

# Los Angeles City 311 Data Analysis

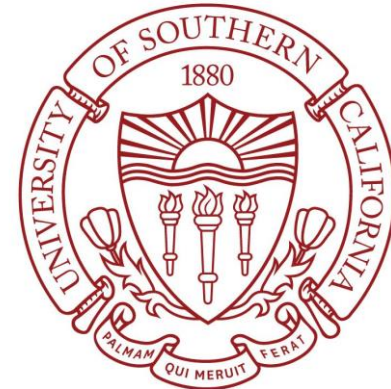
Team SoCal Analytics

Feili Wu   Jing (Helen) Wang   Kshitij Kulkarni   Sheng-Jhih (Ethan) Lin   Ying Zhang

# Agenda

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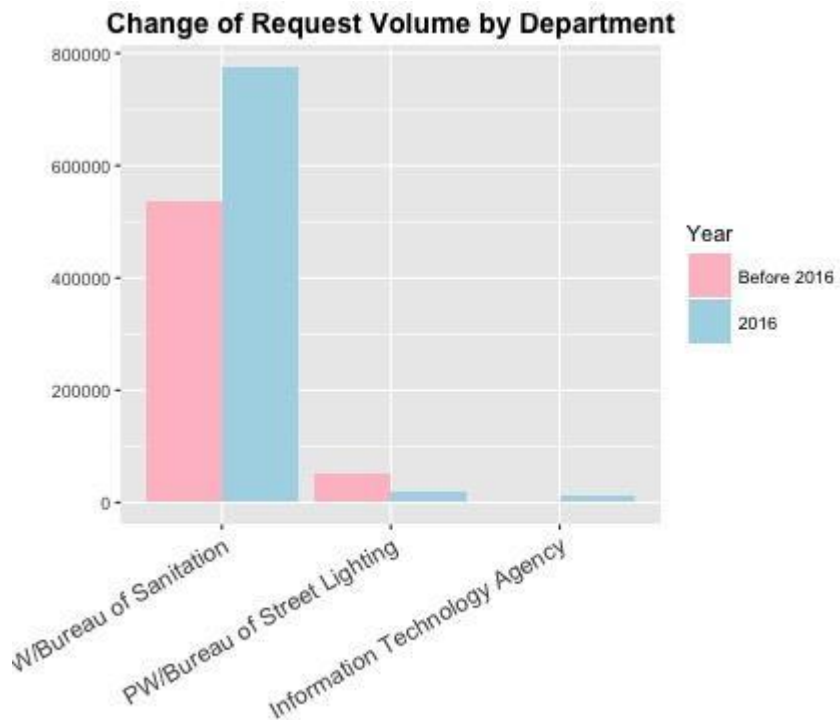
- Findings by Department
- Findings by Service Types
- Findings by Request Sources
- Recommendations



# Findings by Department

# Request Distribution by Department

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- Before 2016, there were 6 departments processing service requests
- In 2016, there are 7 departments
- 3 new departments created
  - Office of Community Beautification
  - Los Angeles Department of Water and Power
  - Bureau of Engineering
- 4 departments remain on duty:
  - Bureau of Sanitation (BOS)
  - Bureau of Street Lighting (BSL)
  - Information Technology Agency (ITA)
  - Bureau of Street Services (BSS)

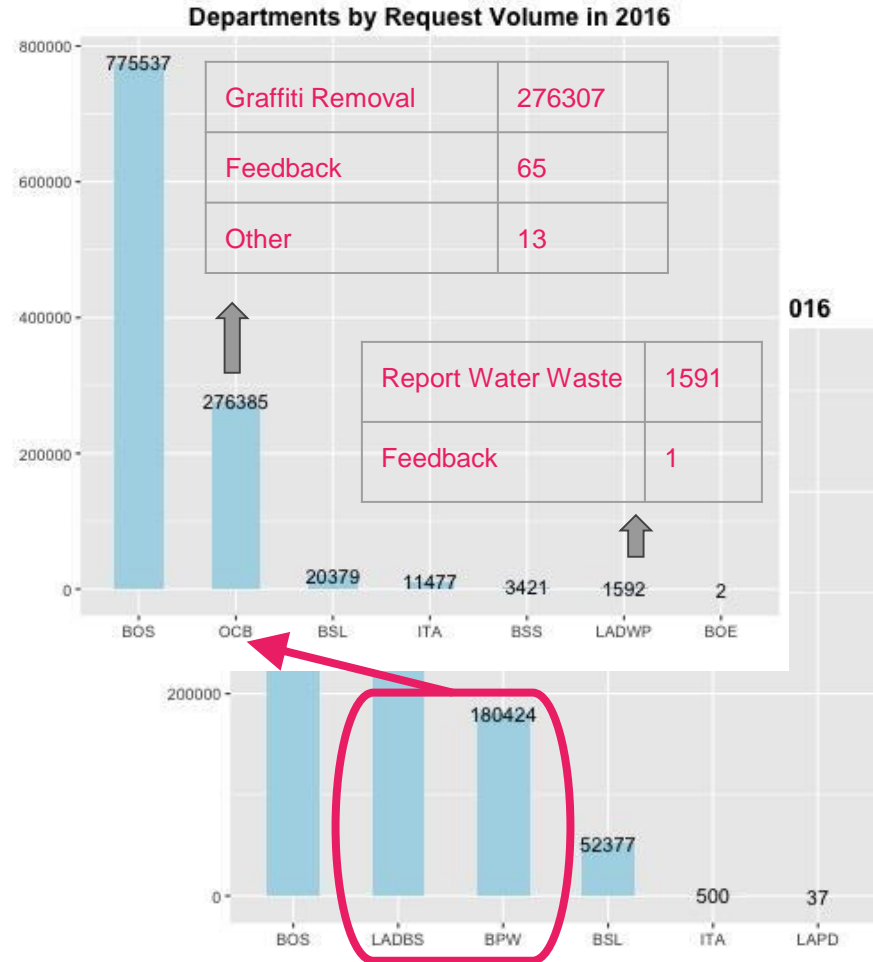
# New Departments in 2016

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**OCB - Office of Community Beautification**, mainly responsible for graffiti removal, which was managed by Board of Public Works(BPW) and Los Angeles Police Department(LAPD) before 2016

**LADWP - Los Angeles Department of Water and Power**, mainly responsible for water waste cases, which was managed by Department of Water and Power(DWP)

**BOE - Bureau of Engineering**, only 2 requests reported in 2016



# Department's Responsibility Change

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## Bureau of Street Services (BSS)

Before 2016, BSS didn't really processed service. It transferred calls for street related services.

In 2016, BSS is mainly in charge of homeless encampment service.

	RequestType	Count
1	Homeless Encampment	2765
2	Other	507
3	Feedback	136
4	Bulky Items	7
5	Illegal Dumping Pickup	4
6	Graffiti Removal	2

## Bureau of Sanitation (BOS)

BOS is mainly in charge of trash and dumping related issues.

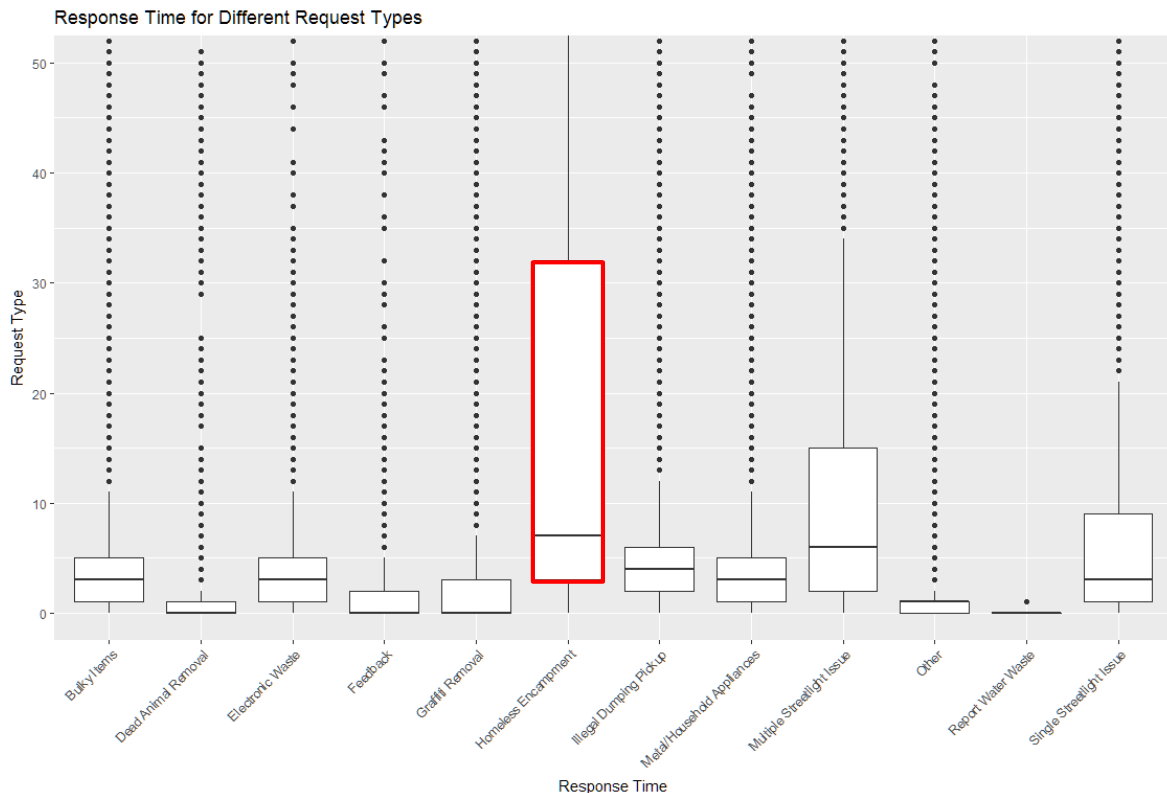
BOS started to process homeless encampment in 2016.

