



THE CITY OF
CALGARY
PLANNING, DEVELOPMENT & ASSESSMENT



***Onward!** We will provide a basis for effective and strategic decision making by monitoring and reporting on the progress made towards achieving the goals and objectives of the MDP.*

CALGARY SNAPSHOTS 2015

Calgary Snapshots

2015

PUBLISHING INFORMATION

TITLE: THE CALGARY SNAPSHOTS

AUTHOR: CITY WIDE STRATEGY - GEODEMOGRAPHICS
CITY WIDE POLICY AND INTEGRATION
PLANNING, DEVELOPMENT & ASSESSMENT

STATUS: FINAL (REVISED JUNE 2015)

ADDITIONAL COPIES: THE CITY OF CALGARY
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Preface

Calgary Snapshots

Calgary Snapshots provides a convenient source of information about growth and change in Calgary. It is produced by the Geodemographics group within Land Use Planning & Policy, based on the Monitoring Growth and Change series.

What is Geodemographics?

Geodemographics is the locational analysis of social, economic and demographic information for urban and regional planning.

Taking that step by step:

- Locational** Showing where people and jobs locate in the city, historically, currently and in the future; attaching numbers to places on maps.
- Analysis** Starting with data and adding expertise to provide credible information, consistent analysis and a foundation for co-ordinated decision making.
- Social** Using information about people to help determine current and future needs for housing and City facilities and services.
- Economic** Identifying likely locations for employment growth within the city and monitoring the capacity of industrial land.
- Demographic** Using information about population, age groups, household characteristics and forecasts to make planning decisions.
- Information** Starting with credible data from Statistics Canada, Calgary civic census, City of Calgary forecasts and data gathered from various City sources.
- Urban** Focusing on locations within Calgary's boundaries, both in new development at its edges and redeveloping areas in its existing communities, including transit station areas.
- Regional** Co-ordinating planning with Calgary's regional neighbours, aligning with provincial legislation and distributing forecast population and employment throughout the region.
- Planning** Contributing to planning decisions by improving understanding of policy implementation, providing analysis for annexation, regional policy plans, community plans and for more informed decisions on the timing, cost and necessity of infrastructure upgrades.

The Geodemographics group uses this approach to:

- Monitor growth and change.
- Track the amount of land available for residential, commercial and industrial development.
- Evaluate where forecast population and employment growth will occur within the city.
- Relate City infrastructure, facility and service needs to the planned land supply and projected development patterns.
- Support the planning activities of the Planning, Development and Assessment Department.

Highlights

- Calgary's boundaries include many features that influence development. The airport, for example, occupies a significant amount of land. While residential development is restricted on lands most affected by the operations of the airport and the noise of air traffic, some types of industrial and commercial development are attracted to the airport area.
- The centre sector has 44 per cent of the jobs in Calgary, but only 17 per cent of the population. The south, west and northwest sectors combined have 46 per cent of the population and 26 per cent of the jobs.
- Industrial land supply increased dramatically following the 2007 annexation. The net result is a large reservoir of land to meet future demand for industrial development.
- An understanding of the amount of suburban land ready for residential development helps both municipal and private decision-makers to phase the development of land appropriately and avoid premature extension of City services.
- The amount of suburban residential land currently available or that will become available for development is expected to last between 35 to 39 years, depending on current short term forecasted growth rates applied against supply.
- A total of about 64 square kilometres of currently vacant suburban residential land has approved area structure plans in place. This area can accommodate about 456,000 people.
- About 17 square kilometres of currently vacant suburban residential land is serviced with city infrastructure and has approved land use in place. This area can accommodate about 152,900 people.
- Increasing the average density of a community means that less land is required to house the same number of people, meaning Calgary does not have to absorb vacant land as quickly. Communities built 30 years ago used more land than communities that are developing now for the same number of people.
- There are some key ways in which more population can be added to the existing areas of The City: infill developments involving a small number of parcels, significant new projects using larger amounts of land previously used for other purposes and comprehensive redevelopment of lands around transit stations. If redevelopment in existing communities is going to accommodate significant numbers of people, it must counter the typical decline in population experienced by Calgary communities as they mature.
- Geodemographics links employment forecasts to demand for land and to the supply of land for commercial and industrial development. We then allocate employment growth to different areas of the city.
- Calgary's population growth is the result of relatively stable natural increase (the difference between births and deaths) and more volatile net migration (the difference between people moving to Calgary and people moving away).
- Calgary's approach to growth makes it difficult to compare its overall density to cities within metropolitan regions. Calgary attempts to maintain a 30-year supply of land within its boundaries. The density of its built-up area is therefore significantly higher than the density of all lands within its boundaries.
- While the city's overall population is growing, most of its communities experience either no growth or a decline in population. Much of this decline is the result of smaller household size.

Overview

Capital investment in growth



Strategic Growth and Capital Investment 2009 – 2011

Strategic Growth and Capital Investment 2009-2011 is a Council mandated report to assist business units and planners with coordinating municipal capital investment priorities in new growth areas. It maps the growth-related capital projects from the corporate 10-Year Capital Plan in relation to the planned land supply and projected development pattern (in both new and established areas) to identify long-term infrastructure and servicing needs. Strategic Growth and Capital Investment provides a common information base for decision-making and establishes an operational framework to undertake growth-related capital investment analysis (timing and sequencing). In addition, it establishes a forum to align growth-related projects toward the coordinated provision of services.

Employment land supply and demand



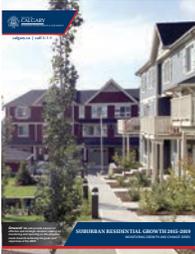
Employment Areas Growth and Change 2010

The Employment Areas Growth & Change 2010 document provides:

- information for The City of Calgary, as a landowner, to monitor whether serviced (3-5 year supply), planned (15 year supply) and annexed (30 year supply) land is available for industrial growth.
- a comprehensive mapped inventory of industrial growth from 2007 through the end of 2009.
- an inventory of industrial land available to accommodate future growth based on municipal infrastructure plans.

New for 2010, the document also includes a mapped inventory of all Business Assessment Information System (BAIS) data. The inventory illustrates business assessed space in primary use categories for the Municipal Development Plan (MDP) retail sector areas. This information will be useful in developing more detailed city-wide and sub-area job density indicators.

Suburban residential land supply and demand



Suburban Residential Growth (SRG)

Each year, Geodemographics prepares an inventory of development activity to determine where and how fast Calgary is growing. The existing supply of residential land is compared to the anticipated demand over the next five years. This information, provided in the SRG and updated on an annual basis, helps to build a picture of potential future growth in the city. In addition to identifying the fit between residential land supply and demand over the short term, the SRG also identifies the infrastructure needs over the five-year period as a result of this estimated growth. The intent of the SRG is to ensure that a sufficient supply of readily developable land is available in a variety of locations to facilitate competitive land and housing markets while avoiding premature municipal investment in infrastructure.

Developed areas growth trends



Developed Areas Growth and Change

Calgary's Developed Areas house 80 per cent of the city's population, and include 176 different communities. Taken together, these areas are incredibly diverse, ranging from the office and residential towers of downtown to the school yards and homes in the suburbs.

For the first time, Developed Areas Growth & Change is organized around the urban structure typologies (areas of similar form and function) identified by the Municipal Development Plan. The document is divided into two main sections. Part 1 provides summaries on demographic, housing and development activity data for each of the Developed Area typologies, and Part 2 contains several brief analyses on intensification potential. The Appendices contain pertinent statistical data, by typology and by community.

Despite a stable population, substantive changes are occurring in household makeup, in the demographics, and in development trends of the Developed Areas. Using a variety of data sources, this document seeks to draw attention to these trends.

Want more information?

If you have any questions on the information contained in this Snapshot or would like additional information, contact Jim Francisco at 403-268-5317 or jim.franciscos@calgary.ca.

Last updated: June 2015

The Greenfield Development Picture

Suburban residential growth and land supply

Suburban growth

A key objective of The City of Calgary is to avoid premature extension of municipal infrastructure in new suburban growth areas, while making every effort to support a competitive, efficient land development process. One of the tools to help achieve this goal is the annual *Suburban Residential Growth* document. The purpose of this product is to help determine, in advance, where and when The City will need to provide fire, transportation and major city utility infrastructure (water, sanitary and storm) to accommodate residential growth in the suburbs. The document provides:

- Information on residential subdivision and development activity in each sector of the city.
- An inventory of the existing land supply.
- Forecasts of the demand for housing and land in each sector over the next five years.
- An assessment of the 'fit' between the existing supply of land and expected demand.
- Recommendations on the location and timing of service extensions.

Who uses *Suburban Residential Growth*?

The information is used by The City of Calgary business units to assist in the preparation of their capital budgets, as well as by a host of groups outside The City that need to know where growth may be going, such as developers, home builders, land appraisers, service providers, business groups, the general public and many others.

Want more information about monitoring suburban residential growth?

If you have any questions on this Snapshot, or would like additional information, contact Decker Shields at 403-268-5489 or by e-mail at decker.shields@calgary.ca.

Last updated: June 2015.

Next scheduled update: June 2016.

Recent development trends

Residential redevelopment is occurring in the established communities, inner city communities and the downtown. Over the past five years these areas have received 36 per cent of all new total housing (building permit applications) accounting for 21 per cent of the single unit housing and 52 per cent of the multi unit housing. The inner city and downtown have seen increases in multi-family development as well as the replacement of older, single-family homes with new infill housing. This type of development generally attracts single and two-person households. Even with this redevelopment in the older areas of the city, population increase has been less dramatic than housing construction capturing lower shares of the city wide population gains for Calgary.

In contrast to the established areas in Calgary, new suburbs have been the location of choice for many families with children and have offered the residential supply needed to accommodate Calgary's growth. Much of Calgary's residential growth has historically occurred in the new suburbs accommodating 75% of the population gains over the last five years and 64 per cent of new housing supply (based on building permits). However, indications are that suburban development's share of growth has been slowing, and an increasing share of growth may be starting to move to the existing built areas of the city. Expectations are that there will continue to be an increasing trend of development intensifying in the existing areas as policies contained in the *Calgary Municipal Development Plan* take effect.

The challenge is that...

despite the concentrations of growth we foresee, the effect of population decline in the suburbs built from the 90s to today (as families with children age and children leave home) means that the net effect of population growth in these areas, minus decline in recently-built communities, may equate to stable or slightly declining populations. It will take even greater efforts than we're making so far to steer the ship even further, toward actual net gains in population in the built-up areas. This will likely be a key challenge for implementing the intensification of Calgary's form.

Tracking residential development activity

The *Suburban Residential Growth* document measures the inventory of existing residential land supply and future residential land capacity. The land inventory is maintained by monitoring new growth areas each year and comparing current counts of vacant lands and developed lots to the previous year. Tentative Plans, Outline Plans and Community Plans (Area Structure Plans) are reviewed to establish a detailed catalogue of opportunities, constraints and future capacities for residential growth. This information, in conjunction with annual civic census data and the existing land supply, allows us to assemble a picture of future residential land dynamics. The image on the following page represents a sample of detail that is tracked.

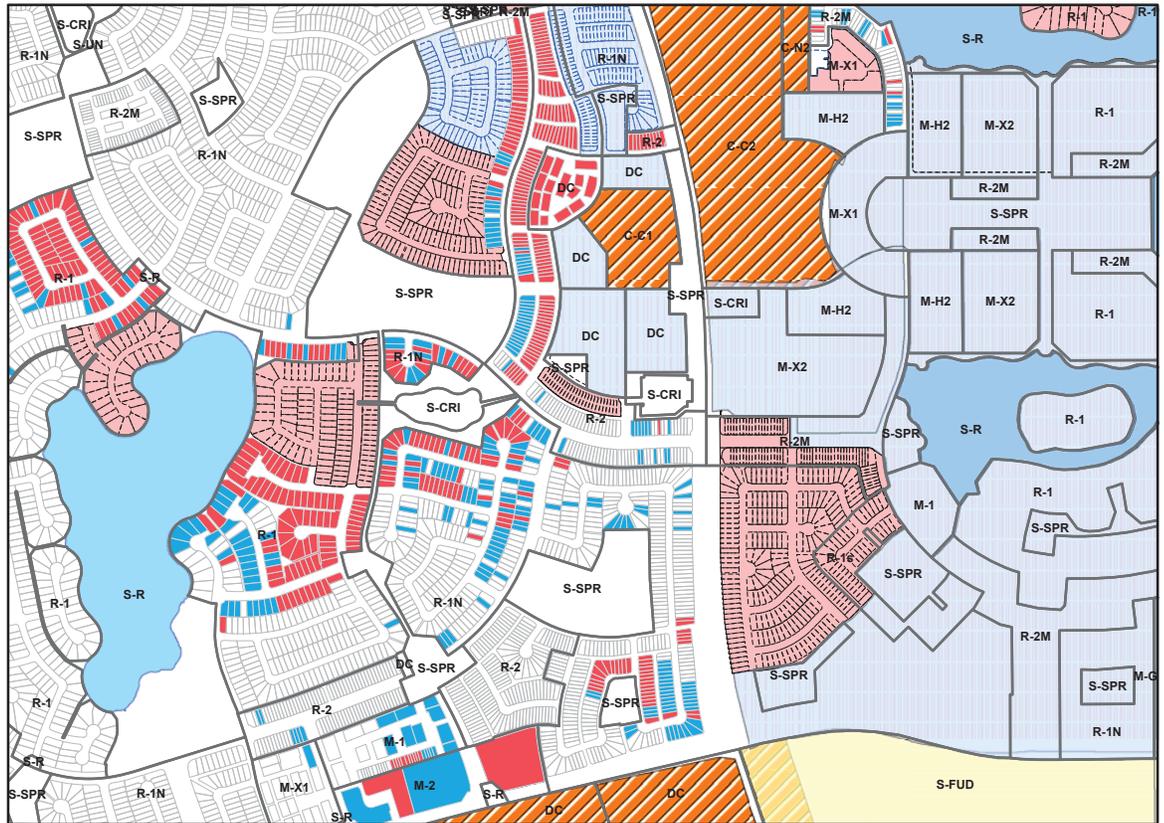
For more information on suburban residential growth, please visit the current version of the document *Suburban Residential Growth* on The City's website.

Detailed supply monitoring

Additional Snapshots in this series describe and list the various capacities in new suburban areas of Calgary. These catalogue the remaining capacities of new growth areas by three measures:

1. An attempt to monitor the potential combined unbuilt land supply for residential growth in the city as a whole for future suburban development within the current city boundary (see Suburban residential supply: city wide).
2. The amount of remaining unbuilt lands that have approved area structure plans in place (see Suburban residential supply: area structure plans).
3. The amount of remaining serviced unbuilt lands that have approved land use in place (see Suburban residential supply: serviced with approved land use).

Sample of vacant suburban residential land inventory



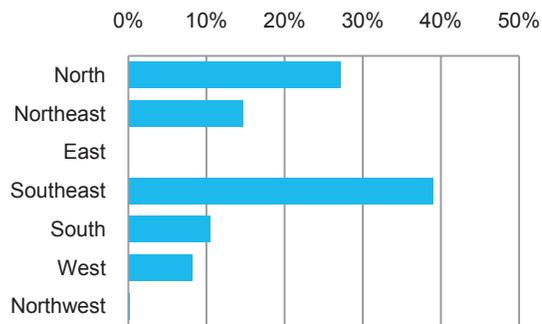
Sample of Vacant Suburban Residential Land Inventory

2014 April Civic Census Parcel Inventory	Remaining Residential Supply	Other
Existing/Other	2014 Approved Tentative Plans (Subdivided)	Land Use Boundaries
Vacant	2014 Vacant Approved Tentative Plans (Subdivided)	Employment Concentrations
Under Construction	2014 Non-Approved Tentative Plans (Unsubdivided)	Regional Standing Water
	2014 Vacant With Approved Land Use (Unsubdivided)	
	2014 Vacant With Approved Area Structure Plan (Unsubdivided)	

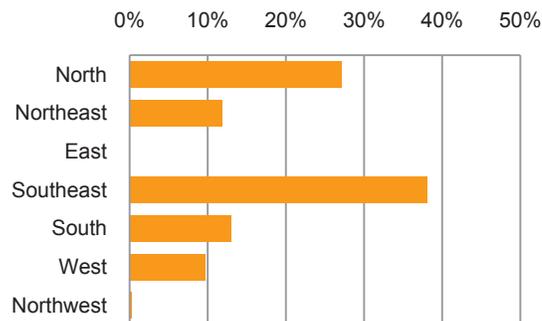
Historical market share of new units added in the new suburban communities of Calgary from 2010 to 2014 by suburban sector and population gains 2013 to 2014

Over the last five years, the southeast and north sectors held the largest shares of new-unit growth in the city. The southeast had the largest share of multi-residential units, at 41 per cent, followed by the north with 27 per cent. Single-family units were also highest in the southeast at 38 per cent, followed by 27 per cent for the north. Over the last year the southeast captured the largest population increase at 32 per cent.

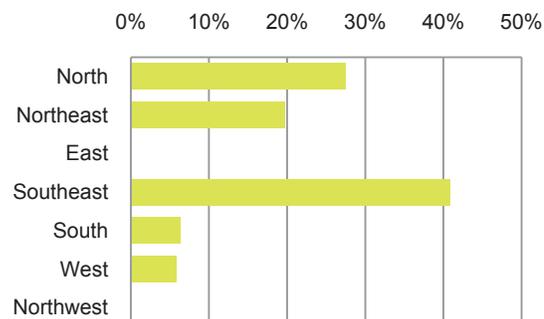
Total units



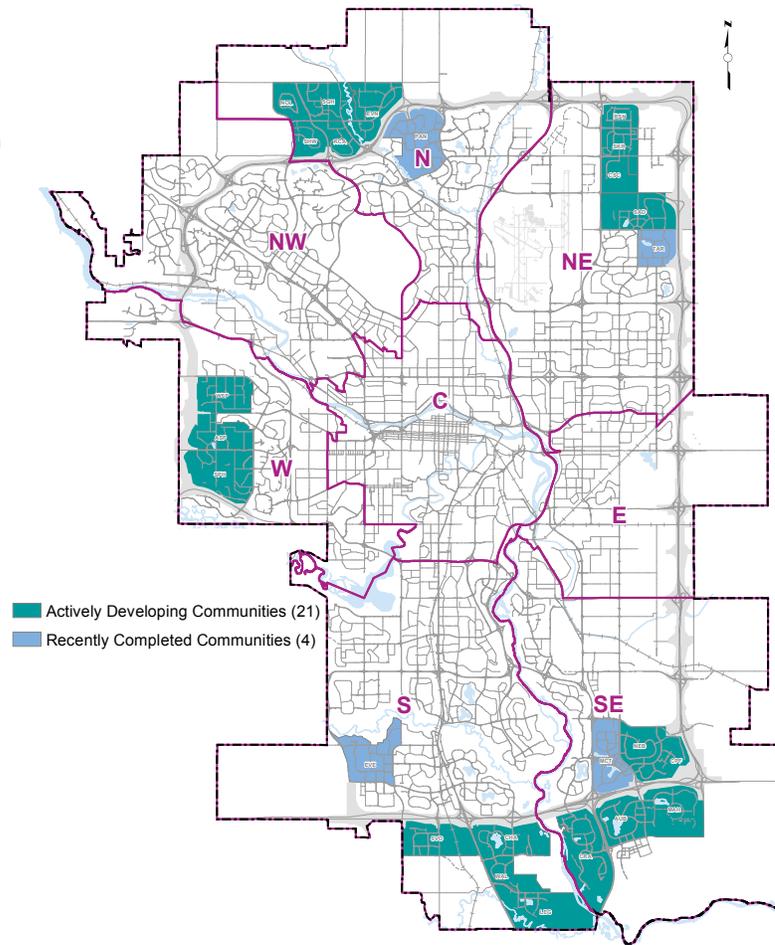
Single and semi-detached units



Multi units



Population Growth in New Suburban Communities April 2013 - April 2014



Sector	Population Gain	Sector Share*	City Share
North	5,594	24%	
Northeast	6,011	25%	
East	0	0%	
Southeast	7,670	32%	
South	2,325	10%	
West	2,088	9%	
Northwest	0	0%	
New Suburban Communities Total**	23,688	100%	62%
Central Sector	6,524		17%
Remainder of the City	8,296		21%
City Total	38,508		100%

* Percentage of total population in New Suburban Communities

** New Suburban Communities include Actively Developing and Recently Completed Communities

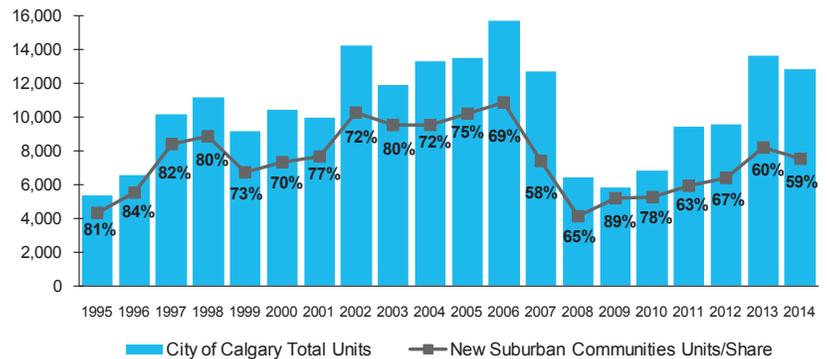
Looking back, since 1995 the amount of **total housing** being built in the city has been showing signs of intensification into the existing areas of Calgary, meaning that in the mid- to late-1990s, the new suburbs' share of total housing averaged 80 per cent, capturing most of Calgary's housing growth. More recently over the last five years, this suburban share has dropped to an average of 64 per cent. Information presented here is based upon building permit applications for new units.

Comparing **single-unit or single-family** growth over the same period, the trend has been less dramatic. Over the last five years, the new suburbs captured an average of 79 per cent of this market. The chart at right demonstrates that new suburban market for single and semi units has moved slightly downward and the established and inner city areas of Calgary has gained more of this unit type compared to earlier decades.

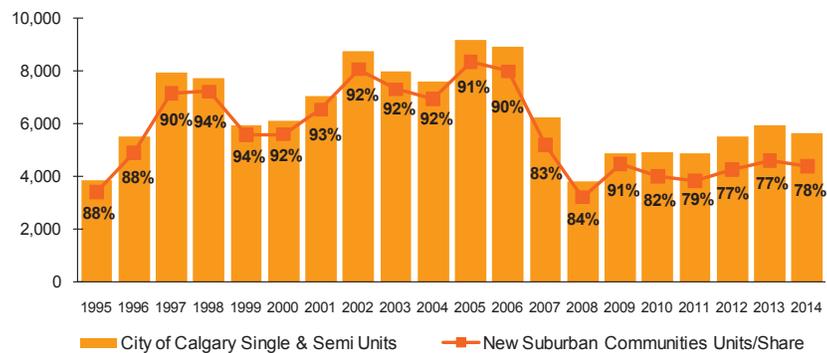
The **multi-unit or multi-family** market is much more cyclical and less predictable. The demand for this unit type fluctuates, resulting in wide swings in shares since 1995, ranging from highs of 79 per cent to lows of 34 per cent in the new suburbs. Since 2010 the average share was 48 per cent of all new multi-units going into new suburban areas.

In terms of **population** the new suburban areas of Calgary continue to capture the majority of the growth. Between April 2009 and April 2014 these new suburban areas saw 75 per cent of the total population gains to Calgary occur in the actively developing and recently completed communities.

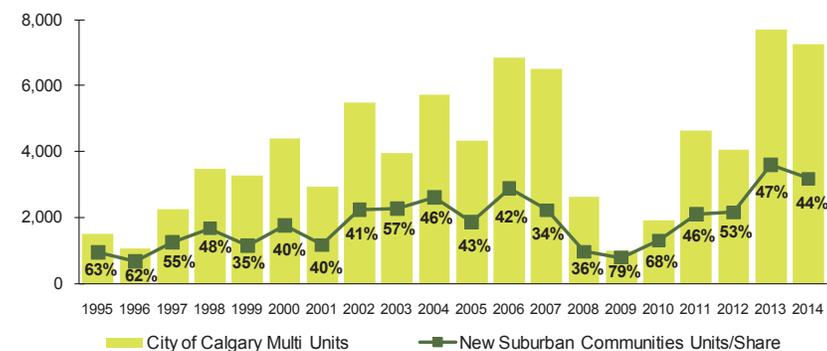
Total housing growth



Single and semi-detached unit growth



Multi unit growth





Suburban residential supply: city wide

As of April 2014, Calgary's unbuilt suburban residential lands totalled 128 square kilometres or 52 square miles. This area could likely accommodate approximately:

- 837,800 people
- 307,530 total units (167,862 single/semi units, 139,668 multi units)

Planned and unplanned lands

Geodemographics provides estimates of the population capacity of lands within the current boundaries. Knowing the approximate population capacity helps decision-makers plan for long term suburban residential growth.

The information provided here combines lands with approved area structure plans, lands with approved land use and lands identified for residential development in *The City of Calgary Municipal Development Plan (MDP)* or in regional context studies.



Want more information about city wide suburban residential growth?

If you have any questions on this Snapshot, or would like additional information, contact Decker Shields at 403-268-5489 or by e-mail at decker.shields@calgary.ca.

Last updated: June 2015.
Next scheduled update: June 2016.

Approved plans and future growth areas

The combination of approved plans and future growth areas as shown here guides us in estimating the remaining capacity and years of supply that Calgary potentially could accommodate within its boundaries. By taking the capacities of each city sector and building out the supply based on current growth trends, the years of supply city wide can be roughly estimated. It's important to note that the current growth trends are subject to change as the result of changing growth rates, future policies and land use decisions.

Existing unbuilt supply

Tables 1, 2 and 3 measure the potential supply as determined in April 2014 for the city of Calgary. Lands in these areas exclude estimates for large employment and non-developable sites but do include predominantly residential and related uses. Therefore, all areas are expressed as gross residential hectares. Land, housing and population supply estimates are based upon information from the *Suburban Residential Growth 2015 – 2019* document. Table 1 shows the vacant capacity of areas with approved land use and remaining area structure plans in place (planned supply). Table 2 represents the lands that have the possibility to accommodate general residential uses but do not yet have approved plans in place (unplanned supply). Table 3 represents the total estimated capacity of possible future suburban growth (planned and unplanned).

■ Table 1. Planned supply

Remaining suburban residential lands with approved area structure plans (subdivided and unsubdivided)					
Plans approved as of September 2014					
Sector	Hectares	Units			Population Capacity
		Single/semi	Multi Units	Total	
North	1,373	16,929	23,428	40,357	99,794
Northeast	956	12,017	19,809	31,826	81,494
East	940	13,407	8,101	21,508	61,251
Southeast	1,647	25,257	16,289	41,546	117,928
South	1,167	16,868	11,438	28,306	79,610
West	345	2,371	3,835	6,206	15,878
Northwest	0	0	0	0	0
City Total	6,428	86,849	82,900	169,749	455,955

■ Table 2. Unplanned supply

Remaining lands in the city of Calgary for potential suburban residential growth (lands without approved area structure plans in place).					
Estimated potential of lands expected for residential uses					
Sector	Hectares	Units			Population Capacity
		Single/semi	Multi Units	Total	
North	2,233	27,286	21,466	48,752	131,674
Northeast	0	0	0	0	0
East	500	6,657	4,438	11,095	31,289
Southeast	1,761	23,457	15,638	39,095	110,246
South	1,503	18,439	12,293	30,732	86,662
West	160	2,072	1,382	3,454	8,946
Northwest	236	3,102	1,551	4,653	13,028
City Total	6,393	81,013	56,768	137,781	381,845

Unplanned land is estimated at 22 uph (9 units per acre) and a 60% single unit, 40% multi unit split, except where other planning detail is available (e.g., regional context studies, area structure plans in progress). Estimates assume a people per unit of 3.3 for single unit and 2.10 for multi unit.

■ Table 3. Total supply (planned and unplanned supply estimates)

Total estimated unbuilt capacity for undeveloped residential uses for the city of Calgary (planned & unplanned)					
Sector	Hectares	Units			Population Capacity
		Single/semi	Multi Units	Total	
North	3,606	44,215	44,894	89,109	231,468
Northeast	956	12,017	19,809	31,826	81,494
East	1,440	20,064	12,539	32,603	92,540
Southeast	3,408	48,714	31,927	80,641	228,174
South	2,670	35,307	23,731	59,038	166,272
West	505	4,443	5,217	9,660	24,824
Northwest	236	3,102	1,551	4,653	13,028
City Total	12,821	167,862	139,668	307,530	837,800

Square Kilometers: 128

Square Miles: 52

Growth forecasts

Having determined estimated capacity for suburban residential growth within Calgary, the next step is to use current forecasts as identified in the *Suburban Residential Growth 2015 - 2019* report to determine an absorption rate for future growth. Information in this document uses projections based upon estimated land, housing and population growth into new suburban areas of Calgary then takes the forecast absorption applied to the supply to determine a general years of supply estimate.

The estimates of land supply do not account for changing future conditions affecting growth trends, rates or locations.

■ Table 4. 2015 - 2019 Forecast Demand

Suburban Growth Forecasts					
Five Year Forecast Demand					
Sector	Hectares	Units			Population
		Single/semi	Multi Units	Total	
North	397	5,430	2,610	8,040	23,140
Northeast	356	5,330	2,580	7,910	22,840
East	0	0	0	0	0
Southeast	529	7,130	3,550	10,680	30,660
South	388	6,120	1,480	7,600	23,190
West	155	1,510	810	2,320	6,610
Northwest	0	0	0	0	0
City Total	1,825	25,520	11,030	36,550	106,440

Absorption Rate					
Yearly Average Need by Sector & City					
Yearly Forecast Demand					
Sector	Hectares	Units			Population
		Single/semi	Multi Units	Total	
North	79	1,086	522	1,608	4,628
Northeast	71	1,066	516	1,582	4,568
East	0	0	0	0	0
Southeast	106	1,426	710	2,136	6,132
South	78	1,224	296	1,520	4,638
West	31	302	162	464	1,322
Northwest	0	0	0	0	0
City Total	365	5,104	2,206	7,310	21,288

Note: Forecast demand and yearly absorption rates are likely to change over time.

