Calgary

Developed Areas Growth & Change 2016

Monitoring Growth & Change Series

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Monitoring Growth & Change Series

The City of Calgary is responsible for managing and coordinating the planning and investment needed to accommodate growth. Planned development should be orderly, well managed, and equitably financed.

The Monitoring Growth & Change series provides City Council, the administration, private developers and the public land supply information needed to plan for growth and change. The three documents share some common information, but each has a specialised focus highlighted in the following table:

			
Report Title	**Suburban Residential Growth & Change**	**Developed Areas Growth & Change**	**Employment Areas Growth & Change**
Release	Annual - SPRING	Triennial - 2016	Triennial - 2016 (next update)
Focus	Suburban residential development (last five years and next five years).	Developed Areas provide profiles of Historic Population and Job Growth (Part 1) and Land Capacity Analysis (Part 2).	Industrial land supply and growth expectations (last five years and next five years).
Content	City approach to managing residential land supply. Suburban residential land inventory including: planning approval status, infrastructure servicing status and plans for water, wastewater, and transportation. Historical suburban residential development activity. Methodology for growth forecast distributions.	Historical trend information including data on population, age cohorts, dwelling units, residential development activity, occupancy rates, vacancy rates and dwelling unit density. Review of historical Census data (2005-2015). Development activity data. Land capacity analysis and detailed parcel based land inventory.	Industrial land inventory including: planning approval status, City supplied infrastructure servicing status, industrial development activity, land absorption, remaining industrial land supply, inventory land capacity analysis and basic forecasting.
Key Info	Five-year population and housing projections by city sector. Existing land supply and expected future demand.	Profiles of growth and change in the established areas. Estimates of land capacity based on policy, land use and utilization measures.	Updates on planned land, serviced land and review of job growth and change since the last Place of Work survey.

The series is not intended to directly support business development or to provide a review of current market conditions for industrial development in Calgary. For business development, investment and site selection inquiries please contact:

Calgary Economic Development
Phone: 403) 221-7831 or 1-888-222-5855
Website: ww.calgaryeconomicdevelopment.com

Executive Summary

By 2039, an estimated 70,500 additional dwelling units will be required within the Developed Area. This is necessary to meet the Municipal Development Plan (MDP) target to capture 33% of all city wide growth within the 2006 Developed Area boundary by 2039. This means that 23 years remain to complete additional planning work and provide the capital infrastructure required for this substantial redevelopment effort. Looked at all at once, this seems like a rather aggressive target. Capacity needs to be examined in stages: short term, mid-term, and long term. Vacant land can provide short term development capacity. **Currently, vacant land could provide capacity for a maximum of 9 - 11 years, assuming current absorption rates and that the vacant parcels are developable**. It is more likely that vacant land will provide capacity for up to about 5 years, given that not all parcels will be developable to their Land Use Bylaw maximums, or be developable at all. As these relatively easy development opportunities build out, the quick redevelopment wins will diminish. Underutilized sites can provide additional redevelopment potential to the vacant parcels in the midterm. Vacant plus underutilized parcels present a maximum land supply capacity for up to 18 – 22 years. The potential capacity for 57,200 units under existing land use addresses only short- and mid-term development. Capacity under Local Area Plans is a slightly higher number (62,700), but even if these numbers are fully realized, there is still a sizeable gap to the goal of 67,000 to 84,000 units. However, Local Area Planning currently in process by The City will add an additional capacity of approximately 24,500 to this total.

This report presents a simplified linear ideal of how to reach the MDP target. A total number of units is required to meet the MDP target. The number of potential units based on existing land use and policy has been counted (in two ways). The gap between the target and the potential capacity is work that remains to be done by The City. In reality, it is not that simple. Under perfect circumstances, every parcel would develop to its maximum potential. This is simply not possible. Because there will always be development constraints, it will be necessary to create or enable potential capacity beyond the 70,500 unit mark to offset situations where a parcel cannot redevelop to its maximums. How many potential units are needed beyond 70,500 units is unknown. **A major finding of this report is the number of new dwelling units in the Developed Area over the last 5 years. An average of 3,000 units per year have been added, representing 26% of all new units city-wide**. This is an important trend and could be sustainable, if sufficient inventories of suitably designated land can be provided to the development industry. Additional work will be required to create the estimated 3,000 – 3,200 units per year required to reach MDP targets.

Background

Developed Areas: Growth & Change was first published in 2007. Calgary City Council had requested a report on growth and change in the Developed Area to complement the annual Suburban Residential Growth document that monitors Greenfield land supply and capacity.

Introduction

Until recently, there has not been the same pressure to consider land supply and capacity in the Developed Area as in the suburban areas. New policy direction in the MDP, some shifts in consumer preference and increasing development activity in the Developed Area have made understanding Developed Area land supply a priority. The Framework for Growth and Change requires this information in order to understand where planned and serviced land capacity exists to support growth, and to understand what land supply effects may result from new capacity brought on through infrastructure and service investment.

Purpose

This version of *Developed Areas: Growth & Change* examines redevelopment potential of Calgary's Developed Area. This potential is expressed in terms of capacity for new housing units, whether in the form of entirely new development on vacant land, or the redevelopment of existing parcels.

It attempts to answer three critical questions:

- How much capacity for new housing units exists in the Developed Area?
- Where is this capacity located?
- Is there sufficient capacity to meet the goals of the MDP?

Organization

For 2016, Developed Areas: Growth & Change has been divided into four distinct parts which each explore capacity in the Developed Area through a different lens.

Part 1 provides an overview of the existing conditions of the Developed Area and its guiding vision, and it focuses on trends in the population and the housing stock. Capacity is represented by the existing built form.

Part 2 examines capacity based on existing land use. This capacity represents the number of units that could theoretically be built today under the exiting land use. A key focus of this section is the capacity on vacant and underutilized parcels.

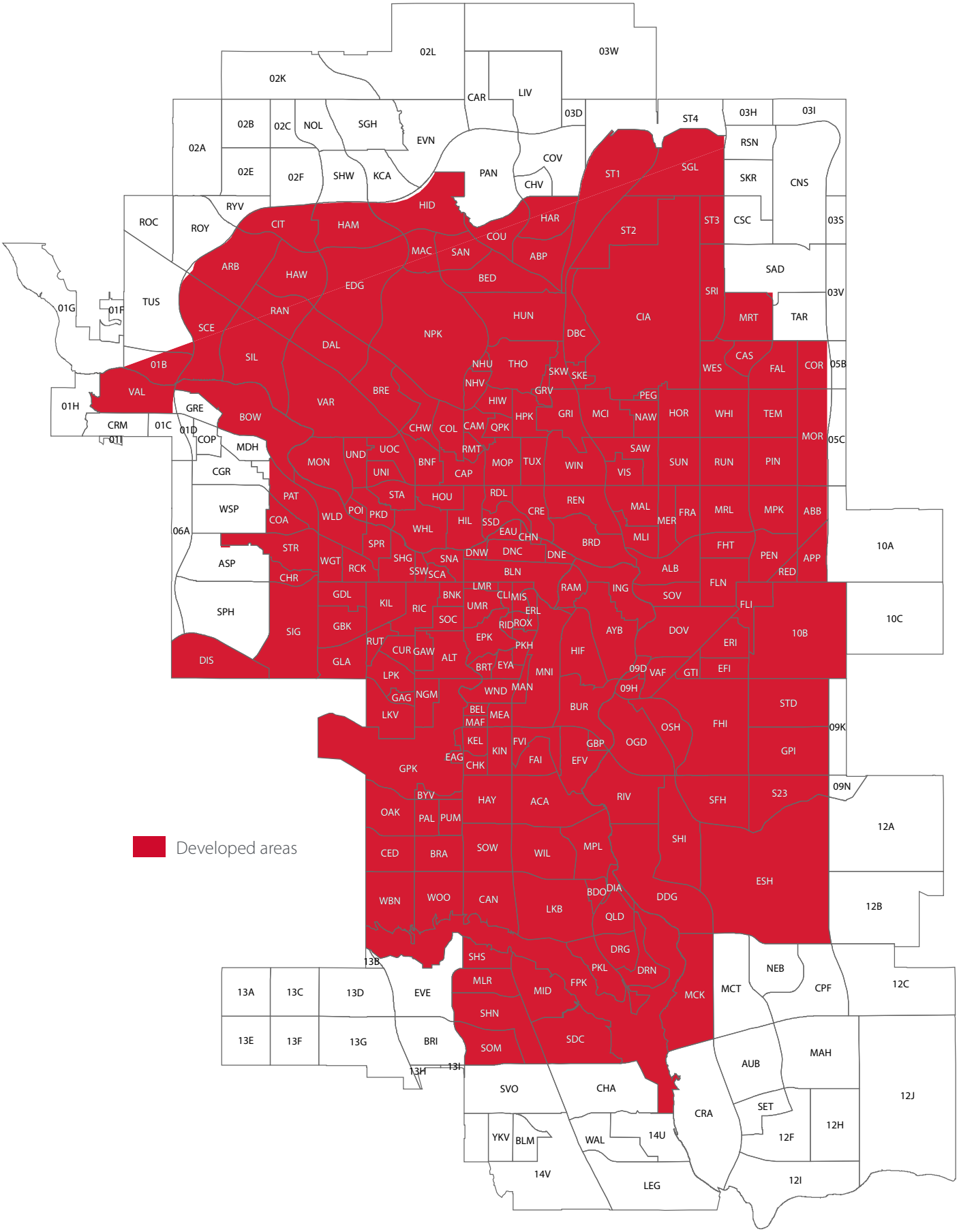
Part 3 measures capacity based on policy in Local Area Plans, such as Area Redevelopment Plans, or other initiatives such as Main Streets and Green Line Station Area Plans.

Part 4 ties together the capacity information from the previous 3 parts. It contextualizes the data through community-level analysis, and provides an outline of the further work required by The City to reach the vision of the Municipal Development Plan.

Study Limitations

This report establishes an initial theoretical baseline of what the maximum redevelopment capacity of the Developed Area may be. **It is important to note that capacity may exist, but whether the right conditions are in place to develop is an entirely different matter. Generalized assumptions are made for land uses at a citywide scale, and may not accurately reflect the conditions of a particular parcel.** One of the key factors in whether a parcel is developable is servicing; this report does not include analysis of serviced land capacity.

MAP 1: Developed area boundary



Developed Area and the Municipal Plan

Map 1 illustrates the Developed Area boundary. The Developed Area has an area of 50,005 hectares and represents 59% of the city's total land area.

The MDP encourages redevelopment within the Developed Area to make the best use of existing land, reduce the cost of City services, to locate residents closer to where they work, shop and play, and to make walking, cycling, and transit more attractive. The MDP sets the following growth targets for the Developed Area (**Figure 1**):

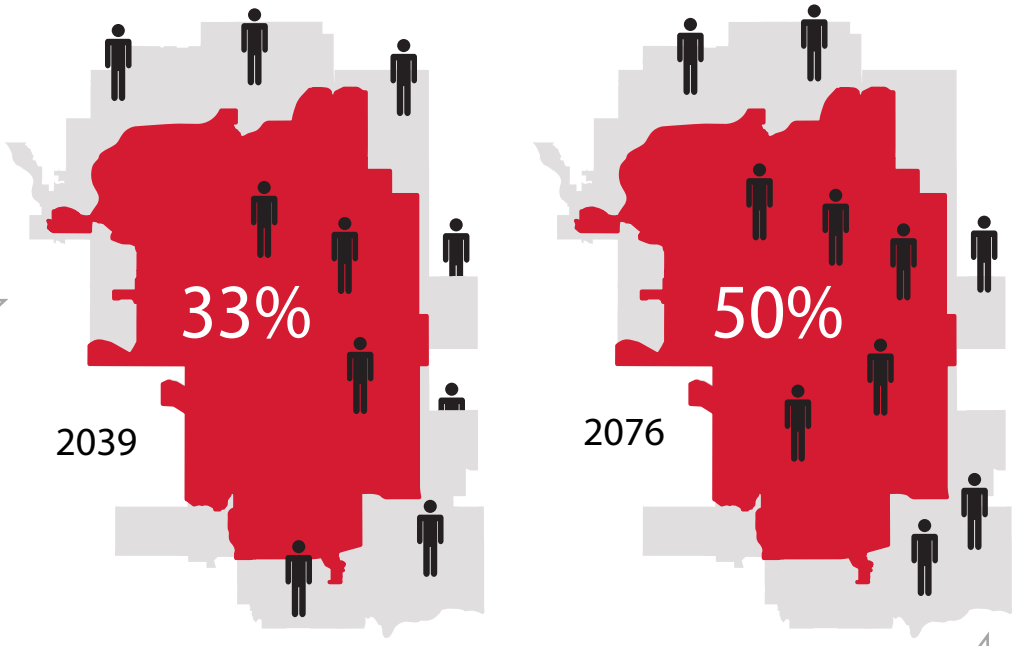
1. Over the next 60 to 70 years (~2076) The City of Calgary should endeavour to accommodate 50 per cent of the city's population growth in the Developed Area. (MDP 5.2.2.c)

2. By 2039, The City of Calgary should endeavour to accommodate 33 per cent of the city's population growth in the Developed Area. (MDP 5.2.2.d)

Related to these targets is the MDP policy to "provide a wide choice of housing types and locations by facilitating growth and redevelopment in existing communities in a wide variety of locations throughout the city."(MDP 5.2.3a).

Calgary's population is forecast to increase by 579,000 (update with 2016 census results, all the following numbers are based on 2015 census data) people over the next 23 years, reaching 1.8 million by 2039. To meet the 2039 MDP target, the Developed Area will need to accommodate an additional 227,000 people. This is a dramatic departure from the status quo in Calgary. There are currently 377,000 housing units in the Developed Area, but more housing will be required to accommodate this population increase. This additional population translates into approximately 90,000 to 100,000 housing units. This target will most likely be achieved through construction of a mix of dwelling types including multi- unit dwellings in select nodes and corridors.

Figure 1:
MDP population Growth Targets for 2039 and 2076



By 2039, The City of Calgary should endeavour to accommodate **33 per cent** of the city's population growth in the Developed Area.

By 2076 The City of Calgary should endeavour to accommodate **50 per cent** of the city's population growth in the Developed Area.

Part 1

Developed Area Overview

The Developed Area is diverse. Both the densest and the least dense parts of Calgary are within the Developed Area. New and old infrastructure exists side by side. New residents mix with those who have lived in these areas for decades. Redevelopment within the Developed Area, therefore, needs to be sensitive to this surrounding context and address the concerns of local residents while encouraging newer more intensive land use patterns.

This section provides a number of measures that can help explain the many changes occurring across the Developed Area. Population and dwelling unit counts in combination with other variables, such as occupancy rates, vacancy rates, and age cohort data help provide a more complete picture of growth and change. Additionally, development activity provides insight into physical changes in the built environment of a community, and also may indicate future growth trends resulting from forecast changes in migration and natural increase.

Overview of the Developed Area

Fast Facts

- 59% of the total city land area
- 73% of the total city population
- 76 % of the total city dwelling

Key Trends

Between 2005 and 2015, population of the Developed Area grew by 51,491 people and housing grew by 26,842 units. 13,667, or roughly half of the units were built from 2005 to 2010. However, during this same time period, the Developed Areas only increased by 1,860 people. In some years, the Developed Areas lost population to the Greenfield Areas. Conversely, population growth in the Developed Areas between 2010 and 2015 was much stronger. During this time, the Developed Areas increased by 13,157 units and 49,631 people. This shows housing growth is not directly related to population growth.

- Over 100% of the net increase of 26,842 units from 2005 to 2015 was due to the increase in multi-family and ground-oriented dwelling. The total number of single family dwellings in the Developed Areas decreased by 855 during this time period.
- New Development is stabilizing population loss due to the natural community life cycle. This new population is critical to maintaining community services, such as schools.

Figure 2:
Population and Unit Growth 2005-2015

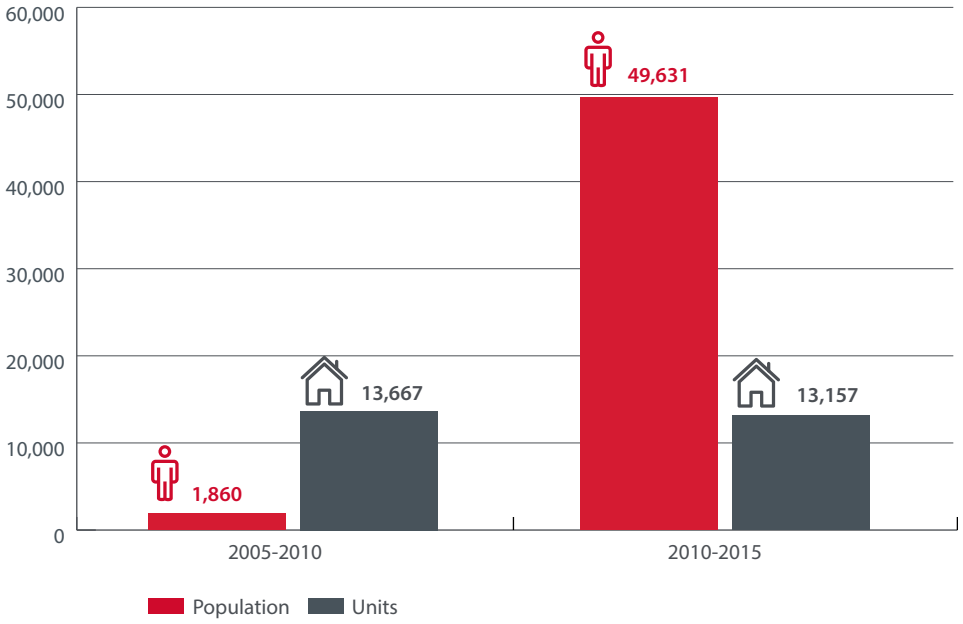


Figure 3:
Developed Area Changes

Developed Area	2015	2010	2005	5 yr change 2010-2015	5 yr change % 2010-2015	10 yr change 2005-2015	10 yr change % 2005-2015
Population	892,370	842,739	840,879	49,631	5.89	51,491	6.12
All Dwellings	376,635	363,478	349,811	13,157	3.62	26,824	7.67
Single Detached Dwellings	194,594	195,135	195,449	-541	-0.28	-855	-0.44
Ground Oriented Dwellings	27,727	25,522	24,014	2,205	8.64	3,713	15.46
Multi Unit Dwelling	135,915	125,420	115,218	10,495	8.37	20,697	17.96
Other Dwellings	18,399	17,401	15,130	998	5.74	3,269	21.61
Occupancy	2.52	2.49	2.54	0.03	1.13	-.02	-0.72
Vacancy %	2.87	4.27	3.72	-1.40	-32.76	-1	-22.73

Figure 4:
Cumulative Population Growth Share (%), 2006-2039 (Developed Area and Greenfield)

Since 2010 Calgary has been on track to meeting the MDP's 2039 target.

