



WSA

a project of pprc.org

FOG ABATEMENT PROGRAM OVERVIEW

POLLUTION PREVENTION
resource center



This training is sponsored by a grant from the USDA Rural Utilities Service (RUS)



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FOG-

Fats
Oils
Grease



“An effective FOG program must be data-driven, not effort-driven.”

Gary Christiansen, City of Seattle
Public Works



Which comes first, the data acquisition or the FOG Abatement Program?



Let's start with the data acquisition and storage...

Data Acquisition and Management

Gathering data to implement the fog program

DATA COLLECTION & STORAGE



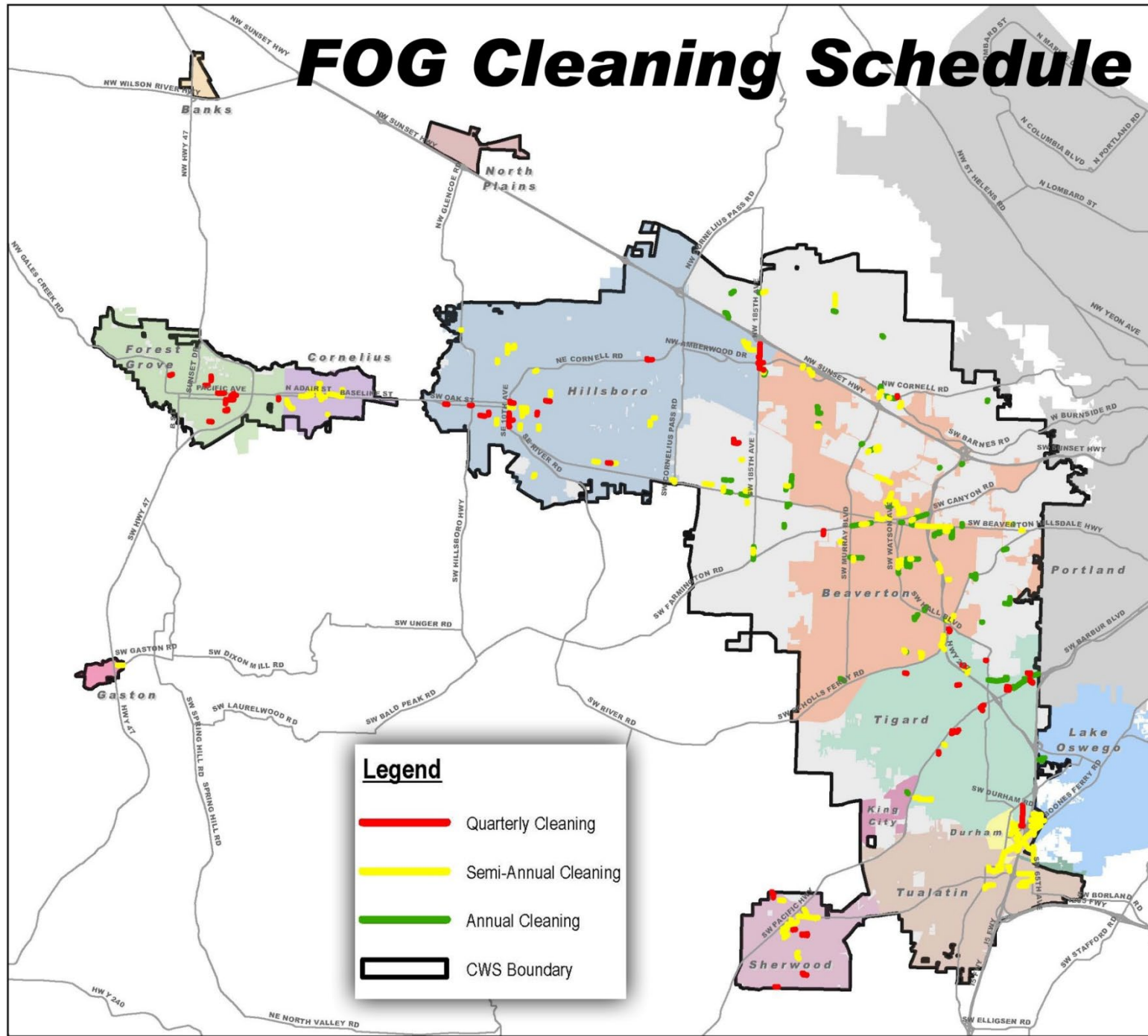
- What Data Do You Need?
- How Is The Data Stored?
- Can The Data Be Easily Analyzed?

COLLECTION SYSTEM DATA NEEDED

Partial list

- Which collection system line segments are impacted by FOG?
- What is the cleaning frequency for these FOG lines?
- Does the frequency exceed the established line cleaning frequency for the normal collection system?
- What is the cost per line segment to keep these FOG lines cleared?

FOG Cleaning Schedule



COLLECTION SYSTEM DATA NEEDED

Partial list - continued

- Are there manholes impacted by FOG?
- What is the cleaning frequency for these manholes?
- Are there pump stations impacted by FOG?
- How often are these stations cleaned?
- What is the cost per cleaning?
- Are additives used in these stations to “control” FOG?
- What is the cost of using these additives?

Inspect the Food Service Establishment (FSE)

- Walk Through the Facility
- Identify Where the Grease Interceptor is
 - *It's a Different Plan if there is NO interceptor*
- Find Out What Fixtures are Connected to the interceptor
- What is the Condition of the interceptor
- How Often is the interceptor Pumped
- Establish a Pump Out Schedule



FOOD SERVICE ESTABLISHMENT (FSE) DATA NEEDED

FSE Data (partial list)

- Physical Address (and GIS data or latitude/longitude)
- Potential FOG Loading of FSE (very high, high, medium, low)
- Proximity of FSE to a FOG-impacted sanitary sewer line (FOG line)
- Type(s) of FOG pretreatment
- Interceptor maintenance history
- Fixtures and drains connected to interceptor
- Contact information for FSE
- Landlord or property manager contact information

DATA COLLECTION & STORAGE



- What Data Do You Need?
- **How Is The Data Stored?**
- Can The Data Be Easily Analyzed?

EXCEL SPREADSHEET EXAMPLE

RESTAURANTS	HAULER	CLEANING	LAST	DUE FOR
WITH TRAPS		SCHEDULE	CLEANED	CLEANING
Abella Italian Kitchen	Baker	monthly	23-Oct-19	19-Nov
Bellagios	River City	2 months	11-Sep-19	19-Nov
Boeckman Creek School	River City	Annually	9-Jul-19	20-Jul
Boones Junction Pizza	River City	2 months	8-Oct-19	19-Dec
Boston's	Encore	monthly	19-Nov	19-Dec
Beer Station CLOSED 2018	NW Bio-fuel	3 months	18-Jul	18-Oct
Better Bean Company	Baker	6 month	18-Mar	18-Sep
Canton Phoenix	Oregon Oils	monthly	1-Jul-19	19-Aug
Charbonneau Country Club	River City	6 months	9-Jul-19	19-Dec
Corner Coffee Shop	River City	3 months	12-Mar-19	19-Apr

Swift Comply

www.swiftcomply.com



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About

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Book Demo

Helping FOG program managers **do more with less**

Our fats, oils, and grease (FOG) program software is designed with one thing in mind – collaboration. Harness the power of your data to optimize your regulatory program and make better more informed decisions around your customers.

