

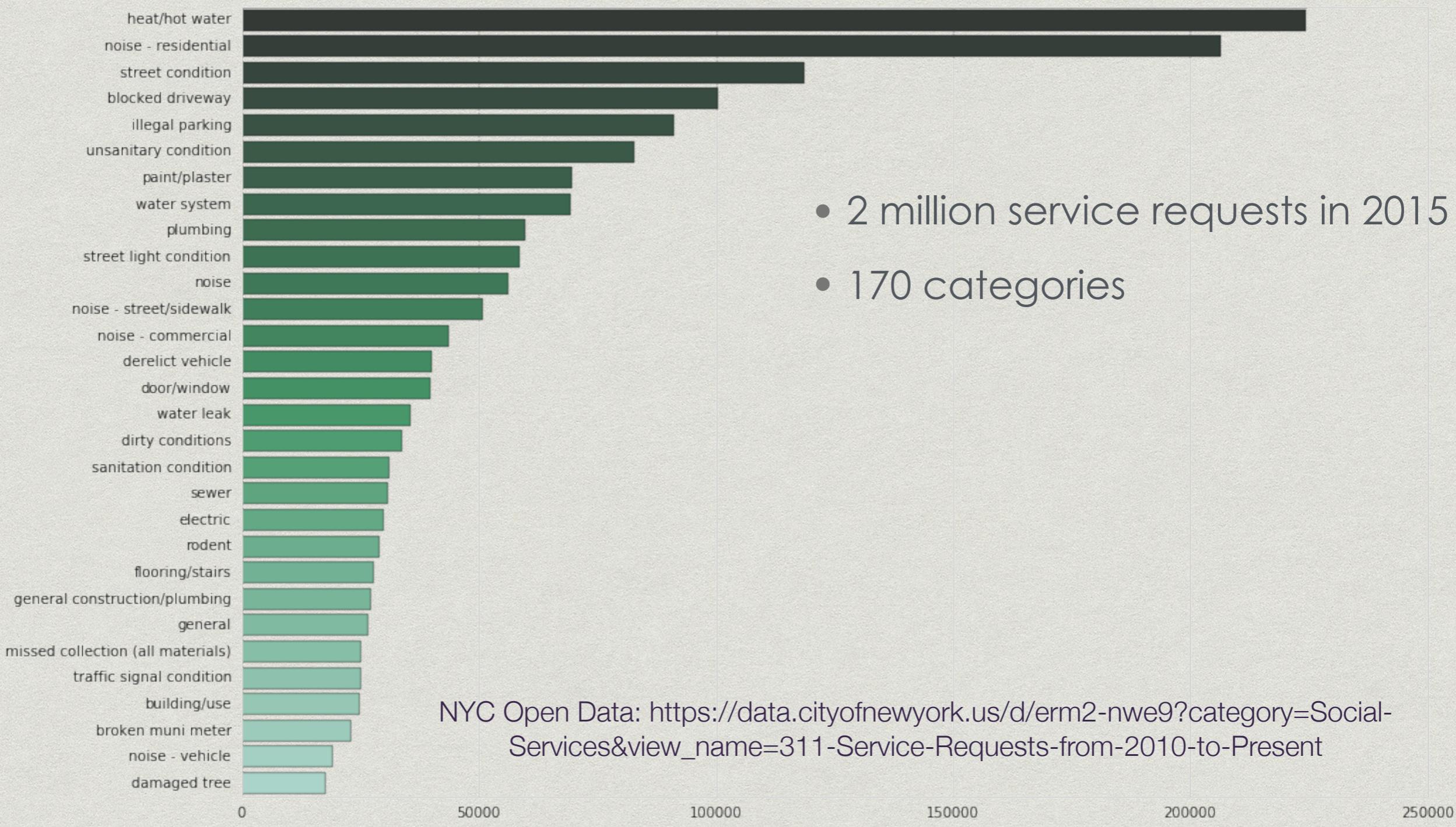


# NYC 311 COMPLAINTS

# Improving city services

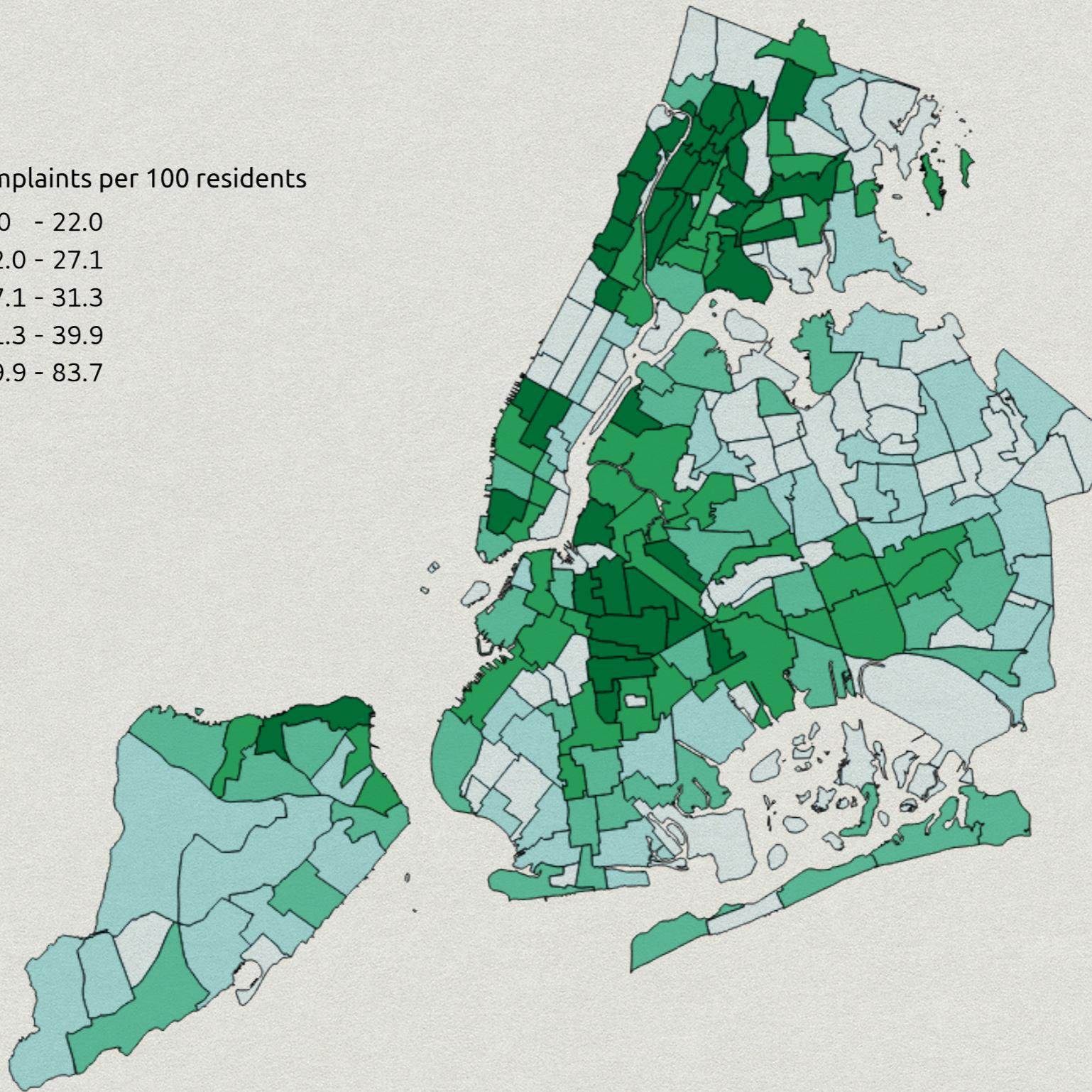
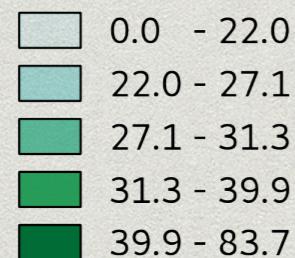
- Aggregation: neighborhood-level
  - Complaint patterns: **what** are the most pressing issues?
  - Spatial patterns: **where** do they occur?
- Explanation: underlying geographic/demographic factors
  - **Who** contacts the city and **why**?
- How can we make city services more responsive?

