



Sunnyvale

FoodCycle Survey Results & Franchise Agreement Update

Karen Gissibl & Jim McHargue
Environmental Programs Manager
Solid Waste Division Manager
Environmental Services Department

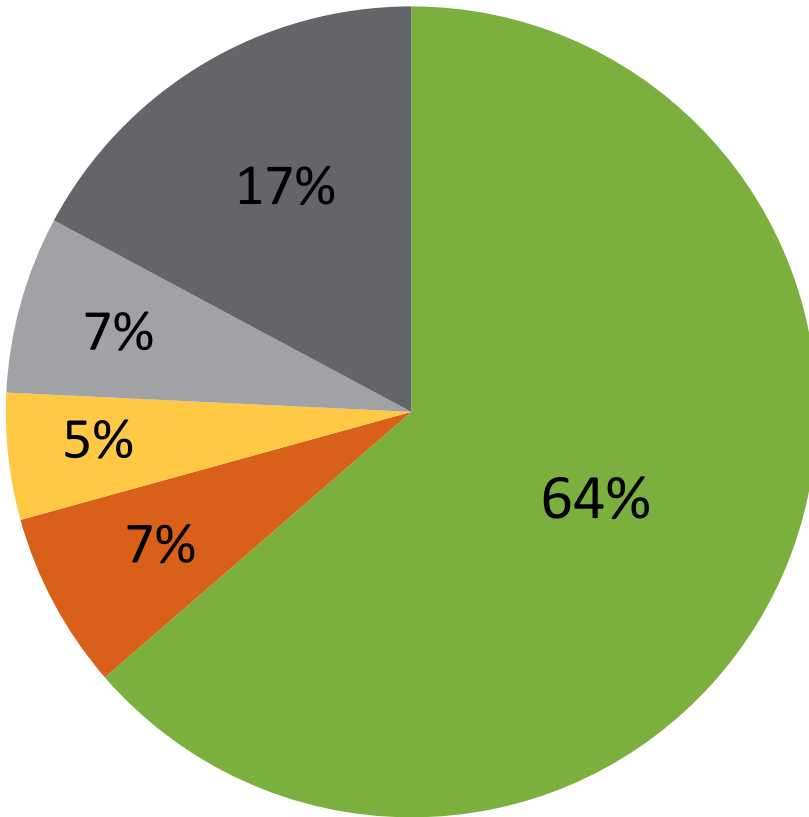


FoodCycle Survey

- Surveys mailed to 3200 randomly selected households
 - ◆ Some also received a visual assessment of cart contents
 - ◆ Survey assessed perception, participation frequency, motivators and challenges
- 40 percent response rate
- Survey developed by and report compiled by Action Research



FoodCycle Report Key Findings



- 75% of respondents participate at least once a month (graph)
- Most participants fill yellow side of cart less than 25% full
- Households with largest cart tend to overfill garbage side the most
- 17% don't participate

■ Every week ■ 2-3 times per month
■ 1 time per month ■ Less than monthly
■ Never

Biggest frustration is lack of garbage space and size of cart

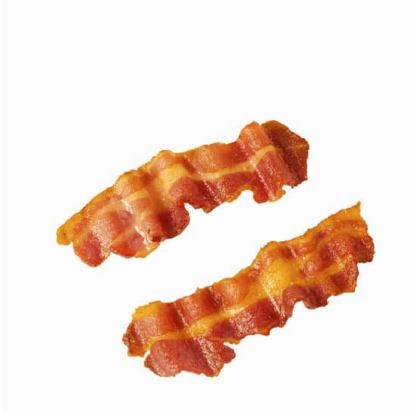
Greatest Barriers and Benefits

- Top barriers for non-participants:
 - ◆ Hygiene (smells, cleaning)
 - ◆ Attracting pests/insects
 - ◆ Not enough kitchen space
- Top benefits for participants:
 - ◆ Reduces waste to landfill
 - ◆ Right thing to do
 - ◆ Reduces GHG emissions



Most Confusing Items

Participants are most confused about where the following items belong:



Bacon



Coffee Filters



Tea Bags

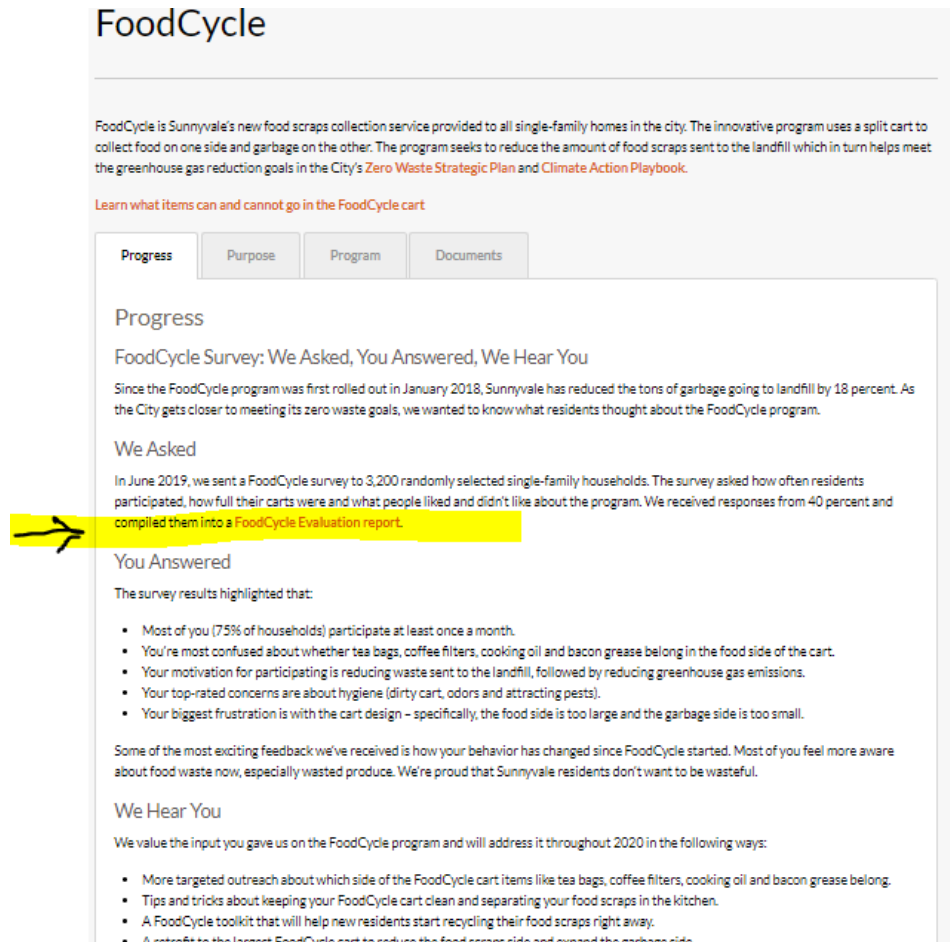


Cooking Oil

Win a prize if you can guess correctly!

Where to access the report:

- Website (search FoodCycle at Sunnyvale.ca.gov)



FoodCycle

FoodCycle is Sunnyvale's new food scraps collection service provided to all single-family homes in the city. The innovative program uses a split cart to collect food on one side and garbage on the other. The program seeks to reduce the amount of food scraps sent to the landfill which in turn helps meet the greenhouse gas reduction goals in the City's [Zero Waste Strategic Plan](#) and [Climate Action Playbook](#).

[Learn what items can and cannot go in the FoodCycle cart](#)

Progress | Purpose | Program | Documents

Progress

FoodCycle Survey: We Asked, You Answered, We Hear You

Since the FoodCycle program was first rolled out in January 2018, Sunnyvale has reduced the tons of garbage going to landfill by 18 percent. As the City gets closer to meeting its zero waste goals, we wanted to know what residents thought about the FoodCycle program.

We Asked

In June 2019, we sent a FoodCycle survey to 3,200 randomly selected single-family households. The survey asked how often residents participated, how full their carts were and what people liked and didn't like about the program. We received responses from 40 percent and **compiled them into a FoodCycle Evaluation report.**

You Answered

The survey results highlighted that:

- Most of you (75% of households) participate at least once a month.
- You're most confused about whether tea bags, coffee filters, cooking oil and bacon grease belong in the food side of the cart.
- Your motivation for participating is reducing waste sent to the landfill, followed by reducing greenhouse gas emissions.
- Your top-rated concerns are about hygiene (dirty cart, odors and attracting pests).
- Your biggest frustration is with the cart design – specifically, the food side is too large and the garbage side is too small.

