Mapping Food Access in Brooklyn and the Bronx

An Urban Food Desert is a City Area Where there is poor Access to Healthy Food

In a food desert it is difficult, time consuming, expensive, or unsafe for low income households to purchase healthy food

Food deserts are categorized by:

  lack of grocery stores and supermarkets

  Abundance of fast food

  Many convenience/corner stores like 7/11

Small businesses or efforts to improve food access can use this data to supply the need for healthy alternatives

Data Acquisition

The Geographic data on New York neighbourhoods was provided courtesy New York University

A Personal Licence of the Foursquare API was used to find the relevant businesses, their categorization, and their location

Using the FourSquare Categories as Metrics

Whether or not a neighbourhood was considered having good access depended on the categorization assigned to a nearby business (a radius of one mile was used)

Fast food restaurants and Convenience stores were considered unhealthy while many types of grocery stores were considered healthy.

Other restaurants were not considered because low income families cannot afford to eat at restaurants often.

A K-Means Learning Algorithm Designated the Neighbourhoods by Food Access

In the figure, Red represents a food desert, green represents some access, and blue represents full access
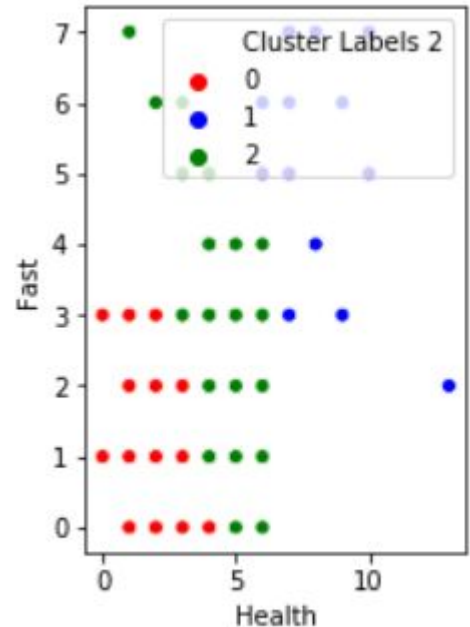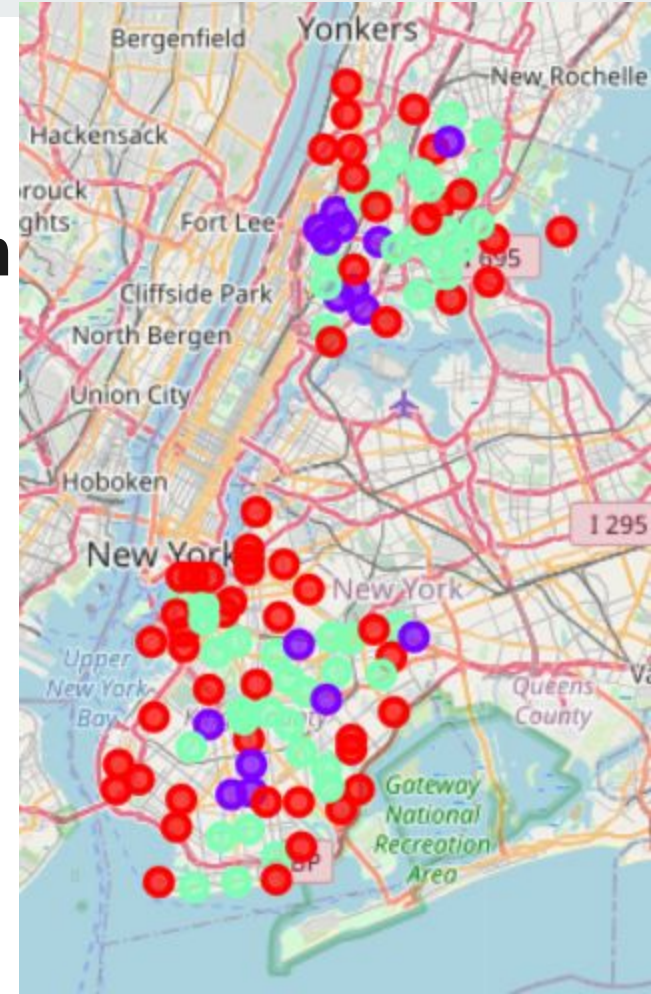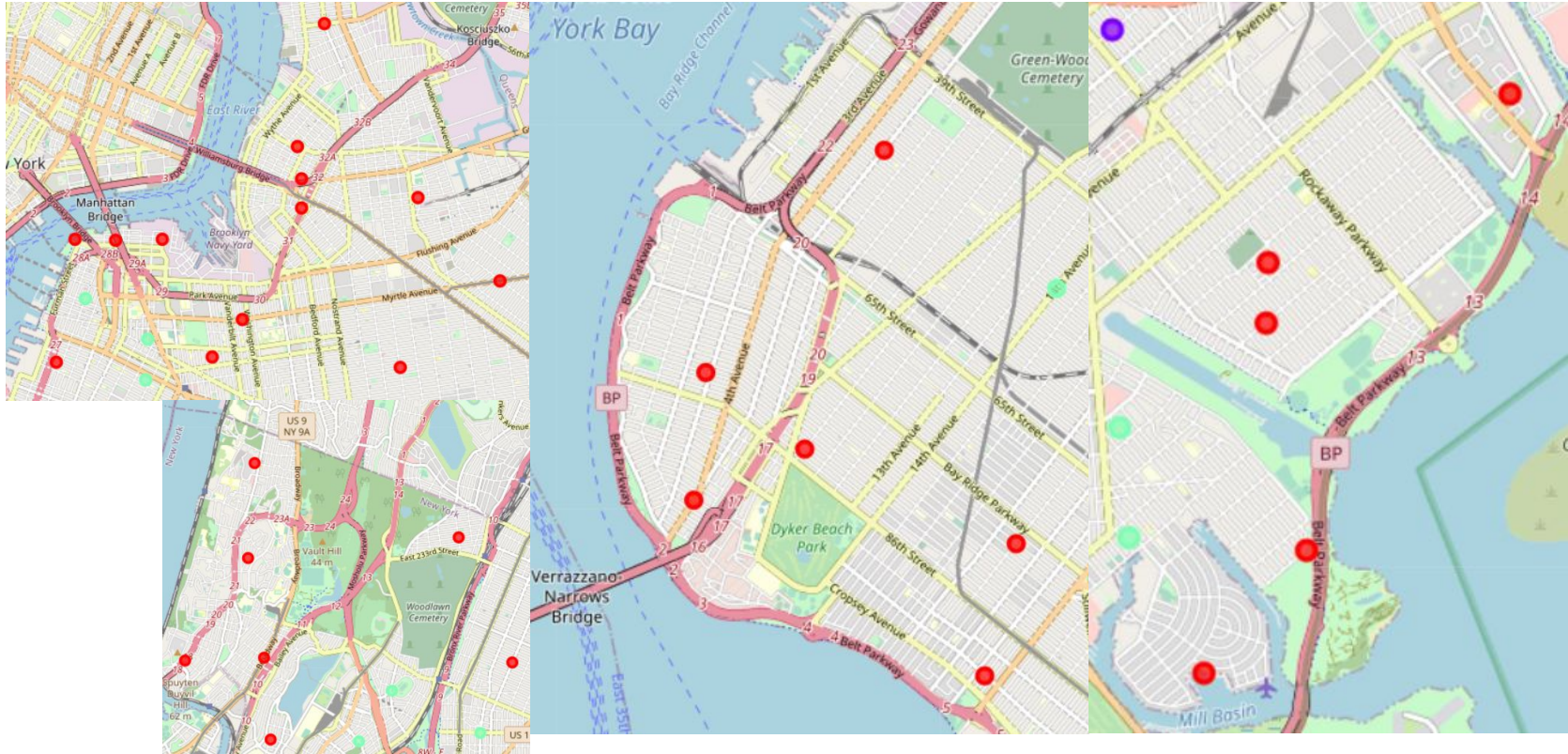
Results

The Center of the Boroughs seem To Have Good Food Access

Neighbourhoods near the coast tend to have poor access

Areas of Interest (Food deserts)

Discussion

and Conclusion

Using FourSquare Categorizations Has Problems

1. It assumes all convenience stores and fast food restaurants are equally unhealthy/healthy
    a. This generalization is in some cases untrue. Many convenience stores stock fresh meat and vegetables
2. It assumes every business has the same ability to feed the same number of people within the same radius.
    a. This is also untrue
3. Some stores may defy categorization/be miscategorized

A better metric may just be to count all the stores that sell unprocessed/fresh food and use business metrics/square footage to create a sphere of influence.

Some Demographic Data wasn't Considered

1. Higher population density would require more healthy stores
   a. Population density wasn't considered
2. Public Transportation and Public Safety are also important factors in this problem
   a. They were not considered

Conclusion

Were I a prospective business owner looking to supply healthy food to urban areas, I would follow up this project with a methodology that accounts for population density and store size

Based on the findings of the capstone I would have the follow up focus on the trends and areas of interest previously identified