GOLDEN TRIANGLE OR BERMUDA TRIANGLE?

A GUIDE TO NAVIGATING OVERLAPPING JURISDICTIONS IN GREASE INTERCEPTOR ENFORCEMENT

WHERE AM I COMING FROM?

23 years of navigating water conservation and backflow prevention regulations

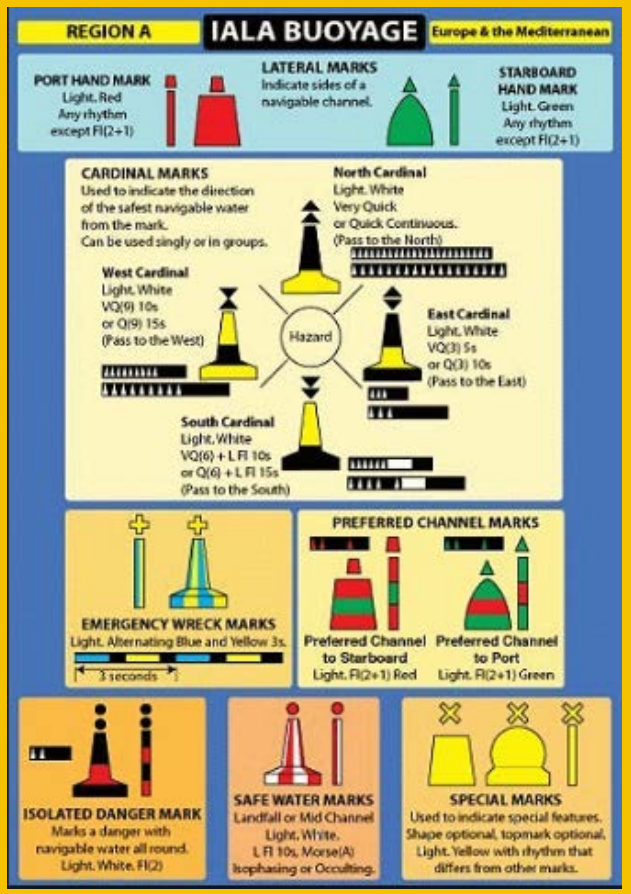
- 8 years co-chair of what became the Irrigation Association Smart Water Application Technology Initiative
  - Lead writer for Marketing Committee for promoting water efficient irrigation products specifications and third-party testing of irrigation products
- 8 years co-chair of Alliance for Water Efficiency WaterSense and Water-Efficient Products Committee
  - Often lead writer for comments on EPA WaterSense specifications
- Several legislative sessions working with lobbyists to modify backflow and cross connection control legislation
- Several rounds of monitoring and commenting on Oregon Administrative Rules for backflow/cross connection and water conservation
  - Certified Cross Connection Specialist & Instructor
  - Community College Adjunct Professor – Commercial & Industrial Water Conservation
- 3 years served on the IAPMO Green Plumbing and Mechanical Code (now a standard)
  - Served as Irrigation Working Group Chair for part of that time
- 2 years served on the AWWA Standards Council (representing water conservation)

CHARTING TODAY'S COURSE

- How a jurisdiction is defined
- Grease interceptor jurisdictions
- Successful navigation of overlapping jurisdictions

DEFINING A JURISDICTION

BUOYAGE MARKS AND SYSTEMS FOR NAVIGATION



SCOPE: SPECS, STANDARDS AND CODES

- Guidance or requirements for the built environment
  - **Specifications** may address installation as well as fixtures or appurtenances
  - **Standards** usually address requirements for manufacture of fixtures or appurtenances
  - **Codes** usually address requirements for installation of pipe that connects fixtures and appurtenances
- Training issues are addressed:
  - Licensing (Apprentice and Journey)
  - Professional certifications
  - Professional certificate courses
- Maintenance issues are addressed:
  - Manufacturers recommendations
  - Best Management Practices (BMPs)

Appurtenance: 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 any 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.(IAPMO 2009)

TRANSITIONS: SPECS, STANDARDS AND CODES

Specifications	Standards	Codes
Special Interests	ASTM/ANSI Process	Prefer to Cite Standards
Voluntary Labeling	Purchase for Use	Permit Enforced
Proving Ground	Legitimizes Specs	

This is the general progression of water conservation guidance and requirements development. Each transition increases the ability to enforce.

