



IBM Data Science Capstone Project

Where to live: Exploring the Coolest Neighbourhoods in Toronto

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1.0 Introduction

- Toronto is the second fastest growing urban centre in North America.
- Toronto is Canada's technology hub.
- New immigrants and job seekers are moving into the city yearly.
- Living in Toronto depends on your preferences and lifestyle.

2.0 Objective of the Study

- Find the safest and coolest neighbourhoods to live or relocate in Toronto.
- This study will take into account crime, apartment rentals, population density, and amenities surrounding the neighbourhoods.

3.0 Target Audience

- Prospective property buyers and tenants who are looking to buy a property at a location.
- Local and global business investors.
- Real estate investment prospects for local and non-resident investors.
- Toronto City Councils.
- New immigrants and job seekers from out of state.

4.0 Data Collection

4.1 Sources of Data on Toronto Neighbourhoods and Venues Categories

- List of Postal Code from Canada: M
- Toronto City Government Open Data
- Geospatial data
- Foursquare API

4.0 Data Collection(cont.)

4.2 Sources of Data for Crime

- Toronto Police Service Public Safety Data Portal
- GeoJSON

4.3 Sources of Data for Apartment Rental

- Kaggle

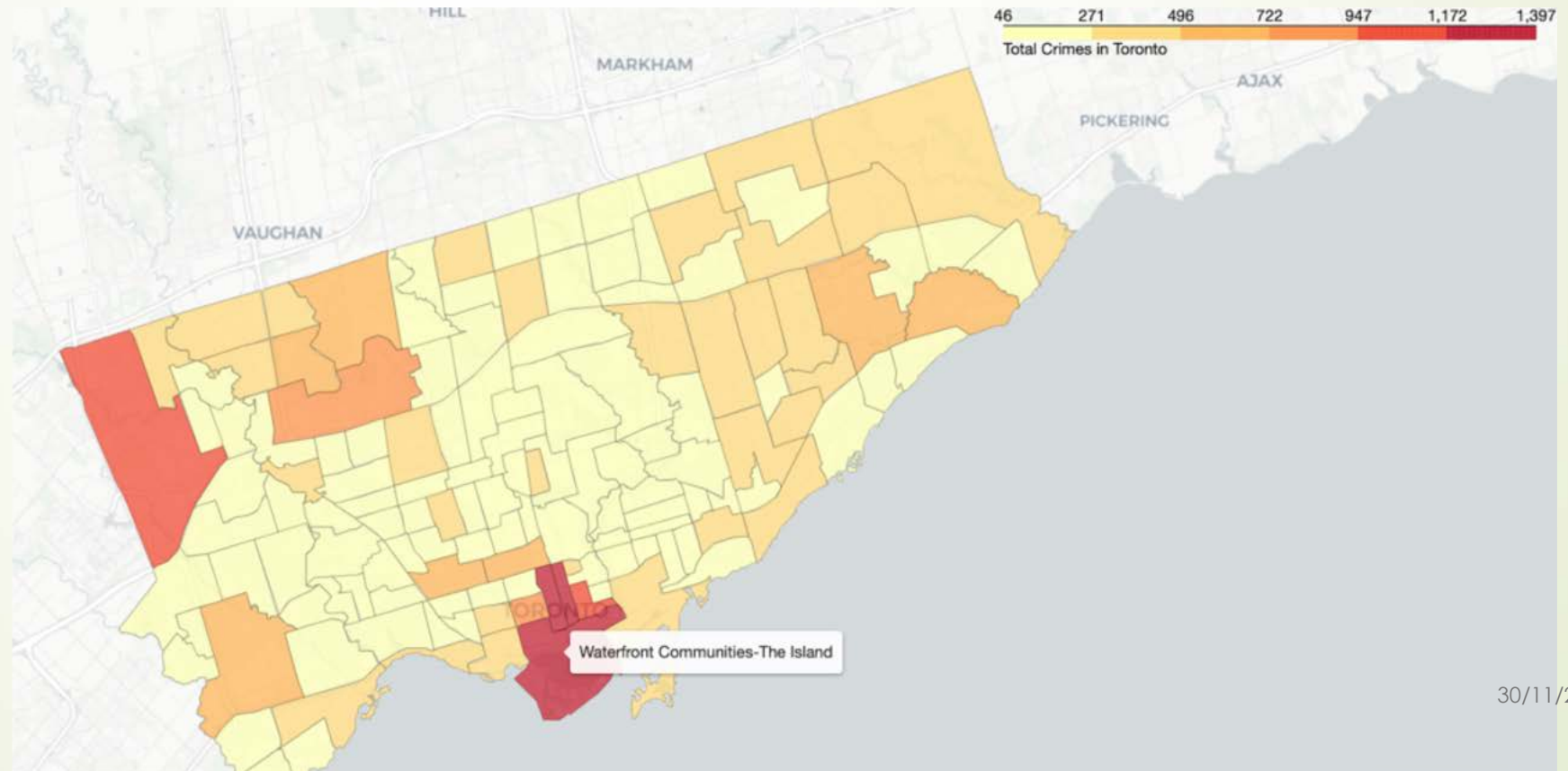
5.0 Methodology

- Strategy based on the mapping of the data from Section 4.
- There are four maps to be constructed as follows:
 - a) Choropleth Heat Map of Total Crime
 - b) Circle Marker Map of Apartment Rental
 - c) Circle Marker Map of Clustered Neighbourhood
 - d) Consolidate Map of the Toronto Neighbourhood