Book demo



SwiftComply

SWIFT COMPLY Dashboard Establishments Contacts Providers Grease control devices Pump outs Inspections Account

< Establishments

SwiftComply Cafe Cool Actions
NV-LAS-000023 ● Compliant

Service frequency: 12 weeks
Pumped on: September 26, 2018
Next pump out: December 19, 2018
Risk Rating Category:
Addresses
1395 Brookline Loop, Pleasanto... - Business

Grease control devices
Equipment
Contacts

New note New pump out New inspection

Attachments
Choose Files No file chosen
You can select multiple files from within the file manager to attach them as part of the note body

Activity Compliance Notes Pump outs
Arizona Grease Services pump out
September 26, 2018
1000 Gallons

Add pump out
Here you can add details about a pump out

Establishment
MGM Grand
3799 S Las Vegas Blvd, Las Vegas, NV 89109, USA

Create another establishment
Establishment name
MGM Grand

Establishment postal address
3799 S Las Vegas Blvd, Las Vegas, NV 89109, USA

Unit
Gallons

SWIFT COMPLY Dashboard Establishments Contacts Providers Grease control devices Pump outs Inspections Account

Grease control devices Actions Import Add GCD

Establishment Category Tags Compliance Location
Status Active Add filter Apply Clear

Reference no	Category	Location	Frequency	Capacity	Updated at
000001	GGI	Inside	4 weeks	3000 Gallons	September 17, 2018 07:24 AM
000003	GGI	Outside	12 weeks	40 Lbs	September 24, 2018 11:47 AM
000004	GGI	Outside	12 weeks	1000 Gallons	May 16, 2018 04:11 PM
000005	HGI	Inside	12 weeks	100 Gallons	November 07, 2018 12:22 PM
000006	GGI	Outside	12 weeks	2000 Gallons	May 16, 2018 04:13 PM
000007	HGI	Inside	12 weeks	75 Gallons	May 16, 2018 04:13 PM
000008	GGI	Outside	12 weeks	2500 Gallons	May 16, 2018 04:16 PM
000009	GGI	Outside	10 weeks	1000 Litres	June 05, 2018 09:31 AM

FOGBMP™

Save. Comply. Sustain.



Fats, Oils, and Grease Management Software

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Municipalities

Take Control of FOG in Your City!

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Whether you need to create a FOG program or enhance your current FOG program, FOG BMP provides your municipality with all of the tools to be in full compliance with EPA standards.

Join the movement of municipalities from coast to coast who use FOG BMP to manage and automate all aspects of their FOG program.

[Learn More](#)

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FOG BMP

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Hello, Sam Mcleod! [Go to FOG BMP Dashboard](#) [Log out](#)

Demo Municipality (Customer) - FOG BMP Dashboard

- Store List**
- User List**
- Reports**
- Approved Pumping Company List**
- Disposal Facilities List**
- FSE Training Videos**
- Municipality Profile**
- Notifications**
- Inspections**
- Mass Email**
- Sewer Overflow Log**



© 2018-2020 Riteway Compliance Group, LLC

1:28 PM
9/23/2020



Organize every aspect of your FOG program on a single online platform.

PROGRAM FEATURES

- Profiles each FOG generating establishment within your jurisdiction.
- Profiles each facility's grease interceptor(s) (Size, type, location, due date, etc...)
- Profiles all licensed and approved Waste Haulers within your jurisdiction.
- Sewer overflow reporting with log and hotspot tracking.
- Automated cleaning record with digital cleaning log for every facility.
- Mass email communication function.
- Tracking and alerts for delinquent or missed grease interceptor cleanings.
- Custom Fats, Oils, & Grease Best Management Plan for restaurants.
- Kitchen staff FOG handling training modules with certificates of completion.
- FOG Inspections
 - Default and/or customizable inspection forms.
 - Perform inspections in the field from any smart device.
 - Issue and track notices of violations, warnings, and fines.
- Customized reports for all reporting facilities.
- Unlimited users for your municipality and supporting departments.
- Fully functional from desktop, tablets, and smart phones.

Aquatic Informatics LINKO FOG

<https://aquaticinformatics.com/products/fog-pretreatment-regulatory-software/>

The screenshot shows a web browser displaying the Aquatic Informatics website. The URL in the address bar is <https://aquaticinformatics.com/products/fog-pretreatment-regulatory-software/>. The website features a green header with the Aquatic Informatics logo and navigation links for Products, Solutions, Resources, Company, and Support. A prominent blue button labeled "BOOK CONSULTATION" is visible. The main content area has a green background with the LINKO logo and the text "Wastewater Pretreatment & FOG Regulatory Compliance Software." Below this, a white dashboard interface is shown, featuring several data visualization components: three donut charts at the top, a line graph on the bottom left, and a bar chart on the bottom right. A large green arrow graphic points to the right behind the dashboard. At the bottom of the page, the tagline "Empowering utilities to focus on what matters." is displayed. The Windows taskbar at the bottom shows the time as 12:28 PM on 2/21/2023.

Use flexible software that streamlines operations & ensures compliance, giving your team more time to help customers and build relationships that foster sustainable, long-term success for your program.

Streamline Operations

- Eliminate the burden of manual data management and poorly-optimized workflows by automating tasks and digitizing field data collection.

Maintain Compliance

- Purpose-built compliance capabilities keep you in control & protected against increasing regulatory pressure. With less risk, you can devote more energy to improving other facets of your program.

Ensure Resilience

- Securely centralize your most critical information; providing defensibility and empowering better, faster decision-making.

