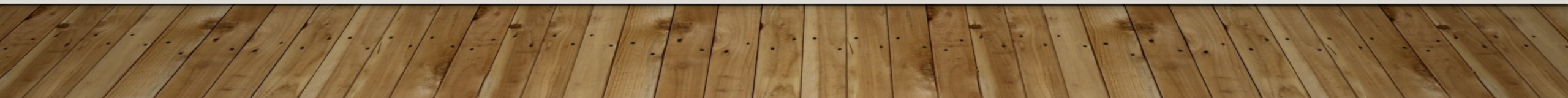# TORONTO

BEST NEIGHBORHOOD FOR LIVING
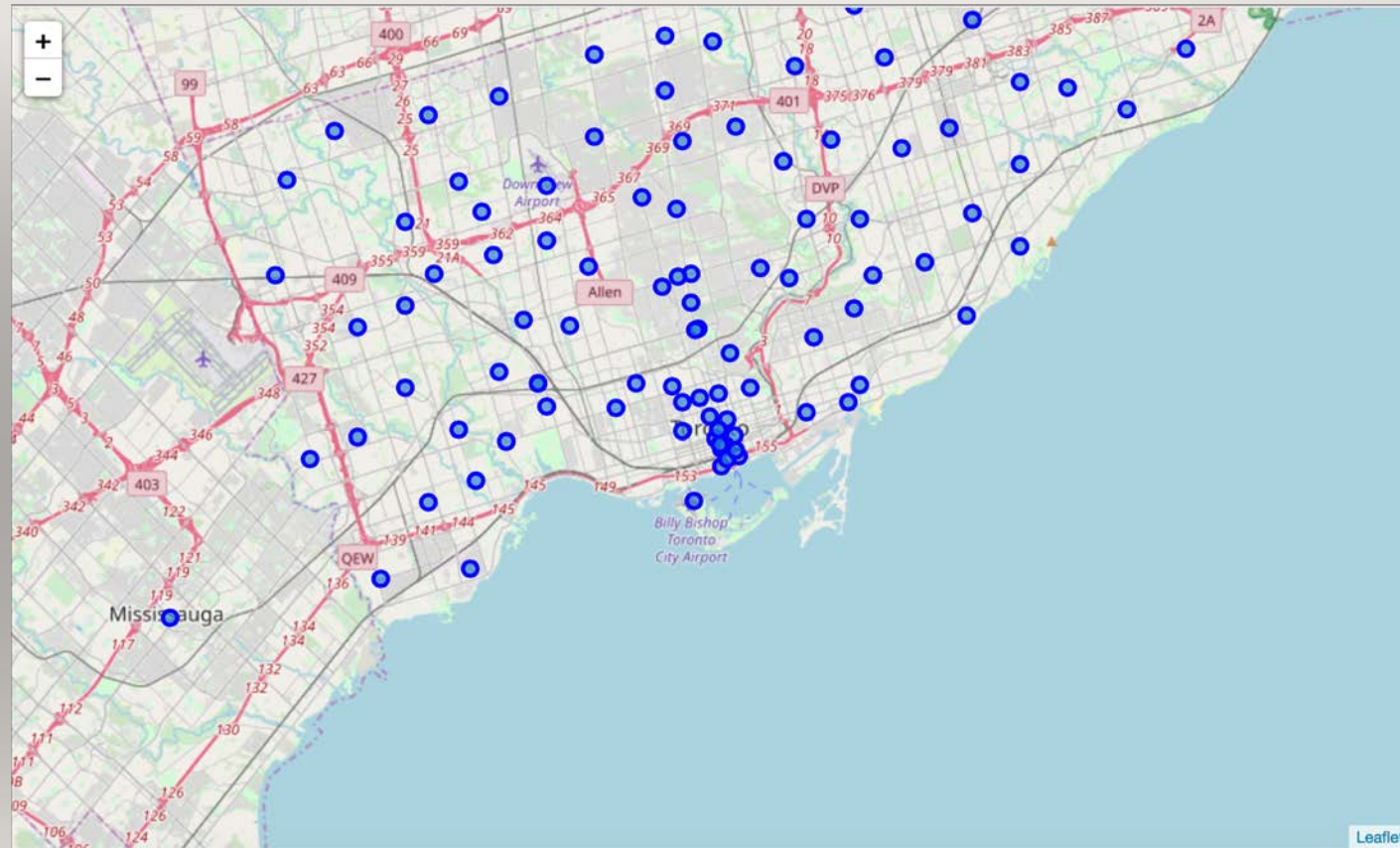
By: Vladimir Rodriguez
Coursera: Data Science

