EFFICIENT LAND USE STRATEGY

An Exploration of Past, Present and Future Growth in the City of Lethbridge

City of Lethbridge
Planning and Development Services

Acknowledgement Statement

The City of Lethbridge acknowledges that the place we now call Lethbridge has for many generations had another name given to it by the Siksikaitsitapi, the Blackfoot peoples. The name is Sikóóhkotok, a reference to the black rocks found in the area.

The City of Lethbridge is located in the traditional territory of the Blackfoot Peoples, and within Treaty 7 lands. The City of Lethbridge is also home to the Metis Nation of Alberta, Region III. We pay respect to all Indigenous peoples past, present and future, by recognizing and respecting their cultural heritage, beliefs, inherent rights and relationship to the land.

Acknowledgement

The City of Lethbridge would like to thank the members of the Efficient Land Use Strategy Technical Working Group and Community Liaison Group for their time and assistance in preparing this report.

Project Team

Report Authors and Project Managers	Devin Diano (City of Lethbridge) Andrew Malcolm (City of Lethbridge)
Contributing Author	Ross Kilgour (City of Lethbridge)
GIS Mapping and Data Analyst	Chelsea King (City of Lethbridge)
Document Graphic Design	Keaton Bosch (City of Lethbridge)

Technical Working Group

Maureen Gaehring (City of Lethbridge)
Perry Stein (City of Lethbridge)
Adam St. Amant (City of Lethbridge)
Rose Braun (City of Lethbridge)
Karen Armstrong (City of Lethbridge)
Adam Campbell (City of Lethbridge)
Janet Gutsell (City of Lethbridge)
Abby Slovack (City of Lethbridge)
Heather Gowland (City of Lethbridge)
Stephanie Vehnon (City of Lethbridge)
Tyson Boylan (City of Lethbridge)
Dave Schaff (City of Lethbridge)
Joel Sanchez (City of Lethbridge)
Heather Gowland (City of Lethbridge)
Robert McKay (City of Lethbridge)
Mark Hilger (City of Lethbridge)
Jerry Firth (City of Lethbridge)
Travis Hillier (City of Lethbridge)
Darren Harsch (City of Lethbridge)
Kevin Deaust (City of Lethbridge)
Heath Wright (City of Lethbridge)
Blair Richter (City of Lethbridge)
Kerry Boogart (City of Lethbridge)
Felipe Guerra (City of Lethbridge)
Cam Woo (City of Lethbridge)
Wally Czech (City of Lethbridge)
Ryan Carriere (City of Lethbridge)
Chris Witkowski (City of Lethbridge)
Lance Wehlage (City of Lethbridge)

Community Liaison Group

Angela Zuba (Canadian Home Builders Association)
Trevor Lewington (Economic Development Lethbridge)
Dawna Coslovi (Green Acres Senior Housing)
Erin Low (Lethbridge Construction Association)
Sarah Amies (Immigrant Services)
Victoria Chester (Chamber of Commerce)
Boyd Thomas (Aboriginal Housing)
Cathy Maxwell (Real Estate Industry)
Sean Robison (Alberta Health Services)
Derek St. Jean (Youth Advisory Council)

Executive Summary

In 2014, the Province of Alberta adopted the South Saskatchewan Regional Plan (SSRP). The SSRP sets the stage for strong and sustained growth, vibrant communities and a healthy environment within the region over the next 50 years. With that long-term horizon in mind, the SSRP identifies strategic directions for the region over the next 10 years, focusing on eight broad outcome areas, including: economy, air, biodiversity, water, efficient land use, outdoor recreation and historic resources, aboriginal peoples, and community development. The City of Lethbridge and the other municipalities within the region are required by the Province of Alberta to be in compliance with the SSRP by August 31, 2019.

In order to demonstrate compliance with the SSRP, the City of Lethbridge is undertaking a series of comprehensive data gathering projects under the umbrella of the SSRP Compliance Initiative. The Initiative is composed of four separate comprehensive data gathering strategies that seek to understand our legislative requirements, assess our baseline, and recommend implementation strategies towards achieving one or more of the SSRP outcomes. The four strategies within the SSRP Compliance Initiative include:

i) Efficient Land Use Strategy (ELUS)
ii) Environment and Historic Resources Strategy (EnvS)
iii) Economy and Tourism Inventory (ETI)
iv) Relationships Inventory (RelI)

The SSRP Compliance Initiative itself does not demonstrate SSRP compliance, however upon completion, the Initiative will provide a thorough background report and baseline understanding of our community, and will be used to review and update the current Integrated Community Sustainability Plan/Municipal Development Plan (ICSP/MDP) which was adopted in 2010.

The ELUS is at its core, a baseline data collection project that looks at the variables that impact land use and growth in our City. To demonstrate that Lethbridge is an efficient land user and manager, we must create a baseline awareness of how we have historically used our land base, the variables at play, and what the future may hold. The outcome of these data gathering exercises is to bring the information collected together to provide a growth-related snapshot of Lethbridge in 2016.

The ELUS report begins with a discussion of the context of this project, the Alberta Land-use Framework and the SSRP. The ELUS report is then organized in three different parts:

Part 1: Background Study

The main purpose of Part 1 is to set the context and begin to explore what is meant by “efficient land use”. Chapter 1 of the Background Study provides historical information about early development, community planning and overall patterns of growth in Lethbridge. Additionally, Chapter 1 describes key considerations and trends that are effecting land use decisions in North America today, as well as providing an overview of some of the leading edge growth management practices from other municipalities in Canada.

Part 2: Baseline Report

Part 2 is broken down into a series of data gathering exercises, each of which takes an in-depth look at key growth related variables. Chapters 2-5 are organized to analyze patterns of growth in Lethbridge starting from large scale (City Wide) and working down to small scale (City Neighbourhoods). Included within are discussions on urban footprint, demographics, land composition, and residential density.

Chapter 6 takes an in-depth look at major commercial and industrial areas in Lethbridge, specifically, exploring current patterns of growth, establishing existing building footprint coverage and employment density, and looking at efficient land use practices for the development of industrial and commercial areas.

Chapter 7 examines some key aspects of greenfield development in Lethbridge. This chapter concentrates on the way we design new residential neighbourhoods, which make up the bulk of the city's ongoing greenfield development, and how we can design in a way that uses land and infrastructure more efficiently.

Chapter 8 focuses on infill development in Lethbridge, and explores the different forms, why infill is desirable, and the types commonly seen in Lethbridge neighbourhoods.

Part 3: Community Values & Recommendations

Part 3 is broken down into two chapters: Chapter 9 summarizes the community's values which includes the collection of several thousands of individual pieces of input from the community at-large and specific stakeholder groups through the 100K+ Conversations project. Chapter 10 provides *recommendations* for the review of the ICSP/MDP which were generated through the baseline data and analysis collected through Part 1 and Part 2 of the ELUS, and interpreted with the help of the input from community members and stakeholders.

The following table presents the recommendations of the ELUS as an easy reference. Greater detail on the recommendations, including a discussion on the rationale and implementation mechanisms, is found in Chapter 10 of this report.

Efficient Land Use Recommendations

General	*Accommodating increases in density in neighbourhoods needs a context-sensitive approach based on meeting community design and infrastructure criteria.*
	The criteria for accommodating density increases should be determined based on the age and classification, geographic location, street-layout, and demographic profile of the neighbourhood.
	The criteria for accommodating density increases should be incorporated into the MDP and will act as a guiding principle for ASPs, ARPs, and land use redesignations.
	The City's approach to residential, industrial, and commercial efficient land use should be defined in the MDP
	The MDP should encourage the preservation of natural grasslands and continued use of agricultural lands until conversion to a permanently developed state
Industrial	*MDP to establish vision and policy direction to locate and encourage intensification of industrial areas.*
	Conduct further research to identify opportunities for the intensified use of industrial land in Lethbridge.
	A review of industrial districts in the Land Use Bylaw should be undertaken to determine if current regulations have provisions that constrain industrial density potential (such as overly-restrictive building height limits, parking requirements, building setbacks, floor area ratios or site coverage limits).
	Support transit-oriented development in industrial areas.
Commercial	*MDP to encourage maximizing the efficient use of commercial land and increasing building footprint coverage on commercial lots by:* • *Planning for smaller lot sizes* • *Reducing the land dedicated to parking* • *Monitoring the impact of 2016 LUB amendment (maximum parking provision). Consider lowering some parking minimums, in general requirements and in special circumstances, e.g. for heritage buildings, in ARPs for older neighbourhoods, downtown, in transit-accessible locations, etc.*
	Conduct parking study to analyze where parking has been oversupplied and determine a more sustainable parking requirement for the Land Use Bylaw.
	Continue to encourage accessible commercial development patterns that accommodate multimodal transportation through appropriate Land Use Bylaw regulations.
	Where appropriate, encourage street-fronting and neighbourhood commercial development in neighbourhoods with a grid or modified grid street layout.
	When preparing either ARPs or ASPs consider how to balance commercial development between city sectors.
	Encourage increased residential density in proximity to existing or planned commercial areas.
	Encourage commercial development around higher density residential areas.
Greenfield Development	*Encourage a greater mix of land use within developing neighbourhoods in locations that support local businesses, transit use, and access to amenities.*
	Encourage the design of more accessible and walkable neighbourhoods through use of the modified grid street layout and the incorporation of green corridors.

	Maximize use of existing infrastructure through careful phasing.
	Set a target to improve on the average non-developable land uses per dwelling unit identified in chapter 8. Outline plans that do not achieve this target should not be supported in the absence of exceptional circumstances (e.g. the OP includes a large regional park).
	Include minimum average density requirements in future Outline Plans. Outline plans that do not achieve the minimum average density should not be supported in the absence of mitigating measures.
	Amendments to existing ASPs or Outline Plans to create less walkable and multimodal-friendly transportation networks will not be supported in the absence of mitigating measures.
Residential Infill Development	*Infill development should continue to be encouraged by the City.*
	Encourage renovation or redevelopment of buildings in poor condition by supplying information and education to residents.
	Encourage residential and mixed-use infill development in core, mature and established neighbourhoods to retain population, and support existing and new businesses and amenities.
	Encourage greater mix of land uses in core, mature and established neighbourhoods
	Continue to encourage higher density development around commercial nodes and corridors, and institutional nodes where access to transit is available.
	Undertake a cross-departmental study with industry, community and city staff on possible steps to bridge the gap between identifying areas for redevelopment and intensification in ARPs, and targeting appropriate upgrades to servicing and utilities.
	Undertake a cross-departmental study into opportunities to reduce the burden on smaller-scale redevelopment projects.
	Ensure adequate green space is provided in core neighbourhoods through ARPs
	A method of recording infill redevelopments should be created to ensure good data is available for future comparisons and studies. This should distinguish between the types of infill identified in chapter 7.

Table 1: Efficient Land Use Recommendations

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Introduction

South Saskatchewan Regional Plan Compliance Initiative Overview

In 2014, the Province adopted the South Saskatchewan Regional Plan (SSRP), the second regional plan in the Province (the Lower Athabasca Regional Plan was adopted in 2012). The SSRP sets the stage for planned urban growth, vibrant communities and a healthy environment within the region over the next 50 years. With that long-term horizon in mind, the SSRP identifies strategic directions for the region over the next 10 years and includes eight broad outcomes and a series of strategies to achieve them. The eight outcome areas include: economy, air, biodiversity, water, **efficient land use,** outdoor recreation and historic resources, aboriginal peoples, and **community development**. The City of Lethbridge and the other municipalities within the region are required by the Province of Alberta (Land Use Secretariat) to be in compliance with the SSRP by August, 2019.

In order to demonstrate compliance with the SSRP, the City of Lethbridge has completed a holistic data gathering project called the **SSRP Compliance Initiative.** The Initiative is composed of four separate comprehensive strategies, each of which seeks to understand our legislative requirements, assess our baseline, and create an implementation strategy towards achieving one or more of the SSRP outcomes. The four strategies within the SSRP Compliance Initiative include:

i) Efficient Land Use Strategy (ELUS)
ii) Environment & Historic Resources Strategy (EnvS)
iii) Economy and Tourism Inventory (ETI)
iv) Relationships Inventory (RelI)

The SSRP Compliance Initiative in itself does not demonstrate SSRP compliance, however upon completion, the Compliance Initiative will provide a thorough background report and baseline understanding of our community, and will be used to update the Integrated Community Sustainability Plan/Municipal Development Plan (ICSP/MDP) which was last updated in 2010.

The ICSP/MDP is a statutory plan, prepared and adopted by bylaw, in accordance with Section 632 of the Municipal Government Act (MGA), and provides a framework through which private & public decisions are made about the future of the city in terms of investments, places of residence, employment, and recreation and protection of the environment including heritage resources. By completing an update of the ICSP/MDP based on the requirements of the SSRP, it will ensure that all decisions within the municipality going forward are informed by a statutory plan that is compliant with the SSRP.

Legislative Framework

This section provides an outline of the existing planning legislation and policy framework that directly impacts the preparation of the Efficient Land Use Strategy (ELUS). The legislation is multi-layered, and includes provincial land use planning legislation as well as municipal statutory and non-statutory plans, bylaws and guidelines.

Community planning in Lethbridge is conducted and administered within a series of plans and bylaws. These include the South Saskatchewan Regional Plan (SSRP), Integrated Community Sustainability Plan/Municipal Development Plan (ICSP/MDP), Secondary Plans (Area Structure Plans and Area Redevelopment Plans), Outline Plans, Land Use Bylaw, and implementation tools such as Master Plans and guidelines.

The imperative for the SSRP Compliance Initiative and the ELUS comes from the SSRP, and specifically the City of Lethbridge's legal requirement to be in compliance with the SSRP by August 2019. Within the hierarchy of Plans, the ICSP/MDP must conform to the Regional Plan while all other Plans and Bylaws must conform to the ICSP/MDP.

Figure 1: Planning Legislation Hierarchy

Therefore, the purpose of the SSRP Compliance Initiative including the ELUS is to inform an update of the ICSP/MDP, which will ultimately ensure all other Plans and Bylaws are in conformity with the SSRP. The following sections describe the legislative hierarchy from a top-down perspective. This list is not exhaustive, however provides a general landscape within which to situate the ELUS.

Alberta Land Use Framework and Alberta Land Stewardship Act

The Land Use Framework (LUF, 2008) is a policy and visioning document that sets out a management framework for land use in Alberta. The LUF is based on the premise that there exist significant and often multiple competing interest for our finite land base, including "oil and gas, forestry and mining, agriculture and recreation, housing and infrastructure." Competing demands on our limited supply of land, air and water in the province poses a significant environmental, social and economic challenge that must be addressed through effective management.

LUF Vision Statement: Albertans work together to respect and care for the land as the foundation of our economic, environmental and social well-being.

The LUF envisions the creation of regional planning areas throughout the province, based on watershed boundaries, to enable the achievement of the stated outcomes in such a way that respects local landscapes, values and realities. The LUF describes the creation of a dedicated Land Use Secretariat to oversee the creation of seven Regional Plans and to manage their ongoing implementation.

The Alberta Land Stewardship Act (ALSA, 2009) is the implementing legislation for the LUF. ALSA creates the legislative authority for the province to undertake the creation of Regional Plans through the Land Use Secretariat. LUF also replaces the previous provincial Land Use Principles.

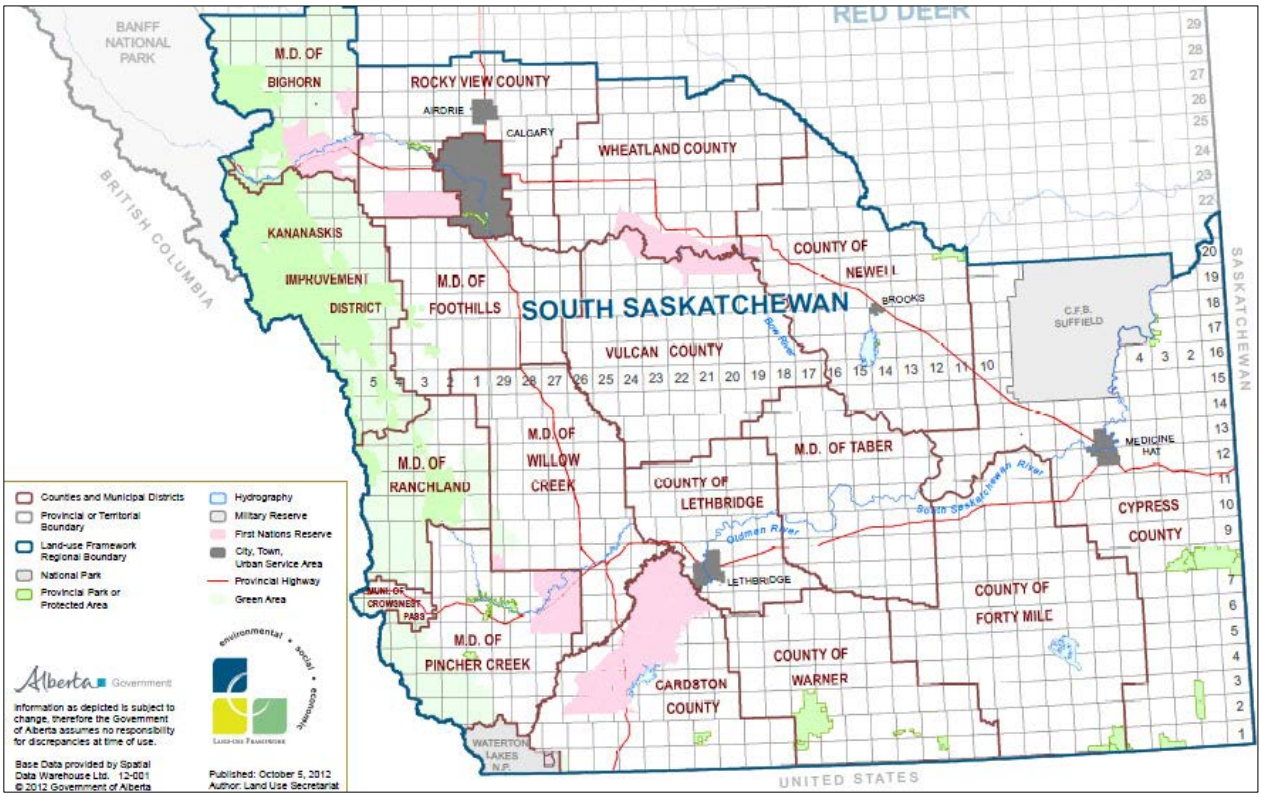
All municipal bylaws, and many pieces of provincial legislation are now required to be in compliance with the ALSA, including the Municipal Government Act (MGA, 2018).

Figure 2: Regional Planning Areas (Source: Land Use Secretariat)

South Saskatchewan Regional Plan

The SSRP was adopted in September, 2014 and municipalities have five years within which to submit a statutory declaration indicating compliance with the SSRP. At the end of those five years, by August 2019, all municipal plans, bylaws and regulations must be in compliance with SSRP.

Within our watershed, the SSRP is the vehicle for implementing the vision and outcomes of the LUF. The South Saskatchewan Region contains 15 municipal districts, one specialized municipality, five cities, 29 towns, 23 villages, two summer villages, and seven First Nations, and covers an area of over 84,000 square kilometers.



Map 1: South Saskatchewan Region (Source: Alberta Land Use Secretariat)

The SSRP document is divided into three main parts: Strategic Plan, Implementation Plan, and Regulatory Details. The Strategic Plan discusses the regional baseline, and outlines a high-level vision for the area (in line with the LUF vision statement). The Implementation Plan introduces eight broad thematic outcomes and a series of strategies for each to achieve them. The Implementation Plan also identifies indicators and /or timelines for each of the outcome areas. Finally, the Regulatory Details contains the binding legislation within the SSRP, including key triggers for certain environmental outcomes. While the Regulatory Details part of the SSRP is the only one of the three parts to be explicitly "binding" on municipalities, Section 4(1) of the Regulatory Details states that local government bodies and decision-makers shall consider the Strategic Plan and Implementation Plan when exercising their duties.

The eight outcome areas within the Implementation Plan include:

ECONOMY	The region's economy is growing and diversified.
AIR	Air quality is managed to support healthy ecosystems and human needs through shared stewardship.
BIODIVERSITY AND ECOSYSTEMS	Biodiversity and ecosystem function are sustained with shared stewardship.
WATER	Watersheds are managed to support healthy ecosystems and human needs through shared stewardship.

EFFICIENT USE OF LAND	Lands are efficiently used to minimize the amount of area taken up by the built environment.
OUTDOOR RECREATION AND HISTORIC RESOURCES	The quality of life of residents is enhanced through increased opportunities for outdoor recreation and the preservation and promotion of the region's unique cultural and natural heritage.
ABORIGINAL PEOPLES	Aboriginal peoples are included in land-use planning.
COMMUNITY DEVELOPMENT	Community development needs are anticipated and accommodated.

As previously mentioned, the ELUS is the first in a series of four strategies that will comprise the SSRP Compliance Initiative. Each of the Strategy projects will align with one or more SSRP outcomes (listed above). The ELUS project is designed to address two SSRP outcome areas: **Efficient Use of Land** and portions of **Community Development**.

Efficient Use of Land

Outcome: Lands are efficiently used to minimize the amount of area taken up by the built environment.

Strategic Direction: Promoting efficient use of land.

Objective: The amount of land that is required for development of the built environment is minimized over time.

Strategies:

5.1 All land-use planners and decision makers responsible for land-use decisions are encouraged to consider the efficient use of land principles in land-use planning and decision-making.

i. Reduce the rate at which land is converted from an undeveloped state into permanent, built environment.
ii. Utilize the minimum amount of land necessary for new development and build at higher density than current practice.
iii. Increase the proportion of new development that takes place within already developed or disturbed lands either through infill, redevelopment and/or shared use, relative to new development that takes place on previously undeveloped lands.
iv. Plan, design and locate new development in a manner that best utilizes existing infrastructure and minimizes the need for new or expanded infrastructure.
v. Reclaim and/or convert previously developed lands that are no longer required in a progressive and timely manner.
vi. Provide decision-makers, land users, and individuals the information they need to make decisions and choices that support efficient land use.

5.2 Build awareness and understanding of the efficient land use principles and the application of land-use planning tools that reduce the footprint of the built environment, how they might be applied and how their effectiveness would be measured over time with municipalities, land-use decision-makers and land users, on both public and private lands.

Community Development

The community development outcome area is broad and the portion that the ELUS will focus on is **building sustainable communities,** specifically the **land use pattern strategies.**

Outcome: Community development needs are anticipated and accommodated.

Strategic Direction: Strengthening Communities.

Objectives:

- Promote healthy and sustainable communities;
- Foster the establishment of land-use patterns for an orderly, economical, and beneficial development, as well as to maintain and improve the quality of the built environment.

Strategies:

8.11 Provide an appropriate mix of uses in an orderly, efficient, safe and economical manner.

8.14 Feature innovative housing designs, range of densities and housing types such as mixed-use, cluster developments, secondary suites, seniors' centers and affordable housing. Provide the opportunity for a variety of residential environments which feature innovative designs and densities and which make efficient use of existing facilities, infrastructure and public transportation.

8.20 Limit the fragmentation of agricultural lands and their premature conversion to other non-agricultural uses.

Integrated Community Sustainability Plan/Municipal Development Plan

The ICSP/MDP is a comprehensive policy document which outlines the City of Lethbridge's long term objectives and policies that guide future development within Lethbridge.

