



My311 Data Analysis Report

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Agenda



1. Project Introduction

2. Methodology

3. Findings

1. Overall trend of requests
2. Why do people call 311?
3. When do people tend to report to 311?
4. How do people reach 311?
5. Geographic Patterns of Requests
6. How long does it take to process a 311 request?
7. Which department is in charge?
8. Let's make some forecast

4. Recommendations

Project Introduction

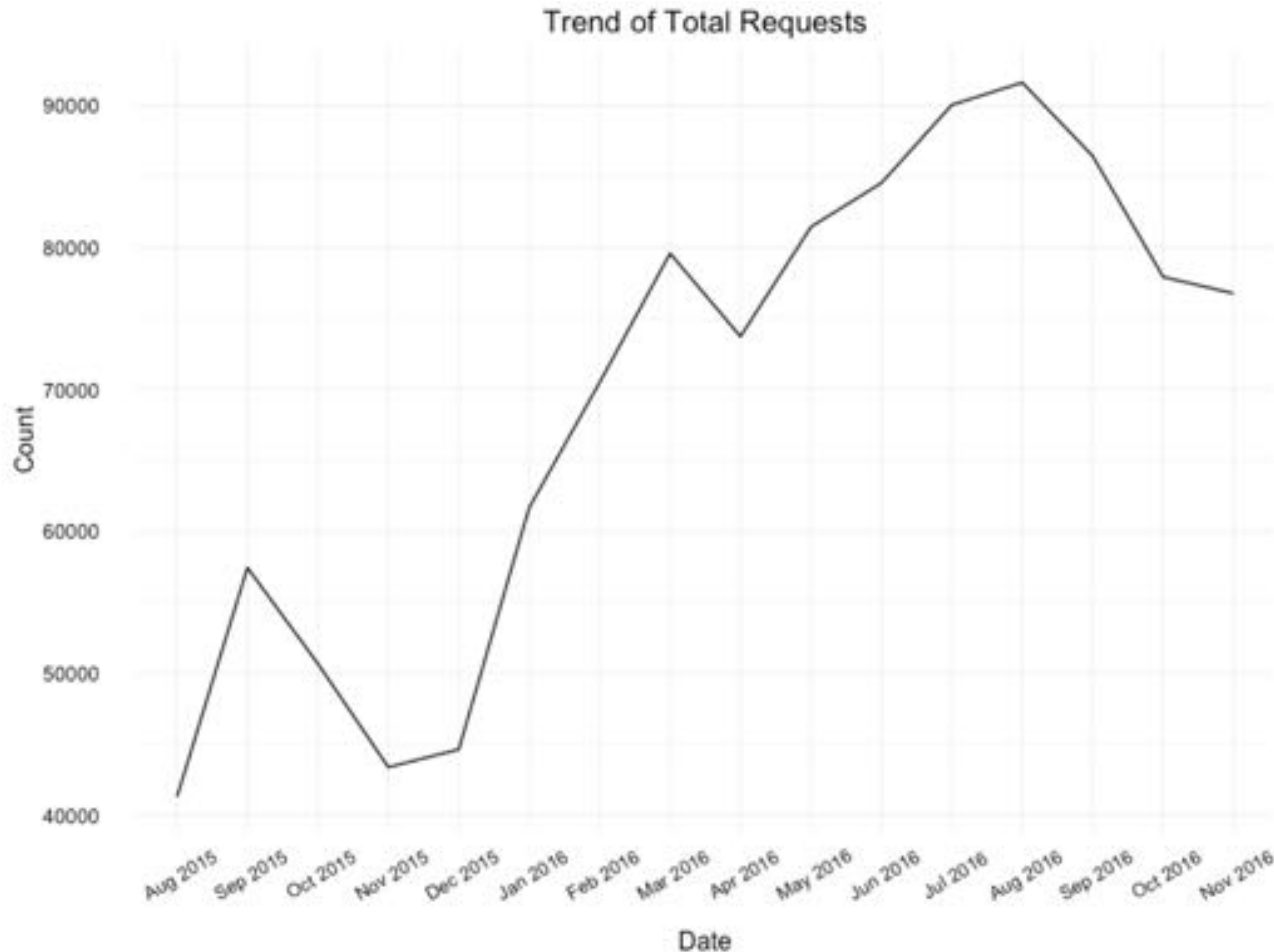


- Demand Analysis
 - Volume
 - Source
 - Time
 - Area
- Efficiency Analysis
 - Internal job distribution and working efficiency analysis
- Insights
- Recommendations



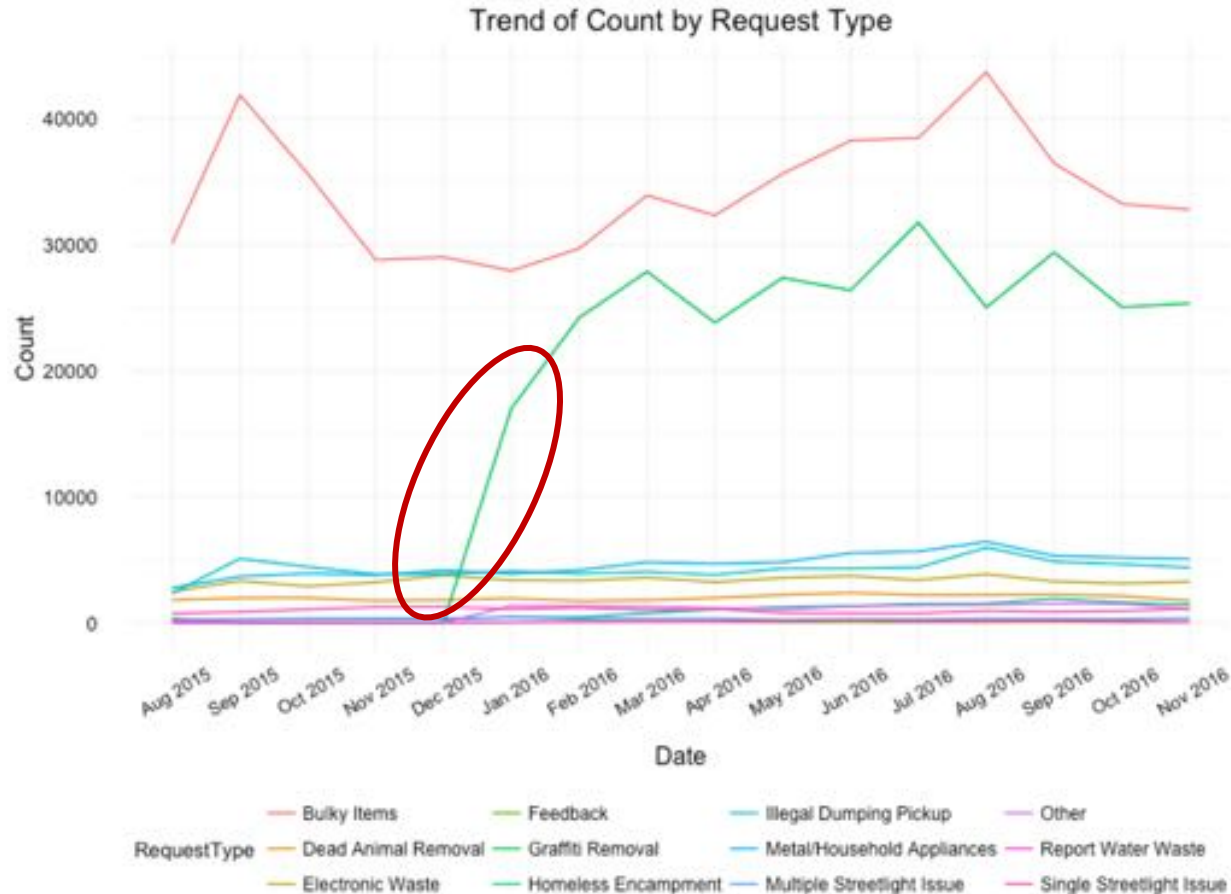
Overall trend of 311 requests

Overall trend of 311 requests



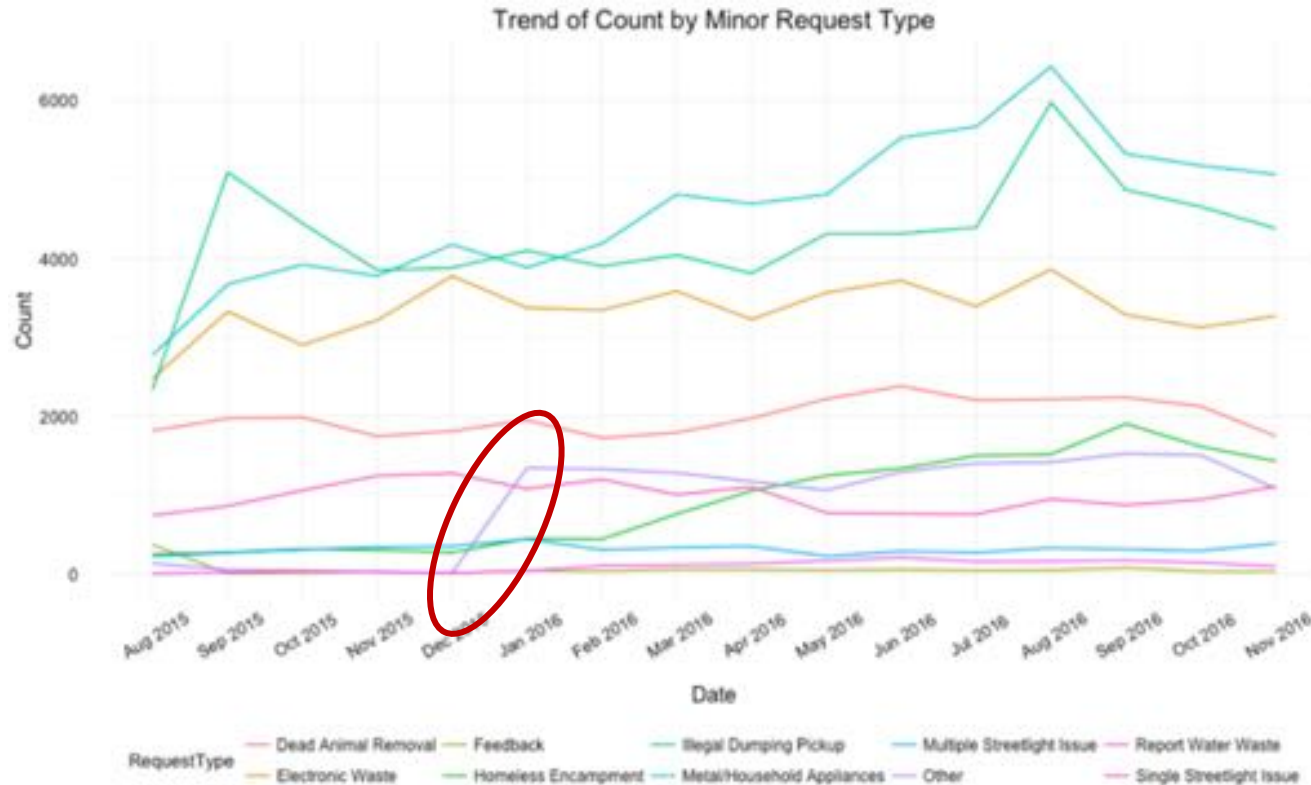
- Overall, the number of service request is increasing.
- Noticeably, the number of service request started to increase dramatically from Jan. 2016