Existing capacity to demand = Estimated years of supply

Using the estimated capacity and applying the growth forecast generates the years of supply that Calgary could expect to accommodate within the current city boundaries based upon current trends. Actual changes to development patterns, land use, densities, occupancy rates and many more unforeseen factors could change any of the assumptions used in this information package. The information produced here is to help provide a general concept of Calgary’s current land capacity.

Table 5. Estimated years of supply for suburban residential growth

Years of city wide suburban residential supply is based upon forecast needs of land, single/semi units and population capacity estimates				
If growth occurred until build-out at the rates estimated over the next five years we could have:				
Absorption Method:	Absorption by Hectares	Absorption by Single/Semi	Absorption by Population	Average Estimate Years of Supply
City Total	35	33	39	36

Forecasted years of supply are based upon a suburban absorption rate of:

Hectares per year:	365
Single/semi per year:	5,104
People per year:	21,288

The forecast demand and yearly absorption rates used to calculate years of supply in this table are likely to change over time. The example above is intended to show a simple method of calculating years of supply using current short term growth forecasts. If intensification targets identified in the Calgary Municipal Plan succeed by 2039 and 2076 it can be assumed that the years of supply will be extended. If these goals of the MDP are achieved The City of Calgary would more likely have a supply between 47 and 70 years depending on the level of success of the MDP targets.

WHAT IF? MDP/PlanIT Intensification Targets Succeed

If growth occurred until build-out at the rates estimated from the MDP/PlanIT Intensification Targets (from 2011 to 2039 forecasts and 2011 to 2078) we could have:

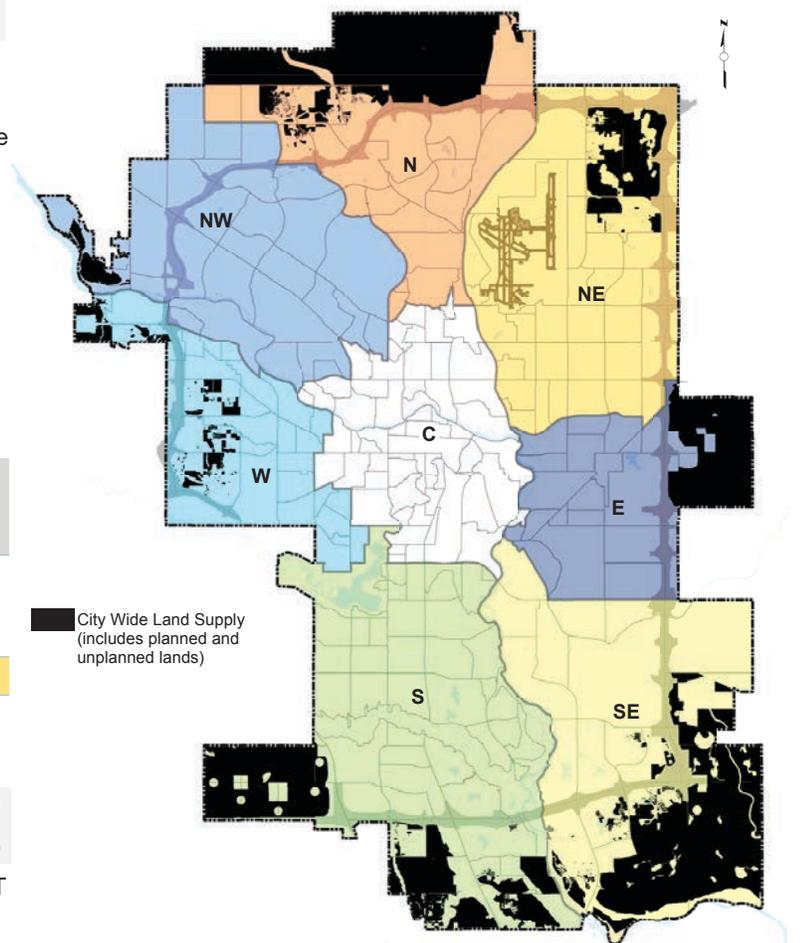
Absorption Method:	Absorption by Hectares (using 2011-2039)	Absorption by Hectares (using 2011-2078)
City Total	47	70

Forecasted years of supply are based upon an average suburban absorption rate of:

Hectares per year 2011 - 2039:	272
Hectares per year 2011 - 2078:	184

These absorption hectares are based upon the MDP PlanIT distribution completed in 2014 and is updated every 3-4 years.

Estimated City Wide Supply - April 2014 (planned and unplanned lands)





Suburban residential supply: area structure plans

The total unbuilt capacity of areas with approved area structure plans (also known as planned land), as of April 2014, could accommodate approximately 456,000 people, 169,750 units and 6,428 hectares (15,884 acres) of land. This represents a **17 to 18 year suburban supply** based on the average five year forecast absorption rates of land and single/semi unit estimates (*Suburban Residential Growth 2015-2019* report).

Suburban residential potential of vacant land with approved area structure plans: April 2014

This Snapshot contains information about the existing unbuilt capacity and development potential of the residential land supply in suburban areas of Calgary. The areas and information in this Snapshot represent those undeveloped locations with approved area structure plans in place.

What is an area structure plan (planned land)?

These plans are a policy document that sets the basic framework by which more detailed land use, school, transportation and servicing components can be formulated. It acts as the starting point for community development that is logical, sustainable and compatible with broader planning objectives set out in The City's strategic planning documents.

Every year, Geodemographics monitors the amount and capacity of vacant lands with approved area structure plans in place. This sets the stage for co-ordinated growth planning and is used to monitor the ability of specific areas to accommodate future residential development. The lands shown here represent all vacant capacity with approved area structure plans in place, some of which will also have approved land use designations and some of which will also have been subdivided. The hierarchy of plans shows where the area structure plan fits in the development of lands in Calgary.

What is the remaining planned land supply?

The City of Calgary aims to maintain a 30-year supply of land for future development needs. Part of this includes a policy to maintain up to a 15-year approved planned land supply. As of April 2014, there were 6,428 hectares (15,884 acres) of undeveloped residential land within the boundaries of Calgary that had unbuilt capacity in approved area structure plans.

Want more information about residential supply with approved area structure plans in place?

If you have any questions on this Snapshot, or would like additional information, contact Decker Shields at 403-268-5489 or by e-mail at decker.shields@calgary.ca or Diane Pearson at 403-268-5879 or by e-mail at diane.pearson@calgary.ca.

Last updated: June 2015.
Next scheduled update: June 2016.

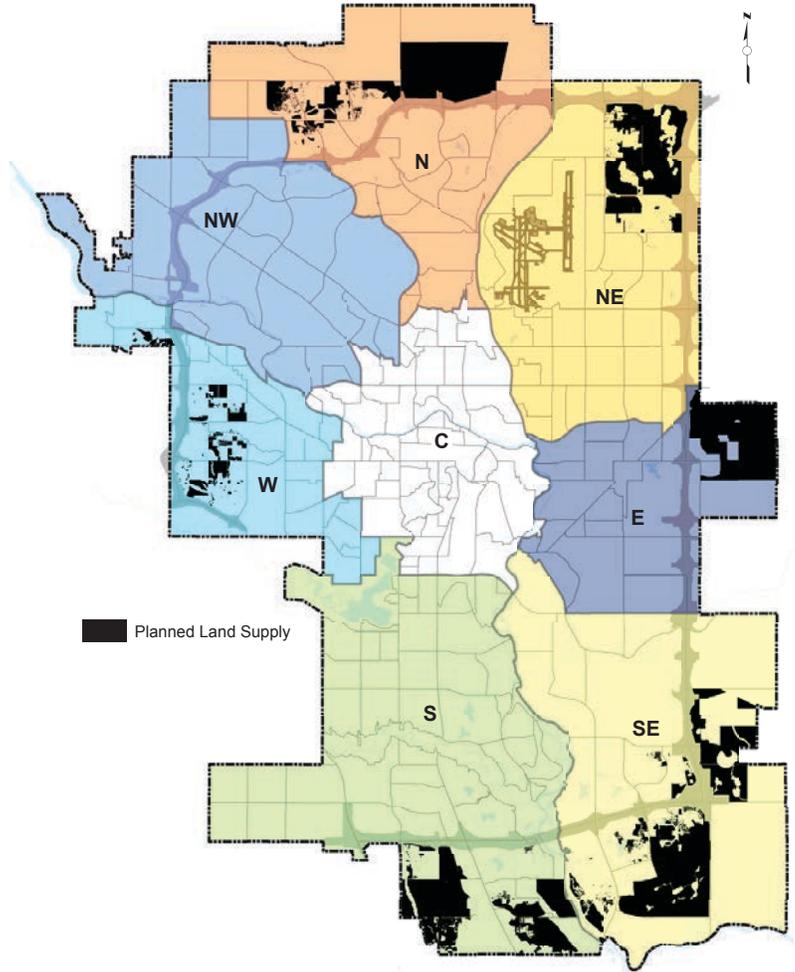
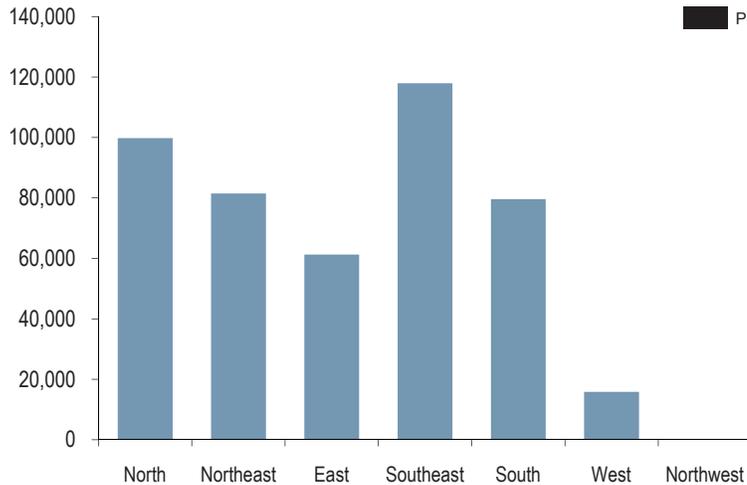


The following maps show the locations of remaining vacant residential lands (subdivided and unsubdivided) with approved area structure plans in place. This city wide map shows these lands in relation to Calgary's current boundary and sectors.

City wide capacity

City wide lands with approved area structure plans could accommodate approximately:

- 455,955 people
- 169,749 total units
- on 6,428 hectares (15,884 acres) of land
- Remaining population capacity



Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Sector	Hectares	Units			Land Use in Place	Population Capacity
		Single/semi	Multi-Unit	Total		
North	1,373	16,929	23,428	40,357	40%	99,794
Northeast	956	12,017	19,809	31,826	60%	81,494
East	940	13,407	8,101	21,508	0%	61,251
Southeast	1,647	25,257	16,289	41,546	43%	117,928
South	1,167	16,868	11,438	28,306	30%	79,610
West	345	2,371	3,835	6,206	31%	15,878
Northwest	0	0	0	0	0%	0
City Total	6,428	86,849	82,900	169,749	37%	455,955

Hectares = gross residential hectares

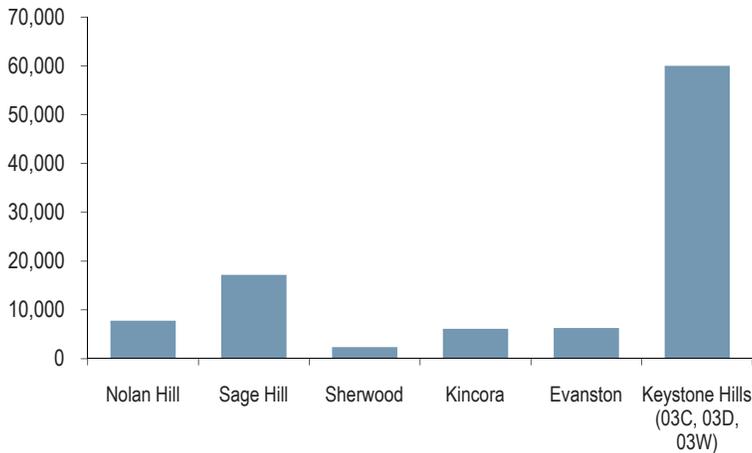
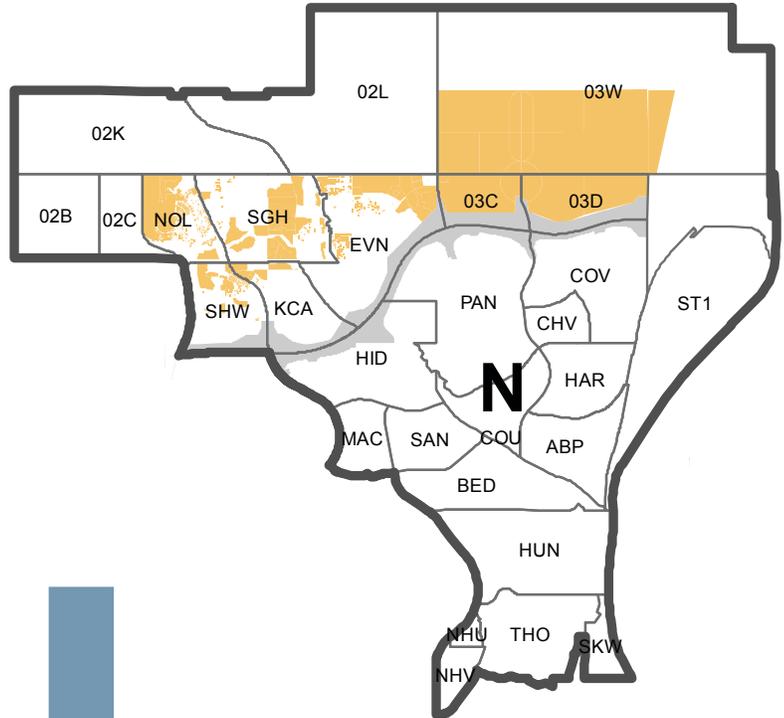
Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

North sector

This sector could accommodate approximately:

- 99,794 people
- 40,357 total units
- on 1,373 hectares (3,393 acres) of land

- Remaining population capacity



Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
Nolan Hill	Symons Valley	122	1,335	1,612	2,947	7,790
Sage Hill	Symons Valley	106	837	6,865	7,702	17,179
Sherwood	Symons Valley	29	405	492	897	2,370
Kincora	Symons Valley	17	86	2,790	2,876	6,143
Evanston	Symons Valley	99	1,434	738	2,172	6,282
Keystone Hills (03C, 03D, 03W)	Keystone Hills	1,000	12,832	10,931	23,763	60,030
Sector Total		1,373	16,929	23,428	40,357	99,794

Hectares = gross residential hectares

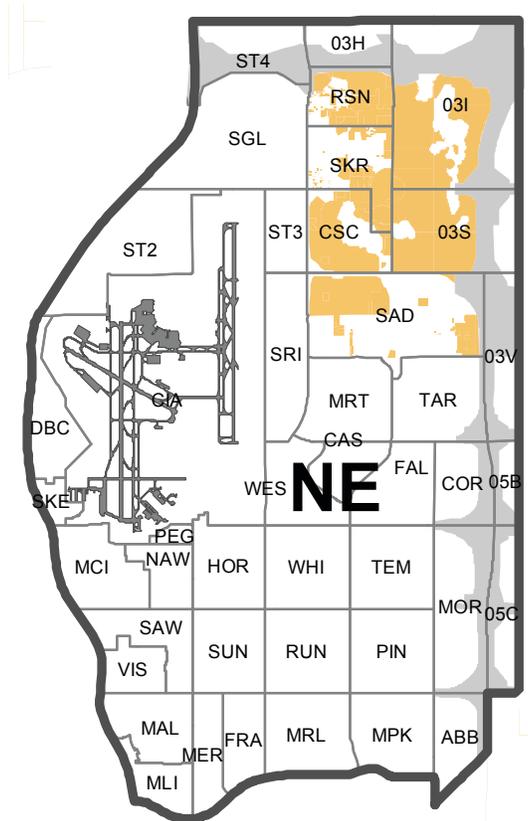
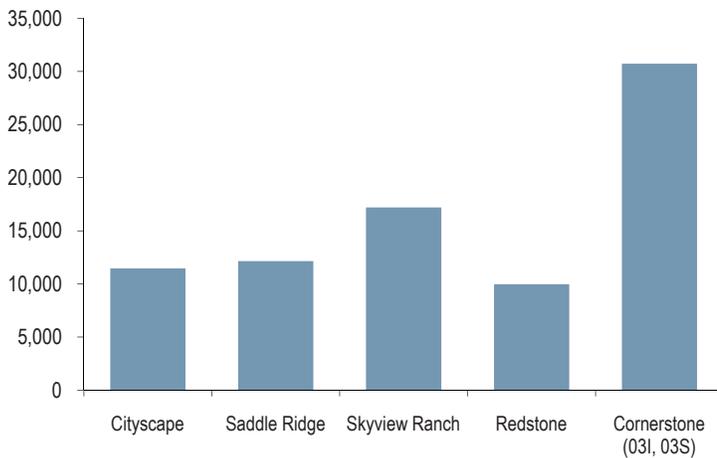
Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

Northeast sector

This sector could accommodate approximately:

- 81,494 people
- 31,326 total units
- on 956 hectares (2,362 acres) of land

Remaining population capacity



Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population
			Single/semi	Multi-Unit	Total	Capacity
Cityscape	NE Community 'A'	148	1,978	2,347	4,325	11,454
Saddle Ridge	Saddle Ridge	148	2,210	2,307	4,517	12,141
Skyview Ranch	NE Community 'A'	77	326	7,678	8,004	17,199
Redstone	NE Community 'A'	105	1,302	2,702	4,004	9,970
Cornerstone (031, 03S)	Cornerstone	478	6,201	4,775	10,976	30,730
Sector Total		956	12,017	19,809	31,826	81,494

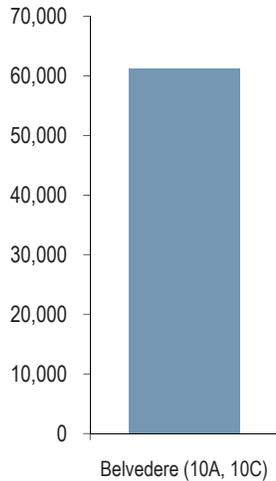
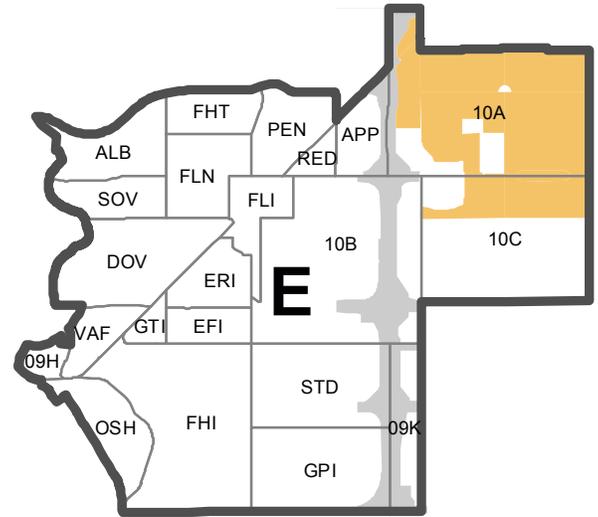
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

East sector

This sector could accommodate approximately:

- 61,251 people
- 21,508 total units
- on 940 hectares (2,323 acres) of land



■ Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
Belvedere (10A, 10C)	Belvedere	940	13,407	8,101	21,508	61,251
Sector Total		940	13,407	8,101	21,508	61,251

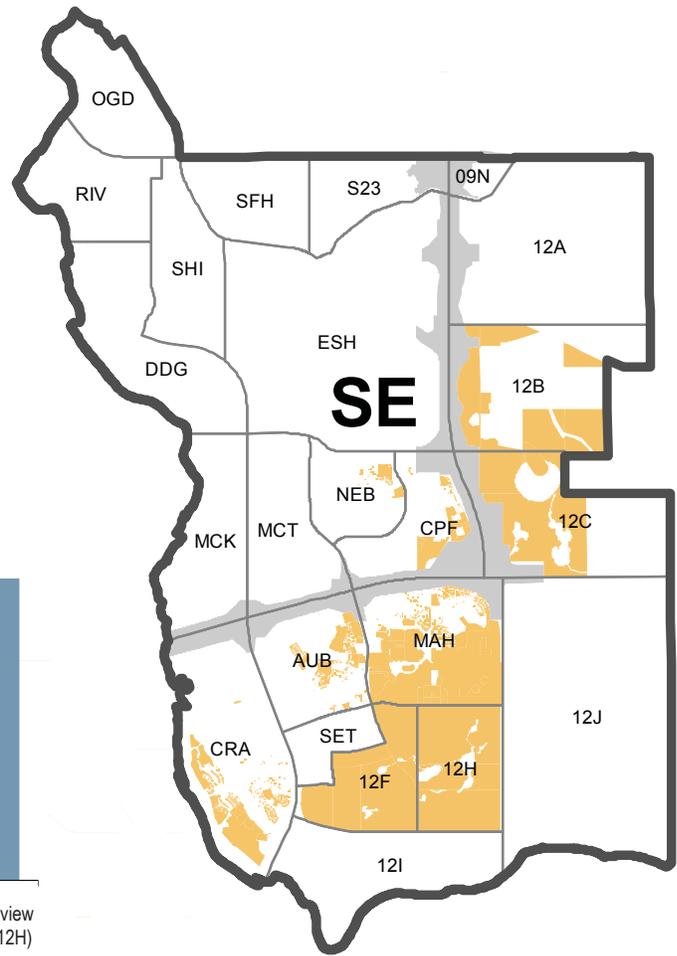
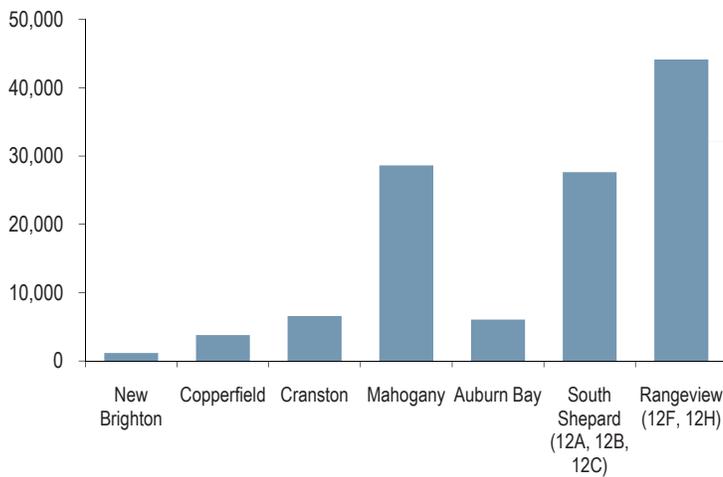
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

Southeast sector

This sector could accommodate approximately:

- 117,928 people
- 41,546 total units
- on 1,647 hectares (4,070 acres) of land
- Remaining population capacity



Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
New Brighton	East McKenzie	11	204	235	439	1,167
Copperfield	East McKenzie	42	530	965	1,495	3,776
Cranston	Cranston	104	1,057	1,465	2,522	6,565
Mahogany	Mahogany	351	4,753	6,161	10,914	28,623
Auburn Bay	Auburn Bay	57	994	1,316	2,310	6,044
South Shepard (12A, 12B, 12C)	South Shepard	415	6,835	2,415	9,250	27,627
Rangeview (12F, 12H)	Rangeview	667	10,884	3,732	14,616	44,126
Sector Total		1,647	25,257	16,289	41,546	117,928

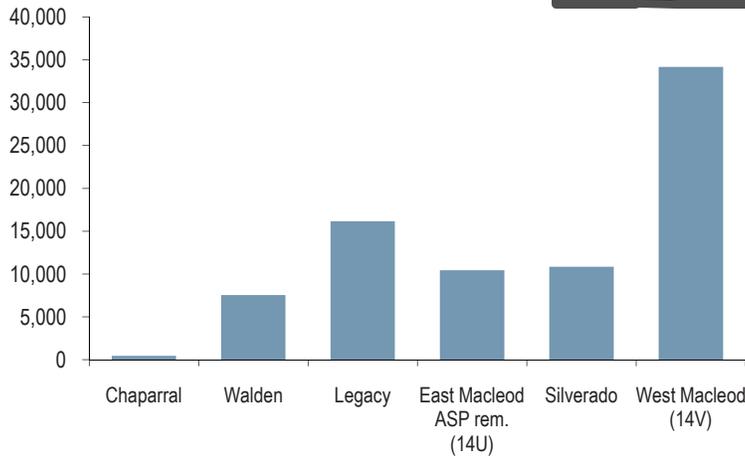
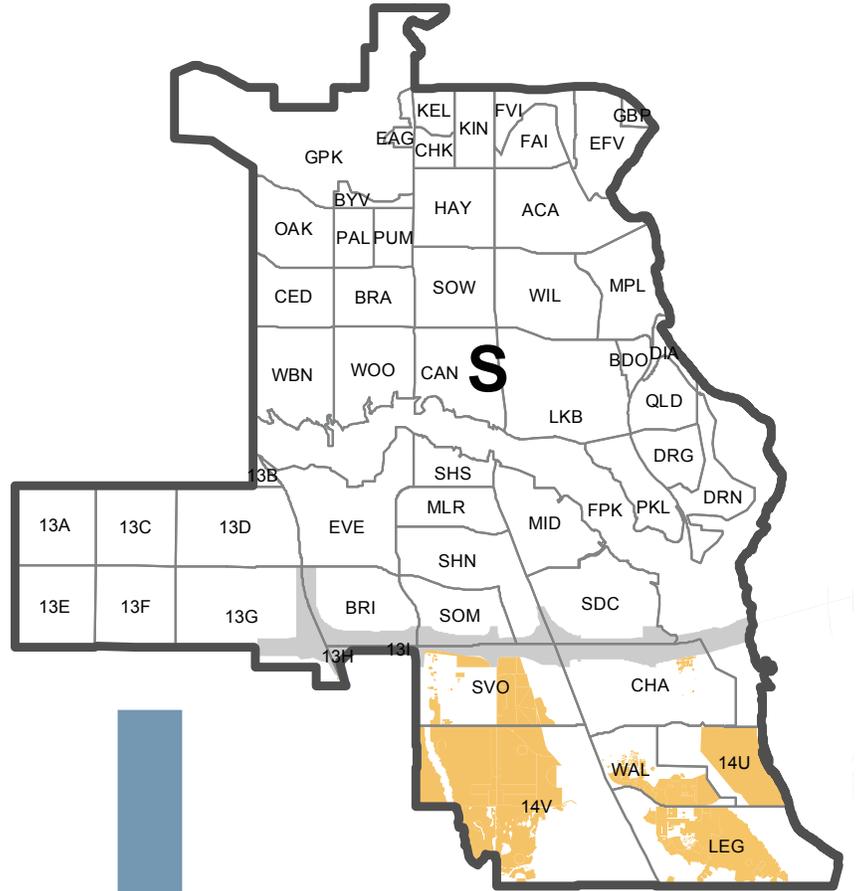
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

South sector

This sector could accommodate approximately:

- 79,610 people
- 28,306 total units
- on 1,167 hectares (2,884 acres) of land
- Remaining population capacity



Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
Chaparral	Chaparral	5	136	0	136	449
Walden	East Macleod	94	1,431	1,340	2,771	7,536
Legacy	East Macleod	234	3,518	2,166	5,684	16,158
East Macleod ASP rem. (14U)	East Macleod	166	2,220	1,480	3,700	10,434
Silverado	Southwest Community "A" & Employment	161	2,256	1,621	3,877	10,849
West Macleod (14V)	West Macleod	507	7,307	4,831	12,138	34,184
Sector Total		1,167	16,868	11,438	28,306	79,610

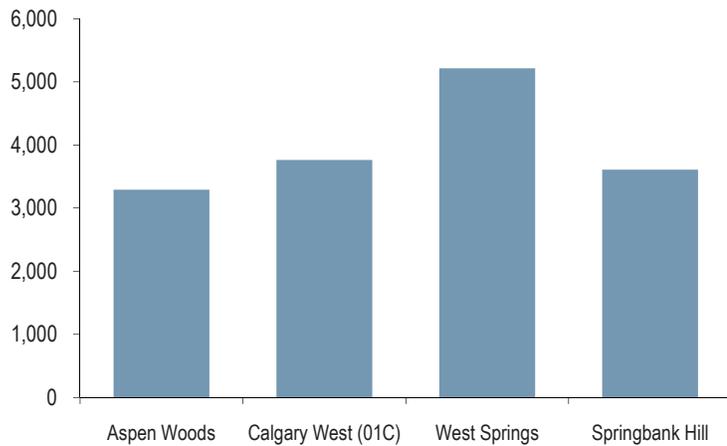
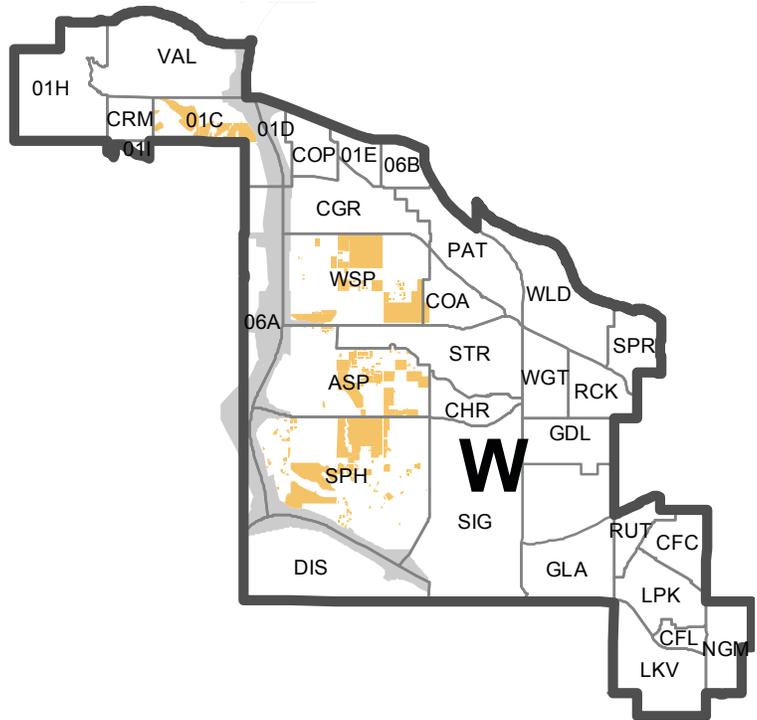
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

West sector

This sector could accommodate approximately:

- 15,878 people
- 6,206 total units
- on 345 hectares (852 acres) of land
- Remaining population capacity



■ Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
Aspen Woods	East Springbank & East Springbank 4	66	722	433	1,155	3,291
Calgary West (01C)	Calgary West	54	0	1,792	1,792	3,763
West Springs	East Springbank & East Springbank 2	107	833	1,174	2,007	5,215
Springbank Hill	East Springbank & East Springbank 1	118	816	436	1,252	3,609
Sector Total		345	2,371	3,835	6,206	15,878

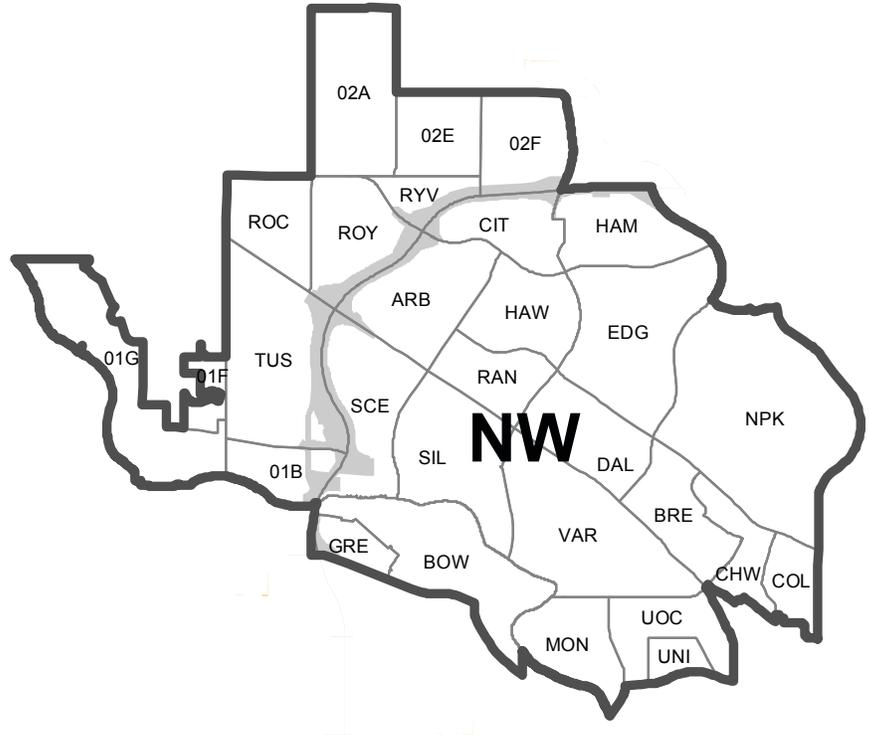
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.

