



# *Calgary's Battle of Neighborhoods*

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# Introduction

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- ❖ **Calgary** is one of the largest city in the western Canadian province of Alberta. It is 299 km (186 mi) south of the Alberat's capital- Edmonton
- ❖ The city had a population of 1,285,711 in 2019. It is considered as one of the most-populous city in western Canada

# Business Problem

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- ❖ Finding out common interest of the people of the city by analyzing the most common places visited?
- ❖ Understanding the top businesses in the current communities and setting up the new business in the new extended community?

# Targeted Audience

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- ❖ When new communities are created then both the government officials and the businesses will be looking for the welfare and the convenience for the people dwelling in these areas.
- ❖ This analysis will help in urban planning for the government and business expansion plans for companies

# Data

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Data that will be used to solve the above business problems are collected from various publicly- available sources.

1. Calgary Communities ([https://en.wikipedia.org/wiki/List\\_of\\_neighbourhoods\\_in\\_Calgary](https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Calgary) )
2. Each Community coordinates (<https://data.calgary.ca/resource/j9ps-fyst.json> )
3. Top venues in each Community (Four Square API)

# Methodology

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Data Acquisition

Data Wrangling

Data Analysis and Normalization

K-Mean Clustering

Results

# Data Acquisition

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The dataset is taken from large different sources and the details are already discussed.

|   | Neighbourhood                | Type        |
|---|------------------------------|-------------|
| 0 | Abbeydale                    | Residential |
| 1 | Acadia                       | Residential |
| 2 | Albert Park/Radisson Heights | Residential |
| 3 | Altadore                     | Residential |
| 5 | Applewood Park               | Residential |

# Data Wrangling

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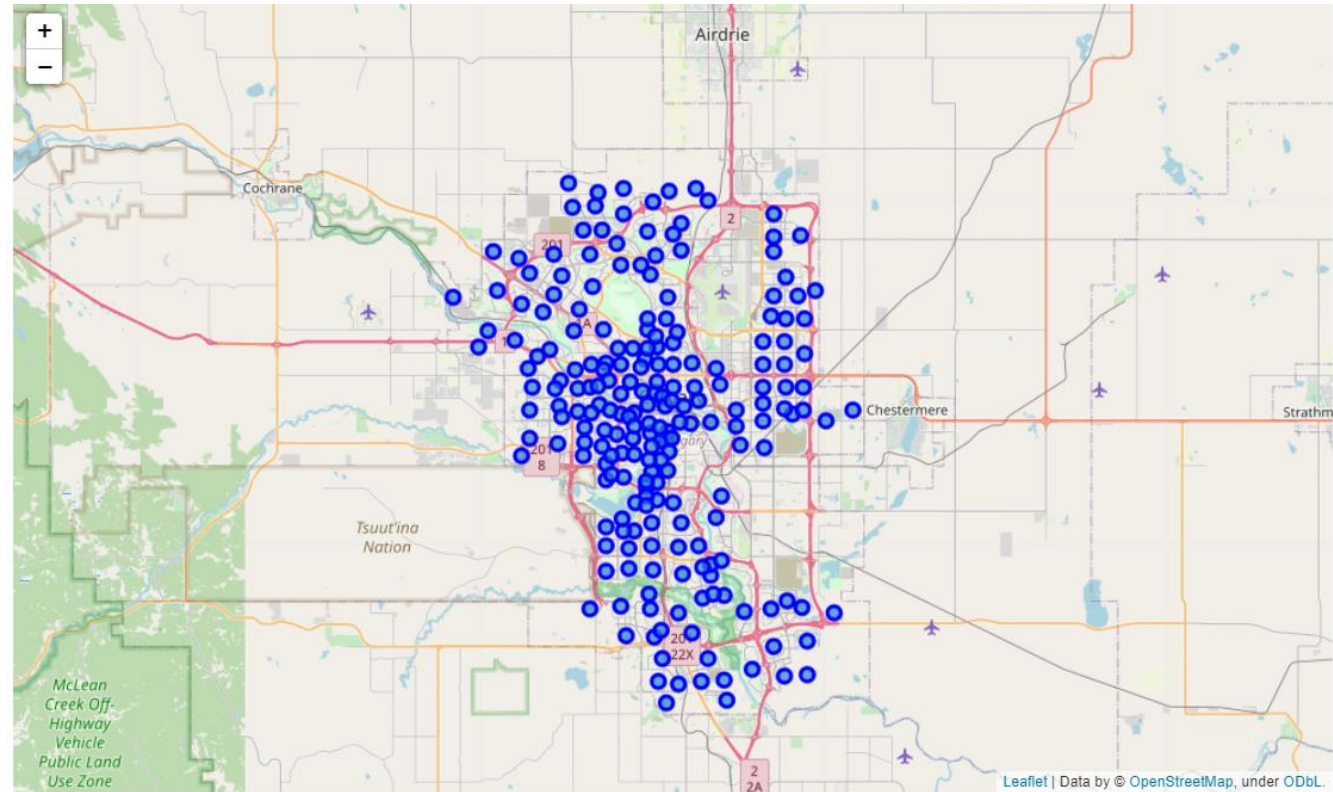
# Latitude and longitude for Neighbourhood

