

# The Battle of Neighbourhoods

IBM Data Science Capstone Project

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**Case: To find an ideal location for a Sushi Bar**

**Client: Mr Kobayashi Maru**



# Problem Statement

- Mr. Kobayashi Maru intends to open a Sushi Bar in Toronto.
- Opening a restaurant is a very expensive affair and its location plays an important role in its success.
- It is generally assumed that a place concentrated with restaurants is a prime location and there is a constant crowd frequenting restaurants
- Competition from peers is another challenge that needs to be looked into.
- In this exercise we are trying to find a location that are hotspots for restaurants and also that currently have no sushi restaurants.

# Data Requirements

- List of all the areas or neighbourhoods in Toronto
- Geospatial Data to triangulate co-ordinates
- List of all the Restaurants in Toronto

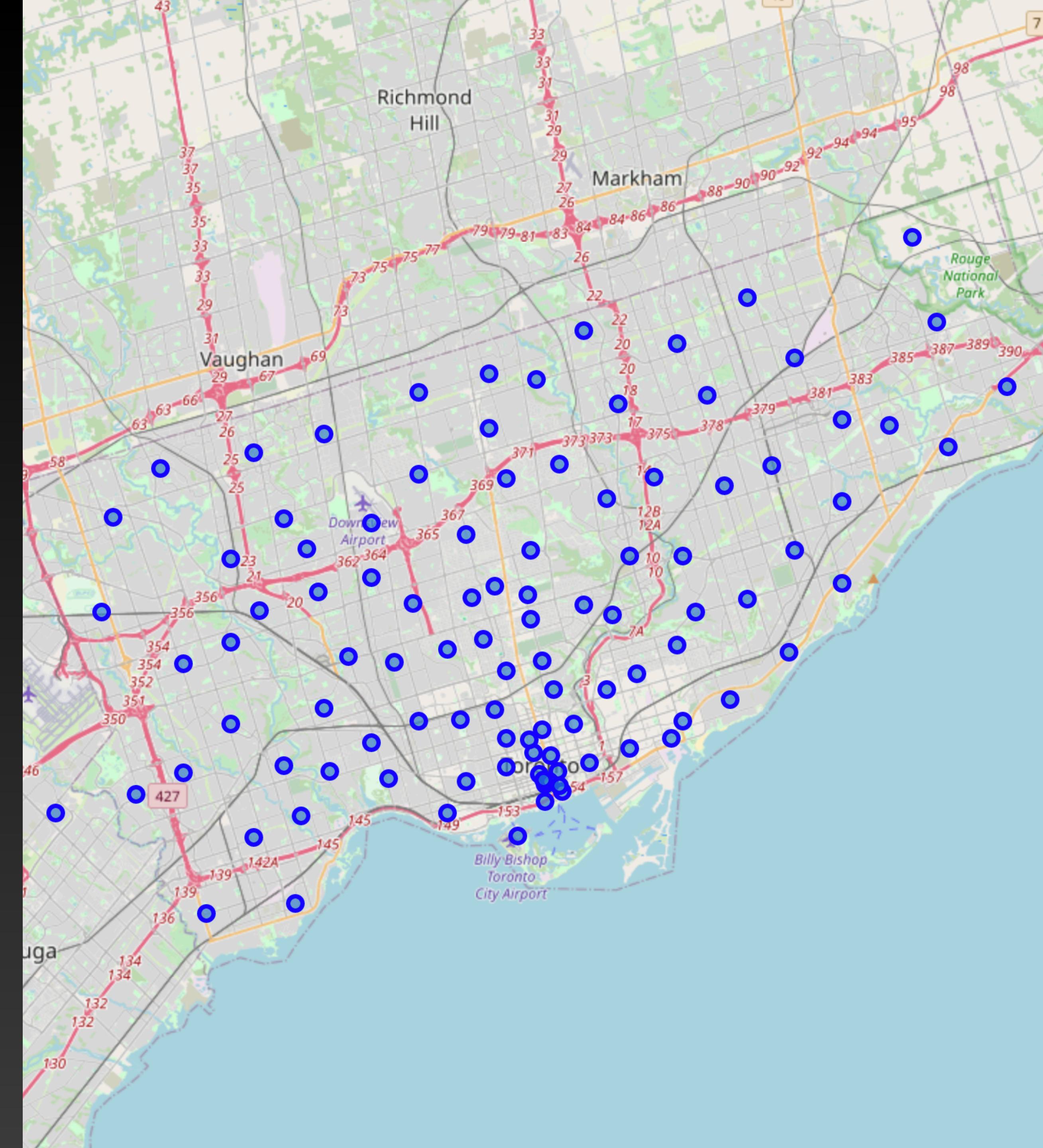
# Data Sources

- Neighbourhood locations of Toronto: [https://en.wikipedia.org/wiki/  
List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)
- Geospatial Data: [http://cocl.us/Geospatial\\_data](http://cocl.us/Geospatial_data)
- List of restaurants in Toronto using Foursquare API: [https://  
developer.foursquare.com/](https://developer.foursquare.com/)