5.0 Results and Discussion

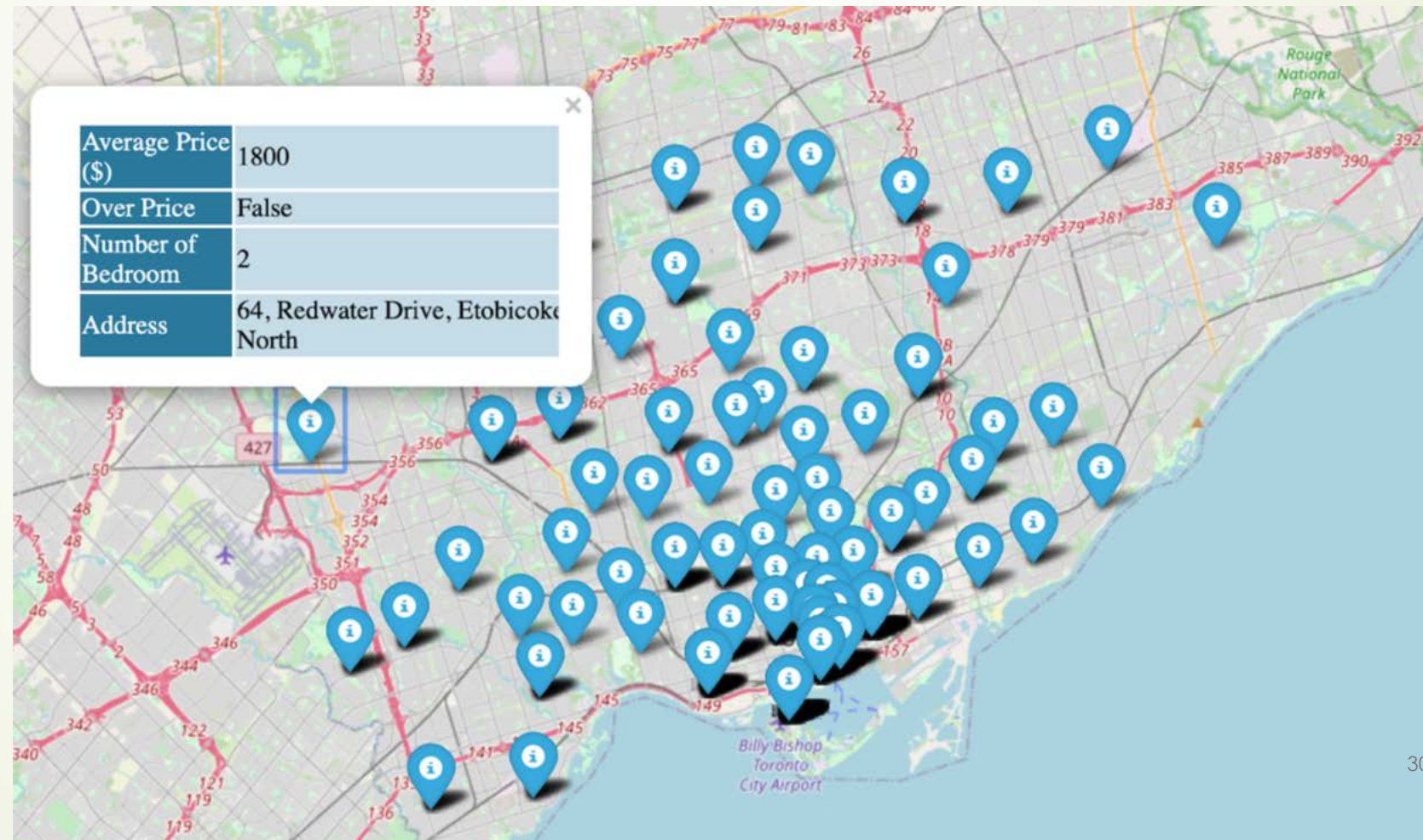
5.1 Results

5.1.1 Choropleth