

ENVIRONMENTAL SERVICES WORKING FOR CLEAN RIVERS



ENVIRONMENTAL SERVICES
CITY OF PORTLAND

City of Portland Bureau of Environmental Services Extra Strength Charge Program

John Holtrop
March 30, 2017



ENVIRONMENTAL SERVICES
CITY OF PORTLAND

What is an Extra Strength Charge?

- Base sewer rates assume a maximum wastewater strength. In Portland the threshold is 300 mg/L for BOD and 350 mg/L for TSS.
- Businesses that discharge wastewater with higher concentrations than the threshold are subject to extra strength charges.
- Revenues cover the added cost of service to treat high strength wastewater.



Regulatory Authority

Federal

- Part 35 of 40 Code of Federal Regulations (CFR) Appendix B to Subpart E

(1) The user charge system must result in the distribution of the cost of operation and maintenance of treatment works within the grantee's jurisdiction to each user (or user class) in proportion to such user's contribution to the total wastewater loading of the treatment works. Factors such as strength, volume, and delivery flow rate characteristics shall be considered and included as the basis for the user's contribution to ensure a proportional distribution of operation and maintenance costs to each user (or user class).



Universal Truisms

- Other than establishing an equitable rate structure to users no standard practice exists.
- Most jurisdictions have different approaches to billing extra strength.
- Most jurisdictions bill for BOD or COD and TSS but some bill for additional parameters



City of Portland Approach to Extra Strength Charges

Measured Extra Strength

- Applied to larger users or those not included in the Class Average Program.
- Results in a Custom rate
- ~58 Customers

Class Average Extra Strength

- Applied to mostly smaller food service establishments (FSEs)
- Billed using a rate table
- ~3400 Customers



Measured Methodology

- Custom rate requires ongoing sampling.
- Sampling frequency based on recovered revenue. 5x rule
- Collect about 450-500 composite samples per year.
- Custom rate calculated using a 10 month rolling average.
- Self monitoring and split sampling is allowed.
- Monthly account updates and billing statements to customers.



Self Monitoring and Splits in the rolling Average



City of Portland Extra-Strength Sewage Charges Rate Calculation Explanation (not a billing statement)

Corporation - [REDACTED] 1002

Site Address: [REDACTED] N Columbia Blvd, Portland OR 97217-
 Mailing Address: [REDACTED] N COLUMBIA Blvd, PORTLAND OR 97217-
 Acct No(s): 2989757000

New data in Rolling Average →

Month #	Month Date	B O D						T S S					
		city	#	self	#	split	#	city	#	self	#	split	#
1	2013-12	2060	1	1250	1	0	0	753	1	364	1	0	0
2	2013-11	0	0	1490	1	1265	1	0	0	412	1	494	1
3	2013-10	0	0	885	1	1680	1	0	0	144	1	520	1
4	2013-09	0	0	1590	1	640	1	0	0	616	1	268	1
5	2013-08	0	0	1450	1	1100	1	0	0	262	1	422	1
6	2013-07	0	0	901	1	1300	1	0	0	240	1	624	1
7	2013-06	0	0	1410	1	1190	1	0	0	514	1	419	1
8	2013-05	0	0	1620	1	902	1	0	0	572	1	415	1
9	2013-04	0	0	1340	1	1155	1	0	0	402	1	387	1
10	2013-03	0	0	1360	1	1250	1	0	0	354	1	378	1
11	2013-02	0	0	773	1	706	1	0	0	214	1	240	1

Old Data drops out →

Months 2-11			
Standard Dev	305		131
Mean+3*StDev	2068		792
Mean	1153		399
Mean-3*StDev	238		0
Rolling Average	1214		395
Allowable Concn.	300		350
Excess Concn.	914		45
Excess Pounds/CCF	5,708		0.281
Rate	\$0.6010		\$0.7440
Charge(\$)/CCF	\$3.429		\$0.209
Total Prev. \$/CCF	\$3.638		
<small>(Rolling Average - Allowable Concn.) * 0.006243 * Rate = Charge(\$)/CCF</small>			

New Averages into Billing System →

Months 1-10			
Rolling Average	1302		428
Latest Entry	1655		559
Allowable Concn.	300		350
Excess Concn.	1002		209
Excess Pounds/CCF	6,255		0.487
Rate	\$0.6010		\$0.7440
Charge(\$)/CCF	\$3.760		\$0.362

New ESC Rate →

Total Current \$/CCF \$4.122



Class Average Methodology

Program has 11 characterized FSE business classes.

