

# 311 Exploratory Analysis

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## Setup

### Pathways

```
project_dir <- here::here()
data_city <- params$city
data_name <- paste0(data_city, "_data_census")
```

### Parameters

```
write_my_files <- "no" # If you'd like to write out a .shp and .tsv file, use "yes", otherwise "no".
```

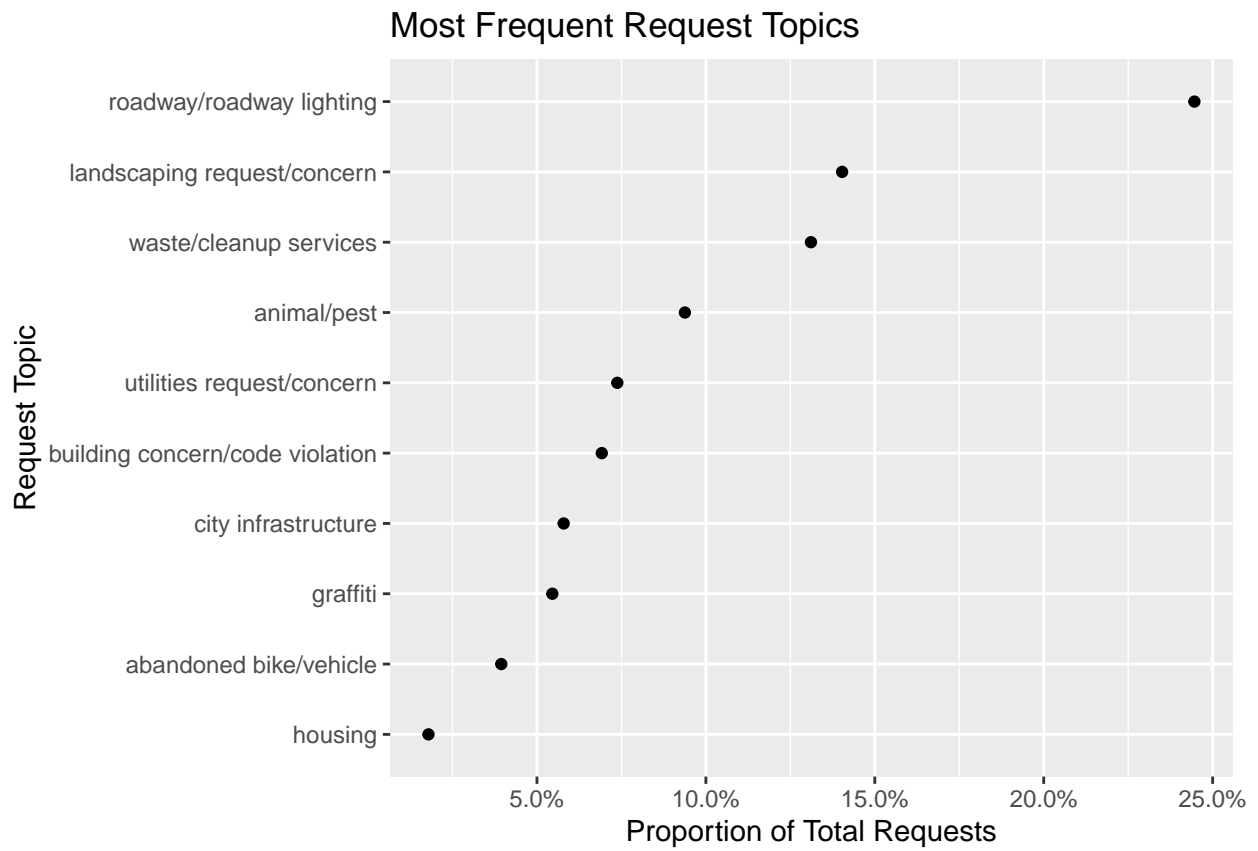
## Sourcing and Libraries

## Analysis

### Base Benchmark Analysis (Non-Geographic)

What is the distribution of call by topic?

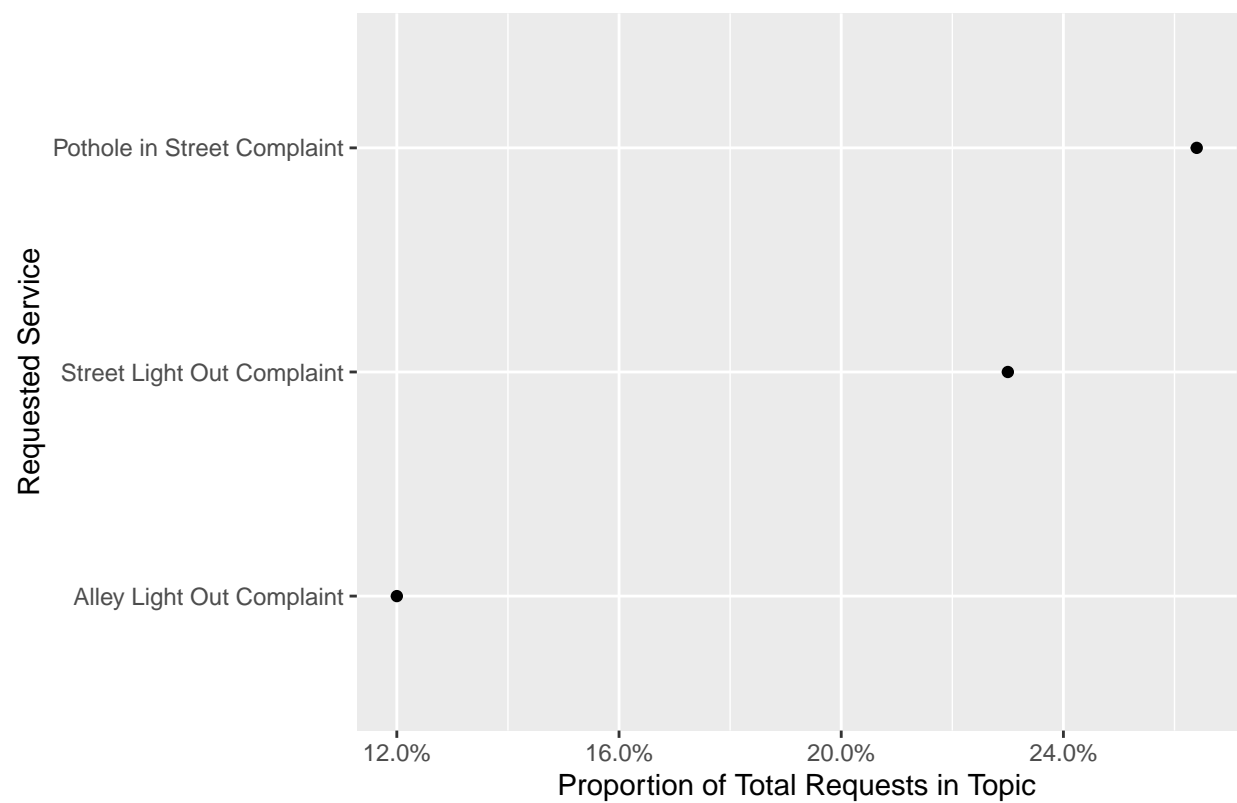
topic	n	prop_total
roadway/roadway lighting	173942	0.245
landscaping request/concern	99785	0.140
waste/cleanup services	93232	0.131
animal/pest	66695	0.094
utilities request/concern	52470	0.074
building concern/code violation	49198	0.069
city infrastructure	41180	0.058
graffiti	38794	0.055
abandoned bike/vehicle	28044	0.039
housing	12720	0.018
information request	10023	0.014
business	8527	0.012
blocked passage	8345	0.012
construction	7545	0.011
abandoned building	6190	0.009
taxi/ride-sharing	6070	0.009
health concern/public safety	5122	0.007
other/miscellaneous	1916	0.003
noise	958	0.001
city feedback	354	0.000