STANDARDS & CODE DEVELOPMENT = BIG BUSINESS

- Competitive market for manufacturing requirements, levels the playing field
- If you wish to influence standards & codes
  - Choose whether your change is to a fixture or appurtenance (standards) or to the piping (codes)
  - Make time to understand the market
  - Follow the money to your ally
- In the U.S. there has often been a East/West divide
- When East Coast and West Coast values collide:
  - Federal legislation tends to sway toward East Coast values
  - State legislation tends to sway toward the region
  - Occasionally courts will decide the issue
    - Usually rulings uphold States rights

EXAMPLE: WATER EFFICIENT TOILETS

Toilet (gallons per flush)	1980's	1990	EPAct 1992	2009 Baseline Plumbing Code	2015 Green Code	% Reduction Average Water Use [5]
Residential	5.0+	3.5	1.6	1.6	1.28	74%
Commercial	5.0+	3.5	1.6	1.6	1.6	68%

- ANSI/ASME minimum toilet certification standards do not seem to include flush performance criteria (national outcry that low-flow toilets don't work)
- Water utilities began developing performance specifications and toilet testing
- Manufacturer fee funded Maximum Performance (MaP) toilet testing standards
- U.S. EPA WaterSense adopts MaP into specifications for voluntary product labeling
- IAPMO adopts U.S. EPA WaterSense toilets in Green Plumbing and Mechanical Model Code
- Oregon REACH Code adopts IAPMO Green Plumbing and Mechanical Model Code

[1]Source table text : Status of Legislation, Regulations, Codes & Standards on Indoor Plumbing Water Efficiency, January 2016, Alliance for Water Efficiency

[2]Source bullet text: How did MaP begin? https://www.map-testing.com/performance-toilets-testing/background.html, accessed 9/25/2018

GREASE INTERCEPTOR STANDARDS

- **The Plumbing Drainage Institute (PDI) standard includes a performance test**
  - The interceptor must hold at least twice the flow rate in pounds of grease before pass-through occurs
  - Test medium is melted lard
  - Example:
    - Interceptor flow rate: 50 gallons per minute
    - Must hold at least 100 pounds of lard
- **The American Society of Mechanical Engineers also has a grease interceptor standard includes this test as a minimum for certification but also tests maximum holding capacity**[6]
  - PDI testing now includes the option to test maximum capacity for added cost to the manufacturer

Appurtenance: 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 any 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.(IAPMO 2009)

[3]Source : Curtis Clowers, Shier Products Pacific Northwest Sales Representative. Interviewed 1/22/2019

EXAMPLE: INFLUENCE GREASE INTERCEPTOR MODEL CODE

- Problem: Selection of grease interceptor size by plumbing code is often too small for the application (e.g. 30 gpm grease interceptor for a fast food restaurant)
  - Solution: Select grease interceptor by grease production instead of flow based on fixture count
    - Selection of grease interceptor is a code issue not a standards issue
    - There is a standard that tests for maximum capacity
    - There is a plumbing engineer and manufacturer methodology to determine grease production
  - Follow the money to your ally:
    - Manufacturers or an association of manufacturers
    - Green plumbing code developers that are working on commercial kitchen efficiency (e.g. IAPMO WEStand)
    - Wastewater utilities have an interest in avoiding substantial fines

Note: “Green” specifications, standards and codes are where innovations are adopted. Once the innovation is fully proven, it becomes eligible to be adopted into base code.

LEGISLATION AND RULEMAKING

Administrative Procedures Act 1946

- EPA Summary
- Cornell Law Legal Information Institute
  - 5 U.S. Code Title 5 Part I Chapter 5 Subchapter II § 552

Rulemaking vs. adjudication

- Supreme Court rulings have supported both processes

Internal Management Directive (IMD)

- State of Oregon Summary

TRANSITIONS: LEGISLATION, RULEMAKING, IMD/BMP

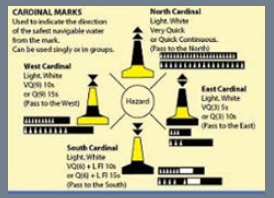
Legislation

Rulemaking

Enabling Authority

Internal Management Directives

Best Management Practices



This is the general progression of pretreatment guidance and requirements development. Each transition decreases the ability to enforce.