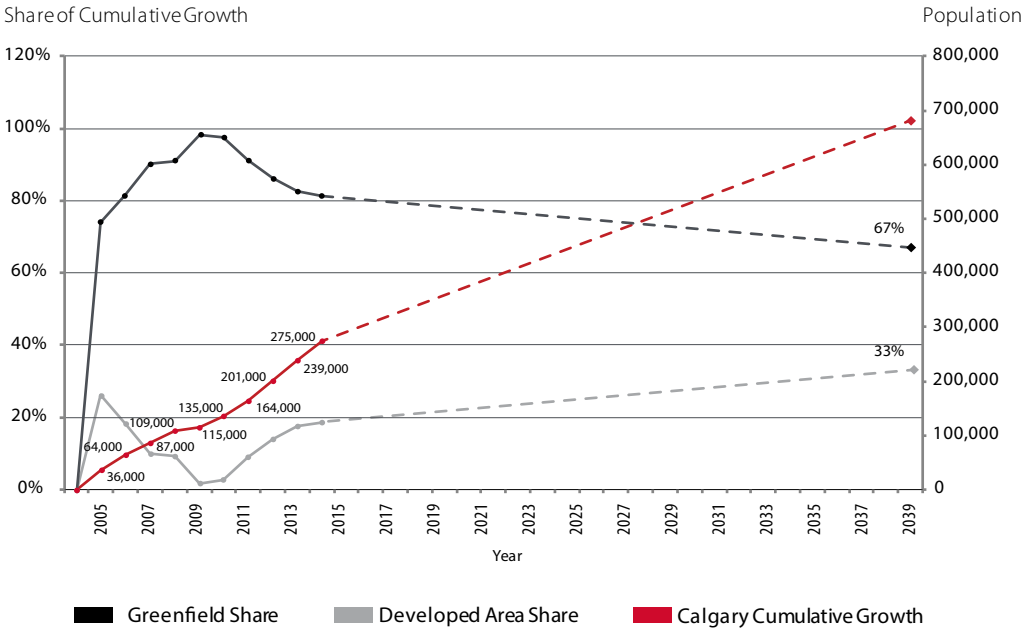


Figure 5: Comparison of population change 2005-2010

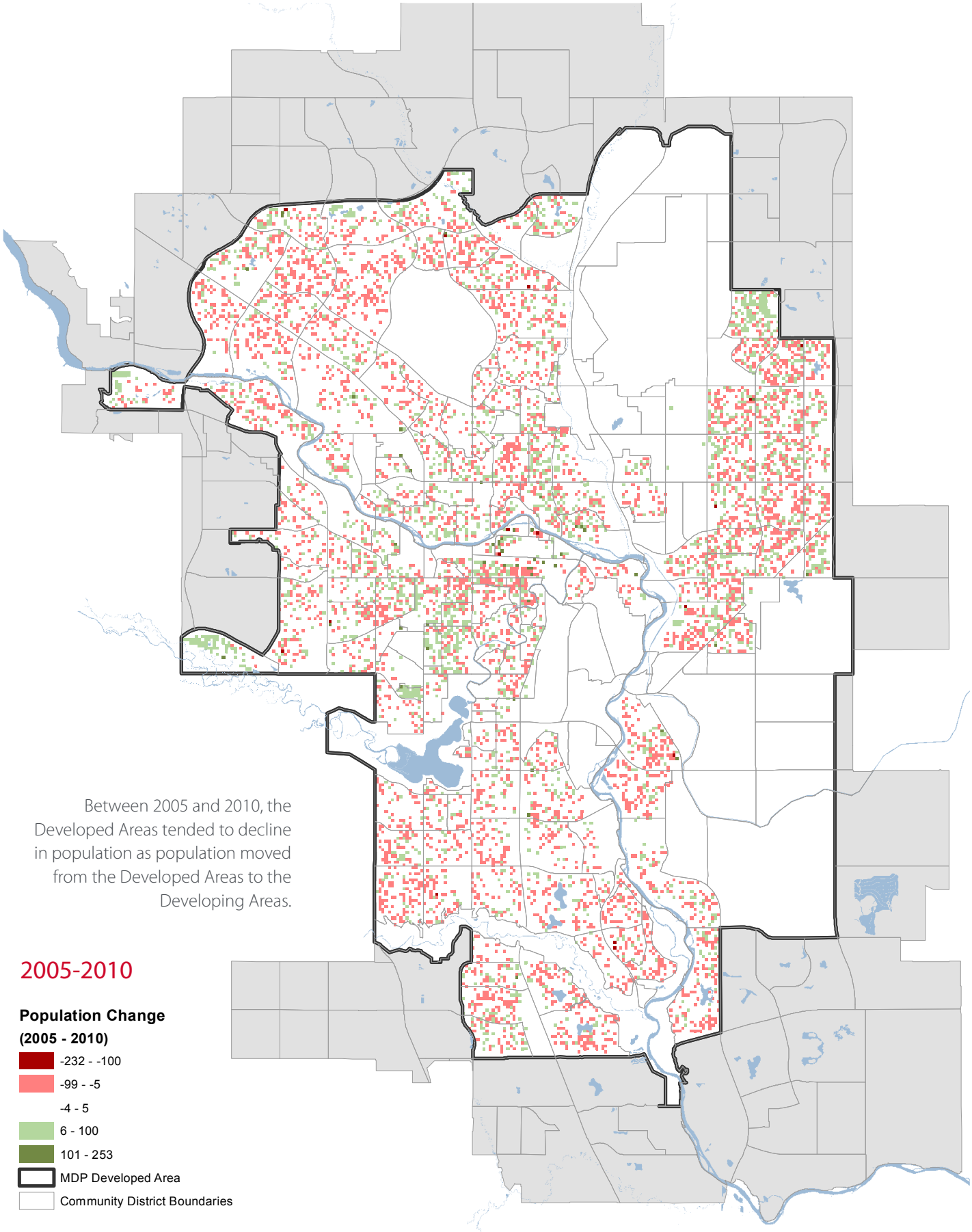
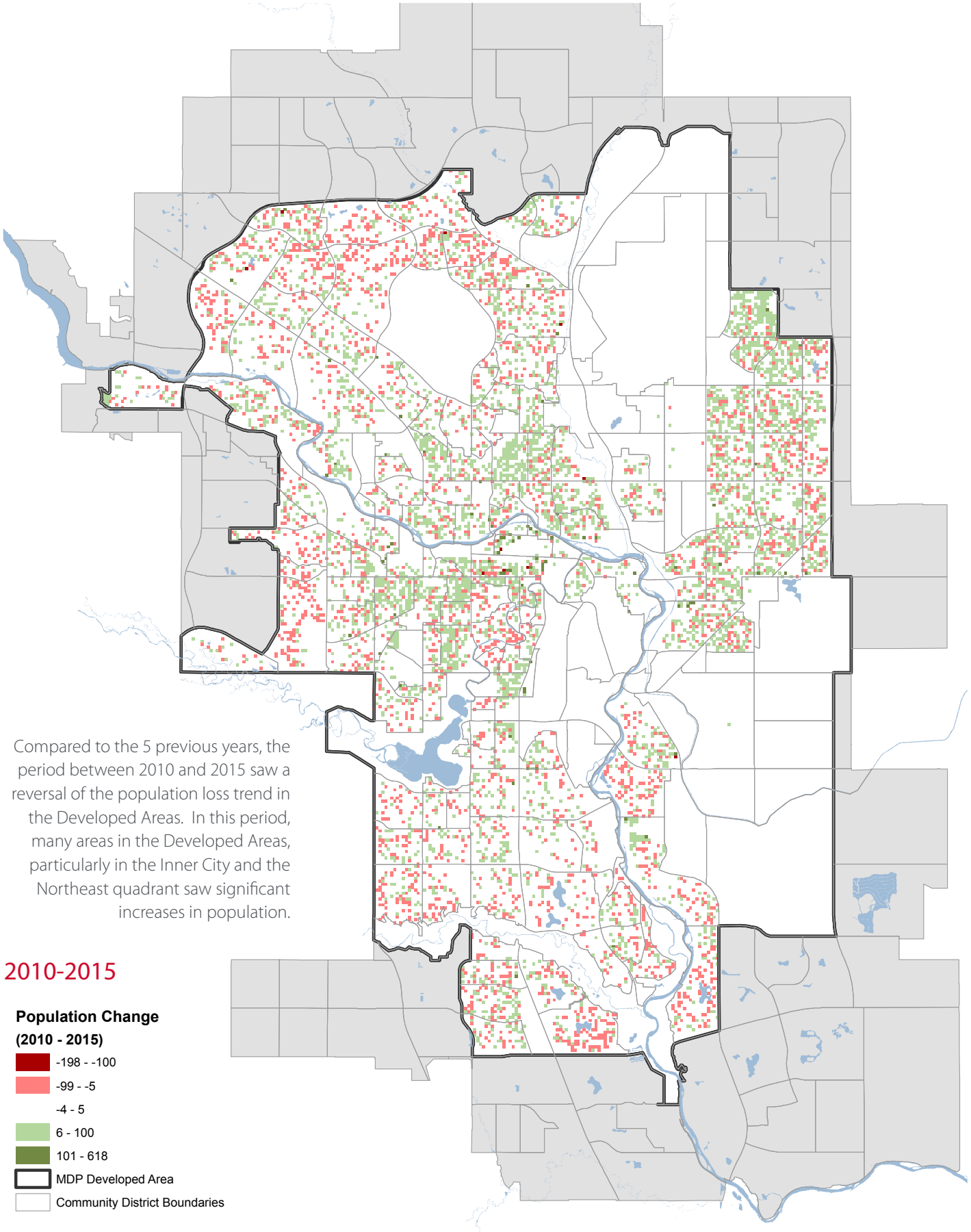
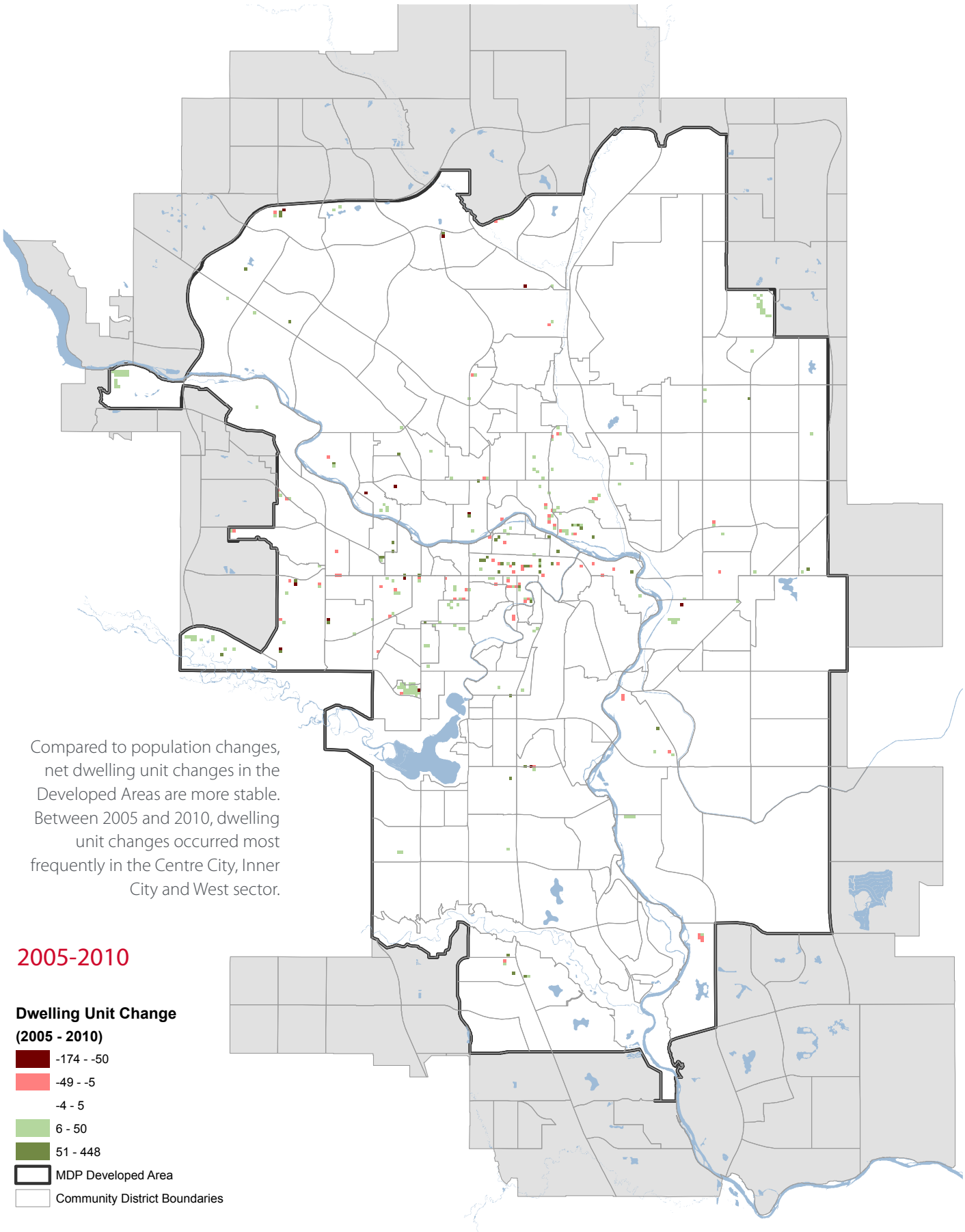


Figure 6: Comparison of population change 2010-2015



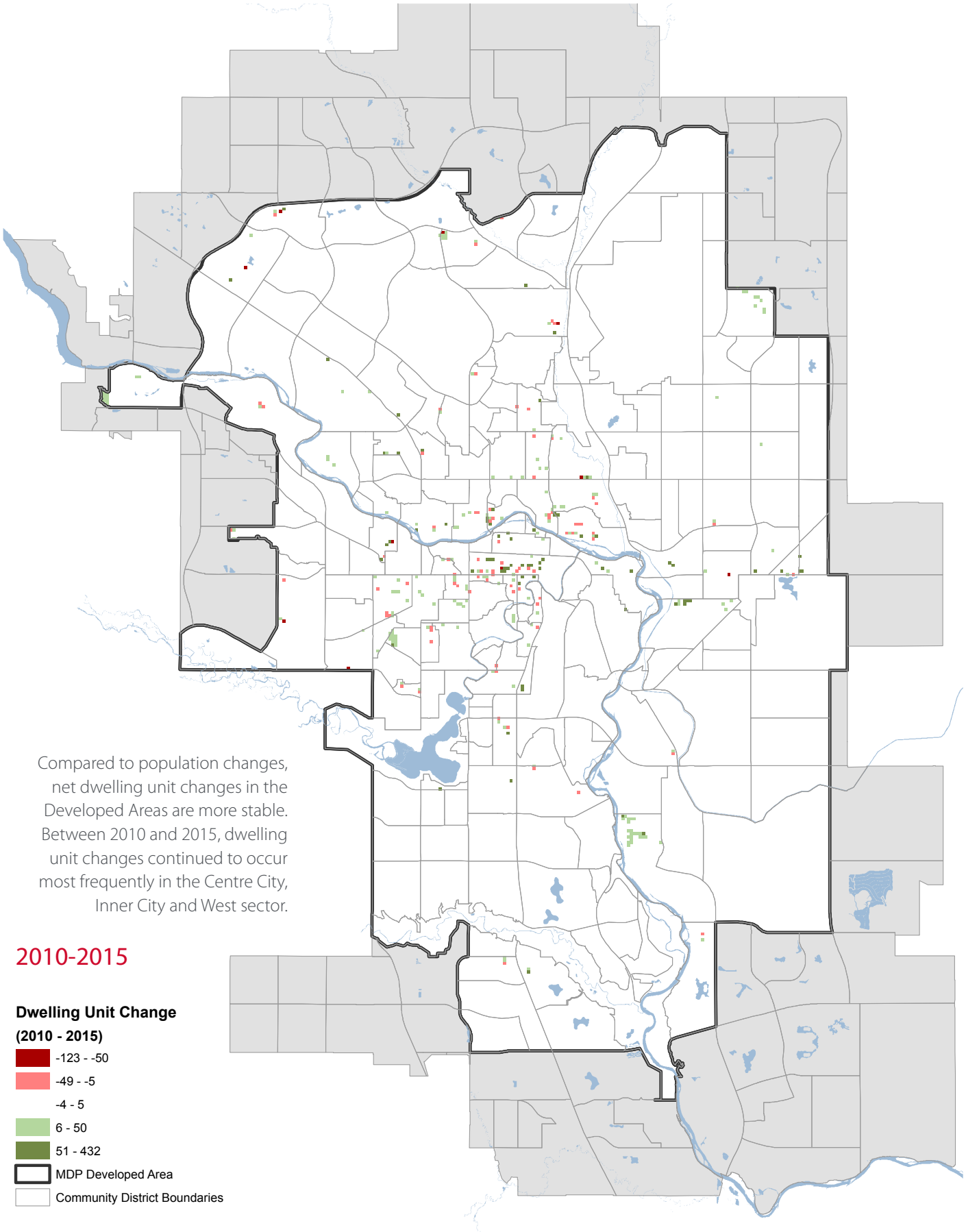
Compared to the 5 previous years, the period between 2010 and 2015 saw a reversal of the population loss trend in the Developed Areas. In this period, many areas in the Developed Areas, particularly in the Inner City and the Northeast quadrant saw significant increases in population.

Figure 7: Comparison of dwelling unit change 2005 - 2010



Compared to population changes, net dwelling unit changes in the Developed Areas are more stable. Between 2005 and 2010, dwelling unit changes occurred most frequently in the Centre City, Inner City and West sector.

Figure 8: Dwelling Unit Change 2010 - 2015



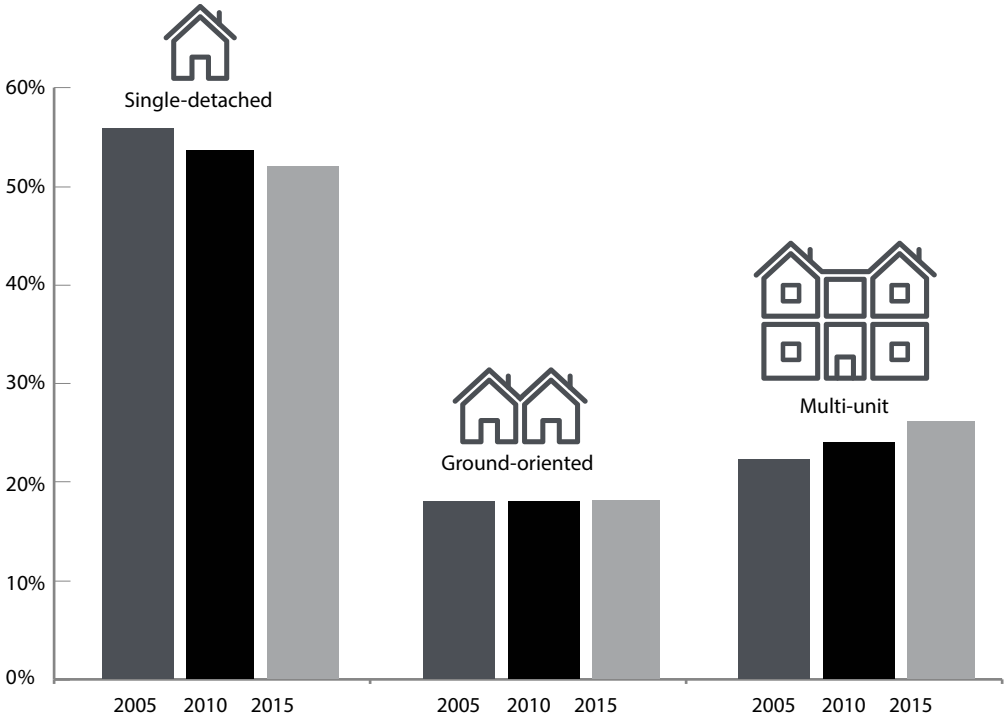
Housing

Key Trends

The proportion of single-detached dwelling units has decreased over the last decade. However more than half of all dwelling units in the Developed Areas are single-detached dwellings.

