

# Ranked: Vancouver's Canada-Line Stations

Based on 15-Minute City  
Principles

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2024 April 8th  
Geography 2210

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Which of Vancouver's  
Canada-Line stations  
best align with  
principles of the  
15-Minute City?

# Vancouver's Canada-Line Stations

- Marine Dr Station
- Langara - 49th Ave Station
- Oakridge 41st Ave Station
- King Edward Station
- Broadway - City Hall Station
- Olympic Village Station
- Yaletown - Roundhouse Station
- Vancouver City Centre Station
- Granville Station
- Waterfront Station





# Background Information

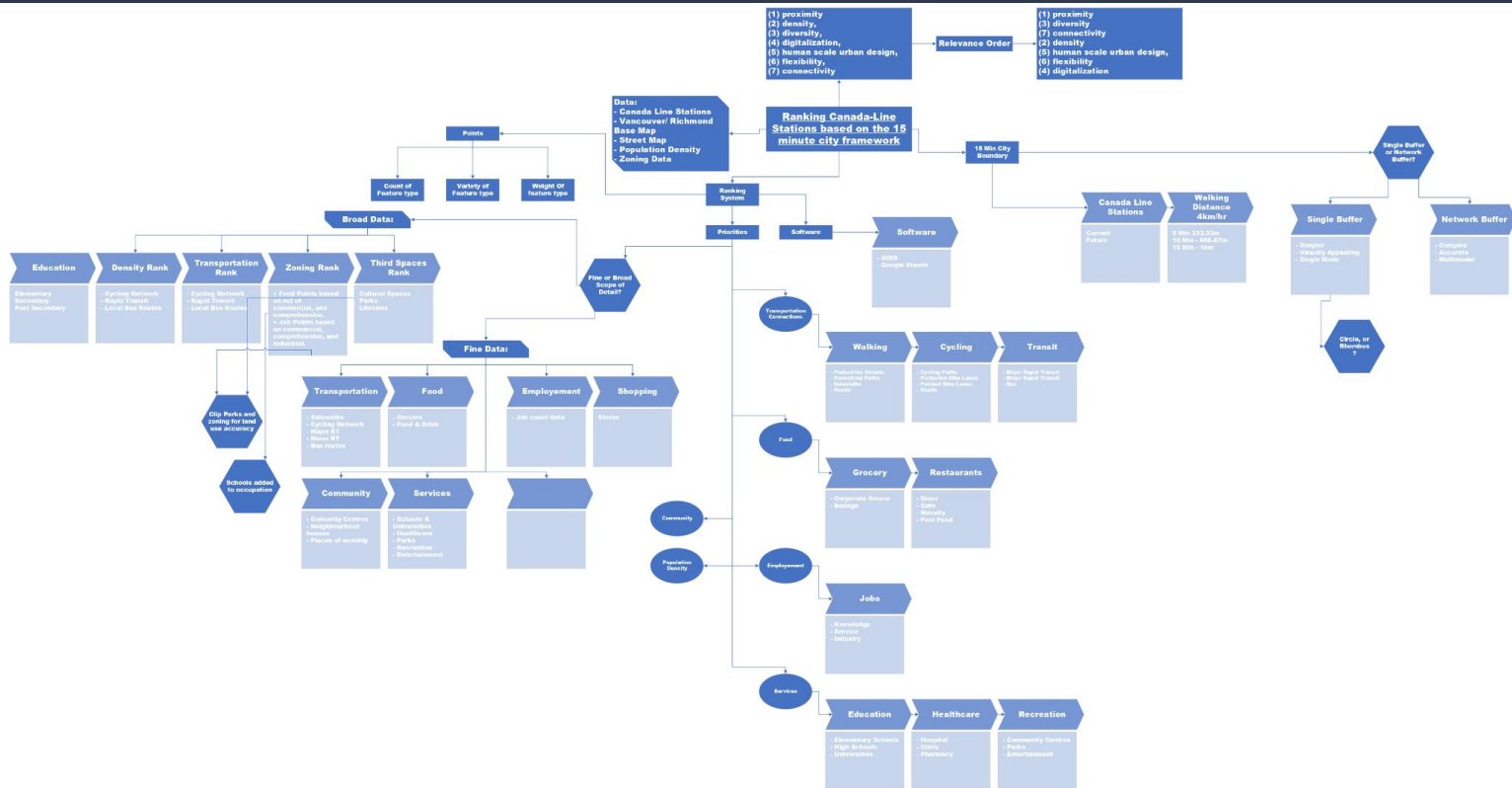
The 15-Minute City is a concept in urban geography whereby the design of cities should aim “to create self-sufficient neighborhoods with the essential functions of living, working, commerce, healthcare, education, and entertainment by decentralizing urban functions and services”(Khavarian-Garmsir et al., 2023). One of the key features of this concept is that the city, through human scaled design, should be built in a way that eliminates the need for personal automobiles, and long commutes (Khavarian-Garmsir et al., 2023). As established in *The 15-Minute City*, the underlying principles are; proximity, density, diversity, digitalization, human scale urban design, connectivity, and flexibility (Khavarian-Garmsir et al., 2023). The scope of my project covers four of these principles. Both proximity and diversity are covered by my analyses of stores, services, and third places. Density is covered by my analyses of population density. And Finally, connectivity is covered by my analyses of cycling and public transportation networks.

I chose to analyze the area around Vancouver’s Canada-Line stations, as I believe the Canada-Line provides a high level of connectivity within Vancouver. Considering one of the 15-Minute City principles is connectivity, Canada-Line stations are a great place to start. Additionally, I am very familiar with Vancouver, and the Canada-Line, and I wanted to pick a topic relevant to my interests. I would have liked to analyze all of the Canada-Line Stations, but because the City of Richmond’s open data portal is not as extensive as Vancouver’s, my analysis would be extremely limited.

## References

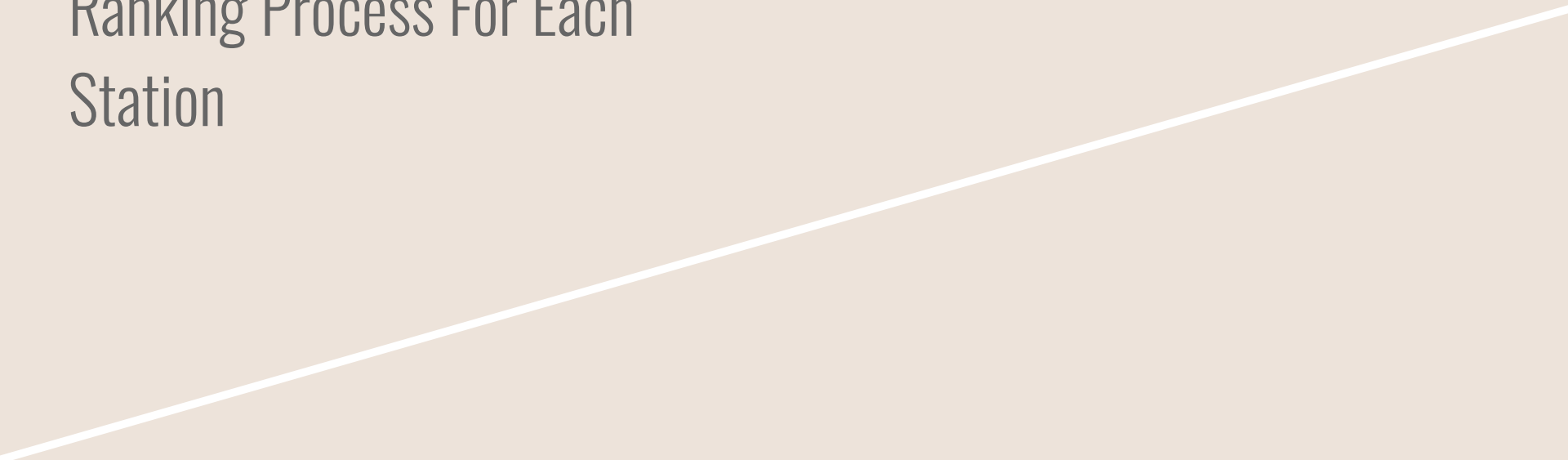
Khavarian-Garmsir, A. R., Sharifi, A., & Sadeghi, A. (2023). The 15-minute city: Urban planning and design efforts toward creating sustainable neighborhoods. *Cities*, 132, 104101. <https://doi.org/10.1016/j.cities.2022.104101>

# Brainstorm/Workflow



# Analysis

Ranking Process For Each  
Station



# Marine Drive Station

Location Within Vancouver



# Stores & Services Analysis: Marine Dr Stn

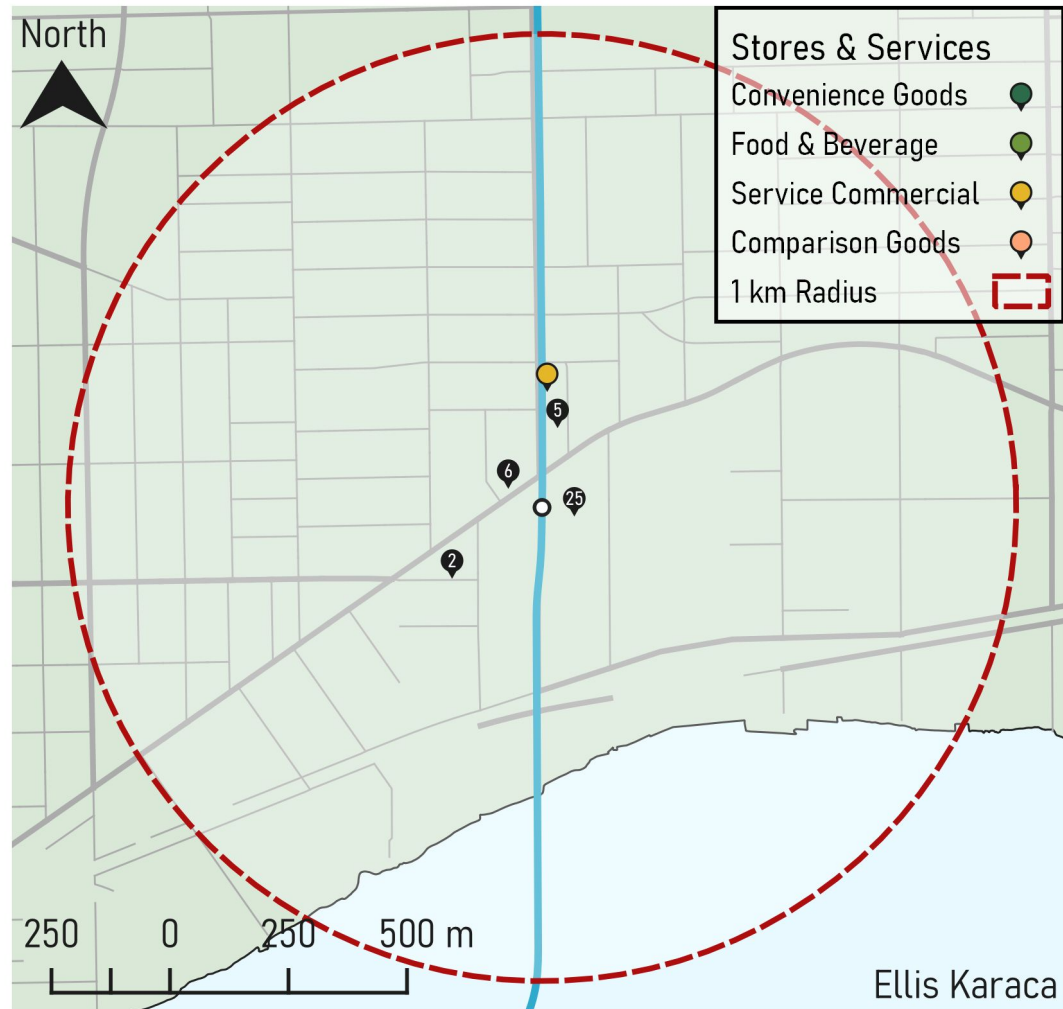
Convenience Goods (5.0\*): **4**

Food & Beverage (2.5\*): **15**

Service Commercial (2.5\*): **17**

Comparison Goods (1.0\*): **3**

Total Points: **103**



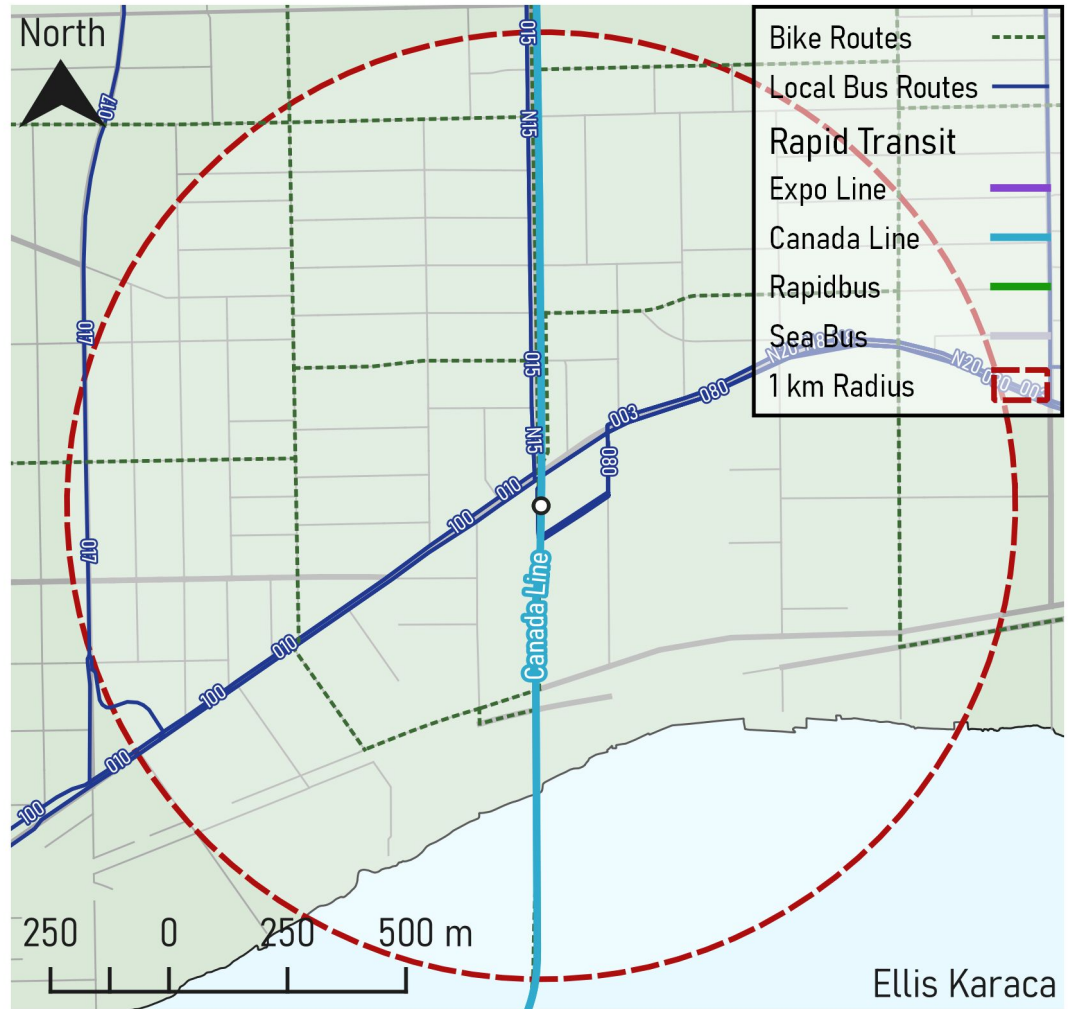
# Transportation Analysis: Marine Dr Stn

## Rapid Transit Lines (5.0\*): 1

## Local Bus Routes (2.5\*): 9

## Bike Routes (1.0\*): 10

Total Points: **37.5**

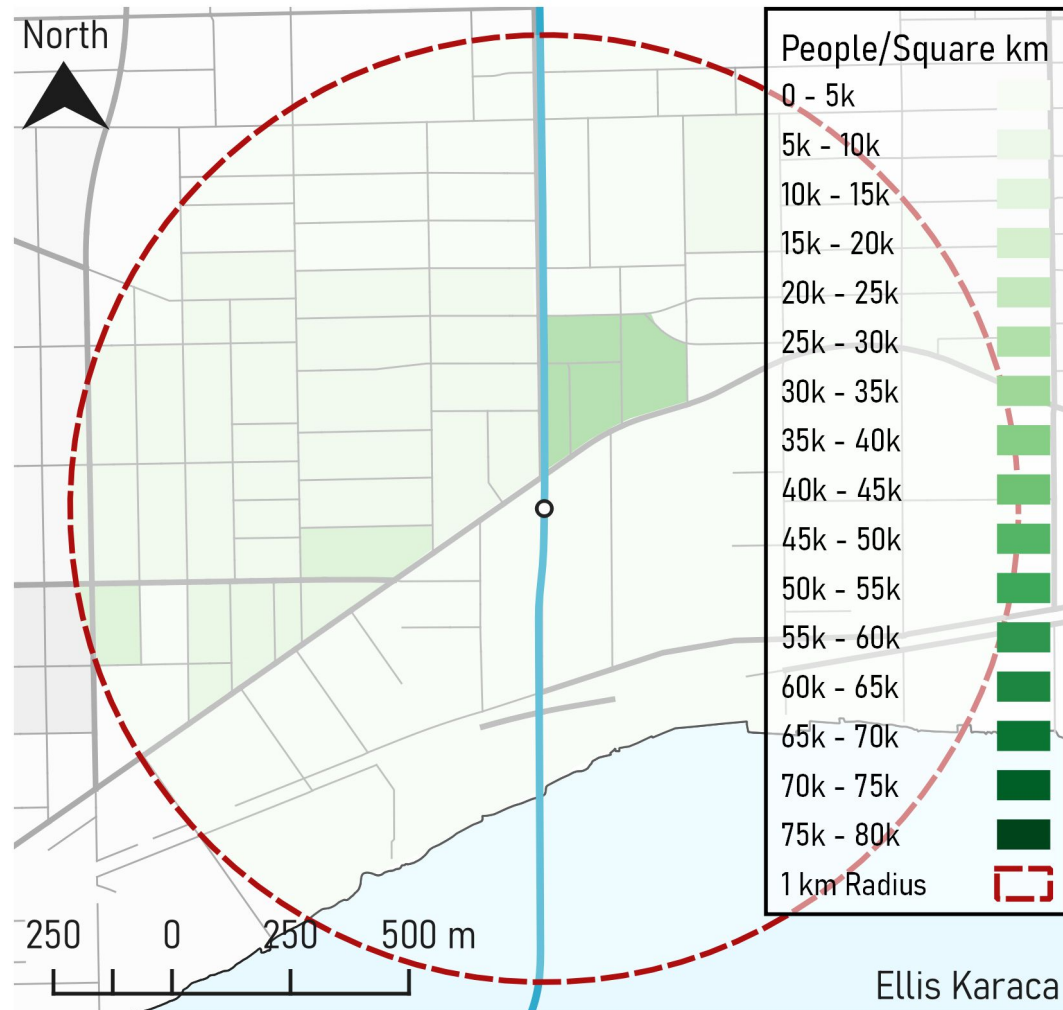


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# Density Analysis: Marine Dr Stn