Overall trend of 311 requests



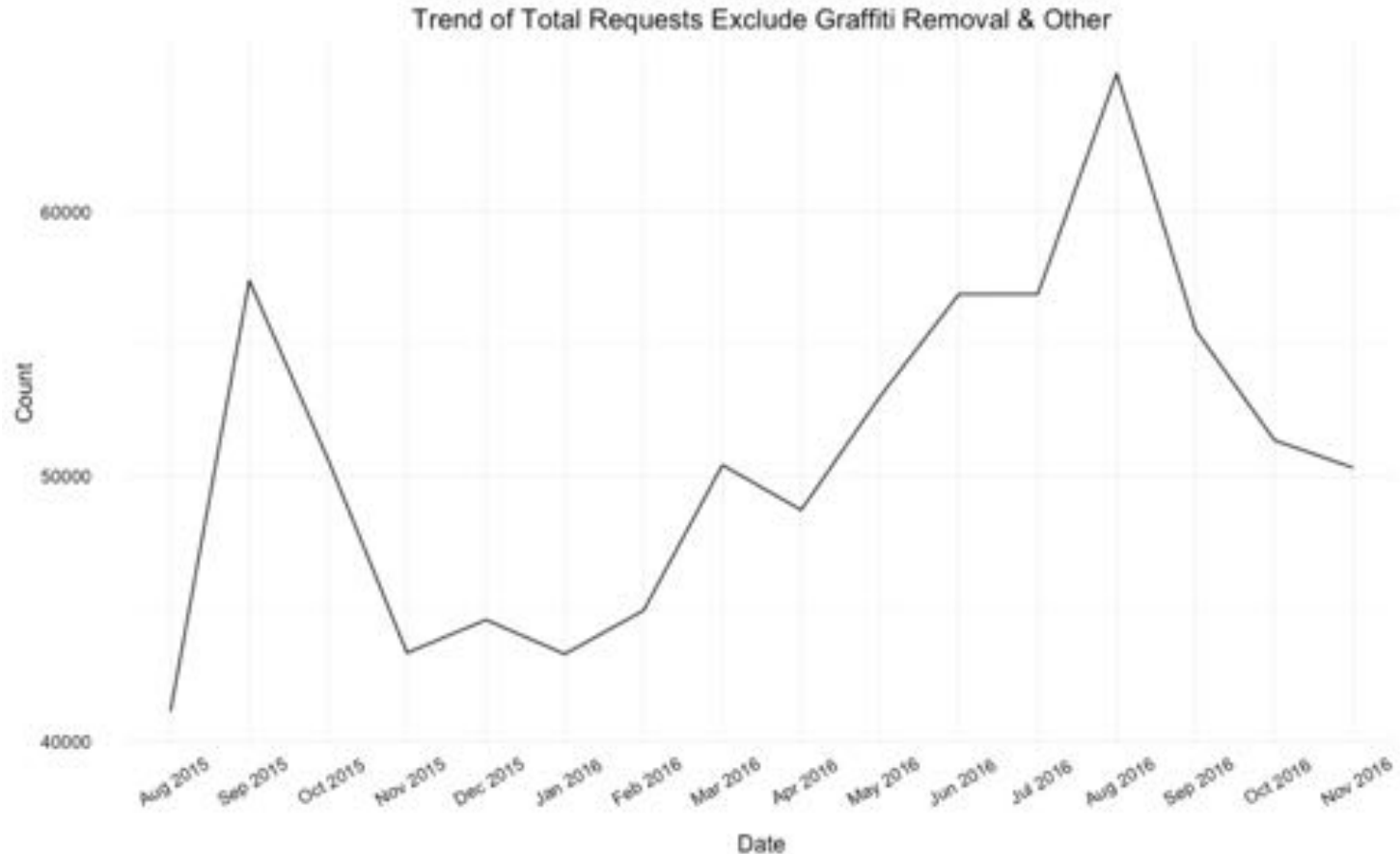
- The sudden request increase is due to a newly added category “Graffiti Removal”, not a sudden increase in issue.

Overall trend of 311 requests



- There is also an unusual growth in **Others** type, which we suspect may due to change of categorization.

Overall trend of 311 requests

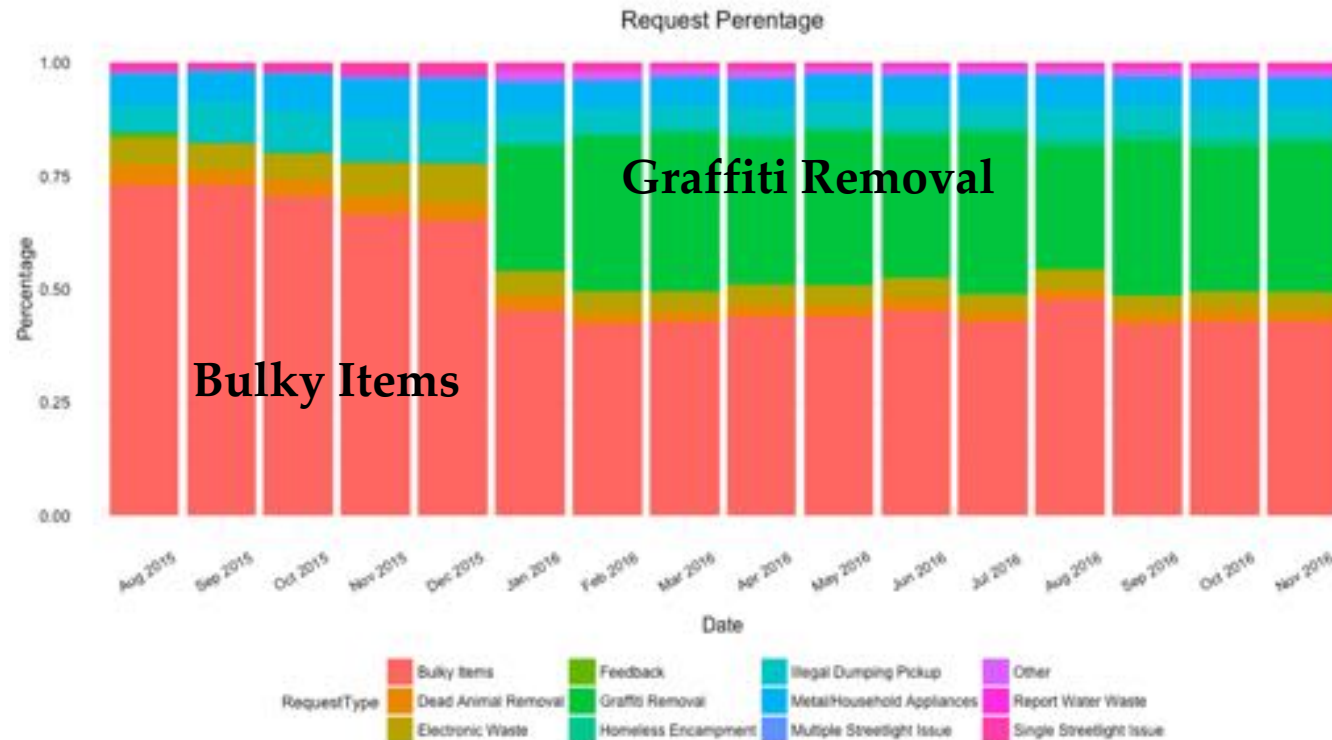


- There is an approximately 12 % increase (from approximately 58k in Aug. 2015 to approximately 65k in Aug. 2016)
- The potential reasons for the peaks



Why do people call 311?