# What people complain about



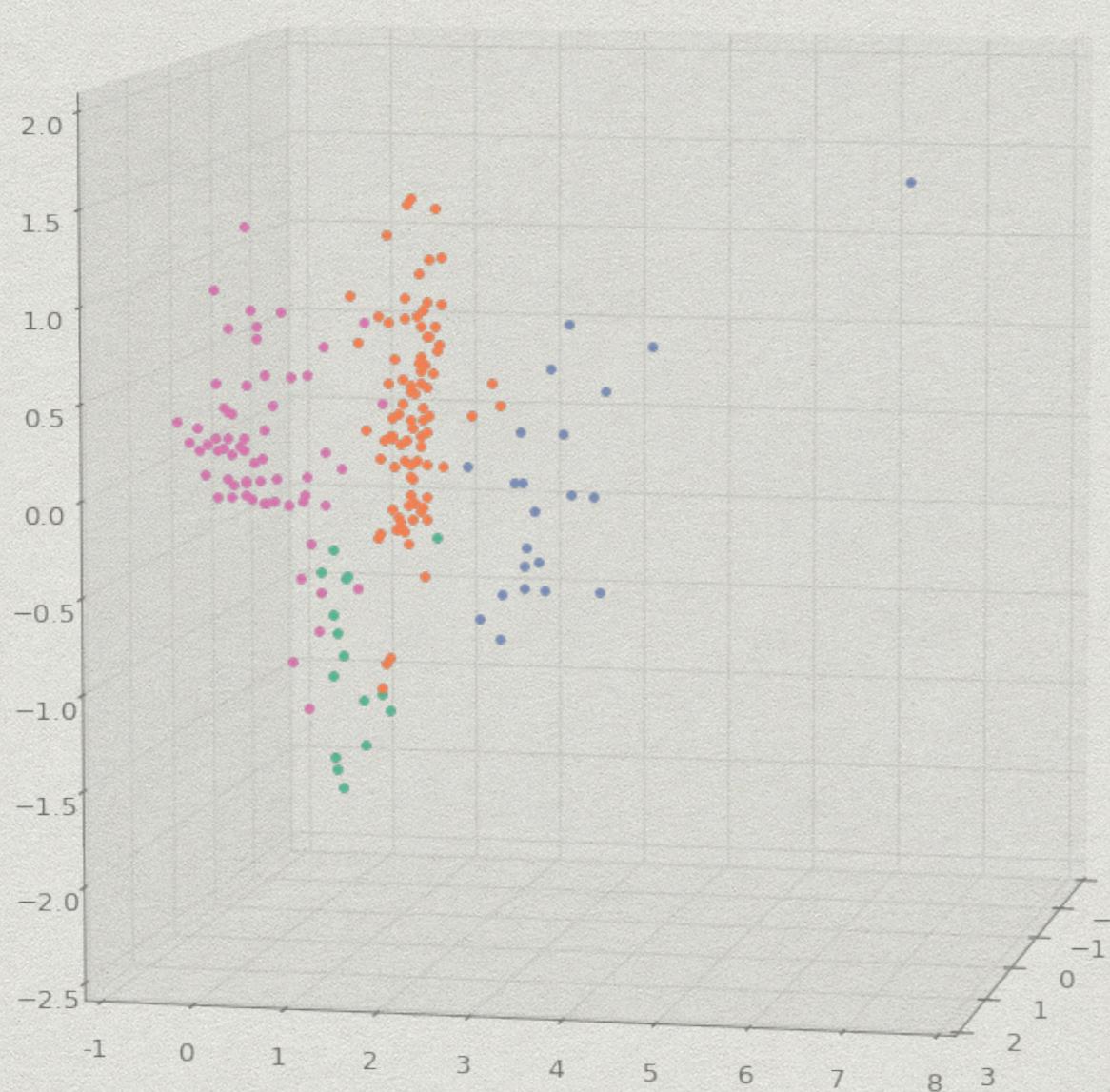
# Where people complain

311 complaints per 100 residents



# Clustering complaints

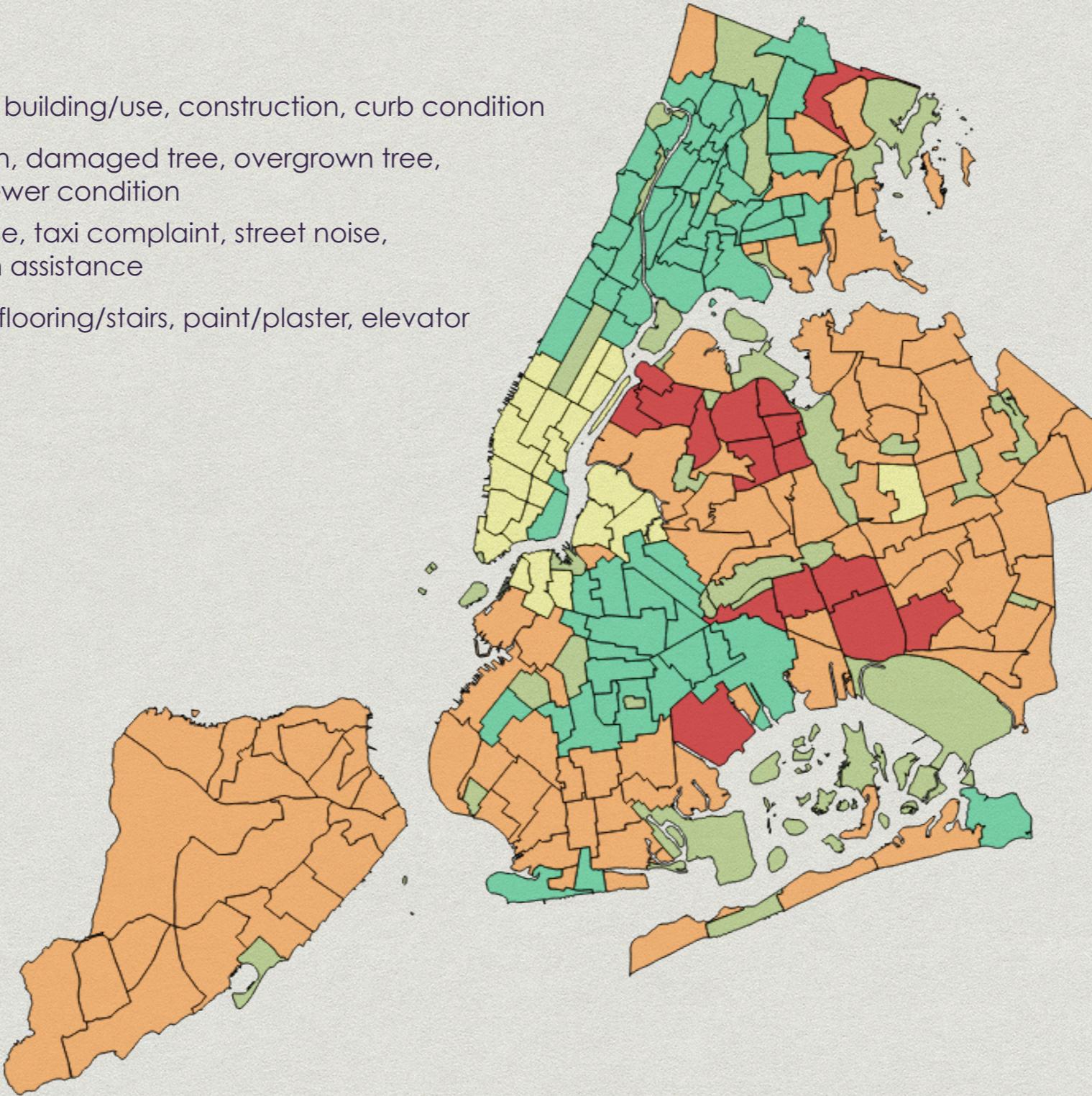
	air quality	animal abuse	asbestos	blocked driveway	broken meter	...
BK09	0.06	-0.12	-0.01	-0.24	0.22	...
BK10	-0.02	0.01	0.03	0.08	0.00	...
...	...	...	...	...	...	...



- Non-negative matrix factorization
- K-Means clustering

# How people complain

- █ derelict vehicle, building/use, construction, curb condition
- █ missed collection, damaged tree, overgrown tree, root/sidewalk/sewer condition
- █ commercial noise, taxi complaint, street noise, homeless person assistance
- █ heat/hot water, flooring/stairs, paint/plaster, elevator
- █ parks



# Why people complain

**complaint rate = demography + geography**

## Demographic

median income  
median age  
percentage minority  
percentage male  
unemployment rate  
percentage below poverty line  
percentage renter-occupied  
percentage family households  
same home last year

## Geographic

number housing units  
percentage vacancy  
percentage built before 1939  
median rent  
number of households

