

ENSF 692 Final Project Report

Spring 2025

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Group #3

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Executive Summary

This report analyzes Calgary's housing and demographic trends using 2,024 records from three City of Calgary open datasets spanning 2016-2017. The analysis period was constrained to these years due to assessment data availability as complete median property valuations were only accessible in this timeframe. Our analysis addresses three critical urban planning questions that help city planners understand where Calgary is growing and where housing pressures are emerging.

Research Questions

1. Which city sectors are growing fastest?
 - a. To identify where infrastructure investment is needed
2. Which sectors have the highest property values?
 - a. To understand Calgary's premium real estate markets
3. How do inner-city and suburban areas grow differently?
 - a. To understand Calgary's urban development pattern.

Major Findings

- Southeast sector leads city growth with +3.5% population increase, demonstrating the strongest demographic momentum
- West sector commands Calgary's highest property values at \$523,021 average assessment, despite smaller population
- Continued suburban sprawl pattern as suburban areas grow (+2.1%) while inner-city communities experience population decline (-0.5%)

Data Sources

We merged three City of Calgary open datasets [1] – [3]:

1. Civic Census by Community and Dwelling Structure
 - a) Provides population counts, dwelling types, and vacancy data across all Calgary communities
2. Assessments by Community
 - a) Contains median residential property valuations that reflect market conditions and investment patterns
3. Communities by Ward

- a) Geographic classification system linking communities to wards, sectors, and development characteristics

Time Period: Analysis focused on 2016-2017 as these were the only years with complete assessment data across all three datasets.

Data Quality and Processing

- Scale
 - 2,577 community-year observations covering 248 distinct Calgary communities.
- Completeness
 - 78.5% usable data (2,024 valid records for analysis).
- Data Integrity
 - Merged three datasets using community names as primary keys.
- Missing Values
 - 8% of records missing sector classification, primarily industrial areas.

Derived Metrics

Metric	Purpose	Interpretation
VACANCY_RATE	Housing market health	<3% indicates tight market, >7% suggests oversupply
ASSESSMENT_PER_PERSON	Per-capita wealth indicator	Property value per resident, shows community affluence
GROWTH_MOMENTUM	Demographic trajectory	Year-over-year population change shows community vitality

Program Execution Instructions

System Requirements

This analysis program requires Python 3.7 or higher with the following packages installed

1. pandas (data manipulation and analysis)
2. matplotlib (visualization generation)
3. openpyxl (Excel file handling)

Repository Setup and Installation

1. Clone the GitHub repository

2. Navigate to the project directory

3. Install required packages using the provided requirements file:

```
pip install -r requirements.txt
```

Alternatively, install packages manually:

```
pip install pandas matplotlib openpyxl
```

Program Outputs

Upon successful execution, the program generates:

- Console output displaying comprehensive data analysis and research findings
- calgary_housing_research_analysis.png
- Four-panel research visualization
- calgary_housing_complete_analysis.xlsx
- Multi-sheet Excel file with complete dataset and analysis results

Optional: Clean Dataset Generation The repository includes pre-cleaned datasets for immediate analysis. To regenerate the cleaned dataset from raw data (optional): `python clean_dataset.py`

Research Findings and Analysis

Question 1: Fastest-Growing City Sectors

Methodology: Combined population and housing data by Calgary's geographic sectors, calculated year-over-year growth rates, and checked whether housing supply matches population growth patterns.

Results (descending population growth):

Sector	Population Growth	Market Assessment
Southeast	+3.5%	Fastest growth sector
North	+2.1%	Strong growth
Northeast	+1.8%	Moderate growth
Centre	+0.8%	Slow growth
South	+0.7%	Moderate growth
West	-0.1%	Stable
Northwest	-1.1%	Population decline
East	-1.3%	Population decline

Insight: Southeast Calgary shows the strongest population growth (+3.5%), followed by North (+2.1%) and Northeast (+1.8%) sectors, creating clear growth momentum in Calgary's eastern regions. In contrast, three sectors experienced population losses, with East (-1.3%) and Northwest (-1.1%) showing the steepest declines, while West remained relatively stable (-0.1%). This pattern reveals a distinct east-west divide in Calgary's demographic trends, with eastern sectors driving city expansion while western and northwestern areas face population challenges.