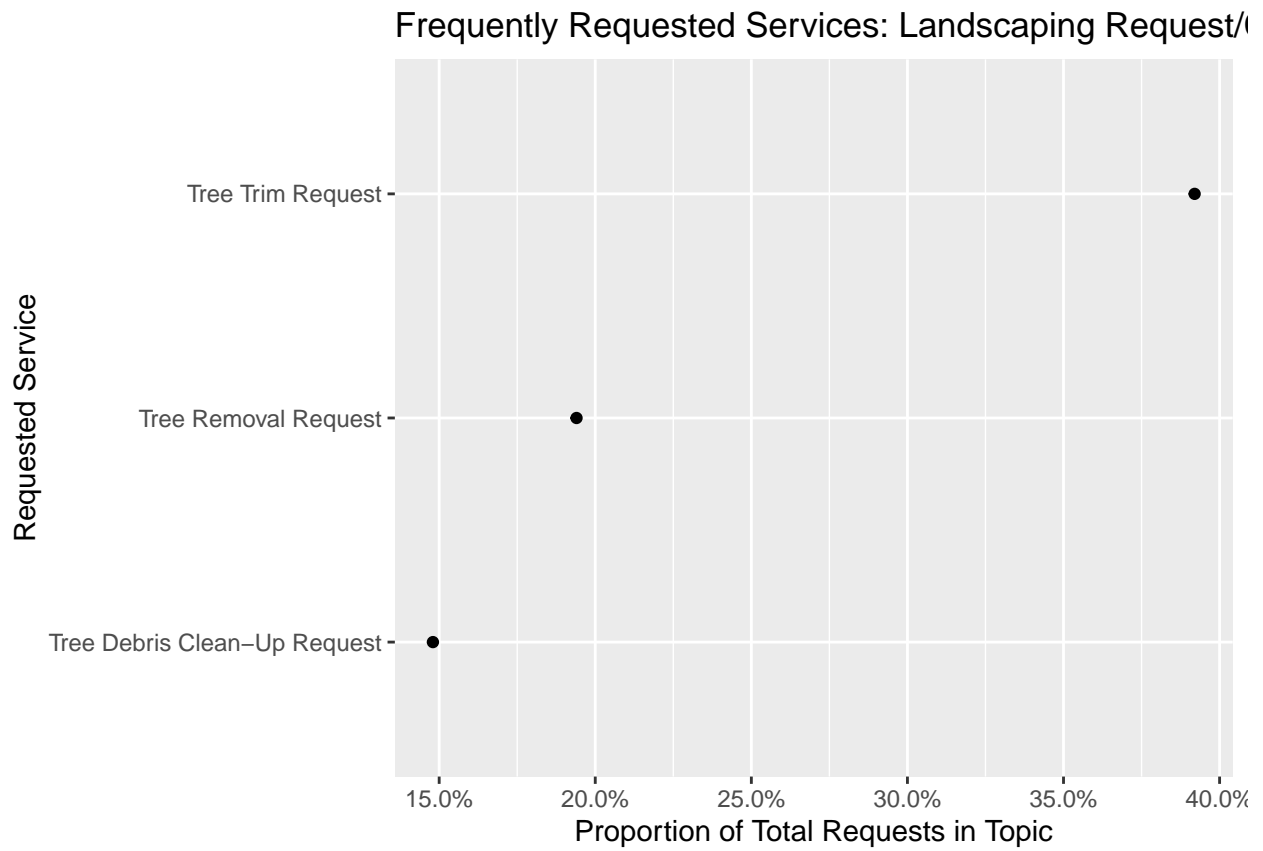
Within each topic, what are the most frequent services requested?

```
## [[1]]
```

Frequently Requested Services: Roadway/Roadway Lighti

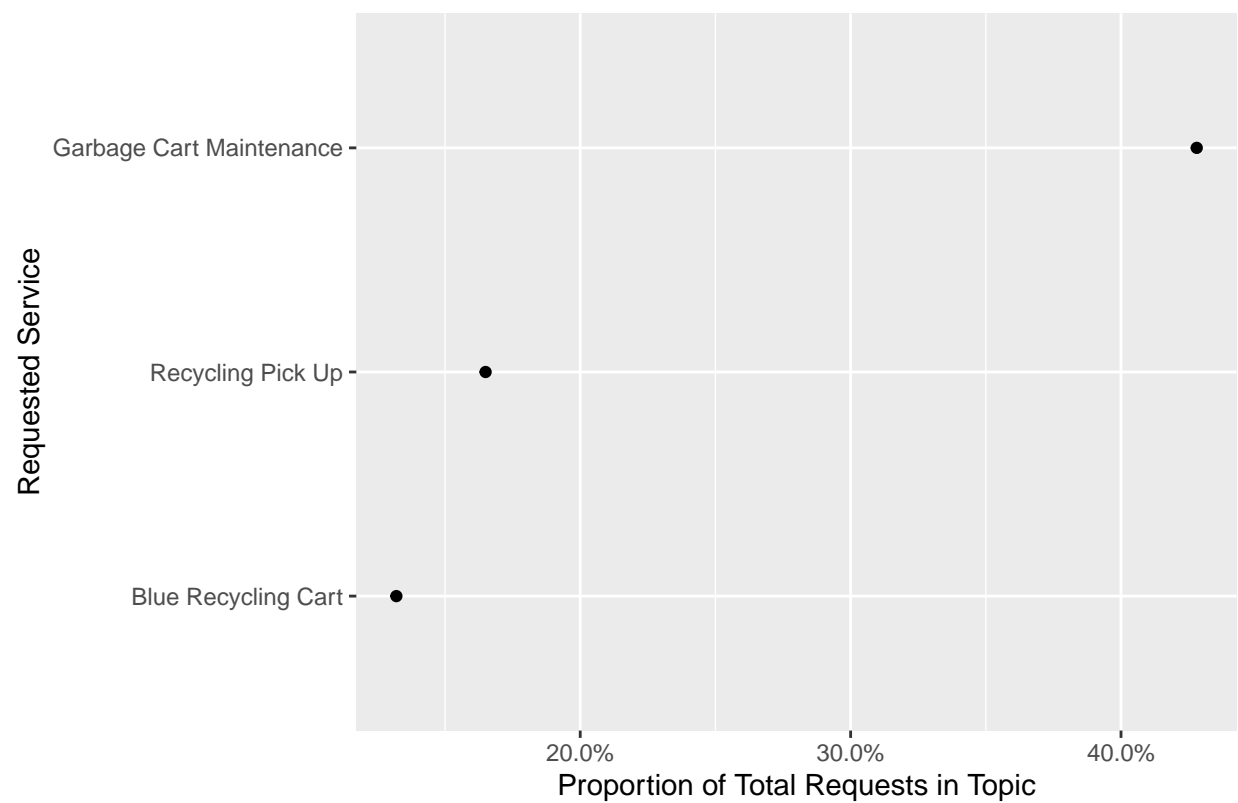


##  
## [[2]]



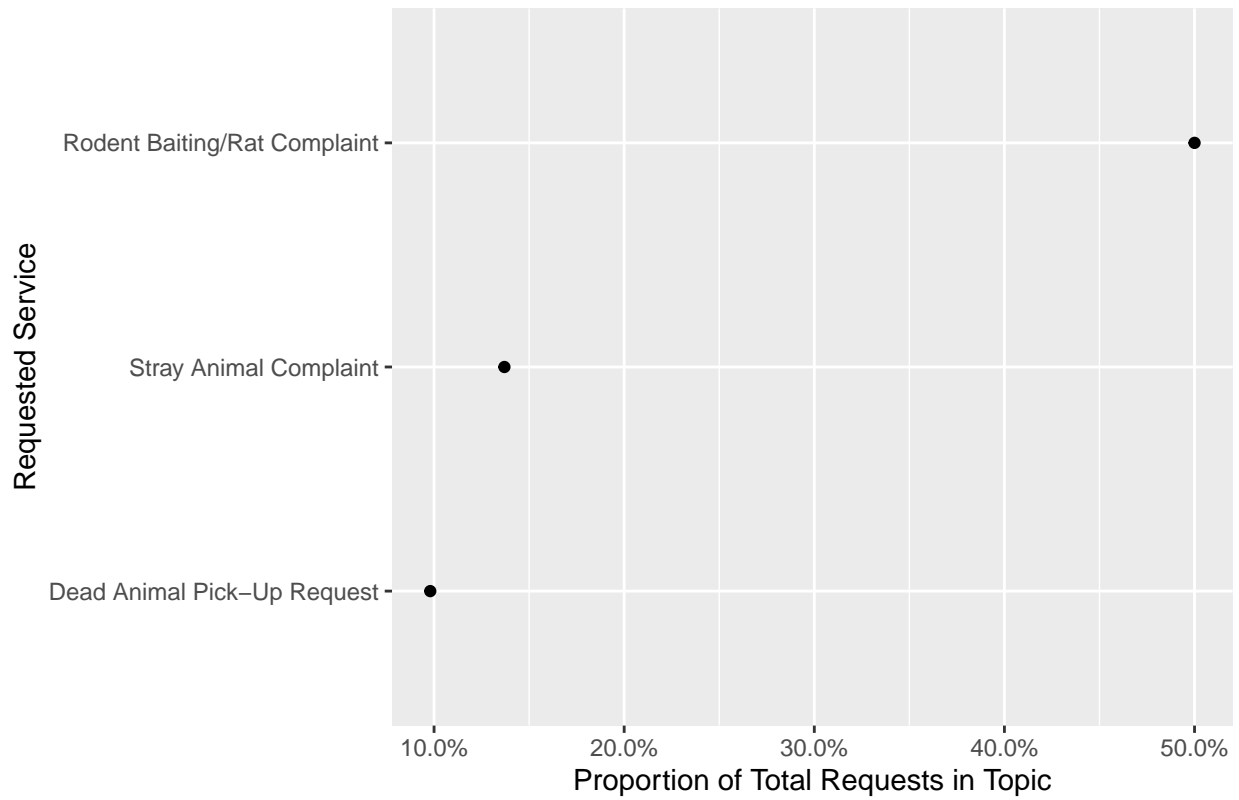
##  
## [[3]]