CONTENT

- Toronto venues

- Toronto neighborhood classification

- Toronto criteria selection for neighborhood

- Conclusion: Toronto best Place

TORONTO VENUES

INTRODUCTION

When you live in a big city, usually you what to be at home in a neighborhood where you have all main services nearby. The most common services to be comfortable at place where you live are following:
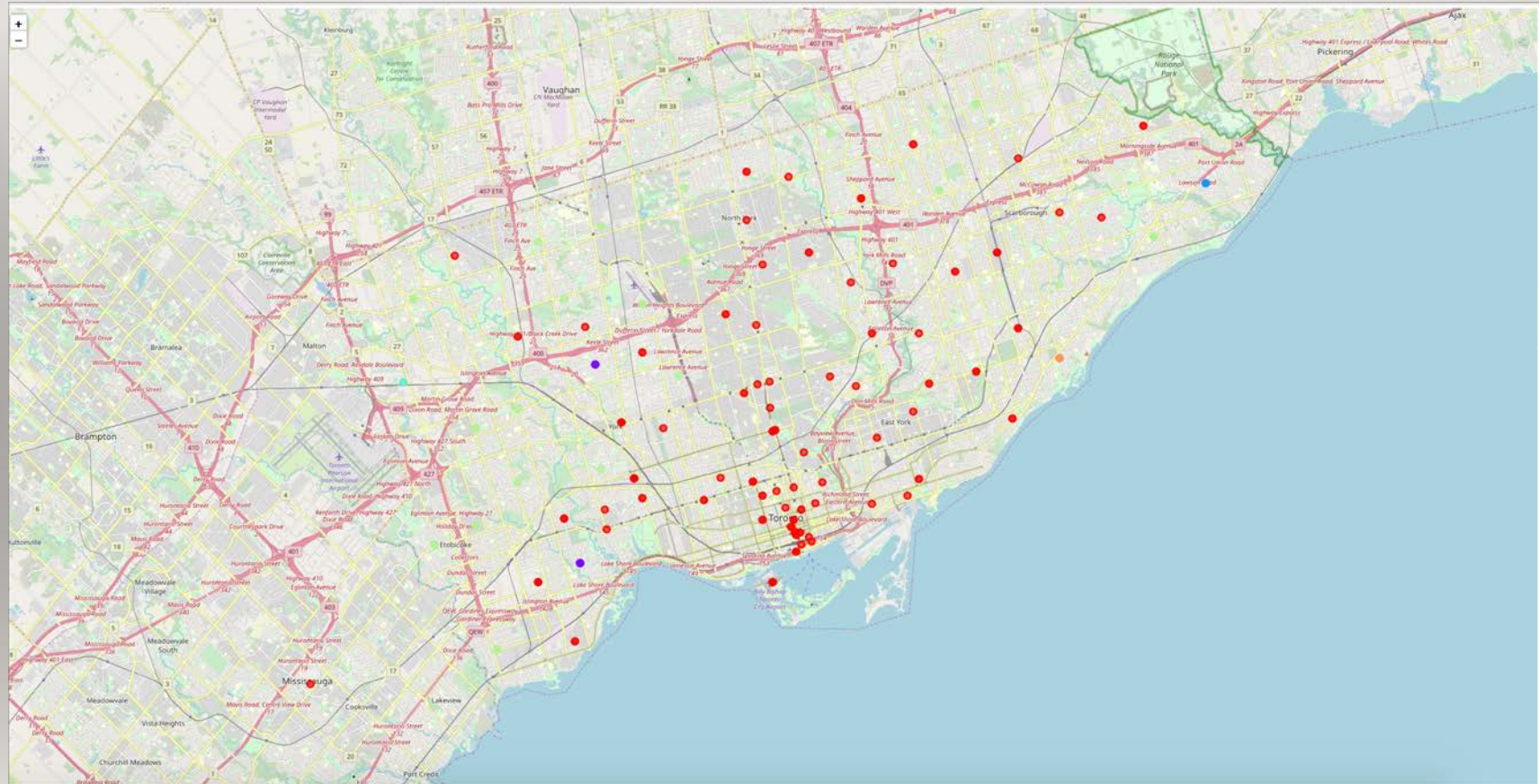
- Food markets

- Supermarkets

- Parks

- Shopping malls

- Grocery stores

- Government services centers

- Transport services

Also, when we select a neighborhood to live, we evaluate safety and most nationality of people that live in that place.

Getting data from Foursquare we will try to predict which neighborhood in the city of Toronto follows criteria mentioned before and represent it in a Map.

The target audience of this project are citizens and business persons in Toronto, Ontario in Canada.

CLUSTERS IN TORONTO

DATA COLLECTION AND METHODOLOGY

Data collection

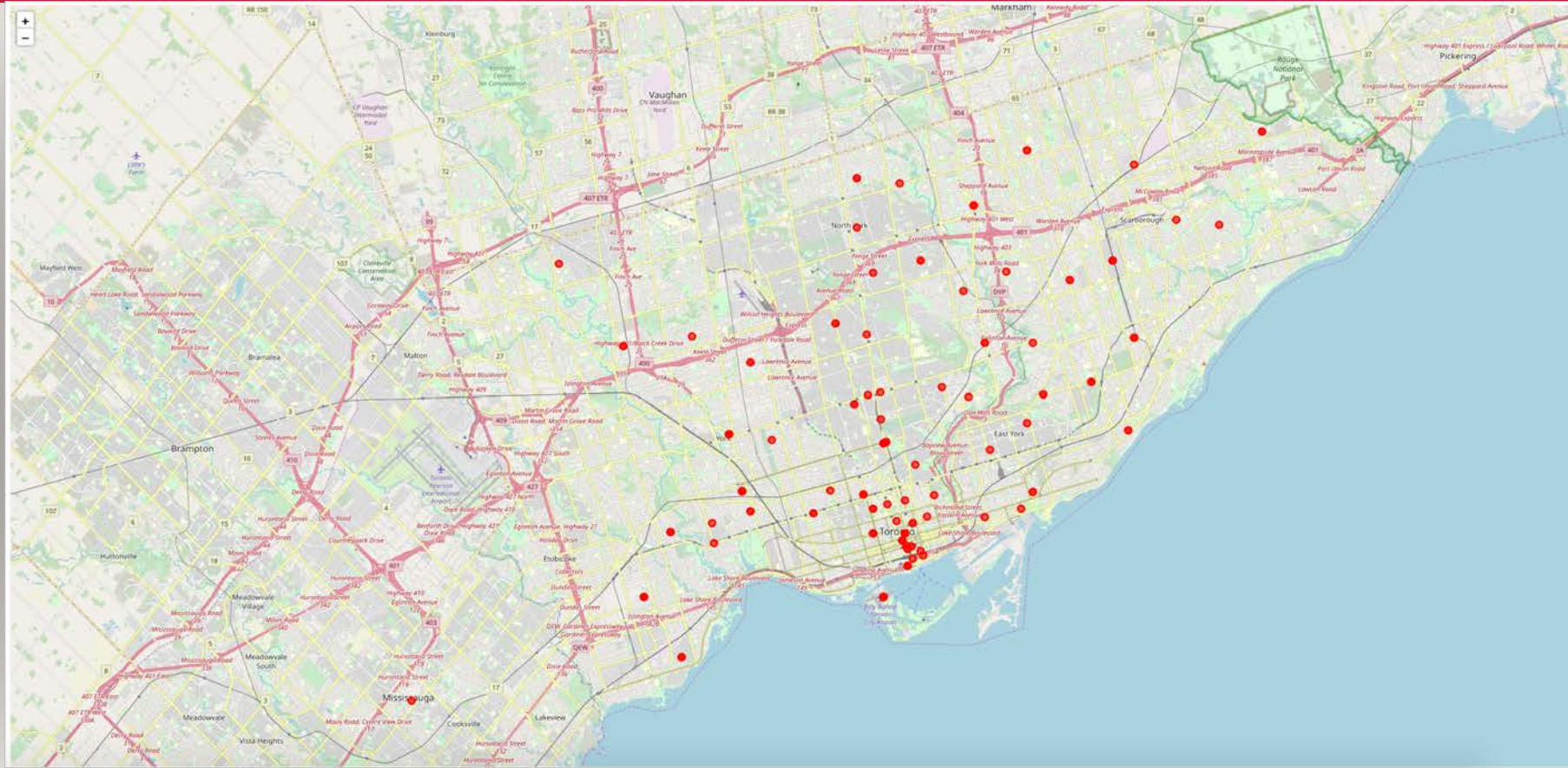This project will require the exploration and analysis of following data:

Toronto Neighborhood Data 'https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada' which provides a list of neighborhood in the Toronto area and use of a geo locator to determine the latitude and longitude of each area.

Foursquare Location Data to get information and rating about venues for each neighborhood. We will consider this information to cluster target for citizens and make recommendations.
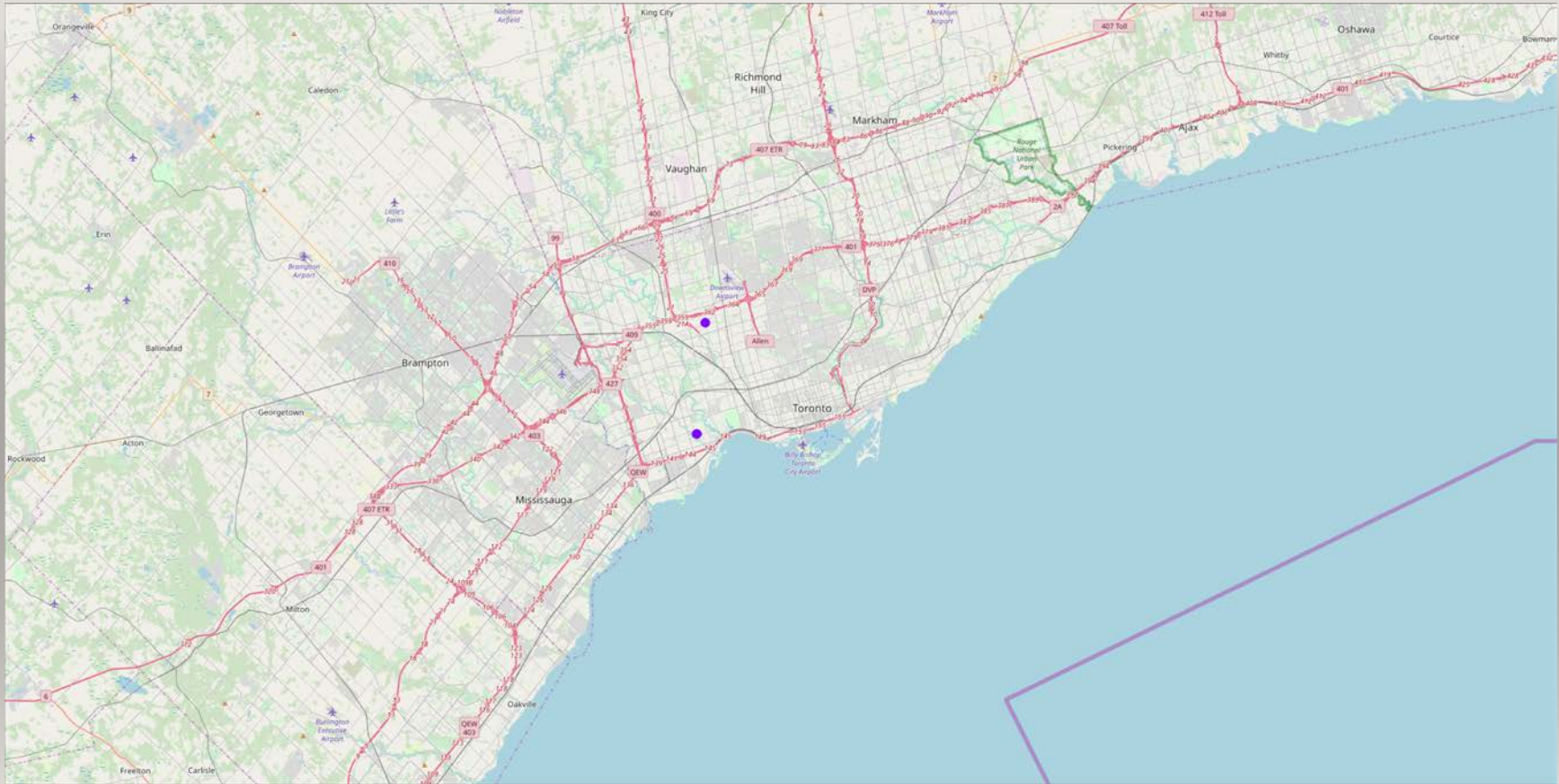
Methodology