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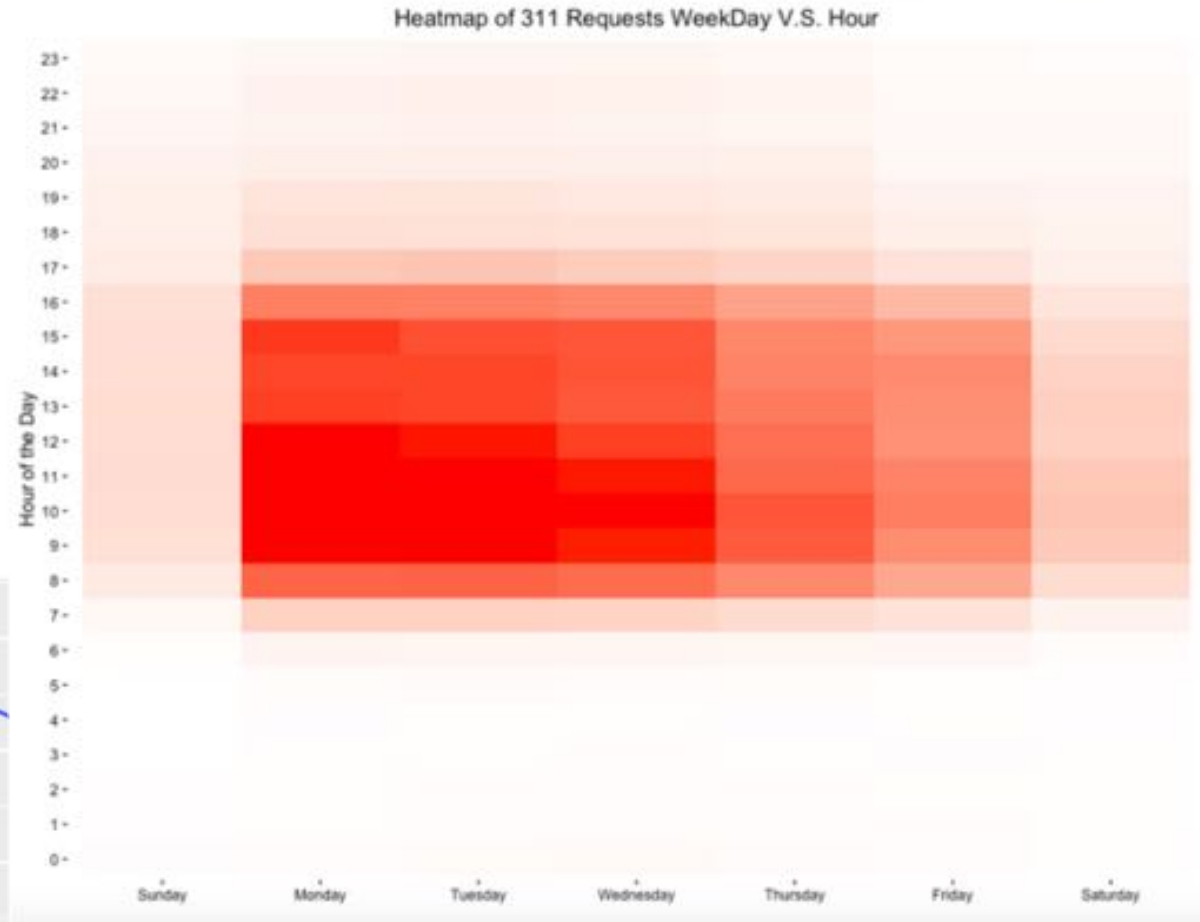
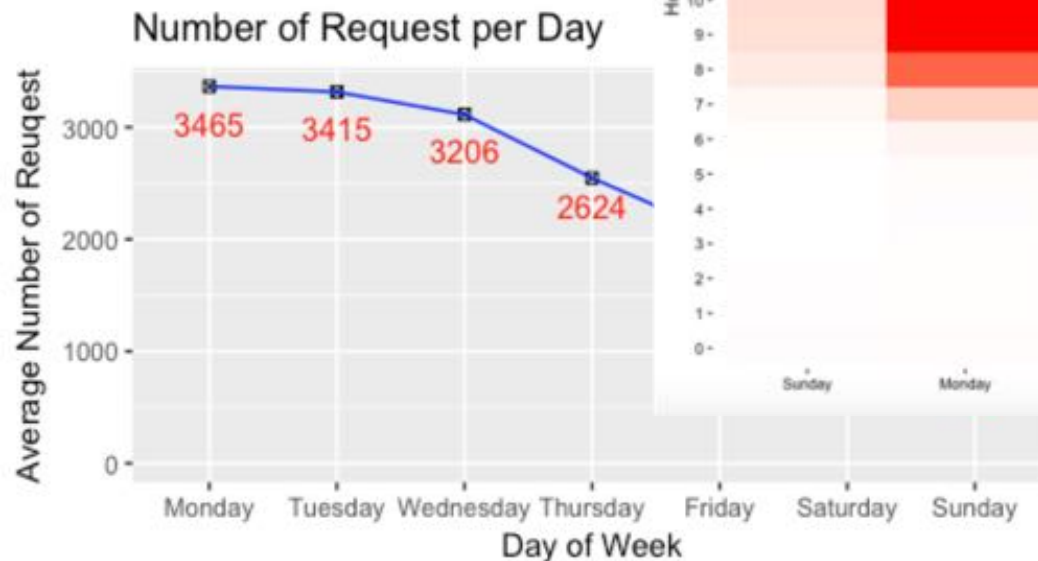


- Bulky Item and Graffiti Removal are the two mostly requested services

Why do people call 311?



- Peaks on Mondays from 8:00am to 3:00pm, and decrease gradually in the following week days.



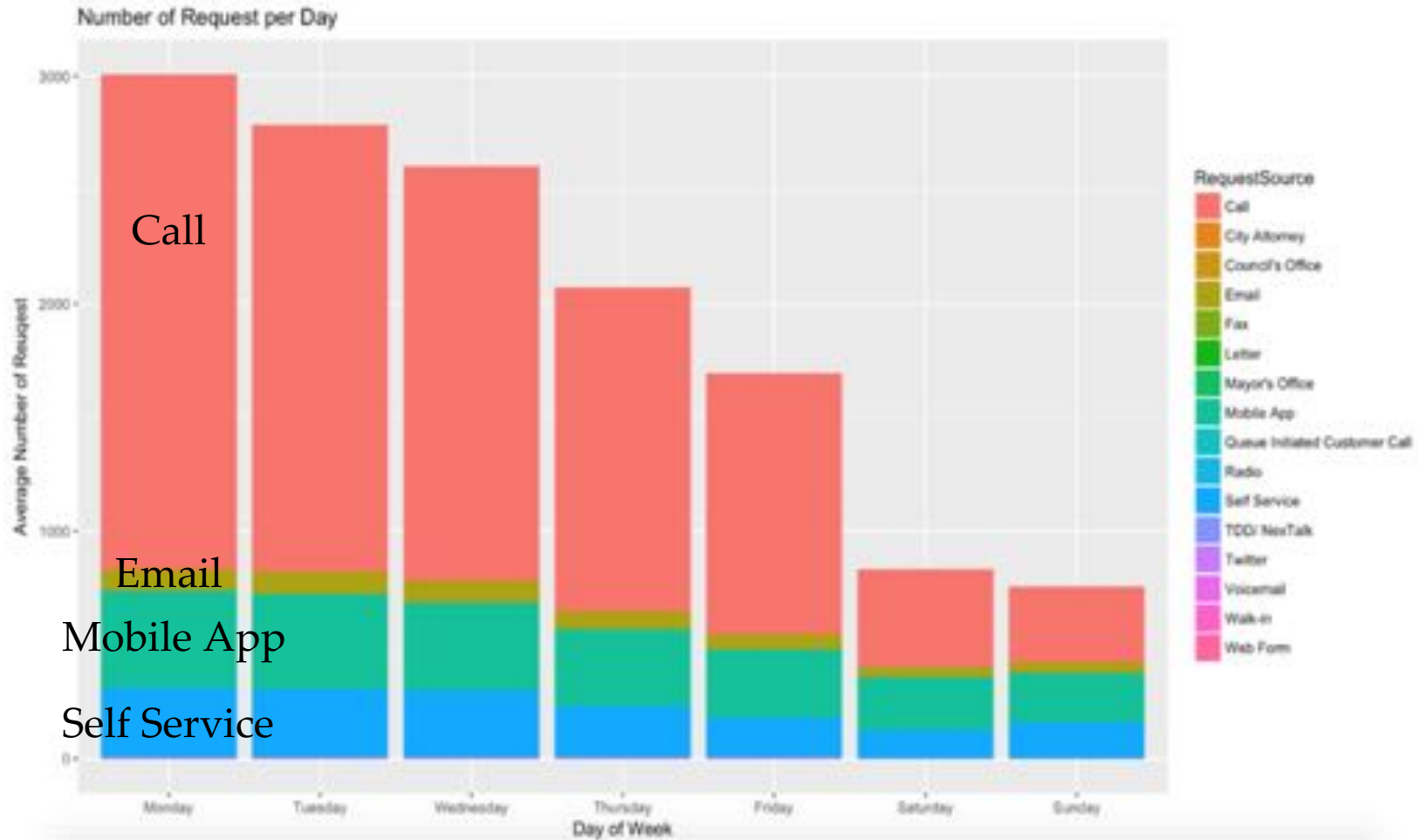


When do people report to 311?

When do people report to 311?



- Peaks on Mondays from 8:00am to 3:00pm



- After excluding “Driver Self Report” requests, there’s still a downward trend.

When do people report to 311?

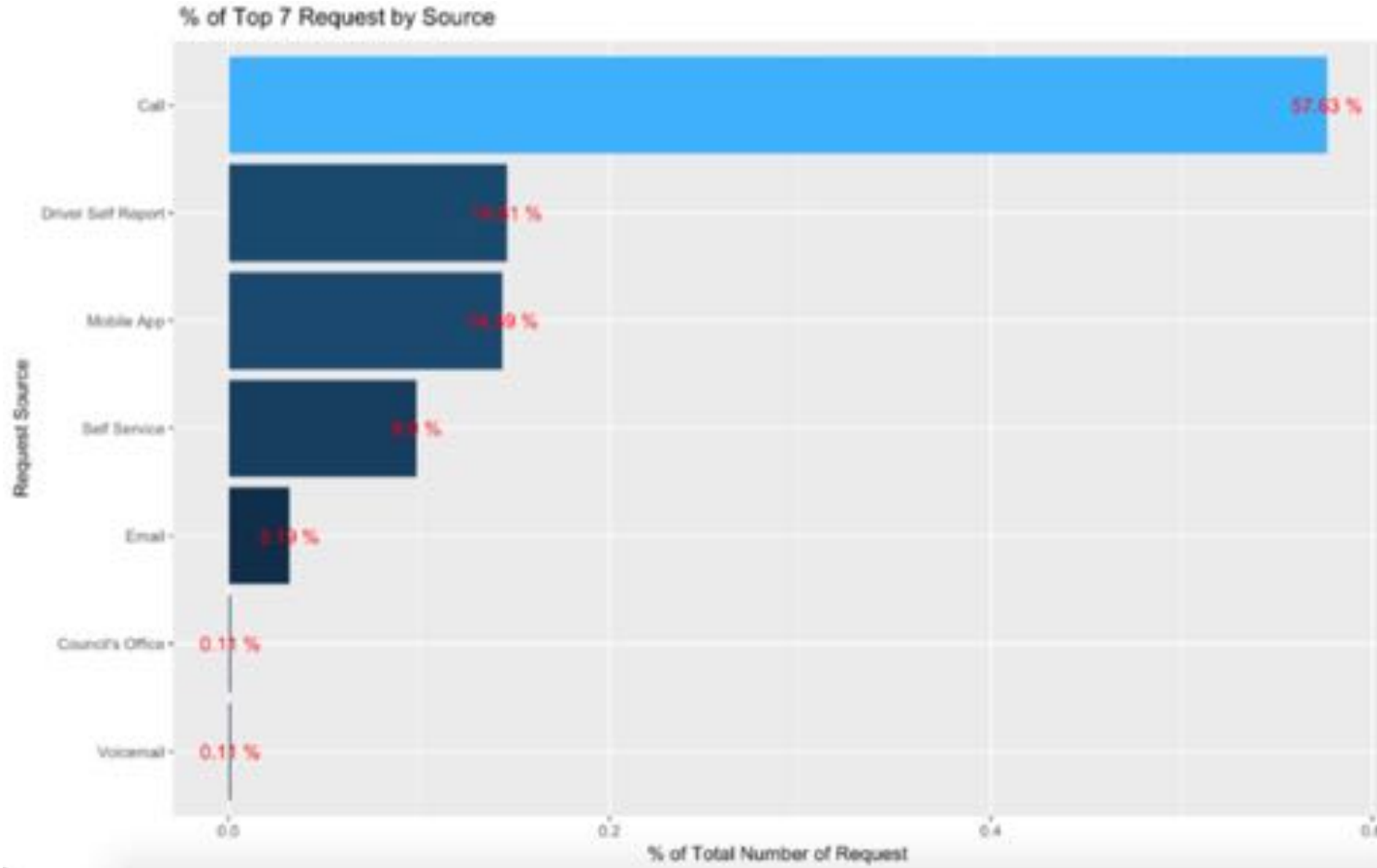


- People tend not to report issues during weekends through calls, but through other unattended ways.
- Potential Reasons:
 - 1) People who have requests on weekends would like to wait until Monday to report, because they might assume Call Center is closed at weekends.
 - 2) Requests sent during weekends will be dealt together on Monday.
 - 3) Call center is understaffed during weekends.