Frequently Requested Services: Waste/Cleanup Services



##  
## [[4]]

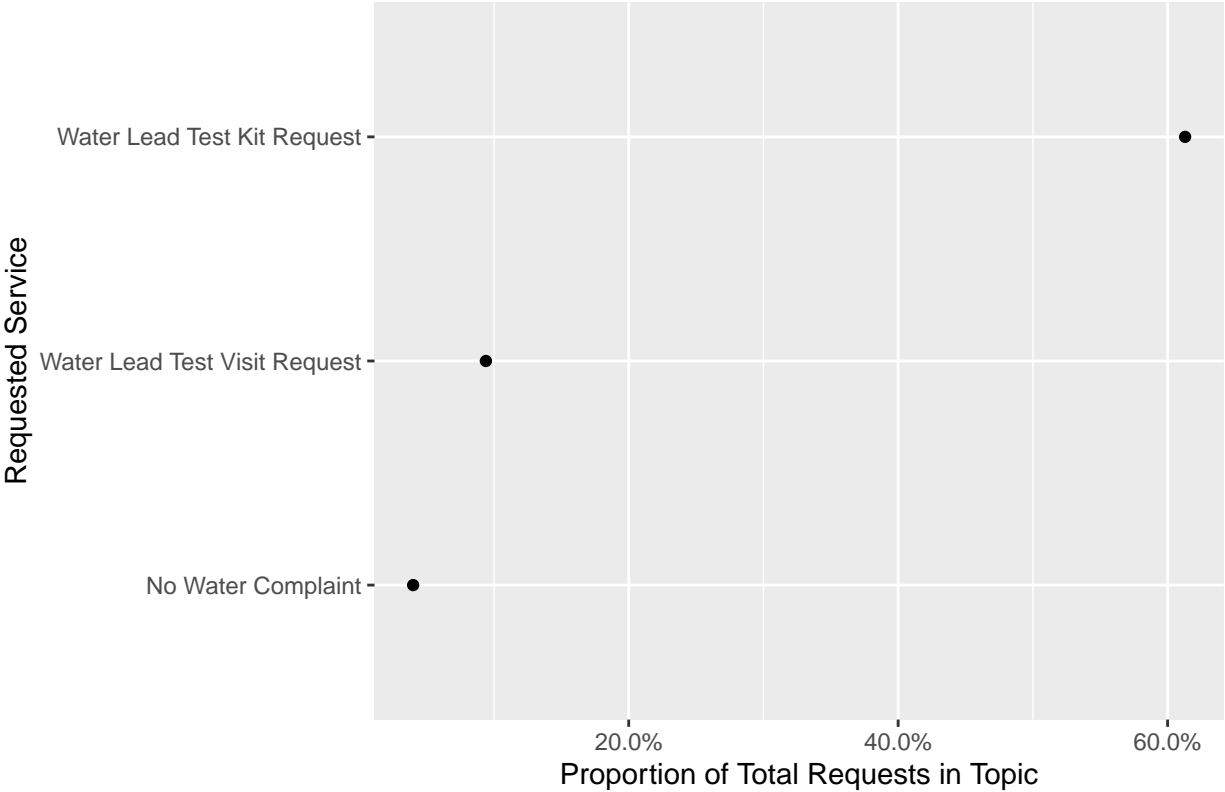
## Frequently Requested Services: Animal/Pest



##

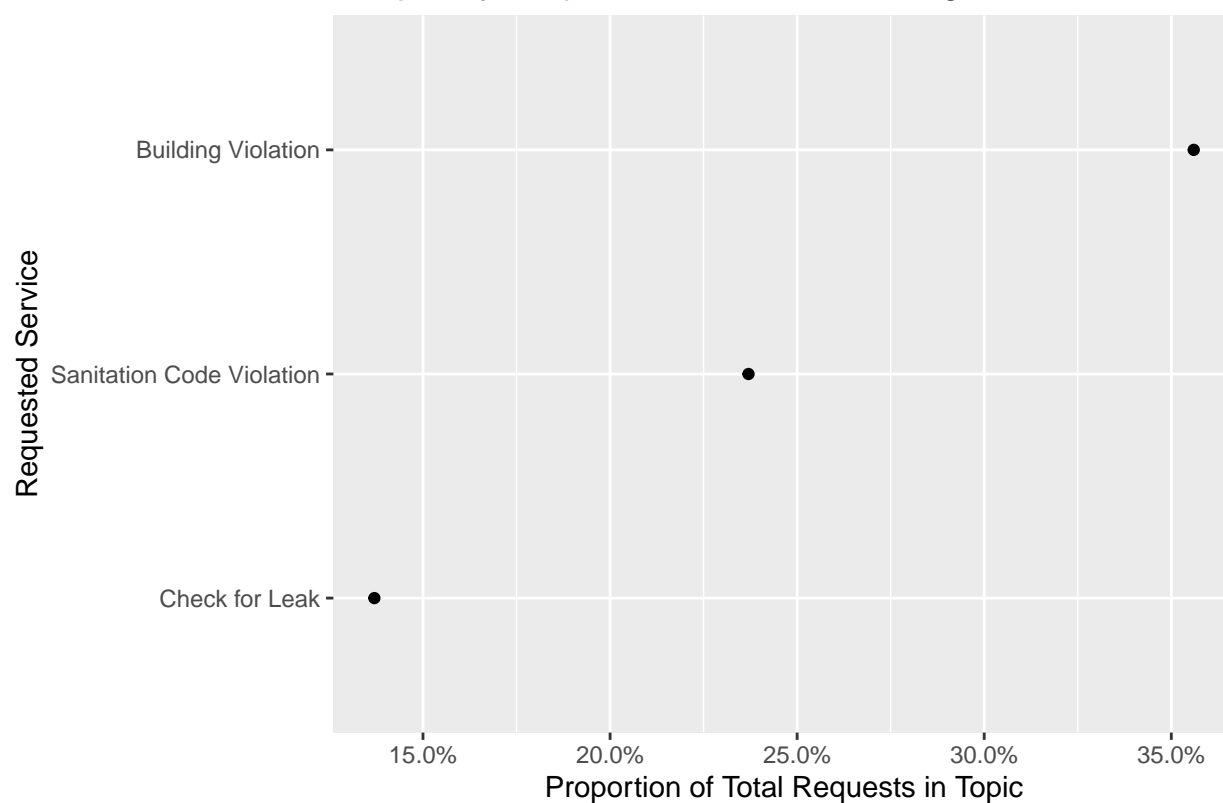
## [[5]]

