

Sushi Co. Toronto Expansion

Introduction/Business Problem

Toronto, Canada. as one of the largest cities in Canada has a population of over 6 million people. The City is broken down into 103 postal codes with a diversity of different neighborhoods make up with many varied venues.

Sushi Co. is looking to expand and open a new Sushi Restaurant in Toronto.

They have come to me to do data analysis and provide a recommendation of the best place to open this restaurant. This report should help give Sushi Co. information needed to help make an informed decision where they could get the most business value in restaurant placement.

Data Description

I will start with scrapping source data from Wikipedia on the neighborhoods in Toronto.

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

After gathering the list of neighborhoods, we will use Foursquare locational information. Foursquare is a location data provider with information about venues within an area of interest. To get the data I will use the Foursquare API to gather data about venues inside each neighborhood. For each neighborhood using a chosen radius of 500 meters I will obtain per venue the following information:

1. Neighborhood
2. Neighborhood Latitude
3. Neighborhood Longitude
4. Venue
5. Name of the venue
6. Venue Latitude
7. Venue Longitude
8. Venue Category

With the data collected we will investigate current Sushi Restaurant locations as well as proximity to other Restaurants that may be considered alternate choices to Sushi.

Methodology

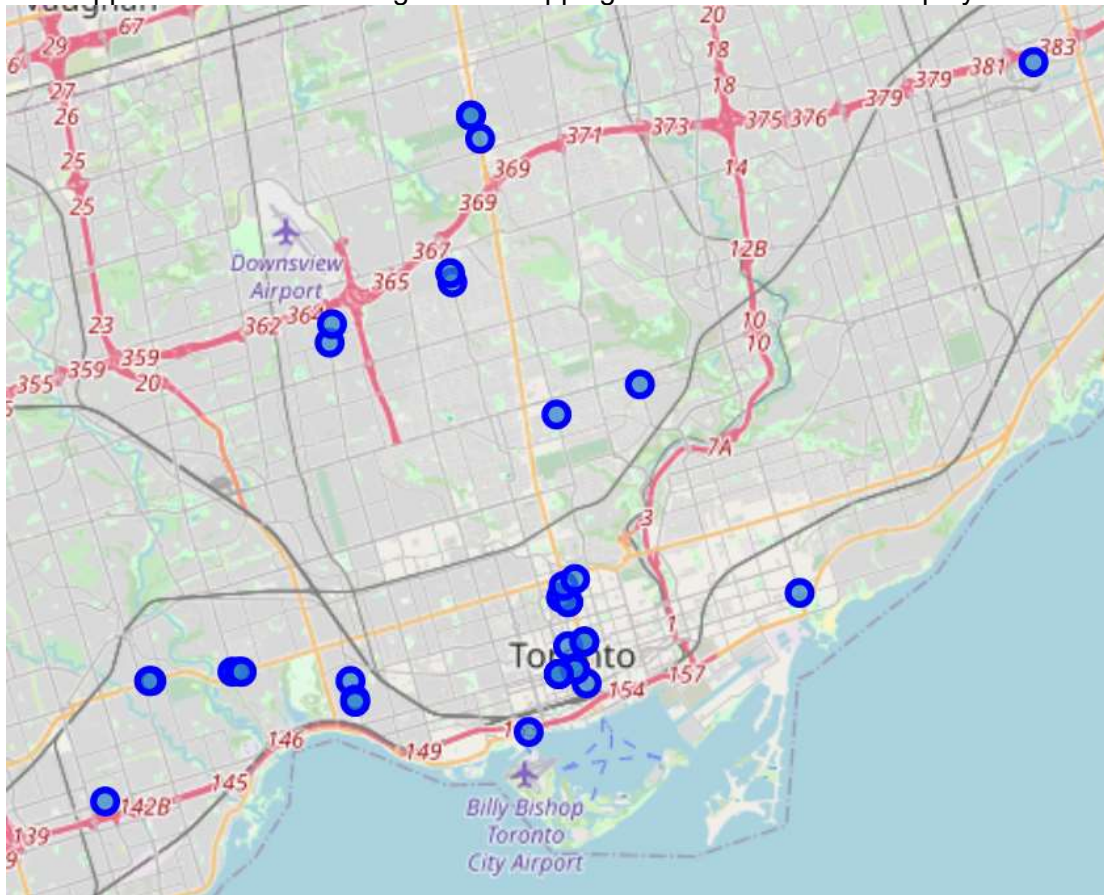
Our main goal is to get an optimum location for the new restaurant that was not too close to existing competition restaurants.