Heat Map of Total Crime



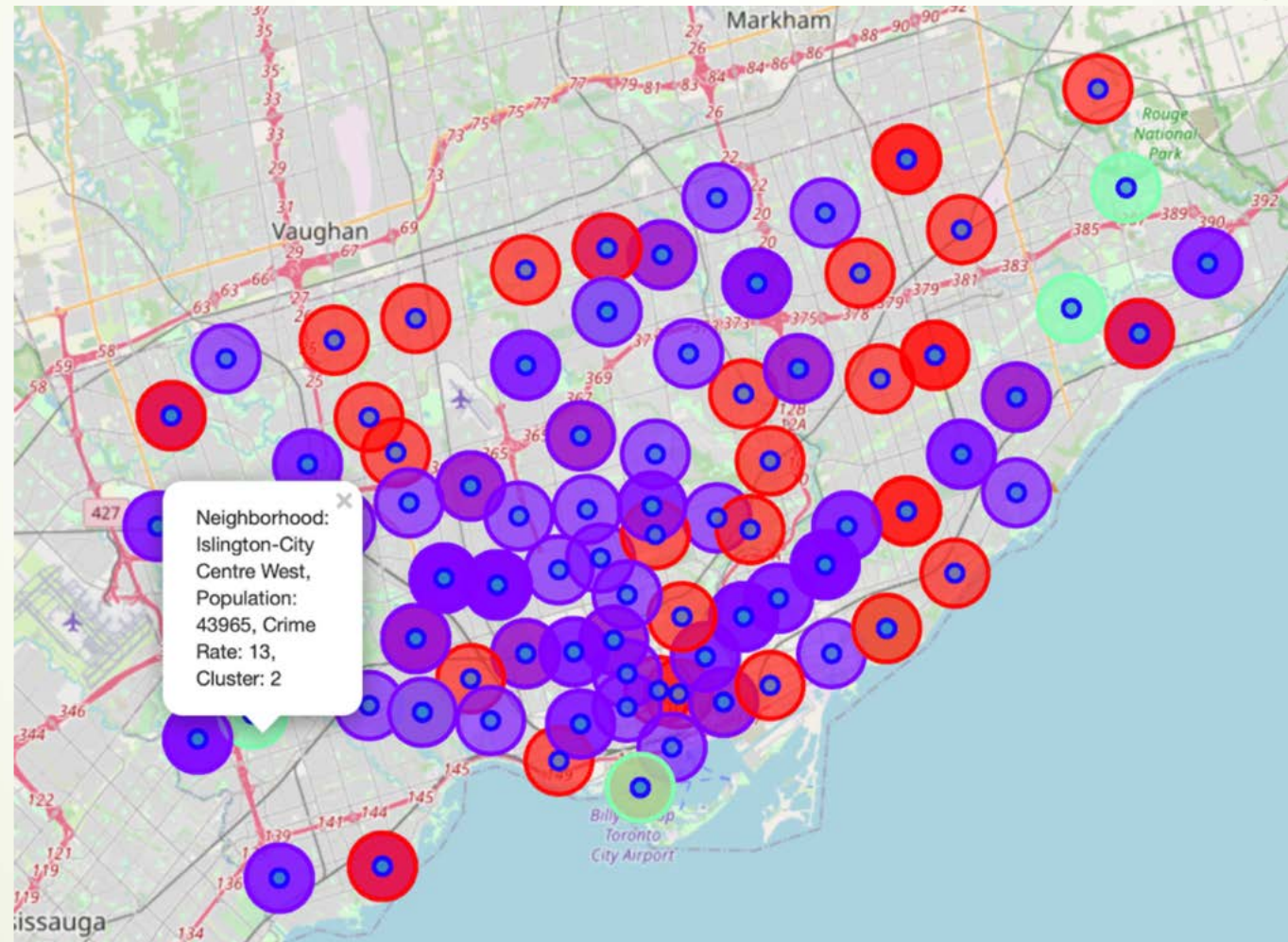
5.0 Results and Discussion(cont.)