Northwest sector

This sector could accommodate approximately:

- 0 people
- 0 total units
- on 0 hectares (0 acres) of land



■ Remaining capacity of unbuilt approved area structure plans

Inventory as of April 2014. Plans as of September 2014.

Community	Approved Area Structure Plan	Hectares	Units			Population Capacity
			Single/semi	Multi-Unit	Total	
None Remaining	None Remaining	0	0	0	0	0
Sector Total		0	0	0	0	0

Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, remaining vacant lands with approved land use and lands with remaining area structure plan capacity.



Suburban residential supply: serviced with approved land use

The total remaining capacity of serviced lands with approved land use, as of April 2014, could accommodate approximately 152,900 people, 60,650 units and 1,656 hectares (4,092 acres) of land. This represents a **4 to 5 year suburban supply** based on the average five year forecast absorption rates of land and single/semi unit estimates (*Suburban Residential Growth 2015-2019* report).

Suburban residential potential of vacant serviced land with approved land use in place: April 2014

Information shown here represents the development potential of vacant serviced residential lands with land use approved within the suburban areas. Serviced are those lands with fire, transportation and major city utility infrastructure in place (water, sanitary and storm). These lands are essentially ready for development having major servicing capacity in place and approved land use. Following individual developer subdivisions and servicing connections to major city infrastructure, these lands are available to the home building industry.



Want more information about residential supply with approved land use in place?

If you have any questions on this Snapshot, or would like additional information, contact Decker Shields at 403-268-5489 or by e-mail at decker.shields@calgary.ca or Diane Pearson at 403-268-5879 or by e-mail at diane.pearson@calgary.ca.

Last updated: June 2015.

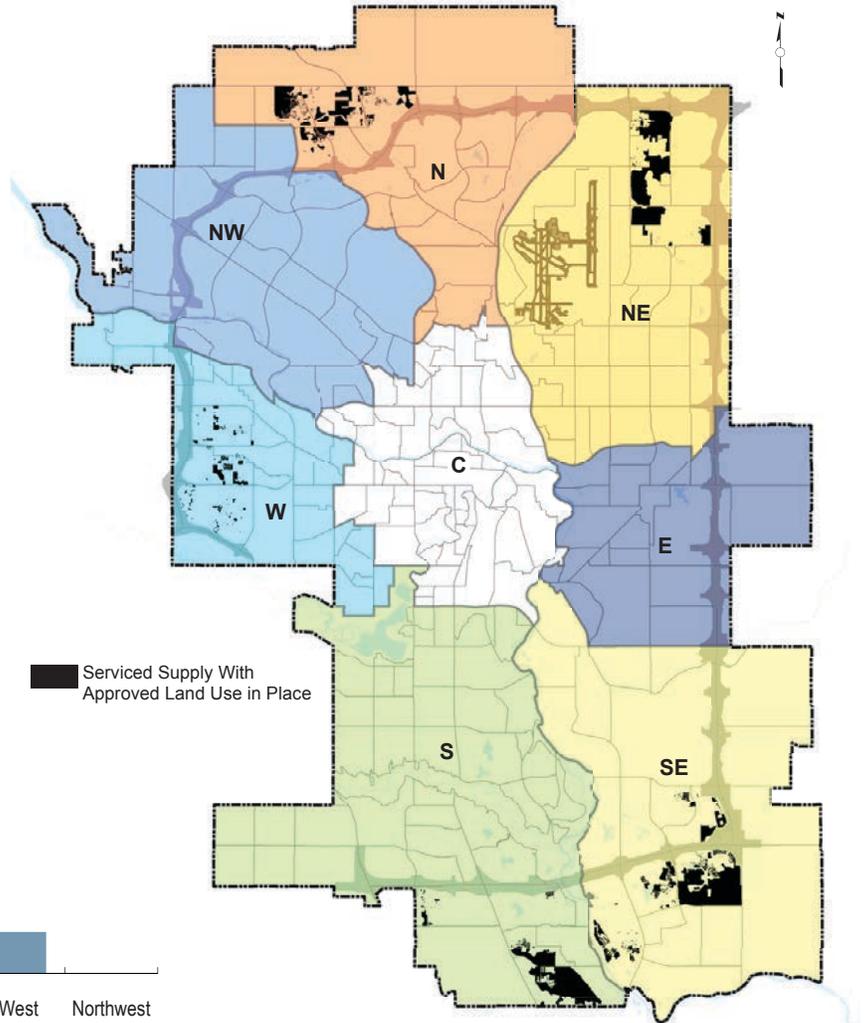
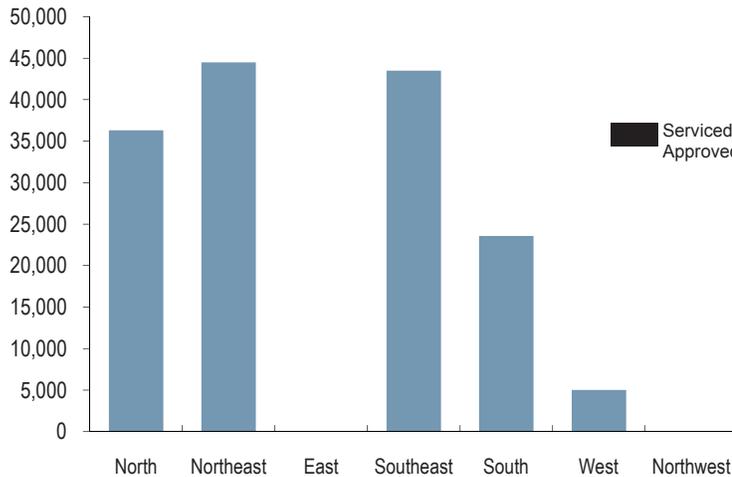
Next scheduled update: June 2016.

The following maps show the locations of remaining vacant serviced residential lands (subdivided and unsubdivided) in the new suburban communities with approved land use in place. The map below shows these lands in relation to Calgary's current boundary and sectors.

City wide capacity

City wide serviced supply with approved land use could accommodate approximately:

- 152,885 people
- 60,646 total units
- on 1,656 hectares (4,092 acres) of land
- Remaining population capacity by sector



Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Sector of City	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
North	3,307	12,091	15,398	79%	313	36,304
Northeast	4,925	13,450	18,375	73%	402	44,498
East	0	0	0	0%	0	0
Southeast	7,272	9,285	16,557	56%	522	43,496
South	4,912	3,507	8,419	42%	330	23,574
West	858	1,039	1,897	55%	89	5,013
Northwest	0	0	0	0%	0	0
City Total	21,274	39,372	60,646	65%	1,656	152,885

Hectares = gross residential hectares

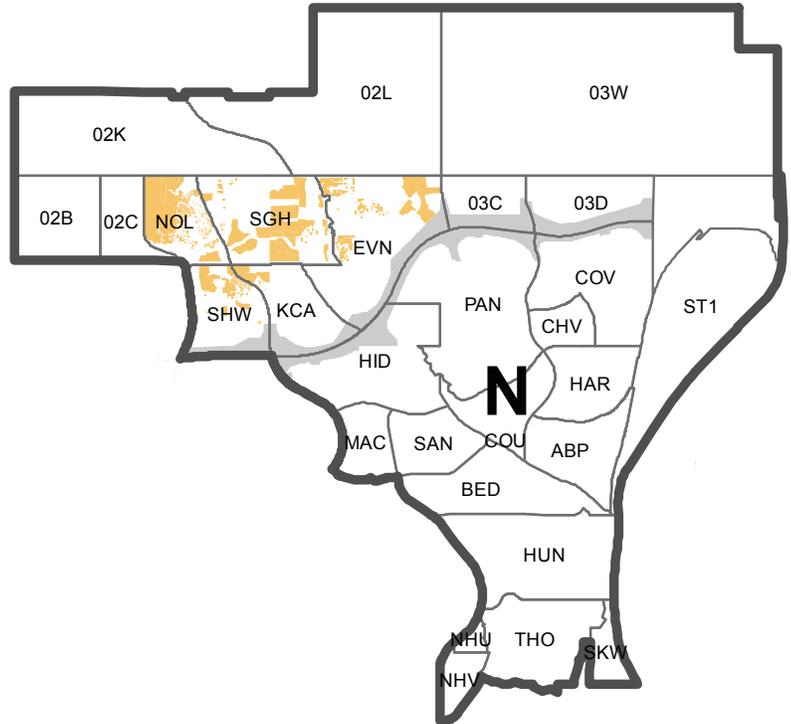
Sq. km 16.6

Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

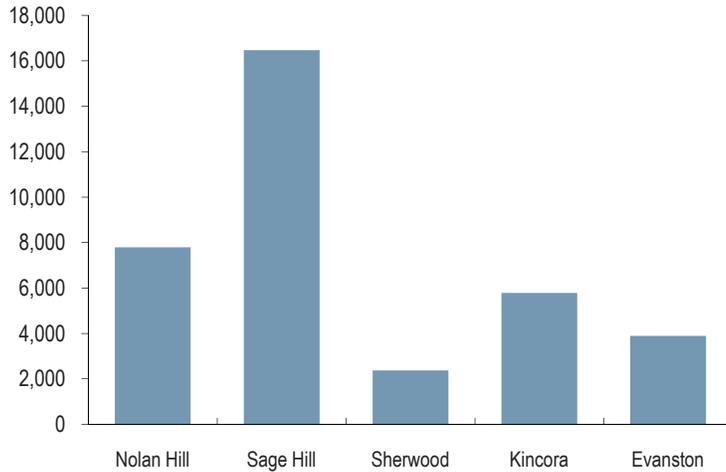
North sector

This sector could accommodate approximately:

- 36,304 people
- 15,398 total units
- on 313 hectares (773 acres) of land



■ Remaining population capacity



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
Nolan Hill	1,335	1,612	2,947	55%	122	7,790
Sage Hill	686	6,764	7,450	91%	98	16,468
Sherwood	405	492	897	55%	29	2,370
Kincora	9	2,739	2,748	100%	12	5,782
Evanston	872	484	1,356	36%	52	3,894
Sector Total	3,307	12,091	15,398	79%	313	36,304

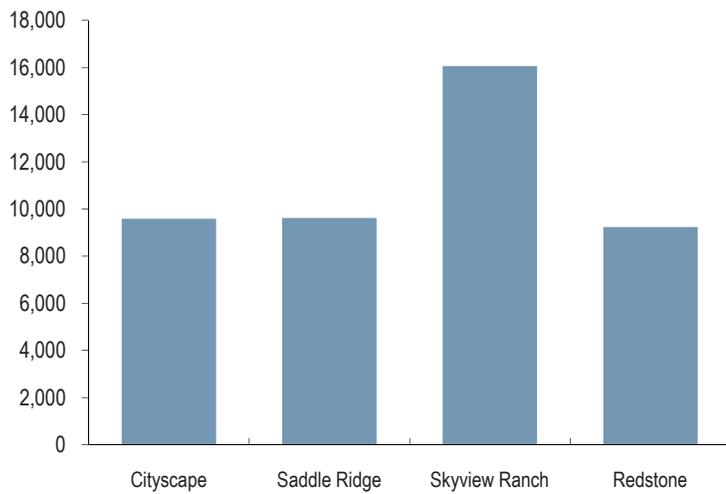
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

Northeast sector

This sector could accommodate approximately:

- 44,498 people
- 18,375 total units
- on 402 hectares (993 acres) of land
- Remaining population capacity



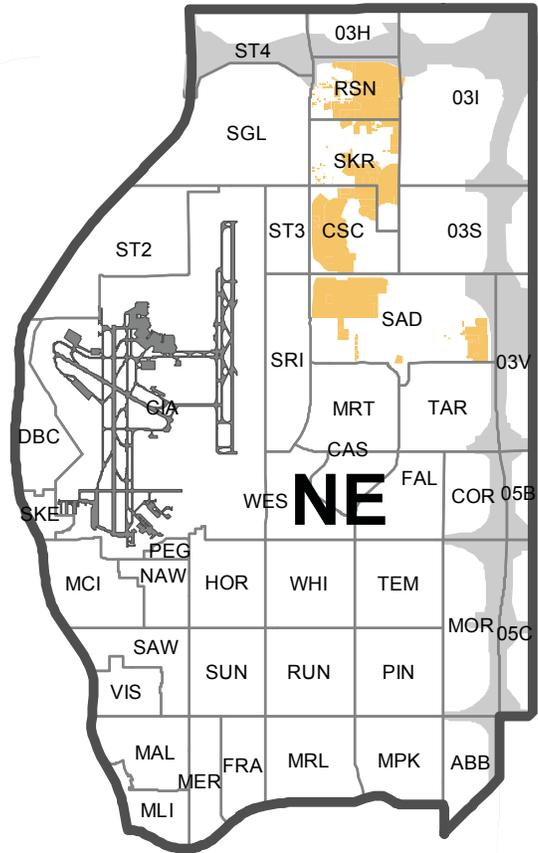
■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
Cityscape	1,549	2,130	3,679	58%	114	9,585
Saddle Ridge	2,147	1,205	3,352	36%	131	9,615
Skyview Ranch	84	7,517	7,601	99%	59	16,063
Redstone	1,145	2,598	3,743	69%	98	9,235
Sector Total	4,925	13,450	18,375	73%	402	44,498

Hectares = gross residential hectares

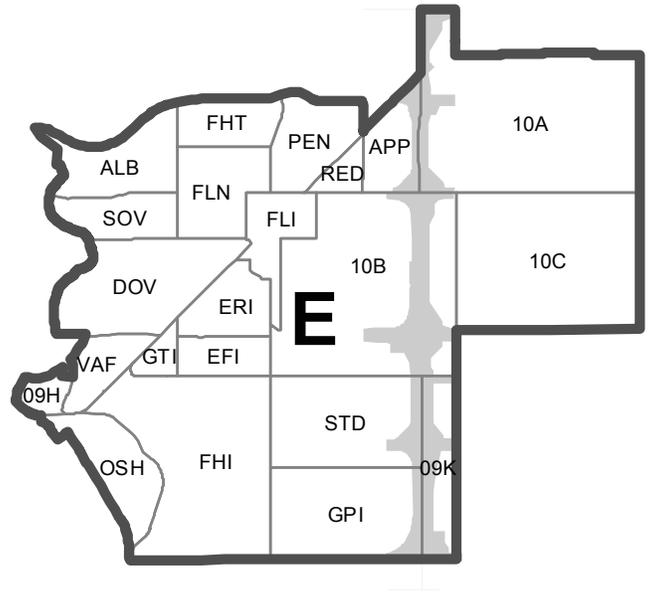
Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.



East sector

This sector could accommodate approximately:

- 0 people
- 0 total units
- on 0 hectares (0 acres) of land



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
None Remaining	0	0	0	0%	0	0
Sector Total	0	0	0	0%	0	0

Hectares = gross residential hectares

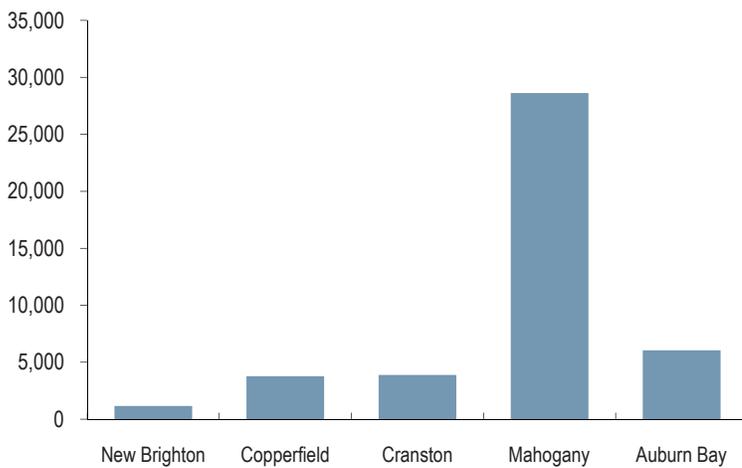
Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

Southeast sector

This sector could accommodate approximately:

- 43,496 people
- 16,557 total units
- on 522 hectares (1,290 acres) of land

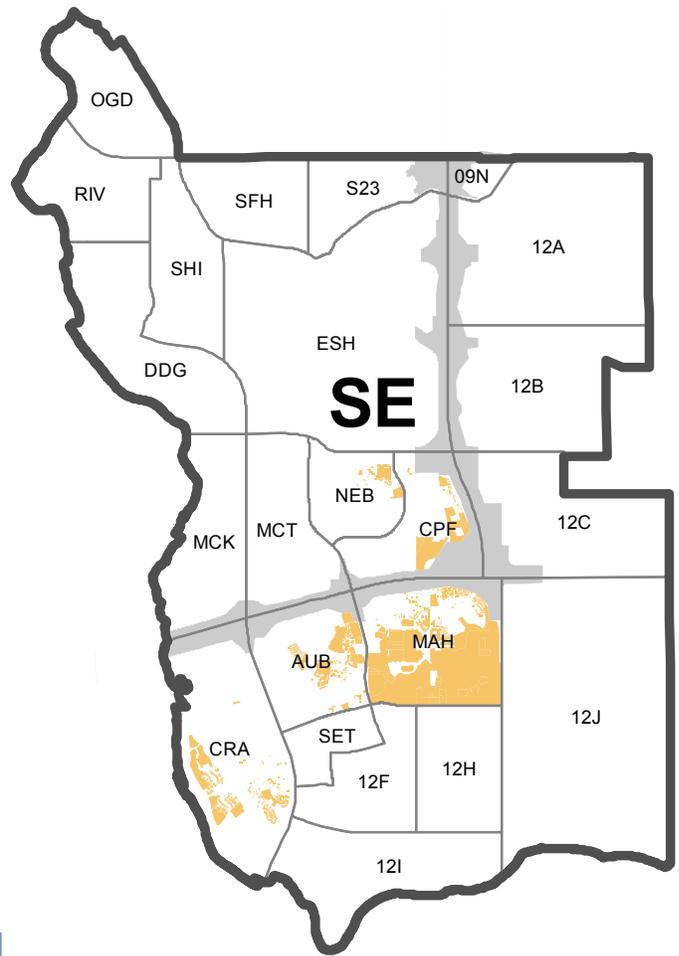
■ Remaining population capacity



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
New Brighton	204	235	439	54%	11	1,167
Copperfield	530	965	1,495	65%	42	3,775
Cranston	791	608	1,399	43%	61	3,887
Mahogany	4,753	6,161	10,914	56%	351	28,623
Auburn Bay	994	1,316	2,310	57%	57	6,044
Sector Total	7,272	9,285	16,557	56%	522	43,496



Hectares = gross residential hectares

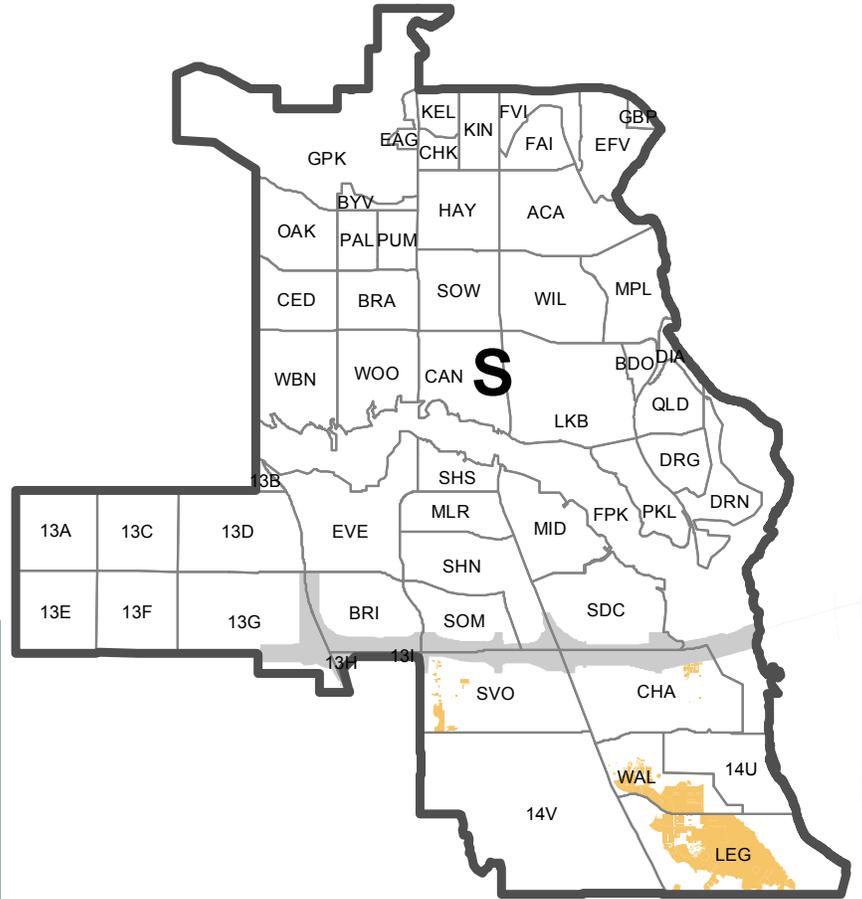
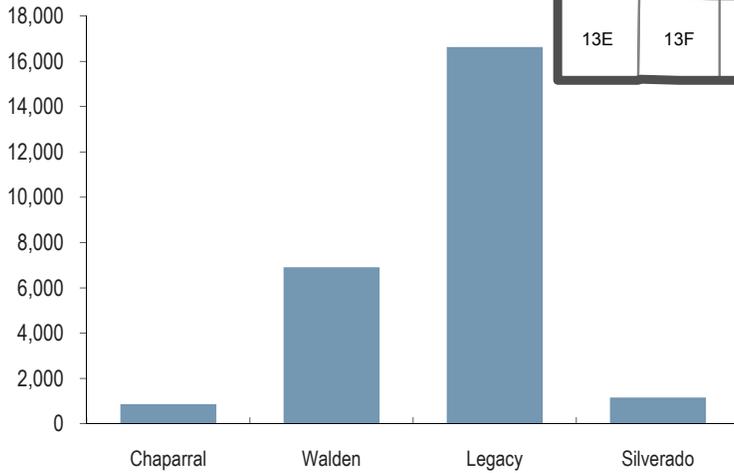
Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

South sector

This sector could accommodate approximately:

- 23,574 people
- 8,419 total units
- on 330 hectares (815 acres) of land

■ Remaining population capacity



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
Chaparral	136	0	136	0%	5	449
Walden	1,095	1,116	2,211	50%	75	5,957
Legacy	3,518	2,166	5,684	38%	234	16,158
Silverado	163	225	388	58%	16	1,010
Sector Total	4,912	3,507	8,419	42%	330	23,574

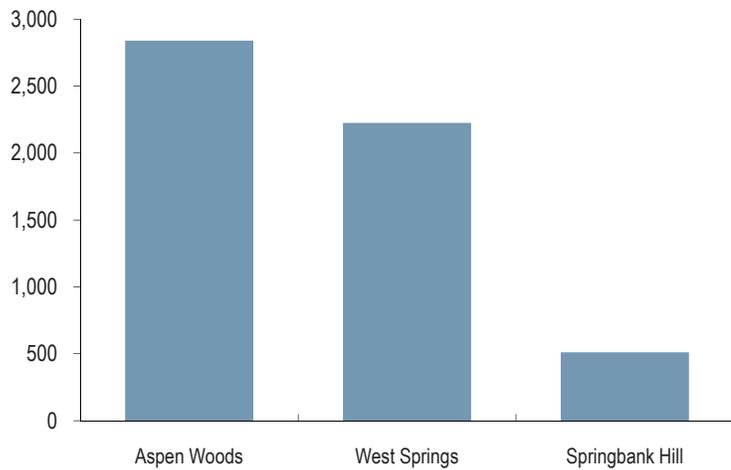
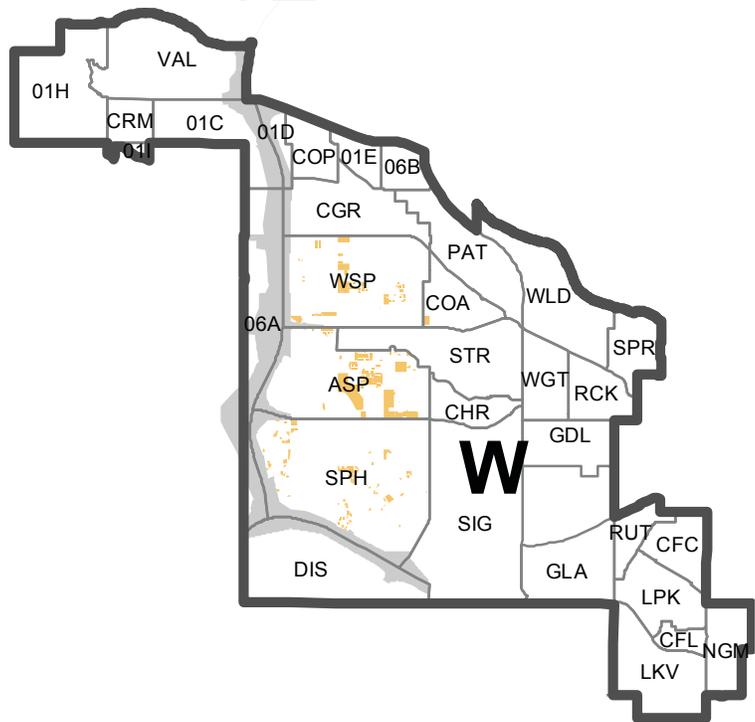
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

West sector

This sector could accommodate approximately:

- 5,013 people
- 1,897 total units
- on 89 hectares (220 acres) of land
- Remaining population capacity



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
Aspen Woods	598	351	949	37%	50	2,710
West Springs	105	688	793	87%	22	1,791
Springbank Hill	155	0	155	0%	17	512
Sector Total	858	1,039	1,897	55%	89	5,013

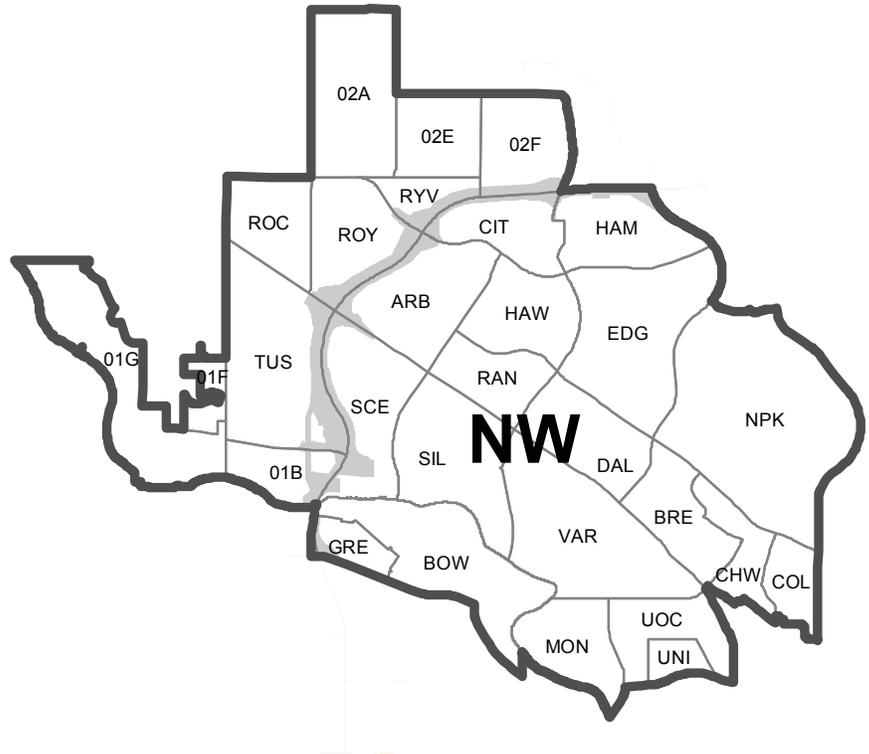
Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.