For our exploratory data analysis, we found all the current Sushi Restaurants in Toronto using the Foursquare locational information. There turned out to be 39 Sushi Restaurants.

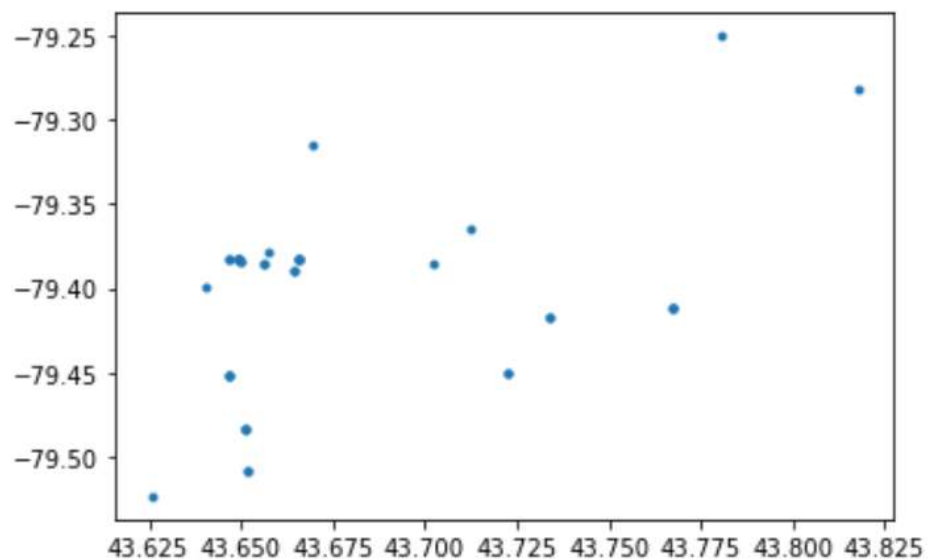
| Neighborhood | Venue | Venue Latitude | Venue Longitude | Venue Category |
|--|-----------------------------|----------------|-----------------|------------------|
| Lawrence Manor, Lawrence Heights | Yuki Japanese Restaurant | 43.720610 | -79.456119 | Sushi Restaurant |
| Lawrence Manor, Lawrence Heights | Tora Aburi Sushi | 43.724257 | -79.455383 | Sushi Restaurant |
| Ontario Provincial Government | Tokyo Sushi | 43.665885 | -79.386977 | Sushi Restaurant |
| Ontario Provincial Government | Sushi Garden | 43.664858 | -79.384941 | Sushi Restaurant |
| Garden District, Ryerson | Spring Sushi | 43.656253 | -79.380660 | Sushi Restaurant |
| Leaside | Kintako Japanese Restaurant | 43.711597 | -79.363962 | Sushi Restaurant |
| Central Bay Street | Japango | 43.655268 | -79.385165 | Sushi Restaurant |
| Central Bay Street | Spring Sushi | 43.656253 | -79.380660 | Sushi Restaurant |
| Richmond, Adelaide, King | Tachi | 43.650596 | -79.383396 | Sushi Restaurant |
| Richmond, Adelaide, King | JaBistro | 43.649687 | -79.388090 | Sushi Restaurant |
| Toronto Dominion Centre, Design Exchange | Tachi | 43.650596 | -79.383396 | Sushi Restaurant |
| Toronto Dominion Centre, Design Exchange | Sushi-Q | 43.647738 | -79.379699 | Sushi Restaurant |
| India Bazaar, The Beaches West | O Sushi | 43.666684 | -79.316614 | Sushi Restaurant |
| Commerce Court, Victoria Hotel | Tachi | 43.650596 | -79.383396 | Sushi Restaurant |
| Commerce Court, Victoria Hotel | JaBistro | 43.649687 | -79.388090 | Sushi Restaurant |
| Bedford Park, Lawrence Manor East | Sakura Garden | 43.733398 | -79.419491 | Sushi Restaurant |
| Bedford Park, Lawrence Manor East | Issmi Sushi | 43.735269 | -79.419983 | Sushi Restaurant |
| Willowdale South | Sushi Moto Sake & Wine Bar | 43.764095 | -79.411344 | Sushi Restaurant |
| Willowdale South | Aburi Room | 43.769197 | -79.414039 | Sushi Restaurant |
| Willowdale South | PROJECT:FISH | 43.769100 | -79.414305 | Sushi Restaurant |