5.1.2 Circle Marker Map of Apartment Rental



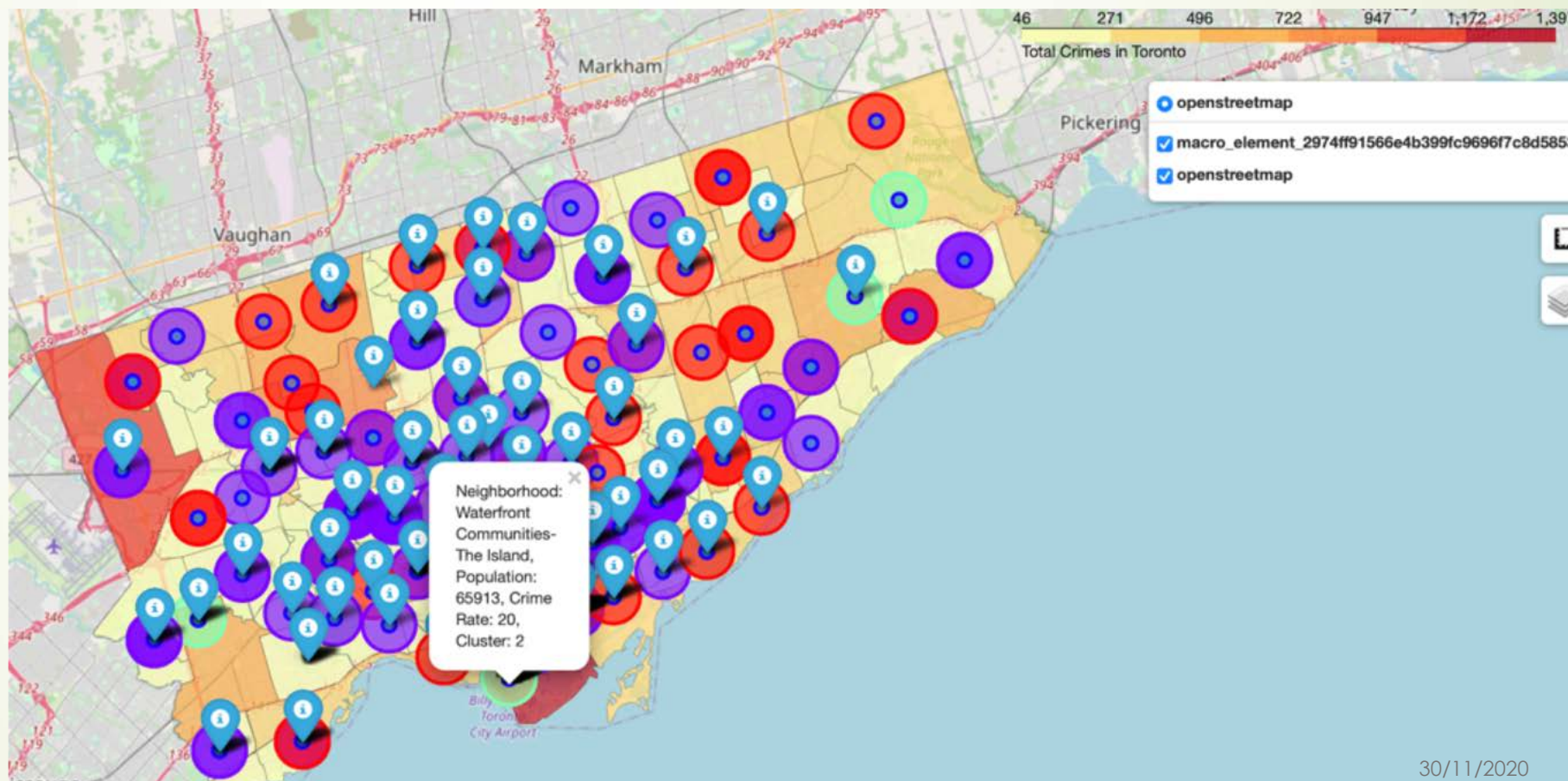
5.0 Results and Discussion(cont.)

5.1.3 Circle Marker Map of Clustered Neighbourhood



5.0 Results and Discussion(cont.)

5.1.4 Consolidate Map of the Toronto Neighbourhood



5.0 Results and Discussion(cont.)

5.2 Discussion

	Cluster 1	Cluster 2	Cluster 3
Neighborhoods	48	85	7
Average Population 2016	26180	13257	49726
Average Crime Rate Per 1000	15	12	10
1st Most Common Venue	Coffee Shop(6)	Park(11)	Print Shop(1)
2nd Most Common Venue	Park(4)	Coffee Shop(13)	Women's Store(2)
3rd Most Common Venue	Park(4)	Sandwich Place(9)	Pub(2)
4th Most Common Venue	Bakery(6)	Women's Store(7)	Eastern European Restaurant(1)
5th Most Common Venue	Women's Store(5)	Women's Store(9)	Dim Sum Restaurant(2)
6th Most Common Venue	Dumpling Restaurant(3)	Dumpling Restaurant(11)	Dumpling Restaurant(1)
7th Most Common Venue	Intersection(4)	Drugstore(11)	Donut Shop(1)
8th Most Common Venue	Donut Shop(5)	Donut Shop(12)	Donut Shop(1)
9th Most Common Venue	Dog Run(4)	Doner Restaurant(11)	Dog Run(1)
10th Most Common Venue	Diner(5)	Dog Run(13)	Dog Run(1)

The number in the parentheses shows the frequencies of the items.

