Palo Alto Regulations for Food Facilities Related to Water Pollution Prevention and Management of Fats, Oils, and Grease

These regulations were adopted by Council Resolution No. X on X

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Part 1. Purpose, Applicability, and Definitions

A) Purpose and Intent

The purpose of this regulations document is to elaborate on and clarify the requirements of Chapter 16.13 of the Palo Alto Municipal Code, *Requirements for Food Facilities Related to Water Pollution Prevention and Management of Fats, Oils, and Grease*. The purpose of Chapter 16.13 is to control and limit impacts from Fats, Oils, and Grease (FOG) generated by Food Facilities to the City of Palo Alto (City) Storm Drain System, Sanitary Sewer System, right-of-way, and Receiving Waters, including the San Francisco Bay (Bay) and local creeks, marshes, wetlands and other natural habitats, as well as to protect human health and the environment. These regulations are intended to not only provide detailed requirements but also guidance in meeting these requirements. Additional fact sheets and outreach information supplement this document. Food facilities must comply with all applicable laws, including Chapter 16.11 (Stormwater Pollution Prevention) and Chapter 16.09 (Sewer Use Ordinance) of the Palo Alto Municipal Code and the California Plumbing Code as adopted and amended by Chapter 16.08 of the Palo Alto Municipal Code.

The City's Public Works Director (Director) enforces these regulations and all related ordinances, requirements, and specifications. The Director assigns City staff to conduct implementation of requirements and enforcement actions.

B) Applicability

In accordance with Title 16 of the Palo Alto Municipal Code, Chapter 16.13, the following regulations shall apply to all Food Facilities and Mobile Food Facilities in the City's service area. Nothing in this Chapter shall be interpreted to infringe on any vested property right.

C) Alternate Means and Methods

If compliance with any section of these regulations is infeasible, the Director, upon application in writing by the owner, a lessee, or an authorized representative of the Food Facility, is authorized to approve alternate means or methods of compliance with this Chapter. The Food Facility shall demonstrate, as required by the Director, that the proposed alternative is at least equivalent in quality, strength, effectiveness, fire resistance, durability, and safety. The particulars of any such approval made by the Director shall be in writing and a signed copy shall be furnished to the Applicant.

D) Definitions and Acronyms

The following terms, whenever used in this document, are capitalized and shall be as defined herein:

APPLIANCE means a device that utilizes an energy source to produce light, heat, power, refrigeration, or air conditioning.

APPLICANT means any Person that submits an application for a Planning and Land Use Entitlement or Building Permit from the City of Palo Alto.

ASME means the American Society of Mechanical Engineers, a national organization that promotes the art, science, and practice of multidisciplinary engineering and allied sciences around the globe. ASME

develops, administers and publishes the product standards ASME A112.14.3, A112.14.4, and A112.14.6 for grease interceptors. For more information, visit www.asme.org.

ASME A112.14.3 is a product standard governing Hydromechanical Grease Interceptors (HGI). The standard provides requirements regarding design elements, flow rates, and testing procedures to validate performance.

ASME A112.14.4 is a product standard governing Grease Removal Devices (GRD). The standard provides requirements regarding design elements, flow rates, and testing procedures to validate performance.

ASPE means the is American Society of Plumbing and Engineering means, an international organization for professionals skilled in the design, specification, and inspection of plumbing systems.

BEST MANAGEMENT PRACTICES or BMPs means a combination of general good housekeeping practices, pollution prevention and educational practices, operations and maintenance procedures, and other practices to prevent or reduce to the Maximum Extent Practicable Non-Stormwater Discharges or Sanitary Sewer System Discharges directly or indirectly to the Storm Drain System, Sanitary Sewer System, right-of-way, or Receiving Waters.

BUILDING means a structure built, erected, and framed of component structural parts designed for the housing, shelter, enclosure, or support of Persons, animals, or property of any kind.

CITY or THE CITY means City of Palo Alto, California.

COMMISSARY means a Food Facility that services Mobile Food Facilities, mobile support units, or vending machines where any of the following occur:

i. Food, containers, or supplies are stored;
ii. Food is prepared or prepackaged for sale or service at other locations;
iii. Utensils are cleaned; and
iv. Liquid and solid wastes are disposed, or potable water is obtained.

COUNTY OF SANTA CLARA DEPARTMENT OF ENVIRONMENTAL HEALTH oversees the Consumer Protection Division, Hazardous Materials Compliance and Vector Control of the County, including review of all new or remodeled retail Food Facilities in the County of Santa Clara to ensure that they meet minimum health and safety standards.

DIRECTOR means the Director of Public Works of the City of Palo Alto and their duly authorized designees.

DISCHARGE means the introduction of a Pollutant to the Storm Drain System, Sanitary Sewer System, or a Receiving Water from any activity or operation associated with a Food Facility or Mobile Food Facility.

ENFORCEMENT RESPONSE PLAN or ERP means a reference document for inspection staff and management to ensure a consistent and transparent enforcement process for meeting City, regional, and state requirements.

FATS, OILS, AND GREASE or FOG means any non-petroleum fats, oil, and grease substance, such as a vegetable or animal product, that is used in, or is a byproduct of, the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions.

FOOD FACILITY (also known as Food Service Establishment) means any room, Building, place or portion thereof, maintained, used, or operated for the purpose of storing, preparing, serving, packaging, transporting, salvaging, or otherwise handling food and/or drinks for its customers, employees, or the general public. "Food Facility" does not include the following:

i. Locations where food is stored temporarily but not prepared or served;
ii. Private home kitchens, also known as cottage food operations, as defined by the California Department of Public Health;
iii. Community Food Producers;
iv. Farmers' markets and produce stands, except where food is prepared and/or served at the market; and
v. Kitchen facilities principally for individual use by employees ancillary to another primary use (i.e., office break rooms).
vi. Public events at temporary locations without connections to the Sanitary Sewer System and Storm Drain System.

FOOD WASTE DISPOSER means a device installed under a sink drain used to shred and/or grind food waste into smaller particles in order to drain to the Sanitary Sewer System.

GRAVITY GREASE INTERCEPTOR or GGI means a Plumbing Appurtenance or Appliance that is installed in a sanitary drainage system to intercept non-petroleum Fats, Oils, and Grease (FOG) from a Wastewater Discharge and is identified by volume, 30-minute retention time, baffle(s), no less than two compartments, a total volume of no less than 300 gallons (1,135 L), and gravity separation. These interceptors comply with the requirements of Chapter 10 of the California Plumbing Code or are designed by a registered design professional. Gravity grease interceptors are generally installed outside.

GREASE-LADEN WASTE means a Wastewater Discharge that is produced from food processing, food preparation, or other sources where FOG enter pre-rinse stations, sinks, or other appurtenances.

GREASE CONTROL DEVICE or GCD (also known as a grease interceptor) means a Plumbing Appurtenance or Appliance that is installed in a Food Facility's sanitary sewer drainage system to intercept non-petroleum FOG from a Wastewater Discharge. GCDs include Gravity Grease Interceptors and Hydromechanical Grease Interceptors (including Grease Removal Devices).

GREASE REMOVAL DEVICE or GRD means at type of a Hydromechanical Grease Interceptor that, automatically, mechanically removes non-petroleum Fats, Oils, and grease (FOG) from the interceptor, the control of which is either automatic or manually initiated.

HYDROMECHANICAL GREASE INTERCEPTOR or HGI means a Plumbing Appurtenance or Appliance installed in a Food Facility's sanitary sewer drainage system to intercept FOG from a Wastewater Discharge and is identified by flow rate, and separation and retention efficiency. The design incorporates

air entrainment, hydromechanical separation, interior baffling, or barriers in combination or separately, and one of the following: 1) External flow control, with an air intake (vent), directly connected. 2) External flow control, without air intake (vent), directly connected. 3) Without external flow control, directly connected. 4) Without external flow control, indirectly connected. Hydromechanical grease interceptors are generally installed inside.

KITCHEN WASTE or KW means left-over organic matter from Food Facilities.

LATERAL means the sanitary drainage piping and appurtenances that constitute a Building's connection to the Sanitary Sewer System. The private Lateral typically is the upper portion of a Sewer Lateral upstream from the City Sanitary Sewer Cleanout.

LIQUID WASTE HAULER means a licensed Person engaged in the collection and transport of liquid waste associated with a Food Facility. This includes used oil from Waste Oil Containers and waste from Grease Control Devices.

MAXIMUM EXTENT PRACTICABLE or **MEP** means utilizing all reasonably feasible means, including implementation of BMPs, control techniques, and system, design and engineering methods.

MOBILE FOOD FACILITY means any vehicle used in conjunction with a Commissary or other permanent Food Facility upon which food is sold or distributed at retail. This does not include a "transporter" used to transport packaged food from a Food Facility or other approved source to the consumer. Mobile Food Facilities include "compact mobile food operations," which include pushcarts, stands, displays, pedal-driven carts, wagons, showcases, racks, or other non-motorized conveyances.

MUNICIPAL CODE or PAMC means the ordinances and laws adopted and enforced by the City of Palo Alto.