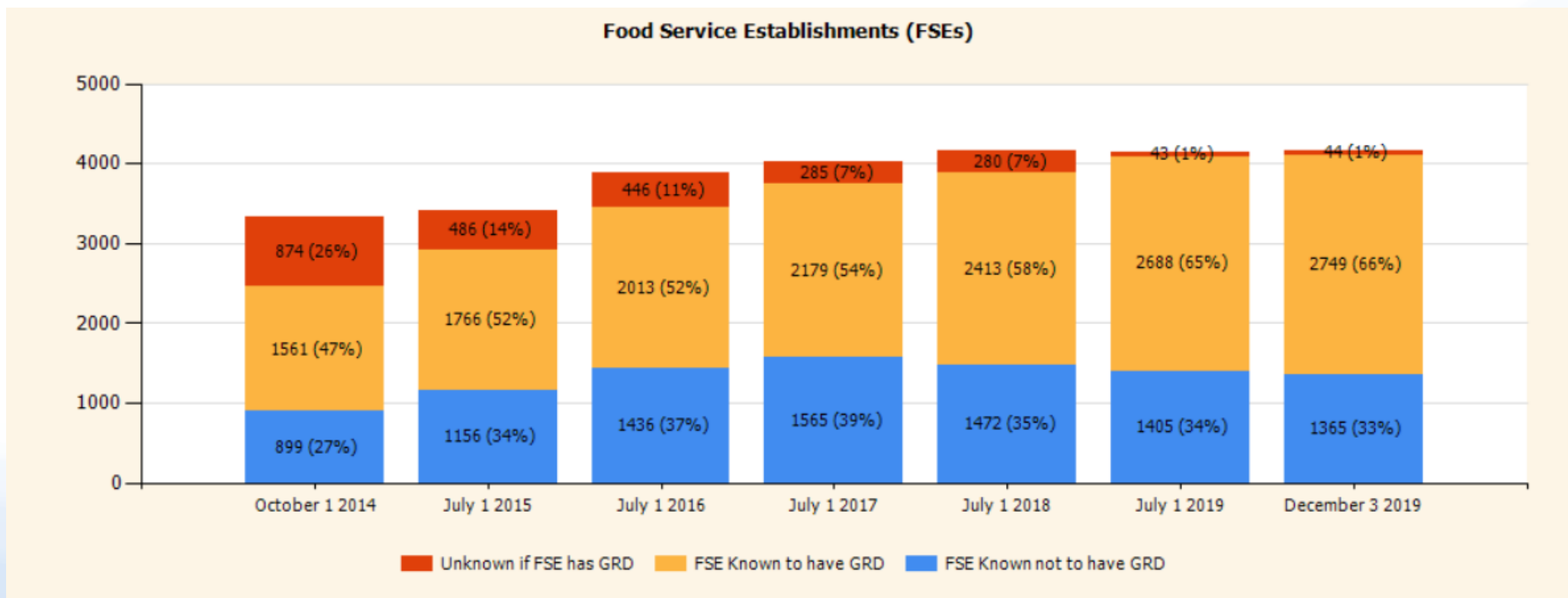
DATA COLLECTION & STORAGE



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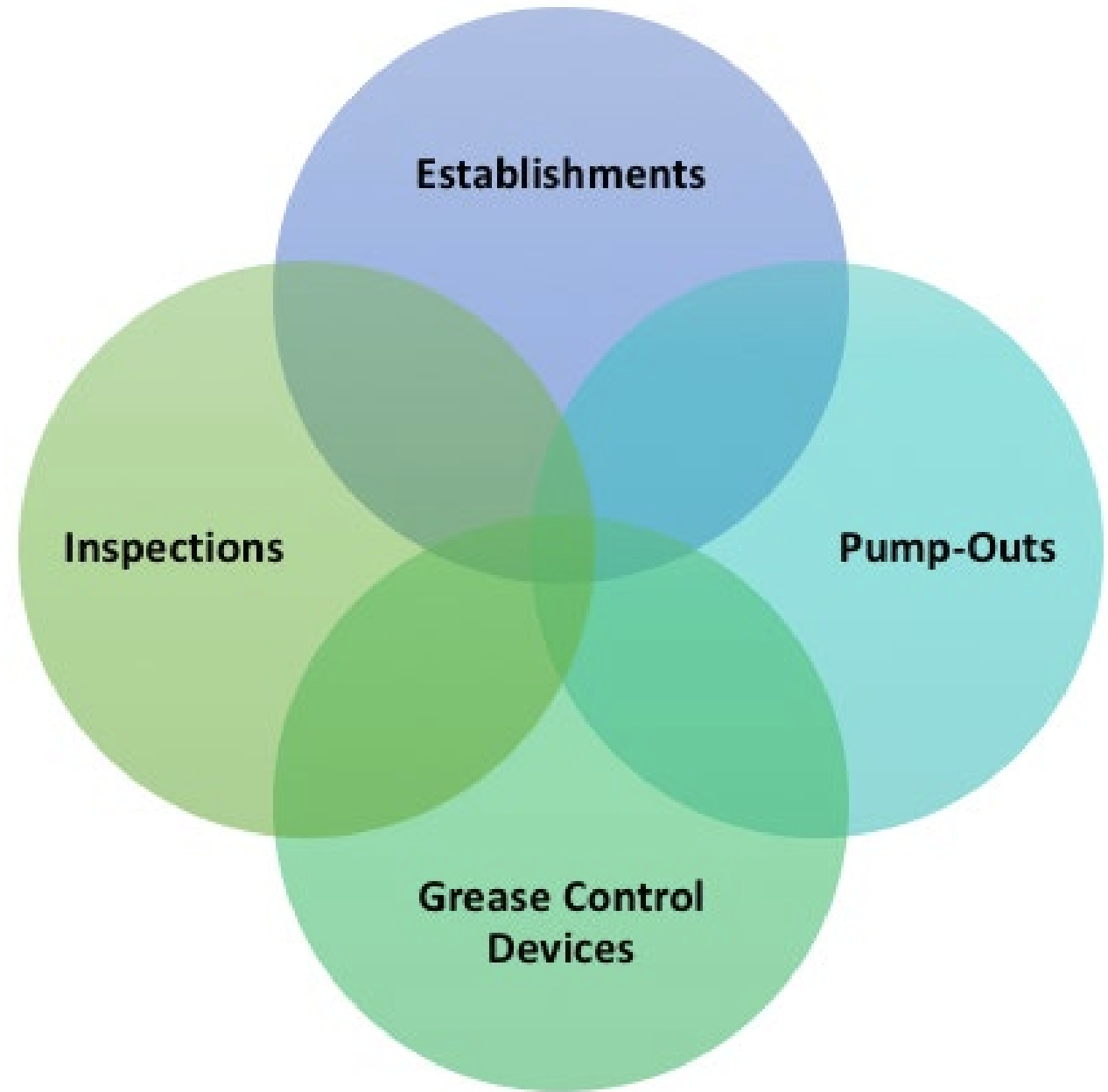
- What Data Do You Need?
- How Is The Data Stored?
- **Can The Data Be Easily Analyzed?**

PORTLAND'S INSPECTION RESULTS OVER 5 YEARS



WHATEVER SYSTEM YOU DECIDE TO USE

You'll want to include
these four elements



FOG INFORMATION SYSTEM QUESTIONS

1. What is the ANNUAL cost per user license?
2. Fully functional from desktop, tablets, and smartphones? If so, do you charge extra for mobile capability?
3. Is there an annual flat fee that grants full access to the complete program and all available features? Are there levels/tiers? If so, what are they and what are the annual costs?
4. Is there a charge for set up, data integration, and implementation/? if so, how much?
5. Is there a charge for multiple municipal users? If so, how much per user?

Adapted from “Choosing the right software to manage your FOG Control Program”, FOG in the News, US FOG ALLIANCE, June 2022



FOG INFORMATION SYSTEM QUESTIONS

6. Is there a charge for program training? If so, how much?
7. Is there ever any potential charge for customer/technical support? If so, how much?
8. Are there additional charges for program updates? If so, how much?
9. Are software downloads required? If so, how much extra cost?
10. Can FSE users access the portal with their own passwords? If so, is this an extra cost? How much?
11. Can transporters access the portal with their own passwords? If so, is this an extra cost? How much?

Adapted from “Choosing the right software to manage your FOG Control Program”, FOG in the News, US FOG ALLIANCE, June 2022

PLANNING & Program Development Costs

WHAT DOES IT TAKE TO PUT TOGETHER AN EFFECTIVE FOG PROGRAM?

PLANNING AND PROGRAM DEVELOPMENT

Planning

Take time to map out what your FOG Program outcomes should be

Identify measures to track.
Measures should demonstrate that outcomes have been met, or are being achieved



????????