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|   | Neighbourhood | Longitude   | Latitude  |
|---|---------------|-------------|-----------|
| 0 | YORKVILLE     | -114.076648 | 50.870403 |
| 1 | WOLF WILLOW   | -114.008637 | 50.870724 |
| 2 | WEST SPRINGS  | -114.206168 | 51.059732 |
| 3 | WOODLANDS     | -114.106339 | 50.942876 |
| 4 | WINDSOR PARK  | -114.083550 | 51.005040 |

# Neighbourhood Details

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# Top 100 Venue details

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|   | Neighbourhood | Neighbourhood Latitude | Neighbourhood Longitude | Venue                                   | Venue Longitude | Venue Longitude | Venue Category |
|---|---------------|------------------------|-------------------------|---|-----------------|-----------------|----------------|
| 0 | YORKVILLE     | 50.870403              | -114.076648             | Mattamy Homes - Yorkville               | 50.869997       | -114.070936     | Home Service   |
| 1 | WEST SPRINGS  | 51.059732              | -114.206168             | My Favourite Ice Cream Shop             | 51.061317       | -114.209994     | Ice Cream Shop |
| 2 | WEST SPRINGS  | 51.059732              | -114.206168             | Fergus & Bix Restaurant and Beer Market | 51.059953       | -114.212111     | Restaurant     |
| 3 | WEST SPRINGS  | 51.059732              | -114.206168             | Starbucks                               | 51.060318       | -114.212768     | Coffee Shop    |
| 4 | WEST SPRINGS  | 51.059732              | -114.206168             | Boston Pizza                            | 51.062335       | -114.210770     | Pizza Place    |

# Data Analysis

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|   | Neighbourhood                | Venue Category |
|---|------------------------------|----------------|
| 0 | ABBEYDALE                    | 4              |
| 1 | ACADIA                       | 2              |
| 2 | ALBERT PARK/RADISSON HEIGHTS | 4              |
| 3 | ALTADORE                     | 4              |
| 4 | APPLEWOOD PARK               | 5              |

# One-Hot Encoding

|     | Neighbourhood                      | Accessories<br>Store | American<br>Restaurant | Arcade | Argentinian<br>Restaurant | Art<br>Gallery | Books<br>&<br>Crafts<br>Store | Asian<br>Restaurant | Astrologer | Athletics<br>& Sports | ... | Vegetarian<br>/ Vegan<br>Restaurant | Video<br>Game<br>Store | Vietnamese<br>Restaurant |
|-----|------------------------------------|----------------------|------------------------|--------|---------------------------|----------------|-------------------------------|---------------------|------------|-----------------------|-----|-------------------------------------|------------------------|--------------------------|
| 0   | ABBEYDALE                          | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 1   | ACADIA                             | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 2   | ALBERT<br>PARK/RADISSON<br>HEIGHTS | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 3   | ALTADORE                           | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 4   | APPLEWOOD PARK                     | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| ... | ...                                | ...                  | ...                    | ...    | ...                       | ...            | ...                           | ...                 | ...        | ...                   | ... | ...                                 | ...                    | ...                      |
| 181 | WINDSOR PARK                       | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 182 | WINSTON<br>HEIGHTS/MOUNTVIEW       | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 183 | WOODBINE                           | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 184 | WOODLANDS                          | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |
| 185 | YORKVILLE                          | 0.0                  | 0.0                    | 0.0    | 0.0                       | 0.0            | 0.0                           | 0.0                 | 0.0        | 0.0                   | ... | 0.0                                 | 0.0                    | 0.0                      |

