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Token Entry:

A First Pass at MTA Turnstile Data

Team 5

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Background and Goals

Background

- WomenTechWomenYes (WTWY) holds its annual gala each summer
- Interested in placing street teams at subway stations to collect email addresses
- Those providing email address are sent an invitation to the annual gala

Goals

- Provide guidance on where and when to deploy staff to collect emails for gala invite blast
- Take a first pass pinpoint stations to based on traffic
- Identify useful entrances for selected subway stations where staff should be stationed

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Assumptions & Approach

Assumptions

- 10 street team members available 5 days a week for up to 8 hours a day
    - 5 teams of 2
- Gala taking place in June; WTWY collecting emails in the months prior

Approach

- Maximization: Go to areas with the greatest traffic; rely on volume to make up for lower levels of receptivity
- Soft Targeting: Provide **starting** list of 15 stations with the greatest traffic flow in months before Gala (as starting point)
- Among selected stations identify days of the week and times of day with the greatest traffic
- Base estimates in months prior to Gala (e.g. April and May)

Methods

Data Sources

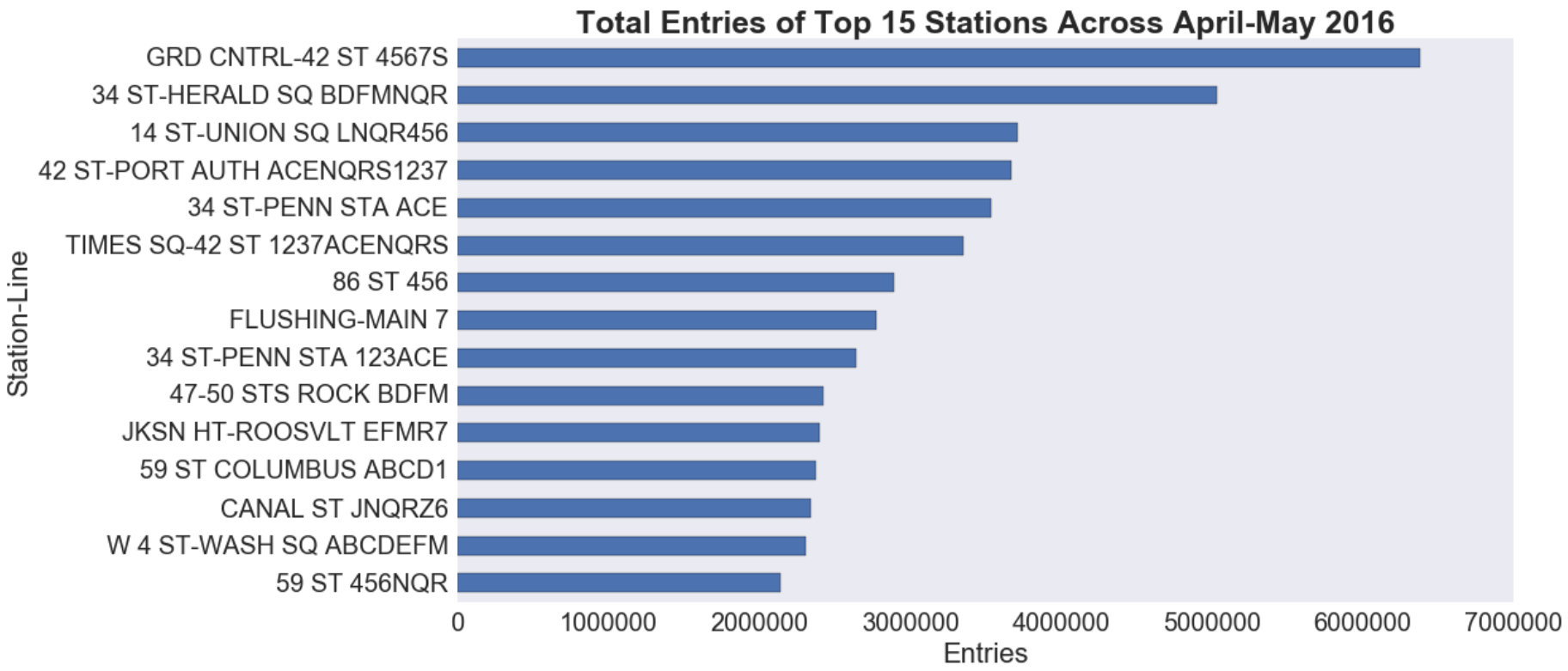
Methodology

- MTA turnstile data: 4/3/2016 - 6/4/2016 (1,747,742 records)
- Estimate total traffic flow at each station based on entries only
- Traffic calculated contiguously within station (across turnstile)
- Trim negative values and extremes (> 99.9 percentile)
- Ignored data recorded at midnight

