



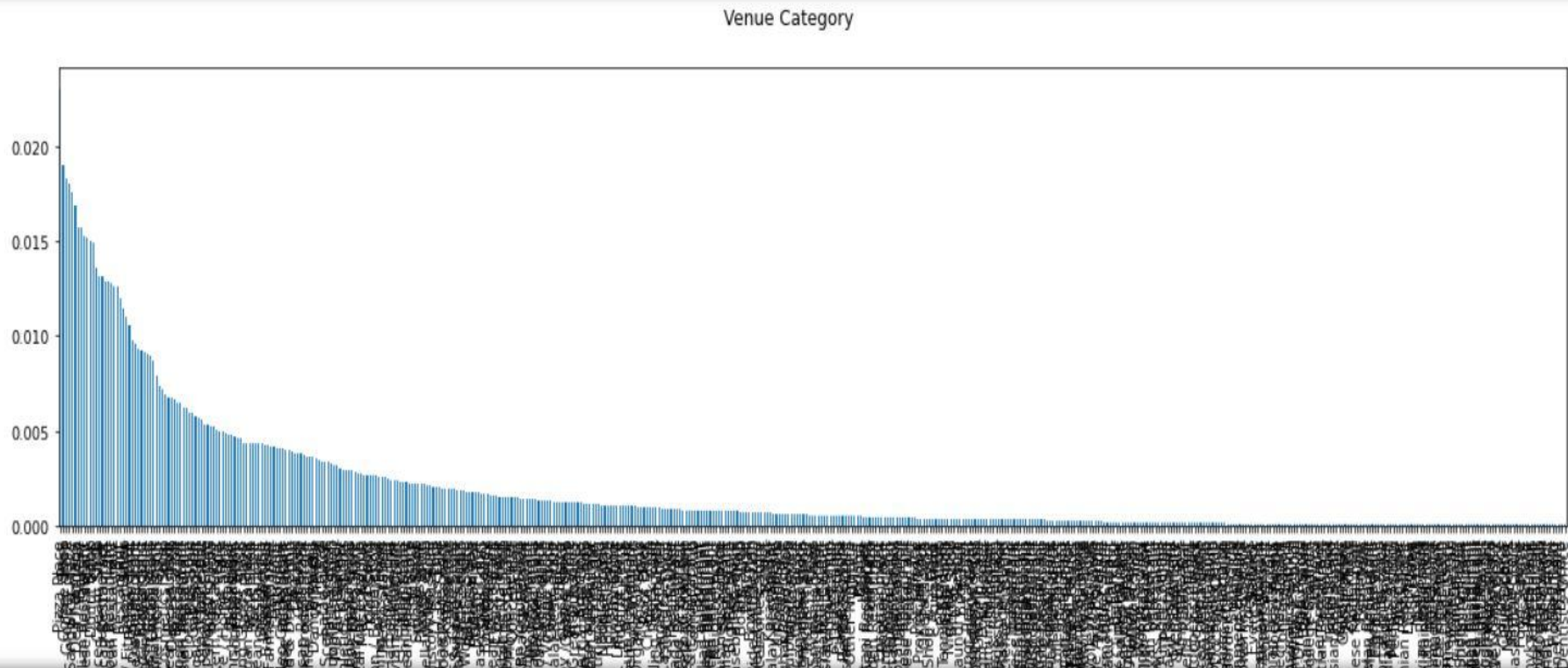
Clustering Neighborhoods of New York and Toronto Cities

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Venue Categories - Word Cloud





Venue Categories - Neighborhood Count Bar Plot

(11225, 3)

	Neighborhood	Venue Category	Popularity Index
0	Allerton, Bronx, New York	Supermarket	1.000000
1	Allerton, Bronx, New York	Fast Food Restaurant	0.966667
2	Allerton, Bronx, New York	Pharmacy	0.933333
3	Allerton, Bronx, New York	Trail	0.900000
4	Allerton, Bronx, New York	Fried Chicken Joint	0.866667

Popularity Index

(408, 93)