| Neighborhood | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|--------------------------|----------------|-----------------|------------------|
| Parkdale, Roncesvalles | Sushi On Roncy | 43.647862 | -79.449493 | Sushi Restaurant |
| Parkdale, Roncesvalles | Kami Sushi | 43.643946 | -79.448117 | Sushi Restaurant |
| Parkdale, Roncesvalles | Vincent Sushi | 43.643529 | -79.448125 | Sushi Restaurant |
| Davisville | Sakae Sushi | 43.704944 | -79.388704 | Sushi Restaurant |
| Runnymede, Swansea | Asa Sushi | 43.649902 | -79.484611 | Sushi Restaurant |
| Runnymede, Swansea | Yumi Sushi | 43.649891 | -79.482404 | Sushi Restaurant |
| Runnymede, Swansea | Yama | 43.649857 | -79.482052 | Sushi Restaurant |
| Milliken, Agincourt North, Steeles East, L'Amo... | Mr. Sushi | 43.821600 | -79.280989 | Sushi Restaurant |
| CN Tower, King and Spadina, Railway Lands, Har... | Guirei Sushi | 43.636867 | -79.396927 | Sushi Restaurant |
| First Canadian Place, Underground city | Tachi | 43.650596 | -79.383396 | Sushi Restaurant |
| First Canadian Place, Underground city | JaBistro | 43.649687 | -79.388090 | Sushi Restaurant |
| The Kingsway, Montgomery Road, Old Mill North | Momiji Sushi Bar & Grill | 43.647843 | -79.508534 | Sushi Restaurant |
| The Kingsway, Montgomery Road, Old Mill North | Sushi 2 Go | 43.647875 | -79.509427 | Sushi Restaurant |
| Church and Wellesley | Tokyo Sushi | 43.665885 | -79.386977 | Sushi Restaurant |
| Church and Wellesley | Sushi Garden | 43.664858 | -79.384941 | Sushi Restaurant |
| Church and Wellesley | Wow! Sushi | 43.668514 | -79.386686 | Sushi Restaurant |
| Church and Wellesley | Asahi Sushi | 43.669874 | -79.382943 | Sushi Restaurant |
| Enclave of M4L | Fukuoka Sushi | 43.780679 | -79.247320 | Sushi Restaurant |
| Mimico NW, The Queensway West, South of Bloor,... | K & B Sushi | 43.622269 | -79.522485 | Sushi Restaurant |

We then mapped the locations using folium mapping function for a visual display.



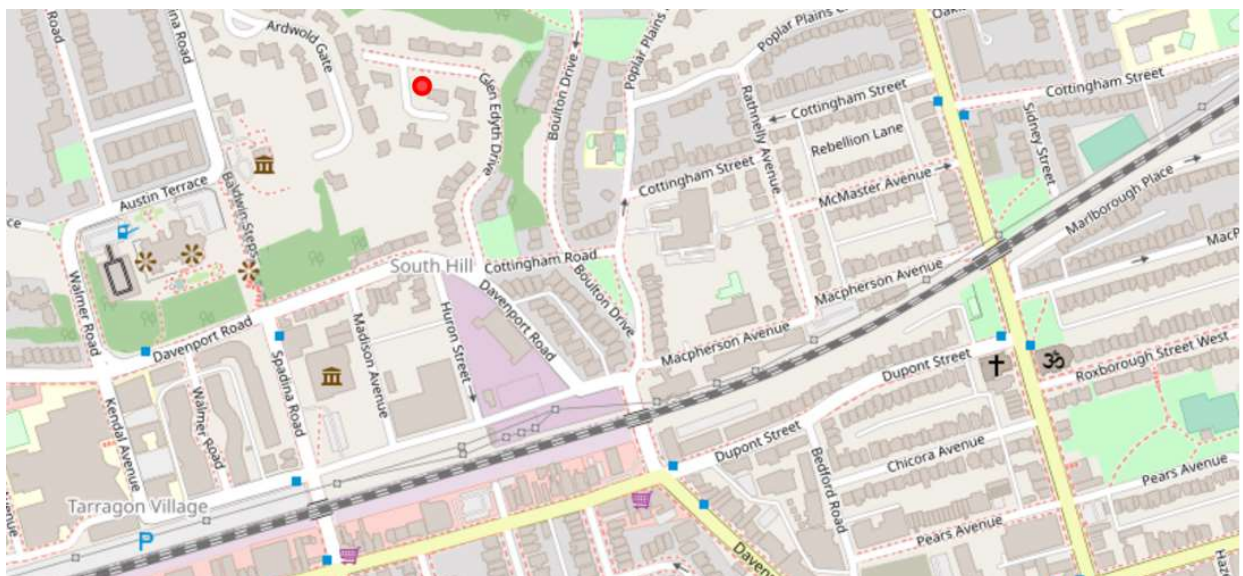
I then took these data points into an array plot



