

This presentation premiered at WaterSmart Innovations

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“You May Have a Leak!”

Automating Leak Alert Notifications

Kevin Galvin, San Francisco Public Utilities Commission

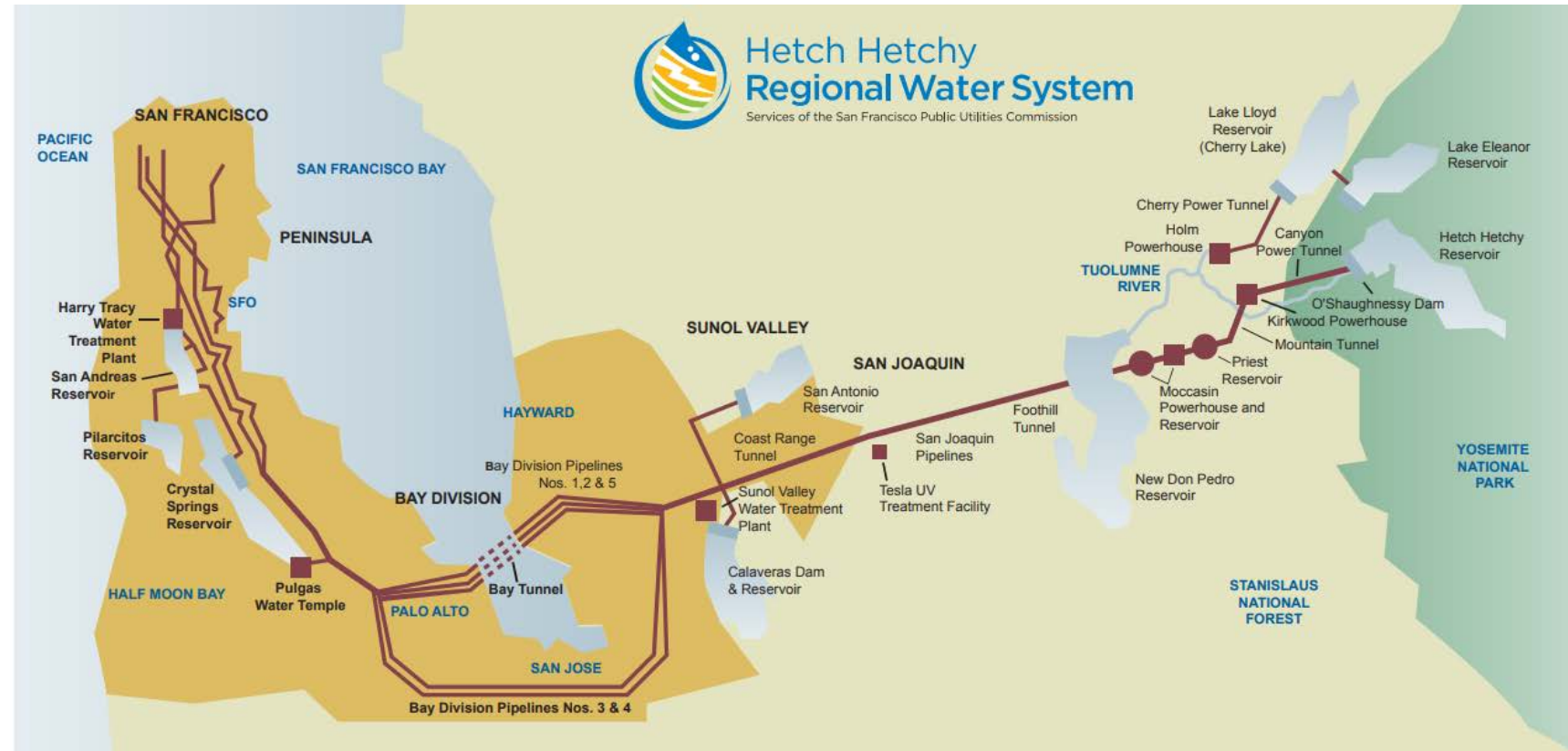
Chris Hewes, Woodard & Curran