How do people reach 311?

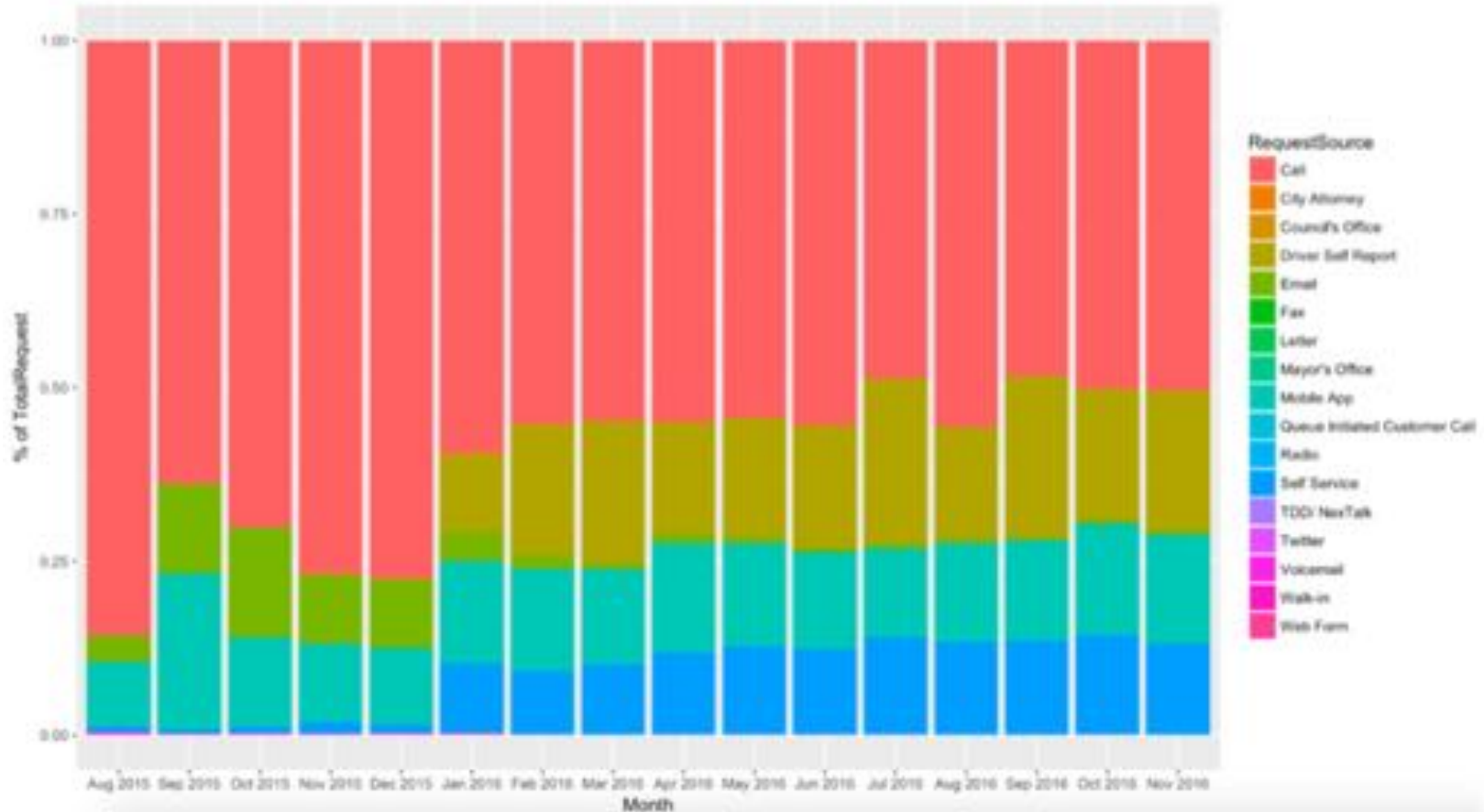
How do people reach 311?



- Call is still the major channel that people reach 311, reported more than half of total requests.

How do people reach 311?

Percentage of Request Source on Monthly Base

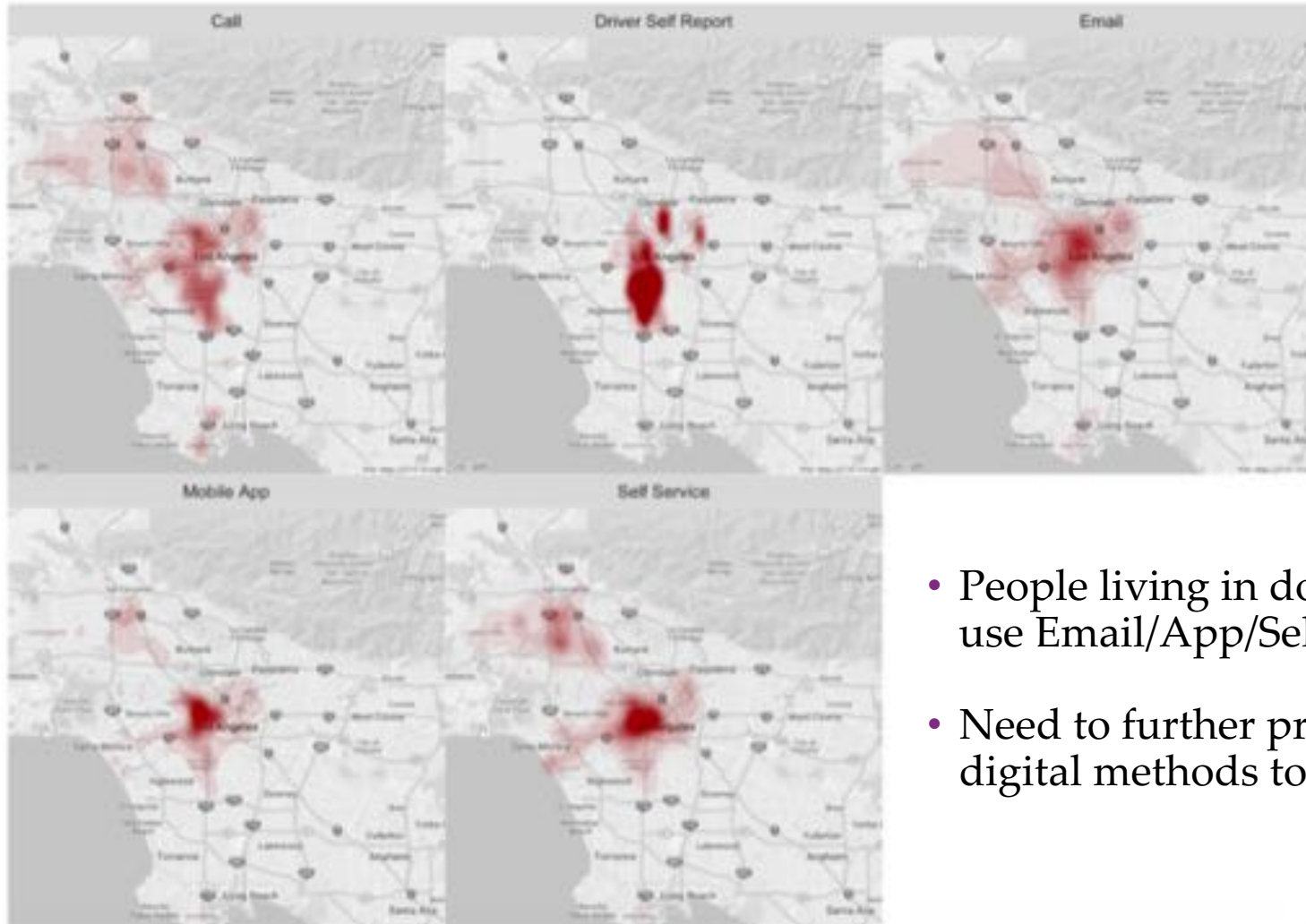


- However, things are changing - more and more people are now using App and Self Service to submit requests.

How do people reach 311?



Request Volume Distribution by Request Source



- People living in downtown tend to use Email/App/Self Service more
- Need to further promote these digital methods to the city.