Using K-Means I found the center point 43.67973333, -79.4059 and remapped the existing Sushhi restaurant with this point in red. This is our first recommended point for a possible new location.



Zoomed in:



I then explored what other Venues are around our Suggested Site 1.

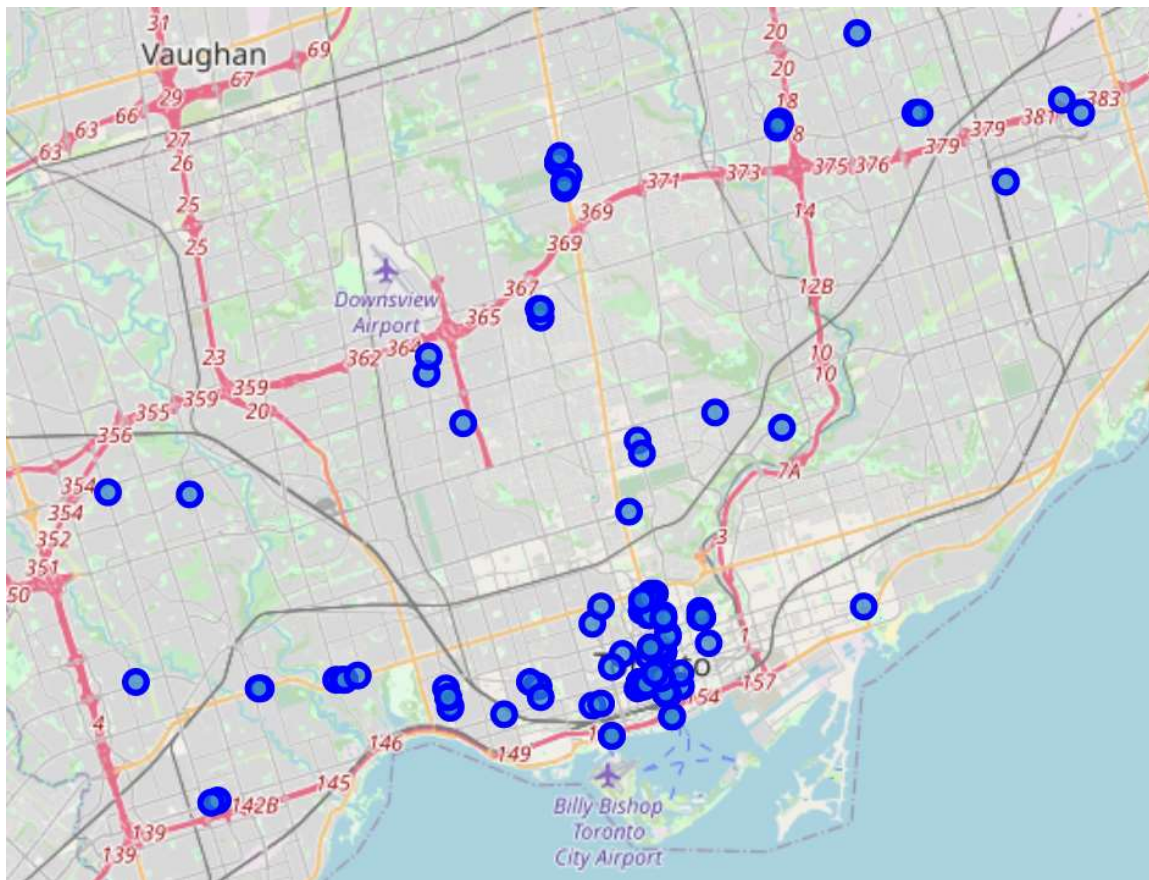
| Neighborhood | Venue | Venue Latitude | Venue Longitude | Venue Category |
|--------------|--|----------------|-----------------|----------------------------|
| Parkwoods | Casa Loma | 43.677934 | -79.409521 | Castle |
| Parkwoods | Baldwin Steps | 43.677707 | -79.408209 | Historic Site |
| Parkwoods | Casa Loma Stables | 43.679395 | -79.410905 | Museum |
| Parkwoods | Flor de Sal | 43.677757 | -79.407176 | Modern European Restaurant |
| Parkwoods | Big Crow | 43.675896 | -79.403680 | BBQ Joint |
| Parkwoods | Toronto Archives | 43.676447 | -79.407509 | History Museum |
| Parkwoods | Spadina Museum: Historic House & Gardens | 43.678883 | -79.408858 | History Museum |
| Parkwoods | Blueblood Steakhouse | 43.678061 | -79.409628 | Steakhouse |
| Parkwoods | Pour House | 43.675641 | -79.403821 | Pub |
| Parkwoods | Tim Hortons | 43.675800 | -79.403532 | Coffee Shop |
| Parkwoods | LCBO | 43.675344 | -79.405327 | Liquor Store |
| Parkwoods | Roycroft Park | 43.680332 | -79.403944 | Park |
| Parkwoods | Casa Loma Parkette | 43.677834 | -79.408227 | Park |
| Parkwoods | Boulton Drive Parkette | 43.677654 | -79.403526 | Park |
| Parkwoods | Queen's Own Rifles of Canada Museum and Archives | 43.678472 | -79.409308 | History Museum |
| Parkwoods | Casa Loma Liberty Caff   | 43.677919 | -79.409541 | Caf   |
| Parkwoods | Summerhill Nursery & Floral | 43.676961 | -79.402443 | Garden Center |