MUNICIPAL REGIONAL STORMWATER PERMIT or MRP means the most recently-adopted San Francisco Bay Area Municipal Regional Stormwater Permit (MRP), a multi-countywide municipal Stormwater NPDES Permit issued by the California Regional Water Quality Control Board, San Francisco Bay Region-Region 2 (Regional Water Board) to regulate Discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo, and Santa Clara counties, and the cities of Fairfield, Suisun City, and Vallejo to their Storm Drain Systems.

NFPA means National Fire Protection Association, a national organization that serves as the leading information and knowledge resource on fire, electrical, and related hazards.

NON-STORMWATER DISCHARGE means any Discharge that is not entirely composed of Stormwater (. Non-Stormwater Discharges include but are not limited to polluted groundwater, any Pollutant, Discharges allowed under an NPDES Permit, or an Illicit Discharge.

NPDES means National Pollutant Discharge Elimination System, which is a national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the Federal Clean Water Act.

PERSON means any individual, partnership, firm, company, corporation, association, joint venture, joint stock company, trust, estate, governmental entity, or any other legal entity; or their representatives, agents, or designees.

PERVIOUS refers to a material or surface (such as landscaping or natural landscape) that allows water to infiltrate below the surface. Pervious materials may include, but are not limited to, permeable interlocking concrete pavers, permeable pavers, Pervious concrete and porous asphalt.

PDI means Plumbing and Drainage Institute, a national organization comprised of a group of member companies, each of which is engaged in the manufacture of products for the plumbing industry. PDI develops, administers, and publishes the product standard PDI G101 for Hydromechanical Grease Interceptors. For more information, visit www.pdionline.org.

POLLUTANT means those substances that may cause or contribute to the degradation of water quality of Receiving Waters and are harmful to aquatic life, human health and the environment. Pollutants associated with Food Facilities and Mobile Food Facilities include cleaning agents, food waste, trash, and Fats, Oils, and Grease.

PLUMBING APPURTENANCE means a manufactured device, a prefabricated assembly, or an on-the-job assembly of component parts that is an adjunct to the basic piping system and Plumbing Fixtures. An appurtenance demands no additional water supply, nor does it add a Discharge load to a fixture or the drainage system. It performs some useful function in the operation, maintenance, servicing, economy, or safety of the plumbing system.

PLUMBING FIXTURE means an approved type of installed receptacle, device, or Appliance that is supplied with water or that receives liquid or liquid-borne wastes conveyed into the drainage system to which it may be directly or indirectly connected.

PRIVATE SANITARY SEWER DRAINAGE SYSTEM means all the piping within public or private premises that conveys sewage or other liquid wastes to a legal point of disposal but does not include the mains of the City's sanitary sewer system or sewage treatment or disposal plant.

RECEIVING WATER means waters of the State, as defined by the Porter-Cologne Water Quality Control Act. Receiving Waters include but are not limited to creeks, marshes, wetlands, shorelines, estuaries, and bays.

REFUSE means and includes compostable materials, recyclable materials, and solid waste. Solid waste means solid and semisolid wastes, generated in or upon, related to the occupancy of, remaining in or emanating from residential premises or commercial premises including but not limited to garbage, trash, rubbish, ashes, and industrial wastes.

REFUSE MANAGEMENT AREA means an area located outdoors used to store Refuse bins and/or dumpsters, inside or outside of an enclosure.

RESPONSIBLE PARTY means any Person who owns, operates, or manages a property, business, facility, or site, or who is otherwise responsible for the activities thereon or the Person whose action or omission causes or results in a violation of Chapter 16.13 or these regulations.

ROOFTOP GREASE CONTAINMENT SYSTEMS are filters applied to rooftop terminations at Food Facilities. They are applied to rooftop fans on exhaust systems to capture the aerosol form of FOG from food being cooked in the kitchen.

SANITARY SEWER OVERFLOW means any overflow, spill, release, or diversion of untreated or partially treated wastewater from a Sanitary Sewer System.

SANITARY SEWER SYSTEM means the collection system, all sewers, treatment plants and other facilities owned or operated by the City for carrying, collecting, storing, treating, reclaiming, and disposing of sanitary sewage and industrial wastes (as defined in Section 16.09.015 of Title 16 of the Palo Alto Municipal Code).

STORM DRAIN SYSTEM means the storm drain facilities owned, managed, or operated by the City by which Stormwater is collected and/or conveyed to Receiving Waters, including but not limited to streets and roads, gutters, curbs, inlets, piped storm drains, parking lots, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures which are within the City's jurisdiction. The Storm Drain System also includes pipes, underground and surface conveyances, and other components on private property and other property within the City's limits not owned by the City that connect and/or route Stormwater and Stormwater Runoff to the City's Storm Drain System.

STORMWATER means any surface flow, runoff, and drainage consisting entirely of water that originates from precipitation events.

STORMWATER RUNOFF means flow that is created when precipitation falls on Impervious Surfaces or compacted Pervious surfaces that do not allow water to infiltrate into the ground.

STRUCTURAL RETROFIT BEST MANAGEMENT PRACTICES means a retrofit to a structure, fixed feature, or property to prevent or minimize the potential of a Discharge of Grease-Laden Waste to the Sanitary Sewer System, Non-Stormwater Discharge, or Discharge to Receiving Waters, in association with an enforcement action due to noncompliance with this Chapter.

TWENTY-FIVE PERCENT RULE or "25% Rule" means that the total depth of the floating grease layer plus the settleable solids layer cannot exceed 25% of the design hydraulic depth in any location of a GCD that has been rated and tested to 90% efficiency. Exceeding the 25% Rule triggers an immediate cleaning of the GCD and other potential requirements instituted by the Director.

WASTE OIL means FOG generated by cooking or Food Facility equipment that is not plumbed to the Sanitary Sewer System but is collected, stored, and hauled off-site. Waste Oil is also known as cooking oil, yellow oil, or tallow.

WASTEWATER DISCHARGE means the liquid waste from a Plumbing Fixture, Appliance, or appurtenance in connection with a plumbing system that does not receive fecal matter.

Part 2. Inspections and Corrective Actions

A) Authority to Inspect

The Director shall have the authority to inspect inside and outside of private and public Food Facilities, sites, property, structures, equipment, and sanitary and Stormwater drainage systems associated with Food Facilities, whether existing or under construction, whenever necessary to ensure and confirm compliance with Chapter 16.13 and applicable state and regional requirements and these regulations.

Inspections may occur at any time, with or without warning, during and after normal working hours, to verify compliance with Chapter 16.13 and applicable state and regional requirements and these regulations.

B) Authority to Enter

The Director shall be authorized to enter, without unreasonable delay, any premises subject to the requirements of Chapter 16.13 and these regulations to conduct inspections and monitoring to assure compliance with Chapter 16.13, applicable regional and state law, and these regulations.

Unreasonable delays in allowing the Director access to the Food Facility's premises are a violation of Chapter 16.13.

C) Refusal of Entry

In the event the owner or occupant of the premises refuses entry after a request to enter and inspect the premises has been made by City inspection staff, the City is empowered to seek assistance from any court of competent jurisdiction in obtaining such entry.

D) Authority to Require Corrective Actions

i. Violations and Enforcement

The Director shall have primary responsibility for enforcement of Chapter 16.13. The Director is authorized to take all actions reasonable and necessary to enforce this Chapter and these regulations. Violations of Chapter 16.13 may be enforced as allowed by Title I of the Palo Alto Municipal Code. The Director is authorized to exercise the authority provided in the California Penal Code section 836.5 and San Francisco Bay Area Municipal Regional Stormwater Permit (MRP) Provision C.5.a.

The Director may require any Food Facility engaged in activities that have resulted in a Discharge to take any or all the following actions. The City's Enforcement Response Plan (required per MRP Provision C.5.b) provides details regarding what constitutes a violation of the Municipal Code and the type of enforcement (and potential penalty) that may be conducted per type of violation. The remedies outlined here are not exclusive. In addition to any other remedies allowed under the Palo Alto Municipal Code, violations may be subject to penalties established by resolution of the Council and any other enforcement action available under law.

ii. Public Nuisance

Notwithstanding any waiver of requirements under this chapter, Food Facilities determined by the Director to have contributed to a sewer blockage, sewer system overflow, or any sewer system interferences resulting from the Discharge of wastewater or waste containing FOG may be ordered by the Director to immediately install and maintain a grease interceptor, and may be subject to a plan determined by the Director to abate the nuisance and prevent any future health hazards created by sewer line failures and blockages, sewer system overflows or any other sewer system interferences. Sewer system overflows may cause threat and injury to public health, safety, and welfare of life and property and are hereby declared public nuisances. They are subject to any remedy available under law.

iii. Remediation of Discharge

Discharges shall be remediated, and the affected property and/or City right-of-way shall be restored within a specified time, as needed. The Responsible Party shall also be responsible for cleanup or reimbursement of cleanup costs incurred by the City for cleanup activities associated with any Discharges that have entered the City's right-of-way and Storm Drain and/or Sanitary Sewer Systems.

iv. Non-structural Best Management Practices (BMPs)

Non-structural BMPs, as applicable, shall be implemented to protect the Storm Drain System, Sanitary Sewer System, and Receiving Waters to address Pollutant sources, including but not limited to those associated with outdoor Waste Oil storage and disposal areas, outdoor Refuse Management Areas, outdoor parking areas and access roads, outdoor areas used by customers and employees, outdoor wash areas, drainage from indoor areas, rooftop equipment, and other sources that have a reasonable potential to contribute to pollution.

v. Structural Retrofit Best Management Practices (BMPs)

If noncompliance is repeated or if the violation(s) incurred are deemed significant or if the Director determines that the GCD has not been properly cleaned or maintained, the Director may require the installation of additional equipment or devices. Structural Retrofit BMPs shall be reviewed and approved by the Public Works Director and may require review and approval by the City's Planning and Building Divisions and other City Departments. Examples of Structural Retrofits include an upgrade of a GCD, an enclosure for Waste Oil, or an upgrade of rooftop equipment to manage grease created in a kitchen.

