

# San Francisco's "SFGreasecycle": How to Start a Successful FOG Program

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May 14<sup>th</sup> 2015

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SFPUC Wastewater Enterprise, Source Control Program

# Defining the Problem: The cost of Fats, Oil and Grease (FOG) still in sewers



Beach & Embarcadero

## FOG in S.F. Manholes and Sewer Mains



California & Montgomery



# Challenge: SF Regulatory Landscape

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Styrofoam Ban

Plastic Bag Ban

Health Care Requirement

Noise Enforcement Program

Nutrition Labeling Requirement

Trans-fat Ban

Outdoor Seating Restrictions

Healthy Food Initiatives Ordinance

Sick Pay Requirement

(San Francisco also prohibits kerchoo powders, stink balls,  
and elephants off leash)

# Challenge: Political Sensitivity

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San Francisco's a world-class restaurant town

...with an ex-restaurant owner as Mayor, at the time





# Program Strategies (Sources of Grease)

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- Household kitchens
- Restaurant used cooking oil
- Restaurant grease traps





## CLEAN IT BEFORE YOU DUMP IT

LIMPIELO ANTES DE DESECHARLO 丟棄前請清潔！

### HOW-TO HANDLE USED FRYER OIL

QUÉ HACER CON EL ACEITE DE LAS FREIDORAS 如何處理煎炸油



Filter oil from fryer  
Filtre el aceite  
從油桶中濾出廢油



Don't contaminate with water  
No agua  
無水



Keep out food particles  
No partículas de comida  
無食物殘渣



No trash  
No basura  
無垃圾



SFGREASECYCLE: SFPUUC BUSFUEL PROGRAM  
SFGREASECYCLE: PROGRAMA DE RECICLADO DE ACEITE DE SFPUUC  
SFPUUC 之生物燃料計畫  
(415) 625-7390 sfgreasecycle.org

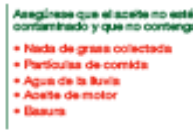


### HOW-TO STORE USED VEGETABLE OIL

CÓMO ALMACENAR EL ACEITE VEGETAL USADO 如何儲存煎煮植物油



Make sure oil is not contaminated.  
• No trap grease  
• No food particles  
• No rain water  
• No motor oil  
• No trash



Asegúrese que el aceite no esté contaminado y que no contenga:  
• Nada de grasas colectadas  
• Partículas de comida  
• Agua de la lluvia  
• Aceite de motor  
• Basura

繼續避免污染  
• 無雜質油類  
• 無食物殘渣  
• 無雨水  
• 無機油  
• 無垃圾



Secure lid with ring.  
Sujete la tapa con el anillo.  
鎖緊罐子



Keep area clean, free from oil drips.  
Mantenga el área limpia y sin gotas de aceite.  
保持罐地清潔，無滴漏



SFGREASECYCLE: SFPUUC BUSFUEL PROGRAM  
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## EVERY DROP COUNTS

### Put USED COOKING OIL in its place.

For drop-off info, visit  
SFGreasecycle.org



在這個  
年末節日期間，  
給市政府送一件大禮：  
**您用過的烹調油。**



在三藩市公用事業委員會的「三藩市油脂回收計劃」(SFGreasecycle) 之下，我們將把它轉變為生物柴油。

送交地點詳情  
12月27日至30日

**COSTCO WHARHOUSE:**  
450 10th St (夾 Bayard)  
時間: 9:30am-6pm  
星期: 10am-6pm  
星期一至星期五: 10am-10pm

**99c-100 三藩市 WHOLE FOODS MARKET:**  
Franklin 1700 California St (夾 Franklin)  
Potrero Hill 450 Rhode Island St (夾 Mariposa)  
SOMA 399 4th St (夾 Harrison)  
時間: 星期一至星期五: 8am-10pm

請注意小貼士:

1. 在烹調器具中煮油時，不要破鍋，可以適當的添水，不要使用舊容器，如舊的煎鍋等。
2. 當油桶中沒有水，把剩餘食物倒掉。
3. 在煮油時把紙巾放在油桶中，以便吸走油。
4. 在煮油時把紙巾放在油桶中，以便吸走油。

Costco 或 Whole Foods Market

廢棄的油類會積少成多，特別是在烹調活動繁忙的節日期間。把用過的烹調油倒入下水道會造成堵塞，每年給市政府帶來三百五十萬美元的損失。讓我們把它回收為消防車和公車可以使用的、燃燒清潔的生物燃料。

您可以在聖誕節和元旦之間把用過的烹調油送交市內的 Costco 或任何一家 Whole Foods Market 分店。記得使用可以蓋緊、不易破碎的容器。請訪問 SFGreasecycle.org 瞭解詳情。