The plan provides a framework for the creation of a safe, healthy, vibrant, prosperous, economically viable place where all people can fully participate in community life. Within this context the City is committed to creating a sustainable community through the promotion of six objectives that touch on many different aspects of what makes a community. Many of these outcomes are inter-related, however, for the purposes of the ELUS the focus will be on Objective 4 – A Well Designed City and its particular 7 outcomes.

The ICSP/MDP objectives and the related outcomes include:

1. A Prosperous City
    I. Good Place to Open and Operate a Business
    II. Financially Viable City
2. A Healthy and Diverse City

I. Range of Housing that Meets Everyone's Needs
II. Welcoming and Diverse City
III. Opportunities for Personal Development and Social Well-being
IV. Safe City

3. A Culturally Vibrant City
   I. Respects and Celebrates its History
   II. Celebrates Arts and Culture
   III. Supports Active Living
4. A Well Designed City
   I. Compact City
   II. Efficient and Effective Integrated Transportation Network
   III. Walkable, Bicycle Friendly City
   IV. Expanding in a Responsible Manner
   V. Planned City that Exhibits Quality Urban Design
   VI. Diverse Parks and Open Space System
   VII. Strong and Vibrant Downtown
5. An Environmentally Responsible City
   I. River Valley is the Primary Open Space System
   II. Conserves Natural Resources
6. A City that Supports the Region
   I. Strong Relationship with Neighbouring Communities

Efficient Land Use Strategy Overview

With a population that is expected to pass 100,000 in the next 3 years, and a strong and diverse economy, Lethbridge will continue to grow. An additional 30,000 residents in the next 20 years will require approximately 14,000 new dwelling units. While growth may be inevitable, the pattern and rate of growth, and consequences of that growth cannot be fully anticipated, or currently understood.

The ELUS is being prepared as a component within the larger SSRP Compliance Initiative. Efficient land use is central to the South Saskatchewan Regional Plan, based on the premise that our land base is a finite resource with many competing demands: Agricultural, industrial, commercial and residential development, resource extraction, linear infrastructure, conservation, tourism, and aboriginal rights. Our growing population and future economic growth demand that we use our land as efficiently as possible to ensure future economic, environmental, and social sustainability. However, efficient land use means different things to different land users and in different parts of the South Saskatchewan Region. To demonstrate that Lethbridge is an efficient land user and manager, we must create a baseline awareness of how we have historically used our land base, the variables at play, and what the future may hold.

The strategy's purpose is to understand the variables that impact land use and growth in Lethbridge. The Strategy focuses on establishing baseline data for specific variables such as demographics; land composition; residential, commercial and industrial building density; and general patterns of growth and development. Through exploring these variables we will have a greater understanding of how we have

historically used our land base and trends that may lie on the horizon (including shifting community demographics), and be able to monitor if we are using our land base more or less efficiently overtime.

One of the projected outcomes of the ELUS will be to provide recommendations to the update of the ICSP/MDP, specifically section 4 – A Well Designed City. The ICSP/MDP was developed with extensive community consultation in 2010 and provides a good vision on creating a more compact and efficient city through redevelopment, higher densities, mixed-use buildings, etc. The current ICSP/MDP lacks measurable goals and targets in these areas, making implementation and monitoring progress challenging. The ELUS will provide the necessary background information, baseline data, and strategy direction to ensure that the ICSP/MDP update can include tangible and measurable goals and targets.

The strategy's intent is to anticipate future community needs and ensure growth occurs in a manner that minimizes the amount of land that is taken up by development. Thus ensuring the City continues to benefit from growth and that new development makes a positive contribution to the community.

The ELUS will be structured as follows:

Part 1: Background Study

The main purpose of Part 1 is to set the context and begin to explore what is meant by "efficient land use". Chapter 1 of the Background Study provides historical information about early development, community planning and overall patterns of growth in Lethbridge. Additionally, Chapter 1 describes key considerations and trends that are effecting land use decisions in North America today, as well as providing an overview of some of the leading edge growth management practices from other municipalities in Canada.

Part 2: Baseline Report and Data Analysis

Part 2 is broken down into a series of data gathering exercises, each of which takes an in-depth look at key growth related variables. Chapters 2-5 are organized to analyze patterns of growth in Lethbridge starting from large scale (City Wide) and working down to small scale (City Neighbourhoods). Included within are discussions on urban footprint, demographics, land composition, and residential density.

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Part 3 is broken down into two chapters: Chapter 9 summarizes the community's values which includes the collection of several thousands of individual pieces of input from the community at-large and specific stakeholder groups through the 100K+ Conversations project. Chapter 10 provides *recommendations* for the review of the ICSP/MDP which were generated through the baseline data and analysis collected through Part 1 and Part 2 of the ELUS, and interpreted with the help of the input from community members and stakeholders.

What does Efficient Use of Land Mean?

Efficient land use draws on the concept of "smart growth" – which is a comprehensive approach to development that focuses on the true costs and benefits of growth to communities. Within efficient land use is a range of practices from demand management strategies (decreasing the demand before increasing the supply) for transportation, water provisioning and energy -- to development practices that minimize negative environmental impact and foster vibrant communities. Ultimately, the aim is to promote development and growth patterns that limit our urban footprint and conserve resources (land, infrastructure, and materials), while also contributing numerous social, economic, and environmental benefits to the City.

Efficient Land Use for Lethbridge

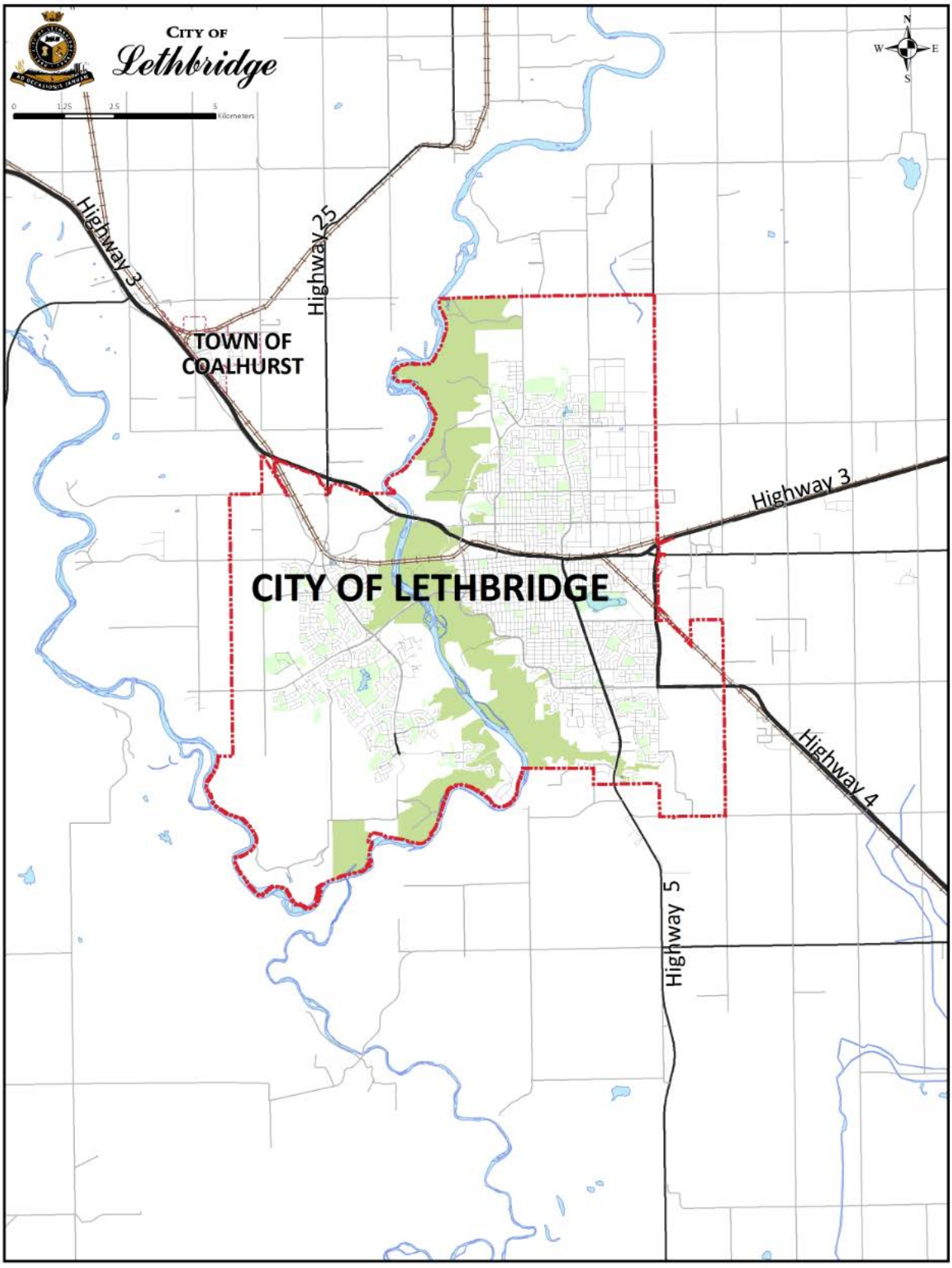
The principles of promoting the efficient use of land articulated in the SSRP represent the strategic direction of the Province of Alberta. Decision-marks such as municipal councils, boards and land use planners are encouraged to consider these efficient land use principles when planning and making decisions on both public and private lands. *As the South Saskatchewan Region is such a large area that contains a wide variety of municipality sizes and types, land use patterns, demographics, community values, constraints and opportunities; it is important to understand and explore what more efficient land use means for the City of Lethbridge within the context of the region.*

Part 1: Background Study

Chapter 1.0 Lethbridge Growth Context

The City of Lethbridge is located in southern Alberta, within the Oldman River sub-watershed basin and within the South Saskatchewan Region. Lethbridge is approximately 215km south of Calgary and 105km north of the Alberta/Montana border. According to the 2016 Municipal Census, Lethbridge remains the second largest municipality within the region, next to Calgary, in terms of population, with 96,829 residents (2016).

Lethbridge is situated on major transportation corridors including Highway 3, 4, 5, 25 and a CP rail line. The City of Lethbridge population continues to grow due to the diverse local economy, which has allowed the City to avoid the traditional boom and bust cycles associated with oil and gas experienced in other Alberta municipalities. Although traditional industries like agriculture and transportation will continue as primary economic drivers, increased efforts to support the knowledge-economy will continue to be crucial for growth in the future.



Map 2: City of Lethbridge

1.1 History of Development in Lethbridge

The City of Lethbridge acknowledges that the place we now call Lethbridge has for many generations had another name given to it by the *Siksikaitsitapi*, the Blackfoot peoples. The name is *Sikóóhkotok*, a reference to the black rocks found in the area. *Sikóóhkotok*, the City of Lethbridge is a central location within Blackfoot traditional territory and cultural landscape[1]. The *Sikisikaitsitapi*, the Blackfoot peoples have been present on the land we now call Lethbridge long before the settlement of Euromericans. The early presence of the *Sikisikaitsitapi*, the Blackfoot peoples is further explored in the EnvS, however the ELUS will focus on the urban development of Lethbridge.

Early Development (1885-1913)

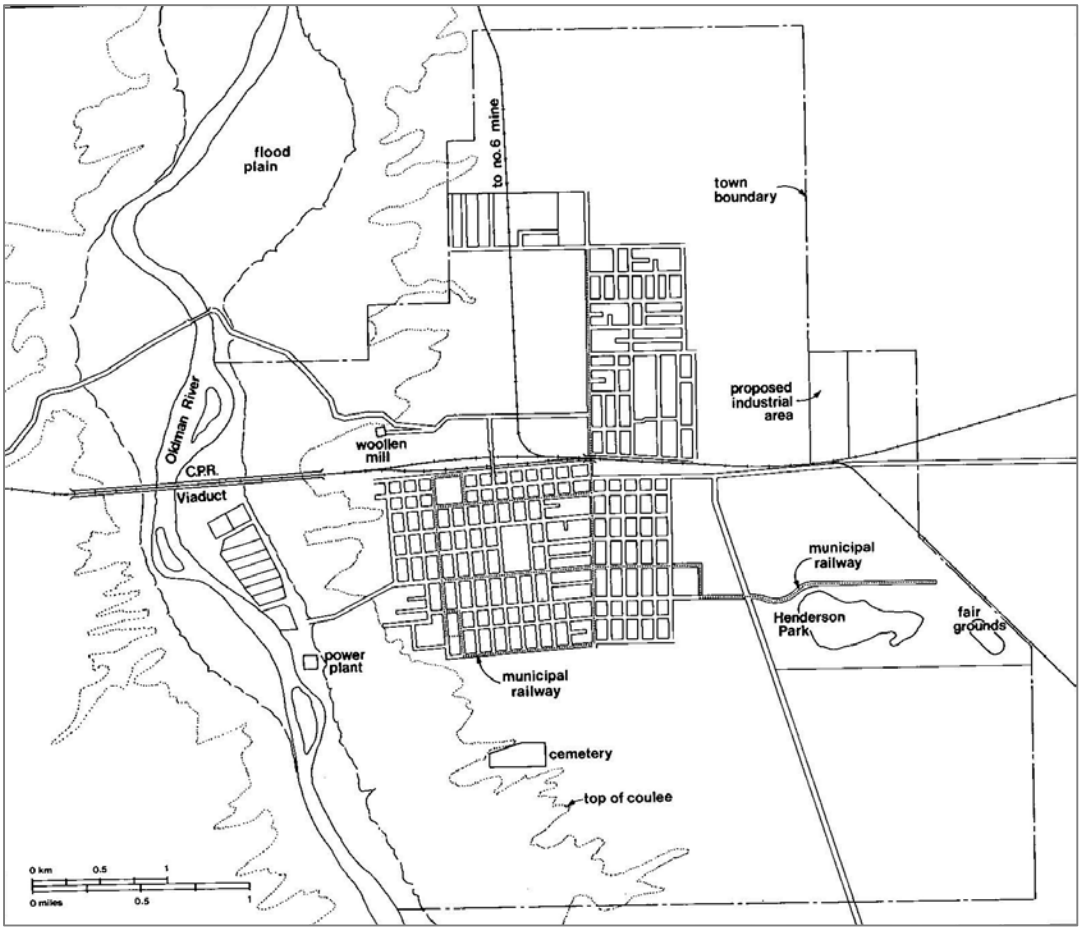
Lethbridge began as a tiny coal mining settlement known as "Coalbanks" in the 1880's, with development predominantly taking place in the river valley next to the mining operations. The original Lethbridge town survey which plotted south of the CP rail line to Seventh Avenue South, from the top of the River Valley east to 13th Street in a gridiron street network, dates back to 1885-86. Lethbridge like many Canadian cities in the West, was based around the location of the passenger station and rail yards which brought people, goods and services to the municipality.

Lethbridge's passenger station and rail yards "anchored" the north side of the downtown. Housing development spread out from this core, but not evenly, as the freight yards proved to be both a physical and psychological barrier to growth. Housing for the more affluent was located to the south (London Road and Victoria Park), and housing for poorer segments of the population was left to the land adjacent to industry and railways (former residential in the west part of existing downtown). The large, linear area occupied by the rail lines called for bridges and underpasses to allow development to cross the railway (Stafford Drive North and 13th Street North). The rail lines were more than just a divider of economic differences, but also cultural, as immigrants from Eastern Europe settled on the north side of the tracks so they could walk to the various mines to work. On the south side of the tracks, a predominately Western European population settled to be in close proximity to commerce and commercial opportunities and amenities located in or near the downtown.

The first dozen years of the 20th century constituted a period of unparalleled prosperity for Lethbridge as the population rose 434% (approximately 36% per year) from 2,072 in 1901 to 11,070 in 1913. Immigrants poured into Canada, and technological solutions provided cities with infrastructure, both below ground (water and sewage) and above ground (electric lines, paved roads), fairly rapidly and inexpensively. The advent of urban rail transportation was noteworthy for several reasons. The street railway was introduced to Lethbridge in 1912, with five lines (17km of track) that served the downtown, Henderson Lake Park, and north and south side residential areas. The streetcar would operate until 1947. This form of transportation dramatically influenced the pattern of growth, as the streetcar lines followed major streets that radiated outward from the central area (downtown) of the community and was a great stimulus for land development adjacent to the routes. The oldest housing outside the downtown is found

[1] Oka, Right Hand, Wolfe, Guns, Mirau, Berry, Hamza, and Temoin. *Traditional Knowledge and Land Use Assessment.* (City of Lethbridge, 2017).

in areas served by the earliest streetcar lines. A strip of retail and commercial establishments also were developed along the lines to serve these new extended neighbourhoods.



Map 3: Lethbridge about 1915 (Source: Johnston, & den Otter. Lethbridge: A Centennial History. City of Lethbridge, & Historical Society of Alberta, 1985.)

Post-World War I Development (1914 – 1945)

Growth in Lethbridge would slow drastically from the onset of World War I in 1914 and through the Great Depression in the 1930s. Swift physical expansion of the City would not occur until after World War II. The city grew in population and increased its area. Three forces combined to produce the urban environment we are familiar with today. First, were demographic forces due to (a) migration from rural to urban centres; (b) people emigrating to Canada from abroad; and (c) a dramatic increase in birth rates, known as the "Baby Boom". Second, were economic forces. The economy continued to expand and produce jobs and rising incomes. There was also pent up demand for housing created by its suppression during 15 years of depression and war. The third force, and in many ways the most impacting in its effect on the urban form, was the vast expansion in automobile use.

Post-World War II Development (1946 – 1969)

After World War II, a planning commission was established in Lethbridge and it quickly became active in carefully considering proposed subdivisions and zoning by-law amendments. It commissioned studies of

parking needs, tourist routes, city highway approach and marking, and of uses for the riverbottom area. In 1950, the commission recommended work begin on a master plan for the city. This master plan and its recommendations would lead to the formal establishment of a civic planning department along with principles of orderly growth and careful planning. A few of these principles included:

- Recognition of the downtown area as the commercial core of the city;
- Incorporating the river valley into the urban fabric by using its recreational potential and by preserving its natural characteristics;
- Balanced city development by expanding west of the river so that downtown and river valley became centrally located and easily accessible.

By the 1960's strict zoning by-laws were in place under a new master plan. Fundamental to the master plan was an efficient system of roadways, as automobile ownership was on a steady rise. Central to this design was the street known today as Mayor Magrath Drive. The other artery developed by the city was Scenic Drive, this roadway was designed to connect a number of dead end streets, provide a scenic by-pass route along the southwestern coulees between highways 3 and 4, and provide easy access to the downtown core. Another important objective of planners in the 1960's was the establishment of an industrial park in northeast Lethbridge, and by the 1970's, on the backing of various federal incentive programs, the industrial park became large and complex.

In the late 1960's, linked with increasing automobile ownership came growth in the form of conventional suburban developments. The suburban neighbourhood model provided opportunities that were spurred on by housing policies that made attaining a mortgage more feasible, including policies that protected lenders by only guaranteeing loans for homes in new neighbourhoods that were built to certain construction specifications (service provision, street widths, building setbacks, and structural performance). This would be further emphasized as these stringent construction codes led to the decline of the "self-built" home in favor of homes built by large developers and builders who could build homes that could be easily replicated to fulfill demand.

Curvilinear Development (1970 – 2000)

By the 1970's, Lethbridge, as a small, isolated settlement on an expansive plain had grown into a modern city. Growth and development was spurred by the decision to build the university campus in West Lethbridge, a decision strongly supported by planners of the day as they for years had advocated for expansion west of the river. This unprecedented opportunity to lay out residential districts, unencumbered by previously built structures was a planners dream. The planners were able to control spiraling land costs and expedite development as they divided the suburb into three 640-acre (260ha) districts, called Varsity Village, Indian Battle Heights, and Mountain Heights. The first to be constructed was Varsity Village, which was nearest to the University. The pattern of development would change quite drastically as it shifted from a grid pattern to a curvilinear, or "loops and lollipops" pattern which called for major traffic streets to encircle residential blocks, making it possible to group single family dwellings on cul-de-sacs.

Designed to accommodate 30,000 people, the initial demand for West Lethbridge lots was slow. However, by 1983, fueled by the abundance of cheap land and consumer preference for space and

privacy, the low density, automobile-oriented suburban neighbourhood design would attract over 10,000 new residents in the communities of Varsity Village, Indian Battle Heights, and Ridgewood.

Although growth during this period was concentrated on the west side of the city, new development was taking place on all sides including Uplands in North Lethbridge and Lakeview in South Lethbridge.

Meanwhile, in the city's existing neighbourhoods, the city was taking full advantage of federal housing improvement funds as Westminster, London Road, Staffordville, and Hardieville all made use of neighbourhood improvement funds and the residential rehabilitation assistance program, under which a large number of individual home owners and landowners made applications for renovations on their buildings. By the end of 1983, the federal government has invested more than $1.25million dollars in Lethbridge under its various neighbourhoods loans and grants programs.

These programs would be overshadowed by the largest beneficiary of government funds, the railway yards. In 1984, the relocation of the railway yards would eliminate the historic division between north and south and would remove an intrusive and unattractive land use from the central area, and would provide attractively planned development opportunities.

21st Century Development (2001 – Present)

Since the turn of the 21st century, development in Lethbridge has more or less followed a similar pattern of primarily low-density development taking place on the edge of the city. A development model that has emphasized choice has seen growth on 11 fronts in the West, North, and South sides of the City. Although growth is occurring on all sides of the city, the primary growth node has been in West Lethbridge where a number of neighbourhoods are being built out. More recently, since 2010, in alignment with the ICSP/MDP the design of new neighbourhoods has taken on a slightly different look as we are seeing a move away from curvilinear street networks and a return of grid-like streets in what has become known as the modified grid. Neighbourhoods are also incorporating the ideas of "live, work, shop, and play" within proximity to one another, and a focus on promoting a diversity of housing types.

1.2 Changing Patterns of Growth: Considerations and Trends

There are a number of trends that effect how we grow and plan for efficient land use. Trends can be related to population or demographics, economics and the design of neighbourhoods. Trends can also be global, national, or local in nature. The following is a brief summary of considerations and trends in planning and development. The cumulative impact of these various forces at play is the prospect of a new urban growth paradigm. The work of the Efficient Land Use Strategy, particularly within Phase 2's Baseline Report will place these considerations and trends into a Lethbridge context.

Demographic Changes

The changing demographic make-up of our community creates opportunities for decision-makers such as city council, boards, planners and developers to consider what the marketplace wants and what a municipality can provide its residents, all while maintaining regulatory flexibility to encourage innovation.

Ageing Population

We live in an ageing society that features one out of three persons now reaching the age of 60 that has a living parent or close relative who is 80 years old or more. By the time the last of the Baby Boomers reaches retirement age, around 2030, there will be nearly one million seniors living in Alberta—or about one in five Albertans[2]. This is a significant shift from when the Province of Alberta's Demographic Planning Commission released its Findings Report in 2008, when seniors accounted for one in 10 Albertans.