Part 3. Discharges, Devices, and Connections

A) Prohibited Discharges (MRP Provision C.5.a.ii(1)(f))

No Person shall cause, allow, or permit any FOG, trash, wash water, debris, or Pollutants flow or spill to any private property, Storm Drain System, Sanitary Sewer System or private sanitary drainage system, Receiving Waters, or City right-of-way, including but not limited to a street, sidewalk, alley, or Pervious area such as gravel or landscaped area. Prohibited Discharges are associated with, but not limited to, the following Pollutant sources:

i. Fats, Oils, and Grease (FOG), including any liquid or other waste containing FOG;

ii. Grease Control Device (GCD) contents;

iii. Waste Oil Container contents;

iv. Drippings, spills, or Refuse from Outdoor Refuse Management Areas; and

v. Refuse, liquids and other waste from indoor and outdoor storage and wash areas and public or employee areas associated with a Food Facility.

B) Plumbing Fixture Connection Requirements

i. Unless otherwise approved by the Director, all Plumbing Fixtures or equipment that receive or generate Grease-Laden waste shall be connected to a GCD. At a minimum, the following Plumbing Fixtures, if present in the food preparation, alcohol service, clean-up, and food service areas of a Food Facility where grease is introduced into the drainage or sewage system in quantities that can affect line stoppage or hinder sewage treatment or private sewage disposal systems, shall be connected to a GCD:

1) Sinks: bar sink, hand sink when located in the food prep area, multi-compartment sink, pot sink, pre-rinse sink, and prep sink;

2) Plumbing Fixtures in dishwashing space except for dishwashers;

3) Trough drains (small drains prior to entering a dishwasher), small drains on bussing counters adjacent to pre-rinse sinks, or silverware-soaking sinks;

4) Flush-mounted floor sinks and drains;

5) Mop sinks and drains in outside areas designated for equipment washing. These drains shall also have a cover and be opened only when in use.

6) Pasta boilers designed to drip into floor sinks or drains;

7) Rotisserie ovens and/or broilers, wok ranges/stoves, and other cooking equipment with drip lines that may introduce FOG into the Food Facility's drainage system;

8) Soup kettles, tilt/braising pans; and

9) Exhaust fan hood equipment.

The Director may require any other cooking equipment or Plumbing Fixtures that are reasonably likely to generate additional FOG at the facility to be connected to a GCD.

C) Prohibited Devices, Equipment, and Connections

Only those devices, equipment, and connections allowed under the California Plumbing Code, Chapter 16.13, and these regulations shall be allowed for Food Facility operations. Specific prohibitions include:

i. Plumbing lines and fixtures located in bathrooms and water closets shall not be connected to a GCD.

ii. Dishwashers shall not be connected to a GCD unless specifically required or permitted by the Director.

iii. No Food Facility shall install, maintain, or use a Food Waste (or garbage) Disposer (or disposal).

iv. Unless otherwise approved by the Director, no Food Facility shall install, maintain, or use any food waste liquefiers, aerobic or anaerobic food waste digesters, food composters, or similar devices designed or intended to digest biodegradable Kitchen Waste to be drained to the Sanitary Sewer System.

v. A Food Facility shall not connect any Plumbing Fixture or outdoor drainage to the City's Storm Drain System unless provided permission by the Director.

Part 4. Installation and Replacement of Grease Control Devices

A) Applicability.

The requirements of this Part shall apply to any project that involves installing or replacing a Grease Control Device. If the Food Facility determines it is not able to comply with this Part, the Director may allow it to comply through alternate means and methods.

B) GCD Operating Requirements

Food Facilities shall install and operate a GCD in compliance with these regulations as required by the Director subject to the Palo Alto Municipal Code, Chapter 16.13 Food Facility Requirements. In approving a Food Facility's plumbing and/or GCD design or installation, the City accepts no liability for the failure of a system to adequately treat wastewater to achieve compliance with the provisions of these regulations. Any Food Facility installing a GCD shall provide documentation of approval from the Santa Clara County Department of Environmental Health if required.

C) Prohibition of Sharing of GCDs

Effective January 1, 2026, GCDs installed as a result of the requirements of this Section shall not be shared by Food Facilities. Existing GCDs in use by more than one Food Facility shall continue to be allowed if the action does not result in violations of Chapter 16.13 or these regulations.

D) Wastewater Discharge through GCDs

Effective January 1, 2026, wastewater Discharge through GCDs shall be by means of gravity. Unless otherwise approved by the Director, mechanical pumping of wastewater through a GCD shall not be allowed. Pumps and/or other mechanical pumping equipment to convey wastewater shall only be installed to convey wastewater after the wastewater has passed through the GCD.

E) Repair and Replacement of Existing GCDs

The City may require repair and/or replacement of a GCD if not kept in operating condition necessary to prevent FOG bypass, backups or overflows, or other discharges prohibited by Chapter 16.13 and these regulations.

F) Installation Requirements

i. GCDs shall be installed in an accessible location per manufacturer instructions. Access for maintenance and inspections shall be approved by the Director. A Food Facility may use more than one GCD to treat its FOG-laden waste.

ii. GCDs shall be installed with a manhole lid labeled “grease” or similar, indicating their locations. Lids shall not have the name “sanitary,” “storm drain,” or similar.

iii. Unless otherwise approved by the Director and the County of Santa Clara, GCDs shall be installed outdoors on private property. If approved for indoor installation, GCDs shall meet the requirements contained herein and the requirements of the County of Santa Clara Department of Environmental Health as applicable and be installed to be readily accessible for servicing.

iv. Unless otherwise approved by the Director, GCDs shall be installed at finished grade level and not in underground areas or structures, including, but not limited to parking garages and basements. If GCDs cannot be installed at finished grade level, the Director may allow alternate compliance if accessibility for maintenance and inspection is not hindered. The Director may allow a pumpout port for GCD maintenance as part of the alternative compliance plan.

v. ***Effective January 1, 2026,*** two-way Lateral cleanouts shall be installed on the inlet and outlet side of GCDs for ease of maintenance and flushing of the Lateral line(s).

vi. Designated Cleaning Area. Food Facilities shall have a designated sink or drain connected to a GCD for cleaning floor mats, containers, exhaust hood filters, and equipment. The sink shall be a sufficient size to clean necessary equipment. This designated area may be designed as part of the Refuse enclosure or room if that area’s drain is connected to the GCD.

G) Minimum Requirements for Allowed GCDs
GCDs shall only be approved if the following requirements are met:

i. GCDs shall be sized in accordance with the requirements in these regulations.

ii. If a Food Facility shows the installation of a non-mechanical GCD is infeasible due to the sizing requirements in these regulations or due to space or existing physical constraints, the Food Facility may offer an alternate method to be compliant with this Section. The alternate method shall achieve the required grease removal capacity and comply with the California Plumbing Code and other regional, state, and federal laws and regulations. A third-party inspection may be required. A combination of hydromechanical, Gravity Grease Interceptors and engineered systems shall be allowed where space or existing physical constraints of existing buildings necessitate such installations.

iii. ***Effective January 1, 2026,*** the following GCD construction materials shall not be allowed: materials susceptible to corrosion in low pH environments, concrete, metal, and acid-resistant enamel or epoxy (A.R.E.) coatings. Examples of acceptable materials of construction include thermoplastic (low or high-density polyethylene) or similar non-corrosive materials.

iv. Only GCDs that have been tested and rated for performance according to industry standards shall be allowed to be installed in the City. At minimum, GCDs shall comply with ASME A112.14.3, ASME A112.14.4, CSA B481, PDI G-101, or PDI G-102.

v. Grease Removal Devices (GRDs) shall not be installed in the City without permission from the Director.

vi. GCDs shall be installed as close as practical to the Plumbing Fixtures to connect to them. Installation locations shall be approved by the Director.

vii. More than one GCD may be installed at a Food Facility to meet sizing requirements in these regulations.

viii. Commissaries located in the City used by Mobile Food Facilities shall ensure that GCDs are adequately sized in accordance with the sizing and selection requirements of these regulations and shall consider all Mobile Food Facilities that dispose of their FOG waste at their location in these calculations.

