

Outreach about Community Composting at Select MTA Stations

Exploratory Data Analysis Project

Chloe Bergsma-Safar

Summer 2021

Introduction

- **Motivation**
 - Concern about climate change
 - Personal practice
- **Objective** - Identify a station in each borough at which to conduct outreach about community composting
 - Two selection criteria:
 1. Moderate station traffic flow
 2. Close proximity to food scrap drop-off sites
- **Goal** – increase awareness of and knowledge about community composting in NYC

Methodology

- **Data**

- MTA turnstiles data from late April – July 2021
 - Metrics: station names, entries and exits
- MTA station location data
 - Metrics: station names, latitudes and longitudes
- Food scrap drop-off site location data
 - Metrics: food scrap drop-off site names, latitudes and longitudes

- **Tools**

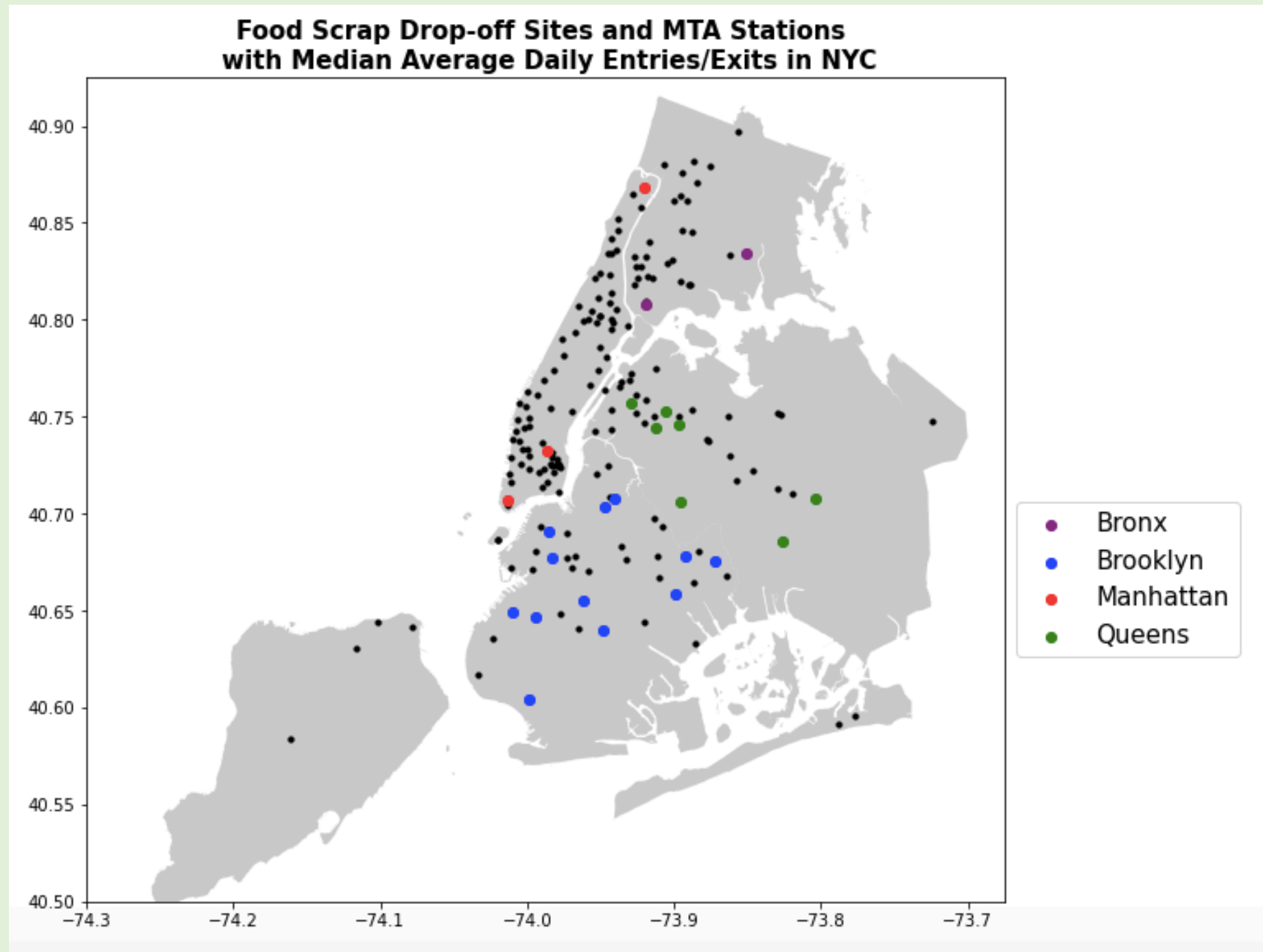
- Numpy, Pandas and SQLAlchemy for data manipulation
- Matplotlib and Seaborn for plotting
- Geopandas, Math and Shapely for distance calculations and geospatial analyses

