

# Fats, Oil, & Grease (FOG) The Basics

Joint Meeting of WSAC & CDWAC

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\*\* Special thank you to Vince Chavez, FOG Program Manager – Clean Water Services, Washington County Oregon  
Who provided many of photos and much of the research provided in this presentation

# Topic Overview

What is FOG?

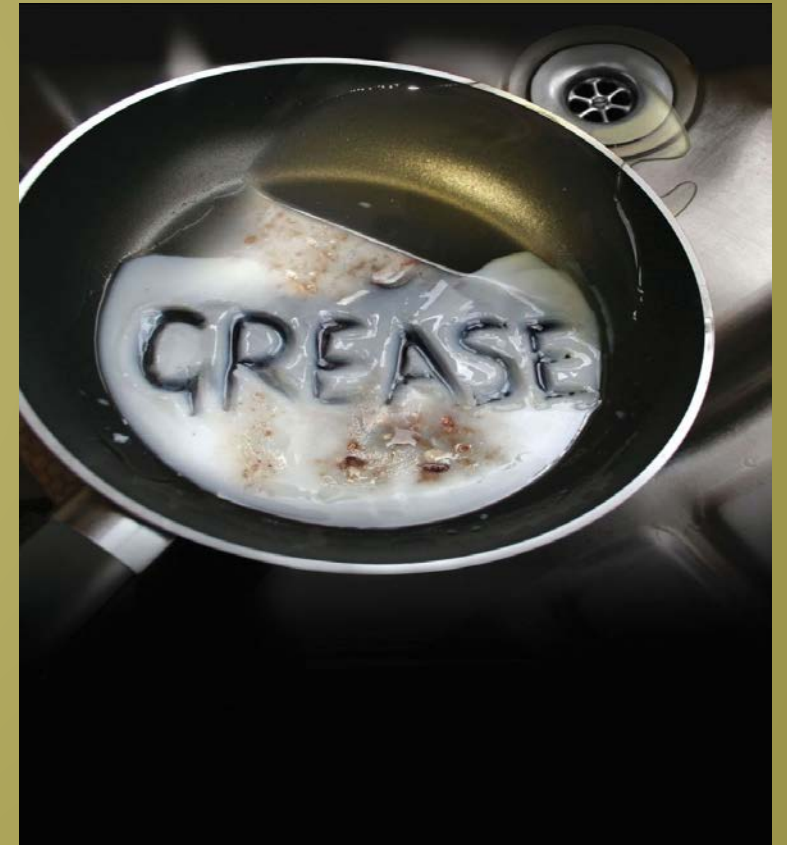
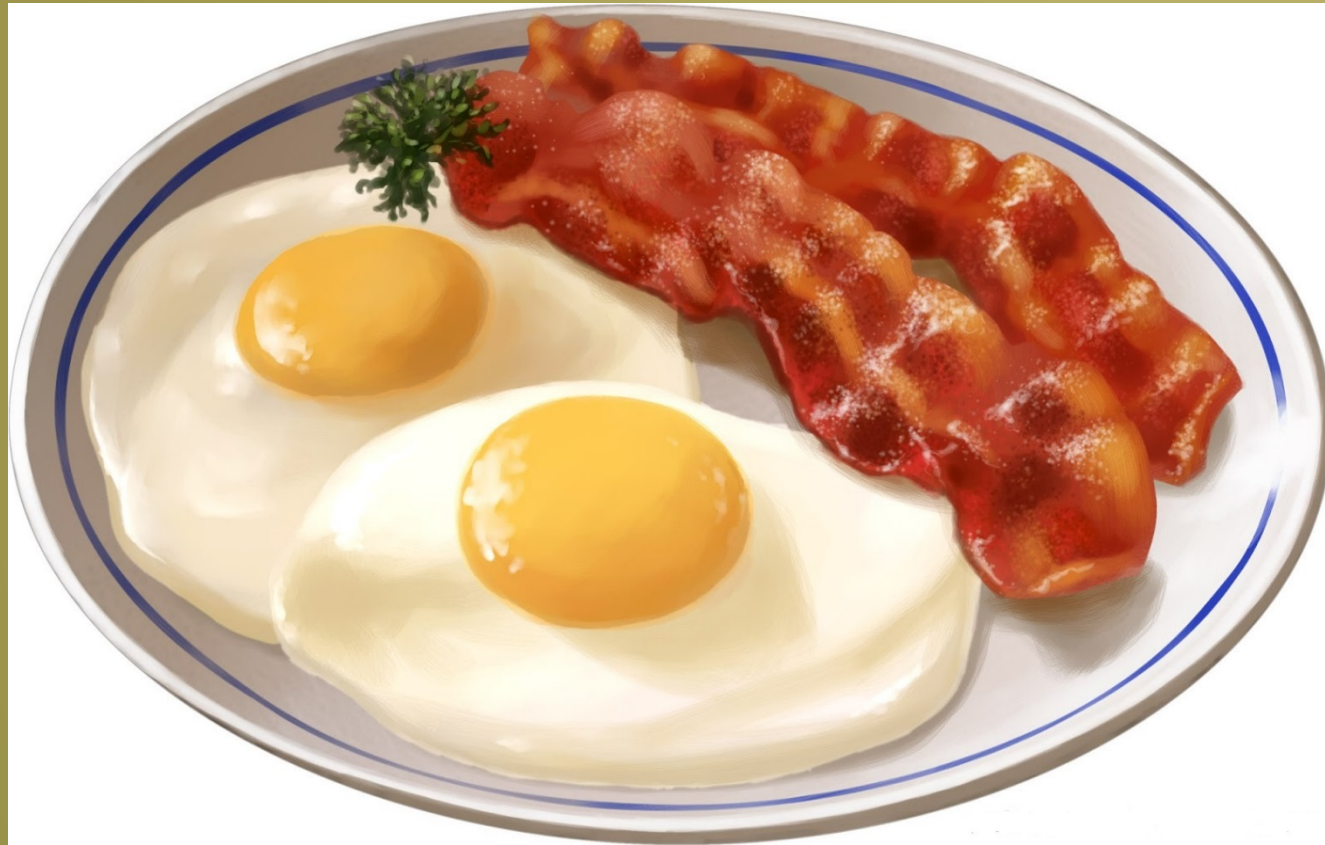
What are the Primary Sources?