Some of the most exciting feedback we've received is how your behavior has changed since FoodCycle started. Most of you feel more aware about food waste now, especially wasted produce. We're proud that Sunnyvale residents don't want to be wasteful.

We Hear You

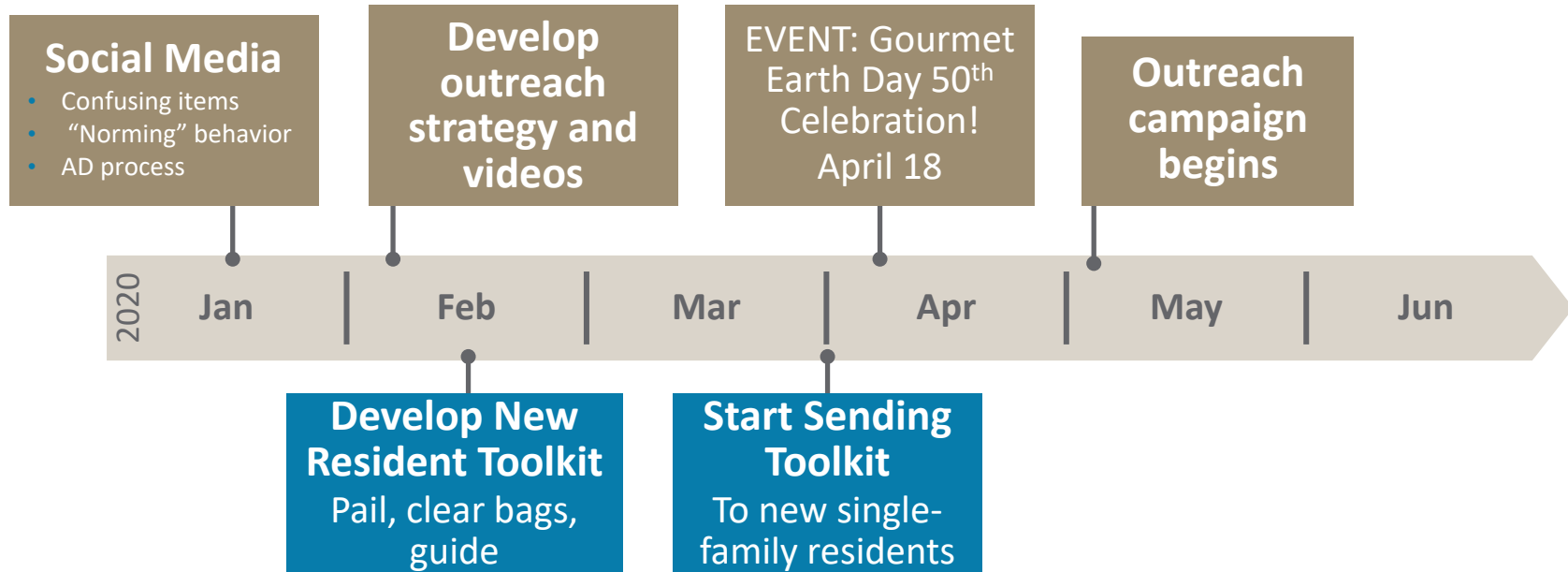
We value the input you gave us on the FoodCycle program and will address it throughout 2020 in the following ways:

- More targeted outreach about which side of the FoodCycle cart items like tea bags, coffee filters, cooking oil and bacon grease belong.
- Tips and tricks about keeping your FoodCycle cart clean and separating your food scraps in the kitchen.
- A FoodCycle toolkit that will help new residents start recycling their food scraps right away.
- A retrofit to the largest FoodCycle cart to reduce the food errors side and expand the garbage side.

