

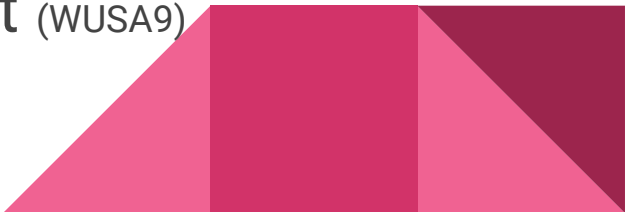


Street Crime in Baltimore

Narrative Analytics and Experimentation
Katie Peterson

Context: Crime in Baltimore, Maryland

Baltimore is infamous for high crime rates

- Named the 7th most dangerous city in the U.S. in 2015 (Forbes)
 - Record-breaking homicides per capita in 2017 (Baltimore Sun)
 - 55.8 killings per 100,000 people
 - Crime threatens economic development (WUSA9)
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Importance of Reducing Crime

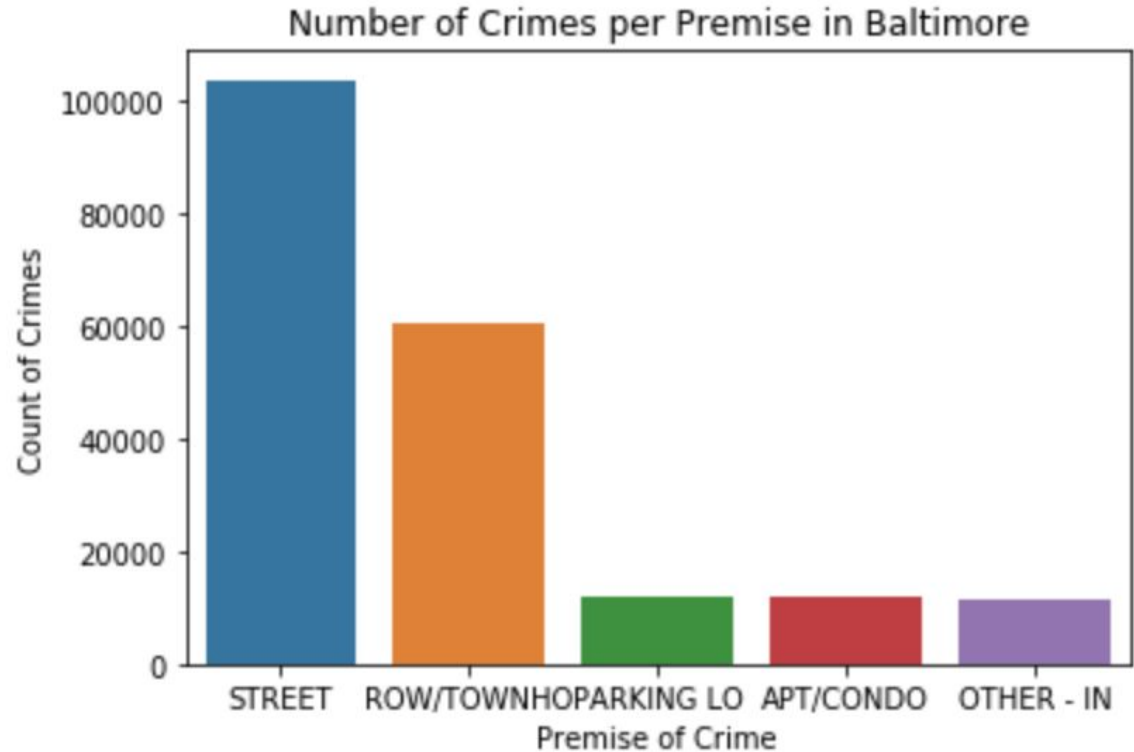
- Improve quality of life for citizens
- Increase real estate values
- Boost local economy