	RequestType	Count
1	Bulky Items	537768
2	Metal/Household Appliances	72282
3	Illegal Dumping Pickup	67086
4	Electronic Waste	52332
5	Dead Animal Removal	31435
6	Homeless Encampment	11501
7	Other	2555
8	Feedback	576
9	Graffiti Removal	2

Before 2016

	Service.Name	Count
1	Bulky Item Pick-up	534780

# Request Processing Time analysis



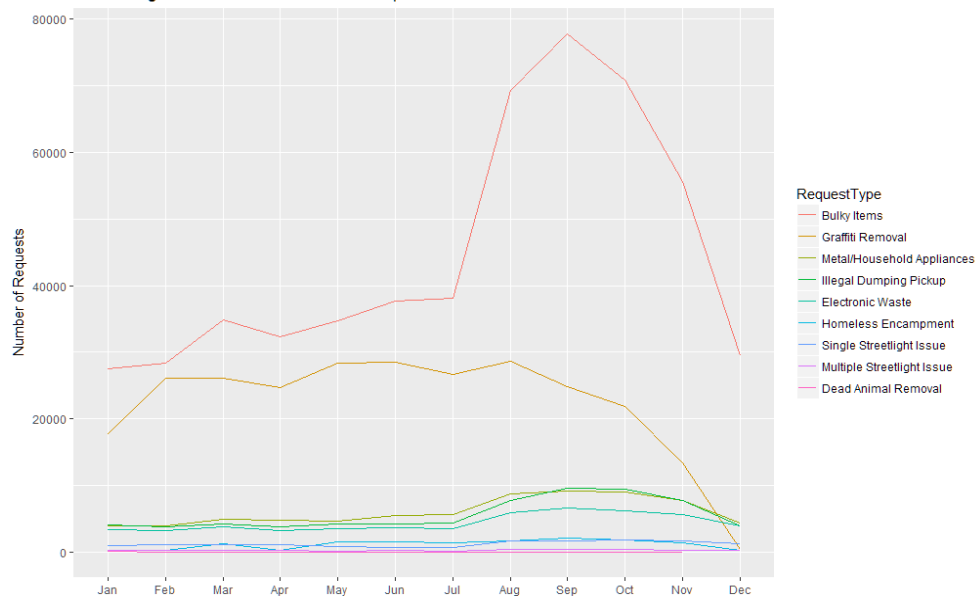
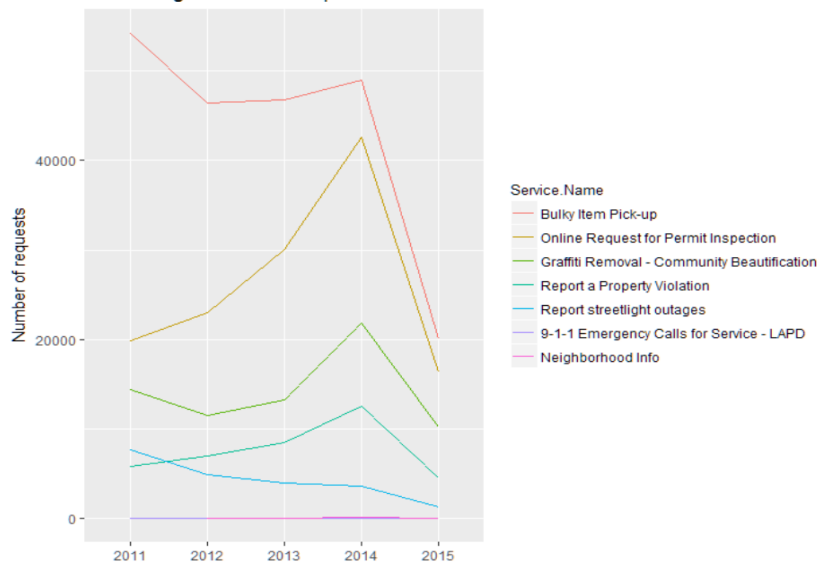
	RequestType	count	mean	sd
1	Bulky Items	537776	3.77213003183482	6.41874624389473
2	Dead Animal Removal	31435	1.201654207094	7.27966571523336
3	Electronic Waste	52332	3.57836505388672	4.6291645935027
4	Feedback	968	13.2262396694215	37.6897125180361
5	Graffiti Removal	276311	2.91855554067699	8.03731011769804
6	Homeless Encampment	14266	26.6515491378102	42.7367563527188
7	Illegal Dumping Pickup	67090	6.66723803845581	15.4173362878413
8	Metal/Household Appliances	72282	3.52937107440303	4.93781440642799
9	Multiple Streetlight Issue	4910	14.289816700611	27.5576567042661
10	Other	14381	11.5509352618038	35.1803775791945
11	Report Water Waste	1591	0.000628535512256443	0.0250706105281953
12	Single Streetlight Issue	15452	7.87386746052291	17.0595153541238

- Homeless Encampment has the longest response time and largest standard deviation.
- The average response time for Homeless Encampment Requests is 27 days
- The long response time for Homeless encampment may be because both BSS and BOS are handling the request

# Findings by Service Type

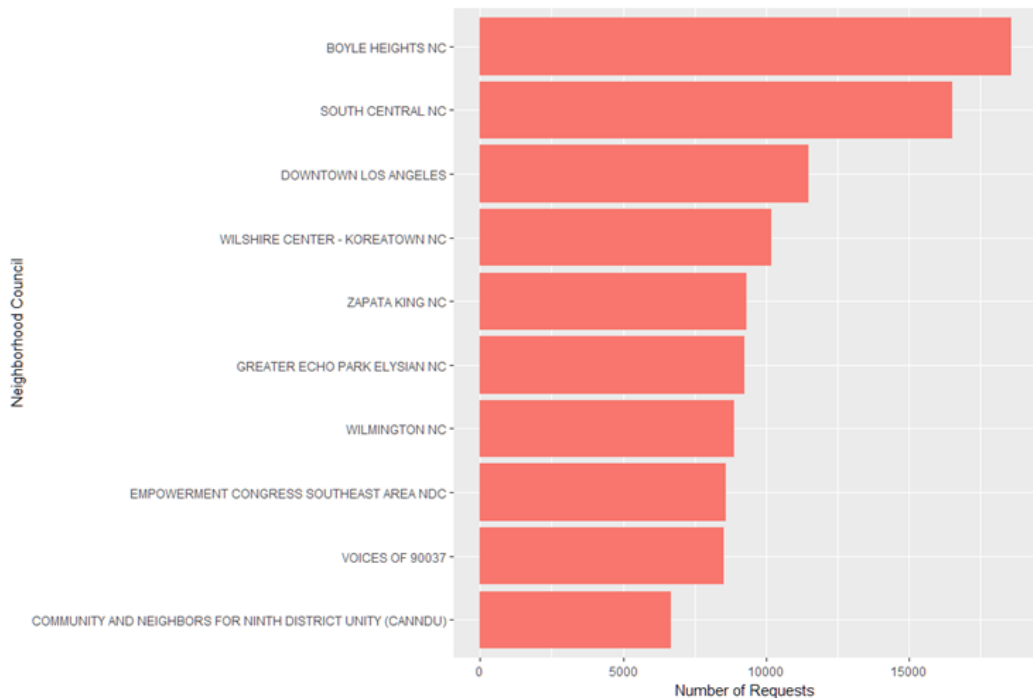


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# Geographic Analysis on “Graffiti Removal” Requests

