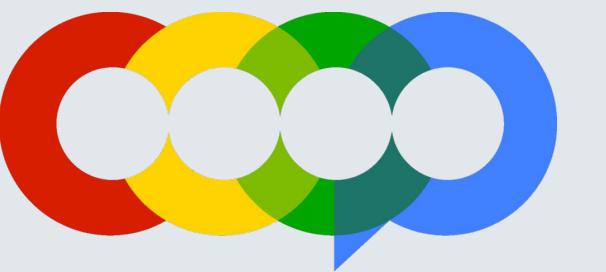


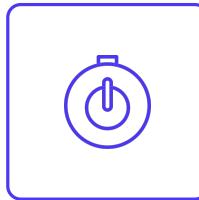
# 311 Cases Project Overview

*Issac Zhao, Marwat Al-Olefi, Andres Zamora, Ceren Dogan*

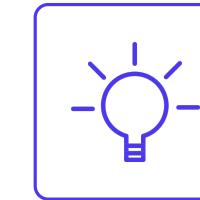
SOCIALNICHEGURU



# Agenda



Part 1:  
Structure of the Data



Part 2:  
Data Overview



Part 3:  
Hotspots Overview



Part 1:  
Structure of the Data

# STRUCTURE OF THE DATA





# 311 Case Data - Basics

- SF311 is easy-to-remember telephone number that connects residents, businesses, and visitors to representatives ready to help with general government information and services.
- SF311 started taking web requests in 2008, social media in 2009, and mobile requests in 2010 from apps that connect to the open311 API.
- 311 offers customers 4 channels to submit service requests: by calling 311, using the SF311 Mobile App, visiting the website, or messaging through Twitter.
- Mobile App has the highest service requests according to the separate database.
- % 44 of the service requests are coming from the “Phone” source and % 39 of the service requests are coming from “311/Mobile App” source.
- Data is refreshed every morning at approximately 10am.

# Reliable and Unreliable Columns

## Reliable Columns

**Columns:** Status, Status Note

**Reasons:**

1. **Status** Column only shows a single-word indicator of the current state of the service request
2. **Status Note** Column explains why status was changed to current state or more details on current status than conveyed with status alone

## Reliable & Useful Columns

**Columns:** CaseID, Closed, Responsible Agency, Category, Request Type, Request Details, Address, Street, Neighborhood, Latitude, Longitude, Source

**Reasons:**

1. Column only shows detail insights of the cases
2. Relational columns where
  - a. **Responsible Agency** - Category, Request Type & Request Details
  - b. **Address** - Street, Neighborhood, Latitude, Longitude

## Unreliable Columns

**Columns:** Updated

**Reasons:** Column only shows when the date and time when the service request was last modified. Column does not show the history of modification.

## Unreliable But Useful Columns

**Columns:** Opened

**Reasons:** Column only shows when the date and time when the service request was made, not the actual occurrence time of the event



Part 2:  
Data Overview

# DATA OVERVIEW

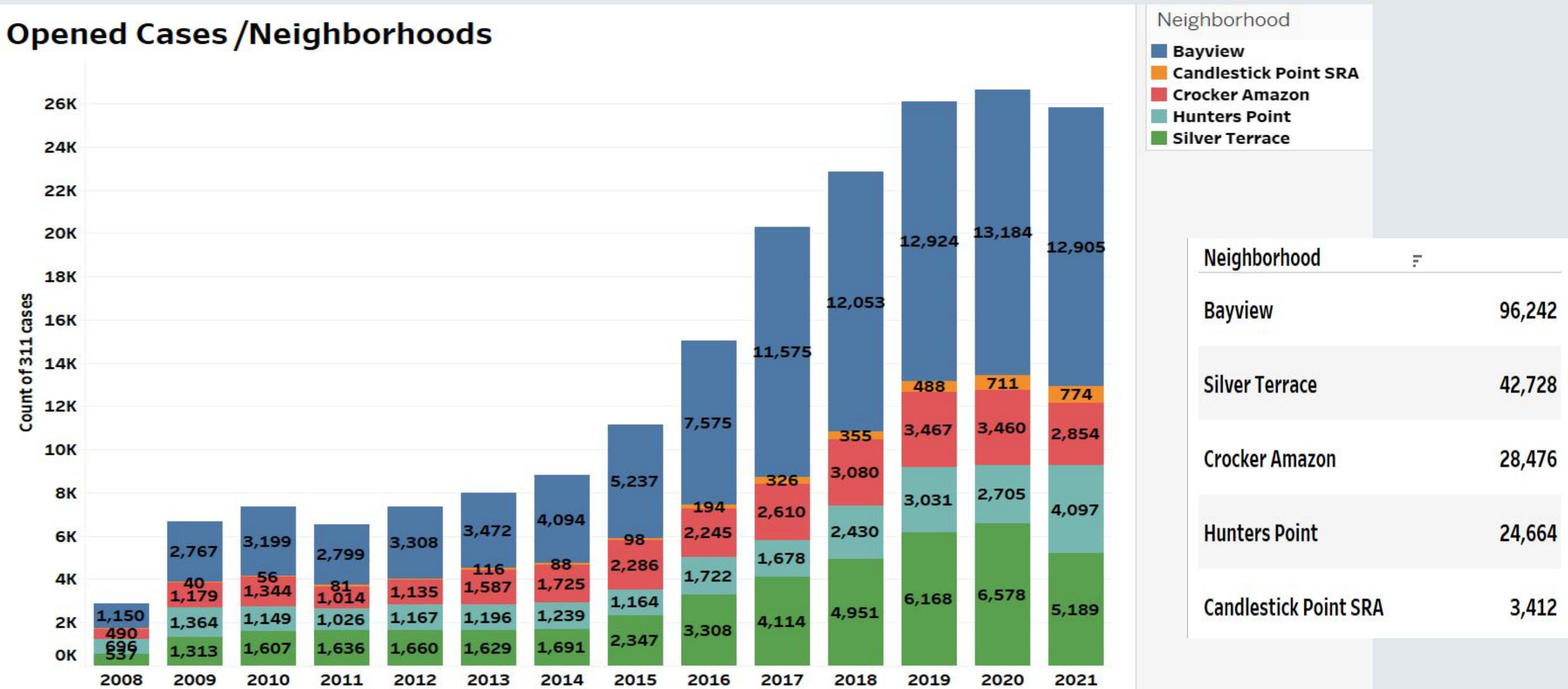


# What do we know:



- Count of cases through years 2008 to 2021
- Bayview has the most 311 cases.

## Opened Cases / Neighborhoods

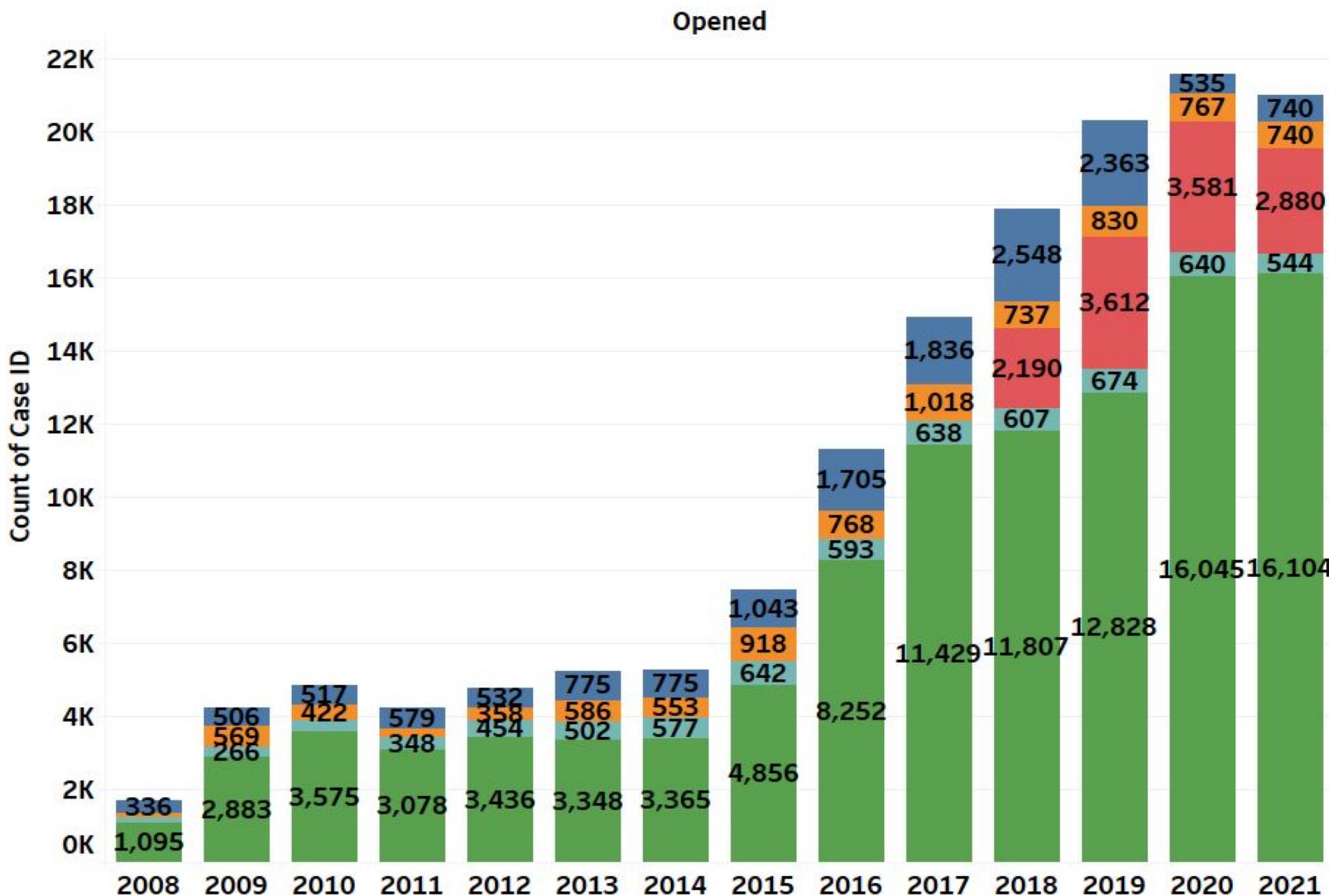


# What do we know:



- Majority reports are for Street & Sidewalk Cleaning
- Parking Enforcement reports start to increase by 2018

## TOP 5 CATEGORIES BETWEEN 2008-2021

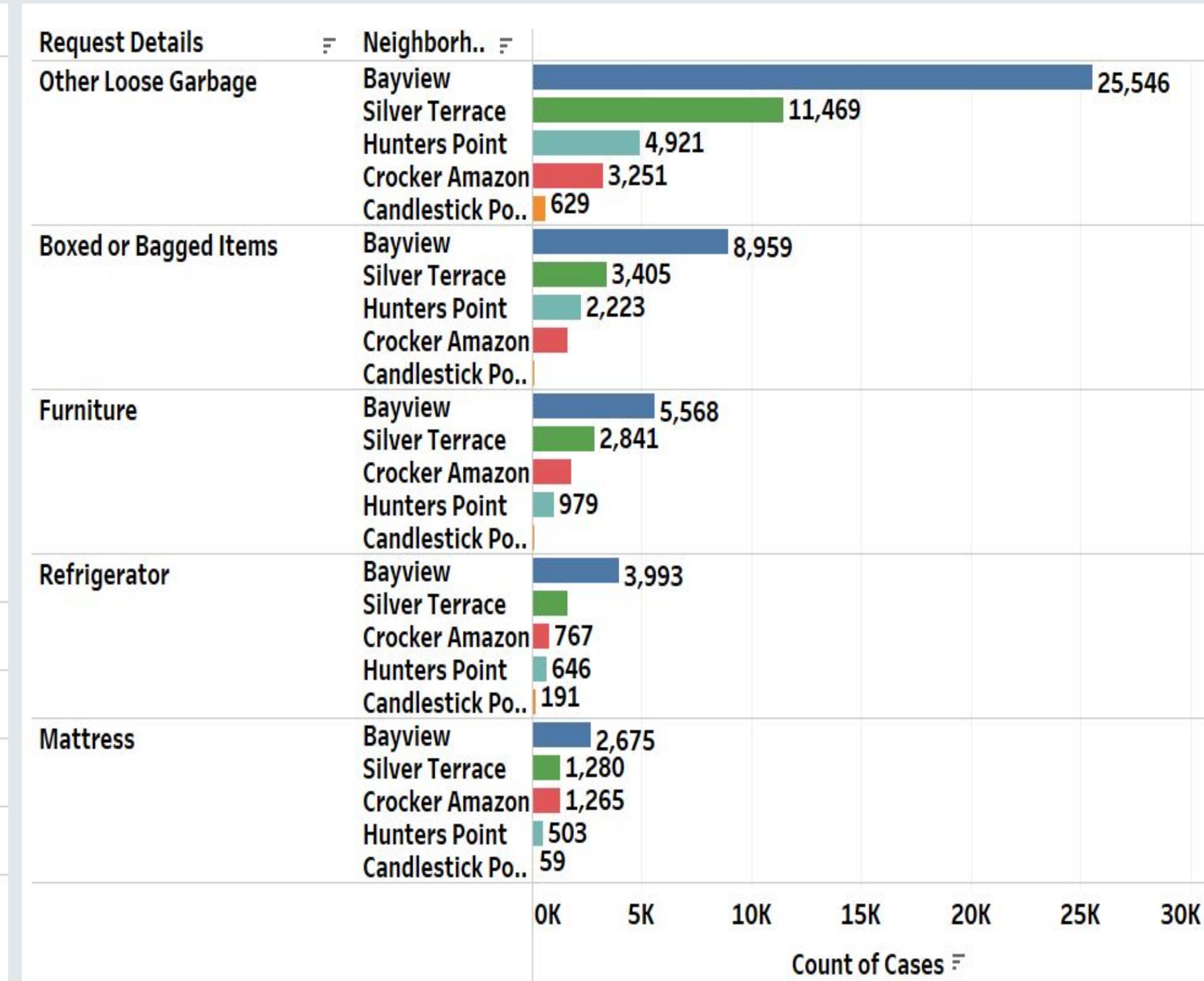
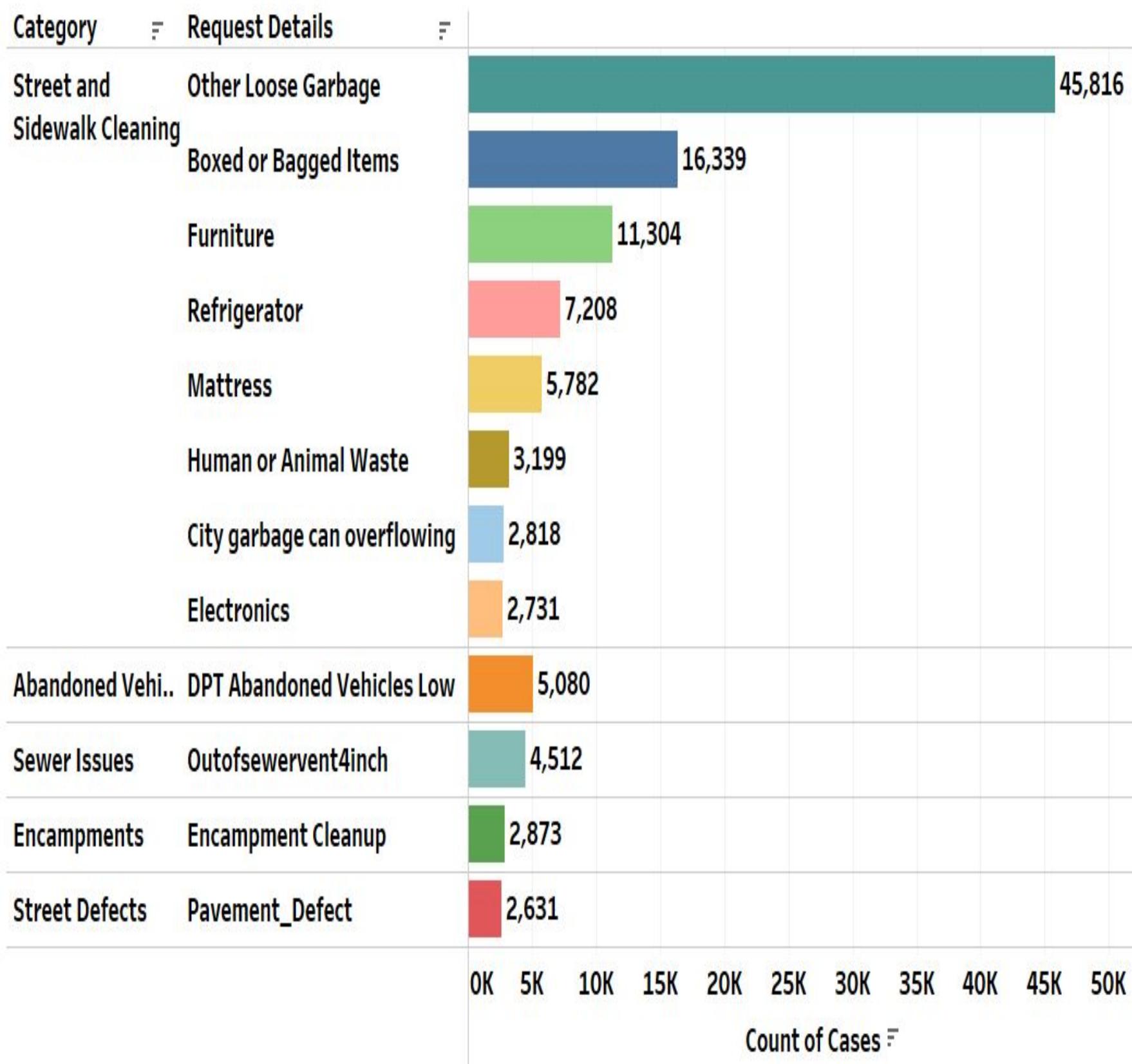


Category
Abandoned Vehicle
Graffiti
Parking Enforcement
Sewer Issues
Street and Sidewalk Cleaning

Category	Count
Street and Sidewalk Cleaning	102,101
Abandoned Vehicle	14,790
Parking Enforcement	12,263
Graffiti	8,603
Sewer Issues	6,940

## What do we know:

- Request Details for the top 5 categories
- Top 5 requests for the specific neighborhoods