Figure 9:
Types of Dwellings 2005-2015

Single -family dwellings is shrinking, Multi-family dwellings is rising while Ground-oriented dwellings are stable.



Demographics

Similar to many communities across Canada, the population of the Developed Areas of Calgary is aging. From 2004 to 2014, the number of residents over the age of 65 living in the Developed Areas has increased by 25%, or an additional 21,000 people. The number of school-aged children (ages 5 – 19) has decreased by 16%, or 27,000 people. This demographic shift can cause strain on community services.

There may be some remaining capacity for additional units on developed land, but the building value to land value ratio is such that additional development is unlikely in most cases. For this reason, capacity of developed parcels is calculated in this report, but not counted towards the final potential capacity numbers.

Figure 10: Percent of population within age cohort, 2004 & 2014

Age Cohorts	2004	2014	2004 - Share of Total	2014 - Share of Total	10-Year % Change (2004-2014)
Aged 0-4	43,320	50,659	5%	6%	1%
Aged 5-19	164,628	137,573	20%	16%	-4%
Aged 20-44	347,554	351,682	41%	40%	-1%
Aged 45-64	203,022	238,712	24%	27%	3%
Aged 65+	83,116	104,106	10%	12%	2%
Total Population	841,640	882,732	100%	100%	0%

Figure 11: Percent Population Within Age Cohort, 2004 & 2014

Calgary is aging. Compared to 2004, the total share of Calgarians above the age of 44 has increased, while the share of Calgarians aged 5 to 44 has decreased.

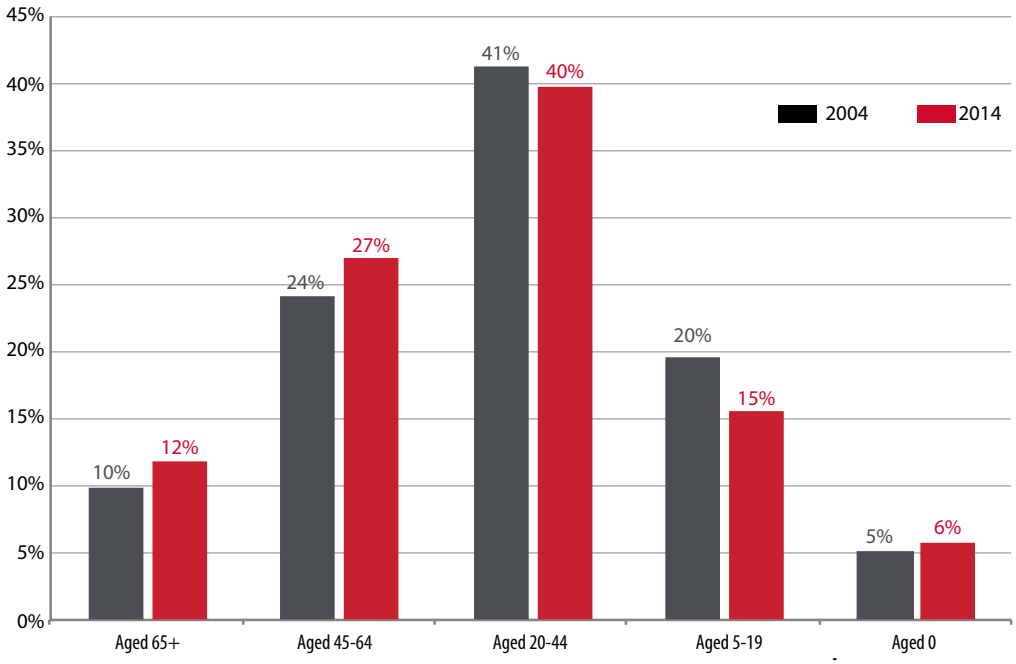


Figure 12:
Comparison of seniors share, 1999 & 2014

"In 1999, seniors tended to live in inner city neighbourhoods. By 2014, inner city neighbourhoods have started to transition and attract a younger population. Established communities further from downtown are now aging and housing the majority of Calgary's senior population. Compared to the actively developing communities, the Developed Areas contains the vast majority of Calgary's seniors."

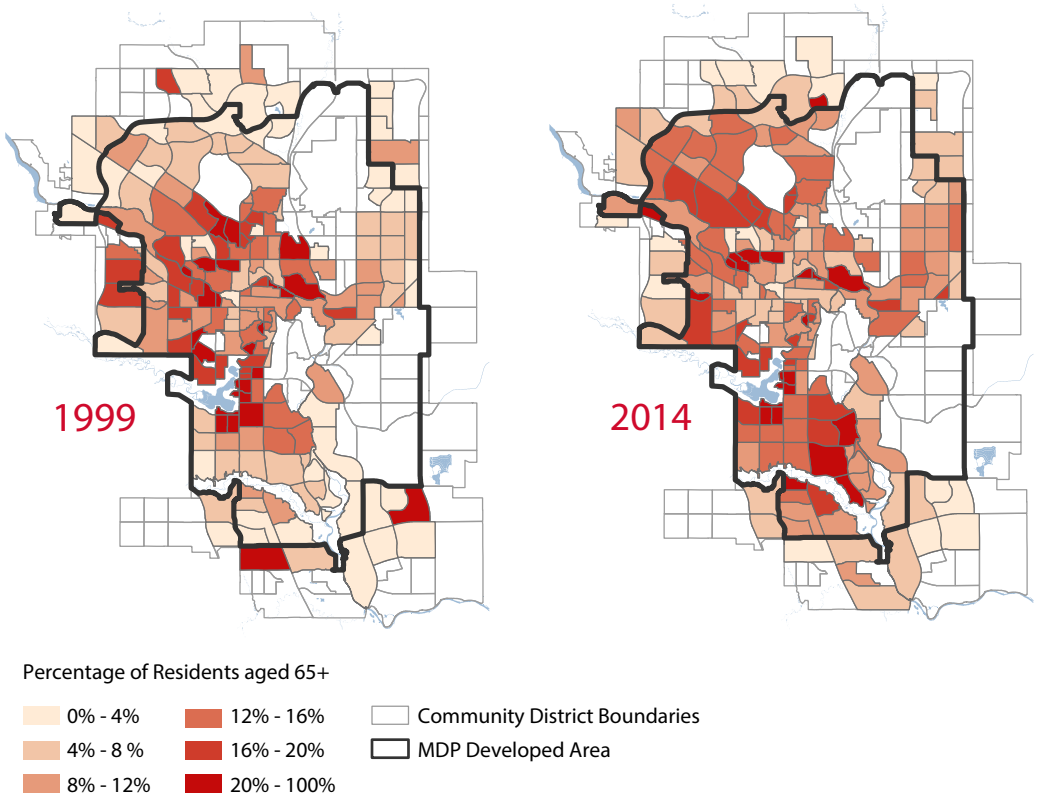
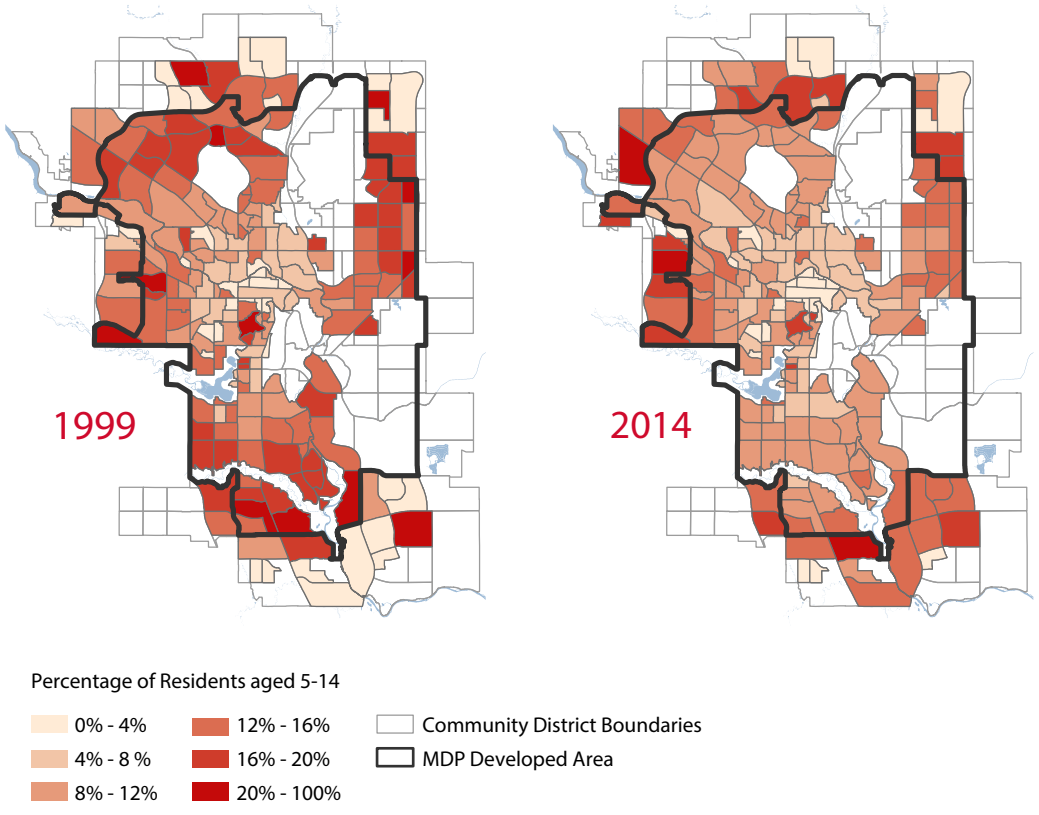


Figure 13:
Comparison of students share, 1999 & 2014

"In 1999, the majority of school-age children lived in the Developed Areas' newer communities. By 2014, students tended to have highest concentrations in new communities outside the Developed Areas."

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Part 2

Developed Capacity Based on Existing Land Use

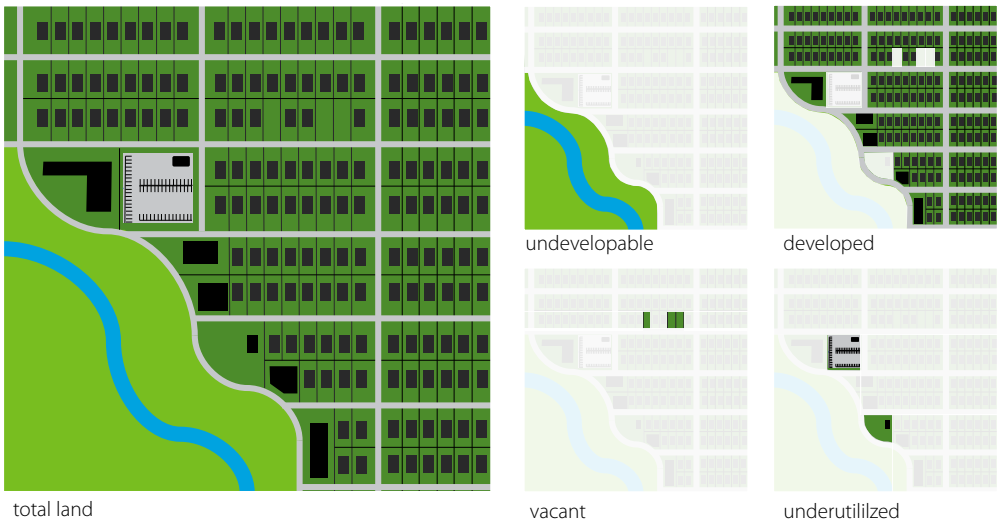
Unlike the Developing Area, in which land supply can be tracked in a linear manner from the annexation of vacant land to the final occupancy permit approval, the Developed Area requires a different type of analysis.

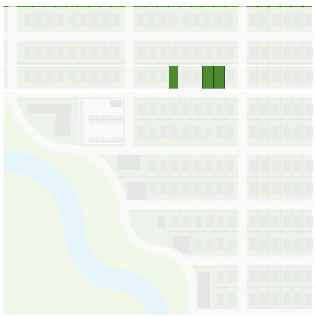
In the Developed Area, a first generation of development has occurred and large tracts of undeveloped vacant land are not common. Identifying development capacity in the Developed Area therefore requires an assessment of vacant land, as well as of the capacity available on sites that are already developed.

Types of Capacity in the Developed Area

In the Developed Area, the total land supply is composed of **developed area, vacant land/ underutilized parcels** and **developed land**. For the purposes of this report, land that is developed to a state that makes redevelopment unlikely is excluded from the development capacity. **Undevelopable land** (ex. land designated for open space, public or private easements, or major infrastructure) is also excluded from the development capacity. Development capacity is found on the remaining lands, which are categorized as Vacant and Underutilized.

Figure 14:
Land Supply in the Developed Area





vacant

Vacant Land

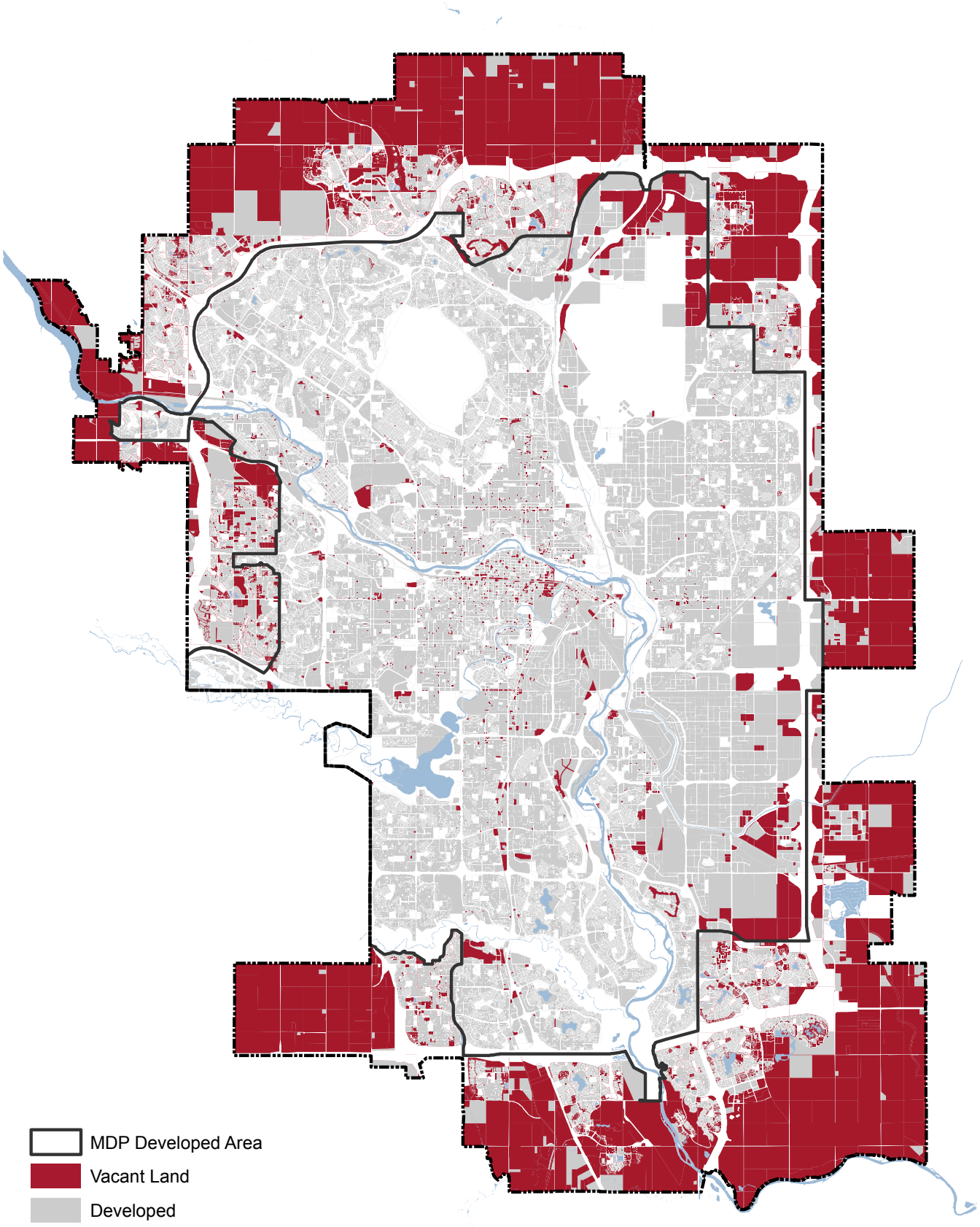
Vacant parcels are those that do not have an urban land use or significant improvements, such as a structure or building. The developable capacity of a vacant parcel is calculated based on the maximum development potential of its current land use, according to the methodology outlined in **"Method"** pg25. Due to the nature of this report, vacant parcels were examined at a high level only. This report assumes that vacant parcels are ultimately developable. In reality, there may be good reason why a parcel may be vacant, e.g. easements, contamination, etc. For this reason, the amount of vacant capacity in this report is very likely overstated, but the extent is unknown. **Map 2** highlights the location of vacant parcels in the Developed Area.

developed

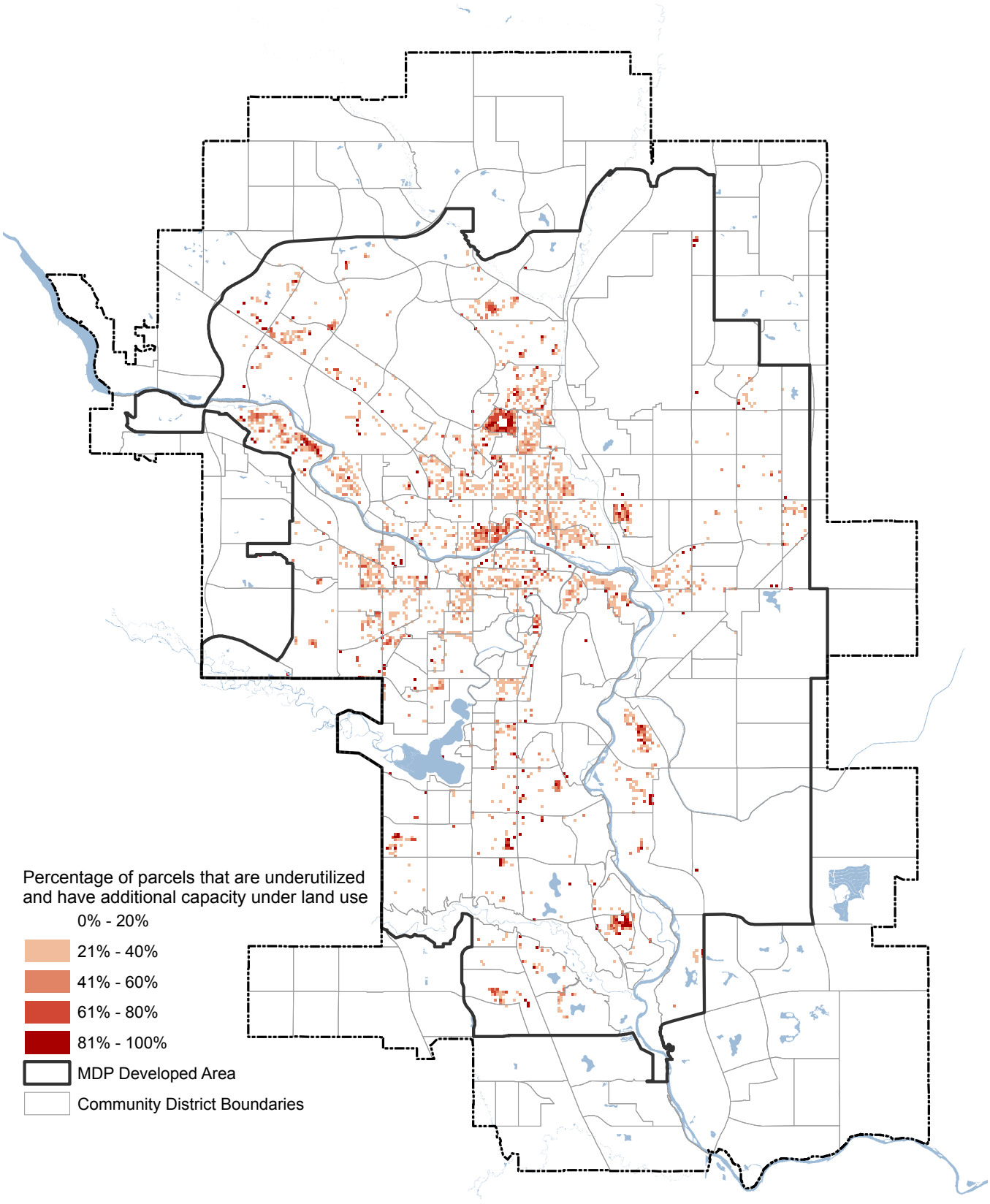
Developed Land

Conversely, parcels of land with buildings are considered 'developed' if the building value is greater than 50% of the land value. These parcels are not likely to redevelop. There may be some remaining capacity for additional units on developed land, but the building value to land value ratio is such that additional development is unlikely in most cases. For this reason, capacity of developed parcels is not assumed to be a significant source of capacity in the Developed Area.