Firstly, Toronto borough neighborhood addresses are converted into their equivalent latitude and longitude using the values retrieved from Toronto geodata sheet using Pandas library in Python. After that, the Foursquare API is used to explore neighborhoods in Toronto borough. Using the explore function, the most common venue within a radius of 800 meters is extracted for each Toronto neighborhood and the number of returned venues by Foursquare API is limited to 100. Next, the venue categories feature is used to group the neighborhoods into clusters. The k-means clustering algorithm is used to perform this task. Finally, the Folium library is employed to visualize the neighborhoods in Toronto borough and their emerging clusters with colors and recommendations for the best place for living.
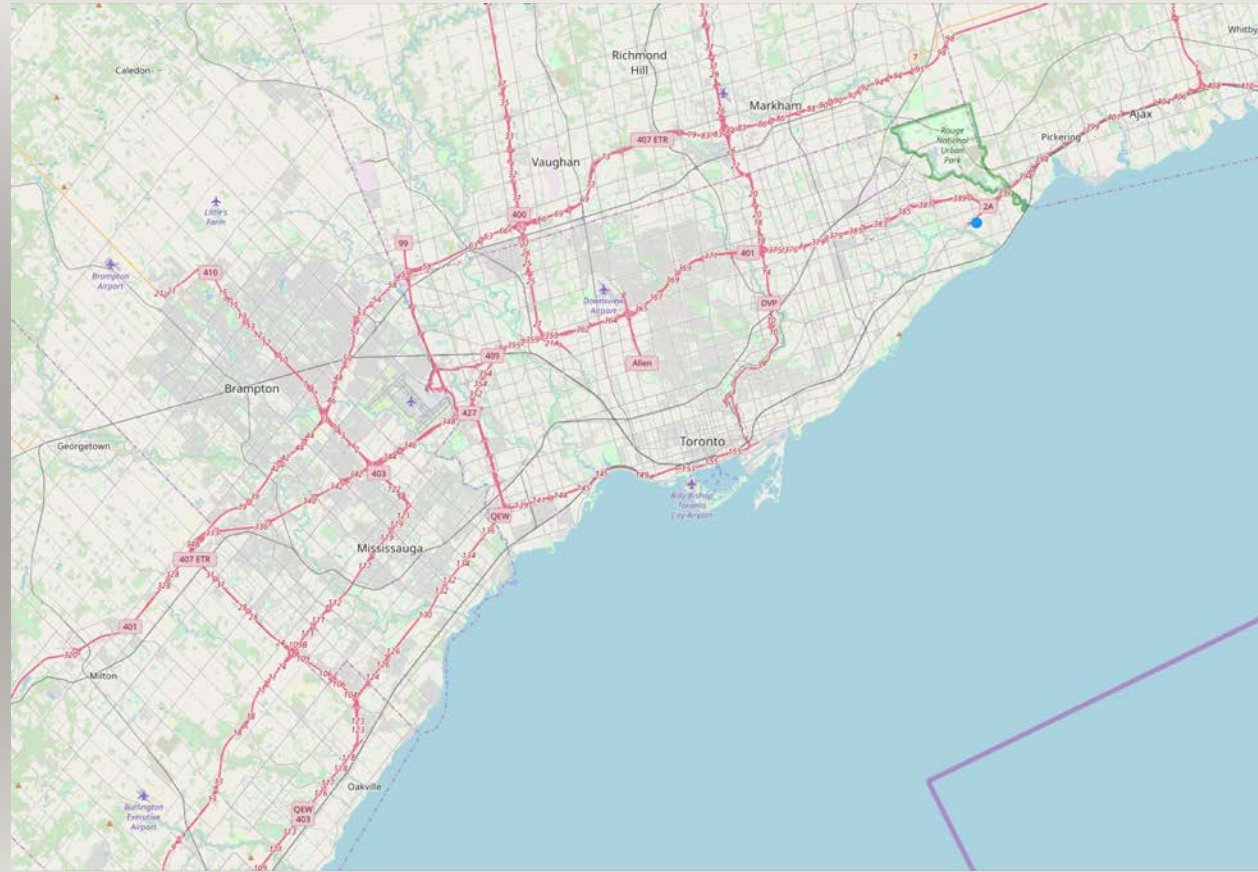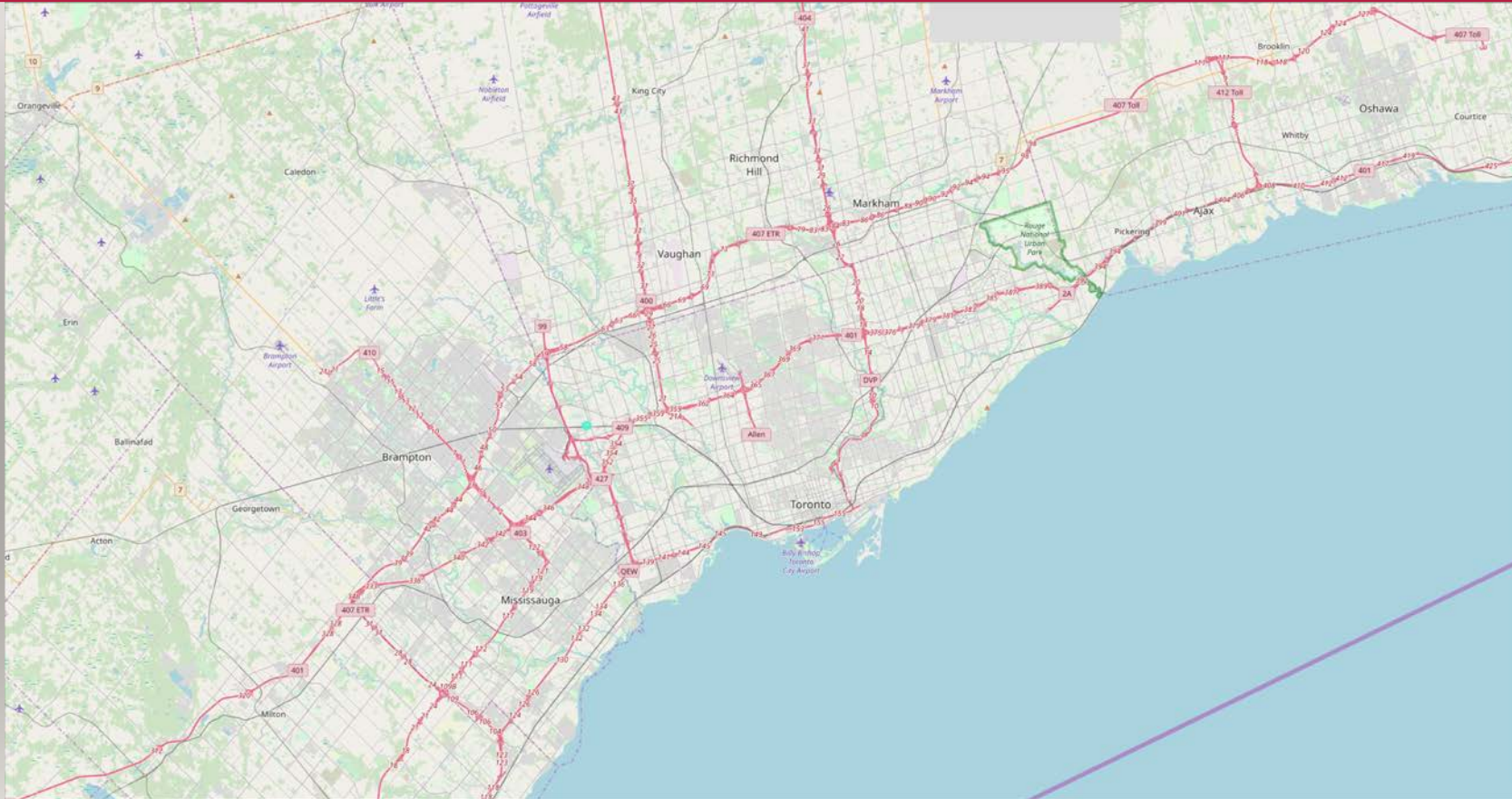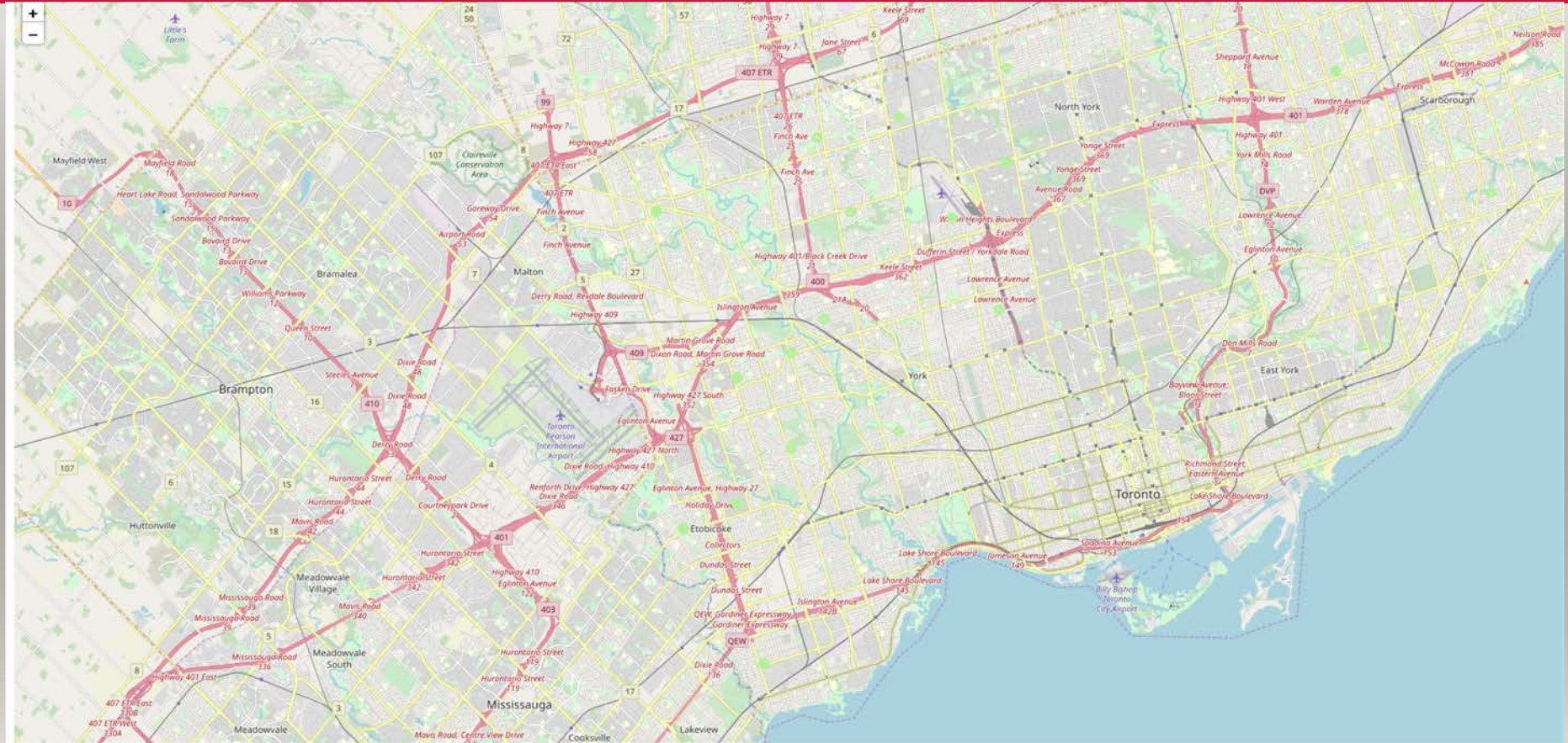
CLUSTER #1