Planning Implications: Calgary should prioritize Southeast sector for faster approval processes and infrastructure planning to prevent housing shortages in the city's fastest-growing area. The strong growth areas in the Southeast, North, and Northeast sectors requires coordinated infrastructure investment, particularly in transportation and utilities, to support continued expansion. While declining sectors (East, Northwest) present opportunities for targeted revitalization efforts and policy interventions to reverse population losses and prevent neighborhood decline. The city's eastern growth momentum suggests shifting development pressure away from traditional western communities toward emerging suburban areas.

Question 2: Premium Property Markets

Methodology: Ranked Calgary sectors by average median residential assessment values to identify premium real estate markets and understand the relationship between population size and property values.

Results (descending avg assessment):

Sector	Avg Assessment	Total Population	Market Position
WEST	\$523,021	247,641	Premium market
SOUTH	\$484,939	451,152	High value/high-density
CENTRE	\$484,502	388,762	Urban premium
NORTHWEST	\$478,838	350,289	Upper-middle market
NORTH	\$412,251	386,927	Middle market
SOUTHEAST	\$395,150	259,419	Growing market
NORTHEAST	\$328,668	355,228	Affordable/high-density
EAST	\$265,728	115,726	Most affordable sector

Insight: Calgary's property market shows clear divisions three distinct market levels emerge with premium sectors (West, South, Centre) exceeding \$480,000, middle-tier markets ranging \$395,000-\$479,000, and affordable sectors below \$330,000. The relationship between population density and property values proves more complex than expected, while West sector follows the typical low-density premium pattern, South sector successfully combines high property values (\$485,000) with high population (451,000 residents), showing Calgary's potential for high-value, high-density development.

Planning Implications: Calgary's divided market requires different policy approaches. Premium sectors need infrastructure quality preservation, growing markets require faster development approvals and strategic investment, while affordable sectors would benefit from improvement programs and better transit connections. The South sector's success combining high values with high population provides a valuable model for sustainable urban development. Policy makers should study this approach to balance premium positioning with population growth while preventing further gaps between premium and affordable sectors.

Question 3: Inner-City vs Suburban Development Patterns

Methodology: Classified Calgary communities as Inner-City or Suburban based on historical development patterns, then compared growth trajectories, investment flows, and housing market dynamics.

Results:

Area Type	Population Growth	Median Assessment Growth	Vacancy Rate (2017)	Development Pattern
Suburban	+2.1%	+2.6%	7.8%	Continued expansion
Inner-City	-0.5%	-3.7%	9.0%	Population decline
Difference	+2.6pp	+6.3pp	-1.2pp	Favors suburban sprawl

Insight: Calgary shows clear suburban expansion patterns, with suburban areas growing in both population (+2.1%) and property values (+2.6%) while inner-city areas decline in both measures (-0.5% population, -3.7% property values). The 6.3 percentage point gap in property value growth shows significant investment flowing toward suburban development rather than inner-city renewal. Additionally, inner-city areas face higher vacancy rates (9.0%) compared to suburban areas (7.8%), indicating weaker housing demand in established neighborhoods. This pattern confirms Calgary's continued outward expansion rather than urban core strengthening.

Planning Implications: This pattern shows ongoing urban development challenges requiring targeted policy responses. The city should focus on reversing inner-city population decline through improvement programs, better transit connections, and enhanced services and facilities to make downtown living more attractive. Calgary must also manage the infrastructure costs and environmental effects of continued suburban expansion, including transportation networks, utilities, and green space preservation. Without intervention, this trend will further increase city service costs while leaving inner-city areas underutilized, creating an unsustainable development pattern.