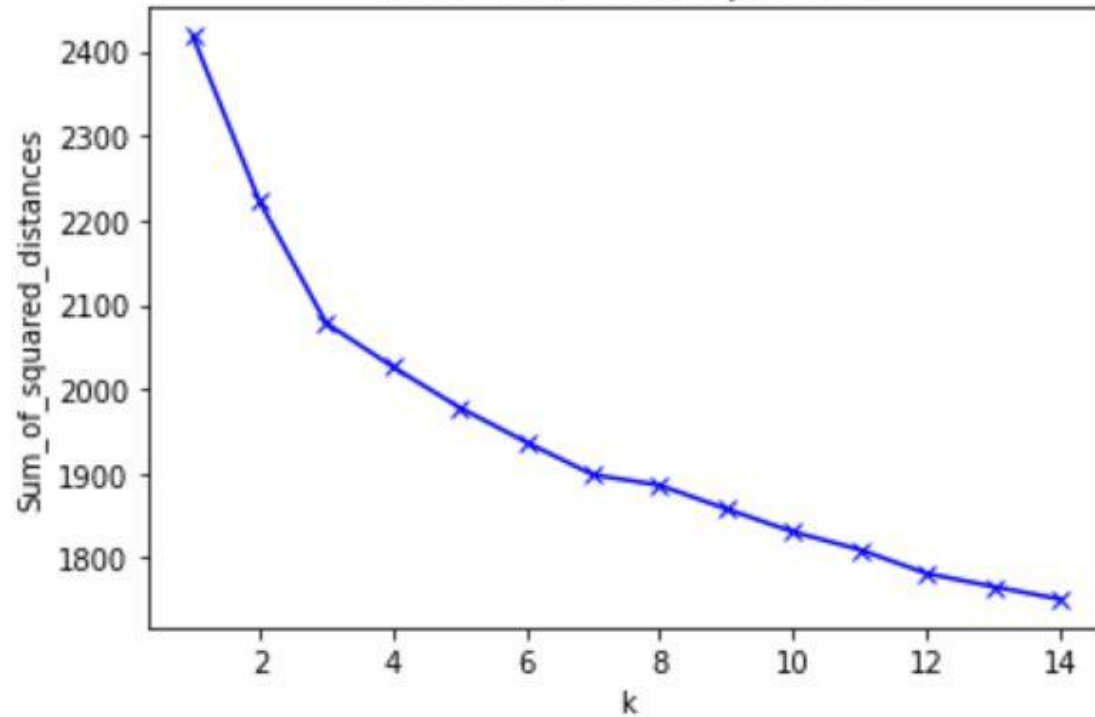
	Neighborhood	American Restaurant	Asian Restaurant	BBQ Joint	Bagel Shop	Bakery	Bank	Bar	Baseball Field	Bookstore	Breakfast Spot	Brewery	Bubble Tea Shop	Burger Joint	Bus Station	Bus Stop	C
0	Allerton, Bronx, New York	0.266667	0.0	0.0	0.0	0.066667	0.6000	0.2	0.0	0.0	0.633333	0.666667	0.0	0.0	0.033333	0.0000	
1	Annadale, Staten Island, New York	0.000000	0.0	0.0	0.0	0.000000	0.0000	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0	0.000000	0.0000	
2	Arden Heights, Staten Island, New York	0.000000	0.0	0.0	0.0	0.000000	0.8125	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0	0.000000	0.1875	
3	Arlington, Staten Island, New York	0.000000	0.0	0.0	0.0	0.000000	0.0000	0.0	0.0	0.0	0.000000	0.000000	0.0	0.0	0.000000	0.8750	

Final Df fed to the model

	Neighborhood	1st Most Popular Venue	2nd Most Popular Venue	3rd Most Popular Venue	4th Most Popular Venue	5th Most Popular Venue	6th Most Popular Venue	7th Most Popular Venue	8th Most Popular Venue	9th Most Popular Venue	10th Most Popular Venue
0	Allerton, Bronx, New York	Supermarket	Fast Food Restaurant	Pharmacy	Trail	Fried Chicken Joint	Mexican Restaurant	Donut Shop	Pizza Place	Diner	Dessert Shop
1	Annadale, Staten Island, New York	Restaurant	Trail	Train Station	Diner	Park	Pharmacy	Pizza Place	Dog Run	Cosmetics Shop	Dance Studio
2	Arden Heights, Staten Island, New York	Pharmacy	Pizza Place	Trail	Bank	Mexican Restaurant	Sushi Restaurant	Italian Restaurant	Chinese Restaurant	Shopping Mall	Park
3	Arlington, Staten Island, New York	Discount Store	Bus Stop	Convenience Store	Department Store	Fast Food Restaurant	Donut Shop	Deli / Bodega	Grocery Store	Gastropub	Greek Restaurant
4	Arrochar, Staten Island, New York	Supermarket	Plaza	Mediterranean Restaurant	Restaurant	Bagel Shop	Baseball Field	Chinese Restaurant	Italian Restaurant	Hotel	Bus Stop