Population (0.001\*): **12682**

Total Points: **12.7**





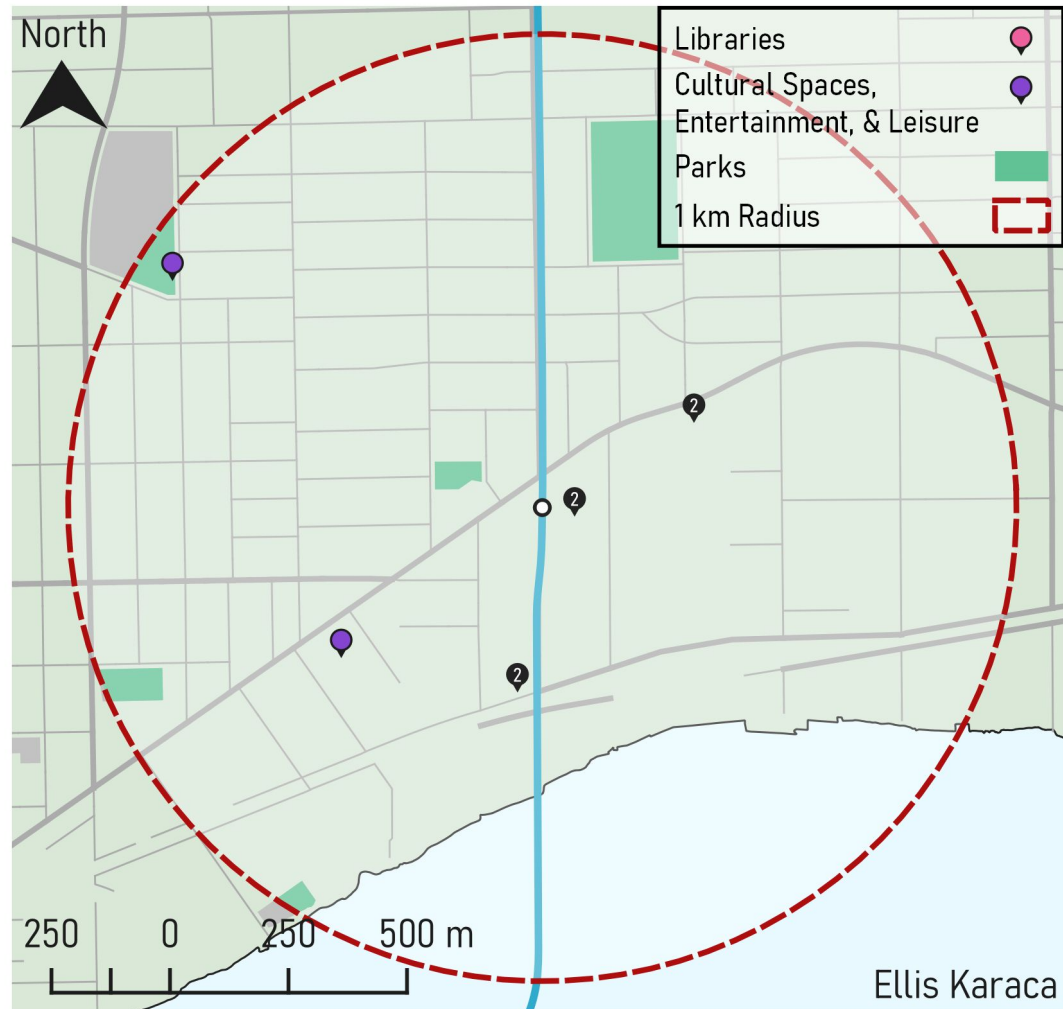
# Third Places Analysis: Marine Dr Stn

Libraries (5.0\*): **0**

Parks (**0.0798**\*100 + 2.5\*): **5**

Cultural Spaces, Entertainment, &  
Leisure (1.0\*): **8**

Total Points: **28.5**





# Langara - 49th Avenue Station

Location Within Vancouver



# Stores & Services Analysis: Langara - 49th Ave Stn

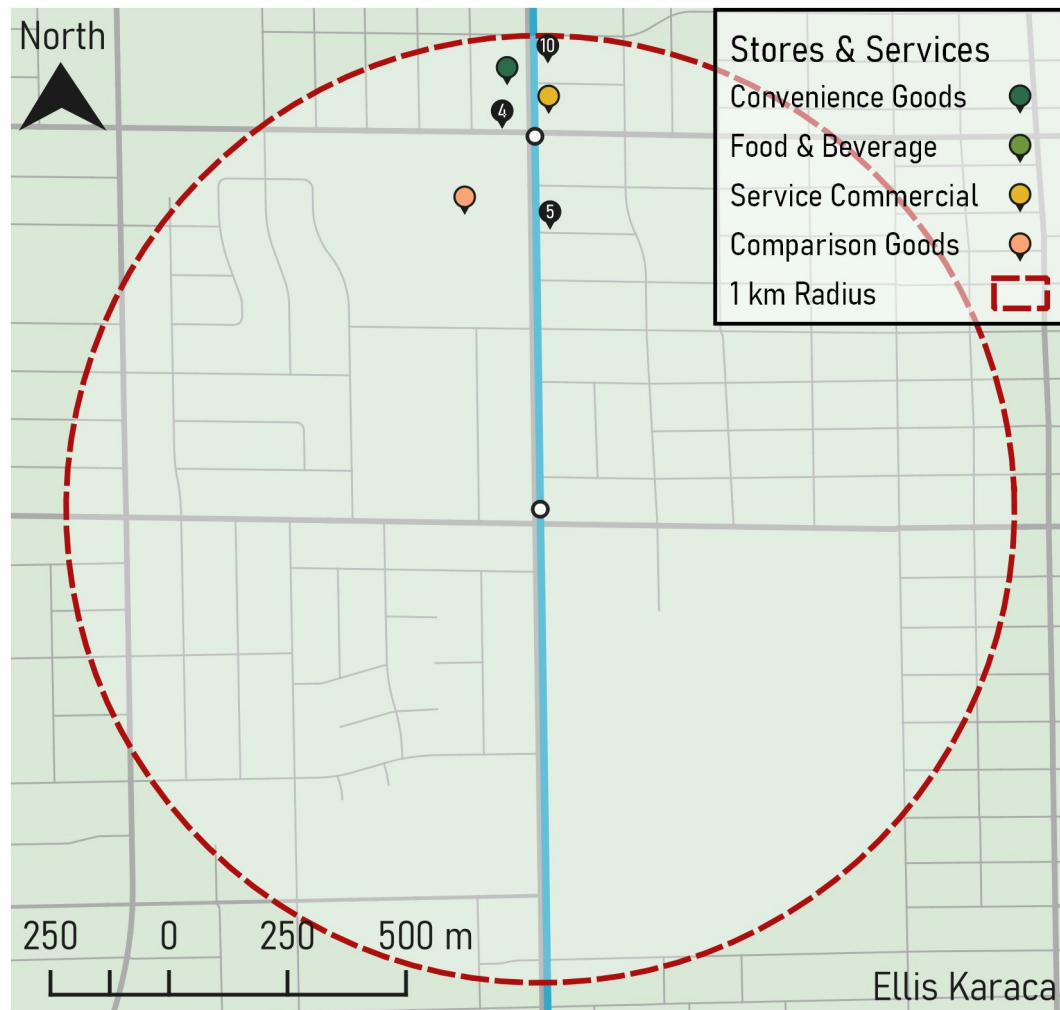
Convenience Goods (5.0\*): **4**

Food & Beverage (2.5\*): **2**

Service Commercial (2.5\*): **15**

Comparison Goods (1.0\*): **1**

Total Points: **63.5**



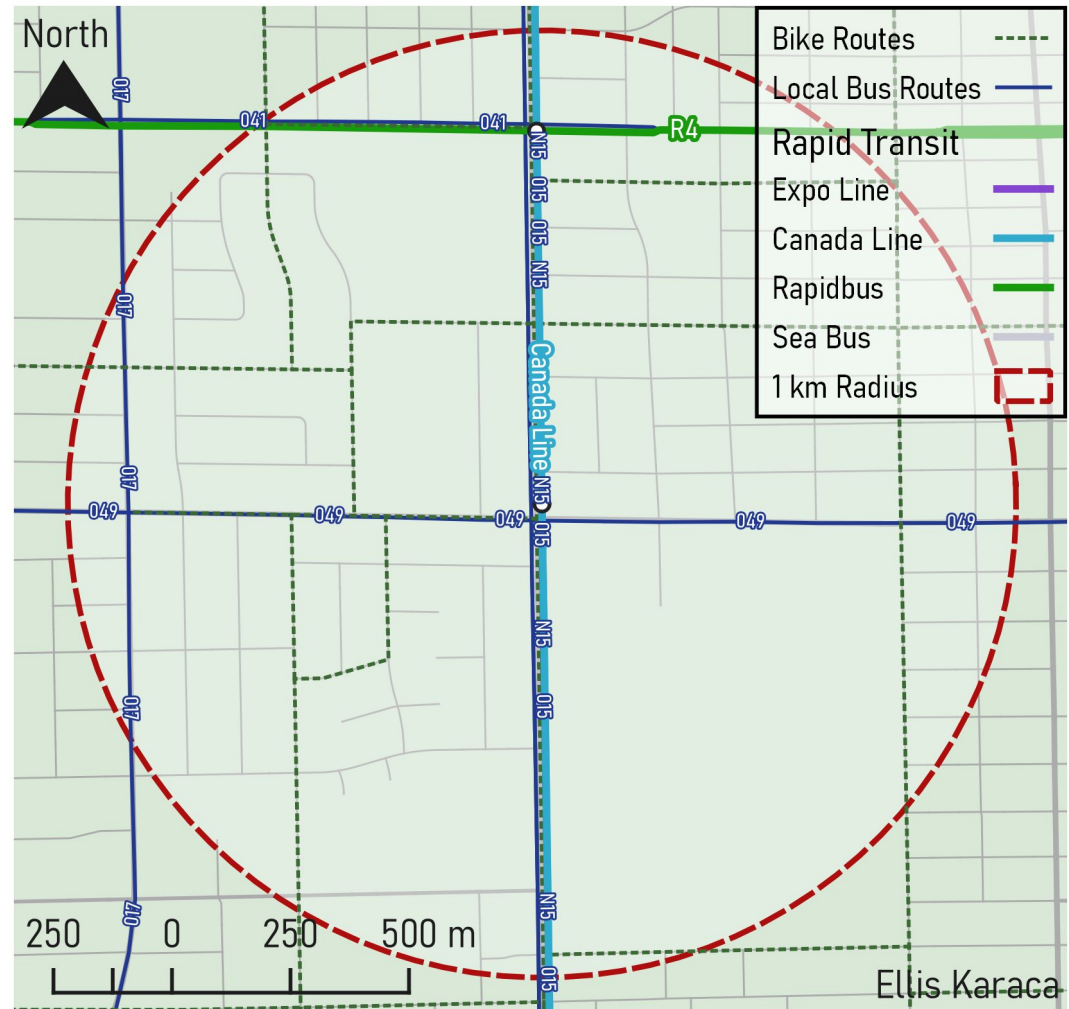
# Transportation Analysis: Langara - 49th Ave Stn

Rapid Transit Lines(5.0\*): **2**

Local Bus Routes (2.5\*): **5**

Bike Routes (1.0\*): **8**

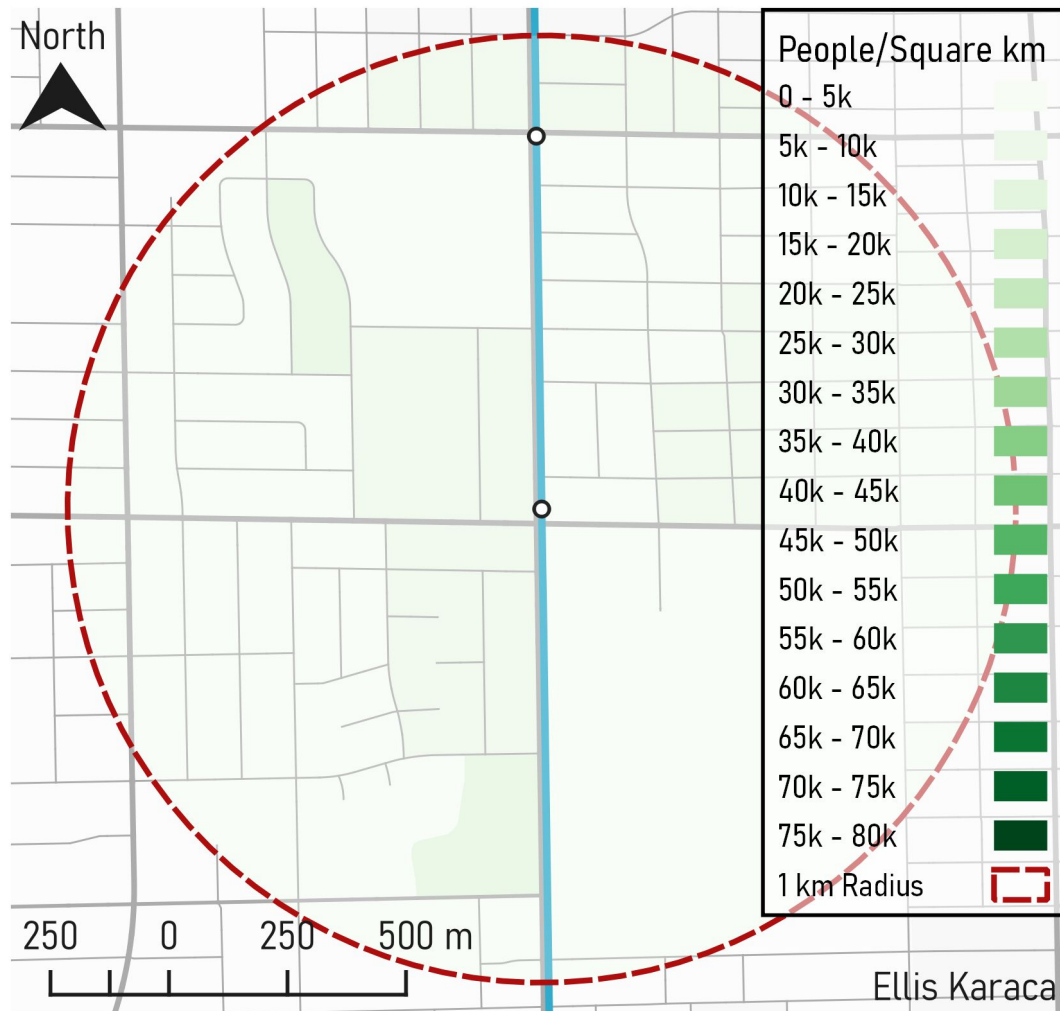
Total Points: **30.5**



# Density Analysis: Langara - 49th Ave Stn

Population (0.001\*): **12419**

Total Points: **12.4**



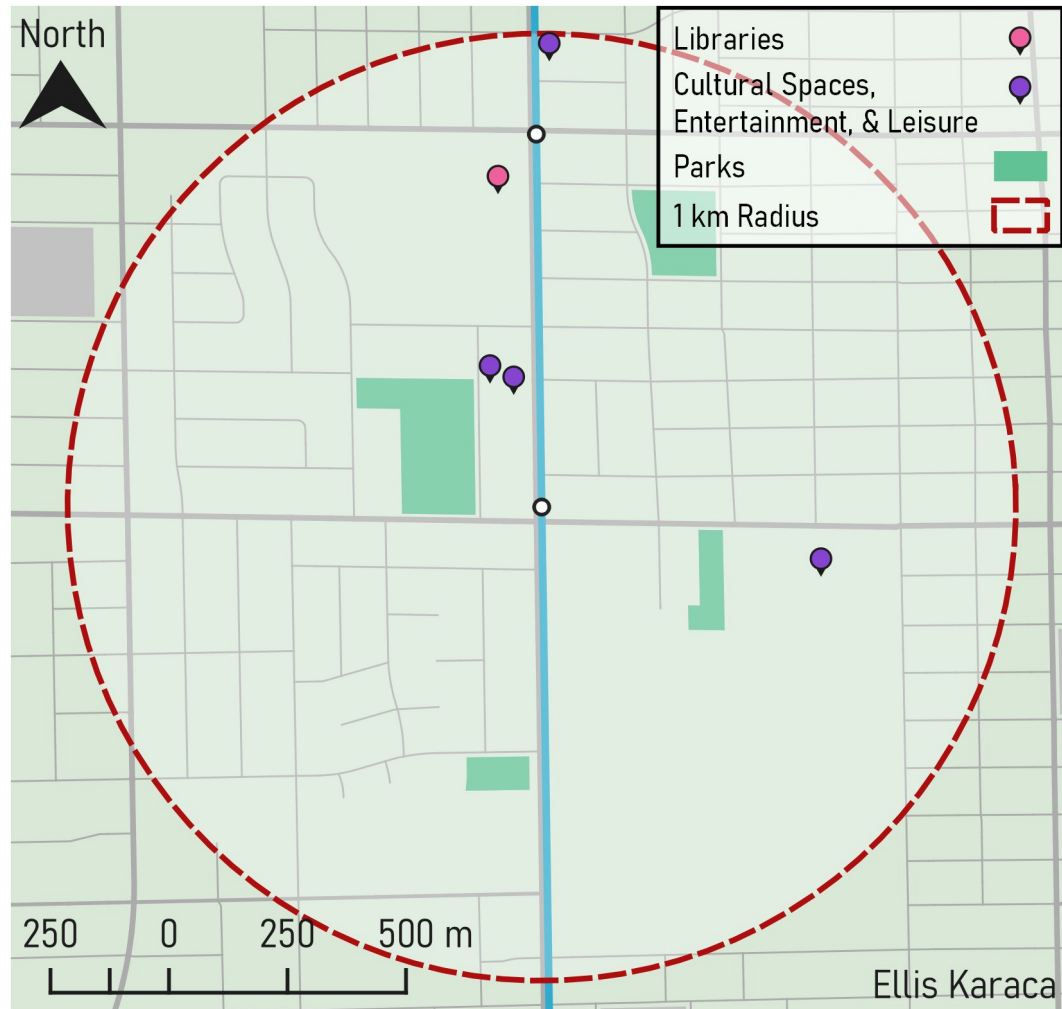
# Third Places Analysis: Langara - 49th Ave Stn

Libraries (5.0\*): **1**

Parks (**0.0997**\*100 + 2.5\*): **4**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **4**

Total Points: **29.0**





# Oakridge - 41st Avenue Station

Location Within Vancouver



# Stores & Services Analysis: Oakridge 41st Ave Stn

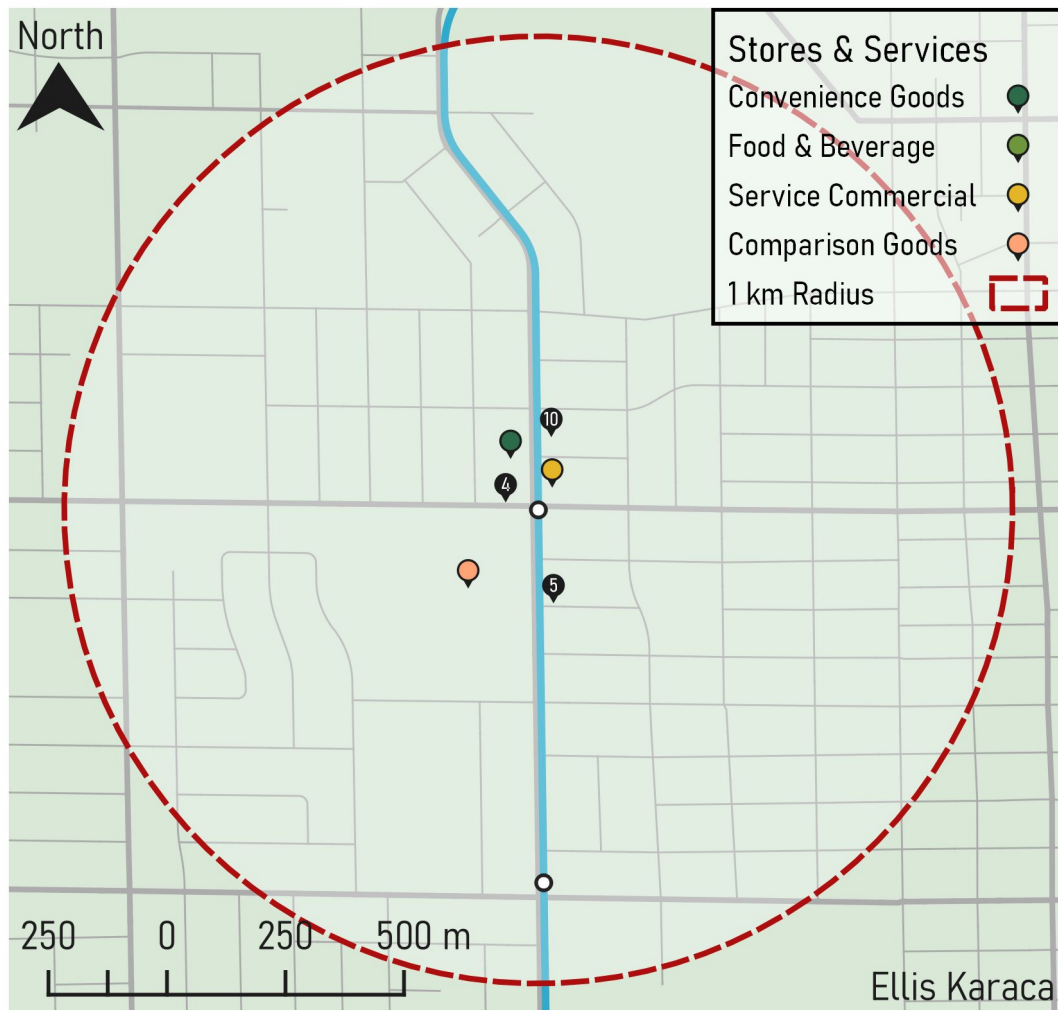
Convenience Goods (5.0\*): **4**

Food & Beverage (2.5\*): **2**

Service Commercial (2.5\*): **15**

Comparison Goods (1.0\*): **1**

Total Points: **63.5**



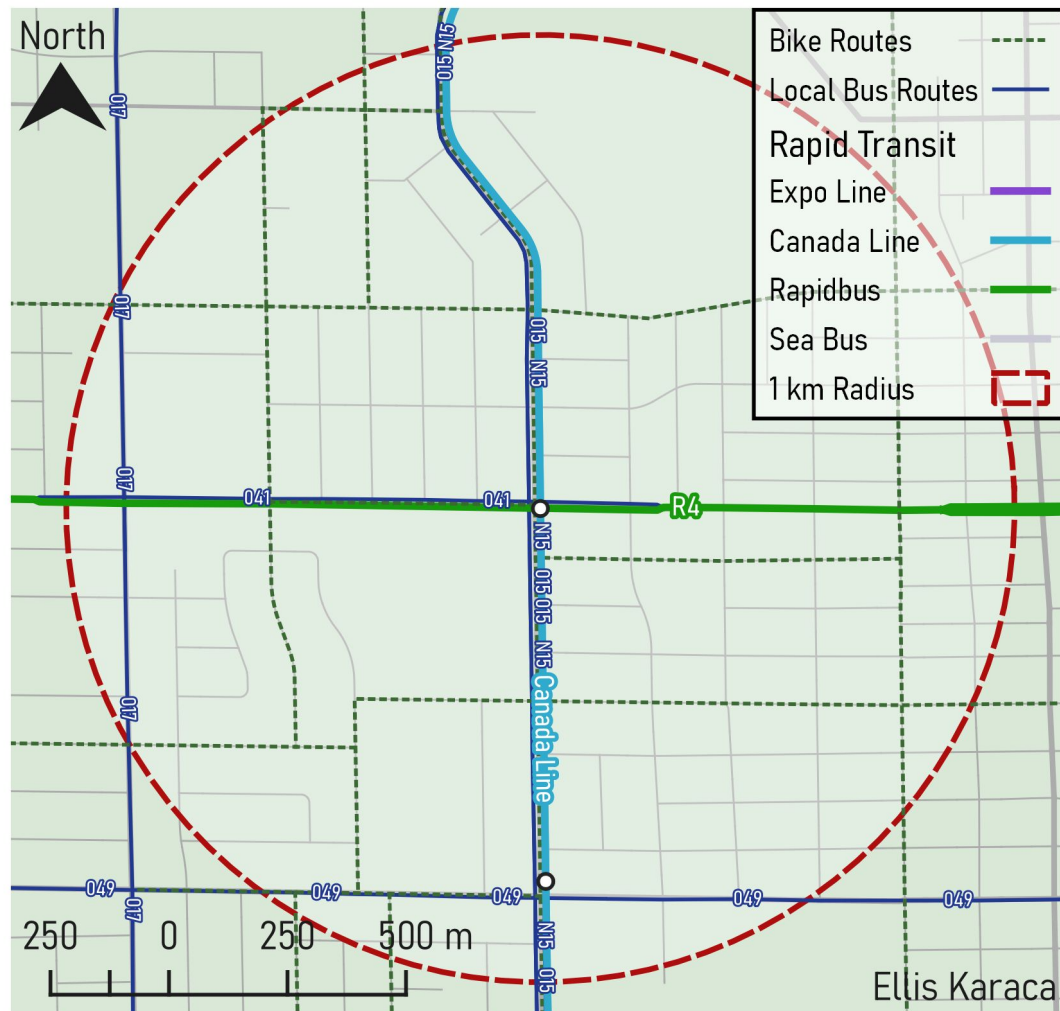
# Transportation Analysis: Oakridge 41st Ave Stn