Total Crimes in Baltimore

Majority of crimes occur on the streets of Baltimore

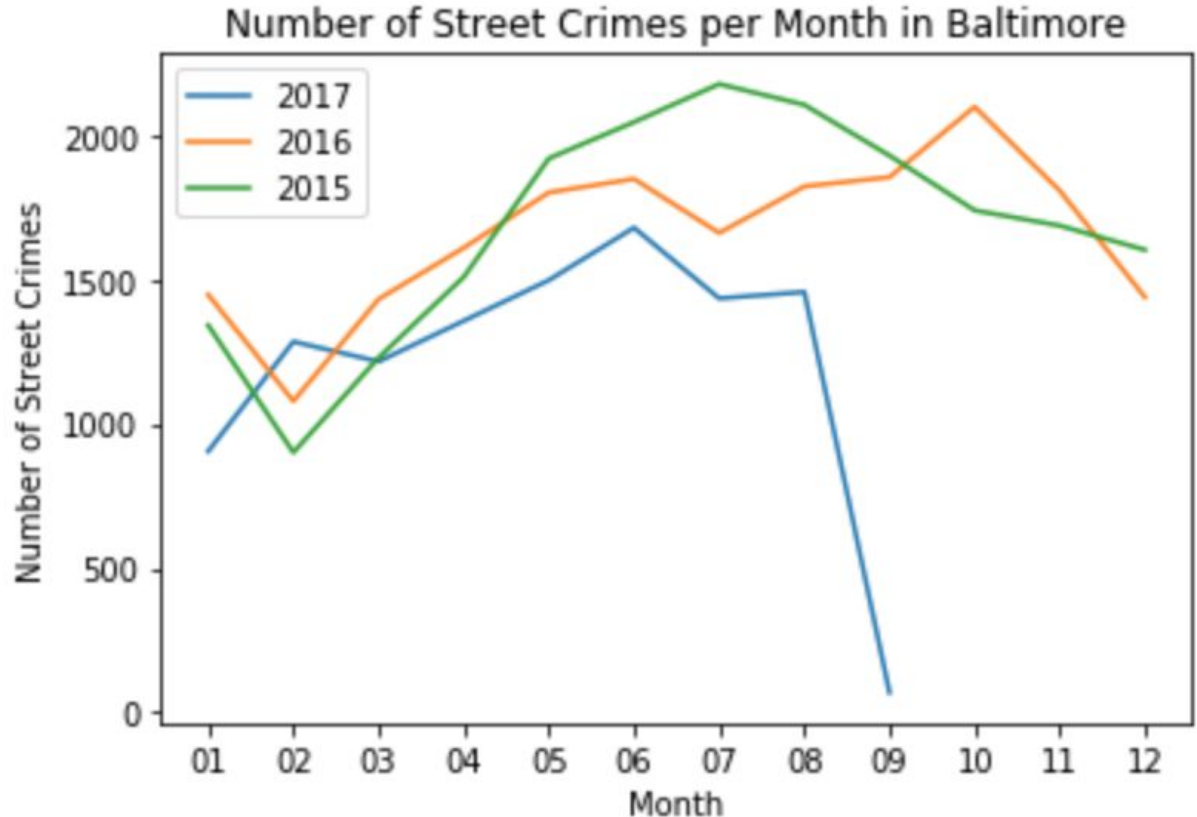
Almost double the second highest location



Street Crimes per Month in Baltimore

Street crimes least frequent in February

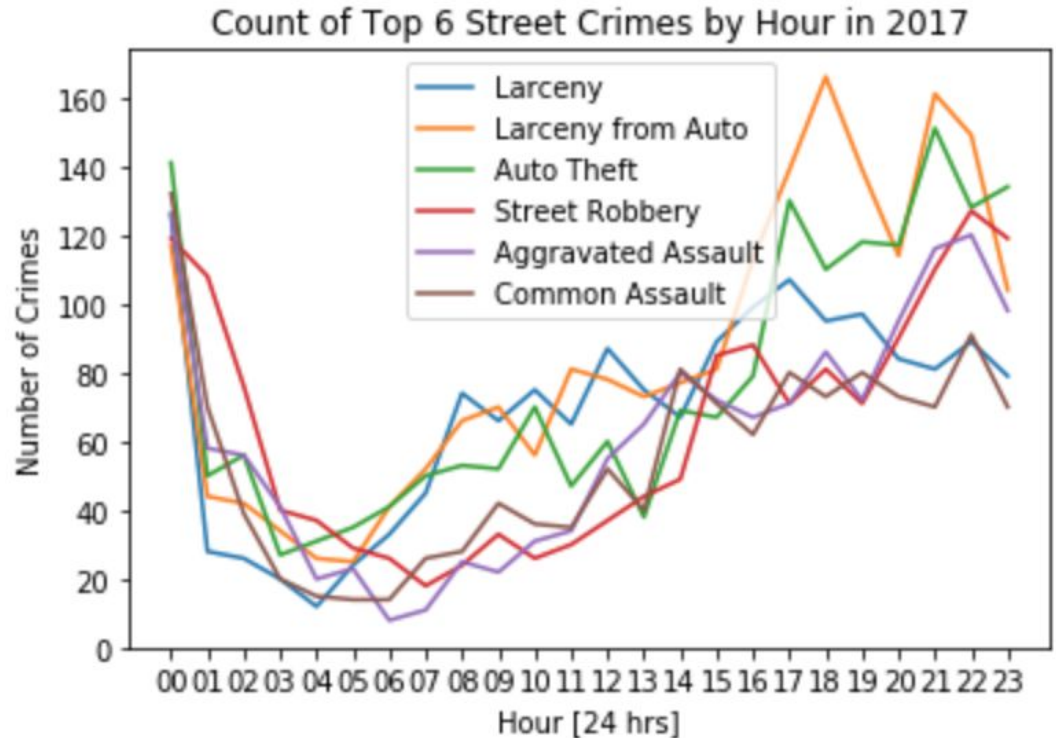
Note: Spike in crimes from April to August 2015 stemmed from Freddie Gray's death