## 污染積少成多 請妥善回收用過的烹調油。



倒入塑膠瓶，  
濾出雜物

和/或



在擦淨後把用過的廚房紙巾扔入綠色大桶

欲瞭解回收地點資訊，請訪問  
SFGREASECYCLE.ORG

# Solution (Household Drop-offs)

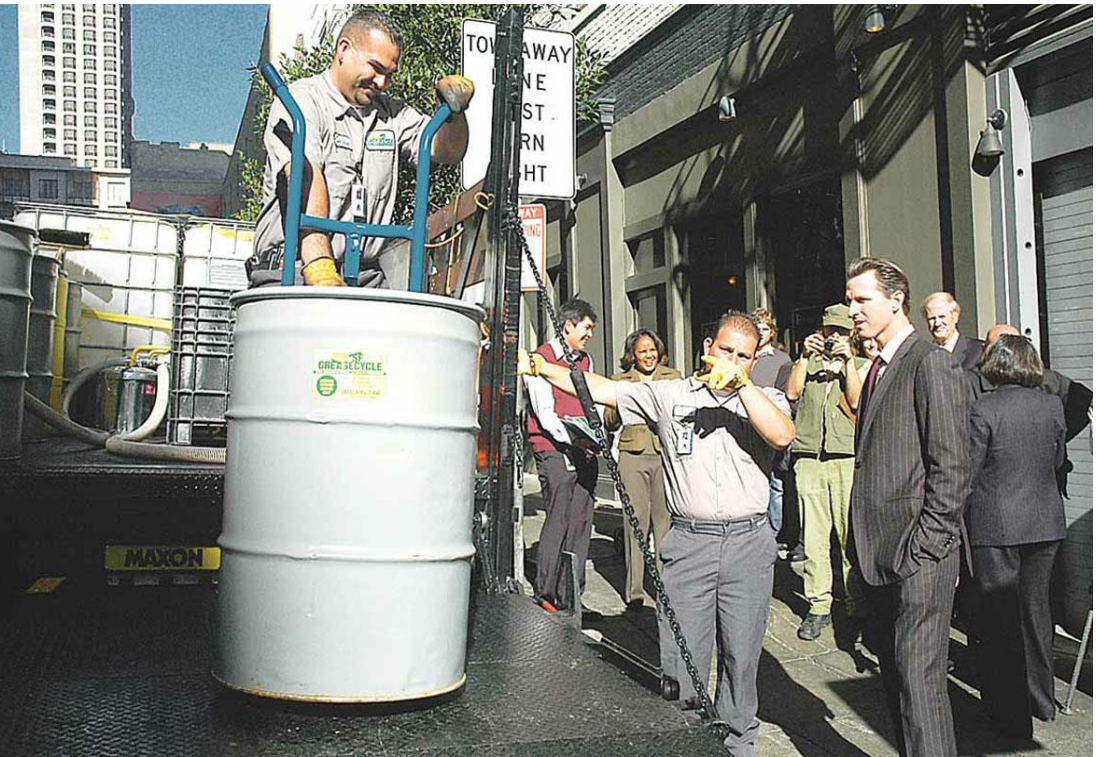




# Solution (Restaurant used cooking oil )







**AN INSTANT CLASSIC VIDEO GAME**  
**DATEBOOK:** Mass Effect's action, storytelling make it season's best

#430

**AT-HOME DNA TESTS MULTIPLY**  
**BUSINESS:** Google, 23andMe behind latest kit on the market

# San Francisco Chronicle

Printed on recycled paper | TUESDAY, NOVEMBER 20, 2007 | sfgate.com 415.777.1111 40¢ plus tax

## SAN FRANCISCO BAY OIL SPILL

### Homeland Security spill probe is sought

House members not pleased safety board could take a year

By Peter Finn  
 CHRONICLE STAFF WRITER

A House subcommittee grilled the federal and state commanders in charge of handling the oil spill in San Francisco Bay and, unhappy with the response, announced Monday they would seek a new probe by the inspector general for the Department of Homeland Security.

The subcommittee members, including House Speaker Nancy Pelosi, D-San Francisco, were particularly concerned when they heard that the National Transportation Safety Board investigation would take a year. It is imperative, they said, that problems with the emergency response be identified immediately so solutions can be found before the next disaster.

"I wasn't satisfied with the answers or the path that we were on," Pelosi said after the three-hour hearing in the Peninsula held by the House Subcommittee on Coast Guard and Maritime Transportation.

She expressed concerns that the Coast Guard and California Department of Fish and Game offer of Spill Prevention and Response were investigating.

—S.F. Chronicle

## GETTING BACK INTO THE FLOW



Wave rider Paul Dewel prepares to end an oil-imposed drought of wave riding with a surf session at Ocean Beach. Other Bay Area events lovers are following suit. See story, Page A13

## California sues 20 companies over lead in toys

By Jane Kuy  
 CHRONICLE ENVIRONMENT WRITER

California Attorney General Jerry Brown has sued 20 companies, including Mattel Inc. and Toys R Us, accusing them of selling toys that contain unlawful amounts of lead and failing to warn the public of the health dangers.

Brown's lawsuit, filed Monday in Alameda County Superior Court, alleges that the companies violated the Safe Drinking Water and Toxic Enforcement Act of 1986, a voter-approved law passed by Proposition 65, because they didn't notify consumers of toys in the marketplace that contained high concentrations of lead.

Lead, known to cause cancer and reproductive harm, also can cause mental and physical retardation as well as behavioral and other health problems in children. In adults, it can damage the nervous system.

The state's legal action follows a similar lawsuit recently filed by Mattel, Fisher-Price and other companies that make popular toys, including some Ernie, Dora and Big Bird toys in the Sesame Street line, as well as other toys.

—S.F. Chronicle

**GREASY PATH TO A CLEAN FUTURE**  
 S.F. to recycle restaurants' cooking oil for use as fuel

By Charles Barrows  
 CHRONICLE STAFF WRITER

San Francisco officials are giving the city's old grease a new career — one that should mean cleaner air, cleaner streets, and more jobs that smell like fried rice — one day and French fries the next.

Today the city launches SF GreaseCycle, a free program in which the city will pick up used vegetable oil and grease from local restaurants, hotels and other commercial food preparation establishments. These substances then will be turned into biodiesel, a fuel made of plant oil that burns cleaner than petroleum-based fuels.

Although several other localities around the nation have begun limited programs to collect cooking grease for biodiesel, San Francisco officials believe theirs will be the largest such effort.

Eventually, the city wants to recycle grease generated in homes with the installation of a small-scale grease trap. Eventually, the city wants to recycle grease generated in homes with the installation of a small-scale grease trap.

David Silvestri, a city official, says the program is a win-win. "This is a case of taking what could be a bad situation and turning it into a win," said Susan Leal, general manager of the city's waste management department.

