

Final Project Proposal

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Title: Manhattan Congestion Relief Zone

Abstract: Our initial proposal was about visualizing London's traffic patterns to understand the impact of the London Congestion Charge imposed in 2003 to reduce traffic congestion. Since New York City also implemented the congestion pricing policy on January 5th, 2025, we believe it is more relevant to look at the vehicle entry patterns in NYC after the policy's implementation to understand its impacts. The policy details that vehicles entering the Congestion Relief Zone under 60th Street in Manhattan will be charged with a standard toll of \$9 during peak hours (5 a.m. to 9 p.m. on weekdays and 9 a.m. to 9 p.m. on weekends), and \$2.25 for the rest of the non-peak hours.

- **Entry points:** Since the detection entry points include those coming from other boroughs and city (Queens, Brooklyn, New Jersey, and Upper Manhattan etc.), and some tunnels already have a base toll besides from the additional congestion pricing charge, we will look at how the number of vehicle entries differ between each entry point and their corresponding region.
- **Temporal patterns:** While traffic patterns have inherent temporal differences, the policy is more targeted on reducing peak congestion with a higher toll rate, so we will look at the traffic patterns based on time of day and day of week, separating into peak and off-peak.
- **Other relevant insights:** What is the composition of vehicle types entering the CRZ? Since there are some peripheral routes under 60 Street passing through the borough that are excluded from the charging zone, are there a lot of vehicles coming into downtown Manhattan but staying on excluded roadways to avoid the toll?

Data:

The dataset is retrieved from New York State Open Data and is provided by the MTA: [MTA Congestion Relief Zone Vehicle Entries Dataset](#).

- The dataset starts on January 5th, which was the policy implementation date, and is updated weekly with the number of CRZ and excluded roadway entries captured every 10 minutes on a daily basis.

Visualization:

1. Map

- A geographic map displaying the entry points/region and the number of vehicle entries
 - Heat map and bubble map can be used to visualize the degree of the number of entries among different entry points/regions
2. Line Charts
- Changes in the number of entries during peak and non-peak hours over time
 - The time of day/hourly trend of the number of entries
3. Bar chart
- The percentage distribution of entries based on entry regions
 - The composition of vehicle types entering the zone
 - Stacked bar to show the number of entries in CRZ vs. excluded roadways each day

Visualization Reference

[New York City Congestion Pricing Plan, Meier, 2024.](#)