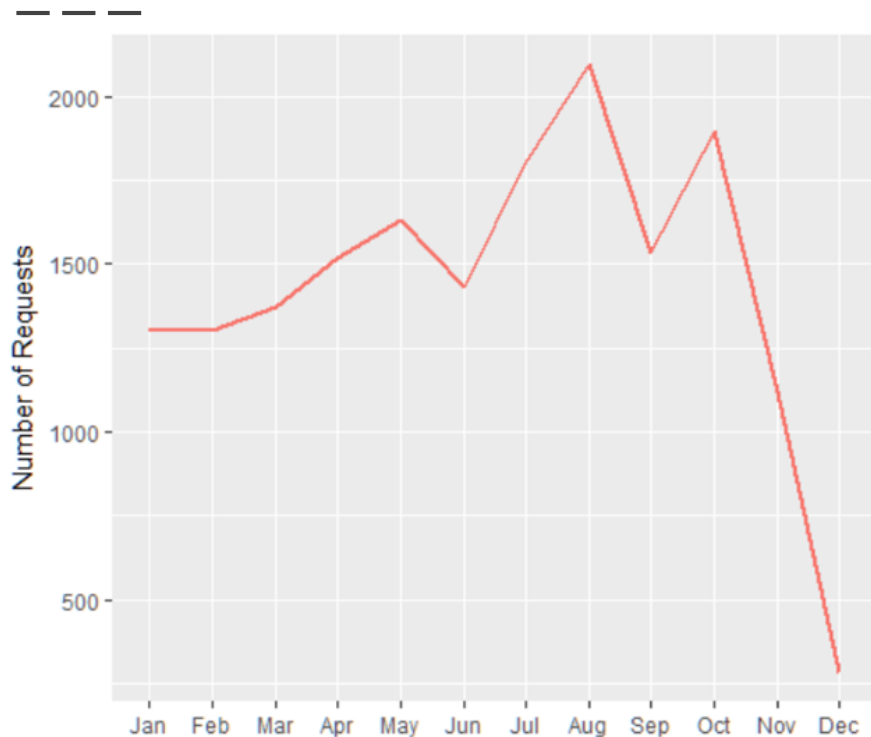
## “Graffiti Removal” Requests by Neighborhood Council



- The top three neighborhood councils that get the most “Graffiti Removal” Requests are

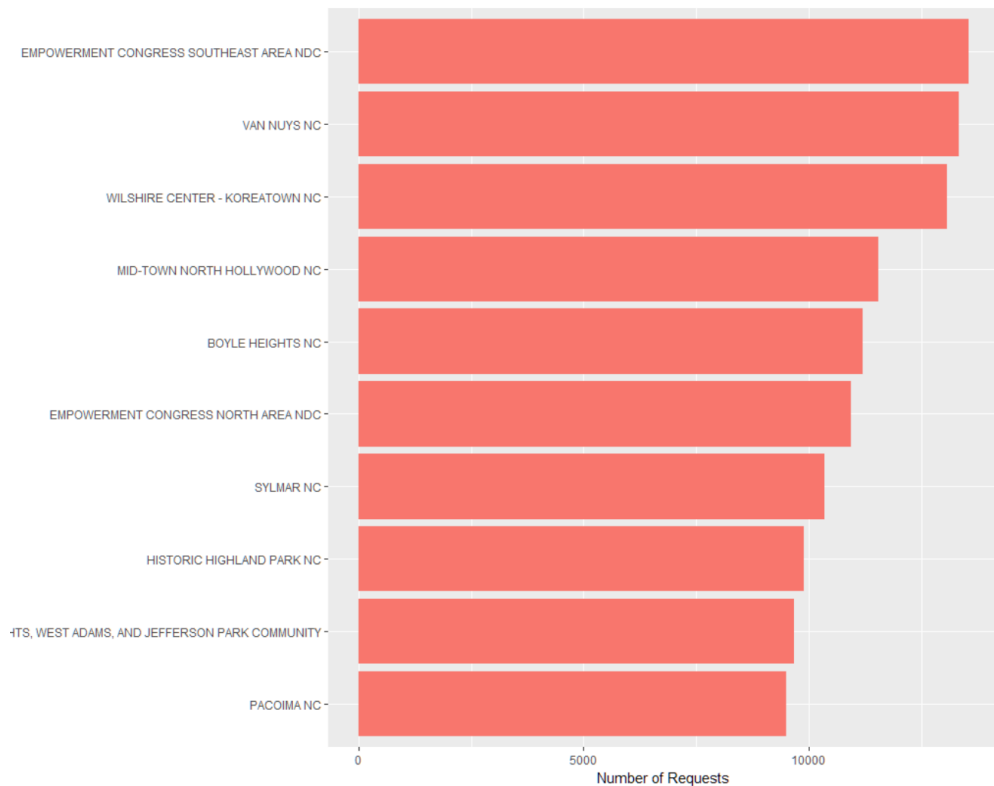
- Boyle Heights NC
- South Central NC
- Downtown LA NC

# “Graffiti Removal” request in Boyle Heights



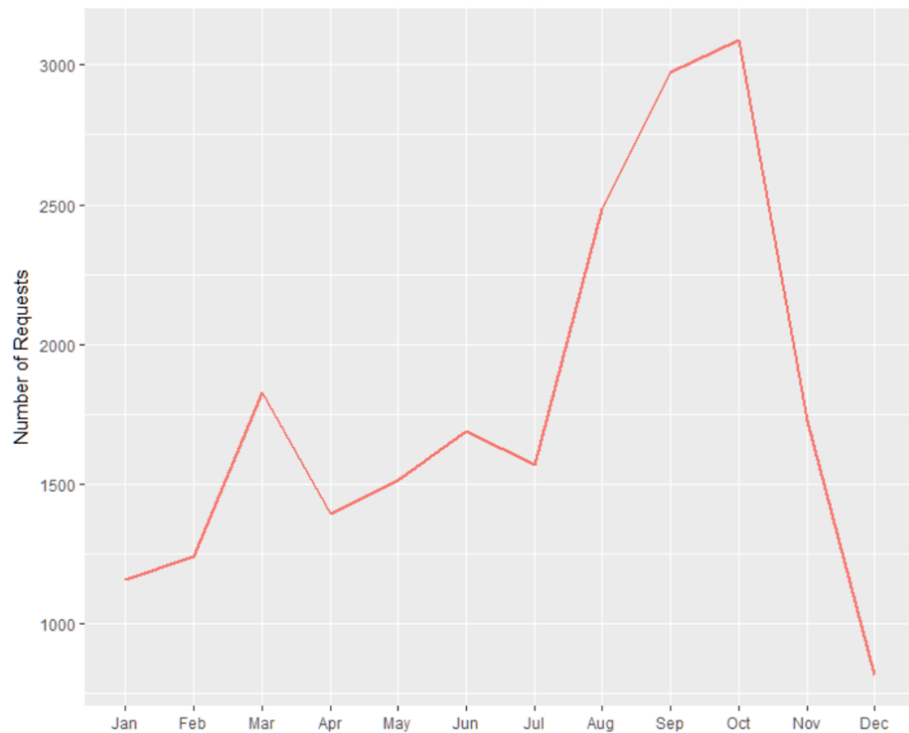
- The “Graffiti Removal” requests occurred most in August and October and decreased sharply in November and December.
- So Office of Community Beautification may want to deploy more resources in August and October in Boyle Heights.

# Geographic Analysis on “Bulky Items” Requests



- The top three neighborhood with the most “Bulky Items” requests are
  - SouthEast Area NC
  - Van Nuys NC
  - Wilshire Center-KoreaTown NC.

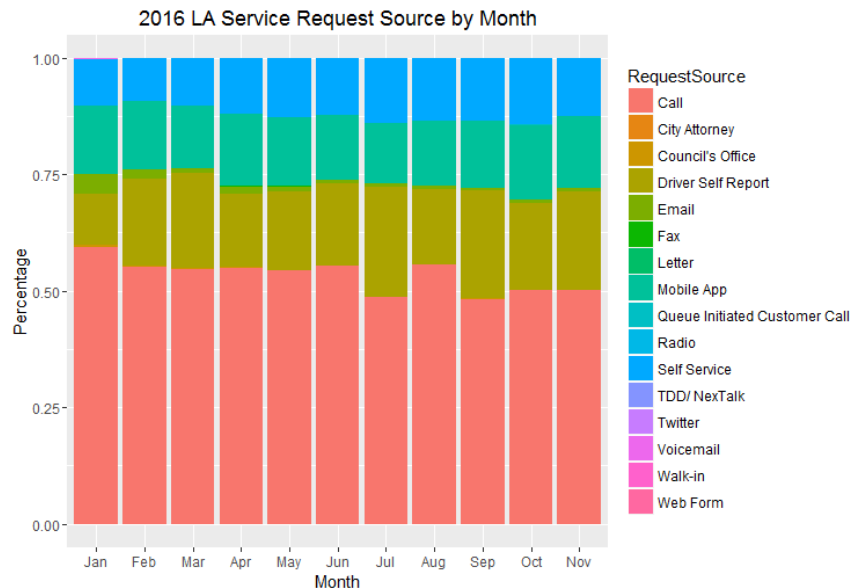
# “Bulky Items” Requests in SouthEast Area



- The Bulky Items Requests in South East La also shows a clear seasonality. The number of requests increased largely from August to October.
- So Bureau of Sanitation may expect a high volume of Bulky Item Cleanup requests during August to October in Southeast LA neighborhood.