186 rows × 227 columns

# Top 10 Venues of each community

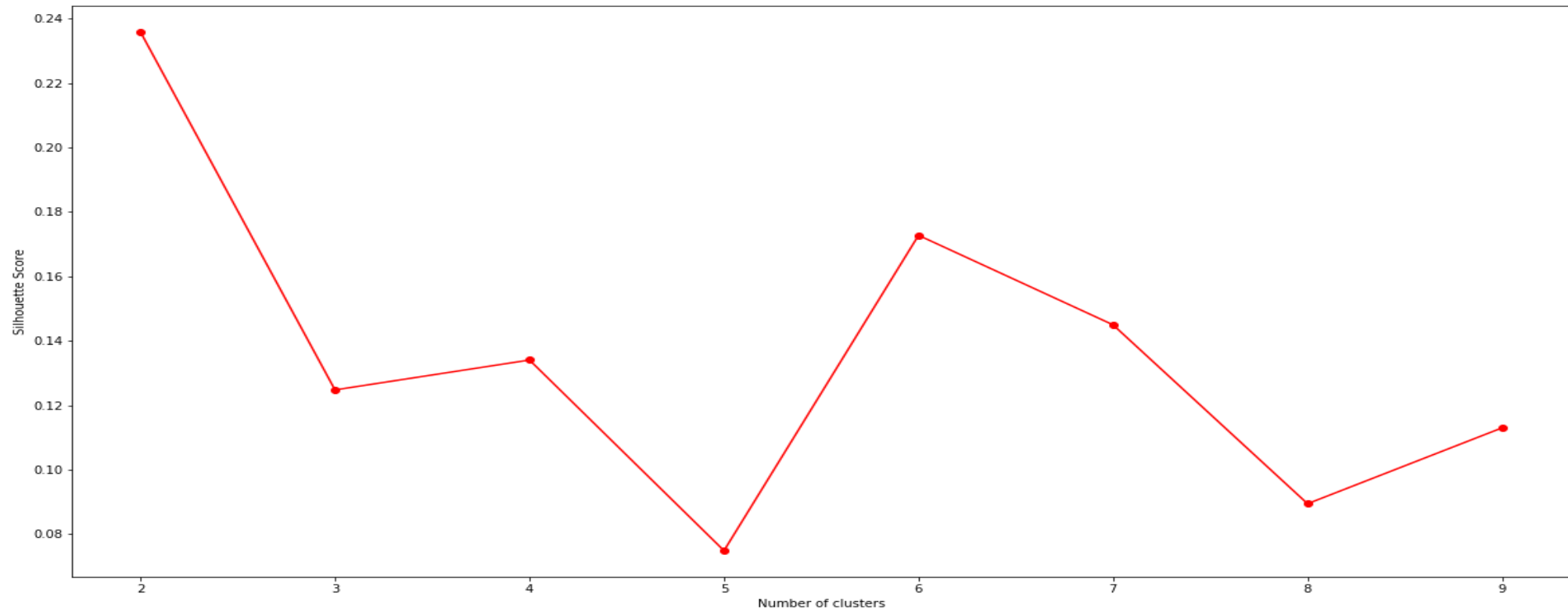
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-----ABBEYDALE-----

|   | Venue                   | freq |
|---|-------------------------|------|
| 0 | Wings Joint             | 0.25 |
| 1 | Health & Beauty Service | 0.25 |
| 2 | Sandwich Place          | 0.25 |
| 3 | Convenience Store       | 0.25 |
| 4 | Accessories Store       | 0.00 |
| 5 | Performing Arts Venue   | 0.00 |
| 6 | Nightclub               | 0.00 |
| 7 | Noodle House            | 0.00 |
| 8 | Other Great Outdoors    | 0.00 |
| 9 | Other Repair Shop       | 0.00 |