The Findings Report demonstrates that Alberta seniors are more educated, more culturally diverse and have longer life expectancies than generations past. Based on the Commission's community consultations – seniors in Alberta want to live independently as long as possible "based on factors such as cost, access, proximity to services and personal preferences"[3]. For those who remain healthy enough and can afford to, this will mean "ageing-in-place", while others will look to downsize and relocate to neighbourhoods in proximity to the services they need (e.g., personal care, health care, grocery stores, banking).

Generation Y

Another important demographic group that analysts tend to highlight is Generation Y [4]. Generation Y refers to the specific generation born between the 1980s to early 1990's and was given to the generation after the preceding Generation X. This is because their housing preferences increasingly reflect growing disinterest in living in suburban communities, and willingness to forgo many previously valued residential attributes for walkable, mixed-use communities[5].

Generation Y-ers also tend to have diverse values and can display conflicting housing interests. In 2016, students from the University of Lethbridge conducted a research project on behalf of both the University and the City of Lethbridge, with the intent of understanding the housing, transportation, and lifestyle preferences of Generation Y in the context of Lethbridge. This project included a survey that reached out to over 175 respondents from the Generation Y demographic in Lethbridge. Key findings from this research include:

- Value housing close to amenities
- Value walkable neighbourhoods
- See housing affordability as a key consideration
- Value parks, open space and backyards
- Have diverse values and conflicting housing interests
- Have preferences for both inner-city and suburban areas

[2] Government of Alberta. (2014). *Embracing an aging population*. Url: www.seniors.alberta.ca/seniors/aging-population.html
[3] Demographic Planning Commission. (2008). *Findings Report: Executive Summary*. Url: www.seniors.alberta.ca/documents/Demographic-Commission-Report-2008-Summary.pdf
[4] Nelson, A. (2013). *Reshaping Metropolitan America: Development trends and opportunities to 2030*. Island Press: Washington, DC.
[5] McCormick, K. (2014). *Echo boom making noise: Generation Y is a powerful engine revving up: are you ready?* Profile, Spring 2014. Url: http://www.chbacalgary.com/profile_magazines/magazine-2014-spring.pdf

Generation Y will present an interesting opportunity for developers and municipalities as they will have to shift expectations of the *ideal community*. The ideal may no longer only include a greenfield master-planned community with single-detached homes on large lots. As Baby Boomers transition from the workforce and Generation Y-ers take over the highest earning positions, many of them will invest / allocate their money to homes in established communities as renters or buyers. Developers, community planners and administrators will need to at least partially shift their attention to facilitating the kinds of communities that this next demographic cohort want to live in—rethinking greenfield development (e.g., more dense, mixed-use, walkable) and planning for infill (e.g., reducing barriers to secondary suites, planning for infrastructure upgrades).

Urban Indigenous Community

The Aboriginal population (First Nations people, Métis and Inuit) is another important demographic group that is becoming increasingly influential in Canadian Cities. The 2016 Statistics Canada Census has emphasized that Aboriginal peoples are both young in age (the average age of the Aboriginal population was 32.1 years—almost a decade younger than the non-Aboriginal population) and growing rapidly in number (since 2006, the Aboriginal population has grown by 42.5%, more than four times the growth rate of the non-aboriginal population)[6]. Additionally, the increase in the *urban* population of Aboriginal peoples has been taking place for decades. In 2016, 51.8% of Aboriginal people lived in a metropolitan area of at least 30,000 people. From 2006 to 2016, the number of Aboriginal people living in a metropolitan area of this size increased by 59.7%. The urbanization of the Aboriginal population is due to multiple factors including demographic growth, mobility and changing patterns of self-reported identity[6].

Statistics Canada reported that the Aboriginal population in the Lethbridge Census Metropolitan Area[7], has increased from 3,975 in 2006, to 6,135 in 2016 (54% increase of the decade)[8]. As this demographic continues to grow rapidly, it is important to consider their different housing needs when designing neighbourhoods that offer a range of housing options for all people. For example, about 17.9% of Aboriginal children aged 0 to 4 lived with a grandparent in 2016, either with a parent present or without[9]. This draws attention to the intergenerational housing needs of Aboriginal peoples. Additionally, Aboriginal people often experience forms of discrimination based on perceived stereotypes that are present in the community[10]. Discrimination against Aboriginal people can lead to social barriers when accessing housing including discrimination from landlords, financial institutions and neighbourhood

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[6] Statistics Canada (2016). *Aboriginal peoples in Canada: Key results from the 2016 Census.* Url: http://www12.statcan.gc.ca/census-recensement/2016/rt-td/ap-pa-eng.cfm

[7] Lethbridge Census Metropolitan Area includes surrounding communities including Coaldale, Coalhurst, Nobleford, Picture Butte, Barons, and rural residents

[8] Statistics Canada. (2016). *Aboriginal Peoples Highlight Tables.* Url: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/abo-aut/Table.cfm?Lang=Eng&T=102&SR=51&S=88&O=A&RPP=25&PR=0&D1=1&D2=1&D3=1

[9] Statistics Canada (2016). *Aboriginal peoples in Canada: Key results from the 2016 Census.* Url: http://www12.statcan.gc.ca/census-recensement/2016/rt-td/ap-pa-eng.cfm

[10] Dobek (2006). *Round Street: Building a Better Neighbourhood*. (Community & Social Development Group, City of Lethbridge).

residents[11]. These social barriers are particularly challenging for those seeking rental housing. It is important to be aware of this fast growing demographic and housing needs they require, however further socio-economic research on this demographic is outside the scope of this report.

Immigration

Immigration is another key player in housing changes in Canada, and particularly in Alberta as industry and government tries to address large and growing labour shortages—the Alberta Labour Minister stated in 2014 that the province will be short nearly 100,000 workers in the next 10 years[12]. Immigration will place added demand on housing inventory in all of the main recipient communities.

Data from the Province of Alberta shows that immigrants (and particularly recent arrivals) are more likely than other Albertans to be unemployed and earn less than the provincial average[13]. As immigrants become more established their earning potential increases, as does their level of labour force participation. As immigration will continue to be a key tool used to address the provincial labour shortage for the foreseeable future, communities will absorb the vast majority of new immigrants into rental housing. However, the influx of immigration into the Lethbridge Area is not anticipated to be as dramatic as other areas of the province such as Wood Buffalo, Calgary and the Mountain Parks (in 2013 the job vacancy rate for the Lethbridge-Medicine Hat region is slightly below the provincial average[14]). Immigrants will bring with them their own unique housing needs, such as the preference to have many generations living under one roof, and to live within proximity to social and employment support.

Housing Choice

Preferences

The 2013 National Association of Realtors (NAR)[15] Community Preferences Survey reported that "60 percent of respondents favor a neighbourhood with a mix of houses and stores and other businesses that are easy to walk to, rather than neighbourhoods that require more driving between home, work and recreation"[16]. The survey also indicates that while property size remains an important consideration, respondents are willing to sacrifice size to decrease their commute and to live in a *preferred*

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[11] Canada Mortgage and Housing Corporation. (2005). *An Exploration of Housing Options for Aboriginal People in Edmonton, Alberta and Winnipeg, Manitoba.* Socio-economic Series 05-034. (Produced by CMHC. 12-01-10).

[12] Edmonton Journal. (October 10, 2014). *"Immigration, unemployed workforce keys to solving labour shortage, Kenney says"*. Url:www.edmontonjournal.com/Immigration+unemployed+workforce+keys+solving+labour+shortage+Kenney+says/10278725/story.html

[13] Government of Alberta. (2013a). *Alberta Labour Force Profiles: Immigrants in the Labour Force*. Url: http://work.alberta.ca/documents/labour-profile-immigrants.pdf

[14] Government of Alberta. (2013b). *2013 Alberta Wage and Salary Survey*. Url: http://work.alberta.ca/documents/wage-and-salary-survey-overview.pdf

[15] The National Association of Realtors is America's largest trade association, representing 1.3 million members composed of residential and commercial brokers, salespeople, property managers, appraisers, counselors and others engaged in the real estate industry.

[16] National Association of Realtors. (2013). *Realtors Report Americans Prefer to Live in Mixed-use, Walkable Communities*. News Release October 31, 2013. Url: http://www.realtor.org/sites/default/files/reports/2013/2013-community-preference-press-release.pdf

neighbourhood. Analysts have suggested this will lead to a slow retreat back to inner city communities and a gradual increase in inner city property values relative to suburban property values as neighbourhoods are renewed[4]. While this survey was conducted in the US, there is no reason to suspect that a similar pattern of development will not be experienced in Canada. In fact we have seen trends in most large Canadian cities towards a renewal of older neighbourhoods.

Ownership

Housing affordability has a role to play as CMHC reports home ownership rates have been increasing across the board since the 1970s[17]. Statistics Canada (2013; 2014) has shown a correlation between home ownership and age and income level[18]. What this suggests is that for the next several years, Baby Boomers (who are largely expected to now be in their highest earning years) will constitute the highest proportion of home owners. Meanwhile lower-income, younger and other related cohorts (e.g., new immigrants) will continue to struggle to attain home ownership and will either rent or stay at home with family members. While the general trend in Canada may be one of increasing homeownership, data is overwhelmingly reflective of the impact of Baby Boomers and hides the growing disparity in home ownership across all demographic cohorts.

While demand for housing, in and of itself, will grow as populations grow, the demand for greenfield areas to build single-detached homes may be poised to slow. Changing consumer preferences and the exclusivity of ownership will draw more people towards infill housing either as renters or owners (or in combination as “mortgage helpers”).

Public Health

The connection between our built environment and public health has been overlooked for years, however, a growing number of studies are showing the important relationship between urban design and a number of public health crises, including asthma caused by particulates from cars and trucks, obesity, heart conditions, and depression exacerbated by stressful living conditions, long commutes, lack of access to fresh food, and isolated, car-oriented neighbourhoods.

Environmental Concerns

Carbon Footprint

Although we tend to focus on large emitters of Green House Gasses (GHG) such as coal burning plants, heavy industry, and automobiles when we think of how we can shrink our carbon footprint, the buildings we inhabit have one of the single greatest impacts. In Manitoba, the heating and cooling of these

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[17] Canada Mortgage and Housing Corporation (CMHC). (2013). *Research Highlight: Demographic Change and the National Rate of Homeownership, 2001–2006*. Url: http://www.cmhc-schl.gc.ca/odpub/pdf/68024.pdf?fr=1418764852177

[18] Statistics Canada. (2013). 2011 *National Household Survey: Homeownership and shelter costs in Canada*. Url: http://www.statcan.gc.ca/daily-quotidien/130911/dq130911b-eng.htm
Statistics Canada. (2014). *Homeownership and Shelter Costs in Canada.* Url: http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-014-x/99-014-x2011002-eng.cfm

structures represents 23% of Manitoba's GHG emissions[19]. How we construct buildings is an important factor to climate change, but it is even more important to consider where we construct them. In Canada, we have for a half-century built sprawling, low density suburban cities – a form that has a profound effect on GHG emissions today. In cities across North America, the vast majority of modern growth has been accommodated through low-density suburbs that have disproportionately pushed the edge of the city farther from its centre. As commuting distances have grown, the car has become the only transportation option for almost all daily pursuits. Neighbourhoods are no longer designed around neighbourhood corner stores, libraries, churches, or community clubs and schools. Most of these activities are not provided through the big-box model, requiring long travel distances accessed almost exclusively by car.

In addition to GHG emissions from buildings and automobiles. Sprawling Canadian cities also produce higher emissions through such things as construction of larger roads, pumping water and waste over greater distances, building new community facilities and operating far-reaching civic services such as snow clearing and solid waste management.

Increasing Cost of Growth (Infrastructure, Servicing, and Land)

The dominant form that cities have been building for decades take up more space per person than earlier development modals, and they are more expensive to build and operate than any urban form ever constructed. Requiring more roads for every resident, and more water pipes, sewers, power cables, utility wiring, sidewalks, signposts, and landscaping. They cost more to protect with emergency services. They simply cost more for cities to maintain and cities are falling behind[20].

Building a city almost solely based on the greenfield suburban model means that as we continue to face infrastructure deficits and deteriorating streets and pipes, Canadian cities continue to spend billions of dollars to build bigger roads in a short-sighted effort to provide access and increased capacity. Long term, these roads become the catalyst for even more sprawl, traffic and car dependency as increased vehicle capacity promotes greater development further away.

Adding to service provision and maintenance are land costs. Farm land has increased dramatically in value over time, partially as a result of changing local consumer demands, the global supply chain (e.g., agricultural exports), speculation and the concentration of land ownership (Farm Credit Canada [FCC] reported that farmland values have increased in value significantly since the 2008 global recession, increasing some 13% annually in 2012 and 2013)[21].

Moreover, land has become more expensive because we are valuing it differently. Society is assigning economic value to nature—referred to as ecosystem services. The growing prominence of ecosystem service valuations by consumers and government means that developers will need to spend more capital on 1) regulatory approvals to bring land into their developable inventory and 2) design. In some cases off-

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[19] Brent Bellamy. (2015). *Building a Better City*. Winnipeg Free Press. December 14, 2015. URL: www.winnipegfreepress.com/business/building-a-better-city-361759091.html

[20] Charles Montgomery. (2013*). Happy City: Transforming Our Lives Through Urban Design*. London: Penguin Books, 2015

[21] Farm Credit Canada. (2014). 2013: *Farmland Values Report*. Url: https://www.fcc-fac.ca/fcc/about-fcc/corporate-profile/reports/farmland-values/farmland-values-report-2013.pdf

site mitigation to incorporate or altogether avoid natural and human introduced features (e.g., wetlands, historical sites) will also factor into the equation.

Economic Vulnerability

Reflected through many of the previously mentioned considerations and trends that are based on household finances, is the growing number of Lethbridge residents that are subject to economic vulnerability. Lethbridge has the second highest low-income rate in Alberta and the highest level of child poverty in the province with 1 in 5 children affected[22]. When people live in persistent financial distress, the whole community pays in increased costs to the health care, education, social services and criminal justice systems as well as impacting our local economy in lower spending on goods and services.

1.3 Growth Management Best Practices

There are many good examples of best practices in growth management across North America. The following are a select few that have been highlighted due to their strengths as well as the similarities the municipality draws to the City of Lethbridge.

Places to Grow: The Growth Plan for the Greater Golden Horseshoe (2006)

In 2005-2006 the Province of Ontario instituted the Places to Grow Act and the Places to Grow Plan for the Greater Golden Horseshoe (GGH) Region, which draws many similarities to the Land Stewardship Act and South Saskatchewan Regional Plan here in Alberta. Many of the municipalities within the GGH Region have been busy since 2006 in a similar process of determining how they fit within the broad regional plan. We have drawn on the experiences of two municipalities that are similar in size to Lethbridge that have developed successful growth management strategies in line with the regional plan. This section provides a brief overview of the GGH Regional Plan as well as two growth strategies that were outcomes of the plan.

The Growth Plan establishes a framework for implementing the Provincial Government's vision for building stronger more prosperous communities by managing projected growth to the year 2031.

Key policy directions in the Plan include:

- Directing growth to build up areas where the capacity exists to best accommodate the expected population, household and employment growth;
- Providing strict criteria for settlement area boundary expansion;
- Promoting density and land use mix that supports transit use;
- Preserving employment land for future opportunities;
- Linking urban growth centers and supporting a multi-modal transportation network for moving goods and people;
- Planning for the infrastructure to support growth;
- Ensuring sustainable water and waste water services; and
- Identifying and conserving a natural heritage system and prime agricultural areas.

[22] City of Lethbridge. (2015). *Understanding the Impacts of and Finding Community Solutions to Poverty in Lethbridge.* (Vibrant Lethbridge. Community and Social Development). URL: http://www.lethbridge.ca/living-here/Our-Community/Documents/Vibrant%20LethbridgePovertyReport.FINAL.Feb.%202015.pdf

Due to the similarities, we have focused on the municipalities of Brantford and Guelph which are located within this region to explore the municipal growth strategies that have developed out of a Regional Plan.

City of Brantford – Growth Management Strategy Study

The Plan provides for a strong policy framework of economic development, livable and complete communities, environmental protection, resource management, comprehensive transportation improvements and infrastructure investment. The Growth Management Strategy was initiated by the City of Brantford to identify land use needs and adequately plan for major public infrastructure investments. A time horizon of 40 years has been used to consider long-term land needs.

- Forty years is an appropriate (and perhaps minimum) growth strategy time frame to consider long-term municipal boundaries and major public infrastructure investment.
- Population of 93,000 in 2006 to 155,000 in 2046, and employment from 43,000 (2006) to 82,000 in 2046.
- This Strategy is based on current trends and densities, compared against numbers put forth in the "Places to Grow Plan"

The City of Brantford has developed two growth scenarios to consider. **Existing 'Planning Scenario A'** is essentially a status quo scenario based on existing inventories of known infilling projects as well as current estimates of development in residential greenfield areas. 'Planning Scenario A' would result in an ultimate population at total build-out to City boundaries of approximately 124,000 people. **The 'Compact City Scenario B'** is based on intensification and density targets. For example, the capacity of greenfield areas has been adjusted based on 50 people or jobs per gross hectare. Downtown density has been estimated at 150 people or jobs per hectare. A minimum of 40% of future residential units have been assumed to be provided through intensification within the built-up area. Compact City Scenario (B) would add an additional capacity of 15,000 people over existing Planning Scenario A within the City's existing boundaries. However, this would be achieved at a substantial change to housing mix / density types. For example, the following table compares the City's projected demand for housing by density type relative to the housing distribution, which results from the Compact City Scenario:

Housing Type	Existing City (Scenario A) Density Distribution Target		Compact City (Scenario B) Impact on Density Distribution
"Low" Density	75%	vs.	47%
"Medium" Density	15%	vs.	22%
"High" Density	10%	vs.	31%

Based on current projected housing demand, it is anticipated that the lower density forms of housing (single detached and semi-detached) would be completely built-out in approximately 17 years (i.e. by 2023). This would leave a long-term shortfall of new density housing in the remaining 23 years to 2046.

City of Guelph – Local Growth Management Strategy

By the year 2031, Guelph is expected to be a city of approximately 175,000 people. The City aims to build a compact, vibrant, and *complete community* for current and future generations that meet the following objectives:

- Directs growth to locations within the *built-up area* where the capacity exists to best accommodate the expected population and employment growth.
- Intensifying generally within the built-up area, with higher densities within Downtown Guelph, the community mixed use nodes and within the identified intensification corridors;
- Planning for a minimum density of 50 residents and jobs per hectare in the greenfield area.
- By 2015 and for each year thereafter, a minimum of 40% of the City's annual residential development will occur within the City's built-up area.
- Plans the *Greenfield* area to provide for a diverse mix of land uses at *transit supportive* densities, achieving an overall minimum density target that is not less than 50 residents and jobs combined per hectare.
- Support a *multi-modal* transportation network and efficient public transit that links the city growth nodes to the rest of the community. Generally an area within approximately 500m, or a 10 minute walk from a transit station or major bus depot will generally be planned and designed to achieve increased residential and employment densities that support and ensure the viability of existing and planned transit infrastructure and service.
- Plan for *community infrastructure* to support growth in a compact and efficient form.

Overall, the above best practices in growth management provide examples of policy direction from growing Canadian municipalities with similarities to Lethbridge. As Lethbridge continues to grow, it is important for the City to develop a shared vision that guides policies and investment choices to accommodate growth, while also maintaining the vibrancy and quality of life of Lethbridge. Through the direction of the MDP, the City of Lethbridge can take steps towards accommodating growth in an efficient manner. However, in order to take these steps we must understand patterns of growth and development occurring in Lethbridge.

Part 2: Baseline Report & Data Analysis

ELUS Baseline Report

Part 2 is organized to analyze patterns of growth in Lethbridge, starting from large scale (City Wide) and working down to small scale (City Neighbourhoods). The outcome of these data gathering exercises is to bring the information collected together in a comprehensive baseline report that provides a growth-related snapshot of Lethbridge in 2016. The baseline report includes the following chapters:

2) City of Lethbridge: Establishes baseline data and explores current patterns of growth from a City wide perspective
3) City Sectors: Establishes baseline data and explores current patterns of growth in the North, South, and West sectors.
4) City Neighbourhoods: Establishes baseline data and explores current patterns of growth in residential neighbourhoods
5) Analyzing Patterns of Growth in Lethbridge Neighbourhoods: Analyzes patterns of growth occurring in residential neighbourhoods
6) Industrial and Commercial Areas: Explores how efficiently growth is occurring in industrial and commercial areas
7) Infill Development: Analyzes infill development and statistics in Lethbridge
8) Greenfield Development: provides specific key information on the dynamics of Lethbridge's suburban or greenfield growth

The majority of data and mapping within the Baseline Report is representative of the 2016 statistics, and is intended to be a data "snapshot" of the state of Lethbridge in 2016. However, there are some instances where 2016 data was not available, and data sets prior to or after 2016 were used. All Maps, figures, and tables have been labeled with the year represented by the data.

Chapter 2.0 City Of Lethbridge

2.1 DEMOGRAPHICS

The City of Lethbridge continues to grow steadily with the official 2016 census results at 96,829, an increase of 2,025 new residents (2.14%) over the 2015 municipal census numbers. The 2015-2016 growth rate increased by 0.18%, from the previous 2014-2015 average growth rate of 1.96%. When compared to Alberta's other mid-sized cities of Red Deer, Medicine Hat, and Fort McMurray, Lethbridge's growth has been consistent over the past fifteen years and has not seen major population changes associated with times of limited economic growth or decline.

As discussed in Part 1, the changing demographics of our community means that planners, developers, and decision-makers need to consider what the marketplace wants and what a municipality can provide to residents, while maintaining flexible regulations that encourage innovative development. Figure 3 represents the age population distribution in Lethbridge in 2016, as well as outlining the generations that each age group fits into.