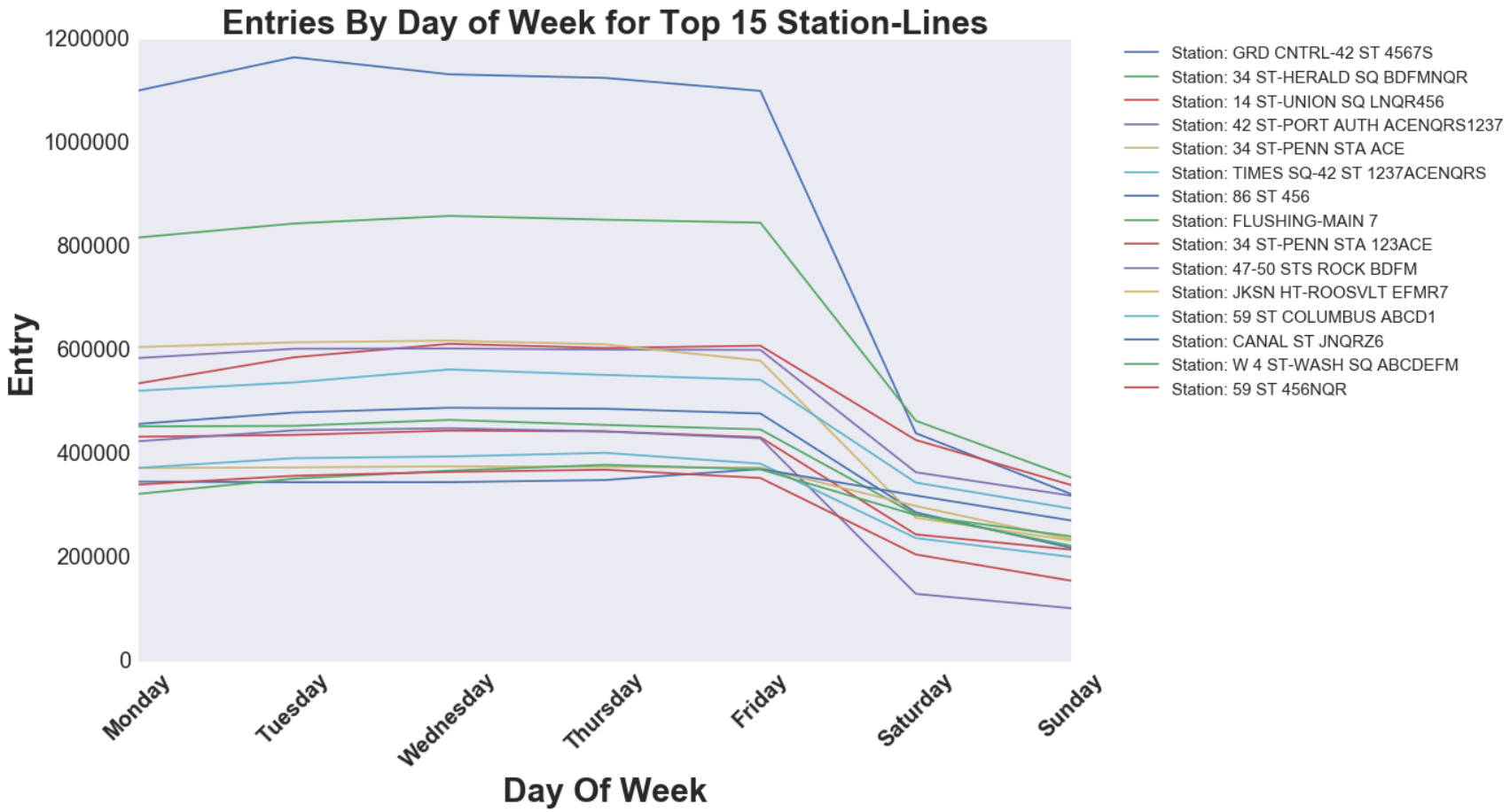
- Subway entrances
- Subway station geographical coordinates

