

Optimizing Street Outreach with MTA Data

Objectives

- Optimize WomenTechWomenYes (WTWY)'s street team placement to grow attendance for upcoming summer gala and long term donor base

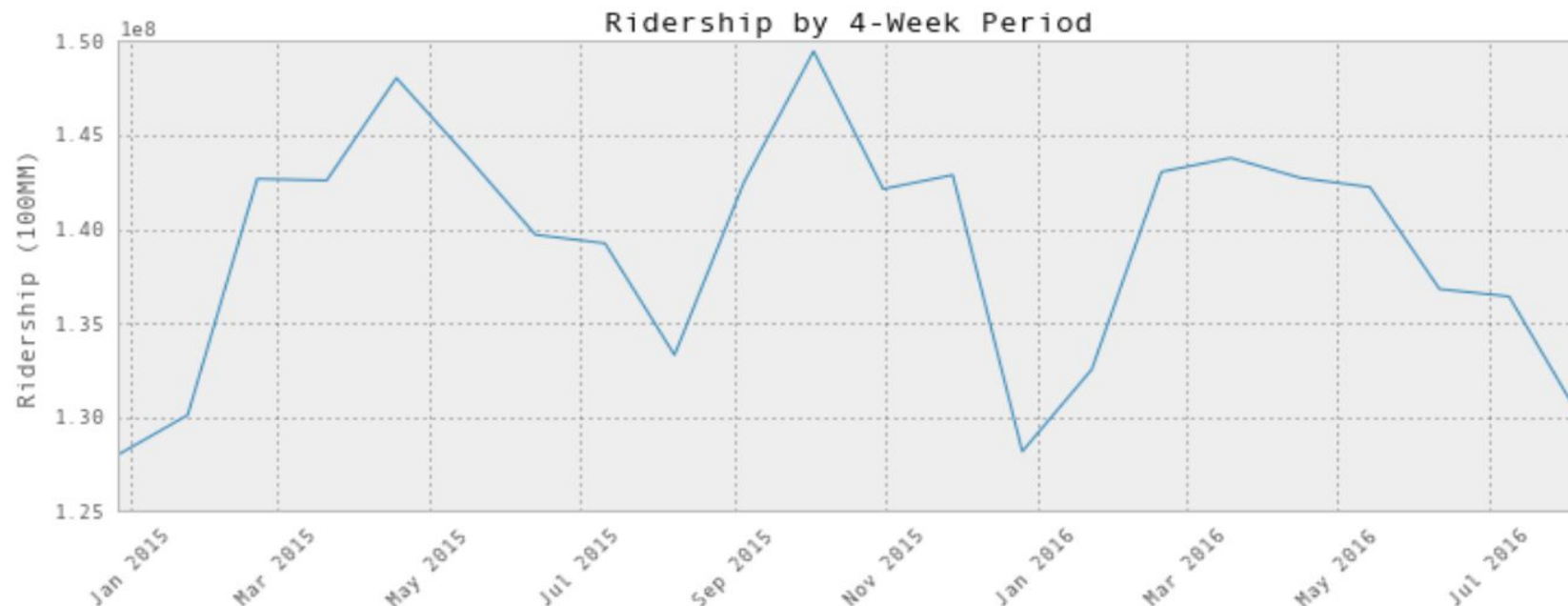
Hypotheses/Questions:

- Midtown will be a high traffic area worth targeting
 - How to best target this area? Top station, times of day, days of week?
- Higher Income or Tech-Sector areas may have superior conversation rates
 - How can we identify these areas, narrow down locations to target?

Approach:

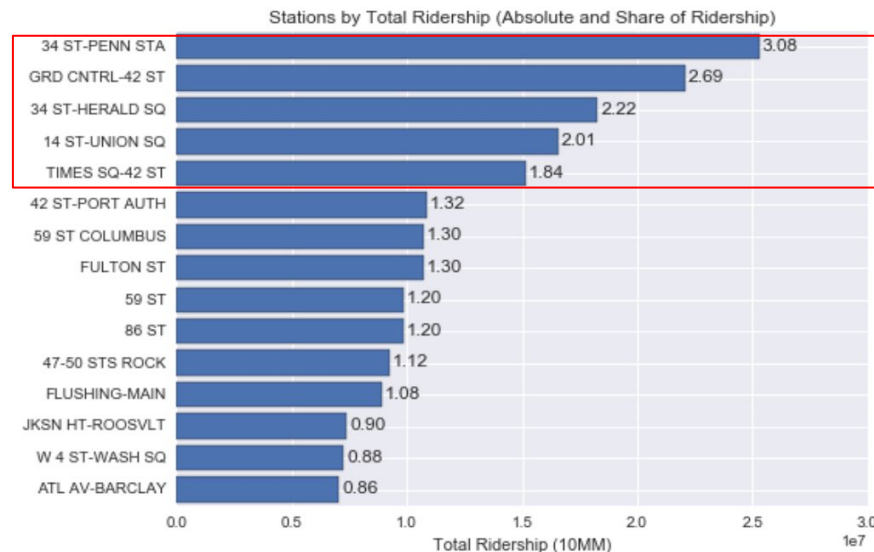
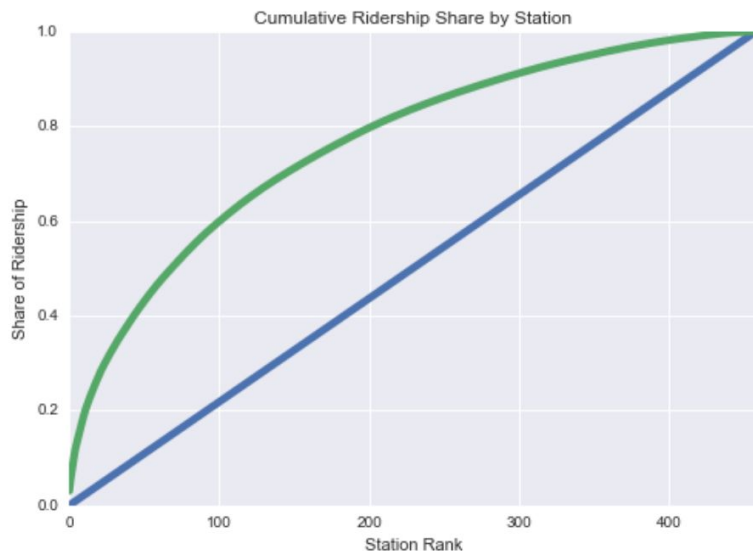
- Break Stations into Categories

Ridership Trends Over Time Highlight Optimal Months for Street Team Deployment



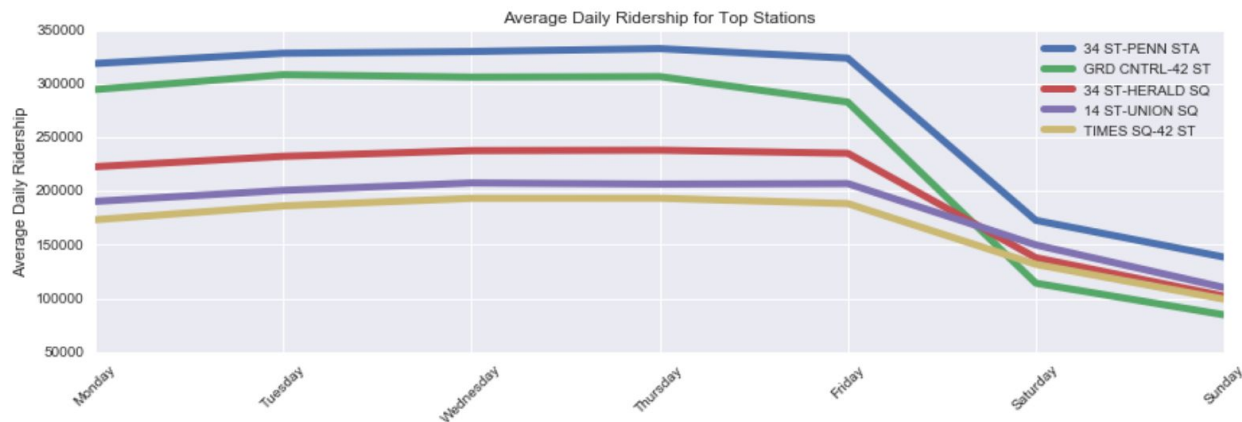
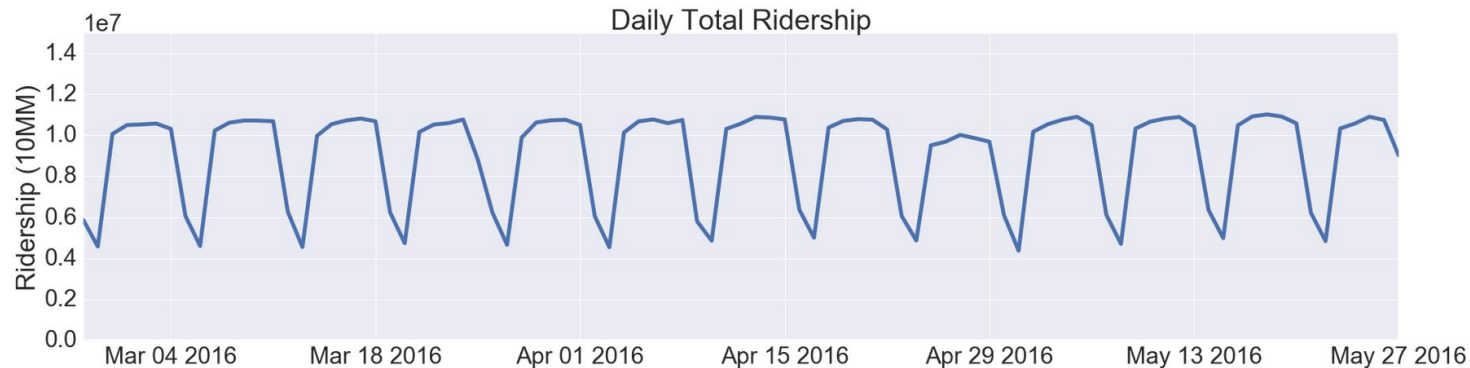
Peaks in the Spring and the event's intended early summer date draw our focus to March-May