I then expanded to include analysis to find possible alternatives that may be considered instead of Sushi.

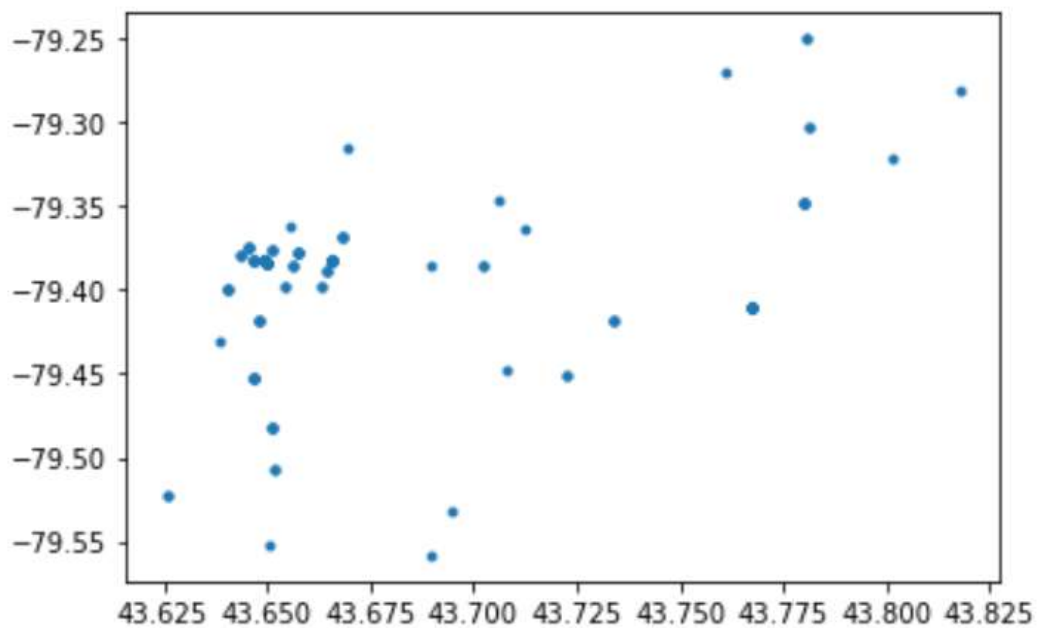
From the available location data, the alternative Venue Categories and counts were deemed to be:

| | |
|----------------------|----|
| Japanese Restaurant | 46 |
| Thai Restaurant | 23 |
| Asian Restaurant | 17 |
| Chinese Restaurant | 10 |
| Korean Restaurant | 3 |
| Taiwanese Restaurant | 1 |

These restaurants plus the Sushi restaurant were mapped.