Rapid Transit Lines (5.0\*): **2**

Local Bus Routes (2.5\*): **5**

Bike Routes (1.0\*): **9**

Total Points: **31.5**

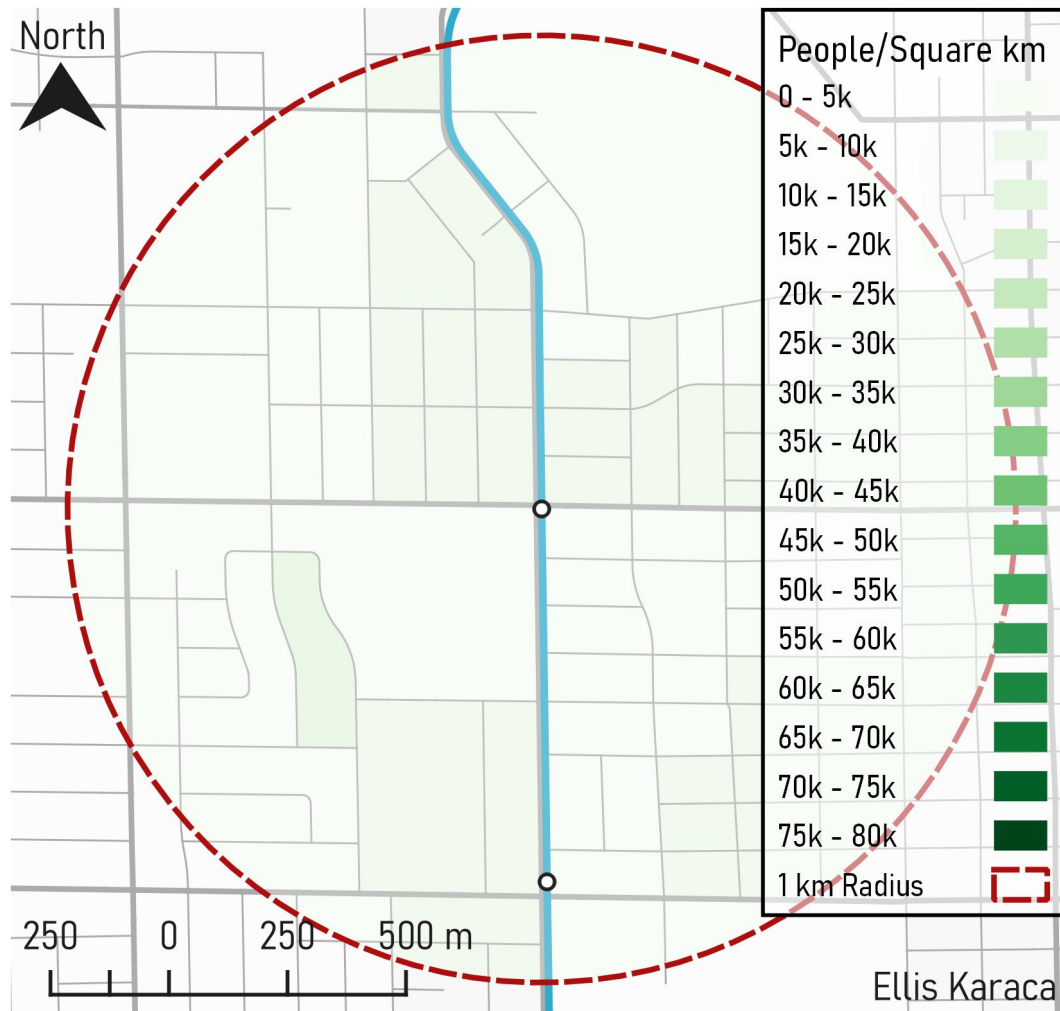




# Density Analysis: Oakridge 41st Ave Stn

Population (0.001\*): **12053**

Total Points: **12.1**



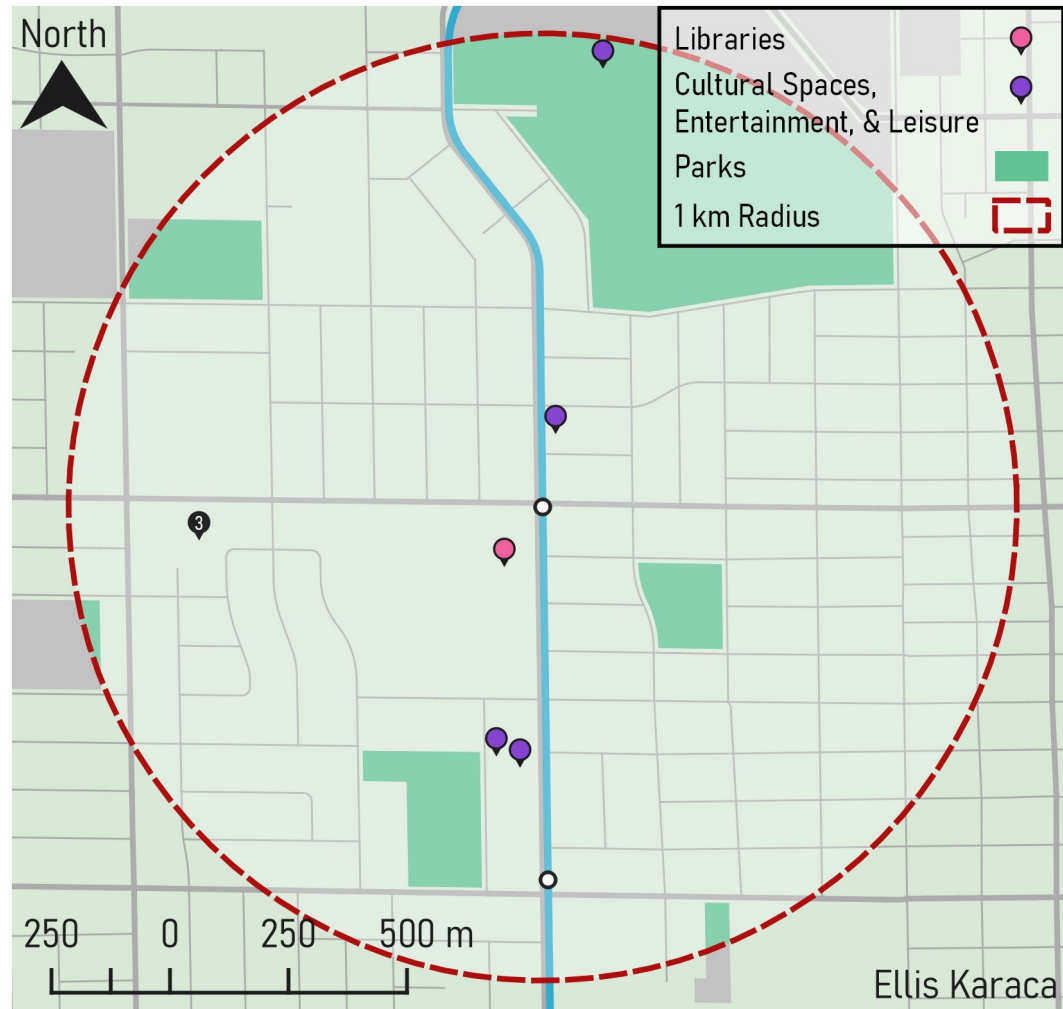
# Third Places Analysis: Oakridge 41st Ave Stn

Libraries (5.0\*): **1**

Parks (**0.4759**\*100 + 2.5\*): **7**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **7**

Total Points: **77.1**



# King Edward Station

Location Within Vancouver



# Stores & Services Analysis: King Edward Stn

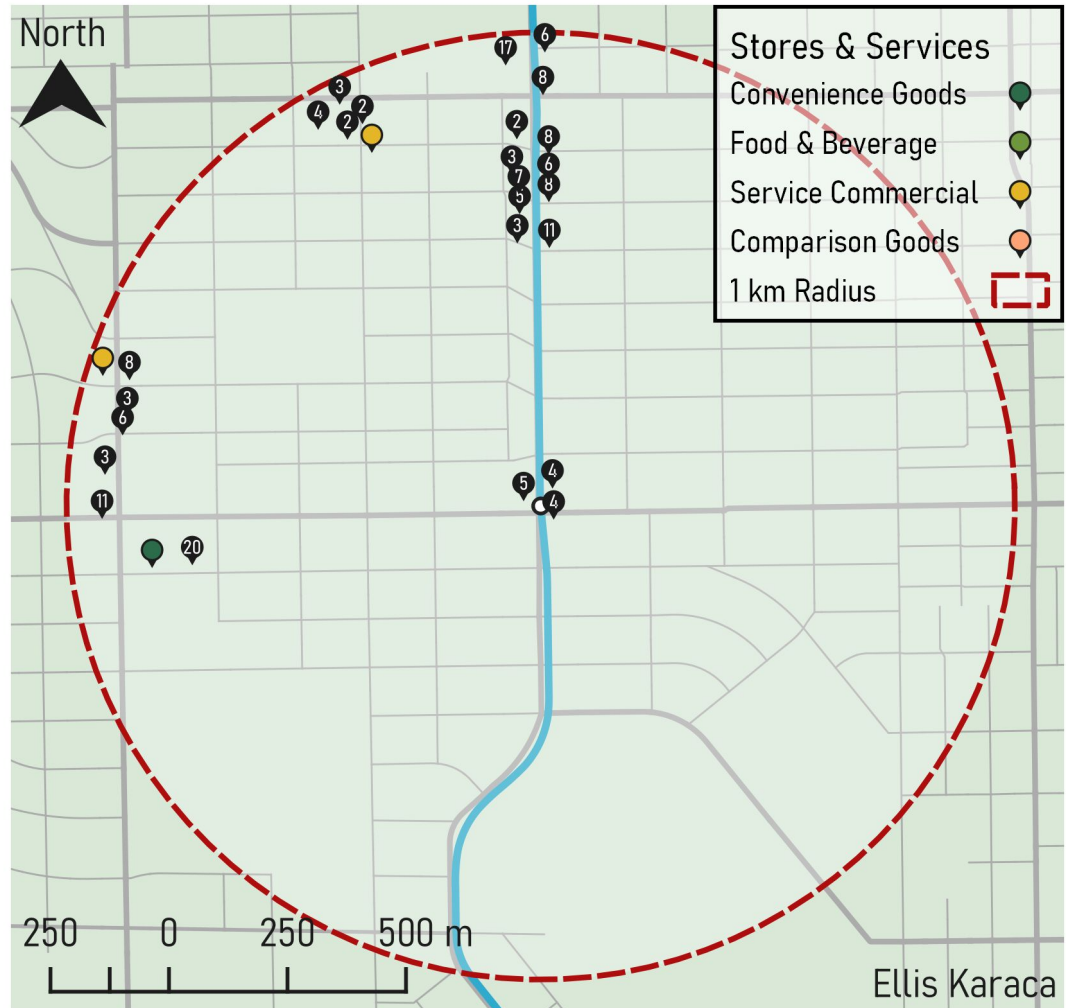
Convenience Goods (5.0\*): **20**

Food & Beverage (2.5\*): **37**

Service Commercial (2.5\*): **88**

Comparison Goods (1.0\*): **17**

Total Points: **429.5**



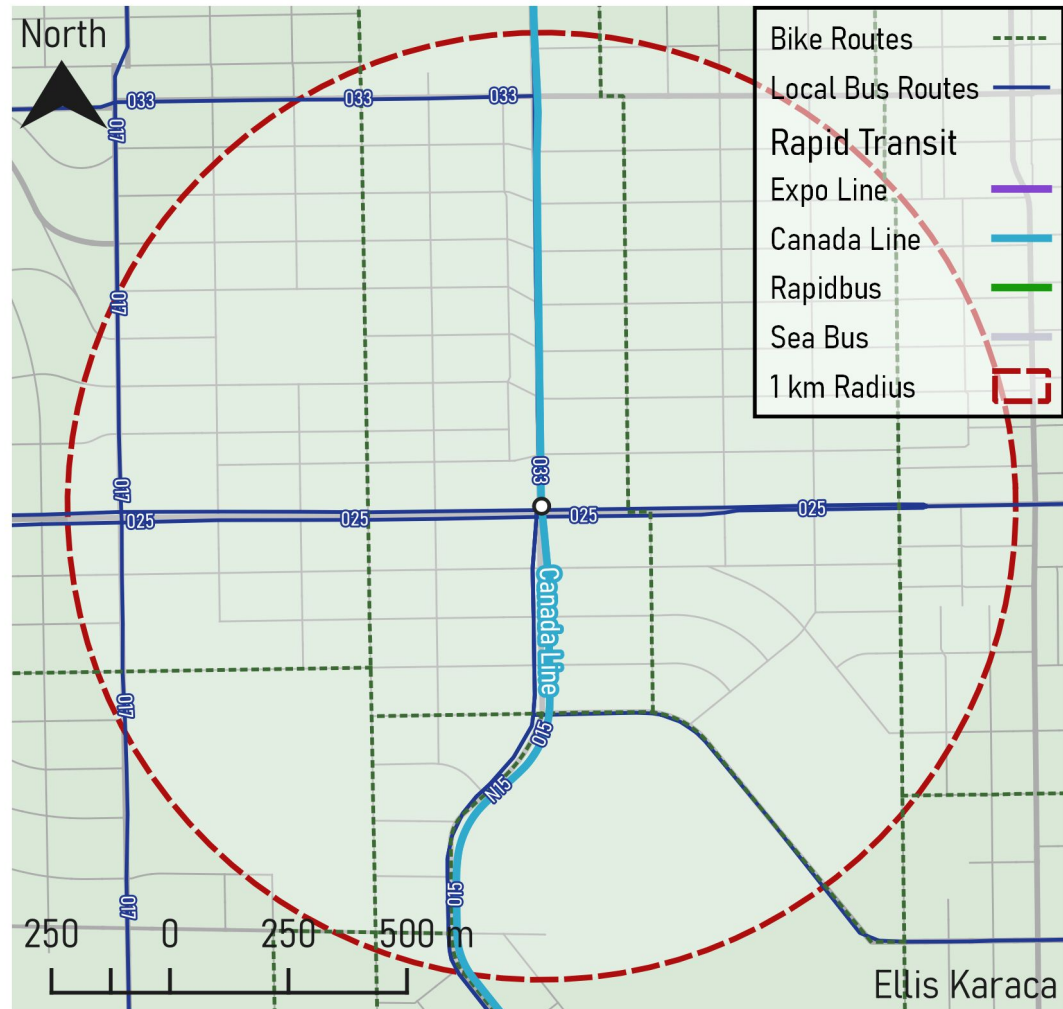
# Transportation Analysis: King Edward Stn

Rapid Transit Lines (5.0\*): **1**

Local Bus Routes (2.5\*): **5**

Bike Routes (1.0\*): **7**

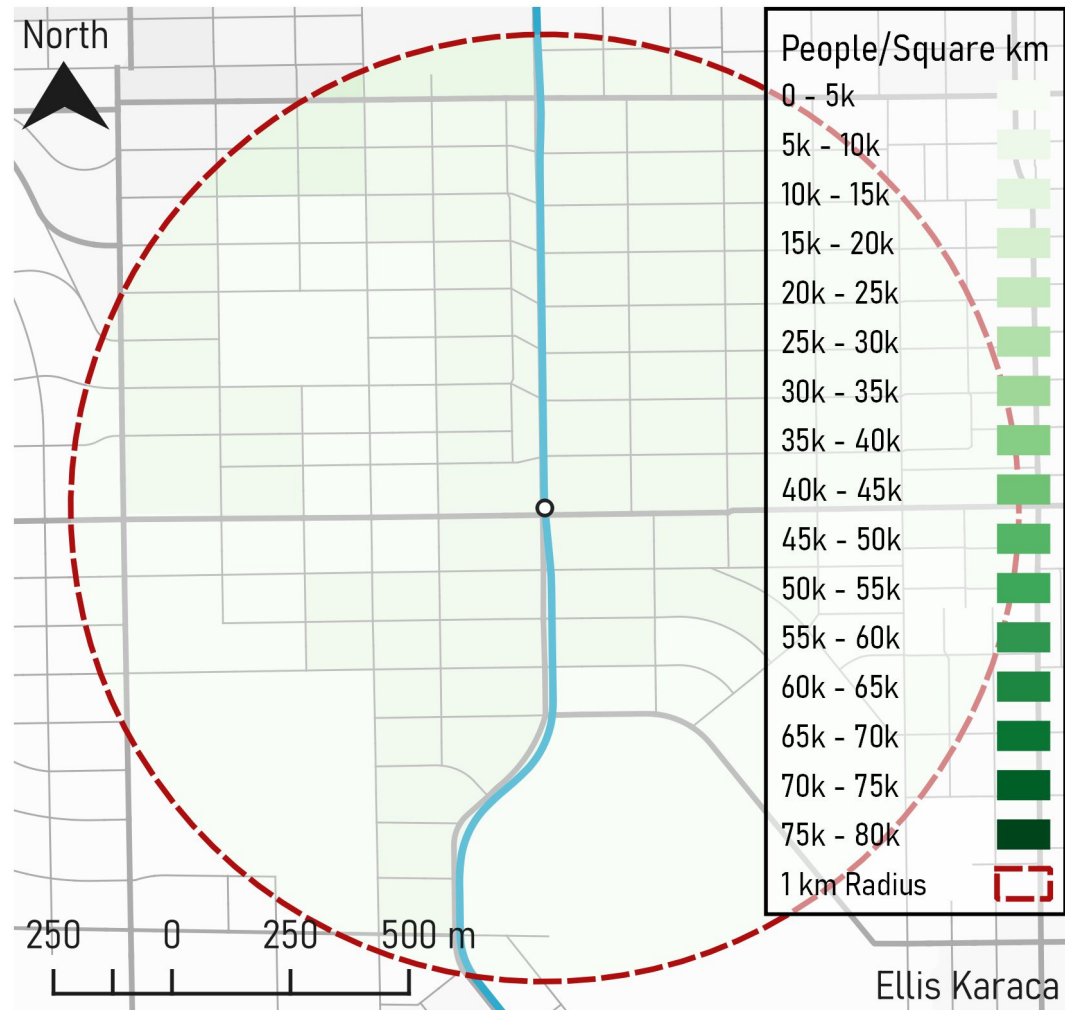
Total Points: **24.5**



# Density Analysis: King Edward Stn

Population (0.001\*): **15248**

Total Points: **15.2**





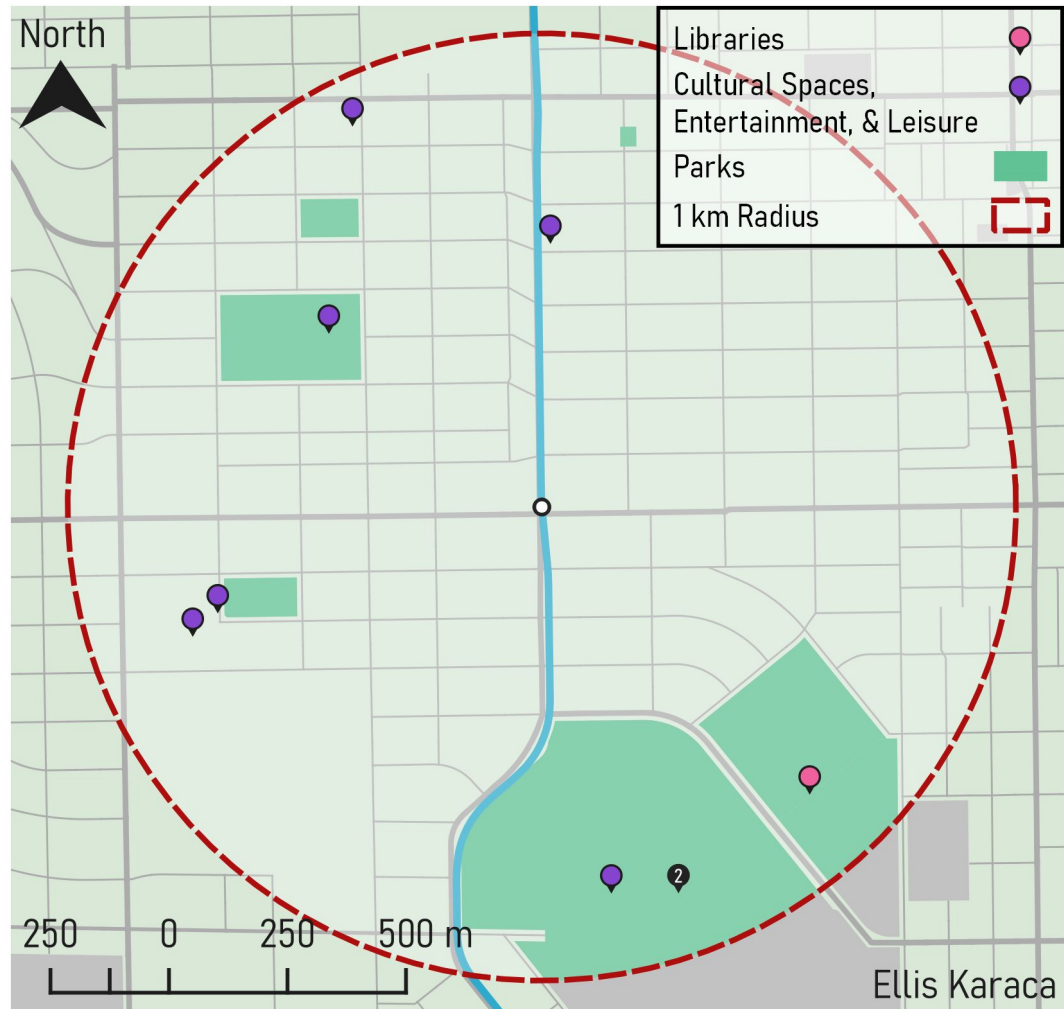
# Third Places Analysis: King Edward Stn

Libraries (5.0\*): **1**

Parks (**0.4758**\*100 + 2.5\*): **8**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **7**