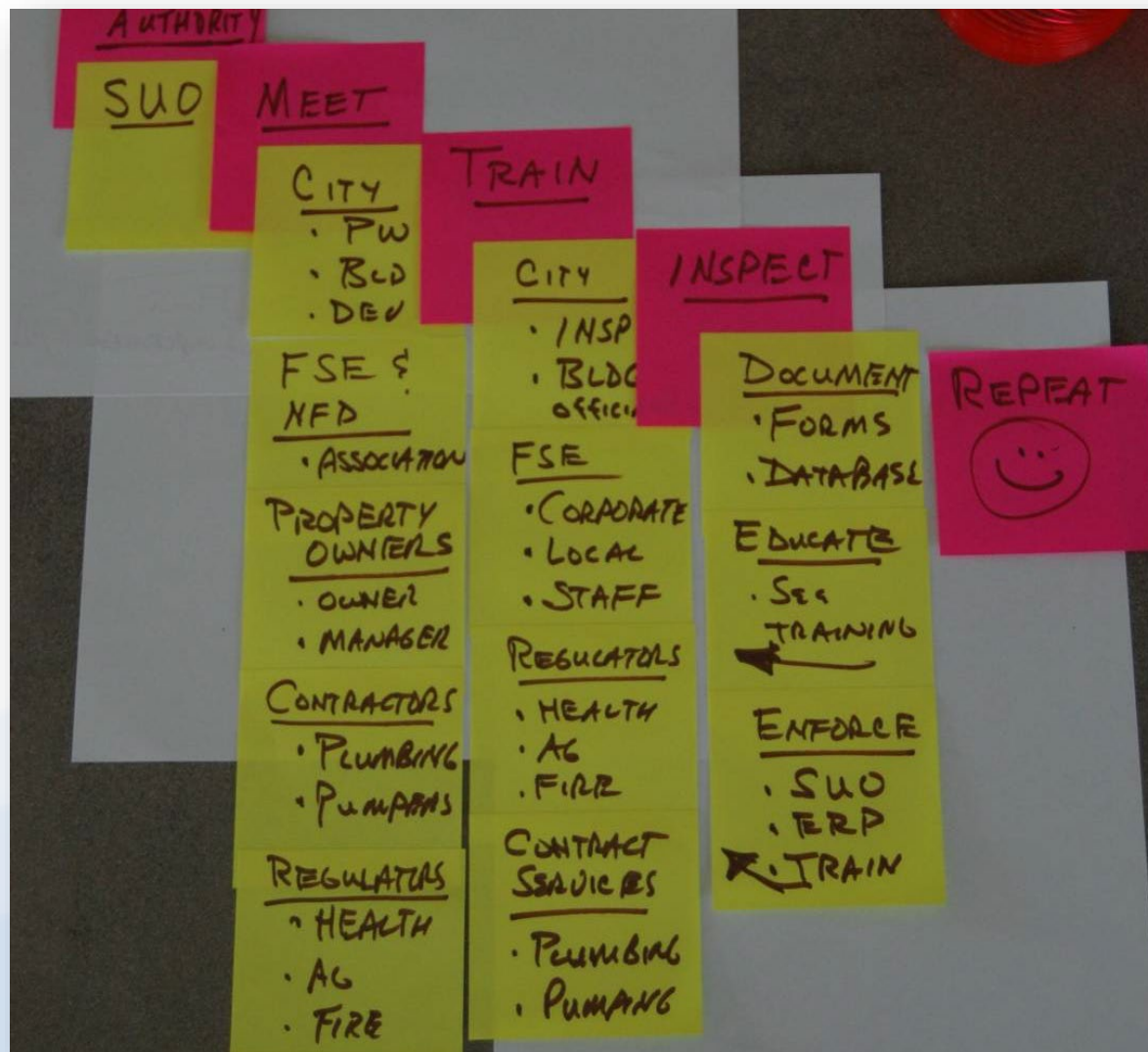


????????

Poll question

PROGRAM DEVELOPMENT

- Put legal authority into place
- Identify all stakeholders
- Identify all “moving parts” of the program
- Implement, gather data, analyze, repeat



PROGRAM DEVELOPMENT STAFFING PLAN

- Which staff will be involved in program development?
- One sewer district developed for a year, using
 - Division Manager (part time)
 - Program Manager (part time)
 - Communication specialist (part time)
 - Environmental Specialist (full time)



STAKEHOLDER INVOLVEMENT PLANNING

- **Have you identified the stakeholders?**
- **Have meetings been scheduled to discuss the FOG Program with stakeholders?**
- **Has the business case been presented to the municipal leadership?**
- **One sewer district spent one year meeting with stakeholders in monthly meetings. Four staff members from the District were involved, three part time and one full time during this year.**
- **What are the estimated fully-loaded labor costs to get input from stakeholders?**

NO SURPRISES !



All Stakeholders Must Be Kept Updated On This Process

- Regular Updates
- Meetings
- Stakeholder Participation

City Management Must Be Kept In The Loop Too

- Regular Updates
- Feedback

Prioritizing Inspections

- Give top priority to FSEs on any line with an SSO
- Give priority to FSEs on most frequently cleaned lines
- Give priority to FSEs that produce the most fog