MAP 2: Vacant Land Supply - 2015

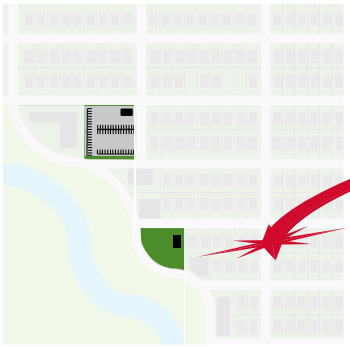


MAP 3: Developed Area Underutilized Land - 2015

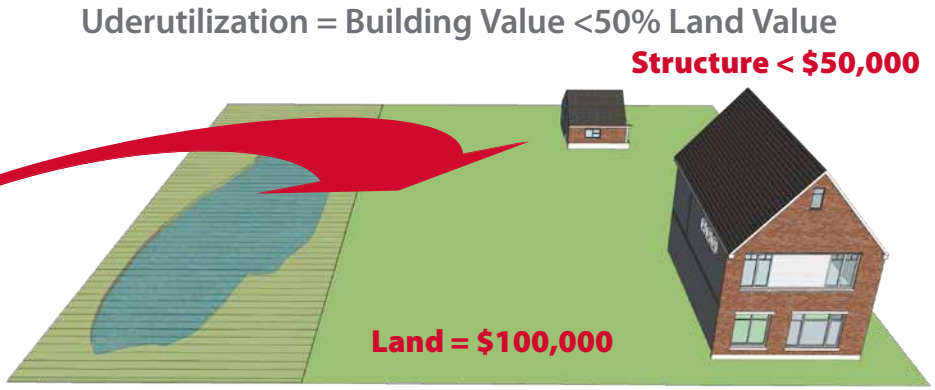


Underutilized Land

Underutilized Land is developed, yet additional development potential remains. There are several possible ways to define and measure this potential, but this report uses a singular method. Parcels in the Developed Area were evaluated based upon a ratio of building to land value. This ratio is a first attempt at using assessment values of both land and buildings as a 'proxy' measure to identify sites that may be candidates for redevelopment. All parcels with buildings on them are either 'developed' (i.e. have a building to land value ratio >50%) or 'underutilized' (i.e. have a building to land value ratio < 50%).



underutililzed



The City of Calgary does not assess building value and land value separately. Rather, a total fair value market assessment is provided for each parcel of land that includes both building and land value. Building value is therefore interpreted as the total assessment value for a site minus the land value. 'Underutilized' parcels identified in this calculation may not actually be underutilized. A host of other factors may encourage (or discourage) land owners to redevelop land (or not). For example, a car dealership may have a low building to land value ratio, because of the large lots and small buildings that car lots require. The site is fully utilized as a car lot use. Another example is older bungalows on large lots in the inner city. A low ratio of building to land value may indicate redevelopment potential but individual land owners may have no intention of redeveloping. The building to land value ratio is therefore only a general indicator of redevelopment potential.

Map 3 indicates Underutilized parcels in the Developed Area whose existing number of units is below the land use potential capacity. In other words, an underutilized single family dwelling located on an R-C1 designated parcel would not be included on the map because it is built out to its maximum capacity. Only parcels designated under the Land Use Bylaw as low density residential or multi-residential (including mixed residential and commercial land use districts) were evaluated in this initial estimate of 'underutilization'. The ratio used in this report is only one way to determine a parcel's utility. A more detailed discussion of this measure and others can be found in **Appendix 1**. Using a singular method as an indicator has its limitations for something as complicated as land value. For example, Calgary's cyclical economy means that land prices fluctuate. In periods of strong growth, land costs may increase rapidly, only to decrease in a downturn. Both increases and decreases will affect the building to land value ratio, and as a result, change whether a parcel is considered underutilized, even though there has been no physical change to the parcel itself. Thus, additional criteria should be used in future reporting to make this measure more robust and reliable

Estimating Development Capacity of Vacant, Underutilized or Developed Land

Whether a parcel is vacant, underutilized, or developed, it has a land use designation. The land use designation determines the maximum development capacity on each parcel. It is possible to calculate the difference between the existing development on a parcel and its maximum development potential based on its current land use designation.

For example, a parcel has one house on it, but its land use allows up to 100 units. This parcel has:

- 1 existing unit
- 99 potential new units
- a maximum capacity of 100 units under the existing land use designation.

It is important to note that existing land use may or may not be in line with current policy. However, redevelopment to existing bylaw maximums will contribute towards achieving the larger MDP goals.

Methodology

Factors such as parcel area, setbacks, maximum site coverage, landscaping requirements, parking requirements, maximum Floor Area Ratio (FAR) are used to estimate the maximum development potential of a single parcel of land. This level of analysis is not practical for examining the more than 300,000 parcels in the Developed Area. Therefore, some generalized assumptions were made for this report. The assumptions used to estimate development capacity of the Developed Area are based on existing citywide averages. All parcels were assigned to one of 18 general land use categories, with citywide averages calculated for each category (**Appendix 1**). These average levels of 'development' were then applied to all sites to provide an estimate of total development capacity. **Figure 15** outlines the two calculation methods used. Land use designations without maximum density provisions were estimated based on these citywide averages. Parcels with a DC (Direct Control) land use designation were given the maximum densities of the underlying or base DC district. Parcels with an estimated development capacity that is actually lower than existing development capacity (since citywide averages are used) were manually reassigned the existing development capacity.

Two methods were used to calculate maximum capacity based on existing land use:

Figure 15: Methods to Calculate Maximum Capacity

LAND USE DISTRICTS USING FLOOR AREA RATIO:

Total parcel area multiplied by the maximum Land Use Bylaw floor-to-area ratio (FAR) = gross floor area

- Gross floor area multiplied by a gross to net ratio = net floor area
- Split the net floor area in to residential and non-residential floor area. Multiple net floor area by per cent residential assumption = residential floor area.
- Residential floor area divided by average unit size = maximum residential units

LAND USE DISTRICTS BASED ON DENSITY:

Total parcel area multiplied by the maximum Land Use Bylaw density (units per hectare) = maximum residential units

Note: *This method only takes into account current land use, and does not consider potential land use, such as prescribed in a Local Area Plan. Potential capacity based on Local Area Plans will be dealt with separately in* **Section 4.0**.

Findings

Figure 17 summarises the results of the capacity calculations based on existing land use of vacant, underutilized and developed parcels by MDP typology. The Existing Units section establishes the number of existing units. Of most interest is the middle section, Potential New Units, which calculates the potential new units. The third section simply adds the existing and potential together to derive a total maximum capacity. The Developed Area could theoretically provide up to 293,233 new units if all vacant, underdeveloped and developed parcels were built to their maximum land use potential (**Figure 17**). However, this total includes 236,035 units on parcels that are not likely to redevelop. A far more realistic number is 57,198 new units, accounting for potential development on vacant or underutilized land, and discounting any residual capacity on developed land. **Map 4** illustrates where this capacity is generally located. **Part 4 -Development Capacity: Location-Based Analysis (pg37)** examines this capacity on a community level basis and highlights communities where there may be potential redevelopment opportunities.

"The Potential New Units can be summarized as the difference between the Maximum Units Under Existing Land Use and the number of Existing Units, or (Potential New Units) = (Maximum Units Under Existing Land Use) – (Existing Units). For example, if one parcel containing one single family home had a land use that allowed for a maximum of 100 units on the parcel, the number of potential new units would be 99. Figure 17 breaks this equation down by typology. For example, existing Land Use designations in Major Activity Centres allow for a total of 27,300 units. However, 5,432 units already exist in Major Activity Centres. Therefore, the difference of 21,898 units is the potential additional units Major Activity Centres have the capacity to absorb. However, for the purpose of this document, of more interest is just the potential additional units on vacant and underutilized land, which is 3,283 and 1,074 units respectively, for an immediate redevelopment potential of 4,357 units in Major Activity Centres."

Figure 16: Immediate Redevelopment Potential Summary

	Immediate Redevelopment Potential		
Developed Area	Vacant Land	Underutilized Land	Developed Land
Max Units	28,386	107,264	532,169
Existing Units	-0	-78,452	-296,134
Potential New Units	**28,386**	**28,812**	236,035

Figure 17:
Dwelling Unit Summary
by MDP Typology

Maximum Units Under Existing Land Use

Developed Area

637,037

	Total Units	Vacant	Underutilized	Developed	Immediate Redevelopment Potential Vacant + Underutilized
Centre City	70,188	8,770	7,691	53,727	16,461
Inner City	83,960	2,421	18,190	63,349	20,611
Established Areas		9,182	67,921	298,612	77,103
Major Activity Centres	27,300	3,283	1,144	22,873	4,427
Community Activity Centres	14,129	1,597	188	12,344	1,785
Urban Corridors	31,855	2,474	5,890	23,491	8,364
Neighbourhood Corridors	33,890	659	6,240	26,991	6,899
Developed Area	**637,037**	**28,386**	**107,264**	**501,387**	**135,650**
Change from previous report	0%	-0.1%	17%	-3%	13%

Existing Units

Developed Area

374,586

	Total Units	Vacant	Underutilized	Developed	Immediate Redevelopment Potential Vacant + Underutilized
Centre City	29,145	0	2,646	26,499	2,646
Inner City	54,755	0	12,664	42,091	12,664
Established Areas	246,617	0	57,488	189,129	57,488
Major Activity Centres	5,432	0	70	5,362	70
Community Activity Centres	4,050	0	50	4,000	50
Urban Corridors	14,155	0	2,612	11,543	2,612
Neighbourhood Corridors	20,432	0	2,922	17,510	2,922
Developed Area	**374,586**	**0**	**78,452**	**296,134**	**78,452**
Change from previous report	6%	0%	17%	10%	17%

Potential New Units

Developed Area

262,451

Vacant Developed Area: 28,386

\+

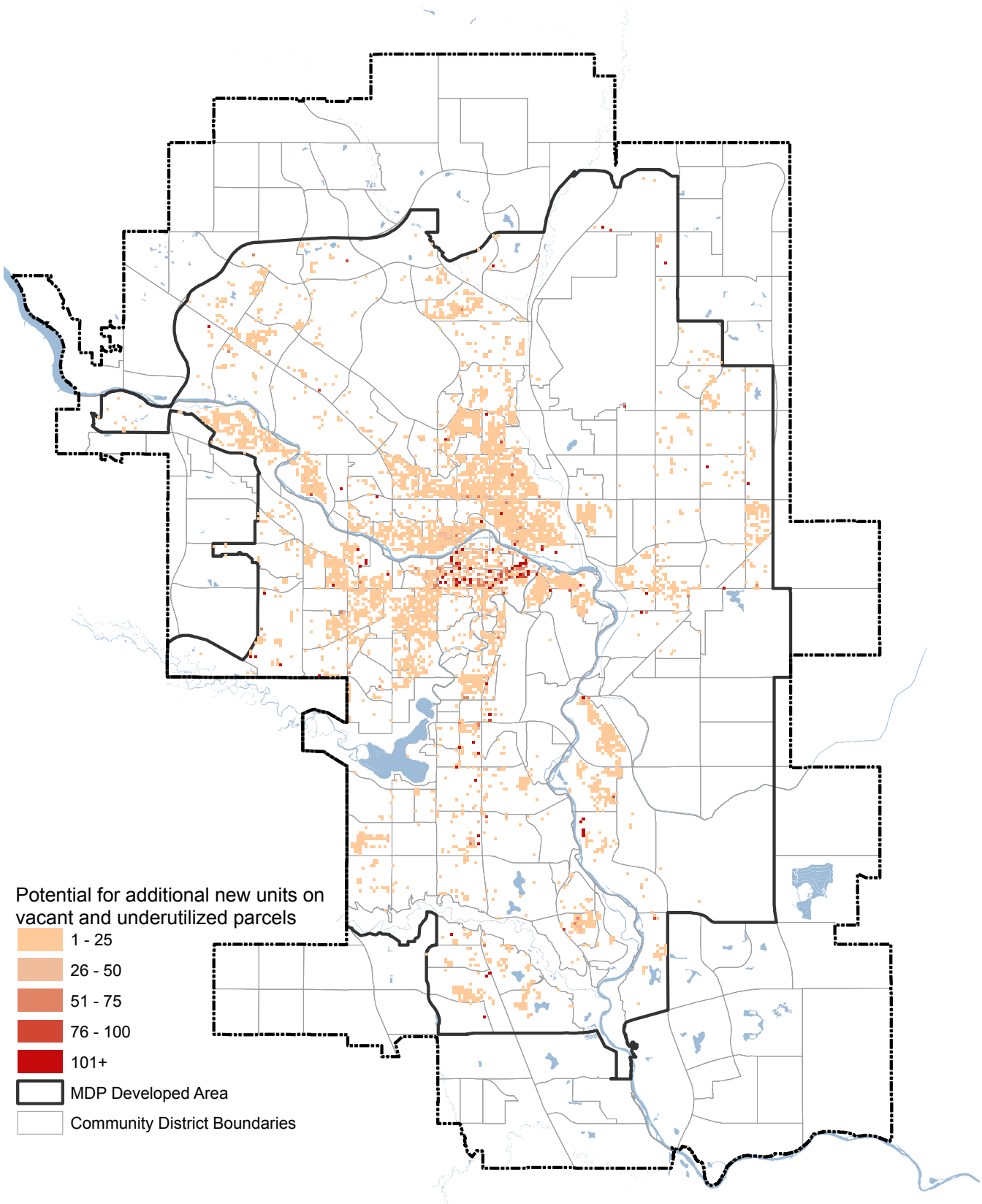
Underutilized Developed Area: 28,812

=

Immediate Redevelopment Potential for Developed Area: 57,198

	Total Units	Vacant	Underutilized	Developed	Immediate Redevelopment Potential Vacant + Underutilized
Centre City	41,043	8,770	5,045	27,228	13,815
Inner City	29,205	2,421	5,526	21,258	7,947
Established Areas		9,182	10,433	109,483	19,615
Major Activity Centres	21,868	3,283	1,074	17,511	4,357
Community Activity Centres	10,079	1,597	138	8,344	1,735
Urban Corridors	17,700	2,474	3,278	11,948	5,752
Neighbourhood Corridors	13,458	659	3,318	9,481	3,977

MAP 4: Developed Area Capacity of Redevelopment based on Existing Land Use -2015



Meeting MDP Targets

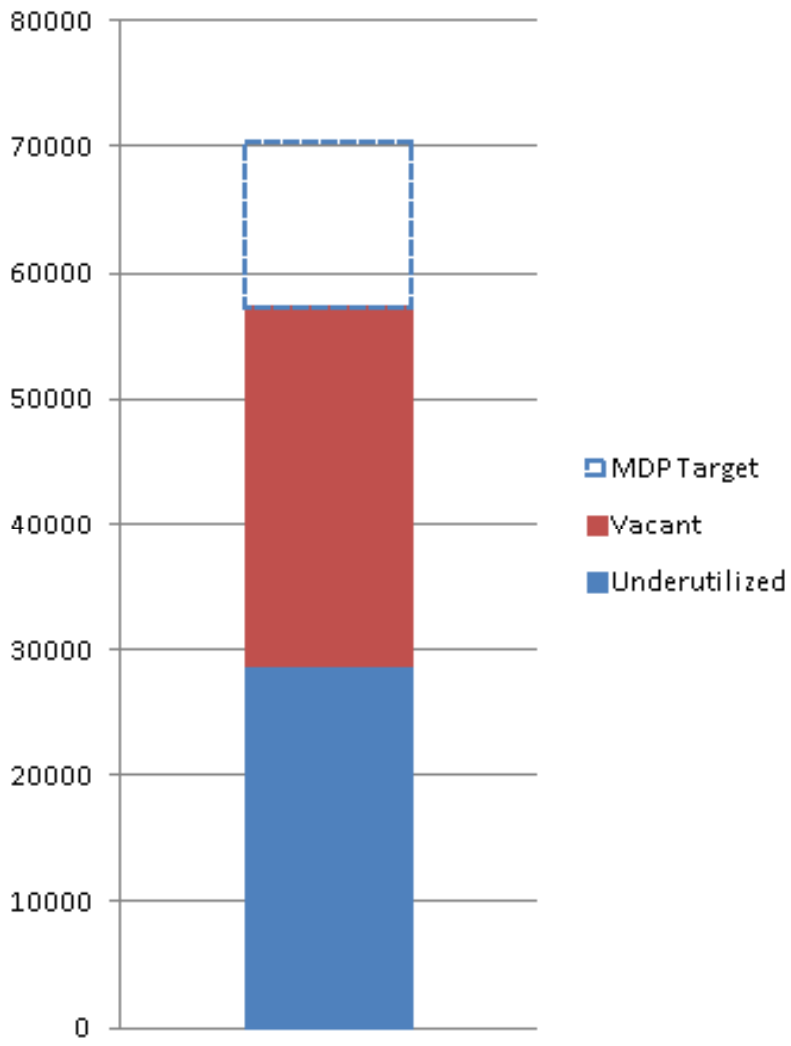
Based on existing land use, can the Developed Area accommodate 33 per cent of Calgary's future population growth by 2039? Approximately 70,500 new units are required in Developed Area to meet the MDP target and accommodate 33 per cent of Calgary's population growth by 2039.

- There is potential for 28,400 new units on vacant land, plus an additional 28,800 new units on underutilized land, for a total of 57,200 units (64% of the MDP target)
- An additional 13,300 units are still required to meet the MDP's 2039 target (**Figure18**).