Total Points: **79.6**



# Broadway - City Hall Station

Location Within Vancouver





# Stores & Services Analysis: Broadway - City Hall Stn

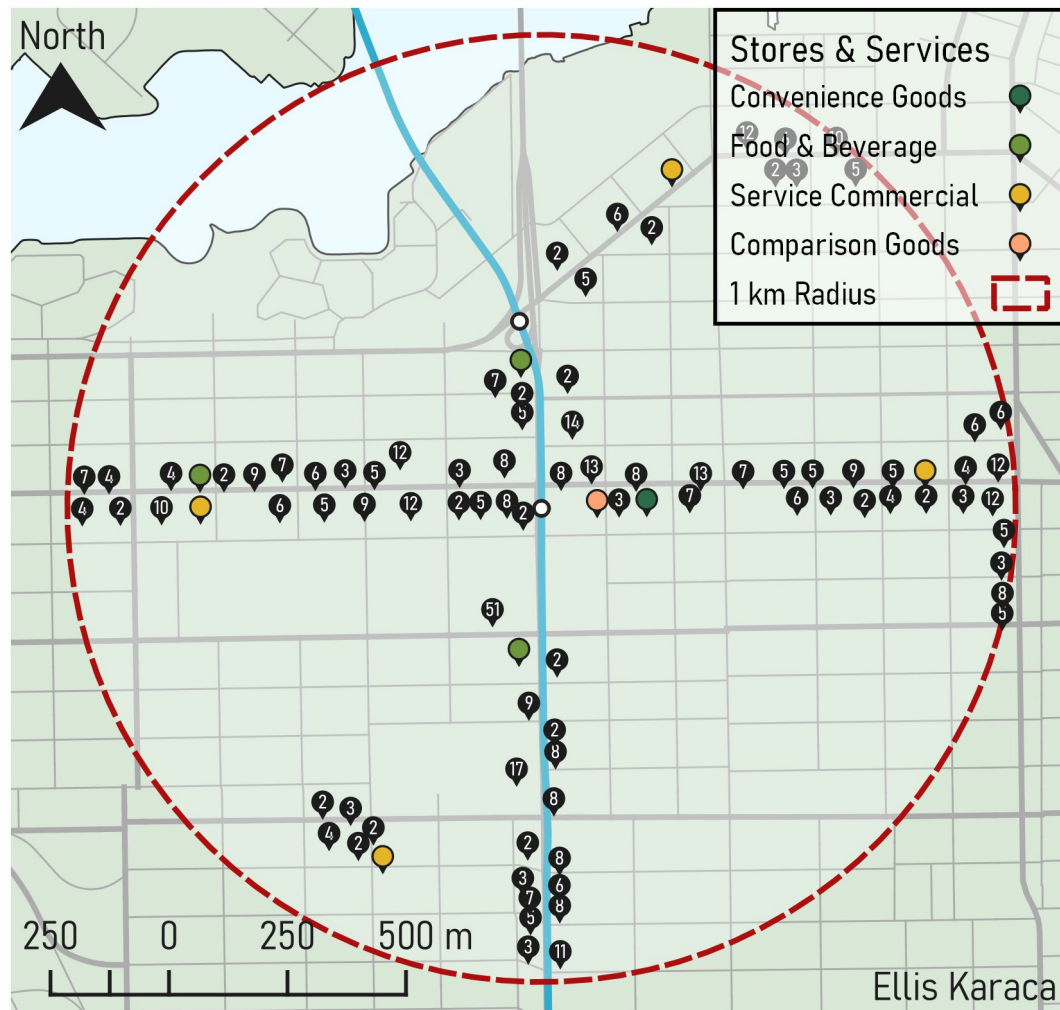
Convenience Goods (5.0\*): **68**

Food & Beverage (2.5\*): **151**

Service Commercial (2.5\*): **232**

Comparison Goods (1.0\*): **103**

Total Points: **1400.5**



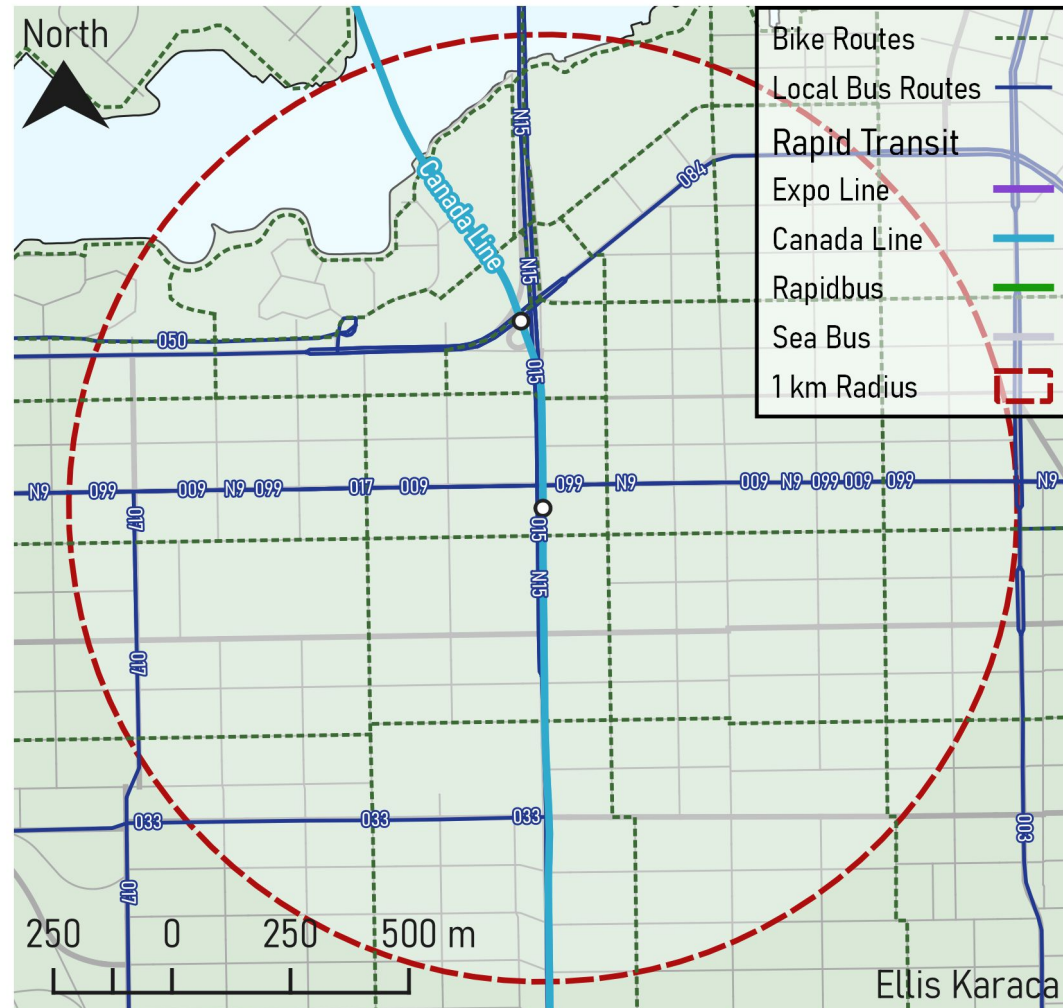
# Transportation Analysis: Broadway - City Hall Stn

Rapid Transit Lines (5.0\*): **1**

Local Bus Routes (2.5\*): **10**

Bike Routes (1.0\*): **12**

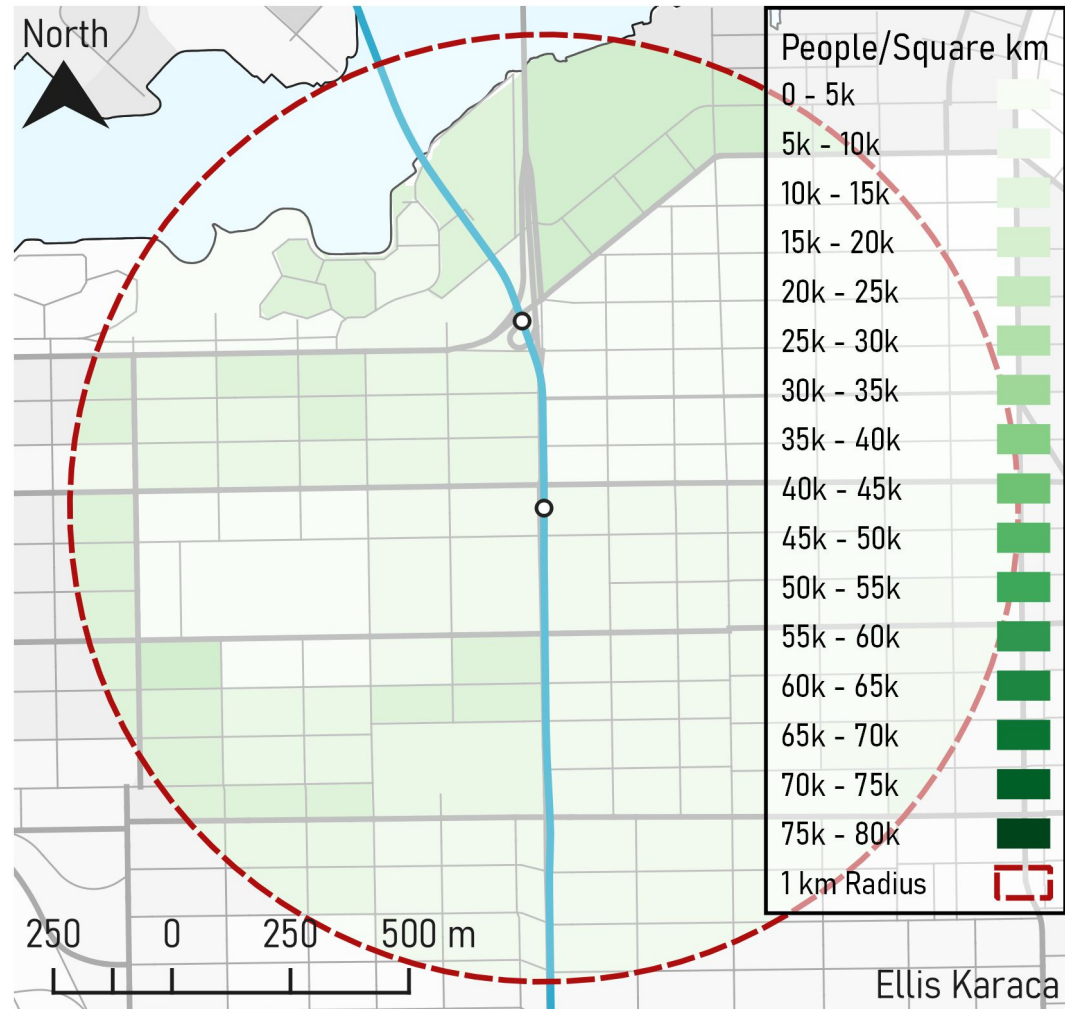
Total Points: **42**



# Density Analysis: Broadway - City Hall Stn

Population (0.001\*): **26733**

Total Points: **26.7**



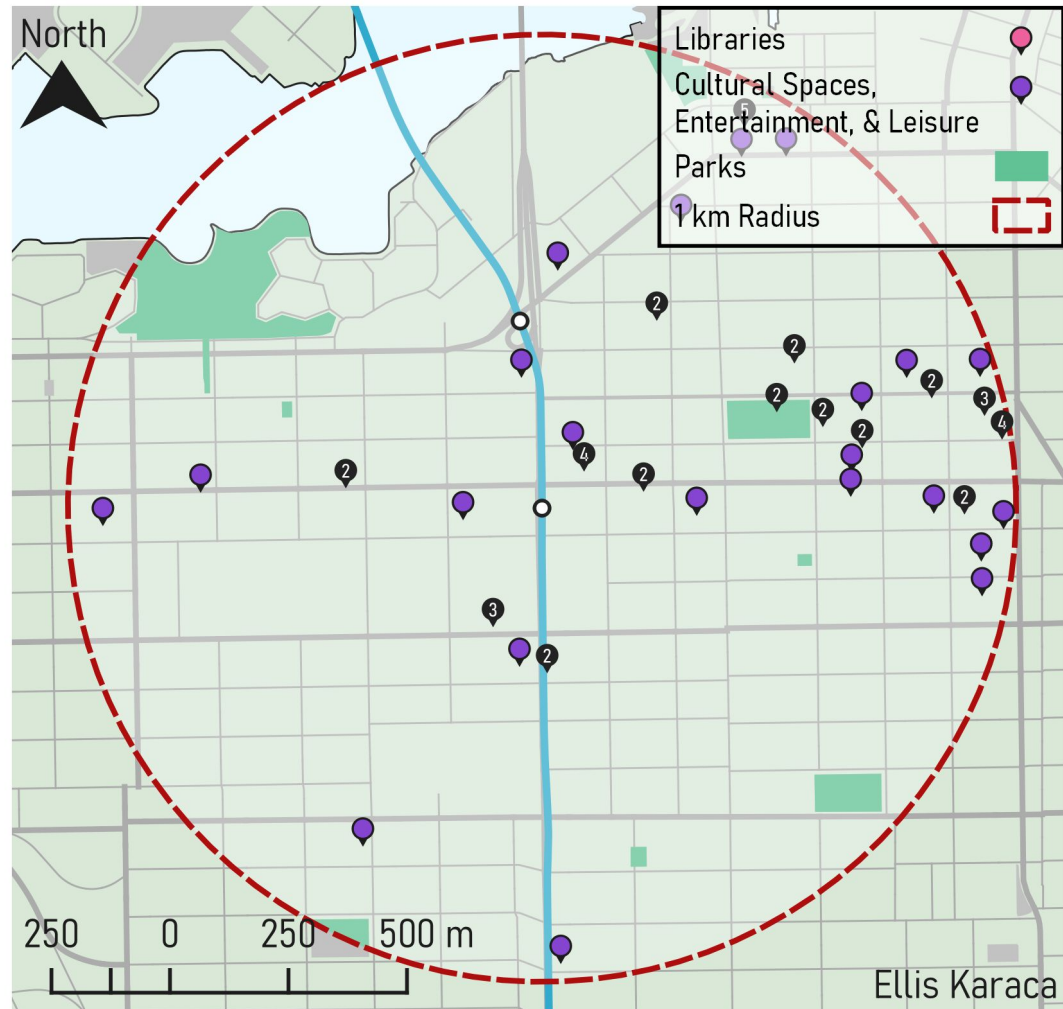
# Third Places Analysis: Broadway - City Hall Stn

Libraries (5.0\*): **0**

Parks (**0.1085**\*100 + 2.5\*): **8**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **57**

Total Points: **92.9**



# Olympic Village Station

Location Within Vancouver





# Stores & Services Analysis: Olympic Village Stn

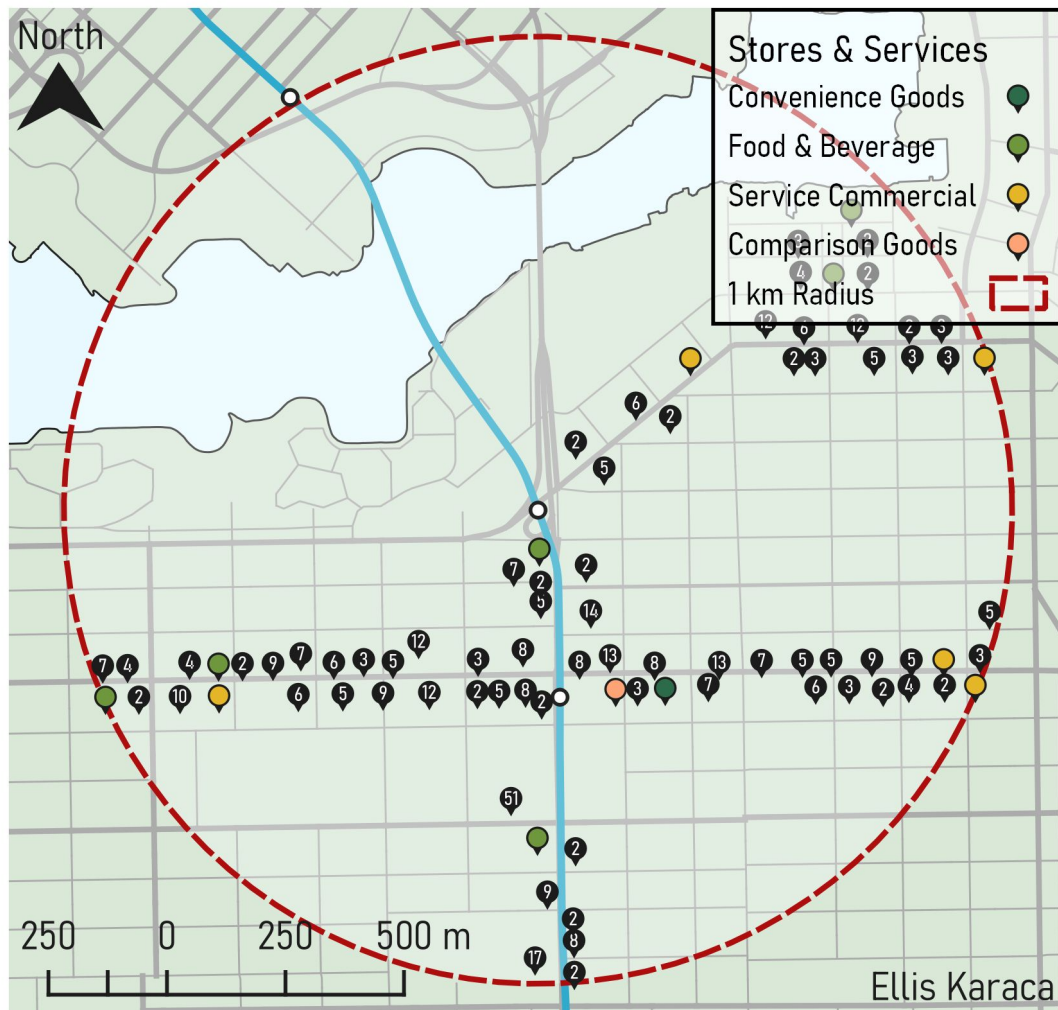
Convenience Goods (5.0\*): **53**

Food & Beverage (2.5\*): **121**

Service Commercial (2.5\*): **197**

Comparison Goods (1.0\*): **79**

Total Points: **1139**



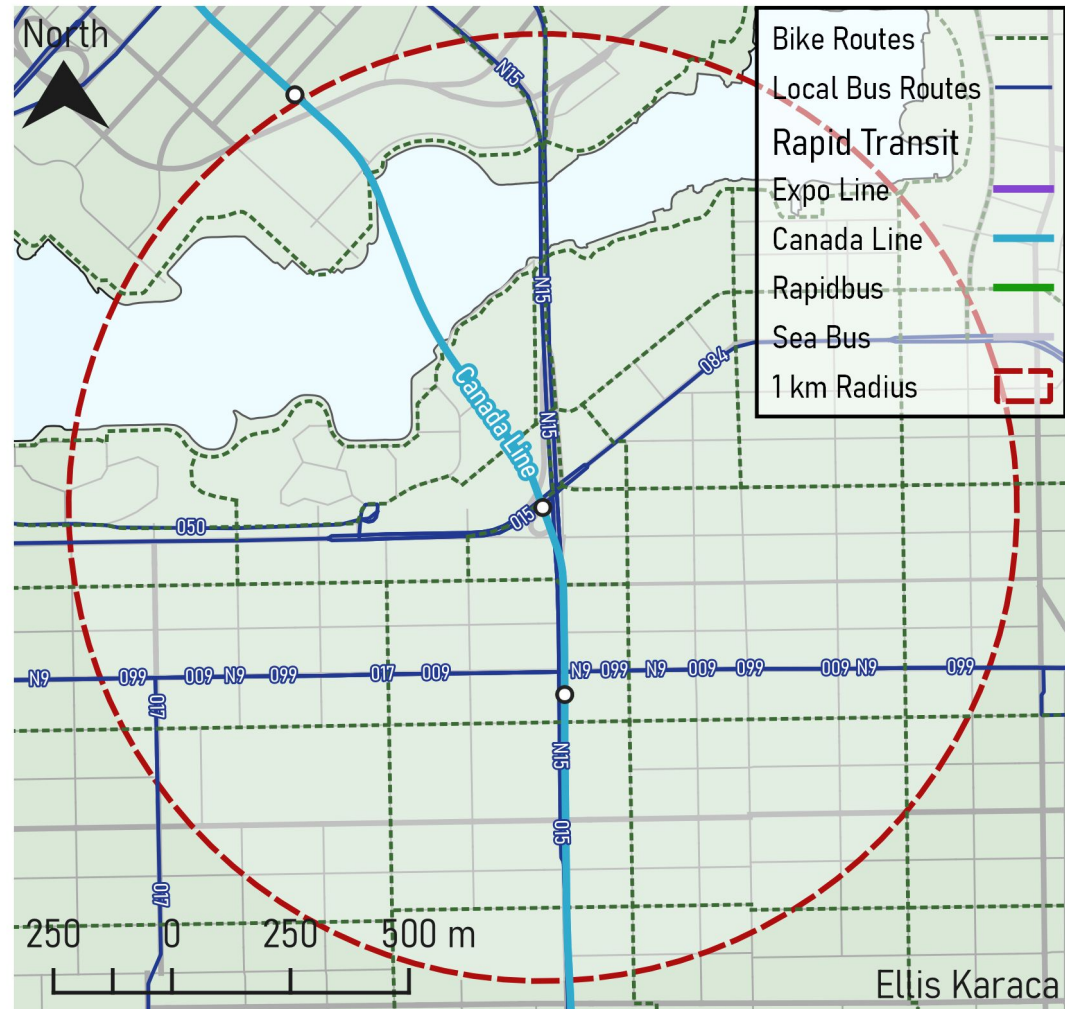
# Transportation Analysis: Olympic Village Stn

