

MTA Turnstile Traffic Study

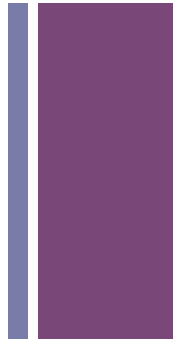
On Behalf of

WomenTechWomenYes(WYWT)

by Metis Team 6

+ Objectives – Where and When

- Seek to optimize placement of WYWT street teams around NYC train stations, **such that the most signatures can be gathered**
- Provide placement recommendations based on public traffic data for station, time and day-of-week
- Offer suggestions to expand the analysis



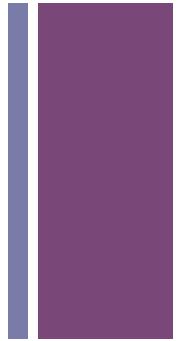
+ What methods and tools?

Methods:

- Exploratory Data Analysis
 - Box Plots
 - Heat Map

Tools used

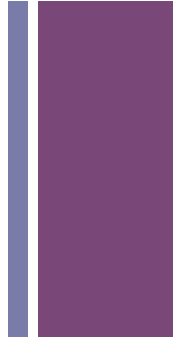
- Python
 - Pandas
 - Seaborn



+ How did we do it?

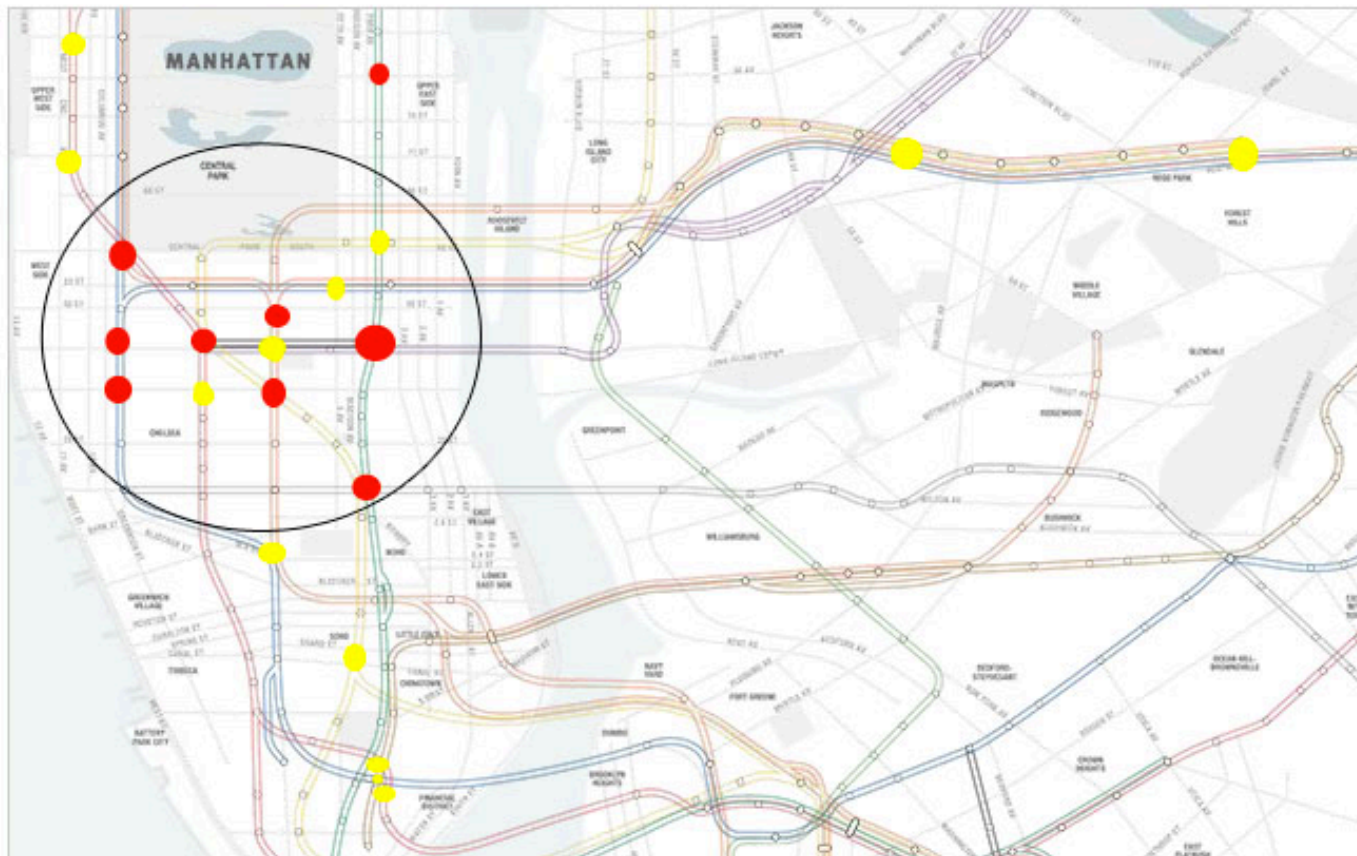
Data and Assumptions

- MTA Turnstile Data:
URL: <http://web.mta.info/developers/turnstile.html>
- We believe surveys done in preceding 3 months leading up to the gala will have the most relevant impact. Traffic data from March-May were used to yield analysis
- To measure foot traffic at each station, we aggregated the total entries and exits at the turnstile level
- Entries/exits were placed in 6 time bins
- Turnstile traffic less than 0 or greater than 10,000 were discarded
- A total of 2,689,812 measurements were analyzed, representing 98 days of data for 464 stations



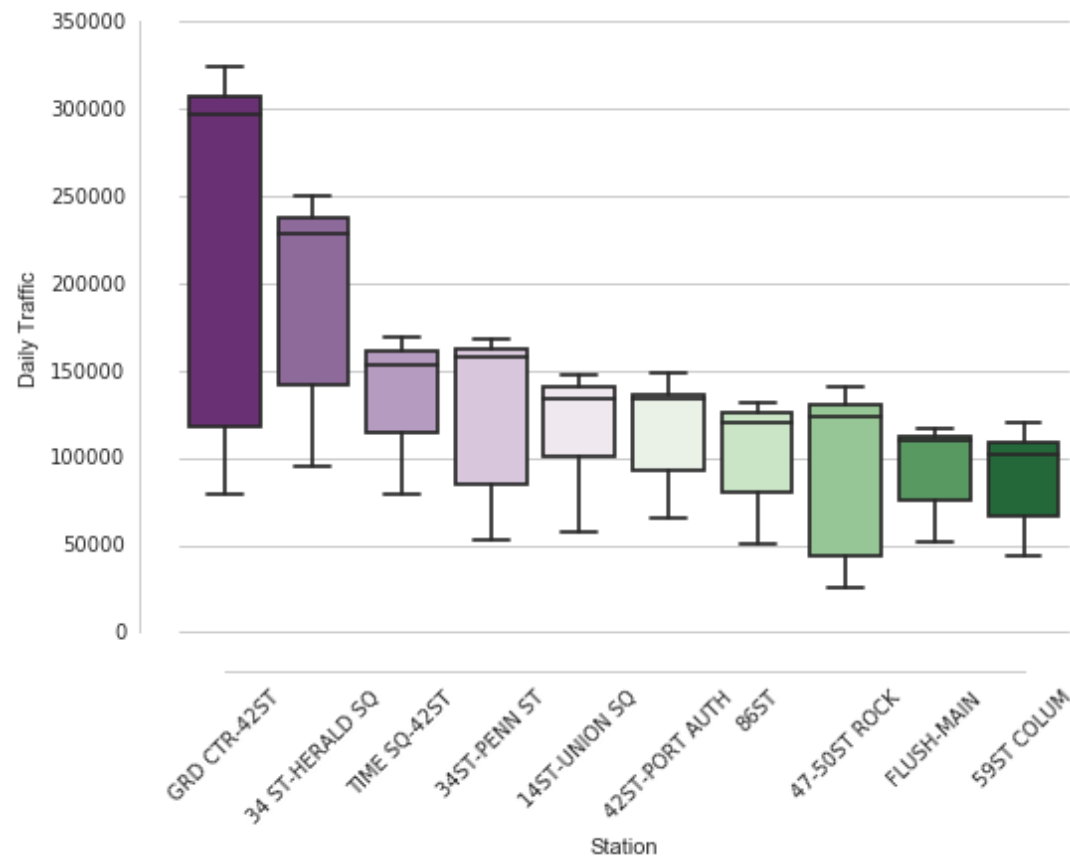
+ Where in New York?