H) Overview of GCD Types

GCDs are designed to prevent grease from clogging private sanitary drainage pipes and the City's Sanitary Sewer System to prevent infrastructure damage, sewer back-ups, and Sanitary Sewer Overflows. The two types of GCDs are Gravity Grease Interceptors (GGIs) and Hydromechanical Grease Interceptors (HGIs). The following sections provide a brief description of each type of GCD and the requirements for their use in the City of Palo Alto.

I) Gravity Grease Interceptors (GGIs)

i. GGI Description and Design and Construction Requirements: GGIs are large volume-based tanks that use passive gravity separation over a certain retention time period to prevent FOG from flowing into the Food Facility's sanitary sewer drainage system. They are typically, but not always, made from precast concrete or steel and installed underground outside Food Facilities. Tank volumes can range from 300 gallons to 3,000 gallons, depending on how many Plumbing Fixtures drain to it. As a result of their size, GGIs tend to be expensive to install. GGIs store a minimum of 300 gallons at a 30-minute retention time and have no fewer than two compartments with baffles and gravity separation devices.

   GGIs, where approved, shall comply with Section 1014.3 through Section 1014.3.7 of the California Plumbing Code, as adopted and amended by PAMC 16.08. A GGI that complies with IAPMO Z1001 shall not be installed in a Building where food is handled. The California Plumbing Code recommends that a sample box be located at the outlet end of the GGI for periodic sampling.

ii. Gravity Grease Interceptor Sizing: Gravity Grease Interceptors shall be sized in accordance with CPC Section 1014.3.6 (*Figure 1*). The volume of a GGI shall be sized equal to or greater than the minimum size set forth in the following *Figure 2* based on the number of drainage fixture units[1] (DFU) draining to the GCD. Where DFUs are unknown, the GGI shall be sized based on the maximum DFUs allowed for the pipe size connected to the inlet of the GGI. Refer to the 2022 CPC table 703.2, Drainage Piping, Horizontal for details in calculating the GGI size. The

[1] A fixture unit is a quantity of which the load-producing effects on the plumbing system of different kinds of Plumbing Fixtures are expressed on some arbitrarily chosen scale.

calculations shall be documented on the GCD Sizing and Selection Worksheet provided by and submitted to the City for evaluation and approval of the proposed project. The following is an example of the required sizing methodology for GGIs per CPC 1014.3.6.

Example: A restaurant has the following Plumbing Fixtures and equipment: one food prep sink and three floor drains - one in the food prep area, one in the grill area, and one receiving the indirect waste from the ice machine and a mop sink.

3 floor drains at 2 DFUs each	=	6 DFUs
Mop sink at 3 DFUs	=	3 DFUs
Food prep sink at 3 DFUs	=	3 DFUs
Total	=	12 DFUs

Using Figure 1, the GGI will be sized at 750 gallons.

Figure 1: Sizing Criteria for GGIs

Sizing Criteria for Gravity Grease Interceptor (GGI) CPC Table 1014.3.6	
Total Number of DFUs	**GGI Volume (gallons)**
8	500
21	750
35	1,000
90	1,250
172	1,500
216	2,000
307	2,500
342	3,000
428	4,000
576	5,000
720	7,500
2112	10,000
2640	15,000

Figure 2: DFUs per Plumbing Fixture

Plumbing (or Drainage) Fixtures*	Number of DFUs per Fixture
Pre-Rinse Sink	4
3 Compartment Sink	3
2 Compartment Sink	3
Mop Sink	3
Prep Sink	3
Floor Drain	2
Floor Sink	2

*For Plumbing Fixtures not listed in this table, refer to Table 702.1 of the California Plumbing Code.

J) Hydromechanical Grease Interceptors (HGI) Design and Construction

HGIs are grease interceptors that are identified by flow rate and separation and retention efficiency. The design incorporates air entrainment, hydromechanical separation, interior baffling, or barriers in combination or separately. HGIs are categorized as one of the following types based on whether flow control is external or not (otherwise known as "integral" in the CPC), has an air intake, and whether they are directly or indirectly (designed to be installed to receive the Wastewater Discharge from fixtures through an Air Gap[2] or air break[3]) connected to Plumbing Fixtures.

1. Type A: external flow control, with an air intake (vent), directly connected
2. Type B: external flow control, without an air intake (vent), directly connected
3. Type C: without external flow control, directly connected
4. Type D: without external flow control, indirectly connected

Plumbing Fixtures or equipment connected to types A and B HGI shall flow through an approved type of vented flow control installed in a readily accessible and visible location.

HGIs tend to be smaller than GGIs and can be installed in tighter spaces both aboveground and belowground. Generally, HGIs are cheaper to install than GGIs. The tank sizes are based on the flow rate designation, intended installation location, Food Facility application, and a minimum certified grease storage capacity, which can be found under the lid of the GCD or can be obtained from the

manufacturer. HGIs are equipped with a flow control device that limits the flow of wastewater into and through it. Because of this flow limiting functionality, HGI sizing can vary depending on the fixture

[2] An air gap is the unobstructed vertical distance through the free atmosphere between the lowest opening from a pipe, plumbing fixture, appliance, or appurtenance, conveying waste to the flood-level rim of the receptor (California Plumbing Code, 2022).

[3] An air break is a physical separation which may be a low inlet into the indirect waste receptor from the fixture, appliance, or device indirectly connected (California Plumbing Code, 2022).

drainage period**.**

HGIs are tested and rated for performance under various product standards. HGIs shall comply with California Plumbing Code Section 1014.2 and nationally recognized product standards ASME A112.14.3 and/or PDI G101, and/or ASME A112.14.3/CSA B481.1 as approved in the California Plumbing Code. Flow control devices shall be designed and installed so that the total flow through the device is not at any time greater than the rated flow of the connected HGI and shall otherwise comply with CPC Section 1014.2.

GRDs are mechanically operated (in other words, not passive) devices that automatically skim FOG from the surface of collected wastewater and separate it into a container connected to the outside of the collection tank. Sizing of devices is based on determining a required minimum flow rate. They tend to be installed aboveground inside the Food Facility's kitchen under a sink or other area. The type of construction and how these devices are installed and operated place significant limitations on their application. For example, they require electricity to operate, must be cleaned daily to function properly, have moving parts that may break, and are inoperable when unplugged or during power outages. The devices are tested and rated for performance under various product standards. **However, due to the various limitations, GRDs shall only be approved when shown that installing a passive GCD is infeasible. If approved, GRDs shall, at a minimum, meet product standard ASME A112.14.4.**

K) HGI Sizing

Effective January 1, 2026, the following sizing methodology shall be used for HGIs.

i. The City has adopted an HGI sizing methodology that determines the minimum required flow rate for a given Food Facility but also calculates the estimated grease loading anticipated from that Food Facility to ensure that the HGI selected will have adequate grease storage capacity for the application.

   Food Facilities shall follow the two-step method below for sizing HGIs. The calculations shall be documented on the GCD Sizing and Selection Worksheet provided by and submitted to the City for evaluation and approval of the proposed HGI for the applicable project.

   1) Step 1: Calculate Flow Rate according to CPC 1014.2.1

   The minimum flow rate (in gallons per minute or gpm) for a given GCD may be calculated by either 1) using the diameter of the pipe leading from the establishment to the GCD or 2) the anticipated fixture volume for the project using either a one-minute or two-minute drainage period for the connected fixtures. A one-minute drainage period shall be used when the interceptor is installed within 20 feet of directly connected fixtures and/or has indirectly connected fixtures (i.e., fixtures that connect to the Food Facility's sanitary sewer drainage system via a floor drain or floor sink). If the GCD is installed outside the Building beyond 20 feet of the connected fixtures, a two-minute drainage period shall be used. For an overview of drainage period, refer to California Plumbing Code (CPC) Section 1014.2.

   As applicable, one of the following options shall be used to calculate the minimum flow rate for a Food Facility's HGI.

   - <u>Option A: Fixture Volume Sizing</u>

If the Food Facility knows which Plumbing Fixtures will be used, the following option should be applied. If unknown, see Option B below. To determine the minimum required flow rate and size of HGI, use the below process to calculate the volume capacity of each fixture that will be connected to the HGI based on the appropriate drainage period. The total capacity in gallons of fixtures discharging into an HGI shall not exceed two and one-half times the certified gallon per minute flow rate of the interceptor. A certified HGI shall be selected to meet the total calculated flow rate.

The formula and instructions, along with an example, are provided below. Fixtures should be sized by volume with a 75% fill factor (to account for dishware).