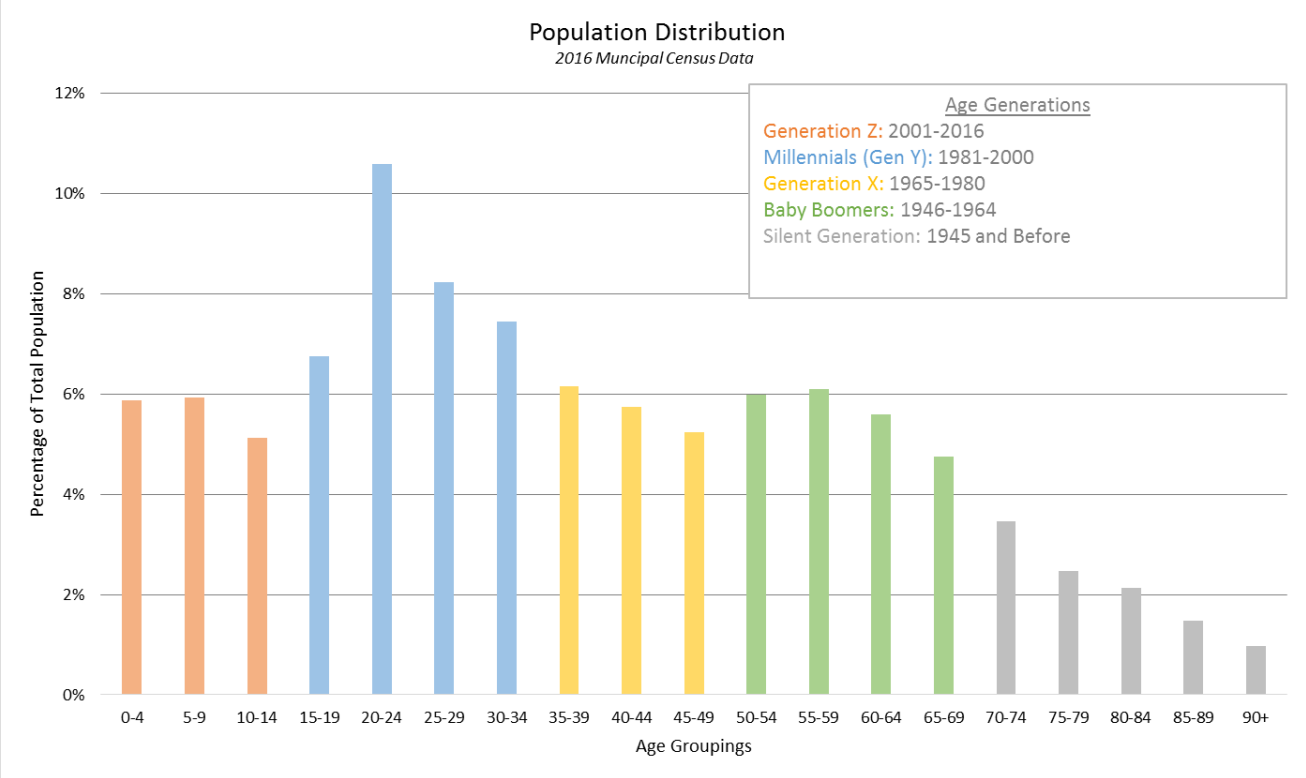


Figure 3: Age Population Distribution (2016)

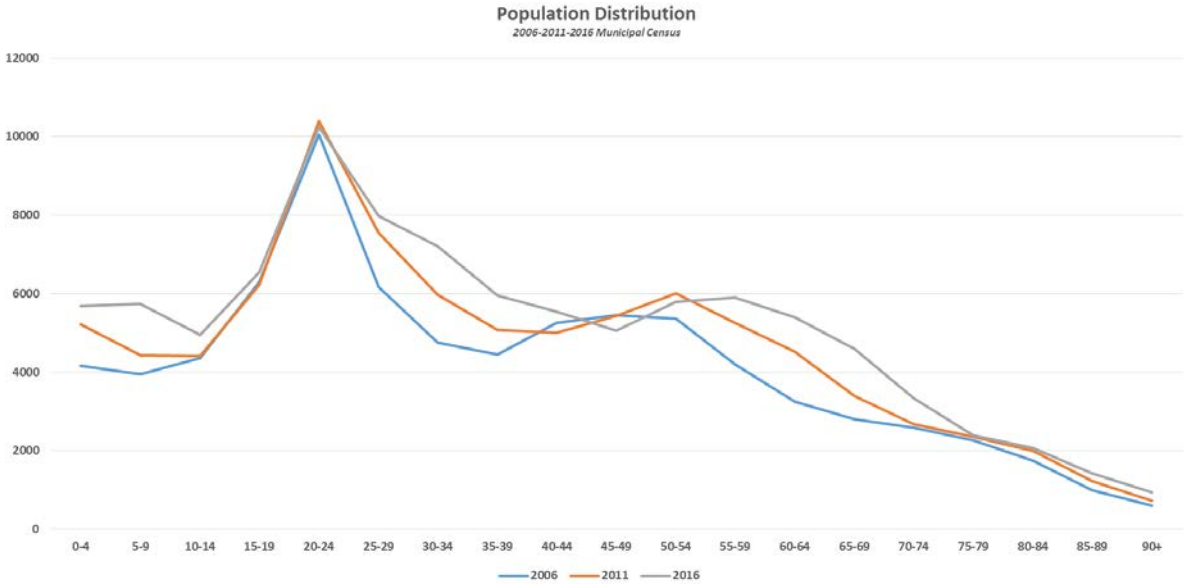


Figure 4: Age Population Distribution from 2006-2016

In Lethbridge, Generation Y (or millennials) represents the largest proportion of the City's population, at 33%. This is mostly attributed to the amount of University of Lethbridge and Lethbridge College students that call Lethbridge home during their school terms. However, as Generation Y continues to age, they become more influential in the housing market, neighbourhoods, workplaces and transportation networks through the City. In Figure 4 we can see a large increase over the past decade of individuals aged 25-44, as well as an increase in children aged 0-14. This is an indicator showing that an increasing proportion of Generation Y are starting families in Lethbridge. Understanding the lifestyle preferences of Generation Y, particularly in terms of housing and transportation, is important when looking for future opportunities to use land efficiently in response the demands of this demographic. As discussed in Part 1, many Generation Y-ers show growing disinterest in living in suburban communities, and willingness to forgo many previously valued residential attributes for walkable, mixed-use communities[5]. However, Generation Y is a diverse group and we must further analyze these trends within the context of Lethbridge. Chapters 3 and 4 will take a closer look at the demographic trends of Generation Y within the context of our city sectors and city neighbourhoods.

Baby Boomers represent the second largest proportion of the population at 22%, and account for almost 1 in 4 residents living in Lethbridge. Figure 4 indicates that the Baby Boomer Generation is both ageing as well as growing in population. As discussed in Part 1, many of these seniors want to live independently for as long as possible. For some, this means "ageing in place", while others will look to downsize and relocate to neighbourhoods in proximity to services they need. Planning for this ageing (and growing) population, and designing a city that meets their needs in an efficient manner needs to be a key consideration for future decisions.

Lastly, both Generation Z (generally children aged 0-14) and Generation X (generally age 35-49) represent 17% of the Lethbridge population. Since 2006, Generation Z has been a growing demographic within the City. A growing population of children within the city is an important trend to note, particularly in terms of availability of schools. The oldest and smallest proportion of the Lethbridge population, known as the Silent Generation (generally older than 70 years), represents 11% of the population.

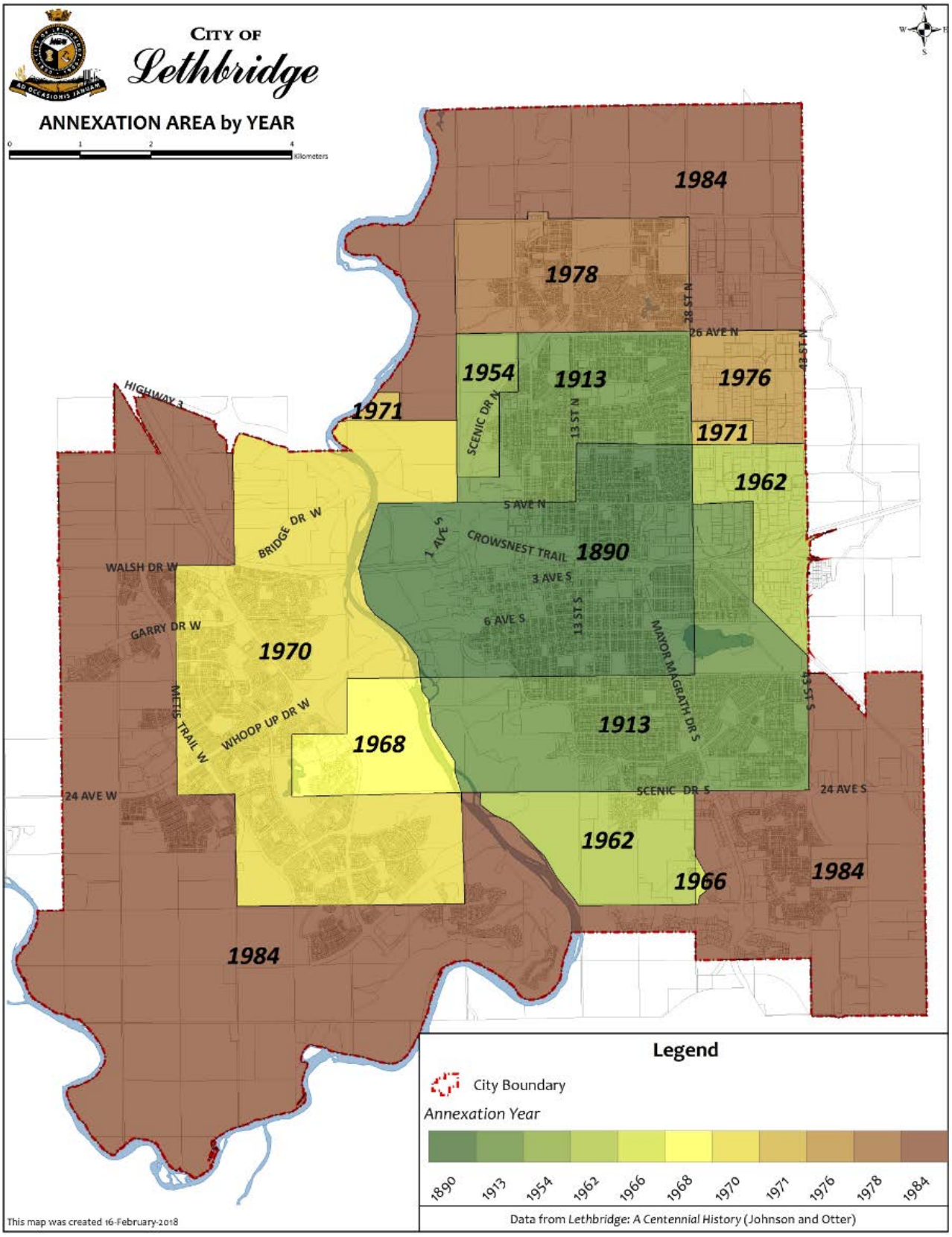
2.2 A History of Urban Expansion

Lethbridge's unique prairie and river valley landscape, and its diverse historic past has greatly influenced the way that the city has grown from past to present. As discussed in Part 1, Lethbridge has gone through various development patterns from the time it was a coalmine settlement known as "Coalbanks" situated in the river valley, to the post-war automobile orientated curvilinear development situated on the plains above. Overall, the immense prairie landscape that surrounded the early city development ensured a lack of geographical constraints and allowed development to spread out from the downtown and central neighbourhoods, consuming land within the municipal boundary and necessitating additional land be acquired.

An urban municipality increases the land within its boundary periodically over time through the acquisition of land from neighbouring municipalities through a process known as annexation. Annexation is not a change in land ownership and does not necessarily facilitate immediate development. Annexations in Lethbridge have occurred periodically throughout history as the city continued to grow. The most recent and most significant taking place in 1984 when 5856.5 hectares of land was annexed from Lethbridge County (Table 1) which increased the City boundary area by 89% over the prior amount. During the 1980s, municipalities were encouraged to think 50 years in the future and not to undertake numerous small scale annexations. The second largest annexation in Lethbridge occurred in 1970, with the acquisition of 1803.2 ha of lands predominantly on the west side of the City as well as the river valley.

Year	Total Lands Acquired (ha)	River Valley Lands Acquired (ha)
1890	1230.6	243.6
1913	1632.9	268.9
1954	146.5	72.5
1962	649.9	242.9
1966	7.3	3.3
1968	286.1	103.1
1970	1803.2	467.2
1971	49.7	20.7
1976	231.1	0.1
1978	538.2	84.2
1984	5856.5	1531.5
TOTAL	12432.1 ha	3038.1 ha

Table 2: Historical Annexations in Lethbridge (1890-1984)



Map 4: Historical Annexations in Lethbridge (1890-1984)

Urban Footprint

As the City's municipal boundary continued to expand through annexations, so has the built environment that makes up Lethbridge's *urban footprint.* The City's urban footprint shown in Map 5 below was created using aerial photography dating from 1926-2015, and displays the growth of urban development across the city's total land base (all land within the City's municipal boundary). These photos provide the ability to estimate growth from past to present. At any one time, the urban footprint has represented anywhere from 25% to 60% of the City's total land base[23]. Historically, in the years prior to an annexation the urban footprint represented a mean of approximately 49% of the city's total land base. In 2015, the urban footprint covered approximately 46% of the city's total land base. These percentages are a useful standard to think of for the timing of future annexations.

"URBAN FOOTPRINT"

"Urban footprint" is the geographical measure of land consumed by a city's *developed* and built environment.

Box 1: Urban Footprint

However when discussing efficient land use, the SSRP sets the objective of minimizing the amount of land that is required for development of the built environment (urban footprint). The true test of whether or not efficient land use is being achieved, is the extent to which the footprint of land taken up by the built environment is minimized over time. It is important to note that while striving to minimize this, we recognize that our cumulative footprint will continue to grow as our population increases and economic development continues into the future. Efficient use of land is not about stopping this development. It is about using and developing less land to accommodate each new person or each new job than has been the case in the past.

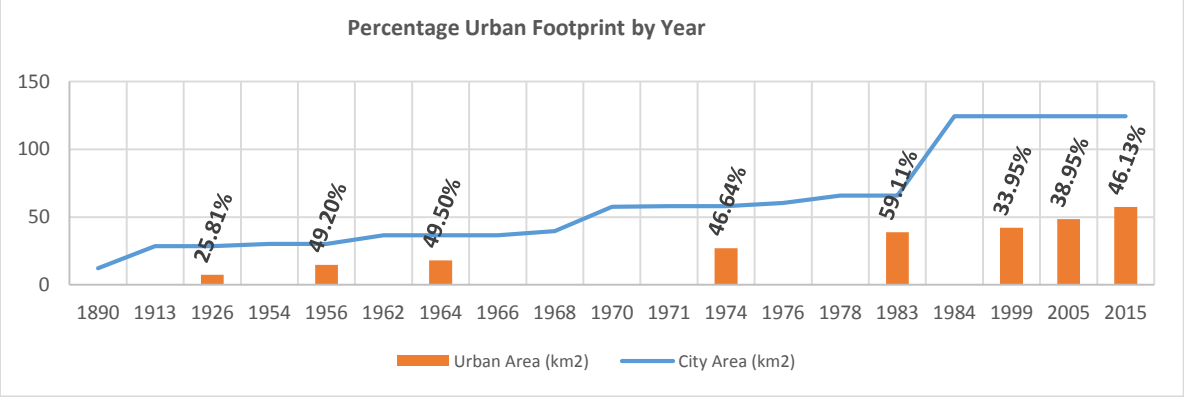
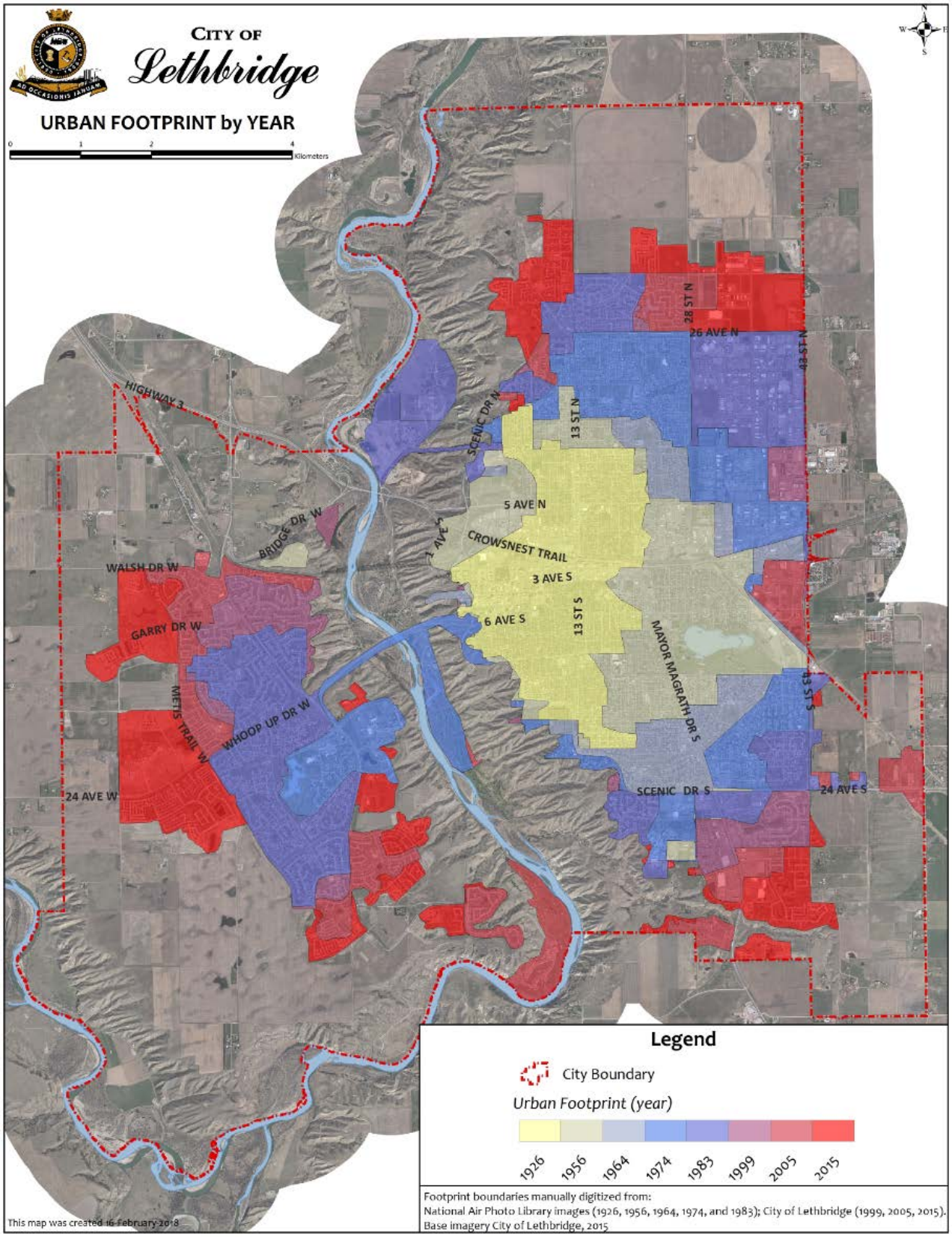


Figure 5: Percentages of Urban Footprint by Year in Lethbridge (1890-2015)

[23]Lethbridge's urban footprint does not include river valley land, except where development has occurred (e.g. golf courses)



Map 5: City of Lethbridge's Urban Footprint (1926-2015)

2.3 LAND COMPOSITION

Today, the land that makes up the City's urban footprint is utilized for a variety of different uses to supply a complex diversity of needs. How we plan, design and locate urban development is key to utlizing our land in a efficient manner. By measuring how land is consumed for varying land uses, we can begin to look for ways to shift towards greater efficiencies.

The City's land composition has been broken down into different categories, analyzing our land from large to small scale. A thorough understanding of what our land consists of today, is important in determining how growth and development should take place in the future. The categories of the City's land composition include:

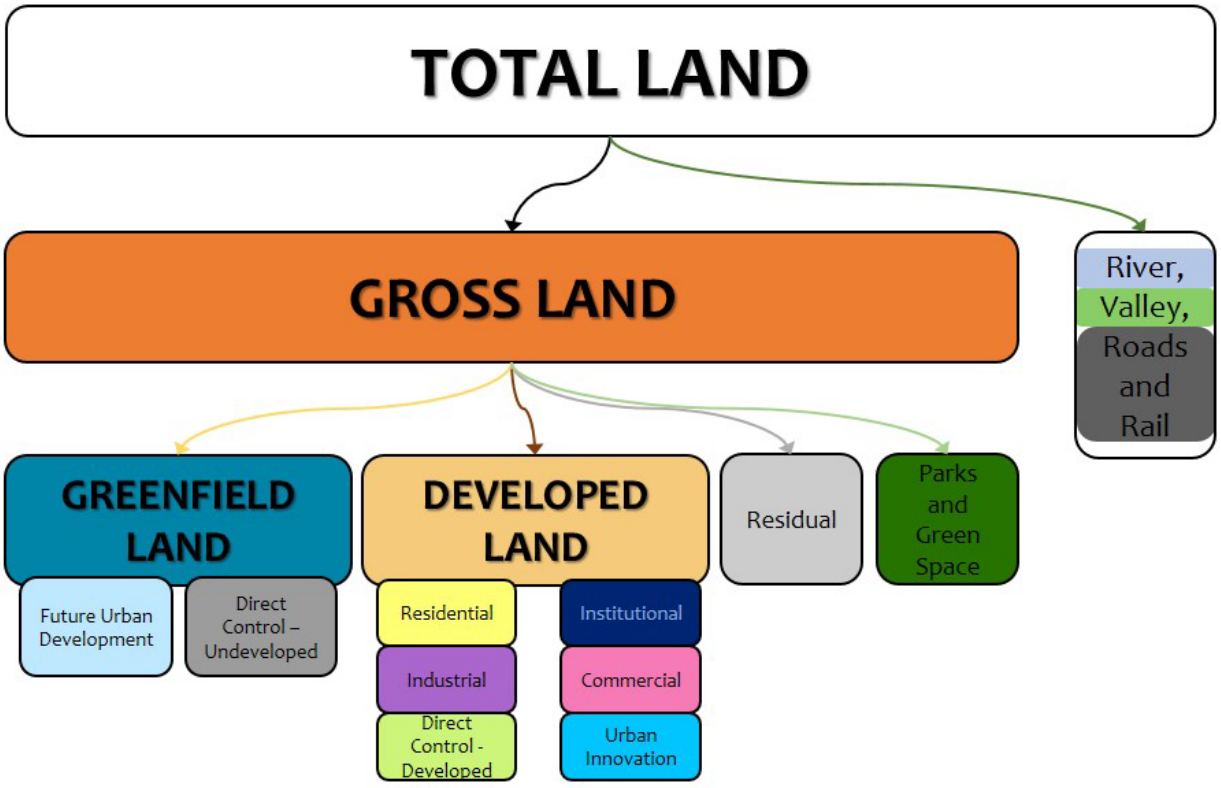


Figure 6: Categorizing Land Composition

Total Land Composition

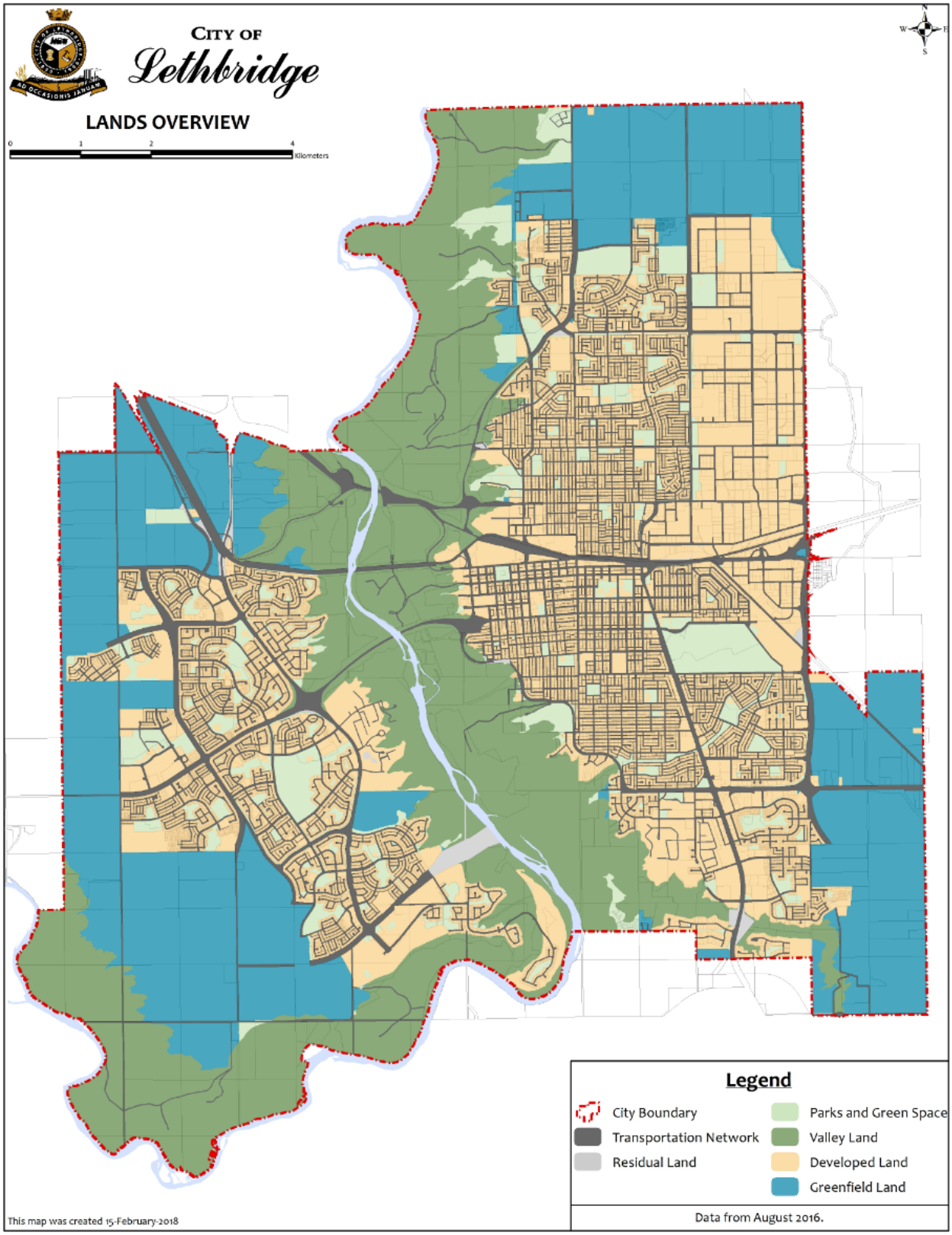
The City's Total Land Composition includes *all* land that is currently within the City of Lethbridge boundary. As of 2016, the City's ***total land*** (Map 6) within its boundaries consisted of 12432.1 ha which included the plains, river valley, and hydrological features.