—S.F. Chronicle

**PREPARATION**

- Vegetable oil is ground into processor
- Oil is heated to 120° Fahrenheit
- Acidity level is checked

**REACTOR**

- Lye (alkaline base) and methanol (alcohol) are mixed in a reactor container
- Solution is mixed with oil

**SETTLING**

- Oil separated into glycerine and unrefined biodiesel
- Glycerine removed

**WASHING**

- Biodiesel is washed with water

**PURIFICATION**

- Water removed from biodiesel
- Processed biodiesel transferred to storage container

**DISTRIBUTION**

- Biodiesel is "blended" or allowed to settle
- Ready for testing

Source: San Francisco Department of Public Works

**TENTATIVE STEPS TOWARD NORMALCY IN BAGHDAD**

For the first time in nearly two years, people move with freedom around much of Baghdad. While no-go zones remain, more Iraqis drive between Sunni and Shiite areas for work, shopping or school. Residents are surprised and relieved to see commerce and movement increase.

A15

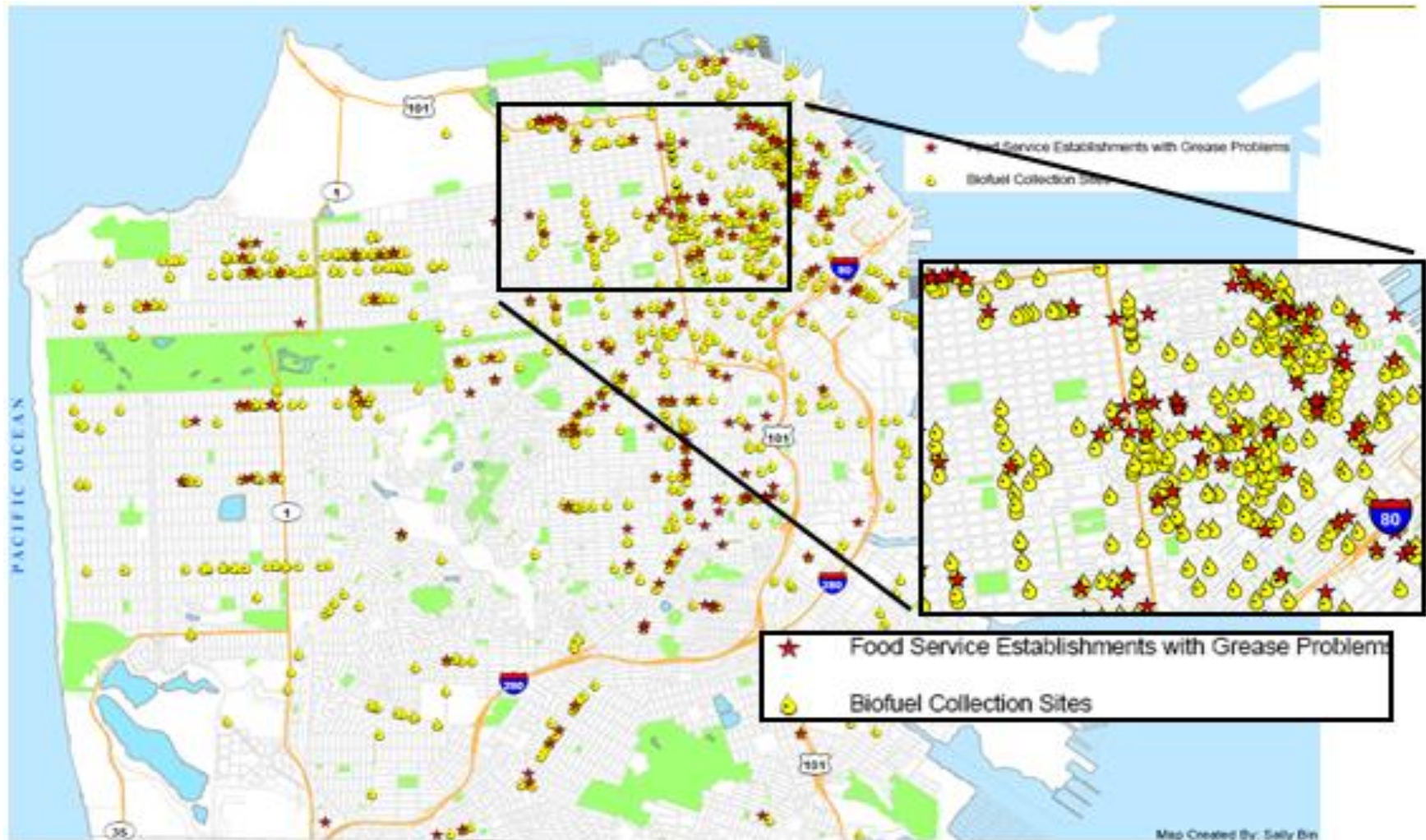
**ESTIMATE OF HIV CASES WORLDWIDE CUT SHARPLY**

Scientists are rolling back by 63 million the number of people worldwide believed to be infected with HIV. The dramatic reduction is largely the result of new methods of counting, but researchers also find that infections have been declining since peaking in the late 1990s.