Frequently Requested Services: Utilities Request/Conce



##  
## [[6]]

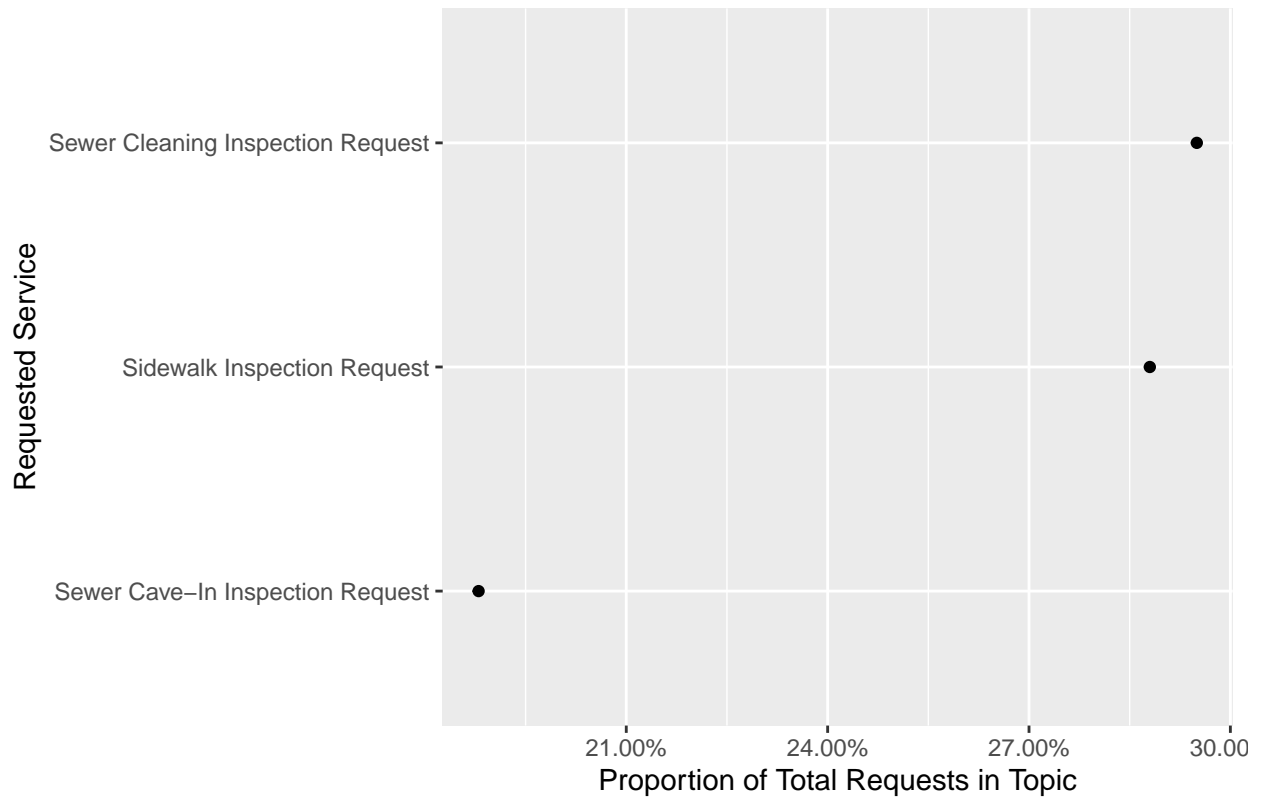
Frequently Requested Services: Building Concern/Code Violation