Some Stations Account For a Disproportionate Share of Total Ridership

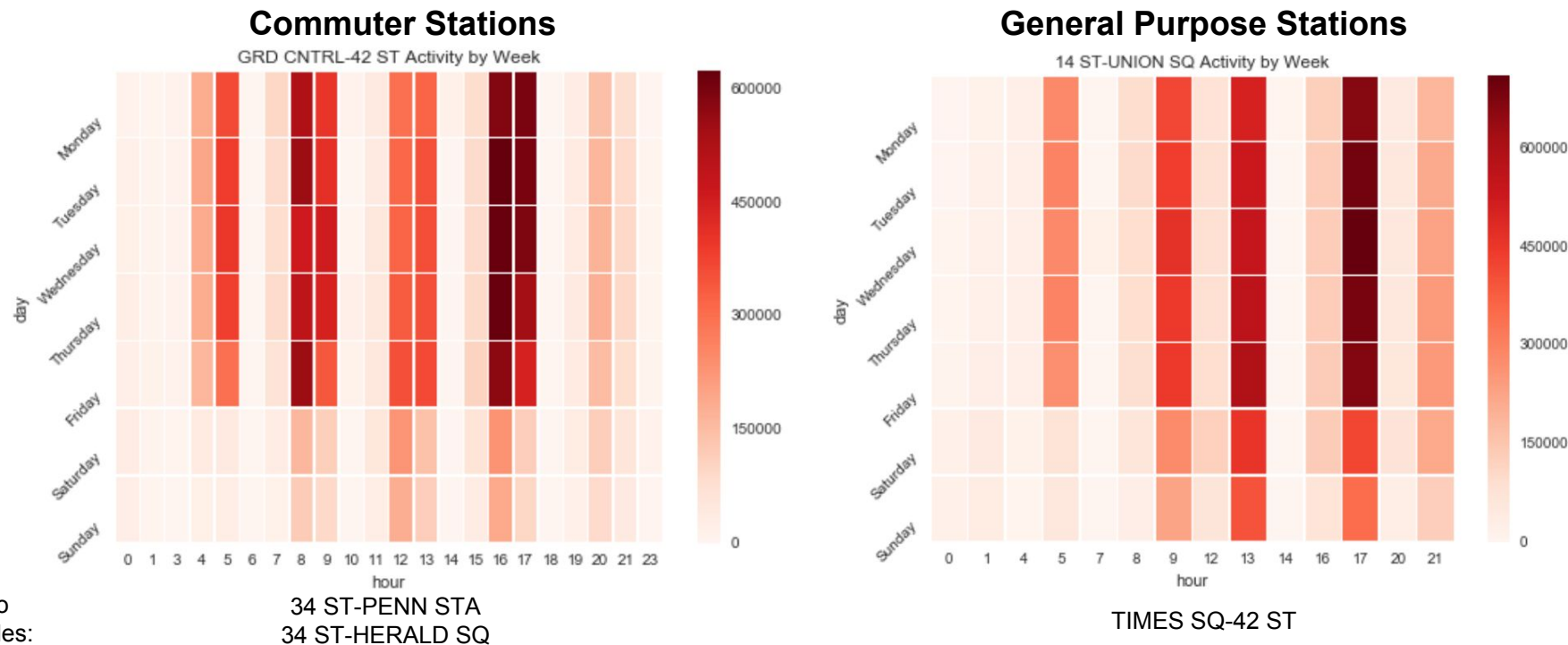


The top 5 stations account for >10% of ridership; these are obvious targets for street teams

Variability in Average Ridership per Day Creates Opportunities to Target Certain Stations Differently



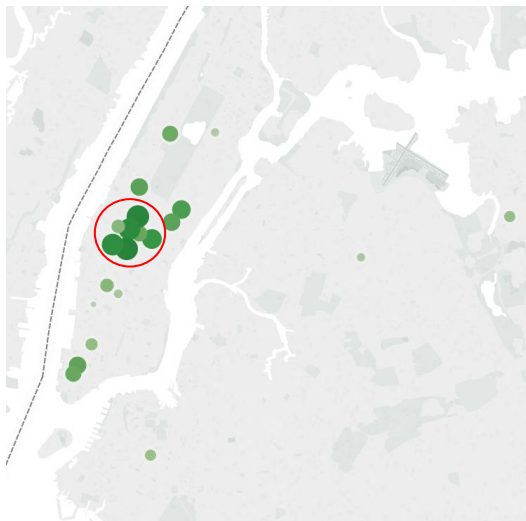
Traffic at Top Stations Varies by Time and Day of Week, Informing Hourly Resource Allocation



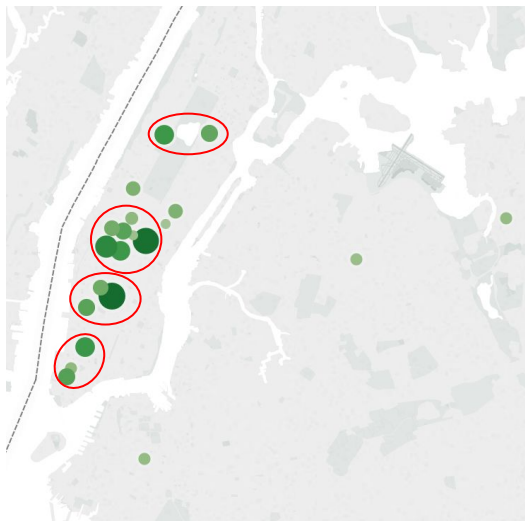
Commuter Stations can be targeted in morning and evening hours, with resources shifted to general purpose stations in the afternoon (and potentially on the weekends)

Geographic Flow of Exits Highlights Key Regions to Target by Daypart