Top 10 Popular Venues

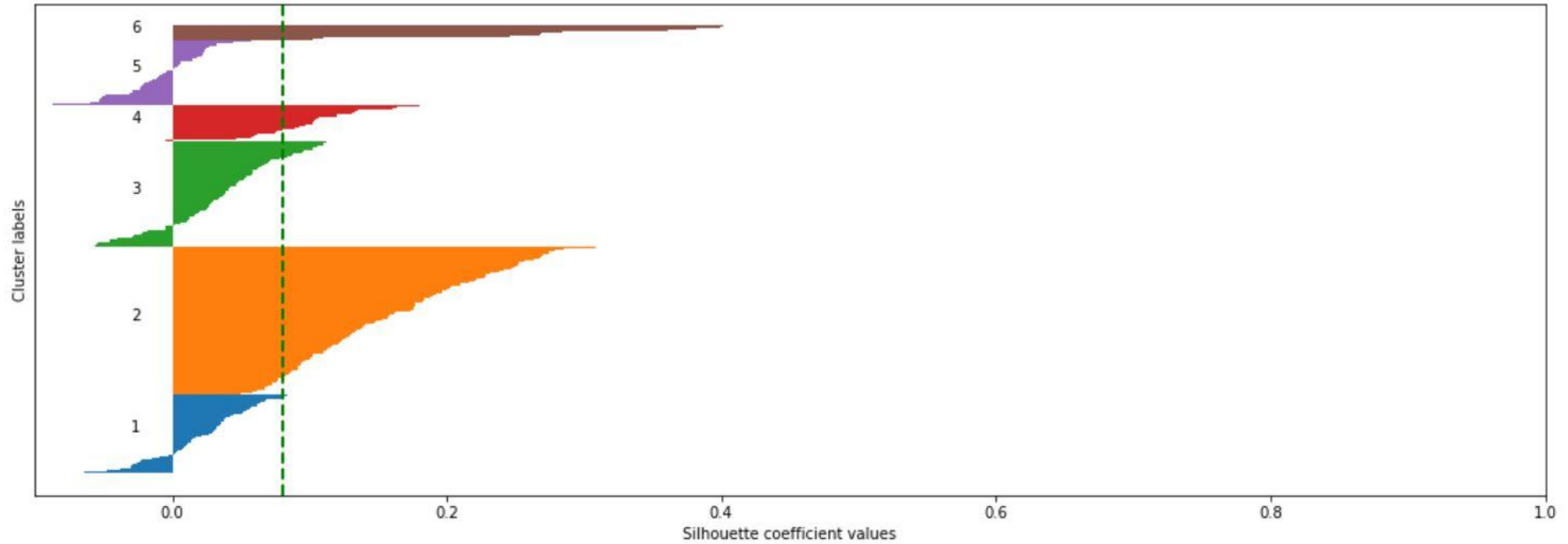
Elbow Method For Optimal k



Elbow Method

Silhouette analysis using $k = 6$, silhouette score = 0.0803351211870396

Silhouette plot for the various clusters



Silhouette Analysis

	Cluster Labels	1st Most Popular Venue	2nd Most Popular Venue	3rd Most Popular Venue	4th Most Popular Venue	5th Most Popular Venue	6th Most Popular Venue	7th Most Popular Venue	8th Most Popular Venue	9th Most Popular Venue	10th Most Popular Venue
0	1	Pharmacy	Donut Shop	Supermarket	Pizza Place	Bank	Coffee Shop	Bagel Shop	Italian Restaurant	Convenience Store	Deli / Bodega
1	2	Park	Grocery Store	Coffee Shop	Pizza Place	Pharmacy	Restaurant	Bank	Fast Food Restaurant	Italian Restaurant	Bakery
2	3	Pharmacy	Donut Shop	Supermarket	Fast Food Restaurant	Grocery Store	Pizza Place	Discount Store	Park	Fried Chicken Joint	Bank
3	4	Grocery Store	Park	Gym	Hotel	Burger Joint	Coffee Shop	Gym / Fitness Center	Bakery	Pizza Place	Restaurant
4	5	Park	Coffee Shop	Grocery Store	Restaurant	Bar	Café	Gym	Pizza Place	Bakery	Supermarket
5	6	Shopping Mall	Hotel	Park	Supermarket	Plaza	Coffee Shop	Grocery Store	Bookstore	Gym	Gastropub