A3



# Solution (Targeting “Hot Spots”)



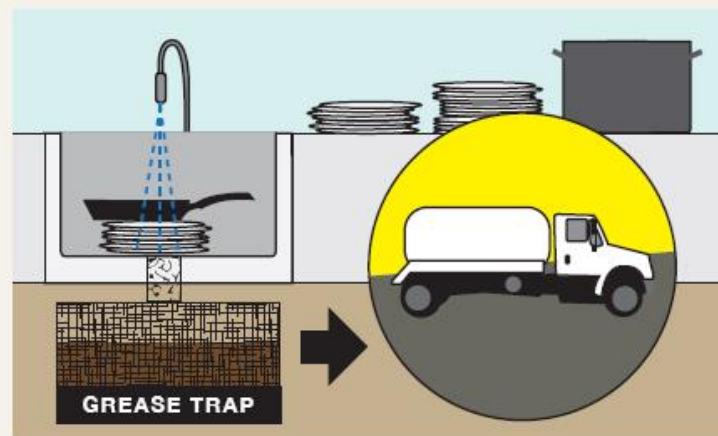


# GREASE TRAP GUNK (AKA “BROWN GREASE”) IS PROCESSED INTO CLEAN-BURNING BIOFUEL

Technology developments and enterprising water agencies are solving environmental and energy issues by using the scrapings at the bottom of the grease trap barrel. Here's how:

## 1. COLLECTION

Most, if not all, grease and food scrapings from dirty dishes and pots from commercial kitchens are captured in a grease trap. Instead of flowing straight from a restaurant's sink drain down into the sewer pipes, brown grease is collected (restaurants pay \$ for this service) and hauled to a wastewater treatment plant (haulers then pay \$ for disposal).



## 2. CONVERSION

At the plant, the patent-pending conversion process occurs, refining brown grease and creating three kinds of biofuel:

1. High-grade, road-worthy certified biodiesel for vehicles;
2. Lower grade boiler fuel for running sewage treatment plant equipment; and
3. Electricity converted from methane to run the treatment plant





### 3. DIVERSION

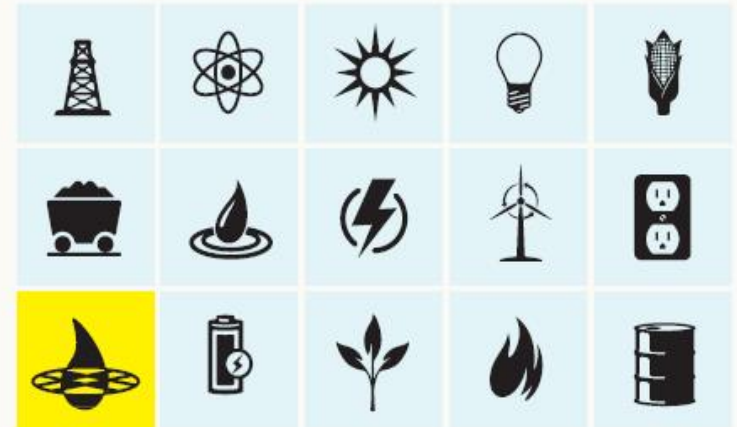
Unlike cooking oil from deep fryers, which can easily be processed and recycled, trap grease is so rancid that it is considered a pollutant. It has typically been sent to an incinerator or landfill. Today's technology enables this waste to be converted into alternative energy.



### 4. CONSERVATION & MARKET CREATION

Sewer maintenance, including repairs when brown grease clogs sewer pipes, costs municipalities millions of dollars annually. By being the raw material for biofuel, "brown grease" becomes a commodity. It assumes market value and less gets dumped down the drain, minimizing costs for sewer maintenance and repair.


**In the end, every drop, every scrap is used to produce energy, leaving nothing wasted.**

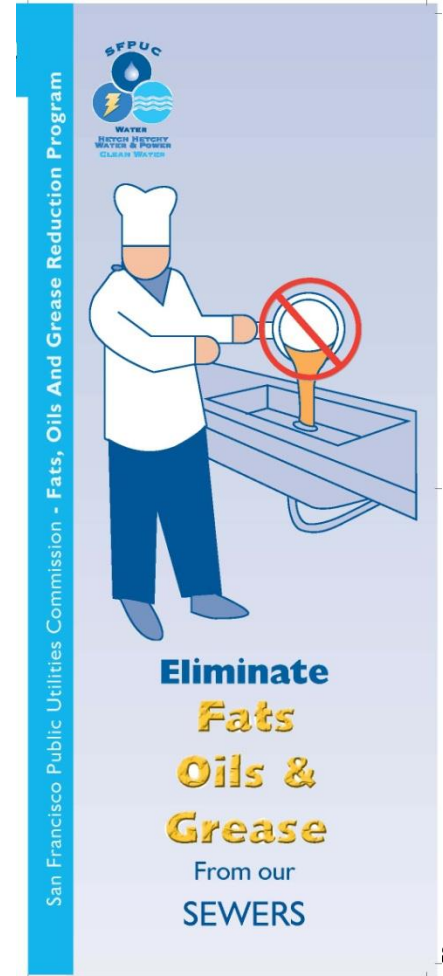


SFGREASECYCLE: SFPUC  
(415) 695-7366      [sfgreasecycle.org](http://sfgreasecycle.org)



# Existing FOG Source Control Program

- Wastewater Inspector visits (Began in 2004)
- FOG Best Management Practices taught
- Education and Handouts 
- Not focused on grease capturing equipment



# STEP 1: Address Restaurant Concerns

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What will I be required to do?

How much will it cost to comply?

We only make sandwiches!!

What if my restaurant has been complying with the existing ordinance?

I don't have time to pour through legislation...



# STEP 1: Address Restaurant Concerns

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What will I be required to do?

We only make sandwiches!!