##  
## [[7]]

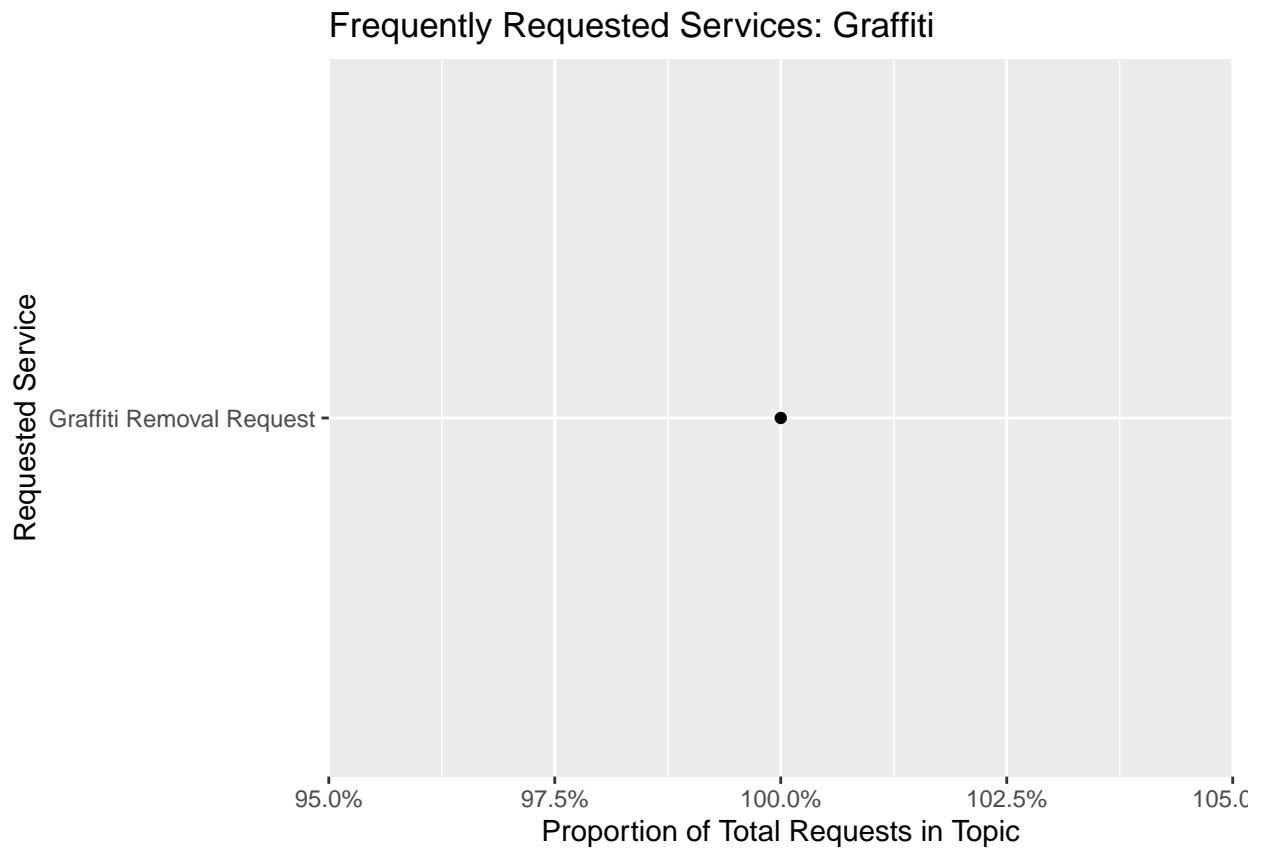


## Frequently Requested Services: City Infrastructure

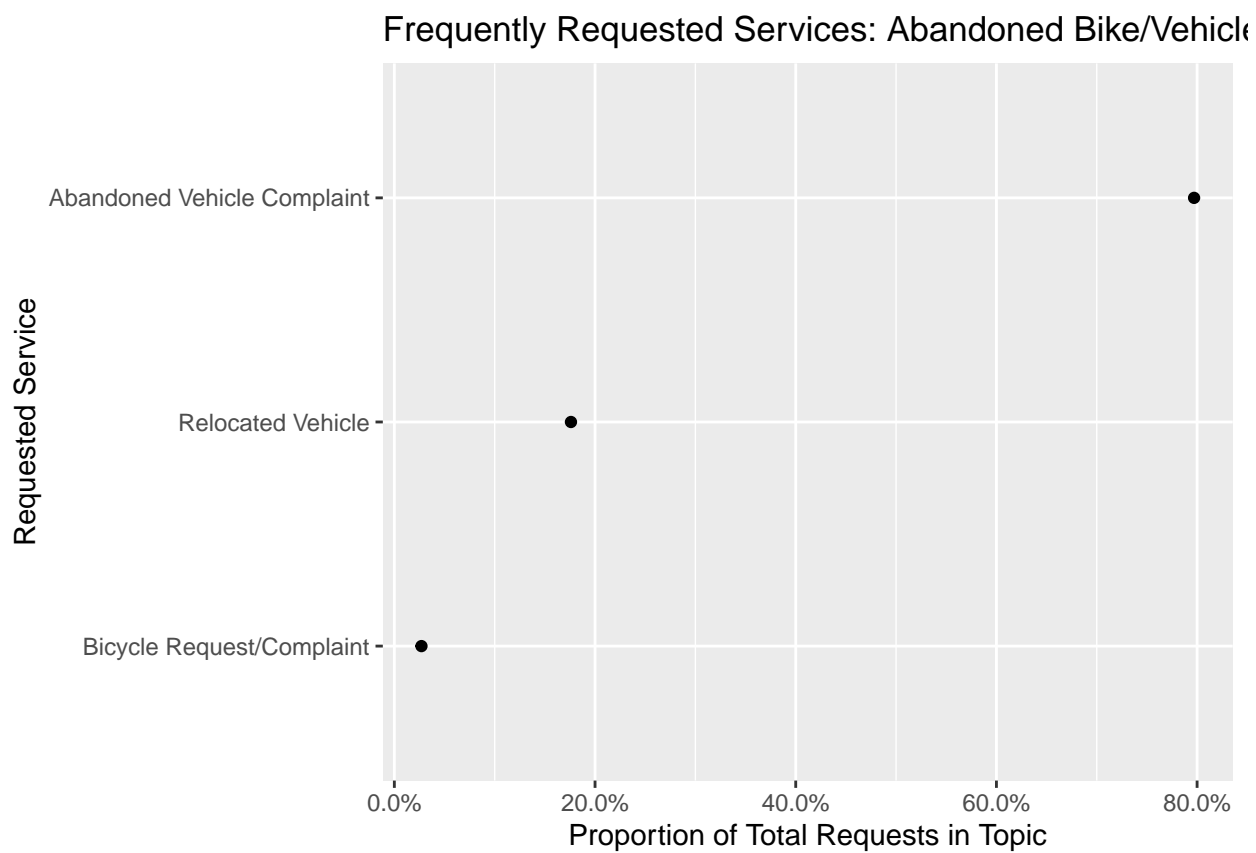


##

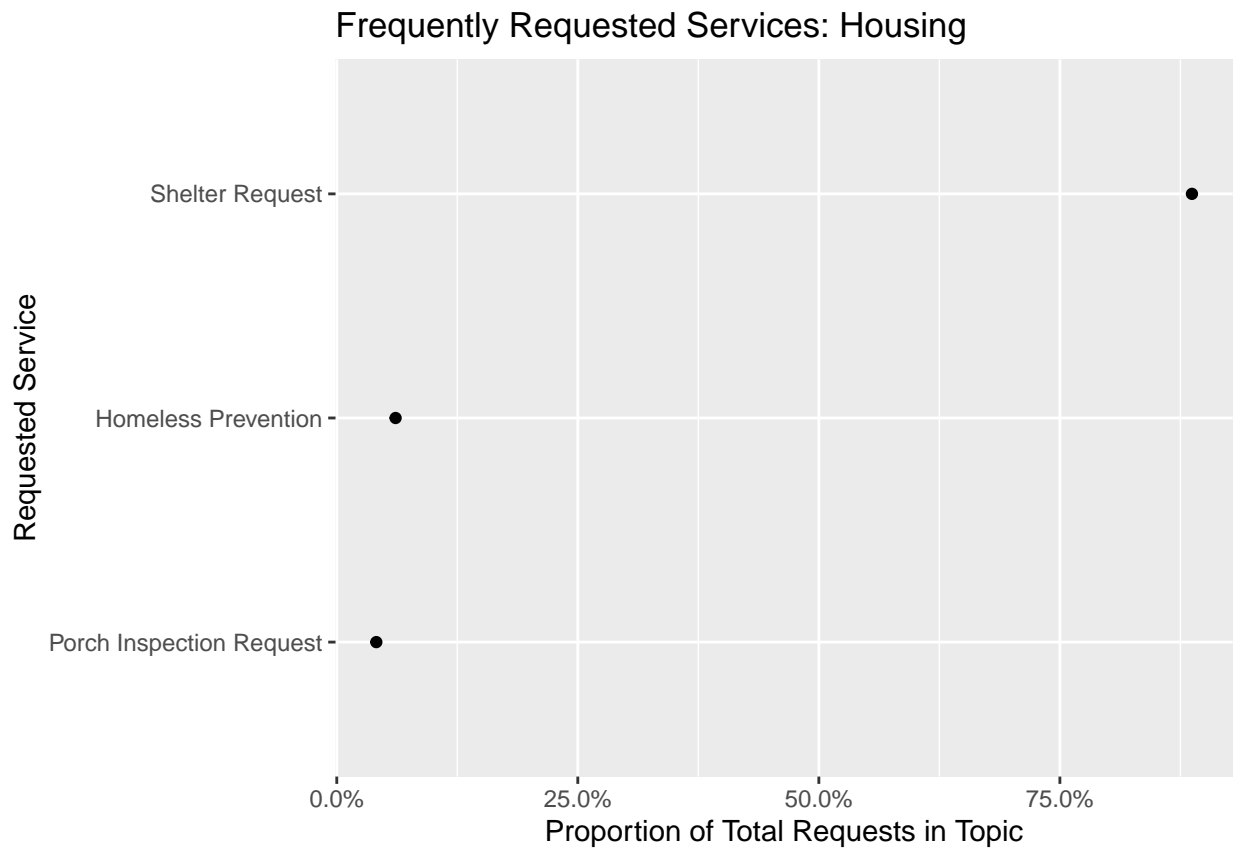
## [[8]]



##  
## [[9]]

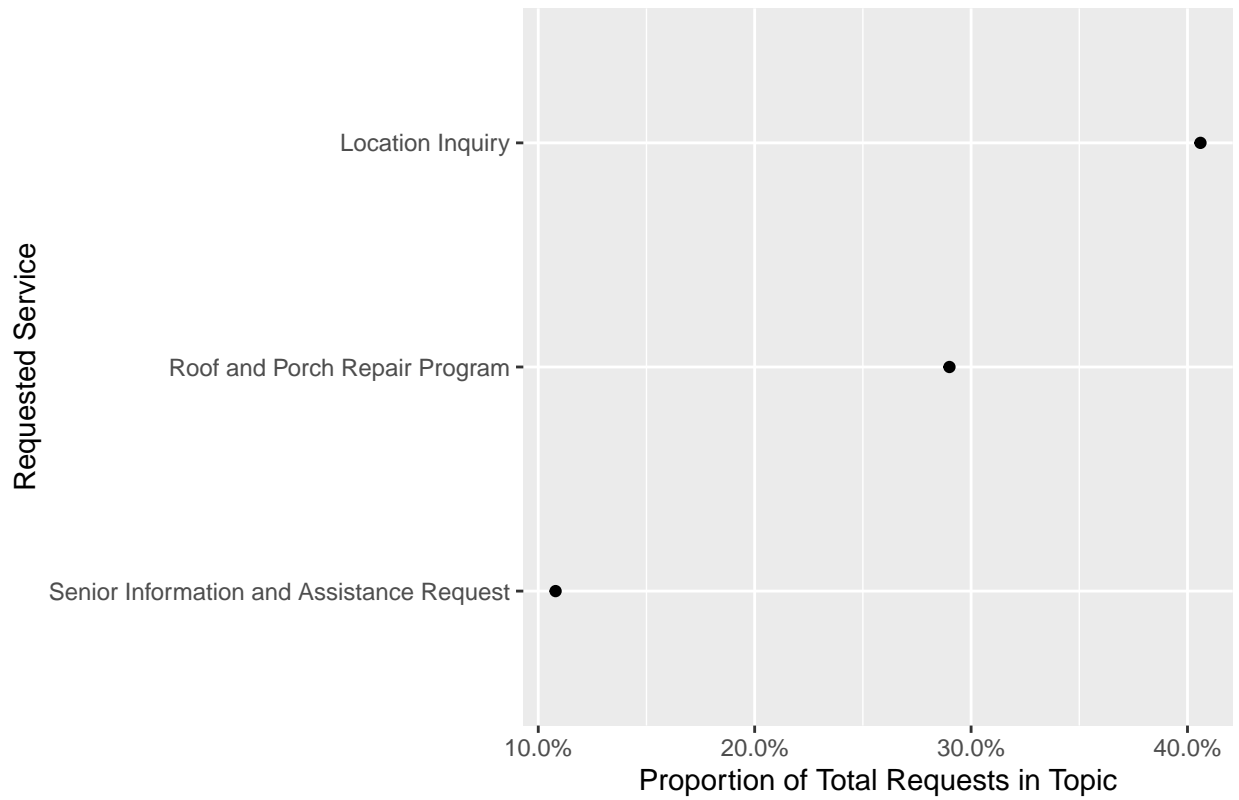


```
##  
## [[10]]
```



```
##  
## [[11]]
```