Rapid Transit Lines (5.0\*): **1**

Local Bus Routes (2.5\*): **8**

Bike Routes (1.0\*): **14**

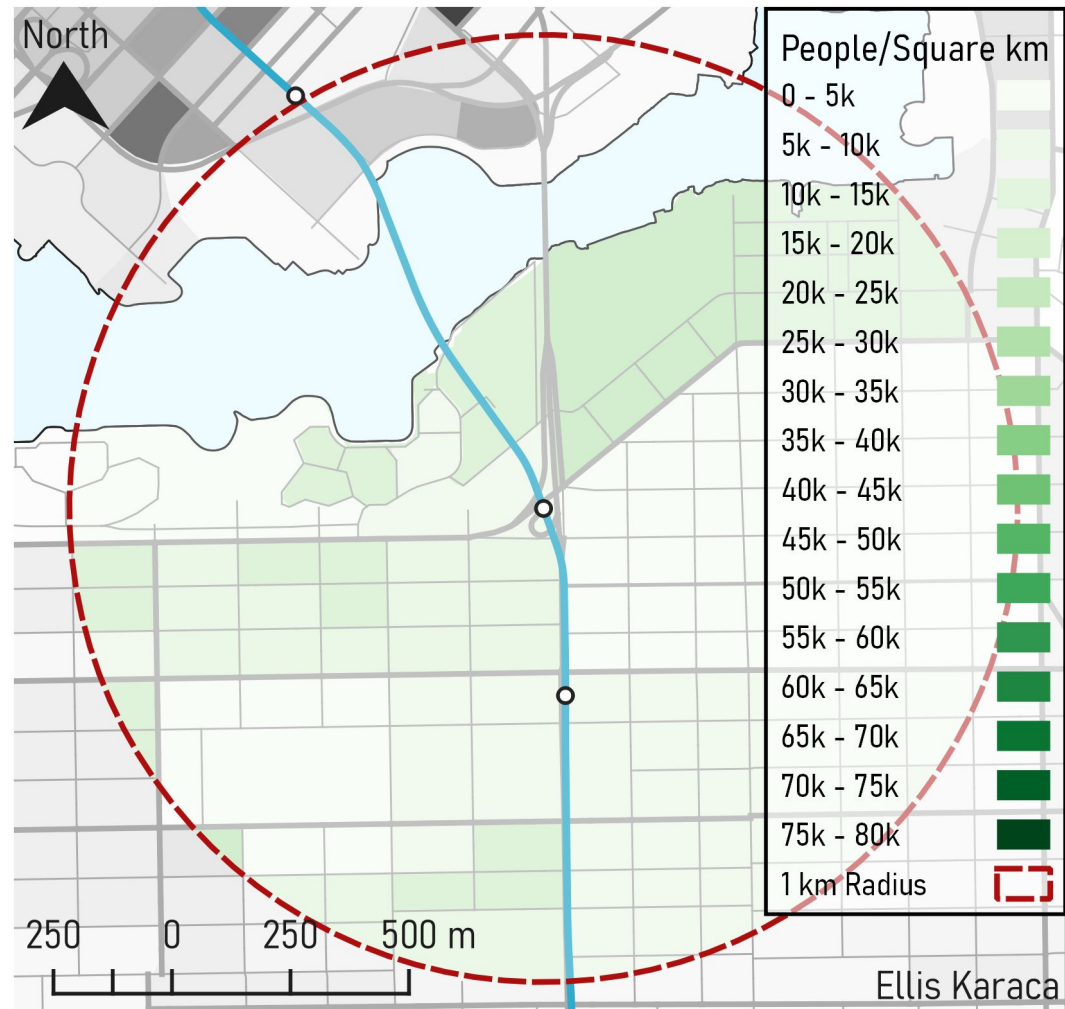
Total Points: **39**



# Density Analysis: Olympic Village Stn

Population (0.001\*): **21849**

Total Points: **21.8**





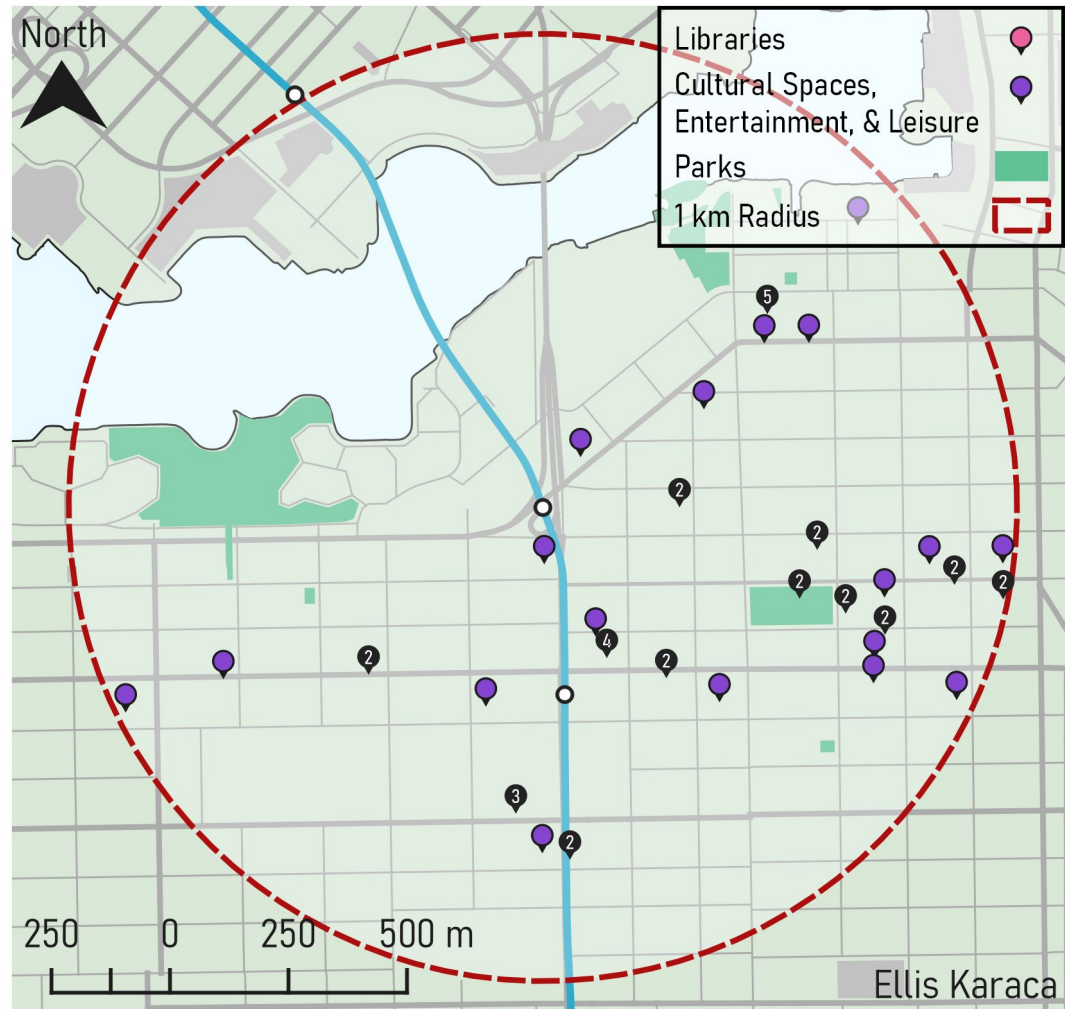
# Third Places Analysis: Olympic Village Stn

Libraries (5.0\*): **0**

Parks (**0.1110**\*100 + 2.5\*): **10**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **48**

Total Points: **84.1**



# Yaletown - Roundhouse Station

Location Within Vancouver



# Stores & Services Analysis: Yaletown - Roundhouse Stn

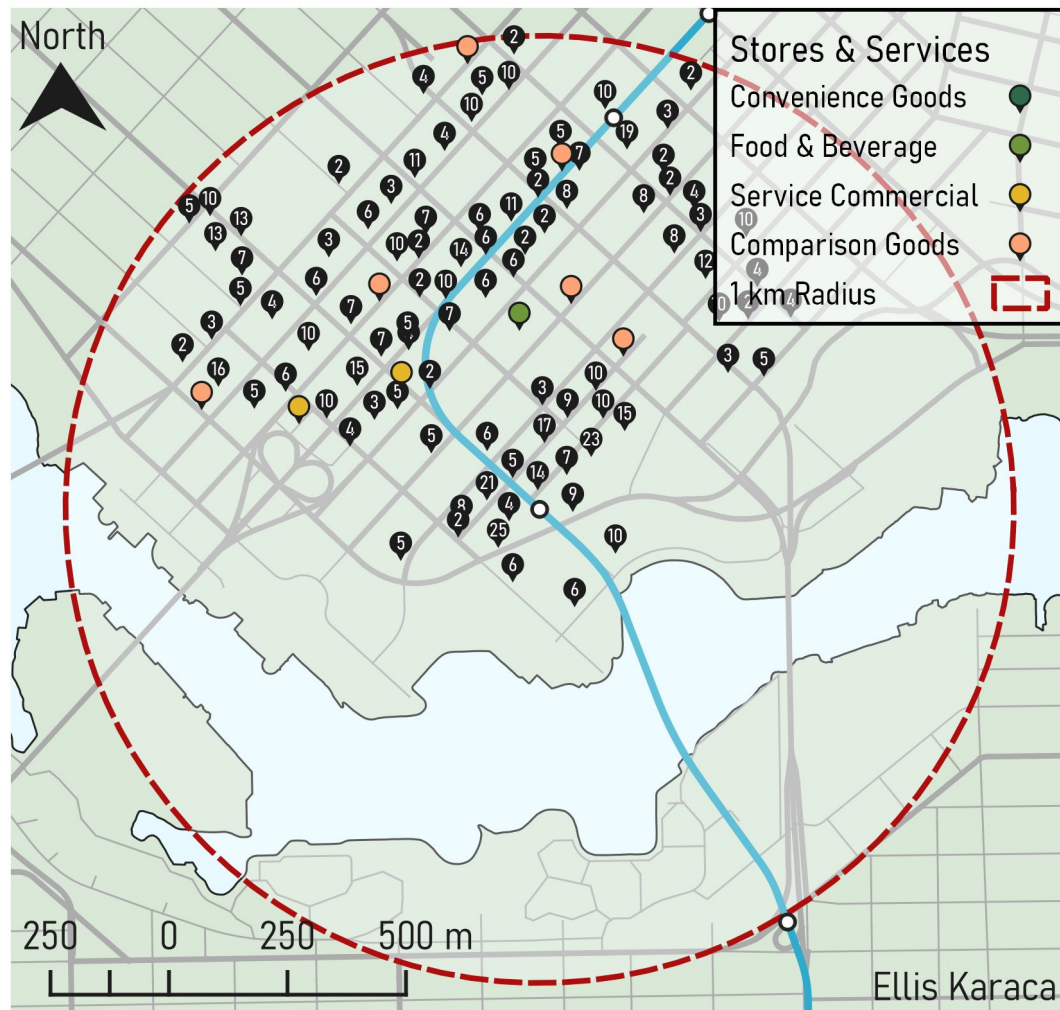
Convenience Goods (5.0\*): **86**

Food & Beverage (2.5\*): **274**

Service Commercial (2.5\*): **210**

Comparison Goods (1.0\*): **115**

Total Points: **1755**





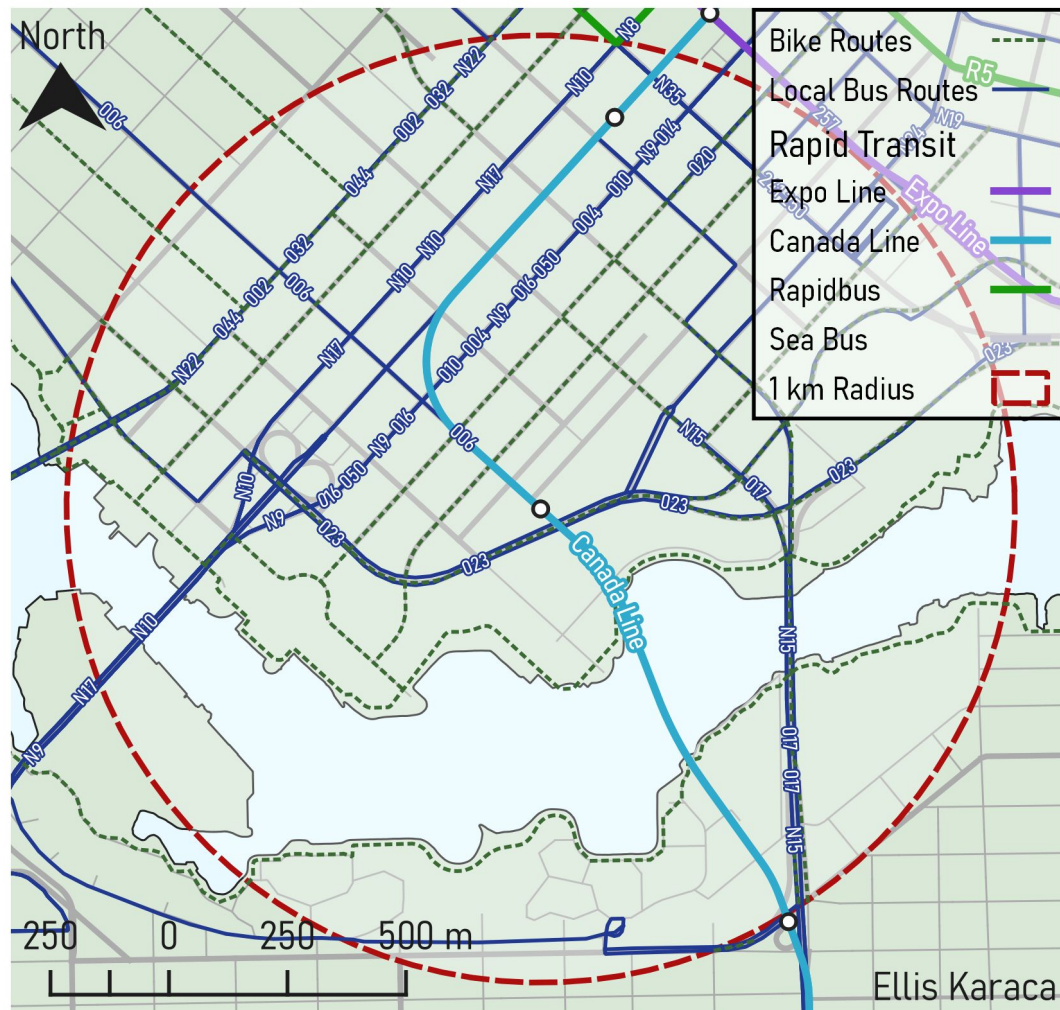
# Transportation Analysis: Yaletown - Roundhouse Stn

Rapid Transit Lines (5.0\*): **1**

Local Bus Routes (2.5\*): **33**

Bike Routes (1.0\*): **20**

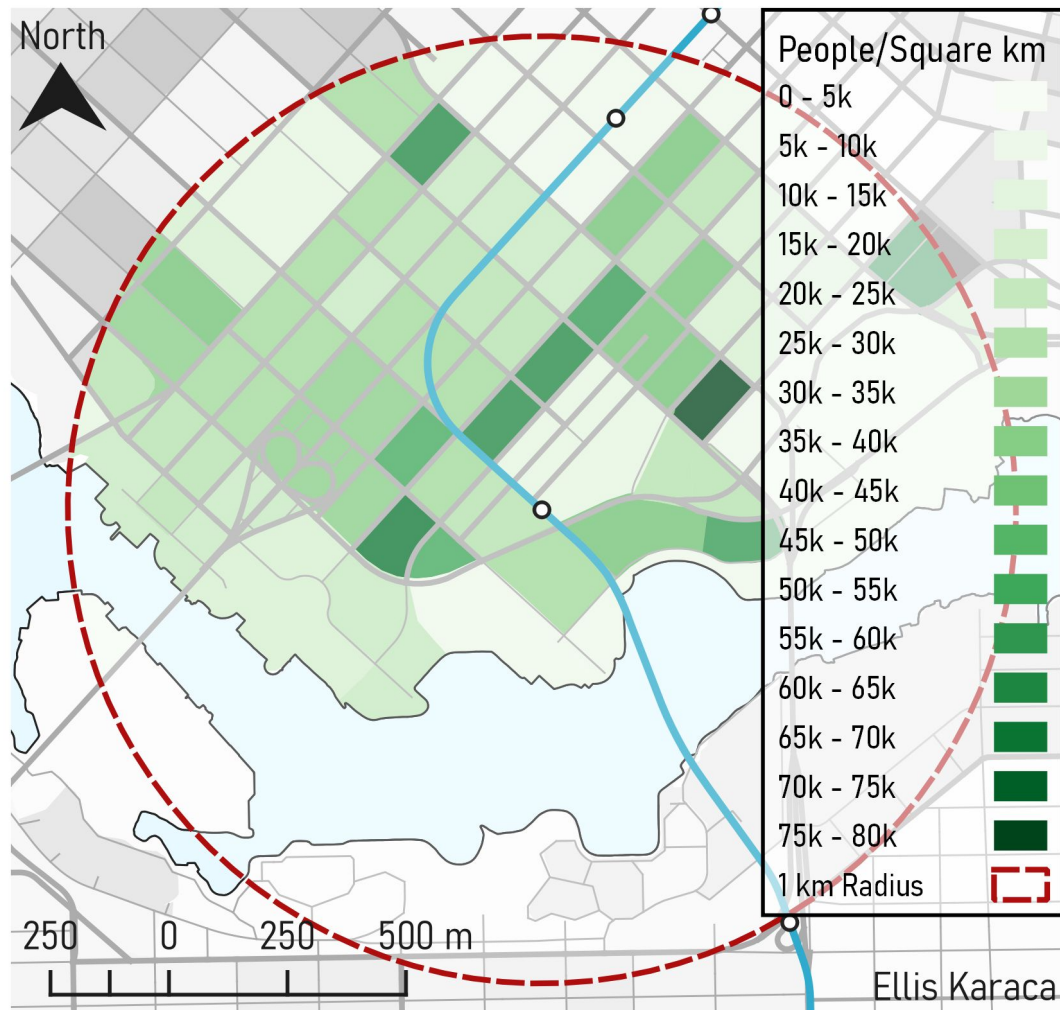
Total Points: **107.5**



# Density Analysis: Yaletown - Roundhouse Stn

Population (0.001\*): **47758**

Total Points: **47.8**



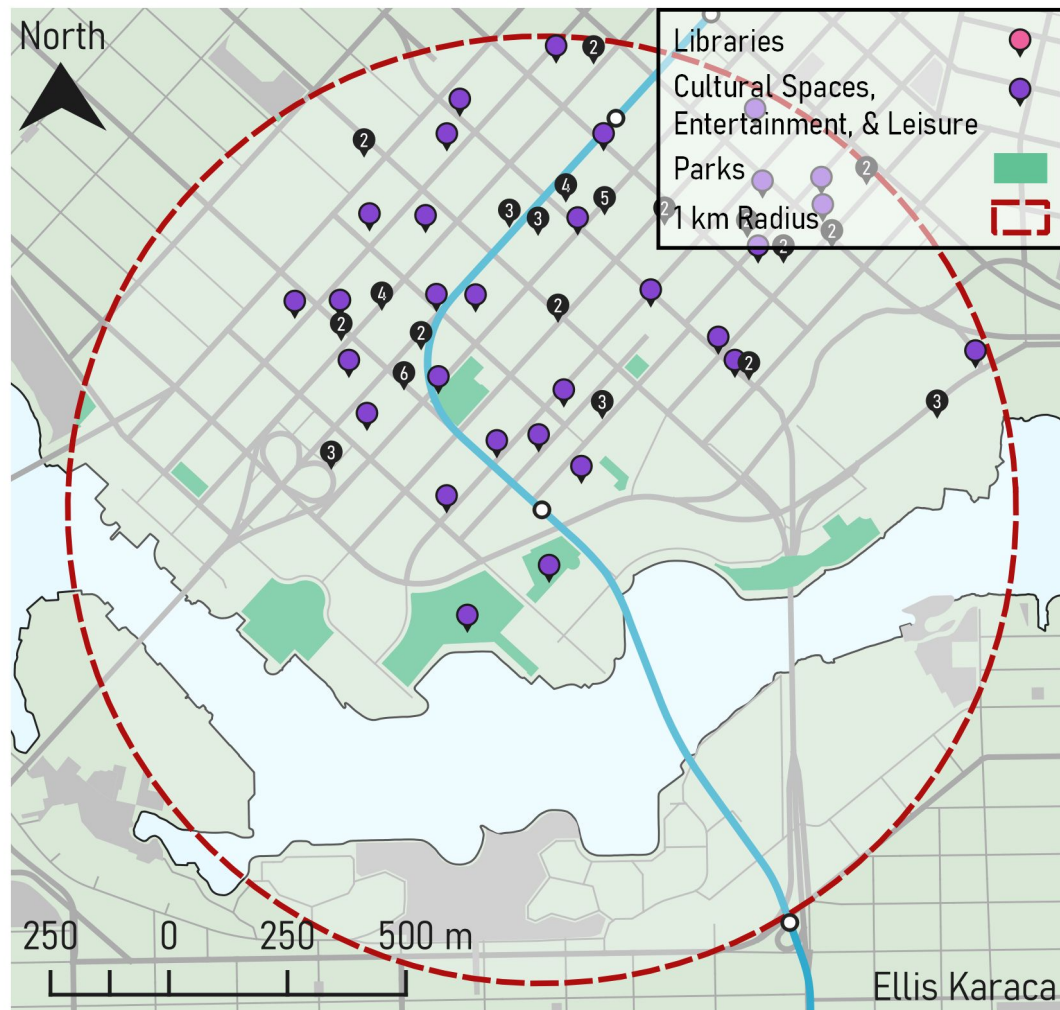
# Third Places Analysis: Yaletown - Roundhouse Stn

Libraries (5.0\*): **2**

Parks ( $0.1032 \times 100 + 2.5^*$ ): **10**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **83**