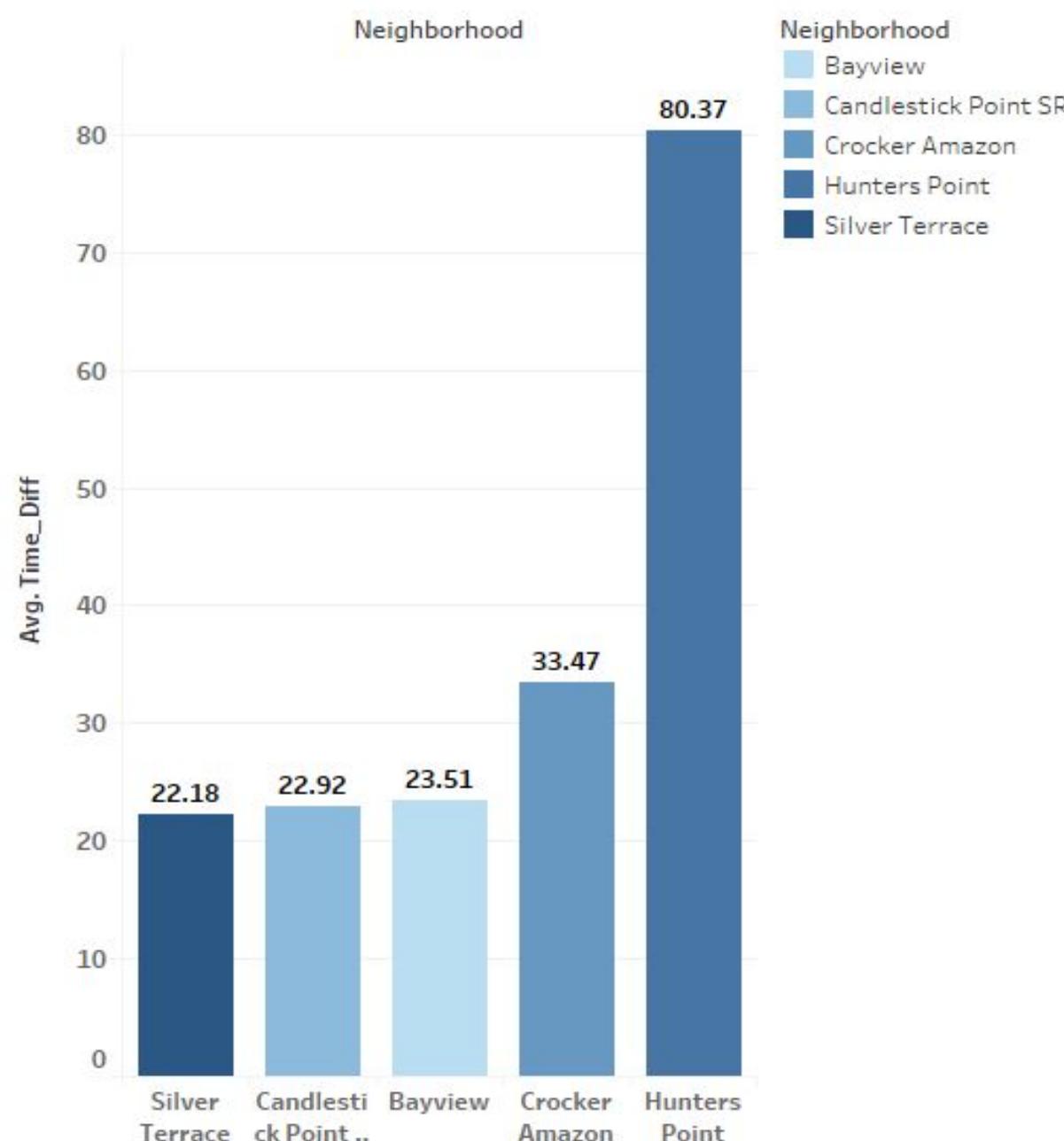
# What do we know:



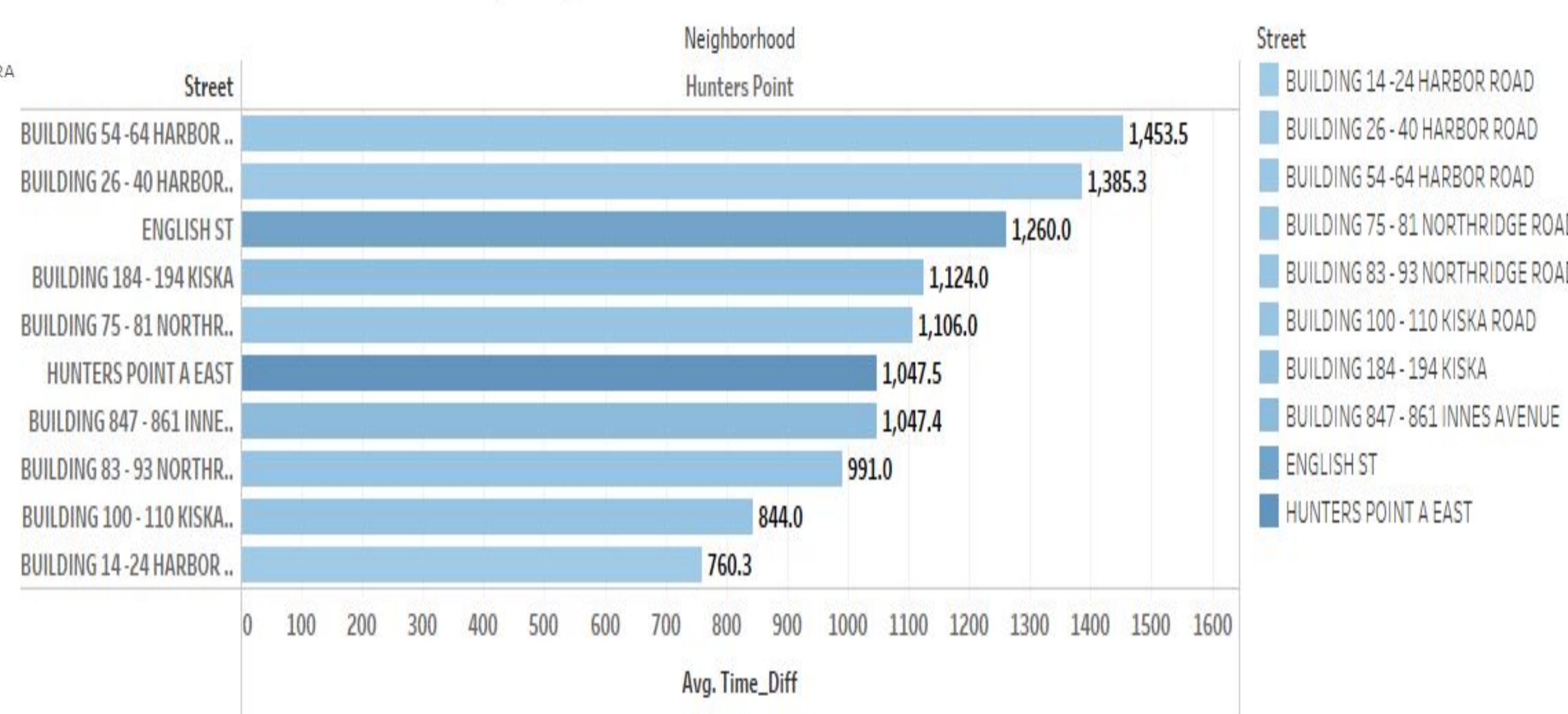
- Hunters Points is the most inefficient with resolving cases with the avg. resolve time of 80.37 days
- Bayview has the most cases of 94,970 cases
- Hunters Point has 24.436 cases
- Candlestick Point SRA has 3,303 cases

- Top 10 most inefficient cases are on Harbor Road, Northridge Road, and Kiska Road
- 9/10 are SFHA Request (Category) and 1/10 in Streetlights (Category)
- Number of cases range from 1 - 5

Avg Resolve Time in Neighborhoods (Days)



Avg Resolve Time in Neighborhoods (Days)

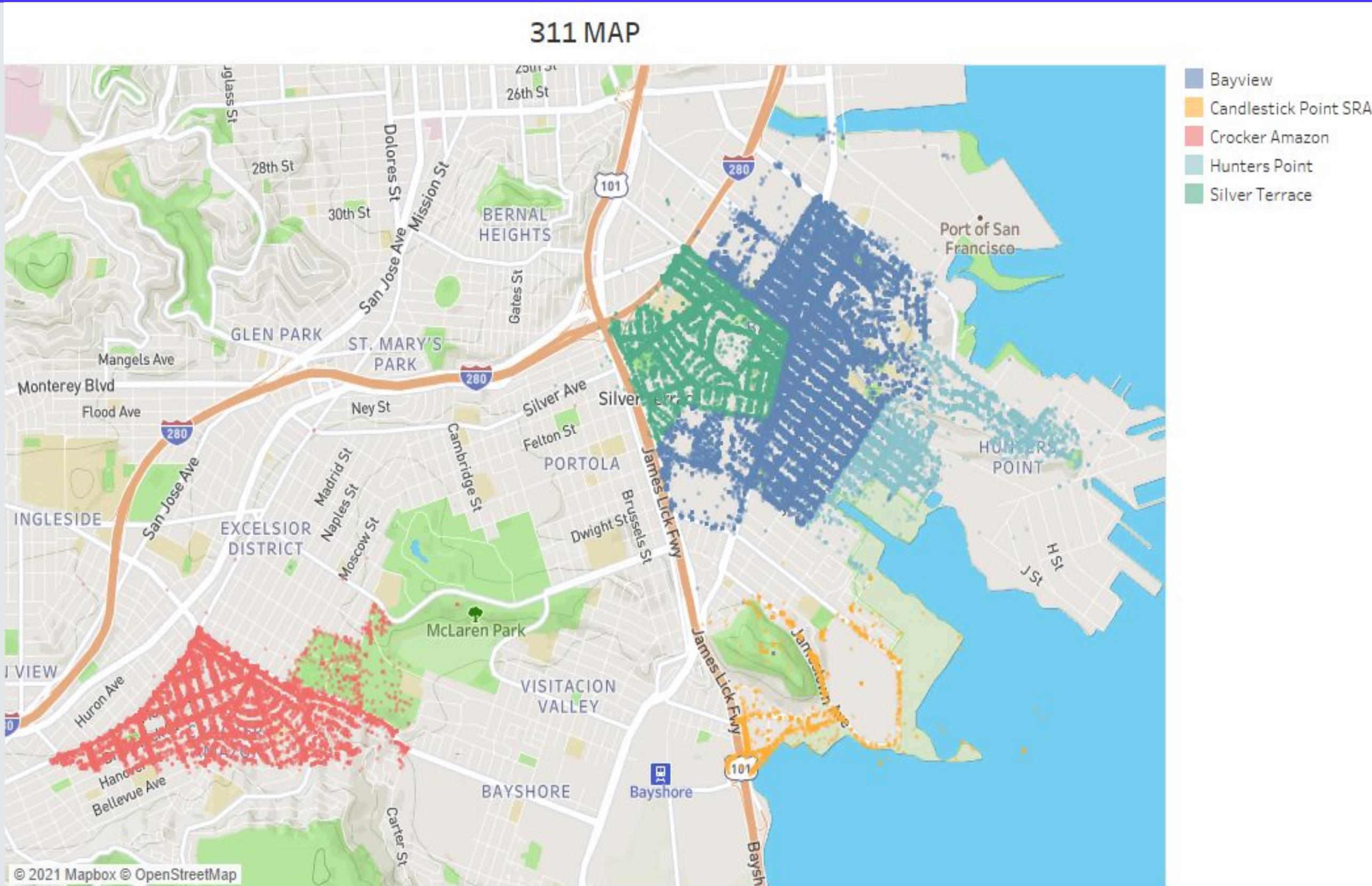


Average of Time\_Diff for each Neighborhood. Color shows details about Neighborhood. The data is filtered on Status, which keeps Closed.

# Overview of 311 Cases in 5 Neighborhoods



High Density = More Cases



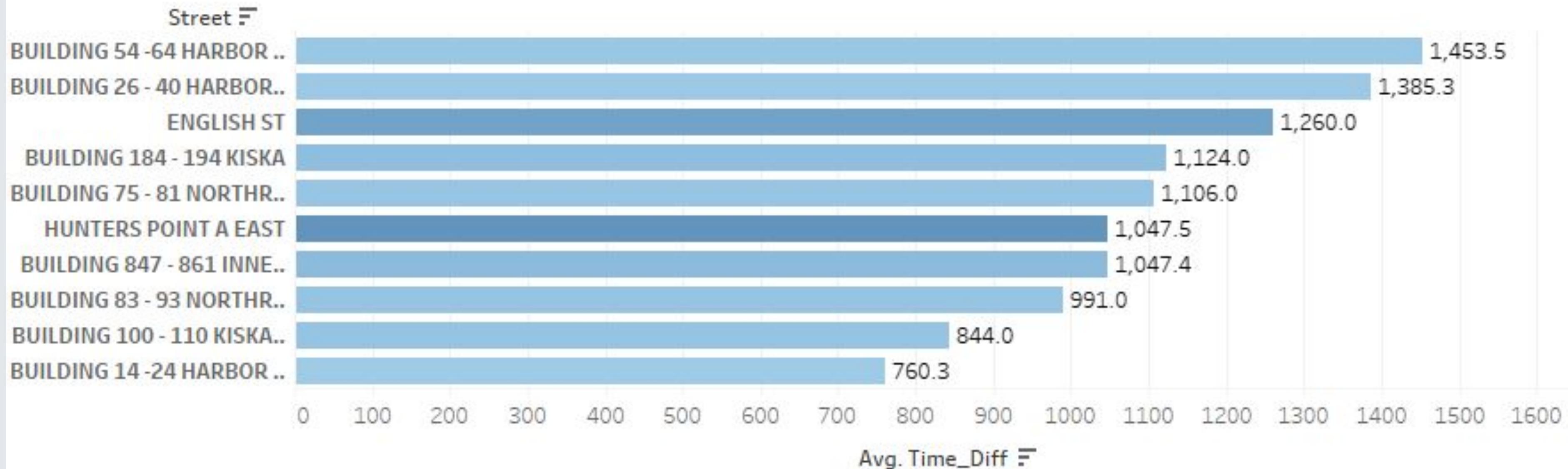
Map based on Longitude and Latitude. Color shows details about Neighborhood. Details are shown for Request Details, Case ID and Status Notes.

## What do we know:

- Top 10 most inefficient cases are on Harbor Road, Northridge Road, and Kiska Road in the 5 neighborhoods
  - All from Hunters Point neighborhood
- Longest resolve time is 1,453.5 days



### AVG Resolve Time on Streets





Part 3:  
Hotspots Overview

# HOTSPOTS OVERVIEW



## BACKGROUND DATA INTRODUCTION

### Top 5 Categories:

- **Abandoned Vehicles:** Report a vehicle that is suspected to be abandoned or has been parked in the same space for more than 72 hrs
- **Graffiti:** Report buildings, public property, and other objects that have been vandalized with graffiti
- **Parking Enforcement:** Abandoned Vehicles or Blocked Driveway or Other Illegal Parking
- **Sewer Issues:** Report water related issues including flooding, sewage back-ups, & leaking fire hydrant
- **Street Sidewalk Cleaning:** Abandoned Furniture, Human/Animal Waste, Mattress, Medical Waste

### 2019-2021:

- 2019: Pre Pandemic
- 2020: Pandemic
- 2021: Post Pandemic

### 5 Neighborhoods:

- Bay View
- Hunters Point
- Crocker-Amazon
- Candlestick
- Silver Terrace

### Bay View:

- One of the few places in the city where working-class people and low-income households reside
- Deals with geographic isolation of the city and low level of transit services → reliance on private vehicles

## RESEARCH METHODOLOGY:

### Primary Location Variables:

- **Longitude and Latitude:** extracted from the google maps on the request form
  - *Constraints:* Some cases don't have a Latitude and Longitude for mapping because sometimes cases occur at a location without a valid street address. These cases are forwarded to the departments with a description of the location instead of a verified street address.
- **Street:** extracted from the Address field and grouped all addresses into streets
  - *Constraints:* The street column was added after February 2019
- **Address:** Intersections inputs are developed when the forum under Location includes “&”
  - *Constraints:* intersections are available, but doesn't capture all of the case ID inputs since some users will put exact address instead of only intersections

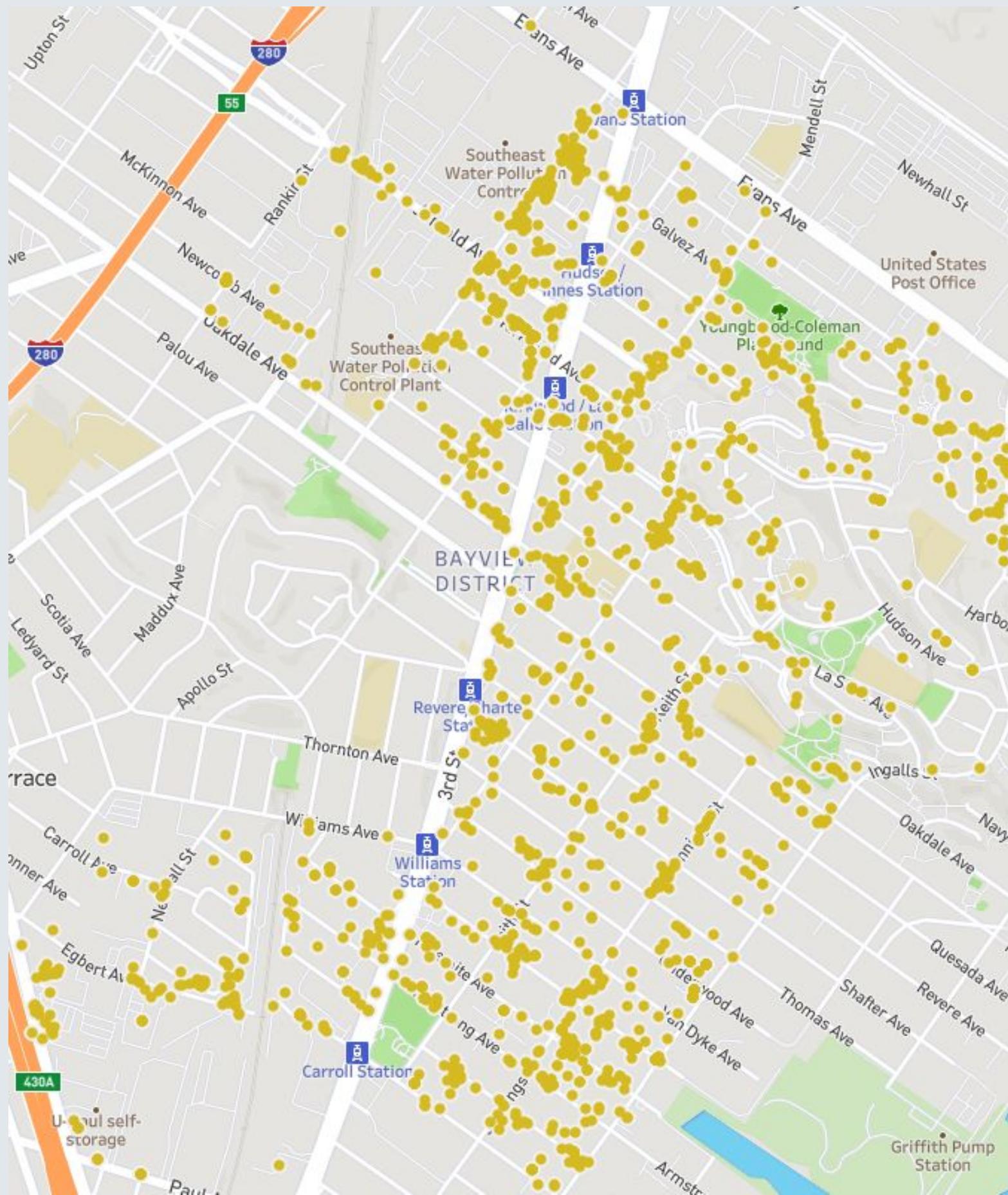
### Secondary Variables:

- |               |                        |
|---------------|------------------------|
| - Category    | - Closed [Year]        |
| - Open [Year] | - Responsible Agencies |

# HOTSPOT #1: ABANDONED VEHICLE

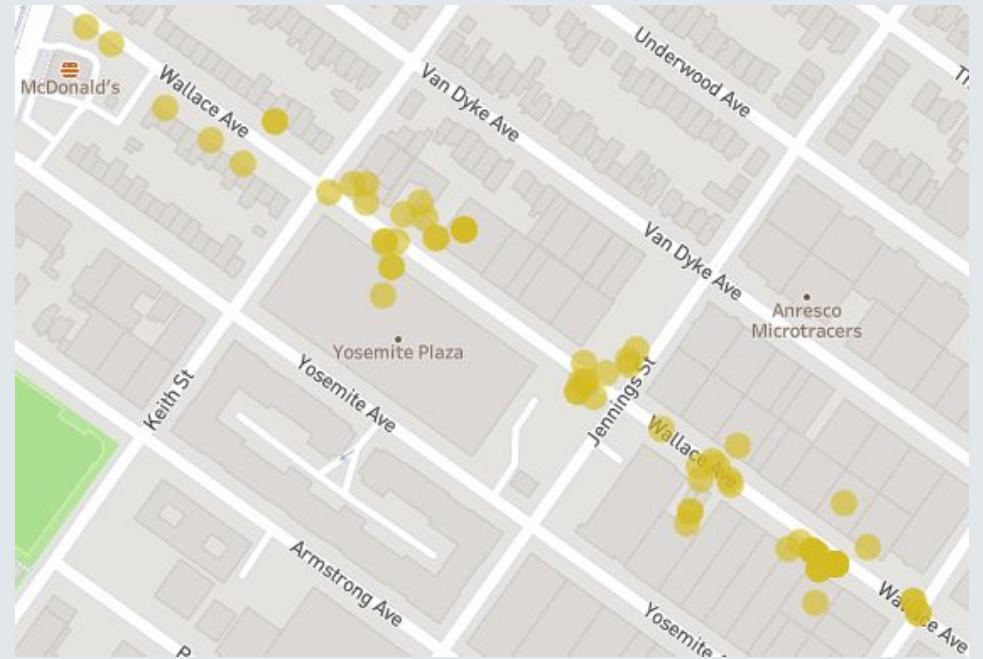


## HOT SPOT #1: ABANDONED VEHICLE

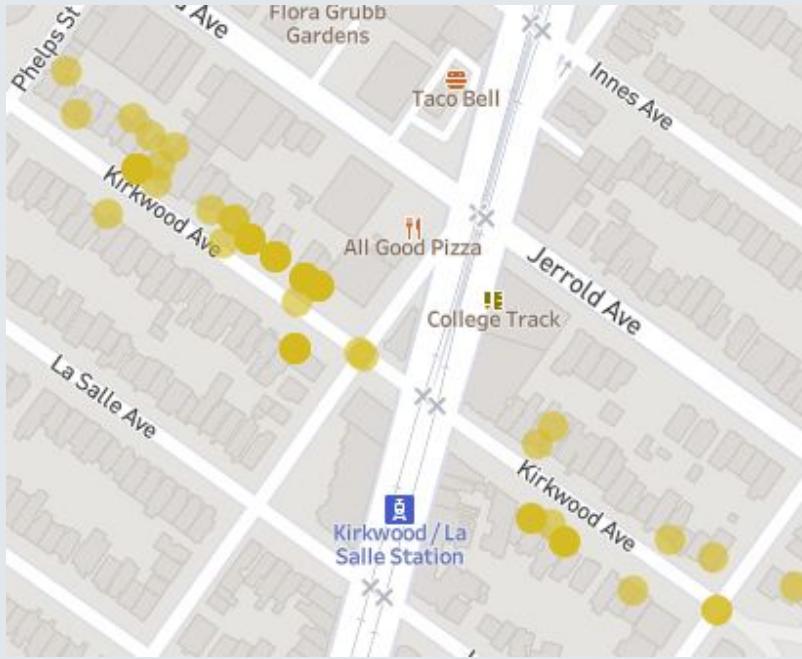


## HOT SPOT #1: ABANDONED VEHICLE

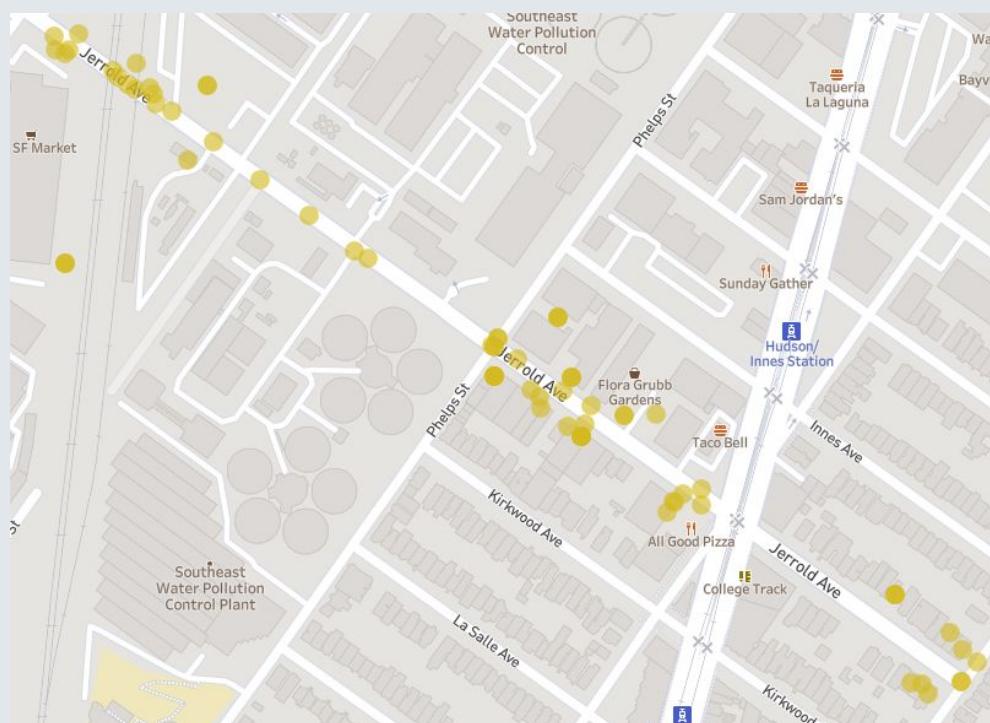
Wallace Ave - 132 count



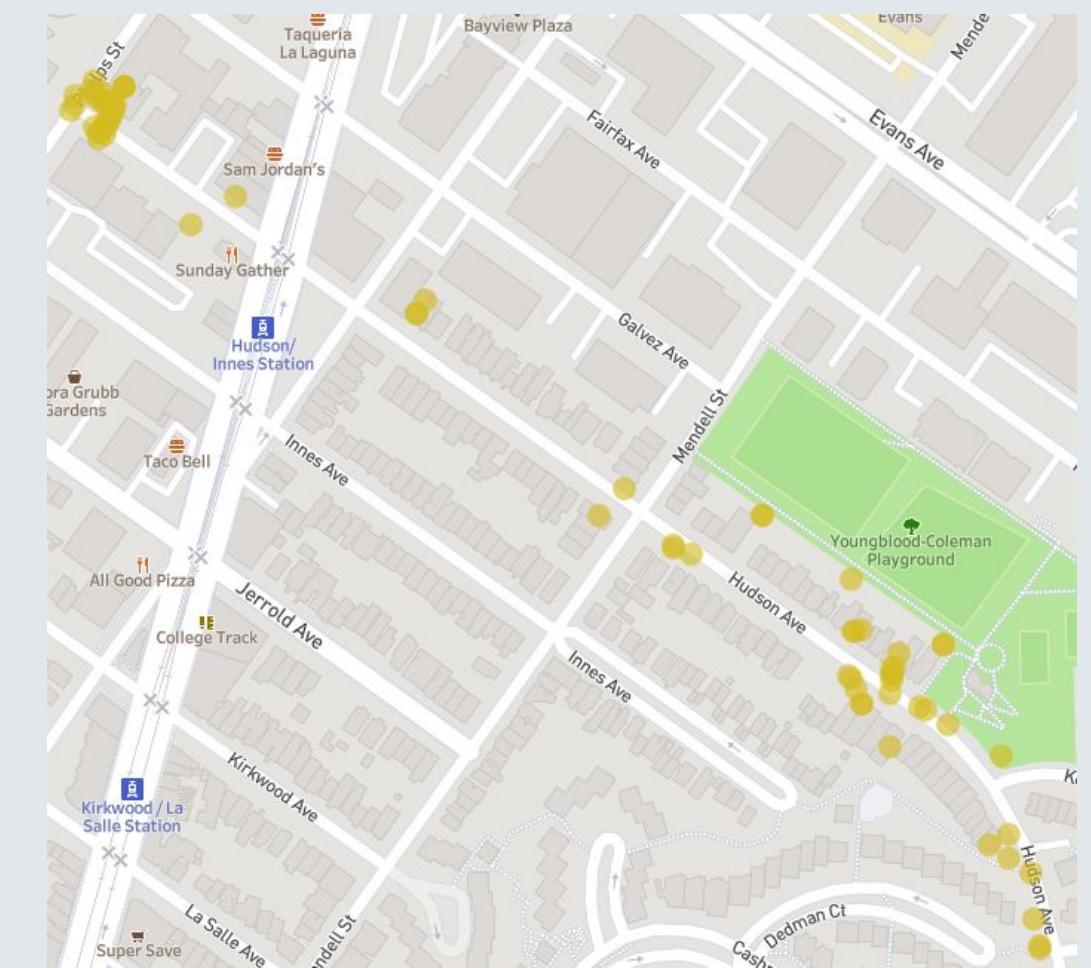
Kirkwood Ave - 87 count



Jerrold Ave - 77 count

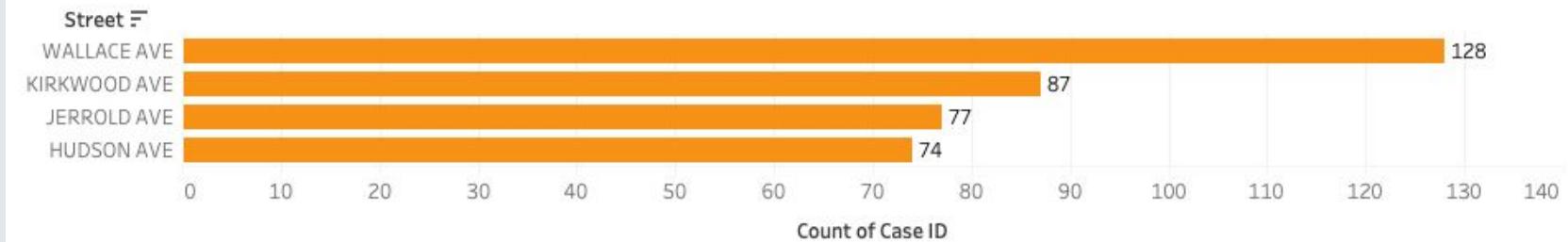


Hudson Ave - 75 count

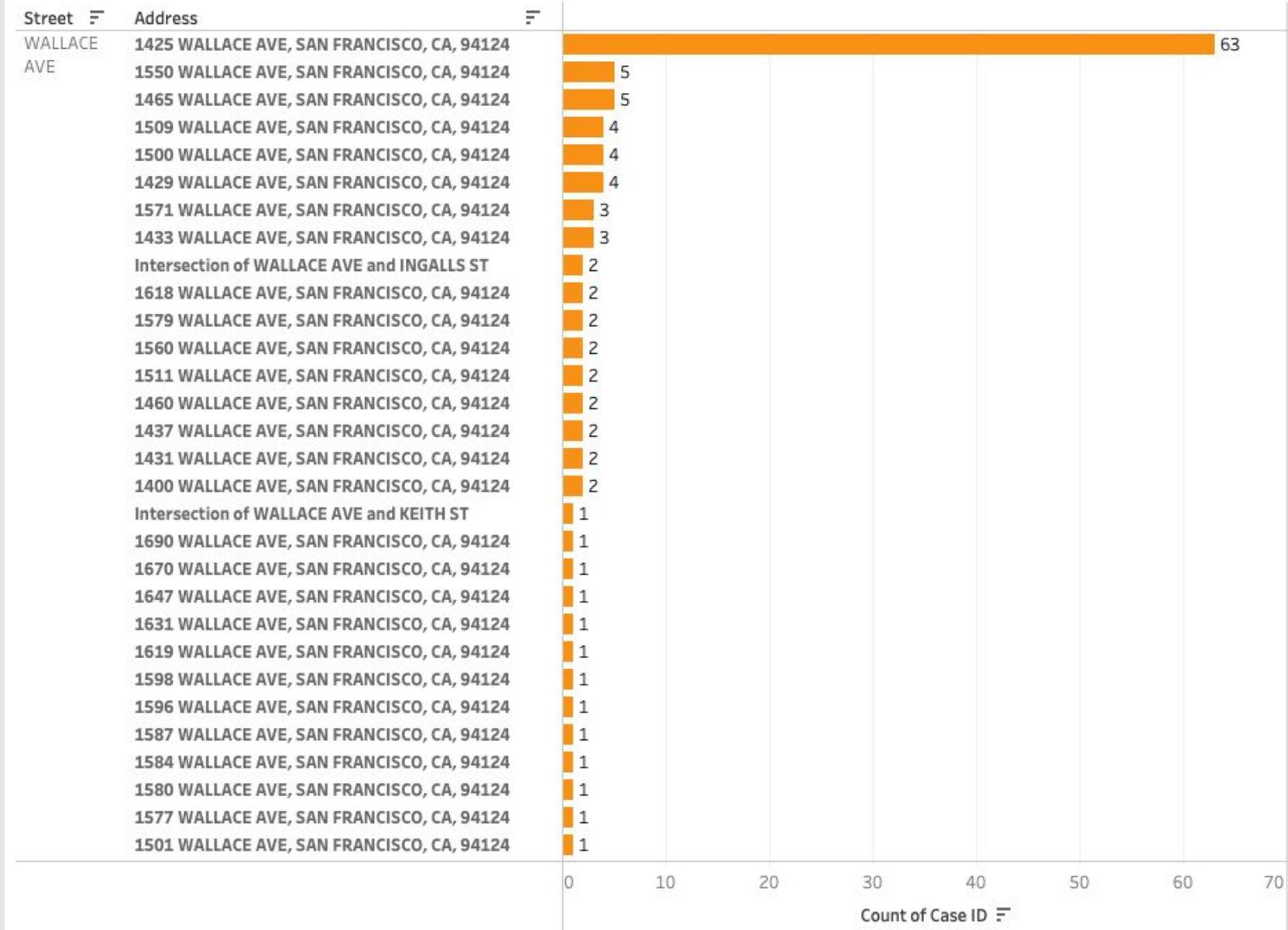


## HOT SPOT #1: ABANDONED VEHICLE

Bayview's Intersection's Count of Abandoned Vechicle [2019-2021]



Bayview's Intersection's Count of Abandoned Vechicle [2019-2021]