WaterSmart Innovations 2018 - Wednesday October 3, 2018 – 3:55 pm

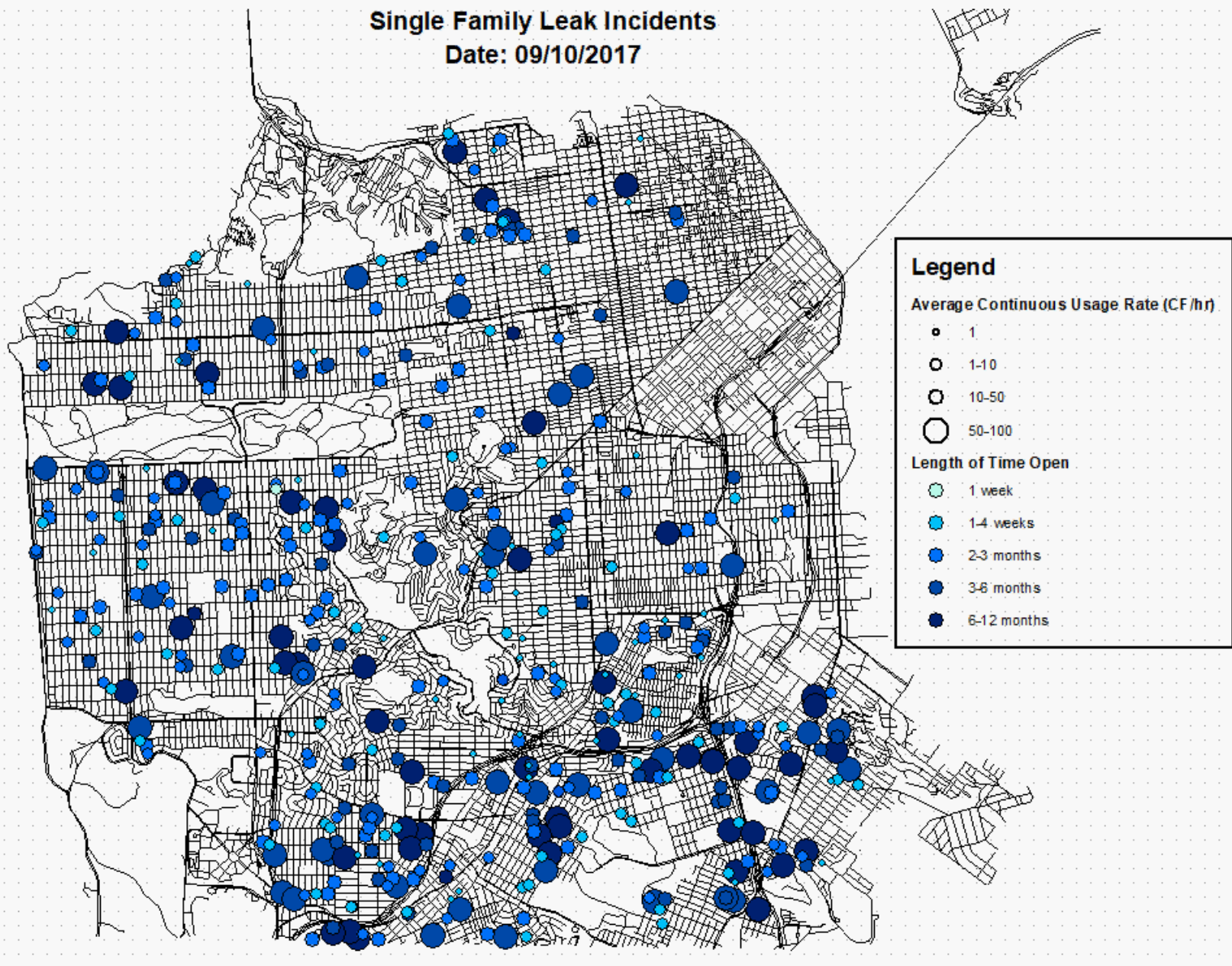


SFPUC Background

- Wholesale /retail water supplier
- 27 wholesale water agencies
- 11 reservoirs
- 280-plus miles of pipelines
- In City: 178,000 customers
- JD Power #3 in conservation satisfaction in nation 2018