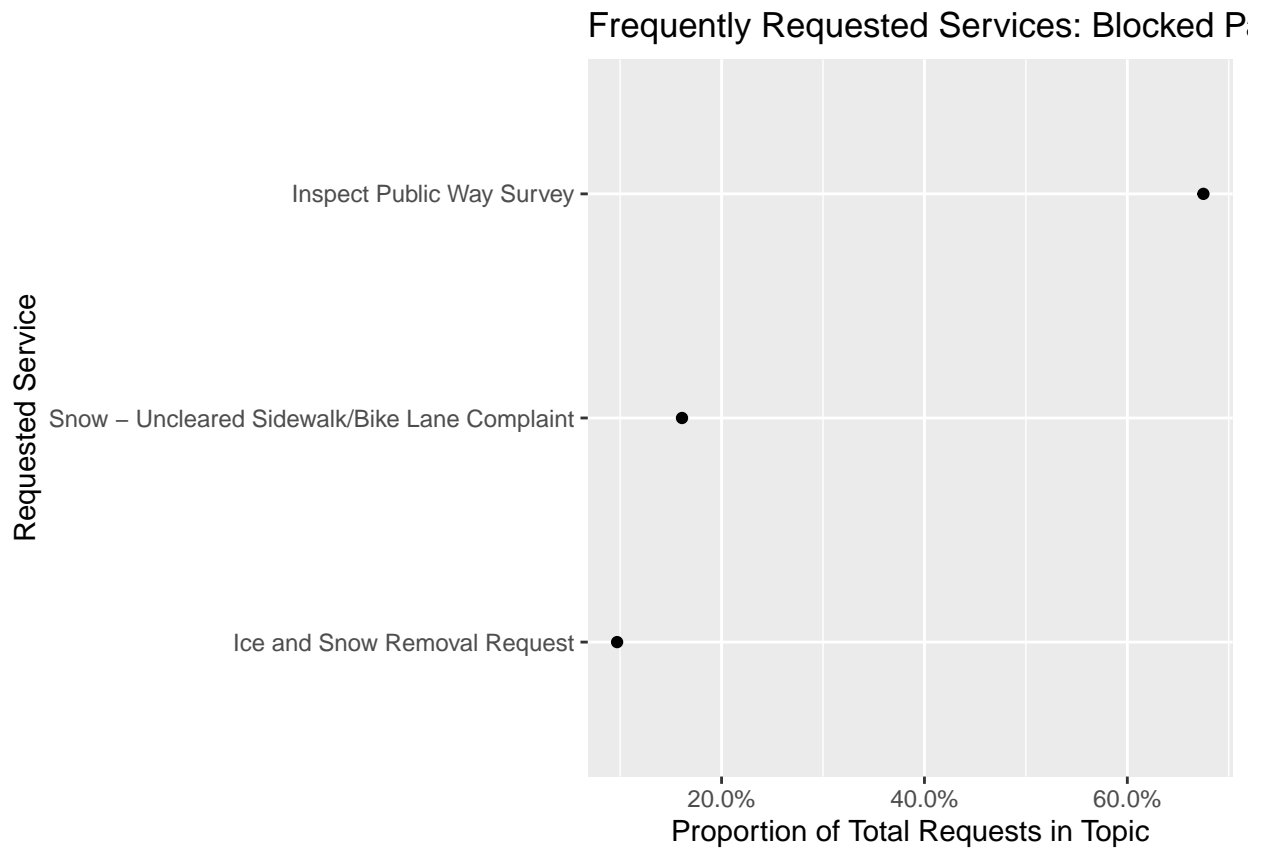
## Frequently Requested Services: Information Re



##  
## [[12]]



##  
## [[13]]



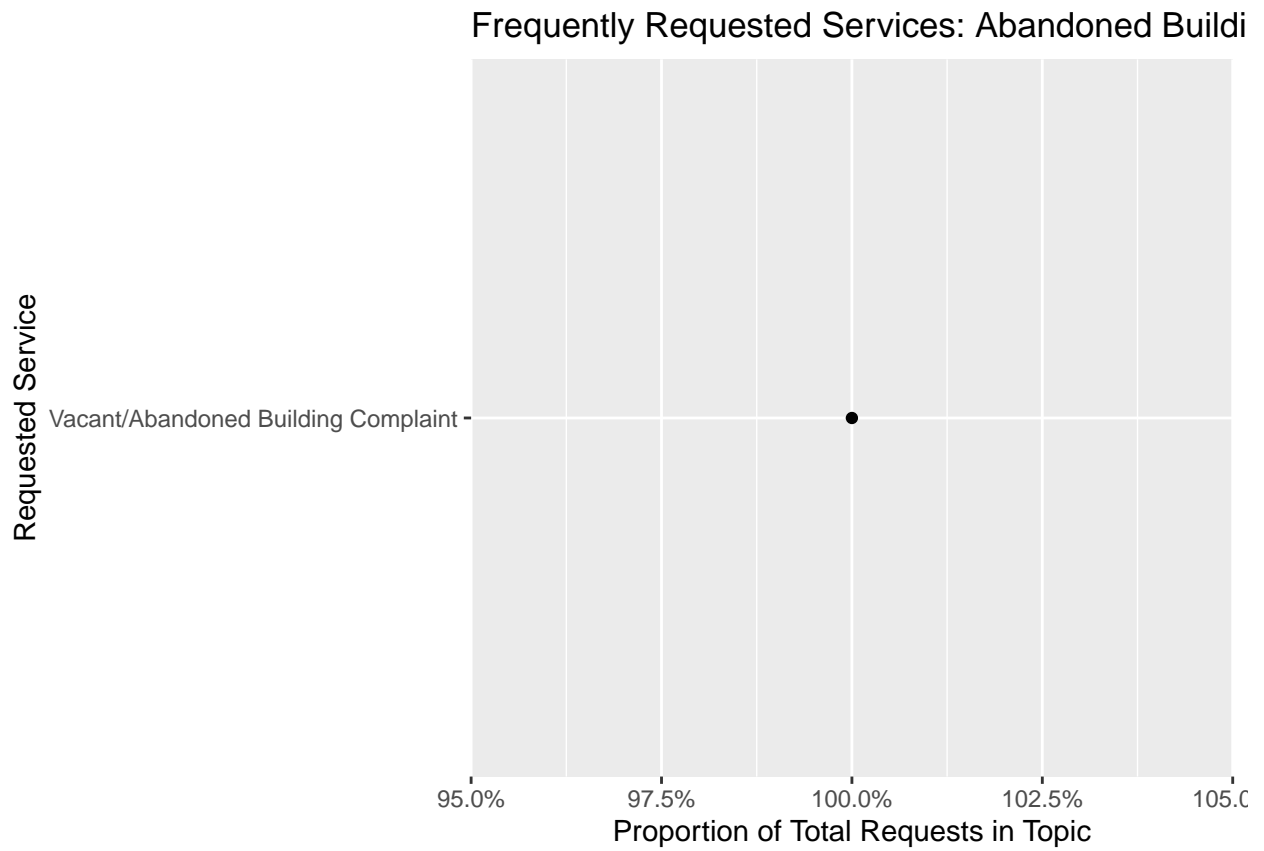
##  
## [[14]]