Total Points: **128.3**





# Vancouver City Centre Station

Location Within Vancouver



# Stores & Services Analysis: Vancouver City Centre Stn

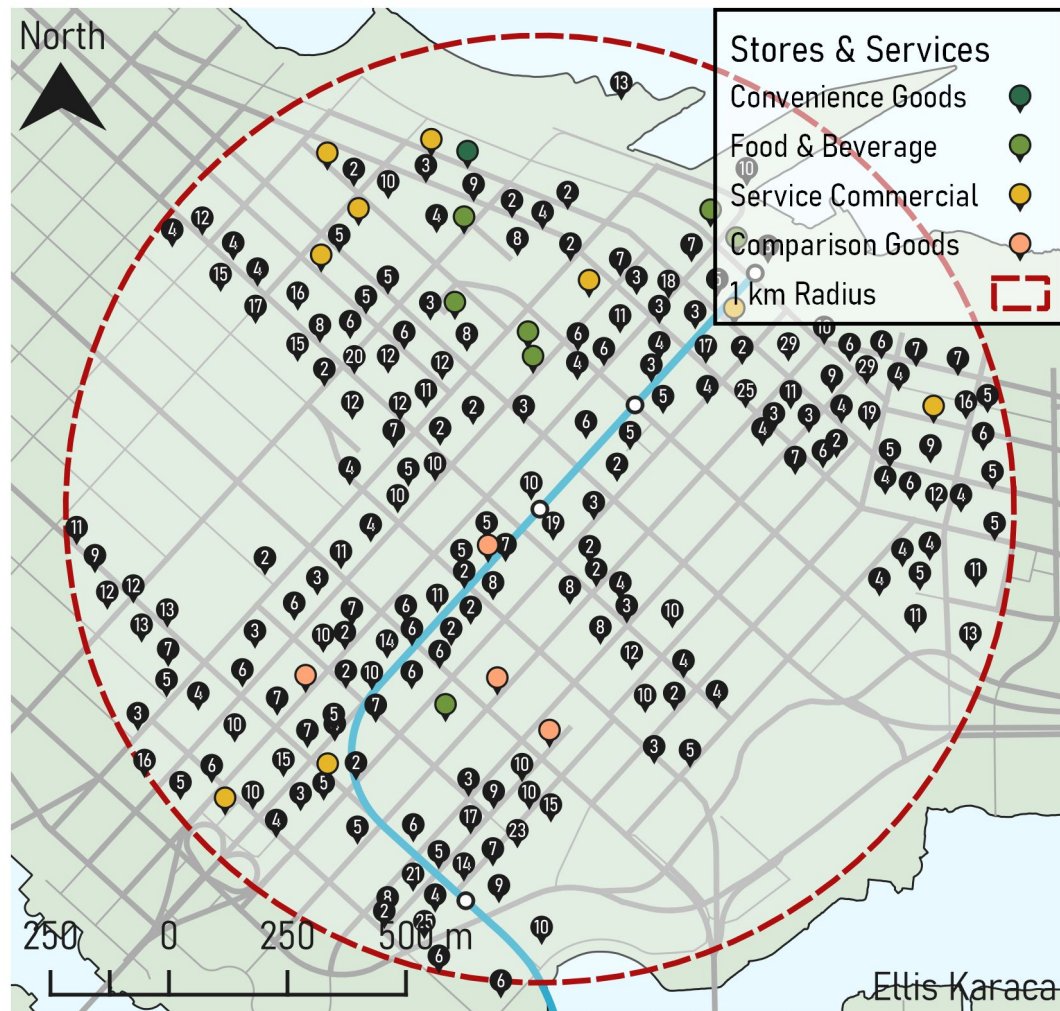
Convenience Goods (5.0\*): **180**

Food & Beverage (2.5\*): **569**

Service Commercial (2.5\*): **354**

Comparison Goods (1.0\*): **353**

Total Points: **3560.5**



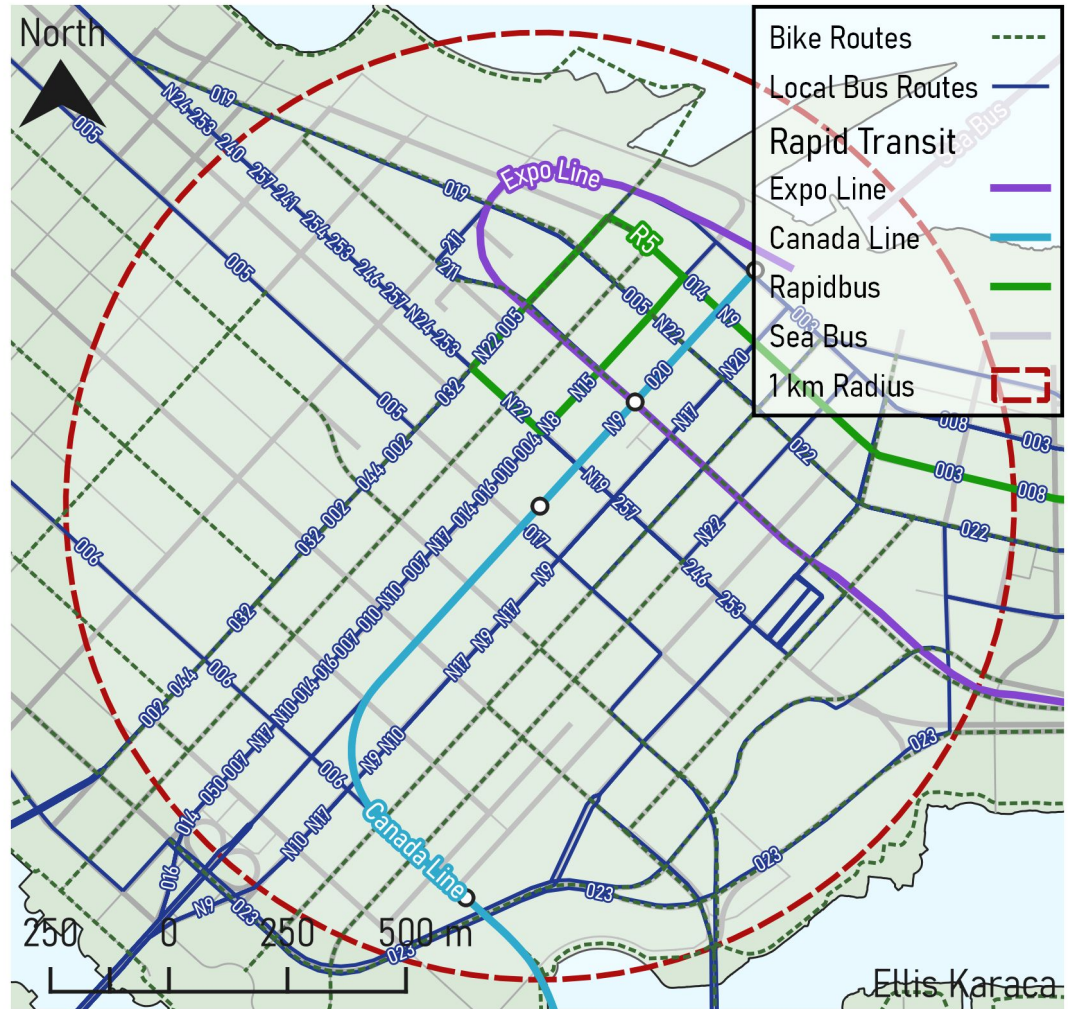
# Transportation Analysis: Vancouver City Centre Stn

## Rapid Transit Lines (5.0\*): 4

Local Bus Routes (2.5\*): **40**

Bike Routes (1.0\*): **22**

Total Points: **142**

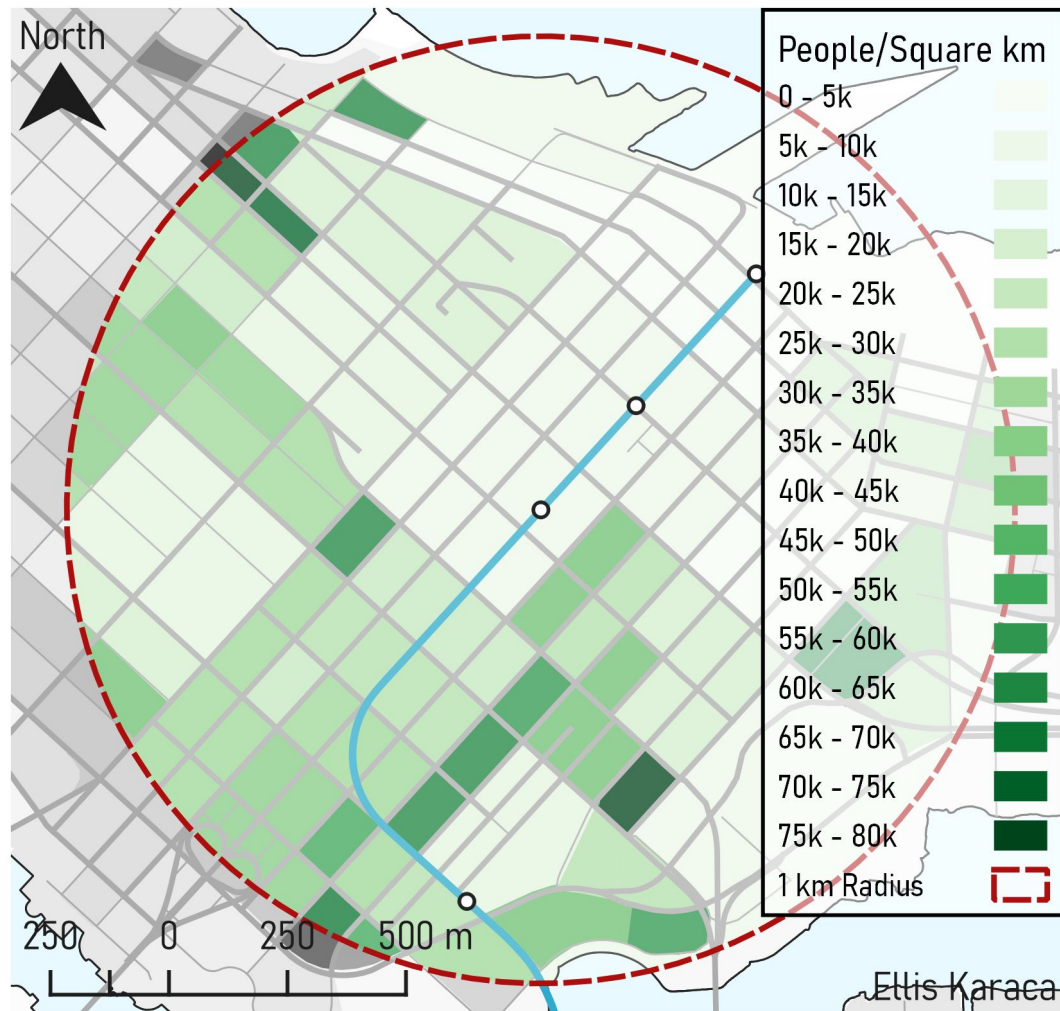




# Density Analysis: Vancouver City Centre Stn

Population (0.001\*): **60276**

Total Points: **60.3**



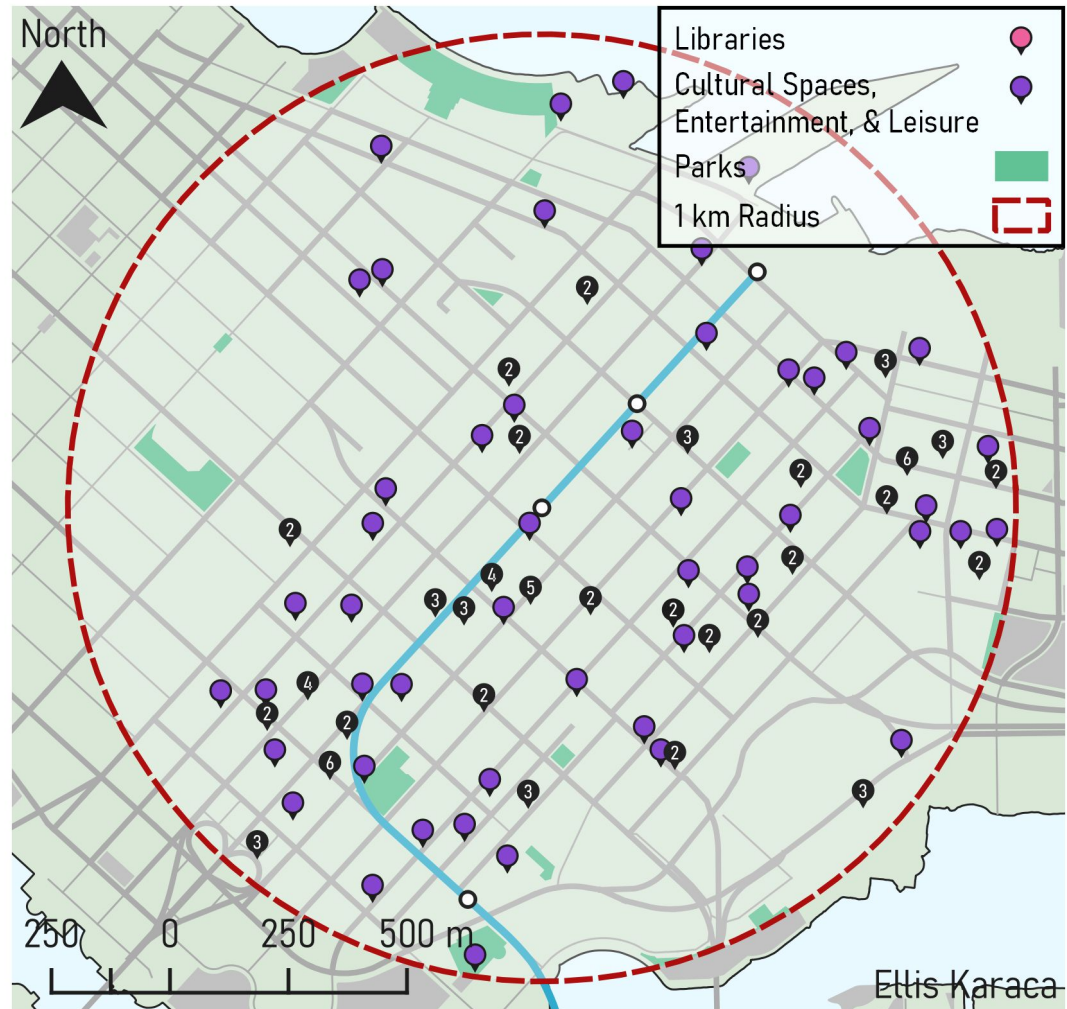
# Third Places Analysis: Vancouver City Centre Stn

Libraries (5.0\*): **2**

Parks ( $0.0749 \times 100 + 2.5^*$ ): **15**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **131**

Total Points: **186.0**



# Granville Station

Location Within Vancouver





# Stores & Services Analysis: Granville Stn

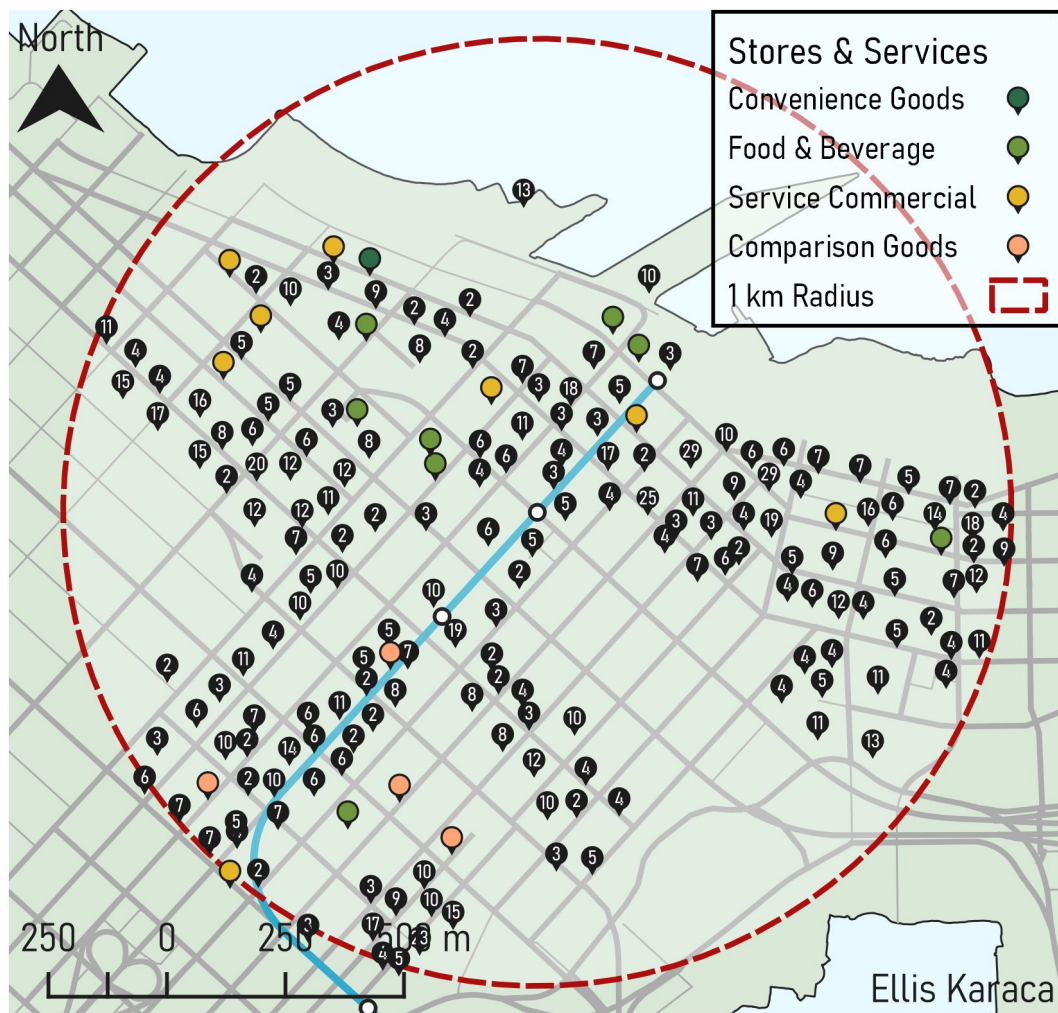
Convenience Goods (5.0\*): **153**

Food & Beverage (2.5\*): **492**

Service Commercial (2.5\*): **276**

Comparison Goods (1.0\*): **353**

Total Points: **3038**



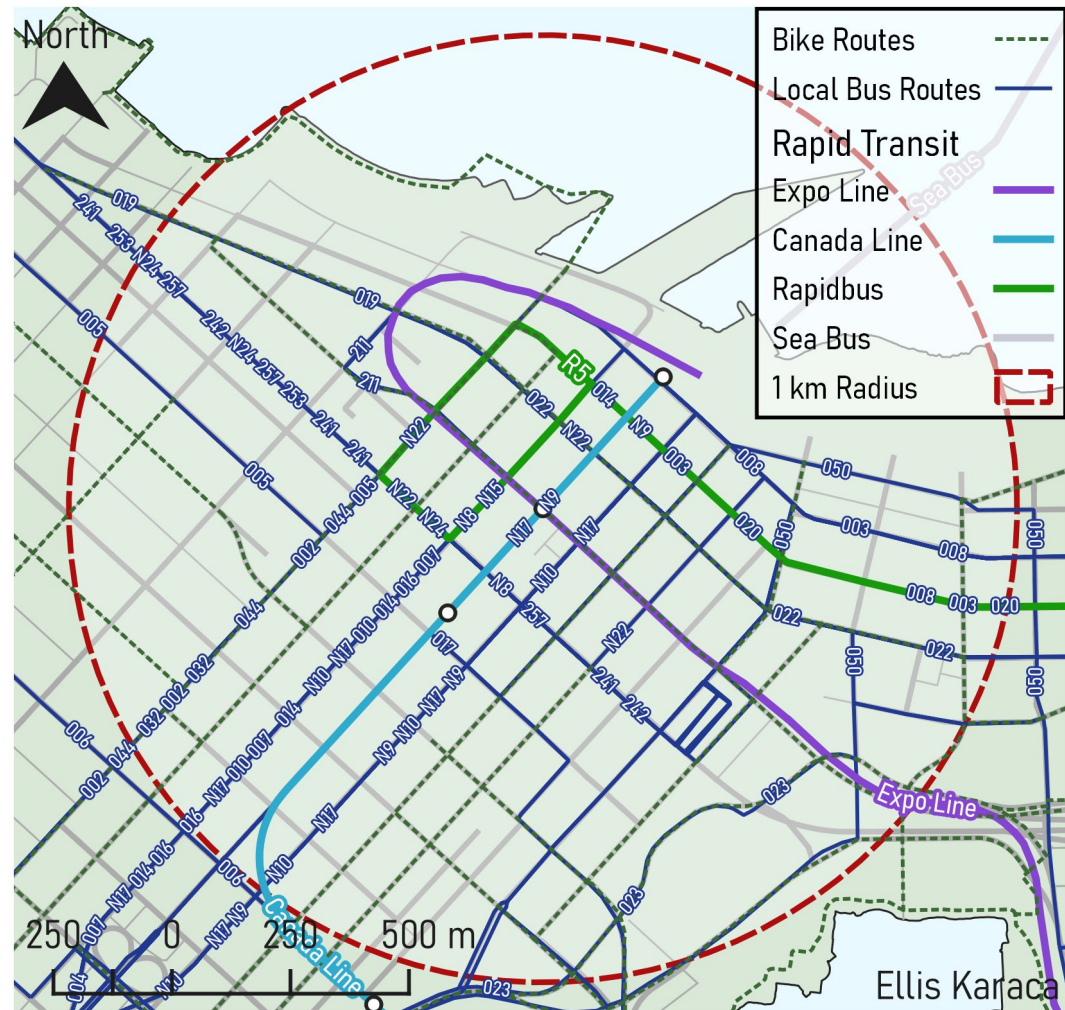
# Transportation Analysis: Granville Stn

Rapid Transit Lines (5.0\*): **4**

Local Bus Routes (2.5\*): **40**

Bike Routes (1.0\*): **23**

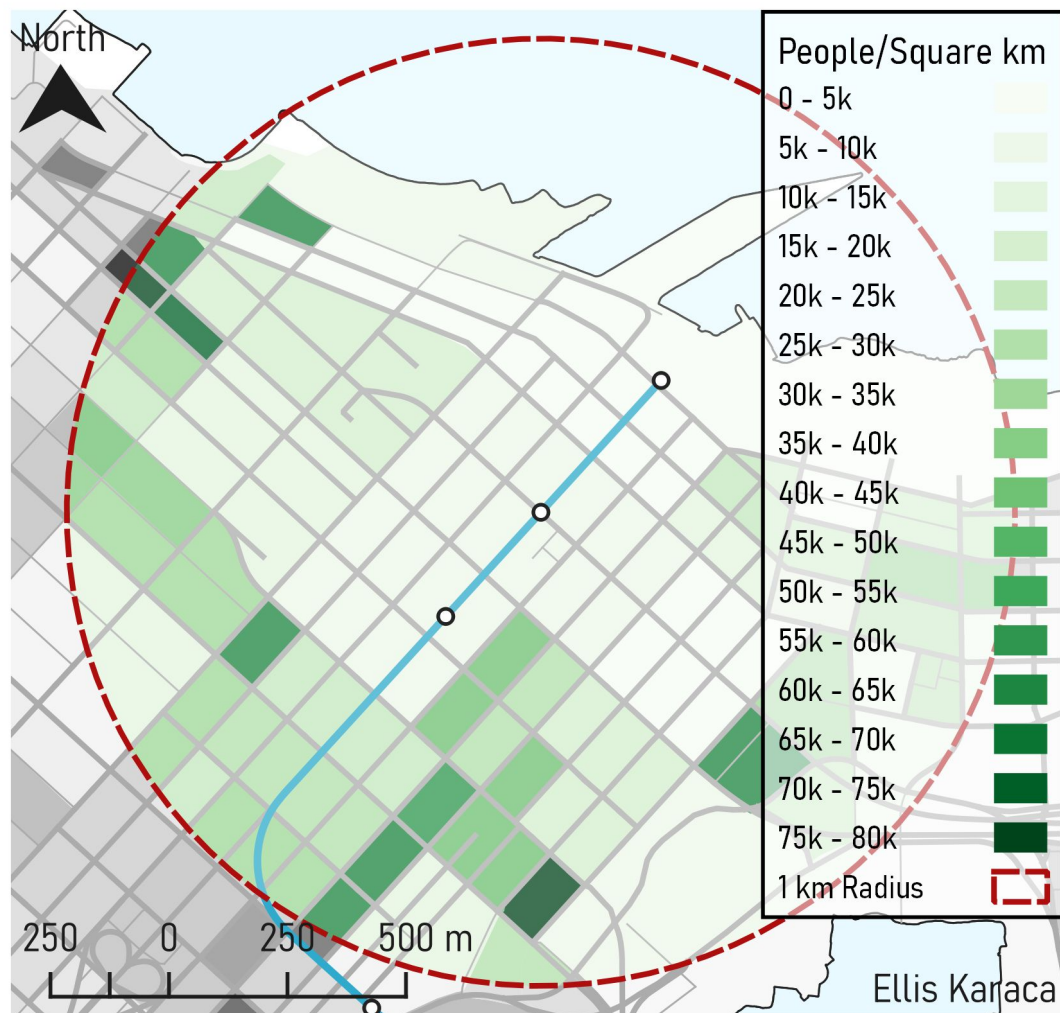
Total Points: **143**



# Density Analysis: Granville Stn

Population (0.001\*): **45821**

Total Points: **45.8**





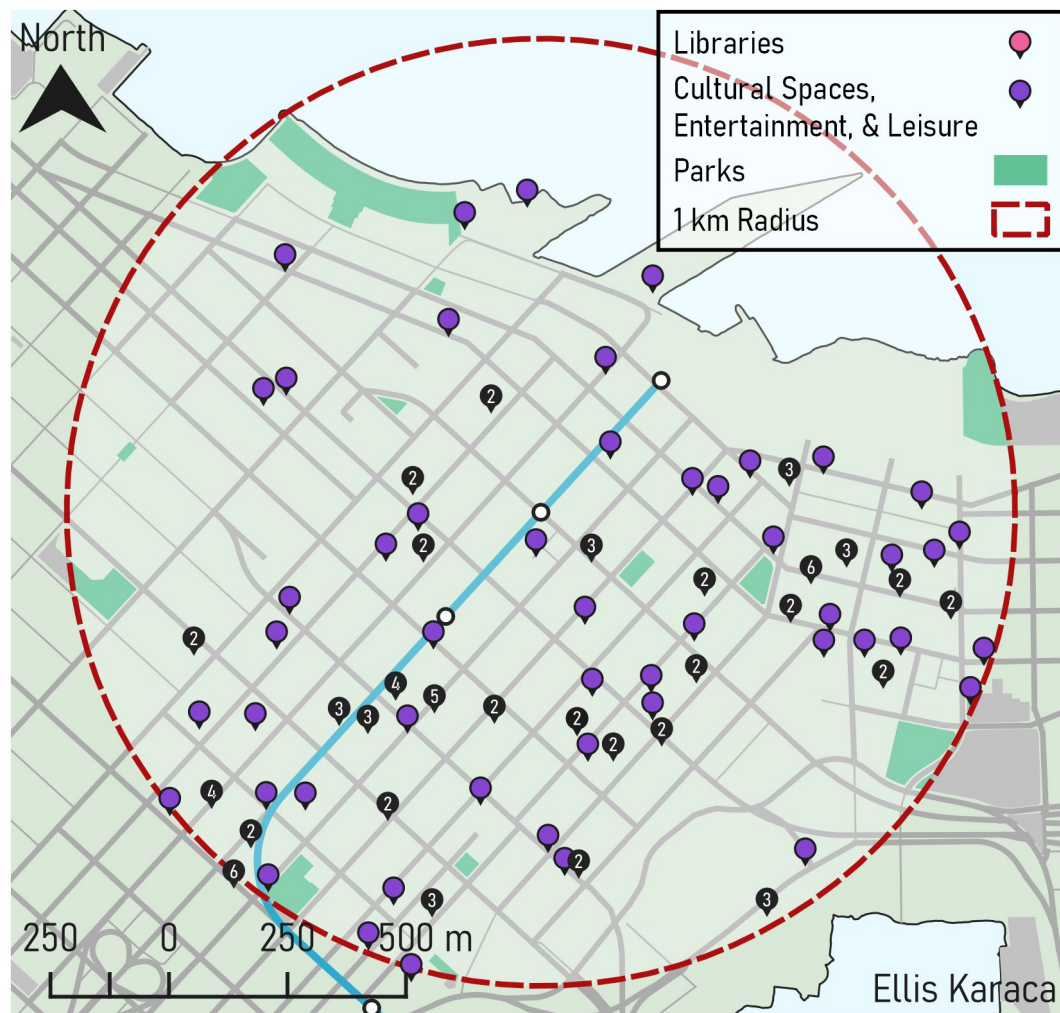
# Third Places Analysis: Granville Stn

Libraries (5.0\*): **2**

Parks (**0.0974**\*100 + 2.5\*): **15**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **127**