1st $\dfrac{\text{L x W x H (}\textit{size of container/compartment}\text{)}}{\underset{\text{(}\textit{conversion of cubic inches to gallons}\text{)}}{231}}$ x 0.75 = Total Fixture Capacity in gallons

2nd Total Fixture Capacity (gallons) x 1 = one-minute drainage period (gallons per minute or GPM) OR
Total Fixture Capacity (gallons) x 0.5 = two-minute drainage period (GPM)

Example: Fixture volume calculation for a three-compartment sink with each compartment having the size of 18 x 24 x 12 inches

1. Size of compartment = 18 x 24 x 12 = 5184 cubic inches (in^3)
2. Fixture volume capacity of one compartment = 5184 in^3 / 231 = 22.44 gallons
3. 22.44 gallons x 3 (three compartments) = 67.3 gallons total fixture volume capacity of the three-compartment sink
4. 67.3 gallons x 0.75 = 50.4 gallons total fixture capacity after 75% loading factor (to account for dishware)
5. 50.4 gallons / 1 minute = 50 GPM, one-minute drainage period
6. 50.4 gallons / 2 minutes = 25 GPM, two-minute drainage period

- Option B: Pipe Diameter Sizing

When the final configuration of kitchen fixtures in a Food Facility is unknown, or to allow for the Addition of fixtures in the future, the minimum required flow rate may be determined by the diameter of the drainage pipe leading from the establishment to the HGI (refer to Figure 3*).*[4] The total capacity in gallons of fixtures discharging into an HGI shall not exceed 2.5 times the certified gallon per minute (gpm) flow rate of the HGI in accordance with *Figure 3*.

Figure 3: Pipe Diameter Sizing

[4] The section of the Grease Capacity Formula in regards to the number of meals or customer per day is adapted from the ASPE Design Handbook 4, *Plumbing Components and Equipment*, Chapter 8, *Grease Interceptors* (2016-2017 edition).

Pipe Size (inches)	Full-Pipe Flow (GPM)	One-minute drainage period (GPM)	Two-minute drainage period (GPM)
2	20	20	10
3	60	75	35
4	125	150	75
5	230	250	125
6	375	400	200

Note: The *Figure 3* approach may be used if the number or type of fixtures are unknown. For outdoor installations where the developed length of piping can be quite long, a two-minute drainage period will provide a satisfactory result in drainage times.

2) Step 2: Calculate Grease Capacity

Once the minimum required flow rate has been established in Step 1, the following method shall be used to calculate the minimum grease storage capacity for the GCD that is required for the desired pump-out frequency. Per Section 4 (Grease Control Device Maintenance Requirements) of these regulations, the maximum allowed number of days between GCD pump-outs is 90 days. The grease capacity formula and instructions, along with an example, are provided in *Figure 4* below.

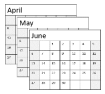
Grease Factor from Figure 5 (below)	X	Meals or Customers per day	X	Calendar days between pump-outs (maximum of 90)	=	Grease Capacity Required
						

Figure 4: Grease Capacity Formula

To determine the correct grease factor for your Food Facility (pounds of grease generated per meal for a particular menu) using *Figure 5*, select the predominant menu type from the column labeled "menu"[5]. Then, following along the same row from left to right, select the appropriate situation for the Food Facility out of columns A through D to indicate whether the Food Facility has a fryer and whether it will use disposable or washable plates, glasses, and flatware (knives, forks, and spoons). Use the grease factor associated with that row (menu type) and column in the formula above. The City acknowledges that the Food Facility list provided in *Figure 5* is by no means inclusive of all types of foods offered in the City of Palo Alto. If a Food Facility menu

does not match one of the categories listed in *Figure 5*, please contact the City for assistance in identifying the best fit grease factor for the facility.

[5] The Food Facility Grease Factor Table is adapted from a 2011 Kennedy/Jenks Consultants Brown Grease Supply Study for Clean Water Services, and ASPE Design Handbook 4, *Plumbing Components and Equipment*, Chapter 8, *Grease Interceptors* (2016-2017 edition).

A minimum of 30 days and a maximum of 90 days shall be used for the number of calendar days between pump outs conducted by the Liquid Waste Hauler.

Example: Fast Food Full Prep (e.g., cooking as opposed to reheating meat products) with fryer, and compostable flatware, serving 300 meals per day.

1. Grease factor from Figure 5: 17C (menu type 17, column C) = 0.035 pounds per meal
2. Meals per day = 300 (determine through business planning)
3. Calendar days between pump-outs = 90
4. Grease capacity required: 0.035 x 300 x 90 = 945 pounds per 300 meals

The correctly sized and selected HGI will have both the minimum flow rate determined in Step 1 and the minimum grease storage capacity calculated in Step 2. As allowed by the Director, multiple HGIs may be installed to satisfy the minimum flow rate requirement, the minimum grease storage capacity, or both. Parallel HGI installations (wherein effluent flows from one HGI into another HGI) shall not be allowed. HGIs certified to meet the minimum requirements of ASME A112.14.3 shall have the flow rates and minimum grease storage capacities as listed in *Figure 6*.

HGIs may have capacities exceeding the minimum capacities shown in *Figure 6*. HGIs claiming grease capacities exceeding the minimum requirements in *Figure 6* shall be reviewed and approved by the Director when the manufacturer can demonstrate by third-party test reports, including the incremental test data, that the device has the capacity claimed. Upon approval from the Director, the HGI's proven grease storage capacity may be used in selecting the required size necessary to satisfy the requirements of this two-step sizing method.

Figure 5: Food Facility Grease Factors

	Without Fryer w/o Flatware	Without Fryer with Flatware	With Fryer w/o Flatware	With Fryer with Flatware

Type	Menu Grease Factor →	A	B	C	D
1	Bakery	0.0250	0.0325	0.0350	0.0455
2	Bar – Drinks Only	0.0050	0.0065	0.0250	0.0325
3	Bar and Grille	0.0250	0.0325	0.0350	0.0455
4	BBQ	0.0250	0.0325	0.0350	0.0455
5	Buffet	0.0250	0.0325	0.0350	0.0455
6	Cafeteria – Full Serve	0.0250	0.0325	0.0350	0.0455
7	Cafeteria – Heat & Serve	0.0050	0.0065	0.0250	0.0325
8	Chinese	0.0350	0.0455	0.0580	0.0750
9	Coffee Shop	0.0050	0.0065	0.0250	0.0325
10	Continental Breakfast	0.0050	0.0065	0.0250	0.0325
11	Convenience Store	0.0050	0.0065	0.0250	0.0325
12	Deli	0.0050	0.0065	0.0250	0.0325
13	Donut Shop	0.0250	0.0325	0.0350	0.0455
14	To Be Determined	0.0250	0.0325	0.0350	0.0455
15	Family Restaurant	0.0250	0.0325	0.0350	0.0455
16	Fast Food – Pre-Cook	0.0050	0.0065	0.0250	0.0325
17	Fast Food – Full Prep	0.0250	0.0325	0.0350	0.0455
18	Fried Chicken	0.0250	0.0325	0.0350	0.0455
19	Greek	0.0250	0.0325	0.0350	0.0455
20	Grocery Store	0.0250	0.0325	0.0350	0.0455
21	Ice Cream/Yogurt/Smoothies	0.0050	0.0065	0.0250	0.0325
22	Indian	0.0250	0.0325	0.0350	0.0455
23	Italian	0.0250	0.0325	0.0350	0.0455
24	Mexican	0.0350	0.0455	0.0580	0.0750
25	Pizza Restaurant	0.0250	0.0325	0.0350	0.0455
26	Pizza Carryout	0.0050	0.0065	0.0250	0.0325
27	Multi-unit dwelling	0.0050	0.0065	0.0250	0.0325
28	Salads / Healthy Bowls	0.0050	0.0065	0.0250	0.0325
29	Sandwich Shop	0.0050	0.0065	0.0250	0.0325
30	Seafood	0.0250	0.0325	0.0350	0.0455
31	Snack Bar	0.0050	0.0065	0.0250	0.0325
32	Steak House	0.0250	0.0325	0.0350	0.0455
33	Sushi	0.0050	0.0065	0.0250	0.0325

*The City acknowledges that the Food Facility list provided in *Figure 5* is by no means inclusive of all types of foods offered in the City of Palo Alto. If a Food Facility menu does not match one of the categories listed in *Figure 5,* please contact the City for assistance in identifying the best fit grease factor for the facility.