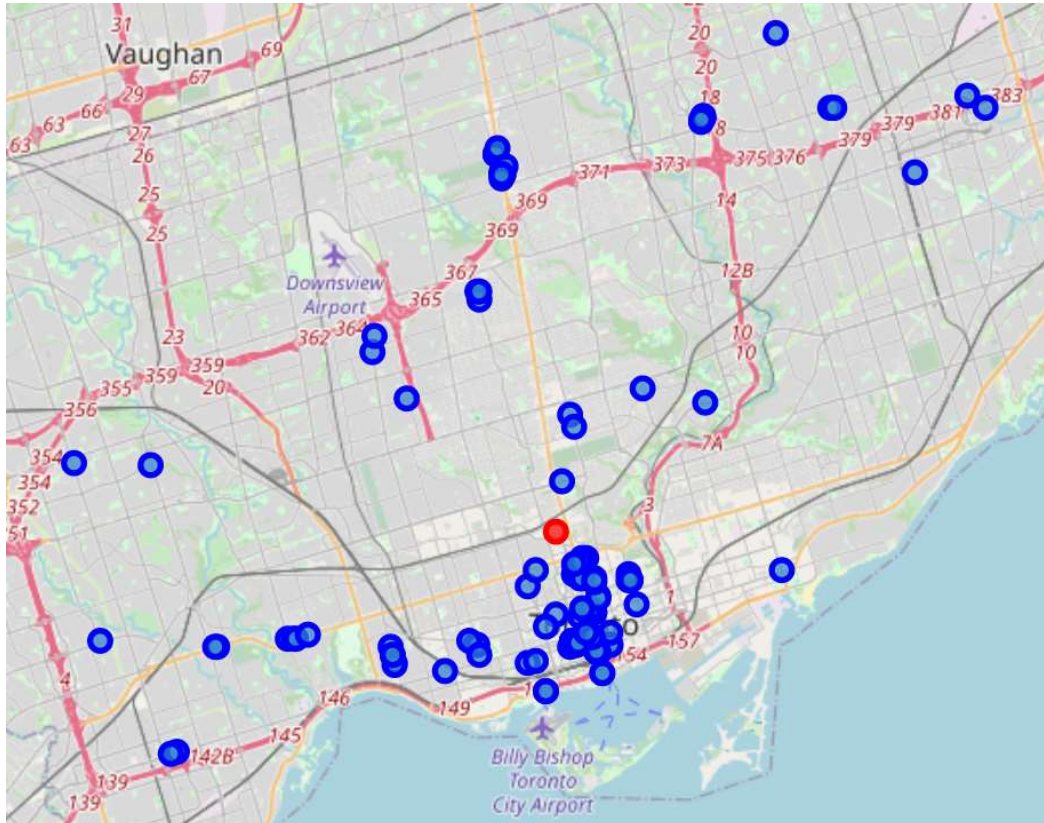


This listing was converted into a array and plotted

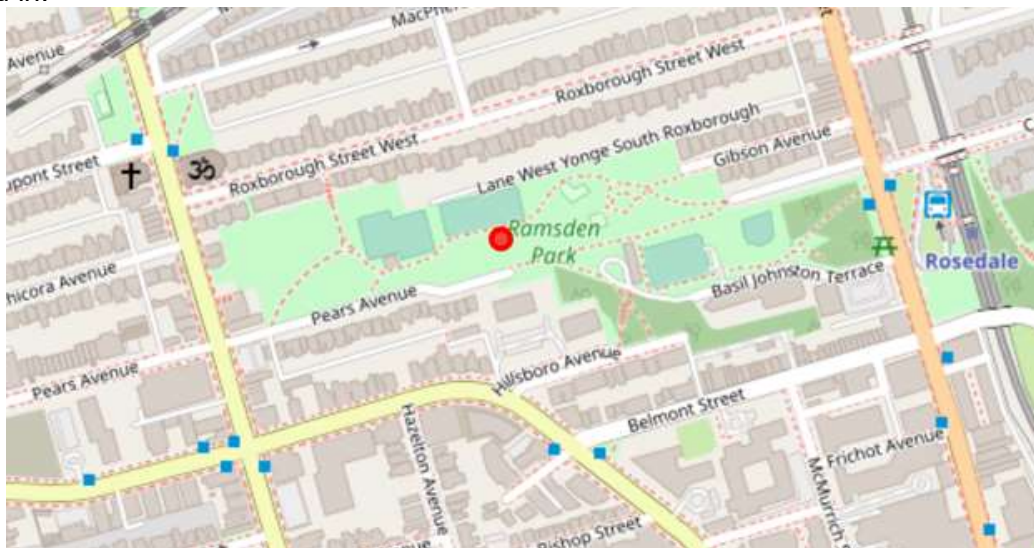


Using K-Means we find the center point of the cluster with these additional data points as 43.67641511, -79.3937259.