CLUSTER #2

CLUSTER #3

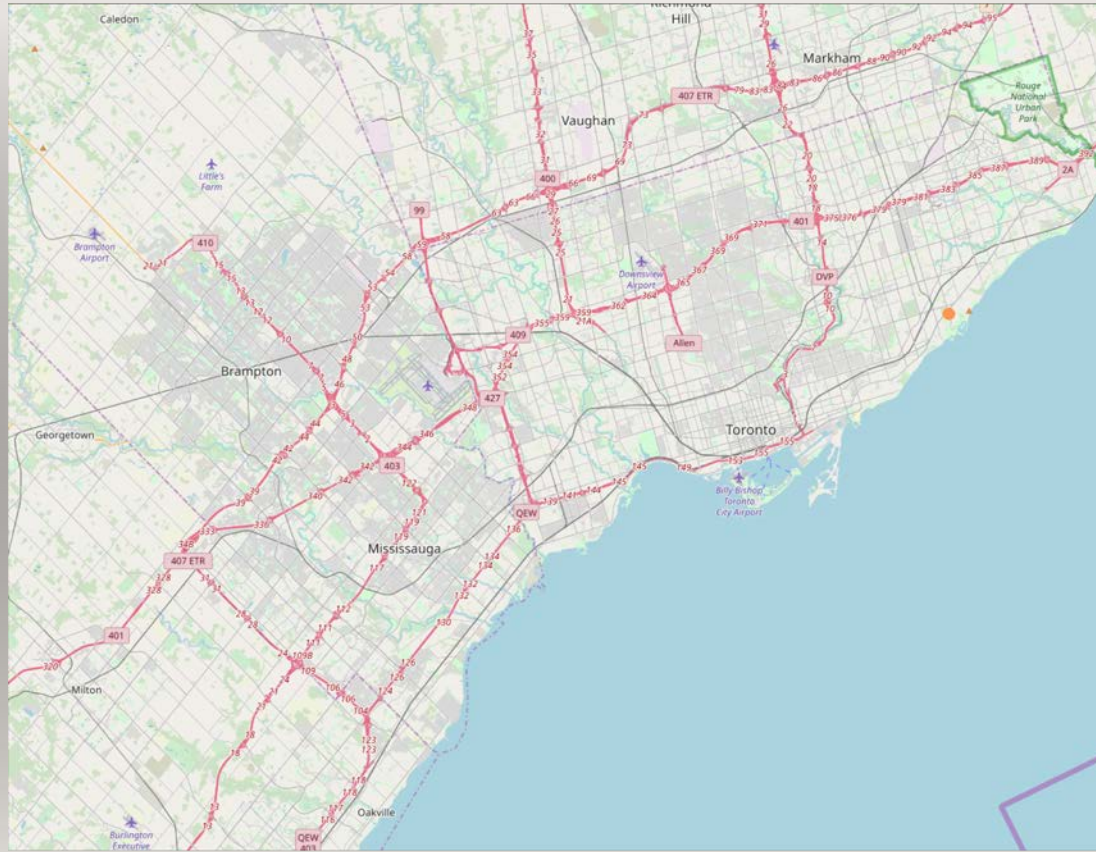# CLUSTER #4

CLUSTER #5

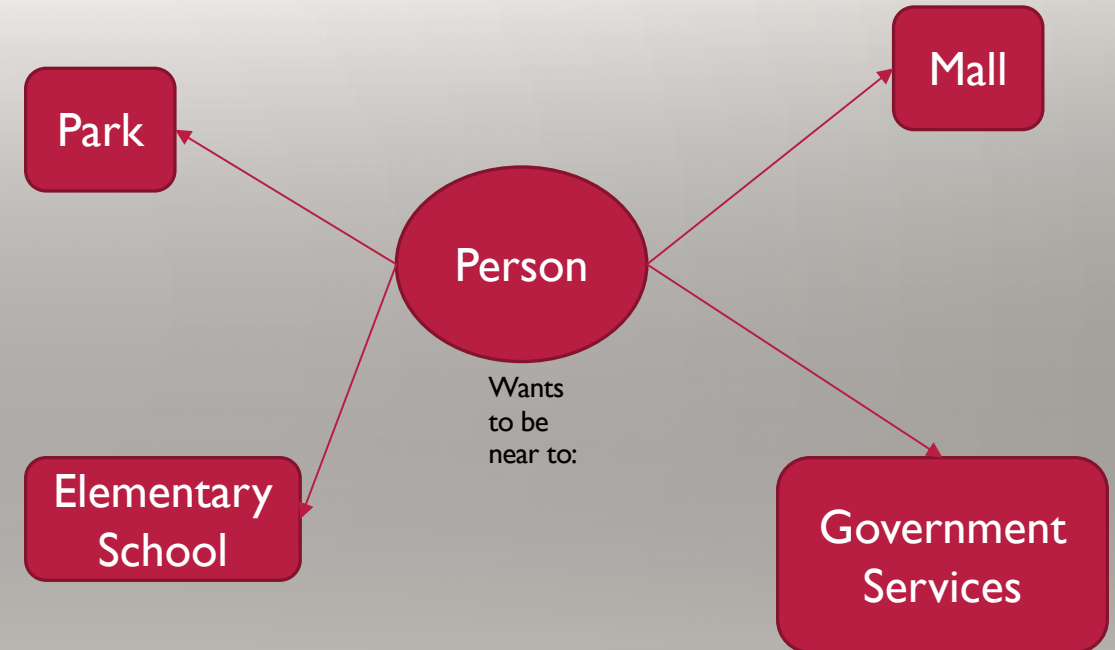# CLUSTER #6

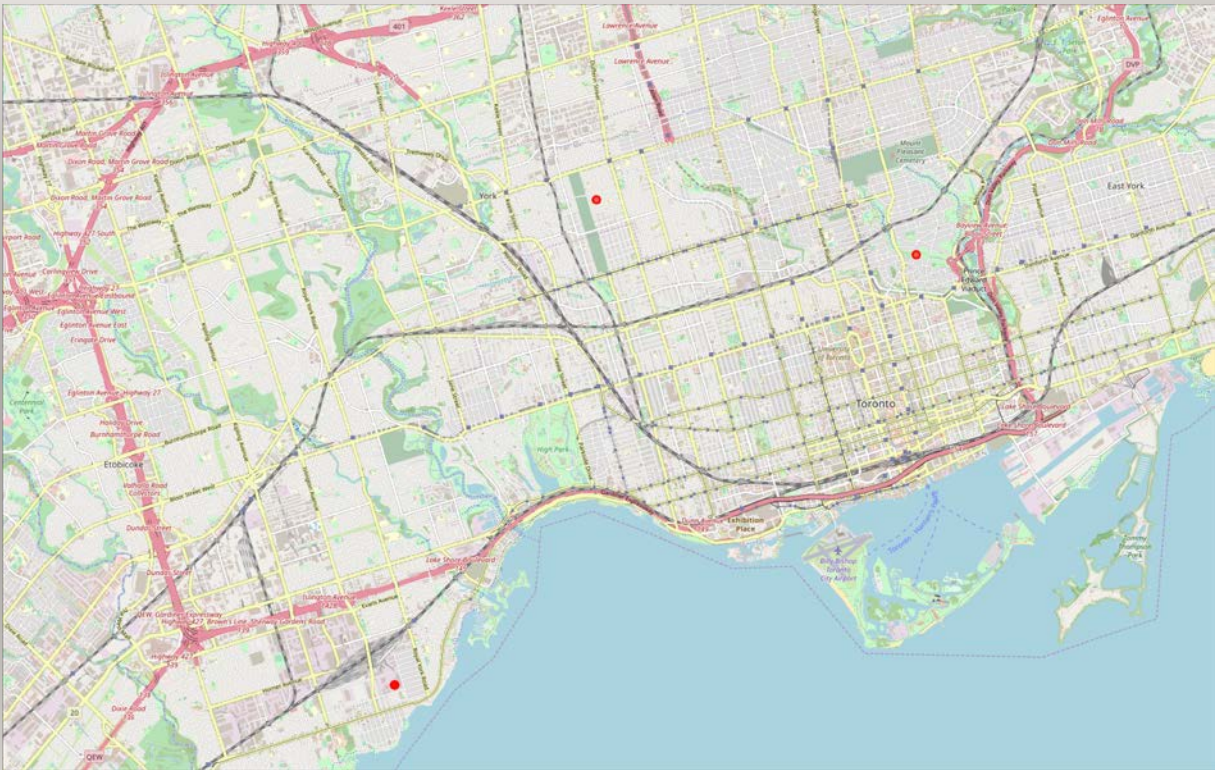# CRITERIA FOR SELECTION OF BEST PLACE

- #1: Park

- #2: Elementary School

- #3: Mall

- #4: Government Services

Park

Mall

Person

Wants
to be
near to:

Elementary
School

Government
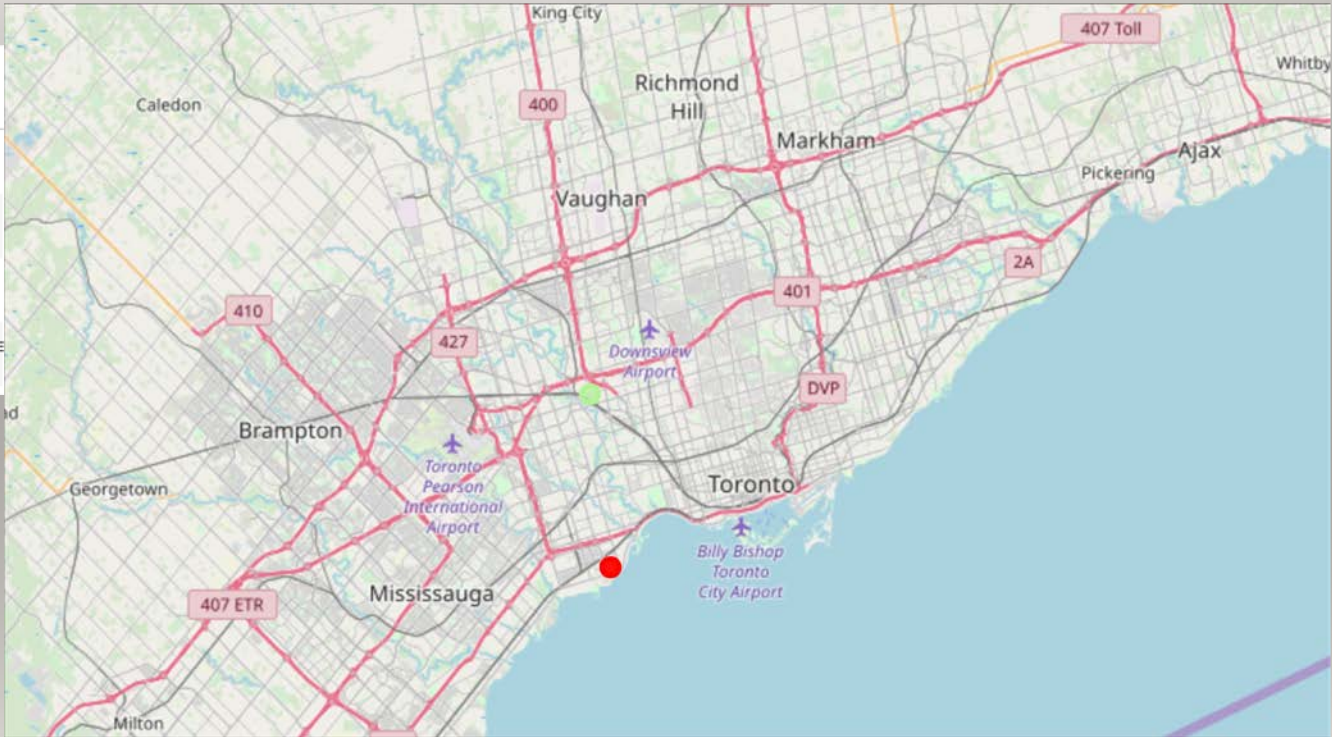Services

WHICH NEIGHBORHOODS HAVE A PARK:

Cluster 1 and Cluster 4

	Neighbourhood	Neighborhood Latitude	Neighborhood Longitude	Cluster Labels	1st Most Common Venue
18	Caledonia-Fairbanks	43.689026	-79.453512	0	Park
69	Hillcrest Village	43.803762	-79.363452	4	Park
71	Humber Bay Shores	43.605647	-79.501321	0	Park
108	Mimico South	43.605647	-79.501321	0	Park
114	New Toronto	43.605647	-79.501321	0	Park
139	Rosedale	43.679563	-79.377529	0	Park