Most of the land on the plains above the river valley has the potential for development, however there are servicing, ecological and topographic constraints in some instances. Development opportunities within the river valley are narrowly defined. In 2016, of the 12,432.1 ha of total land within the city boundaries, approximately 3,193.46 ha is river valley land, and 1,782.14 ha of land consisted of the existing roadway network. This leaves the City of Lethbridge with approximately 7,372.28 ha of ***gross land*** (largely suitable for urban development).

Total Land Composition	Hectares (ha)	% of Total Land
Gross Land	7,372.43 ha	59%
→Developed	3,444.51 ha	47%
→Greenfield	3,006.48 ha	41%
→Parks and Green Space	863.04 ha	12%
→Residual [24]	58.39 ha	1%
Transportation Network	1,782.14 ha	14%
River Valley	3,193.46 ha	26%
Oldman River	84.23 ha	1%
Total	12,432.11 ha	100%

Table 3: Total Land Composition (2016)

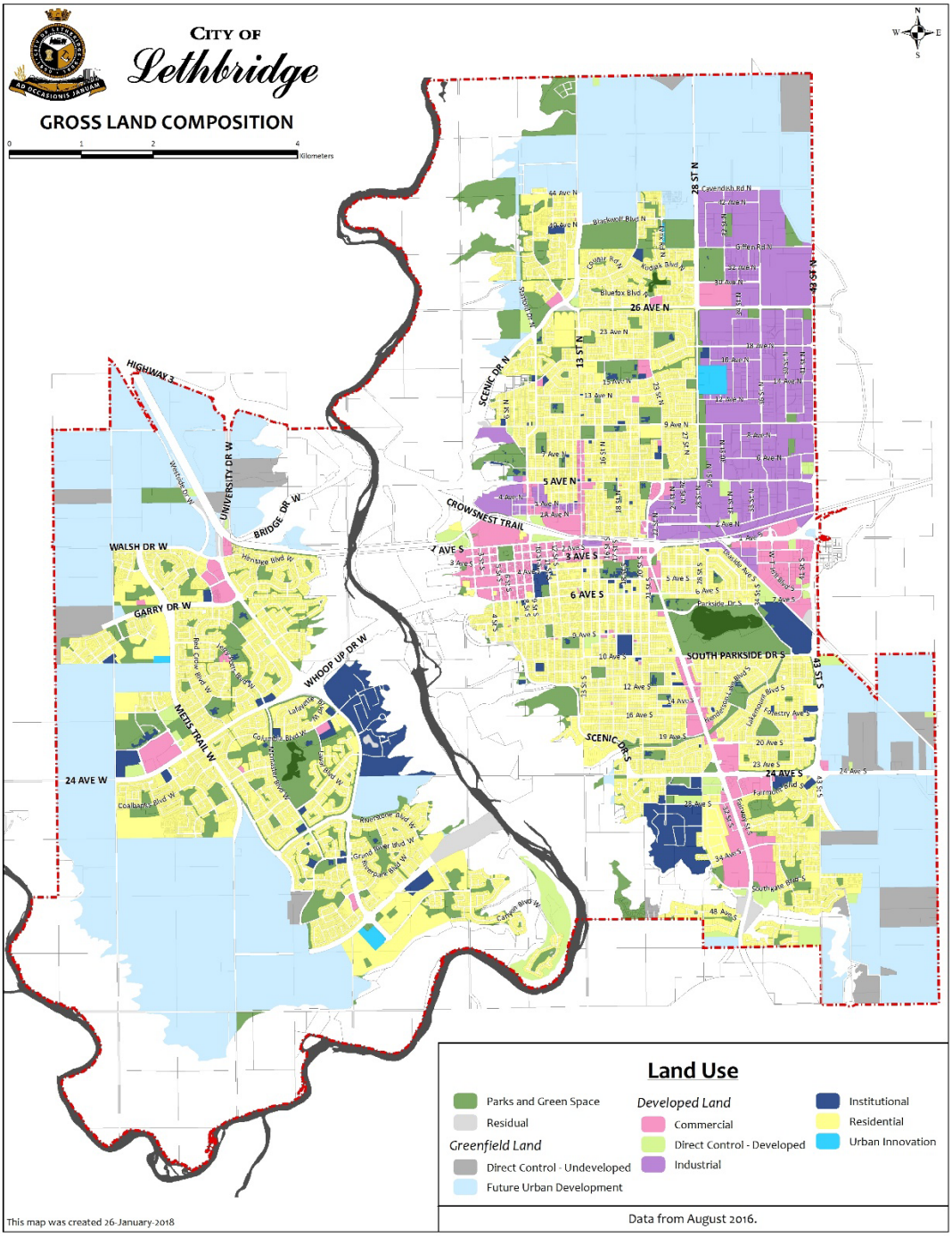
[24] Typically small slivers of residual land bordering transportation corridors and the River Valley that includes transportation right of ways and unzoned land



Map 6: Total Land Composition (2016)

Gross Land Composition

The gross land composition consists of land that is largely suitable to support urban development. Furthermore, it can be separated into land that has already been developed into the built environment and is therefore considered *Developed land*, or vacant *Greenfield land* that has the potential to support future urban growth. The gross land composition also includes the various forms of *Parks and Green Space* found through neighbourhoods in Lethbridge.



Map 7: Gross Land Composition (2016)

Developed Land

Developed land is comprised of a variety of land uses or zonings which most commonly includes residential, commercial, industrial, and institutional. Combined, Lethbridge's different land uses and development patterns within the built land base support a diversity of buildings, landscapes and amenities that create a vibrant City and provide a range of opportunities for people to live, work, and play. Through various planning documents including the Integrated Community Sustainability Plan and Municipal Development Plan (ICSP/MDP), Area Structure Plans (ASP), Area Redevelopment Plans (ARP) and Outline Plans (OP), land uses and built form for any given land parcel is envisioned. In combination with planning documents, zoning is a tool used to implement the vision developed in statutory planning documents. This process ensures that Lethbridge has opportunities for employment, housing, and recreation (see the City of Lethbridge Land Use Districts Map for an illustration of citywide zoning).

In 2016, there were approximately 3,444.51 ha of *developed land* (Map 8) within the City's boundaries, which accounts for approximately 48% of the city's gross land base. The developed land composition is comprised of zoned land that contains built form in most instances. In total, the City's 3,444.51 ha of zoned developed land consisted of 59% residential, 10% commercial, 18% industrial, and 8% institutional.

Special "direct control" zones accounted for 4% of land uses, and are used to define unique regulations or to accommodate mixed uses. Additionally, special "Urban Innovation" zones account for 1% of land uses, and are used to allow the comprehensive development of a site which may or may not feature a mixture of complementary land uses to create an environment not possible using another land use district. So Lethbridge's actual land use breakdown may underrepresent areas where specialty zoning is more common.

Moreover, there are large parcels of land across the city that operate as a residential land use (typically apartment buildings and senior housing) but are zoned as direct control, commercial or institutional land uses districts. These areas have been calculated as a residential land use in order to increase data accuracy when completing further analysis, particularly calculating residential neighbourhood density.

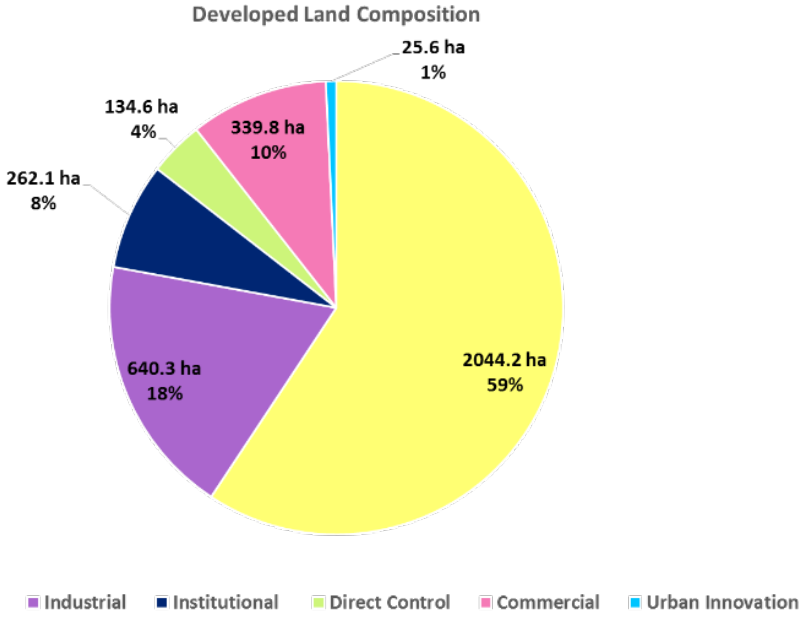
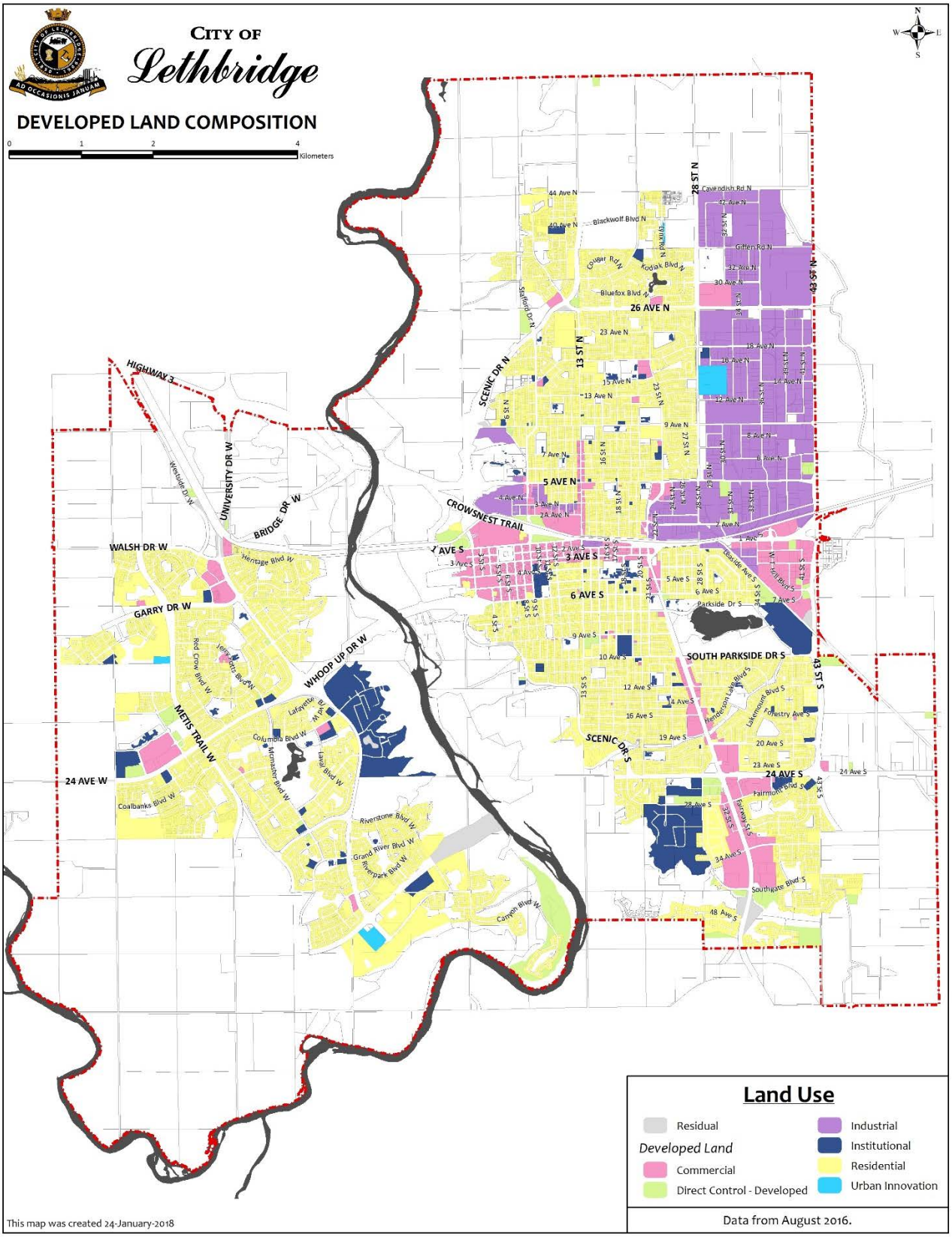


Figure 7: Developed Land Composition (2016)



Map 8: Developed Land Composition (2016)

Greenfield Land

Greenfield land, in its current state, is generally used for agricultural purposes or has been left natural, and usually consists of large vacant parcels which are potentially suitable for future urban growth. Greenfield land can be converted from an undeveloped state into permanent built state in order to support a variety of land uses, and meet a variety of different needs providing it meets the required infrastructure standards and good planning practice. In Lethbridge, greenfield land with the potential for greenfield development is generally found surrounding the city's current urban footprint, and is typically zoned as either Future Urban Development (FUD) or Direct Control (DC) (Map 9).

The purpose of the FUD land use districts is to control subdivision and development of the land until the required municipal services are available, planning is complete, and more appropriate land use districts can be determined to allow for development. Rezoning greenfield land from FUD to DC allows for the subdivision of the land usually to separate a farm residence from agricultural land, which would not be permitted under a FUD zoning. The development of greenfield land cannot occur until both an Area Structure Plan and Outline Plan has been completed. Map 10 outlines the areas that currently have planning in place within the City.

Within the City's municipal boundary, there are currently 3,006.48 ha of greenfield land, 2,729.2 ha is zoned for FUD and 277.2 ha is zoned as DC.
Greenfield land represents approximately 41% of Lethbridge's gross land composition. However, the greenfield land supply includes land that will be consumed by areas of infrastructure such as roadways, right-of-ways and storm pond facilities, or may be kept in a naturalized or agricultural state, and does not represent the amount of land that will be available to support residential, commercial, industrial or public buildings.

In the context of efficient land use, greenfield land is a limited non-renewable resource. The development of this land must occur in a thoughtful manner that maximizes the limited greenfield land base, and minimizes the outward impacts of the City's urban footprint. Additionally, the development of greenfield land often means the need for new or expanded infrastructure. The development of greenfield land will be further explored in Chapter 7: Greenfield Development.

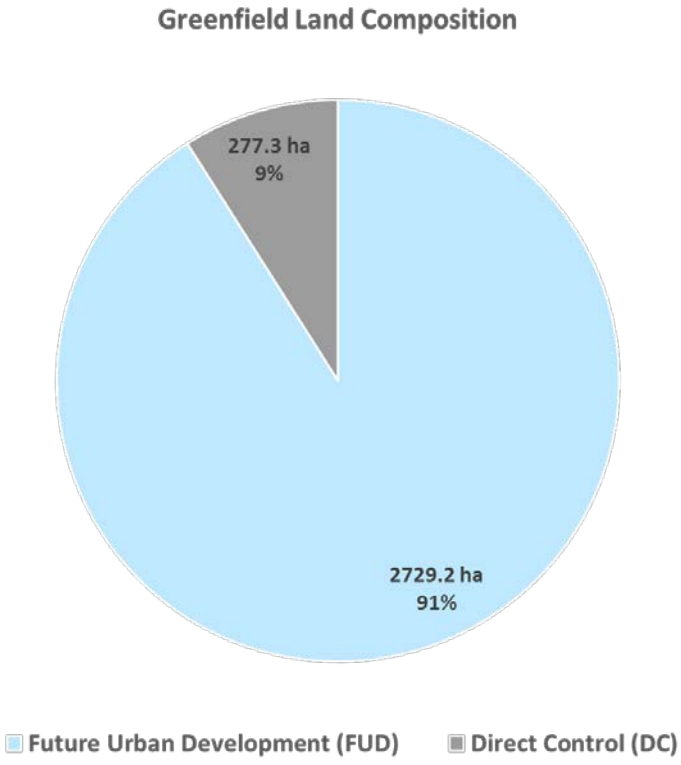
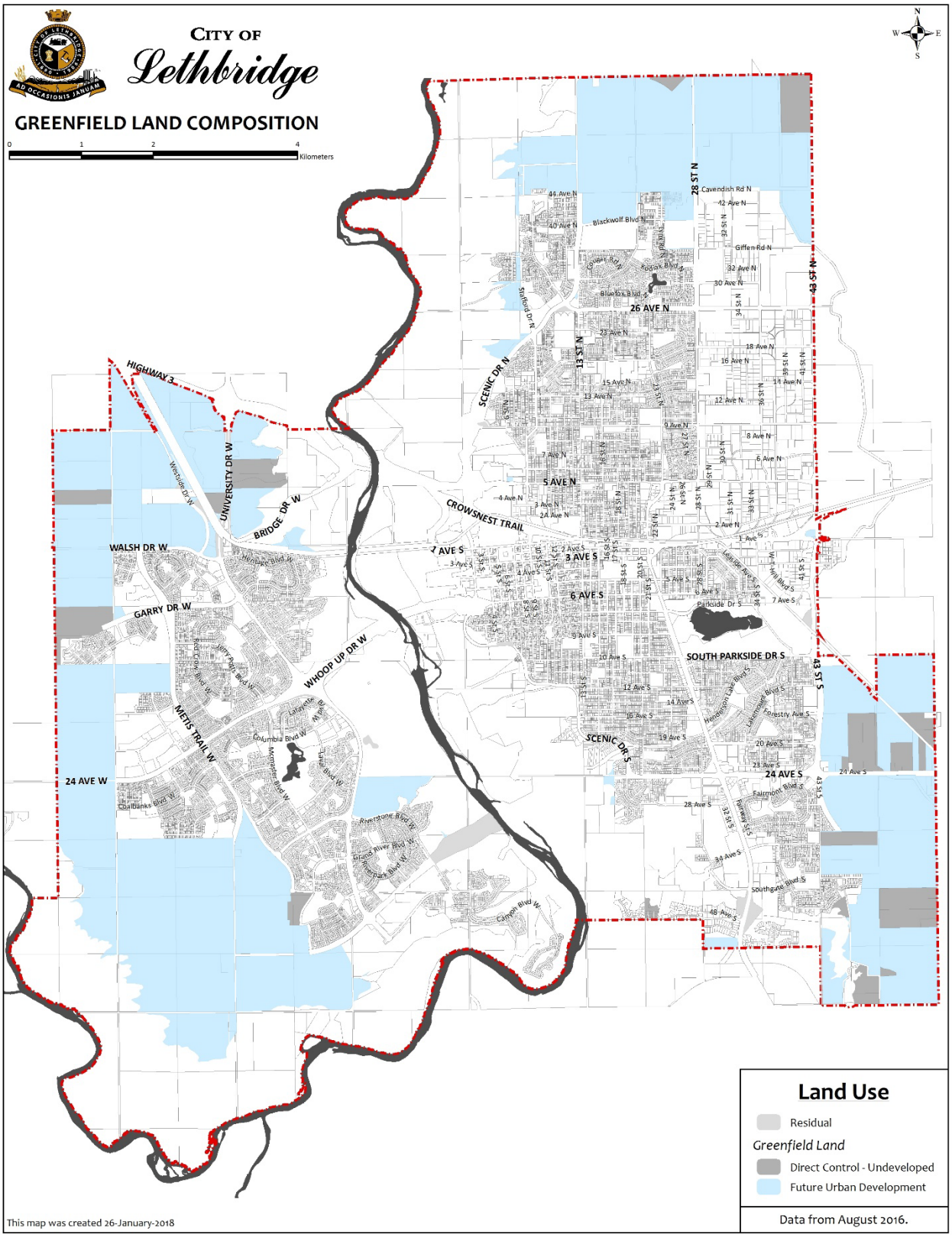
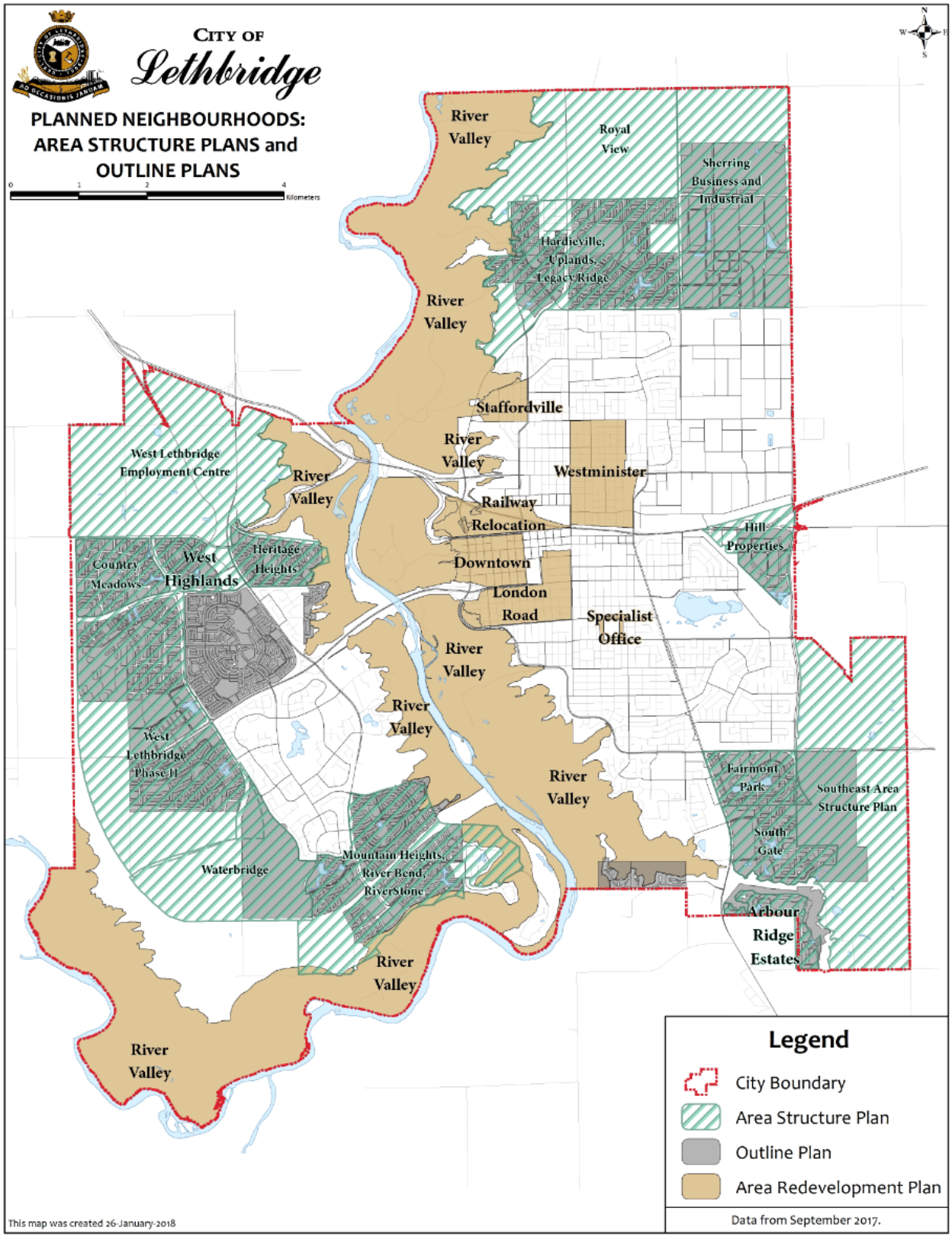


Figure 8: Greenfield Land Composition (2016)



Map 9: Greenfield Land Composition (2016)



Map 10: Planned Neighbourhoods (2017)

Parks & Green Space

The City of Lethbridge has 863.04 ha of parks and green space[25] (Map 10) that represents 12% of the City's gross land supply. Parks and green Space was included as part of the gross land composition, however, it was not considered to be developed land. This was decided with the rationale that parks and green spaces do not generally contain built form in any substantial amounts and the large areas of park space would lead to data skewing when analyzing density statistics.