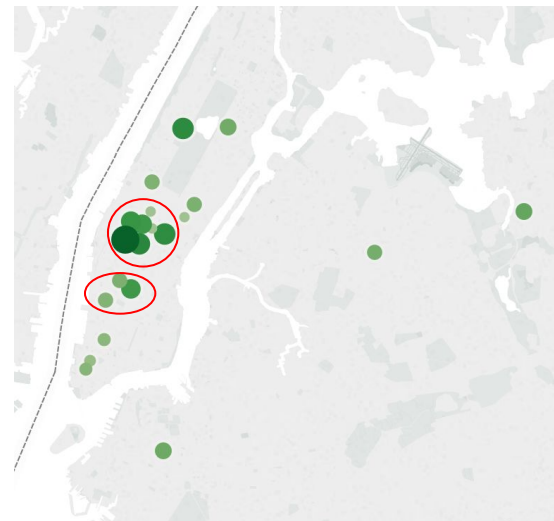
Morning



Afternoon



Evening



If street teams are small, volunteers can be distributed across compact areas with multiple high exit volume stations

Non-Traffic Factors: Higher Conversion Rates

- Additional filters to find relevant canvassing sites for WTWY.
 - Tech Industry Hubs
 - High Income Areas
- Looking at top stations by ridership in these areas reveals some additional stations that merit attention
 - 86th Street, 10028 (Upper East Side)
 - 72nd Street, 10023 (Upper West Side)
 - Chambers Street, 10007 (Downtown)
 - 14th Street, 10011 (Chelsea)
 - Canal Street, 10013 (SoHo)
- Summarizes selection criteria:
 - Top 25 by ridership
 - Top 15 by mean income
 - Tech Hotspot or Residential Area