Figure 6: HGI Flow Rates and Minimum Grease Capacity

HGI Flow Rate	Minimum Grease Storage Capacity (lbs.)
20	40
25	50
35	70
50	100
75	150
100	200
Note: Minimum grease capacity as required by ASME A112.14.3	

Part 5. Maintenance of Grease Control Devices

A) GCD Maintenance Requirements

GCDs shall function properly and always be maintained in efficient operating condition by periodic removal of the accumulated grease and latent material according to requirements from the manufacturer, Chapter 16.13, and these regulations. The following requirements apply to all Food Facilities with a GCD in use.

i. The contents of GCDs shall only be removed and appropriately disposed of by a Liquid Waste Hauler licensed through the California Department of Food and Agriculture and that meets all applicable requirements from the County of Santa Clara Department of Environmental Health.

ii. GCDs shall be readily accessible for inspection and maintenance. Bulky, heavy equipment shall not be stored on top of access hatches of GCDs.

iii. GCDs shall be identified with a manhole lid or access hatch labeled “grease” or similar, indicating their locations for maintenance and other needs. Lids shall not have the name “sanitary,” “storm drain,” or similar.

iv. GCDs shall be maintained every 90 days, at a minimum, by performing periodic removal of their entire contents, including wastewater, accumulated FOG, floating materials, and solids. It shall be the Food Facility’s responsibility to ensure that Liquid Waste Haulers maintain their GCDs as follows:

1) Remove cover(s) to access the GCD’s interior.
2) Document condition of the GCD of the interior through each manhole lid/access hatch. It is the Food Facility’s responsibility to store images and make them available upon request.
3) Remove all FOG, solids, food debris, and wastewater.
4) Clean all internal surfaces and remove build-up of FOG or other residual materials. Cleaning chemicals and/or degreasers are prohibited.
5) Inspect all internal components, note, and report any missing or broken components. The Hauler shall report any issues with the components to the Food Facility on the manifest.
6) Document condition of GCD when empty and cleaned. When feasible, document with

digital pictures of the interior through each manhole/cover.

7) Refill with fresh water; if a nearby water spigot is not available, run water from connected fixtures into the GCD
8) Replace cover(s) and all bolts. Ensure cover is secured.
9) Record and report all necessary information in accordance with Requirements for Records Retention, as contained in these regulations.

B) GCD Maintenance Frequency

Food facilities shall maintain the GCD by adhering to the pump-out frequency determined when sizing the GCD for installation. At minimum, GCDs shall be maintained once every 90 days. If, during an inspection, the City's FOG Inspector determines that pump-out frequency is insufficient to adequately capture the Food Facility's Grease-Laden Waste, more frequent pump-outs may be required.

The City's FOG Inspector will calculate pump-out frequencies for existing GCDs with known grease capacities using the grease capacity formula (see example below). The formula provides a tool to estimate the amount of FOG that the Food Facility will create and determine whether the GCD is adequate for that amount of FOG. The pump-out frequency is adjusted per the results to ensure that no FOG bypasses into the Building's drainage system or the City's Sanitary Sewer System. GCDs are typically maintained in monthly intervals. Maintaining the GCD more often than monthly tends to be cost-prohibitive, while maintaining less often than every three months (or quarterly) may cause issues to the GCD or private plumbing system. **Thus, a minimum of 30 days and a maximum of 90 days shall be used for the number of calendar days between pump-outs to calculate the required maintenance frequency.** For questions about calculating a GCD pump-out frequency, contact the City's FOG Inspector by emailing FOG@cityofpaloalto.org.

Example: A full-service (i.e., uses flatware) Italian cuisine restaurant uses a fryer and serves 150 meals per day. Its existing GCD has a rated grease capacity of 500 lbs. (located inside lid of GCD or from the manufacturer) and is maintained (or pumped out) every 90 days. The following provides an example calculation using the Grease Capacity Formula provided in Figure 2 of the estimated amount of FOG that the Food Facility creates to determine whether a 90-day maintenance frequency is sufficient.

1. Grease factor from Figure 3: menu column 23, row D = 0.0455lbs per meal
2. Meals per day (taken from point-of-sale report) = 150
3. Current pump-out frequency = 90 days
4. Rated grease capacity of existing GCD = 500 lbs.

0.0455lbs./meals x 150 meals x *90 days* = **614.25 lbs.**

A 90-day pump-out frequency is insufficient for the capacity of the existing GCD (500 lbs.), because the FOG output is greater than the capacity of the GCD. The City's FOG Inspector will lower the number of days between pump-outs in the formula to identify the point at which the result will be less than the rated grease capacity of the GCD (500lbs). Using 60 days of 90 days between pump-outs provides the following result:

0.0455lbs./meals x 150 meals x *60 days* = **409.5 lbs.** (which is less than the GCD's 500 lbs.

grease capacity)

The GCD should be pumped at minimum every 60 days to limit FOG bypass and stay in compliance.

C) Changes in a Food Facility's Operations

Changes in operations that may reasonably likely generate additional FOG may necessitate more frequent pump-outs. Examples include a change in cuisine that results in an increased FOG grease factor per *Figure 3* or an increase in seating or drive-through capacity. These types of changes may require an updated GCD maintenance schedule and will be identified through FOG inspections or Building Permits. The Director may approve an alternative maintenance schedule if a Food Facility can demonstrate that a lower pumpout frequency is sufficient to adequately treat the Food Facility's FOG-laden waste.

A Food Facility may email FOG@cityofpaloalto.org to report changes and get assistance in determining a proper maintenance schedule to avoid clogged pipes or FOG bypass to the City's Sanitary Sewer System. The following provides an example of different FOG outputs when Food Facilities change their cuisine and an example of a change of seating or drive-capacity.

i. Change in cuisine example: A full-service (i.e., uses flatware) pizza restaurant uses a fryer and serves 150 meals per day. The existing GCD has a rated grease capacity of 700lbs and is pumped every 90 days. If the restaurant makes no other changes other than adding Mexican cuisine to its menu, the grease factor increases from 0.0455 *(Figure 3: menu type 25, column D)* to 0.0750 *(Figure 3: menu type 24, column D)*. The example below portrays how the FOG output changes with the change in cuisine.

   0.0750 lbs./meals x 150 meals x 90 days = **1,012.5 lbs.** capacity needed

   Given that the existing GCD only has a rated capacity of 700lbs, the pump-out period for the change in cuisine is insufficient. The new pump-out frequency can be calculated as below:

   0.0750 lbs./meals x 150 meals x *60 days* = 675 lbs. grease capacity

   0.0750 lbs./meals x 150 meals x *30 days* = 337.50 lbs. grease capacity

   Due to the change in cuisine type, the pump-out frequency will need to be updated from every 90 days to at least every 60 days.

ii. Change in seating capacity, or drive-through capacity example: A full-service (i.e., uses flatware) pizza restaurant uses a fryer and has a grease factor of 0.0455 (*Figure 3, menu type 25, column D*). It seats 50 people, serving approximately 150 meals a day. The existing GCD has a rated grease capacity of 700lbs and is pumped out every 90 days. The Grease Capacity Formula calculates the following FOG output from the restaurant.

   0.0455lbs./meals x 150 meals x 90 days = 614.25 lbs. grease capacity (which is under the grease capacity of the GCD, and thus, is sufficient)

If the restaurant expands its dining area from seating for 50 to seating for 100 people, while making no changes to the kitchen fixtures or menu, the increase in seating could change the number of meals served leading to an increase in FOG output:

0.0455lbs./meals x *200 meals* x 90 days = **819 lbs. grease capacity**

The pump-out frequency should be updated to keep the Food Facility's GCD grease capacity of 700 lbs. and to limit the bypass of FOG:

0.0455lbs./meals x *200 meals* x 60 days = **546 lbs. grease capacity**

Due to the increase in seating capacity and meals served, the pump-out frequency will need to be updated from every 90 days to at least every 60 days.

D) Unknown GCD Grease Capacity (25% Rule)

i. When information regarding a GCD's grease capacity is not provided or is unknown, a GCD must be maintained frequently enough such that the total depth of the floating grease layer plus the settleable solids layer does not exceed 25% of the design hydraulic depth[6] in any location of the GCD (known as the 25% Rule). This is the maximum depth of FOG allowed when the maximum grease capacity is not provided by the manufacturer or is unknown. Exceeding the 25% Rule triggers an immediate cleaning of the GCD. A diagram of the 25% Rule is shown in Figure 7.

City staff will use the following procedure to calculate the depth that meets the required 25% rule for a particular GCD:

1) The total depth (in inches, in.) of the static water plus the FOG floating at top of the water and the solids that have settled at the bottom of the GCD are measured, providing the design hydraulic depth of the GCD. This is done by measuring from the top of the FOG to the bottom of the GCD.
2) The total of the depth of the FOG and the solids layers is divided by the depth of the GCD and multiplied by 100. This is the amount of FOG and solids in the GCD.
3) If the calculated percentage is greater than 25%, the amount in the GCD has exceeded the 25% Rule and requires maintenance.

   Example of the 25% Rule applied to either a GGI or GRD (HGIs have a known grease capacity): Total depth of the static water, FOG, and solids (or the depth of the GCD) is 48 in., and the depth of the FOG and solids layer is 13 in.

   (13 in. / 48 in.) x 100 = 27%

   This GCD would need maintenance, as the amount of FOG and solids is greater than 25%.