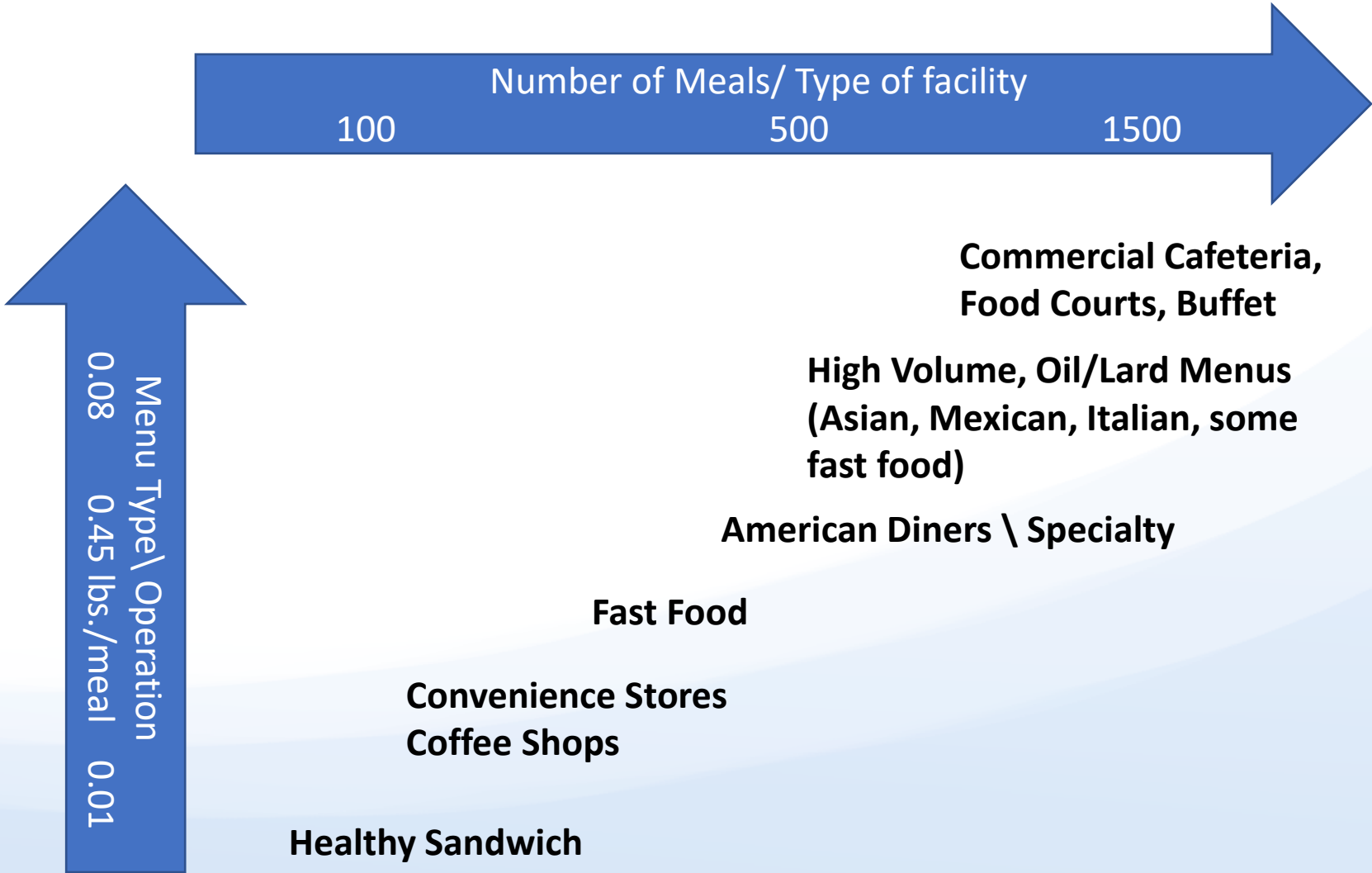
Sample Priority Matrix

HIGHER ← Schedule Priority → LOWER

HIGHER ↑ Impact Priority ↓ LOWER	Required (P1)	Work Stoppage	Regulatory	Audit Finding	Program Directives
	Work stoppage will occur and no workaround exists OR Regulatory, Program Directive, or contractual requirements will not be met.				
	Significant (P2)	High impact to production (significant cost to resources)	Significant cost reduction to a currently expensive workaround	Break-fix not stopping production but has high impact	System retirement/ system replacement
	High impact to resources and/or systems OR Workaround requires excessive time, cost and/or resources.				
	Moderate (P3)	No risk (easy to change, minimum resource effort), moderate benefit	Low risk (minimum resource effort), moderate benefit	Medium risk (reasonable change required), moderate benefit	High risk (extensive change), moderate benefit
Moderate impact to resources and/or systems OR Workaround requires some increase in time, cost and/or resources.					
Minor (P4)	No risk (easy to change, minimum resource effort), minor benefit	Low risk (minimum resource effort), minor benefit	Medium risk (reasonable change required), minor benefit	High risk (extensive change), minor benefit	
Minimal impact to resources and/or systems OR Workaround in place with minimal time, cost and/or resources.					
Low (P5)	Administrative change	System or process nuisance; cosmetic change	Watch Item: Cost prohibitive	Watch Item: not technologically feasible at the present time	
Administrative change or system nuisance with no impact OR Watch item					

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FOG PRODUCTION



Technical Resources

As part of our mission to provide technical resources from partners throughout the country, we offer this selection of FOG related materials for your training needs.

[National Resource Reference Guide](#)

[Preferred Pumper Program](#)

[Interceptor Sizing Guide](#)

[Kennedy Jenks Brown Grease Supply Study](#)

[WSA's FOG Source Control Guide](#)

[The City of Portland's FOG Extra Charge Guidelines](#)

[WSA FOG Training Playlist on YouTube](#)

[Plumbing & Draining Institute Publications](#)

[FOG Resources in the PPRC Resource Library](#)

[Presentation Slides from FOG Abatement Training \(coming soon\)](#)

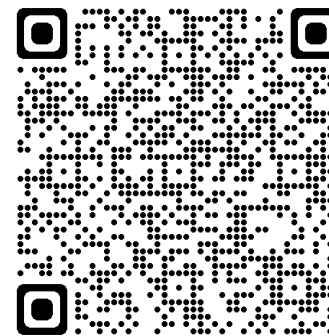
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[Kennedy-Jenks-Brown-Grease-Supply-Study.pdf](#)
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Kennedy/Jenks Brown Grease Supply Study

Kennedy/Jenks Consultants

200 S.W. Market Street, Suite 500
Portland, Oregon 97201
503-295-4911
FAX: 503-295-4901

Brown Grease Supply Study

16 February 2011

Prepared for

Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, OR 97123

K/J Project No. 1091014.10



INTERCEPTOR WHISPERER

Hydromechanical GREASE INTERCEPTOR

Sizing and Selection Guide (includes two-page worksheet)

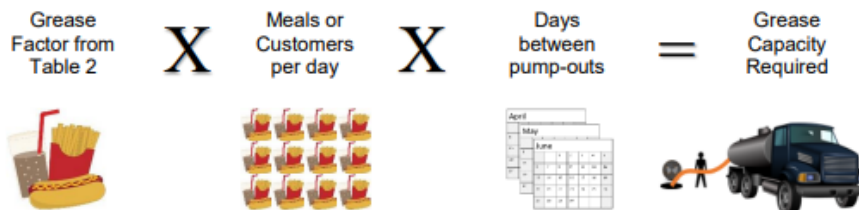
August 2018 Edition

ABSTRACT

Hydromechanical grease interceptors certified to ASME A112.14.3, CSA B481 or PDI G101 are tested to determine efficiency, flow-rate alone is not sufficient to ensure that sizing and selection method provides guidance. A second step is included that evaluates the grease interceptors to be used to select a grease inter

Step 2: Calculate Grease Capacity

Once the minimum flow rate has been established in Step 1, calculate the minimum grease storage capacity for the HGI required for the desired pump-out frequency as follows:

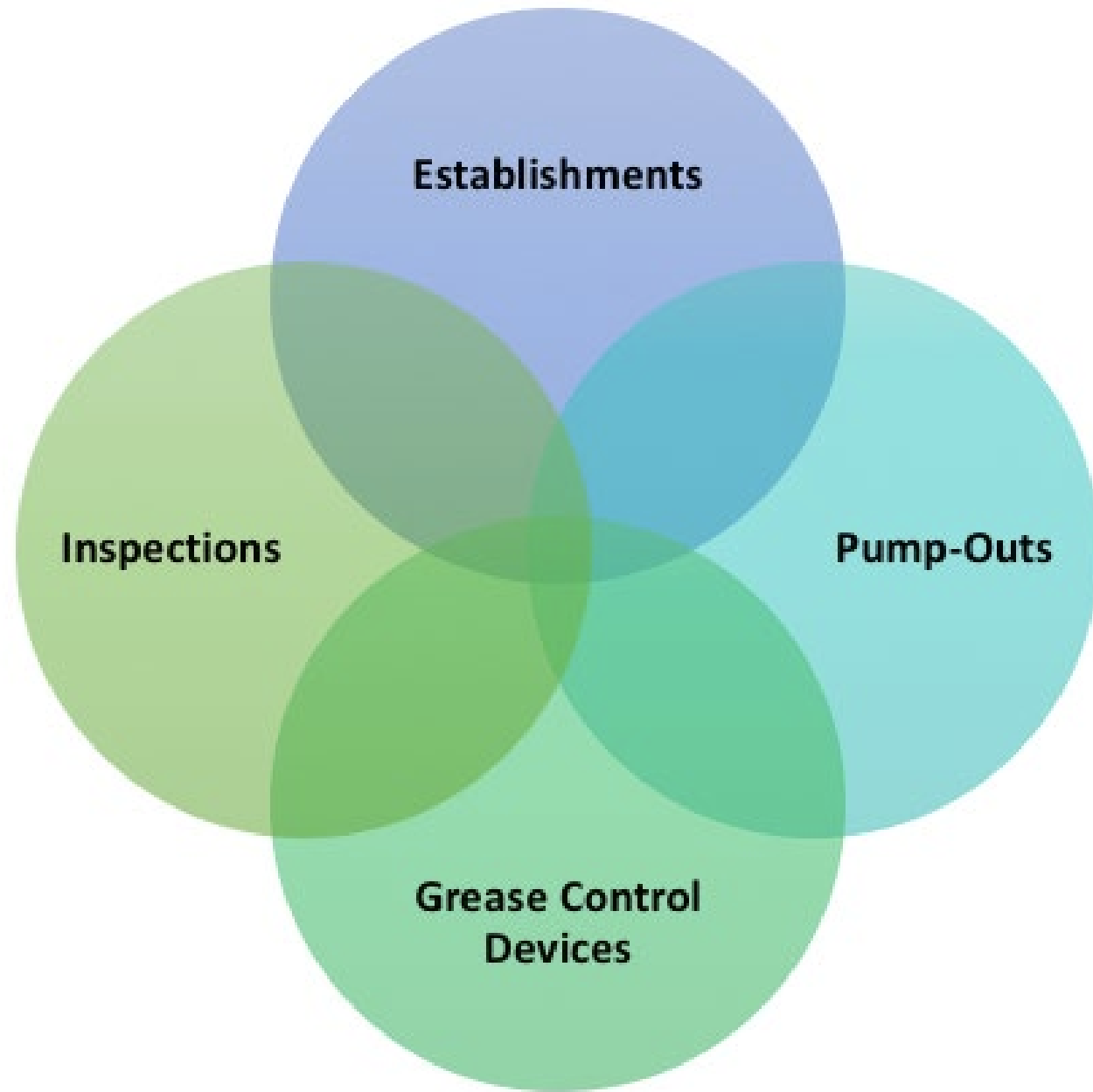


To determine the correct grease factor, using Table 2, select the menu type (1 through 30), then the correct column (A through D) for whether there is a fryer and whether the establishment uses disposable or washable plates, glasses, knives, forks and spoons (flatware).

Table 2

Type	Menu	Grease Factor ->			
		without Fryer without flatware	without fryer with flatware	with fryer without flatware	with fryer with flatware
		A	B	C	D
1	Bakery	0.035	0.0455	0.035	0.0455
2	Bar and Grille	0.005	0.0065	0.025	0.0325
3	Barbeque	0.035	0.0455	0.035	0.0455
4	Breakfast Bar - Hotel	0.005	0.0065	0.025	0.0325
5	Buffet	0.035	0.0455	0.058	0.0754
6	Burger and fries, fast food	0.035	0.0455	0.035	0.0455
7	Cafeteria	0.025	0.0325	0.035	0.0455
8	Caterer	0.005	0.0065	0.025	0.0325
9	Chinese	0.035	0.0455	0.058	0.0754
10	coffee shop	0.025	0.0325	0.035	0.0455
11	Convenience Store	0.005	0.0065	0.025	0.0325
12	Deep fried Chicken / seafood	0.035	0.0455	0.058	0.0754
13	Deli	0.005	0.0065	0.025	0.0325
14	Family Restaurant	0.035	0.0455	0.035	0.0455
15	Frozen Yogurt	0.005	0.0065	0.025	0.0325
16	Greek	0.025	0.0325	0.035	0.0455
17	Grocery Bakery	0.025	0.0325	0.035	0.0455
18	Grocery Deli	0.025	0.0325	0.035	0.0455
19	Grocery Meat Department	0.025	0.0325	0.025	0.0325
20	Ice Cream	0.025	0.0325	0.035	0.0455
21	Indian	0.025	0.0325	0.035	0.0455
22	Italian	0.035	0.0455	0.035	0.0455
23	Mexican, fast food	0.035	0.0455	0.035	0.0455
24	Mexican, full fare	0.035	0.0455	0.058	0.0754
25	Pizza	0.025	0.0325	0.035	0.0455
26	Religious Institution	0.005	0.0065	0.025	0.0325
27	Sandwich shop	0.005	0.0065	0.025	0.0325
28	Snack Bar	0.005	0.0065	0.025	0.0325
29	Steak and seafood	0.035	0.0455	0.058	0.0754
30	Sushi	0.005	0.0065	0.025	0.0325

Track FOG program elements as separate entities and add more as your program matures.