Parks and recreational areas in Lethbridge give us space to participate in activities that we enjoy and encourages residents to socialize and be active in the community. Parks and green space also help to contribute to physical health, showcase our community's rich culture and history, and are good for our mental health and general well-being. Parks and green spaces in Lethbridge are very diverse and can include large open spaces small green strips with pathway systems that are used for walking and cycling or even cemeteries. Some park spaces in Lethbridge also include recreational infrastructure such as playground equipment, outdoor workout equipment, or outdoor swimming pools. Table 3 outlines the different forms of parks and open spaces found within the City.

Park Type	Description	Examples
Pocket Parks	Small parks designed for those living nearby and focus on passive recreation and aesthetic appeal that can accommodate a wide variety of users (Size: .05 to .8 ha)	Stafford Court Park, Tudor Tot Lot, and Willow Pointe Park
Neighbourhood Parks	Medium-sized parks designed for the nearby community and focus on more dominant activities with primary users being families and children (Size: .8 to 5.5 ha)	Kodiak Park, Gyro Park, and Columbia Park
Community Core Parks	Large core parks designed to meet the needs of a more broad community area. Accommodate large group activities or formal gatherings, community events and temporary festival spaces (Size: 5.5 ha and larger)	Chinook Lake Park, Fairmont Lake Park, and West Highlands Park
Regional Parks	Very large-scale parks that provide major recreational facilities not found in other city parks. These parks could be a destination or attraction for visitors and tourists with unique areas for specialty sports, concerts or festival areas.	Henderson Lake Park, Nicholas Sheran Park and Legacy Park
Downtown Core Park	Parks located downtown with focal points providing a setting for social and passive recreation, public events and festivals	Galt Gardens Park, Civic Centre Park
School Grounds	Meet the community's active recreation needs and provide expanded play areas for neighbourhood schools. *NOTE: School Grounds are zoned as Public Building, and not included within the Parks & Recreation zoning count.	Galbraith School, Agnes Davidson School, and Mike Mountain Horse School
Linear Parks	Green strips that contribute to pedestrian and bicycle circulation through the city. Also act as buffers, providing visual screening and noise reduction.	28 Street North Buffer, Lakeview Green Strip, and Heritage Park Green Strip

[25] Parks and Green space also includes Archmont Cemetery (12.5 ha), Mountain View Cemetery (19.67 ha), and Royal View Memorial Cemetery (17.64 ha)

Special Use Parks	Respond to distinctive and unique community needs.	BMX and skate parks, outdoor swimming pools, sports complexes, cemeteries, off leash dog parks

Table 4: Park Types in Lethbridge

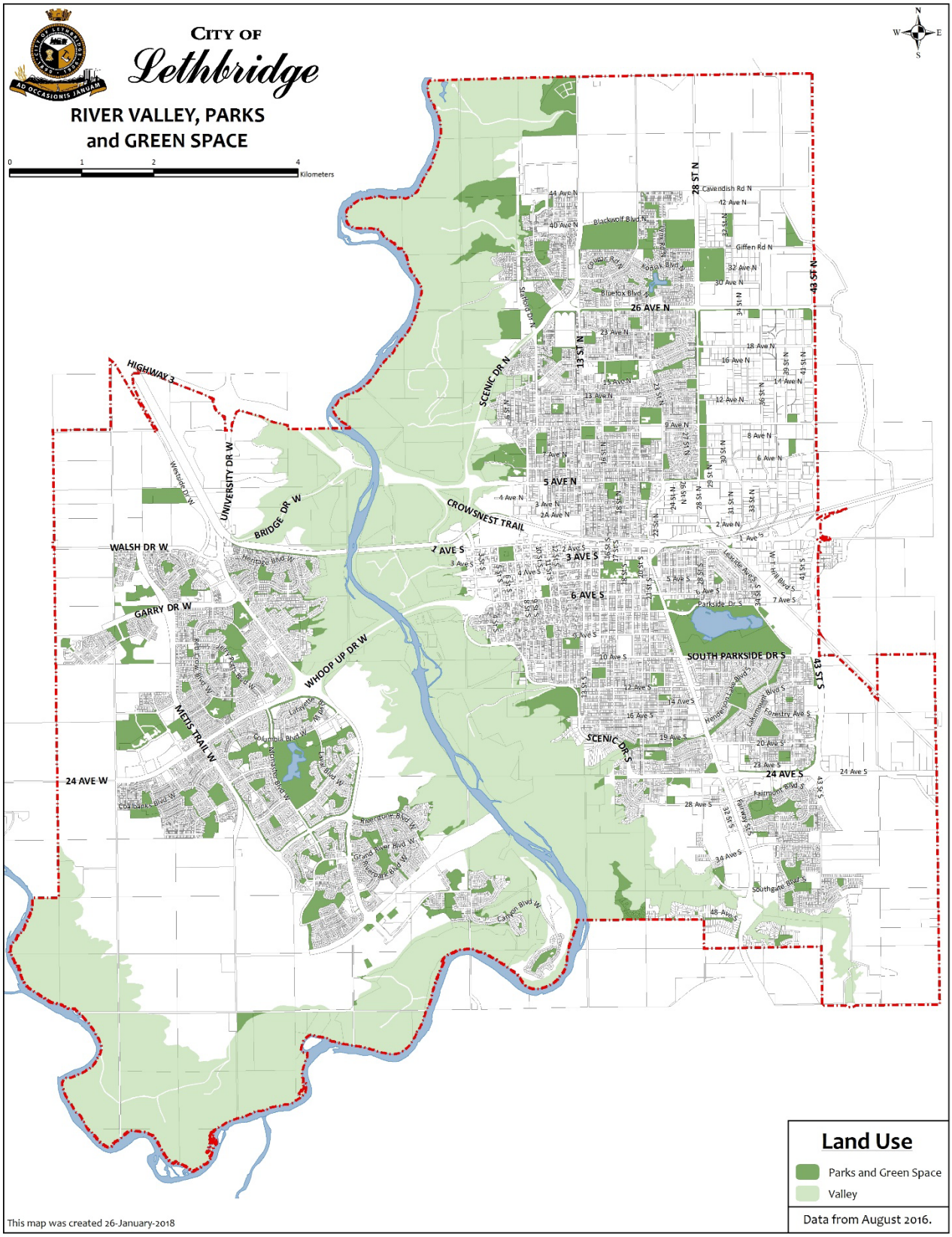
The Oldman River Valley

The Oldman River Valley (Map 10) runs through the City of Lethbridge, providing an irreplaceable scenic and cultural landscape around which the City has developed. Indigenous peoples have made use of the river valley for thousands of years. Previous and current generations have utilized the river valley to harvest plants and animals for subsistence, and for ceremonial and medicinal uses. Many traditional uses of the river valley still occur by the indigenous community today. Additionally, these lands saw a wide variety of activities, as people held ceremonies (including the Sundance), grazed horses and cattle, mined the slopes (for gravel, iniskim / Buffalo Stone, ammolite, and coal), built homesteads and communities, and planted crops.

The City's decision to designate the majority of the river valley as parkland has maintained the natural character of the landscape in many areas. However, over the past century there has been some small areas of development that have been approved to remain within the River Valley such as golf courses[26]. Today, recreation, culture, and conservation are the defining elements of the Lethbridge River Valley. Careful planning has resulted in the balancing of ecological preservation with public access to recreational space. Twelve *natural parks* and *preservation areas* with numerous recreational and cultural amenities exist on both sides of the river valley. Examples of these natural parks and preservation areas includes Pavan Park, Indian Battle Park, Popson Park, and Alexander Wilderness Park.

Due to the natural character and cultural importance of the river valley, the land was calculated separately from parks and green space. In total, the River Valley consists of 3193.46 ha of land, making up 26% percent of the total land within the City of Lethbridge. The system of parks and wilderness areas that stretch along the Oldman River offer residents and visitors an opportunity to interact with nature while providing numerous recreational activities. These areas consist of natural and native vegetation such as cottonwood trees and willows, whereas all trees on the plains above were planted by early settlers. By limiting development in the Lethbridge River Valley, the City has stewarded a natural cultural landscape which positively contributes to the quality of life in Lethbridge.

[26] There are three golf courses in the river valley: Bridge Valley Golf Course, the Lethbridge Country Club, and Paradise Canyon Golf Course. Paradise Canyon Golf Course is zoned with a land use district of Direct Control so it has been included within the developed land base. However, Bridge Valley Golf Couse and the Lethbridge Country Club are zoned with the Valley land use district and are included within the total river valley land count.



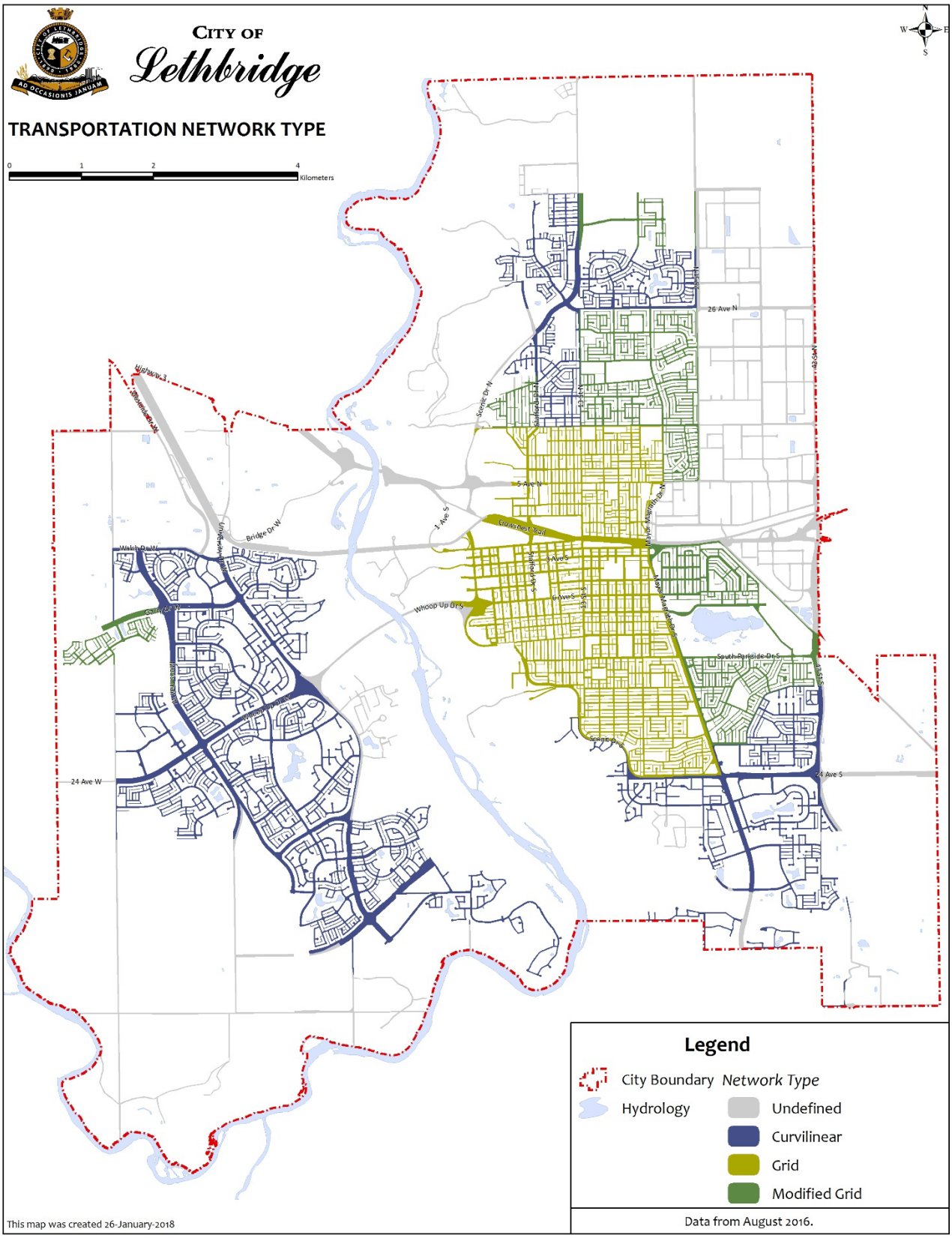
Map 11: River Valley, Parks and Green Space (2016)

Transportation Network

The City of Lethbridge is designed with hierarchical road transportation network (Map 11) that use a system of arterial, collector, and local roadways. Collector and local roadways through Lethbridge neighbourhoods are typically designed with curvilinear, grid, or modified grid layouts.

Arterial roadways include east-west corridors that traverse the Oldman River Valley: Highway 3 (Provincial corridor) and Whoop Up Drive (City operated). The north-south arterial corridors include University Drive on the west side of the Oldman River Valley and Scenic Drive, Mayor Magrath Drive and 43rd Street on the east side of Lethbridge. Portions of 43 Street S from Highway 3 to the southeast City limits are under provincial jurisdiction. Additionally, the Public Transportation (P-T) zoning consists of regional and national railway systems through the city and has been added to the existing roadway network.

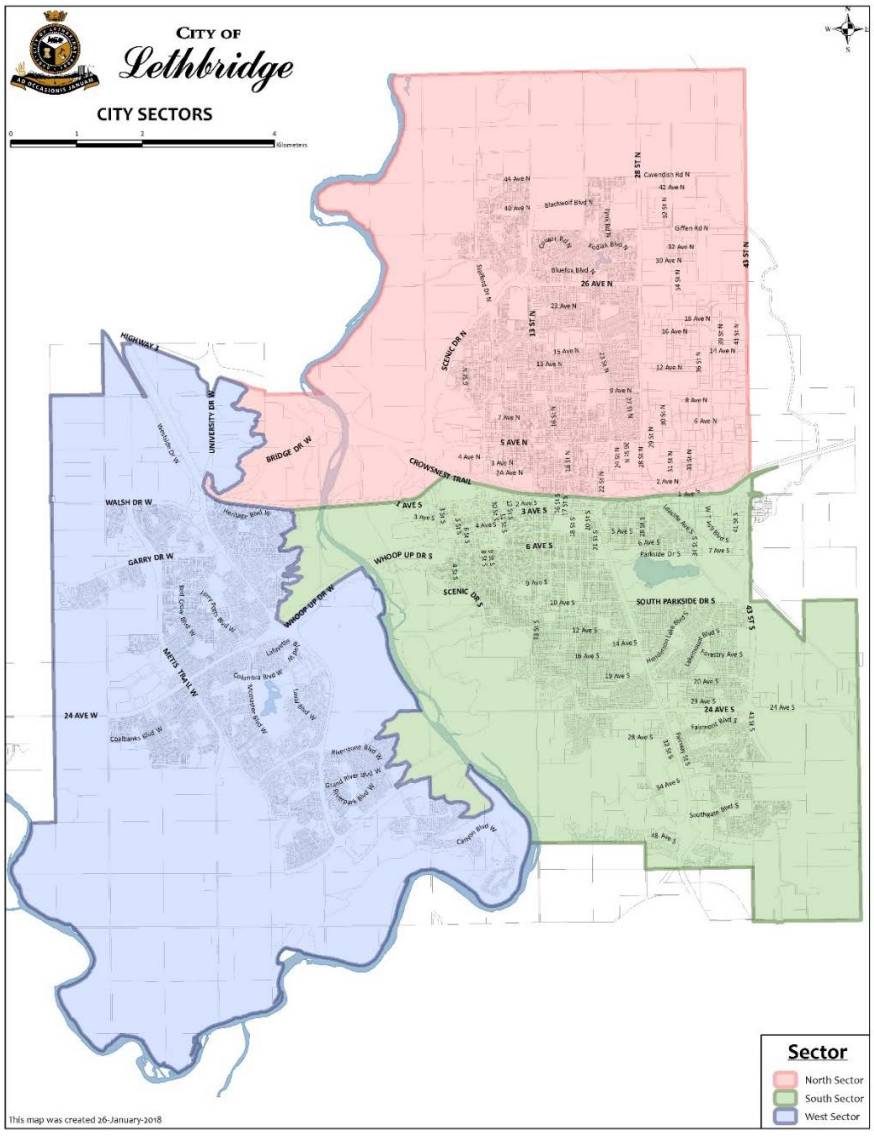
In total the existing transportation road network consumes 1783.00 ha of land, and makes up 14.3% of the city's total land base. The transportation network was not included within the gross land composition for the rationale that it is not developable and does not contain built form, despite the fact that it is part of the overall urban footprint.



Map 12: Transportation Network (2016)

Chapter 3.0 City Sectors

Lethbridge has changed over the past few decades, and is expected to change and evolve as it grows. However, not all areas of the city have experienced uniform development patterns and population growth over the same periods. Geographically, the City can be divided into three sectors: ***North Lethbridge***, ***South Lethbridge*** and ***West Lethbridge*** (Map12)[27]. Each of these sectors show unique tendencies in terms of population growth and land use patterns.



Map 13: City Sectors (2016)

[27] The Oldman River physically divides the North and South Sectors from the West Sector. However, for this analysis the City Sectors map and associated data reflects the neighbourhood boundaries that were established in a cross-departmental exercise in 2013. Since the City Sectors boundaries were created to reflect the neighbourhood boundaries, they may not follow natural boundaries such as the Oldman River.

3.1 City Sector Demographics

Population growth in West Lethbridge continues to outpace growth of other sectors of the City. In 2016, West Lethbridge population increased by 3.30% (1,211 new residents) from 2015. North Lethbridge witnessed an increase of 1.11% (297 new residents), while South Lethbridge recorded an increase of 1.65% (517 residents).

Sector	2015	2016	Change in #'s (2015-2016)	Change in % (2015-2016)
North Lethbridge	26,751	27,048	297	1.11%
South Lethbridge	31,337	31,854	517	1.65%
West Lethbridge	36,716	37,927	1,211	3.30%
Totals	94,804	96,829	20,25	2.14%

Table 5: Population by City Sector (2015-2016)

Prior to the development of the West sector, the City's population was predominately located in the North and South sectors. However, the construction of the University of Lethbridge paired with the decision to encourage development on the west side of the river drastically changed growth in the City. When these decisions were made in the late 1960's, the West sector began to dominate population growth across the city (Figure 7) accounting for over 70% of the City's total population growth, every year from 1975-2005 (Table 5). *See Appendix 1.0 for additional historical population growth statistics.*

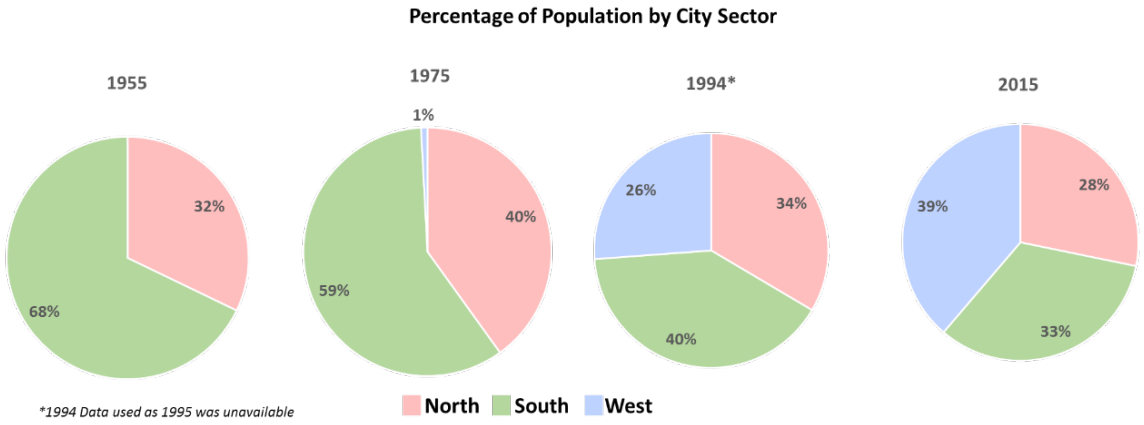


Figure 9: Percentage of Population by City Sector

Sector	1955-1964	1965-1974	1975-1985*	1985-1994	1995-2005**	2005-2014
North Lethbridge	43.72%	65.13%	25.17%	0.77%	9.51%	21.82%
South Lethbridge	56.28%	30.04%	0.54%	-3.99%	13.76%	19.62%
West Lethbridge	0.00%	4.83%	74.29%	103.22%	76.74%	58.57%
City Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

*Table 6: Population Growth as Percentage of Total Growth (*1985 data used as 1984 was unavailable. **2005 data used as 2004 was unavailable)*

In 2016, West Lethbridge also showed the highest proportion of children, youth, young adults, and middle aged adults in comparison to the other two sectors. Contrastingly, South Lethbridge is home to the highest proportion of adults over the age of 50, as well as the highest proportion of the senior population. West and South Lethbridge both show a higher population of 20-24 year olds, attributed to the location of the University of Lethbridge in the West sector, and Lethbridge College in the South Sector. North Lethbridge has less polarization of age groups, and indicates a generally balanced age distribution in comparison to the other two sectors.

