

A grayscale photograph of a subway staircase. The image shows a set of concrete steps leading up to a platform. A metal railing with handrails runs along the stairs and the platform edge. The background wall is made of dark, textured panels. The overall tone is somber and industrial.

Subway Accessibility and Medical Infrastructure

Team The Problem Solvers

Overview of Accessibility

- The first table to the left shows us the total amount of stations city-wide that are ADA accessible.
- The second table to the left breaks down the ADA accessible stations through borough.

ADA accessible station(s) count

| | count | percentage |
|---------------------|-------|------------|
| ADA | | |
| Not Compliant | 319 | 73.17 |
| Fully Compliant | 104 | 23.85 |
| Partially Compliant | 13 | 2.98 |

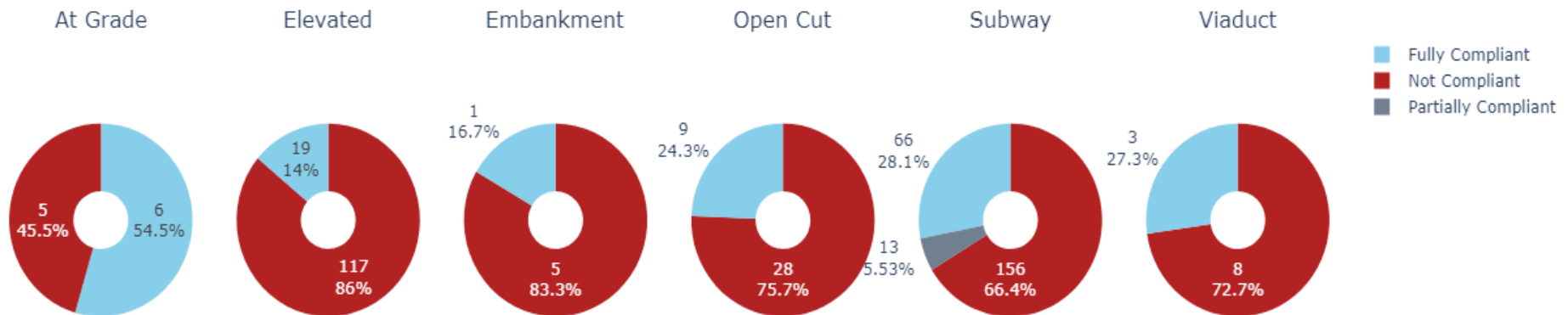
ADA accessible station(s) by Borough

| Borough | ADA | count | total | percentage |
|---------------|---------------------|-------|-------|------------|
| Bronx | Fully Compliant | 16 | 67 | 23.88 |
| | Not Compliant | 51 | 67 | 76.12 |
| | Partially Compliant | 0 | 67 | 0.00 |
| Brooklyn | Fully Compliant | 28 | 150 | 18.67 |
| | Not Compliant | 119 | 150 | 79.33 |
| | Partially Compliant | 3 | 150 | 2.00 |
| Manhattan | Fully Compliant | 35 | 121 | 28.93 |
| | Not Compliant | 76 | 121 | 62.81 |
| | Partially Compliant | 10 | 121 | 8.26 |
| Queens | Fully Compliant | 19 | 77 | 24.68 |
| | Not Compliant | 58 | 77 | 75.32 |
| | Partially Compliant | 0 | 77 | 0.00 |
| Staten Island | Fully Compliant | 6 | 21 | 28.57 |
| | Not Compliant | 15 | 21 | 71.43 |
| | Partially Compliant | 0 | 21 | 0.00 |