# Findings by Request Source

# 2016 LA Service Request Source



- People still prefer requesting services by using phone calls
- Government could possibly save costs in phone call operators by promoting LA residents to use mobile app as request resource

# Recommendations



# Recommendations

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- **Optimize the resource utilization across departments**
  - a. Distribute the services according to the capacity of department
  - b. Eliminate the overlap of responsibilities (Having only one department handle Homeless Encampment Requests)
- **Allocate seasonal labor in high density areas to control the volume of service requests**
  - a. Allocate temporary workers / volunteers to handle Bulky Items and Graffiti Removal services in the high density areas in summer (July – Sept.)

# Recommendations (Cont.)

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- **Conduct education program to control graffiti**

- a. Promote anti-graffiti programs to educate youth in most serious districts

- b. Potential target districts could be: South Central, Boyle Heights (east of Downtown), Echo Park, Pico Union

- **Promote Mobile APP**

- a. Reduce volume of “Calls” to further save labor costs in operators

- b. Improve convenience in reporting incidents

# Thank You!

Questions?

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# Appendix

# Bureau of Street Service (BSS) Responsibility Change

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In 2016

	RequestType	Count
1	Homeless Encampment	2765
2	Other	507
3	Feedback	136
4	Bulky Items	7
5	Illegal Dumping Pickup	4
6	Graffiti Removal	2

Before 2016, BSS didn't really processed service. It transferred calls for street related services.

In 2016, BSS is mainly in charge of homeless encampment.

Before 2016

	Service.Name	Count
1	Maintenance of Public Street Landscape	52203
2	Bureau of Street Services Complaints	37701
3	Street Use Permits	32894
4	Street Pothole Information	28926
5	Enforcement of Street Use Rules	5379
6	Tree Trimming/Pruning Permits	4553
7	Bee Control	3304
8	Street Resurfacing	2260
9	Street Services Emergency After Hours Services	1948
10	Illegal Dumping Crime Tip	1413
11	Standing/Ponding/Stagnant Water (West Nile Virus)	988
12	Leaf Blower Complaints	873
13	Bureau of Street Services Employee Verification	756

# Breakdown of Request Type and Owner

RequestType	Owner	count
Bulky Items	BOS	537768
Bulky Items	BSS	7
Dead Animal Removal	BOS	31435
Electronic Waste	BOS	52332
Feedback	BOS	576
Feedback	BSL	9
Feedback	BSS	136
Feedback	ITA	181
Feedback	LADWP	1
Feedback	OCB	65
Graffiti Removal	BOS	2
Graffiti Removal	BSS	2
Graffiti Removal	OCB	276307

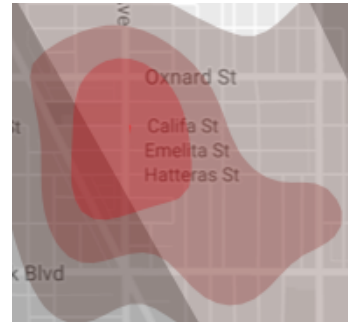
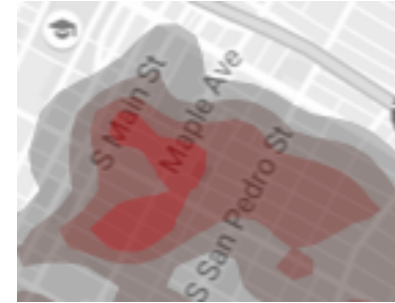
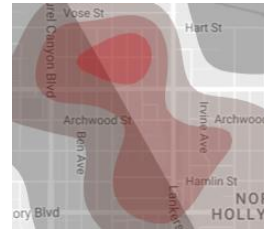
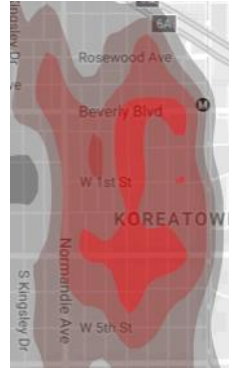
RequestType	Owner	count
Homeless Encampment	BOS	11501
Homeless Encampment	BSS	2765
Illegal Dumping Pickup	BOS	67086
Illegal Dumping Pickup	BSS	4
Metal/Household Appliances	BOS	72282
Multiple Streetlight Issue	BSL	4910
Other	BOE	2
Other	BOS	2555
Other	BSL	8
Other	BSS	507
Other	ITA	11296
Other	OCB	13
Report Water Waste	LADWP	1591
Single Streetlight Issue	BSL	15452

Finding:

Homeless Encampment Requests are both handled by BOS and BSS

# Bulky Items & Graffiti Removal High Density Areas

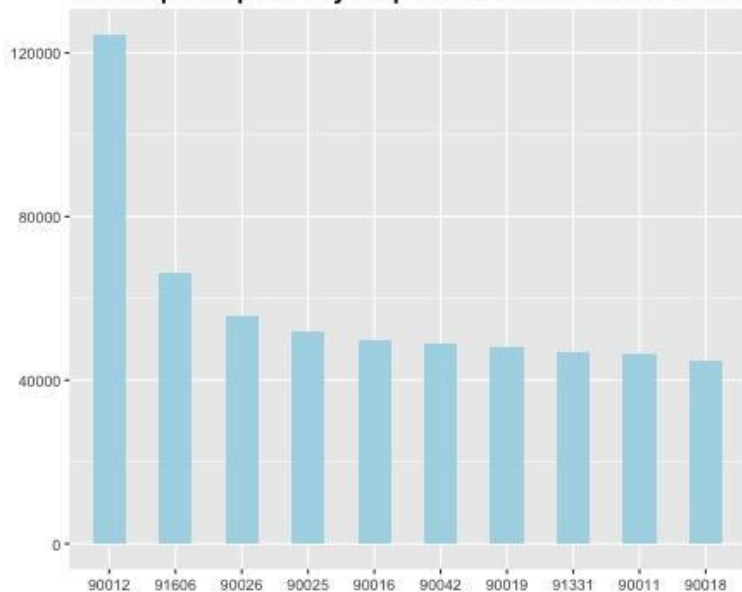
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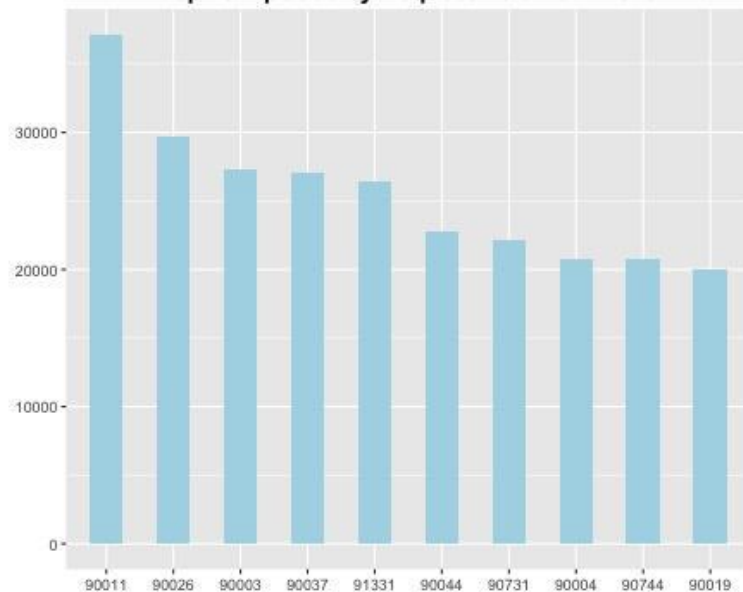
# Top 10 Zip Code by Request Volume

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Top 10 ZipCode by Request Volume before 2016