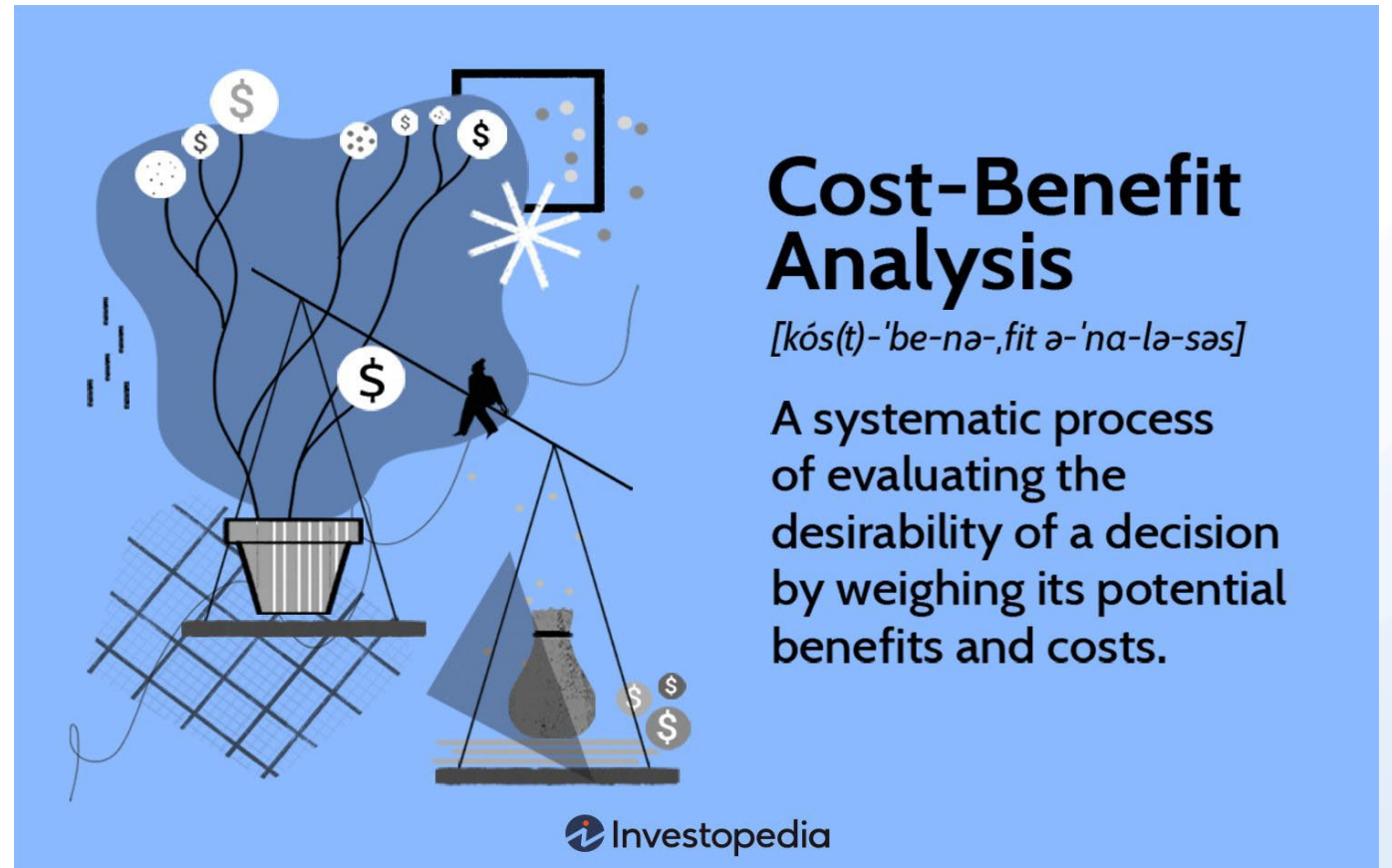
Pumper INFORMATION MANAGEMENT



- Pumper Name
- CONTACT INFORMATION
- Registration #
- AUTHORIZED DISPOSAL SITE
- PUMPING MANIFEST
- PUMP-OUT VOLUME

FOR EACH EVENT

Cost-Benefit Analysis



Given the costs of program implementation and expected costs on on-going program implementation, what are the financial and health/environmental benefits?

What is A FOG PROGRAM Cost- Benefit Analysis?



- The process of comparing the costs and benefits of **ACTIVITIES & RESOURCE ALLOCATIONS TO ACHIEVE DESIRED RESULTS**
- A way to evaluate effectiveness of decision-making
- Helps collection system staff & fog **PROGRAM MANAGERS MAKE INFORMED DECISIONS**
- A way to determine the break-even time period where costs equal benefits

COST-BENEFIT ANALYSIS

- Existing costs to municipality if no FOG program is implemented
- Cost to develop and implement FOG program
- Cost to maintain a well-managed FOG program
- Proposed savings due to well-managed FOG program

FOG PROGRAM COST-BENEFIT ANALYSIS

Pros

- Help Justify additional fog program resources
- Test worthiness of additional resources of various staffing and operational cost scenarios
- Help determine priorities

Cons

- some of the needed data is not readily available
- Estimate short- and long-term expected results

BASIC FOG PROGRAM COST-BENEFIT ANALYSIS

- **Step 1**: Existing costs to municipality if no FOG program is implemented or enhanced (i.e., “Status Quo” Costs)
- **Step 2**: Cost to develop and implement or enhance a FOG program to achieve desired outcomes
- **Step 3**: Cost to maintain a well-managed FOG program
- **Step 4**: Estimated savings due to well-managed FOG program
- **Step 5**: Time period to break-even

What is the **cost to clean sanitary sewer lines** per lineal foot?

Column A	Column B	Column C	Column D	
Time to clean each line section (hrs)	Fully loaded labor rate (\$/hr)	Equipment cost (\$/hr)	Traffic Control (\$/hr)	Total cost (A*(B+C+D))

Fully loaded labor rate includes benefits and overhead. For emergency cleanouts, include overtime charges. Equipment costs may be estimated based upon the cost for renting equipment. Traffic control costs may be estimated based on the cost for contracting out for traffic control.

What is the **cost to clean pump stations**?

Column A	Column B	Column C	Column D	
Time to clean each pump station (hrs)	Fully loaded labor rate (\$/hr)	Equipment cost (\$/hr)	Traffic Control (\$/hr)	Total cost (A*(B+C+D))

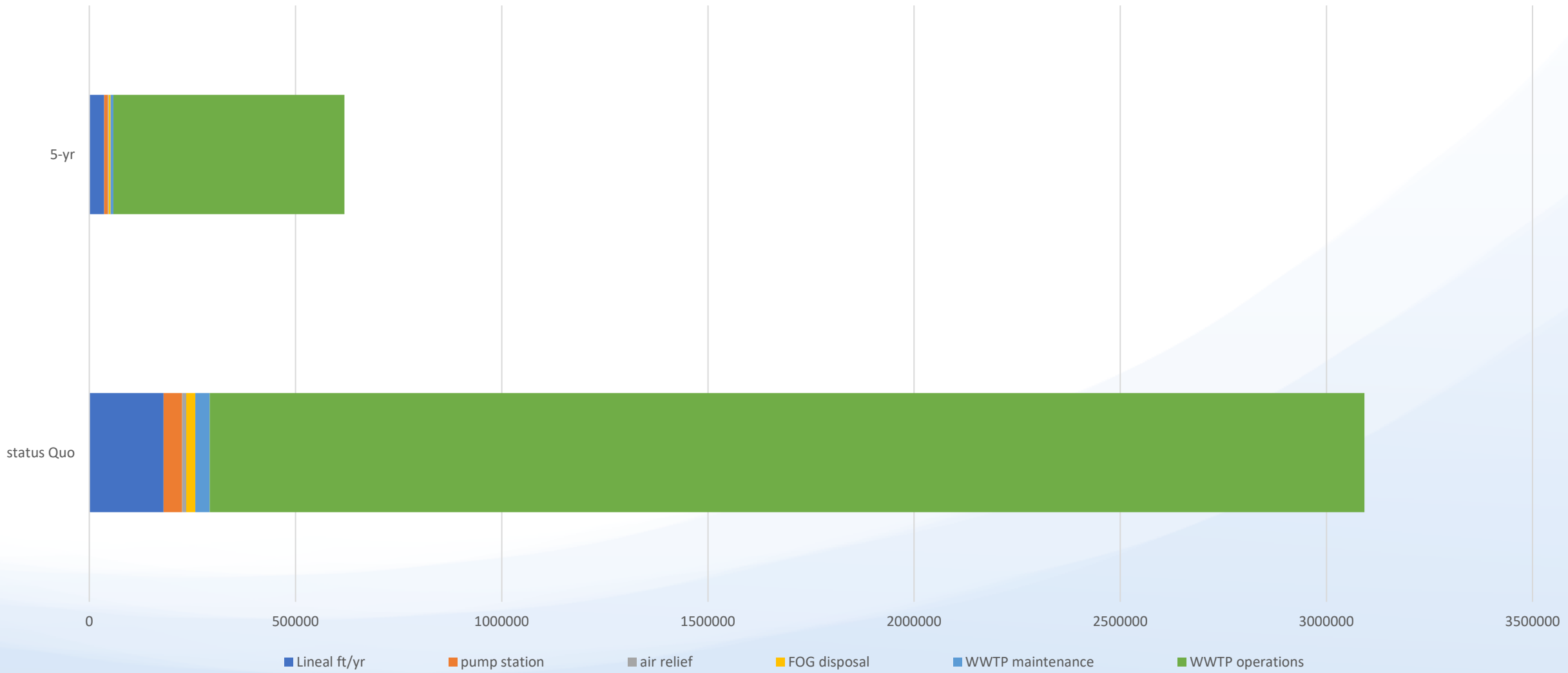
Calculating costs

- **Collect actual cost data where feasible**
- **Use calculators if available**
- **develop calculators if possible**
- **Use Anecdotal data if available**