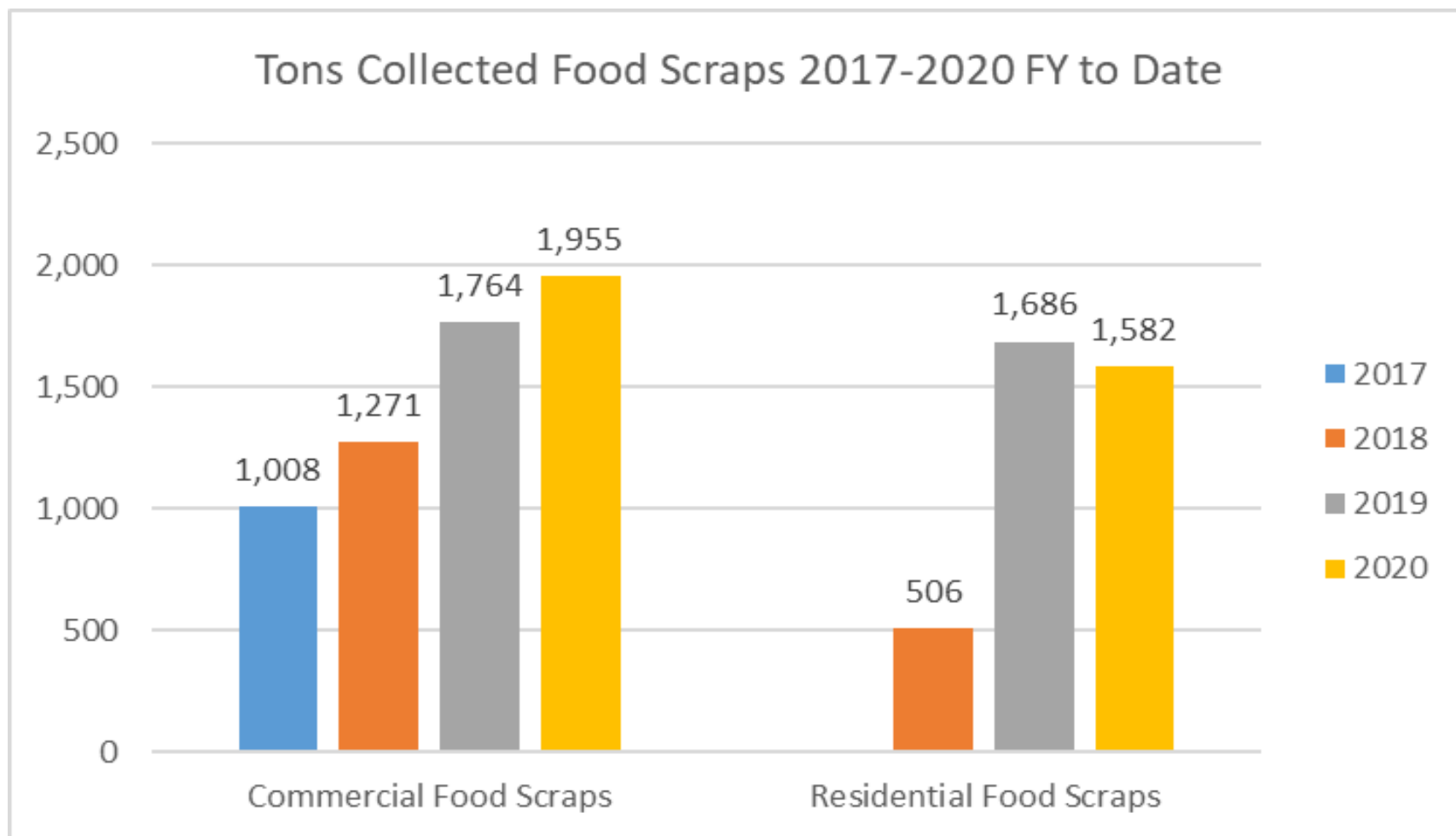
Next steps:

- More (year round) specific outreach targeting participants
- Toolkit for new residents
- Implement cart retrofit
- Consideration of a cart washing service
- SB 1383 requirements in future (mandatory, with fines)

Outreach Timeline



Current Food Scrap Tonnage Collection



Solid Waste & Recycling Franchise Agreement Update

- 7/2018 Council authorized a performance evaluation of Specialty Solid Waste & Recycling (Specialty)
- 4/2019 Council approved consultant contract to develop a single-source Request for Proposal (RFP)
- 2/2020 Council will consider the draft RFP and draft franchise agreement
- 4/2020 Proposal from Specialty due to City
- 7/2020 Staff presents key findings in proposal to Council in study session
- 12/2020 Staff presents recommendations to Council based upon negotiations with Specialty



Sunnyvale

Food Waste Co-Digestion Pilot Study

Water Pollution Control Plant (WPCP)

January 21st, 2020

Christine Jiang

Cameron KostigenMumper

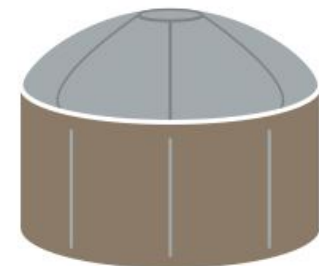


Presentation Outline

- Food waste co-digestion drivers and benefits
- How to convert food waste to energy
- Co-digestion pilot study performance measurements
- Economic and environmental benefits
- Future steps
- Questions?