What is the Problem

What is the Expectation?

What Can We Do?

The food we prepare and eat contains Fats, Oil, and Grease (FOG). Clean up from food preparation & waste disposal sends FOG down the drain, where it becomes a problem.





Concentrated sources harden and build up in the pipe having a soap like consistency. This material blocks the pipes, and resulting in Sanitary Sewer Overflows (SSOs)...



And backups into homes and businesses..



8X more overflows & backups in areas with a high concentration of restaurants than the city-wide average





# Primary Sources of FOG

Floor cleaning



# Primary Sources of FOG

Pre-wash Sinks & Food Grinders



# Primary Sources of FOG

Poorly Implemented Best Management Practices (BMPs)





# The Perception

*“FOG not really a problem, typically only 5 or 6 grease related SSOs/Year (low of 2 in 2014)”*



This mentality lead to this above ground...



And this below ground...



Post cleaning

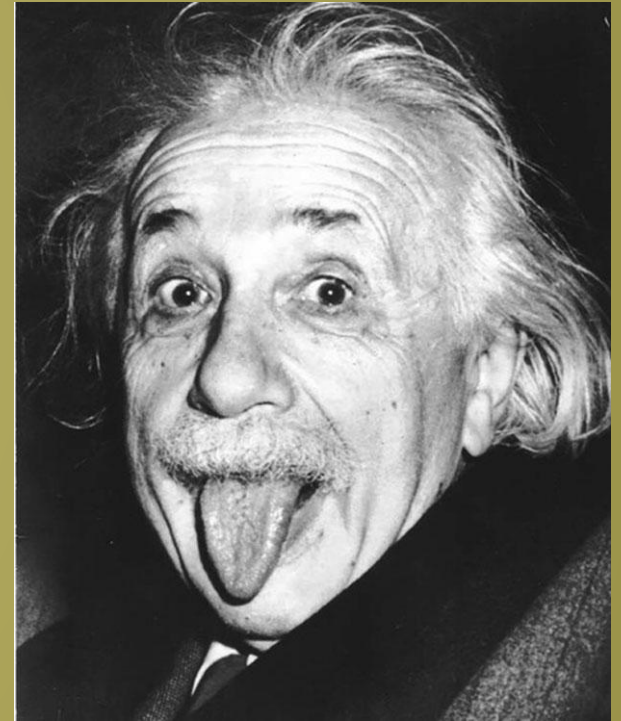


Prior to cleaning... 6 months later

# The Reality

*“If the facts don’t fit the theory, change the facts” – Albert Einstein*

- 400-500 miles of line cleaning/year
- 981 miles-58% of pipe = some FOG impact (535 Miles - 32% significantly)
- Priority 1 Hotspots 8X more SSOs/mile than city wide average
- With projected growth & increased density...  
50-60% increase in FOG to sewer over next 15 years



# Case Study - Hospital

## Two cafeterias, coffee shop and main kitchen

- 1 GRD 20 gal/40 lb for one 3-compartment sink
- Estimated FOG discharge: 0.045 lbs per meal; 0.0039 lbs per drink
- 771,120 meals/year = 34,700 lbs FOG/year
- 212,400 coffee drinks/year = 637 lbs FOG/year

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- Total FOG discharge per year: 35,337 lbs
  - FOG captured by 20 gal GRD: 1,920 lbs per year
  - 16.7 tons (33,417 lbs) FOG discharged to public sewer per yr.