Single Family Leak Incidents
Date: 09/10/2017



AMI & STAR Consumption

- Fixed network with 84 data collectors and ~178,000 meter transmission units using Aclara STAR System
- Custom in-house AMI data screening tool
- My Account in-house customer portal



Pilot Postcard Program



- March 2015 – August 2017
- Weekly postcards to single-family customers with 3 days of constant usage of at least 1 CF/hour
- Only review period was Wednesday through Friday



Pilot Outreach Results

- 7,200 unique accounts notified (about 6% of all single family customers)
- About 76% stopped in 4 weeks
- Most had low rate of constant usage, while about 13% had high usage of 5+ CF/hr
- Reaching chronic constant users took extensive follow up; some never responded


Expanded Automated Program

- Completely automated, runs daily instead of weekly
- Added voice call, text message, email, and letter (no postcard)
- 3 rounds of noticing using all methods available
- Notices in English, Chinese, Spanish and Tagalog
- Configurable and scalable

Mi-Nexus Back Actions ? Help iVIDEO i-INFO

Account Info

Account ID: #####
SPID: #####
Premise Address: ### Magellan Av, San Francisco, CA 94116
Account Type: RES-SWTR
Account Status: Active Service Agreement
Incident Status: Current Open Incident (since 08/13/18)
Account Name: Doe, John
Last Notice Sent On: 08/14/2018
Incident # - Notice #: 1 - 1
of times on leak report: 2

Notes (0) 
no notes

Customer Name	Phone	Email Address	Mailing Address	Opt Out
Doe, John	(###) ###-#### (H) (###) ###-#### (W)		✗ ### Magellan Ave San Francisco CA 94116	None

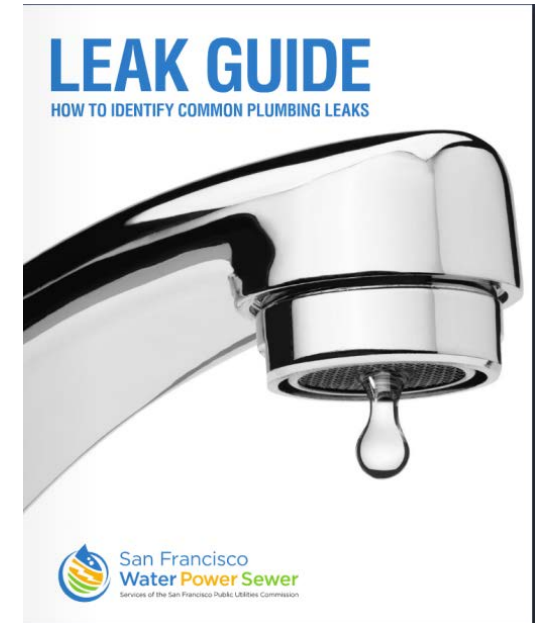
Communication History

Leak History

Service Points

Resources Available for Customers

- Investigate the leak or call a plumber
- Schedule a free SFPUC Water-Wise evaluation
- Review hourly usage on My Account
- FAQs and info on www.sfwater.org/homeleaks
- Leak guide in English, Chinese and Spanish
- Seek a high bill adjustment through SFPUC Customer Service



DO YOU HAVE A LEAK?

A home with plumbing leaks can lose over 70,000 gallons of water each year – that's enough water to fill a bathtub! Court two feet deep! Toilets are the most common sources of household leaks, although leaks can also occur in faucets, irrigation systems, or even a home's main water service line. While most plumbing leaks can be easily repaired by a homeowner, they often go unnoticed and can waste thousands of gallons of water per month. This Leak Guide will help you identify common plumbing leaks and provide steps to make simple repairs yourself.

A cutaway diagram of a house showing various plumbing components. Numbered callouts point to specific areas: 1. Water meter in the yard; 2. Toilet in the bathroom; 3. Shower in the bathroom; 4. Kitchen sink faucet; 5. Irrigation system in the yard; 6. Service line in the yard; 7. Dishwasher in the kitchen; 8. Clothes washer in the laundry room.