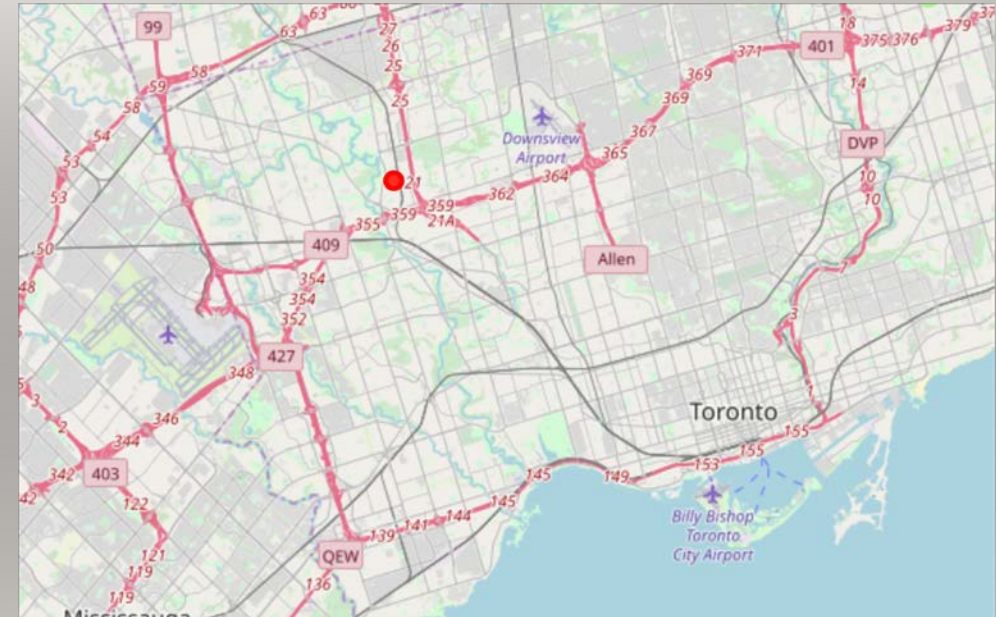# WHICH NEIGHBORHOODS HAVE A ELEMENTARY SCHOOL:

Cluster 1 and Cluster 4

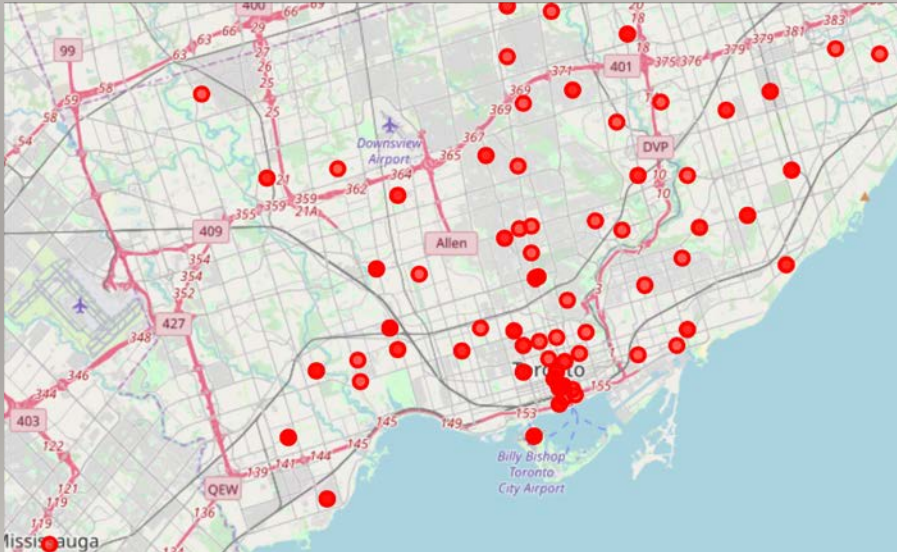|	Neighbourhood	Neighborhood Latitude	Neighborhood Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	
71	Humber Bay Shores	43.605647	-79.501321	0	Park	Pharmacy	Mexican Restaurant	Sushi Restaurant	Fried Chicken Joint	Elementary School	
108	Mimico South	43.605647	-79.501321	0	Park	Pharmacy	Mexican Restaurant	Sushi Restaurant	Fried Chicken Joint	Elementary School	
114	New Toronto	43.605647	-79.501321	0	Park	Pharmacy	Mexican Restaurant	Sushi Restaurant	Fried Chicken Joint	Elementary School	
192	Weston	43.706876	-79.518188	4	Pizza Place	Breakfast Spot	Café	Fried Chicken Joint	Pharmacy	Elementary School	E

WHICH NEIGHBORHOODS HAVE A MALL:

Cluster 1 and Cluster 4

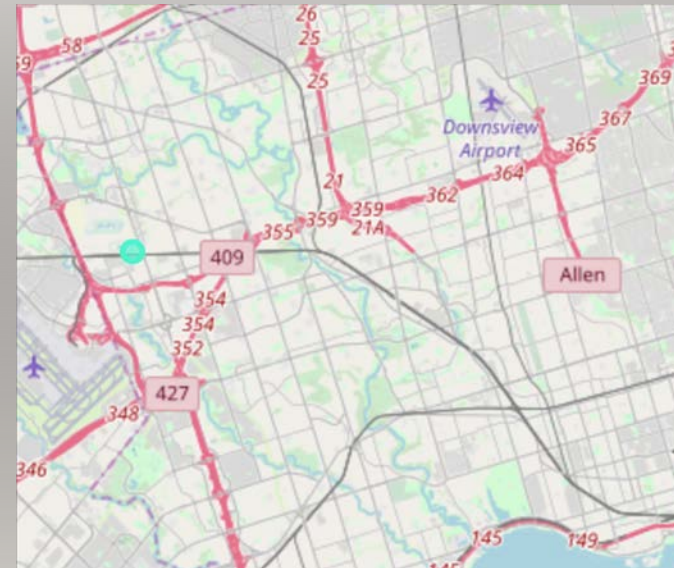|	Neighbourhood	Neighborhood Latitude	Neighborhood Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
26	Clarks Corners	43.781637	-79.304302	4	Pharmacy	Pizza Place	Park	Discount Store	Italian Restaurant	Intersection	Shopping Mall	Fried Chicken Joint
49	Emery	43.724766	-79.532242	0	Convenience Store	Home Service	Italian Restaurant	Discount Store	Baseball Field	Furniture / Home Store	Shopping Mall	Elementary School
74	Humberlea	43.724766	-79.532242	0	Convenience Store	Home Service	Italian Restaurant	Discount Store	Baseball Field	Furniture / Home Store	Shopping Mall	Elementary School
163	Sullivan	43.781637	-79.304302	4	Pharmacy	Pizza Place	Park	Discount Store	Italian Restaurant	Intersection	Shopping Mall	Fried Chicken Joint
168	Tam O'Shanter	43.781637	-79.304302	4	Pharmacy	Pizza Place	Park	Discount Store	Italian Restaurant	Intersection	Shopping Mall	Fried Chicken Joint

CONCLUSION

- We could find a place for living in the Cluster 1 or in the Cluster 4, where we can met our criteria according to our methodology

Cluster 1

Cluster 4