- 22 out of 25 busiest subway station lines are located in Manhattan.
- 8 out of the top 10 stations are in or near the midtown area, driven by high volume of commuter traffic



+ Which Stations are busiest?

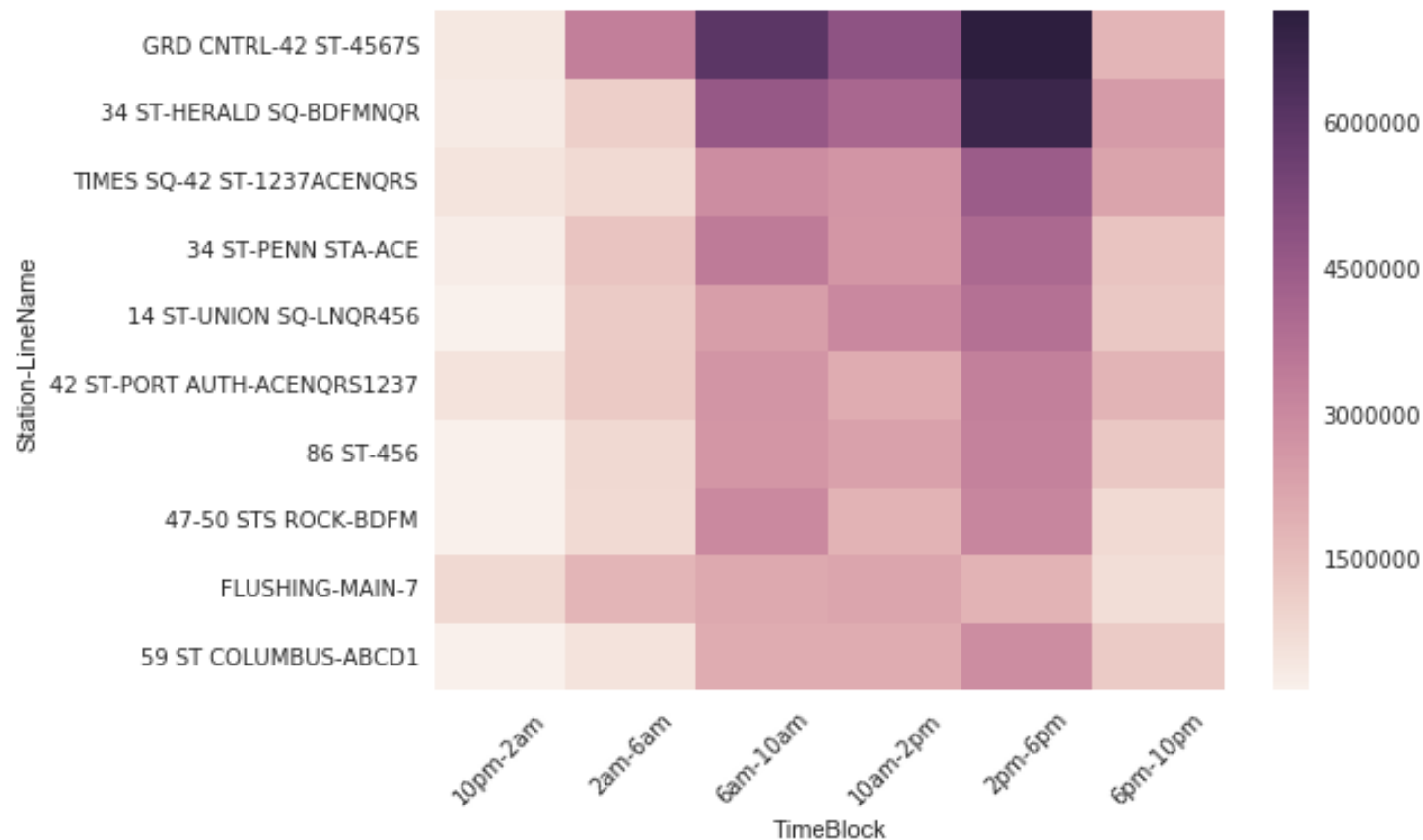
- Top 10 Station Daily Traffic shows a wide and dispersed distribution
- Besides choosing the busiest station and train line, it is also important to choose the right day and the right time





What time of the day is ideal?