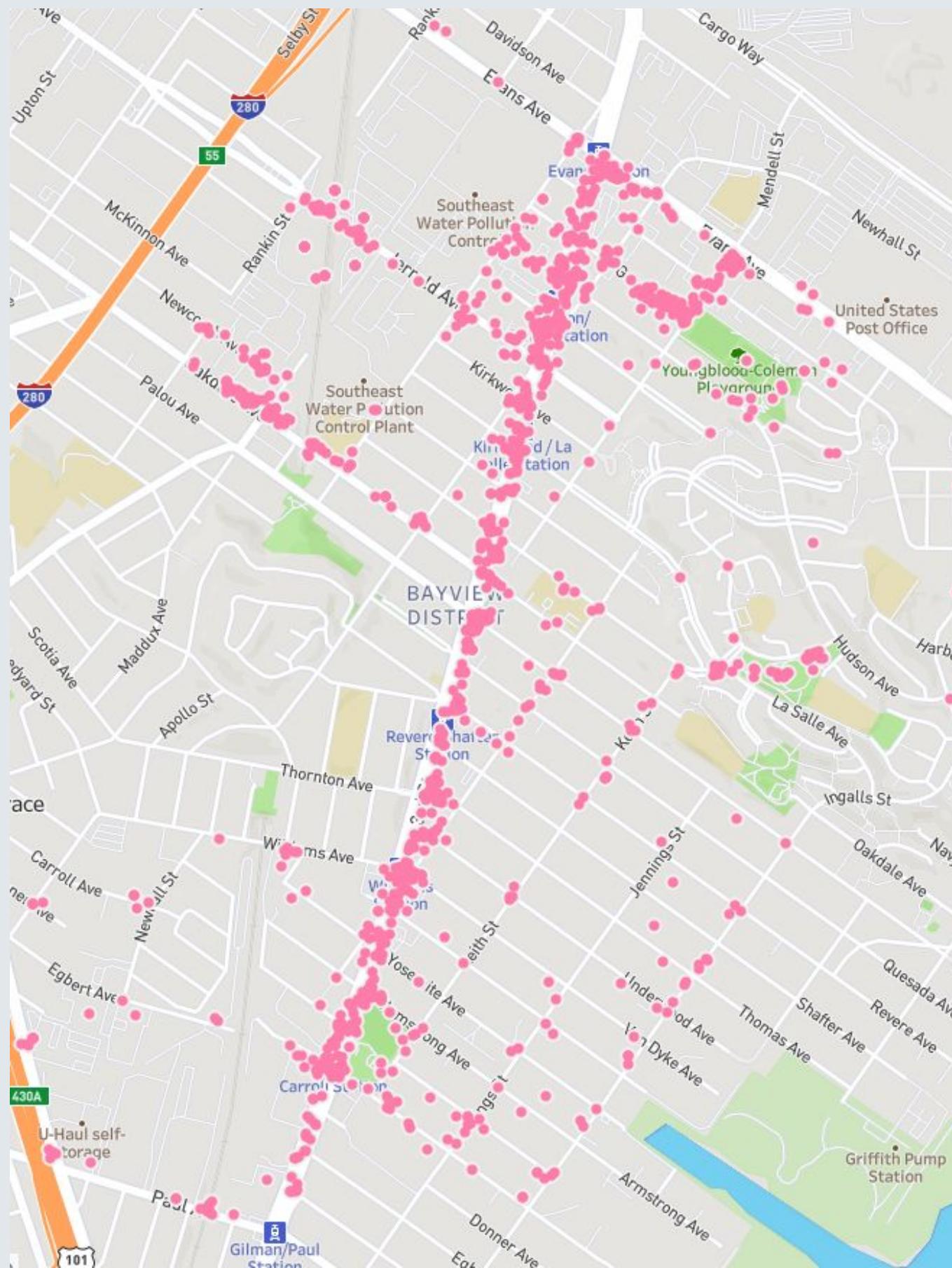
Bayview's Intersection's of Abandoned Vechicle & Time Difference of Responsible Agency Open to Close Case [2019-2021]



# HOTSPOT #2: GRAFFITTI

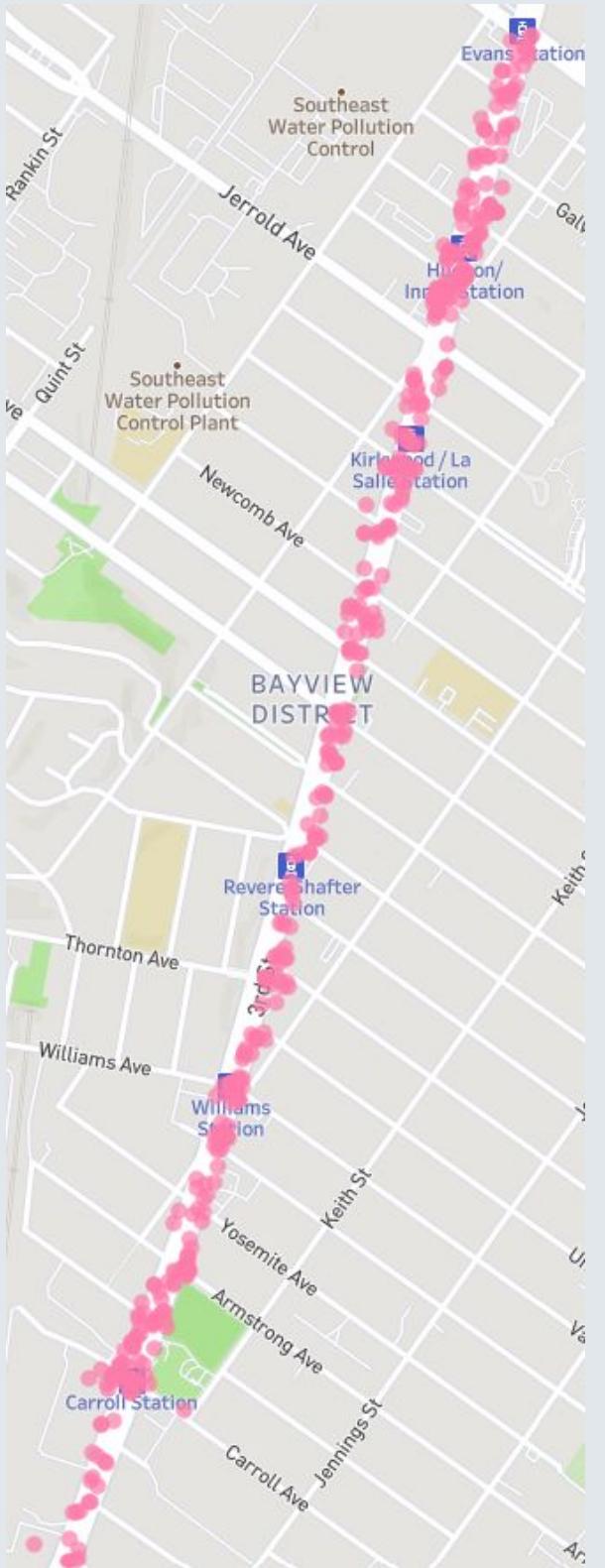


## HOT SPOT #2: GRAFFITI

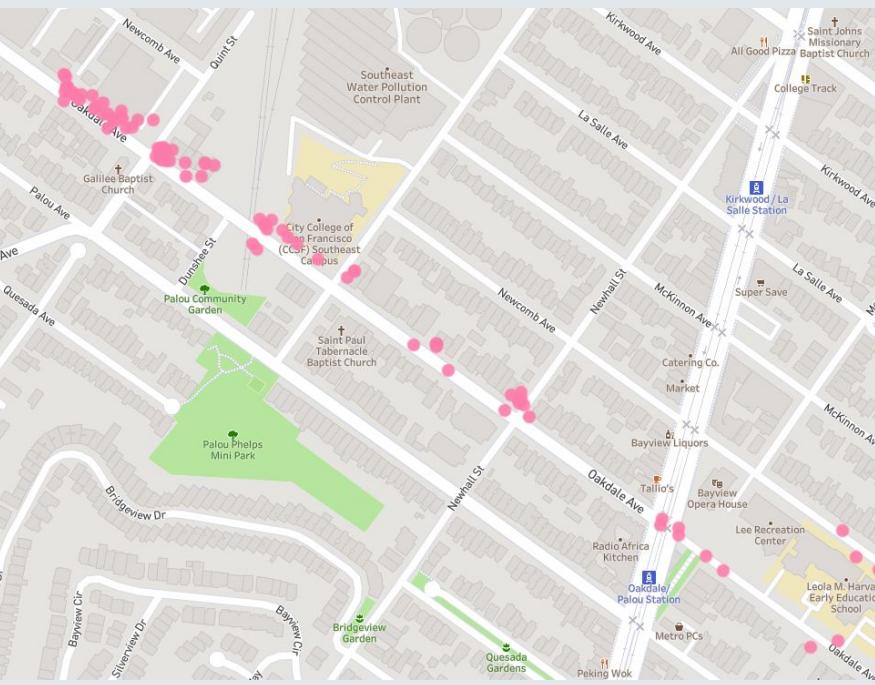


## HOT SPOT #2: GRAFFITTI

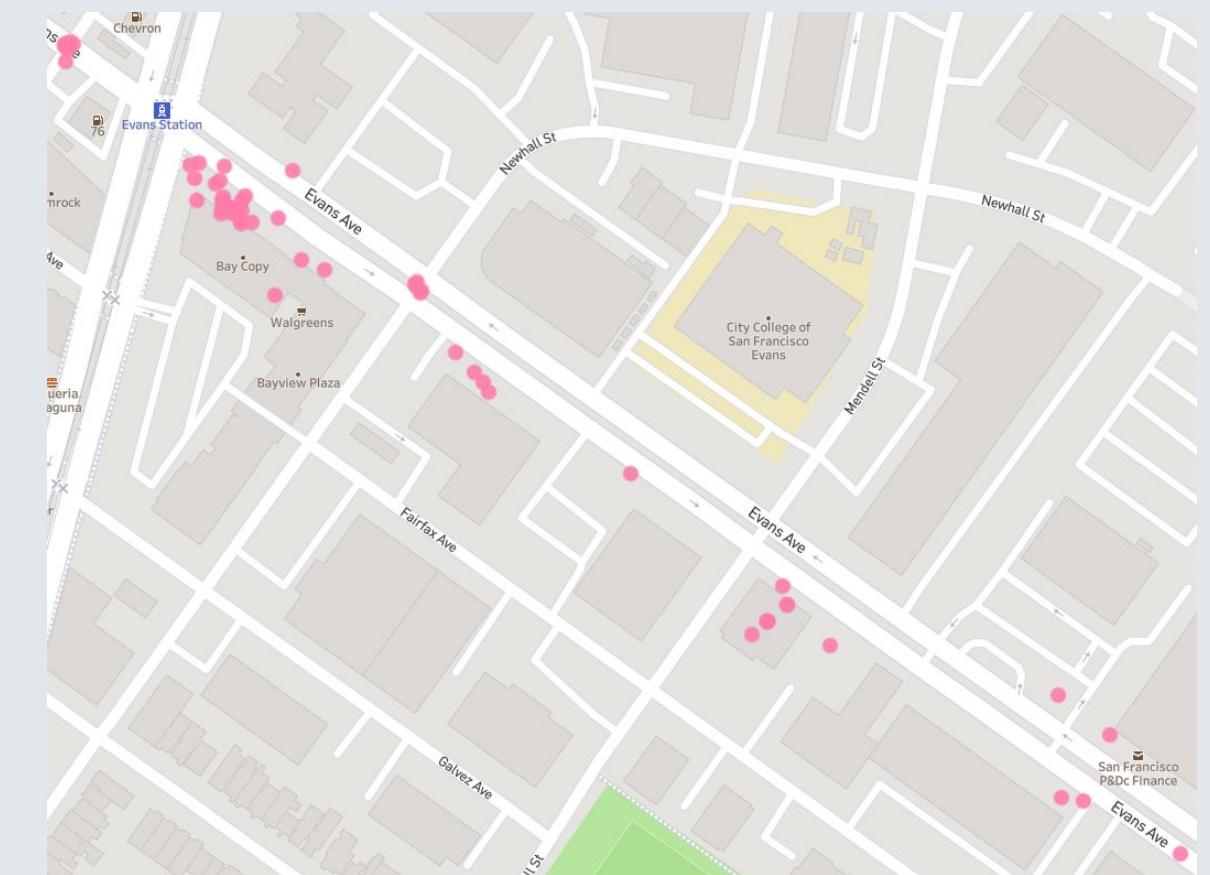
3rd St - 460 count



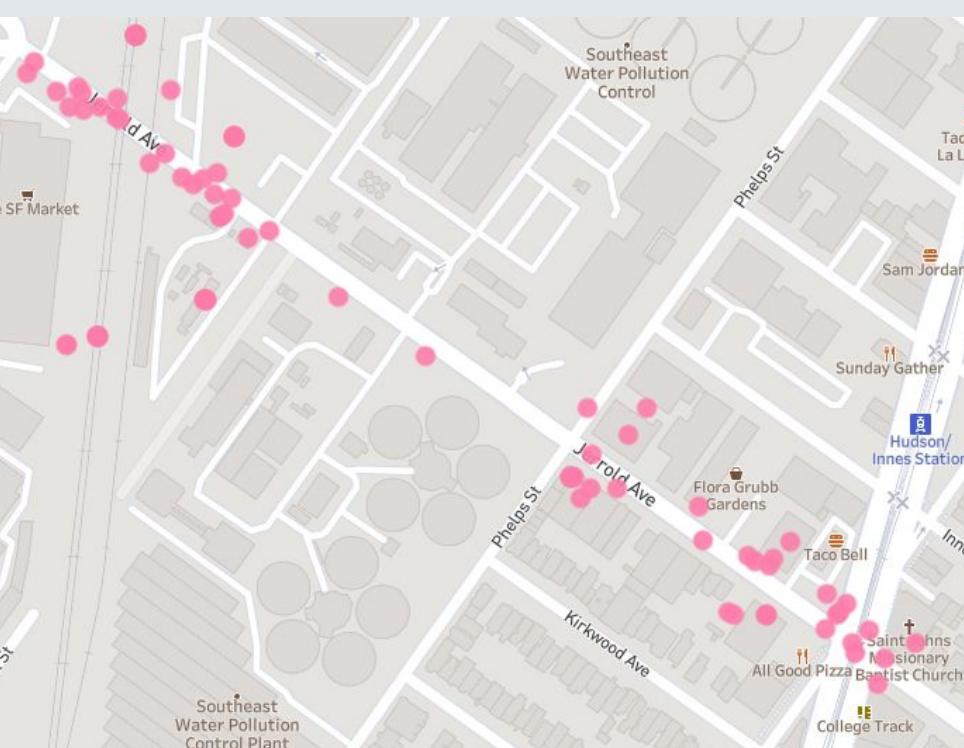
Oakdale Ave - 91 count



Evans Ave - 63 count

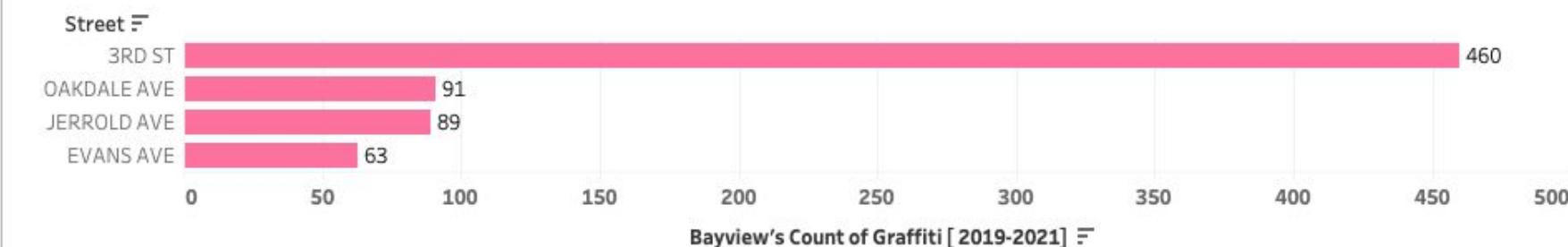


Jerrold Ave - 89 count

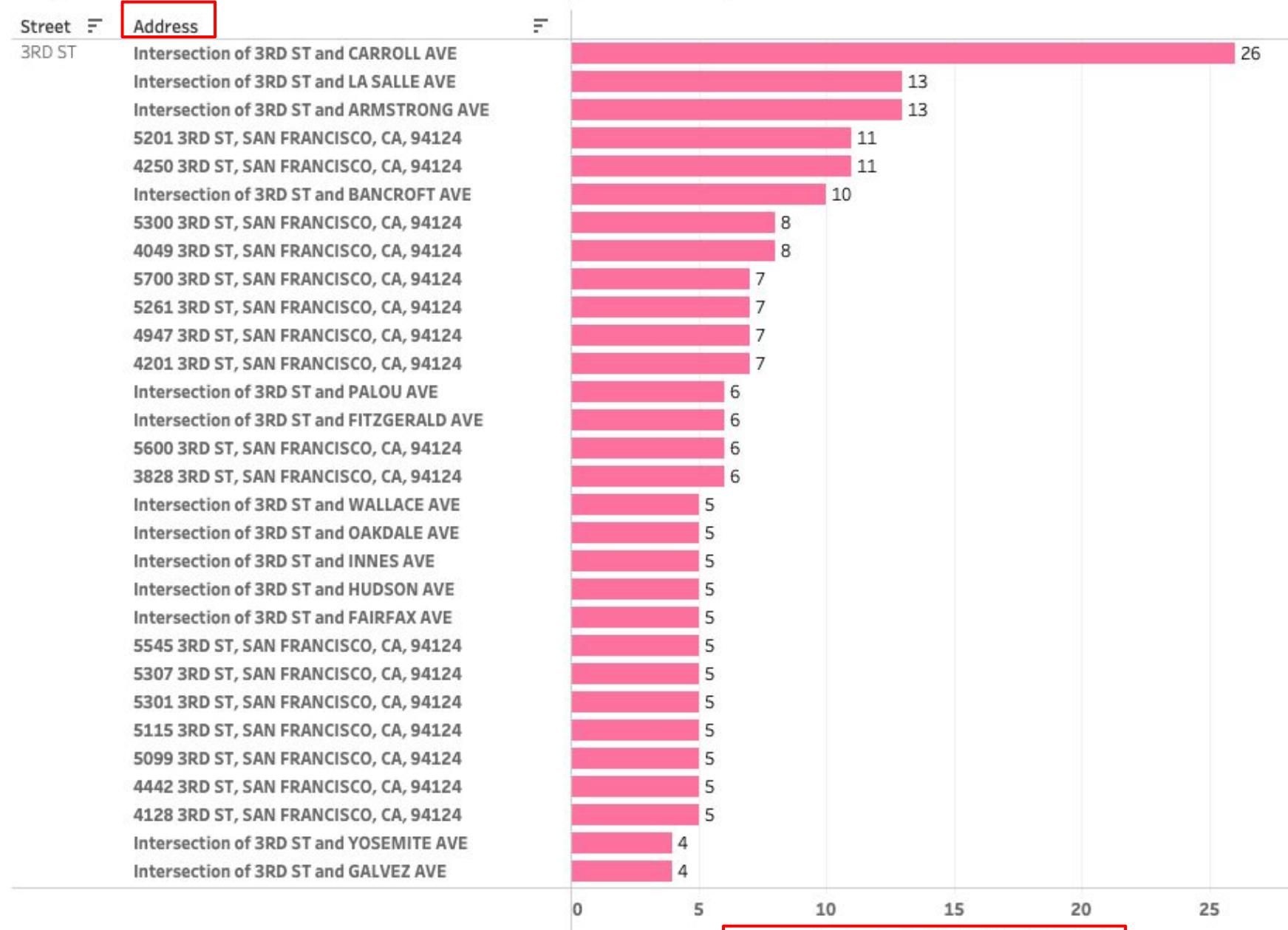


## HOT SPOT #2: GRAFFITI

Bayview's Intersection's Count of Graffiti [2019-2021]