Top 10 Popular Venues for each Cluster

Please enter the Neighborhood Name: Wakefield, Bronx, New York

Cluster: 3

The top 5 popular venues for the cluster are:

Pharmacy

Donut Shop

Supermarket

Fast Food Restaurant

Grocery Store

The other similar neighborhoods you might be interested in Toronto are:

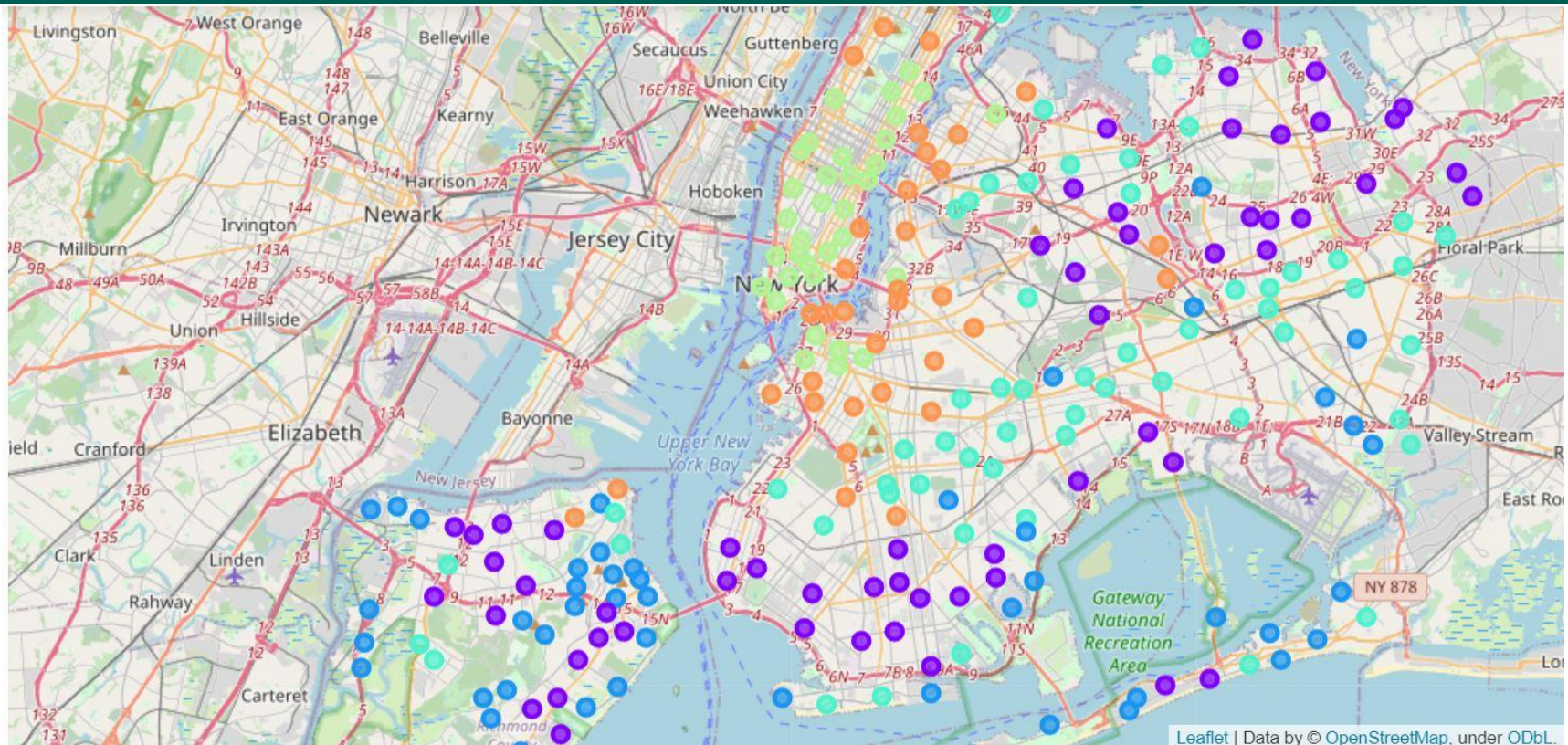
M4H, Thorncliffe Park, East York, Toronto