Insights on ADA Compliance

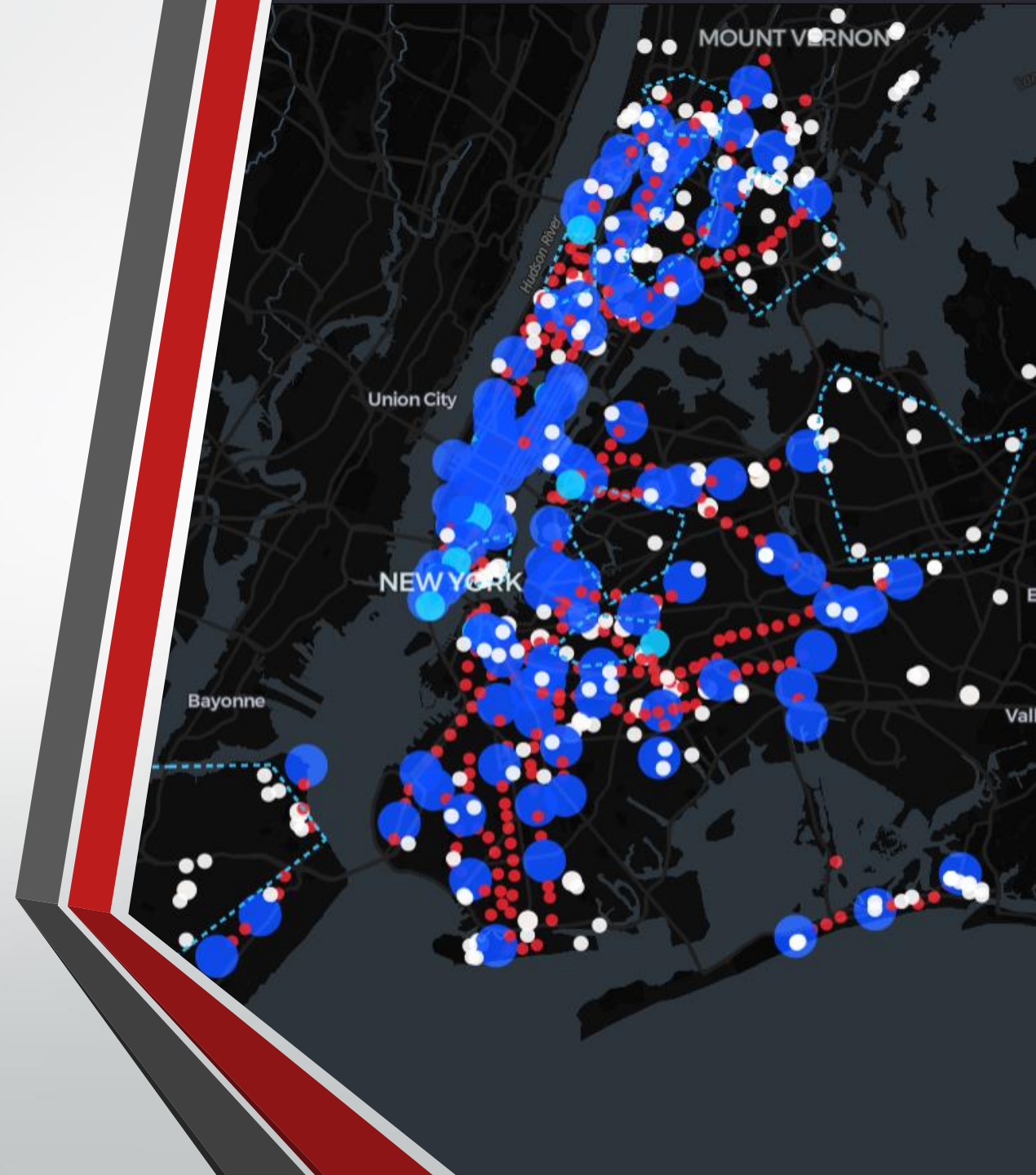
- The charts show us that stations with elevated structure types are the worst in terms of ADA compliancy.
- The subways have the best compliancy out of all the categories