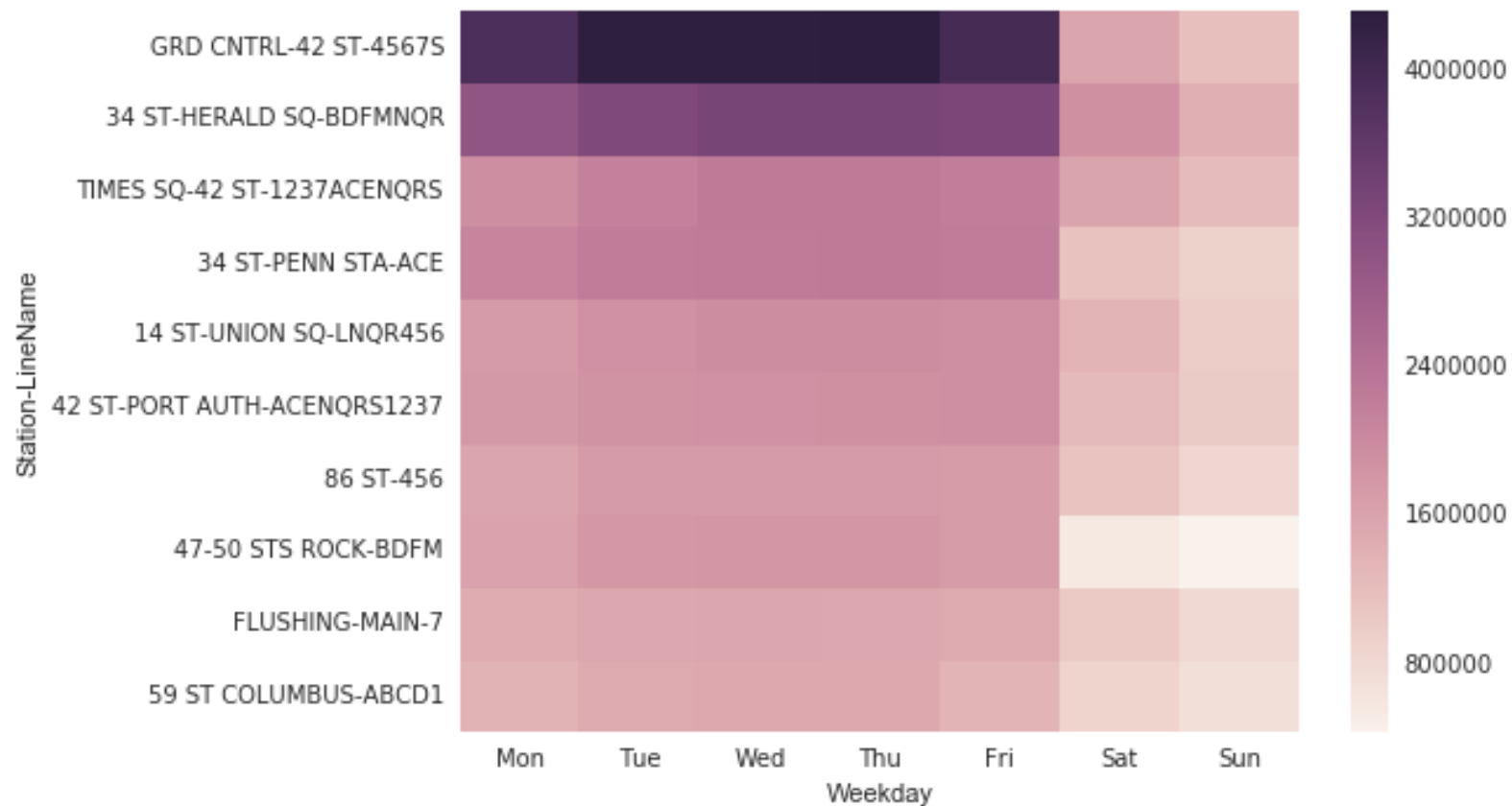
- Rush hours, namely 6am-10am and 2pm-6pm, exhibit the highest foot traffic





Which days are optimal?