M2N, Willowdale, Willowdale East, North York, Toronto

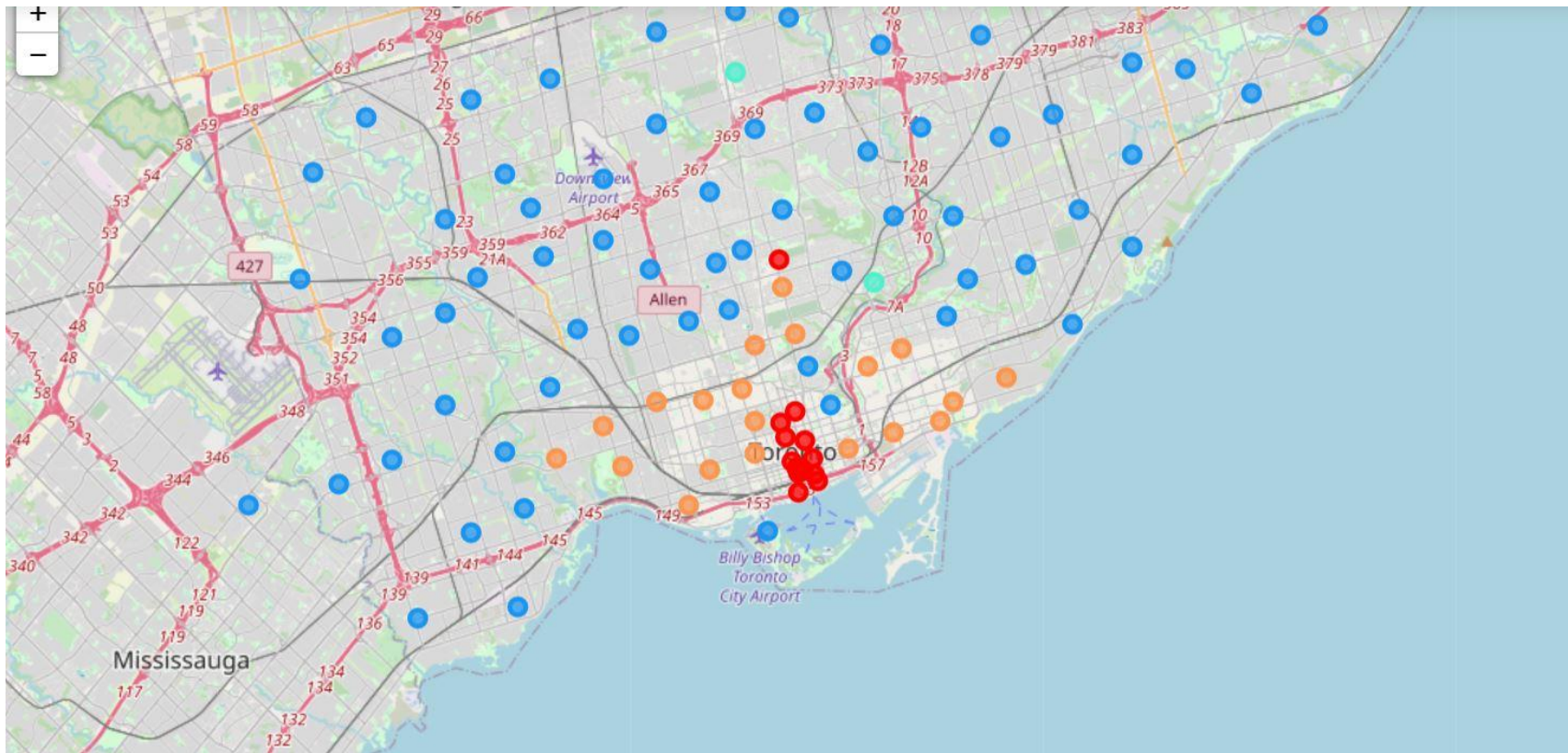
Similar Neighborhoods suggestion in the other city

Cluster Labels	City	Neighborhood Count
1	New York	72
2	New York	67
2	Toronto	67
3	New York	94
3	Toronto	2
4	New York	34
5	New York	39
5	Toronto	20
6	Toronto	13

City-wise Neighborhood Count for each Cluster



New York Map with Clusters



Toronto Map with Clusters