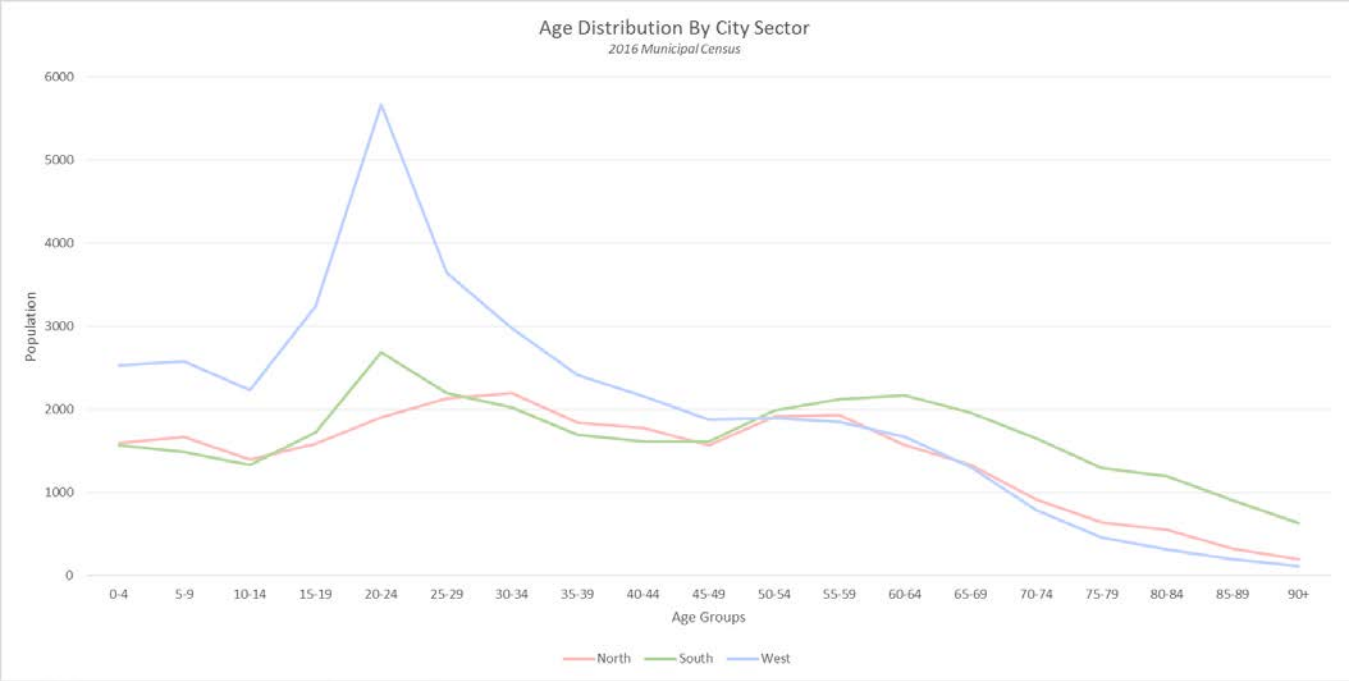


Figure 10: Age Distribution by City Sector (2016)

North Lethbridge

North Lethbridge is currently home to 27,048 residents (28% of the City's Population), and has historically represented the lowest proportion of the population since Lethbridge's early development.

Over the past decade, North Lethbridge has shown signs of an increasing and ageing Generation Y population (born 1981-2000). In 2006, there was a higher proportion of individuals aged 20-24 (Figure 11) living in North Lethbridge, however, in the second half of the decade we can see this "age bubble" both growing and shifting rightwards as these individuals age. As this age bubble shifts towards the 25-34 age group, we see an increase in young children (Generation Z) in North Lethbridge which may be associated with this age demographic beginning to start families.

In 2006, there was a high proportion of the Baby Boomer Generation living in North Lethbridge. We can also see this age bubble shifting rightward as the Baby Boomers continue to age. A notable to trend to be aware of is whether the Baby Boomer generation continues to "age-in-place" in North Lethbridge as they transition into their senior ages, or if they migrate to other sectors of the City.

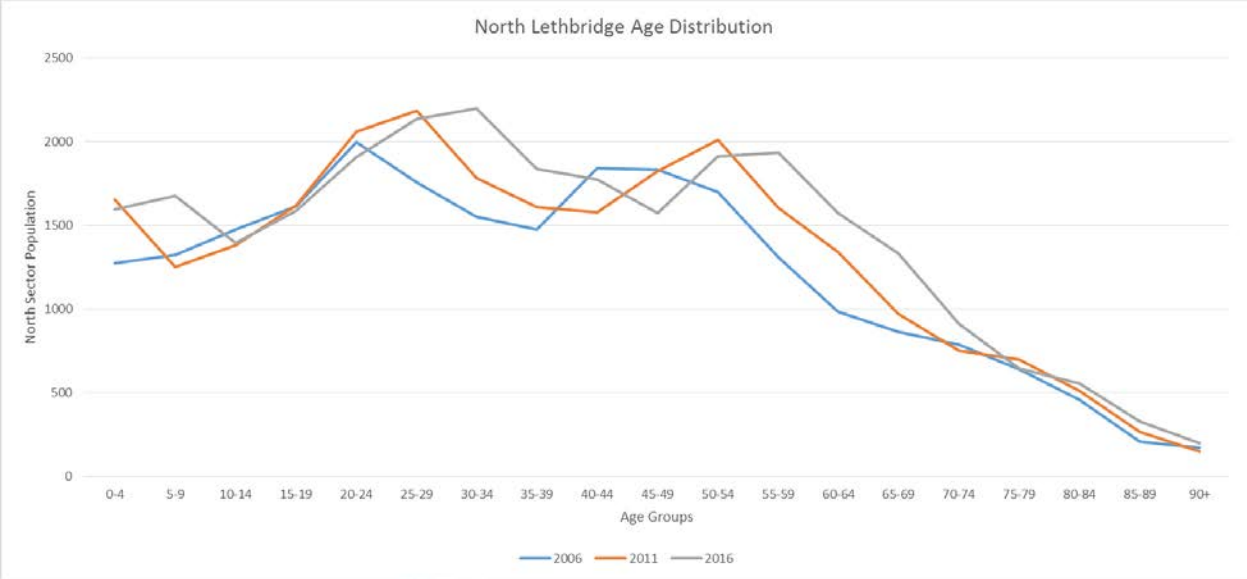


Figure 11: North Sector Age Distribution (2006-2016)

South Lethbridge

South Lethbridge is currently home to 31,854 individuals, and represents 33% of the Lethbridge population. Between 2006 and 2016, South Lethbridge had a declining population of individuals aged 20-24. Contrastingly, there was an increase of individuals aged 30-39 (Generation Y) as well as an increasing number of children aged 1-14 (Generation Z). South Lethbridge has shown a growing Baby Boomer generation, as well as a growing senior's population. As discussed in Chapter 1, the Baby Boomer generation in Lethbridge has continued to grow over the past decade; we can see this growth taking place particularly in South Lethbridge.

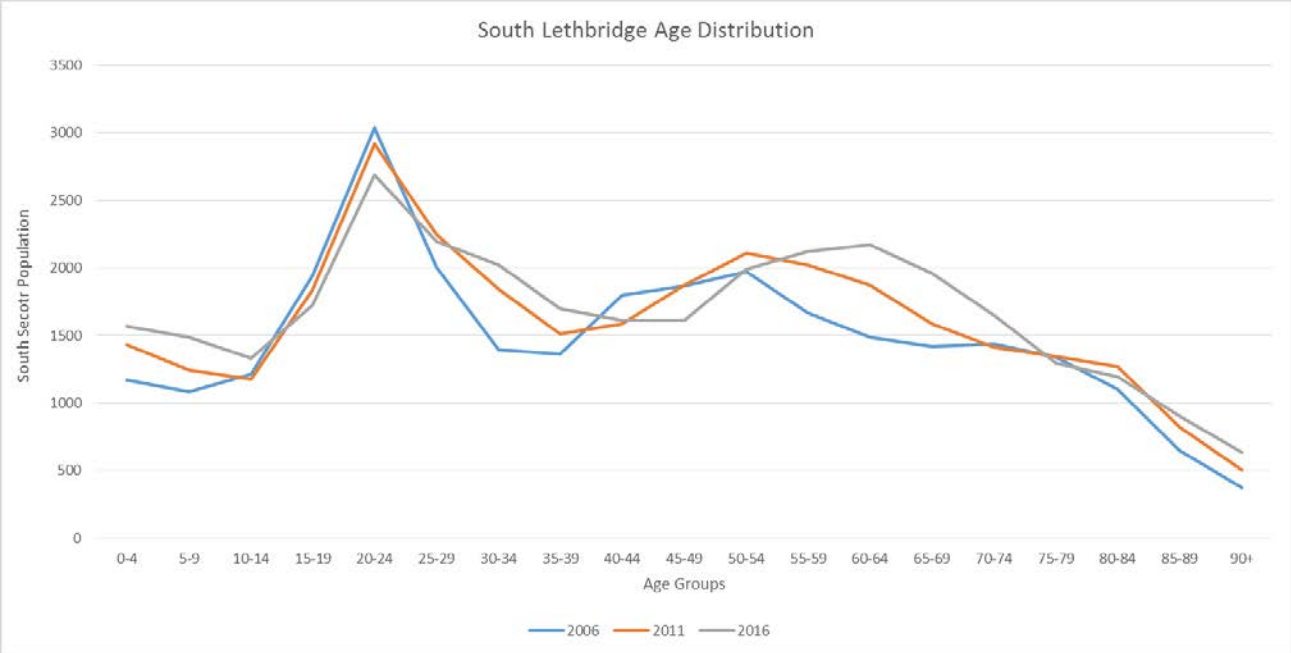


Figure 12: South Lethbridge Age Distribution (2006-2016)

West Lethbridge

In 2016, West Lethbridge continued to be the fastest growing sector and was home to 37,927 individuals, representing the largest proportion of the City population at 39%. Over the past decade, West Lethbridge has shown population growth in every generation and age group across the graph (Figure 13). However, the largest proportion of growth in West Lethbridge has been in young adults aged 25-39 (Generation Y), as well as young children aged 0-4 (Generation Z). Additionally, there has been an increase in individuals aged 55-69 (Baby Boomers). Once again, it will be interesting to see if this Baby Boomer Generation "age-in-place" in West Lethbridge, or shift to other sectors of the City.

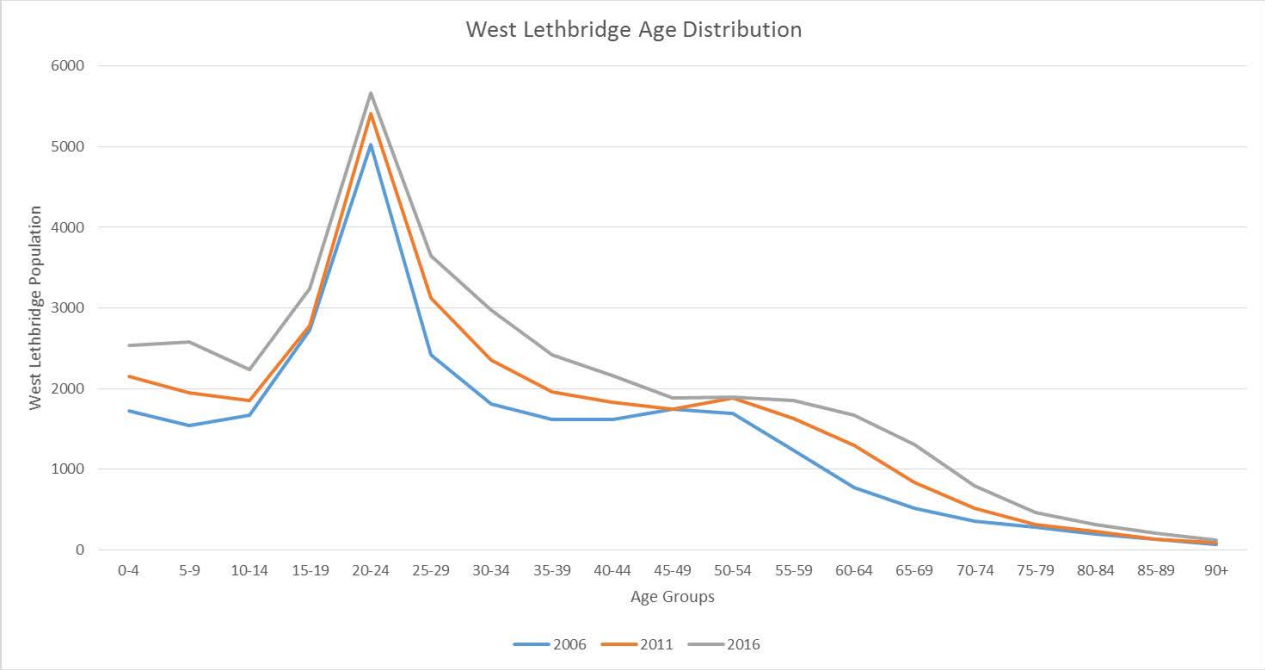


Figure 13: West Lethbridge Age Distribution (2006-2016)

3.2 City Sector Land Composition

The City of Lethbridge's land composition varies across the three city sectors, as each sector has developed with unique land use patterns. The total and gross land composition of each City sector is fairly similar across the City, with the exception of the West sector containing less developed land and a higher proportion of greenfield land. The variations in developed and greenfield Land, is where the most significant differences in land use patterns will be seen across sectors.

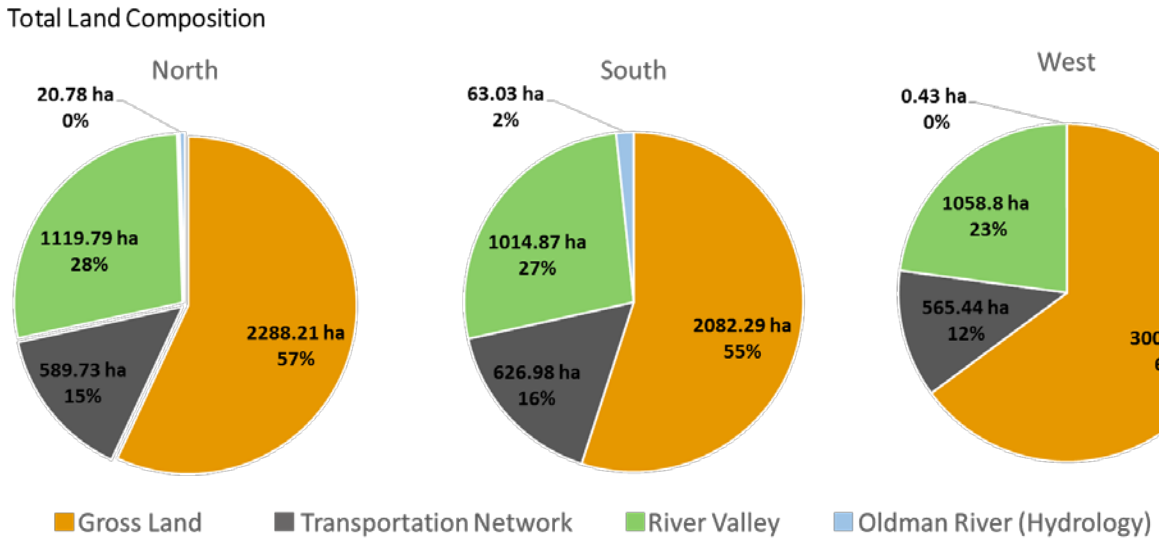


Figure 14: Total Land Composition by City Sector (2016)

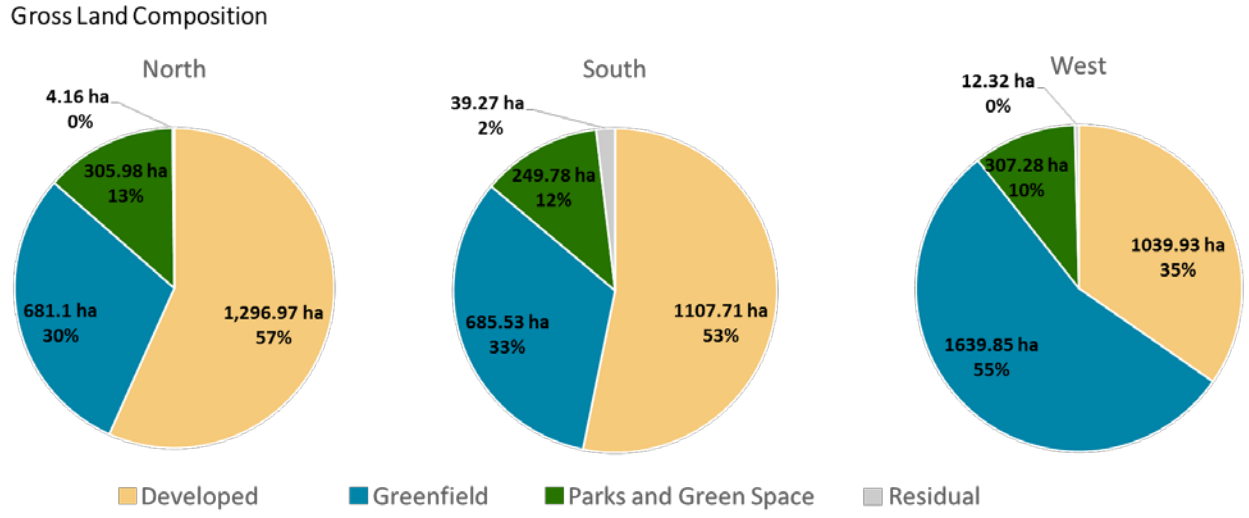


Figure 15: Gross Land Composition by City Sector (2016)

North Lethbridge

As of 2016, there were 4018.49 ha of total land within North Lethbridge, consisting of 2,288.21 ha of gross land potentially suitable for urban development. North Lethbridge's gross land was composed of 57% developed land, 30% Greenfield land, and 13% parks and green space.

North Lethbridge has the highest percentage of developed land (Figure 15) across the City sectors, which predominately consists of industrial and residential zoned land at 49% and 42%, respectively. The 629.11 ha of Industrial land located in northeast Lethbridge represents a significant proportion of industrial land in the City. North Lethbridge is also the only city sector where residential land does not represent the largest proportion of the developed land base. However, in comparison to South Lethbridge, North Lethbridge has significantly lower amounts of commercial and institutional land uses.

There are 681.10 ha of Greenfield land in North Lethbridge with the potential to support future urban growth, consisting of 94% FUD zoned land and 6% DC zoned land. All Greenfield land within North Lethbridge has gone through the area structure plan process, and will be further explored when looking at future growth neighbourhoods in Chapter 7.

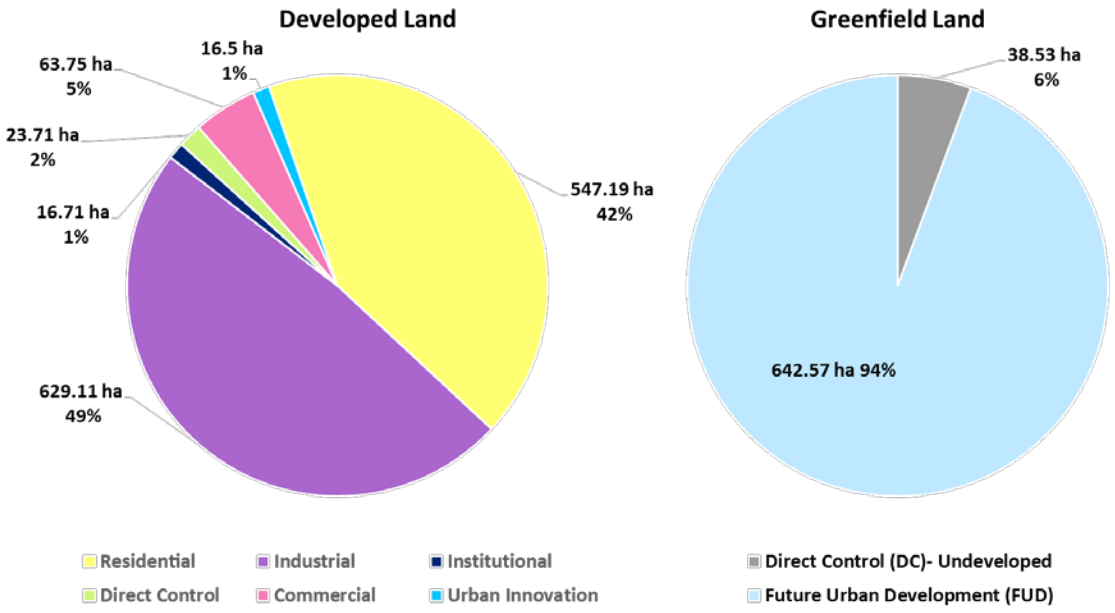
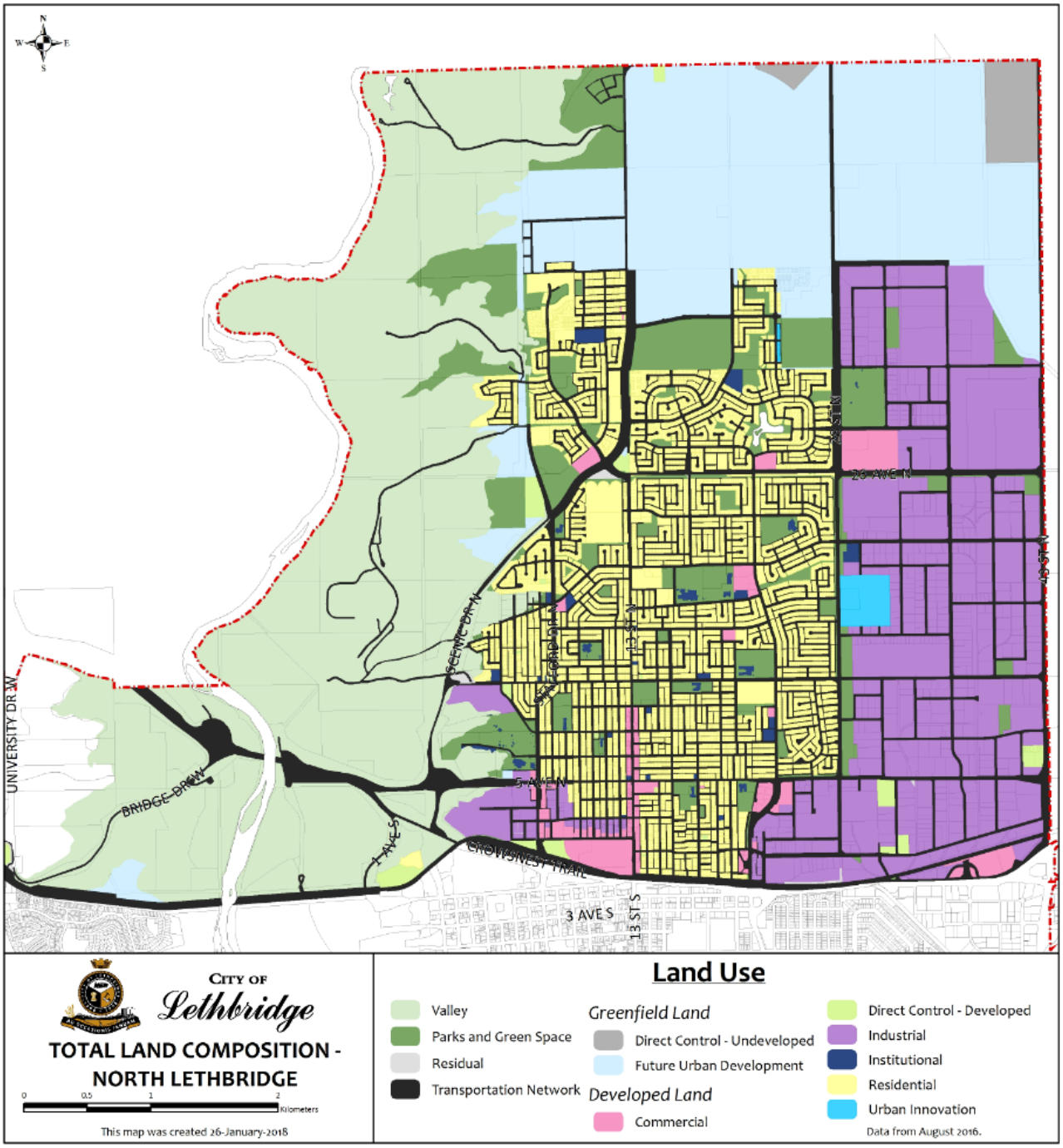


Figure 16: North Lethbridge Developed and Greenfield Land (2016)



Map 14: North Lethbridge Land Composition (2016)

South Lethbridge

As of 2016, there are 3,787.17 ha of total land within South Lethbridge, consisting of 2,082.29 ha of gross land potentially suitable for urban development. South Lethbridge's gross land was composed of 53% developed land, 33% Greenfield land, 12% parks and green space, and 2% residual land.