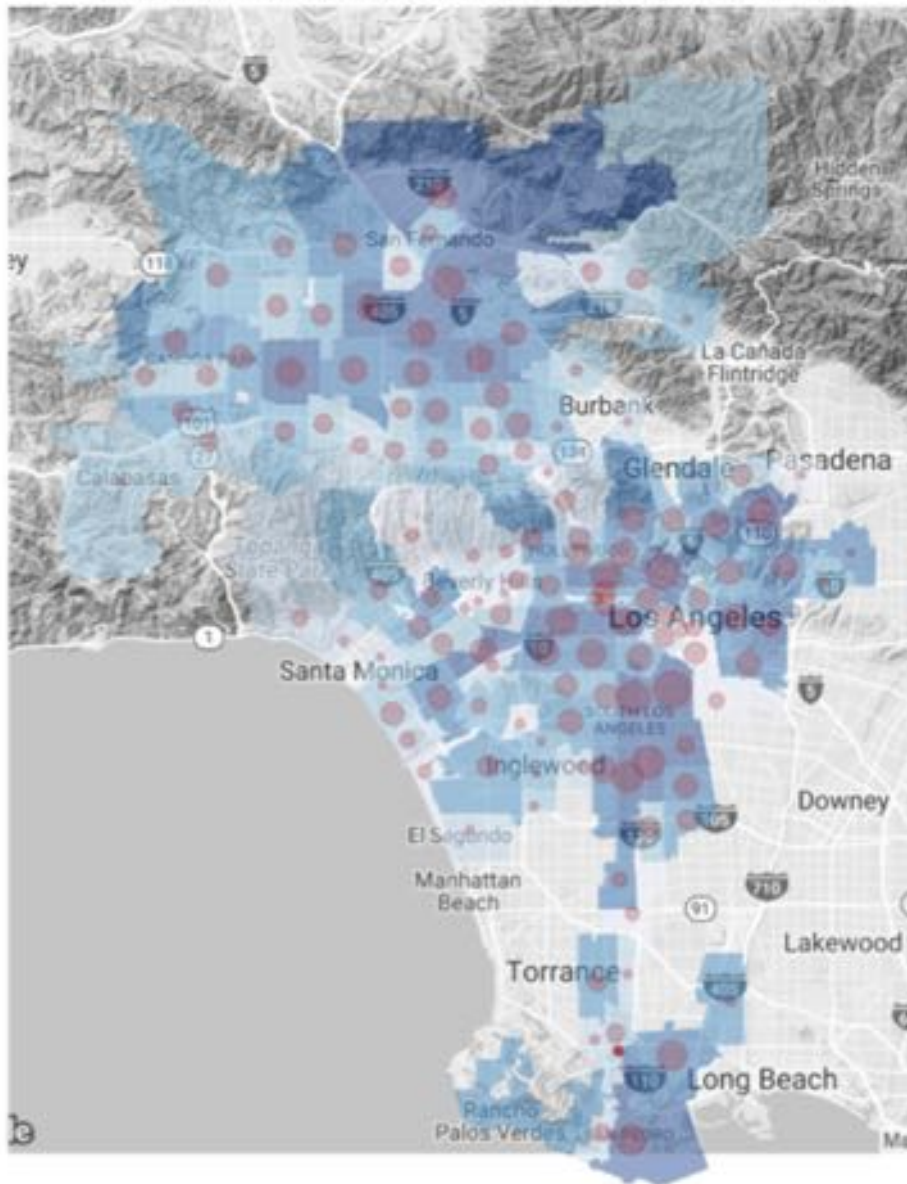


Geographic Patterns of Requests

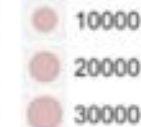
Geographic Patterns of Requests



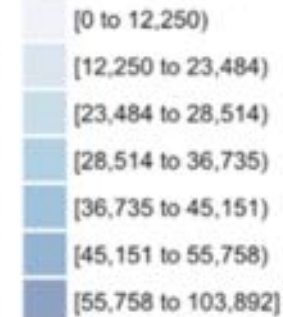
Request Numbers and Population by Zip Code



Request_Number



Population by Zip Code

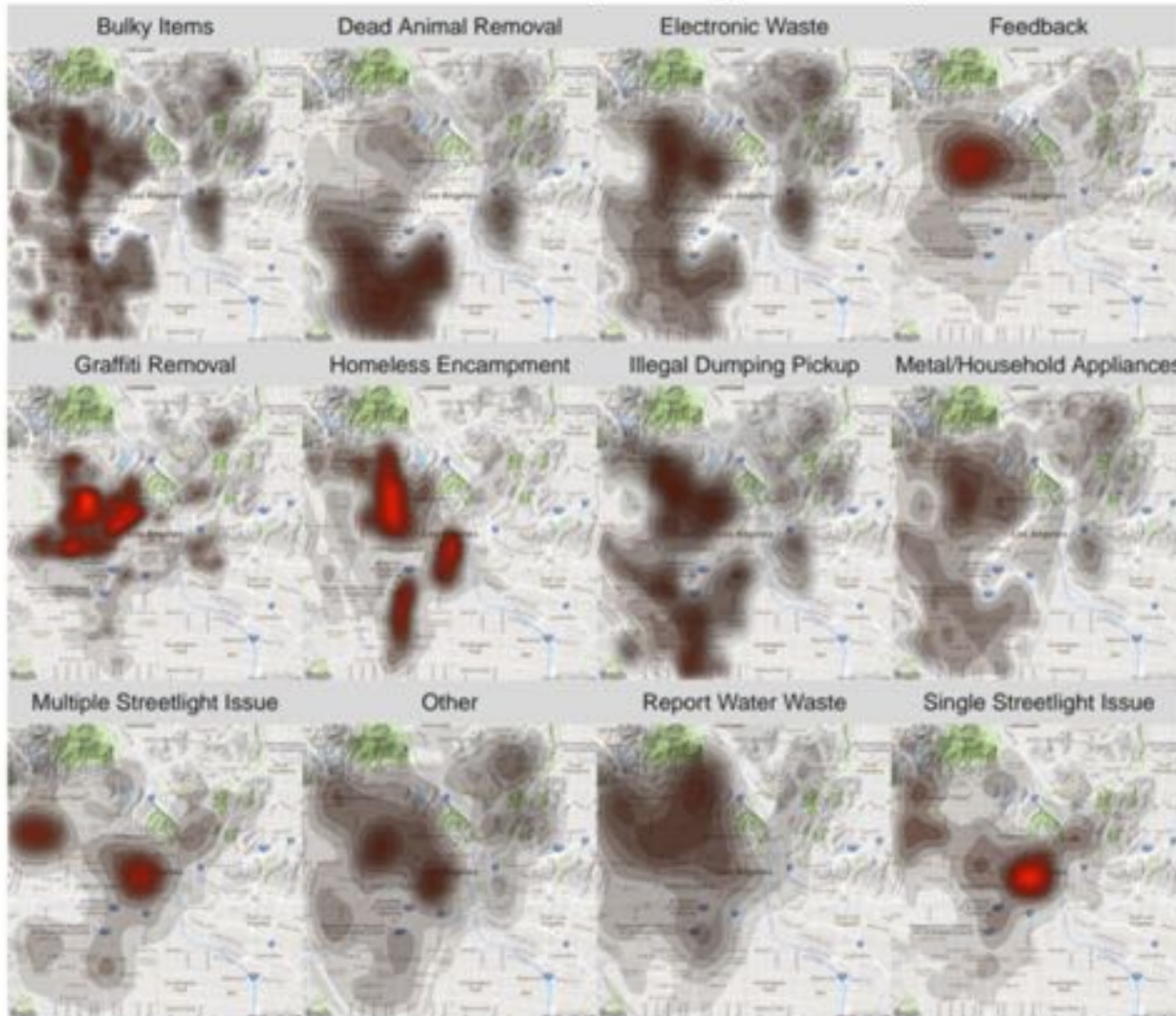


- Generally, the distribution of 3-1-1 service requests is in proportion to the population distribution.