DIGESTION TANK

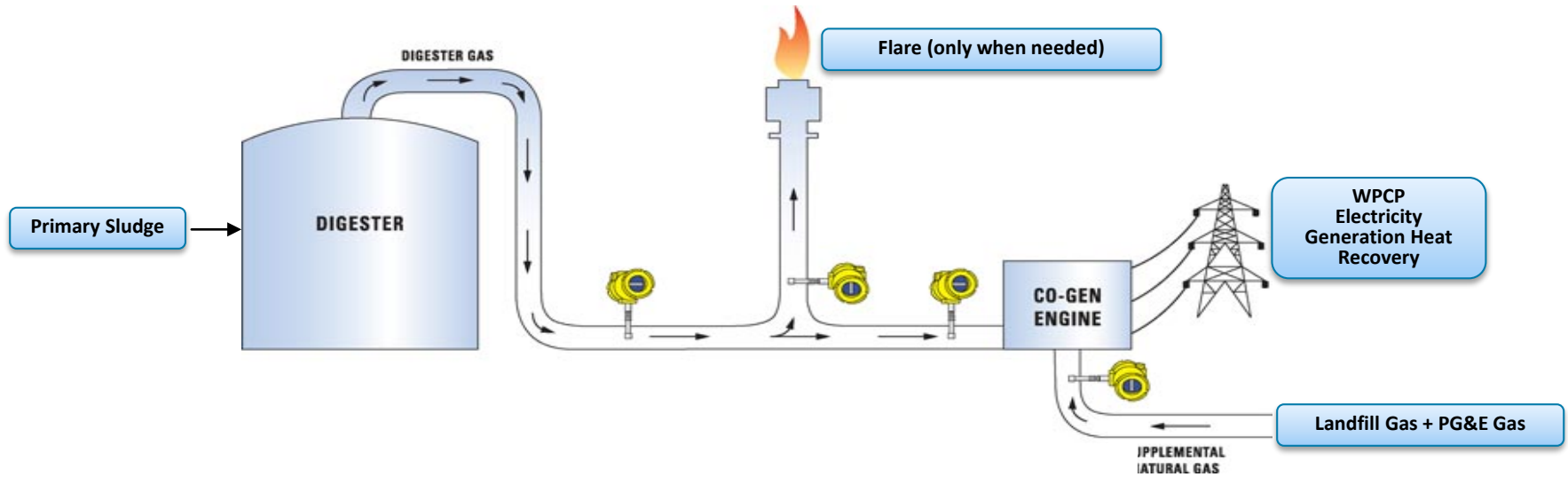


Food Waste Co-Digestion Drivers and Benefits

- Meet SB 1383 organics diversion requirements
- Utilize existing excess digester capacity
- Maximize biogas production (increase renewable power)
- Reduce transportation/disposal costs and vehicle emissions
- Potential cost savings and revenue opportunity



Waste to Energy Process



Gas Type	% of Total Gas Flow
Landfill Biogas	43%
Digester Biogas	29%
Air Blended Natural Gas (PG&E)	28%



Pilot Study Overview

- Implemented pilot study for co-digesting of food waste and wastewater primary sludge (*June 2019 – Present*)
- Collected operational and performance information for future full scale co-digestion program
- Assessed the environmental and economic benefits