Bayview's Intersection's Count of Graffiti [2019-2021]



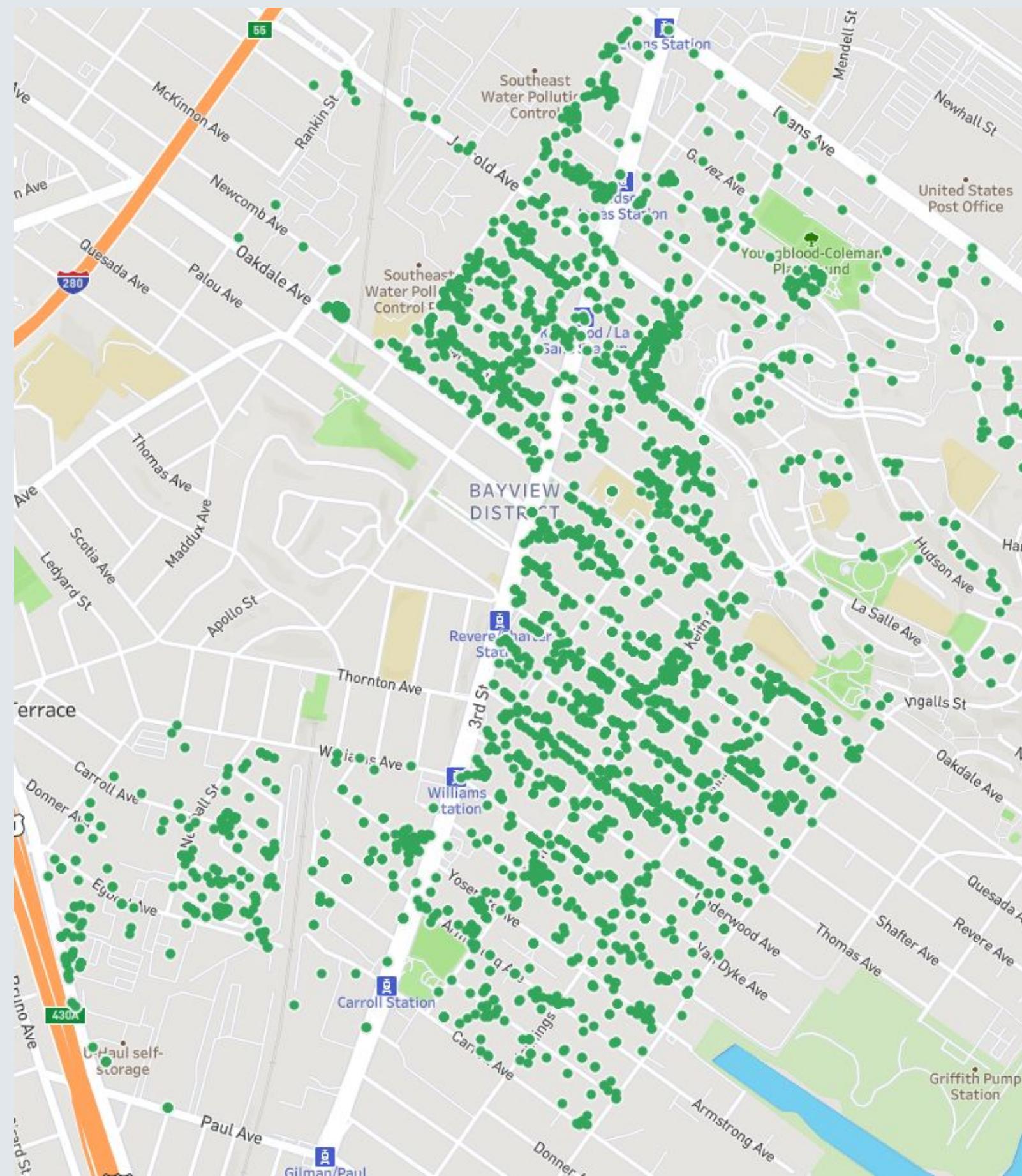
Bayview's Intersection's Graffiti & Time Difference of Responsible Agency Open to Close Case [2019-2021]

Street	Address	Responsible Agency	Time Diff of Open to Close Case
3RD ST	3800 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	0
	3801 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	8
	3828 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	168
		Clear Channel - Transit Qu..	28
	3830 3RD ST, SAN FRANCISCO, CA, 94124	Clear Channel - Transit Qu..	15
	3881 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	1
	3899 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	0
	3909 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	1
	3911 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	24
	3950 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	346
	3955 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	3
	3970 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	1
	4000 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	250
	4011 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	154
	4018 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	1
	4026 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	19
	4040 3RD ST, SAN FRANCISCO, CA, 94124	AT and T - Graffiti Queue	6
	4049 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	481
	4070 3RD ST, SAN FRANCISCO, CA, 94124	AT and T - Graffiti Queue	9
	4098 3RD ST, SAN FRANCISCO, CA, 94124 (Virtual)	DPW Ops Queue	3
	4101 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	8
	4115 3RD ST, SAN FRANCISCO, CA, 94124	Clear Channel - Transit Qu..	36
	4115 3RD ST, SAN FRANCISCO, CA, 94124 (Virtual)	DPW Ops Queue	33
	4120 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	2
	4128 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	525
		Clear Channel - Transit Qu..	12
	4130 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	514
	4132 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	2
	4138 3RD ST, SAN FRANCISCO, CA, 94124	DPW Ops Queue	243