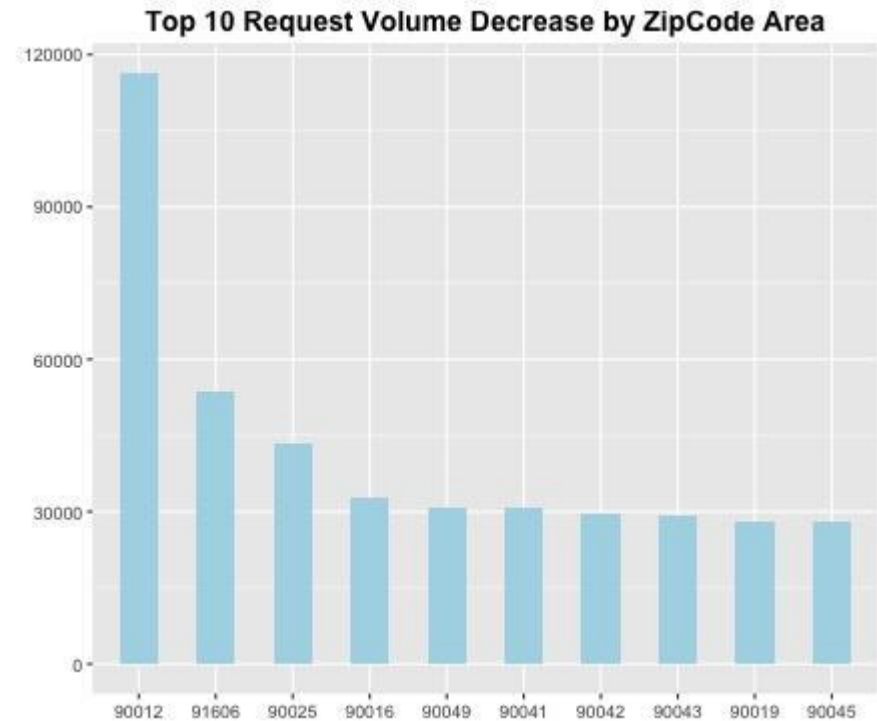
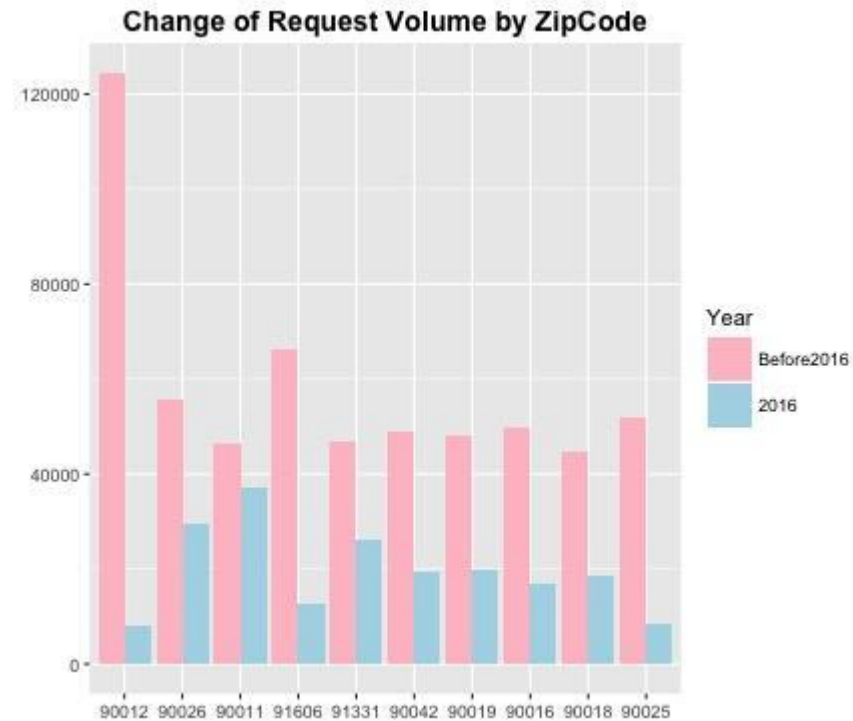