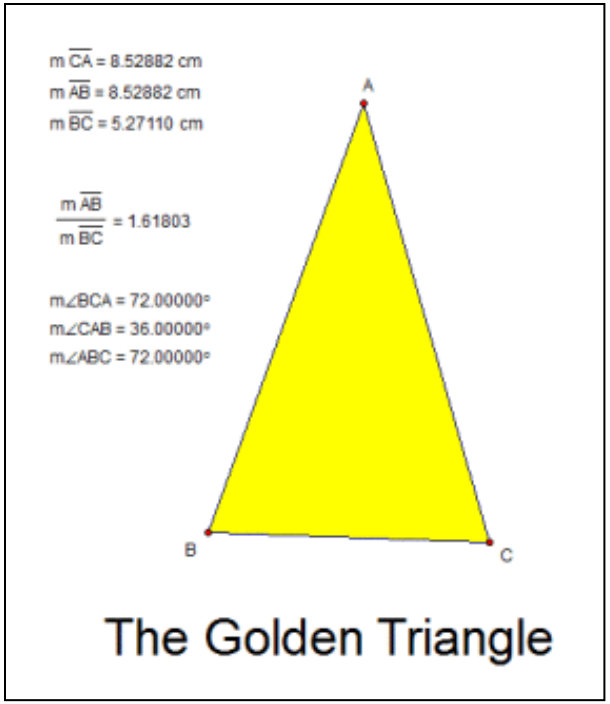
GREASE INTERCEPTOR JURISDICTIONS

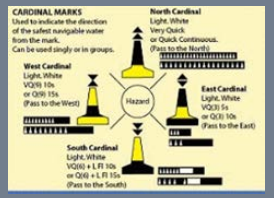
SAILING INTO THE DEVIL'S TRIANGLE?

One version of the Bermuda Triangle area

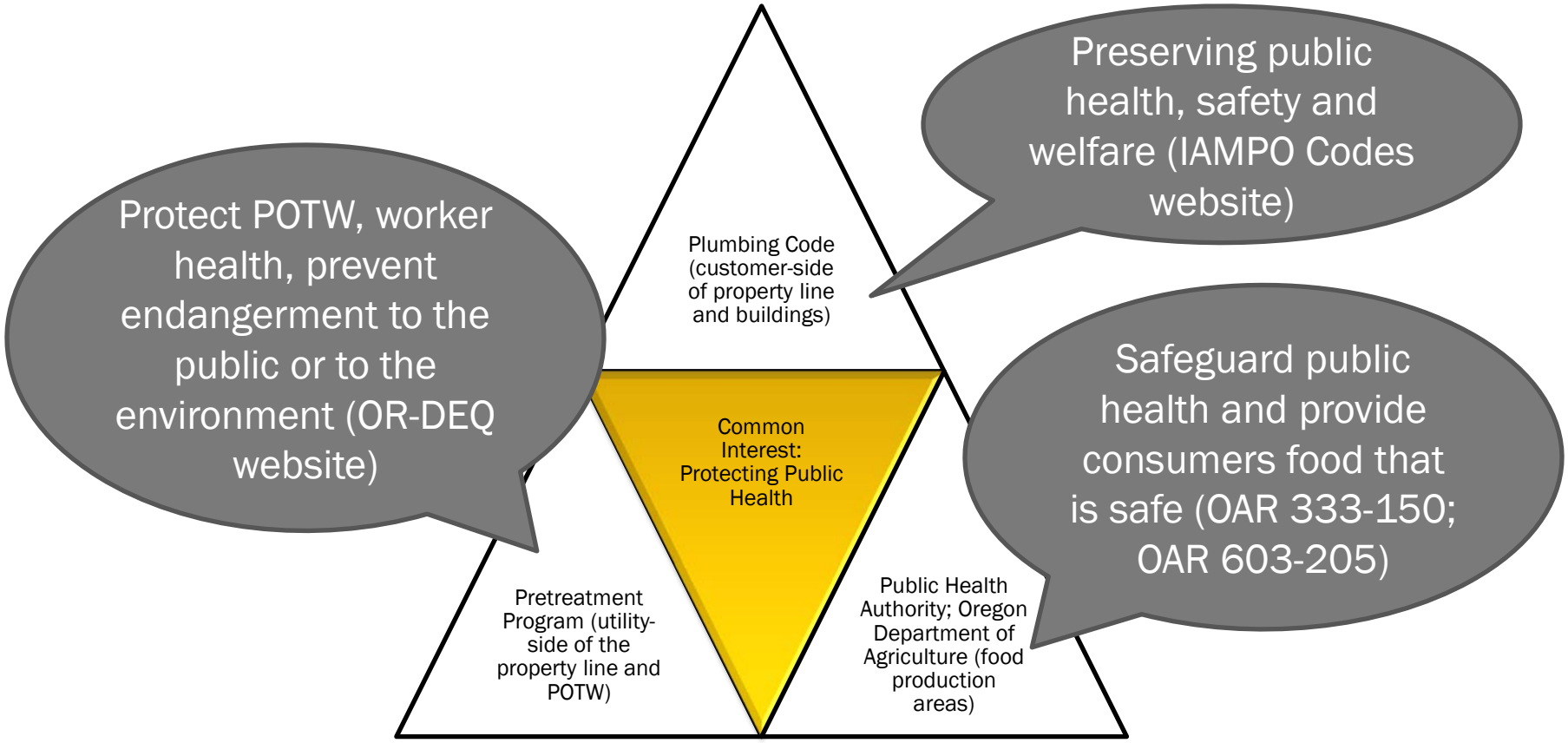
GOLDEN TRIANGLE

- The sublime triangle
- Proportions of the sides of the triangle are an equality of type
- Each side in a harmonious relationship with the other sides