Pilot Study Food Waste Pre-Processing

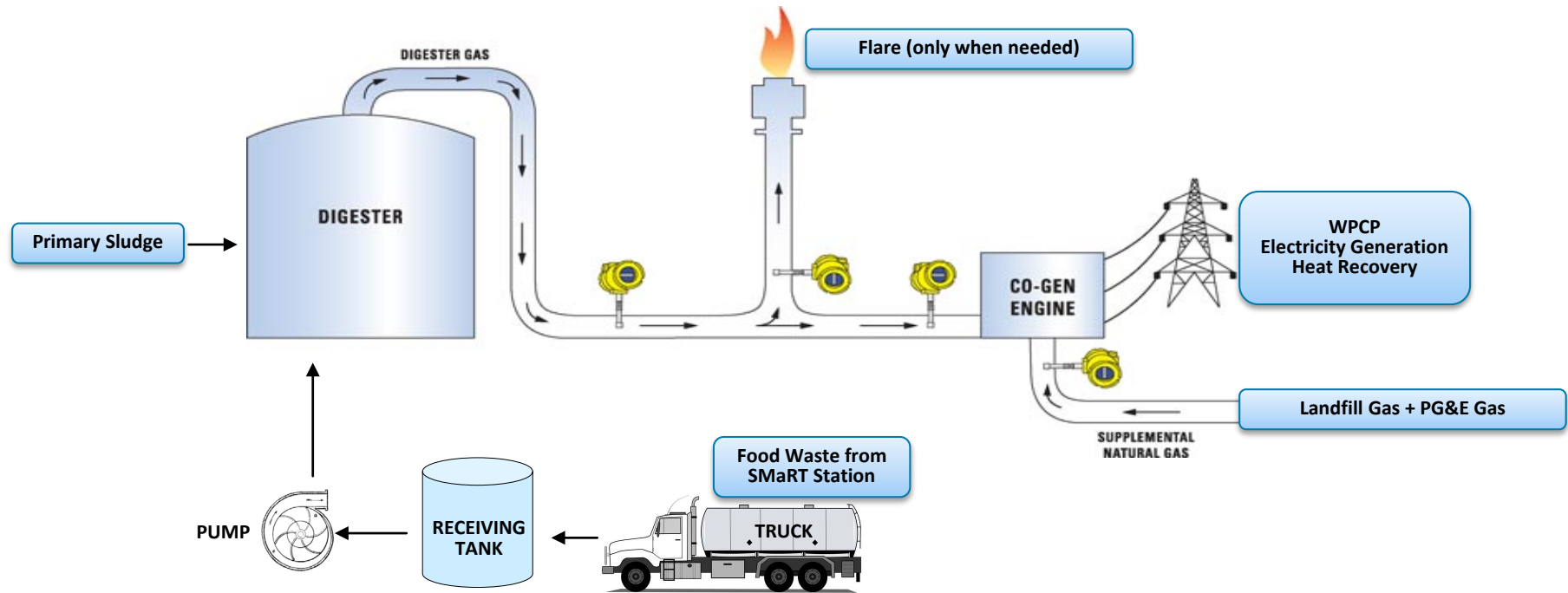
- The SMaRT station receives Food Scraps from residential and commercial sources (~ 30 tons per day)
- Food scraps converted to food mash (~ 40% conversion efficiency)



Pilot Study Site



Pilot Study Schematic



- Digester #1 fed primary sludge + food waste
- Digester #3 fed primary sludge only (control)