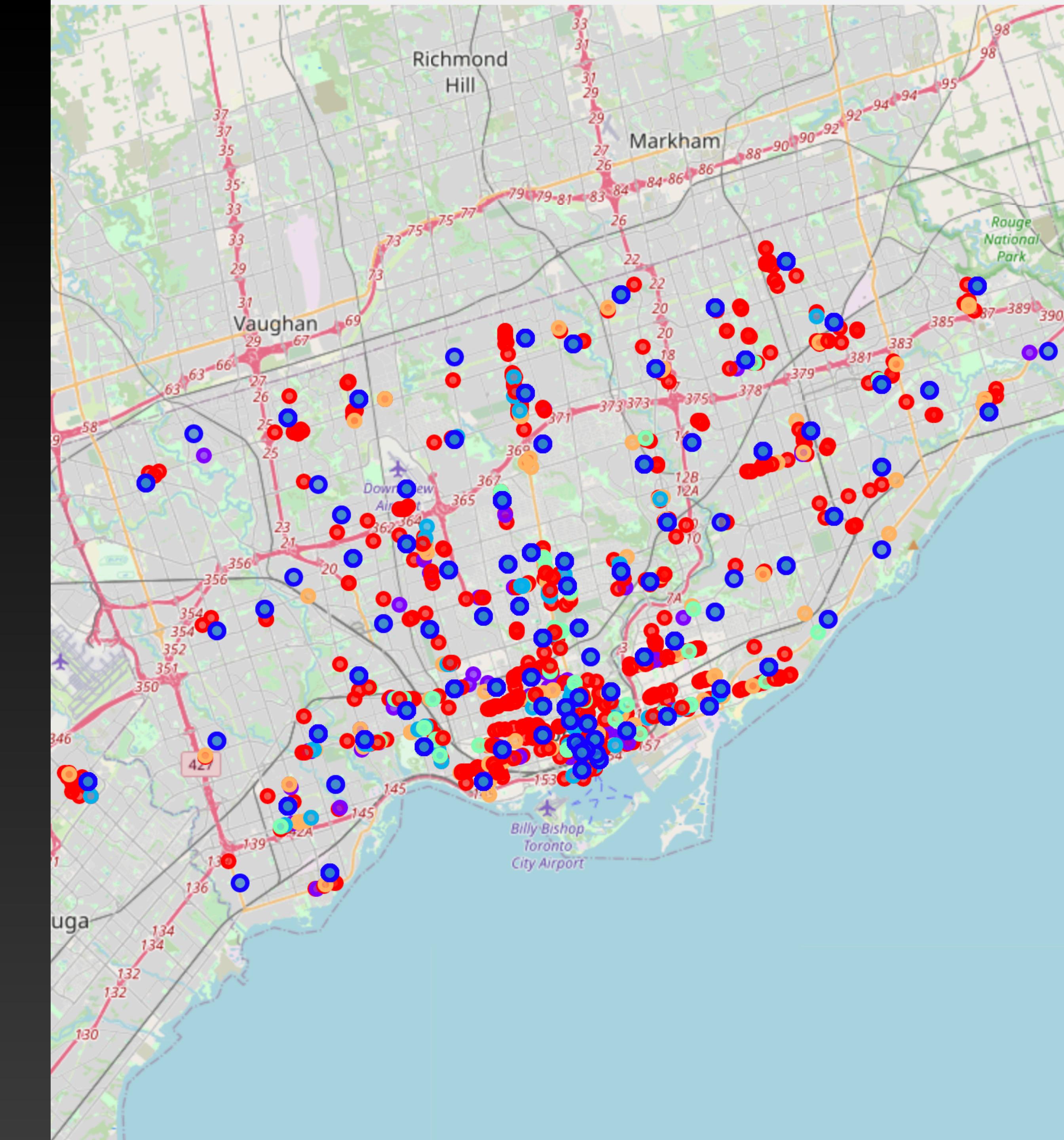
# Data Methodology

- The data was extracted, cleaned and the feature selection was done
- Map of all the neighbourhoods in Toronto were plotted
- Foursquare API was used to figure out the nearest restaurants
- The restaurants were classified using KMeans algorithm
- The clustered restaurants were plotted along with the neighbourhood data on the map
- Cluster = 2 was selected (Sushi Restaurants) and was plotted on the map
- Plots were compared and based on the presence of cluster of restaurants and the absence of competition, locations for the new restaurant was selected