Baltimore Street Crimes per Hour in 2017

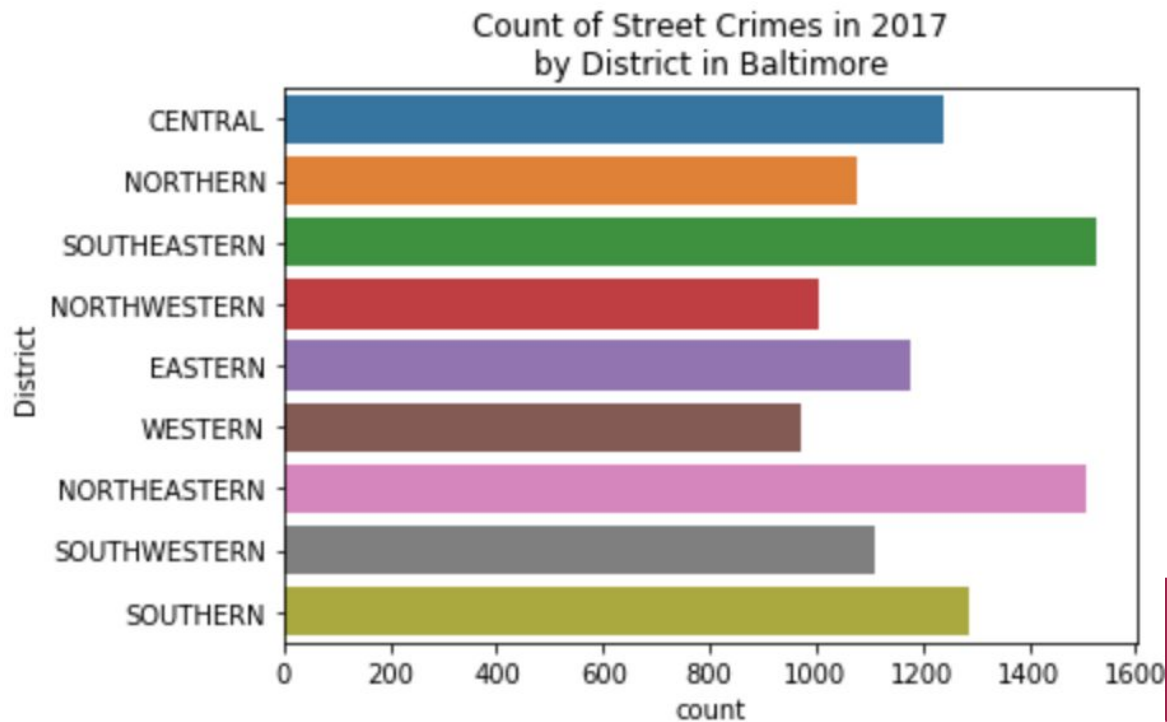
Top types of street crime are mostly larceny and assault

Of the top 6 types of street crimes, the majority occurs between 4 pm and midnight



Street Crimes per District

Street crimes are most frequent in the Southeastern and Northeastern police districts



Experimental Hypothesis

If larceny from auto prevention strategies are employed in a district, then street crime in that district will decrease.