Based on growth projections for the Developed Area:

- The potential 28,400 new units on vacant parcels is a 9-11 year land supply
- it would take 18 - 21 years to build at both vacant and underutilized

Figure 18:
Gap Between Potential New Development Based on Existing Land Use and MDP Target, in Units



13,300
units are still required to meet the MDP's 2039 target

total of
57,200
units

=

potential
28,400
vacant land

+

potential
28,800
underutilized land

Trends

Since this report was last published, using 2012 data, the total potential new units has increased by 8.2%. This growth is primarily due to the increase of underutilized parcels, which have increased from a capacity of 24,466 units in 2012 to 28,812 in 2015. Assessment values are broken into two categories: land value, and improvement (building) value. As the housing stock ages, the improvement (building) value decreases. Although some houses are improved or replaced and therefore increase in value, the majority of homes age. However, land value continues to increase in the city. Therefore, with overall higher land values and lower building values, the number of underutilized parcels has increased by 17.8% since 2012.

The number of potential units on vacant parcels remains relatively stable, having a decrease of only 28,402 to 28,386 units. Although dwelling units have been built upon vacant parcels, land use changes, especially in the centre city and areas such as West Campus and Currie Barracks have increased the potential for new units on vacant land. The overall net result is a 0.1% decrease in the total potential number of units on vacant land.

Figure 19: Immediate Redevelopment Potential Summary

Redevelopment Potential - New Units	2012 - 2015 Years Change		
	2012	2015	Change
Underutilized Parcels	24,466	28,812	17.8%
Vacant Parcels	28,402	28,386	-0.1%
Total Potential for Immediate Redevelopment	52,868	57,198	8.2%

Part 3

Developed Capacity Based on Local Area Plans

So far, this document has analyzed the capacity for new housing units in the Developed Area, based on existing land use. While this is a useful, there are other ways to look at how much capacity is available.

A second lens for viewing capacity is to examine the potential for redevelopment created through Local Area Plans, such as Area Redevelopment Plans and Station Area Plans.

The benefit of this measure is its alignment with The City's strategic priorities. Communities with Local Area Plans are areas where Council has chosen to intensify and allow growth and change, and has put policy in place to support this.

Conversely, while The City has the ability to create and approve policy, a number of factors outside of The City's control ultimately determine when, if and where redevelopment occurs, and at what rate. Further, policy does not always mean that a supportive land use is in place; a land use amendment may be required, which extends the redevelopment process.

Over the past several years, Council has approved more than 20 Local Area Plans that encourage sensitive intensification in the Developed Area in alignment with the MDP. Local Area Plans that predate the MDP that incorporate policies that support the pattern of intensification aligned with the MDP have also been included in this examination. Local Area Plans currently underway, which include the Downtown West Area Redevelopment Plan and Station Area Plans along the Southeast LRT (Greenline) have also been included. However, these plans are subject to change through the planning process are only current as of this report's publication date.

It is worth re-stating that there is overlap between capacity based on land use and capacity based on Local Area Plan, however, this report deals with these two measures separately.

Methodology

The method used to calculate capacity simply looked at the 20 most recent Local Area Plans and added up the possible new units as enabled by the plan. The existing land use of parcels was not considered in this analysis.

Findings

Figure 20 illustrates existing and potential residential development both in plan areas with approved policy and plan areas with policy currently in progress and not yet approved.

- There are currently 25,000 dwelling units built in selected key redevelopment areas with recently approved policy, and an additional 12,000 residents in areas with Local Area Plans underway.
- There is planned capacity for an additional 62,700 units in selected key redevelopment areas with recently approved policy, and a potential for an additional 24,500 units in areas with Local Area Plans along the way.
- If existing Local Area Plans build out to their full potential, and Local Area Plans currently underway are approved, the total number of units would meet the MDP's 2039 target. This is not to suggest that The City should stop writing policy for local area plans, as it is highly unlikely that all local area plans will build out to their full potential by 2039.
- Except for the Montgomery Corridor, The Bridges and Hillhurst/ Sunnyside, there is significant capacity for additional units in communities with Local Area Plans.
- Potential capacity in Unapproved Plans is highly speculative and subject to change as the policy develops, and should not be considered as approved numbers in any way.

Figure 20:
Existing and Potential Residential Development in Recent Local Plan Areas

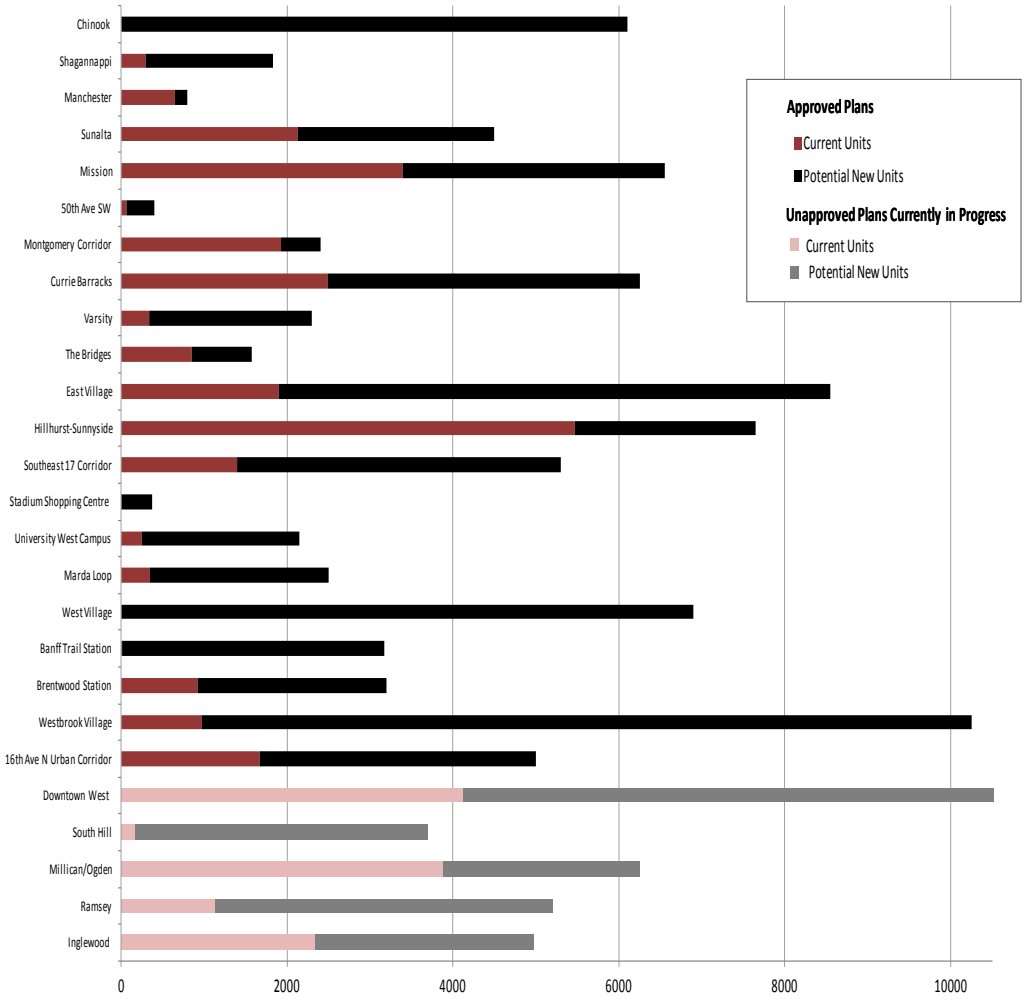
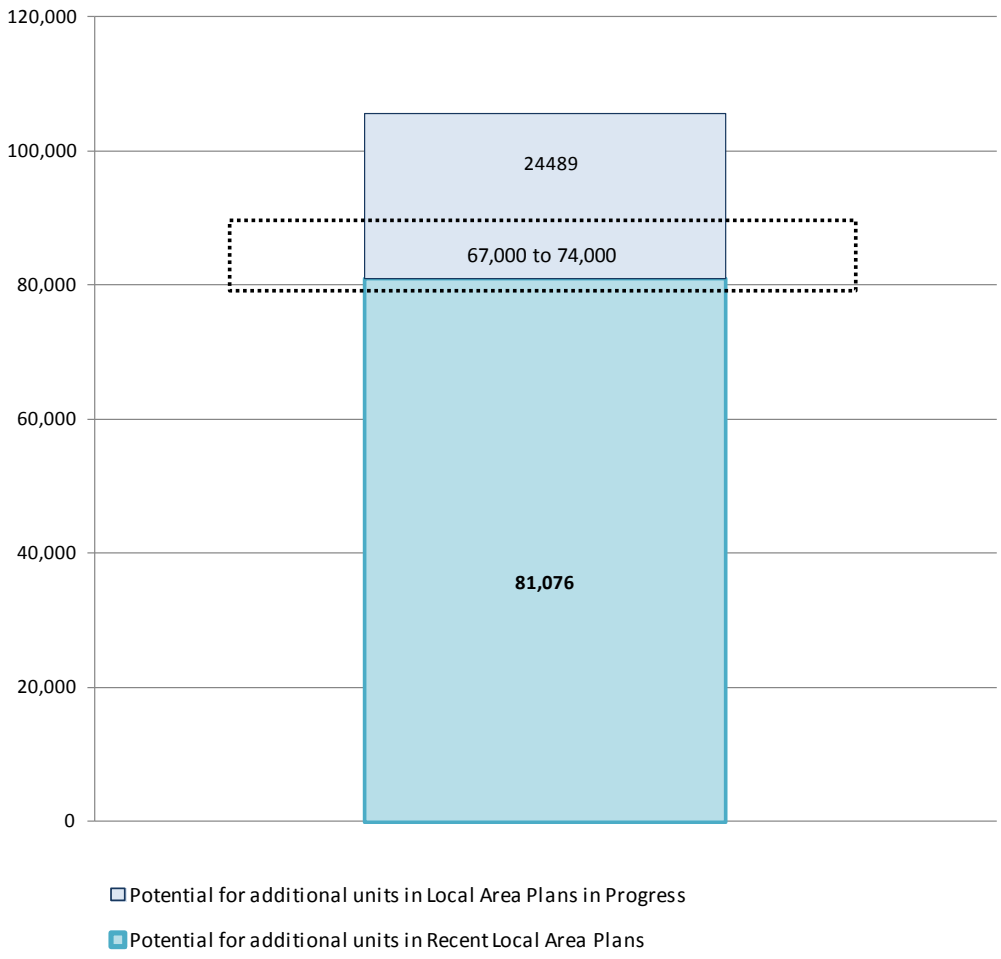


Figure 21:
Based on Approved Policy

Theoretically, enough capacity exists in approved policy areas to accommodate the growth in the Developed Areas required by the MDP by 2039. However, this would require every single policy plan to be built out, the likelihood of which is very low. Therefore, more local area plans are required to distribute the growth throughout more areas in the Developed Area.



	Current Units	Potential New Units	Policy Units	Pop 2039 (SS)	Pop 2039 (Policy)
Inglewood	2342	2641	4983	9813	9250
Ramsey	1130	4071	5201	11797	10560
Millican/Ogden	3891	2366	6257	14499	n/a
South Hill	174	3526	3700	7295	7270
Downtown West	4115	11885	16000		
Total	**11652**	**24489**	**36141**		

Development Capacity based on Outline Plans

Outline Plans are prepared as an initial stage in major subdivision applications. If a Local Area Plan exists, the Outline Plan refines the plan with land use information, among other details. The Outline Plan forms the basic concept for subsequent tentative plans. Many of the Local Area Plans have had Outline Plans submitted to the City. These Outline Plans, along with Outline Plans in areas with no Local Area Plan, have an estimated Capacity of 27,100 units. It should be noted that these 27,100 are not mutually exclusive from the capacity listed earlier in **Part 3** in the Local Area Plans capacity or the capacity based on existing land use in **Part 2**. Rather, this is an indication that 27,100 potential units are in a (relatively) ready-to-be-built state, although they may not have received final approval from The City. Some of the significant Outline Plans The City has received include plans located in the University District, East Village, Currie Barracks and Quarry Park.

Figure 22: Different Ways to Mesuring Existing Capactiy

There are different ways to measure existing capacity.

To achieve the targets of the MDP, we need to accommodate

70,500

more housing units in the Developed Areas by 2039. We are on our way to reaching this target through existing capacity in land use, policy and outline plans.

Land Use

We could develop up to

57,200

housing units without rezoning any land on vacant and underutilized lots.

The Land Use Bylaw sets specific rules for each property, including what the property can be used for and the maximum amount of development allowed. Changing a property's land use is sometimes referred to as "rezoning".

Vacant Land (estimate)

Initial estimates show that there is enough vacant land for up to

28,400

new housing units without rezoning.

If we developed this vacant land to its fullest potential, this would **meet our development needs for 9-11 years.**

Under Utilized Land (estimate)

Parcels where buildings are worth less than half of the land's value. This may signal redevelopment potential.

Initial estimates show that up to **30%** of parcels are underutilized.

28,800

additional units could be built on under-utilized lots where buildings are worth less than half of the land's value.

Local Area Plans (2014)

We could develop up to

62,700

housing units if all developed areas were built accordingly to their current local area plans.

e.g. Westbrook Village ARP
East Village ARP
Stadium Shopping Centre ARP

Local Area Plans

Sets the future vision for a community, including what type of development should be allowed and where.

Outline Plans

There is a capacity for an additional

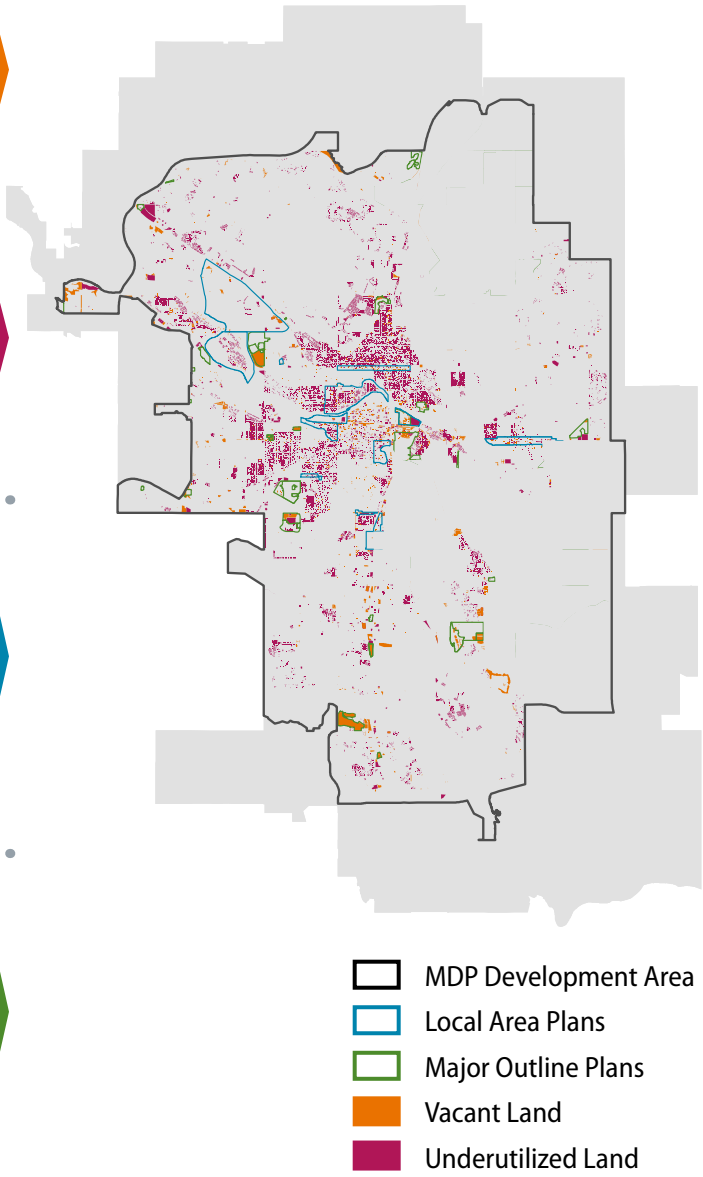
27,100

units in approved outline plans.

e.g. WestCampus
Currie Barracks
Shawnee Park

Outline Plans

Prepared as an initial stage in major subdivision applications. They form the basic concept for subsequent tentative plans.

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Part 4

Development Capacity: Location-Based Analysis

The previous sections identified how much capacity is potentially available in the Developed Area, but where is this capacity located, both in terms of land use district and community? This section provides an overview of the areas that may have redevelopment potential in terms vacant and underutilized land and maximized land use capacities.

Land Use Capacity Analysis: Total Under-built Capacity

This report has largely focused on the land use capacity of parcels that are vacant or underutilized, as these parcels present a higher likelihood for redevelopment in the short-term. However, it is also useful to examine the total built and un-built capacity of each residential land use to better understand the dynamics of Calgary's evolving built form.

Theoretically, if every parcel in the Developed Areas built out to its maximum number of units allowed by its land use, the Developed Areas could accommodate approximately 640,000 units. With an approximate 375,000 units currently existing in the Developed Area, and the potential for 57,000 additional units on vacant and underutilized parcels, there is an unused remainder capacity of 208,000 units available under land use. Because this potential is on parcels that are neither vacant nor underutilized, it is unlikely that this potential can be unlocked in the short-term. However, breaking down the potential into land use districts does provide some insight into where this potential is located.

For this analysis, only primarily residential land use districts are shown. Core areas, including the Downtown Commercial Core, East Village, Eau Claire, Chinatown, and Downtown West are largely excluded from this analysis due to their unique land use regulations. **Figure 23** shows the total land use capacity by residential land use district, in other words, the total capacity should the land use build out to its maximum potential. The chart also demonstrates the amount of capacity that is being filled by existing development, and the capacity on vacant and underutilized parcels. The majority of the un-built capacity in the Developed Areas is on parcels which have units, but which are not underutilized. However, this capacity is not evenly distributed among land uses.

Land Use Capacity Analysis: The Missing Middle

For the purpose of this analysis, land uses are categorized into low, medium and high densities. Low density districts include R-C1 (including R-C1N, R-C1L, R-C1s, and R-C1Ls) and R-C2 districts. These are single-detached and semi-detached homes. Medium density land uses are considered to be R-CG, M-CG, and M-C1 land uses. These are land uses which allow for row-housing or low-profile apartment style development. High density land uses include M-C2, M-H1, M-H2, and M-H3 districts. These are medium profile apartments to high rise apartments.

Not surprisingly, the lowest density land use, R-C1 is nearly at capacity (**Figure 24**), with only a small percentage of parcels being underutilized or vacant. R-C2, a slightly higher density but still low-density land use does have some remaining capacity. Overall, only approximately 14% of the total land use capacity in the Developed Areas is found in areas with low-density land use districts (**Figure 25**), but 84% of the residential district's area has low-density land uses (**Figure 26**).

Conversely, the high density land uses only account for approximately 5% of the residential parcel area, but hold 23% of the un-built capacity. Of note, areas with high-density land uses have seen the strongest percent increase of units being built since 2010. Since 2010, the number of units on high-density land use districts has increased by 7%, compared to an increase of only 1% on low- and medium-density districts (**Figure 27**). Nearly all this growth has been on M-H2 and M-C2 land uses specifically (**Figure 28**).