# HOTSPOT #3: PARKING ENFORCEMENT

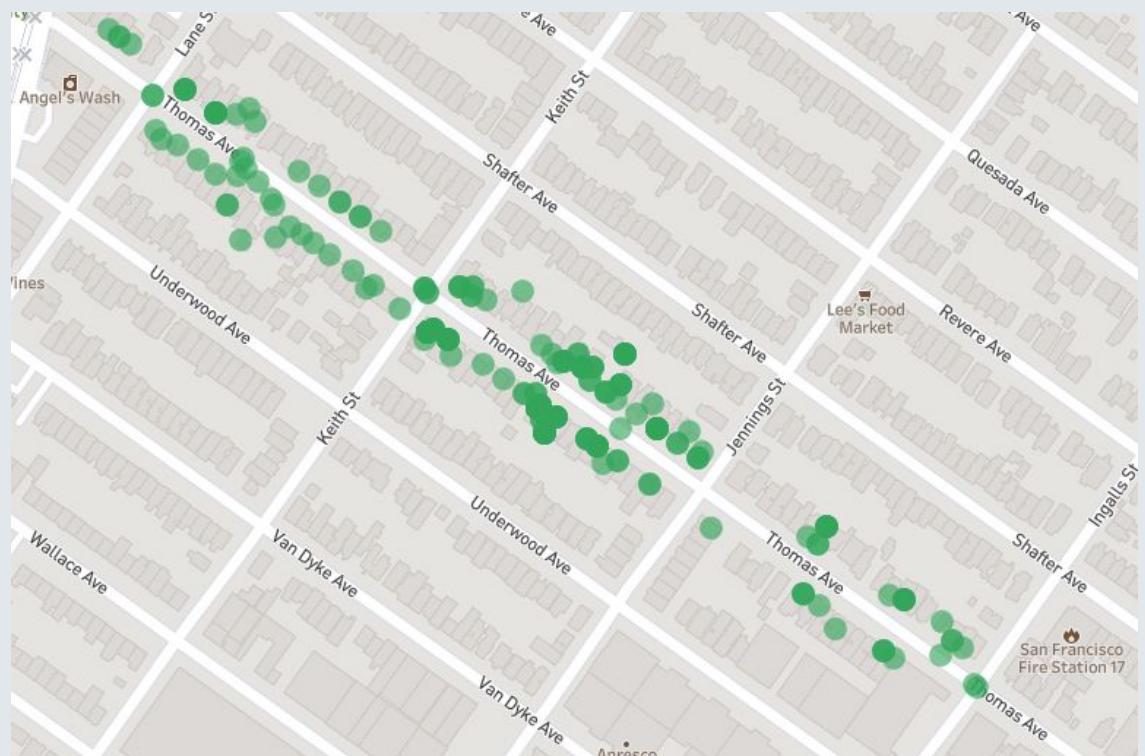


## HOTSPOT #3: PARKING ENFORCEMENT

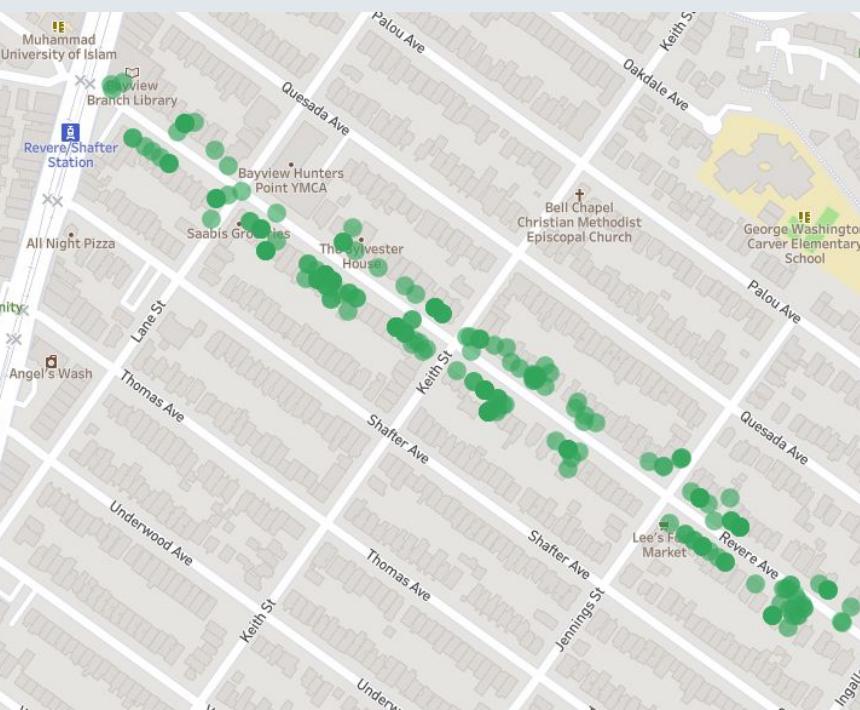


## HOTSPOT #3: PARKING ENFORCEMENT

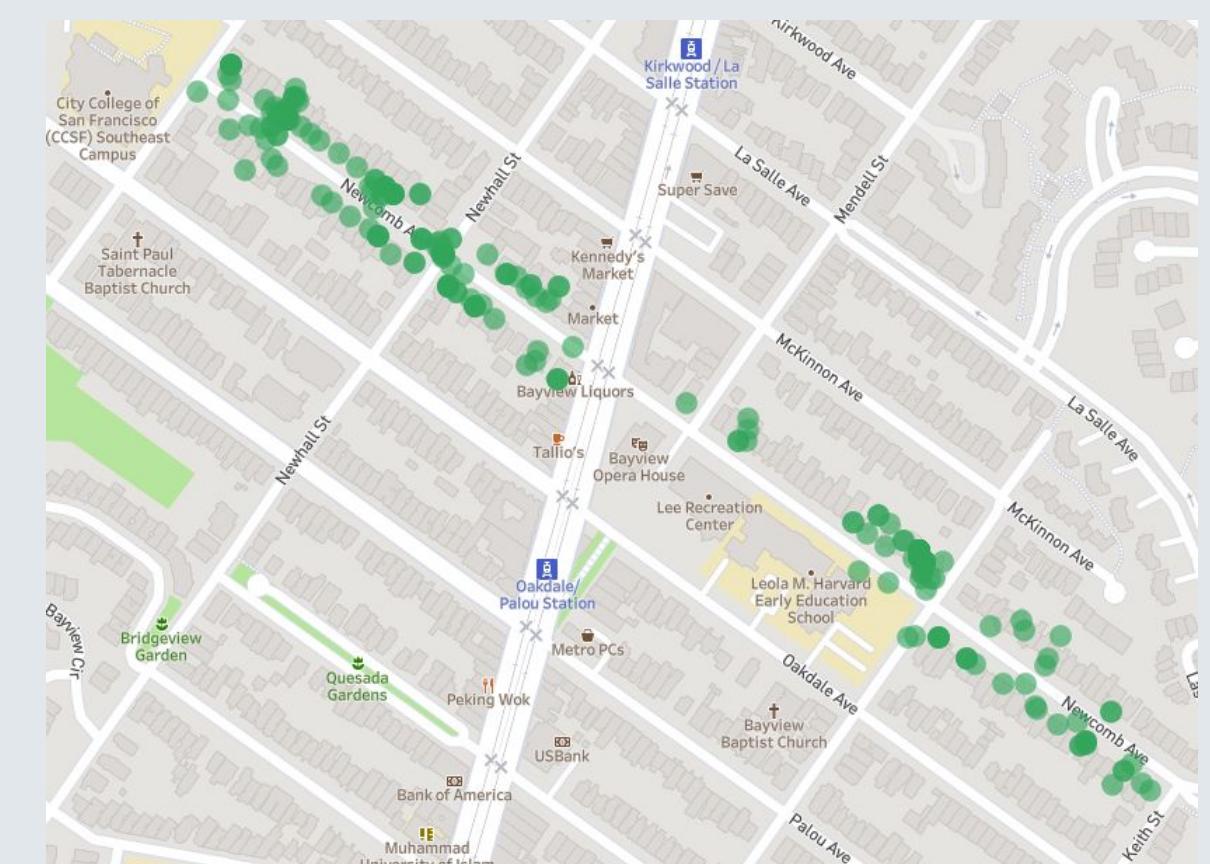
Thomas Ave - 369 count



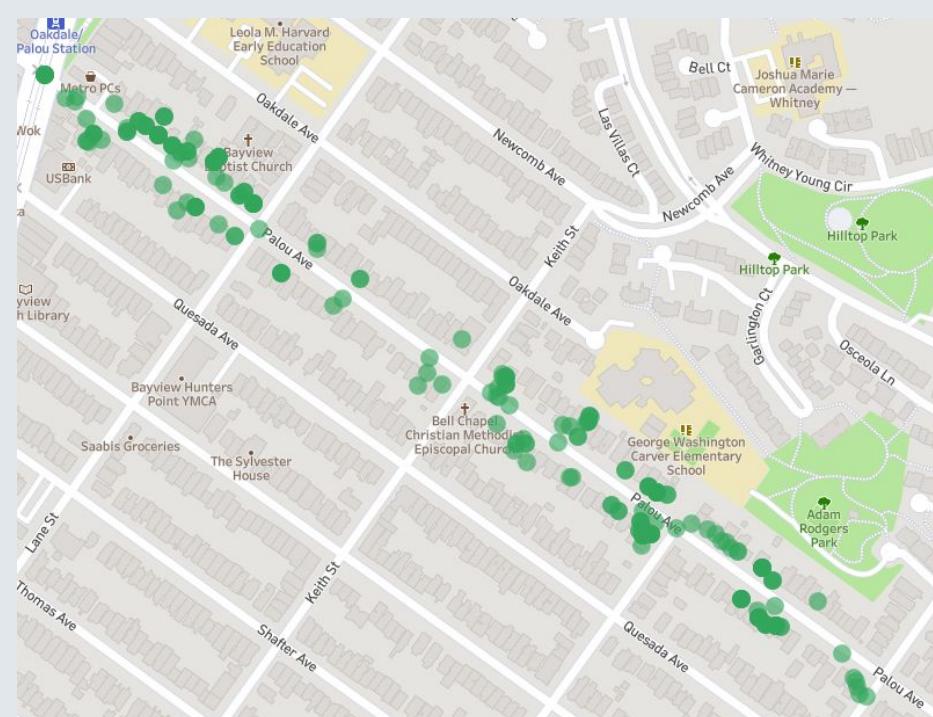
Revere Ave - 263 count



Newcomb Ave - 234 count

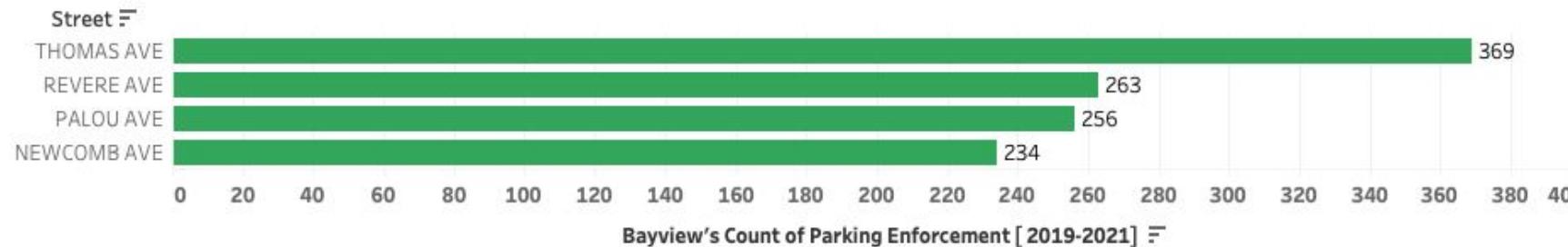


Palou Ave - 256 count

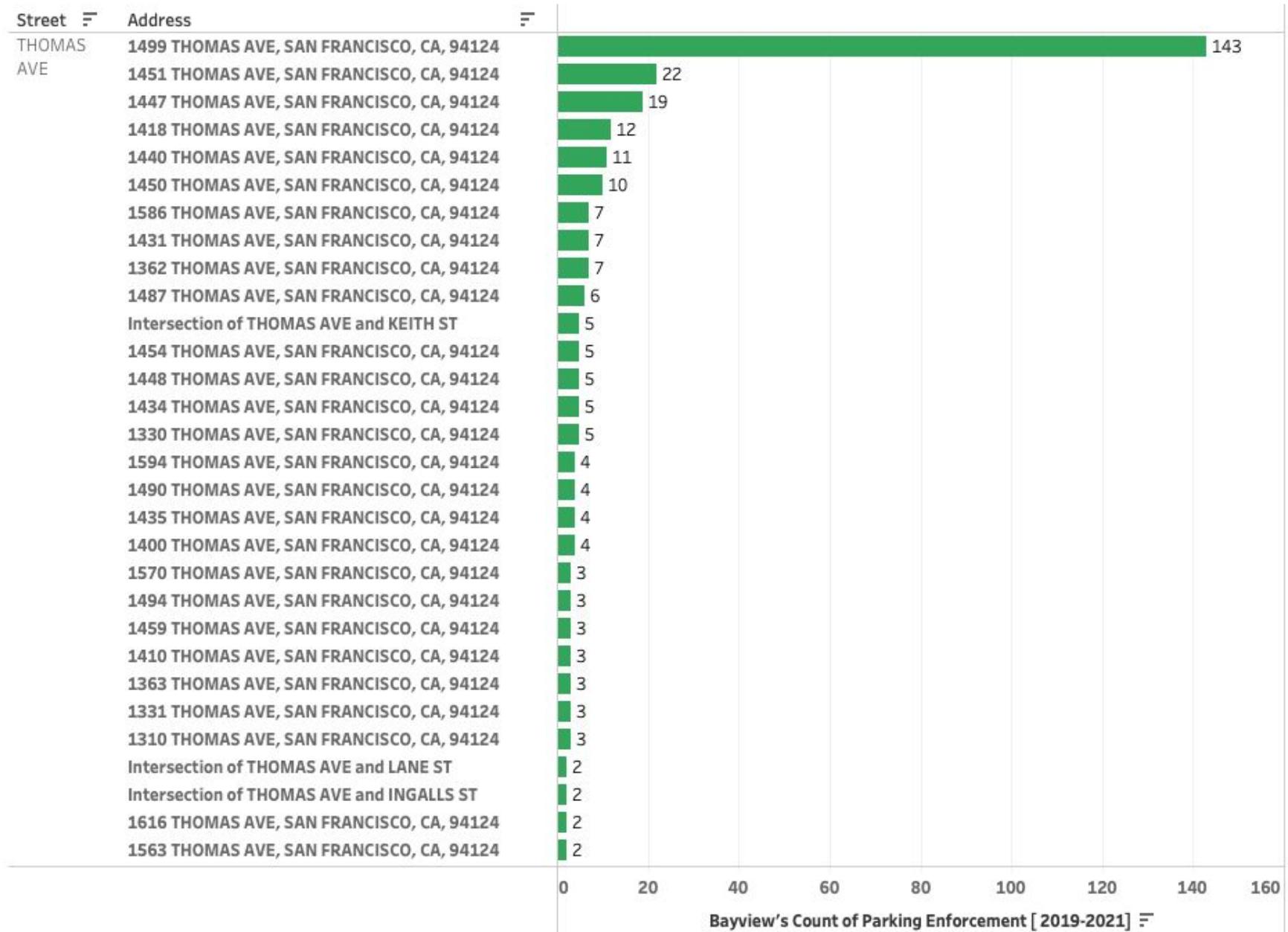


## HOTSPOT #3: PARKING ENFORCEMENT

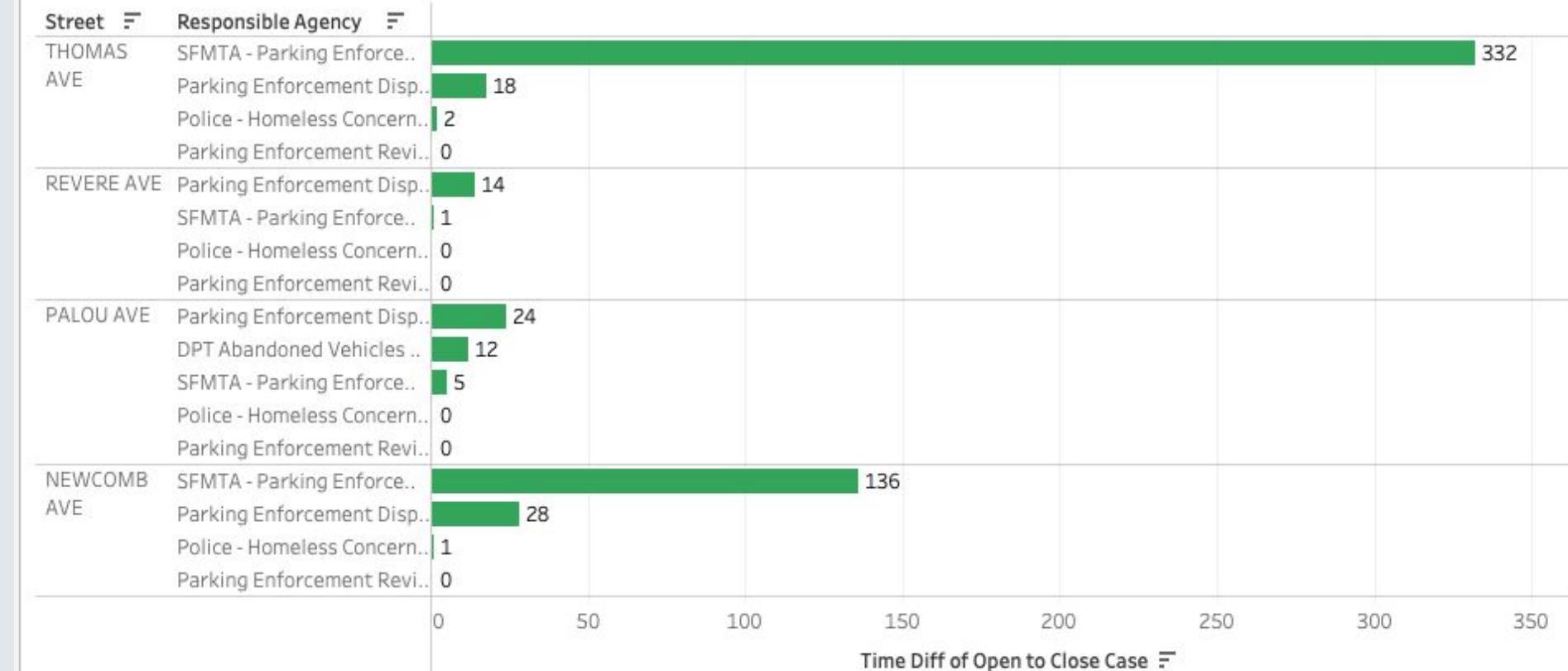
Bayview's Intersection's Count of Parking Enforcement [2019-2021]



Bayview's Intersection's Count of Parking Enforcement [2019-2021]



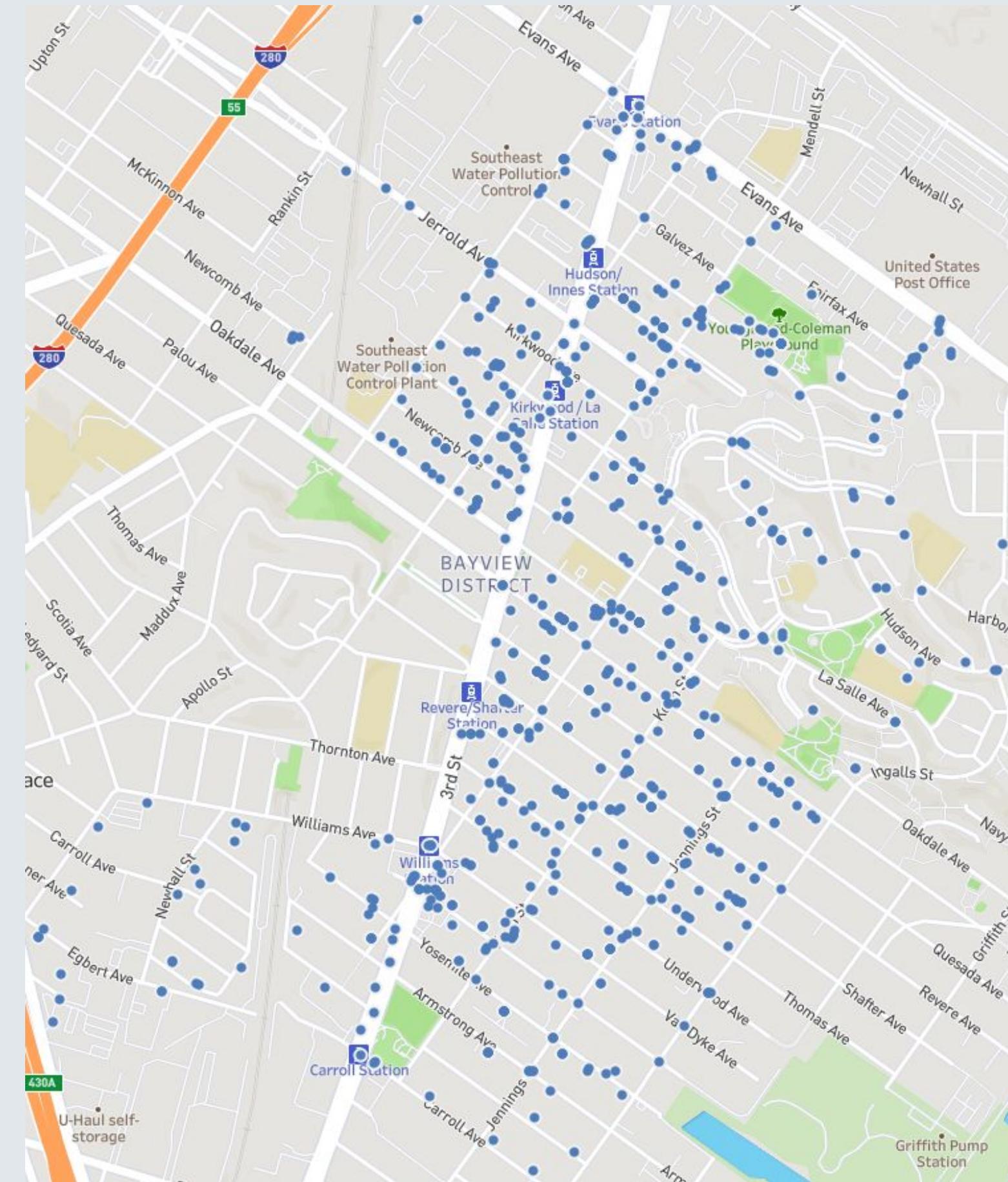
Bayview's Intersection's Count of Parking Enforcement & Time Difference of Responsible Agency Open to Close Case [2019-2021]