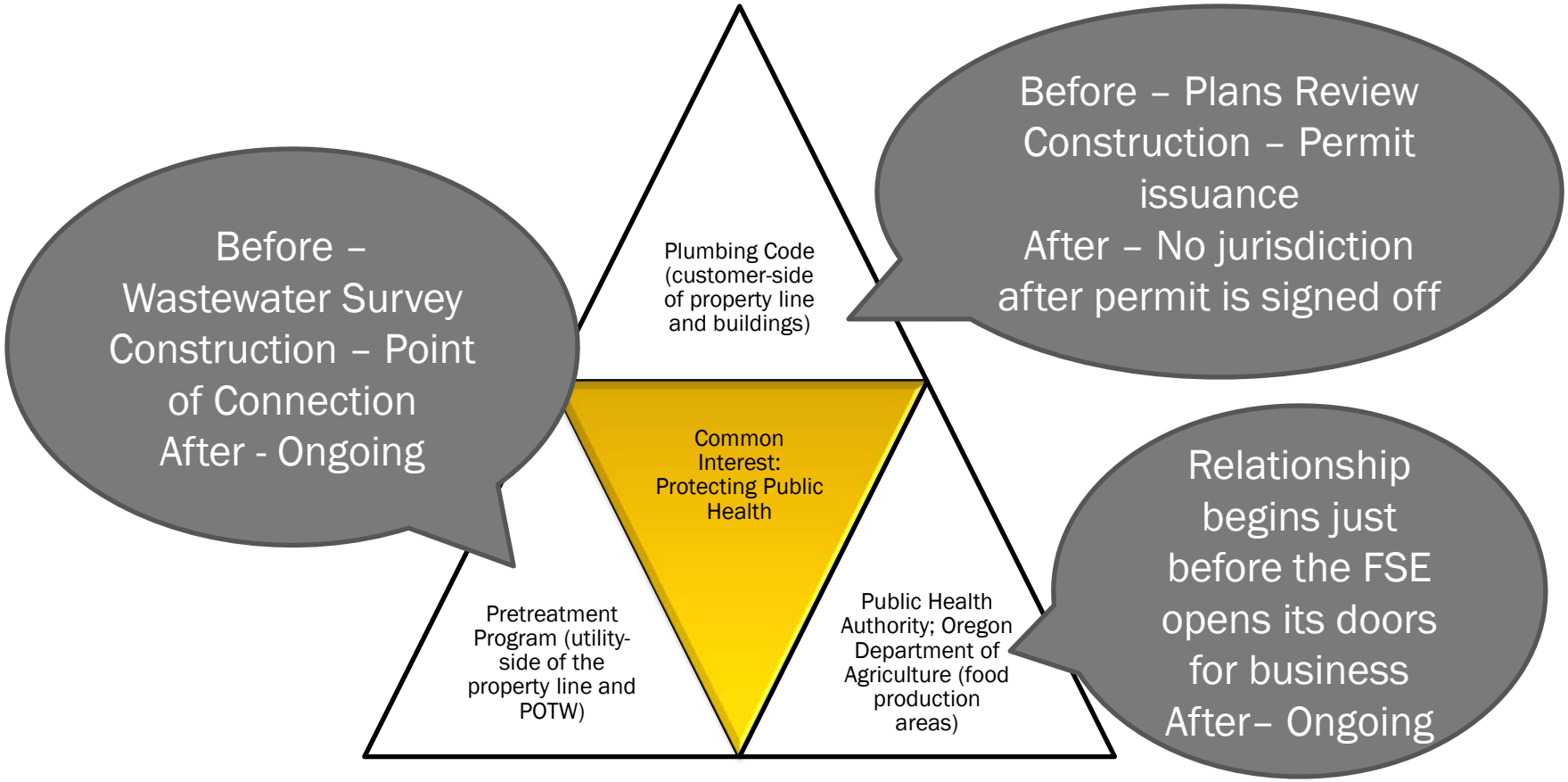


OVERLAPPING JURISDICTIONS



A common interest can be a foundation for coordination between jurisdictions

JURISDICTIONAL RELATIONSHIP WITH CUSTOMER



Institutional kitchens such as nursing homes, hospitals, day care centers, church soup kitchens and schools may be inspected by a different agency or not inspected at all.

CHAPTER & VERSE: PLUMBING CODE

Citation: Chapter 1: Administration

102.2 Existing Installations. Plumbing system lawfully in existence at the time of the adoption of this code shall be permitted to have their use or repair continued where the use or repair is in accordance with the original design and location and no hazard to life, health or property has been created by such a plumbing system.

102.3 Additions, Alterations, Renovations, or Repairs. Additions, alterations, renovations or repairs shall conform to that required for a new system without requiring that the existing plumbing system to be in accordance with the requirements of this code. Additions, alterations, renovations, or repairs shall not cause an existing system to become unsafe, insanitary, or overloaded.