Figure 1: Clean Dataset Module Output

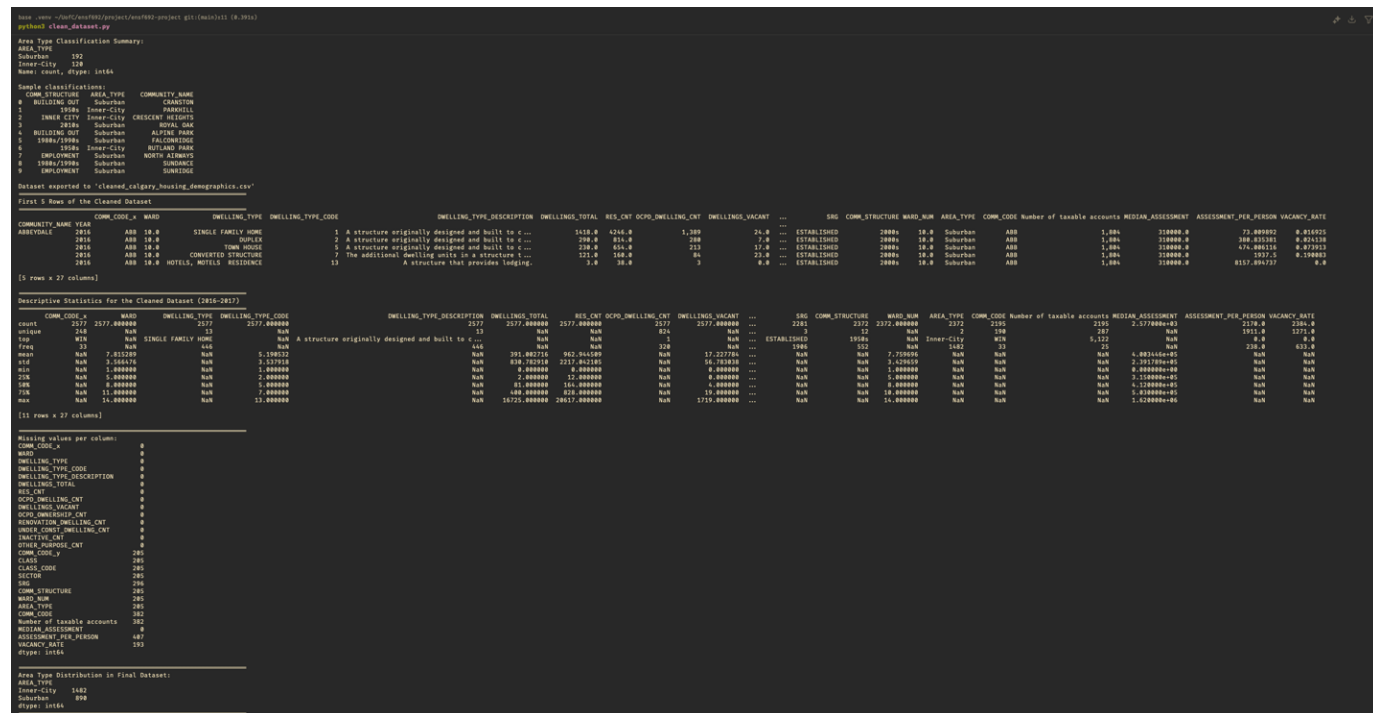


Figure 2: Calgary Housing Analysis Program Invalid Community Name Error Handling

```
base .venv ~/UofC/ensf692/project/ensf692-project git:(main)❯  
python3 calgary-housing-analysis.py  
  
Calgary Housing and Demographics Analysis System  
ENSF 692 Spring 2025 - Final Project  
  
Loading Calgary Housing and Demographics Data ...  
  
Area Type Classification Summary:  
AREA_TYPE  
Suburban 192  
Inner-City 120  
Name: count, dtype: int64  
  
Sample classifications:  
COMM_STRUCTURE AREA_TYPE COMMUNITY_NAME  
0 BUILDING OUT Suburban CRANSTON  
1 1950s Inner-City PARKHILL  
2 INNER CITY Inner-City CRESCENT HEIGHTS  
3 2010s Suburban ROYAL OAK  
4 BUILDING OUT Suburban ALPINE PARK  
5 1980s/1990s Suburban FALCONRIDGE  
6 1950s Inner-City RUTLAND PARK  
7 EMPLOYMENT Suburban NORTH AIRWAYS  
8 1980s/1990s Suburban SUNDANCE  
9 EMPLOYMENT Suburban SUNRIDGE  
Dataset loaded successfully! 2577 records available.  
  
Missing Values Summary:  
COMM_CODE.y: 205 (8.0%)  
CLASS: 205 (8.0%)  
CLASS_CODE: 205 (8.0%)  
SECTOR: 205 (8.0%)  
SRG: 296 (11.5%)  
COMM_STRUCTURE: 205 (8.0%)  
WARD_NUM: 205 (8.0%)  
AREA_TYPE: 205 (8.0%)  
COMM_CODE: 382 (14.8%)  
Number of taxable accounts: 382 (14.8%)  
ASSESSMENT_PER_PERSON: 407 (15.8%)  
VACANCY_RATE: 193 (7.5%)  
  
Dataset Overview:  


|       | WARD        | DWELLING_TYPE_CODE | DWELLINGS_TOTAL | RES_CNT      | DWELLINGS_VACANT | RENOVATION_DWELLING_CNT | INACTIVE_CNT | OTHER_PURPOSE_CNT | CLASS_CODE  | WARD_NUM    | MEDIAN_ASSESSMENT |
|-------|-------------|--------------------|-----------------|--------------|------------------|-------------------------|--------------|-------------------|-------------|-------------|-------------------|
| count | 2577.000000 | 2577.000000        | 2577.000000     | 2577.000000  | 2577.000000      | 2577.000000             | 2577.000000  | 2577.000000       | 2372.000000 | 2577.000000 | 2.577000e+03      |
| mean  | 7.815289    | 5.190532           | 391.002716      | 962.944509   | 17.227784        | 1.353512                | 1.444703     | 1.204501          | 1.039629    | 7.736903    | 4.003446e+05      |