Top 10 ZipCode by Request Volume in 2016



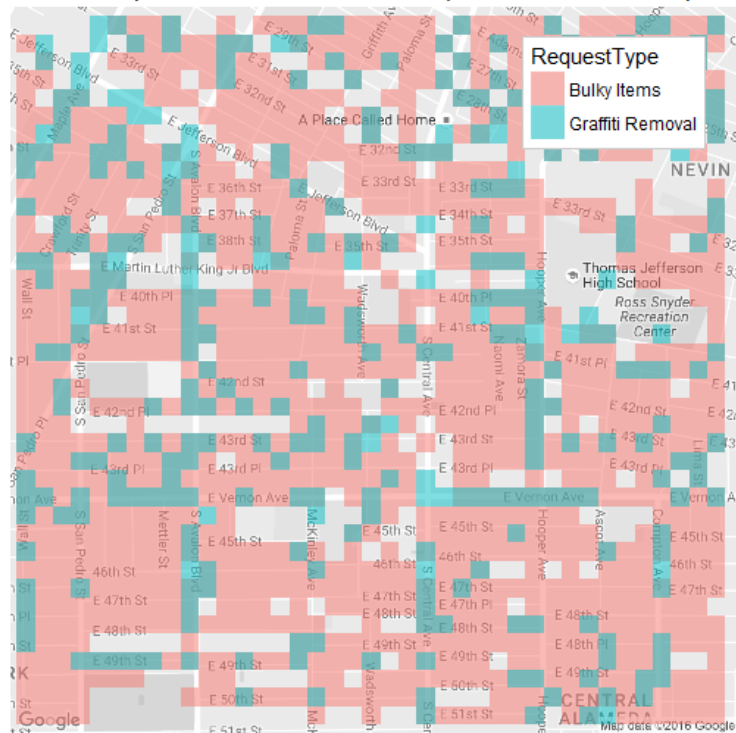


# Distribution by Zip Code



# Bulky Items & Graffiti Removal: Zip Code 90011

2016 Zip Code 90011 Service Request Distribution Map

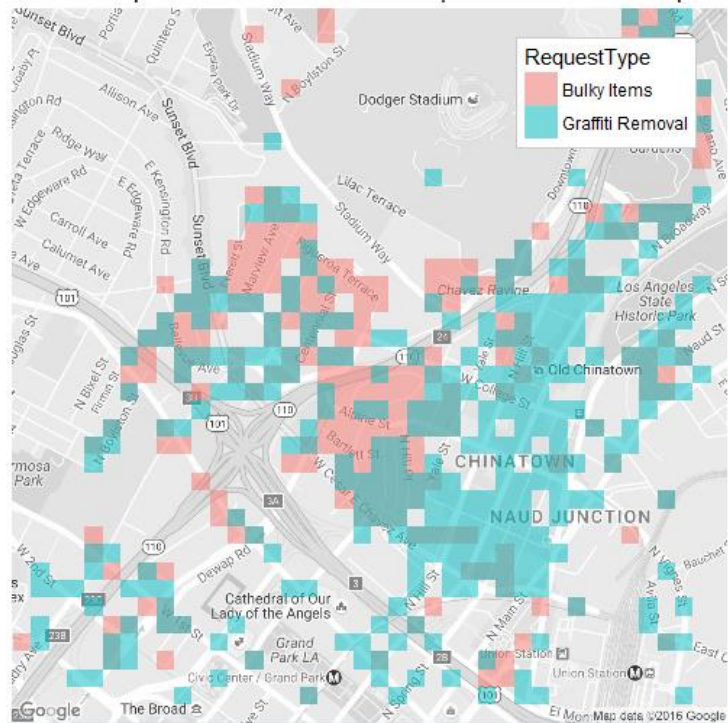


2016 Zip Code 90011 Service Request Distribution Map

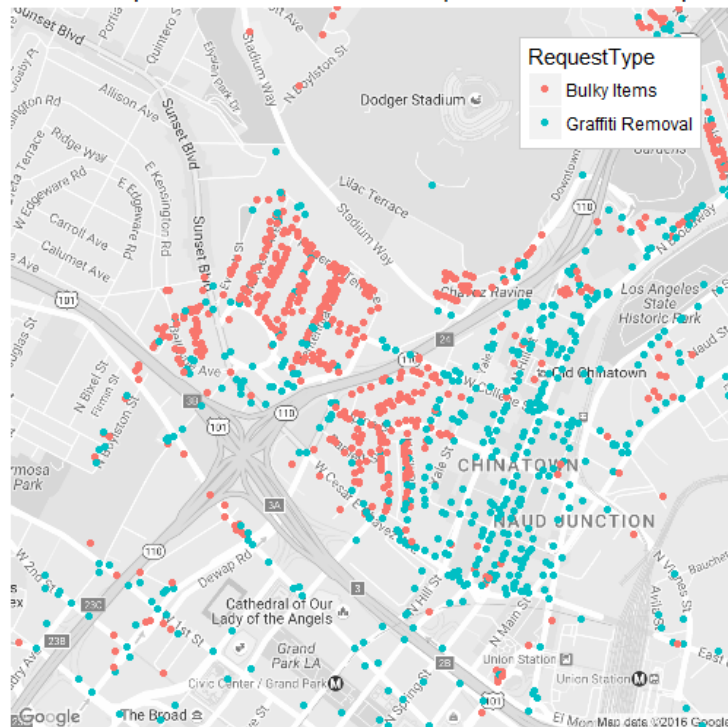


# Bulky Items & Graffiti Removal: Zip Code 90012

2016 Zip Code 90012 Service Request Distribution Map



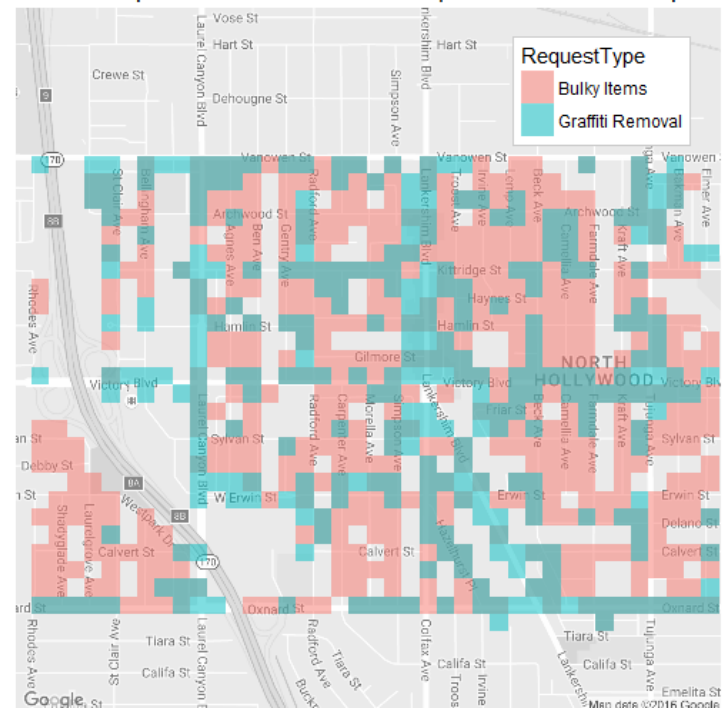
2016 Zip Code 90012 Service Request Distribution Map



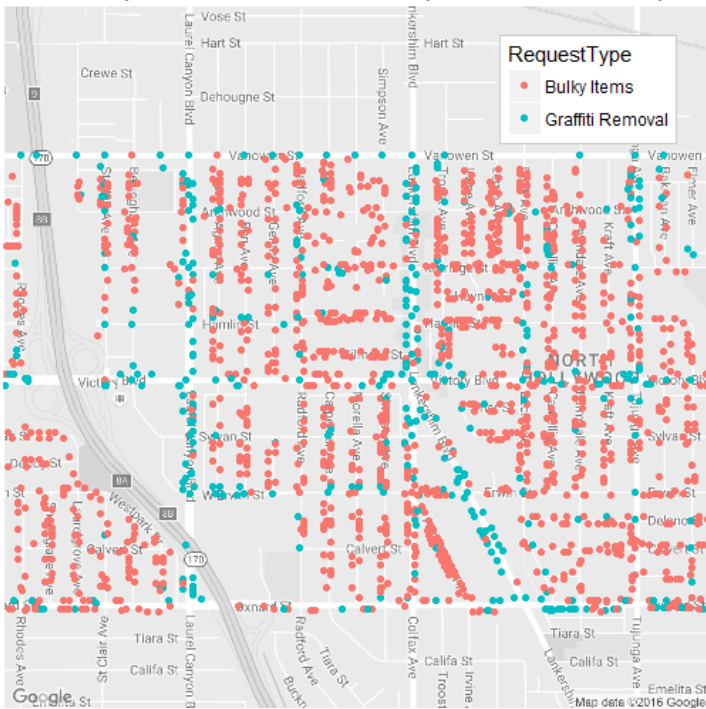
# Bulky Items & Graffiti Removal: Zip Code 91606

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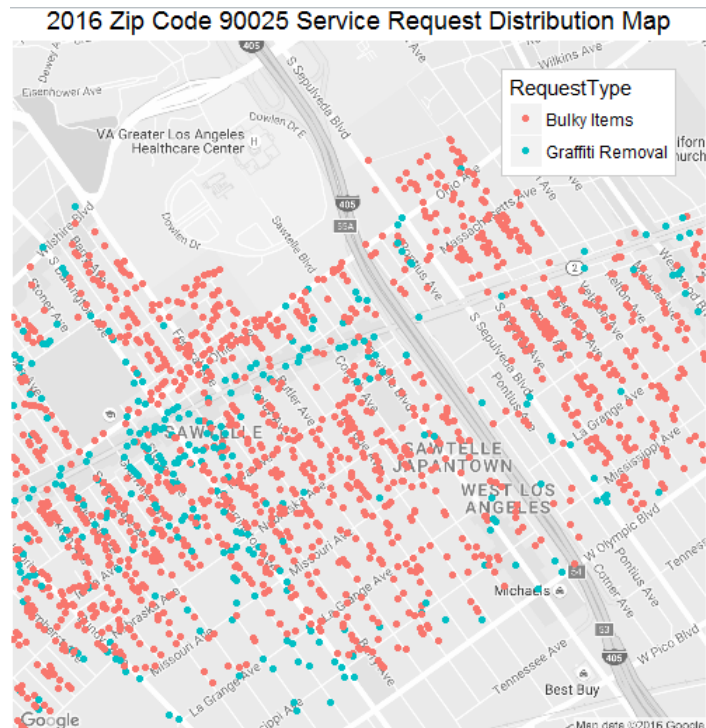
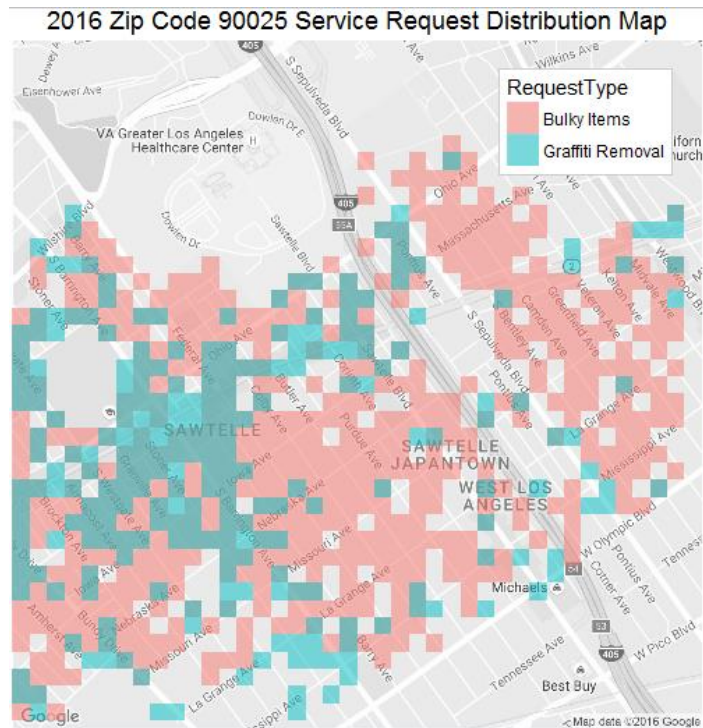
2016 Zip Code 91606 Service Request Distribution Map



2016 Zip Code 91606 Service Request Distribution Map

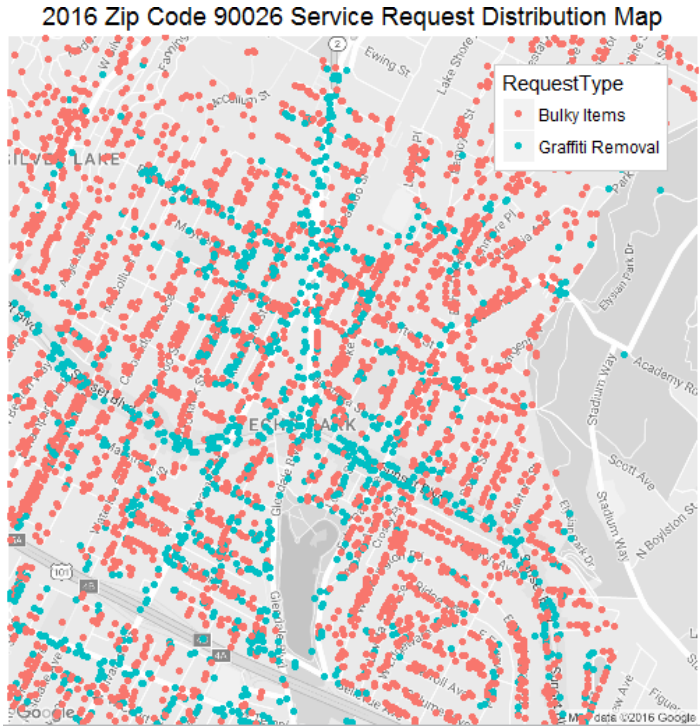
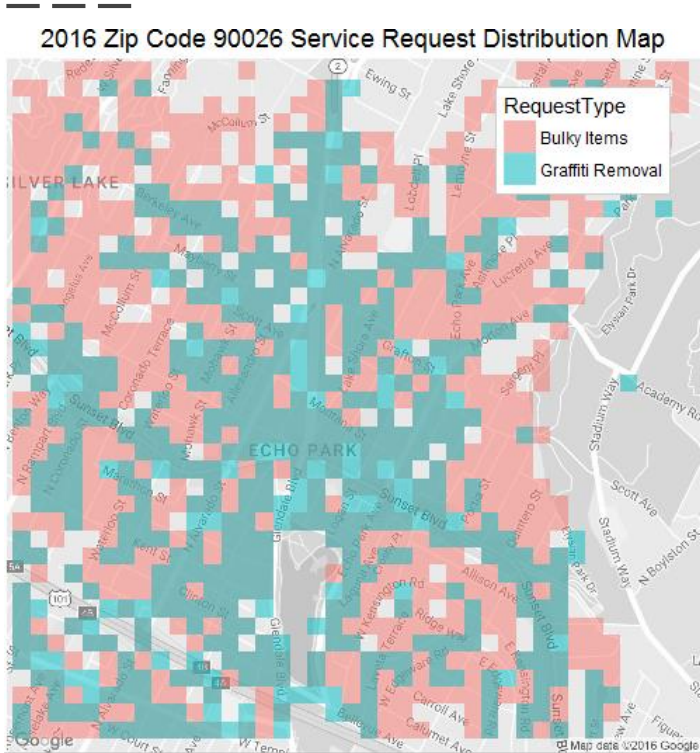