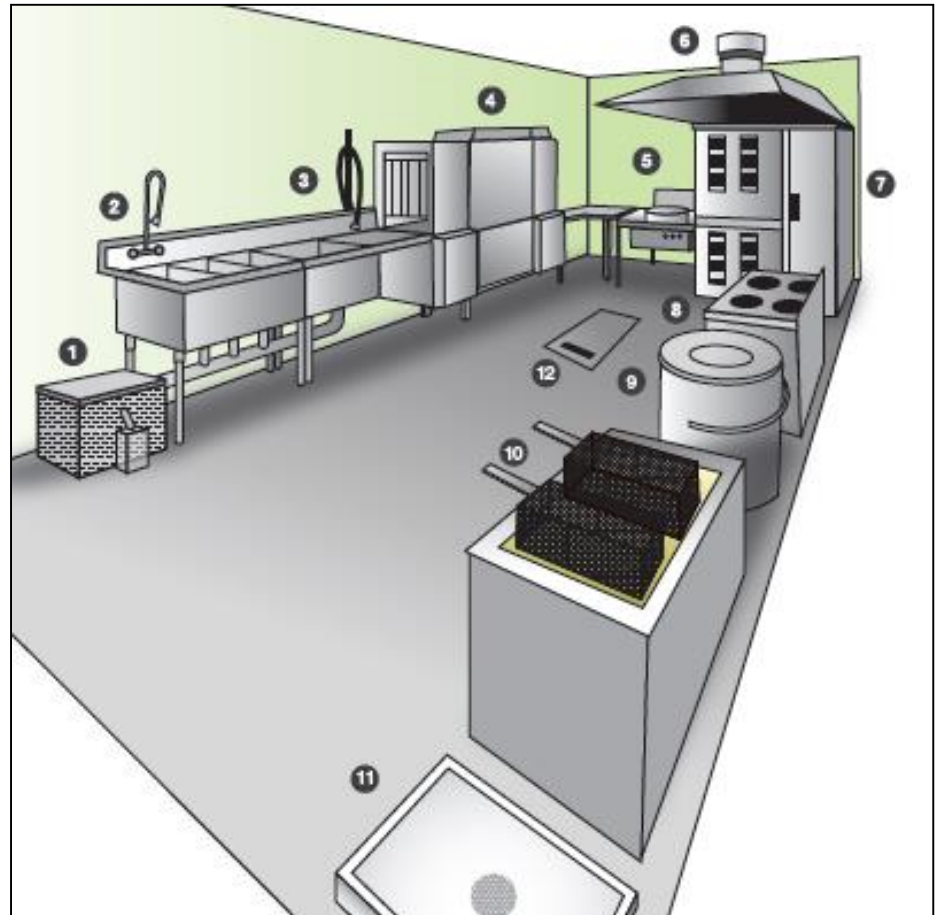
What if my restaurant has been complying with the existing ordinance?

Restaurants are divided into four simple categories, based on the number of appliances in their kitchen and their existing grease capturing equipment.

# Category Determination

FOG DISCHARGER CATEGORY TOOL

Equipment Type	Score
<b>Warm Only Equipment</b>	
<input type="checkbox"/> Microwave	0
<input type="checkbox"/> Toaster	0
<input type="checkbox"/> Toaster Oven	0
<b>Low Risk Cooking Equipment</b>	
<input type="checkbox"/> Bread Oven	1
<input type="checkbox"/> Combi-Oven (Convection/Steam)	2
<input type="checkbox"/> Pizza Oven	2
<input type="checkbox"/> Steamer	1
<b>Moderate Risk Cooking Equipment</b>	
<input type="checkbox"/> Stove (Range)	4
<input type="checkbox"/> Oven/Range	4
<b>High Risk Cooking Equipment</b>	
<input type="checkbox"/> Char-broiler	8
<input type="checkbox"/> Deep Fryer	8
<input type="checkbox"/> Griddle	8
<input type="checkbox"/> Grill	8
<input type="checkbox"/> Kettle	8
<input type="checkbox"/> Rotisserie	8
<input type="checkbox"/> Smoker	8
<input type="checkbox"/> Tilt Skillet	8
<input type="checkbox"/> Wok	8
<input type="checkbox"/> Other _____	8
<b>Other Factors</b>	
<input type="checkbox"/> Single Service Kitchen <sup>1</sup>	0
<input type="checkbox"/> Full Service Kitchen	4
<input type="checkbox"/> Seating > 100	# of seats _____ 8
<b>Total Score</b> _____	



# Discharger Category Tool

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## DISCHARGER CATEGORIZATION

0 – 9 Points

=

Category 4 (Limited Food Preparation Establishment)

10 – 15 Points

=

Category 3 (Less Significant Grease Discharger)

> 15 Points

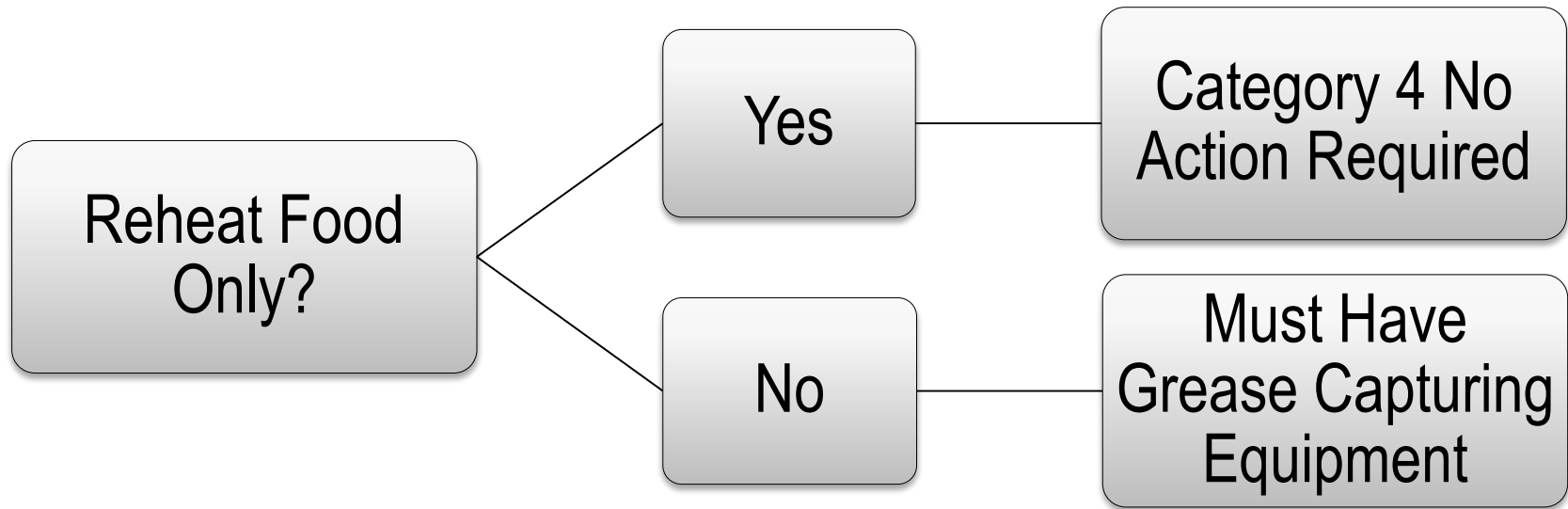
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Category 1 or Category 2 (Category 2 has equipment already installed)