Expand

WHERE TO START

1	Water Meter.....	4
2	Toilet.....	6
3	Shower.....	8
4	Sink Faucet.....	8
5	Irrigation System.....	9
6	Service Line.....	10
7	Dishwasher.....	11
8	Clothes Washer.....	11

What is a Leak Incident?

- Incident - a continuous period of time that meter data are producing daily leak alerts

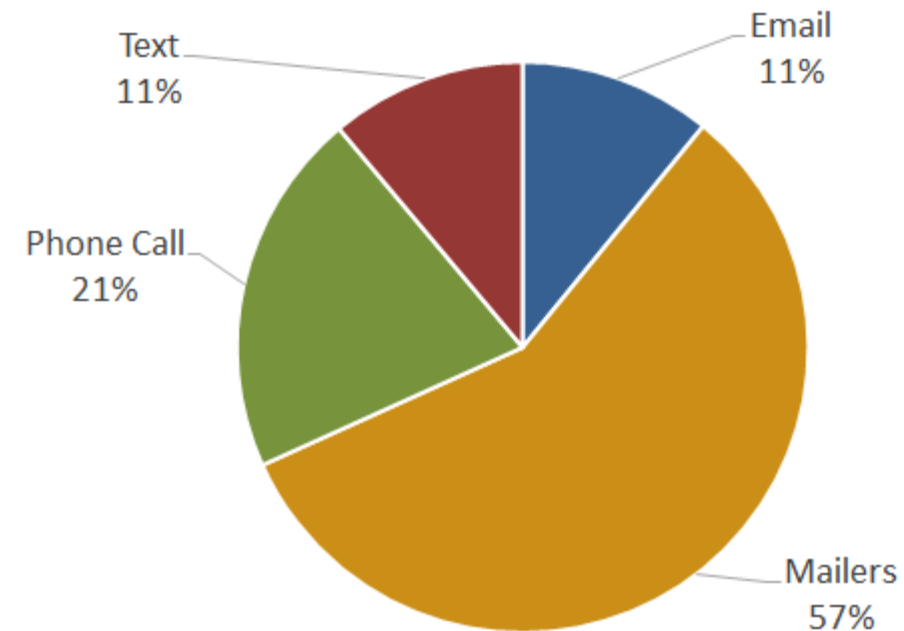


- Daily database extract used for internal reporting using IBM Cognos

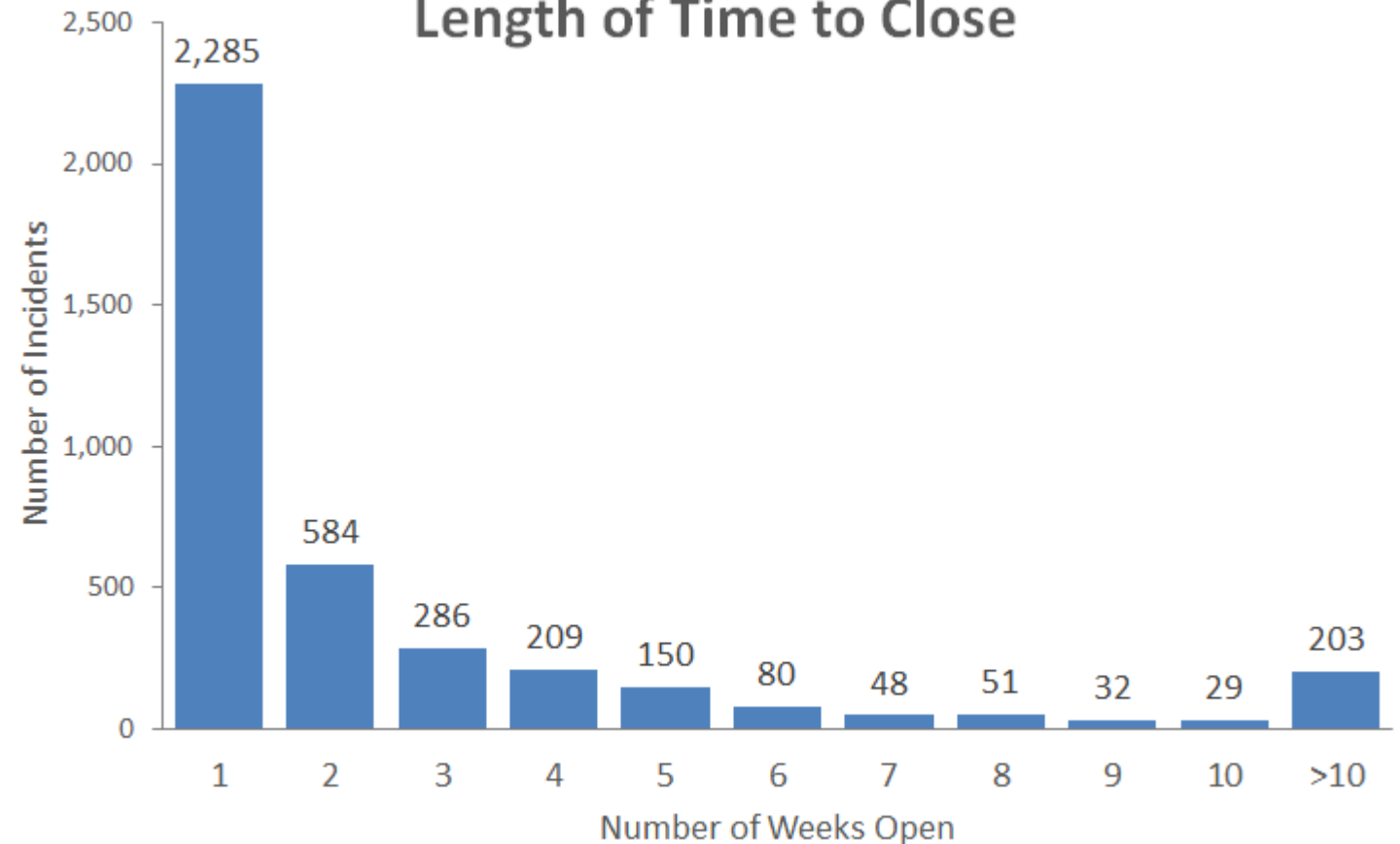
Findings: September 2017 – September 2018