| std   | 3.566476    | 3.537918           | 830.782910      | 2217.042105  | 56.783038        | 3.602371                | 6.908687     | 6.315564          | 0.201507    | 3.464529    | 2.391789e+05      |
| min   | 1.000000    | 1.000000           | 0.000000        | 0.000000     | 0.000000         | 0.000000                | 0.000000     | 0.000000          | 1.000000    | 1.000000    | 0.000000e+00      |
| 25%   | 5.000000    | 2.000000           | 2.000000        | 12.000000    | 0.000000         | 0.000000                | 0.000000     | 0.000000          | 1.000000    | 5.000000    | 3.150000e+05      |
| 50%   | 8.000000    | 5.000000           | 81.000000       | 164.000000   | 4.000000         | 0.000000                | 0.000000     | 0.000000          | 1.000000    | 8.000000    | 4.120000e+05      |
| 75%   | 11.000000   | 7.000000           | 480.000000      | 828.000000   | 19.000000        | 1.000000                | 0.000000     | 1.000000          | 1.000000    | 10.000000   | 5.430000e+05      |
| max   | 14.000000   | 13.000000          | 16725.000000    | 20617.000000 | 1719.000000      | 101.000000              | 205.000000   | 151.000000        | 3.000000    | 14.000000   | 1.620000e+06      |

  
  
User Input Section  
  
Available communities (showing first 10):  
- ABBEYDALE  
- ACADIA  
- ALBERT PARK/RADISSON HEIGHTS  
- ALTADORE  
- ALYTH/BONNYBROOK  
- APPLEWOOD PARK  
- ARBOUR LAKE  
- ASPEN WOODS  
- AUBURN BAY  
- BANFF TRAIL  
... and 238 more  
  
Enter community name (or 'list' to see all): Fake Community  
  
Error: 'FAKE COMMUNITY' not found.  
Tip: Try typing just the first few letters, or use 'list' to see all options  
Available communities (showing first 10):  
- ABBEYDALE  
- ACADIA  
- ALBERT PARK/RADISSON HEIGHTS  
- ALTADORE  
- ALYTH/BONNYBROOK  
- APPLEWOOD PARK  
- ARBOUR LAKE  
- ASPEN WOODS  
- AUBURN BAY  
- BANFF TRAIL  
... and 238 more  
  
Enter community name (or 'list' to see all):
```

Figure 3: Calgary Housing Analysis Program Invalid Year Error Handling

```
base .venv ~/UofC/ensf692/project/ensf692-project git:(main):11
python3 calgary-housing-analysis.py
```

Calgary Housing and Demographics Analysis System
ENSF 692 Spring 2025 - Final Project

Loading Calgary Housing and Demographics Data ...