Remapping the restaurants with this point in red. This is our second recommended point for a possible new location.



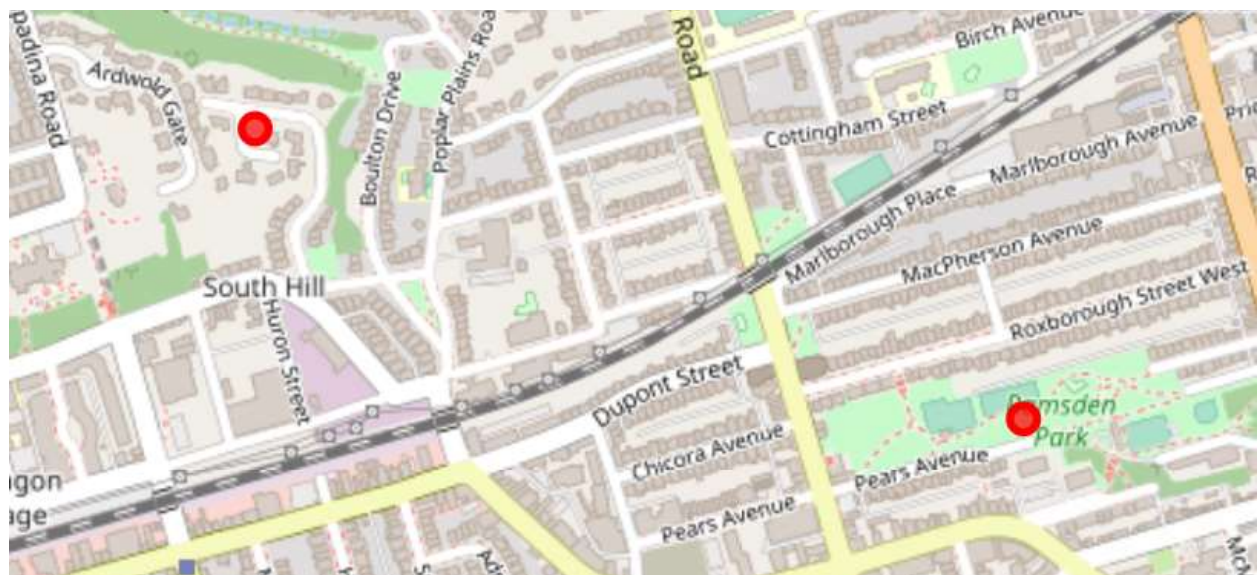
Zoomed in:



This location is also in the Parkwoods Neighborhood and exploring the nearby Venues they are the same as the first location.

| Neighborhood | Venue | Venue Latitude | Venue Longitude | Venue Category |
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Mapping Both Analysis Sites



Results

While the exact locations determined by K Means analysis were found to be in a residential neighborhood and a park the result of looking at current Sushi Restaurants and Restaurants choices considered to be similar alternatives both came to locate Parkwoods Neighborhood as the choice. Additionally, the venues within Parkwoods would appear to be noncompetitive categories, possibly even complementary non eatery establishments and Sushi would be a differentiating restaurant choice.

Discussion

An observation is there is more commercial type shopping complexes a short distance to the west or southeast that may have open spaces to seek for rent.

A large assumption of this analysis is based on distance spacing to other like based restaurants. That being a reasonable distance away from other restaurants would draw people from the immediate area that would have otherwise traveled outside the area to the next nearest restaurant.

Conclusion

From the mapping done Toronto has several existing Sushi restaurants but does not seem overly saturated for a large city.

The Parkwoods Neighborhood seems like an optimum area to explore further with a mix of venues that may be complemented by a Sushi restaurants option.

Opening a restaurant is a risky venture and this is one analysis method performed on limited data and other factors should likely be considered for a final decision.