Advisory: 102.2 was cited as the reason that retrofit or relocation of a grease interceptor could not be required by a plumbing inspector. However, some of the wording from this chapter may be useful for inclusion in an enforcement letter that suggests consulting a plumber.

I do not recommend using citations from sources outside of your jurisdiction. However, words such as unsafe, insanitary, or overloaded are general use words that will be recognized as describing a situation that must be remedied across jurisdictions.

CHAPTER & VERSE: PLUMBING CODE

Citation: Chapter 8: Indirect Wastes

810.1 High Temperature Discharge. No steam pipe shall be directly connected to a plumbing or drainage system, nor shall water having a temperature above 140° F (60° C) be discharged under pressure directly into a drainage system. Pipes from boilers shall discharge by means of indirect waste piping, as determined by the Building Official or the boiler manufacturer's recommendations. Such pipes shall be permitted to be indirectly connected by discharge into an open or closed condenser or an intercepting sump of an approved type that will prevent the entrance of steam or such water under pressure into the drainage system.

Advisory: This chapter only applies to water discharged under pressure (high temperature dishwasher). I was advised that this chapter cannot be applied to non-pressurized high temperature discharge (wok cooking station).

This provision has been in place since the 1980's. Chapter 10 was changed in 2014 to require dishwashers to discharge into a grease interceptor. Hot water dishwashers must be installed such that water cools before entering the interceptor.

CHAPTER & VERSE: PLUMBING CODE

Citation: Chapter 10: Traps and Interceptors

1009.2 Approval. The size, type, and location of each interceptor (clarifier) or separator shall be approved by the Building Official.

1009.5 Location. Each interceptor (clarifier) cover shall be readily accessible for servicing and maintaining the interceptor (clarifier) in working and operating condition. The use of ladders or the removal of bulky equipment in order to service interceptors (clarifiers) shall constitute a violation of accessibility.

1014.3.4.1 Interceptors. Interceptors shall be placed as close as practical to the fixtures they serve.

Advisory: Use caution when discussing where the interceptor is located.

UPC Traps vs. Interceptors[4]

Until 1997, a grease trap was allowed to be used as a single fixture trap and were engineered to provide a water seal.

In 2000, traps were no longer approved for use as a fixture trap and water seal properties were removed from the standard.

In 2006 UPC eliminated the term “grease trap” and introduced the term “hydromechanical grease interceptor (HGI)”

Plumbing Officials do not use the term grease trap because it is no longer a trap.

CHAPTER & VERSE: PLUMBING CODE

Citation: Chapter 10: Traps and Interceptors

1014.0 Grease Interceptors.

1014.1 Where Required. Waste pretreatment is required in all Food Service Establishments. Waste pretreatment is also required in other establishments as determined by the Building Official, where grease is introduced into the drainage or sewer system. An approved type of grease interceptor(s) complying with the provisions of this section shall be correctly sized and properly installed.

All plumbing fixtures, garbage disposals, dishwashers, floor drains, and cooking equipment, with drain connections in food and/or beverage preparation areas of all Food Service Establishments shall be connected to the grease interceptor(s).

Advisory: Do not cause the customer to question what equipment discharges into the grease trap.

IPC Traps vs. Interceptors[4]

Until 2006, the IPC defined grease traps with a rated flow of 50 gpm or less while a grease interceptor had a rated flow exceeding 50 gpm.

The grease trap was designed allowed to serve as a singe fixture trap.

In 2009, the term “grease trap” was removed but if designed to serve as a trap, was allowed to be installed as such.

Several new terms added in 2012 and 2015 compound the confusion regarding traps/interceptors.

[4]Source :Grease Interceptors Are Not Called Traps Anymore, December 2014 (schierproducts.com) Accessed 6/26/2018

CHAPTER & VERSE: PUBLIC HEALTH AUTHORITY

- Recall, the Oregon Plumbing Specialty Code specifically prohibits the plumbing inspector from bringing existing plumbing that was approved under an earlier version of code to the standards of current code with a very narrow exception.

- However, the Oregon Health Authority Food Sanitation Rules allow the public health inspector require a food service establishment to replace equipment or bring it up to current code under certain conditions.

Citation: OAR 333-150- Chapter 8 Code Applicability. Subpart 3 Permit to Operate. Section 304 Conditions of Retention. Subsection 11 Responsibilities of the Permit Holder.

(G) Replace existing facilities and equipment specified in § 8-101.10 with facilities and equipment that comply with this [Food Sanitation] Code if:

(1) The regulatory authority directs the replacement because the facilities and equipment constitute a public health hazard or nuisance or no longer comply with the criteria upon which the facilities and equipment were accepted,

(2) The regulatory authority directs the replacement to meet current code requirements after the food establishment has been closed for a minimum of six consecutive months

ADVISORY: PUBLIC HEALTH AUTHORITY

Advisory: It is worth giving your local public health official a call if you have a grease interceptor issue that requires retrofit.