Northwest sector

This sector could accommodate approximately:

- 0 people
- 0 total units
- on 0 hectares (0 acres) of land



■ Remaining unbuilt city serviced capacity with approved land use

Inventory as of April 2014.

Community	Single Units	Multi Units	Total Units	Per Cent Multi Units	Total Hectares	Population Capacity
None Remaining	0	0	0	0%	0	0
Sector Total	0	0	0	0%	0	0

Hectares = gross residential hectares

Units include vacant registered lots, vacant approved tentative plans, and remaining vacant serviced lands with approved land use in place.



Suburban residential density

Calgary City Council has adopted a set of sustainability principles for land use and mobility. Among them are several that encourage higher density development, both in new communities and in established areas.

Higher densities can be achieved by building homes on smaller lots, by building attached homes (semi-detached, rowhouses or townhouses) or by building multi-residential structures (apartment buildings). The City is working in conjunction with the development industries to further increase land efficiencies in the design of new suburbs. Innovation will continue to be encouraged to find the best solutions to balance the demands of the marketplace with the public costs of operating and maintaining public infrastructure and services. The information here examines various facets of community residential density.

Why is housing density important?

Residential density is an indicator of how intensively land is being used to provide housing. It's important that residential density is high enough to:

- Create a range of housing choices for people of different incomes, ages and household characteristics.
- Support a variety of different land uses within walking or cycling distance of one another.
- Support efficient delivery of transit service.
- Preserve open space, agricultural land and natural systems by using land efficiently.

We need to pay attention to community residential density because, as development progresses outward, more roads, pipes, services and so on must be built and maintained, and higher per capita operating costs are incurred for distance-sensitive services like transit, police, fire, ambulance, garbage collection, snow removal etc.

Keep in mind that higher density is only one component of creating complete and sustainable communities. More on this can be found in Calgary's new *Municipal Development Plan* (MDP-Bylaw 24P2009) approved by City Council in September 2009. The MDP promotes sustainable approaches to the design and development of new complete communities and supports an increase in overall community densities, a variety of housing types, and allowing for new housing forms to be integrated beyond the initial build-out of a community (MDP 3.6 2h). The MDP provides policies that new communities should achieve an overall minimum intensity of 60 people and jobs per gross developable hectare. This is roughly equivalent to a residential housing density of eight to nine units per gross residential acre or 20 to 22 units per gross residential hectare based upon current housing mix estimates. New area structure plans must also contain provisions to allow for that intensity to increase over time to 70 people per gross developable hectare across the lifespan of the community (MDP 3.6.2c)

Want more information about suburban residential density?

If you have any questions on this Snapshot, or would like additional information, contact Decker Shields at 403-268-5489 or by e-mail at decker.shields@calgary.ca.

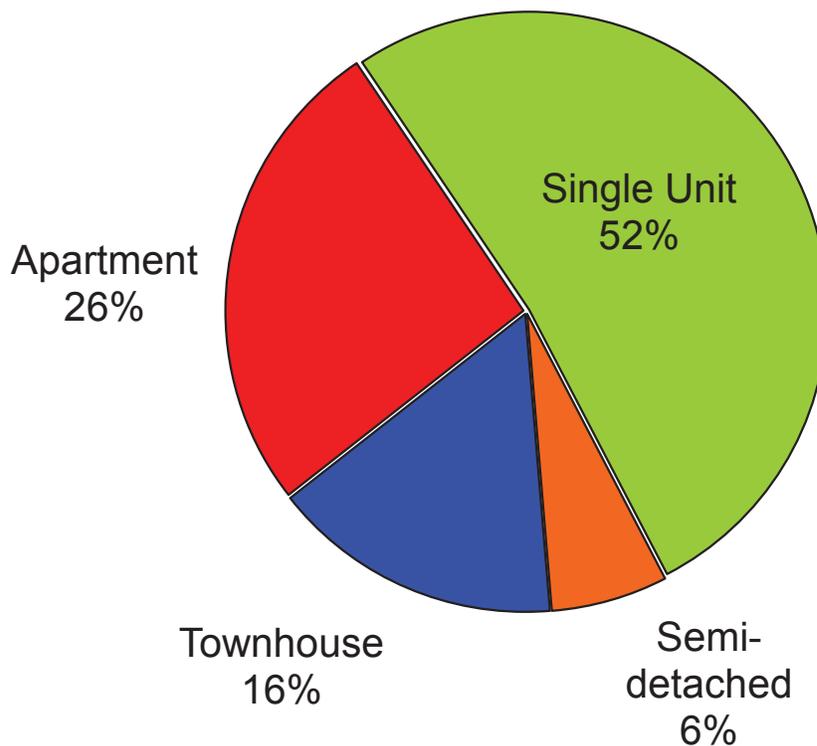
Last updated: June 2015.

Next scheduled update: June 2016.

How is higher density achieved?

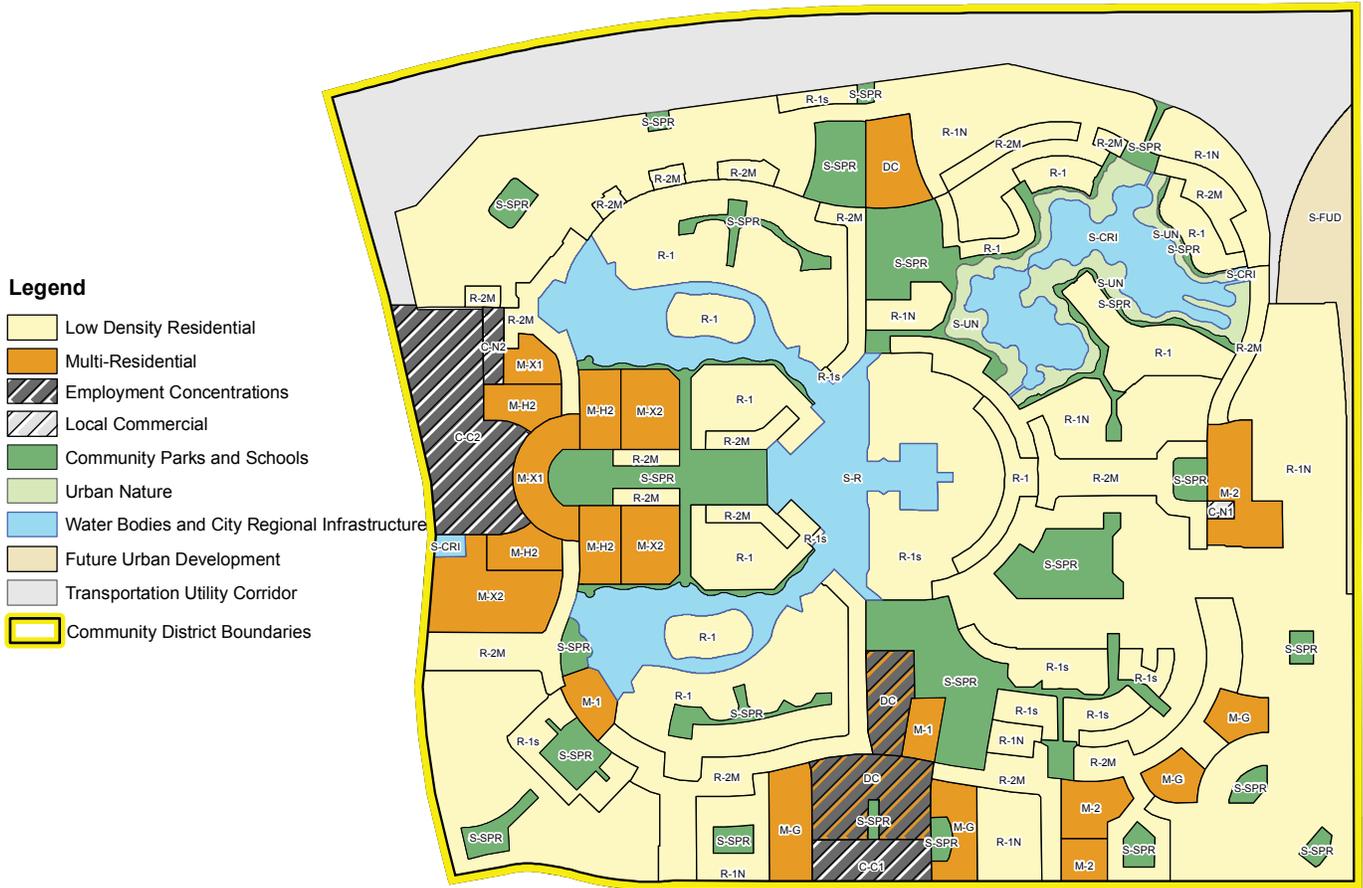
Density can be increased by ensuring the mix of housing types includes more multi-residential development and by building single-detached dwellings on smaller parcels. Increasing density in these ways helps to make better use of residential land and responds to demographic and economic forces that increase the demand for a diversity of housing types. Below is the current typical mix of housing types in Calgary’s suburban areas as applied for in building permits for 2014.

■ 2014 Typical suburban housing mix-new suburban communities



(These comparisons are based upon those new Suburban Communities at the time and Building Permit data)

The developing community of Mahogany in Calgary’s southeast is an example of how housing mix is being used to aim for higher residential density. Council has approved a mix of single detached and multi-residential areas. The approved land use applications for the area are anticipated to achieve an overall density of 24.9 units per hectare (uph), or 10 units per acre (upa). Approximately half the number of dwelling units planned for the community will be multi-residential development built on 12 per cent of the total land area. The density of the multi-residential area will be approximately 104 uph or 42 upa. The remaining 88 per cent of the land will consist of single and semi-detached dwellings, with a density of approximately 13.9 uph or 5.6 upa.

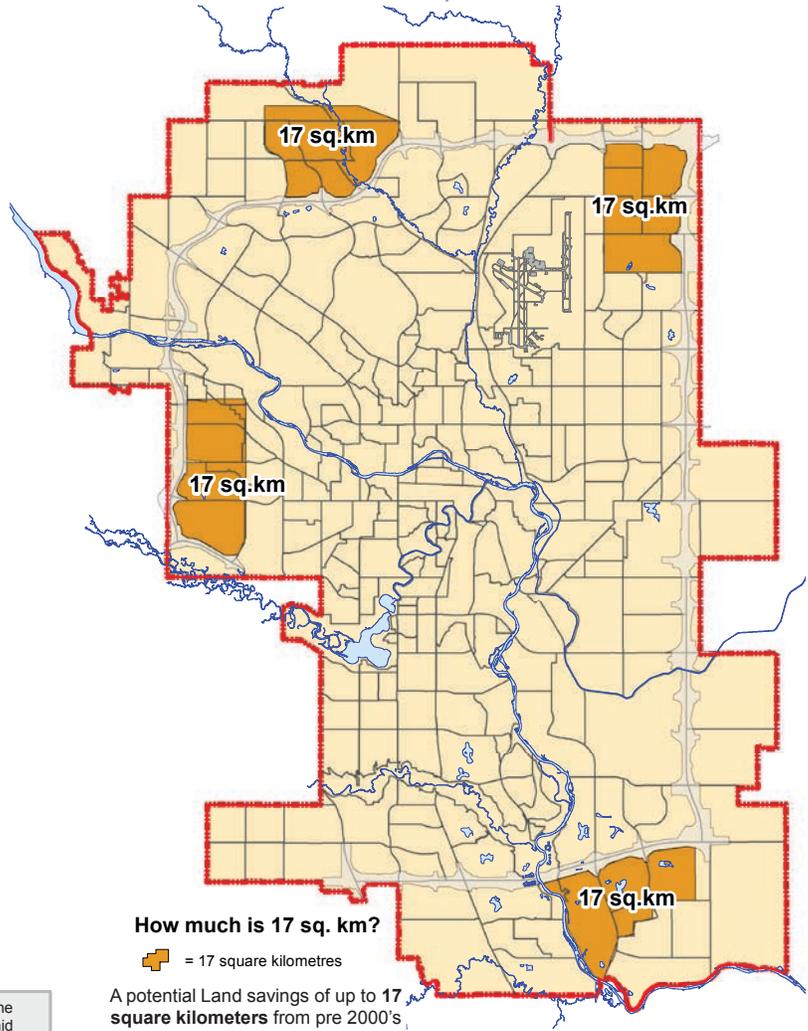


As density is increased in these ways, the average number of people per dwelling decreases, as shown on the chart on the following page. Currently in Calgary, multi-residential development typically has smaller household size (people per unit) than single family units. Therefore, as densities increase, the same amount of population needs more units, but less land.

Using less land

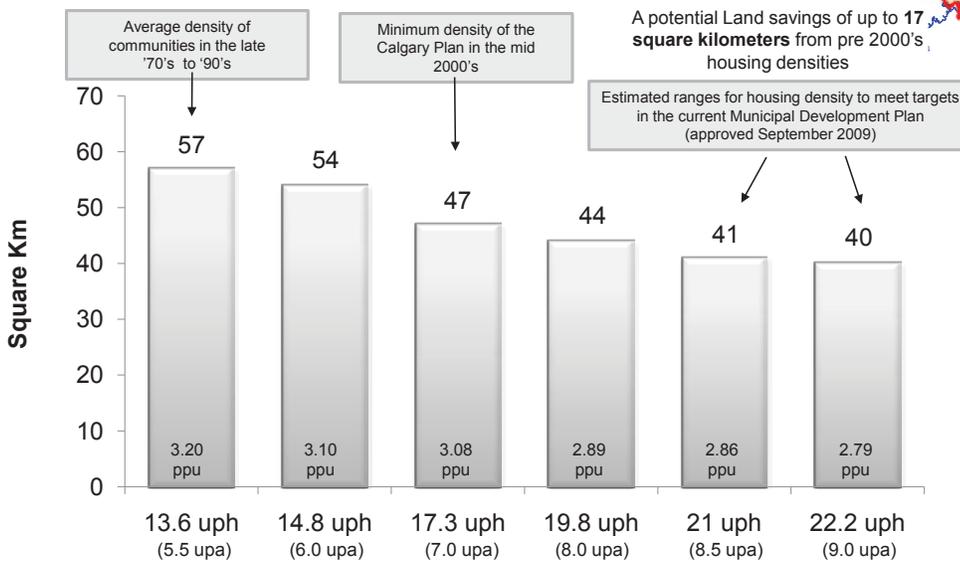
The density achieved in new communities influences the rate at which the city expands on its edges. Higher housing densities use up less land. In fact, if we accommodated 250,000 people in communities with housing densities of 22.2 units per hectare (9.0 units per acre) rather than 13.6 units per hectare (5.5 units per acre), **we would save up to seventeen square kilometres of land.** This is land that would otherwise need water, sewer, storm and transportation, in addition to a host of other services such as police, fire, transit, parks, etc.

What does seventeen square kilometres look like?



- Assumed residential density (units per hectare)
 Estimated land required for general urban uses in Calgary adding 250,000 population, using different density and people per unit (PPU) assumptions.

Land savings of seventeen square kilometres



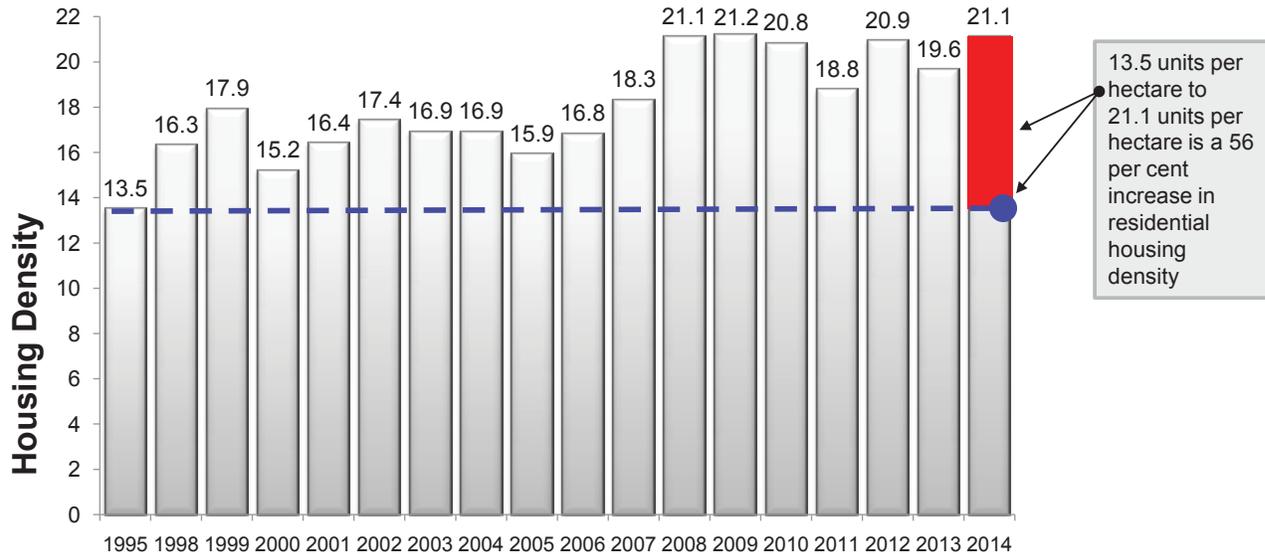
Method: Suburban population required = 250,000 people / 2.79 ppu = 89,606 units / 9 upa = 9,956 acres / 640 acres per sq. mile = 15.6 sq. miles or 40.1 sq km. ppu (people per unit) are estimates. uph = units per hectare, upa = units per acre

Trends in density

The trend in housing density has moved upward.

- Suburban residential densities ranged from 11 to 15 units per hectare (4.5 to 6.0 units per acre) for many communities built from the '70s to early '90s.
- Since the latter part of the '90s, policy plans have been requiring increased density. In the '00s, suburban densities were between 17 to 22 units per hectare (7.0 to 9.0 units per acre).
- Current policy requires that all new communities meet targets in the current Municipal Development Plan of 60 to 70 people plus jobs per gross developable hectare. Relating this to housing density it is estimated that new communities (at build out) would need to achieve a range of 19 to 22 units per hectare (8.0 to 9.0 units per acre). The density ranges shown in the chart below represent yearly approval averages and do not necessarily represent the densities achieved in a built-out community. The yearly applications average may be lower or higher than the estimated targets stated in the MDP. A completed community typically requires multiple outline plan and land use applications over several years, which combine to achieve density and population targets. The chart below simply provides the historical trend in annual land use application approvals.

■ Annual average new suburban densities, outline plan approvals (1995 – 2014)



Source: City of Calgary: Planning, Development & Assessment
 Includes measured community densities from 1995 research. Post 2005 density reporting is from performance measures supplied by subdivision services and is based upon outline plan/land use approvals.



A general guide to understand residential housing density

The City uses the method described in this Snapshot to calculate the residential housing density of a community. Community density is based on gross residential area:

$$\frac{\text{number of dwelling units}}{\text{gross residential area}} = \text{community residential housing density}$$

Gross residential area is calculated by starting with the gross area of land and deducting non-developable land and land required for regional land use needs.

Gross area less non-developable area less regional land uses = gross residential area

The tables below show how this method could be applied to a hypothetical new community.

Sample density calculation Details

(Figures are for sample density calculation only.)

A sample community with 259 hectares (640 acres) of total land area, 36 hectares (89 acres) of non-developable lands, 39 hectares (96 acres) of regional land uses and 4,100 units (multi-unit or single-unit), would result in a housing density of 22 units per hectare (9 units per acre).

GROSS TOTAL AREA:	259 hectares
Less	
NON-DEVELOPABLE AREA:	36 hectares
Equals	
GROSS DEVELOPABLE AREA	223 hectares
Less	
REGIONAL LAND USES:	39 hectares
Equals	
GROSS RESIDENTIAL AREA:	184 hectares
NUMBER OF UNITS:	4,100 units
Divided by gross residential area:	184 hectares
Equals: DENSITY	22 UPH
or	9 UPA

Units per hectare – UPH
 Units per acre – UPA
 (1 ha = 2.47 acres)

While the density criteria noted in this document provide general direction for a consistent approach in calculating density on a community-wide basis, a comprehensive review will be required at the Outline Plan and Land Use stage to ensure that the mathematical density calculation accurately reflects the intent of policy initiatives and achieves City of Calgary objectives.

The information below may not represent all possible uses and maybe subject to modification on specific land use applications

“Gross Area” includes:	259	hectares
All lands within a physical boundary or total area		
“Non-Developable Area” includes:	36	hectares
Environmental reserve / Rivers	19	
Expressways/ large interchanges	5	
Railways	2	
Other non-developable lands etc. Cemeteries, landfills*	10	
“Gross Developable Area” includes:	223	hectares
Regional and local uses (lands that can be built on)		
“Regional Land Uses” may include:	39	hectares
Regional open space	5	
Major commercial centres > 4.0 ha or 10 acres	6	
Major institutional sites	3	
Senior high schools	14	
Industrial areas	2	
Public lakes/water bodies	5	
Other regional uses	4	
“Gross Residential Area” includes:	184	hectares
Single-unit residential	91	
Multi-unit residential	10	
Local commercial	5	
Local parks & open space	18	
Elementary & junior high school sites	10	
Local Roads including majors & lanes	37	
Local Community Church sites	1	
Daycare centres	1	
Community centres	2	
Small indoor recreation sites	1	
Small site fire & police stations	1	
Private lakes, wet/dry ponds & public Utility sites	2	
Other local uses	5	

* Slopes that may be part of the Environmental Reserve are determined not to be developable only if they are considered geotechnically unstable.

Parcel density vs. community density

The example provided shows how a gross area of land has various amounts deducted to arrive at land available for residential development, or gross residential area. This gross residential area is used to determine the overall density for a community, as shown.

It is important to remember that the density calculation for a community is very different from the density calculation for an individual parcel of land. Density on an individual parcel is calculated simply by dividing the number of dwelling units by the area of the titled parcel.

$$\frac{\text{number of dwelling units}}{\text{area of parcel}} = \text{parcel density}$$

However, looking at density on a community wide level means that the land required to sustain that community must be added to the area amount. As the table in the example shows, a community requires land for local needs like roads, small businesses, parks and open space, elementary and junior high schools, places of worship, child care centres, community centres, small emergency services stations, wet or dry ponds and public utility sites.

Land for these things is included in the “gross residential area” of a community. To calculate community-wide density, the total number of dwelling units is divided by this gross residential area.

$$\frac{\text{number of dwelling units}}{\text{gross residential area}} = \text{community residential housing density}$$

Another way to think of this is that each dwelling unit needs not only its own parcel of land but also a footprint of land required in the community to support it and its residents. This footprint must be accounted for in the community density calculations.

Because this total footprint adds to the amount of land required for residential units, the density figure decreases.

Using the hypothetical community provided in the example, the amount of land developed with residential buildings (Single and Multi unit) is only 101 hectares (about 250 acres). The density of just the residential land (net residential) would therefore be:

$$\frac{4,100}{101} = 41 \text{ units per net residential hectare (about 17 units per acre)}$$

However, these 4,100 units require land for the local needs of that community, which total 83 hectares (about 205 acres) in this example. The density of the community is therefore calculated to be:

$$\frac{4,100}{101 + 83} = 22 \text{ units per gross residential hectare (about 9 units per acre)}$$

Population Picture

Population growth: past, present and future

Planning for future population growth

The City closely monitors Calgary's growing population. Insights can be gleaned from past trends that explain the present and help predict the future.

Planning for future population growth is a key component of city building. Long-term growth projections help us visualize the way the city will look and operate in the future, and this helps The City of Calgary to plan for the needs of future citizens. Increasingly, citizens and City staff are recognizing that these forecasts are not just continuations of current trends, but can reflect the expectations for the kind of future we want to have.

There are two dimensions to population forecasting - figuring out **how many** people will live in Calgary at a given time, and figuring out **where** they will live. Both dimensions impact municipal planning and decision-making.

This Snapshot examines past and present population trends, and explains how they contribute to the forecasting of future growth.

Want more information on population growth?

If you have any questions on this Snapshot or would like additional information, contact Matthew Sheldrake at 403-268-5929 or matthew.sheldrake@calgary.ca.

Last updated: December 2012.
Scheduled update: November 2013.

Where does population growth come from?

Population change has two components: **net migration**, which is the difference between the number of people who move to Calgary and the number who leave Calgary, and **natural increase**, which is the difference between the number of births and deaths recorded. The two, added together, produce growth or decline in population over a given time frame. In Calgary, natural increase has historically been much less volatile than net migration.

Natural increase has been a reliable source of growth for many years. Since 1996 there have been approximately three births for every one death. Calgary added 9,631 people in this way in 2012. Over the past 25 years, this growth from natural increase has ranged between 7,028 and 10,552 people per year.

Net migration is affected largely by economic conditions. Whether or not the economy is growing directly affects the number of jobs available, which affects whether people choose to live here or elsewhere. As well, the cost of living relative to other areas can factor into migration decisions.

In 2012, net migration brought 19,658 people to the city. This is in sharp contrast with the loss of people experienced in 2010 and nearly double the growth experienced in the previous year. The net migration levels are the highest since 2006 and the third highest seen over the last decade indicating renewed economic interest in Calgary. The population gained through

immigration added to Calgary's continuous natural increase to produce a high level of growth for the city.

What is Calgary's historical population trend?

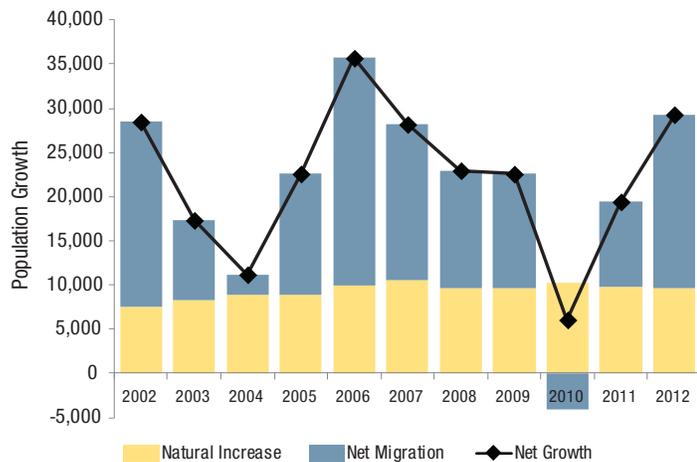
Calgary has enjoyed generally strong population growth since its establishment, supported by relatively robust economic growth and strong birth rates. While growth was muted in 2010, it rebounded in 2011 and has achieved even higher growth in 2012 to make it the 29th consecutive year of population gains for the city.

Forecasting Calgary's future growth

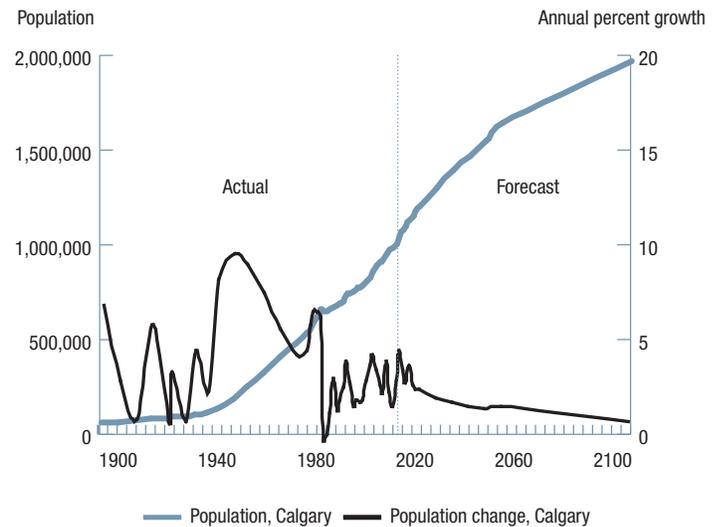
Calgary's population forecast is prepared by Corporate Economics using economic and demographic assumptions. It is published in the Calgary & Region Socio-Economic Outlook with Long Term Economic Trends. Geodemographics takes the total population from this forecast and makes assumptions about where that population will locate in the city.

In the graph below, it is evident that the percentage growth rate has slowed since the 1960s, and Corporate Economics' growth forecast beyond 2012 expects this trend to continue. This is due to changes in both of the two drivers of growth. The first change is that people are having fewer children than in the past and, when combined with the death rate that will increase as the baby boomers age, this will significantly decrease the gains from natural increase.

Calgary's population growth – net migration and natural increase components



Calgary's population – actual and forecast



Source: Civic Census and Corporate Economics

Secondly, increased demand for labour elsewhere and lower intraprovincial migration may constrain gains from net migration, although these are expected to be offset somewhat by increased international migration.

Population growth is forecasted to remain positive to 2076 and beyond as Calgary is expected to continue to create jobs and opportunities for potential migrants and new families.

Population growth in the Calgary region

Any prediction of Calgary's future growth must take into account expected growth in the region outside the city. There are several different definitions of the region, however most generally refer to the areas within a daily commuting distance to Calgary. Some of the cities, towns and rural municipalities within this area form the Calgary Regional Partnership (CRP), which seeks to maximize the potential of its members through co-operative sustainable planning.