Pilot Study Summary

- Food waste delivered

Total (gallons)	Ave. Daily Loading (gallons)
250,000	1,800

- Food waste

pH	TS (%)	VS (%)
3.9	14.7	84

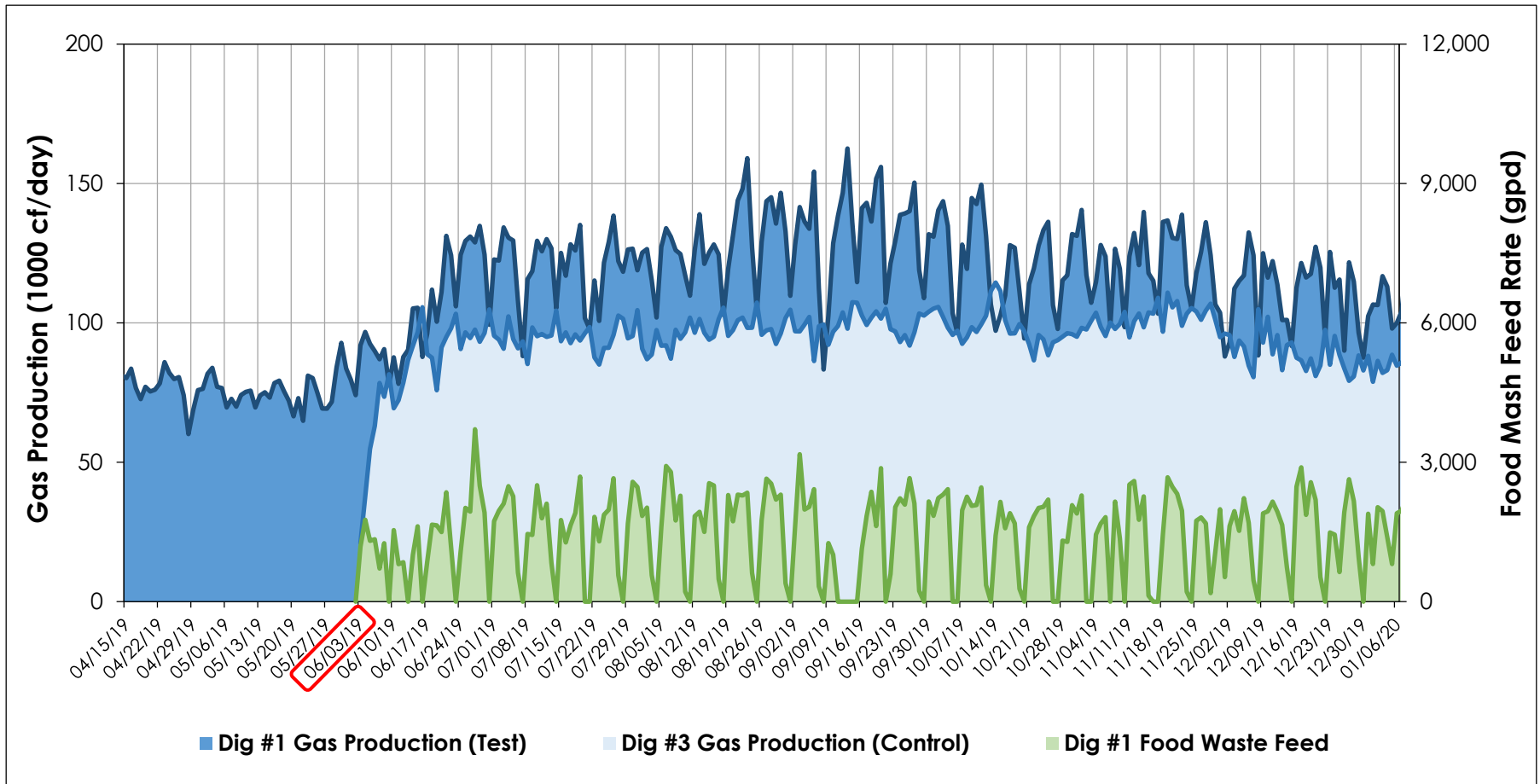
- Digesters

	Hydraulic Loading (%)	VS Loading (%)
Primary Sludge	93	78
Food Waste	7	22

- No negative impact on digester performance
- Biogas production increase: 25 %

Pilot Study Summary

1,800 gallons/day of food waste increased biogas production by 25%



Benefits to the WPCP

- Utilize existing digester capacity
- More energy recovery: electrical power and heat

Year	Food Waste (Tons/day)	Modeled Biogas Production (SCF/year)	PGF Recovered Electrical Production (kWh/year)	Potential Cost Saving (\$/year)
2019	20	7,553,716	382,333	\$ 114,700
2020	40	15,107,432	764,667	\$ 229,400
2021	50	18,884,290	955,834	\$ 286,750
2022	60	22,661,149	1,147,000	\$ 344,100
2023	70	26,438,007	1,338,167	\$ 401,450
2024	80	30,214,865	1,529,334	\$ 458,800
<u>2025</u>	100	56,652,871	2,867,501	\$ 860,250
<u>2035</u>	140	79,314,020	4,014,502	\$ 1,204,350

Future Steps

- Evaluate any unintended impacts (grit accumulation, increased nutrient loads, biogas variability, potential odors, etc.)
- Optimize biogas utilization system capacity
- Cost and revenue evaluation
- Expand co-digestion program
- Implement Food Waste + Algae codigestion pilot study (phase II)