# Category 4 Restaurants: Reheat Only?

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# Categories 1 - 3

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If you Cook...



You Must Have  
Grease Capturing  
Equipment



What Type is  
Required?



=



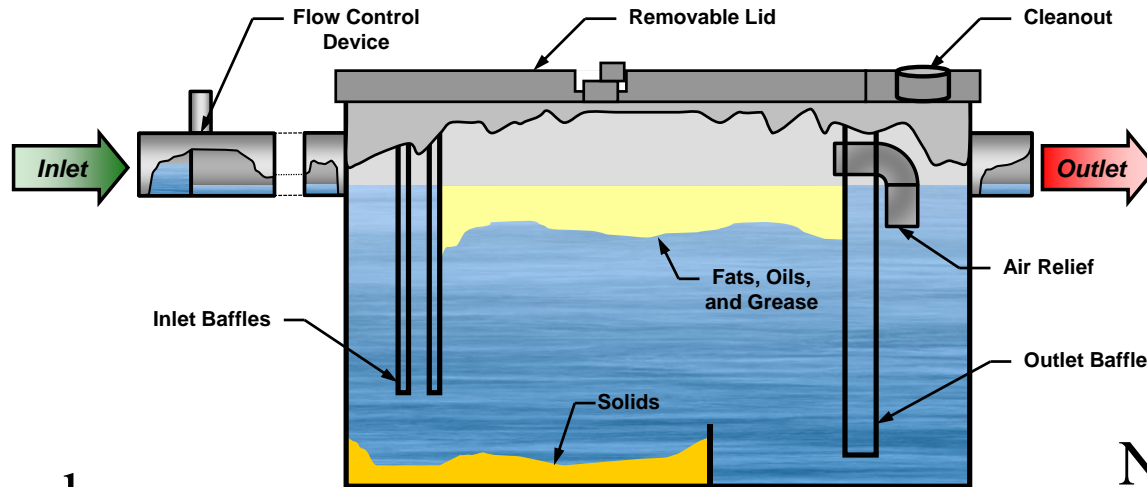
or



Grease Removal Device (GRD)