Frequently Requested Services: Construction

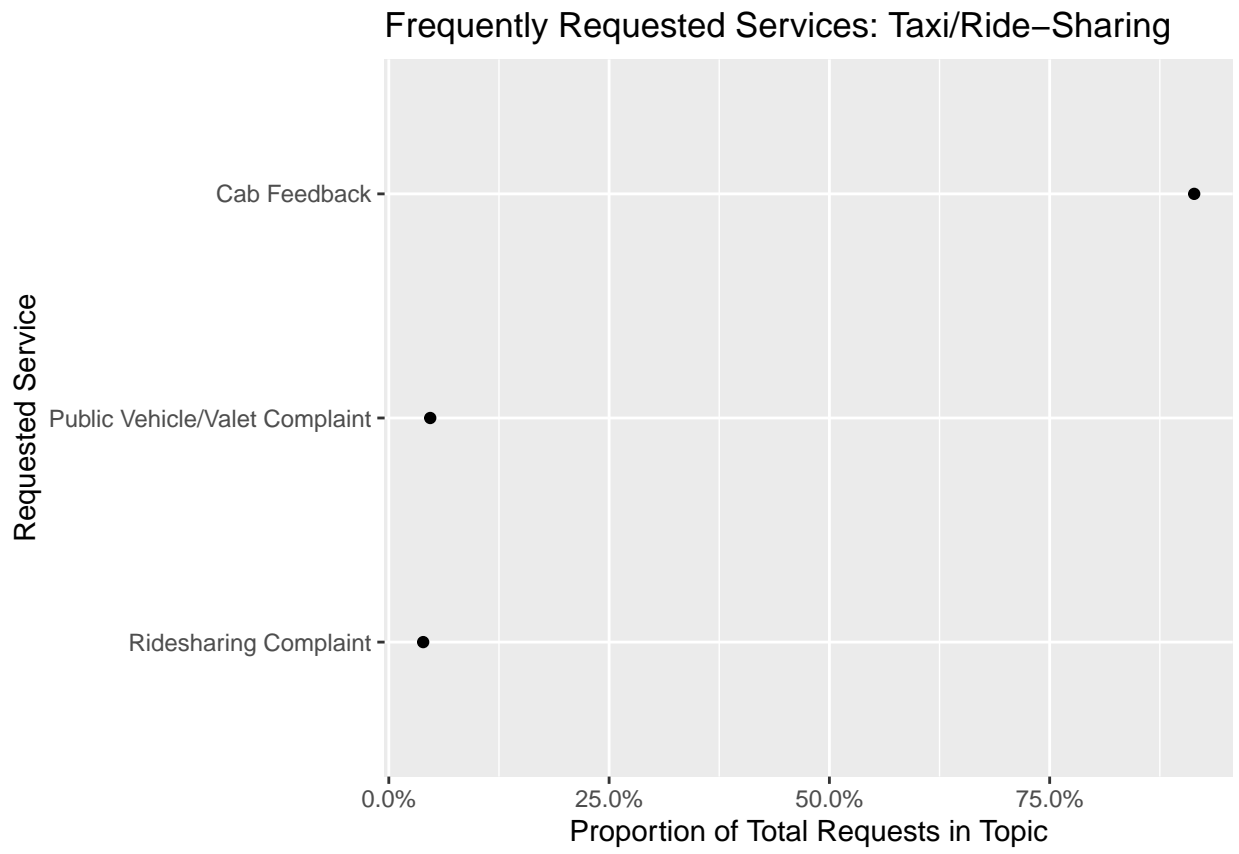


##  
## [[15]]



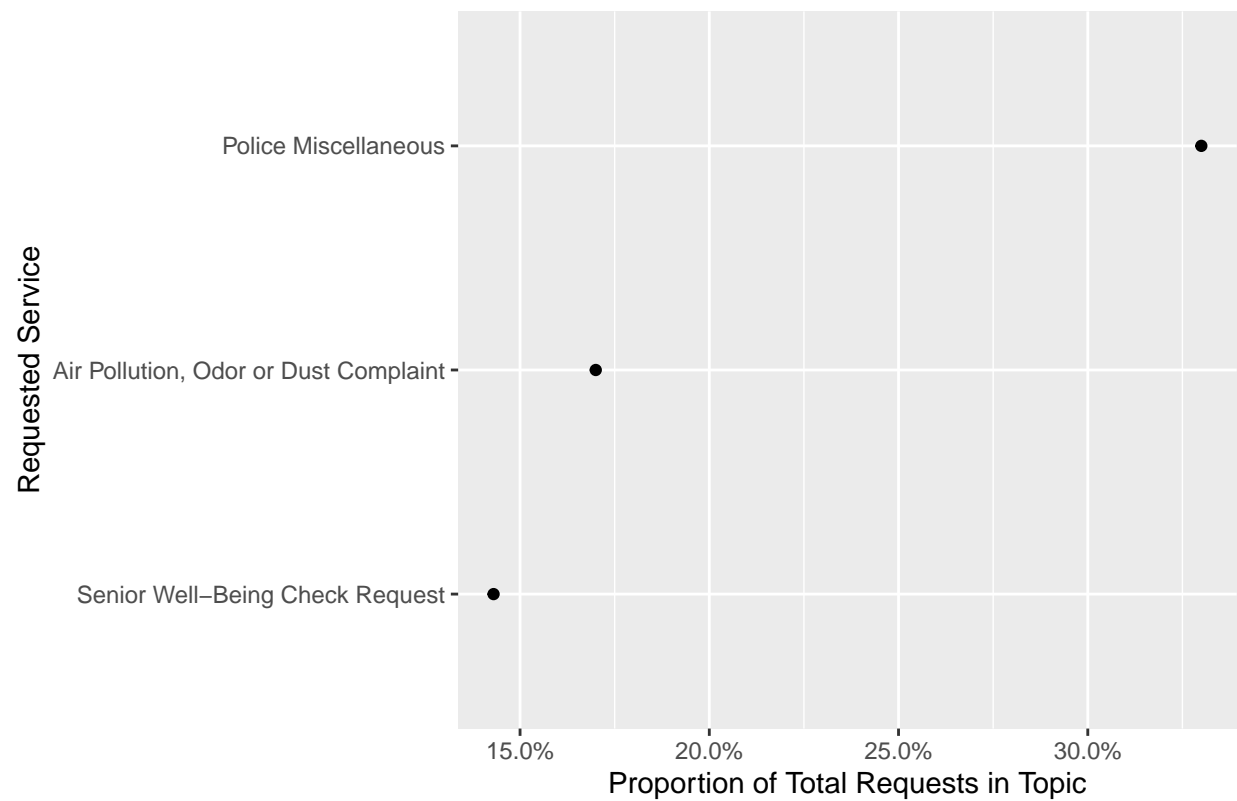


##  
## [[16]]



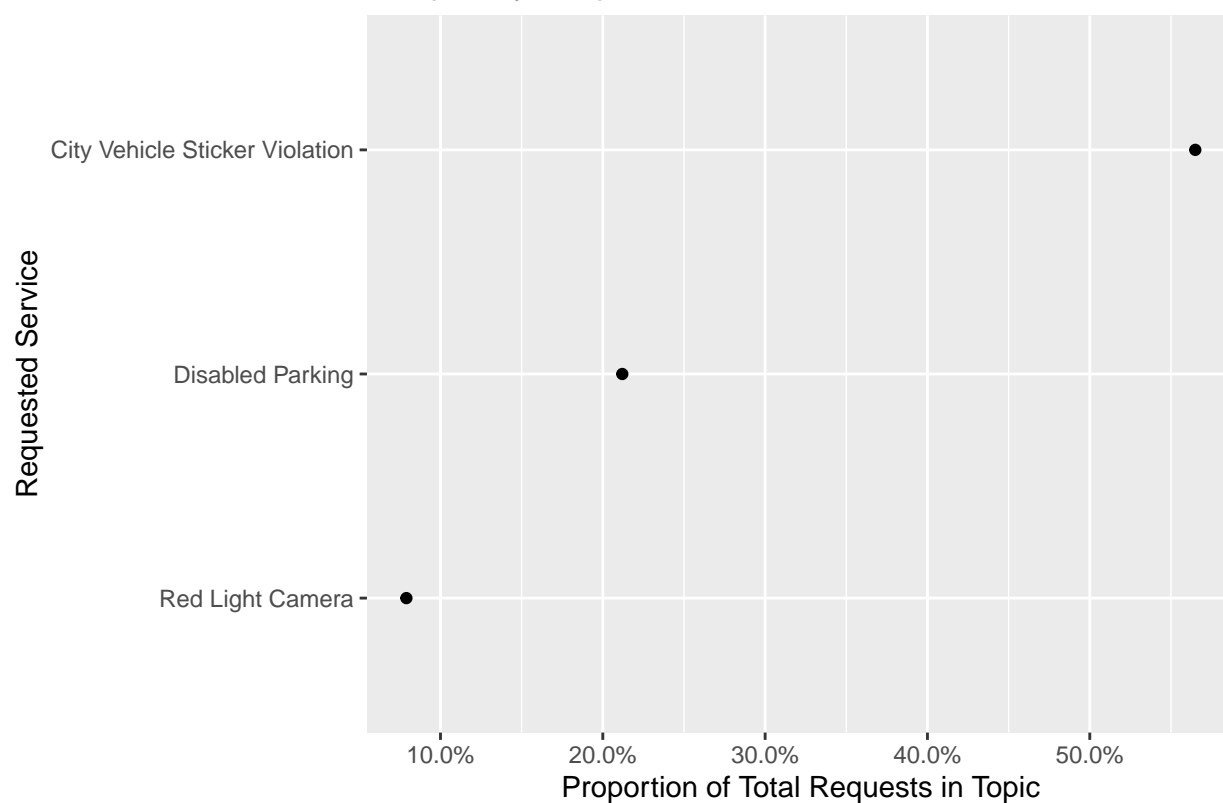
##  
## [[17]]