[6] Design hydraulic depth, typically provided by the manufacturer, for the purposes of this section, is the depth from the bottom of the GCD to the outlet pipe. The City's FOG Investigator can provide a field calculation if unknown.

i. The Liquid Waste Hauler maintaining the GCD shall make note of the amount of FOG and solids accumulation as a percentage on the manifest document provided to the Food Facility. The City FOG Inspector will conduct regular inspections of Food Facilities to determine if their GCDs are being maintained to compliance standards. The Food Facility is responsible for complying with the 25% Rule.

ii. The Director may require a Food Facility to implement an amended GCD maintenance schedule at any time, regardless of GCD type or size, if the above maintenance program results in inadequate treatment of a Food Facility's FOG-laden waste.

iii. No additives shall be introduced into GCDs and/or Sanitary Sewer Systems to biologically or chemically treat, remediate, or emulsify FOG, or as a supplement to GCD maintenance. Biological or chemical treatment of FOG includes, but is not limited to, systems or additives, such as solvents, emulsifiers, surfactants, caustics, acids, enzymes, or bacteria that dissolve or mobilize FOG.

iv. Where increased maintenance frequency is insufficient to maintain a Food Facility's GCD to adequately treat the Food Facility's FOG-laden waste, the City may require an upgrade or installation of additional equipment.

v. GCDs shall be cleaned in accordance with these regulations at the time of the Food Facility business closure, closure of the Building in which the Food Facility is located, or a change in ownership of the Food Facility. At minimum, the following shall be done as part of the final GCD cleaning: 1) thorough pump out and cleaning by a Liquid Waste Hauler and 2) flushing of the private drainage lines up to the connection to the City's Sanitary Sewer System. If the GCD may be used again by a subsequent Food Facility, it shall also be inspected to ensure all parts are in operable condition. If the GCD will be abandoned, Part 14 Section D below shall be followed.

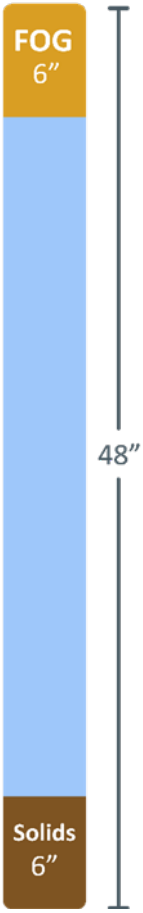


Figure 7: Image Portraying Example of 25% Rule

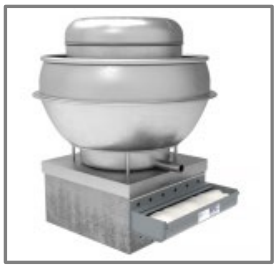
Part 6. Requirements for Installing or Replacing Rooftop Grease Containment Systems

A) Rooftop Grease Containment System Requirements

Food Facilities shall install and maintain Rooftop Grease Containment Systems in accordance with applicable law, including the California Mechanical Code (CMC) Chapter 5, as adopted by PAMC Chapter 16.05, and the California Fire Code, as adopted by PAMC Chapter 15.04, to prevent accumulations of FOG from rooftop terminations of exhaust hoods for commercial cooking equipment (*Figure 8*).

Steam or smoke is evacuated from the kitchen through rooftop exhaust systems. Rooftop Grease Containment Systems are used to mitigate the risks of roof and kitchen fires and grease Discharges to the Storm Drain System by preventing grease build-up on exhaust equipment and roofs. The filters or grease capturing containers shall be maintained regularly. Evidence of a lack of proper maintenance is in the form of brownish or reddish stains on the roof leading to rooftop drains that are connected to the Storm Drain System.

Grease Discharges to the Storm Drain System are prohibited per MRP Provision C.5.a.ii(1)(f). All Food Facilities must also meet the mechanical exhaust ventilation requirements of the County of Santa Clara Department of Environmental Health.



Small Grease Gutter

Large Grease Gutter

Grease Collection Box

Sources: hoodfilters.com and drainnet.com

Figure 8: Examples of (NFPA 96) Rooftop Grease Containment Systems

Part 7. Development Plan Submittal Requirements for Food Facility Projects

A) Plan Submittal Requirements

Food Facilities that meet applicability criteria of Part 4, Section A, of these regulations, shall follow this plan submittal and approval process in complement and adherence to the requirements of the Planning and Land Use Entitlement and Building Permit processes. If plan submittal requirements are not met by the Applicant, a GCD will not be approved, and consequently, the project will not receive a Building Permit. Any changes to the approved drawings may require that revised drawings be submitted for review and approval before construction. This includes any change to the drawings as a result of reviews by other jurisdictions, including the County of Santa Clara Department of Environmental Health. At a minimum, the following shall be included in the plan submittal:

1. Site Plan (a drawing that depicts the existing and proposed construction for the given area): As applicable, the site plan shall include the location of relevant outdoor Food Facility equipment and outdoor use areas, the GCD, Waste Oil storage, and Refuse enclosure or room.
2. Plumbing drawings, including the “Details” pages: These shall contain the manufacturer, model number, and flow rate of the GCD proposed for the project. The sewer, grease, and Kitchen Waste lines shall be clearly shown on the plans. If depicted by acronyms, a legend shall be provided to identify them.
3. Food Service/Kitchen drawings (often called “Food Service Equipment Plans”): These drawings shall include an equipment schedule with each Food Facility equipment (e.g. dishwasher) listed, the quantity of each item, the manufacturer, model number, and if applicable, the flow rate. A plan layout of the kitchen area, with each piece of equipment labeled, shall be included.
4. Civil/Architectural/Structural Plans: These plans shall provide information and details regarding the Refuse Management Area, Waste Oil storage, and the Rooftop Grease Containment System. Plans shall show dimension details (width, length, and height) and

grading and drainage detail of the surrounding areas. Any additional requirements of the Palo Alto Refuse Enclosure regulations shall be followed.

5. GCD Sizing and Selection Worksheet: Filled-out worksheet for the proposed GCD, including all requested details.
6. GCD manufacturer specification Sheets and Information.
7. Food Facility menu, schedule, seating capacity, and expected number of daily customers.
8. GCD cleaning schedule and cleaning procedures (see Part 5 for more information about maintenance requirements).

B) Construction Inspections.

Once plans are approved and a Building Permit is issued, City staff will conduct construction inspections to ensure the project is installed per the approved design. The project will not receive final approval of completion if the requirements of these regulations are not met.

Part 8. Waste Oil Storage and Management Requirements for Food Facilities

A) Required Waste Oil Storage Requirements

Effective September 1, 2025, all Food Facilities shall store outdoor Waste Oil Containers at finished grade level in secondary containment units/systems (see example *Figure 9*) per the requirements listed below.

i. Waste oil storage shall comply with applicable provisions of the California Fire Code and PAMC Title 17 (Hazardous Materials Storage).

ii. Waste oil is considered hazardous once it comes in contact with the environment. Consequently, to prevent waste oil spills and leaks, all installation, construction, and substantial repair or modification of waste oil storage requires a permit from the City of Palo Alto Fire Department per PAMC Chapter 17.12.010.

iii. The secondary containment shall be constructed of materials of sufficient thickness and density and have a minimum storage capacity equal to 1.5 times the volume of the storage container(s) and be designed to prevent rainfall intrusion.

iv. The storage area shall have a concrete pad or other approved material that can be maintained easily and minimally stain.

v. If this storage method does not prevent oil from spilling or leaking outside the storage area, the Director may require construction of a structure to store the Container or re-location of the Container to a Food Facility's Refuse Enclosure. Waste Oil Containers stored in a Food Facility's Refuse Enclosure must be separated from Refuse containers by a barrier to minimize impact of any spills on Refuse hauling.

vi. If approved by the Director and the County of Santa Clara Department of Environmental Health, containers may be located indoors if there is adequate access for the Liquid Waste Hauler to provide maintenance in place.

vii. Closure and removal of secondary containment for waste oil also requires a permit from the City of Palo Alto Fire Department per PAMC Chapter 17.12.010.

B) Required Waste Oil Container Management and Maintenance

Food Facilities shall manage their Waste Oil Containers per the following:

Source: ensafeco.com

Figure 9: Example of a Spill Containment System

i. Waste Oil shall be disposed of into a leak-free, product-tight Waste Oil Container. If leaks are identified, Containers shall be replaced within 10 business days. If the Containers have drains, they shall be kept plugged to prevent leakage. Lids or covers to the Containers shall fit properly and shall be securely fastened and locked at all times.

ii. Waste Oil Container storage areas shall be locked and labeled with the name and address of the Food Facility that uses it and shall include a direct phone number for the Food Facility's owner or manager. If the Waste Oil Container is in use by more than one Food Facility, contact information for each Food Facility shall be included.

iii. Containers shall be placed in a secured manner, preferably on level ground, to prevent spills, Discharges, and/or vandalism.

iv. Waste Oil Containers delivered for Food Facility service shall be new or clean and shall be regularly inspected, maintained, and replaced to ensure a condition that will ensure their proper function and prevent any Discharges.

v. Waste Oil Containers shall have wheels and cannot be wheeled out of its storage area and shall be maintained in place within the storage area, except for Containers that may need to be wheeled out of underground Refuse Enclosures for the sole purpose of maintenance by a Liquid Waste Hauler. The latter shall be conducted only with Director approval.

vi. Waste Oil Containers shall be filled and emptied carefully to avoid spills. Containers and surrounding areas shall immediately be cleaned if spills occur using dry cleanup methods per Part 9.

vii. Waste Oil Containers and their storage areas shall be cleaned and maintained a minimum of once every 90 days, or more often if required by the Director.

