

# Predicting Best Food Truck Business Expansion Location

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# Introduction

## A Business Problem to Solve

A successful food truck vendor in Toronto is seeking to expand with another truck, but would like to know which location within the city would be the best for expanding business.

This type of project would also be of interest to:

- Entrepreneurs looking to launch a new business and need to know an ideal location for their services
- City planners trying to identify areas in a city lacking certain amenities or to better understand centers of gravity for certain amenities when evaluating development applications

### PROBLEM STATEMENT:

***Identify the best Toronto neighborhood for a successful Food Truck vendor in the Downsview, Toronto neighborhood to expand business by staging a second truck in another city neighborhood.***

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# About the Data

## Data-Driven Decision Making

Toronto is a significant urban area with a population over 6 million people, slightly smaller in population than New York City (8 million people) with a much larger geographic footprint. In such a densely populated area, each borough can almost be considered as a small city within a larger city.

Toronto has 12 boroughs and 102 neighborhoods. Food trucks figure prominently as a top two most common venue within the Downsview neighborhood in the borough of North York. In order to identify similar neighborhoods in Toronto where food trucks might be equally as successful outside of North York, several data elements were obtained to support this research.

Data examined included:

- Postal codes, boroughs, and associated neighborhood names of Toronto from Wikipedia
- Toronto postal codes and their related latitude and longitude from a geospatial dataset csv file
- Toronto venues categories, locations, and associated details from Foursquare
- Map tile sets for displaying results from Folium

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# Methodology

## Identifying Similar Neighborhoods

Grouped all 102 Toronto neighborhoods by postal codes (joining dataframes), and then compared the Top 10 Venues per postal code to identify similarities between the “Food Truck Central” neighborhood of Downsview in the borough of North York and all other neighborhoods and boroughs.

Evaluated the Top 10 venues across all neighborhoods by a knn clustering algorithm to identify groups and themes.

**In Downsview, where “Food Truck” as a category from Four Square API data is the second most common category, the first most common category is “Baseball Field.”**

Research indicates that food truck location is critical to success, and locations such as sports venues are commonly profitable.

Knn cluster results identified two postal codes in Toronto where the **first most common category is “Baseball Field,”** yet the “Food Truck” category is not listed in the Top 10 Venues listing, identifying market opportunity for expansion.

## Observation

The cluster results highlighted that the Downsview neighborhood fell into the fifth cluster and within that cluster had a **nearly 100% similarity match in both venues AND degree of venue commonality** between Downsview in **North York** and Old Mill South, King’s Mill Park, Sunnylea, Humber Bay, Mimico Northeast, Queensway East, Royal York Southeast, and Kingway Park Southeast neighborhoods in the **Etobicoke** borough.

# Conclusion

## Data-Driven Recommendation

The Etobicoke borough's neighborhoods included within the M8Y postal code (*Old Mill South, King's Mill Park, Sunnylea, Humber Bay, Mimico Northeast, Queensway East, Royal York Southeast, and Kingway Park Southeast neighborhoods*) appear to have the closest commonality to the food truck-friendly Downsview neighborhood. Specifically, within that area, locations near baseball fields are likely to be the most profitable for food truck expansion operations.



While the North York cluster analysis locations identify potential:

- This location is closest to the current location and therefore less likely to be profitable for expansion, given the high number of Food Trucks nearby ("Food Truck Central").

### RECOMMENDATION:

**The top Etobicoke Borough in Toronto for Food Truck expansion are the neighborhoods near baseball fields in postal code M8Y**