Results

Top Stations



Daily Entries



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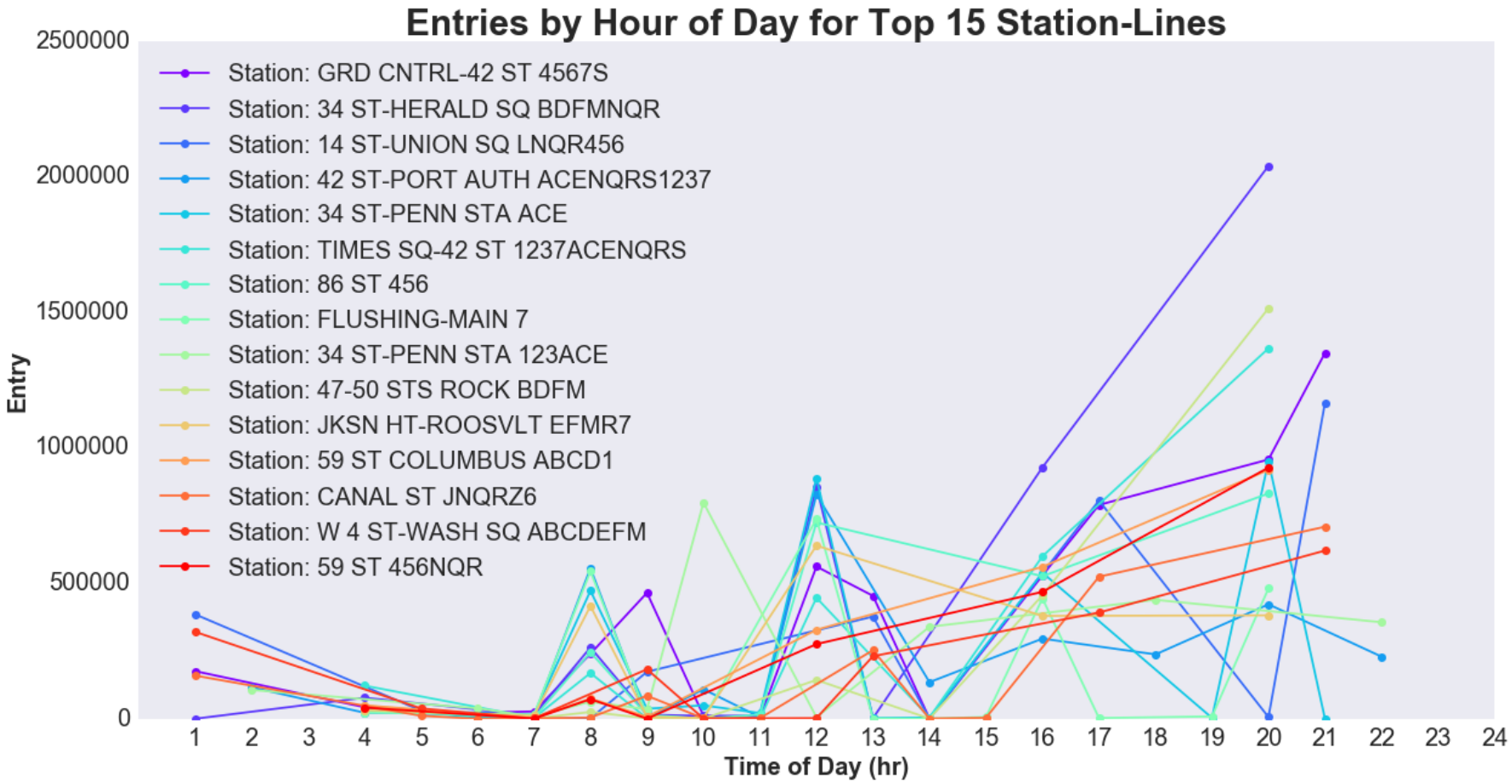
Hourly Entries



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Traffic Density = Flow/Entry#

Station Names	Flow	Count of Entrances	Flow/Entrances
34 ST-HERALD SQ BDFMNQR	5035010	11	457,728.18
GRD CNTRL-42 ST 4567S	6384809	15	425,653.93
42 ST-PORT AUTH ACENQRS1237	3674337	9	408,259.67
W 4 ST-WASH SQ ABCDEFM	2311829	6	385,304.83
14 ST-UNION SQ LNQR456	3711978	10	371,197.80
86 ST 456	2894762	8	361,845.25
JKSN HT-ROOSVLT EFMR7	2403158	7	343,308.29
FLUSHING-MAIN 7	2778742	10	277,874.20
TIMES SQ-42 ST 1237ACENQRS	3354597	13	258,045.92
34 ST-PENN STA ACE	3538270	16	221,141.88
59 ST COLUMBUS ABCD1	2379059	12	198,254.92
CANAL ST JNQRZ6	2346221	14	167,587.21
34 ST-PENN STA 123ACE	2647402	16	165,462.63
59 ST 456NQR	2145341	13	165,026.23
47-50 STS ROCK BDFM	2422287	17	142,487.47