Area Type Classification Summary:
AREA_TYPE
Suburban 192
Inner-City 120
Name: count, dtype: int64

Sample classifications:

COMM_STRUCTURE	AREA_TYPE	COMMUNITY_NAME
0 BUILDING OUT	Suburban	CRANSTON
1 1950s	Inner-City	PARKHILL
2 INNER CITY	Inner-City	CRESCENT HEIGHTS
3 2010s	Suburban	ROYAL OAK
4 BUILDING OUT	Suburban	ALPINE PARK
5 1980s/1990s	Suburban	FALCONRIDGE
6 1950s	Inner-City	RUTLAND PARK
7 EMPLOYMENT	Suburban	NORTH ALIBAYS
8 1980s/1990s	Suburban	SUNDANCE
9 EMPLOYMENT	Suburban	SUNRIDGE

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CLASS: 205 (8.0%)
CLASS_CODE: 205 (8.0%)
SECTOR: 205 (8.0%)
SRG: 296 (11.5%)
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WARD_NUM: 205 (8.0%)
AREA_TYPE: 205 (8.0%)
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Dataset Overview:

	WARD	DWELLING_TYPE_CODE	DWELLINGS_TOTAL	RES_CNT	DWELLINGS_VACANT	RENOVATION_DWELLING_CNT	INACTIVE_CNT	OTHER_PURPOSE_CNT	CLASS_CODE	WARD_NUM	MEDIAN_ASSESSMENT
count	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2372.000000	2577.000000	2.577000e+03
mean	7.815289	5.198532	391.002716	962.944509	17.227784	1.353512	1.444783	1.204501	1.039629	7.736903	4.003446e+05
std	3.566476	3.537918	830.782910	2217.042105	56.783038	3.682371	6.908687	6.315564	0.201507	3.464529	2.391789e+05
min	1.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	1.000000	0.000000e+00
25%	5.000000	2.000000	2.000000	12.000000	0.000000	0.000000	0.000000	0.000000	1.000000	5.000000	3.150000e+05
50%	8.000000	5.000000	81.000000	164.000000	4.000000	0.000000	0.000000	0.000000	1.000000	8.000000	4.120000e+05
75%	11.000000	7.000000	480.000000	828.000000	19.000000	1.000000	0.000000	1.000000	1.000000	10.000000	5.030000e+05
max	14.000000	13.000000	16725.000000	20617.000000	1719.000000	101.000000	205.000000	151.000000	3.000000	14.000000	1.620000e+06

User Input Section

Available communities (showing first 10):

- ABBEYDALE
- ACADIA
- ALBERT PARK/RADISSON HEIGHTS
- ALTADORE
- ALYTH/BONNYBROOK
- APPLEWOOD PARK
- ARBOUR LAKE
- ASPEN WOODS
- AUBURN BAY
- BANFF TRAIL
- ... and 238 more

Enter community name (or 'list' to see all): Acadia
Enter year (2016 or 2017): 2020

Error: Year must be 2016 or 2017
Please try again.

Enter year (2016 or 2017):

Figure 4,5,6: Calgary Housing Analysis Program Successful User Input and Community Profile, Analysis Output, Program Completion and File Export

```
base .venv ~/UofC/ensf692/project/ensf692-project git:(main)!11 (9.795s)
python3 calgary-housing-analysis.py
```

Calgary Housing and Demographics Analysis System
ENSF 692 Spring 2025 - Final Project

Loading Calgary Housing and Demographics Data ...