- Sit Down Restaurant
- Fast Food Restaurant
- Commercial Kitchen
- Bread Bakery
- Confectionary Bakery
- Supermarket
- Brew Pub
- Coffee Shop
- Meat Market
- Donut Shop
- Hotel



Class Average Methodology

Approved BMPs for rate reductions are:

- Maintained Grease Interceptor (GGI)
- Maintained Grease Trap (HGI)
- No Garbage Disposal
- No Garbage Disposal and Food Composting or Charitable Donation
- Added -5% bonus for having all BMPs and all plumbing fixtures plumbed to GGI or HGI per current OSPC requirements.



Class and BMPs Example

Each business class has its own rates and list of potential Best Management Practices (BMPs) which allow for ESC rate reductions.



Restaurant, Sit Down.	BOD mg/L	TSS mg/L	ESSC Rate \$/CCF
Base, No BMPs	1200	500	\$4.566
with Grease Trap (GT)	1140	475	\$4.184
with Grease Interceptor (GI)	1080	450	\$3.801
no Grinders	1164	485	\$4.337
no Grinders & GT	1104	460	\$3.954
no Grinders & GI	1044	435	\$3.572
Food Composting/Donation, no Grinders	1116	465	\$4.031
Food Composting/Donation, no Grinders & GT	1056	440	\$3.649
Food Composting/Donation, no Grinders & GT w/Bonus	996	415	\$3.266
Food Composting/Donation, no Grinders & GI	996	415	\$3.266
Food Composting/Donation, no Grinders & GI w/Bonus	936	390	\$2.884



Class Average Methodology

FOG Requirements

- FSEs responsible for keeping GRD in good working condition and serviced appropriately.
- FSEs must report cleaning information, Preferred Haulers report maintenance directly to the City
- City determining appropriate cleaning frequency
- Extra Strength Charge discounts revoked for failure to comply with FOG requirements



Food Grinders and Composting



From This....



To This....



Class Average Implementation

History

- Proposed as early as 1978
- Promised to the measured customers in the mid 1990s.
- Given high priority by City Council Late 1990s
- Rate methodology audit by Black & Veatch in 2005 recommended implementation as soon as possible.
- Bureau leadership gives the “green light” 2010
- City Code and Administrative Rules approved late 2011.



Internal Approval

- Program methodology that included the ability for customers to control their rates.
- Outreach Plan that included face to face customer “outreach inspections”
- Implementation timeline (Two Years)
- Staffing requirements (5 FTEs)
- Financial impact to customer projections
- Water and Revenue Bureau Approval
- Combining with the FOG program and “Branding” as the Cut Through the FOG
- Getting Commissioner approval



Outreach, Pre Implementation

- Meetings with impacted business groups: (ORLA, PURB, SBAC, NW Grocers Association, Brewers Guild, BOMA)
- Two direct mailers to impacted FSEs
- Telephone hotline
- Administrative Rules public comments



Outreach, Post Kickoff

- Began Billing January, 2012
- Outreach inspections began in mass prioritized by business class
- Something hit the fan
- More business outreach meetings that were much more contentious (BOMA, PBA, Venture Portland)
- Responded with some program adjustments
 - -5% bonus
 - Tenant building moratorium until Jan 2013



Outreach Inspections

Objectives:

- Educate the customer on the ESC Program and FOG requirements
- Determine business class or classes.
- Verify applicable BMPs for rate discounts.
- Inventory all Grease Removal Devices for database.
- Determine water account or if there are sub-meters
- Follow up with rate letters to FSE and landlord/account holder if different



ESC Tailored Rates

Can tailor an ESC rate to specific business activities.