Geographic Patterns of Requests



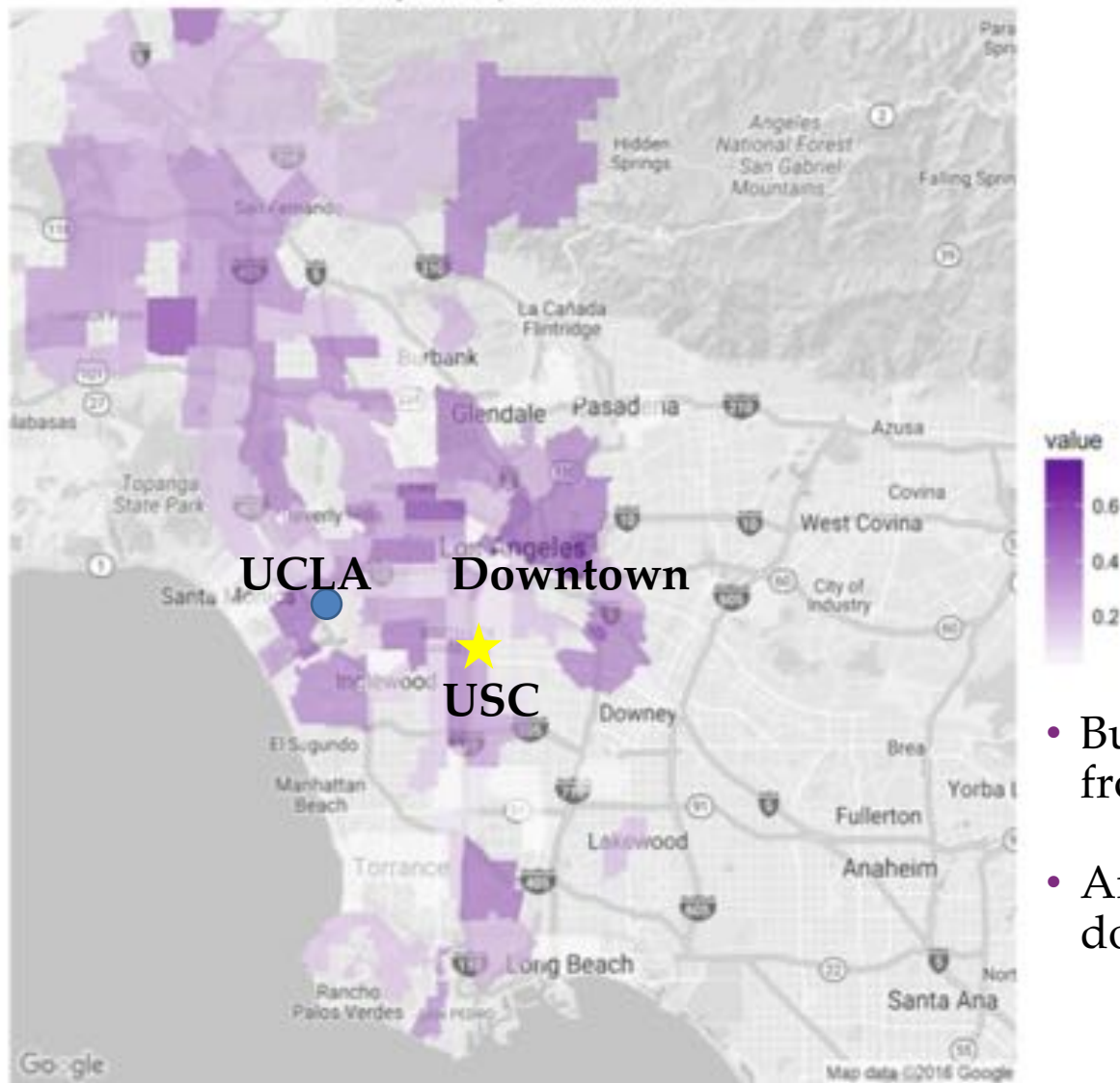
Distribution of Request Type on Map



Bulky Items



Bulky Items per Household

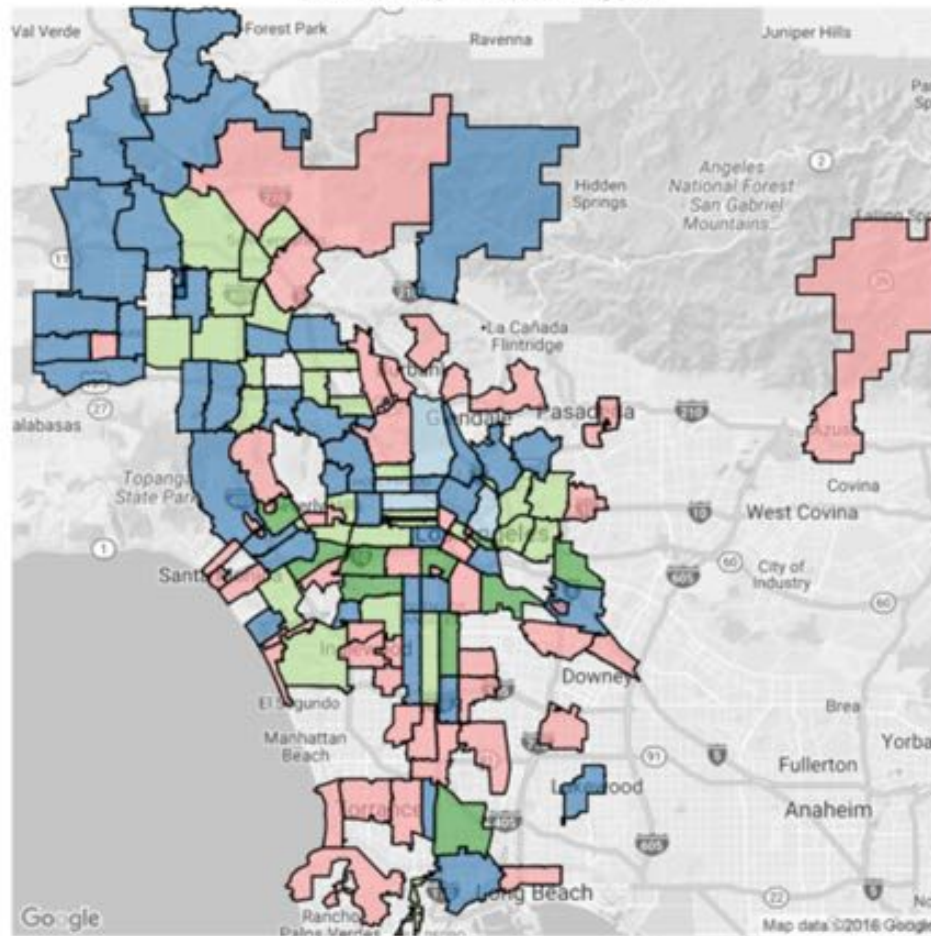


- Bulky items are mostly requested from residential
- Areas such as Koreatown, downtown and around USC

Geographic Patterns of Requests



Clusters by Request Type



- K-means clustering: 5 clusters
- Same clusters share similar magnitudes and structures of requests

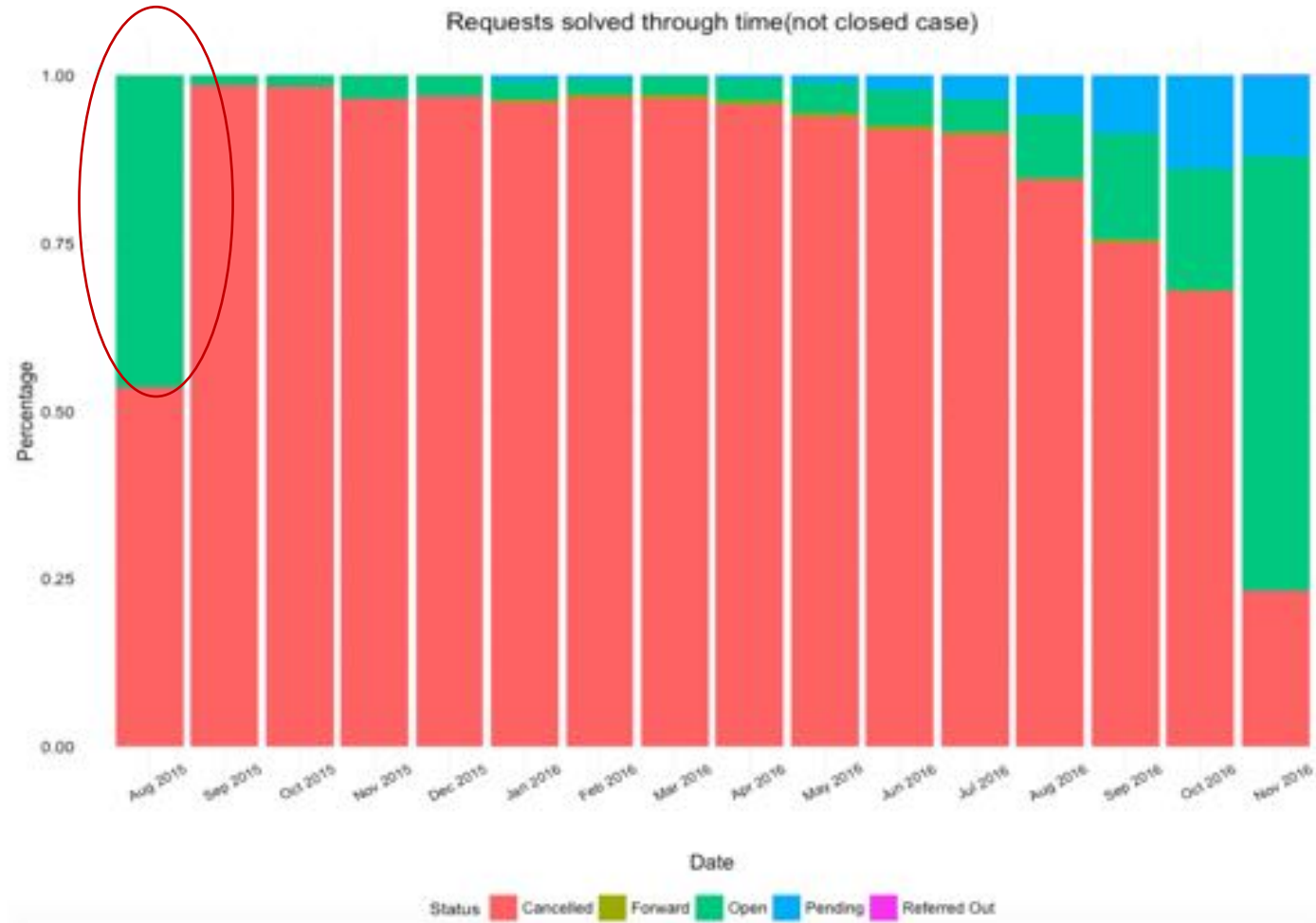


	1	2	3	4	5
size	4.00	46.000000	29.00000	10.0	50.00
Bulky.Items	12198.75	3873.608696	8697.58621	3956.7	345.26
Dead.Animal.Removal	825.25	219.413043	479.68966	260.1	27.98
Electronic.Waste	1104.25	366.021739	862.86207	411.1	35.88
Feedback	15.75	6.608696	12.58621	6.7	0.58
Graffiti.Removal	12463.75	1092.391304	3263.24138	6624.9	284.82
Homeless.Encampment	401.75	105.695652	175.68966	177.4	17.66
Illegal.Dumping.Pickup	1950.75	409.543478	1056.65517	731.3	45.04
Metal.Household.Appliances	1305.50	630.717391	1048.65517	426.0	63.36
Multiple.Streetlight.Issue	74.00	46.260870	52.00000	43.0	10.70
Other	229.75	117.565217	202.34483	125.6	18.20
Report.Water.Waste	16.75	18.760870	17.34483	6.4	1.84
Single.Streetlight.Issue	191.00	148.630435	149.31034	187.0	31.96



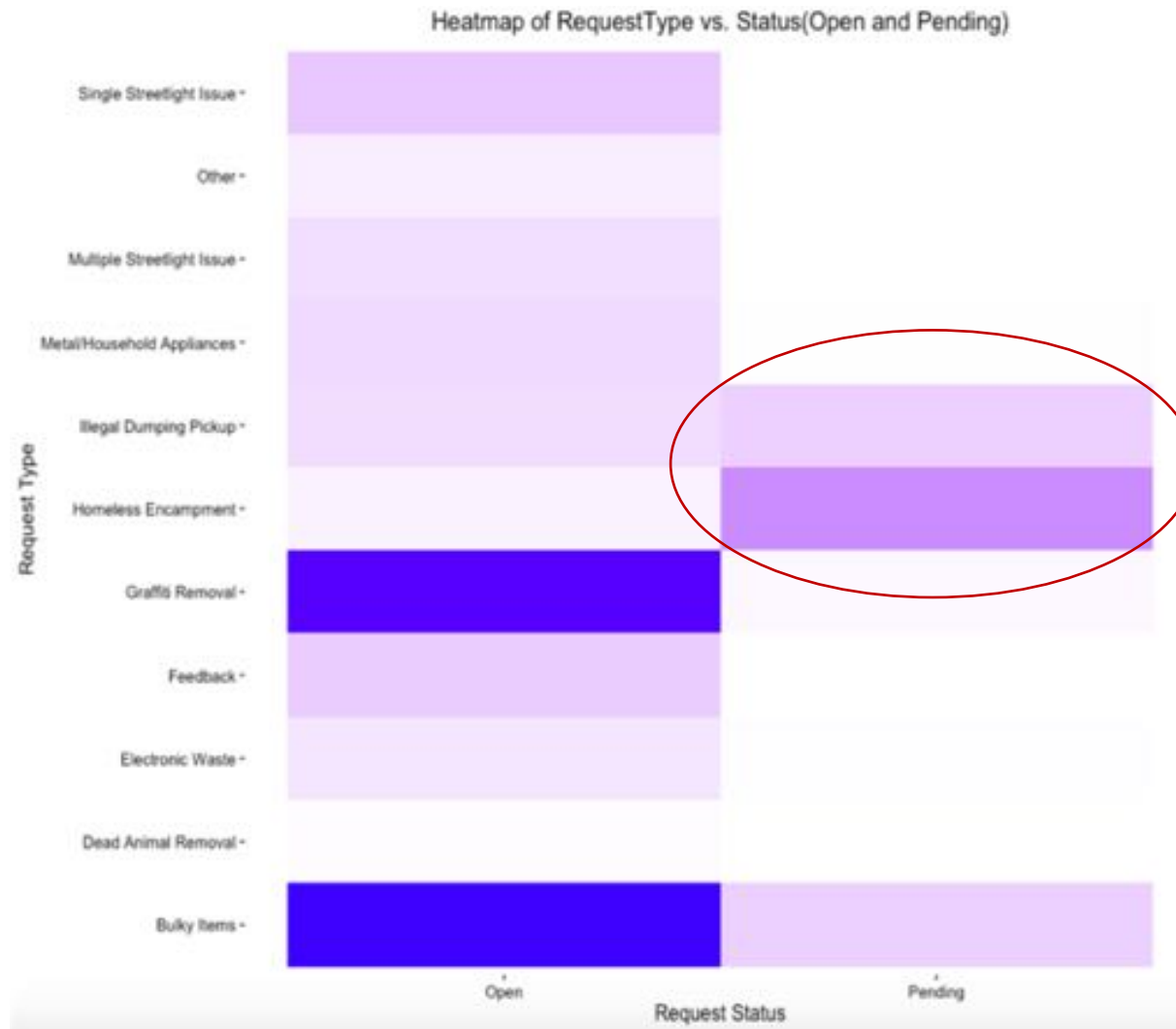
**How long does it take to
process a request?**