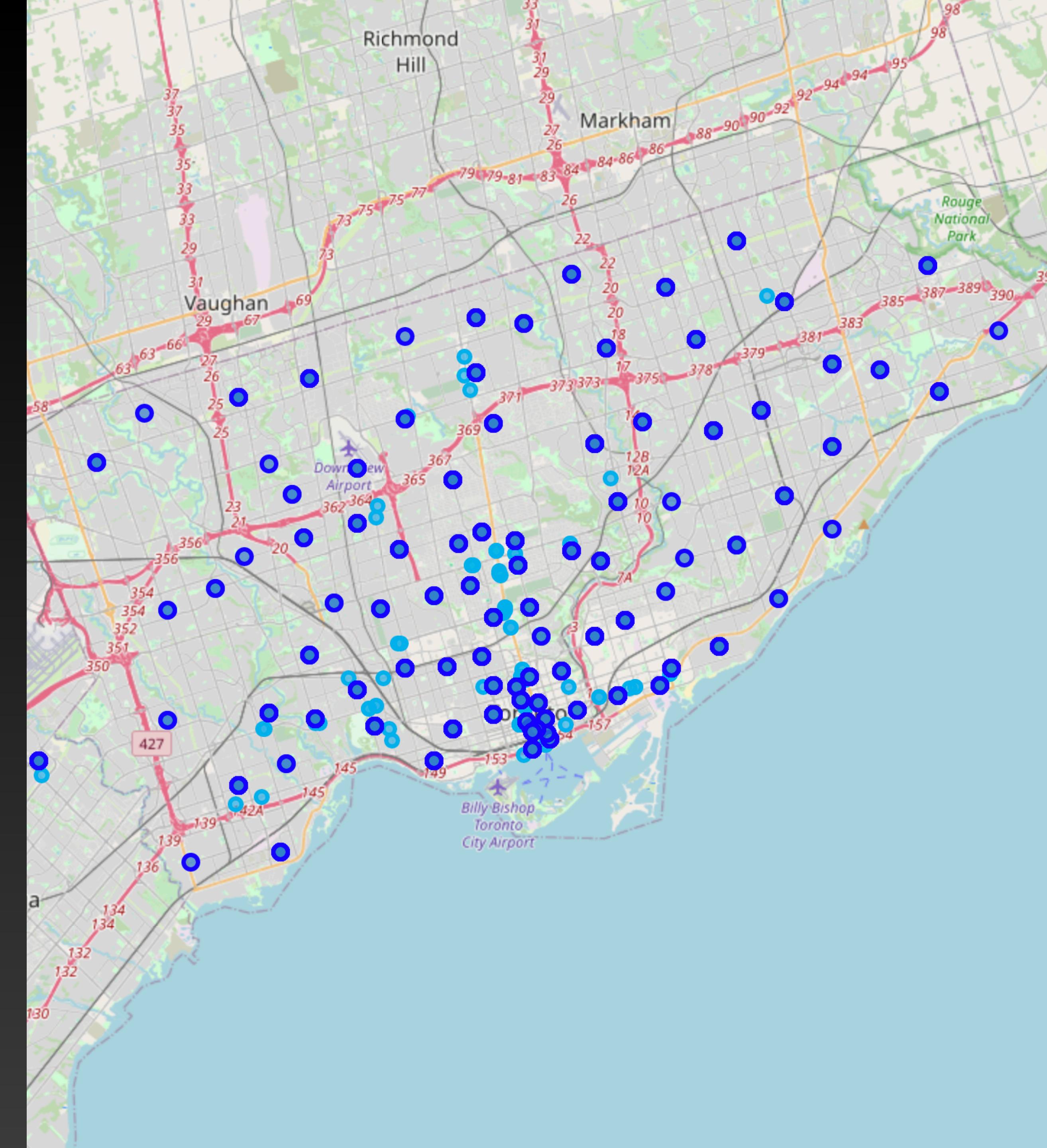
# Map of all the neighbourhoods in Toronto