Frequently Requested Services: Health Concern/Pu



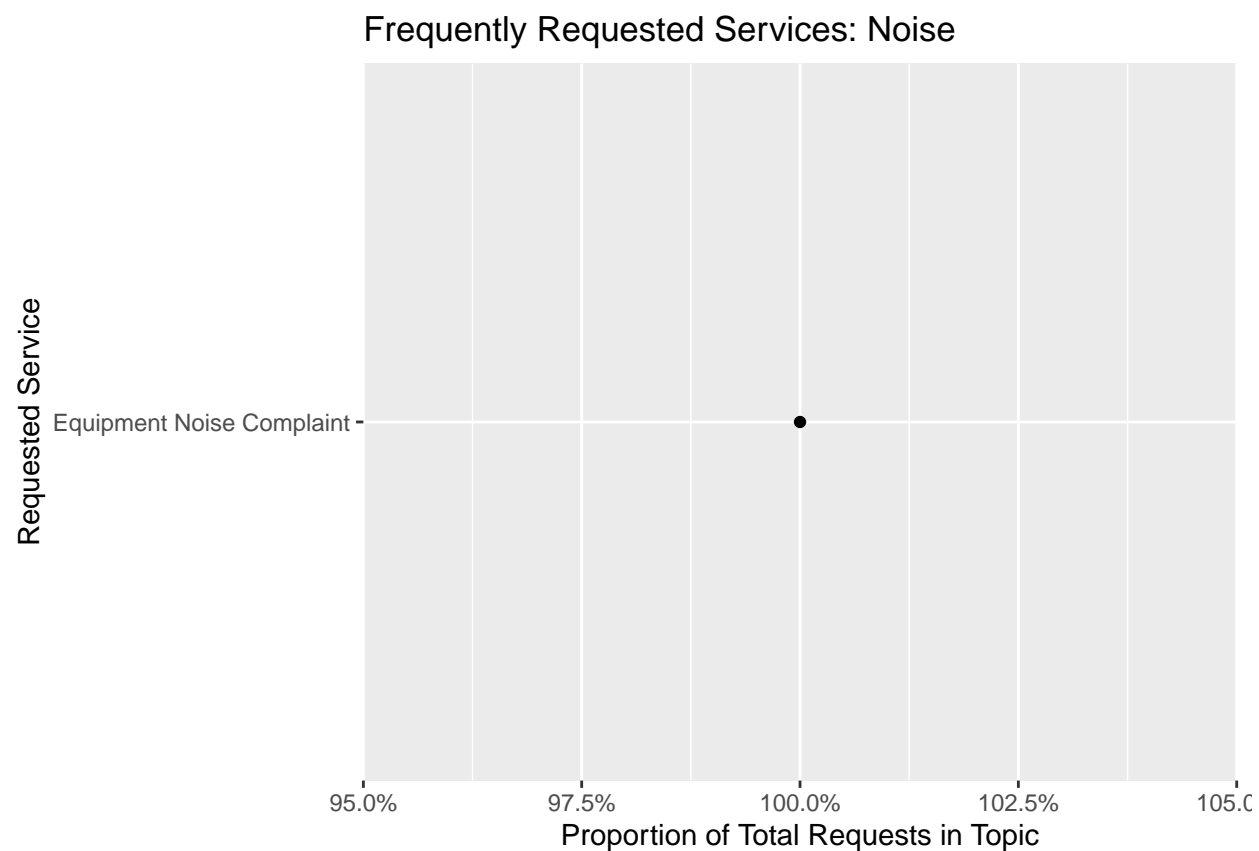
##  
## [[18]]

## Frequently Requested Services: Other/Miscellaneous



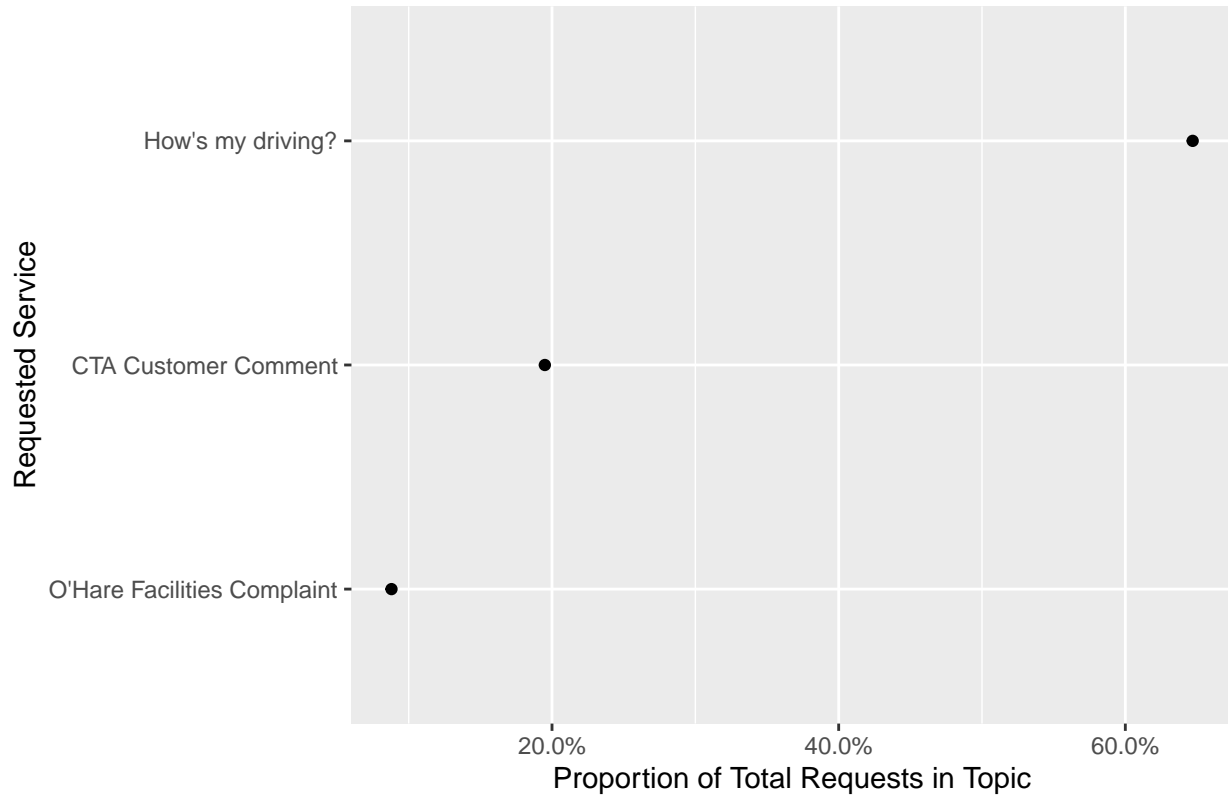
##

## [[19]]



##  
## [[20]]

## Frequently Requested Services: City Feedback



What is the proportion of requests that may be adversarial by topic?

topic	tot_adversarial	tot_not_adversarial	prop_adversarial	prop_not_adversarial
abandoned bike/vehicle	28044	0	1.0000000	0.0000000
abandoned building	6190	0	1.0000000	0.0000000
construction	7545	0	1.0000000	0.0000000
graffiti	38794	0	1.0000000	0.0000000
noise	958	0	1.0000000	0.0000000
taxi/ride-sharing	6070	0	1.0000000	0.0000000
business	7724	181	0.9771031	0.0228969
city feedback	329	25	0.9293785	0.0706215
health concern/public safety	2052	2844	0.4191176	0.5808824
building concern/code violation	12496	18923	0.3977211	0.6022789
utilities request/concern	7973	42649	0.1575007	0.8424993
animal/pest	7047	48801	0.1261818	0.8738182
housing	1424	11289	0.1120113	0.8879887
waste/cleanup services	7514	76812	0.0891066	0.9108934
blocked passage	332	8013	0.0397843	0.9602157
city infrastructure	248	38637	0.0063778	0.9936222
other/miscellaneous	2	1914	0.0010438	0.9989562
information request	0	9911	0.0000000	1.0000000
landscaping request/concern	0	99785	0.0000000	1.0000000
roadway/roadway lighting	0	173925	0.0000000	1.0000000

What is the proportion of requests that may involve illegal activity by topic?

topic	tot_illegal	tot_not_illegal	prop_illegal	prop_not_illegal
construction	4400	0	1.0000000	0.0000000
graffiti	38794	0	1.0000000	0.0000000
noise	958	0	1.0000000	0.0000000
abandoned bike/vehicle	22356	748	0.9676247	0.0323753
business	3267	618	0.8409266	0.1590734
building concern/code violation	38201	10736	0.7806159	0.2193841
other/miscellaneous	1082	567	0.6561552	0.3438448
health concern/public safety	2021	2399	0.4572398	0.5427602
waste/cleanup services	7514	85718	0.0805946	0.9194054
blocked passage	332	8013	0.0397843	0.9602157
animal/pest	20	66084	0.0003026	0.9996974
city feedback	0	354	0.0000000	1.0000000
city infrastructure	0	41014	0.0000000	1.0000000
housing	0	11886	0.0000000	1.0000000
information request	0	10019	0.0000000	1.0000000
landscaping request/concern	0	99785	0.0000000	1.0000000
roadway/roadway lighting	0	173897	0.0000000	1.0000000
utilities request/concern	0	51206	0.0000000	1.0000000
abandoned building	0	0	NaN	NaN
taxi/ride-sharing	0	0	NaN	NaN

What is the average time needed to close a request pertaining to something potentially illegal?

*# This needs more thinking through, as there is bound to be extraneous data here.*

```
# data_calls %>%
#   summary()
#
# data_calls %>%
#   mutate()

data_calls %>%
  filter(status == "closed", fix_min < 300000) %>%
  group_by(illegal) %>%
  summarise(
    avg_minutes_to_close = mean(fix_min, na.rm = TRUE),
    avg_hours_to_close = avg_minutes_to_close / 60,
    avg_days_to_close = avg_hours_to_close / 24
  )
```

```
## # A tibble: 3 x 4
##   illegal avg_minutes_to_close avg_hours_to_close avg_days_to_close
##   <chr>          <dbl>          <dbl>          <dbl>
## 1 maybe          110045.          1834.           76.4
## 2 no              85089.          1418.           59.1
## 3 yes            79764.          1329.           55.4
```

What is the average time needed to close a request by topic?

## Geographic Analysis