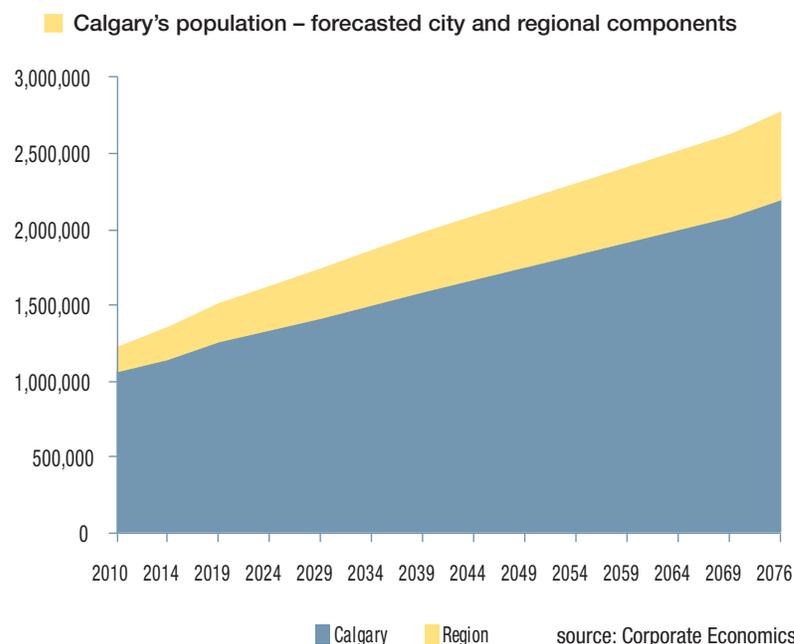
For several years now, the region has been growing at a faster percentage rate than Calgary. The urban and rural municipalities around Calgary provide housing, lifestyle and employment options, attracting people and jobs to locate throughout the region. Regional residents and employers contribute to the economy and benefit from locating in the Calgary area.

While Calgary grew by 25 per cent between the 2001 and 2011 Federal Censuses, the region excluding Calgary grew by 71 per cent. Airdrie, Chestermere and Okotoks each grew by more than 100 per cent. In 2001, 91 per cent of people in the Calgary region lived in Calgary; by 2011 that fell to 88 per cent. The City and the region expect this trend to continue, with this percentage falling to 80 per cent by 2039 and to 79 per cent by 2076. As such, it has become standard practice to assume that the region's population will grow approximately twice as fast as Calgary's. This is illustrated in the population forecast graph below. For more information about how population and housing growth is shared between Calgary and surrounding municipalities, refer to the new Regional Picture section appended to this document.

Geodemographics' current long term population distribution

Corporate Economics last published a new 30-year population in 2007, which detailed how Calgary will grow from its current population to 1.6 million by 2037. Additional work prepared for the Calgary Regional Partnership by Urban Futures has shed light into how the region might grow and change over the next 70 years.

Geodemographics uses this work as a starting point for distributing population and jobs in the city and surrounding region. See the Snapshot "2009 Scenario Series: Where will Calgary's future population live?" for more information.





2009 Scenario Series: Where will Calgary's future population live?

The Scenario

The role of Geodemographics is to provide credible, consistent and co-ordinated analysis of land use planning, both within the Land Use Planning and Policy business unit and for our partners and clients throughout The City of Calgary.

Historically, one major piece of analysis Geodemographics undertakes is to spatially distribute The City's population and employment forecasts. Corporate Economics publishes forecasts of the total numbers of residents and jobs in Calgary, but does not attempt to report where those residents and jobs are likely to locate throughout the city. Geodemographics conducts that spatial analysis for a variety of clients.

Typically, the distribution of the forecast entails starting from the current state, studying and evaluating trends and the circumstances that might change those trends, deriving assumptions and establishing likely future growth patterns. For example, the forecast distribution in 2006 included assumptions about future transit oriented development that represented a significant departure from a trend-based analysis.

The purpose of the forecast distribution is to help planners and others make recommendations about how The City should serve that growth and answer questions like:

- What areas require planning policy, either to allow for greenfield development or to encourage redevelopment of existing areas?
- Where should The City invest in new or expanded infrastructure?
- Where will other City services be necessary in the future?

Of course, the accuracy of the forecast distribution is subject to the accuracy of the assumptions at its foundation. For that reason, Geodemographics updates the forecast distribution every few years to take into account new information about the rate and location of growth, housing preferences, lands that become available for development and infrastructure investment decisions.

However, the circumstances surrounding the current forecast, prepared in 2009, involved change of such importance that they fundamentally altered the approach to forecast distribution. In an effort to signal the significance of that change, Geodemographics calls the current exercise the 2009 Scenario Series, referring to the long-term growth scenarios envisioned in the Calgary Metropolitan Plan and the Municipal Development Plan, both completed in 2009.

Want more information?

If you have any questions on this Snapshot or would like additional information, contact Michele Broadhurst at 403-268-8047 or michele.broadhurst@calgary.ca.

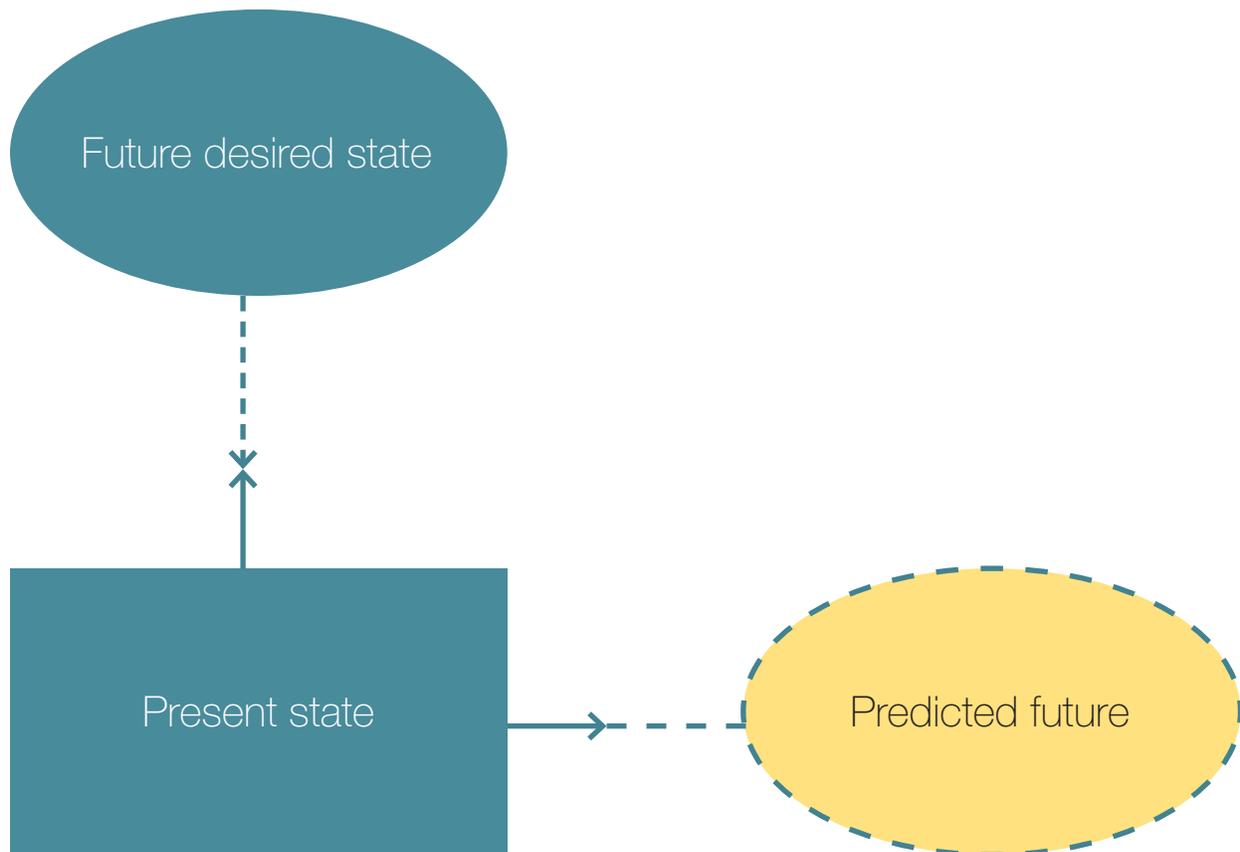
Last updated: February 2011.
Scheduled update: November 2014.

These plans significantly alter the previously assumed growth patterns for the city of Calgary and the surrounding region. The function of the 2009 Scenario Series, then, is to distribute population and employment according to those changed assumptions. The scenario is not a prediction: it is one possible way growth will occur if the policy directions within the CMP and the MDP substantially influence that growth.

The process used to prepare the scenario turns the typical forecast distribution process on its head. Instead of saying

“If current trends either continue or change in expected ways, this is what is likely to happen”, the scenario says “If the future growth pattern envisioned in these long-term plans is to be realized, this is what is likely necessary to occur”. The Natural Step Framework ¹ calls this approach “backcasting” rather than forecasting. The scenario series starts with an end-state and illustrates how the location of population and jobs will have to occur to create that end-state.

¹ See www.naturalstep.org/en/backcasting

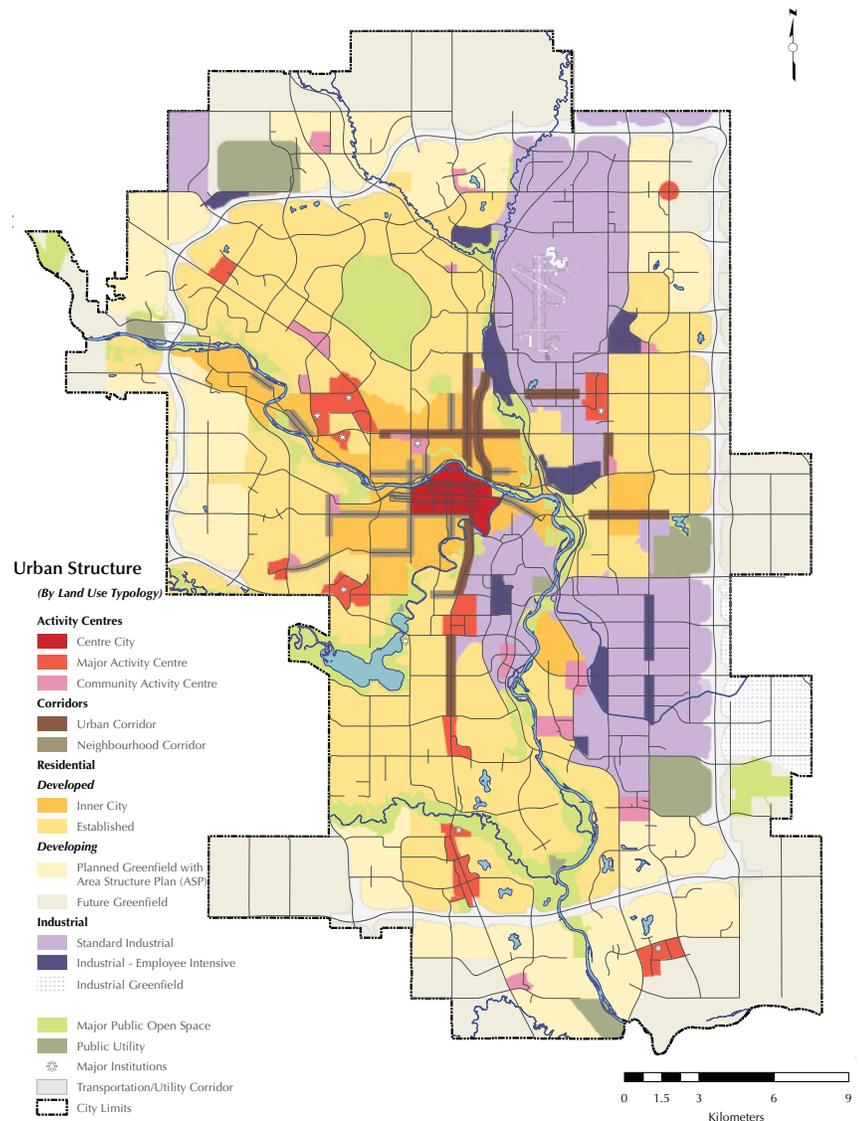


The role of the Municipal Development Plan

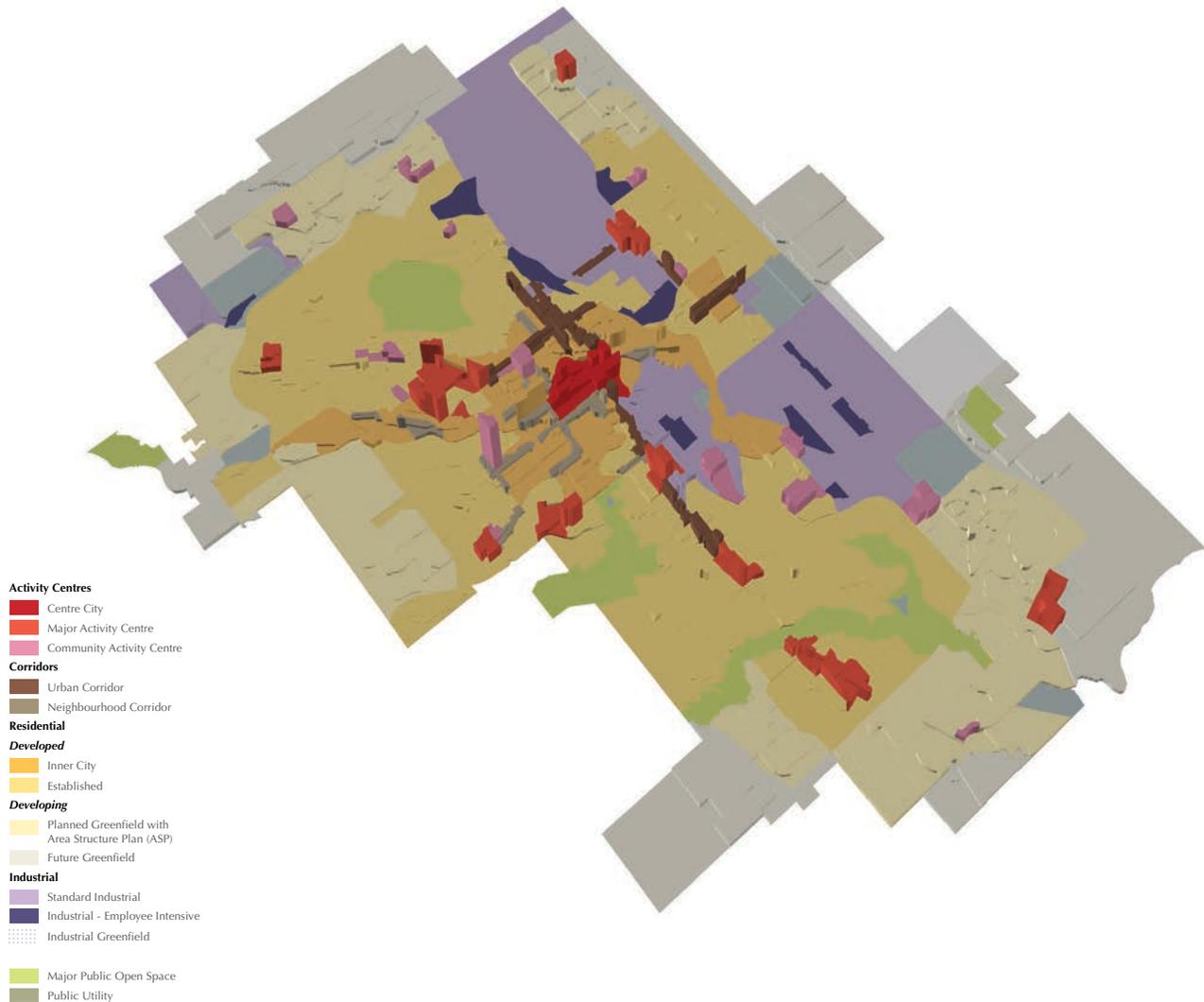
For The City of Calgary, this scenario is a direct extension of the Municipal Development Plan (MDP). Every number reflects, to some degree, the aspirations in this new plan. Other local area plans are also considerations, to the extent that they advance the objectives of the MDP. The MDP contributed two major pieces to this forecast:

- The first is a new urban structure that divided the city into typologies. Each typology has a set of assumptions and targets associated with it, and these informed the scenario process. With the exception of currently approved policy plans and approved developments, the new MDP is the single largest factor considered in this scenario. As well, Geodemographics divided the project workload along the lines of the new urban structure.
- The second piece is a specific direction on the share of growth allotted to the urban structure types. Simply put, the plan specifies that over the next 30 years, the developed areas (as at 2006) should accommodate 33 per cent of the population growth. Over the next 60 to 70 years, the developed areas should accommodate fully 50 per cent of growth. This is a dramatic departure from the status quo in Calgary, and a departure from any forecast Geodemographics has ever produced. The overall result is that the plan envisions significant intensification and growth for the developed area typologies, focused on activity centres and specific corridors. The map on the next page shows a three-dimensional representation of the change in people per hectare between 2006 and 2076, by MDP typology. It illustrates the amount of change necessary to achieve the MDP targets.

MDP Land Use Typologies



Population Density Change People Per Hectare 2006 – 20076



The results

The most basic question the 2009 Scenario Series attempts to answer is “If the city grows according to the MDP, where will Calgary’s future population live?” The Scenario Series produces results at a relatively fine grain, in about 2,000 zones throughout the city and the surrounding region. This scale is useful to plan transportation and City utilities. Organizing these zones to align with the MDP’s land use typologies provides a more general view of the population scenario.

Distributing population across the city

The Scenario Series does not assume an even distribution of population growth across the city. The MDP sets targets for balanced growth between greenfield and developed areas and focuses population growth in specific areas: centre city, activity centres and corridors. See the map on page 51 for the MDP land use typologies.

The 2009 Scenario Series assumes that, between 2006 and 2076, the city's population will increase by 1.2 million people, for a total population of 2.2 million. To achieve the balance of growth targeted in the MDP, about 607,000 of these additional people will locate in developed areas and about 608,000 will locate in greenfield areas. The tables below show the population growth that will be necessary to achieve MDP targets, located within the MDP land use typologies.

Population Growth to 2076 in Developed Areas by MDP Typology*

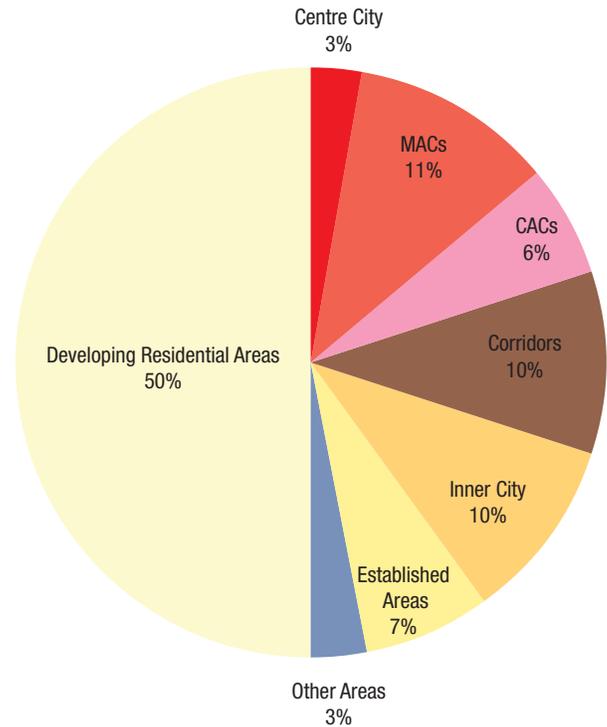
Typology	Additional Population
Centre City	38,000
Activity Centres (Major and Community in Developed Areas)	209,000
Corridors (Urban and Neighbourhood)	113,000
Inner City	118,000
Established Areas	97,000
Other Developed Areas	32,000
Total	607,000

Population Growth to 2076 in Greenfield Areas by MDP Typology*

Typology	Additional Population
Major Activity Centres (in Greenfield areas)	29,000
Greenfield	579,000
Total	608,000

* Some MDP typologies are combined for simplification.

Share of growth in population 2006-2076



Distributing population over time

The Scenario Series also does not assume an even distribution of population growth over time. Developed areas and greenfield areas grow at different rates, largely because they develop in very different ways. Greenfield development typically occurs through comprehensive master plans for entire communities, where The City and developers manage the phasing and style of development. There is little or no built context; instead, the master plan establishes the context.

In developed areas, growth is achieved through redevelopment, either through an incremental process on a few parcels at a time or through larger scale comprehensive redevelopment of underused or obsolete sites. This redevelopment also occurs within an existing context, which redevelopment must respect.

While a greenfield community can add thousands of people over several years, redevelopment of existing communities usually adds fewer people, takes more time and must also counter the typical community pattern of population growth and decline, described in detail in the Snapshot called Population Change: demographics and occupancy.

For these reasons, for greenfield areas to meet the target of accommodating 50 per cent of growth that occurs between 2006 and 2076, about two-thirds of that growth occurs by 2039, or within the first 30 years of the scenario period. The remaining third of growth occurs between 2039 and 2076, a period of 37 years.

The developed areas achieve one-third of their growth target by 2039. Two-thirds of their growth occurs between 2039 and 2076. These areas achieve only about five per cent of their growth target by 2019.

Population Growth Between:	Developed Areas		Greenfield Areas	
	Population Growth	Per Cent of Target	Population Growth	Per Cent of Target
2006 and 2019	28,000	5	249,000	41
2019 and 2029	67,000	11	89,000	14
2029 and 2039	110,000	18	64,000	11
2039 and 2076	402,000	66	206,000	34
2006 and 2076 (Total Growth)	607,000	100	608,000	100

With this information, City departments and others can determine the steps necessary to achieve MDP population targets.

Population density and urban growth

Calgary is expected to continue its record of strong population gains. Therefore The City needs to have a plan to accommodate that growth. A key component to that planning is monitoring how the population is distributed spatially. This Snapshot examines the spatial element of growth, including the city's spatial extent and the relationship to population growth patterns.

Calgary's spatial extent

As Calgary's population has grown, the area within its boundaries has also grown. In 1951, Calgary's population was 127,057 people; by 2012 the population had grown to 1,120,225, representing growth of 782 per cent. Spatially, the area within Calgary's boundaries grew from about 104km² in 1951 to over 848km² in the 2007 annexation, a gain of 715 per cent.

It is important to note that there are two ways to measure Calgary's spatial extent: total area within its municipal boundary, and area that has actually been developed. On the maps on the adjacent page, the black area represents the built-out area, while the yellow extent around it represents the municipal limits. The area within the municipal limits is significantly larger than the built area in keeping with the Municipal Development Plan, which states that The City should maintain a 30-year supply of developable land. This policy ensures that the municipal boundaries extend beyond the edge of current contiguous development, protecting land for orderly urban development as the city grows. When comparing Calgary to other cities, it is most accurate to examine the extent of the built form when calculating density figures. Doing so excludes those areas between the edges of the built form and the jurisdictional boundary.

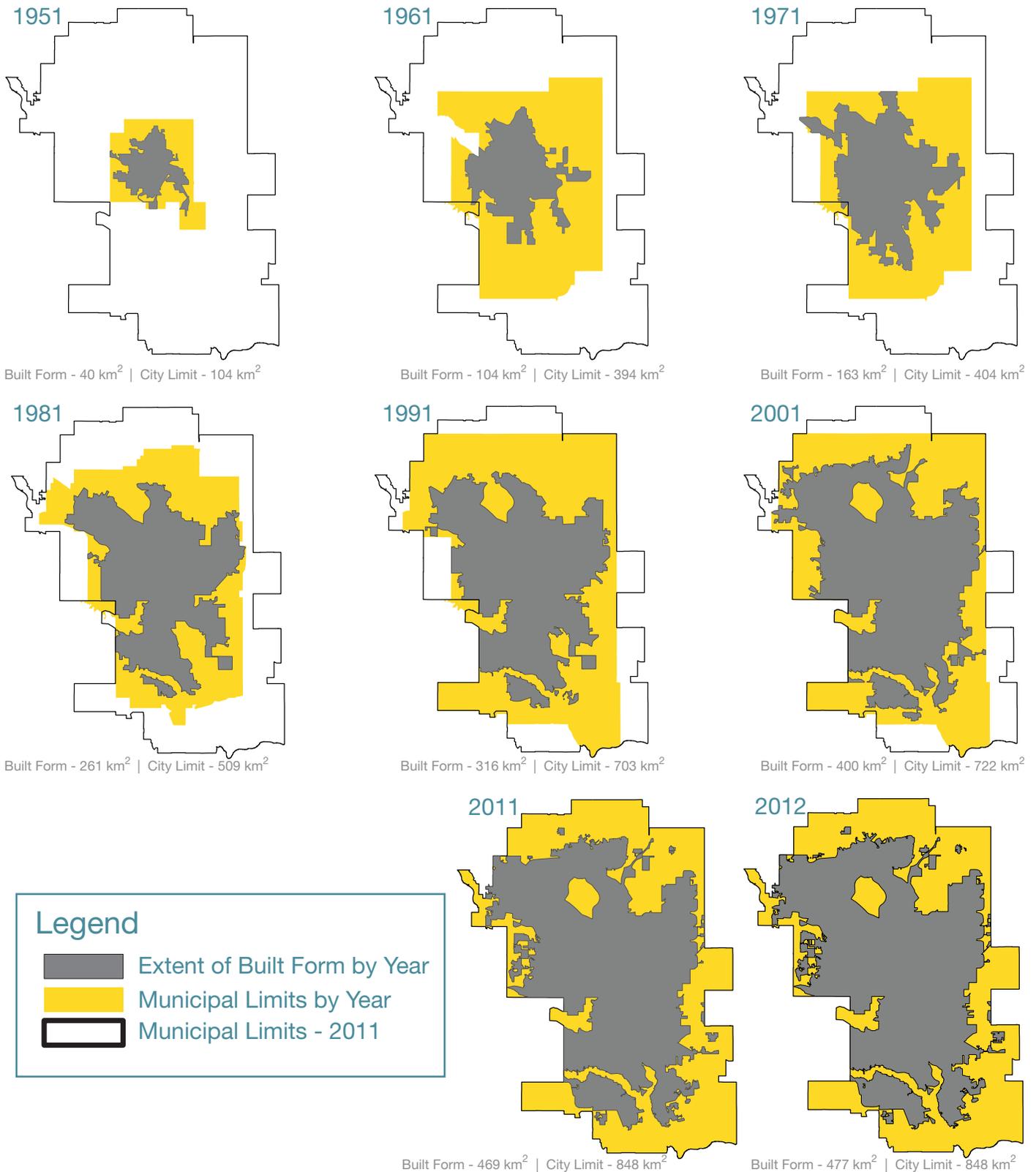
Calgary has grown through several annexations over the past fifty years. The most significant annexation was approved in 2007, and it added 103km² to Calgary's city limits.

Want more information on population density and urban growth?

If you have any questions on this Snapshot or would like additional information, contact Matthew Sheldrake at 403-268-5929 or matthew.sheldrake@calgary.ca.

Last updated: December 2012.
Scheduled update: November 2013.

Calgary's spatial growth, built form and municipal limits, 1951– 2012



Calgary's population density

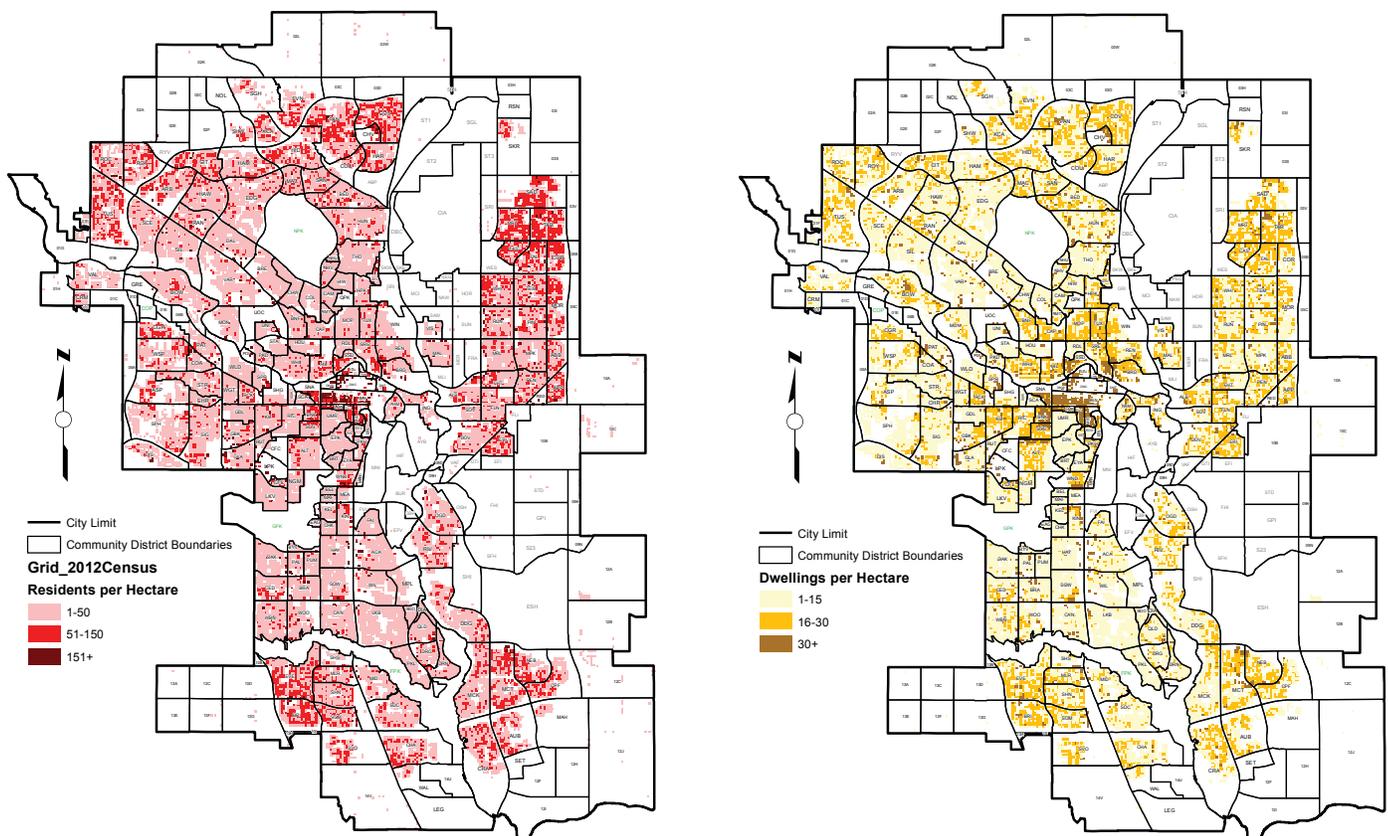
It is often reported that Calgary has a very low population density. Because of the way Calgary manages its boundaries, this is often a misrepresentation. If one simply divides the population by the area within the boundary, it yields a density of 1,264 people/km² – very low by urban standards. But it is more accurate to divide the population by the area of the built form, since this truly represents the area in which residents live. As well, Calgary's built form contains several large features which are not developed for housing, industry or institutions, including a few large parks, a reservoir and the airport. Many large cities do not include these features; as they are located in the metropolitan area instead. If these lands are excluded, the population density is restated as 2,289 people per square kilometre.