# Case Study... Hospital Continued


## Ineffective Maintenance Cycles/Capacity

Status	GRD Size	Connection	Lbs/Year	Cleaning Frequency	Cost/Year	Increase In FOG Captured
Existing	20 Gal	3-comp sink	1,920	30 Days	Self	
Mfr. Spec	20 Gal	(if) All FOG Drains	35,337	0.4 Days	\$69,700	1740%
Updated	3 – 250 Gal	All FOG Drains	35,337	73 Days	\$3,300	1740%

Source: Vince Chavez, Clean Water Services

# Good Install? Newly built/opened facility



- ✓ Size
- ✓ All drains Connected
- ✓ Access for inspection
- ✓ Access  eaning

Oops, 2<sup>rd</sup> level basement accessible through stairs/elevator only (300 gallon capacity)

# So what is the problem

## Is it this?

*“The regulation is there but restaurants aren’t doing what is required.”*

## Or this?

*“The regulation is there but it is not clear, difficult to find, not communicated well, and not enforced adequately or uniformly.”*





# So what is the Current Expectation

## Seattle Municipal Code (SMC) 21.16.310

- Discharge of FOG is prohibited (Visible Accumulations) or discharge greater than 100 PPM.
- You Must have an appropriately sized Grease Removal Device (GRD)
- GRD Must be readily accessible for Maintenance/Inspection
- GRD Must be fully operational at all times
- GRD Must be maintained (25% rule)

*Sample of Current Code Language:*

*“A grease interceptor is not in continuously efficient operation and is in violation if the total volume of grease, solids or food waste at any time displaces more than twenty-five percent of the effective volume of any chamber of the grease interceptor.”*

# Poorly communicated expectation has caused...

- Enforcement based program
  - 50-70% Inspector time spent on enforcement
- Inadequate plan review
  - 50% of FSEs – No Pretreatment
  - 60% of FSEs with Pretreatment – Inadequate size/installation
- Ineffective maintenance
  - 70% of FSEs with Pretreatment – Not maintained to code



# What can we do?



..to change customer relationship from adversary to partner.

By making customers aware of costs & program requirements upfront...

*We will increase awareness of code requirements before business open from current 40% to 85%*



..to increase FOG inspector efficiency

By Ensuring GI sized, installed, and maintained so that inspector's focus changes from enforcing code to confirming code compliance.

*We will reduce inspector enforcement time from between 50 to 70% to between 5 to 10% by 2033.*



...to reduce Drainage & Wastewater Line of Business risk.

By solving problems at the source.

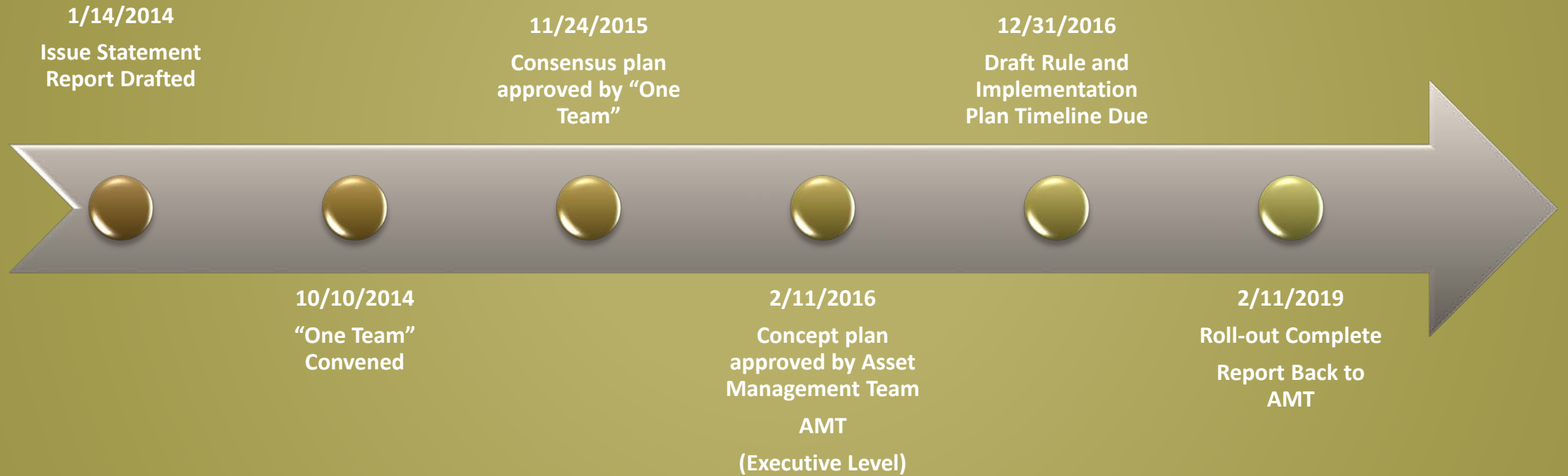
*We will reduce additional grease entering system by 30% over 15 years.*



# The Future of FOG in Seattle

- Simplified code requirements (Director's Rule)
- Improved customer relationship through early outreach/education
- Update Plumbers/Design Engineers knowledge about code requirements
- More thorough plan review and construction inspection process
- Track compliance through routine maintenance reporting VS. Inspection
- Expand Residential Messaging

# Where We're At



Questions?

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