Trap

# Trap (Hydro-mechanical grease interceptor)



Serviced

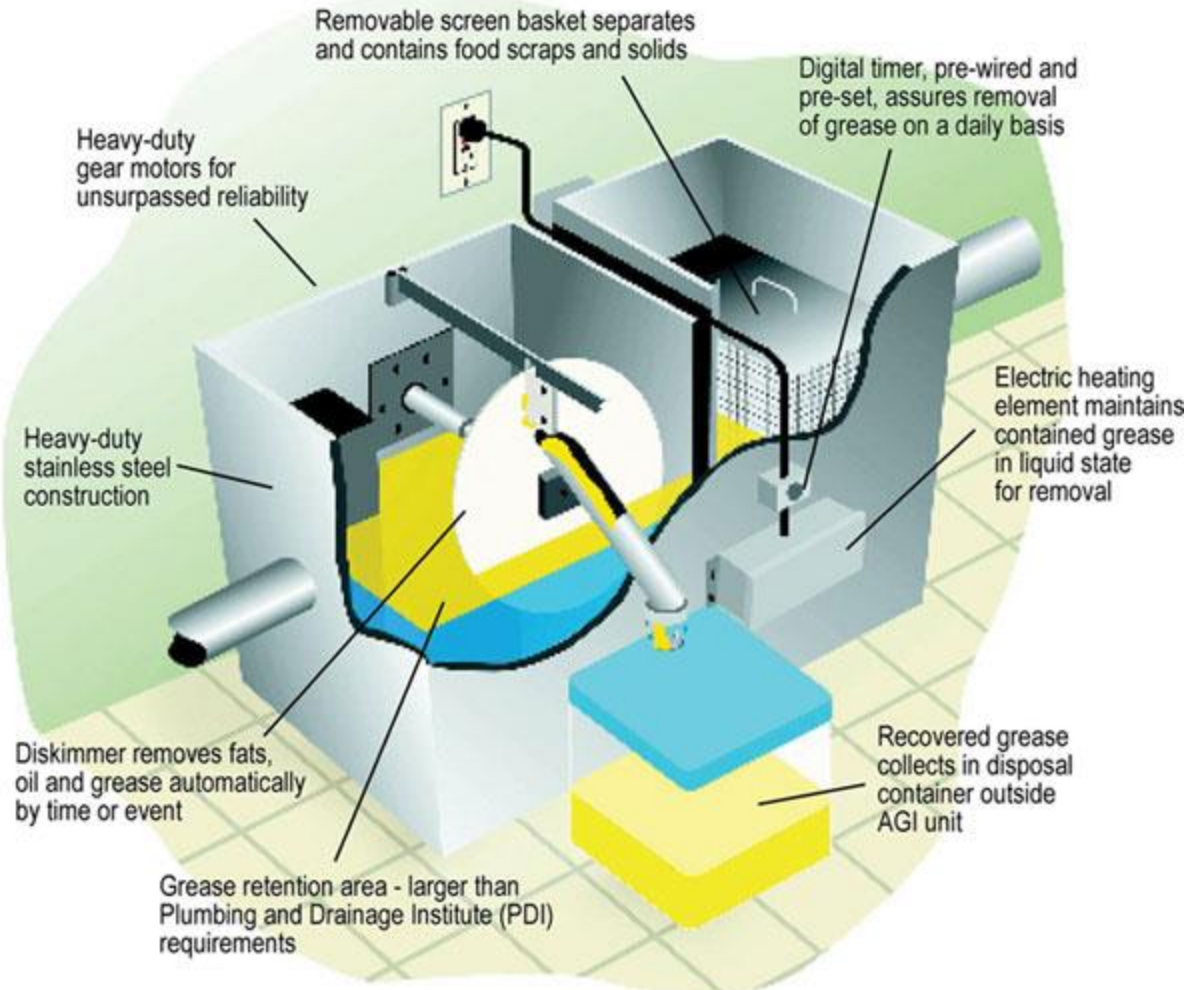


Not Serviced





# Automatic GRD (Grease Removal Device)



# STEP 1: Address Restaurant Concerns

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How much  
will it cost  
to comply?

**Restaurants that don't have grease capturing equipment and are determined to generate a lot of grease will be required to install an Automatic Grease Removal Device (GRD)**

## One-Time Costs

- ❑ Average purchase costs for GRDs
  - \$2,800 ( $\leq 30$  gallon/min) to \$5,500 for  $\geq 30$ -50 gpm
  - Plus installation: ~\$500 - \$2,000

# Reducing Financial Impact on Food Service Establishments

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How much  
will it cost  
to comply?

1. Sewer Service Rate adjustment of **-14.2%** for FSEs with Automatic GRDs and own water account
2. Lease-to-Buy Options
3. Loan Opportunities (ex: Opportunity Fund)
4. Categorized approach crediting existing equipment

# Sewer Bill Reductions

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- If you are required to install a Grease Removal Device, or if you wish to install one, **you may qualify for a 14.2% reduction on your sewer service rate**



**Install a GRD**

+

**Properly  
Maintained  
and  
Serviced**

=

**14.2% rate  
reduction**



# Rate Reduction Calculation

## B: Average Pollutant Concentrations (mg/L)

O&G(T)	T.S.S.	COD
100	303	715

## C: O&G Compliance Status

**No Violations**

Local Limits (mg/L)	
Hydrocarbon Oil & Grease	100
Total Recoverable Oil & Grease	300

## D: Sewer Service Charges

(using FY 2009/2010 rates)

Reduction based on O&G Load Reduction and related COD Reduction (no TSS change) [1, 2]

	Average (mg/L)	O&G(T) Violation?	Average (lbs/unit)	Cost (\$/lb)	Cost (\$/unit)
Total Recoverable Oil & Grease	100	NO	0.624	1.1035	0.6886
Total Suspended Solids	303		1.891	0.8819	1.6677
Chemical Oxygen Demand	715		4.462	0.2156	0.9620
Flow (\$/unit)	----->				6.5548
<b>Adjusted Sewer Service Charge Rate (\$/unit) :</b>					<b>\$9.8731</b>
<b>Historical Restaurant Sewer Service Charge Rate (\$/unit) :</b>					<b>\$11.5018</b>
					<b>14.2%</b>

# Micro-loan Opportunities

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## Small Business Loans

Apply for a small business loan  
today

# Step 2: Coordinated Outreach

Para leer esto en español, ingrese a  
[www.sfsewers.org](http://www.sfsewers.org)

看中文翻譯, 瀏覽  
[www.sfsewers.org](http://www.sfsewers.org)

## The **SFPUC** invites you to a Town Hall regarding the upcoming **Grease Removal Device Ordinance**

### TOWN HALL MEETING DETAILS:

#### Scoma's San Francisco

2:30 PM on Tuesday, March 2, 2010  
Pier 47 on Al Scoma Way, San Francisco

#### Jewish Community Center of San Francisco – Fisher Family Hall

2:30 PM on Wednesday, March 3, 2010  
3200 California Street at Presidio Ave, San Francisco

### PLEASE RSVP TO

[Townhall@ororkeinc.com](mailto:Townhall@ororkeinc.com) or call (415) 543-5937

The San Francisco Public Utilities Commission (SFPUC), in partnership with the Golden Gate Restaurant Association (GGRA), invites you to a Town Hall to discuss the upcoming ordinance requiring installation of new grease removal devices (GRD) at food service establishments in San Francisco.



*Your water, wastewater and municipal power utility.*

# Step 2: Coordinated Outreach

**Fats, Oils and Grease (FOG) Control Ordinance 2011**

## **How You Can Reduce Compliance-Related Costs**



San Francisco  
**Water  
Power  
Sewer**

Services of the San Francisco  
Public Utilities Commission

**INSTALL A GREASE REMOVAL DEVICE<sup>1</sup> AND LOWER  
YOUR SEWER SERVICE CHARGES BY 14.2%**



# Implementation Timeline Prior-Ordinance

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## **2007 – 2010: Lay the Groundwork with Key Stakeholders**

- ❑ Golden Gate Restaurant Association (GGRA)
- ❑ Inter-departmental Cooperation (DBI, Port, DPH)