ADA Compliance per Station Structure Types



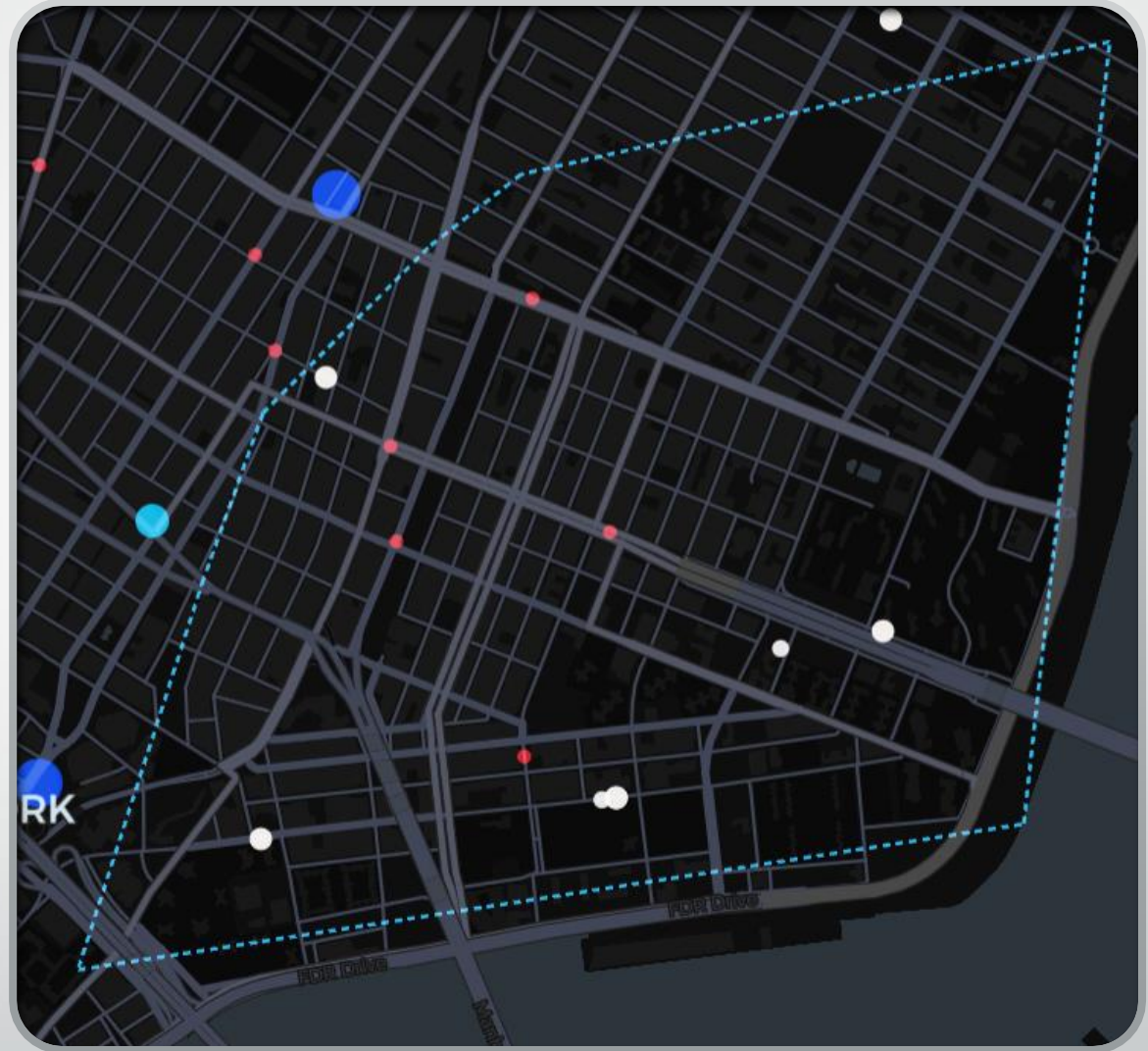
Mapping Accessibility with Kepler

- We utilized Kepler to visualize the proximity of subway complexes to medical facilities, including hospitals, clinics, and nursing homes.
- **White dots** represent hospitals, clinics, and nursing homes.
- **Dark blue dots** indicate fully accessible ADA complexes.
- **Light blue dots** show partially accessible ADA complexes.
- **Red dots** highlight complexes that are not ADA accessible.