Calgary's dwelling unit density

Calgary's population density is obviously related to the density of its dwelling units. "Density" is the number of dwelling units per hectare of land. Dwelling unit density increases when single-detached dwellings are built on smaller parcels and when more multi-residential units are built. About 40 years ago, residential parcel sizes began to decrease, resulting in increases in unit density. Over the past 20 years, the density gains achieved by that approach have levelled off. However, in response to municipal policy and rising land and housing costs, more multi-residential units are being built, increasing overall unit density. Communities constructed during the 1980s and 1990s typically achieved a multi-family proportion of 15 per cent, while communities currently building out will likely achieve proportions over 25 per cent.

Calgary's residential density seems poised to continue increasing, as City Council has incorporated specific typologies for growth and innovative minimum standards for new with the approval of the new Municipal Development Plan. Residential density is now calculated as "Intensity" which is a measure of people and jobs per gross developable hectare (people or units per gross residential hectare).

Calgary's population density – residents and dwellings per hectare (2012)



The new Municipal Development Plan requires a minimum intensity of 60 people and jobs per gross developable hectare for new communities. It also required the inclusion of different typologies such as Activity Centres and Corridors that have even higher Intensity standards associated with them. For example, a Neighbourhood Activity Centre has a minimum intensity of 100 people and jobs per gross developable hectare. Incorporating these typologies into new communities will also result in Calgary's density continuing to increase in the future.

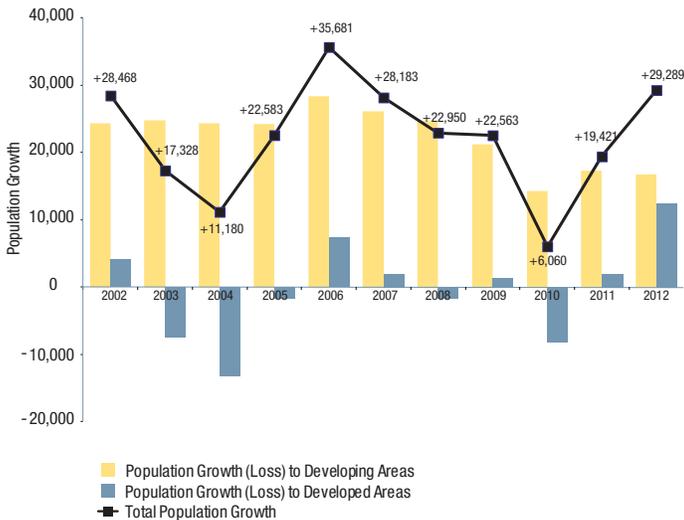
Calgary's spatial growth pattern

Another factor that contributes to the physical size of Calgary is the distribution of population growth among its communities. Historically, developing communities at the edges of the city attract more than all of the population growth Calgary experiences, as these new suburbs gain population from people moving to Calgary from elsewhere, as well as attracting people from the developed areas. Calgary has grown by 243,706 people since 2002, while the new suburbs have added 246,687 people.

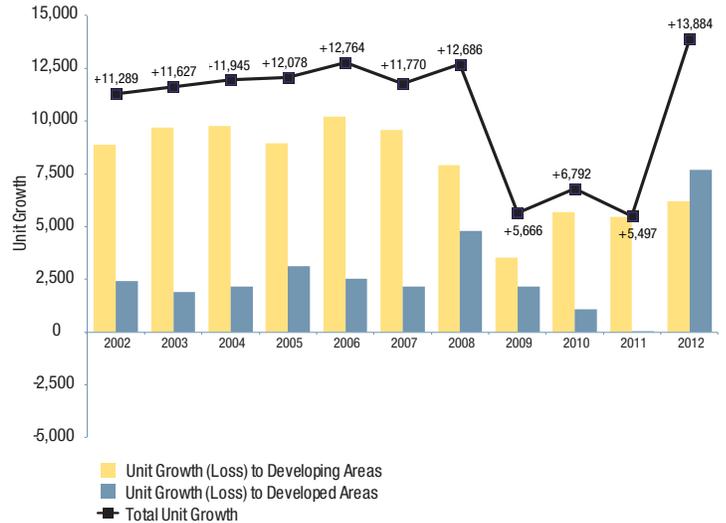
This new suburban growth represents 101 per cent of total city growth, which is actually lower than the share of growth going to new suburban communities between 2000 and 2010 (110 per cent). This also indicates a net loss of 2,981 people from the developed areas over this time. This net loss means the population density in the developed areas has fallen. The gains in the peripheral, developing communities indicates the city is continuing to grow spatially although at a slower rate than previously experienced.

The story is slightly different when discussing the distribution of unit growth. Over the past ten years, 85,896 net units have been added to the new suburbs, while 26,157 have been added to the developed areas, meaning 26 per cent of new net units over this period were built in the developed areas. However, the units added do not house enough population to counter population loss in the developed areas. The gap between population and unit growth is due to occupancy and life-cycling trends (described in the 'Population Change: demographics and occupancy' Snapshot). Proportionately and absolutely, more single-detached units with higher occupancy rates are built in new suburbs, leading to a greater effect on population.

Calgary's population growth, components, 2002-2012



Calgary's unit growth, 2002-2012



Source: Civic Census

What drives the split?

Population growth is cyclical and is generally tied to economic conditions. According to the Civic Census, Calgary has experienced a population boom through most of the 2000s, with peaks occurring in 2002 and 2006. Unit growth is less variable, and annual volumes had been on a gradual upward trend since 2001, until the economic slowdown of 2009 caused a drop in activity. In the new suburbs, population growth appears driven by unit growth. Unit growth, in turn, is driven by industry capacity and buyer demand.

New suburban unit growth has averaged around 8,000 over the past ten years, and population growth has averaged around 22,000. In most years, the values are close to these averages. The consistency of these numbers indicates that when total municipal population growth is greater than this, the remainder will settle in the developed areas. If it is less than 24,000, the developed areas are likely to experience a net loss of people. This pattern has been true in eleven of the past thirteen years. Since 2009, there has been some variability in that pattern which speaks to changing dynamics in Calgary.

In 2009 and 2011, this was not the case, as the developed areas grew even as population growth fell below 24,000. In 2010, the trend had resumed, but the citywide population gain fell well under lower limits seen in recent years to only 6,060, and the developed areas experienced even greater loss (8,257 people). In 2012, the trend again resumes, with citywide population gain much higher than 24,000 and thus population growth occurring in the developed areas. In fact, the share of growth going to the developed areas was extremely high at 43 per cent. Citywide growth was higher in 2006 but the share of that growth going to the developed areas was only half of the rate in 2012 at 21 per cent. As a result, looking at the last five years provides a very different picture with significant variability in developed areas growth patterns: from extreme growth to large losses. It will be interesting to see if this pattern stabilizes once again or whether recent patterns of high variability will continue.



Population change: demographics and occupancy

The key message from the annual Civic Census announcement is often how much Calgary's population has grown from year to year. Often overlooked is the story about how much population change is masked by that total growth number.

While the city as a whole often posts enviable growth numbers, many individual communities slowly lose population from year-to-year, and the age distributions change as well. Combined with redevelopment activities which bring new housing types and new residents to established areas, a community can undergo significant change even if its overall population total stays relatively constant.

This Snapshot discusses some key trends that affect population change.

Want more information on population change?

If you have any questions on this Snapshot or would like additional information, contact Matthew Sheldrake at 403-268-5929 or matthew.sheldrake@calgary.ca.

Last updated: January 2011.

Scheduled update: November 2011.

Community life-cycle trends

Communities follow a predictable pattern as they are constructed and occupied, and then as the residents' families grow and shrink. The "Theoretical Community Life Cycle" graph below shows the expected pattern. Typically, a new community's population will increase rapidly in just a few years as dwellings are constructed and people take possession. In addition, these adults tend to be younger than average and, as a result, are more likely to have children.

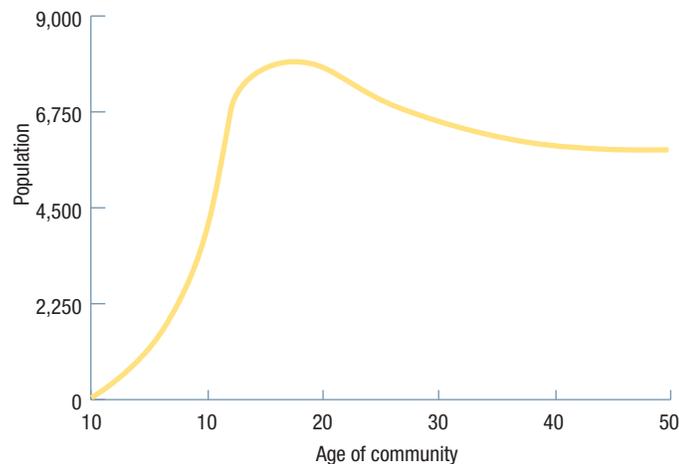
The Civic Census bears this out. In 2011, 22 per cent of women in the new suburbs were aged 25-34, compared to 17 per cent in the rest of the city. As well, dwellings with three or more residents account for 50 per cent of all dwellings in new suburbs, but only 37 per cent of dwellings in the rest of the city. Recent data indicate that these trends are converging as new mixtures of suburban housing types allow for a slight "urbanization" of the suburban population.

Once build-out is achieved and young families have had children, the community's population is stable for several years before those children begin to move out of their parents' homes. This causes the population to drop and it doesn't stabilize again until the out-migration of children is equaled by the in-migration of new residents, either through larger families moving in or through intensification.

These life cycle gains and losses are significant. They are the main reason redevelopment activities in the established communities do not produce expected population gains. Looking into the future, certain trends may affect life cycling. First, families are raising fewer children than several decades ago. This will moderate both the peak and the subsequent decline.

Second, we are seeing a greater diversity in family structure, with children living longer at home, older parents living with adult children, and more single-person households. As the

■ Theoretical community life cycle



percentage share of traditional families declines, this diversity will moderate the peaks and declines in population as well.

Geodemographics uses the Urban Structure typologies from the MDP to spatially analyze Calgary's population change. In the table below, it is evident that population growth is not uniformly distributed across the city. As an example, 2011 was a year of moderate population growth in Calgary, with the city adding 19,421 people (+1.8 per cent). At the community level, some communities shrank while most others grew, as 40 communities lost over 50 people and 75 communities gained over 50. Most of the gains were concentrated at the city's periphery in the Planned Greenfield with ASP typology, which grew by almost 18,000. The Developed Area typologies collectively gained 1,500, growth that represents a drastic change from last year when almost 8,500 people left, causing sizeable losses in 73 different communities.

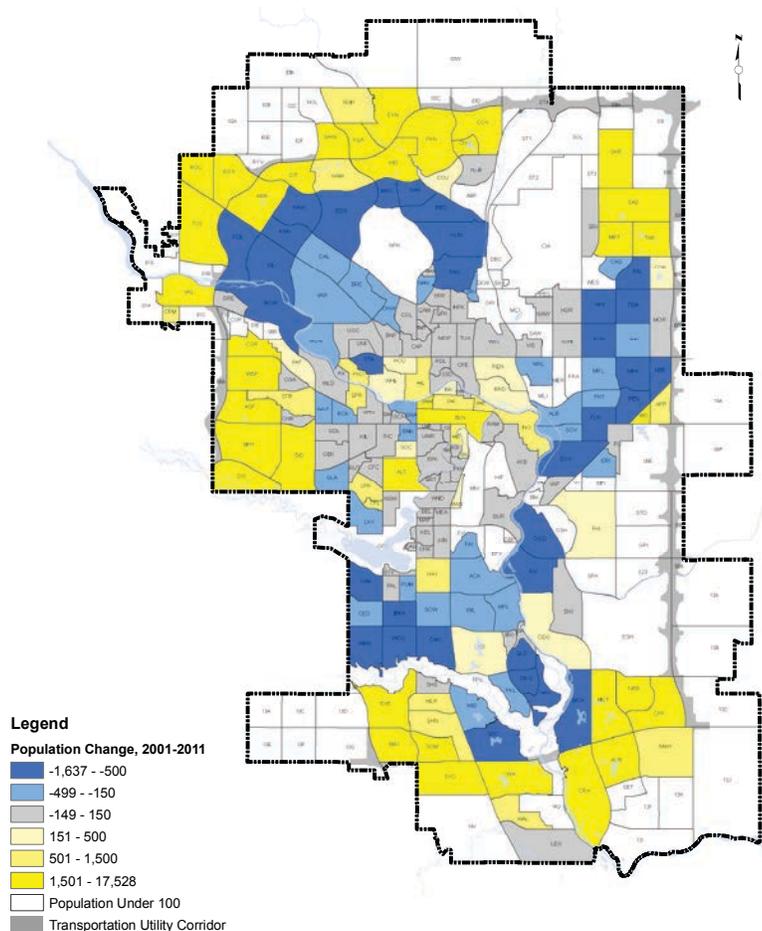
Population growth in Calgary typically concentrates in new suburban communities, the "Planned Greenfield with ASP" typology due to the availability of new and generally affordable housing. Beyond this macro trend, changes in population are linked to each typology's position in the community life cycle. The Centre City and Inner City have completed the cycle and are currently experiencing redevelopment. The earliest built homes of the Established Areas are not far behind, however the largest part of the Established Area – those homes built between 1975 and 2000 – are near or just past the peak of the trend, and are in the process of losing as much as 10 per cent of the population over the short term. It is because of these life cycle processes that this typology lost the most people in 2011.

Geodemographics monitors all of these trends and uses them to forecast population for various City planning initiatives, both in the short and long term. Geodemographics monitors all of these trends and uses them to forecast population for various City planning initiatives, both in the short and long term.

Population change by urban structure, 2010-11

MDP Typology	2010	2011	Change	Per cent Change
Centre City	34,527	35,837	+1,310	+3.8%
Inner City	107,530	108,133	+603	+0.6%
Established Area	633,558	632,271	-1,287	-0.2%
Planned Greenfield with ASP	225,633	243,526	+17,893	+7.9%
Future Greenfield	2,401	2,339	-62	-2.6%
Community Activity Centre	7,283	7,517	+234	+3.2%
Major Activity Centre	8,129	8,286	+157	+1.9%
Neighbourhood Corridor	27,190	27,478	+288	+1.1%
Urban Corridor	24,012	24,206	+194	+0.8%
Other	1,252	1,343	+91	+7.3%
City Total	1,071,515	1,090,936	+19,421	+1.8%

Population change by community, 2001 – 2011



Occupancy trends

Another statistic Geodemographics watches closely is the occupancy rate, which is the average number of people living in a dwelling. The City is interested in this number because many city services are linked to population rather than units. The City and the development industry have some control over the number of dwelling units, but they have only indirect influence on occupancy.

Occupancy varies widely across the city. This is mainly due to dwelling type and stage of community life cycle. Typically, the single-family dwelling occupancy rate is much higher than the multi-family rate. In 2011 there was an average of 2.88 people per single-family dwelling unit, while each multi-family dwelling unit averaged 1.81 people.

Also, as the newer suburbs have a higher proportion of young families, occupancy is higher there than in the developed areas. Overall, the new suburbs have an occupancy rate of 2.91 people per unit, while the established areas average 2.54. At these occupancy rates, about 345 homes will house 1,000 people in the new suburbs, but about 395 homes will be necessary for 1,000 people in the developed areas, or 50 additional units.

Put together, the areas closer to the core with stable or declining populations and greater multi-family proportions, exhibit much lower occupancy rates.

While occupancy rates are in decline, we might be seeing the beginning of a bottom to this trend. After seven years of declines, occupancy was flat in both 2010 and 2011 at 2.58 people per unit overall, and up from the all-time low of 2.57 in 2006. Geodemographics expects occupancy to remain around this low level for at least the near term as more multi-family units with lower occupancy rates are built.

There are two final points to make. First, there is a strong relationship between occupancy and density. An increase in the community's density often requires a larger proportion of multi-residential dwellings, which typically accommodate fewer people. As such, the relationship between population and units is not proportionate. Second, evolving standards of personal and public space can cause the occupancy rate to change over time and across communities, even as unit density remains constant.

Changing age cohorts

The 2011 Civic Census collected age cohort data, providing insight into how the robust local growth and unsteady global economy of the past three years have altered Calgary's demographic profile.

Calgary added 481 people between 2009 and 2011, a gain of 2.4 per cent. However, this growth was not evenly distributed between all age groups, as nearly half of the city's total growth was due to an 11.3 per cent increase in the 55-64 age cohort. Growth in all people over the age of 55 was four times higher than for the city as a whole, averaging 9.7 per cent. Poised to be both the fastest growing segment of the population and the primary demographic challenge of the near future, the aging of the baby boomers is in its first wave. Calgary will experience a profound shift in the makeup of its population as the 55-64 age cohort will have doubled its 2006 population by 2017.

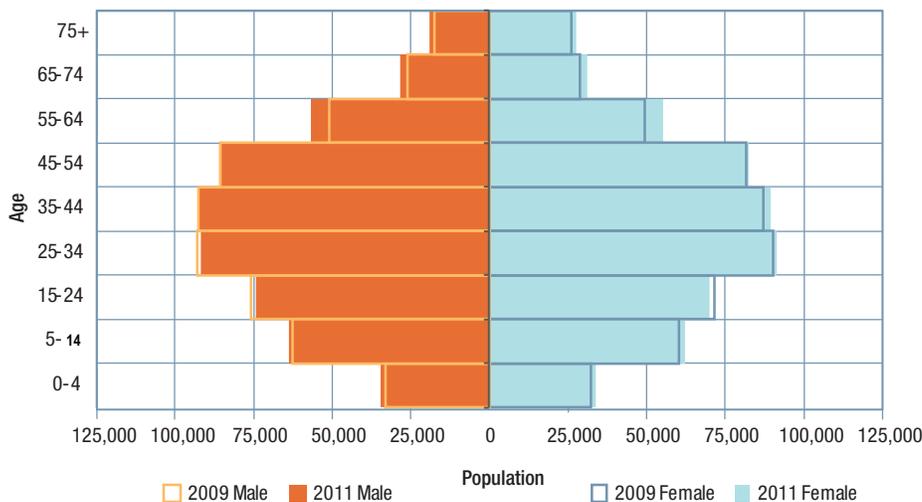
Of note is the significant decline in one of Calgary's traditionally important population drivers, that of young adults between 15 and 34. While these cohorts grew by 8.2 per cent during the boom years between 2006 and 2009, recent data show that this population segment has contracted by one per cent instead, with the losses concentrated entirely in the younger half of the cohort. As this age group represents the youngest,

most mobile full-time workers in the economy, it can be assumed that the large influx of migrant workers aged between 25 and 34 during the boom years was a response to the labour shortage and the contraction in this age group following the boom was a response to reduced local employment opportunities.

However, Calgary is still a young city by Canadian standards. The most recent estimates for median age of the population come from the 2006 Federal Census, which showed a median age of 35.7 in Calgary and 39.5 nation-wide. Despite the aging of the baby boomers, Calgary's median age will continue to remain lower than the national average due to the city's robust economy and subsequent attractiveness to young workers.

Another interesting fact is that during the boom years between 2006 and 2009, 54 per cent of Calgary's new residents were male. In the subsequent years, that trend has reversed. Between 2009 and 2011, only 41 per cent of Calgary's new residents were male. Rather than being indicative of a large influx of females, these latest data imply that the majority of those who left Calgary in the past year were male. Calgary's age pyramid is shown below.

■ Age pyramid – Calgary 2009 & 2011



Developed areas intensification

Sustainability Principles for Land Use and Mobility, Principle 7:

“strategically direct and manage redevelopment opportunities within existing areas.”

Calgary’s developed areas are those parts of the city where all undeveloped land has been absorbed. Change in these communities comes through redevelopment of the existing building stock and through demographic shift.

In 2007, City Council approved the 11 Sustainability Principles for Land Use and Mobility to inform and direct the review of The City’s Municipal Development Plan and Transportation Plan. Principle #7 calls for Administration to “strategically direct and manage redevelopment opportunities within existing areas.” This principle, in partnership with several of the other principles, aims to support the creation of places that achieve higher densities of people and homes, greater diversification of uses and greater use of transportation alternatives at locations that are already within the city’s built-up urban area.

The City of Calgary and the development industry are pursuing redevelopment strategies that encourage intensification in the developed areas. This Snapshot details three broad categories in which these intensification activities can be grouped: transit oriented development (TOD), infill redevelopment and large-scale redevelopment of underused sites.

Want more information on developed areas intensification?

If you have any questions on this Snapshot or would like additional information, contact Matthew Sheldrake at 403-268-5929 or matthew.sheldrake@calgary.ca.

Last updated: December 2012.

Scheduled update: November 2013.

Transit oriented development (TOD)

Transit oriented development is a pedestrian-friendly, mixed-use form of development, typically within walking distance of a transit station (Light Rail Transit or Bus Rapid Transit). Higher density development is concentrated closest to the station to make transit convenient for more people and encourage ridership. This form of development utilizes existing urban infrastructure, optimizes use of the transit network and creates mobility options for the local community. Successful TOD provides a mix of land uses and densities that create a convenient, interesting and vibrant community for residents and visitors alike.

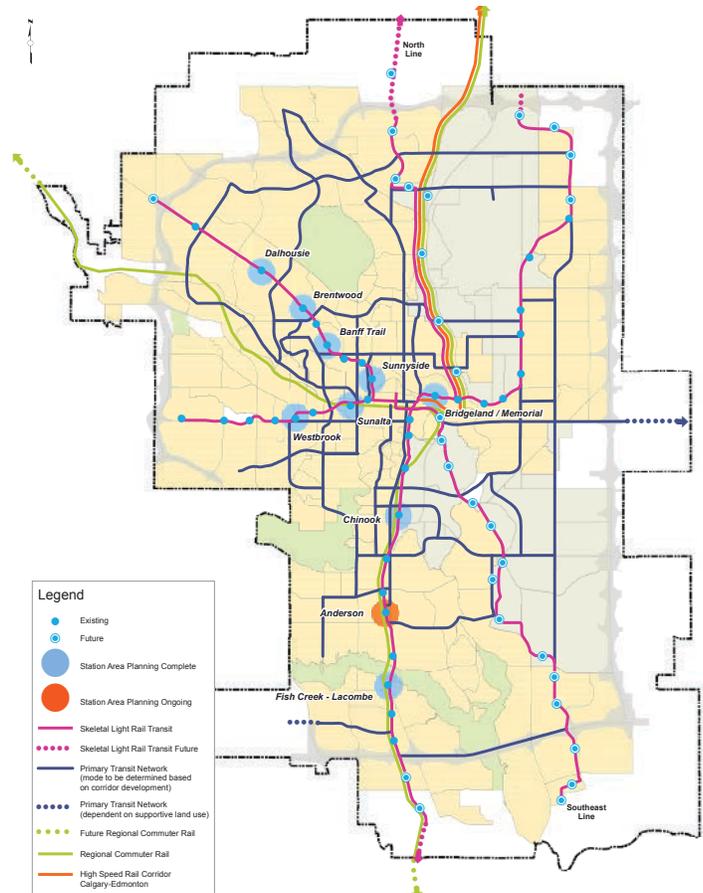
There is development industry interest in residential, office, retail and mixed-use projects close to Calgary's CTrain stations. Supported by the Transit Oriented Development Policy Guidelines and TOD Best Practices Handbook (approved in 2004), Calgary City Council selected several LRT stations as priorities for Station Area Plans beginning in 2007. In addition, TOD policy work has been completed around Sunnyside Station, along the West LRT line at Sunalta and Westbrook, and is an important influence in The Bridges development at Bridgeland station. Future TOD areas have been incorporated into planning for new suburban communities, such as Mahogany and Skyview Ranch.

A City-wide TOD Planning Framework is in development; this will incorporate design principles applicable to all transit hubs and centres across the city. A strategic approach to planning for TOD at the city-wide level ensures successful phasing of development at different intensities across multiple locations, and maximum benefits for local residents, employees and all Calgarians.

In addition, The City of Calgary's Office of Land Servicing & Housing has developed a market-driven program for developing City-owned lands around key LRT stations. This initiative is intended to help create a more sustainable city by enhancing transit operations, promoting employment opportunities close to residential areas, and providing community-related uses and a wider choice of housing options.

Additional TOD opportunities are reflected in Calgary's Municipal Development Plan and Transportation Plan (the MDP and CTP). Many of the Activity Centres and Corridors identified to accommodate a majority of Calgary's future growth are closely aligned with the Primary Transit Network. Encouraging municipal and private sector development in these locations supports the objective of increasing population and job growth within walking distance of transit.

For more information on TOD in Calgary, please visit the TOD website at calgary.ca/TODplanning.



Infill redevelopment

Infill redevelopment is the most prevalent form of developed areas intensification in Calgary. It is generally identified as the demolition of a residence and the subsequent construction of one or more residences in its place. Developers undertake such activities to take advantage of a parcel's location, while still being able to offer new homes to buyers.

Between 2001 and 2011, the City of Calgary has approved an average of 480 Building Permits per year for new infill dwellings. The top 5 communities that saw the most new Building Permits were Altadore, West Hillhurst, Mount Pleasant, Killarney/Glengarry and Richmond. However, all of Calgary's inner city communities have experienced some level of change as new dwellings replace older ones.

Infill redevelopment usually results in moderate dwelling intensification. It rarely results in significant population increase, since the number of new residents is usually only marginally higher than the number of exiting residents. Communities experiencing redevelopment are often also losing population as children grow up and move out. As a result, even high levels of infill redevelopment may not produce significant increases in a community's population. For example, in Mount Pleasant, there were 314 Building Permits for new single family or duplex homes between 2001 and 2011 resulting in 104 net new units (not just replacing one unit with a new one). Yet in that time, the population increase has been modest with just 91 people added. The same is true for Killarney/Glengarry, where there were 303 Building Permits for single family or duplex homes between 2001 and 2011 resulting in 89 net new units, but the population was increased by only 108 people.

The one exception to limited population growth from redevelopment may result from the numerous high-rise condominium towers currently under construction in the Centre City. While these developments will also displace residences (and residents), the sheer number of new units should boost the population of the Centre City. This area grew by over 6,000 people between 2000 and 2010, in stark contrast to the declining population of the Inner City area which surrounds it. The Centre City plan provides strong policy support for this high density development.

Large-scale redevelopment of underused sites

Large-scale projects that significantly upgrade underused or obsolete sites have been very successful at attracting people, jobs and activity to the developed areas. Examples include Garrison Woods (built on former Canadian Forces Base Calgary lands) and The Bridges (built on the site of the former Calgary General Hospital). Similar large-scale developments are underway in Quarry Park in the southeast and Currie Barracks in the southwest. These projects can revitalize areas with significant population and employment gains. The Bridges currently houses 560 people, and will eventually support as many as 2,500 residents. Quarry Park could add 1.8 million square feet of commercial space, which would support thousands of jobs. These opportunities reflect willingness on the part of developers to take significant risks on unique sites that have the potential to accommodate many people and jobs in support of Principle #7.



Residential density in developed communities

It is important that initiative is taken to ensure that Calgary's growth is socially, environmentally, and fiscally sustainable. Increasing residential density has been highlighted as one major way to achieve this goal.

In the next few years, the city's growth will be impacted by the principles in the approved Municipal Development Plan. This plan will require new development to build out at higher densities than before, and it also plans for a much larger percentage of growth to locate in the established areas. Both tenets of the plan would result in higher residential densities in key nodes and corridors across the city.

Discussions about density often suffer from inconsistent assumptions or calculation methods. This Snapshot uses consistent methods to compare densities of established communities, and to support and clarify the understanding of community density.

Want more information on the density of developed communities?

If you have any questions on this Snapshot or would like additional information, contact Matthew Sheldrake at 403-268-5929 or matthew.sheldrake@calgary.ca. Geodemographics gratefully acknowledges Carrie Yap for her work in the preparation of this Snapshot.

Last updated: November 2009
Scheduled update: November 2011

What is community density?

For the purposes of planning, community density is defined as the number of dwelling units in a given community. When counting units, all single residential homes, apartments, townhouses, homes in a duplex, manufactured homes or other types of homes are considered. When counting area, it is the amount of land used specifically by the residents of the community. In this snapshot, the metric is stated as units per hectare (UPH). To convert to units per acre (UPA), divide UPH by 2.47.

How is density calculated?