## **Outreach Began February 2010**

- ❑ Draft Ordinance & Fact Sheet posted on [sfwater.org](http://sfwater.org)
- ❑ Presentation to Restaurants: Town Hall Meetings
- ❑ Chinese Chamber of Commerce presentation
- ❑ Building Owners and Managers Association presentation
- ❑ Door-to-Door bilingual outreach to smaller restaurants
- ❑ Chronicle front page article [3/18/10]
- ❑ KCBS radio [3/3/10]
- ❑ All materials on website; Dedicated email for questions





# Implementation Timeline Post-Ordinance

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## **February 2011: Adoption of Ordinance**

## **February - April 2011: Outreach & Education**

Workshops, Presentations, Written Materials, Website, Equipment vendor fairs

- Work with key stakeholders (ex: GGRA, Office of Small Business, Inter-agency Restaurant Consultation Team led by OEWD, Chinese Chamber, Board of Supervisors)

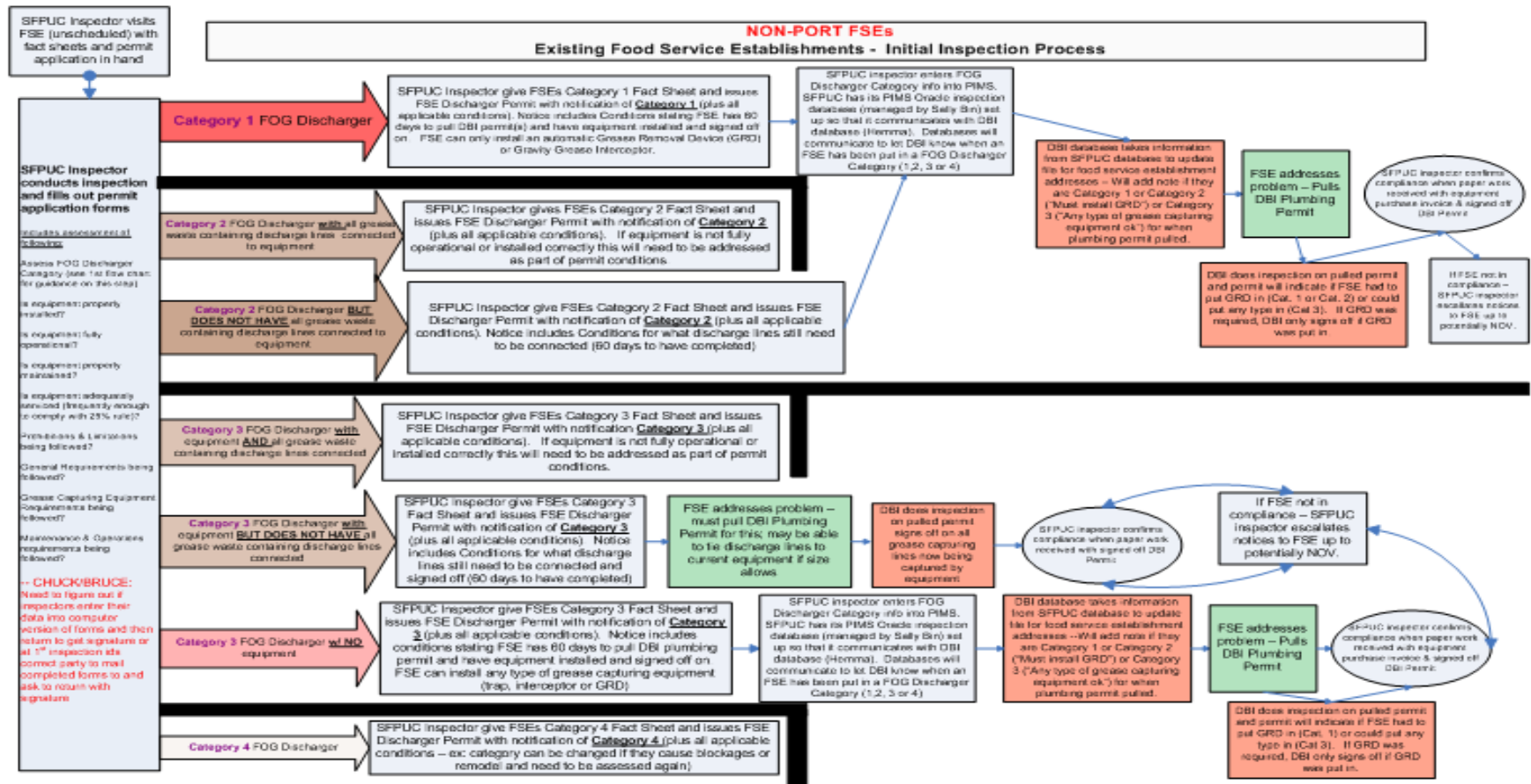
## **April/May 2011:**

- SFPUC Inspectors begin initial site compliance visits

# Restaurant Canvassing Sites Visited

	<i>Name of Restaurant</i>	<i>Language Focus</i>		<i>Name of Restaurant</i>	<i>Language Focus</i>		<i>Name of Restaurant</i>	<i>Language Focus</i>
13	San Sun Restaurant	Cantonese	13	LA PALMA	Spanish	13	Penang Garden Restaurant	Mandarin
14	Joy Hing B.B.Q. Noodle House	Cantonese	14	IZALCO RESTAURANT	Spanish	14	Washington Bakery & Restaurant	Mandarin
15	Good Mong Kok	Cantonese	15	TAQUERIA EL FAROLITO #3	Spanish	15	Chinatown Restaurant	Mandarin
16	New Golden Daisy	Cantonese	16	TORTAS LOS PICUDOS	Spanish	16	Imperial Palace	Mandarin
17	Napoleon Super Bakery Corp	Cantonese	17	LA GALLINITA	Spanish	17	New King Tin Restaurant	Mandarin
18	Sam Wo Restaurant	Cantonese	18	Usulután Restaurant	Spanish	18	Great Oriental Restaurant	Mandarin

# Interdepartmental Implementation



**Thank you**

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