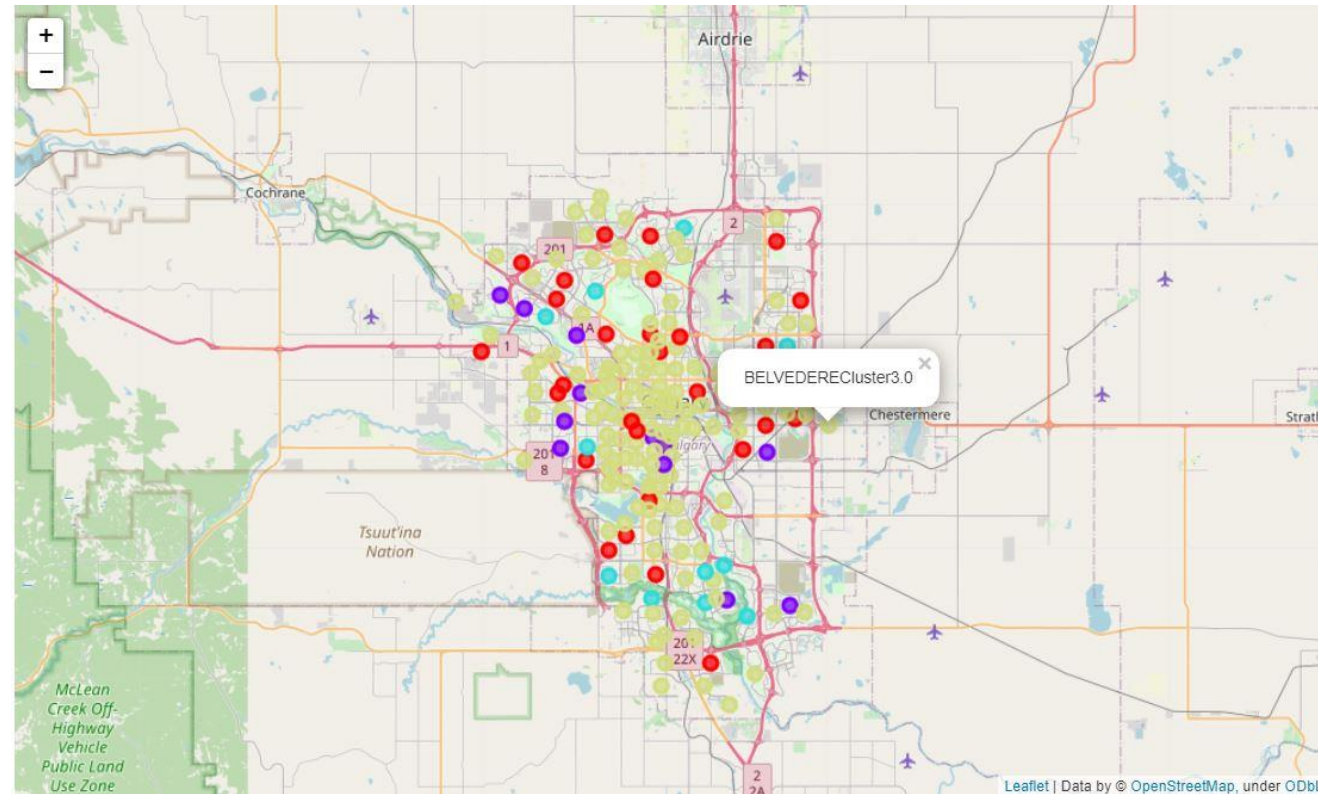
# Silhouette Score

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# K-Mean Clustering

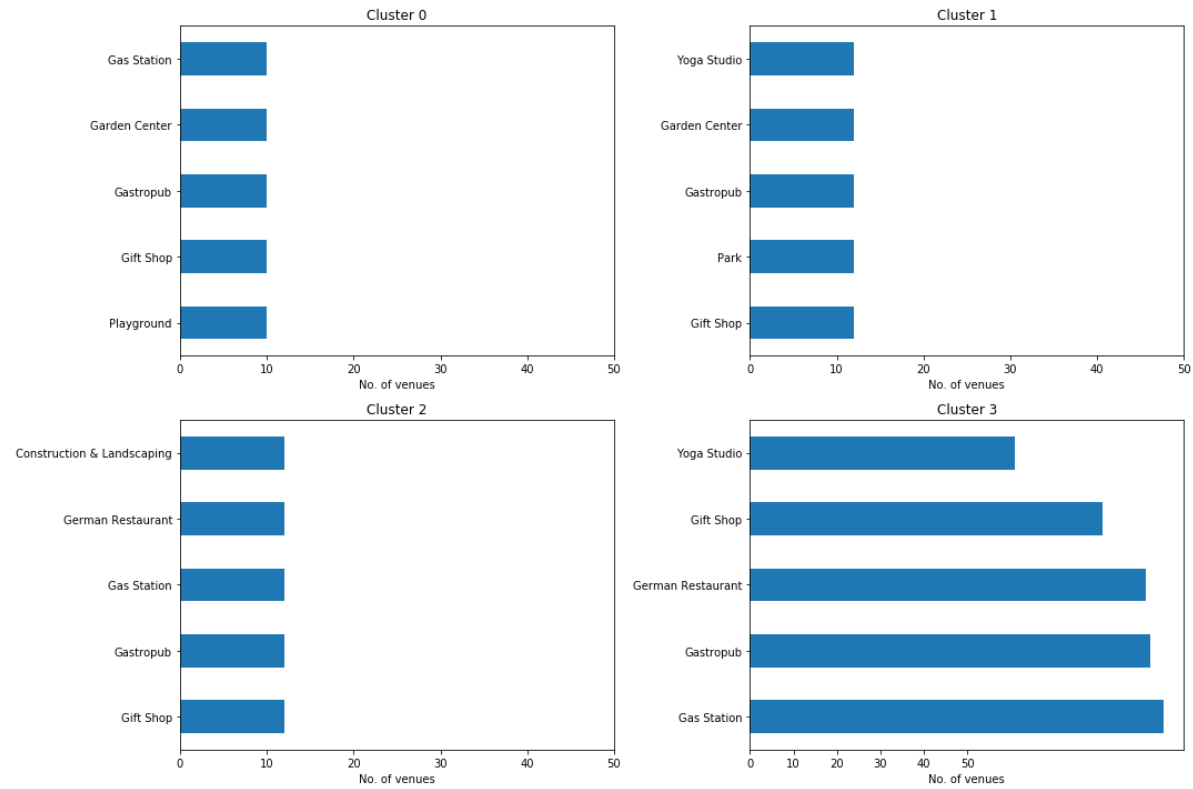
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# Results