# Map of all the restaurant clusters along the neighbourhood



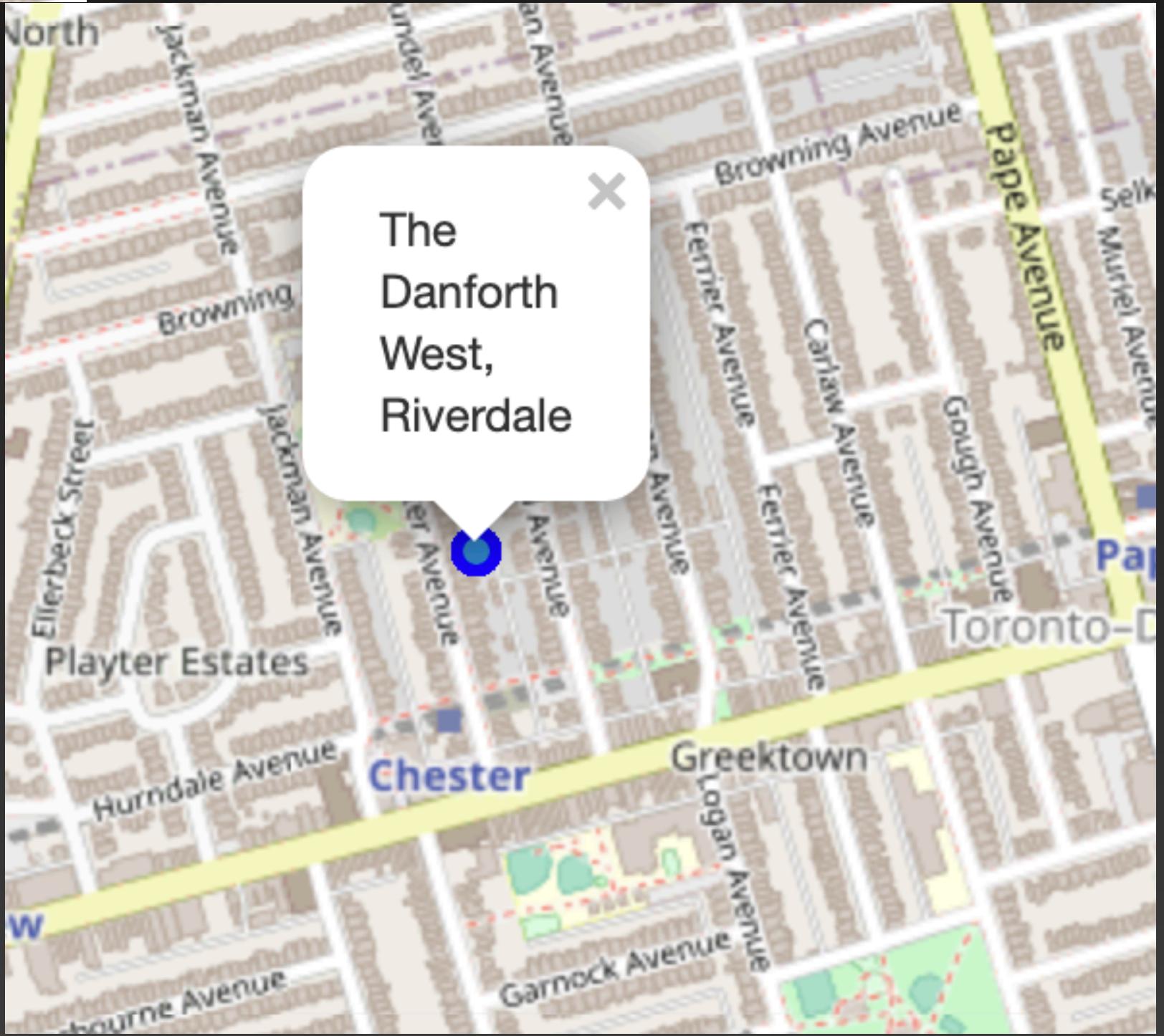
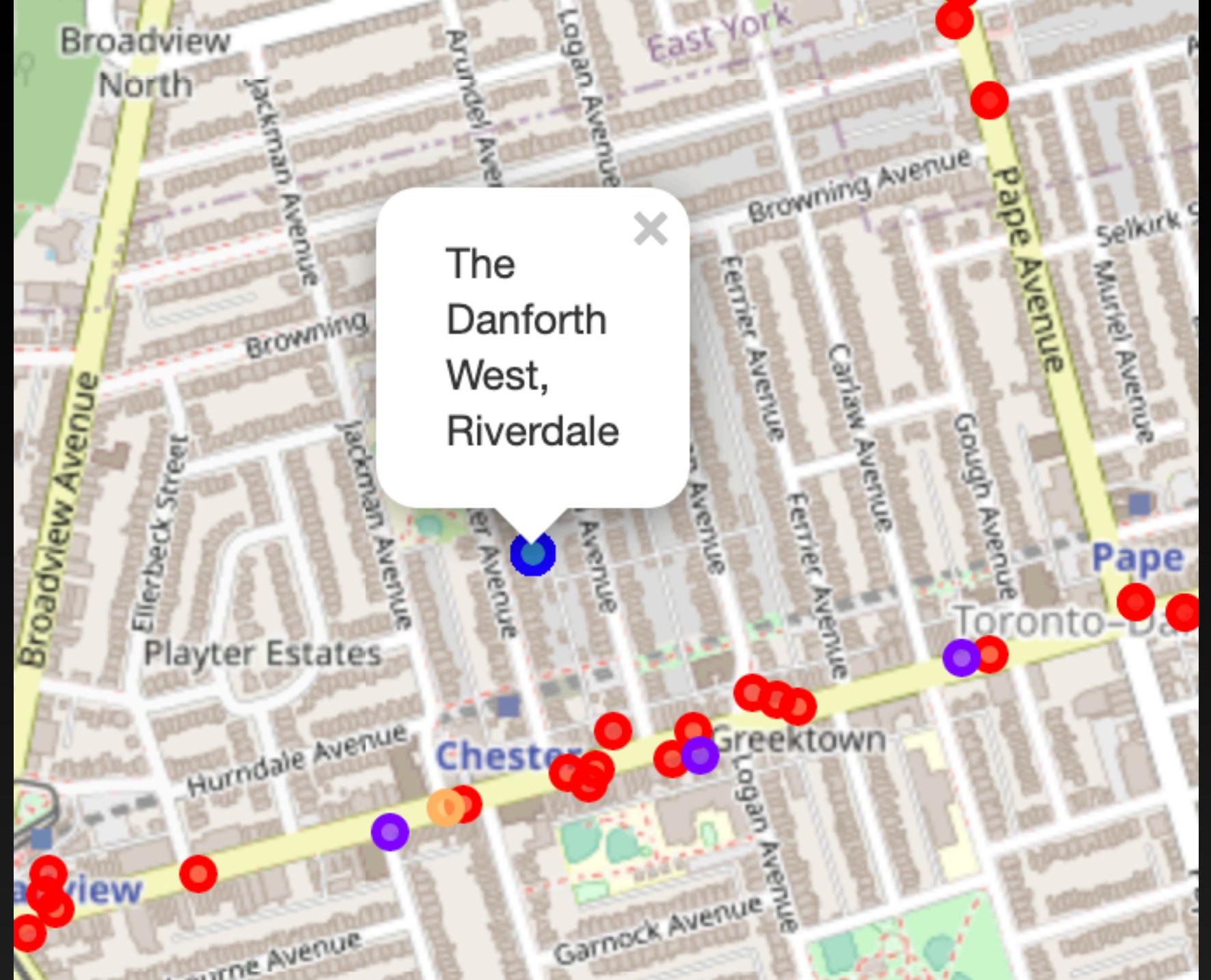
# Map of Cluster 2 (Sushi Restaurants) along the neighbourhood