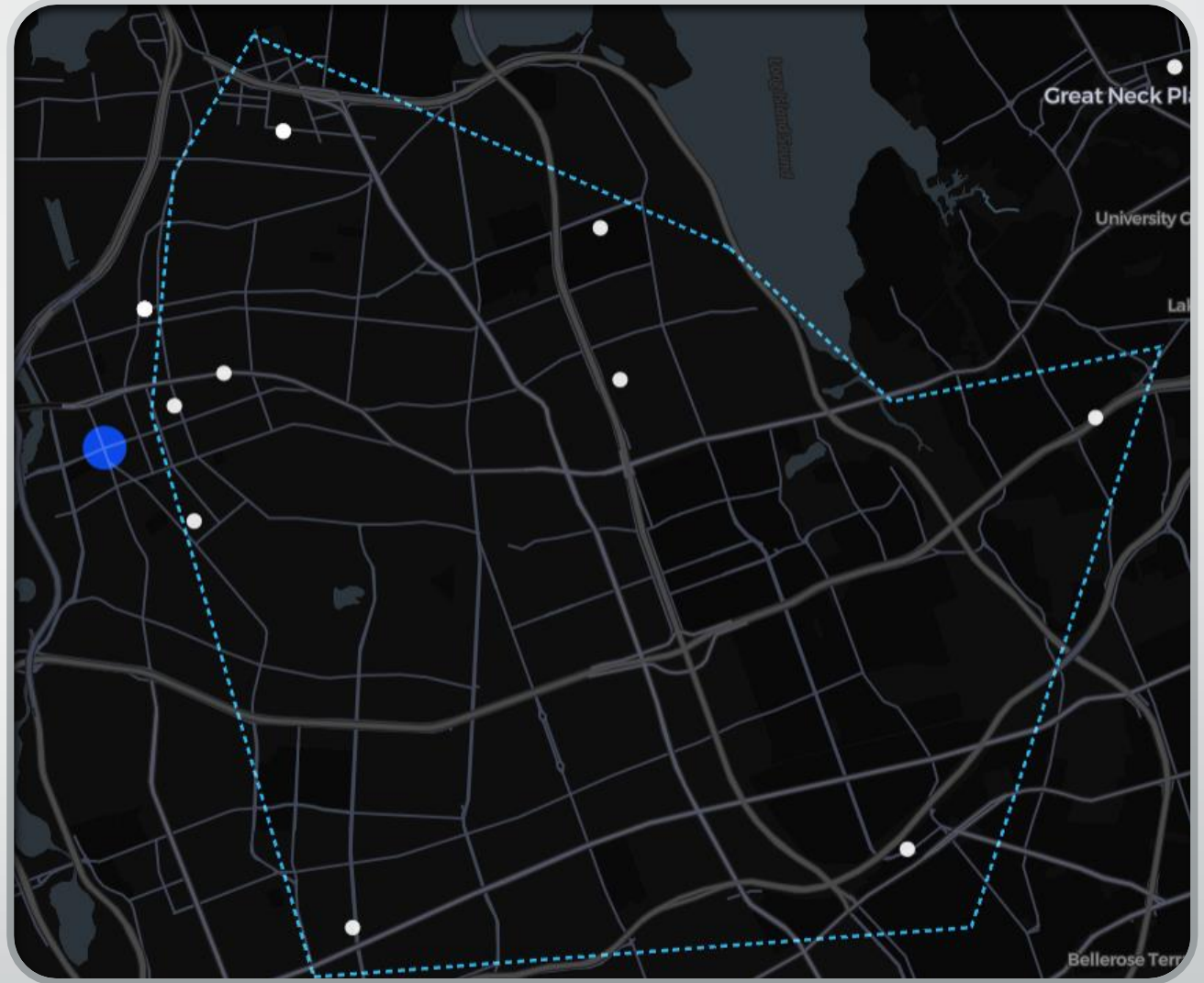
Transportation Deserts

- Borrowing the term “Transportation Deserts” from Jerome Horne, we identified areas with a noticeable presence of hospitals and nursing homes but little to no ADA-accessible subway complexes.
- This example in East Village shows 5 complexes that are not ADA accessible



Transportation Deserts

- Some Transportation Deserts don't even have complexes to begin with.
- This area in Flushing-Broadway doesn't have one complex, so if someone wanted to travel here for medical purposes, they would have to travel through the Queens bus system, which suffers from constant delays.