- Based on Multiple Business Classes
- Based on Best Management Practices
- Based on Flow Percentages

Water Account #		2986493200					
Computer Address		603 SW Jackson					
FSE	Address	Seat Count	Water use ccf/day	CCF/day /seat	CCF/Day @ ## seats	Acct #	
Blue Fin Sushi	1988 SW Broadway	63	0.021	1.321	2986493200		
Bara Sushi	2625 SE 21st Avenue	46	0.53	0.012	0.58	2974207000	
Blue Fin Sushi	4138 NE Broadway	31	0.3666	0.012	0.59	2970782100	
Mio Sushi	1703B NW 16th Ave	15	0.555	0.037	0.00	2972054300	
Sushi Ichan	24 NW Broadway	48	1.521	0.032	1.58	2970324700	
Mio Sushi	1710 SE Tacoma St	70	0.898	0.013	0.64	2965982600	
FSE	Address	Seat Count	Water use ccf/day	CCF/day /seat	CCF/Day @ 61 seats	Acct #	
Chipotle	1948 SW Broadway	61	0.019	1.184	2986493200		
Chipotle #440	710 NE Weidler St	64	1.242	0.019		2970216400	
FSE	Address	Seat Count	Water use ccf/day	CCF/day /seat	CCF/Day @ ## seats	Acct #	
Panda Kitchen	1968 SW Broadway	48	0.028	1.323	2986493200		
Yoko's Japanese	2878 SE Gladstone	35	0.758	0.022	1.04	2999300000	
Chez Jose	8502 SW Terwilliger	84	3.36	0.040	1.92	2985601800	
Chopstick Express	2651 E Burnside	105	1.5	0.014	0.69	2980558900	
Khun Pica	3429 SE Belmont	29	0.3	0.010	0.50	2961284300	
Shandong	3724 NE Broadway	46	2.37	0.052	2.47	2966203200	
FSE	Address	Water use ccf/day	Acct #	Blue Fin - ESSC %	Chipotle - ESSC %	Panda Kitchen ESSC %	Starbucks - ESSC %
Starbucks	603 SW Jackson	0.8177	2986493200	5.0%	4.5%	5.1%	3.1%
Starbucks Coffee #428	1012 NW 21st Ave	0.923	2995635600				