Perhaps the most interesting finding is the missing medium-density land use. Approximately 63% of the un-built capacity is on medium-density R-CG, M-CG, or M-C1 parcels. However, combined these land uses only account for approximately 11% of the residential land uses. This is a key fact to help understand how Calgary can evolve. Density is often perceived as a negative force that erodes communities, and there is a perception that single-detached homes are being replaced by high-rises. While this statement is slightly hyperbolic, it does hold some truth. Low density land uses are at or nearing capacity. These land uses hold limited potential for significant future growth. Likewise, the total number of units on high-density land uses has increased by 7% over the last five years, far outpacing the growth rate of units on low- and medium-density land uses. It appears that as low-density land uses have filled to capacity, and instead of density moving towards the next step in the evolution of built form, medium-density, it has leap-frogged to high-density type development. However, the value of medium-density land uses should not be ignored. They hold 63% of the un-built residential land use capacity on only 11% of the land. This means the majority of communities will not be affected by development on these sites, and density will not occur in the form of high-rises.

Figure 23:
Total Land Use Capacity
by Land Use District

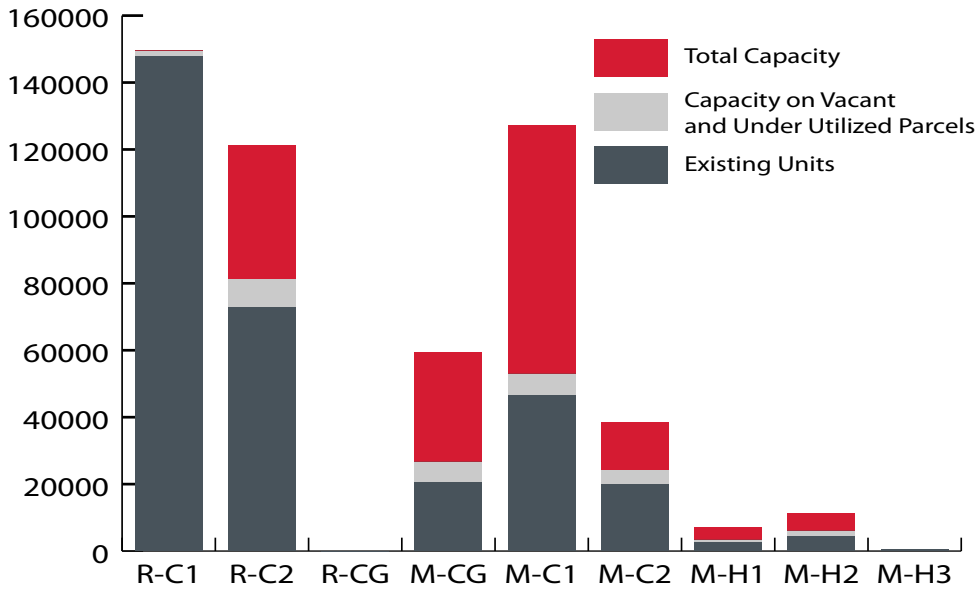


Figure 24:
Remaining Capacity
by Land Use Density

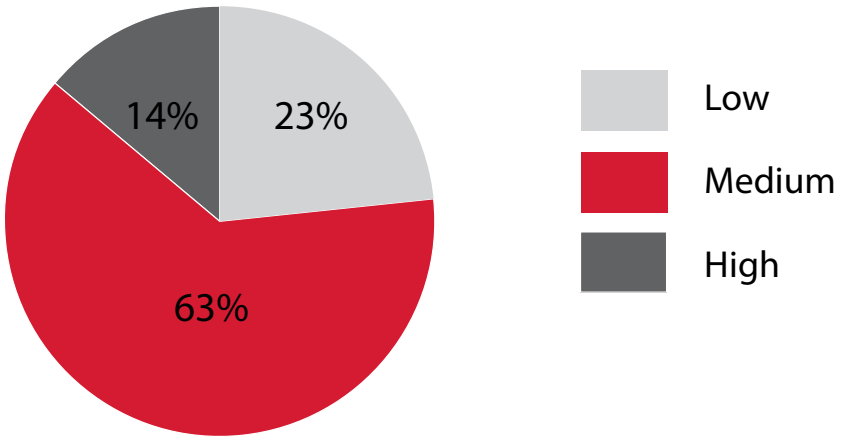


Figure 25:
Total Parcel Area
by Land Use District

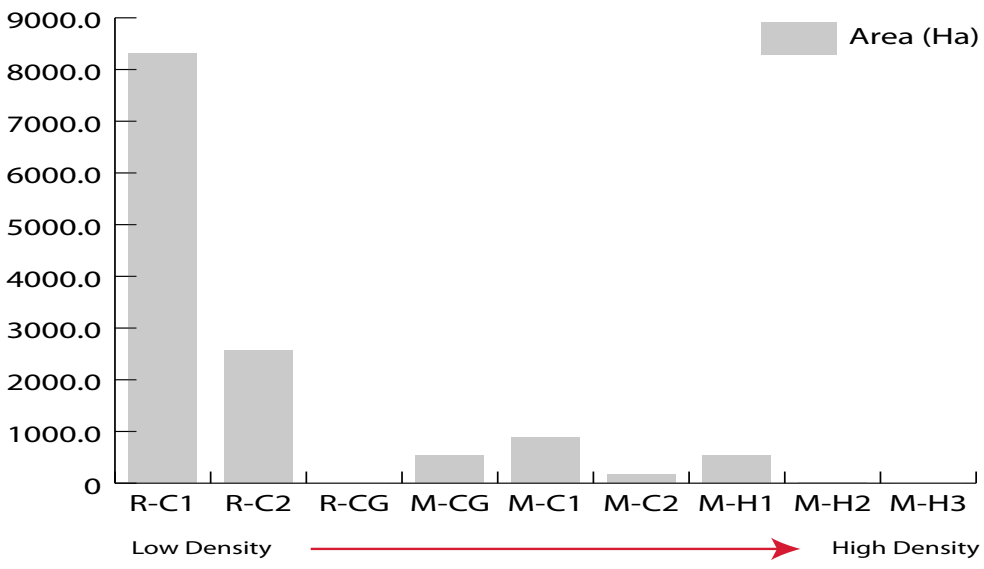


Figure 26:
Percentage of Land Area by Land Use Density

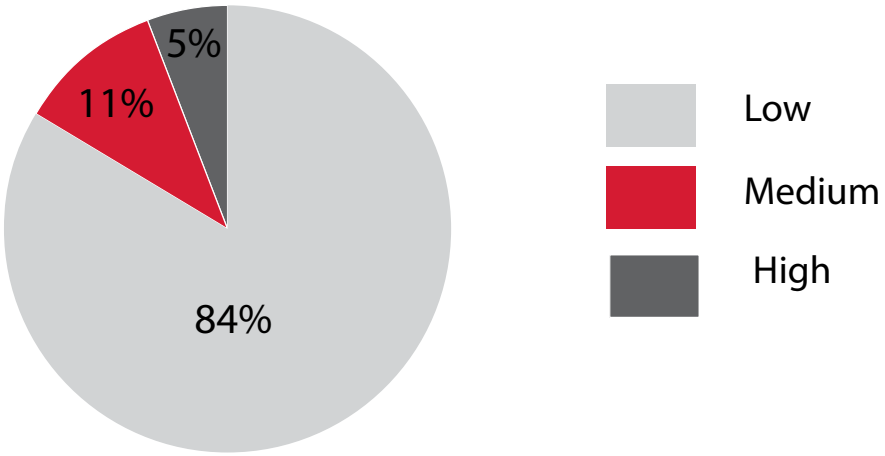


Figure 27:
Percent Change in Number of Units on Land Use Type, 2010 -2015

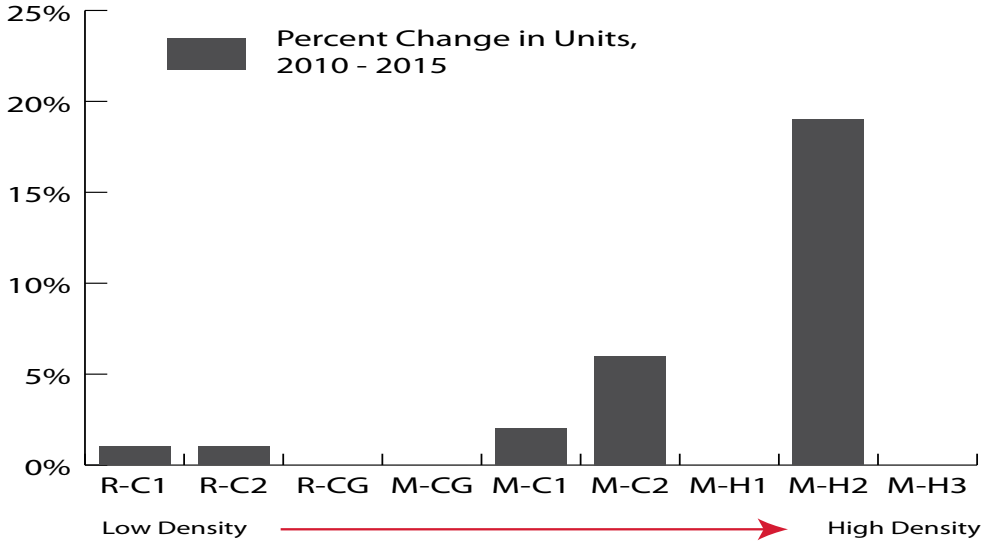
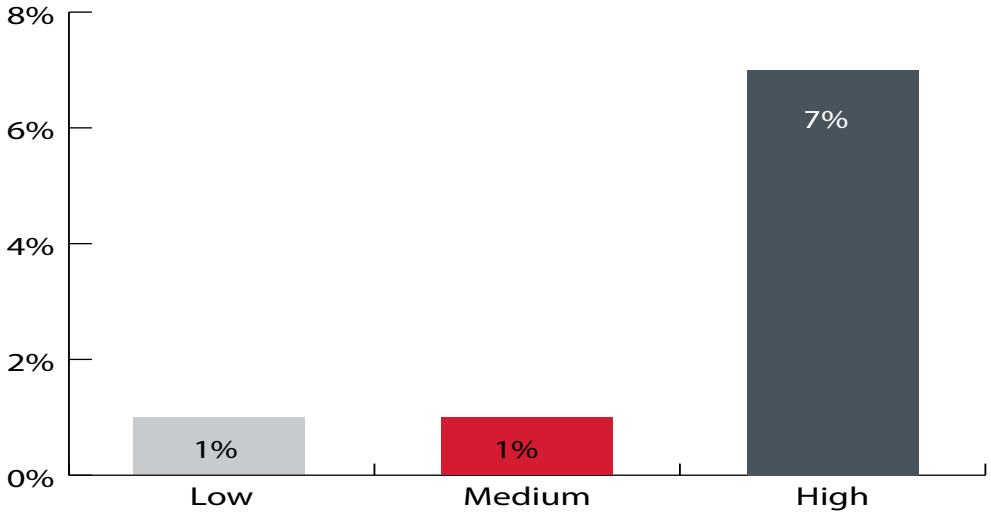


Figure 28:
Percent Change in Total Number of Units by Land Use Density *2010 - 2015



Development Capacity: Community-Based Analysis

This section summarizes various measures of capacity by community.

Figure 29 shows each community within the Developed Area and its relative ranking for each capacity measure. High rankings represent communities that have relatively more capacity. A green value represents a high ranking, or a high amount of potential capacity, while a red value represents a low ranking, or a low amount of potential capacity. The values on the table do not represent absolute numbers, but rather the relative ranking from 1 (being the community with the most capacity) to 158 (being the community with the least capacity). The following capacity measures are analysed:

A. **Highest Percent of Residential Land Designed R-C2** – This is a measurement of the total land area with an R-C2 designation divided by the total residential land. The R-C2 designation is popular for smaller-scale intensification because it allows single detached, semi-detached, duplex, and secondary suite dwellings as discretionary uses. Consequently, a single-detached dwelling on a larger lot can be converted into two dwellings relatively easily, effectively doubling the density of the original parcel. This process does not require a land use amendment, which eliminates a step in the development process and reduces time, cost and risk to the developer.

B. **Highest Total Number of Parcels Designated R-C2 with Areas Greater than 500 m2** – This measure ranks communities by the total number of large R-C2 parcels. While the previous measure captures the prevalence of an R-C2 parcel within a community, it does not take into account that many R-C2 lots have already been subdivided into smaller lots and an additional unit is not permitted. A count of large R-C2 parcels provides an inventory of lots that may be available for subdivision and/or construction of an additional unit. Most inner-city lots have frontages onto the street between 7.5 and 17 metres (25 to 50 feet). Lots depths are on average approximately 40 metres, which indicates these parcels range from 300 to 680 square metres in area. By querying parcels that exceed the midpoint (500 square metres), one can determine how many R-C2 lots are large enough to accommodate an additional dwelling. Because of the relative ease of rezoning, subdividing, and constructing single and semi-detached dwellings on R-C2 parcels compared to higher density land uses and building forms, the total number of R-C2 parcels, as well as the number of vacant and underutilized R-C2 parcels in a community changes frequently.

C. **Greatest Total Additional Capacity on M-CG, M-C1, and M-X1 Parcels** – This is a measurement of the difference between the hypothetical maximum allowable number of units on M-CG, M-C1 and M-X1 parcels and the existing number of units on these parcels. As discussed previously in **Part 4**, there is ample capacity in medium-density land uses, which allow for low-profile, multi-unit types of structures. However, this may not be useful for immediate redevelopment potential, as the parcels may have existing

multi-residential structures on them, which may not be built to their maximum land use capacity, but are in good condition and not underutilized.

D. **Highest Number of Vacant Parcels** – These are the communities with the greatest total number of vacant parcels. Overall, vacant land available for redevelopment within the Developed Area is limited. These communities are located in the Centre City and Inner City areas of the city, where parking lots are more commons and sites are being held for the right market for future development. Other communities which are high on the rankings include communities which are undergoing redevelopment, as houses are demolished before new ones are constructed, creating temporarily vacant lots in the process.

E. **Greatest Additional Capacity on Vacant Parcels** - This is a ranking of the communities which have vacant lots with land use in place to support the greatest number of new units. The communities may not necessarily have many vacant parcels, but the vacant parcels that do exist have potential for many units based on their land use.

F. **Highest Number of Underutilized Parcels** – Communities have been ranked by their total number of underutilized parcels. All parcels with a building valued at less than half of its land value have been flagged as underutilized. This allows us to estimate how much redevelopment potential remains on parcels that have not been built to their full potential. While these communities may have a seemingly high number of underutilized parcels, the potential for redevelopment under the existing land use may be relatively low.

G. **Greatest Additional Capacity on Underutilized Parcels** – Communities are ranked by the total number of additional units that could be built on underutilized parcels.

H. **Most Built-out to Land Use Maximum** – This is a measure of the difference between the theoretical maximum number of units allowable under the Land Use Bylaw and the existing number of units in the community. Not surprisingly, communities with major redevelopment plans, such as University District, Currie Barracks, Shaganappi, or Shawnee Slopes rank high on the list.

Overall, no one community is best able to accommodate all forms of intensification based on land use, and no one community is totally incapable of increasing capacity based on land use. However, some trends do emerge, and there are communities that have characteristics that make redevelopment and intensification more easily achieved, and other communities which exhibit fewer intensification opportunities.

Communities that tend to have higher ranking for increased capacity tend to be older and Inner City communities which feature a range of land uses and housing forms. Because of their age and proximity to the centre, the house value may be low but the land value may be high, leading to higher underutilization rates. **Figure 30** shows 15 communities which tend to have the greatest potential for additional capacity based on land use.

Communities that tend to have lower potential to add significant capacity are communities that are more homogenous in the land uses. Often they are newer, or the homes more expensive, meaning there is less likelihood for the parcels to be underutilized. **Figure 31** shows 15 communities which have the least potential for additional capacity based on land use.

Figure 29:
Communities Relative Ranking for Capacity Measure

	A Highest Percent of Residential Land Designated R-C2	B Highest Total Number of Parcels Designated R-C2 with Areas Greater than 500 m2	C Greatest Total Additional Capacity on M-CG, M-C1, and M-X1 Parcels	D Highest Number of Vacant Parcels	E Greatest Additional Capacity on Vacant Parcels	F Highest Number of Underutilized Parcels	G Greatest Addtional Capacity on Underutilized Parcels	H Most Built-out to Land Use Maximum
Abbeydale	3	21	75	138	132	99	56	75
Acadia	84	63	16	46	37	7	60	44
Albert Park/Radisson Heights	28	19	49	35	64	27	59	124
Altadore	12	11	55	30	60	67	42	88
Applewood Park	41	66	111	91	41	132	98	114
Arbour Lake	61	35	71	80	68	80	38	76
Banff Trail	7	2	121	41	67	42	44	121
Bankview	27	38	84	46	51	80	31	112
Bayview	118	113	107	123	119	100	150	27
Beddington Heights	40	47	13	123	119	15	15	69
Bel-Aire	118	113	133	105	119	116	150	154
Beltline	118	113	133	1	1	97	1	12
Bowness	44	3	26	3	27	10	6	91
Braeside	117	113	10	138	132	17	111	36
Brentwood	118	113	62	50	65	6	64	117
Bridgeland/Riverside	26	59	86	14	15	58	29	28
Britannia	118	113	125	105	95	107	150	129
Cambrian Heights	36	30	105	61	98	49	18	56
Canyon Meadows	102	102	11	61	65	12	58	54
Capitol Hill	4	10	106	18	53	46	36	115
Castleridge	49	88	117	123	119	92	115	155
Cedarbrae	43	54	31	46	50	21	49	66
Charleswood	108	104	110	138	132	20	92	143
Chinatown	118	113	133	35	32	154	140	155
Chinook Park	118	113	133	123	119	60	37	72
Christie Park	93	106	119	91	70	110	114	37
Citadel	78	56	35	91	46	135	103	110
Cliff Bungalow	118	113	103	91	76	132	61	81
Coach Hill	63	100	39	113	112	78	97	50
Collingwood	100	80	97	113	132	39	75	35
Coral Springs	73	72	116	138	132	137	131	139
Country Hills	118	113	66	66	92	154	126	89
Crescent Heights	23	24	70	7	13	41	9	53
Currie Barracks	118	113	133	50	132	142	2	2
Dalhousie	80	68	43	91	112	11	71	46
Deer Ridge	55	37	18	123	132	29	8	11
Diamond Cove	83	95	133	138	132	126	136	149
Discovery Ridge	118	113	122	113	101	138	134	145
Douglasdale/Glen	103	69	58	10	4	64	79	45
Dover	52	51	25	80	22	146	80	97
Downtown Commercial Core	118	113	133	4	5	115	5	18
Downtown East Village	118	113	133	8	3	147	86	7
Downtown West End	118	113	133	22	8	144	26	21
Eagle Ridge	118	113	133	138	132	129	148	9
Eau Claire	118	113	133	80	52	150	91	30
Edgemont	74	47	12	91	104	52	96	92
Elbow Park	118	113	133	22	73	54	113	150
Elboya	101	88	115	19	49	93	123	144
Erin Woods	19	58	76	105	132	112	99	127
Erlton	67	100	82	37	59	118	46	42
Fairview	118	113	133	123	112	16	121	155
Falconridge	37	55	24	123	112	69	82	98
Forest Heights	39	50	51	74	86	134	93	107
Forest Lawn	25	4	23	24	31	120	40	57
Garrison Woods	33	86	73	123	119	68	78	59
Glamorgan	91	75	2	70	14	25	65	10
Glenbrook	30	14	6	66	79	22	43	39
Greenview	20	40	53	138	132	123	74	23
Hamptons	77	45	83	70	41	121	90	128
Harvest Hills	38	36	44	91	29	149	118	40
Hawkwood	97	61	93	80	68	33	66	137
Haysboro	118	113	67	37	12	9	68	33
Hidden Valley	109	105	92	80	92	73	128	138
Highland Park	8	9	64	9	2	39	20	13
Highwood	1	7	124	55	89	35	13	67
Hillhurst	42	33	32	19	34	43	3	109
Hounsfield Heights/Briar Hill	110	110	89	61	99	95	132	86
Huntington Hills	65	34	8	91	76	2	35	99
Inglewood	34	26	59	6	19	45	28	70
Kelvin Grove	118	113	94	80	104	86	142	65
Killarney/Glengarry	18	13	33	58	72	55	23	80
Kingsland	64	49	54	33	18	37	24	26
Lake Bonavista	118	113	63	105	83	1	102	100
Lakeview	92	73	81	123	119	8	100	120
Lincoln Park	118	113	77	91	73	147	52	52
Lower Mount Royal	114	113	131	66	47	142	70	83
Macewan Glen	99	108	80	138	132	88	136	125
Manchester	118	113	133	11	24	140	69	43