Table 1: Summary of Clusters

5.0 Results and Discussion(cont.)

5.2 Discussion(cont.)

- Majority of neighbourhoods in Cluster 2, followed by Cluster 1.
- Cluster 3 has only 7 neighbourhoods and widely spread out .
- Clusters 1 & 2 clustered close together.
- As a result, Clusters 1 and 2 tend to have same common categories as Parks, Coffee Shops, Women Stores, Dumpling Restaurants, Dog Run, and Sandwich or Bakery shops.

5.0 Results and Discussion(cont.)

5.2 Discussion(cont.)

- Cluster 3 is less frequented by Women Stores, Dim Sum Restaurants, Pubs, and Dog Run.
- In other words, less social activities in Cluster 3 neighbourhoods.
- Evidently, there are distinct variations in lifestyle and neighbourhood characteristics between Cluster 3 and other clusters.
- Cluster 3 also has the highest population density.

5.0 Results and Discussion(cont.)

5.2 Discussion(cont.)

Neighborhood	Total Crime	Population 2016	Cluster	1 Bedroom		2 Bedroom	
Guildwood	46	9917	2	1,285	a	1,434	a
Woodbine-Lumsden	54	7865	2	**		**	
Lambton Baby Point	57	43993	3	1,147	b	1,616	c
Markland Wood	67	10554	2	**		**	
Old East York	71	9233	2	1,099	b	1,330	b
Yonge-St.Clair	79	12528	2	1,504	b	2,058	c
Humber Heights-Westmount	81	10948	2	**		1,569	b
Maple Leaf	81	10111	2	1,252	c	1,301	c
Etobicoke West Mall	83	11848	2	1,415	b	1,664	a
Alderwood	85	12054	2	1,193	b	1,357	c
Lawrence Park North	85	14607	2	1,302	b	1,616	b
Bayview Woods-Steeles	90	13154	2	**		**	
Kingsway South	95	9271	2	1,525	d	1,901	d
Pleasant View	95	15818	2	**		**	
Casa Loma	96	10968	2	1,592	a	2,218	c
Centennial Scarborough	99	13362	2	**		**	
Forest Hill South	99	10732	2	1,508	c	1,888	b

The following letter codes are used to indicate the reliability of the estimates: a - Excellent, b- Very good, c - Good, d - Fair (Use with Caution).

** Data suppressed to protect confidentiality or data not statistically reliable.

Table 2: Neighbourhoods with Lowest Crime Rate

5.0 Results and Discussion(cont.)

5.2 Discussion(cont.)

Neighbourhood	Walkability	Bikeability	Public Transit	Affordability	Greenspace	Recreation
Guildwood	Good	Excellent	Okay	\$\$\$\$	Excellent	Good
Woodbine-Lumsden	Excellent	Good	Excellent	\$\$\$	Good	Excellent
Lambton Baby Point	Excellent	Excellent	Good	\$\$\$\$	Excellent	Excellent
Markland Wood	Good	Good	Good	\$\$\$\$	Excellent	Excellent
Old East York	Excellent	Good	Excellent	\$\$\$	Good	Excellent
Yonge-St.Clair	Excellent	Excellent	Excellent	\$\$\$\$	Good	Excellent

Statistics have been obtained from the Neighbourhood Guide.

Table 3: Top Safest Neighbourhoods in Toronto

- Lambton Baby Point and Yonge-St. Clair are the best neighbourhoods to live in Toronto.
- I find that the neighbourhoods listed in Table 3 are the safest and coolest places to live in or move to.

6.0 Conclusion

- Project objective was to identify which neighbourhoods in Toronto are the safest and coolest places to live in.
- Guildwood, Woodbine-Lumsden, Lambton Baby Point, Markland Wood, Old East York, and Yonge-St. Clair are the best neighbourhoods to live in with the lowest crime rates and well-rated amenities.
- Lambton Baby Point and Yonge-St. Clair are the top two best neighbourhoods to live in Toronto subject to affordability.

6.0 Conclusion(cont.)

- Stakeholders will make their own decision based on preferences and lifestyles, and the unique characteristics of locations.
- This project will aid stakeholders narrowing their quest for the best residential neighbourhoods.