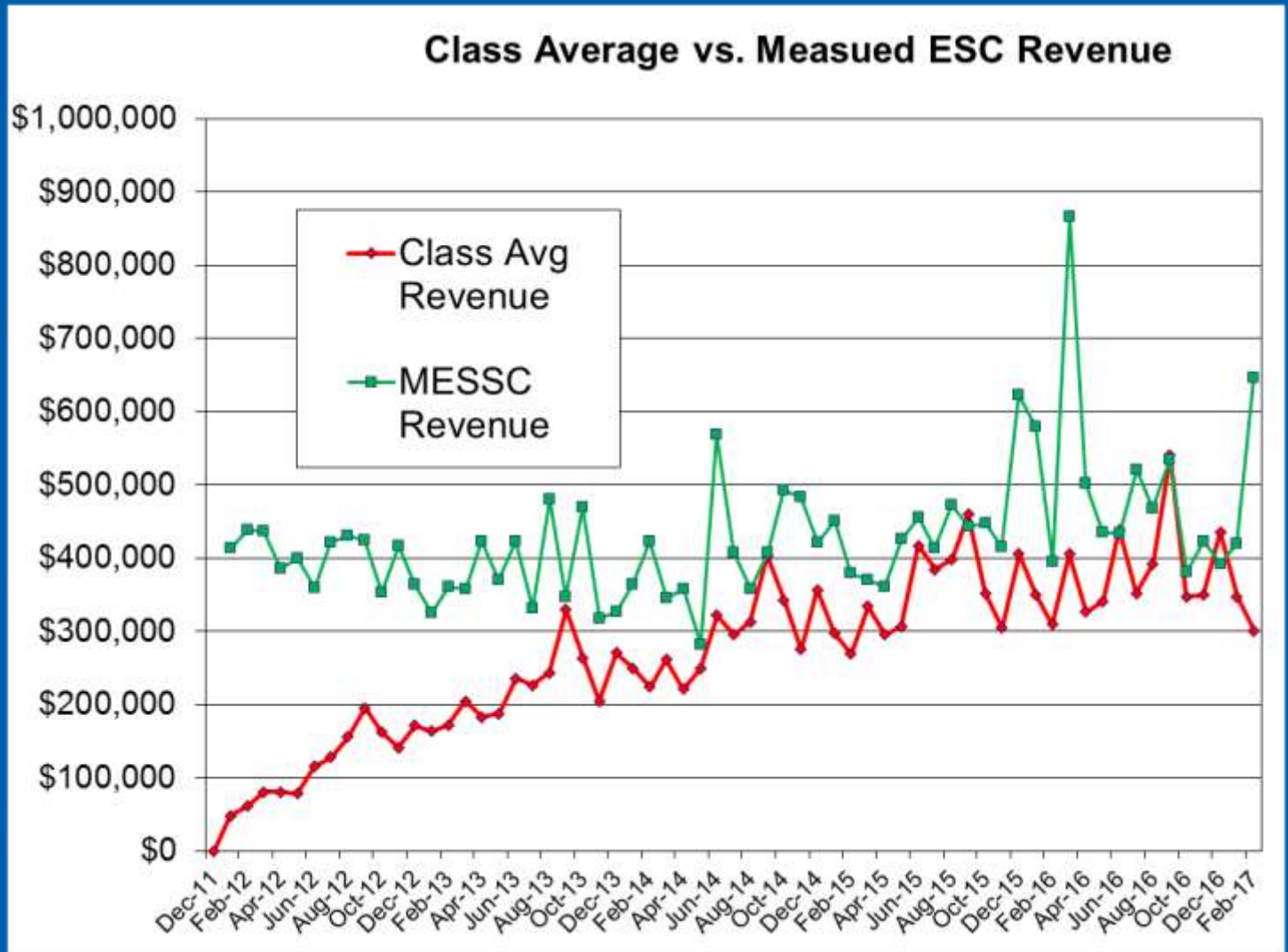


Numbers to date

- 4900 Outreach Inspections
- 3550 FSEs set up to bill
- ~1500 accounts bill every month
- \$4.5M in FY 15/16
- Identified over 850 grease traps that we were not receiving cleanout reports for.



ESC Revenue



ESC BMP Utilization

Base, No BMPs	8.7%	FSEs Receiving some BMP Rate Reduction	91.3%
with Grease Trap (GT)	6.7%	FSEs Receiving One BMP Discount	19.9%
with Grease Interceptor (GI)	2.4%	FSEs Receiving Two BMP Discounts	38.8%
no Grinders	10.8%	FSEs Receiving Three BMP Discounts	32.6%
no Grinders & GT	11.1%	FSEs with GRDs	54.7%
no Grinders & GI	1.9%	FSEs with Traps (GT)	45.0%
Food Composting, no Grinders	25.7%	FSEs with Interceptors (GI)	9.8%
Food Composting, no Grinders & GT	27.2%	FSEs with no Grinders	82.1%
Food Composting, no Grinders & GI	5.4%	FSEs with Composting/Donation	32.6%



Lessons Learned

- Outreach is painful but incredibly important.
- Anticipate customers concerns and pre plan for them. (Rules and Methodology)
- Have a good procedures manual and follow it as close as possible. Consistency is important.
- Document everything. Inspections, decisions, contacts (phone, e-mail, letters), calculations.
- Have thick skin