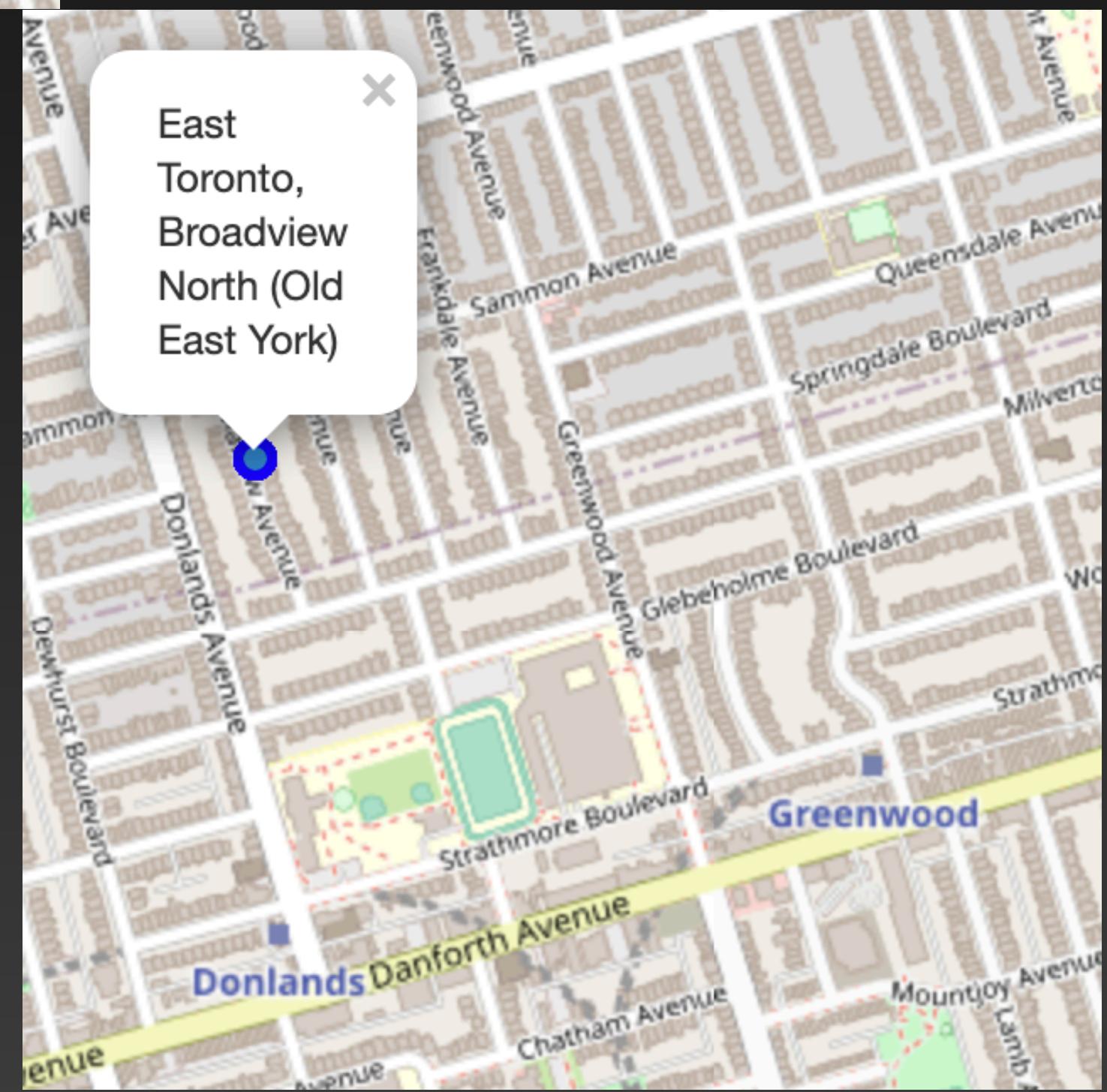
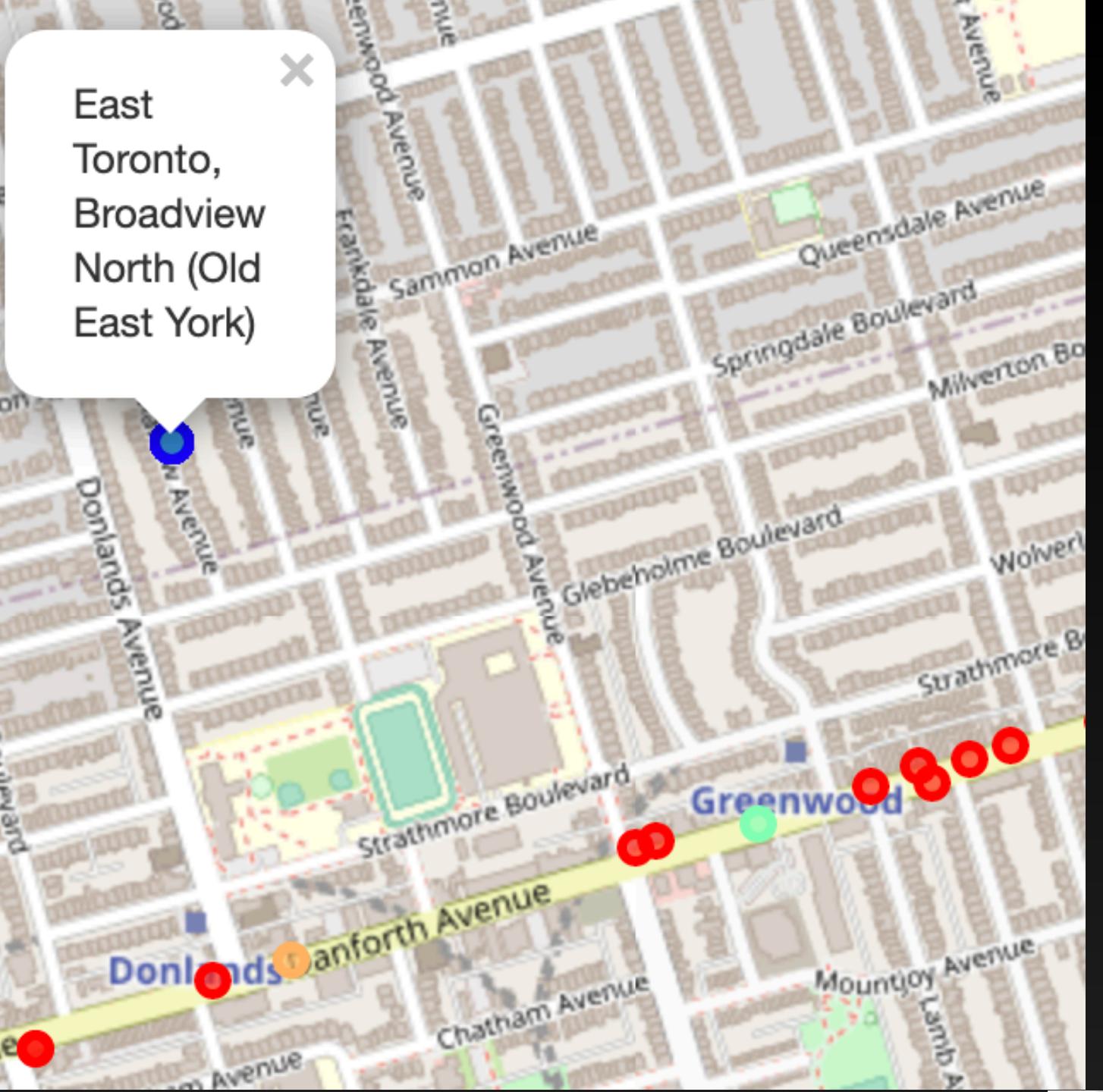
# Results