# HOTSPOT #4: SEWER ISSUES

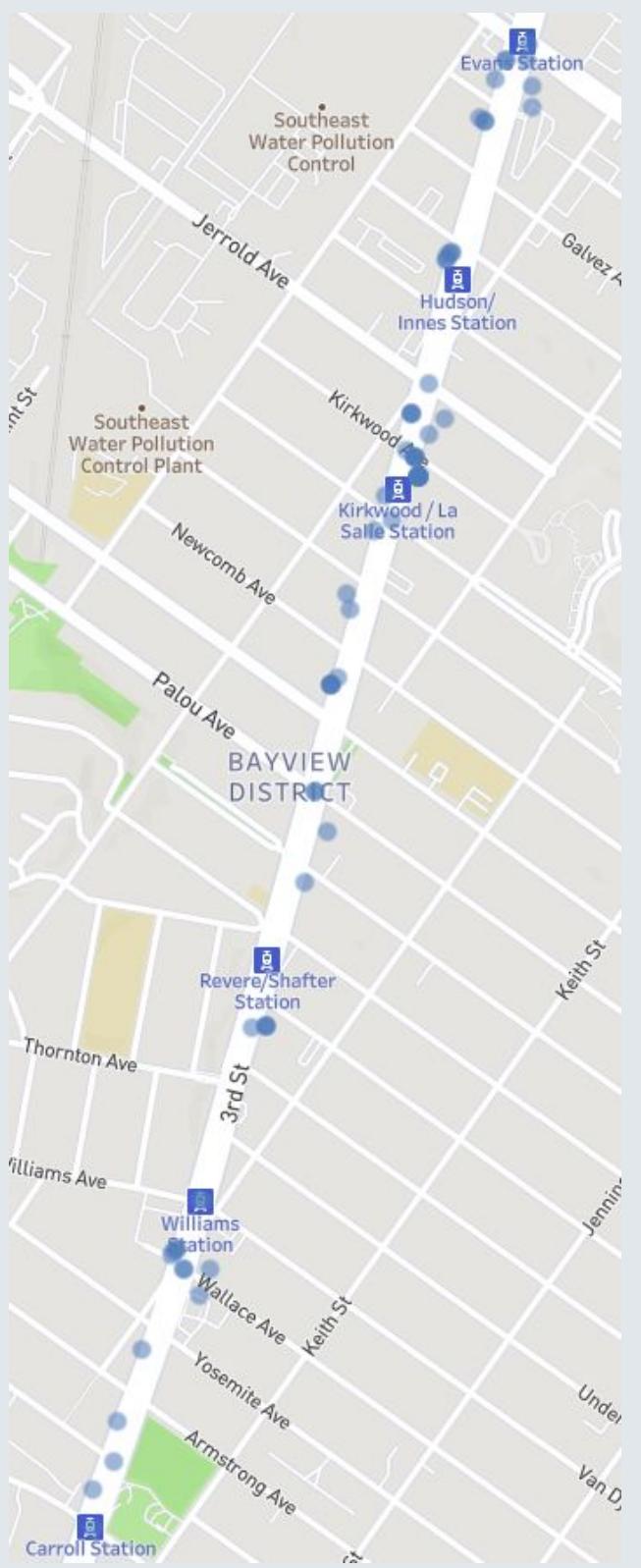


## HOTSPOT #4: SEWER ISSUES

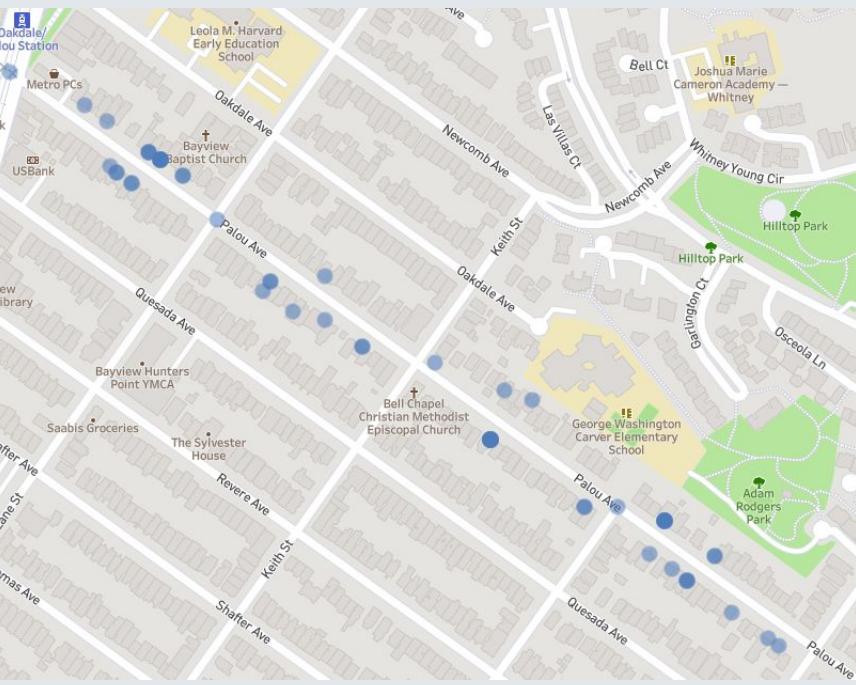


## HOTSPOT #4: SEWER ISSUES

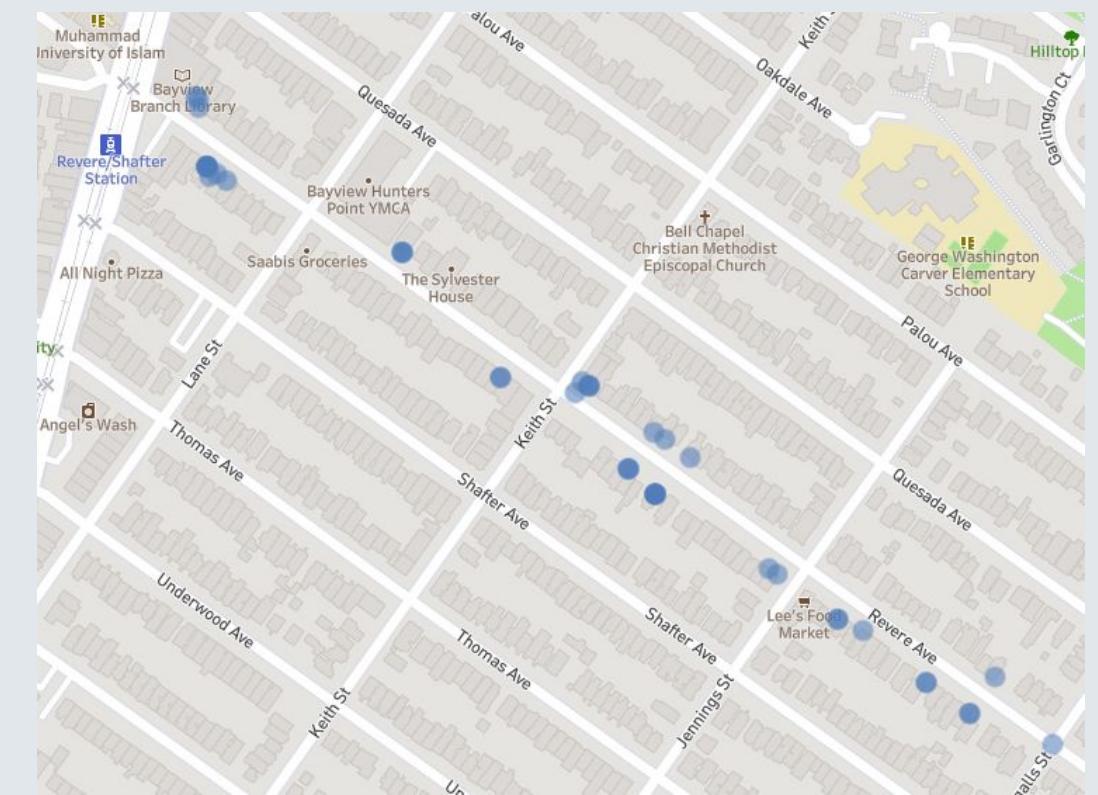
3rd St - 68 count



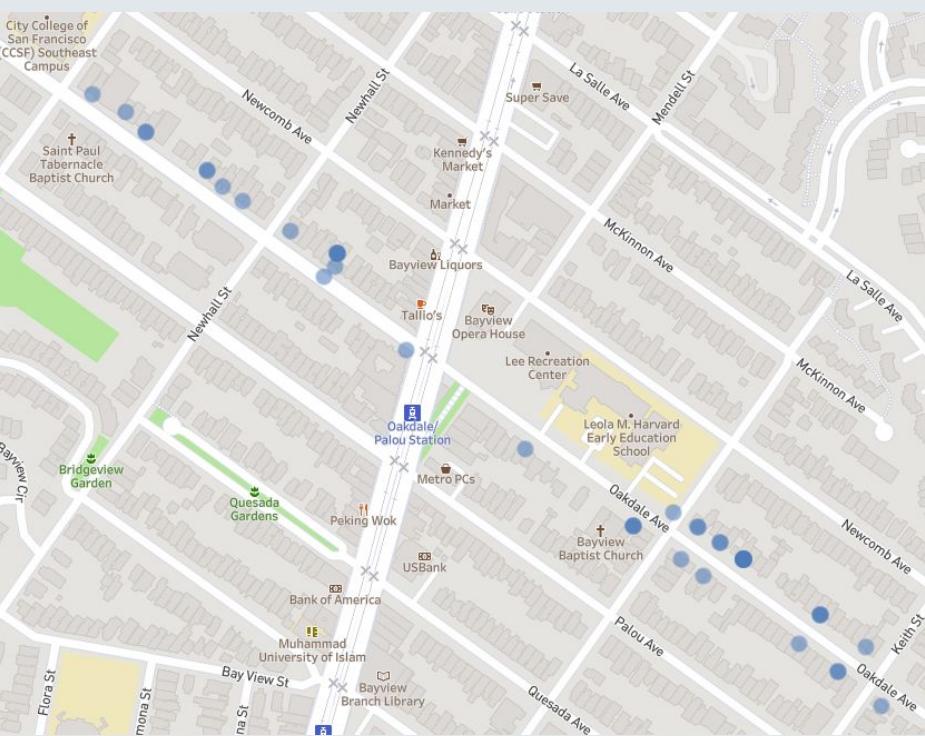
Palou Ave - 68 count



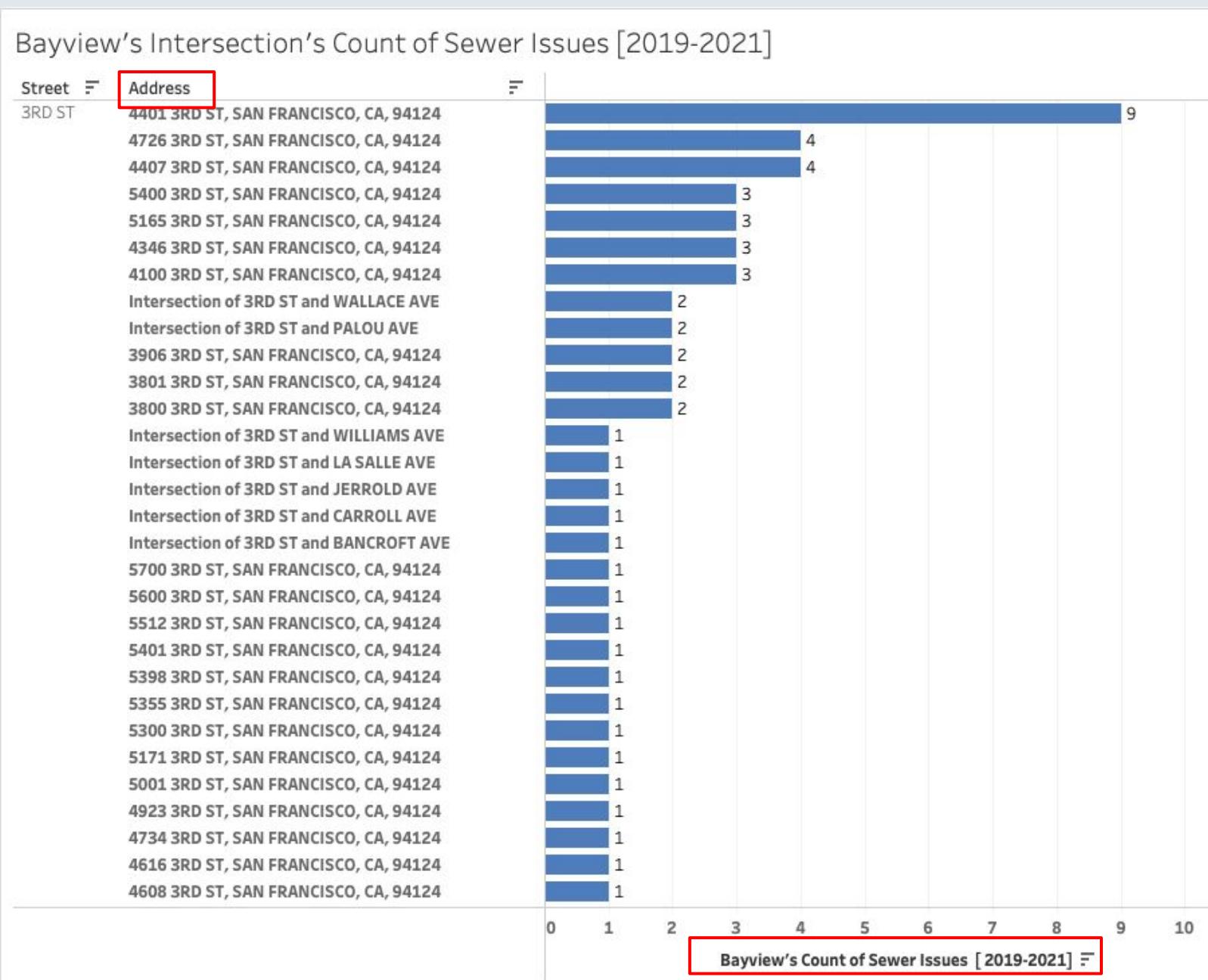
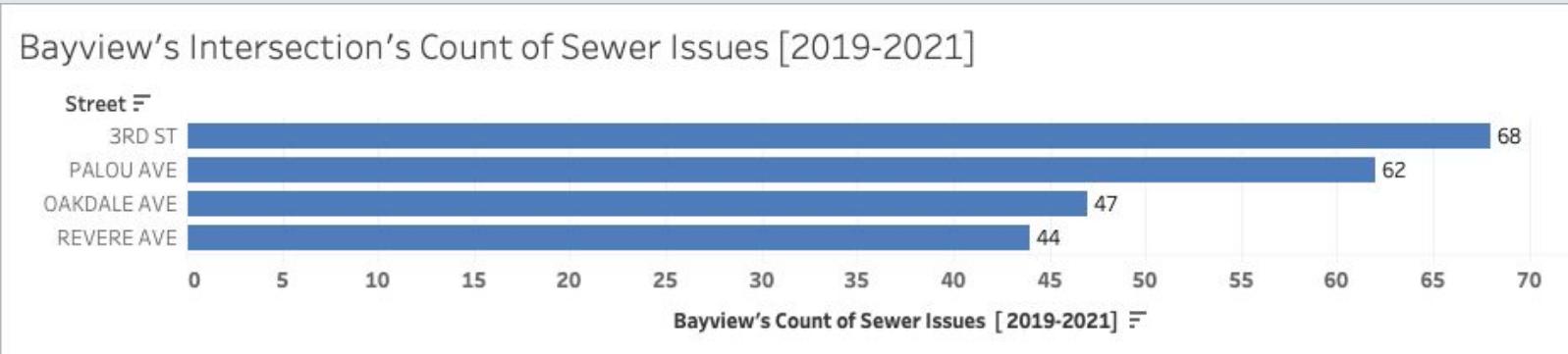
Revere Ave - 44 count



Oakdale Ave - 47 count



## HOTSPOT #4: SEWER ISSUES



Bayview's Intersection's Sewer Issues & Time Difference of Responsible Agency Open to Close Case [2019-2021]

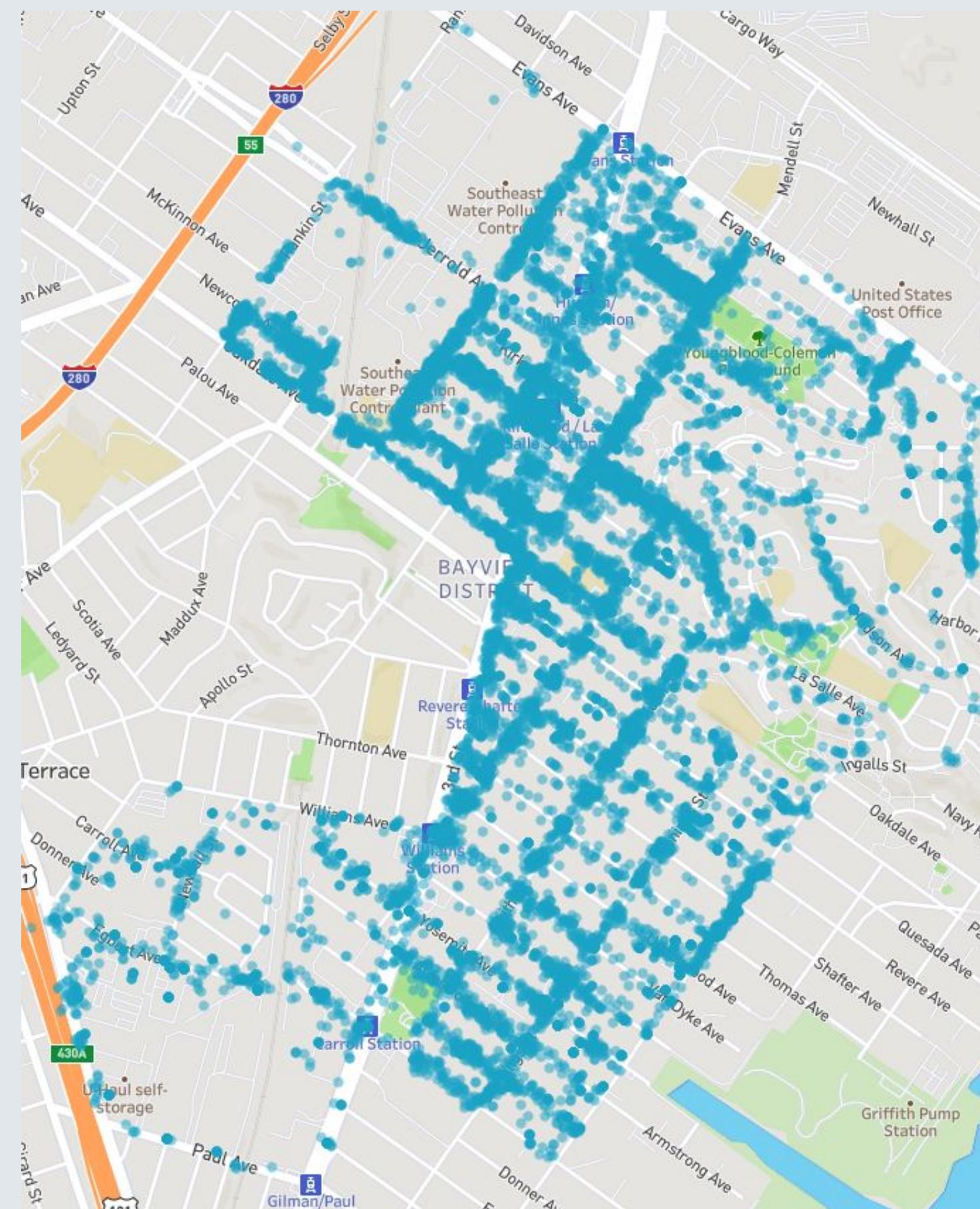
Street	Address	Responsible Age..
3RD ST	3800 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 188
	3801 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 6
	3828 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 5
	3830 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	3881 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	3906 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 8
	3908 3RD ST, SAN FRANCISCO, CA, 94124	PUC - Water - G 2
	4090 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 1
	4100 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 43
	4120 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 1
	4315 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 11
	4343 3RD ST, SAN FRANCISCO, CA, 94124	PUC - Sewer - G 1
	4346 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 195
	4400 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	4401 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 194
	4407 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 3
	4442 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 7
	4508 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 1
	4608 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 206
	4616 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 176
	4726 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 13
	4734 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 12
	4923 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 1
	5001 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	5165 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 16
	5171 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	5300 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0
	5355 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 2
	5398 3RD ST, SAN FRANCISCO, CA, 94124	PUC Sewer Ops 0