Total Points: **184.2**



# Waterfront Station

Location Within Vancouver



# Stores & Services Analysis: Waterfront Stn

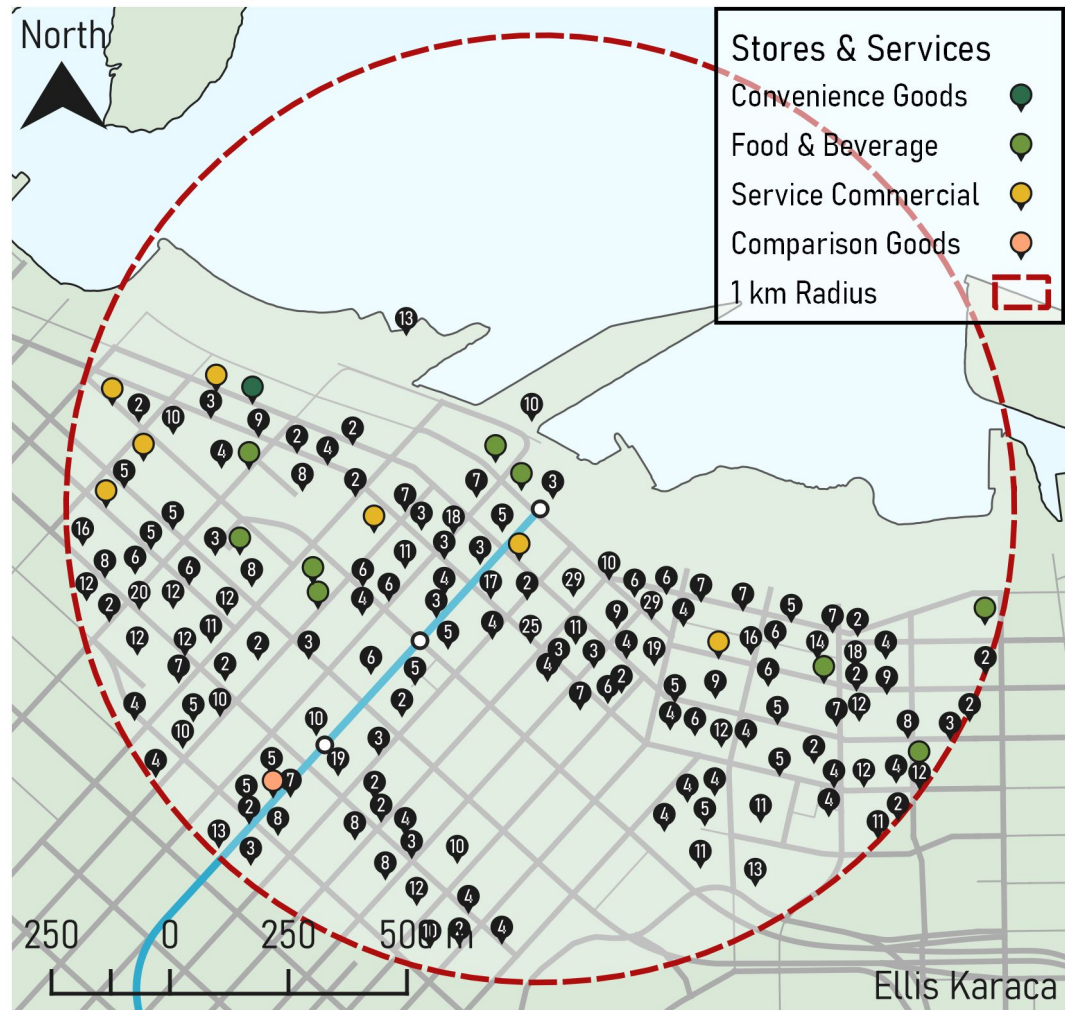
Convenience Goods (5.0\*): **122**

Food & Beverage (2.5\*): **366**

Service Commercial (2.5\*): **204**

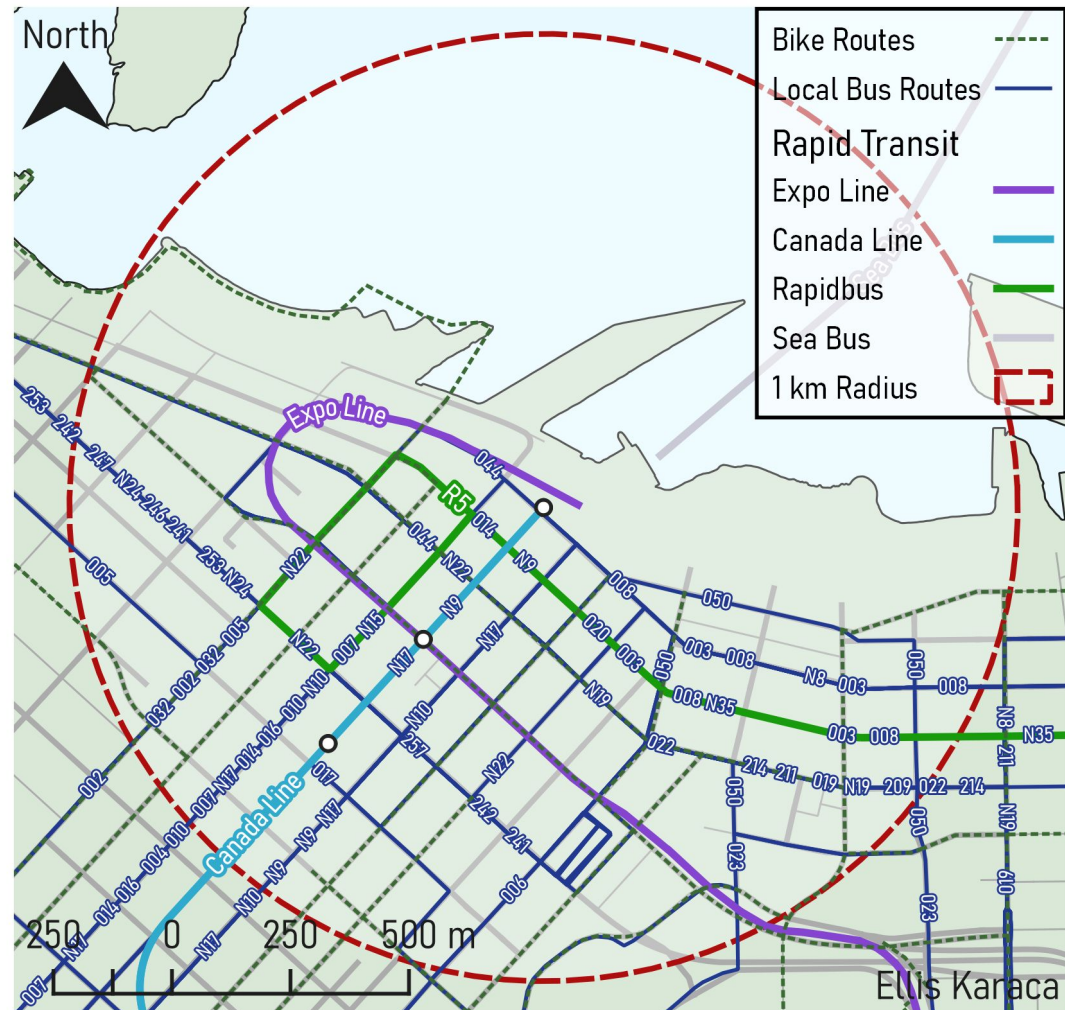
Comparison Goods (1.0\*): **332**

Total Points: **2367**





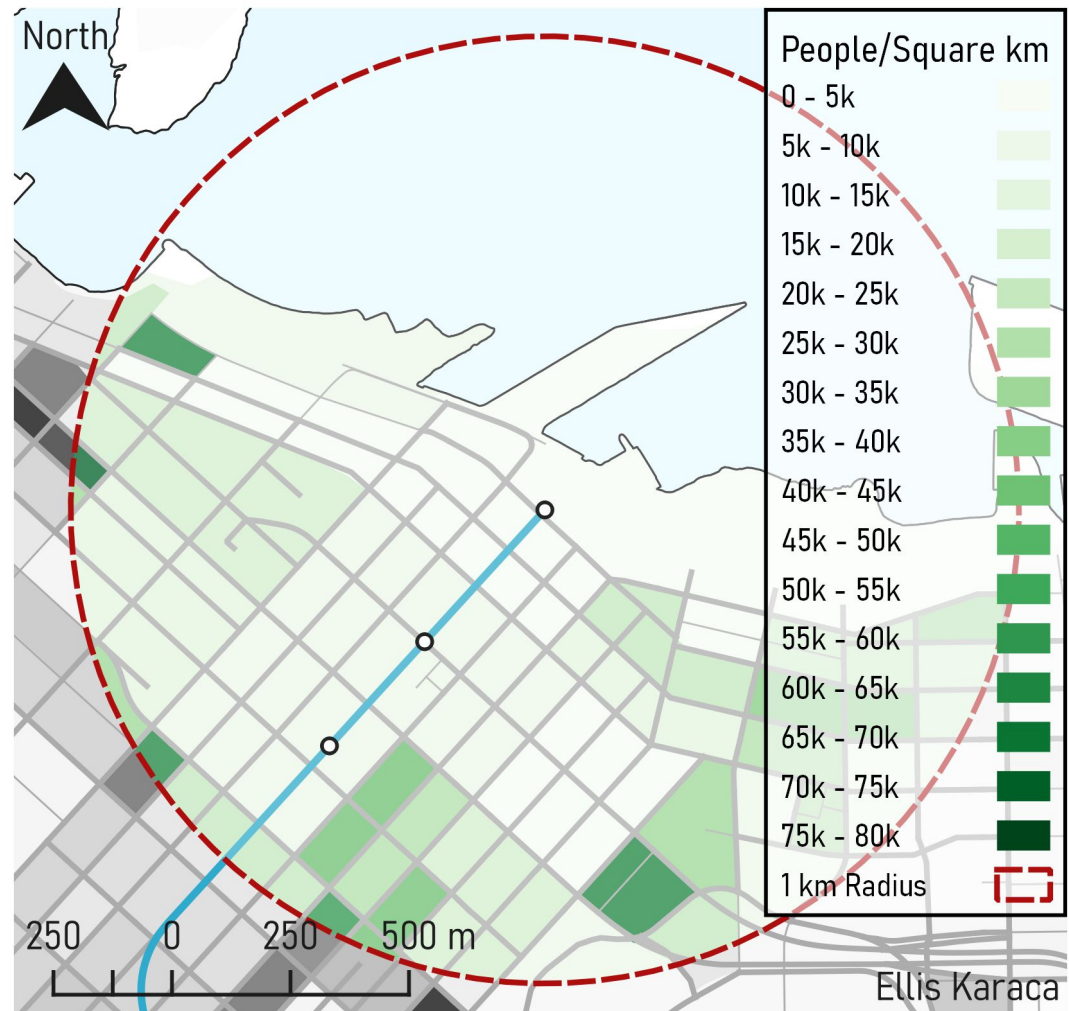
Total Points: **137**



# Density Analysis: Waterfront Stn

Population (0.001\*): **26909**

Total Points: **26.9**



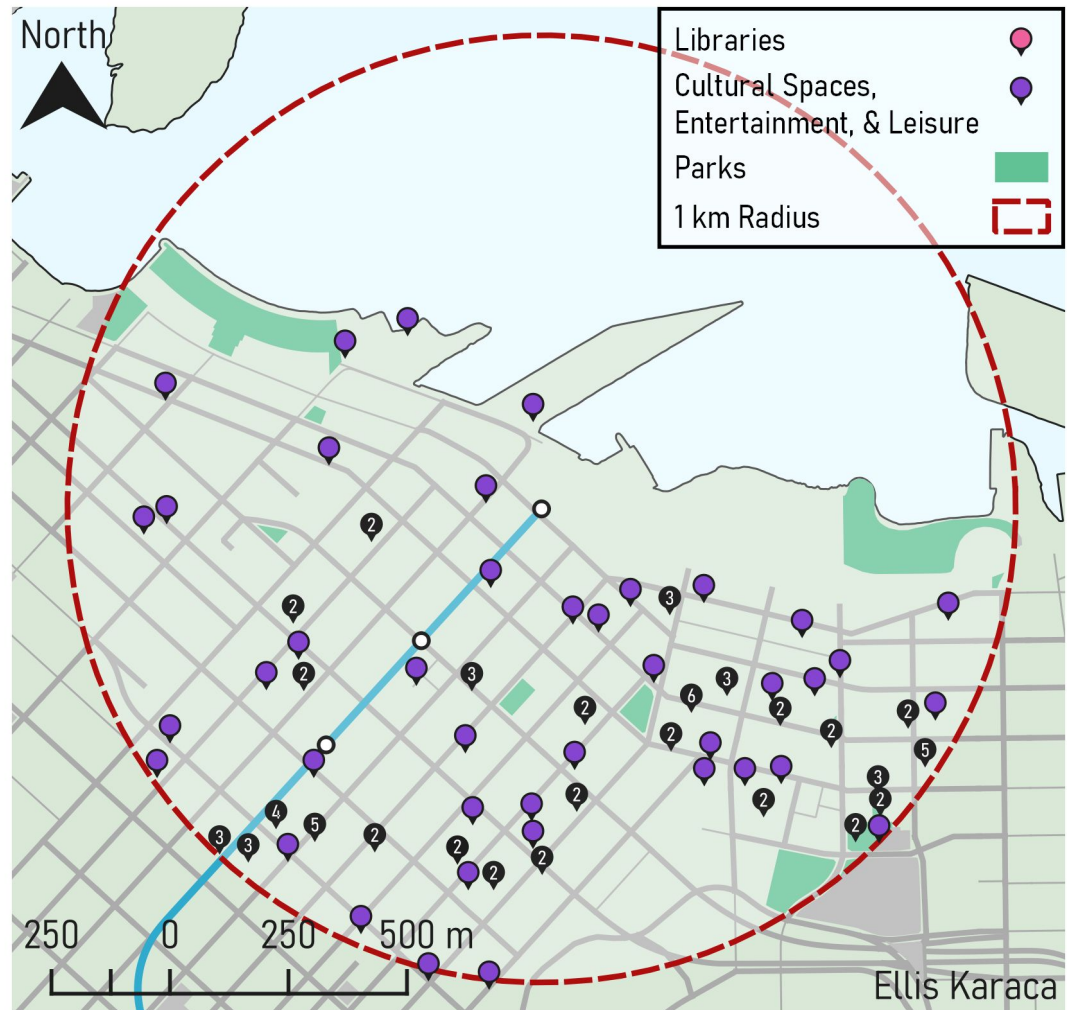
# Third Places Analysis: Waterfront Stn

Libraries (5.0\*): **2**

Parks (**0.0969**\*100 + 2.5\*): **11**

Cultural Places, Entertainment, &  
Leisure (1.0\*): **106**

Total Points: **153.2**



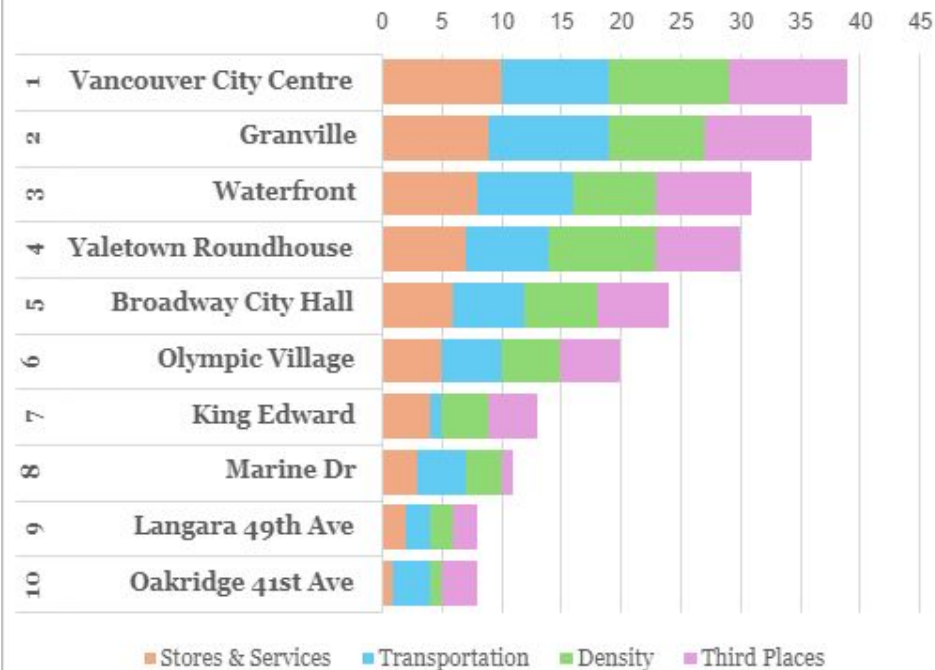
# Conclusion

Final Station Ranking Results



# Final Combined Ranking

Stations Ranked By Placement Points In Each Category





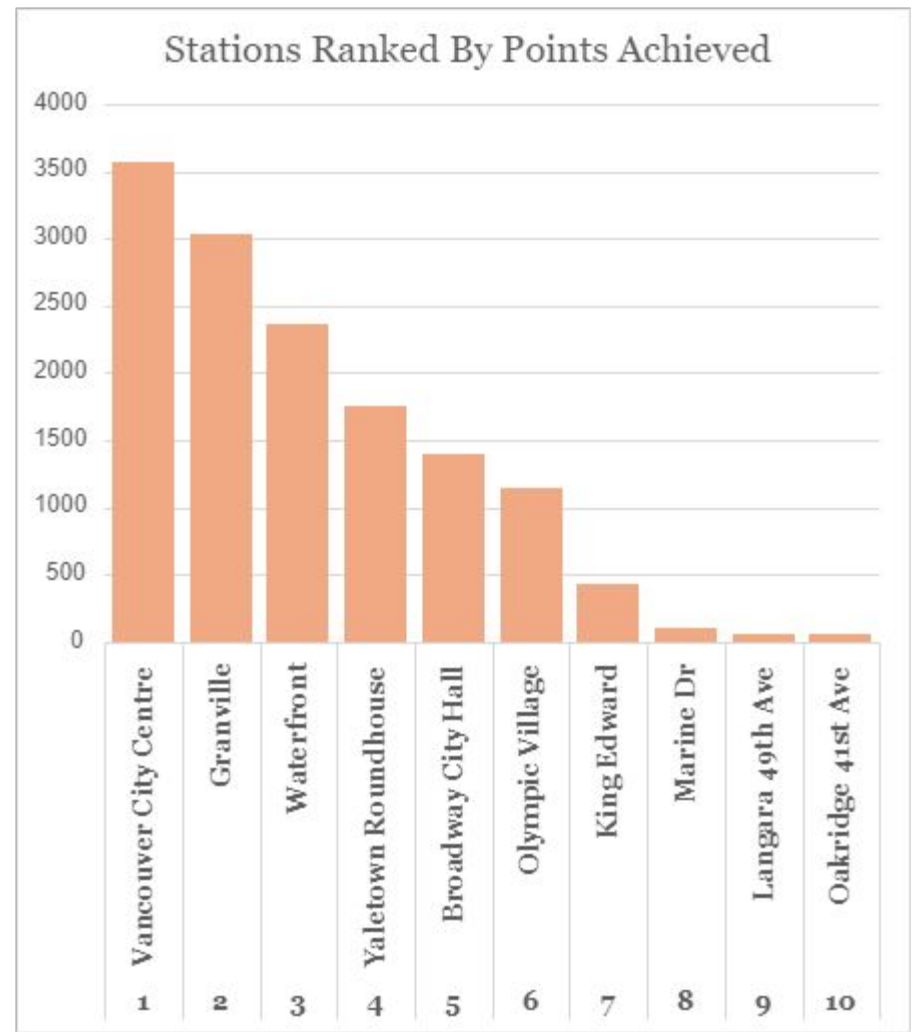
# Final Combined Ranking Breakdown

The Canada Line station final combined ranking is broken down into 4 categories, each of which has an equal weight in the combined ranking.