High Ranking — Low Ranking

	A: Highest Percent of Residential Land Designated R-C2	B: Highest Total Number of Parcels Designated R-C2 with Areas Greater than 500 m2	C: Greatest Total Additional Capacity on M-CG, M-C1, and M-X1 Parcels	D: Highest Number of Vacant Parcels	E: Greatest Additional Capacity on Vacant Parcels	F: Highest Number of Underutilized Parcels	G: Greatest Additional Capacity on Underutilized Parcels	H: Most Built-out to Land Use Maximum
Marlborough	96	103	36	123	119	91	122	104
Marlborough Park	107	111	17	138	132	108	144	73
Martindale	45	77	87	66	84	135	112	146
Mayland Heights	32	18	48	80	119	48	27	84
Mckenzie Lake	75	53	52	50	45	62	73	131
Meadowlark Park	118	113	133	80	86	102	138	132
Midnapore	89	80	7	50	44	51	21	25
Millrise	70	99	68	74	61	79	104	113
Mission	118	113	132	29	38	130	47	103
Monterey Park	59	84	74	113	28	128	116	141
Montgomery	29	22	88	21	47	30	16	90
Mount Pleasant	2	6	114	14	29	31	14	68
North Glenmore Park	51	42	129	74	112	36	76	142
North Haven	57	79	102	138	132	61	77	122
North Haven Upper	118	113	133	138	132	109	150	158
Oakridge	112	88	30	113	89	13	120	60
Ogden	21	1	21	2	16	72	30	49
Palliser	115	113	15	138	132	73	146	16
Parkdale	14	20	113	123	132	113	67	41
Parkhill	13	39	123	37	36	106	62	74
Parkland	118	113	126	138	132	18	139	135
Patterson	94	84	1	27	53	127	127	8
Penbrooke Meadows	66	78	20	138	132	144	142	101
Pineridge	68	95	5	105	101	94	51	51
Point Mckay	85	113	109	138	132	156	150	111
Pump Hill	88	82	104	91	86	89	125	78
Queens Park Village	118	113	108	138	132	156	150	24
Queensland	62	93	41	138	132	14	117	79
Ramsay	6	27	127	13	21	52	32	62
Ranchlands	47	45	4	138	132	28	34	34
Red Carpet	118	113	133	80	38	151	150	133
Renfrew	9	5	45	14	35	58	11	38
Richmond	15	15	78	27	80	76	54	106
Rideau Park	118	113	118	70	92	124	148	14
Riverbend	31	32	72	5	20	63	33	82
Rosedale	118	113	130	41	81	71	110	140
Rosemont	35	43	128	123	108	90	105	136
Rosscarrock	16	16	99	24	58	46	25	96
Roxboro	118	113	133	74	108	124	150	153
Rundle	98	106	3	70	61	114	119	63
Rutland Park	54	44	19	138	132	75	72	6
Sandstone Valley	58	74	56	113	95	77	89	93
Scarboro	118	113	133	91	108	95	130	152
Scarboro/ Sunalta West	118	113	133	123	119	119	147	123
Scenic Acres	104	87	61	41	23	84	108	116
Shaganappi	24	25	112	61	9	104	50	5
Shawnee Slopes	86	83	133	31	7	131	124	4
Shawnessy	56	52	57	91	17	44	53	47
Signal Hill	79	57	28	12	11	32	83	58
Silver Springs	87	66	22	113	95	5	57	85
Somerset	118	113	100	91	38	151	129	95
South Calgary	17	29	40	41	57	82	22	55
Southview	111	95	98	80	26	105	87	71
Southwood	81	61	27	74	10	19	12	32
Spruce Cliff	22	23	38	80	56	103	7	19
St. Andrews Heights	118	113	96	105	112	111	39	29
Strathcona Park	82	88	46	58	91	98	109	87
Sunalta	118	113	85	26	33	101	10	17
Sundance	71	64	69	41	104	87	63	126
Sunnyside	50	88	65	55	55	66	4	119
Temple	53	93	34	138	132	138	133	118
Thorncliffe	60	31	14	46	76	3	55	77
Tuxedo Park	10	17	47	17	43	50	17	61
University District	118	113	133	123	6	156	150	1
University Heights	95	95	120	55	84	85	95	20
University Of Calgary	118	113	133	91	101	151	135	3
Upper Mount Royal	116	111	133	61	104	70	84	134
Valley Ridge	72	41	95	58	73	140	141	94
Varsity	106	70	9	37	99	4	81	48
Vista Heights	105	109	42	113	119	122	101	15
West Hillhurst	5	8	90	33	71	56	41	108
Westgate	69	59	91	113	108	24	85	102
Whitehorn	48	64	79	113	112	116	88	147
Wildwood	90	70	133	105	82	26	107	148
Willow Park	118	113	37	74	61	33	48	31
Windsor Park	46	28	101	50	158	83	45	105
Winston Heights/Mountview	11	12	50	31	25	65	19	22

Figure 30:
Communities Relative Ranking for Capacity Measure - Greatest Potential for Additional Capacity

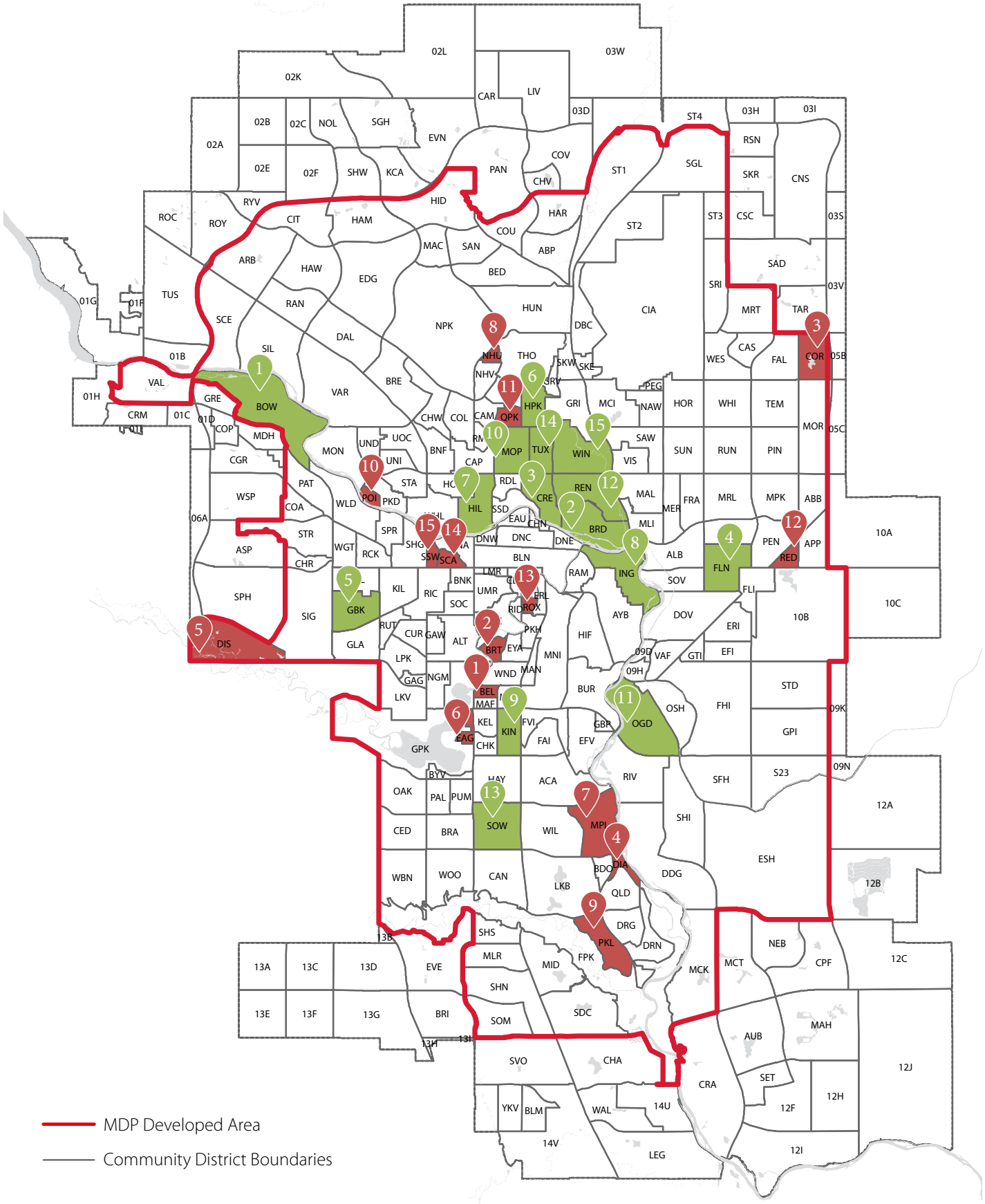
1	Bowness
2	Bridgeland/Riverside
3	Crescent Heights
4	Forest Lawn
5	Glenbrook
6	Highland Park
7	Hillhurst
8	Inglewood
9	Kingsland
10	Mount Pleasant
11	Ogden
12	Renfrew
13	Southwood
14	Tuxedo Park
15	Winston Heights/Mountview

"Building Permits closely follow economic trends. Single/Semi units tend to stay most stable yearly, while Multi units vary year by year.."

Figure 31:
Communities Relative Ranking for Capacity Measure - Least Potential for Additional Capacity

1	Bel-Aire
2	Britannia
3	Coral Springs
4	Diamond Cove
5	Discovery Ridge
6	Eagle Ridge
7	Maple Ridge
8	North Haven Upper
9	Parkland
10	Point Mckay
11	Queens Park Village
12	Red Carpet
13	Roxboro
14	Scarboro
15	Scarboro/Sunalta West

* *Lists do not meant to presume or preclude development potential in listed and non-listed communities. Centre City communities and communities undergoing large scale redevelopment (Currie Barracks, University District, etc.) have been excluded. Lists were created by adding rankings across each category, and ranking the totals.*


MDP Developed Area
Community District Boundaries

Developed Area: Unit Absorption and Forecast 2014 – 2018

Equally important to the question of capacity is absorption, or how quickly new units will enter the market. While previous sections examined the capacity potentially available in the Developed Area, this section will estimate the number of units that will go into the Developed Area over the next five years, by type, and the rate at which they will be absorbed as housing.

Absorption data is based off of issued Building Permits from 2010 to 2015 (**figure 32**). Data is provided for the both the Developed Areas (**figure 33**) and for the remainder of the city, which is referred to as the Actively Developing and Recently Completed Communities for comparison purposes (**figure 34**). Together, these two areas combine to equal the citywide total (**figure 35**). Based off of this data, from 2011 to 2015 the Developed Areas captured:

- 20% of all single/semi units (approximately 1000 per year)
- 46% of all multi-units (approximately 2600 per year)

Figure 32:
New Single/Semi and Multi Unit Building Permits Issued (2010 - 2015)

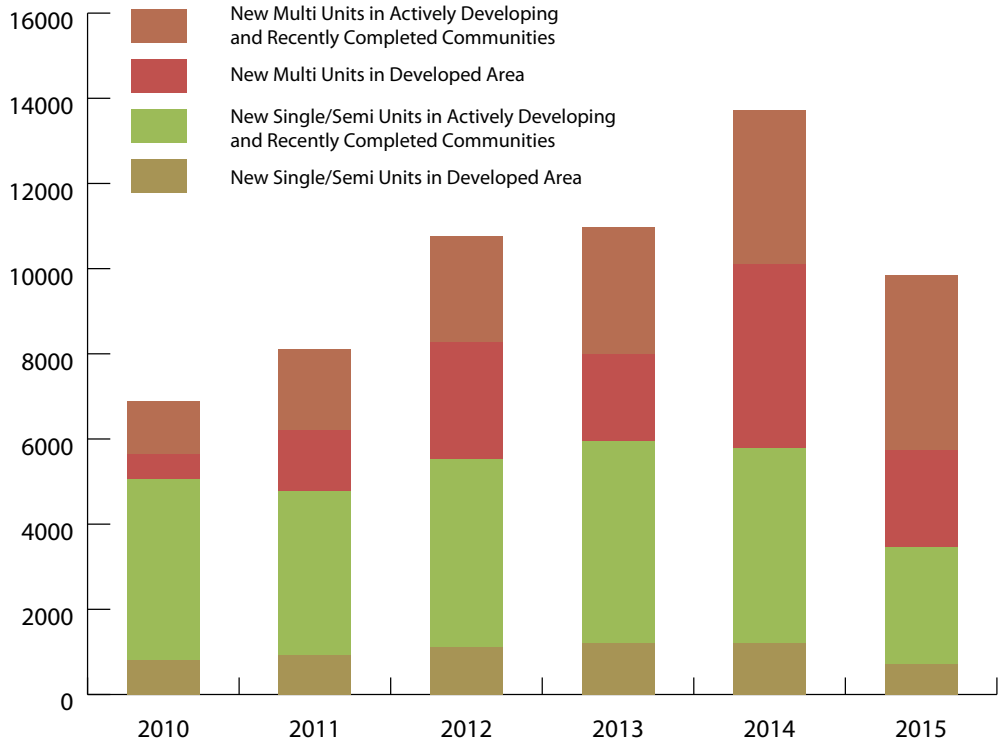


Figure 33:
New Unit Absorption - Developed Areas

Year	2010	2011	2012	2013	2014	2015	2011-2015	Yearly Average
Total New Units	1401	2365	3890	3260	5523	3003	18042	3608
New Single/Semi Units in Developed Area	807	930	1126	1206	1219	714	5195	1039
Single/Semi Share in Developed Area	58%	39%	29%	37%	22%	24%	29%	29%
Percent of Citywide Single/Semi Built in Developed Area	16%	19%	20%	20%	21%	21%	20%	20%
New Multi Units in Developed Area	594	1435	2764	2054	4304	2289	12846	2569
Multi Share in Developed Areas	42%	61%	71%	63%	78%	76%	71%	71%
Percent of Citywide Multi Built in Developed Areas	*32%*	*43%*	*53%*	*41%*	*54%*	*36%*	*46%*	*46%*

Figure 34:
New Unit Absorption - Actively Developing and Recently Developed Areas

Year	2010	2011	2012	2013	2014	2015	2011-2015	Yearly Average
Actively Developing and Recently Developed Communities Total New Units	5489	5744	6865	7715	8210	6835	35368	7074
New Single/Semi Units in Actively Developing and Recently Completed Communities	4249	3841	4393	4735	4578	2741	20288	4058
Single/Semi Share in AD and RD	77%	67%	64%	61%	56%	40%	57%	57%
New Multi Units in Actively Developing and Recently Completed Communities	1240	1903	2472	2980	3632	4094	15081	3016
Multi Share in AD and RD	*23%*	*33%*	*36%*	*39%*	*44%*	*60%*	*43%*	*43%*

Figure 35:
New Unit Absorption - Citywide Total

Year	2010	2011	2012	2013	2014	2015	2011-2015	Yearly Average
Citywide	6890	8109	10755	10975	13733	9838	53410	10682
Single/Semi	5056	4771	5519	5941	5797	3455	25483	5097
Single/Semi Share Citywide	73%	59%	51%	54%	42%	35%	48%	48%
Multi	1834	3338	5236	5034	7936	6383	27927	5585
Multi Share Citywide	*27%*	*41%*	*49%*	*46%*	*58%*	*65%*	*52%*	*52%*

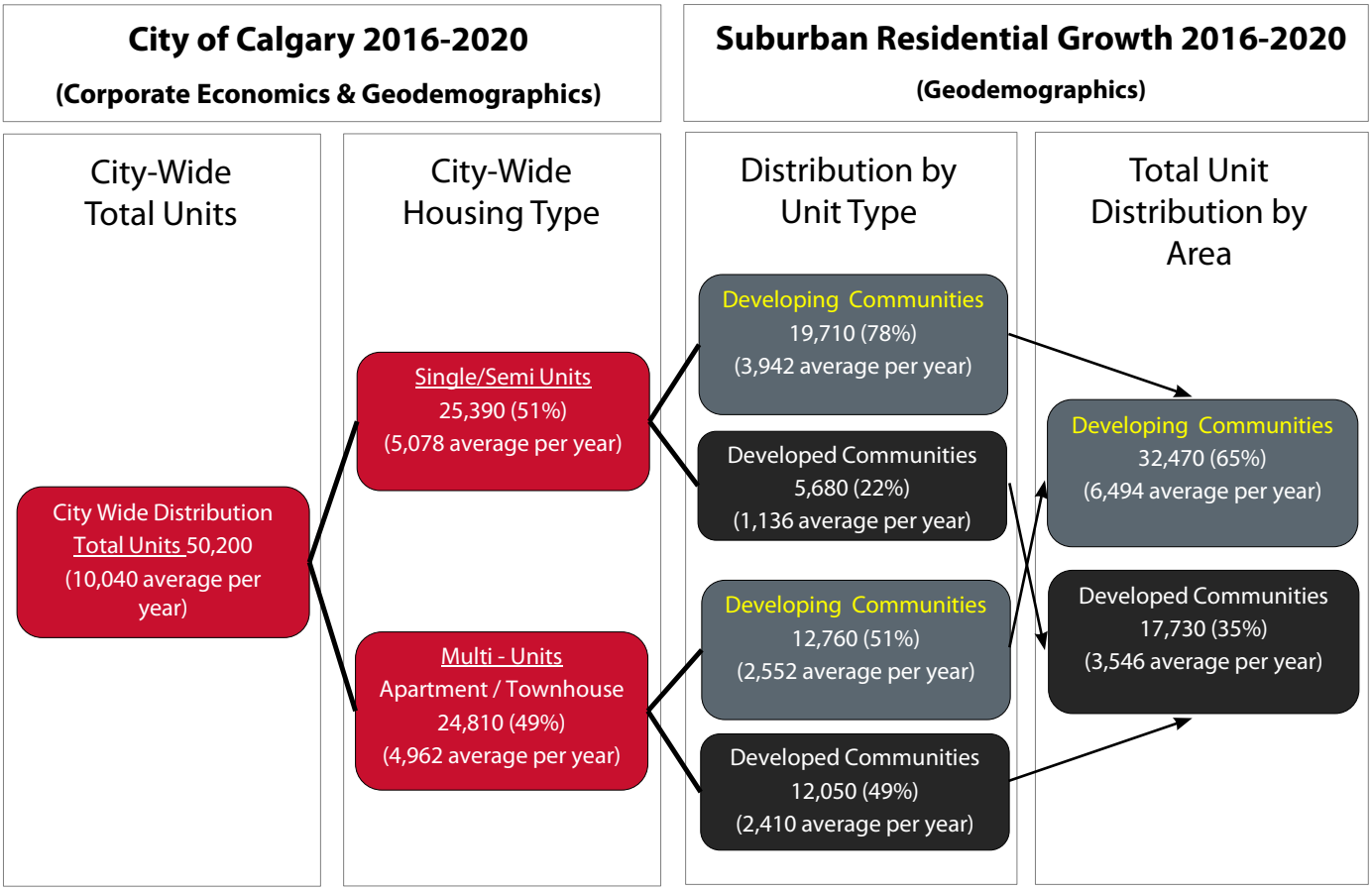
Forecasted Housing Absorption Rates, 2016 – 2020

Figure 36 illustrates the city-wide housing forecast for 2016 - 2020. This forecast comes from the Suburban Residential Growth document. The estimated number of each unit type was provided by The City of Calgary Corporate Economics. The forecasted new units are divided by housing type (single/semi detached units, or multi units) expected to be built over the next five years. Then, a percentage of each of these types are assigned to the Developing Area and Developed Communities, partly based on historical averages. For 2016 - 2020, a city-wide total of 50,200 new housing units are forecast for Calgary. Developed Communities' share of this total, by type, is summarized in **Figure 37**.