- 17,525 notifications sent to 4,968 accounts

Notification Method Breakdown



Length of Time to Close





Research Study of Alert Effectiveness

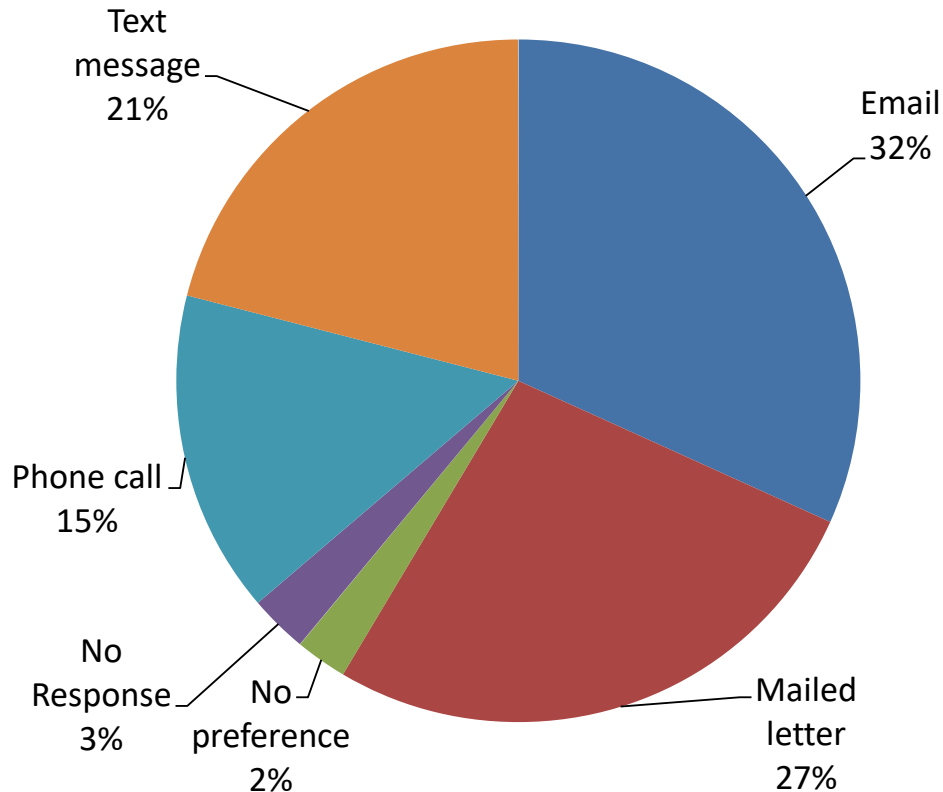
Dina Gorenshteyn, UC Berkeley

- Goals of study: how much better do multiple communication methods compare to single letter in getting customers to respond to leaks?
- 4 months with Research Group A (all notice methods) vs Group B (mailer only)
- Initial findings:
 - Customers who are contacted using multiple methods fix leaks faster and are twice as likely to take “first steps” to investigate their leak
 - Strong evidence that phone call is not as effective as text and email
 - Leakers consume more water (prior to the leak), have more occupants, and live in higher income areas (compared to average)

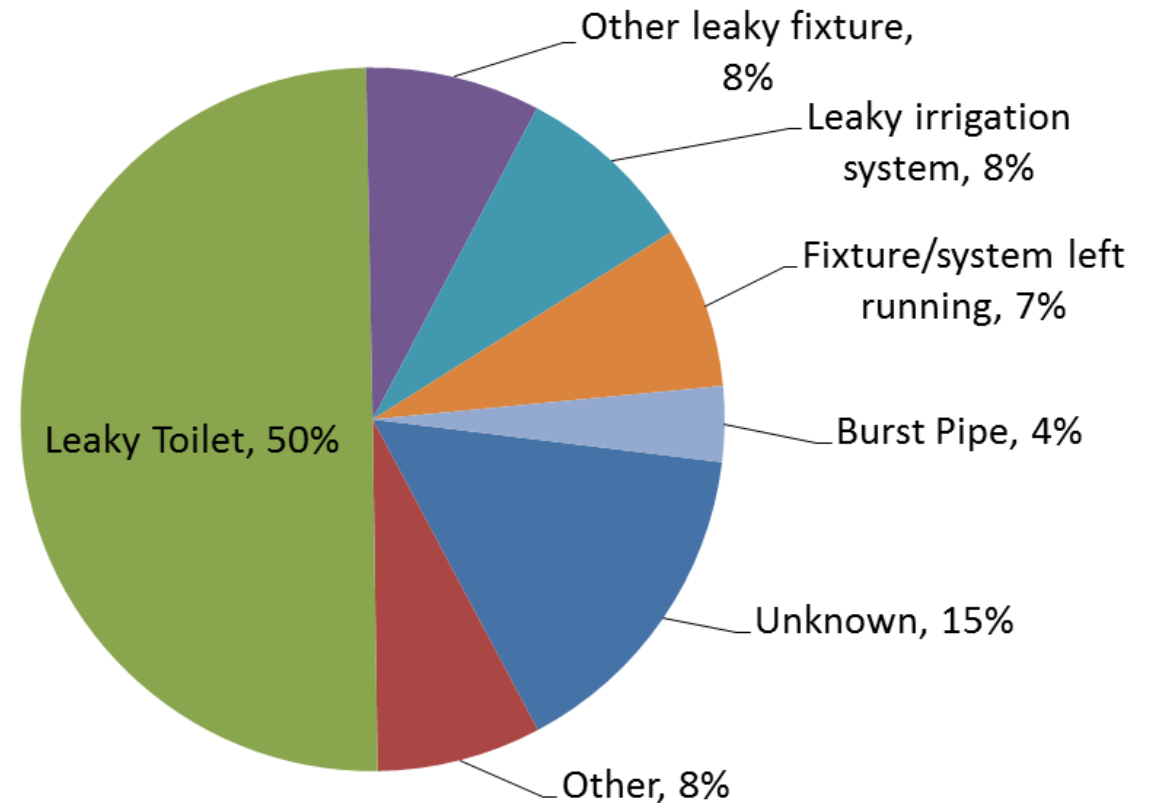
Survey: Notice Preferences and Leak Types

- 2,112 surveys with 586 responses (28% response rate)

Do you have a preference of how to be contacted by the SFPUC in the future about continuous water use?