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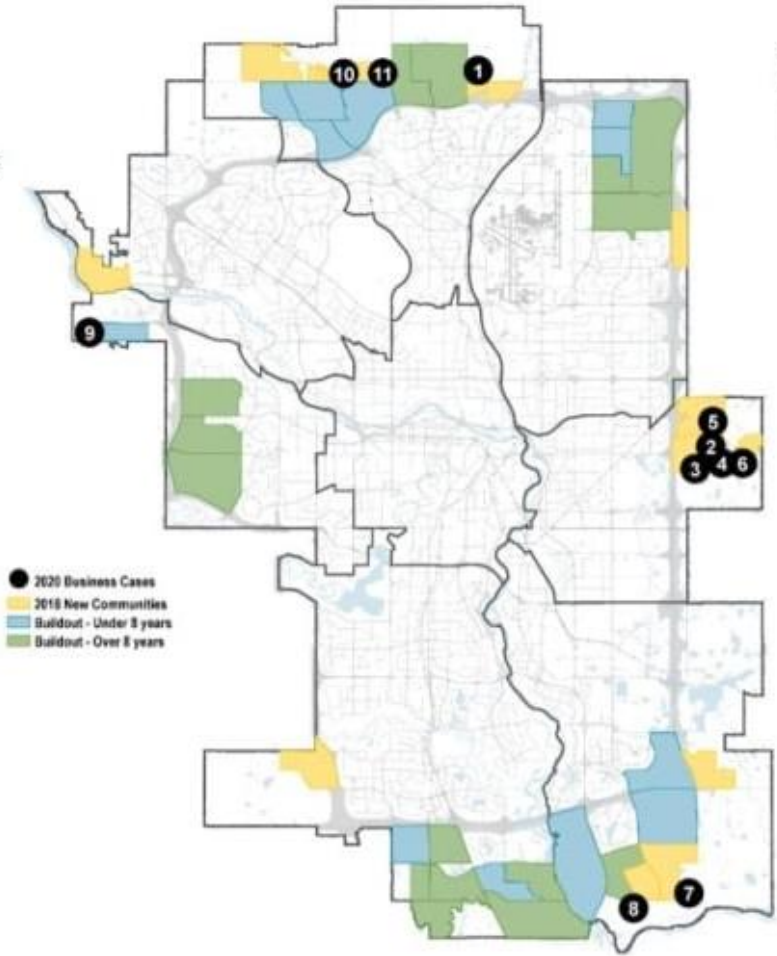


# Discussion

New Proposed Communities in Calgary.

Table 1 – Name of business cases

| Business Cases<br>(Area Structure Plan – Proponent) |
|---|
| 1. Keystone Hills – Genesis                         |
| 2. Belvedere – Grewal                               |
| 3. Belvedere – Huhn                                 |
| 4. Belvedere – Trico Parcel A                       |
| 5. Belvedere – Trico Parcel B                       |
| 6. Belvedere – Truman                               |
| 7. Rangeview – WestCreek                            |
| 8. Ricardo Ranch – Brookfield, Genesis, Soutzo      |
| 9. West View – Qualico                              |
| 10. Glacier Ridge – Qualico/Dream                   |
| 11. Glacier Ridge – Brookfield Cabana               |



Map 1 – General location of the 11 business cases.

# Conclusion

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After the analyzing the clusters, the best place to open the juice and health bar is determined, i.e., cluster 3 near the new communities adjacent to “Belvedere”.