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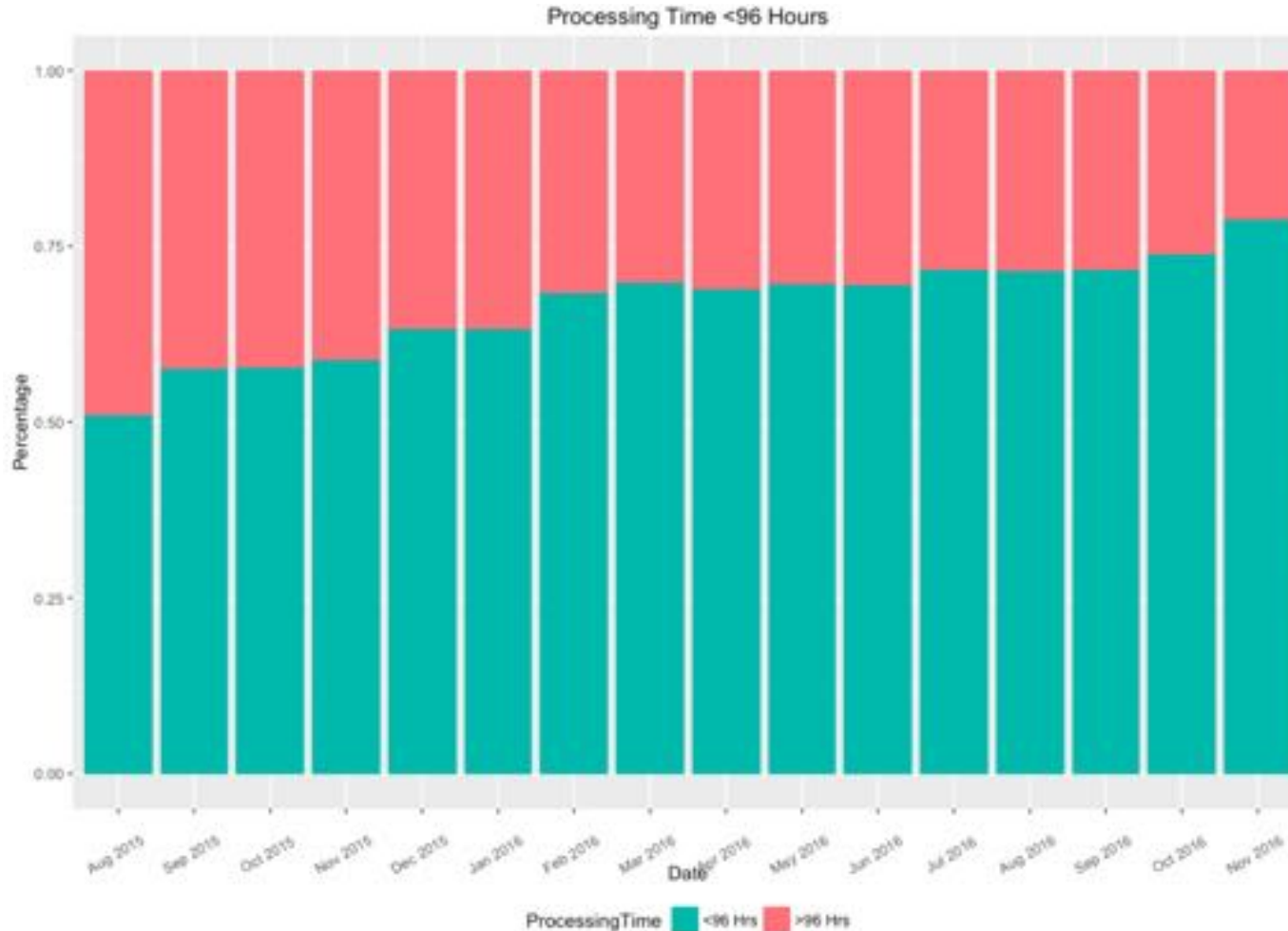
- Over 96% of all requests are closed
- Remaining “Open” requests in Aug 2015 (which are all Feedback requests)

How long does it take to process a request?



- Pending cases of Homeless Encampment & Illegal Dumping Pickup

How long does it take to process a request?



- As of Nov. 2016, around 75% of service requests can be solved within 96 hours (4 days)

How long does it take to process a request?



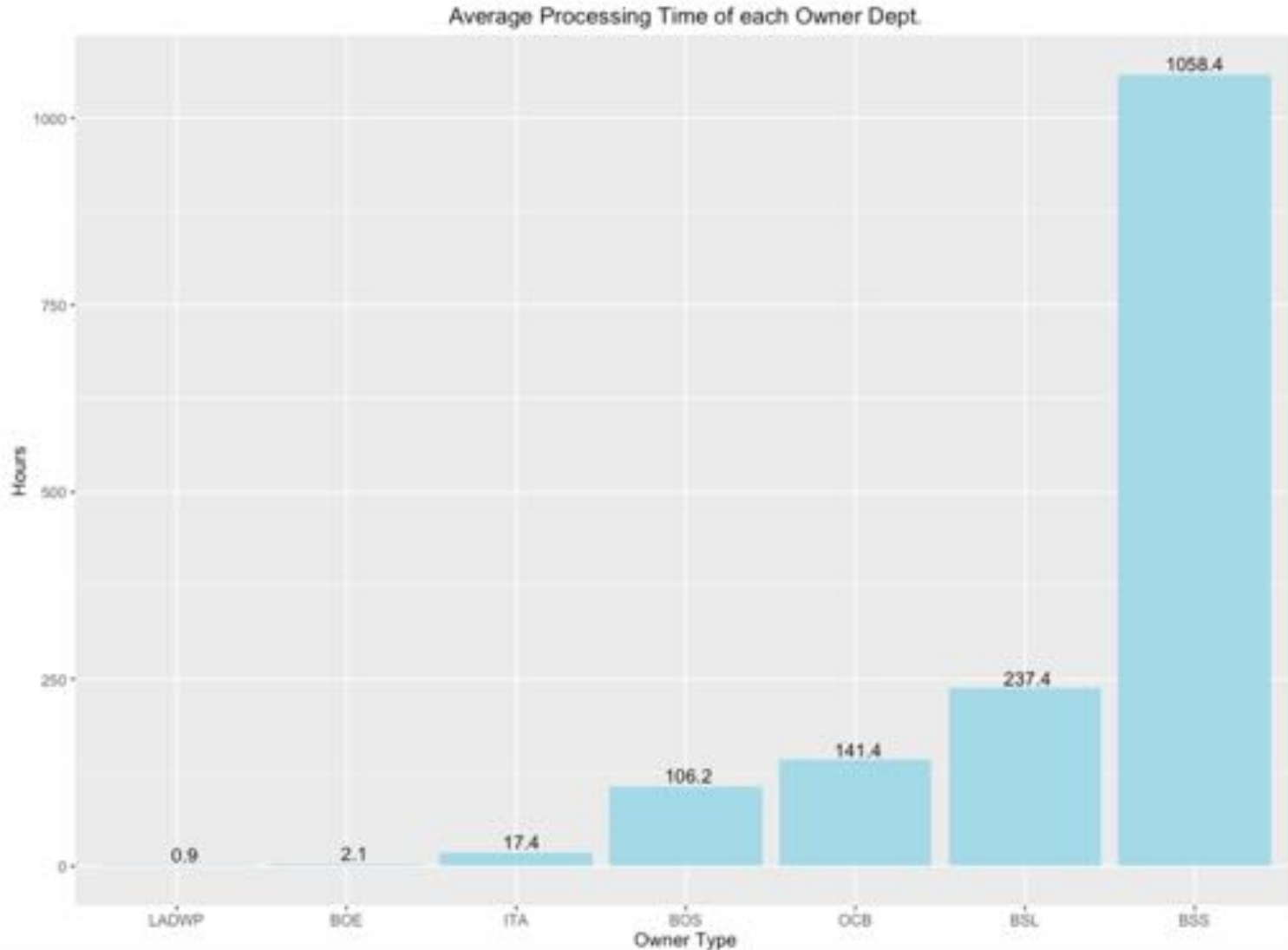
Average Processing Time by RequestType



How long does it take to process a request?