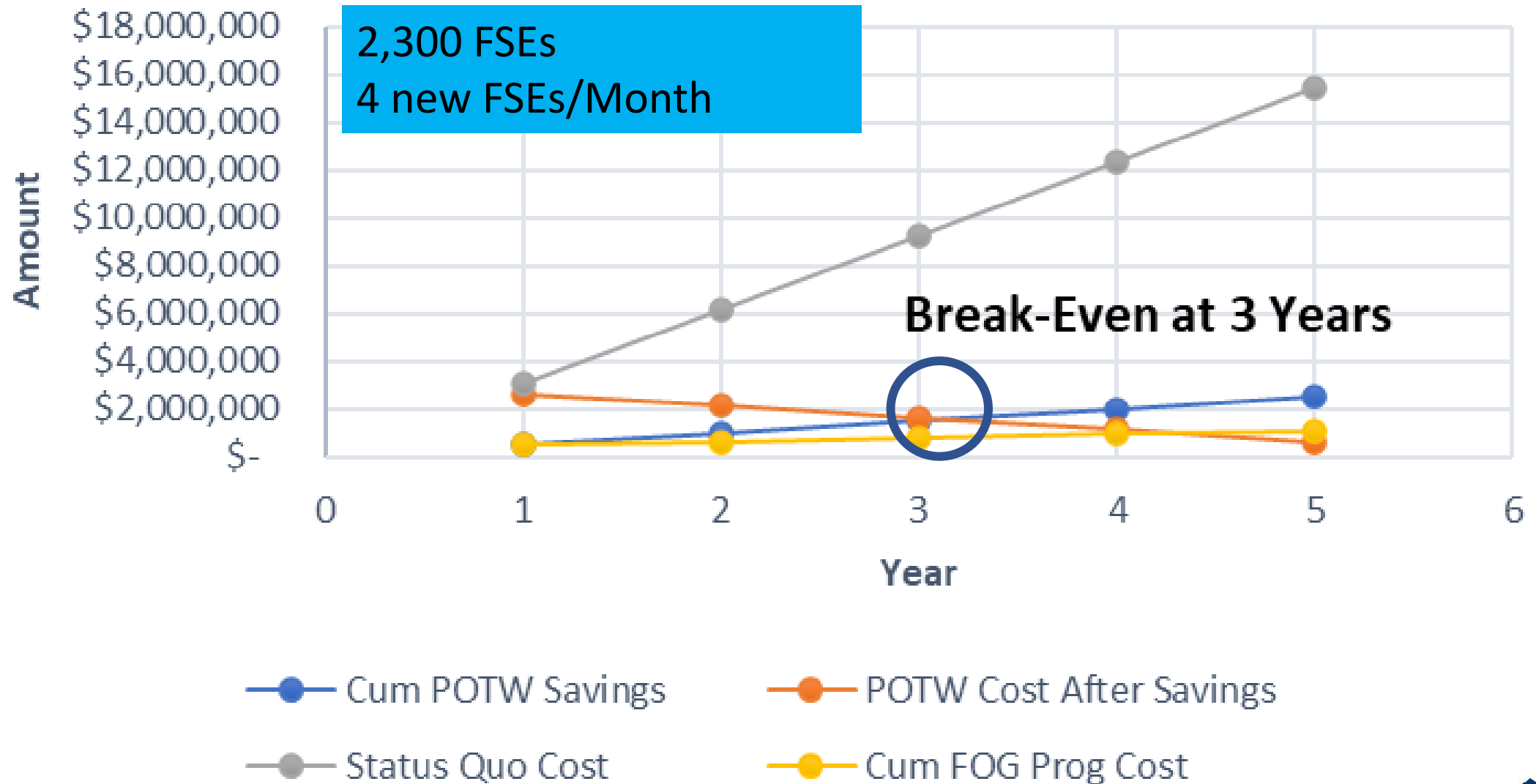
EXAMPLE OF A BUSINESS CASE PRESENTATION ON COST-BENEFITS

Sample Cost-Benefit Analysis		2,300 FSEs	4 New FSE/Month		
Status Quo Annual		FOG Program Costs		Savings after 5 years,	
Item	Cost	Item	Cost	Item	80% Reduction In Cost
# lineal feet /yr	\$180,000	Development	\$120,500	Line Cleaning	\$36,000
Pump Station	\$45,000	1st Inspection	\$375,000	Pump Station	\$9,000
Air Relief	\$10,000	Ongoing Insp	\$90,000	Air Relief	\$2,000
FOG Disposal	\$22,000	Plan Review	\$6,000	FOG Disposal	\$4,400
WWTP maintenance	\$35,000	Data Mgmt	\$45,000	WWTP Maint	\$7,000
WWTP Operations	\$2,880,000			WWTP Operation	\$560,000
Total Cost	\$3,092,000			Total Cost Savings	\$618,400
		Development Cost & First Insp	\$495,500		
		Program Maintenance Cost	\$141,000		
				Total Savings after year 5	\$2,473,600

Status Quo vs 5-yr costs



Simple FOG Program Cost-Benefit Analysis



**COST-BENEFIT
CALCULATIONS
COMPLETE.
WHAT ABOUT
THE REST OF
THE PROPOSAL?**

- Program Development
- Program Implementation
 - Phased Approach
 - FOG Triage
 - Data Acquisition and Management



2023 Pacific Northwest Pretreatment Workshop

- November 6, 7 and 8 2023
- Heathman Lodge
- Vancouver, Washington



About Us

Western States Alliance (WSA) is a project of the [Pollution Prevention Resource Center](#) that helps professionals identify and implement best practices in Fats, Oils, and Greases (FOG) management.

We are a membership organization of FOG professionals from across the United States. [Click here](#) to check out our staff bios on pprc.org.

Our vision is to be a comprehensive source of knowledge and assistance to advance technologies and best management practices, conserve resources, and derive the most value from FOG while prohibiting its damaging effects in the wastewater system.

Conferences & Workshops

We offer two FOG related technical training conferences each year: The [FOG Forum](#) & the [Pacific Northwest Pretreatment Workshop](#). Both events offer immersive training, program development and implementation sessions, and many opportunities for networking with your peers.

[Subscribe Below >](#)

FOG Abatement Training

With funding from the USDA, we provide both virtual and in-person trainings to help small rural communities and those who serve them. The trainings focus on building the business case for your program, program implementation and emerging chemicals of concern.

[Training Calendar >](#)

National Resource Reference Guide

Our National Reference Resource Guide is a "one-stop" shop to learn about FOG, its value as a resource, its problems in sewer conveyance lines, its contribution to sanitary sewer overflows, its cost of treatment, and how you can establish or enhance a FOG Abatement program.

[View the Guide >](#)

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