- Make sure that you can make a case that the grease interceptor installation constitutes a public health hazard or nuisance or no longer complies with the criteria upon which the facilities and equipment were accepted
- Recall, the public health authority cannot assist you with cases that only pose a threat to the environment (e.g. sanitary sewer overflows in the collection system)

CHAPTER & VERSE: PUBLIC HEALTH AUTHORITY

Citation: Oregon Health Authority Food Sanitation Rule OAR 333-150- Chapter 4 Equipment, Utensils, and Linens. Subpart 5 Maintenance and Operation. Section 501 Equipment. Subsection 110. Mechanical Warewashing Equipment, Wash Solution Temperature.

Citation: Oregon Department of Agriculture OAR 603-025-0030 Chapter 4 4-501.110

(A) The temperature of the wash solution in spray type warewashers that use hot water to sanitize may not be less than:

(1) For a stationary rack, single temperature machine, 74°C (165°F);Pf

(2) For a stationary rack, dual temperature machine, 66°C (150°F); Pf

(3) For a single tank, conveyor, dual temperature machine, 71°C (160°F);Pf or

(4) For a multitank, conveyor, multi temperature machine, 66°C (150°F).Pf

(B) The temperature of the wash solution in spray-type warewashers that use chemicals to sanitize may not be less than 49°C (120°F).

ADVISORY: PUBLIC HEALTH AUTHORITY

Advisory: Do not assume that a dishwasher uses water hotter than 140-degrees. Most small establishments use chemical sanitation rather than hot water sanitation type dishwashers because they are cheaper to operate.

- Commercial dishwasher using chemical sanitation typically discharges 100-degrees F (though according to OAR it would discharge no less than 120-degrees F)[7]
- Commercial dishwasher using hot water sanitation typically discharges 180-degree F[7]

[5]Source : Alliance for Water Efficiency, Introduction to Commercial Dishwashers (n.d.) (allianceforewaterefficiency.org) Accessed 6/26/2018

CHAPTER & VERSE: PUBLIC HEALTH AUTHORITY

Citation: Oregon Health Authority Food Sanitation Rule OAR 333-150- Chapter 5 Water, Plumbing and Waste Subpart 4 Sewage, Other Liquid Waste, and Rainwater. Subpart 402 Retention, Drainage, and Delivery. Subsection 12 Grease Trap.

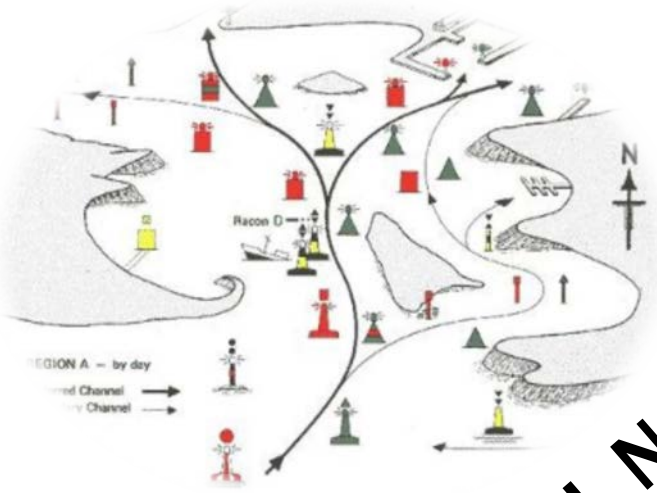
Oregon Department of Agriculture OAR 603-025-0030 Chapter 5 5-402.12

If used, a grease trap shall be located to be easily accessible for cleaning.

- That is the entire grease trap jurisdiction of public health authority
  - However, the Public Health Authority has no jurisdiction regarding grease trap location
- According to my research the Public Health Authority inspection only determines that the grease trap is accessible for cleaning
  - Does not check that it is cleaned
- The Public Health Authority should be called immediately if a grease trap has caused a sewer back-up or overflow within a facility

PRETREATMENT PROGRAM

- USEPA Pretreatment Regulations Title 40 CFR Part 403
- OAR 340-45-0063
- Local Enabling Authority approved by Oregon Department of Environmental Quality
  - The Dalles Municipal Code 4.12 Pretreatment



SUCCESSFUL NAVIGATION OF OVERLAPPING JURISDICTIONS

THE DALLES MUNICIPAL CODE 4.12 PRETREATMENT

The Dalles Municipal Code adopted by City Council in January 2017 includes several jurisdictional conflicts. In this section I will present existing code and my initial suggested changes.