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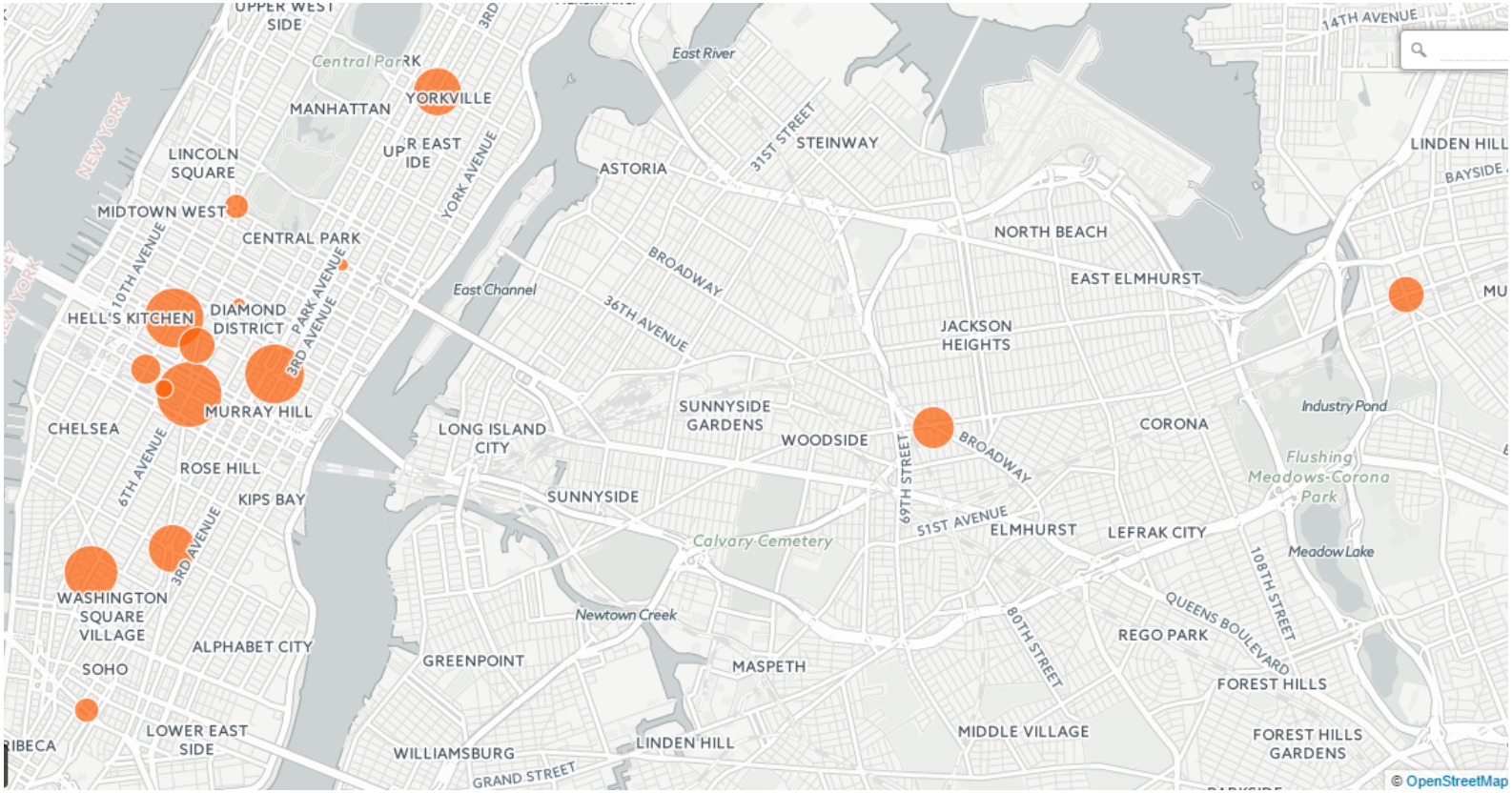
Subway Station Locations Weighted by Traffic Density



Conclusions & Future Work

Conclusions

- Stations with the highest traffic are what you would expect!
- Highest traffic: weekdays during morning and evening commute
  - Lunch time increase in some areas

Next Steps

- Incorporate additional data to identify high-traffic stations in areas with most receptive populations
  - Median income
  - Charitable giving
  - Tech Industry
- Estimate traffic flow by time for specific station exits

Questions