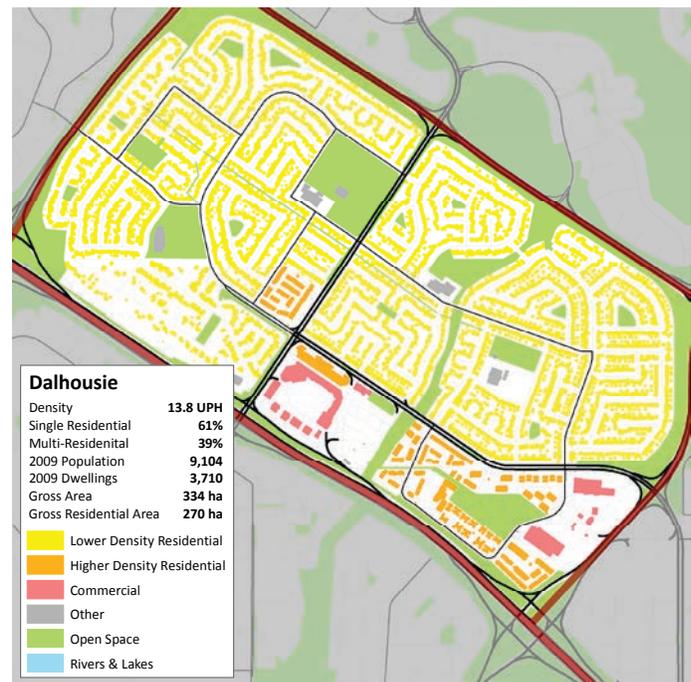
Essentially, there are two steps to calculating density:

1. Classify *Gross Residential Area* by subtracting *Regional Land Uses* and *Non-Developable Area* from the *Gross Area*.
 2. Divide the *Gross Residential Area* by the number of Dwelling Units.
- *Gross Area* is the sum total of land within a community boundary.
 - *Gross Residential Area* is the land used locally by residents living within the community; it includes parks, local roads, and amenities such as everyday shopping, daycare centres and community centres.
 - *Regional Land Uses* service several communities or draw from much larger areas, and are thus not considered to be part of the density calculation for individual communities. Major commercial centres, LRT stations, regional parks, and Senior High schools fall under this classification.
 - *Non-developable Area* refers to land that is protected or does not sustain development, such as environmental reserve land (slopes, rivers, etc.), expressways, and railways.

A more detailed breakdown of land classification can be found in the suburban residential density Snapshot, *A General Guide to Calculate Density*.

This methodology may appear simple, but there are many considerations that can complicate the math. Every community in Calgary is unique and contains unique features. Defining these unique characteristics into one of the above categories is often what makes the density calculation contentious.

Using the community of Dalhousie as an example, the map below is a representation of a community's built form and its constituent building types.



What is the density for my community?

The density for each community is based on the number of dwelling units collected by the 2008 Civic Census:

Community	UPH	Community	UPH	Community	UPH
Abbeystead	15.3	Diamond Cove	10.1	Lake Bonavista	9.9
Acadia	16.3	Discovery Ridge	10.4	Lakeview	11.1
Albert Park/Radisson Heights	17.5	Douglasdale/Douglas Glen	11.4	Lincoln Park	29.9
Altadore	18.3	Dover	15.3	Lower Mount Royal	92.6
Applewood Park	18.0	Downtown West End	124.2	MacEwan	14.6
Arbour Lake	13.1	Eagle Ridge	5.7	Maple Ridge	9.4
Banff Trail	15.1	Eau Claire	75.3	Marborough	14.3
Bankview	51.6	Edgemont	11.1	Marborough Park	13.8
Bayview	7.7	Elbow Park	7.7	Martindale	13.6
Beddington Heights	14.8	Elboya	11.4	Mayfair	6.2
Bel-Aire	5.4	Erin Woods	17.5	Mayland Heights	17.3
Beltline	65.9	Erlton	35.3	McKenzie Lake	11.6
Bonavista Downs	7.9	Fairview	13.6	Meadowlark Park	7.9
Bowness	10.9	Falconridge	18.5	Midnapore	11.9
Braeside	14.6	Forest Heights	15.6	Millrise	15.6
Brentwood	11.6	Forest Lawn	15.8	Mission	85.0
Bridgeland/Riverside	22.5	Glamorgan	16.5	Monterey Park	14.6
Britannia	7.4	Glenbrook	17.5	Montgomery	11.6
Cambrian Heights	11.9	Glendale	9.4	Mount Pleasant	15.8
Canyon Meadows	11.9	Greenview	27.9	North Glenmore Park	10.9
Capitol Hill	19.3	Greenwood/Greenbriar	6.4	North Haven	13.1
Castleridge	16.1	Hamptons	11.6	Oakridge	10.4
Cedarbrae	15.1	Harvest Hills	11.9	Ogden	18.0
Charleswood	9.4	Hawkwood	10.9	Palliser	18.0
Chinatown	94.8	Haysboro	16.5	Parkdale	16.8
Chinook Park	11.1	Hidden Valley	13.3	Parkhill	19.8
Cliff Bungalow	44.0	Highland Park	18.8	Parkland	8.6
Coach Hill	15.6	Highwood	11.4	Patterson	17.0
Collingwood	9.9	Hillhurst	30.9	Penbrooke Meadows	16.5
Coral Springs	12.4	Hounsfield Heights/Briar Hill	12.4	Pineridge	16.3
Country Hills	14.3	Huntington Hills	12.6	Point McKay	47.7
Crescent Heights	27.7	Inglewood	16.1	Pump Hill	6.7
Dalhousie	13.8	Kelvin Grove	15.8	Queens Park Village	26.4
Deer Ridge	14.1	Killarney/Glengarry	19.8	Queensland	12.8
Deer Run	13.3	Kingsland	20.3	Ramsay	16.8

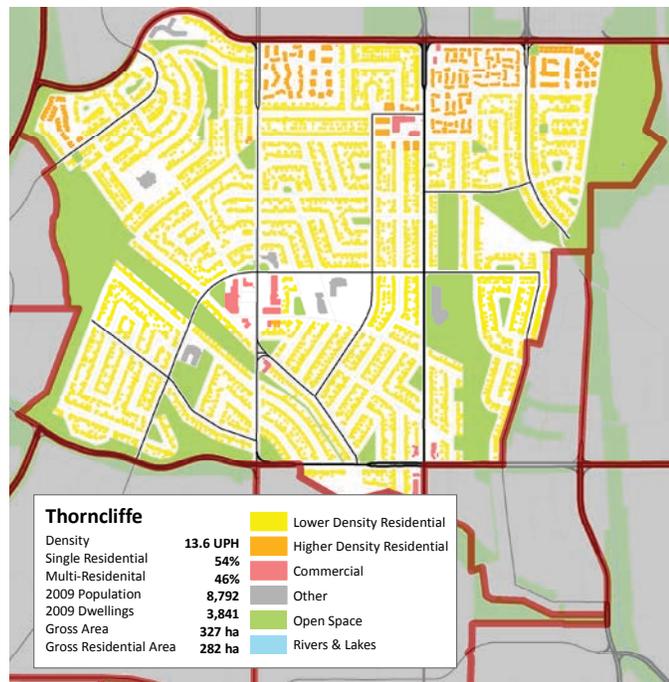
Community	UPH	Community	UPH
Ranchlands	14.6	Whitehorn	14.6
Red Carpet	18.8	Wildwood	9.6
Renfrew/Regal Terrace	18.8	Willowpark	10.4
Richmond	16.3	Windsor Park	34.8
Rideau Park	16.5	Winston Hts/Mountview	14.8
Riverbend	13.1	Woodlands	9.1
Rosedale	11.4		
Rosemont	13.1		
Rosscarrock	20.5		
Roxboro	8.4		
Rundle	15.1		
Rutland Park	14.3		
Sandstone Valley	12.8		
Scarboro	8.6		
Scarboro/Sunalta West	6.4		
Scenic Acres	10.6		
Shaganappi	16.8		
Shawnessy	13.6		
Signal Hill	13.6		
Silver Springs	10.4		
Somerset	18.0		
South Calgary	25.2		
Southview	8.9		
Southwood	12.4		
Spruce Cliff	31.9		
St. Andrews Heights	11.9		
Strathcona Park	10.9		
Sunalta	54.3		
Sundance	10.9		
Sunnyside	42.7		
Temple	14.6		
Thornccliffe	13.6		
Tuxedo Park	21.2		
University Heights	20.3		
University of Calgary	38.0		
Upper Mount Royal	8.9		
Upper North Haven	10.9		
Varsity	14.3		
Vista Heights	9.1		
West Hillhurst	16.5		
Westgate	12.8		

* The densities calculated are only those of developed communities, which are communities where all developable land within the borders has been developed.

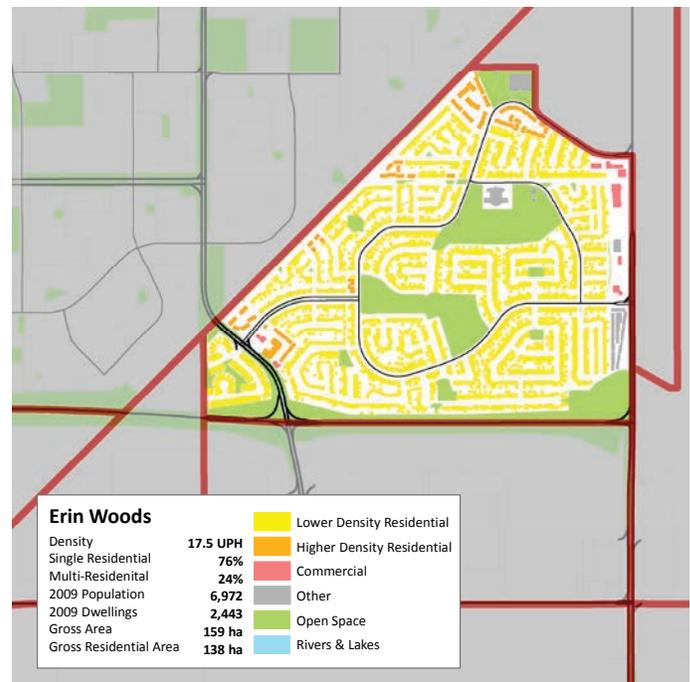
What does density look like?

One of the difficulties in understanding density figures is associating the numbers to the real life built form. Below are four communities which represent prototypical examples of the kinds of communities present in Calgary. All maps are presented at a scale of 1:13,000.

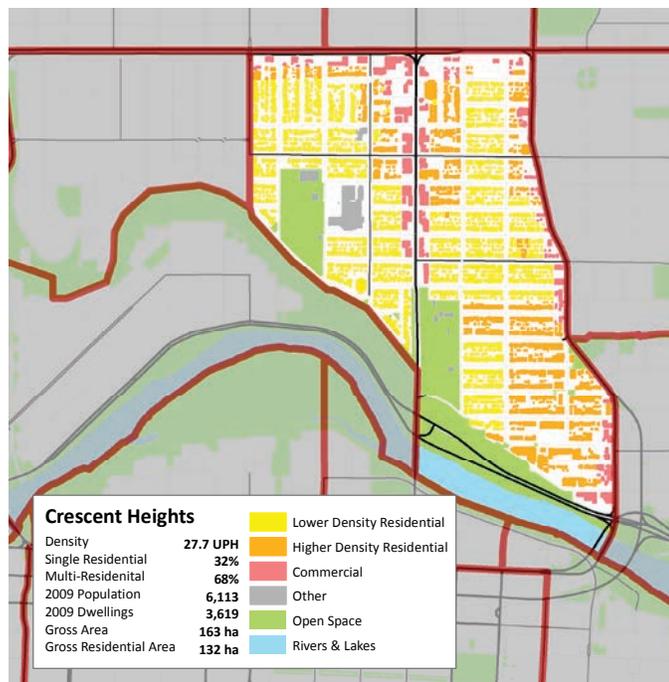
Thornccliffe, in the city's northeast, is a good example of density for an average Calgary suburb. Thornccliffe's density is 13.6 UPH.



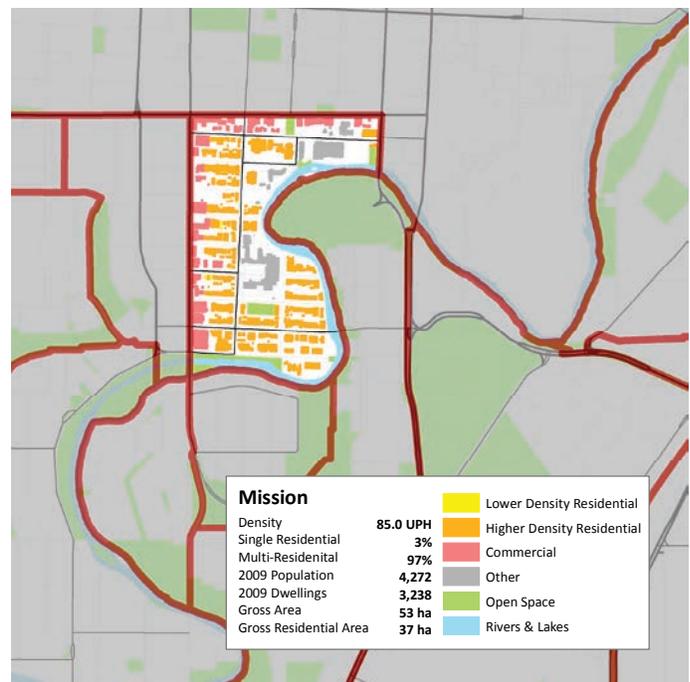
Erin Woods, in the southeast, with a density of 17.5 UPH, represents communities built out according to the policies of the Calgary Plan, approved in 1995.



Crescent Heights, with a density of 27.7 UPH, is typical of Calgary communities which have undergone significant redevelopment since they were first planned. These communities are located in the inner city.



Mission is a model of a higher density community in close proximity to the downtown. It is unique in Calgary because it combines both significant neighbourhood amenities, and a diverse mix of uses, and achieves a high density without relying solely on high rises to provide the density. Its current density is 85 UPH.



Summary

Since the 1950s and up to the 1990s, Calgary's residential development was relatively less dense. During the 1960s, Calgary's suburbs were built out at an average of 13.6 UPH, 15% per cent lower than those built in the inner suburbs, 21 per cent less dense than those communities built under the 17 UPH requirement of 2006 Calgary Plan amendment, and approximately 39 per cent less dense than the approved standard under the new Municipal Development Plan. Currently, about half of Calgary's 152 developed communities have densities between 11 and 17 UPH.

Decade of Build-out	Number of Communities	Minimum Density (UPH)	Maximum Density (UPH)	Average Density (UPH)
Pre 1940s	35	6.4	124.2	33.8
1950s	37	5.4	47.7	16.1
1960s-1970s	47	5.7	38.0	13.6
1980s-1990s	33	9.1	18.5	13.6

To accommodate lower density suburban communities, more land must be developed at the city's edge, reducing the city's existing land supply and requiring future annexations from surrounding municipalities. This is an expensive way to grow because there are servicing costs (water, sanitation, sewage, police, fire, etc.) attached to every new community built, and these costs are proportionately more for lower density communities. Environmentally, this growth is less sustainable as it can encroach on natural ecosystems and farmlands. It is also more difficult to provide practical alternative forms of transportation.

The information presented in this Snapshot, along with the information presented in the Snapshot entitled *A general guide to calculate density* can be used to create a benchmark for understanding density in Calgary. Once a common understanding is established, stakeholders can discuss the different advantages and disadvantages that are present at each level of density, and can use this as a basis for decisions that are positive for Calgary's physical, ecological and social environments.



The Employment Picture

Industrial Employment Areas

The Employment Areas Growth and Change 2010 report provides an update of the city-wide demand for industrial land since 2007 in four major industrial sectors: the North/northeast; the Southeast; the Northwest and Central areas. Calgary has an enlarged inventory of industrial employment land for future growth - a result of the 2007 land annexation. Using long term historic averages the City has within its jurisdiction sufficient land to meet expected industrial growth for the next 30 to 40 years.

The largest industrial growth areas annexed by the City in 2007 include industrial areas north of the Stoney Trail Expressway and in the Shepard Industrial Area in the southeast. The Central industrial Sector is largely built out (only 11 vacant hectares remain), with increasing interest and speculation on redevelopment opportunities for more intensive uses in the older Manchester industrial area and other industrial sites abutting Macleod Trail and major roads.

Calgary's industrial areas are illustrated on the attached map as well as the distribution within each sector of available vacant land supply. The sector map also illustrates the general servicing status of the vacant land (developed non-vacant areas are indicated in pink). Lands that require additional servicing are categorized into either the immediate (all services are in place); short term (i.e., one or two major City services are required); or long term (all three major services- storm, water and sanitary are required).

Want more information on the industrial land inventory?

If you have any questions on this Snapshot or would like additional information, contact Jim Francisco at 403-268-5317 or jim.francisco@calgary.ca.

Last updated: January 2009.

Scheduled update: September 2010.

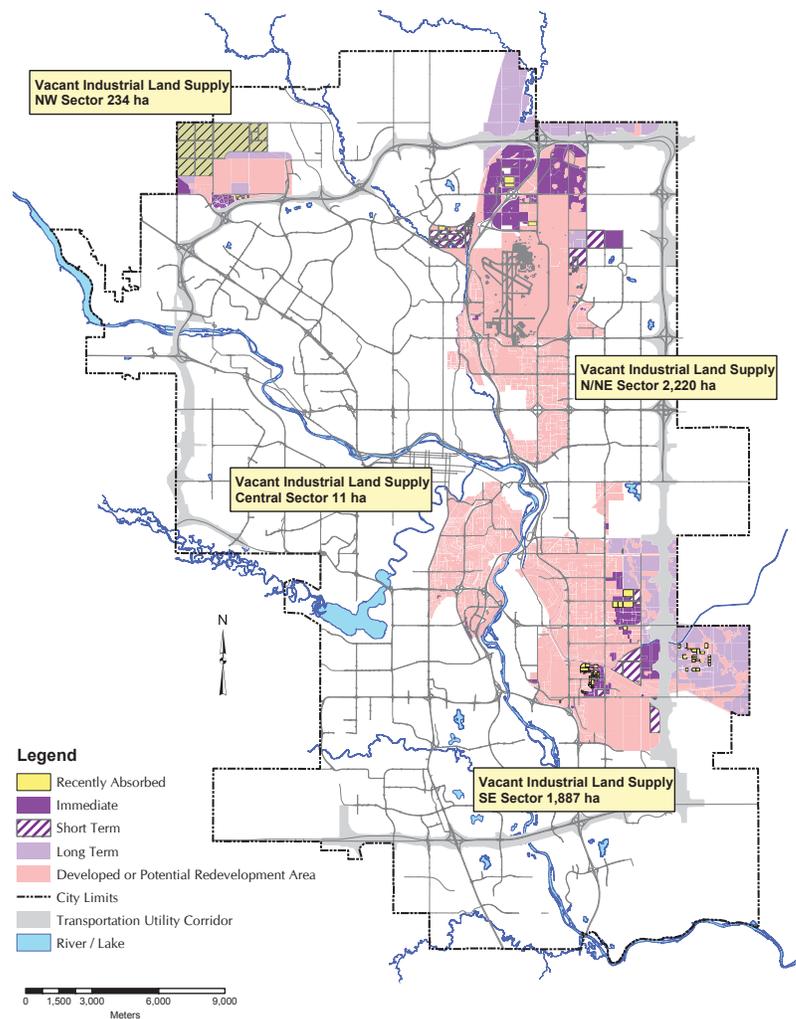
Calgary's planned industrial lands

The Northeast Sector has the largest vacant industrial land supply (2,220 ha) followed by the Southeast Sector (1,887 ha) and the Northwest Sector (224 ha).

The Employment Areas Growth and Change 2010 report also illustrates citywide retail, office and some institutional development based on City of Calgary records. The existing distribution of retail, office, industrial and institutional land and built space illustrates the major employment locations in the City and where City, as well as regional residents, commute for employment.

It is important to note as well, that these four industrial sectors together account for approximately one quarter to one third of all jobs located within the City. An additional third of all jobs are located within the Centre City area, and the final third are dispersed throughout the remaining residential areas (where there is roughly one job for every 10 to 12 residents) and related mixed use areas.

Industrial areas have developed in areas abutting major roads (the Deerfoot Trail, the Blackfoot Trail and Barlow Trail) and also in areas served by rail. Intermodal rail facilities are an integral component of world wide production and supply chains and are integrated components of local industrial areas: particularly the expanding warehouse, transport and distribution facilities that moved to and/or expanded operations in Calgary, starting in the mid-1990s. The Canadian Pacific intermodal facility in the Dufferin Industrial area serves a number of area warehouse and distribution companies, one of the more notable examples being the Wal-Mart warehouse operated by Supply Chain Management. The new regional intermodal rail facility planned by Canadian National in the Conrich area will result in an expansion of industrial activity in the region as well as potential redevelopment opportunities for lands released for redevelopment on its' existing 50th Avenue SE site.



2009 Scenario Series: Where will Calgary's future jobs locate?

The Scenario

The 2009 Scenario Series described elsewhere in Calgary Snapshots also allocates jobs from The City's jobs forecast, prepared by Corporate Economics. (See "2009 Scenario Series: Where will Calgary's future population live?")

Planning for future employment growth is a key component of city building. As described for population, the jobs scenario shows one way of achieving the growth pattern envisioned in the Municipal Development Plan/Calgary Transportation Plan (MDP/CTP). The numbers and location of jobs provide critical information for determining the number of automobile, pedestrian, cycling and transit trips, and for planning the infrastructure needed to support those trips.

The role of the Municipal Development Plan

The MDP's policies, targets and assumptions exert a very strong influence on the allocation of jobs across the city. The MDP envisions much closer connections between where Calgarians live and where they work, achieved by adding residences to areas traditionally dominated by employment uses and by adding offices, stores and other business to residential areas. The intended result is a city of complete communities, where people can live, work, shop, learn and play. The MDP therefore contributed two major pieces to this scenario:

- The first is a new urban structure that divided the city into typologies. Each typology has a set of assumptions and targets associated with it, and these informed the scenario process.
- The second piece is specific direction to locate jobs within activity centres and corridors, to take advantage of transit service and higher density residential development.

Want more information on the 2009 Scenario Series?

If you have any questions on this Snapshot or would like additional information, contact Jim Francisco at 403-268-5317 or jim.francisco@calgary.ca.

Last updated: December 2010
Scheduled update: 2014

The results

The 2009 Scenario Series attempts to answer the question “If the city grows according to the MDP, where will Calgary’s future jobs locate?” The Scenario Series produces results at a relatively fine grain, in about 2,000 zones throughout the city and the surrounding region. This scale is useful to plan transportation and City utilities. Organizing these zones to align with the MDP’s land use typologies provides a more general view of the jobs scenario.

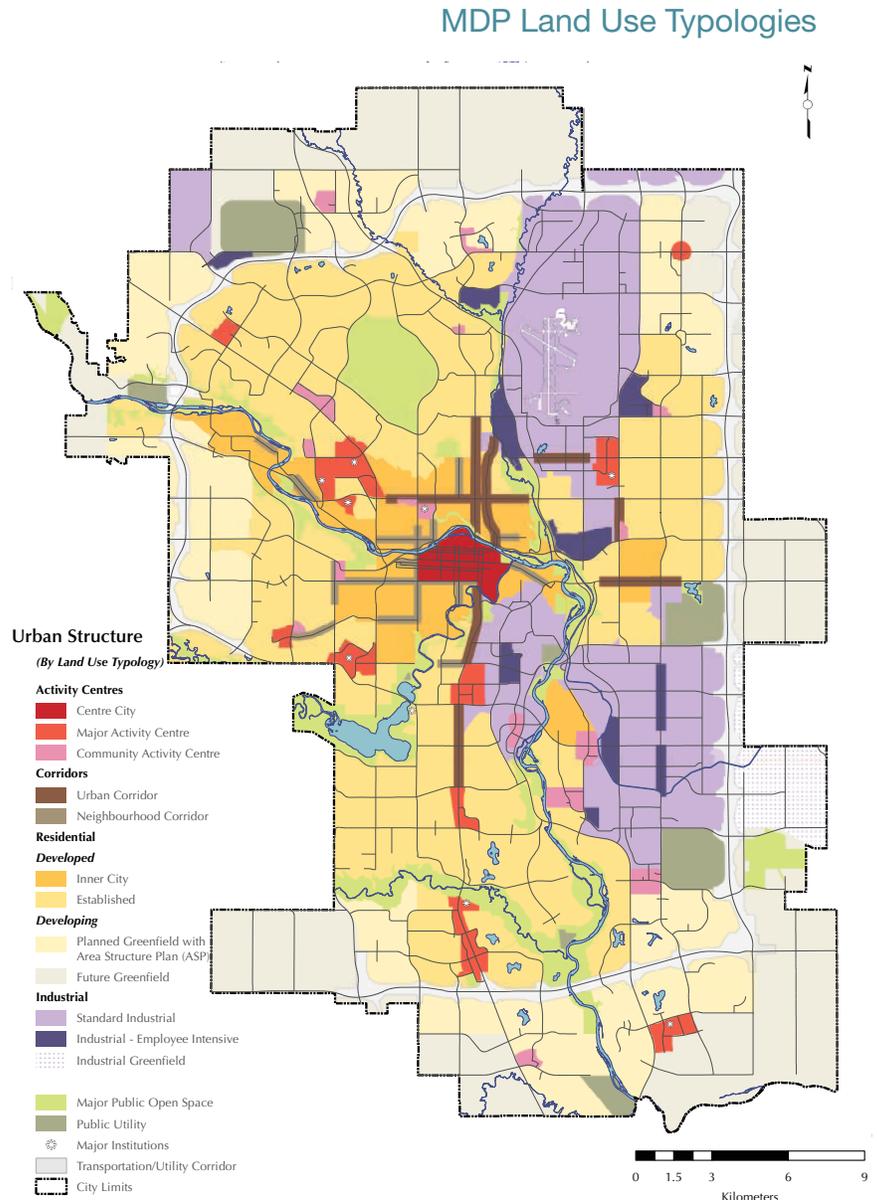
Distributing jobs across the city

The Scenario Series does not assume an even distribution of jobs across the city. The MDP sets targets for the density of jobs and focuses job growth in specific areas: centre city, activity centres and corridors. See the map on this page for the MDP land use typologies.

According to City of Calgary forecasts, by 2076 the number of jobs within Calgary will increase by 563,000 jobs, for a total of about 1.2 million jobs. The tables below show the job growth that will be necessary to achieve MDP targets, located within the MDP land use typologies.

Table 1: Job Growth to 2076 by MDP Typology*

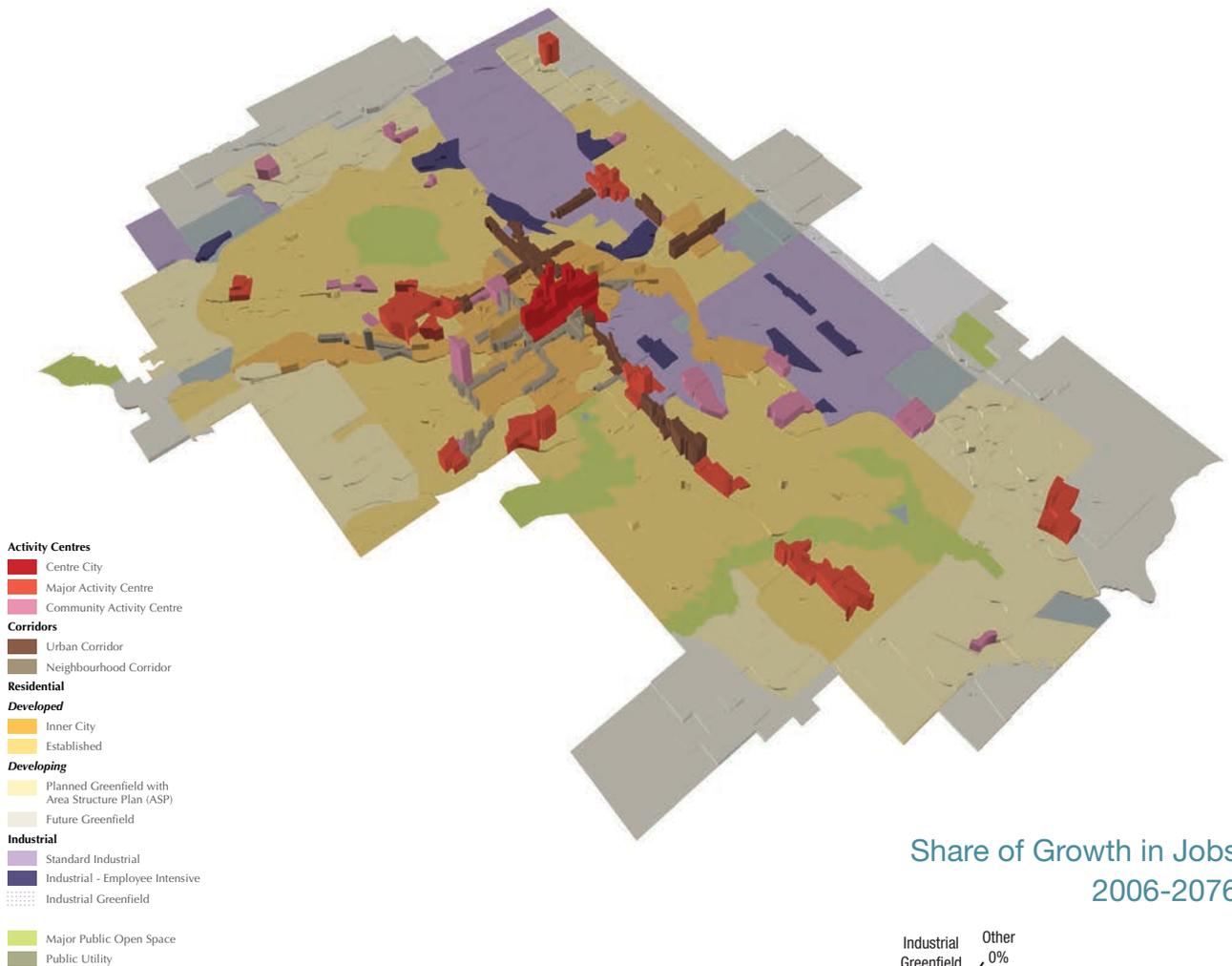
Typology	Additional Jobs
Centre City	74,000
Activity Centres (Major and Community)	141,000
Corridors (Urban and Neighbourhood)	70,000
Inner City	41,000
Established Areas	34,000
Planned Greenfield	22,000
Unplanned Greenfield	50,000
Industrial Employee Intensive	44,000
Standard Industrial	67,000
Industrial Greenfield	18,000
Other Areas	2,000
Total	563,000



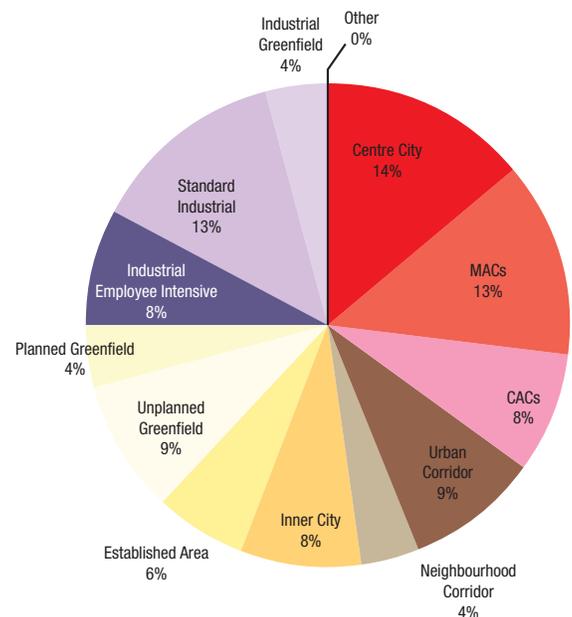
* Some MDP typologies are combined for simplification.