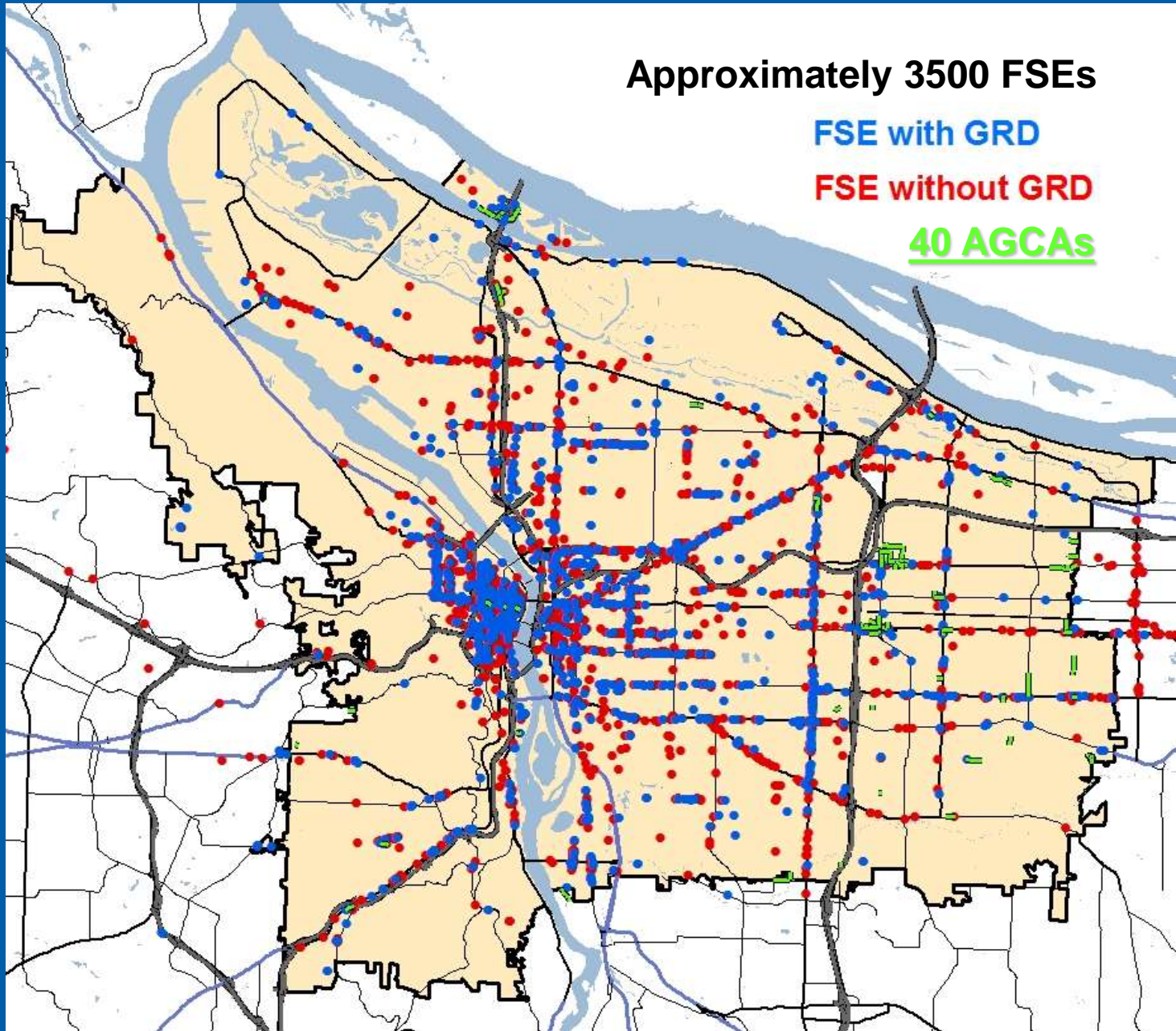


Approximately 3500 FSEs

FSE with GRD

FSE without GRD

40 AGCAs



FOG Program Numbers 2016

- Over 1200 interceptor pump out reports per month. 15,200 last year.
- 728 interceptor pump out inspections.
- ~1,800,000 gallons of interceptor pump out waste.
- ~3,900,000 pounds of FOG prevented from discharge to the sanitary sewer.



What's Coming?

Investigative Sampling at Beverage Manufacturers and Food Cart Pods

	BOD	TSS	pH
Kombucha Tea 1	6569	221	4.5
Distillery 1	3818	60	8.0
Winery 1	3964	1314	6.0
Winery 2 (w/ food Service)	1246	179	5.9
Cider	14084	2088	4.7
Food Cart Pod 1	1375	487	4.4
Food Cart Pod 2	1011	348	5.1



www.portlandonline.com/bes/cutfog

John Holtrop

Extra Strength and FOG Program Manager

John.Holtrop@portlandoregon.gov

503-823-7885

<https://www.portlandoregon.gov/bes/54538>