- **Main steps**

- Calculate average daily entries/exits per station (my proxy for station traffic flow)
- Filter stations down to those with between 2500-3000 daily entries/exits on average (the median amount - my proxy for *moderate* station traffic flow)
- Create map of these stations and all food scrap drop-off sites across NYC
- Find the nearest food scrap drop-off sites to each station

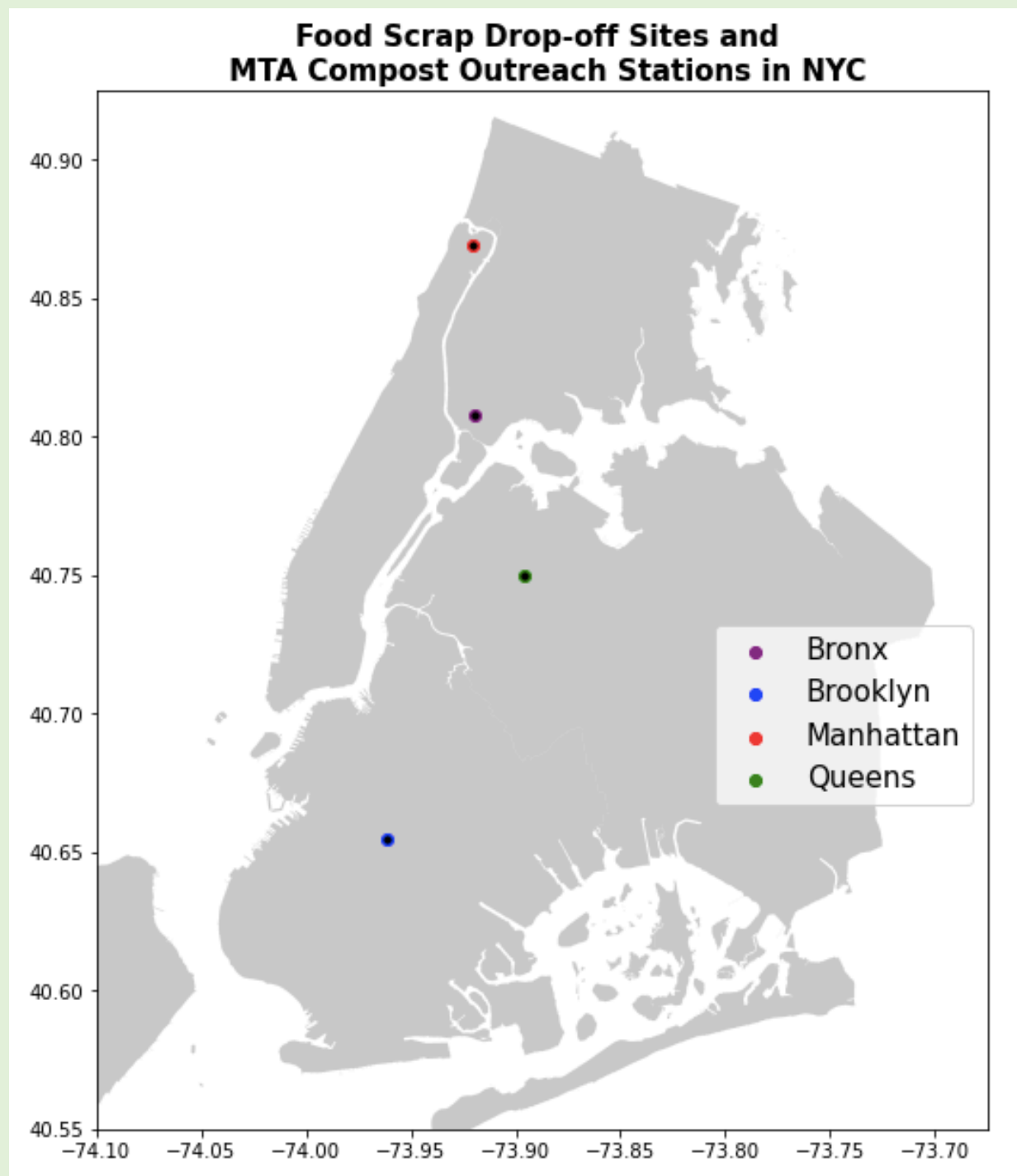
Black dot = food scrap drop-off site

Colored dot = station

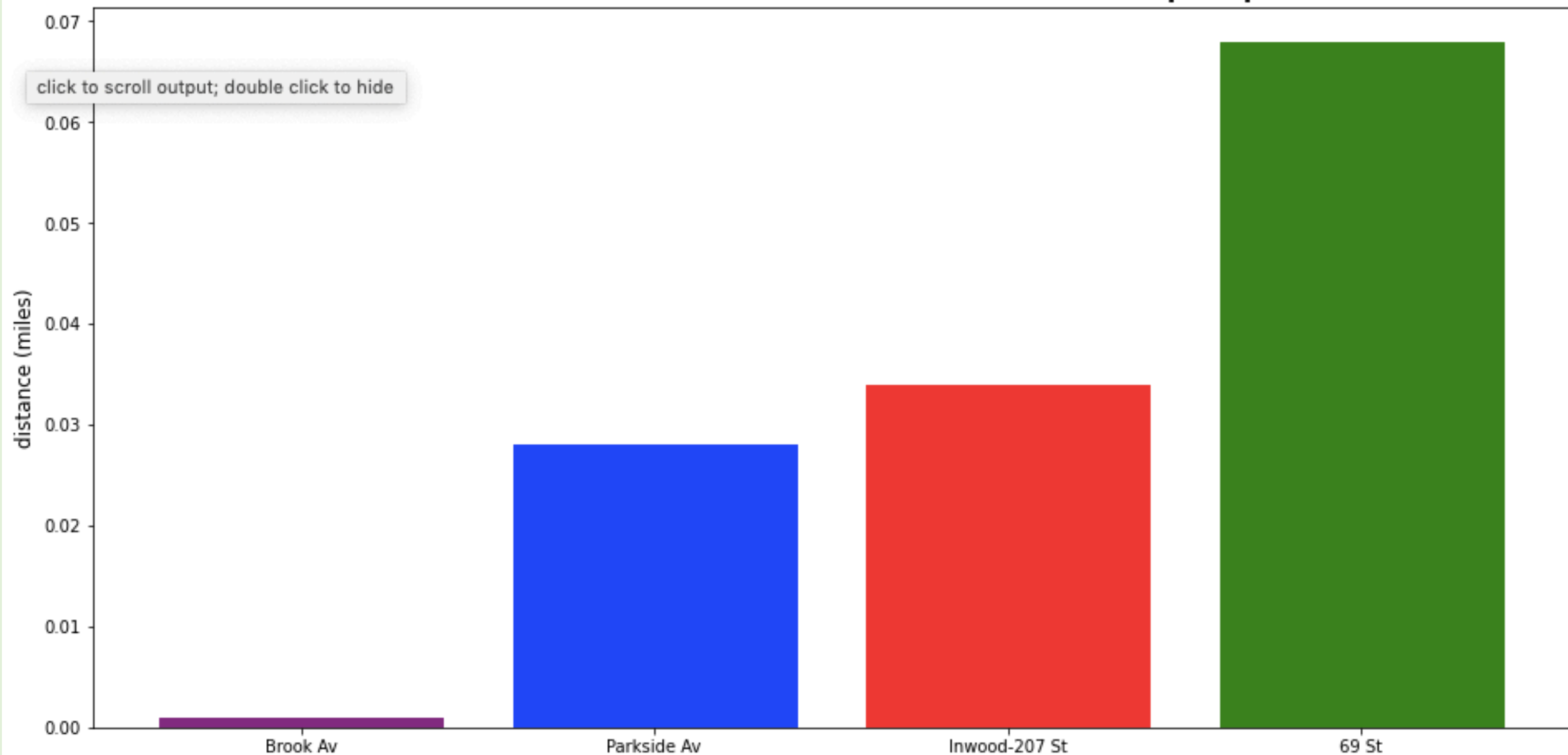


Black dot = food scrap drop-off site

Colored dot = station



Outreach Stations and their Distances to the Nearest Food Scrap Drop-off Sites



Results

- The four stations that met my selection criteria for conducting outreach about composting were:
 - Brooks Av station in the Bronx
 - Parkside Av station in Brooklyn
 - Inwood-207 St station in Manhattan
 - 69 St station in Queens
- Staten Island did not have a station that met the first criterion for selection (i.e., moderate station traffic flow)
 - Once I merged the cleaned MTA turnstiles and station location datasets, there was only one Staten Island station and its average daily entries/exits was 140

Conclusions

- Most food scrap drop-off sites are located in Manhattan
 - It has almost 3x as many as Brooklyn, the Bronx, and Queens
 - Staten Island has the fewest
- There are some stations and food scrap drop-off sites that are very close to one another

Future Work

- Explore other selection criteria
 - Food scrap drop-off sites where volume of food scraps collected is low
 - Locations where residential compost pickup service is not currently offered
- Explore where new food scrap drop-off sites in boroughs other than Manhattan could be established