Part 9. Requirements for Spill Response Activities Conducted at and Associated with Food Facilities

A) FOG Spill Clean-up Responsibility

It is the responsibility of the Food Facility to ensure that no FOG is spilled during transport, cleaning, maintaining, and inspecting the GCD or Waste Oil Container and/or storage area by its employees, contractors, and Liquid Waste Haulers and that no spills enter the City's right-of-way or Storm Drain System. Failure of Food Facilities to comply with this requirement shall be a violation of Chapter 16.13 of the Palo Alto Municipal Code and subject to the enforcement provisions contained therein.

B) Spill Clean-up Requirements

Any Responsible Party (including, but not limited to, the Food Facility owner, manager, staff, contractors, and Liquid Waste Hauler) who has knowledge or information of any known or suspected release of materials, which has resulted in or may result in a Discharge, shall take all necessary steps to immediately cease, contain, clean up using dry clean-up methods, and report the spill or potential thereof. For greasy spills on private property, the following process shall be employed immediately and as quickly as possible:

i. A safety check shall be conducted to ensure no one is injured. Then, the area with the spill shall be blocked off to prevent anyone from entering the spill area.

ii. Large debris, equipment, and other items shall be moved away from the spill area.

iii. The source of the leak or spill shall be investigated and identified.

iv. The affected area shall be covered with absorbent material such as sand, sawdust, baking soda, or cat litter. Commercially available products such as Oil-Dri may be used.

v. The absorbent material shall be left in place for sufficient time to allow it to soak up the spilled material.

vi. The area shall be swept clean of all the absorbent material (*Figure 11*), and the material shall be disposed of in the trash.

vii. These steps shall be repeated as necessary to ensure the spilled material is completely cleaned up.

viii. A cleaning agent shall be used to remove the residual grease from the area, which is typically left behind after using absorbent materials. The cleaning agent shall not be allowed to be washed into the Storm Drain System. The cleaning agent and remaining materials shall be disposed of in the garbage.

Figure 10: Example of Cleaning Spills Using Dry Clean-up Methods

C) Private Storm Drain System/Components

If a spill occurs on private property, the Responsible Party shall be responsible for cleaning the private property and any private sanitary or storm drain components located on said property. If the spill is significant and may flow to the City's system, it shall be reported to the City's non-emergency Police Dispatch at (650) 329-2413 for assistance.

D) Spill in the City's Right-of-Way

If a spill has entered or will enter the City's right-of-way (such as sidewalk, gutter, street or storm drain), the Responsible Party shall immediately contact the City's non-emergency Police Dispatch at (650) 329-2413 for assistance. Although the Responsible Party shall also clean or have cleaned the impacted City property and/or Storm Drain System and/or Sanitary Sewer System, said Party or representative shall not perform cleaning until instruction is provided by Director.

If a Person cannot identify the spilled material, the Person shall not attempt to clean it up in a manner that may result in a Discharge or harm to human health. The Person shall contact the City's non-emergency Police Dispatch at (650) 329-2413 for assistance.

E) Investigation and Enforcement (MRP Provisions C.5.a and C.5.b)

In the event a spill or incident reaches the City's right-of-way, the Director shall conduct an investigation and enforcement per the Enforcement Response Plan until the issue is deemed corrected. The Responsible Party may also be charged for City enforcement costs as deemed necessary.

Part 10. Best Management Practices (BMPs) for Existing Food Facilities

In addition to the BMPs required in Chapter 16.11 – Stormwater Pollution Prevention of the Palo Alto Municipal Code, Food Facilities shall also implement and carry out the following:

A) Food Removal from Preparation and Service Items

Food Facilities shall physically remove food from preparation and service items, including but not limited to utensils, dishware, and cookware, prior to rinsing and washing. The Food Facility shall dispose of all food waste directly into the compost container. Food waste and FOG shall not be disposed of in any sinks, drains, or Food Waste Disposer.

B) Equipment Cleaning

i. Screens shall be installed in all kitchen sinks, drains, floor sinks, and other equipment that are a potential source of FOG or food waste. The screens shall be frequently inspected and cleaned by disposing food waste into the compost container.

ii. Cooking equipment shall be cleaned regularly. Used cooking oil and grease waste shall be disposed of in the Waste Oil Container. Grease and oils shall not be dumped down any drains.

iii. Wastewater generated from cleaning FOG-contaminated items and equipment, or FOG spills, shall not be Discharged to the Sanitary Sewer System unless it first flows through a GCD. Wastewater from cleaning mats and floors shall drain through a mop sink that is connected to a GCD.

iv. All Rooftop Grease Containment Systems, including but not limited to grease cups/trays on roofs, hoods, and removable filters, shall be properly maintained at a frequency sufficient to prevent spills and overflows and in compliance with the California Fire Code (CFC) Chapter 6 table 606.3.3.1. Dispose of grease in trash bin. Do not dispose of any wastewater associated with cleaning into any indoor or outdoor drains or downspouts.

C) Refuse Management Areas and Waste Oil Containers or Storage Areas

Refuse Management Areas and Waste Oil Containers and storage areas shall be routinely inspected to verify that covers are in place, located away from storm drain inlets, and that containers and surrounding areas are clean and free of FOG and food residue, debris and leaks.

i. Spill containment pallets/pads or secondary containment units/systems shall be cleaned using dry cleanup methods at least every 90 calendar days, and immediately if splashes or spills occur.

ii. Spill clean-up kit inventories shall always be kept up to date.

D) Trainings

Food Facilities shall inform all staff of the requirements of this Chapter through regular trainings (occurring bi-annually, at a minimum), new employee orientations, and posting of signs or posters in works areas identifying the required BMPs. Food Facilities shall document the trainings and orientations with employee signatures, indicating each employee's attendance and understanding of the regulations reviewed, and shall maintain and make these records available for inspection by the Director upon request. Records shall be retained in accordance with Part 12.

Part 11. Retention of Records

Food Facilities shall document all cleaning and maintenance conducted of their GCDs, Waste Oil Containers, sewer line, and components thereof in addition to any other equipment and storage and cleaning areas and employee training. Hard-copy or electronic records shall be retained for a period of at least three (3) years. Records shall be made available during inspections or as requested by the Director. At a minimum, records shall include the following information by record type:

A) GCD Equipment and Maintenance Documentation

i. Vendor information and specifications;

ii. Liquid Waste Hauler manifests; and

iii. Logbook documenting all GCD maintenance and monitoring activities, including FOG and solids accumulation measurements.

B) Waste Oil Documentation

i. Maintenance records, manifests, and/or receipts indicating service, cleaning, Repair, and/or replacement by the Liquid Waste Hauler; and

ii. Spill log indicating date and time of any spills and cleanups by Haulers or employees.

C) Liquid Waste Hauler

i. Copy of license or permit from California Department of Food and Agriculture;

ii. Name and address of Hauler;

iii. Amount of material collected; and

iv. Final destination of material collected.

D) All training/orientation records

E) Records Compliance

As needed, the Director shall require additional records be retained to ensure and document compliance with these regulations.

Part 12. Mobile Food Facilities

A) Mobile Food Facility Permits

Mobile Food Facilities as defined by the Santa Clara Department of Environmental Health (DEH) shall obtain and maintain a permit with DEH and a Commissary/approved Facility Agreement approved and signed by the DEH. Once approved by DEH, a copy of the Commissary/approved Facility Agreement shall be submitted to the City.

B) Mobile Food Facility Wastewater

Mobile Food Facilities shall capture wastewater generated in cooking and clean-up operations and dispose of this wastewater only at their approved Commissary.

Part 13. Food Facility Closure or Change of Ownership

A) Closure of Food Facility Responsibility

Food Facilities shall be responsible for a final cleanout and shutting down of operations of their Grease Control Device(s) upon closure of their business and shall adhere to these regulations. City staff will conduct an inspection to confirm compliance with this section.

B) Notification of Food Facility Closure

A Food Facility that intends to close or sell to another owner, or a Building that houses a Food Facility that is closing or is being sold to another owner, shall notify the City's Watershed Protection staff at (650) 329-2122 a minimum of 30 calendar days prior to such closure or change in ownership.

C) Abandoned GCDs

A GCD that has been abandoned shall have the contents removed therefrom, and the bottom perforated and be completely filled with crushed sand, gravel, concrete, or other material approved by the Director. The GCD cover shall be removed before filling, and the filling shall not extend above the top of the vertical portions of the sidewalls or above the level of the outlet pipe until the GCD has been inspected. After the inspection is conducted, the GCD shall be filled to the level of the top of the ground.

Subsequent Food Facilities shall be made aware of abandoned GCD by the current or previous owner. The new Food Facility shall install a separate GCD that meets requirements of these regulations.

D) Responsibility for Abandoned GCD

Owners of a Building connected to or associated with a GCD that was abandoned without being cleaned or filled by the previous user must ensure that that the GCD be addressed as required by this Part. No person owning or controlling property containing an improperly abandoned GCD shall fail to comply with the provisions of this section upon receipt of notice to so comply from the Director.