Elevator and Escalator Outages

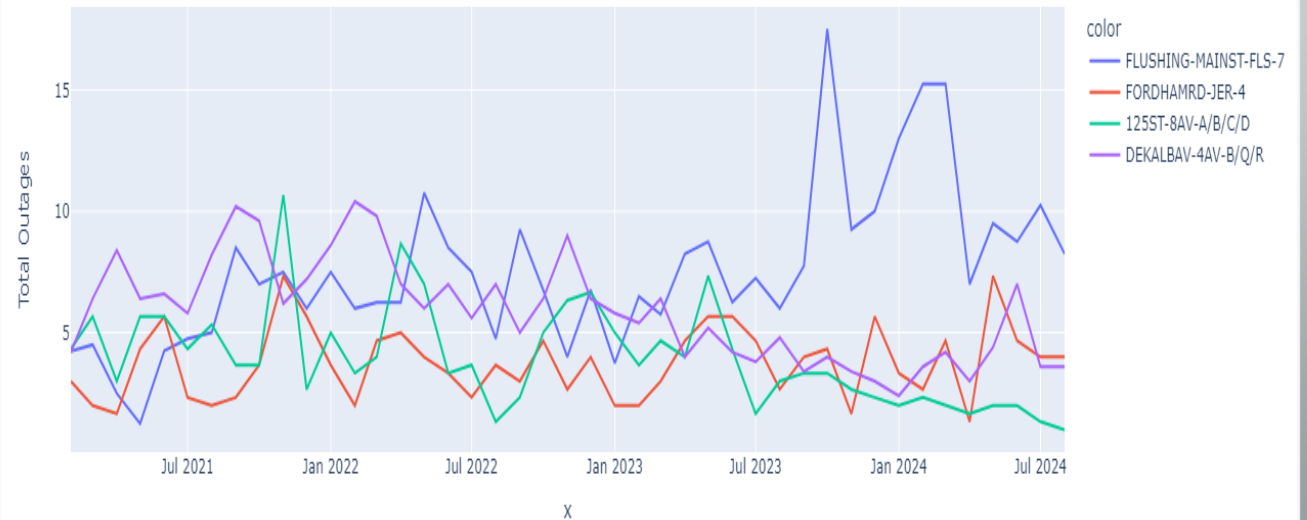
- Even when a station is ADA accessible, the constant threat of outages causes many inconveniences in these area.
- This table shows that the Bronx has the highest number of total averages which is also the poorest borough, affecting low-income communities in a negative way

| | Average Total Outages | Average 24-Hour Availability |
|-----------|-----------------------|------------------------------|
| Borough | | |
| Bronx | 5.39 | 95.68 |
| Brooklyn | 5.06 | 95.48 |
| Manhattan | 5.78 | 94.02 |
| Queens | 4.39 | 94.33 |

Examples of Outages Affecting Medical Infrastructure

- Even when stations are ADA accessible and within medical infrastructure, the chance of malfunctions limits usability
- This chart compares 5 important complexes near medical infrastructure, 2 in Manhattan, 1 in the Bronx and 1 in Brooklyn and compares the outages during the 24-hr availability
- Queens has the worst accessibility which keeps on track for the train transportation in the borough

Total Outages for High Demand ADA Compliant Stations



Recommendations

Improve Accessibility Near Medical Infrastructure

- In areas where subway complexes are not ADA-accessible but are located near medical infrastructure, the MTA should prioritize installing essential infrastructure like elevators and escalators to enhance accessibility for those who rely on public transportation for medical services.

Prioritize Maintenance in Critical Areas

- Increased focus should be placed on areas near medical infrastructure, such as Harlem, where frequent outages or breakdowns occur. Regular and proactive maintenance in these regions will ensure reliable access for those who need it most, particularly individuals with limited mobility.



Kepler HTML



kepler.gl.html