Time Diff of Open to Close Case

# HOTSPOT #5: STREET SIDEWALK CLEANING

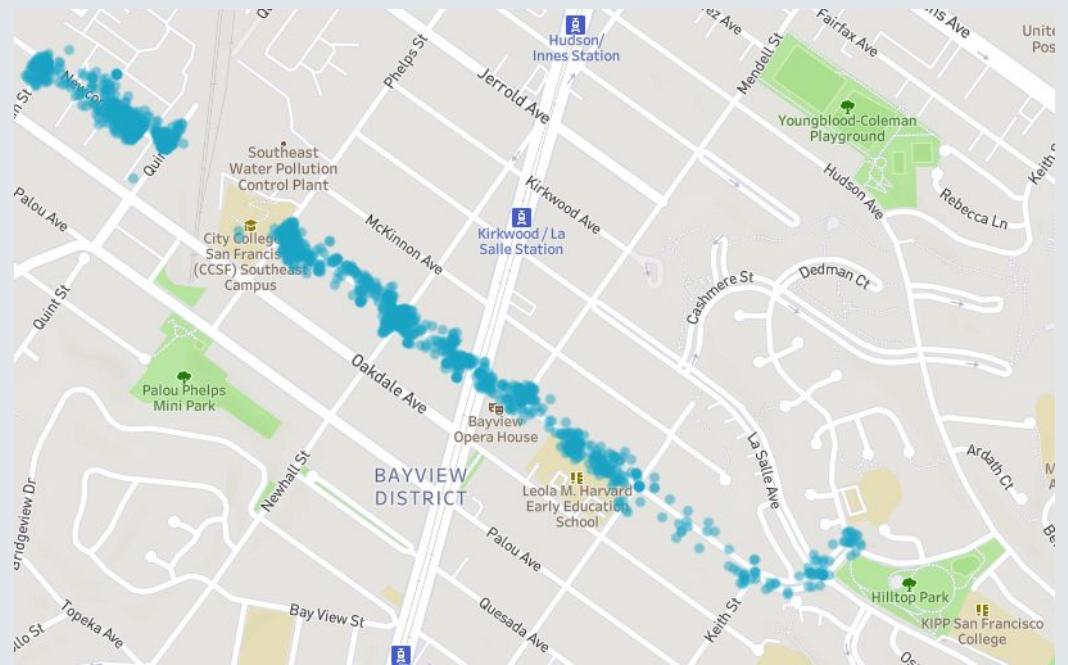


## HOTSPOT #5: STREET SIDEWALK CLEANING

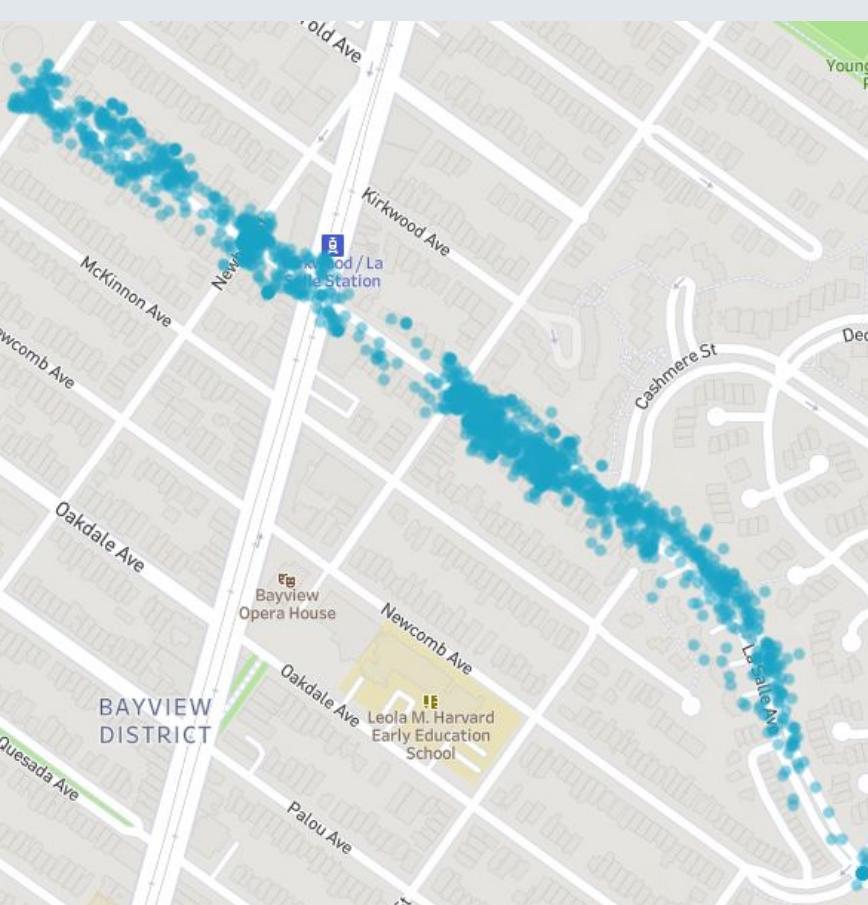


## HOTSPOT #5: STREET SIDEWALK CLEANING

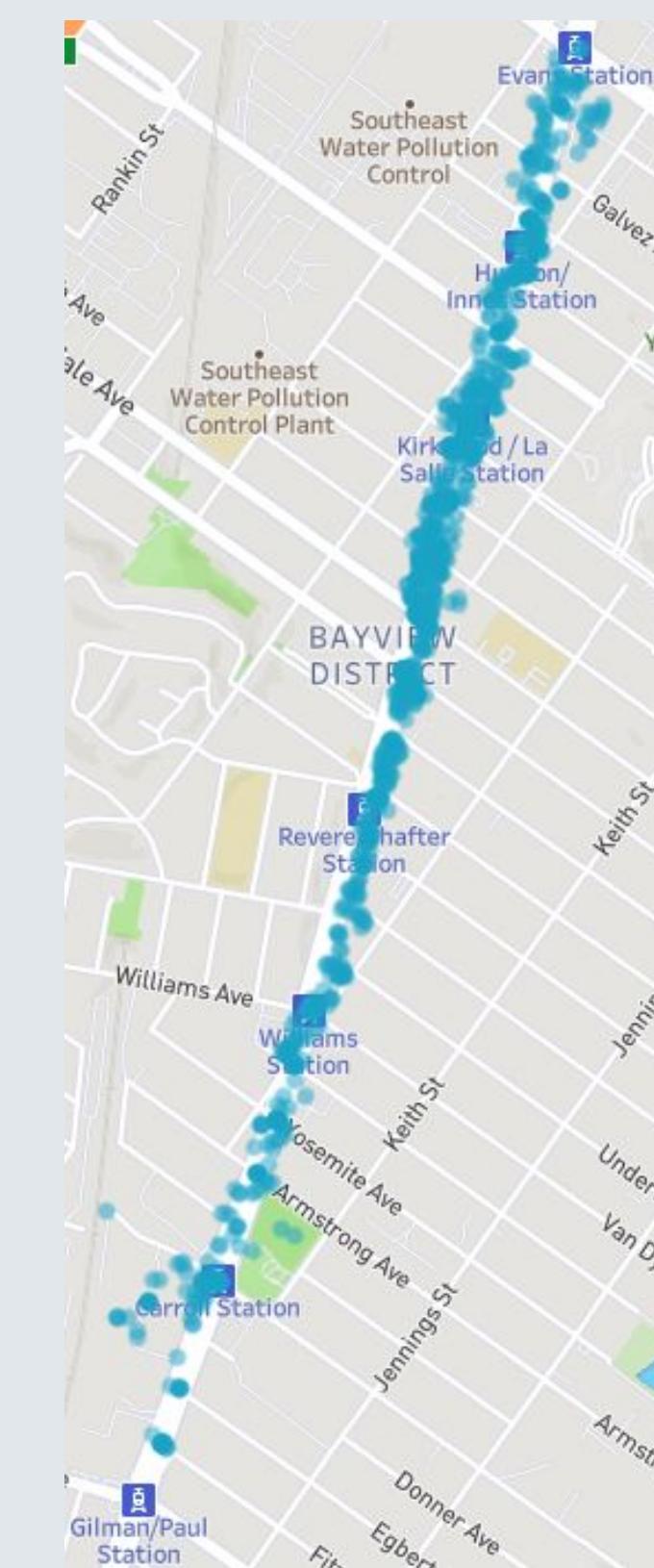
Newcomb Ave - 1,921 count



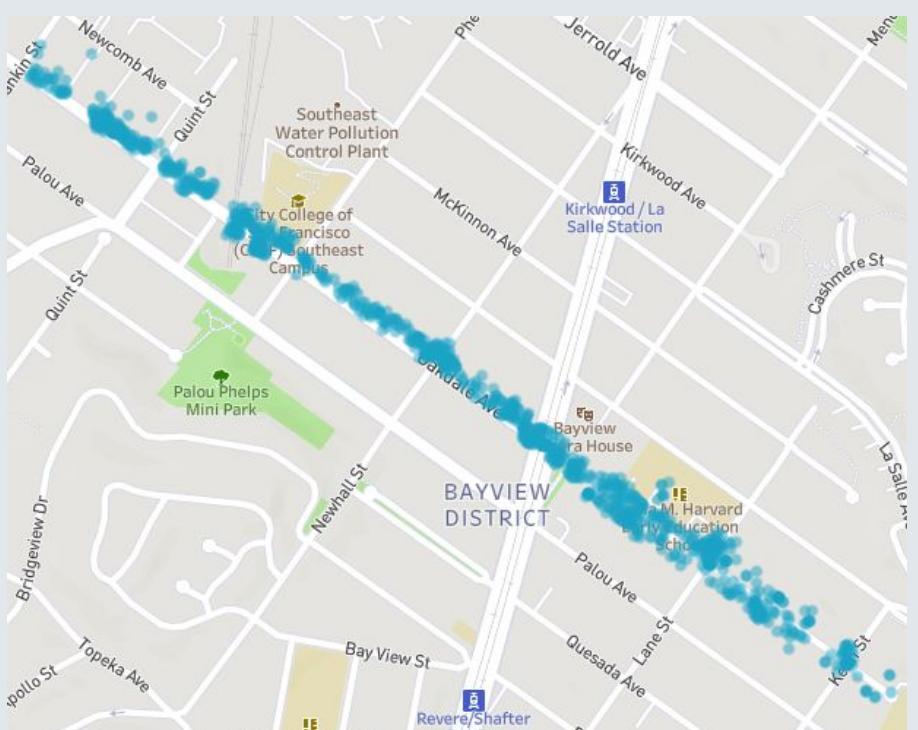
La Salle Ave - 1,912 count



3rd St - 1,507 count

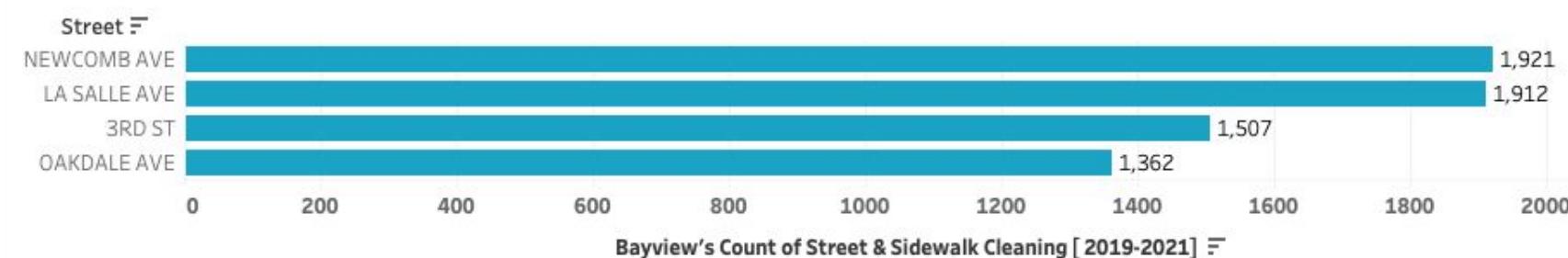


Oakdale Ave - 1,362 count

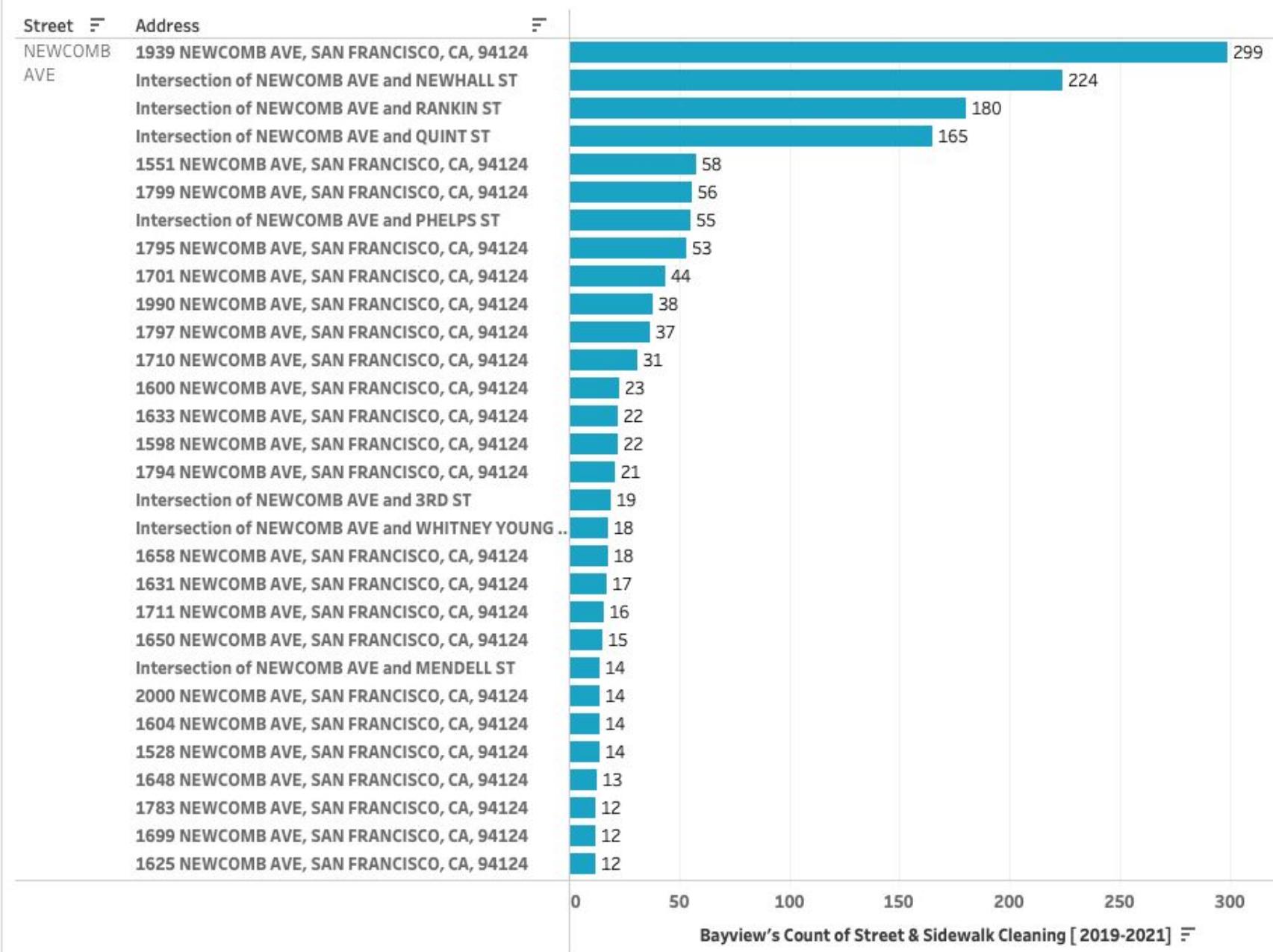


## HOTSPOT #5: STREET SIDEWALK CLEANING

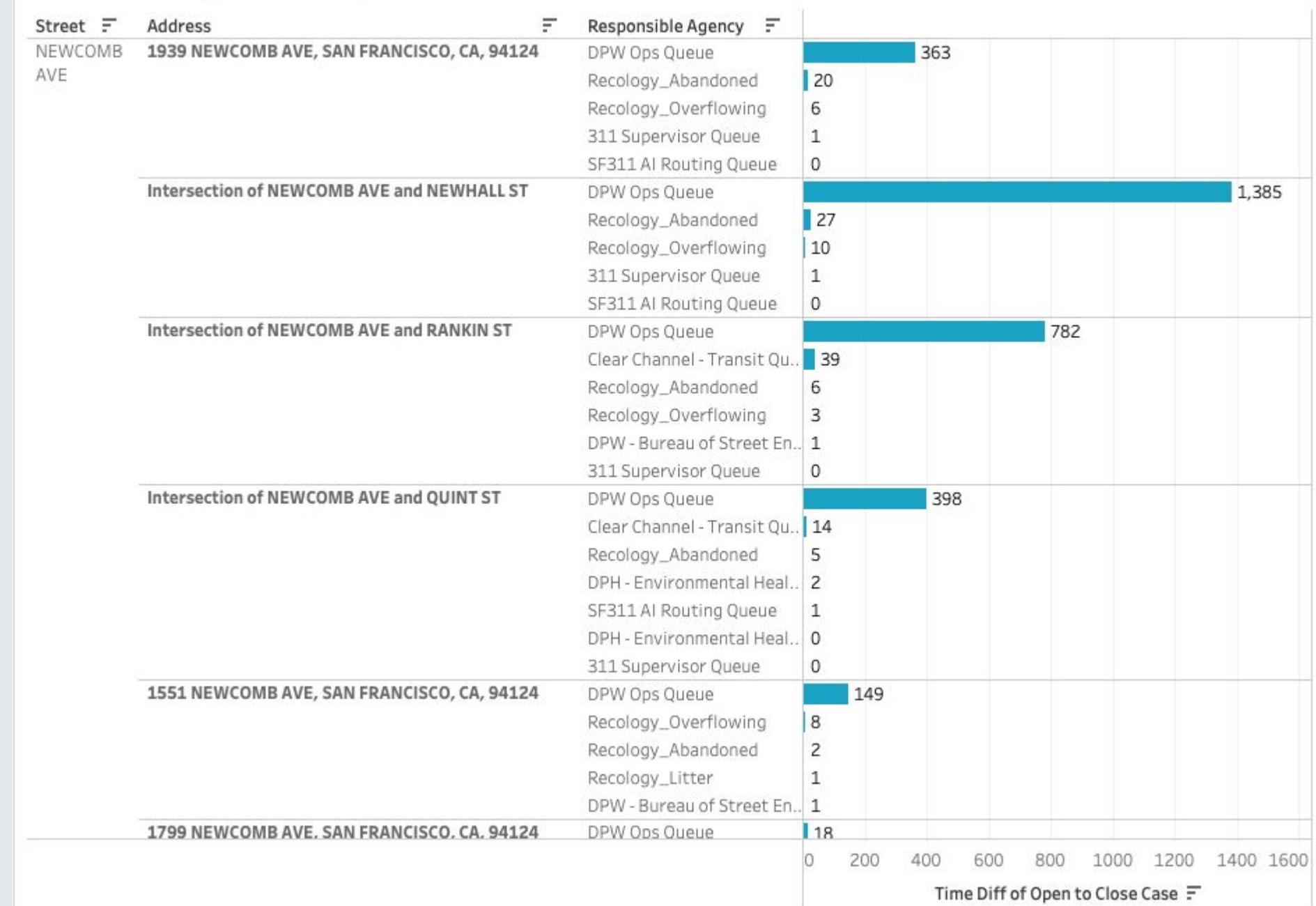
Bayview's Intersection's Count of Street & Sidewalk Cleaning [2019-2021]



Bayview's Intersection's Count of Street & Sidewalk Cleaning [2019-2021]



Bayview's Intersection's Street & Sidewalk Cleaning & Time Difference of Responsible Agency Open to Close Case [2019-2021]



Time Diff of Open to Close Case

Bayview's Count of Street & Sidewalk Cleaning [ 2019-2021 ]

# RESOURCES

Mike Choi, *311 Cases by Channel*. 01 December 2021

[311 Cases by Channel | DataSF | City and County of San Francisco \(sfgov.org\)](https://data.sfgov.org/311-Cases-by-Channel)

AndyM, *311 Cases*. 01 December 2021

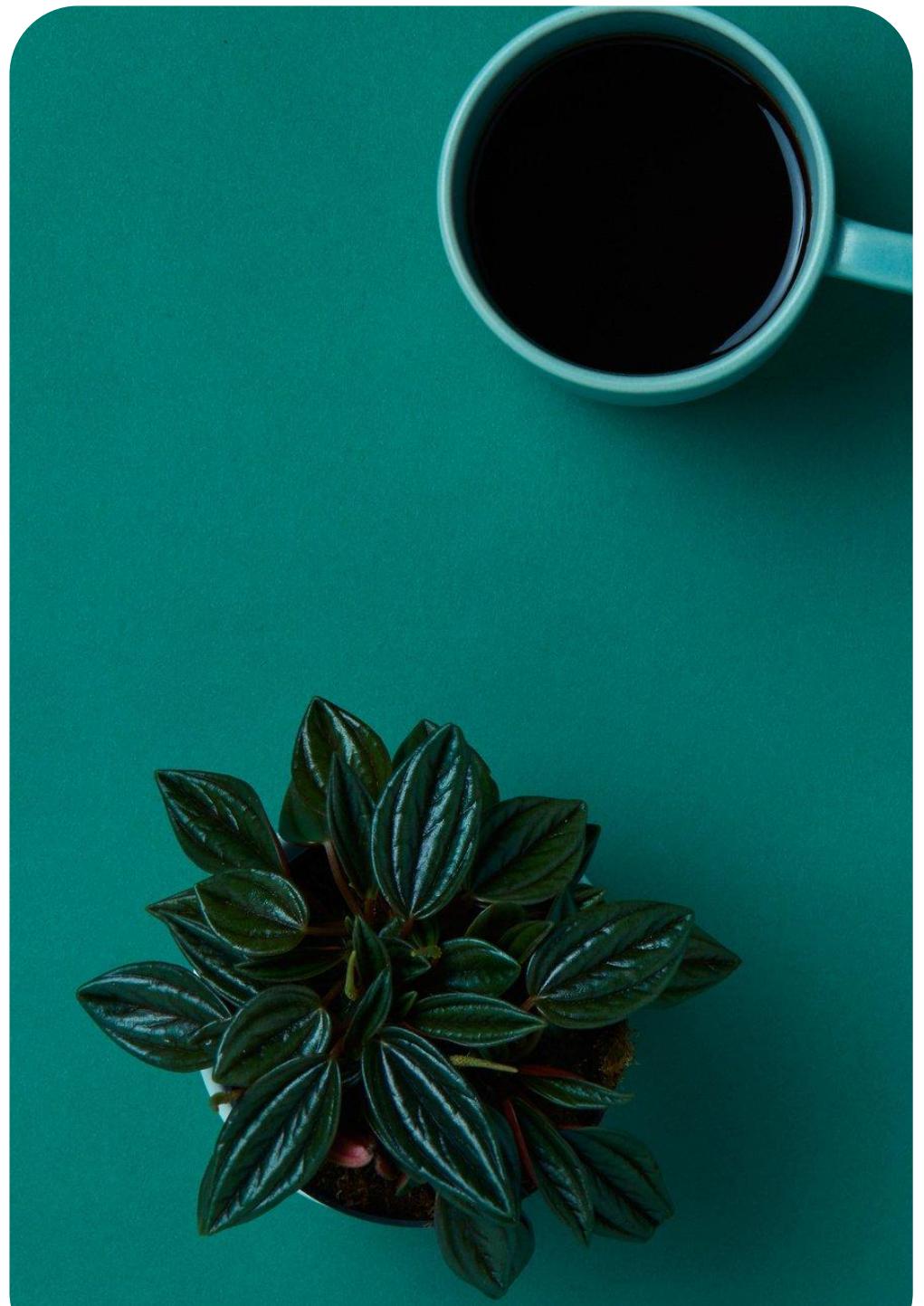
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311 Case Data - FAQ

[311 Case Data - FAQ \(datasf.org\)](https://datasf.org/311-case-data-faq)



**Thank You  
Questions?**