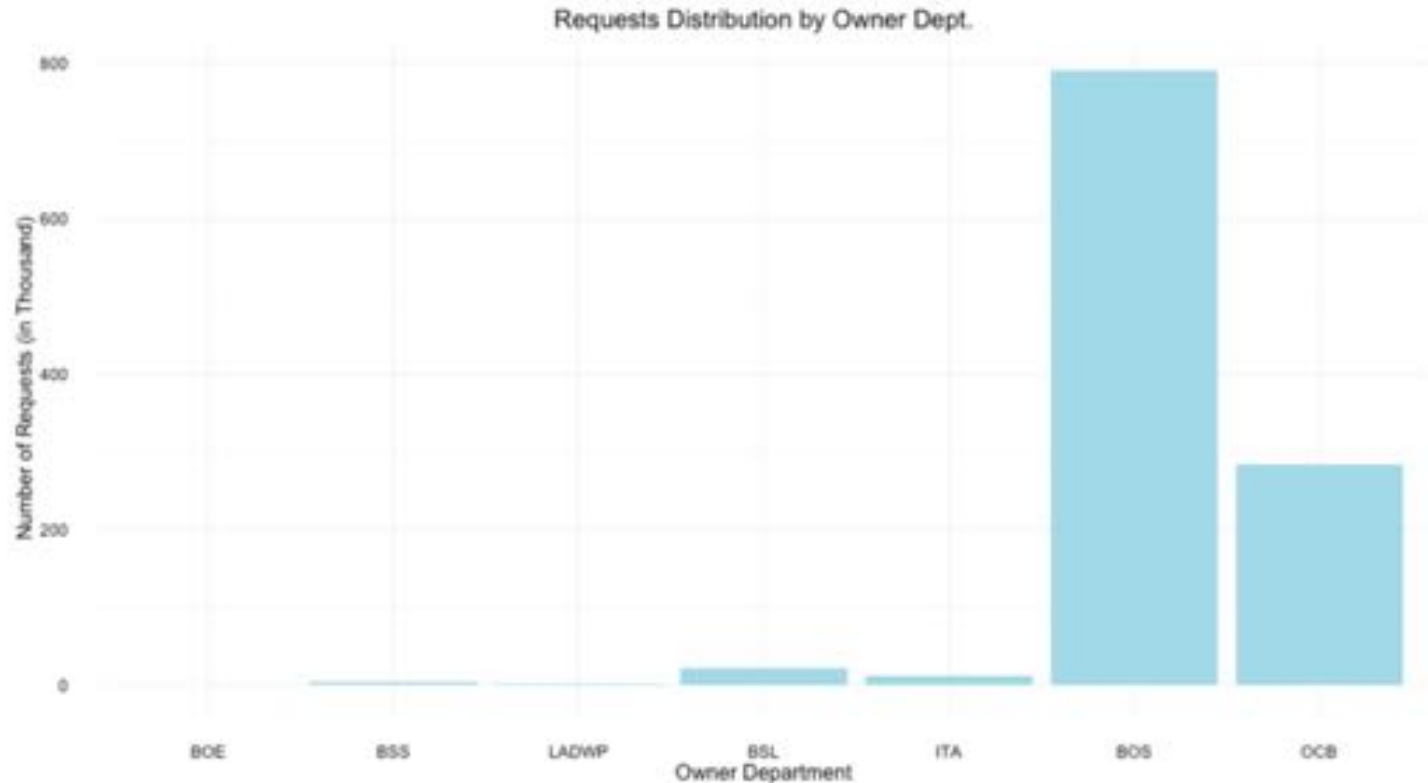
- Most efficient Department





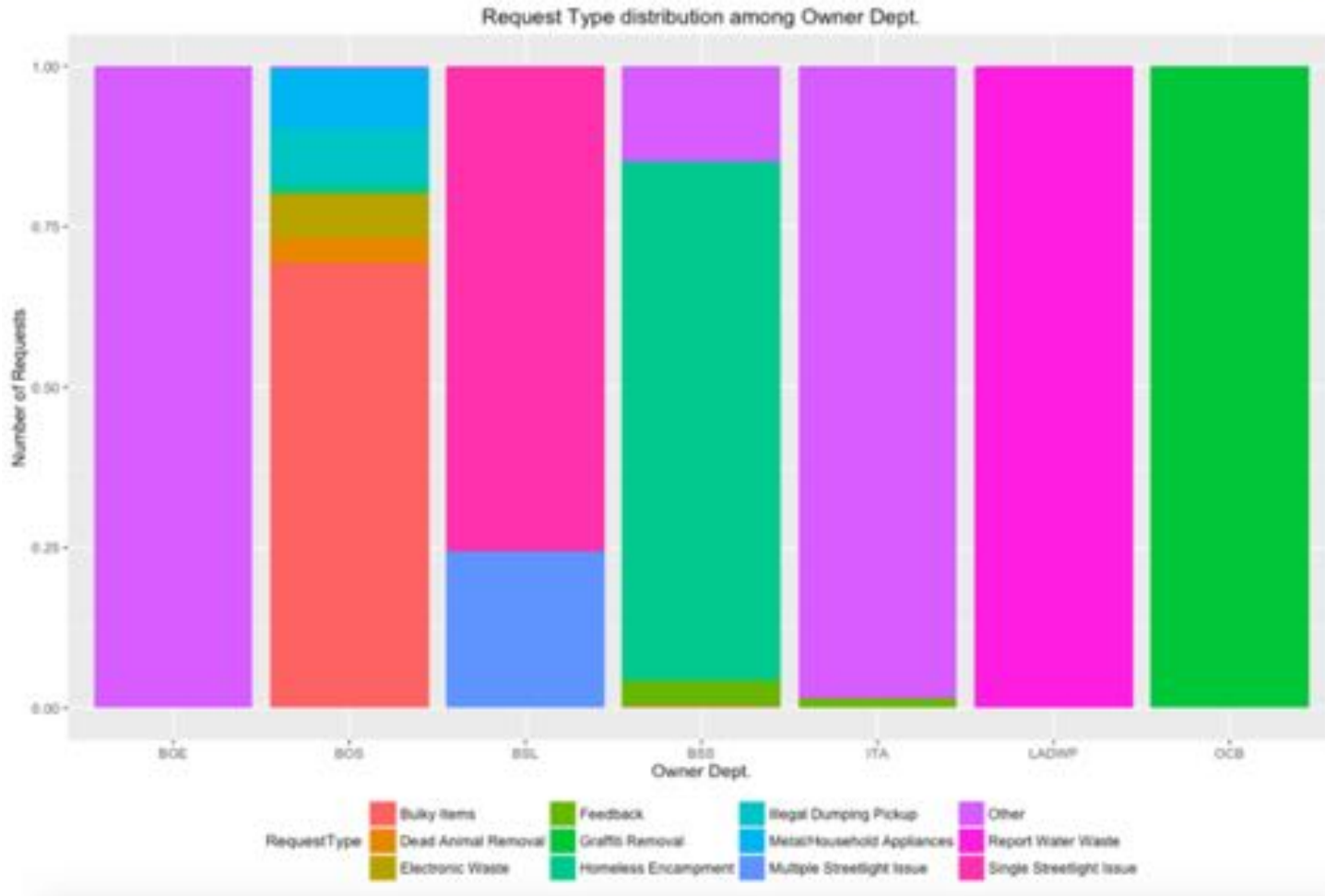
Which department is in charge?

Which department is in charge?



- The top 3 busy departments are BOS, OCB and BSL, who's taking care of Bulky Items, Graffiti Removal and Metal/Household Appliance respectively.

Which department is in charge?

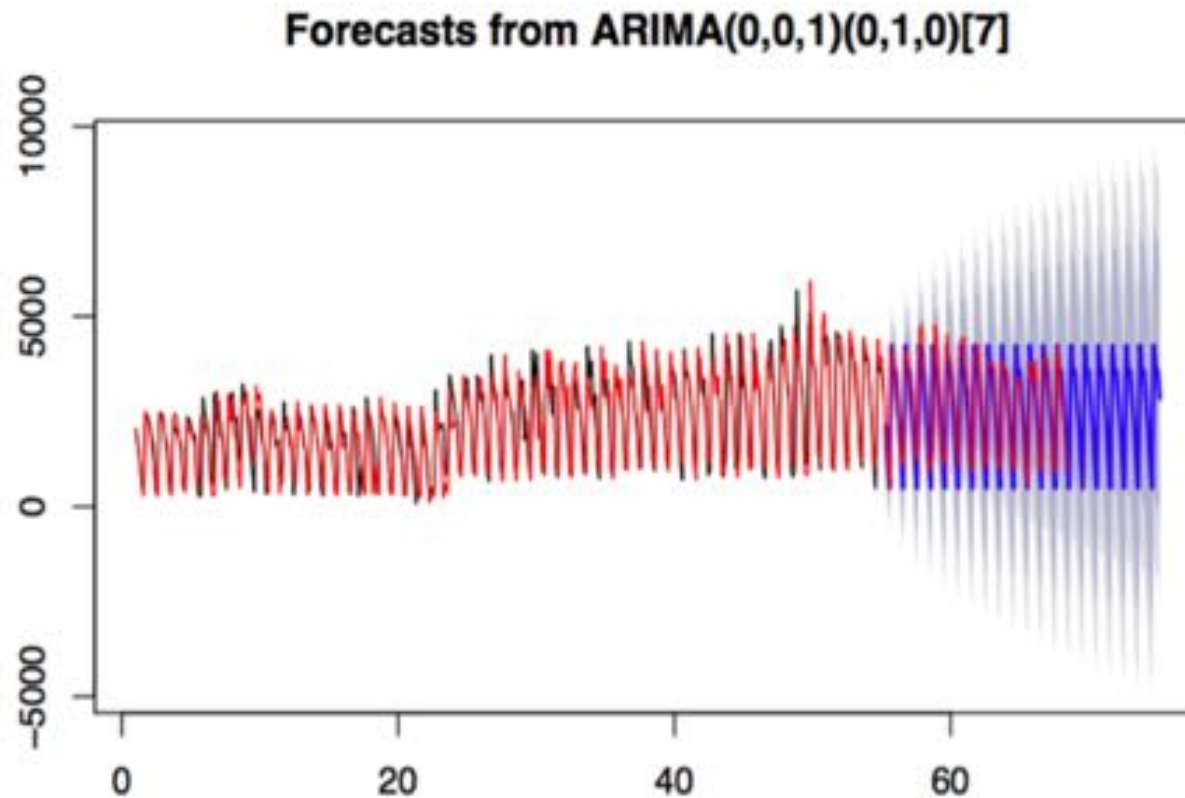


- Add more specialized category to break down “Other” requests



**Let's make some
forecasting!**

Forecasting



Forecasting



Total Number

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
4238	3557	3572	2837	2127	1132	484

Bulky Item

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2267	1797	1692	1298	1084	509	193

Graffiti Removal

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1904	877	339	250	1114	956	1147

Call

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2410	2255	1990	1639	1309	489	792

Recommendations



- Allocate the resources solving 311 requests in correspondence with the population density in each area.
- Provide more disposal services in the area with more households.
- Encourage and promote the use of MyLA311 Apps and online forms instead of phone
- Add triage and category preselection functions at the time of calling
- Update “Action Taken” factor with more levels
- Add more specialized category to break down “Other” requests
- More attention should be paid to Illegal Dumping Pickup and Homeless Encampment.