Area Type Classification Summary:

AREA_TYPE
Suburban 192
Inner-City 120
Name: count, dtype: int64

Sample classifications:

	COMM_STRUCTURE	AREA_TYPE	COMMUNITY_NAME
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1	1950s	Inner-City	PARKHILL
2	INNER CITY	Inner-City	CRESCENT HEIGHTS
3	2010s	Suburban	ROYAL OAK
4	BUILDING OUT	Suburban	ALPINE PARK
5	1980s/1990s	Suburban	FALCONRIDGE
6	1950s	Inner-City	RUTLAND PARK
7	EMPLOYMENT	Suburban	NORTH AIRWAYS
8	1980s/1990s	Suburban	SUNDANCE
9	EMPLOYMENT	Suburban	SUNRIDGE

Dataset loaded successfully! 2577 records available.

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Dataset Overview:

	WARD	DWELLING_TYPE_CODE	DWELLINGS_TOTAL	RES_CNT	DWELLINGS_VACANT	RENOVATION_DWELLING_CNT	INACTIVE_CNT	OTHER_PURPOSE_CNT	CLASS_CODE	WARD_NUM	MEDIAN_ASSESSMENT
count	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2577.000000	2372.000000	2577.000000	2.577000e+03
mean	7.812800	5.190832	391.002716	962.944509	17.227784	1.353512	1.444703	1.204501	1.039629	7.726903	4.003446e+05
std	3.566476	3.537915	830.782910	2217.042185	56.783030	3.602371	6.908687	6.315564	0.201507	3.464529	2.391789e+05
min	1.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	1.000000	0.000000e+00
25%	5.000000	2.000000	2.000000	12.000000	0.000000	0.000000	0.000000	0.000000	1.000000	5.000000	3.150000e+05
50%	8.000000	5.000000	81.000000	164.000000	4.000000	0.000000	0.000000	0.000000	1.000000	8.000000	4.120000e+05
75%	11.000000	7.000000	400.000000	828.000000	19.000000	1.000000	0.000000	1.000000	1.000000	10.000000	5.030000e+05
max	14.000000	13.000000	16725.000000	20617.000000	1719.000000	101.000000	205.000000	151.000000	3.000000	14.000000	1.620000e+06

User Input Section

Available communities (showing first 10):

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- APPLEWOOD PARK
- ARBOUR LAKE
- ASPEN WOODS
- AUBURN BAY
- BANFF TRAIL
- ... and 238 more

Enter community name (or 'list' to see all): Acadia
Enter year (2016 or 2017): 2016

Community Profile: ACADIA (2016)

Basic Information:

Ward: 9
Sector: SOUTH
Area Type: Inner-City

Population & Housing:

Total Population: 10,766
Total Dwellings: 5,031
Vacant Dwellings: 239
Vacancy Rate: 4.8%

```
Assessment Values:
Median Assessment: $206,000
Assessment per Person: $72

Dwelling Types:
A structure originally built to be movable whether it is now movable or on a permanent foundation. Include summer travel trailers only if used as a permanent residence.: 0
A structure originally designed and built to contain a single dwelling unit.: 2,282
A structure originally designed and built to contain at least three dwelling units on three or more levels. The dwelling units share outside entrances.: 2,935
A structure originally designed and built to contain one or more dwelling units which is designated as a nursing home, auxiliary hospital, care centre, lodge, etc. There are many seniors' residences being constructed that have suites with a bathroom and kitchenette containing a sink, bar fridge, microwave, etc. The suite must contain a full size fridge and
d those to be considered as a separate dwelling unit. Otherwise, all suites included as one address and are part of this definition Per Lodges, care centres, or assisted living.: 1
A structure originally designed and built to contain three or more attached, or semi-attached dwelling units, each of which has a separate outside entrance.: 364
A structure originally designed and built to contain two dwelling units, either side-by-side, front-to-back or one above the other.: 32
A structure that provides lodging.: 2
Any residential structure that contains a dwelling unit which does not fit the other structure codes, e.g. shack, garage.: 3
The additional dwelling units in a structure that contains more units than the building was originally designed and built to contain.: 188

COMPREHENSIVE DATA ANALYSIS

1. Average Assessment by Area Type (2017 only):
Area Type      Average Assessment      Community Count
Inner-City      459469.8                    618
Suburban        420277.6                    371
Note: Excluded 214 records with missing data

2. High-Value Communities (Median Assessment > $600,000):
Total high-value properties: 374
Unique communities: 35
Note: Excluded 27 properties with missing population data

Top 5 Highest Assessments:
UPPER MOUNT ROYAL (2016): $1,620,000 - CENTRE
UPPER MOUNT ROYAL (2016): $1,620,000 - CENTRE
UPPER MOUNT ROYAL (2016): $1,620,000 - CENTRE
UPPER MOUNT ROYAL (2016): $1,620,000 - CENTRE
UPPER MOUNT ROYAL (2016): $1,620,000 - CENTRE

3. Population and Assessment by Sector:
Sector      Total Population      Avg Assessment      Avg Vacancy Rate
SOUTH       451152.0                484939.0            5.0
CENTRE      388762.0                484502.0            9.1
NORTHEAST   355228.0                398508.0            8.5
NORTHWEST   358209.0                478238.0            6.4
NORTH       386027.0                422251.0            5.4
SOUTHEAST   294519.0                395158.0            5.1
WEST        247641.0                523021.0            4.4
EAST        153720.0                265728.0            7.0
Note: Excluded 348 records with zero population

4. Enhanced Pivot Table - Growth by Sector and Year:
Sector      MEDIAN_ASSESSMENT_2016      MEDIAN_ASSESSMENT_2017      RES_CNT      VACANCY_RATE_2016      VACANCY_RATE_2017
YEAR        2016      2017      2016      2017      2016      2017
SOUTH       479864.89      458382.27      193827.0      195115.0      0.187667      0.89772
CENTRE      375630.22      368861.06      18257.0      17279.0      0.863883      0.878673
NORTH       419118.28      377281.55      152874.0      151963.0      0.872887      0.868832
NORTHEAST   361010.00      361773.16      176868.0      195112.0      0.887795      0.817928
NORTHWEST   486379.20      485163.76      176879.0      176218.0      0.878113      0.875589
SOUTH       483101.00      481322.95      124797.0      126118.0      0.856458      0.869980
SOUTHEAST   372182.94      375118.96      127488.0      123191.0      0.812847      0.888789
WEST        386088.47      548792.84      122819.0      123782.0      0.848813      0.881244

RESEARCH QUESTION 1: Which Sectors Are Growing Fastest?
Population by Sector (2016-2017 combined):
Sector      Total Population
SOUTH       451152.0
CENTRE      388762.0
NORTHEAST   355228.0
NORTHWEST   358209.0
NORTH       386027.0
SOUTHEAST   294519.0
WEST        247641.0
EAST        153720.0
Name: RES_CNT, dtype: float64
```

RESEARCH QUESTION 2: Where Are Property Values Highest?			
Top 3 Sectors by Average Assessment:			
	Avg Assessment	Total Population	
SECTOR			
WEST	523021.0	247641.0	
SOUTH	484939.0	451152.0	
CENTRE	484502.0	388762.0	

RESEARCH QUESTION 3: Inner-City vs Suburban Comparison			
AREA_TYPE	Total Population	Avg Assessment	Avg Vacancy Rate
Inner-City	567317.0	459469.1	8.00496
Suburban	675780.0	420277.6	5.712512

- ANALYSIS SUMMARY
- Completed all required ENSF 692 analysis operations
 - Answered three research questions about Calgary housing
 - Generated insights for urban planning decisions

Creating Visualizations ...

Research visualization saved as 'calgary_housing_research_analysis.png'

Exporting Results ...

Complete dataset exported to 'calgary_housing_complete_analysis.xlsx'

- Main dataset: 2577 records
- 5 sheets included: Complete Dataset, Summary Statistics, Sector Analysis, High Value Communities, Missing Values

Analysis Complete!

Files generated:

1. calgary_housing_research_analysis.png - Research visualization plots
2. calgary_housing_complete_analysis.xlsx - Complete dataset and analysis

Thank you for using the Calgary Housing Analysis System!

References

- [1] Civic Census by Community and Dwelling Structure, City of Calgary, June 2021. [Online]. Available: <https://data.calgary.ca/Demographics/Civic-Census-by-Community-and-Dwelling-Structure/set9-futw>
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