See the map below for a three-dimensional depiction of the change in jobs per hectare from 2006 to 2076.

Job Density Change 2006 – 2076 (jobs per hectare)



Share of Growth in Jobs 2006-2076



Almost 50 per cent of all job growth occurs in centre city, activity centres and corridors. Twenty-five per cent locates in existing and future industrial areas. The remainder occurs in residential areas, primarily in schools and local commercial centres.

With this information, City departments and others can determine the steps necessary to achieve MDP job targets.



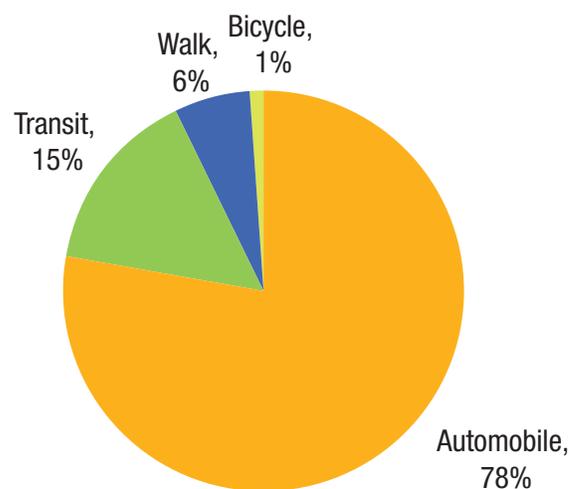
Jobs – housing balance

One of the ways to reduce dependency on the automobile and increase the use of other transportation modes is to provide the opportunity for people to live near their workplace. This Snapshot contains the most current data comparing the location of jobs with the locations of housing.

Location of employment opportunities

The location of employment opportunities in the city plays an important role in the way people commute to work and how far they must travel to get there. Therefore, it plays an important role in the need for municipal infrastructure and services like roads, LRT and bus routes. Calgary's Employment Centres Strategy is aimed at encouraging more employment opportunities closer to where people live. Our Transit Oriented Development policies are aimed at placing jobs and homes close to LRT stations. If successful, we could see shorter commute times and higher numbers of people walking, cycling and using transit to get to and from work. This will make better use of municipal infrastructure, reduce our ecological footprint and improve the quality of life for Calgarians.

■ Modes of travelling to work (2006 Travel to Work Survey – City of Calgary)



Want more information on the jobs housing balance?

If you have any questions on this Snapshot or would like additional information, contact Jim Francisco at 403-268-5317 or jim.francisco@calgary.ca.

Last updated: January 2009.

Jobs and population balance

This map illustrates the location of jobs and population in Calgary.

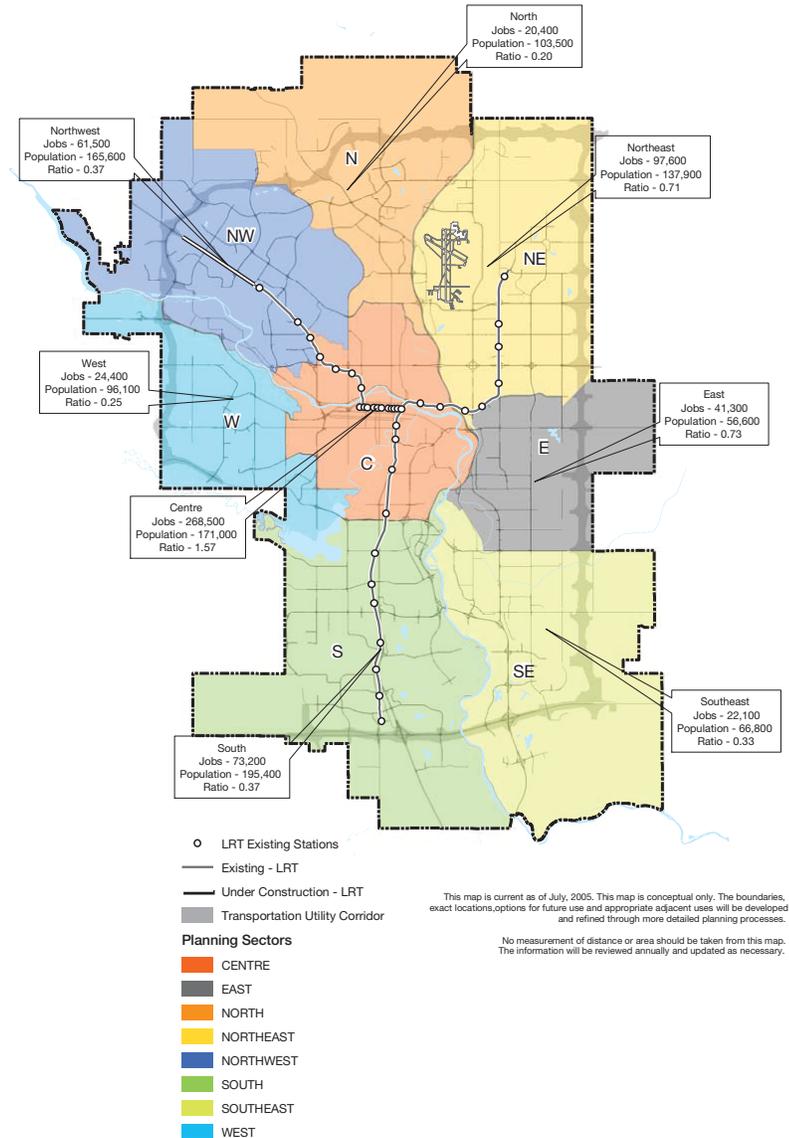
The north, northwest, west, south and southeast areas have low job/population ratios, indicating that most people living in these areas must travel outside their sector to get to work. With LRT lines only available in the northwest and south, travelling by car is often the most practical choice for residents.

Not surprisingly, the central sector has more jobs than population, indicating that it is a sink which draws workers from other parts of the city. Fortunately, the downtown core is well serviced by transit, and it offers residents the opportunity to walk or cycle to work.

The northeast and east are the most closely balanced of all the sectors, but much of the employment there is dispersed and isolated from residential areas. This decreases the appeal of walking, cycling or taking transit to work.

Planning sector	Jobs	Population	Ratio
Northwest	61,500	165,600	0.37
North	20,400	103,500	0.20
Northeast	97,600	137,900	0.71
West	24,400	96,100	0.25
East	41,300	56,600	0.73
Centre	268,500	171,000	1.57
South	73,200	195,400	0.37
Southeast	22,100	66,800	0.33

Job/population balance 2006



Employment centres

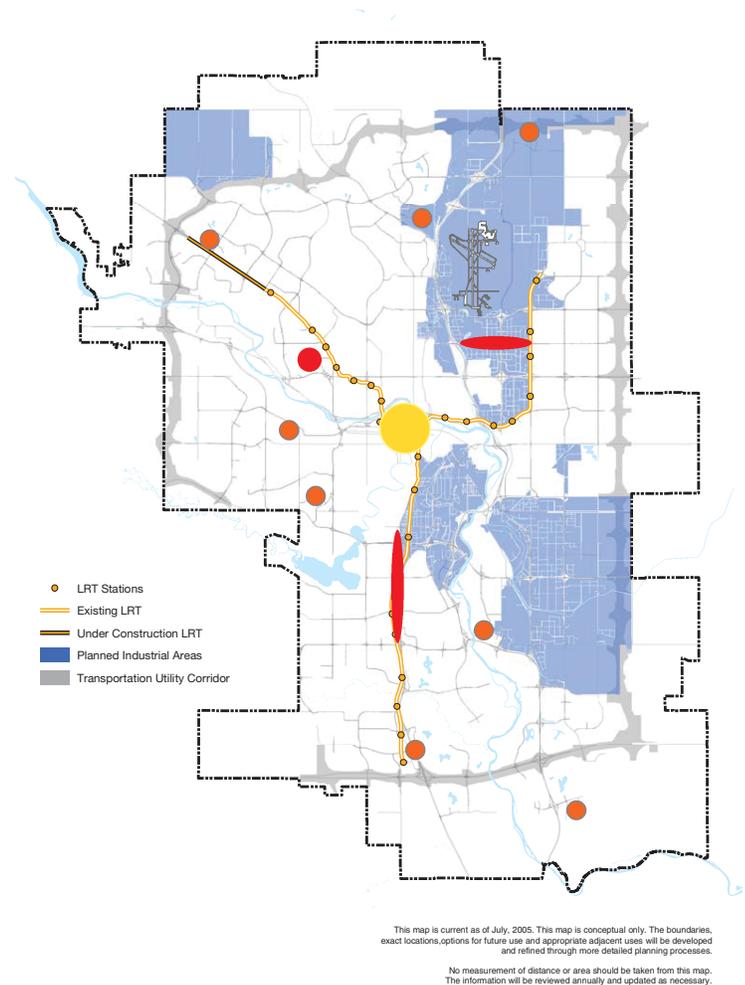
Almost 160,000 jobs were located in the downtown core and beltline of Calgary in 2006. That's more than 25 per cent of all jobs in the city.

Other employment centres are highlighted in red, such as the University/Foothills Hospital, Macleod Trail from Chinook Mall to Anderson Road, and 32nd Avenue N.E. between Deerfoot Trail and 36th Street N.E. Combined, there are about 70,000 jobs located in these centres.

Less dense employment lands, shown in blue, accommodated about 150,000 jobs. The dispersed nature of these jobs means they are farther from residential areas and difficult to service with transit, increasing the need for workers to commute by car.

Future and emerging employment centres are highlighted with orange circles. These centres are located along existing or proposed LRT lines and major transit routes. Many of them are in close proximity to residential areas, providing the opportunity for workers to commute on foot or by bicycle.

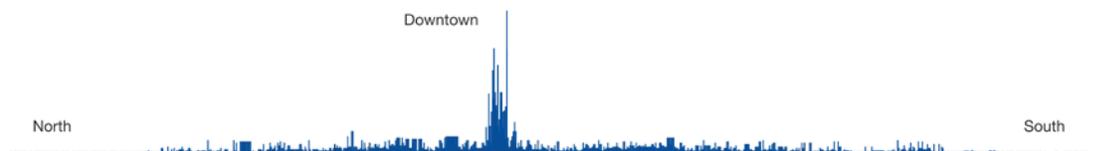
Employment centres and lands in Calgary 2006





Job Density Benchmarks

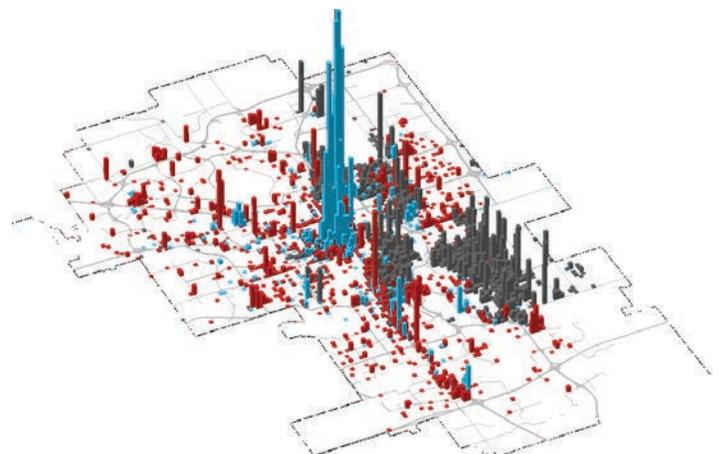
Approval of the Municipal Development Plan (MDP) has renewed interest in employment areas and on achieving higher job densities. Encouraging the growth of high density employment areas is important in achieving a more compact urban form. These high density areas include: urban and neighbourhood corridors, major and community activity centres, and industrial intensive areas. By encouraging higher density job growth in these locations further 'job sprawl' into greenfield areas can be limited. Also, higher density areas will make more efficient use of existing transit, road and water infrastructure investment.



■ Figure 1: Schematic of Calgary Job Density per hectare showing job density from the northern city limits (left), high densities in the urban core, to the southern city limits (right).

Cities grow in both size (out) and density (up). Calgary is no exception and has a typical growth pattern: a high job density urban core area surrounded by lower density areas. Calgary's highly concentrated downtown office/retail core accounts for 23 per cent of all jobs. Density in select blocks of the downtown core area approaches 1,000 jobs per hectare. Job density in greenfield industrial areas and in outdoor storage uses, on the other hand, can be as low as three to five jobs per hectare. Figure 1 provides a schematic plan view of the spatial distribution of job density across Calgary, illustrating the high density urban core area and lower density areas flanking the core. Nodes of higher density (areas with more than 100 jobs+people per hectare) can also be found outside the downtown core near major urban transit stations, intersections of major streets, at major retail mall locations and at major institutions (i.e. SAIT, University of Calgary, Foothills Hospital, and the Calgary Airport). The MDP calls for continued growth of these select high density locations.

The spatial distribution of built space in Calgary varies by job type as well. Figure 2 illustrates the spatial distribution of industrial, retail and office space. Industrial space (black) is located in select industrial areas in the central and east areas of the city. Retail space (red) is much more dispersed and is located in closer proximity to residential areas. Office space (blue) is highly centralized with some spread to accessible suburban locations.



Job density varies by general employment type, as well. Retail, office, industrial and institutional uses have varying

■ Figure 2: Citywide distribution of office, retail and industrial space

job densities. Industrial uses have the lowest job densities, requiring more land and building space for manufacturing, storage and distribution facilities. Retail uses have higher job densities than industrial uses but also have, generally, lower job densities than office uses. Office uses have the broadest range of job densities and also are found in the highest density urban core areas of the city. An illustration of the range of job densities found in industrial, retail, institutional and office areas is provided in Figure 3. Higher density employment areas, as called for in the MDP, require a mix of office, retail and institutional uses to reach the proposed density targets.

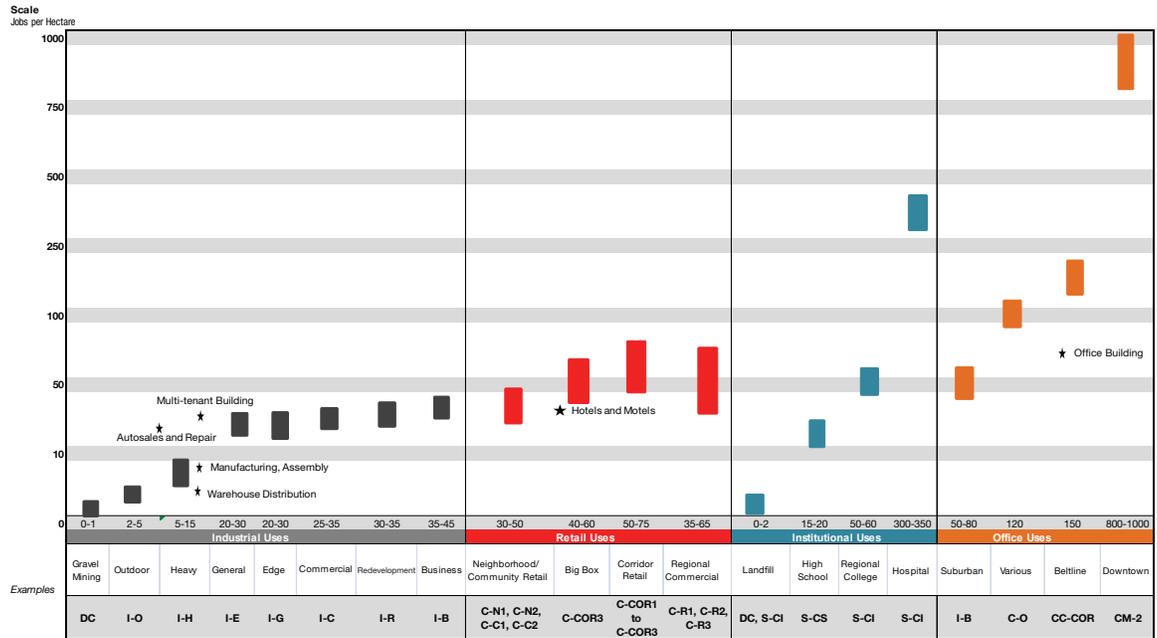


Figure 3: Job Density Estimates by General Land Use type (Jobs per hectare)

Job density statistics are required to establish baselines for further job density monitoring by land use type, by MDP typology and by other sub-areas in Calgary. Ongoing monitoring will assist in determining whether market mechanisms and planning policies are successful in increasing job densities in select high density growth areas identified in the MDP. The information presented in this Snapshot provides measures of baseline densities and provides a starting point for future research and investigation. These benchmarks should be re-evaluated regularly, particularly in those areas and typologies where significant job density increases are mandated by the MDP.

Want more information about job density?

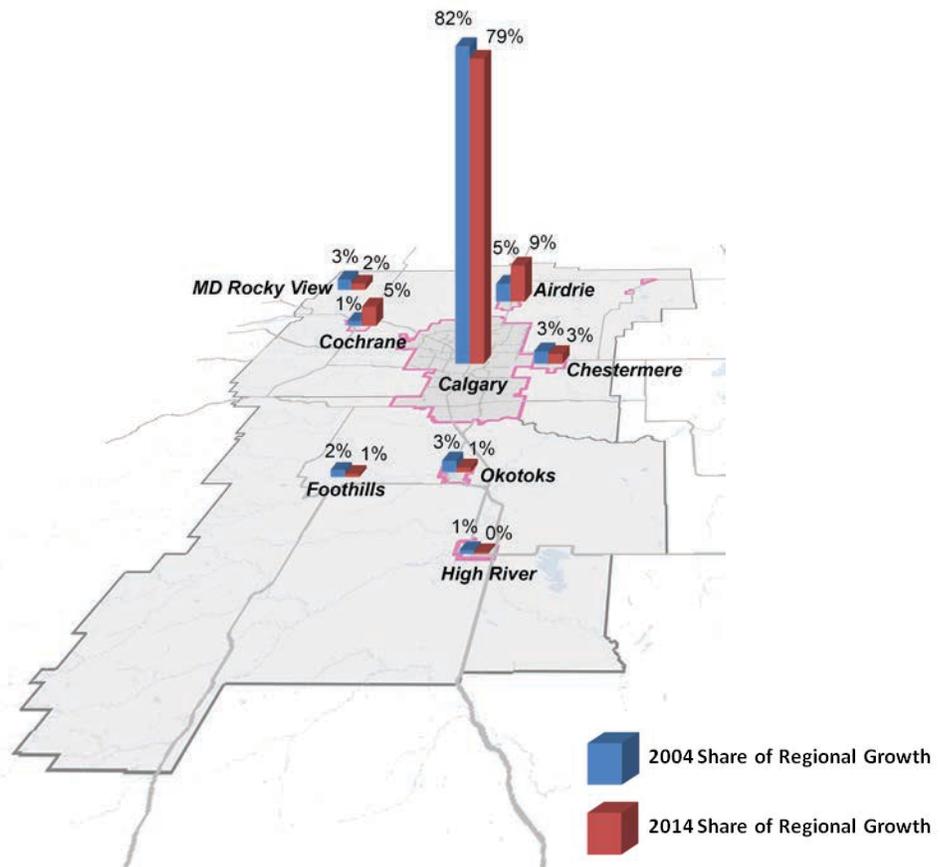
For further information or other enquiries, contact Jim Francisco (403-268-5317; jim.francisco@calgary.ca).

Last Updated: September, 2011

Regional Housing Growth Trends

Share of Regional Housing Growth

Calgary is expected to continue capturing a large majority of growth experienced across the region. This Snapshot examines whether the amount of regional growth captured by the City of Calgary has changed over time, and if Calgary is experiencing a decline in its share of regional housing starts with a rising share of growth occurring in the region as compared to the city itself.



Study Area

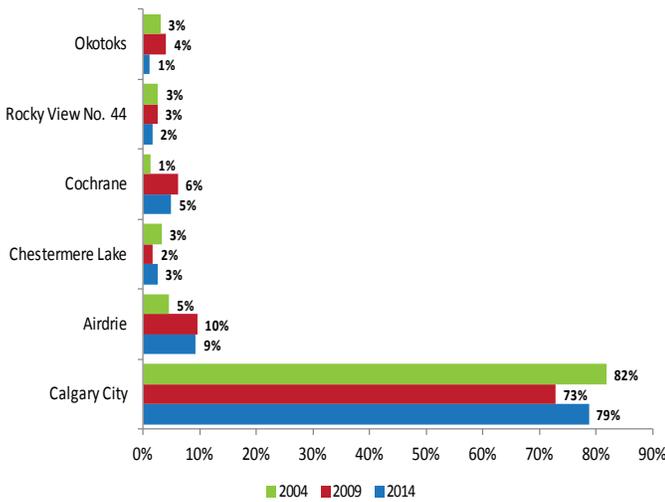
Growth is measured by housing starts available from CMHC (Canada Mortgage and Housing Corporation). As defined in this Snapshot, the Calgary region includes the City of Calgary, the Municipal District of Rockyview, the Municipal District of Foothills, Airdrie, Beiseker, Chestermere Lake, Cochrane, Crossfield, Irricana, Okotoks, High River, and Strathmore.

Want more information on Regional Growth and Change?

If you have any questions on the Snapshot or would like additional information, contact Carlie Ferguson at 403-268-5289 or by email at carlie.ferguson@calgary.ca.

Last update: February 2014
Scheduled Update: February 2015

Calgary Region

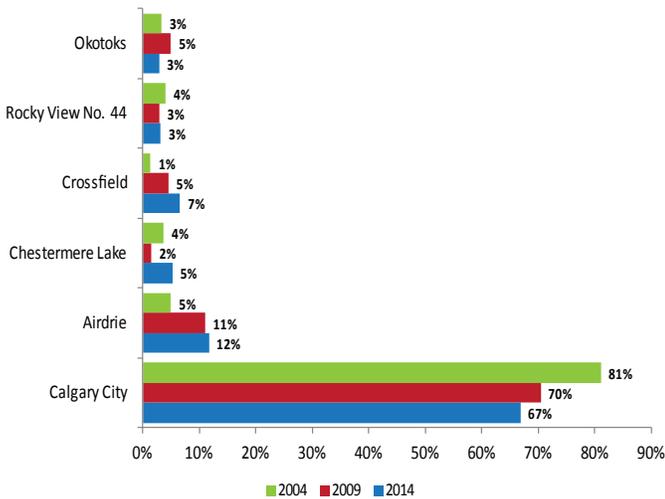


Total Housing Starts

Over the last decade, the percentage of total growth (total housing starts) that has occurred within Calgary has declined from 82% in 2004 to 79% in 2014 with a decade low of 72% in 2007.

Over this same time period, Airdrie has continued to capture a larger percentage of the regional growth with 5% in 2004 increasing to 9% in 2014.

All other municipalities in the region each account for less than 6% of the regional growth and altogether only account for 10% of the regional growth in 2014. Note that the total may not equal to 100% due to housing starts going to other regional municipalities not shown in the shown on the graphs.

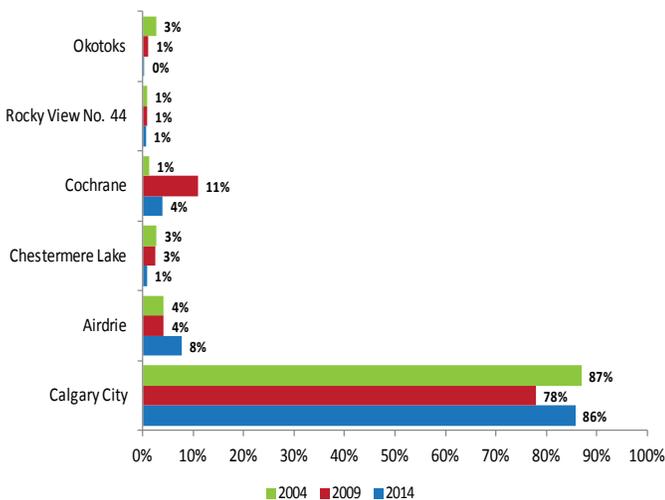


Single Family

Over the last decade, the percentage of single family growth (single family housing starts) that has occurred within Calgary has declined from 81% in 2004 to its lowest recorded value of 67% in 2014.

Over this same time period, Airdrie has continued to capture an increasing percentage of the single family growth with 5% in 2004 increasing to 12% in 2014.

All other municipalities in the region each account for less than 8% of the single family growth each but altogether account for 18% of the single family growth in 2014.



Multi Family

Over the last decade, the percentage of multi family growth (semi, row, and apartment housing starts) that has occurred within Calgary has decreased slightly from 87% in 2004 to 86% in 2014.

Over this same time period, Airdrie's regional percentage of multi family growth has increased from 4% in 2004 to 8% in 2014.

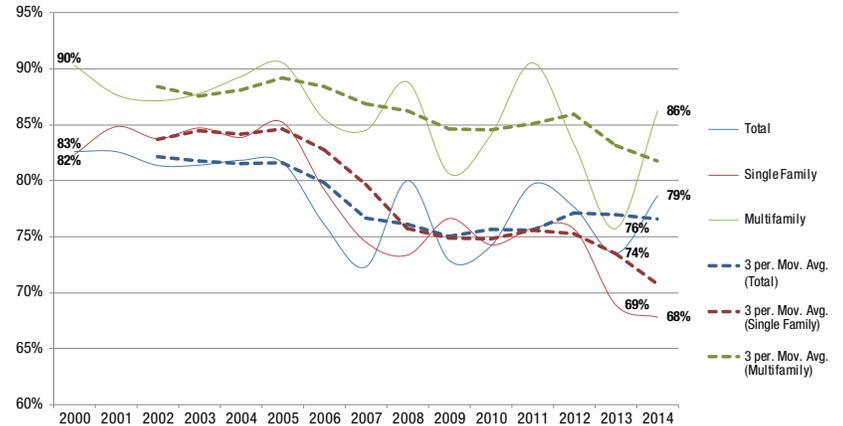
All the other municipalities in the region combined account for 6% of the multi family regional growth in 2014.

Overview

The proportion of growth going to the City of Calgary has declined slightly over the last decade with some variability. There has been a greater loss of single family housing starts to the region while the City of Calgary maintains a consistently higher proportion of the multi family growth relative to the surrounding region.

How much growth are other major cities in Canada sharing with their surrounding regions?

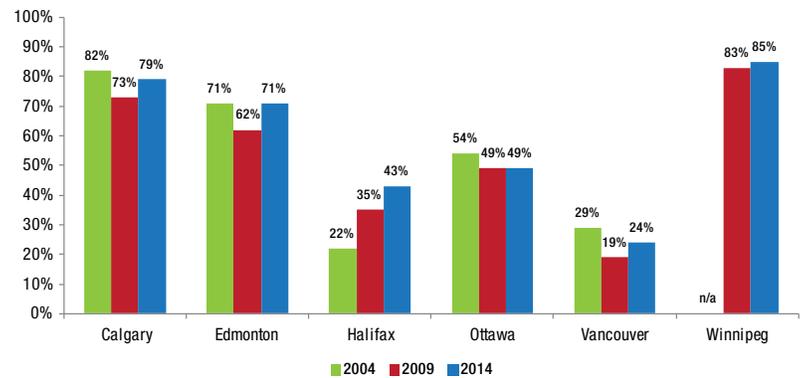
City of Calgary Proportion of Regional Growth



It is useful to investigate regional housing growth in other Canadian Census Metropolitan Areas to gauge whether or not the amount of decline experienced in Calgary is significant. CMHC housing starts data are available for Vancouver, Edmonton, Winnipeg, Ottawa, and Halifax CMAs.

Compared to other cities in Canada, Calgary maintains a high proportion of the growth occurring within its region (79% in 2014). The only major city that maintains a higher percentage of its regional growth is Winnipeg with 85% in 2014.

Proportion of Regional Housing Growth



% of Regional Housing	2004	2009	2014
Calgary	82%	73%	79%
Edmonton	71%	62%	71%
Halifax	22%	35%	43%
Ottawa	54%	49%	49%
Vancouver	29%	19%	24%
Winnipeg	n/a	83%	85%

Considerations

The total proportion of housing growth going to the City of Calgary has declined slightly over the last decade, with the most pronounced change being an increase in single family housing starts occurring in the region. Long range trends forecast that over the next ten years the percentage of single family and multi family housing starts occurring within the City of Calgary will decline moderately as a share of the regional total. Historically, the vast majority of residential growth in the Calgary region was accommodated within the urban boundaries of the City of Calgary. As Calgary and the region have grown and as housing consumer demands have changed, the role of nearby urban municipalities in accommodating growth has become more significant. Even with the exponential growth of some nearby municipalities, the City still retains the majority of residential housing growth in the region. When compared to other Canadian cities, this proportion remains relatively high as well.