# Bulky Items & Graffiti Removal: Zip Code 90025





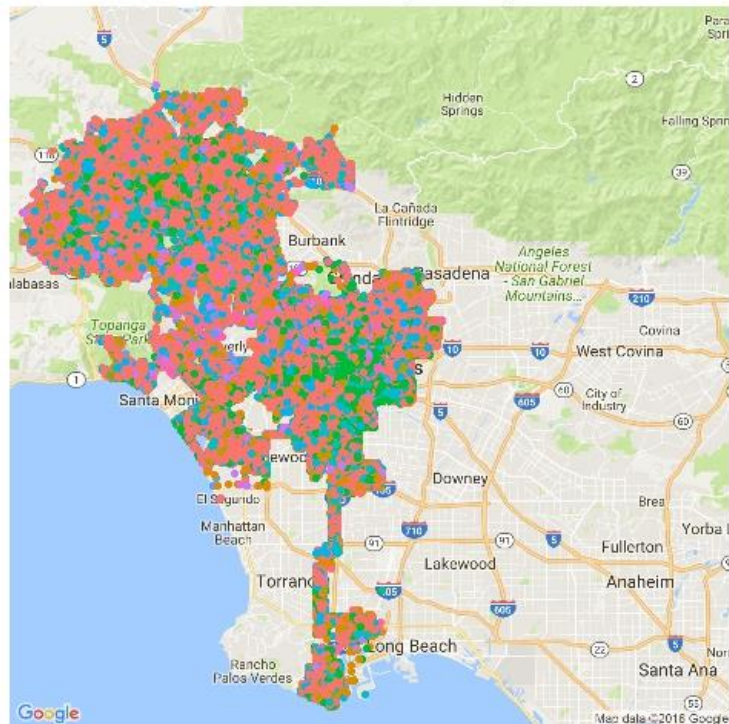
# Bulky Items & Graffiti Removal: Zip Code 90025



# Service Request Distribution in LA Area

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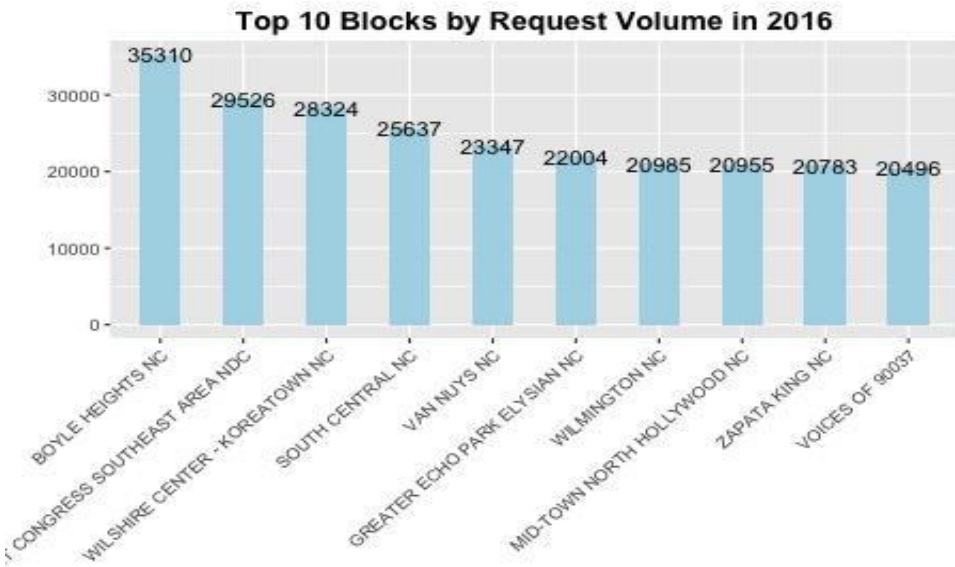
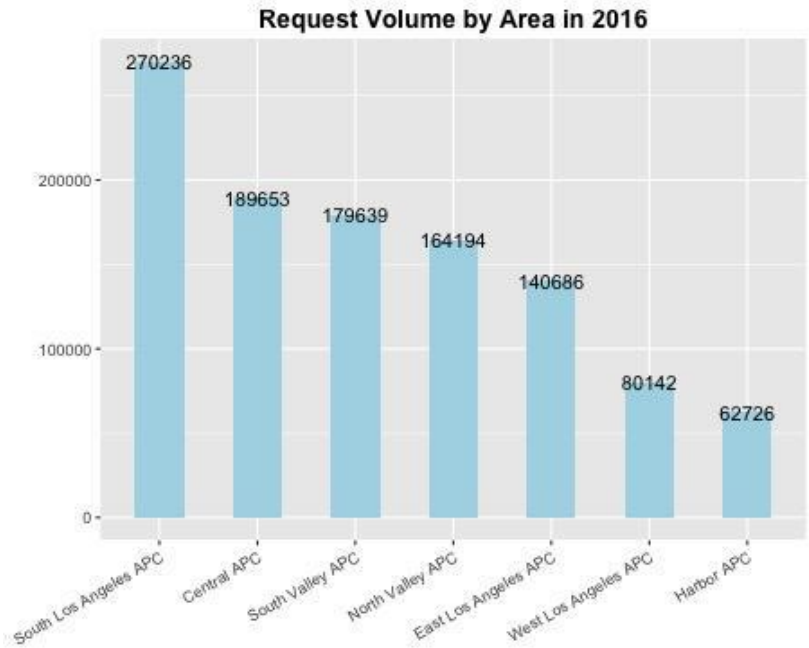
LA Service Request Map



## RequestType

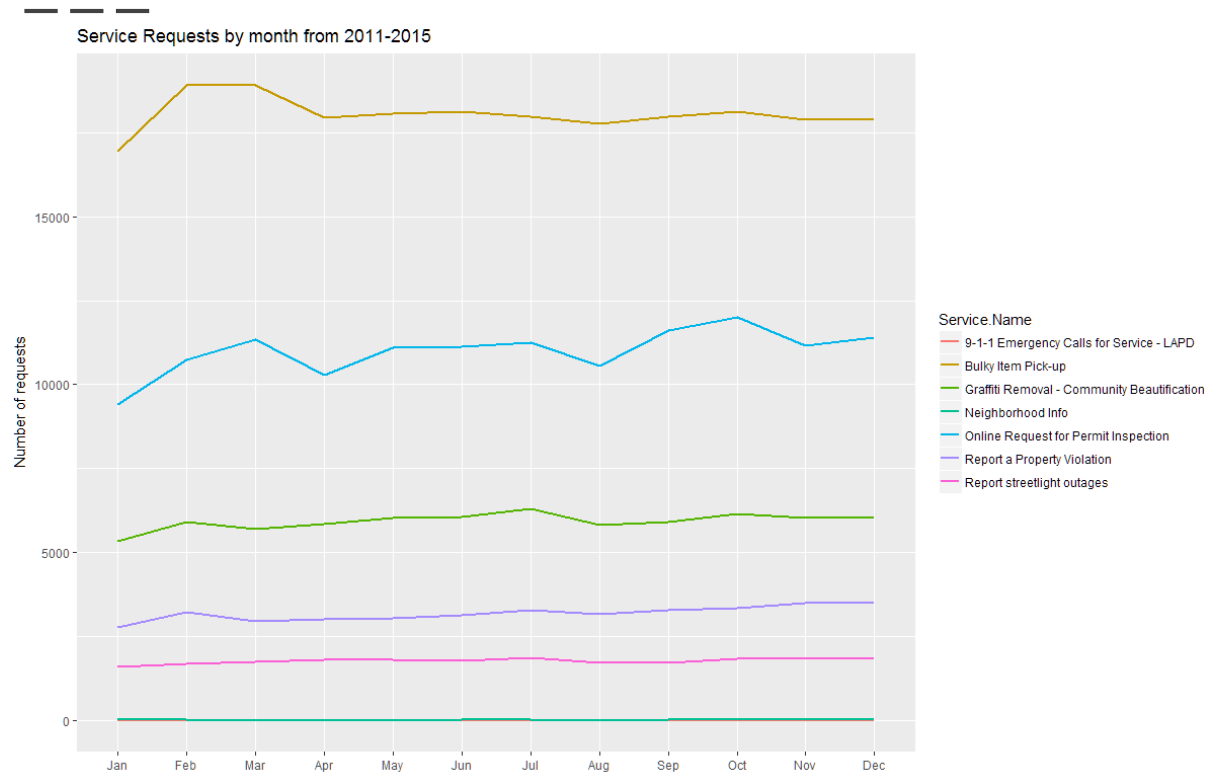
- Bulky Items
- Dead Animal Removal
- Electronic Waste
- Feedback
- Graffiti Removal
- Homeless Encampment
- Illegal Dumping Pickup
- Metal/Household Appliances
- Multiple Streetlight Issue
- Other
- Report Water Waste
- Single Streetlight Issue