- A cluster of restaurants can be implied that it is a prime location and the restaurant business is healthy in that area
- Absence of Sushi restaurant in the cluster can indicate that opening a Sushi restaurant will be beneficial as there will be no competition
- Based on these assumptions following slides shows a comparative model on a set of locations that can prove to be a game changer for Mr Kobayashi Maru

# Location 1: Danforth West



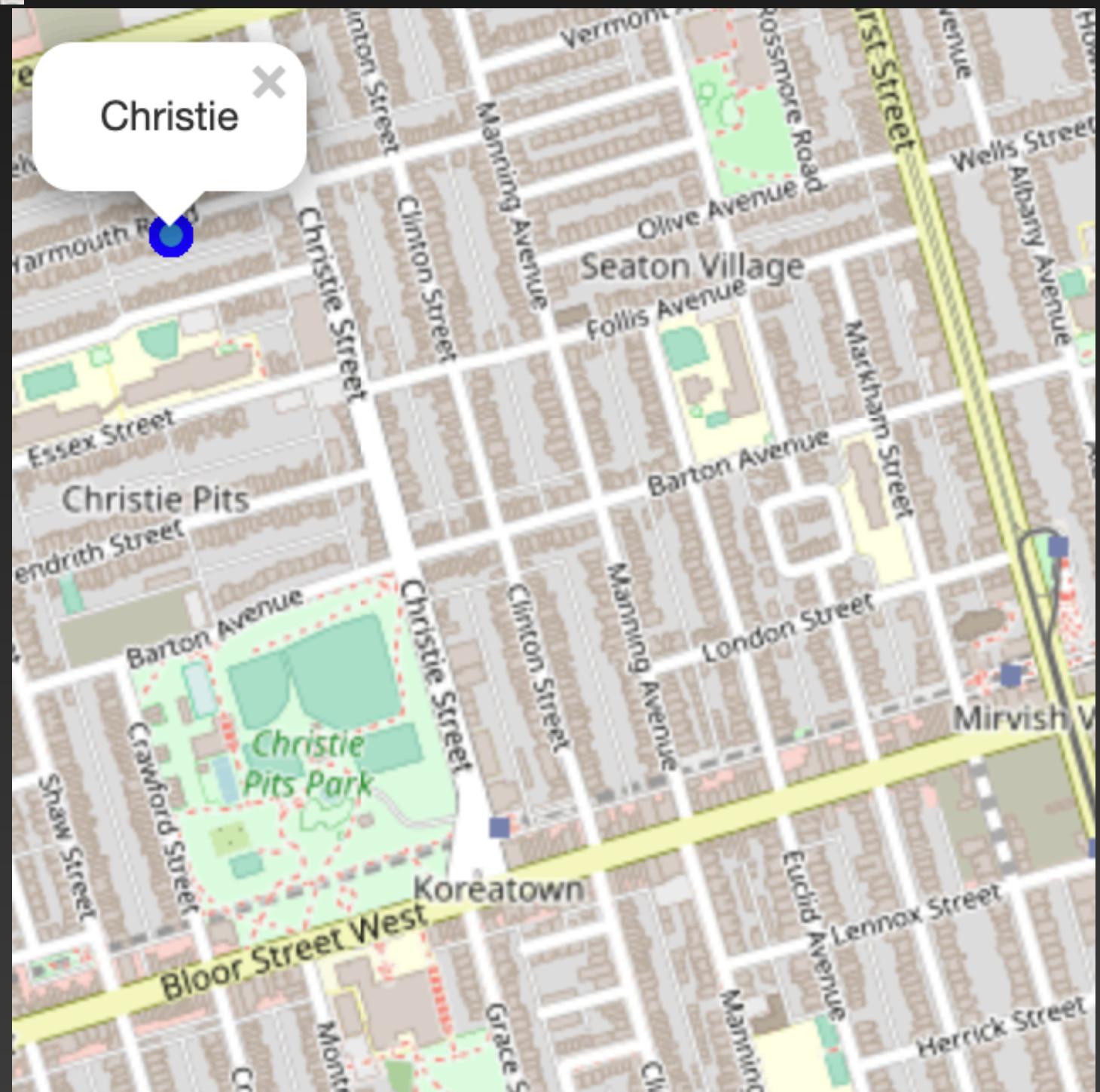
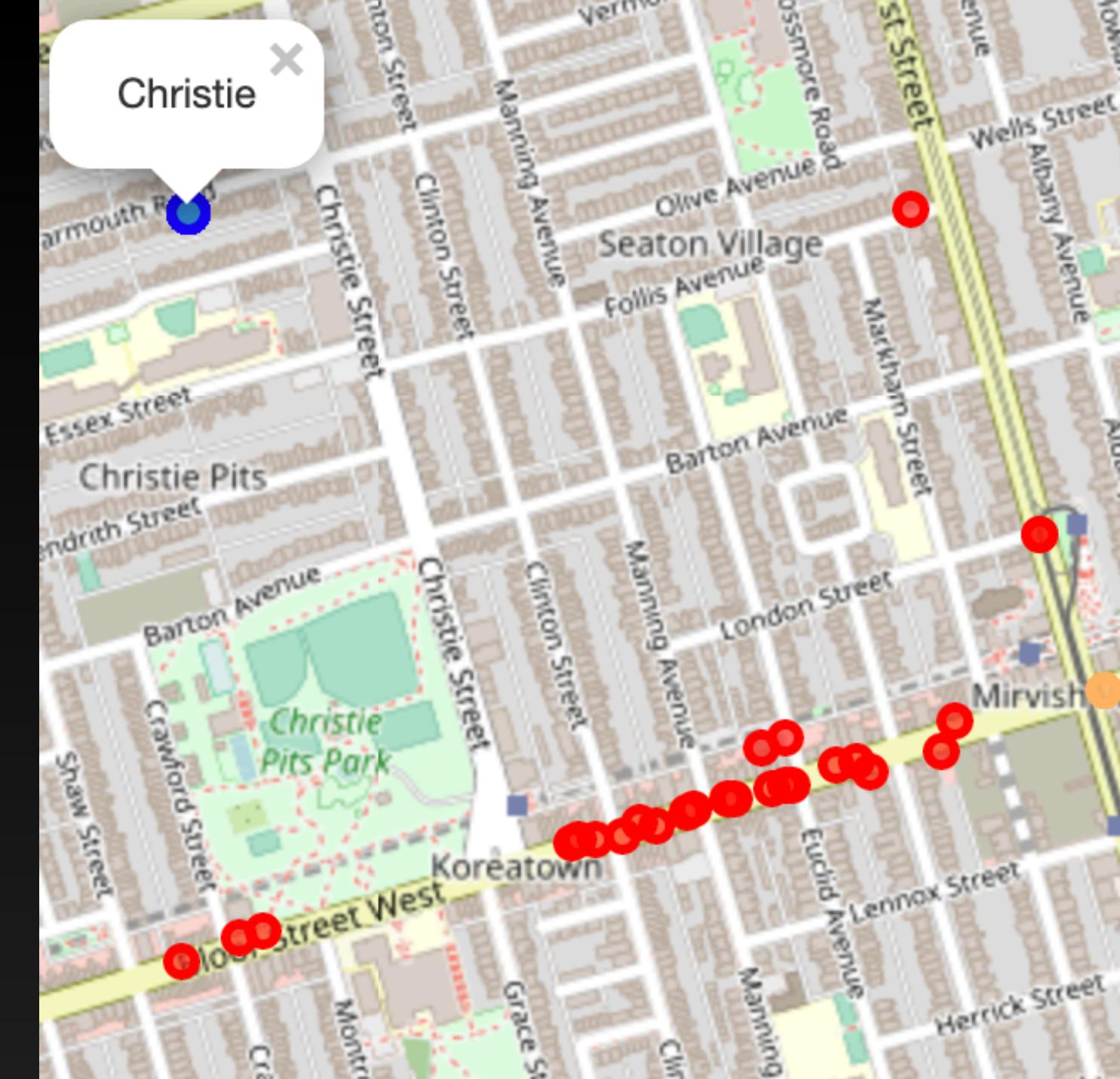
# Location 2: Broadview North