RECALL: LEGISLATION, RULEMAKING, IMD/BMP

Legislation

Rulemaking

Enabling Authority

Internal Management Directives

Best Management Practices

This is the general progression of pretreatment guidance and requirements development. Each transition decreases the ability to enforce.

TRANSITIONS: SPECS, STANDARDS AND RULES/E.A.

Specifications

Best Management Practices

Voluntary Labeling

Proving Ground

Standards

ASTM/ANSI Process

Rulemaking

Prefer to Cite Standards

Enabling Authority

Adopt the general progression of water conservation and cross connection requirements development. Each transition increases the ability to enforce.

EXISTING MUNICIPAL CODE

B. Additional Pretreatment Measures.

3. All new restaurants and industrial users employing a fats, oils, and/or grease (FOG) process shall install an approved FOG pretreatment device (interceptor) to pretreat process wastewater before discharging to the POTW.

   In the case of other users, including preexisting restaurants and industrial users, interceptors shall be installed when, in the opinion of the control authority, they are necessary for the proper handling of wastewater containing excessive amounts of FOG, or sand; except that such interceptors shall not be required for residential users.

   All interceptors shall be of type and capacity approved by the control authority, shall comply with the Oregon Plumbing Specialty Code, and shall be so located to be easily accessible for cleaning and inspection

I do not recommend adopting compliance authority outside of your jurisdiction.

I do not recommend using citations from outside jurisdictions within your enabling authority.

SUGGESTED CHANGES

B. Additional Pretreatment Measures.

3. All new restaurants and industrial users employing a fats, oils, and/or grease (FOG) process shall install an approved FOG pretreatment device (interceptor) to pretreat process wastewater before discharging to the POTW.

   In the case of other users, including preexisting restaurants and industrial users, interceptors shall be installed when, in the opinion of the control authority, they are necessary for the proper handling of wastewater containing excessive amounts of FOG, or sand; except that such interceptors shall not be required for residential users.

   The control authority may require a premise isolation interceptor to be installed on private property at a location closest to the point of connection. In lieu of premise isolation, the control authority may accept in-premises pretreatment devices when the device is maintained in accordance with The Dalles Municipal Code.

The OAR 333-061-0070 Cross Connection Control Requirements (9) Premise isolation requirements, can serve as a resource for exploring premise isolation for interceptor enforcement. Jurisdiction has been tested regarding OPSC overlap.

OREGON HEALTH AUTHORITY
CROSS CONNECTION RULES ADOPT STANDARDS

- **OAR 333-061-0070 Cross Connection Control Requirements (13)** Approved backflow prevention assemblies and devices required under these rules shall be approved by the **University of Southern California, Foundation for Cross Connection Control and Hydraulic Research, or other equivalent testing laboratories approved by the [Oregon Health] Authority.** [author's bold text]

A GREASE INTERCEPTOR STANDARD TO ADOPT?

- Enabling Authority could reference a grease interceptor standard and testing facility
  - Plumbing and Drainage Institute Standard PDI-G 101 (referenced by UPC)
  - Online list of certified grease interceptors easily ensures compliance

Plumbing & Drainage Institute

An Association of Manufacturers of Plumbing and Drainage Products

Home | About PDI | Certified Grease Interceptors | Certified Water Hammer Arresters | Drainage Products | Contact Us | Search

Additional Pages

- Login
- List of Members
- List of Licensees
- PDI Standards
- Publications
- Seminars
- Links

Certified Grease Interceptors

AB Restaurant Equipment LLC
P.O. Box 388
Morganville, NJ 07751
Phone: 800-488-0513
Fax: 732-970-5898

Grease Interceptors

Model Number	Size
ABGT-8LB	04 GPM
ABGT-14LB	07 GPM
ABGT-20LB	10 GPM
ABGT-30LB	15 GPM

Ashland PolyTrap
P.O. Box 218
Williston, Ohio 43468
URL: www.Ashlandpolytraps.com

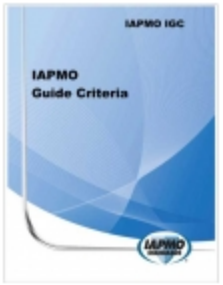
Grease Interceptors

Model Number	Size
4804	04 GPM
4807	07 GPM
4810	10 GPM

A GREASE INTERCEPTOR STANDARD TO ADOPT?