# Distribution by Area / Block





# 2011 - 2015 Service type by month

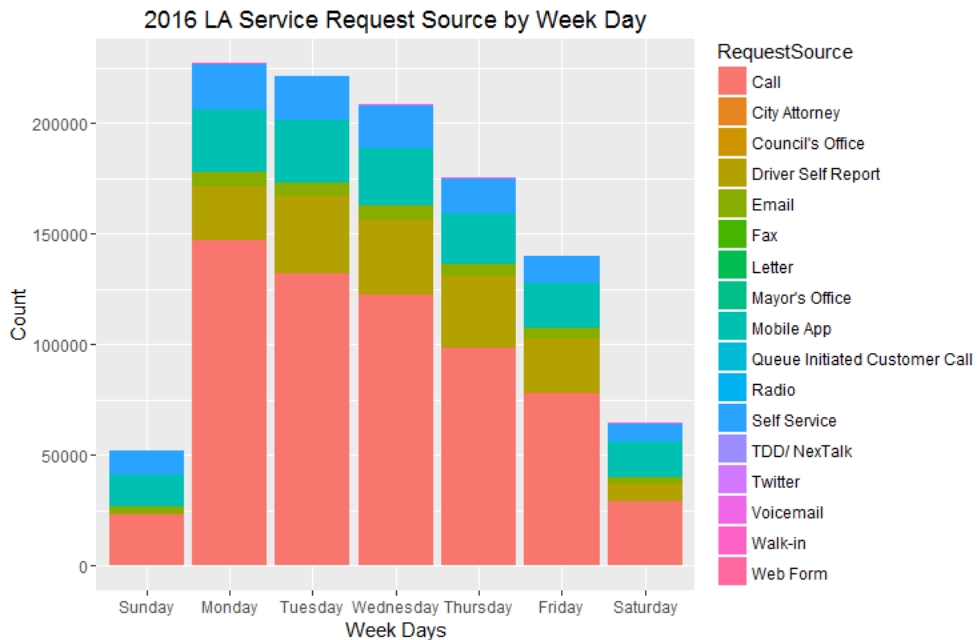


# LA neighborhood rank by population

RANK	NEIGHBORHOOD	POPULATION PER SQMI
1	Koreatown	42,611
2	Westlake	38,214
3	East Hollywood	31,095
4	Pico-Union	25,352
5	Maywood	23,638
6	Harvard Heights	23,473
7	Hollywood	22,193
8	Walnut Park	22,028
9	Palms	21,870
10	Adams-Normandie	21,848

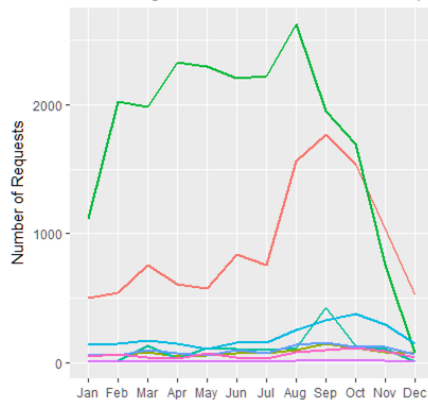
source:<http://maps.latimes.com/neighborhoods/population/density/neighborhood/list/>

# 2016 LA Service Request Source by Week Days

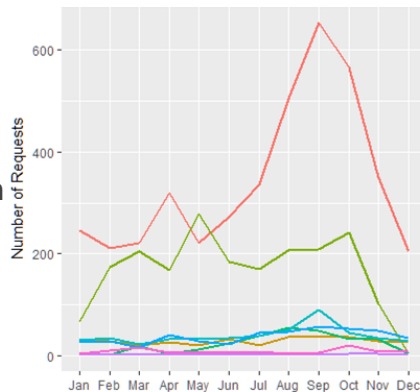


# Service type comparison across populous neighborhoods

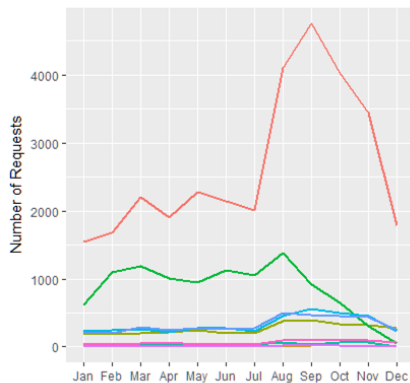
**Downtown  
LA**



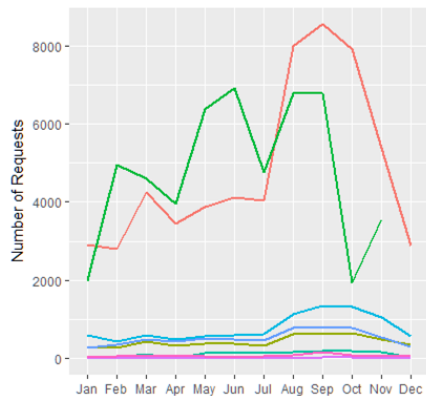
**Koreatown**



**North  
Hollywood**



**South  
Central**



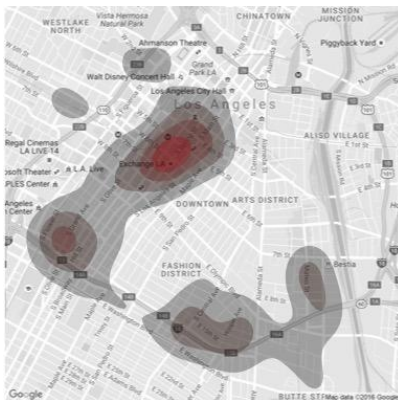
## RequestType

- Bulky Items
- Dead Animal Removal
- Electronic Waste
- Graffiti Removal
- Homeless Encampment
- Illegal Dumping Pickup
- Metal/Household Appliances
- Multiple Streetlight Issue
- Single Streetlight Issue

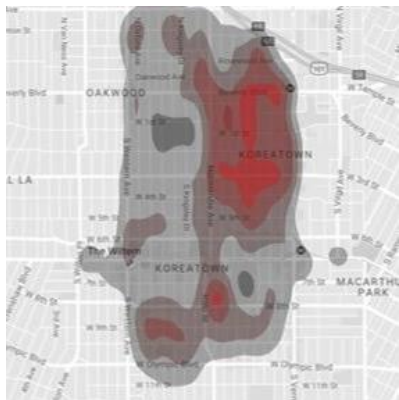
# Density of services across neighbourhood

Bulky Items and Graffiti Removal are the top 2 requests

Density of Bulky Items and Graffiti Removal in the neighbourhoods



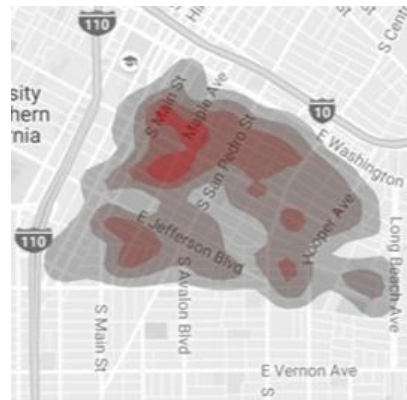
Downtown LA



Koreatown



North Hollywood



South Central