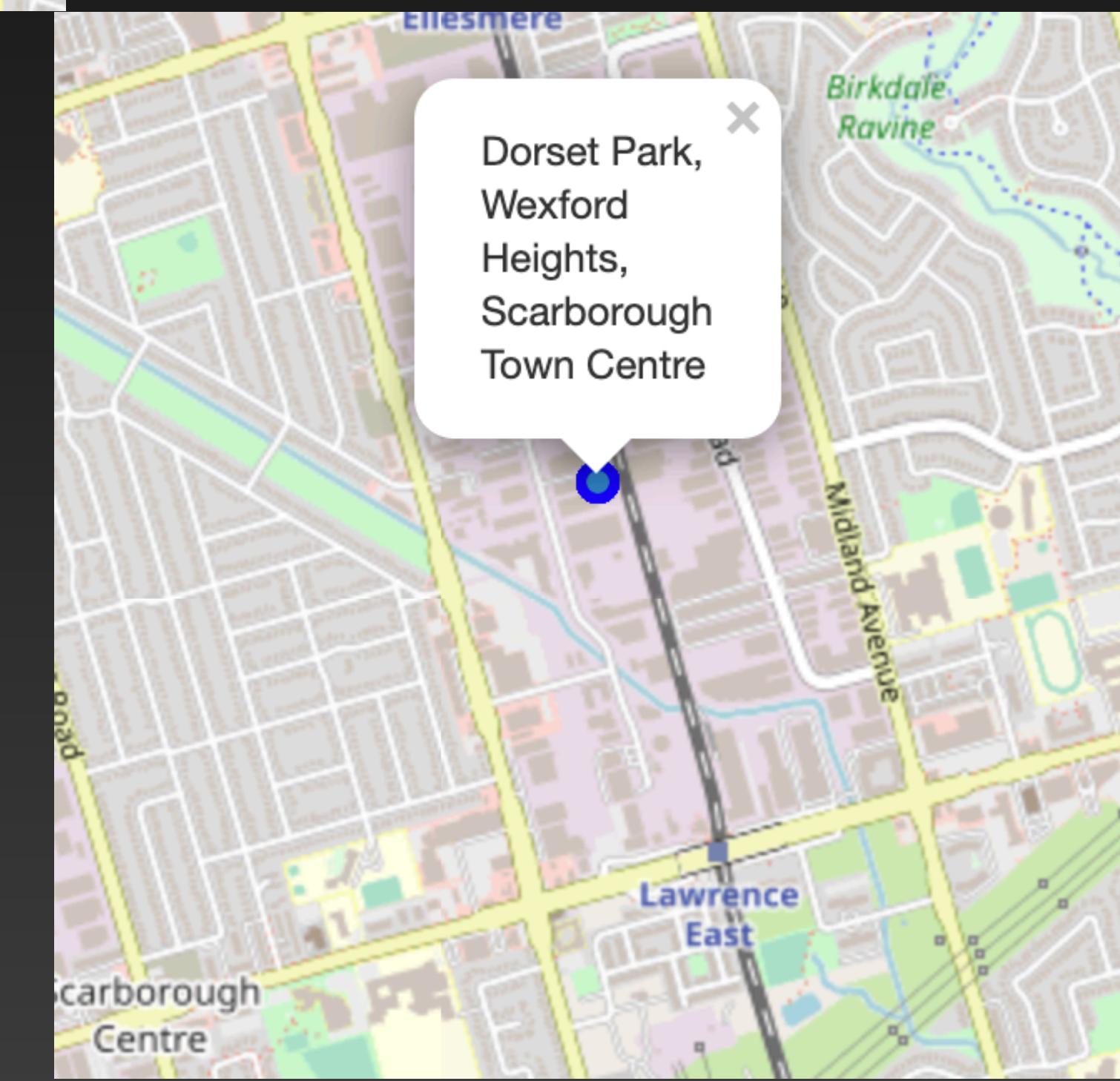
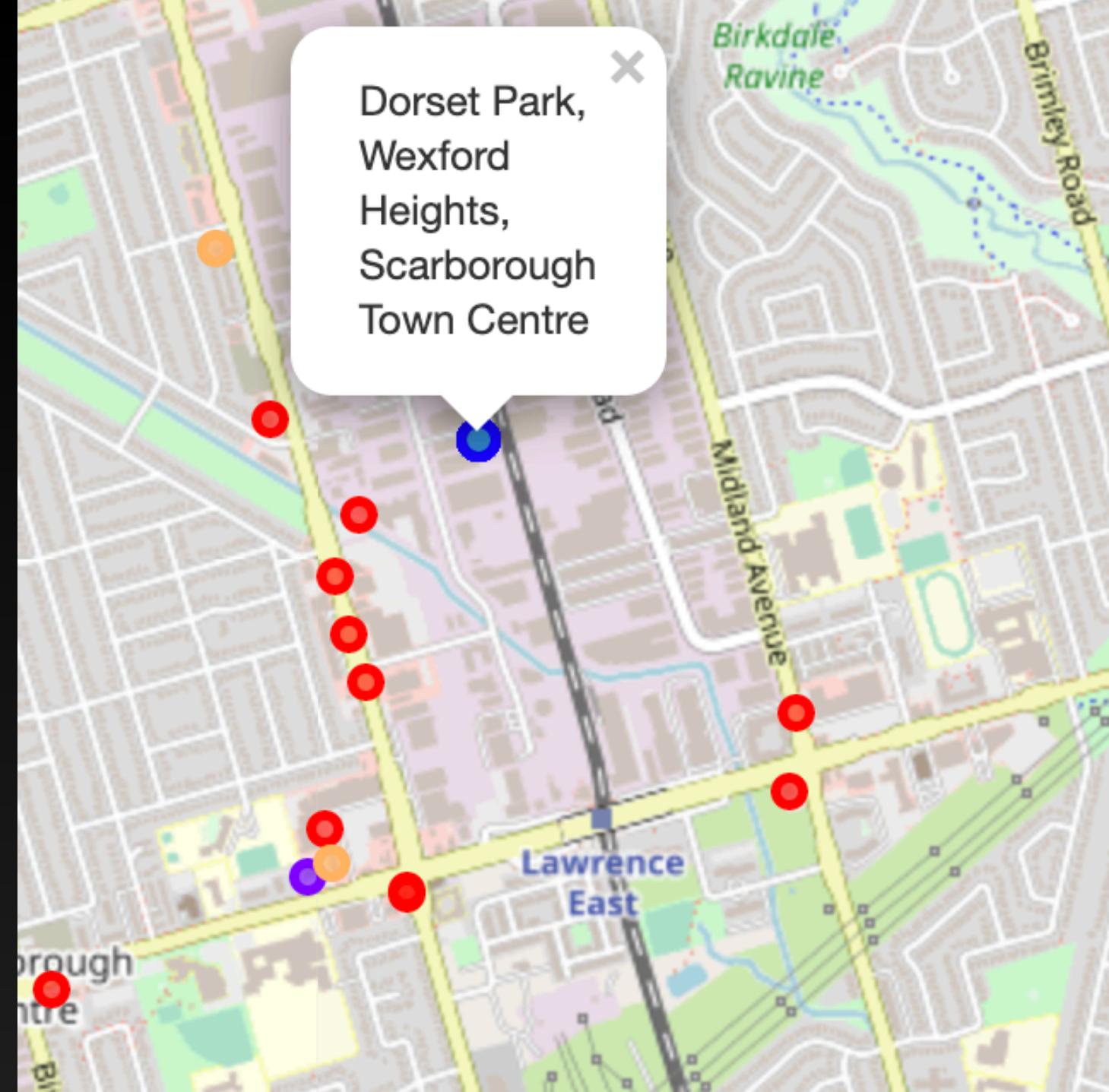
# Location 3: Commerce Court



# Location 4: Christie



# Location 5: Dorset Park



# Conclusion

- Based on the results. Kobayashi Maru can open his Sushi Bar in one of the following locations:
  - Danforth West
  - Broadview North
  - Commerce Court
  - Christie
  - Dorset Park