# Why people complain

**housing complaints (600k), R-squared = .76**

Demographic

median income

median age

**percentage minority -**

percentage male

unemployment rate

**percentage below poverty line +**

**percentage renter-occupied -**

percentage family households

**same home last year +**

Geographic

number housing units

**percentage vacancy +**

**percentage built before 1939 +**

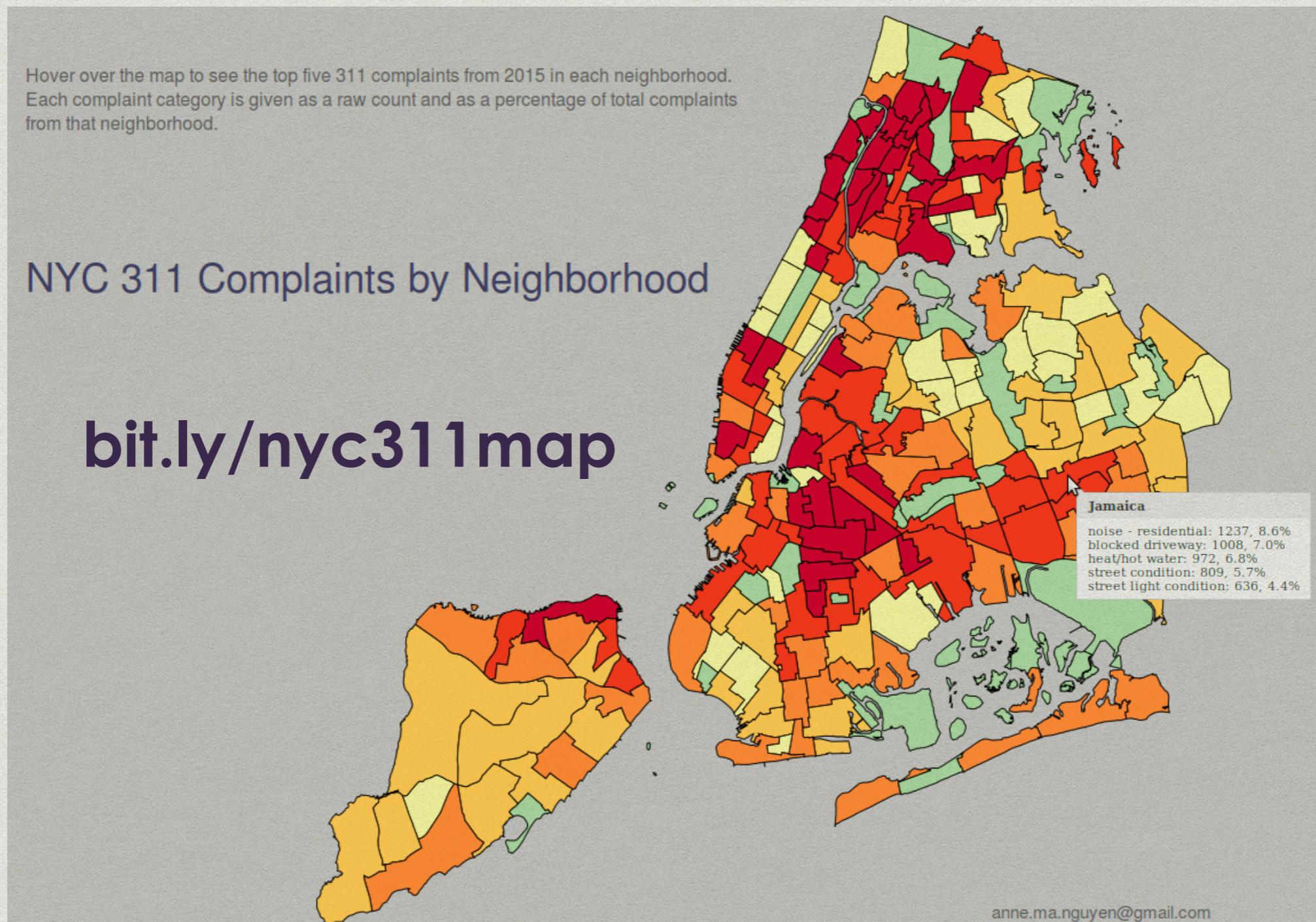
median rent

number of households

# What to do about complaints

- Neighborhoods:
  - Proactively target high-complaint areas & likely problems
- Residents:
  - Understand differences in residents' reactions to city conditions
  - Explain patterns in civic engagement
  - Focus outreach on less vocal demographics

# Top five complaints



Thank you very much!

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