## Final Combined Ranking

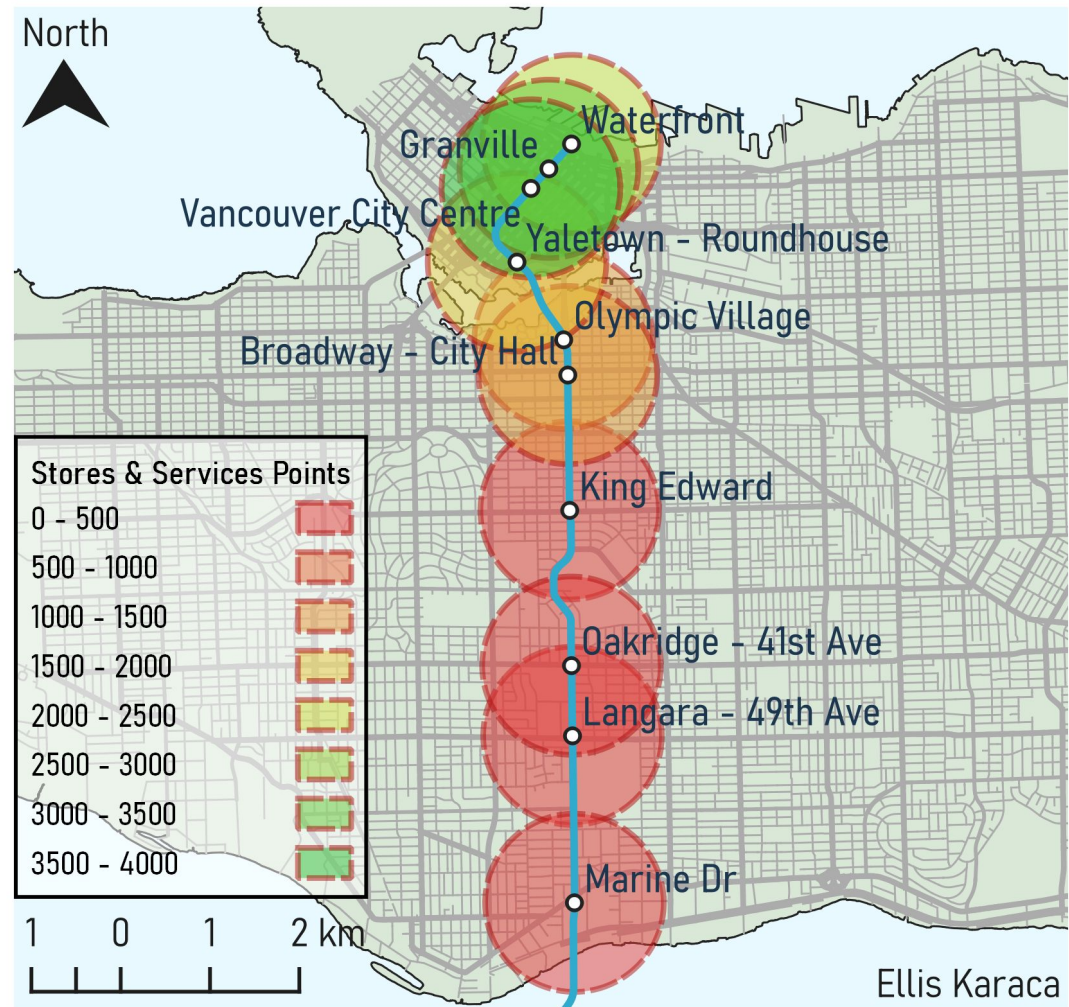
- Stores & Services
- Transportation
- Density
- Third Places

# Stores & Services

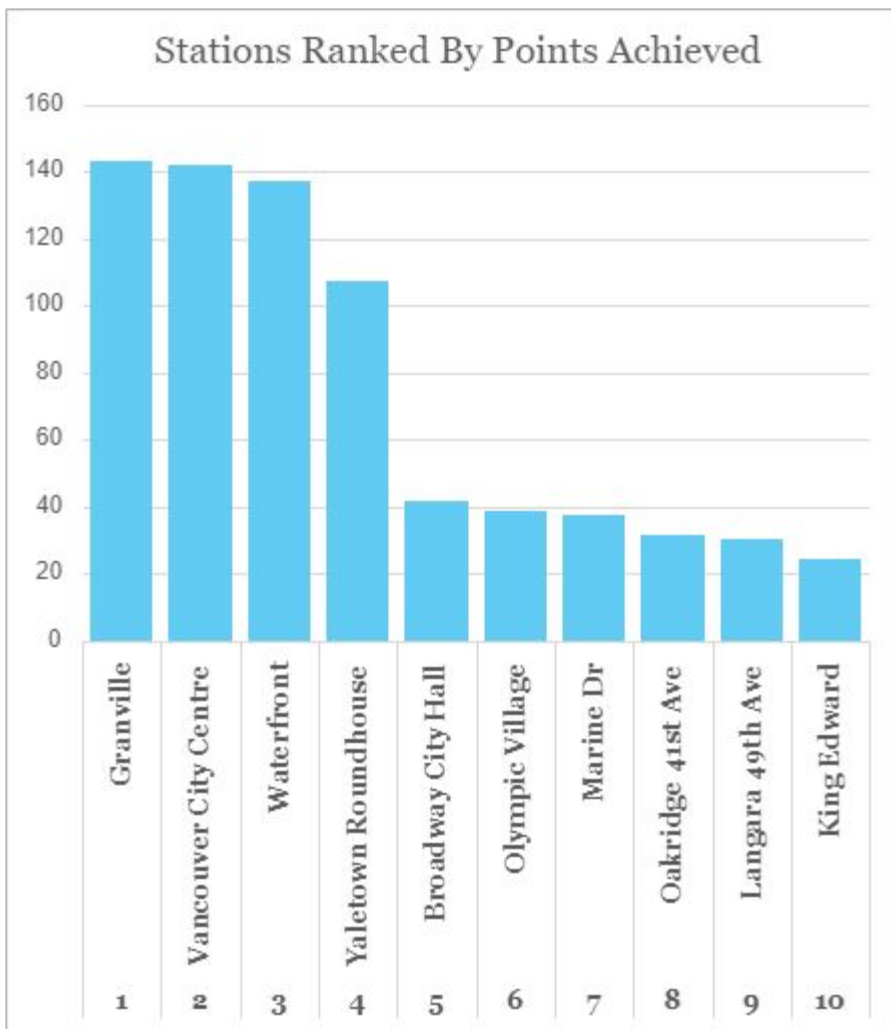


# Stores & Services: All Stations

Coloured based on points achieved

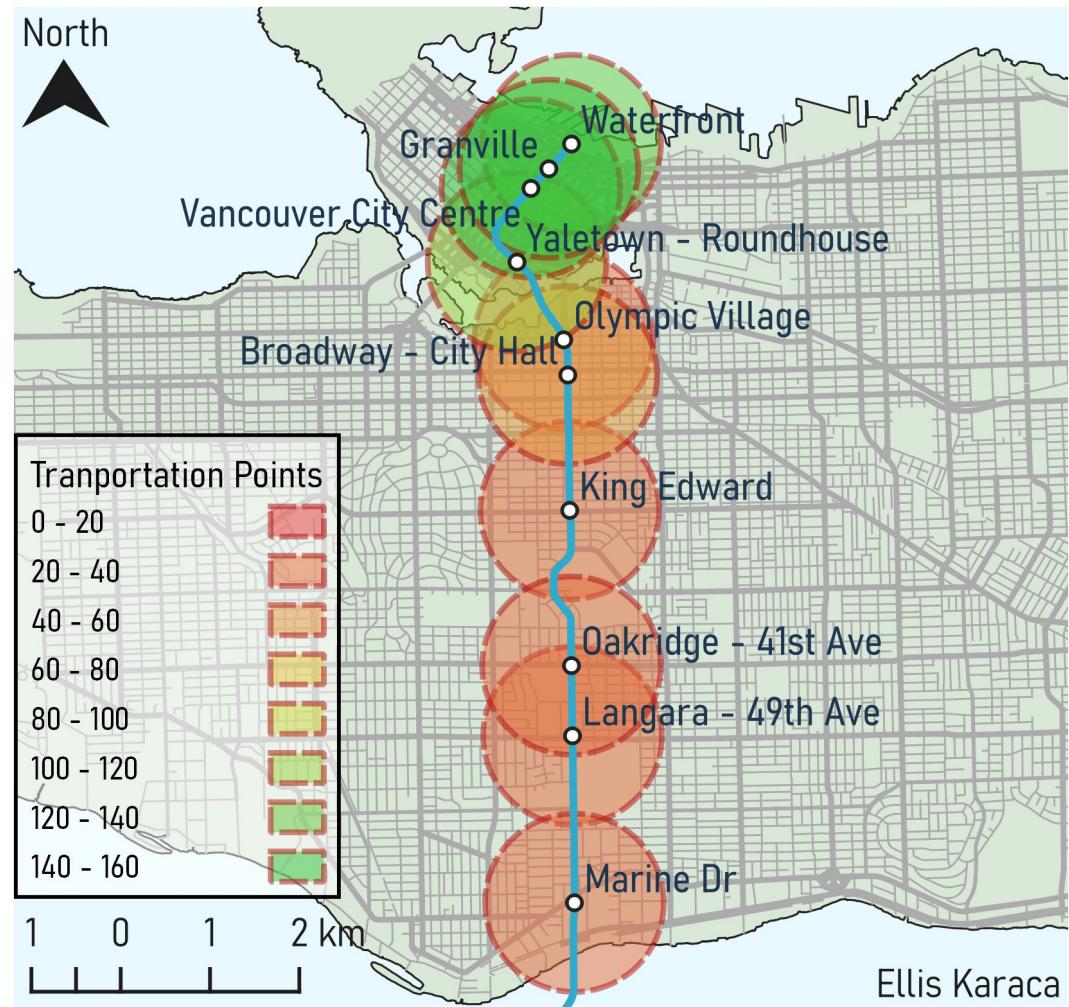


# Transportation



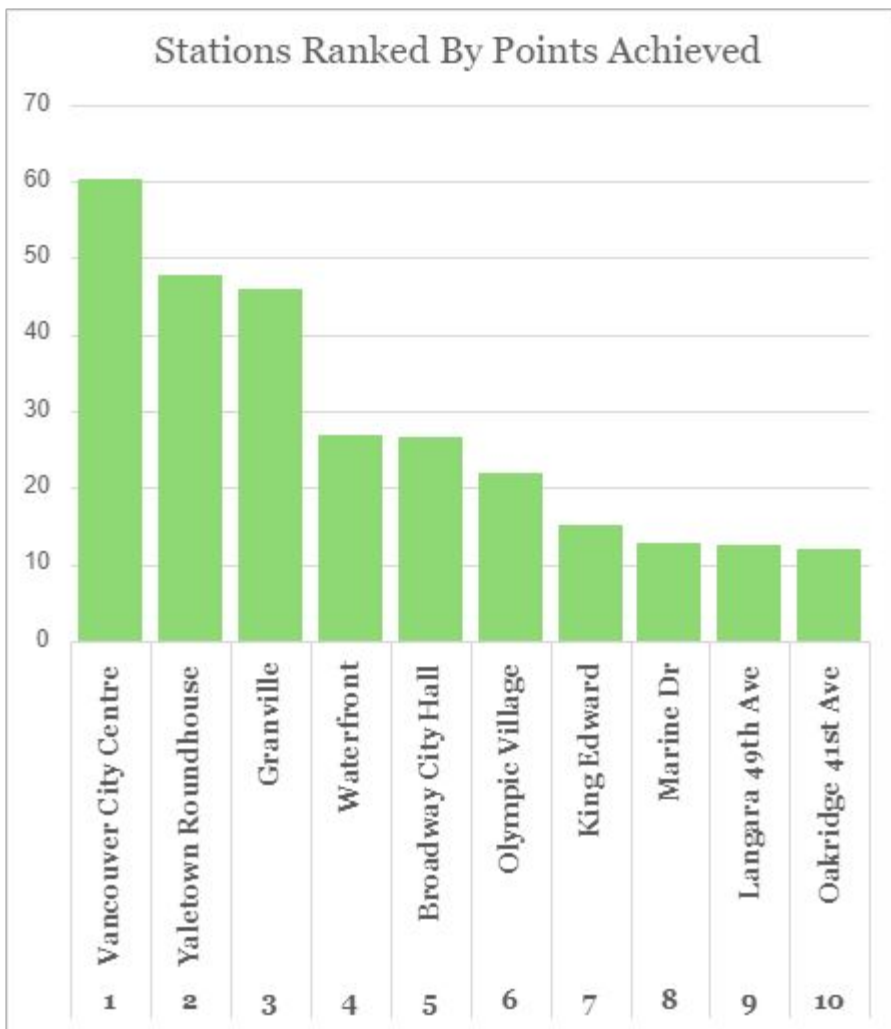
# Transportation: All Stations

Coloured based on points achieved



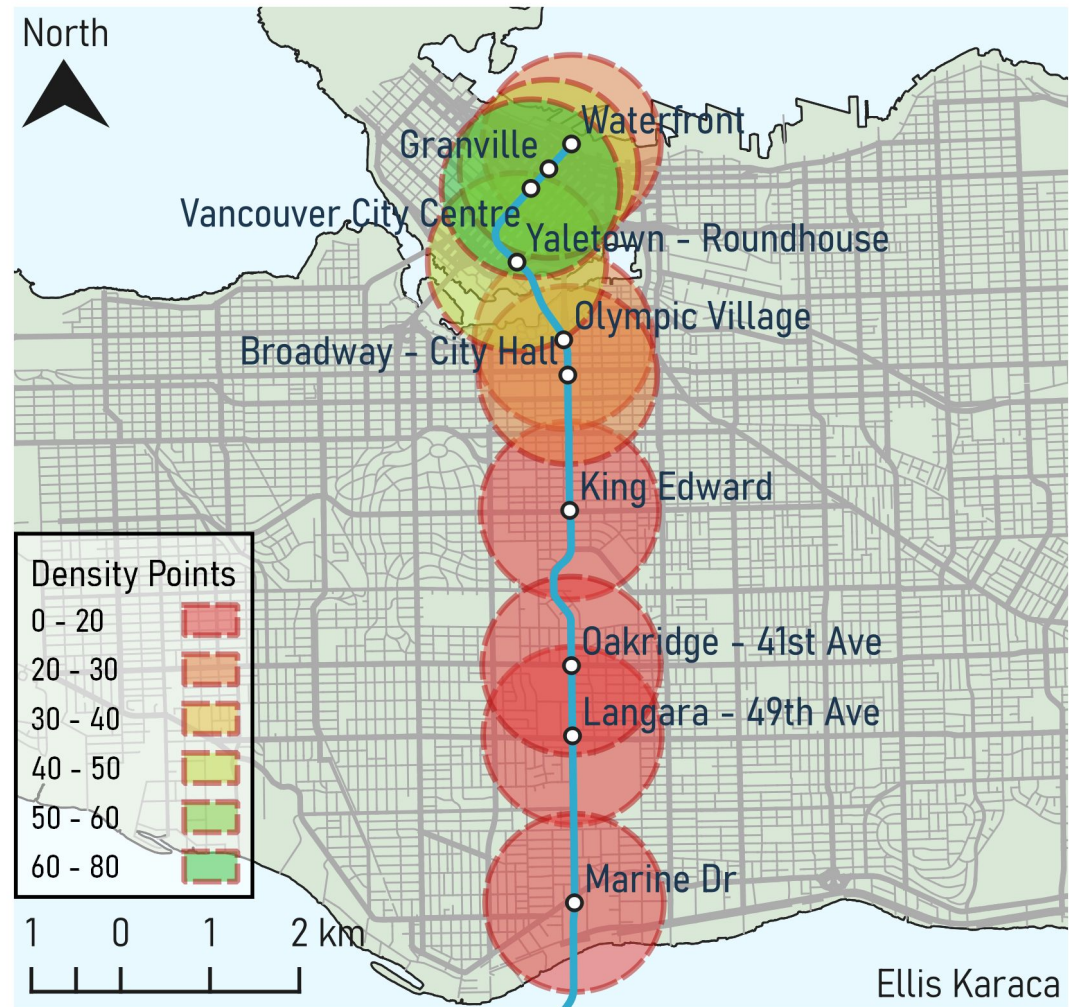


# Density

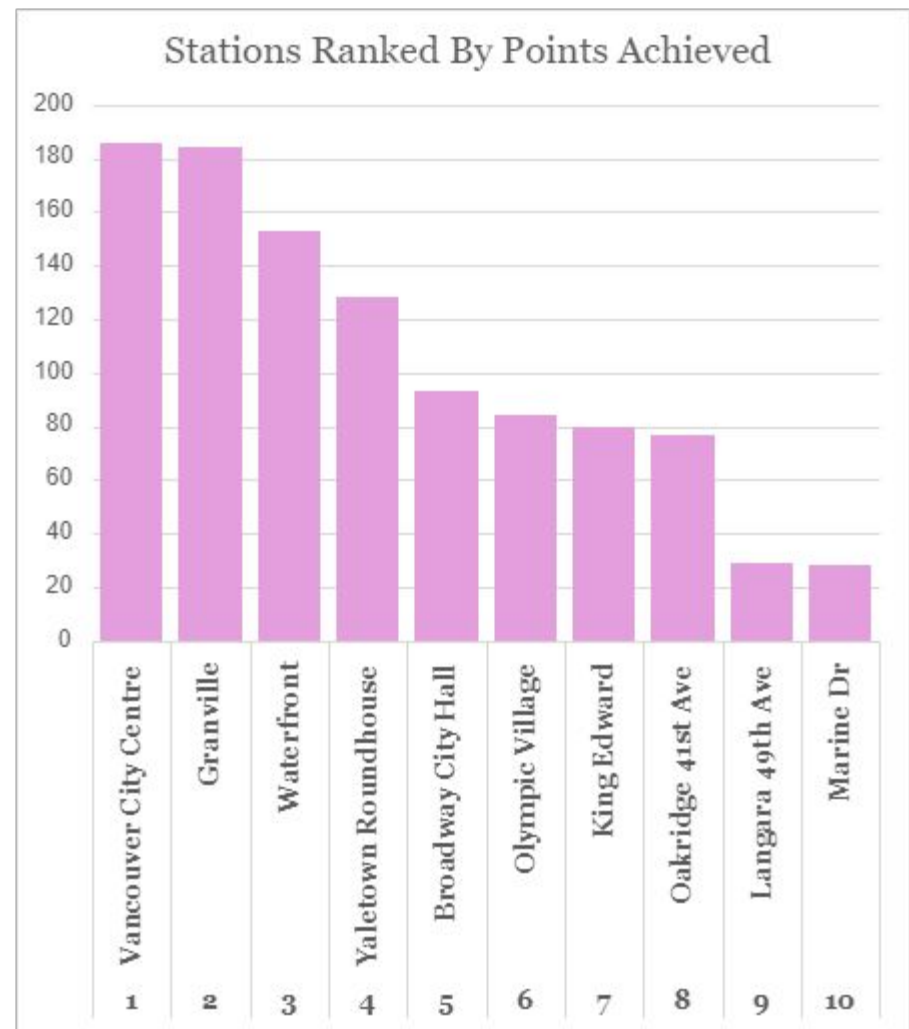


# Density: All Stations

Coloured based on points achieved

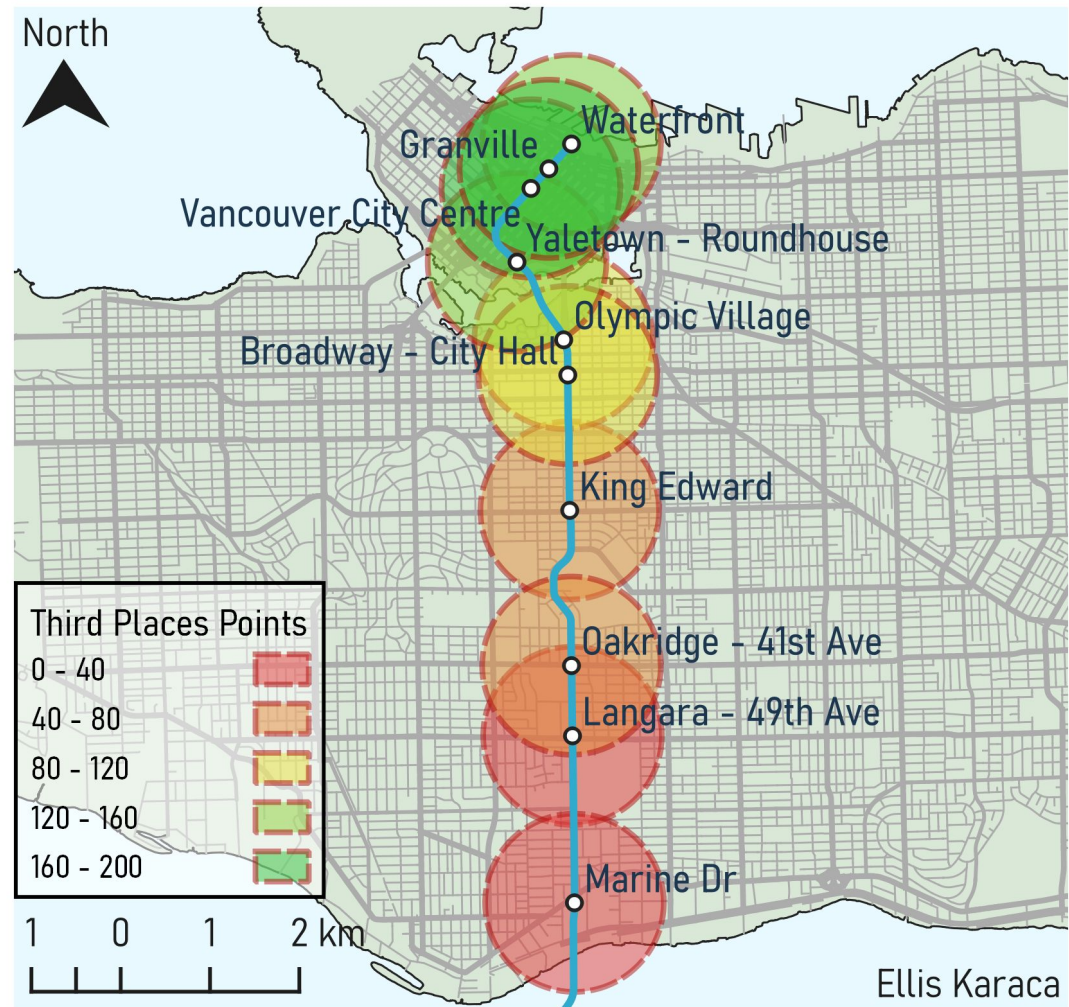


# Third Places



# Third Places: All Stations

Coloured based on points achieved



Ellis Karaca  
2024 April 8th  
Geography 2210