- Enabling Authority could reference a grease interceptor standard and testing facility

IAPMO IGC 273-2009 Hydro-mechanical grease interceptors rated over 100 gpm



View Full-Size Image

Regular price: $69.95

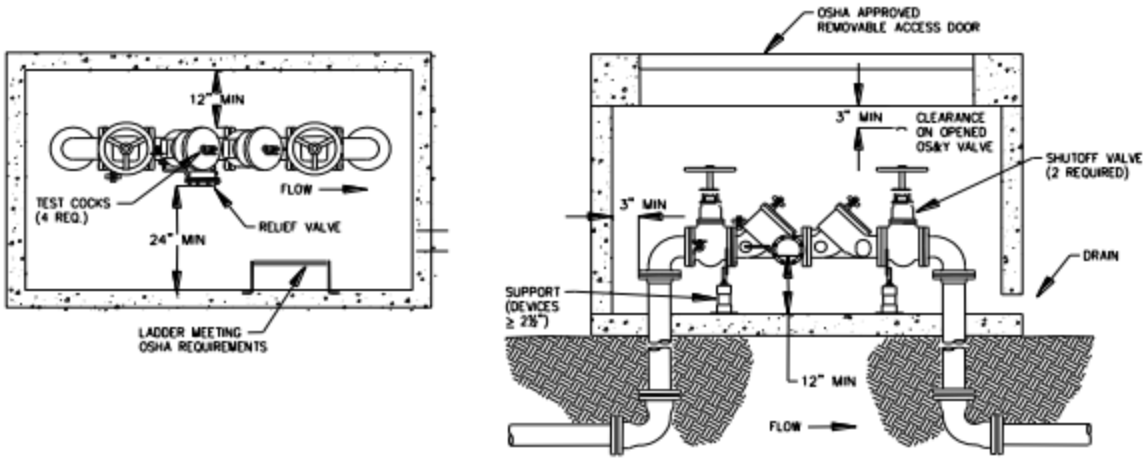
Member price: $55.96

Click to become a member and save

Scope : This standard includes requirements for determining and confirming flow rates for hydromechanical grease interceptors rated at flows greater than 100 gpm (380 L/m). Grease Interceptors shall be designed to remove grease from effluent and retain grease until accumulations can be removed by pumping the interceptor. This standard applies to grease interceptors which are not covered under ASME A112.14.3 or PDI G101.

OAR 333-061-0071 BACKFLOW PREVENTION ASSEMBLY INSTALLATION AND OPERATIONS STANDARDS (CAN BE ADOPTED LOCALLY)

Figure 1



Hyperlink to TVWD Backflow Assembly Installation Standard

A UTILITY ADOPT GREASE INTERCEPTOR INSTALLATION STANDARDS? IT'S BEEN DONE.

Greater Augusta Utility District
Water | Sewer | Storm Water

Grease Trap and Grease Interceptor Standards

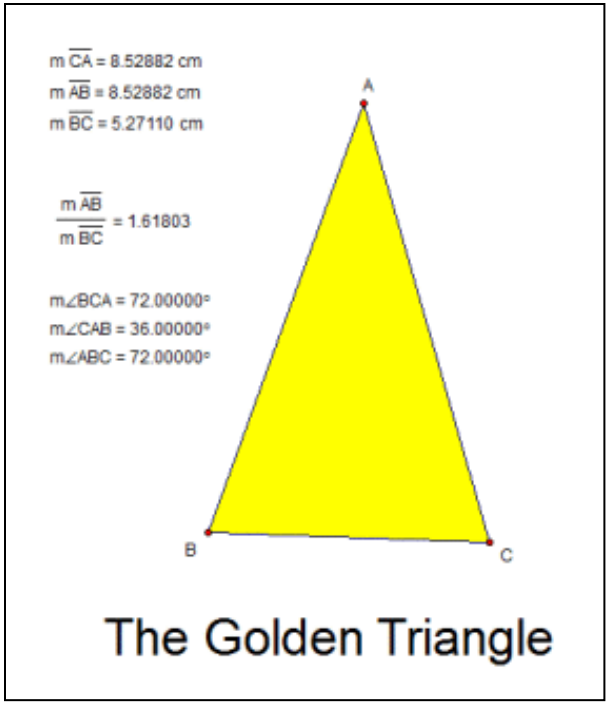
Hyperlink to the GAUD Standard

SUGGESTED CHANGES

- Interceptors with a rated capacity of 100 gallons or less that are required under this code shall be manufactured in accordance with PDI G-101 and shall be listed as certified by the Plumbing Drainage Institute at the time of initial inspection. Interceptors with a rated capacity greater than 100 gallons that are required under this code shall be built and installed in accordance with IAPMO IGC 273-2009.
- Under no circumstance will domestic waste be allowed to discharge into an interceptor required under this [municipal] code.

CAN WE CREATE A GOLDEN TRIANGLE?

- The sublime triangle
- Proportions of the sides of the triangle are an equality of type
- Each side in a harmonious relationship with the other sides



The Golden Triangle

A golden triangle of enforcement can be created when each authority transitions toward a greater ability to enforce within their jurisdiction

Common Interest: Protecting public health

THANK YOU FOR YOUR TIME

ANY QUESTIONS?

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