Larceny from Auto Prevention Strategies

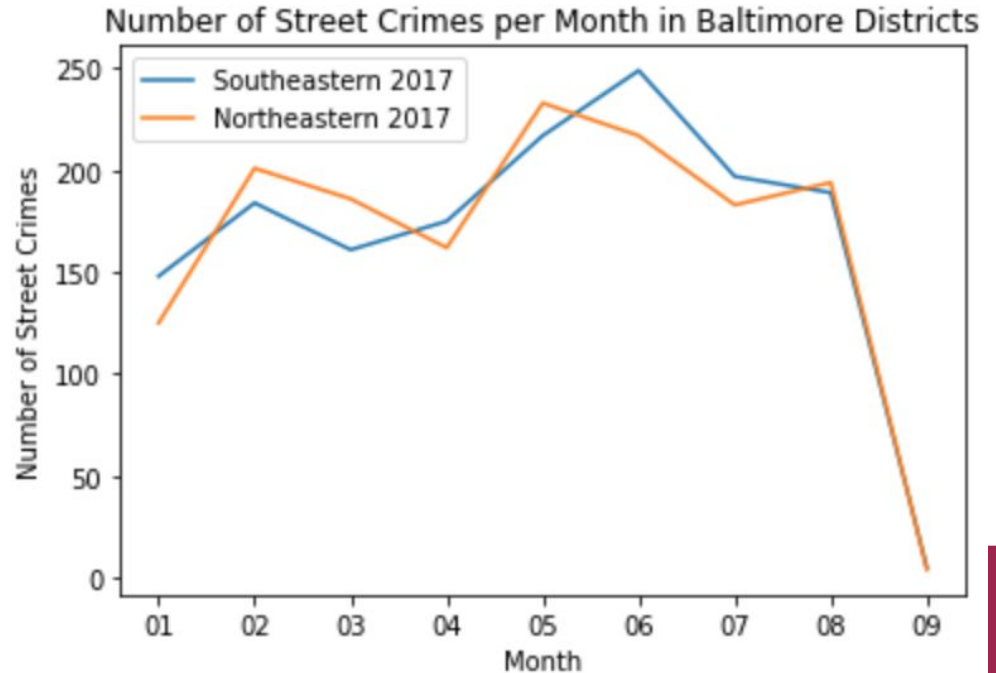


Research Plan - Methodology

Southeastern district = “test region”
= with signs

Northeastern district = “control region” = normal (no signs)

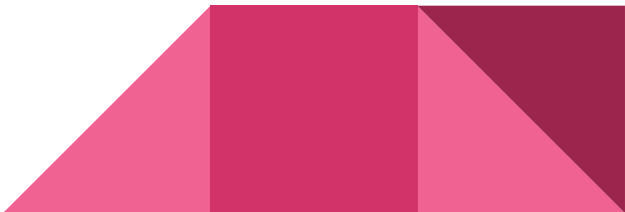
Compare crime in the two regions
to see if signs decrease street
crimes



Research Plan - Rollout Plan

- Before rollout
 - Investigate events that might impact crime in each district
 - Test electronic signs for message quality
- First: Canton neighborhood (in Southeast district)
 - Place signs every mile on main roads
 - Monitor crime for one month
- Success Metric
 - T-test for significance between street crimes per month in the two neighborhoods
 - P-value less than 0.05

Research Plan - Evaluation Plan

- If 10% decrease in street crime, roll out to rest of district
 - If crime decreases but not significantly, monitor for two more months before deciding on next steps
 - If significant decrease in crime over Northeastern district, implement campaign across the city
 - Monitor for two months to ensure efficacy
- 

Sources

Data: Baltimore Police Department, Open Baltimore

<https://data.baltimorecity.gov/Public-Safety/BPD-Part-1-Victim-Based-Crime-Data/wsfq-mvij>

Fisher, Daniel; Forbes Online,

<https://www.forbes.com/sites/danielfisher/2015/10/29/americas-most-dangerous-cities-detroit-cant-shake-no-1-spot/> (October 29, 2015)

Rector, Kevin; Baltimore Sun

<http://www.baltimoresun.com/news/maryland/crime/bs-md-ci-per-capita-homicides-20171227-story.html> (December 27, 2017)

WUSA9

<http://www.wusa9.com/news/local/maryland/city-in-crisis-whats-the-matter-with-baltimore/492491100> (November 17, 2017)