Tech Hotspots in New York City



[1] Heat Map from: <https://project.wnyc.org/median-income-nation/>

[2] Economic Data from U.S. Census Bureau, 2014

[3] Tech Hotspots from <https://www.osc.state.ny.us/osdc/rpt2-2015.pdf>

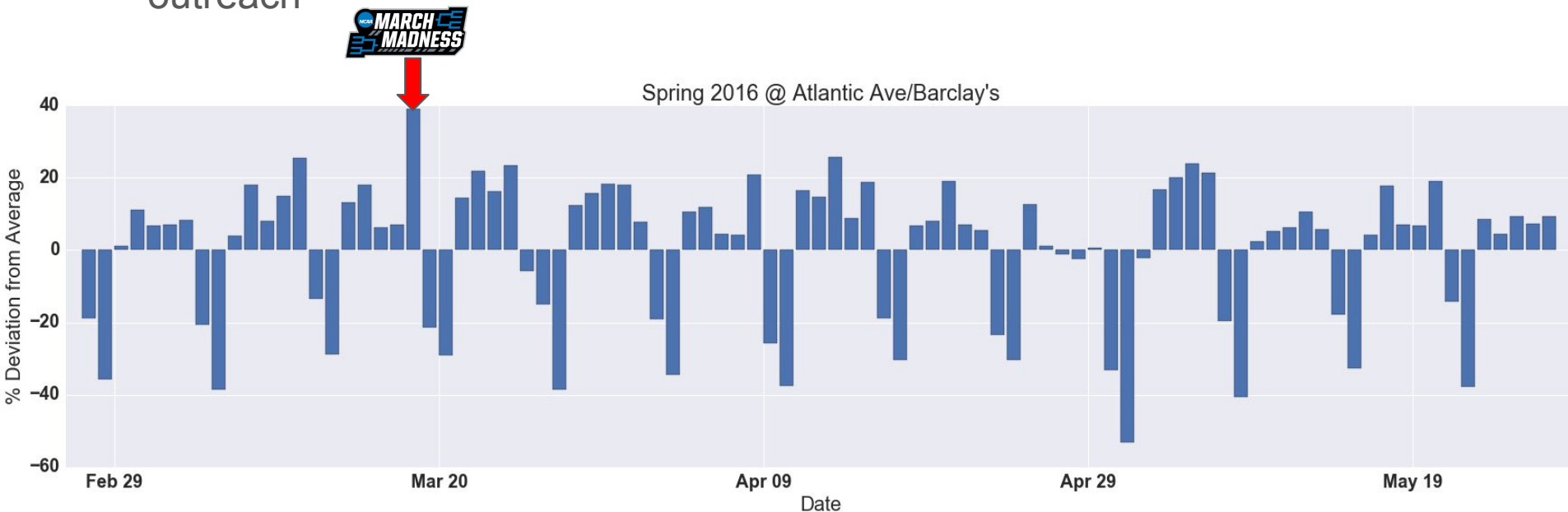
Final Recommendations

- Efforts in the Spring can take advantage of higher seasonal ridership
- Top Traffic Stations are best on Weekdays
 - Weekdays around 4-8pm are the max traffic times if street team man-hours are especially limited
- 3 Station Categories:
 - Commuter: 34th Street Penn Station, Herald Square, Grand Central Terminal
 - General Purpose High-Traffic: 14th Street Union Square, 42nd Times Square
 - Tech/Income Selections: Chambers St, Canal St, 86th St (456), 72nd St (123), 14th St West

	Morning	Afternoon	Evening
Weekdays	Commuter	GP High-Traffic	Commuter
Weekends	Tech/Income	Tech/Income	GP High-Traffic

Future Work:

- Other factors - Events Alter Ridership
- Additional Demographic Variables: Age, Gender, etc
- Simulate future canvassing using conversion outcome data from first round of outreach



Tools Used:

Python, Pandas,
Seaborn, Tableau

Data Time Frame/Source:

Our Time Frame spans
from March 5th 2016 -
May 27th 2016 (with data
through Jan 2015 for
chart on slide 3)

Source of Data:

<http://web.mta.info/developers/turnstile.html>

<http://maps.google.com>

Team Members:

Niall

RJ

Rahul

Tushar