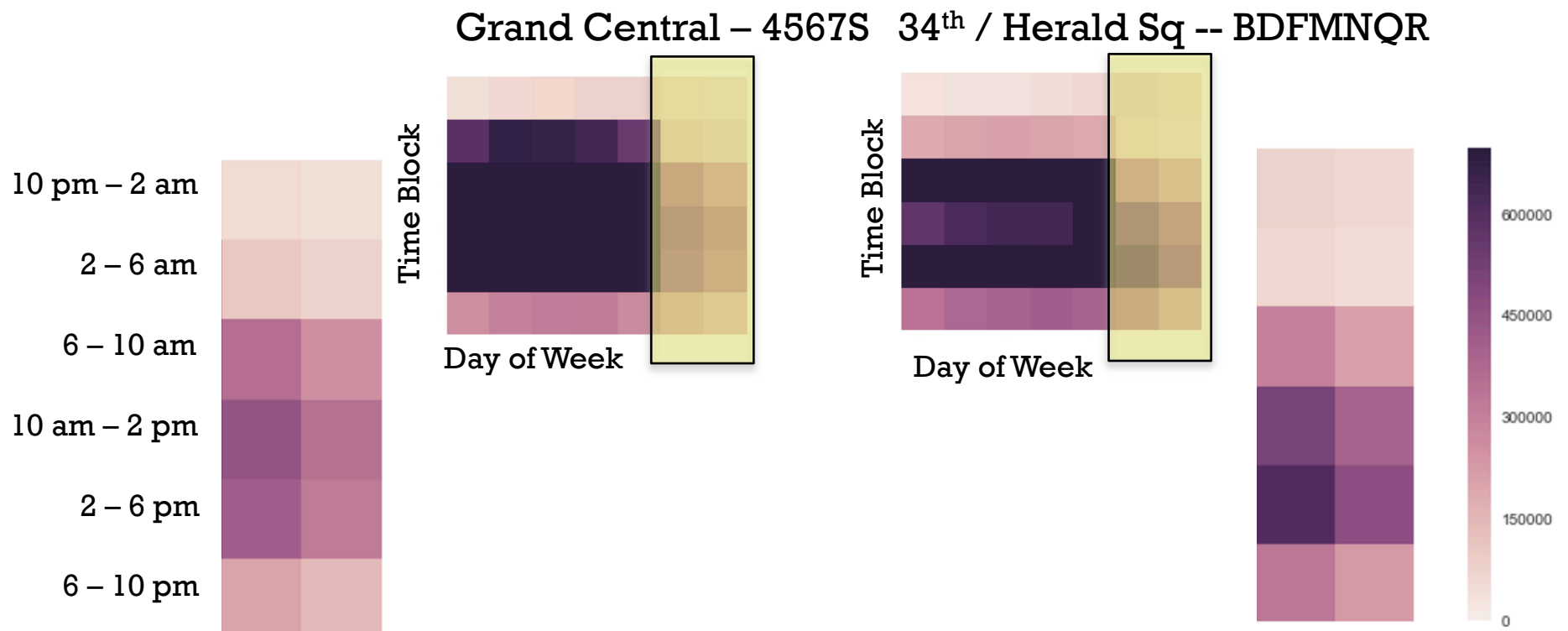
- Weekdays, particularly Tuesday through Thursday, show the highest density of turnstile traffic



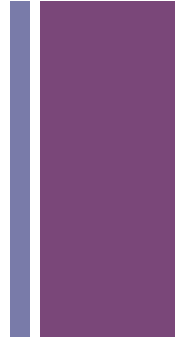


What about weekends?

- 34th / Herald Sq Station has high weekend traffic because of retail exposure in the area



+ Recommendations



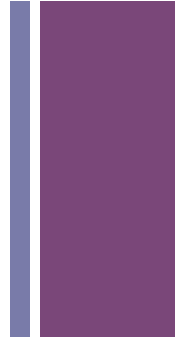
- Traffic is highly concentrated in a few busy stations
 - We recommend placing teams in the following 5 stations during weekdays:
 - Grand Central Station
 - 34th Street / Herald Square
 - 42th Street Time Square
 - 34th Street Penn Station
 - 14th Street Union Square
- We recommend 34th street Herald Square for the weekend volunteers
- 6:00am → 10:00am and 2:00pm → 6:00pm are the optimal time periods

+ Further Considerations

Additional factors we should consider to improve our end goals – optimize volunteer hours spent and raise % of donors per responder

- What are the constraints of WTWY? Are there time constraints or geographical constraints that we should include in the analysis?
- Are riders equally responsive to survey requests during weekdays vs. weekends?
- Do riders respond differently in commuter station vs. residential station?
- Do men and women have respond differently to the cause?
- Do incomes in neighborhoods affect likelihood and size of donations?

+ Metis Team 6 Members



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