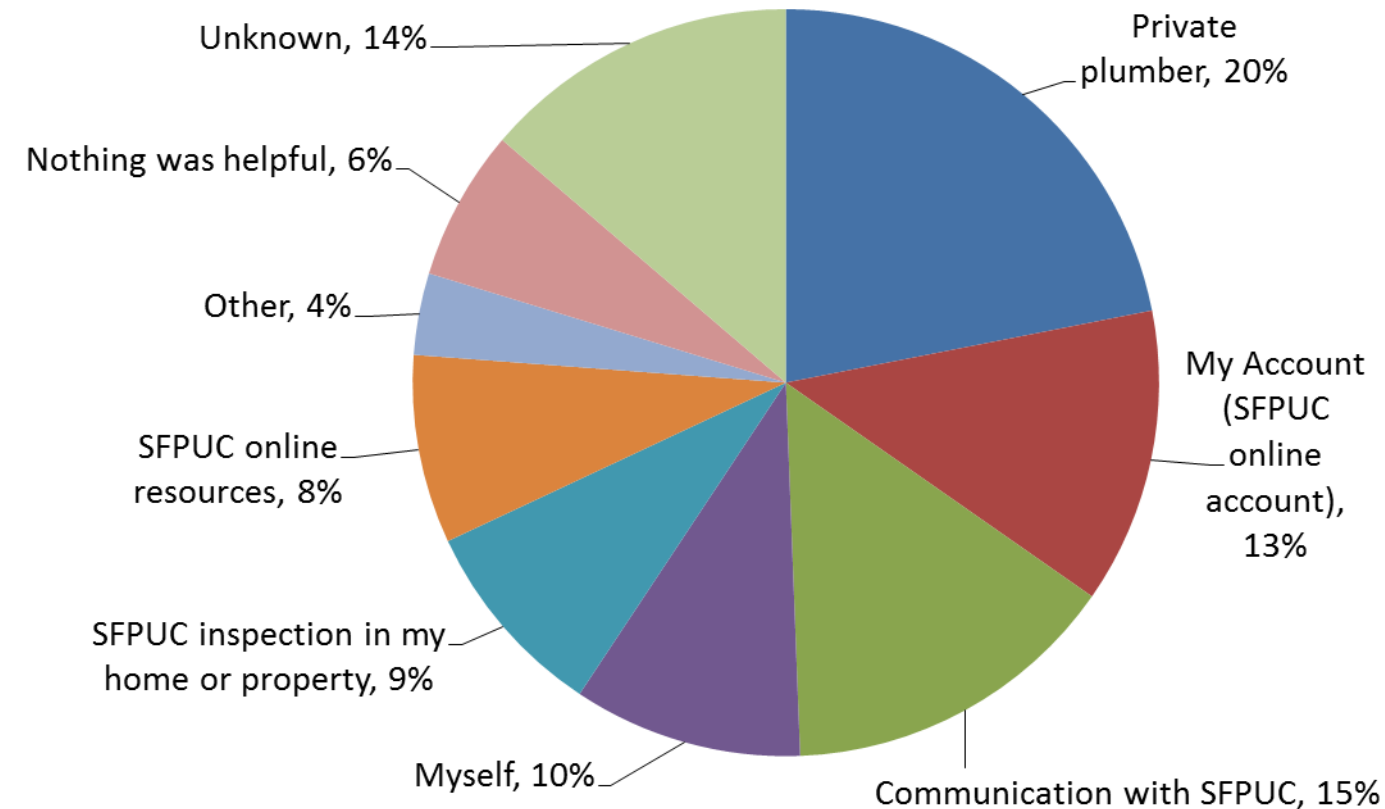


Were you able to determine the cause of the continuous water use?