It is important to note that there is a key distinction between the data presented in this section and the data appearing elsewhere in the document. In all other sections of the document, the Developed Area refers to the MDP defined boundary, as described in **Part 1**. In this section, forecasts apply to Developed Communities. These include communities that are not within the MDP defined Developed Area, but are Recently Completed, and no longer part of the Actively Developing Communities. Currently, these communities include Bridlewood, Chaparral, Cougar Ridge, Country Hills Village, Coventry Hills, Crestmont, Greenwood/ Greenbriar, New Brighton, Panorama, Rocky Ridge, Royal Oak, Taradale, and Tuscany. However, because these communities were recently completed and the amount of underutilized and vacant parcels within them is negligible, little unit growth is expected in these communities within the next five years.

The single/semi forecast remains relatively stable compared to the historic trend, rising from the trend of about 1000 units per year from 2011 to 2015, to 1100 per year. The multi-unit forecast drops below the current trend of approximately 2600 multi units absorbed each year to a forecasted 2400 multi units per year. This is largely due to an overly strong market over the past five years, and an expected cooling of the market in the upcoming five years.

Figure 36: Housing Forecast 2016-2020 City & Suburbs



Source: City of Calgary: Corporate Economics – Calgary & Region Economic Outlook 2015-2020, Planning & Development

Figure 37: Developed Area Housing Forecast 2016 - 2020

	Single/Semi	Multi Units	Total Unit Growth
Total Units in 5 Years	5700	12000	17700
Units/Year	1100	2400	3540
% of Citywide Total	22%	49%	35%

Source: City of Calgary, Planning & Development

Next Steps / Conclusion

This version of the Developed Areas Growth and Change represents the first major update to the document, which was first published in its current form in 2014.

This inventory of the Developed Areas Land Supply is needed to determine::

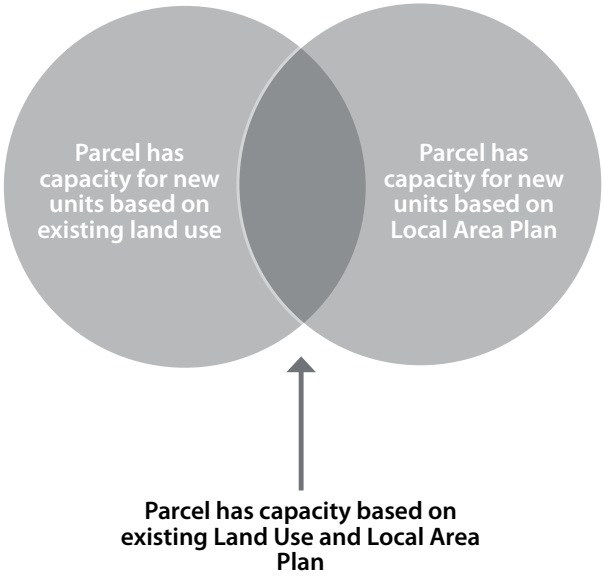
- How much capacity for new housing units exists in the Developed Area?
- Is there sufficient capacity to meet the goals of the Municipal Development Plan (MDP)?
- Where is this capacity located?

Study Limitations

The capacity numbers presented in this report are neither fixed nor absolute; they are a snapshot of potential capacity at a particular time. These numbers are malleable and will fluctuate, perhaps significantly, based on new Local Area Plans that increase density, land use approvals for major developments, changes in the economy that affect land value, etc. Capacity will need to be monitored on an ongoing, regular basis. This is an early attempt to calculate capacity in the Developed Area. As such, the numbers and methodologies presented in this report - particularly for vacant and underutilized land - would benefit from additional refinement. In all likelihood, the numbers are an overstated maximum and should be thought of more as bookends that can be pushed inwards and tightened as methodologies are refined.

The report identifies capacity for nearly 57,200 new units based on existing land use, and 62,700 new units enabled through Local Area Plans, and the additional capacity of 24,500 units in areas with Local Area Plans along the way. However, it is unknown what portion of this capacity is counted twice (e.g. an underutilized parcel in a community with a Local Area Plan). Identifying the extent of the overlap would result in a more accurate estimation of capacity overall (**Figure 38**).

Figure 38:
Land Use and Local Area Plan



Further refinement of numbers and methodologies aside, this document has two significant limitations. Firstly, this document does not provide information on serviced land capacity. Servicing is the most critical aspect of a parcel's ultimate redevelopment potential. Without adequate servicing, redevelopment cannot happen, but the extent to which parcels with redevelopment potential also have adequate servicing remains unknown. An important next step for this work will be to identify how much land with capacity for new units is serviced, or is readily serviceable through additional capital investment. Further work is required through the Growth Management Framework process to identify where new units can be built without additional services, and where additional investment is required.

Secondly, the potential capacity numbers remain theoretical until development occurs. The numbers assume that development will happen, but in reality, many factors must align before it can, including appropriate policy and land use designation, adequate servicing, landowner readiness, market conditions, community support, etc. Some of these are under City control; others are not. And, even if development conditions are favourable, there will always be limiting factors that will prevent some sites from redeveloping to their Land Use Bylaw maximums.

Conclusion

Developed Areas Growth & Change sets a baseline maximum capacity for new housing units in the Developed Area. It is a major step forward towards understanding how much capacity there is, where is it is located and whether Calgary is on track to meet its MDP goals. Over time, it is expected that both the base land inventory and the methods used to calculate development capacity will improve and will provide more refined, comprehensive information required for MDP implementations and the Framework for Growth and Change. Ideally, future versions of this report will pinpoint locations most ready for redevelopment: parcels with appropriate land use, an enabling Local Area Plan and adequate servicing. Although this work has some limitations, its value cannot be discounted. Comprehensive information about land supply in the Developed Area will result in better planning decisions, inform how capital dollars are spent, and contribute to overall growth management. There is a clearer picture of how much potential development could happen in the Developed Area than ever before and a solid foundation has been laid for future land supply work and MDP tracking in the Developed Area.


Quizno
Sub

Appendices

Appendices to the Developed Areas Growth & Change 2016 report. It looks at identifying and approaches to underutilized land. As well as discussed future research and provides references used.

Identifying Underutilized Land

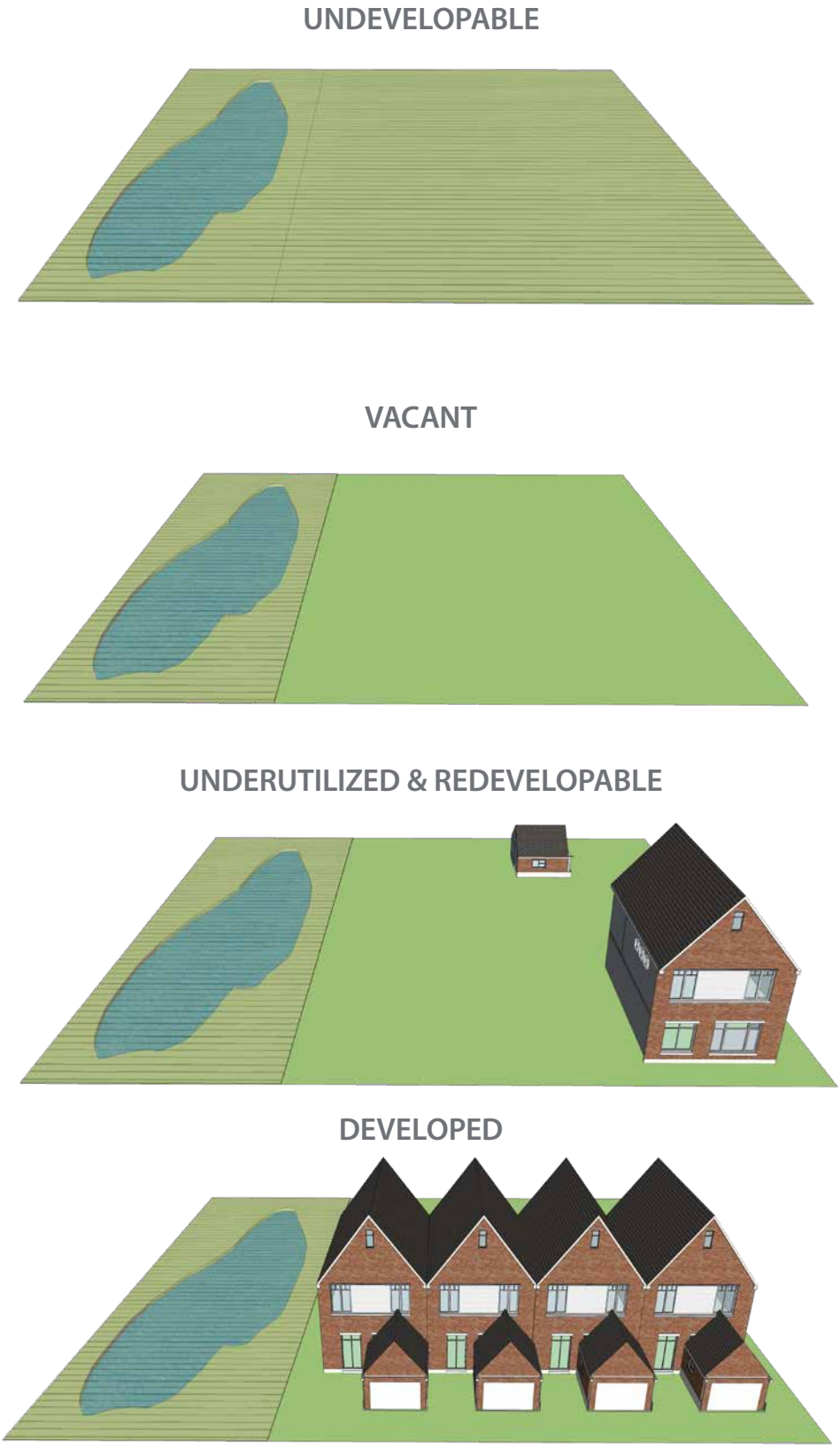
In order to monitor land supply in the Developed Area an inventory of all parcels has been created. This inventory categorizes each parcel of land as one of the following:

- Undevelopable land
- Developable land
- Vacant land
- Underutilized land.

What is underutilized land

Underutilized land is land that is fully developed but assumed to be developed below its maximum potential use. Identification of these parcels is important as they are part of the immediately redevelopable land supply along with vacant land to accommodate infill and redevelopment. It is not likely that all land in the Developed Area will experience redevelopment but it is useful to identify areas that may be likely to redevelop in order to support and achieve the strategic goals of the MDP.

Figure 39:
Potential Candidates for Land Supply



Different Approaches to Identifying Underutilized Land

The following is a list of methods used to identify underutilized land compiled based on similar research conducted throughout North America. The most common, and arguably simplest, approach is to use an improvement or building value to land value ratio.

Methods used to identify underutilized land:

- Improvement/Building Value to Land Value Ratio
- Improvement to Land Value – comparison to surrounding properties
- Improvement to Land Value per Acre
- Land Value Potential
- Existing Development relative to Maximum Capacity
- Other

How Does Developed Area Growth and Change Currently Define Underutilized Land?

All parcels with an improvement-to-land ratio less than 0.5 are considered underutilized. This is where the building value is less than 50 per cent of the land value.

What are the Risks Associated with this Method?

An improvement-to-land value ratio is an imperfect measure. It represents a proxy for economic underdevelopment and it does not include any social or physical considerations. It is not necessarily an accurate indicator of future land use change since redevelopment depends on a variety of other factors such as market conditions, infrastructure, community needs and land owner readiness for change.

There are many reasons why an improvement-to-land ration may be low.

Examples:

- If a building on a parcel of land is old or dilapidated.
- A structure is small relative to the size of the parcel.
- Value of land has risen at a faster rate over time in relation to improvements to any structures on the property.
- If land is "economically" viable (i.e. rent is higher than cost of development).

It is also worth noting that properties may not be economically underutilized but may lack "proper utilization" in relation to the overall land use goals and objectives of the MDP or even Local Area Plans. This is not something the improvement-to-land value ratio will capture but we have attempted to address by calculating development capacity based on not only existing land use but also based on existing policy.

Improvement/Building Value to Land Value Ratio

San Francisco, California	Improvement-to-land ratio <0.9
Bellevue, Washington	Improvement-to-land value ratio < 0.5
Austin, Texas	Improvement-to-land value ratio < 0.5
King County, Washington	Improvement-to-land value ratio < 0.5
Eagle Point, Oregon	Improvement-to-land ratio < 1
Montgomery County, Maryland	Improvement-to-land value ratio < 1.0
Anchorage, Alaska	High redevelopment potential : improvement-to-land value ratio = 0 Moderate potential: improvement-to-land value ratio = 0 to 1
Chicago Region	Residential Single Family: Improvement-to-land ratio of 1.0 Residential multi family: Improvement-to-land ratio of 1.5 Mixed Commercial/residential: improvement-to-land ratio of 1.5
Seattle, Washington	Mid-Rise residential/neighbourhood commercial/commercial: improvement to land ratio < 0.5

Improvement to Land Value – comparison to surrounding properties

Portland Oregon Metro Region	Improvement value of parcel was 50 to 70 per cent of the mean improvement value of surrounding properties.

Improvement to Land Value per Acre

Oregon State (ECOnorthwest Consulting)	Arrayed all development in a matrix with ratio of improvements to land value on one axis, and parcel size on the other. Made judgement based on plan designation about the percentage of land in each category that might develop over 20-year horizon.
LCOG (Land Council of Governments Oregon)	Identify sites for redevelopment and infill potential based on mixed criteria 1 Residential - current use is single family, duplexes or manufactured dwelling; planned use is medium or high density residential or mixed-use; improvement value < land value, improvement value per acre < or = $100,000. 2. Commercial redevelopment - current use is not vacant and not a parking lot; planned for commercial or mixed-use; either improvement value < or = land value or improvement per acre < or = $100,000. 3 Residential infill - current use is single-family and built prior to 1970; planned for single-family; parcel is larger than 1/3 acre; improvement value per acre < or = $150,000
Clark County, Washington	Building Value/Acre is below 10th percentile of Building Value/Acre for all residential property within Urban Growth Area For commercial and mixed-use: building value/acre less than $50,000

Land Value Potential

Tacoma, Washington	Land Value Potential (Also completed analysis using improvement-to-land ratio of less than 1:1 but chose to go with LVP method)
Minneapolis, Minnesota	Land Value potential: if residual land value exceeds 120% parcel is considered redevelopable. There is also some potential if between 80 and 120%.

Existing Development relative to Maximum Capacity

Nanaimo, BC	Ratio of existing units to maximum units at build-out. A threshold of 20 per cent used to identify underutilized lots
Seattle, Washington	Low rise residential: total areas where existing capacity < 40 per cent of maximum build out

Other

State of Maryland	Split inventory into following categories based on size and improvement value: 1. Acres/parcels associates with underdeveloped parcels (improved parcels >$10,000 less than 5 acres) 2. Acres/parcels associated with small parcels (parcels <2 acres improved or unimproved) 3. Acres/parcels associated with larger, undeveloped lands including mixed use (includes unimproved parcels greater than 2 acres and improved parcels greater than 5 acres with capacity)

Future Research

What is the best approach to moving forward?

The following is a list of recommended future research to monitor underutilized or potentially redevelopable land.

- Investigate the implications of Calgary's Fair Market Value tax assessment. Fair Market Value is used across Alberta.
- Research a range of improvement-to-land value ratios. We are currently using the assumption that any properties where the building is worth less than 50 per cent of the land value are underutilized.
    - Would a lower threshold be more appropriate?
    - Should a different threshold be applied to different land uses? A lower one for residential uses, for example?
    - Should land that is currently zoned for one single-detached dwelling (R-1) be excluded from the analysis altogether? Theoretically even if the property were to experience redevelopment there would be no increase in density without a land use amendment to a higher density designation.
- Investigate some of the other methods used in other municipalities:
    - Improvement-to-land ratio per acre
    - Improvement-to-land ratio relative to surrounding properties
    - Existing development relative to maximum development

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City Wide Existing Development Statistics Summary

General Land Use Category	Average Parcel Size	Average Building Footprint Size	Average Parcel Use	Average FAR	Average Occupancy Rate	% Residential (living space)	% Non-Residential (Non-living space)	Residential Net to Gross	Average Unit Size (Square Meters)	LUB FAR MAX	LUB Density MAX (Units per Hectare)
Centre City –	1,900	1,400	0.78	7.22	1.5	7%	93%	85%	100	20	n/a
Centre City – Corridor	1,155	600	0.5	1.59	1.4	59%	41%	85%	92	9	n/a
Centre City - Mixed District	1,420	600	0.41	1.55	2	14%	86%	85%	92	12	n/a
Centre City– Residential	1,137	400	0.39	1.45	1.4	78%	22%	85%	92	7	n/a
City Regional		2,900	0.04	0.09	42	0%	100%	85%	0	0	n/a
	7,500	2,400	0.31	0.86	0	0%	100%	85%	0.01	2.7	n/a
	7,500	2,000	0.27	0.4	1.7	14%	86%	85%	60	3	n/a
	1,800	600	0.32	0.52	1.5	15%	85%	85%	140	5	n/a
	1,300	500	0.43	0.83	1.3	13%	87%	85%	98	6	n/a
	8,200	2,300	0.28	0.32	1.8	6%	94%	85%	150	3	n/a
	2,300	600	0.28	0.4	1.6	15%	85%	85%	90	2	n/a
		7,800	0.27	0.32	1	5%	95%	85%	65	3	n/a
Multi-	2,600	1,100	0.41	2.29	1	88%	12%	85%	92	11	321
Multi-	970	300	0.33	0.57	1.9	99%	1%	85%	91	0	148
Multi-Residential – Medium Profile	2,000	600	0.32	0.86	1.5	96%	4%	85%	91	5	321
Single Residential – Low Density	540	200	0.35	0.38	2.9	100%	0%	85%	197	0	n/a
Single Residential – Medium Density	420	100	0.35	0.37	2.4	100%	0%	85%	141	0	50