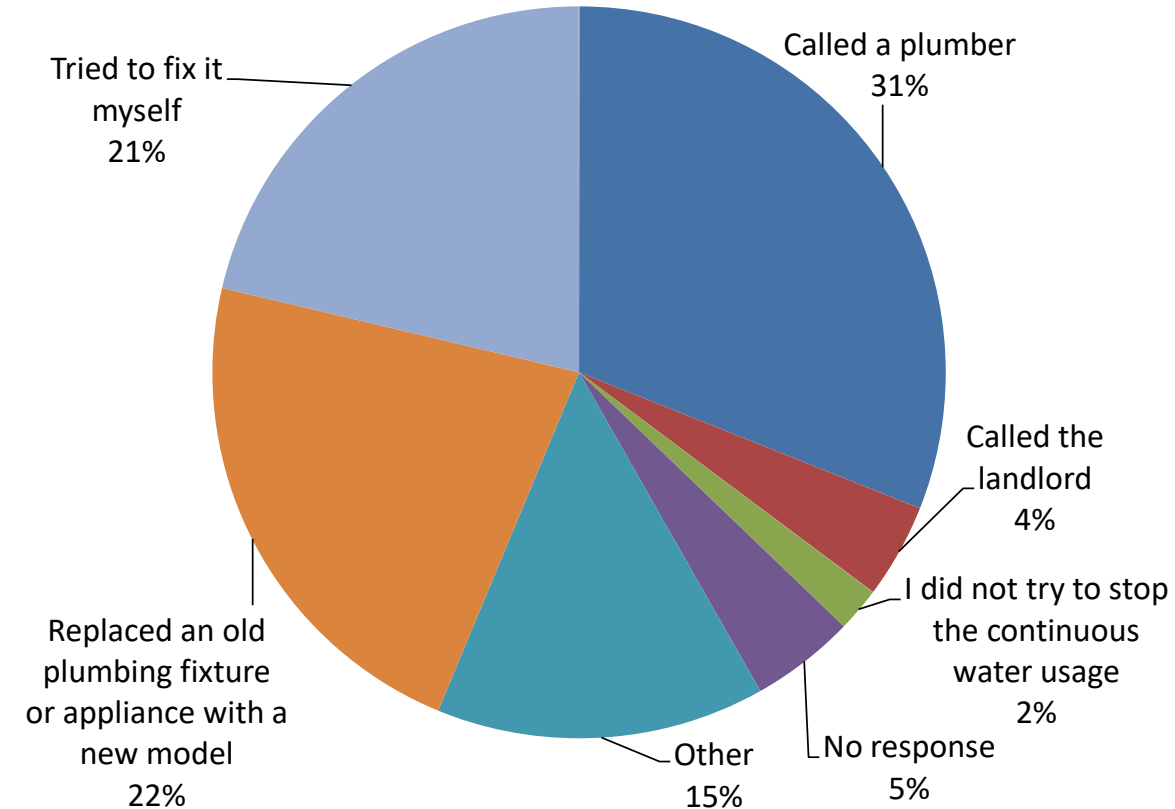


Survey: Useful Resources

What resources were helpful in learning about and trying to identify the cause of continuous water use?



How did you go about trying to stop the continuous water use?



Challenges

- Scaling notification thresholds appropriately
- Preparing staff to respond to customer calls
- Understanding customer data architecture:
 - Contact data (multiple phone types, emails)
 - Account holder vs secondary authorized representatives
 - Legal property owner vs account mailing vs premise addresses
 - Active vs inactive accounts
- Long-term leakers



Tips for Planning Ahead

- Build in flexibility in noticing rules
- Customer opt out flexibility (not as important as we thought)
- How you want to report? (data table design effects your ability to report)



Future Direction

- Developing relevant thresholds for large multifamily properties
- Optimizing our communications for irrigation accounts
- Developing thresholds for specific non-residential sectors



Questions?

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www.sfgov.org/homeleaks