South Lethbridge's developed land composition is made up predominately of residential and commercial land uses at 61% and 21%, respectively. South Lethbridge contains the largest proportion of commercial land in the City and includes the downtown core and highway commercial corridors along Highway 3 and Mayor Magrath Drive. A significant proportion of commercial land on the south end of Mayor Magrath Drive consists of big box stores with large parking lots. Additionally, there are 126.86 ha of institutional zoned land in South Lethbridge. The largest institutional areas in this city sector include Lethbridge College, Exhibition Park and Chinook Regional Hospital. Lastly, there are 685.53 ha of Greenfield land remaining in South Lethbridge with area structure plans in place, composed of 79% FUD and 21% DC zoning.

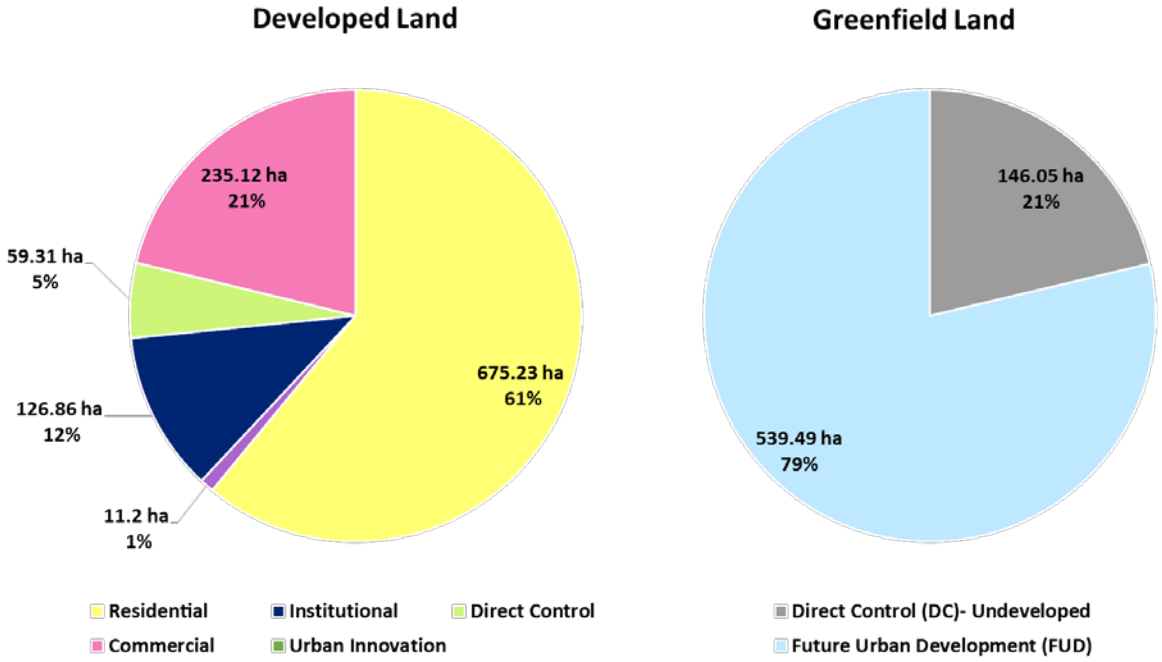
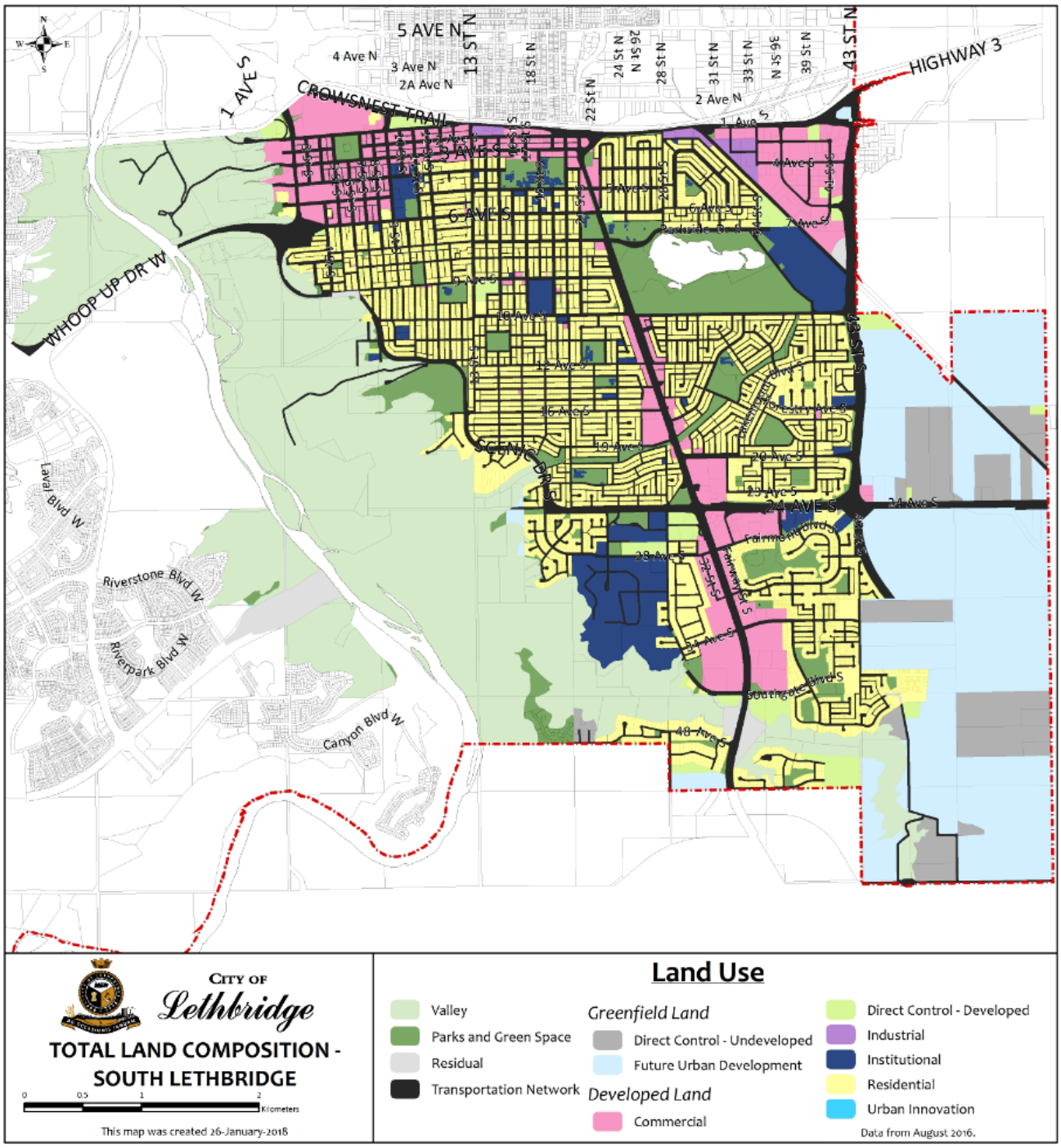


Figure 17: South Lethbridge Developed and Greenfield Land (2016)



Map 15: South Lethbridge Land Composition (2016)

West Lethbridge

As of 2016, there are 4,626.57 ha of total land within West Lethbridge, consisting of 3,001.90 ha of gross land potentially suitable for urban development. West Lethbridge has the largest supply of gross land across the three sectors, composed of 35% developed land, 55% Greenfield land, and 10% parks and greenspace.

In West Lethbridge, residential development dominates the developed land base at 79%, while institutional development (mostly attributed to the University of Lethbridge) is the second highest proportion of developed land at 11%. In comparison to the other two sectors, West Lethbridge has the lowest proportion of developed land, and more than twice the amount of Greenfield land available for future urban growth. There are 1,639.85 ha of Greenfield land in West Lethbridge which has mostly been planned through Area Structure Plans.

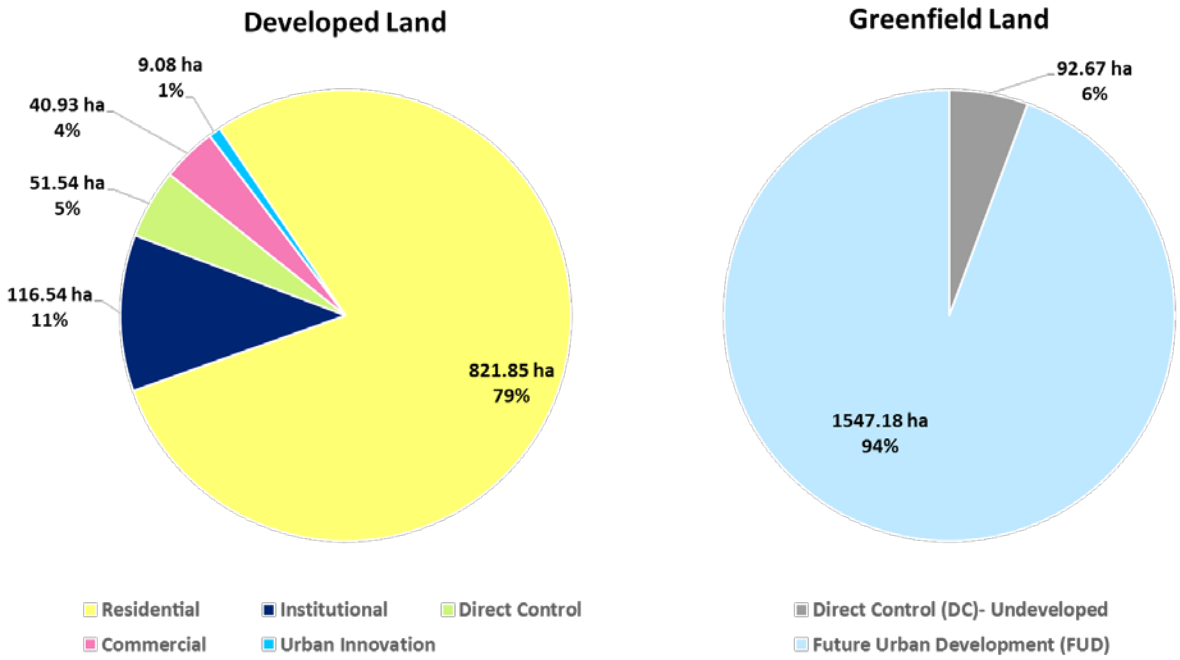
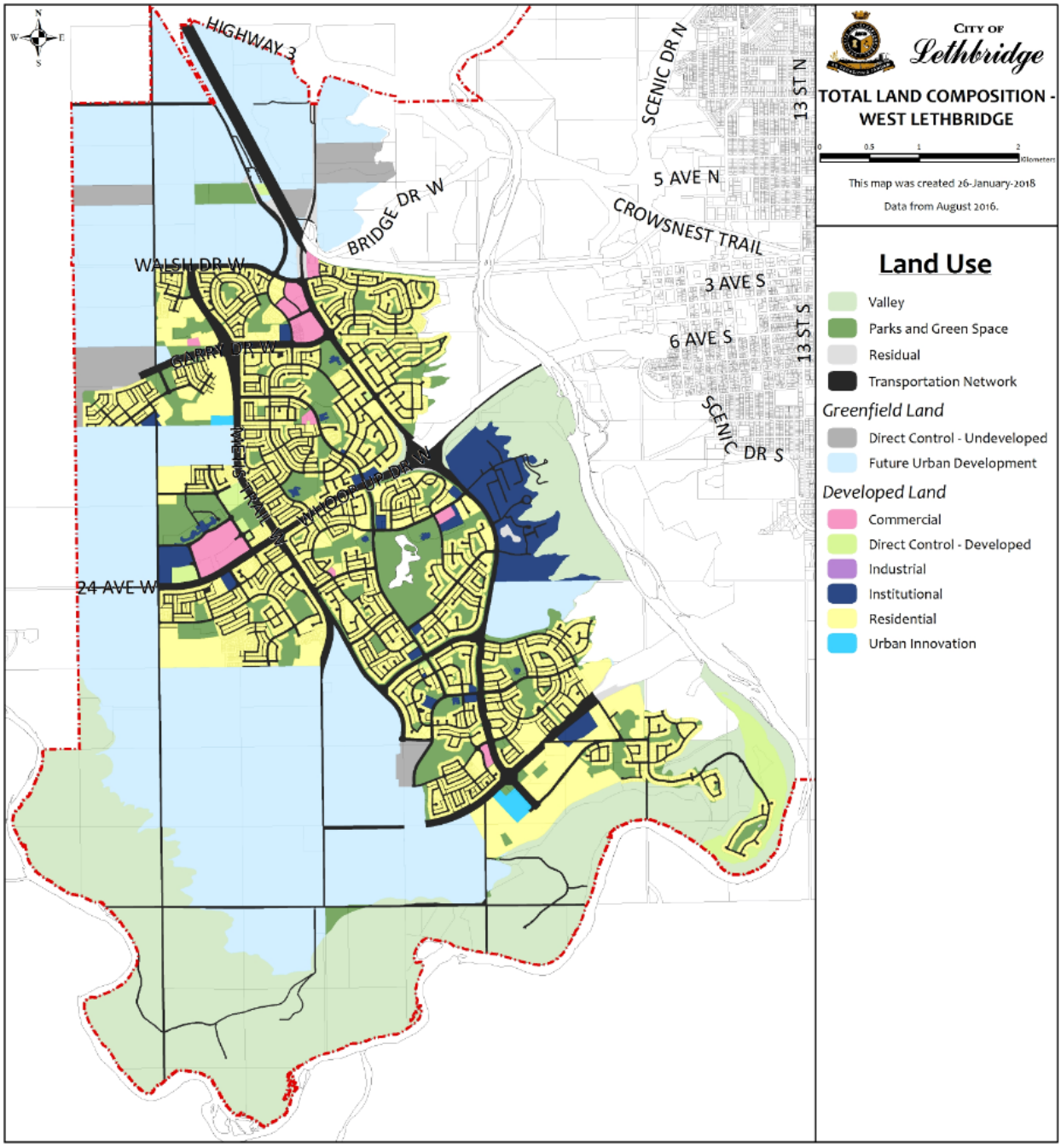


Figure 18: West Lethbridge Developed and Greenfield Land (2016)



Map 16: West Lethbridge Land Composition (2016)

Chapter 4.0 City Neighbourhoods

Lethbridge is growing and changing in many ways, and the unique features of our neighbourhoods are a factor in accommodating growth and development and how we plan for efficient land use. Additionally, each City sector and neighbourhood will experience these changes differently. Neighbourhoods in the City range from just built to 100+ years old and have varying demographics, land uses and building types.

Establishing baseline data indicators for each neighbourhood can help us with comparability, and identification of needs and opportunities. It can be useful to classify neighbourhoods that have similar characteristics as a method to help analyze trends across various eras of development. In Lethbridge, neighbourhood boundaries are defined based on a combination of municipal census tracks, boundaries defined in planning documents (Area Structure Plans, Area Redevelopment Plans, and Outline Plans), and major roadways. Additionally, neighbourhoods in Lethbridge can be classified into 6 "***Neighbourhood Characterizations***" (Map 16):

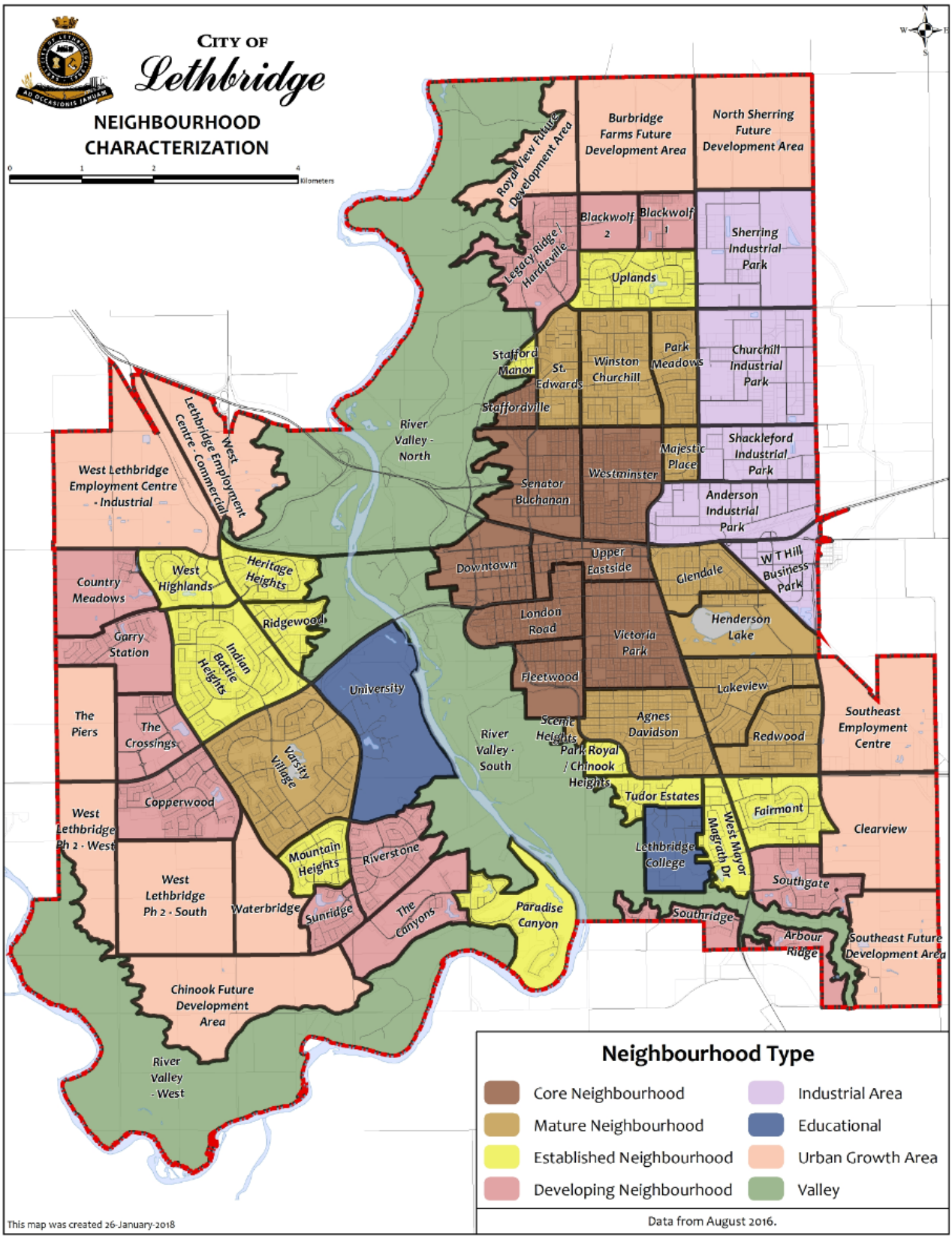
Residential Neighbourhoods:

- Core neighbourhoods – Downtown and adjacent (identified within the Central Neighbourhood Study)
- Mature neighbourhoods – Neighbourhoods outside the core area, generally completed prior to 1980
- Established neighbourhoods – Completed neighbourhoods, generally 1981 to present
- Developing neighbourhoods – Subdivision of the neighbourhood has commenced, development is underway and/or is nearing completion

Non-Residential Areas:

- Industrial areas – Typically developed for industrial land use, with small amounts of commercial uses mixed in. Not generally suitable for residential uses.
- Urban growth area – Neighbourhoods that will support future urban development, and may or may not have Area Structure Plans in place.

The way we define each neighbourhood characterization is subject to change over time as our neighbourhoods continue to age. This chapter will focus entirely on baseline indicators for residential neighbourhoods. However, industrial areas will be further explored in Chapter 6: Industrial and Commercial Areas. Commercial areas are typically clustered through various neighbourhoods and sectors of the city. For this reason they were not identified in our neighbourhood characterizations, however they will also be analyzed in Chapter 6. Urban growth areas will be explored in context of Chapter 7: Greenfield Development.



Map 17: Neighbourhood Characterizations (2016)

Residential Neighbourhoods: Baseline Indicators

This section will establish baseline data indicators for each neighbourhood, organized within the context of its corresponding city sector, and analyze differences seen across neighbourhoods. Chapter 5: Analyzing Patterns of Growth in Residential Neighbourhoods will combine the data and analysis from each indicator to look at overall patterns of development seen in the city as a whole, as well as discussing these current development patterns within the context of efficient land use and community development.

Demographic statistics can help to analyze the overall population characteristics of Lethbridge neighbourhoods by indicating population growth or decline, while also providing an indication of market trends through age characteristics.

Furthermore, land composition can indicate where we are designing complete neighbourhoods with diverse land uses, and density statistics can indicate patterns of development in terms of the variations of built form across neighbourhoods.

By organizing this data within *neighbourhood characterizations*, we are able to see differences across different eras of development. Additionally, monitoring how these indicators change over time allows us to identify specific decisions and land use practices that may have led to a more or less efficient use of our residential land.

4.1 Neighbourhood Demographics

The concept of the "***Neighbourhood Lifecycle***" (Figure 19) is a useful tool that helps us analyze what demographic trends are occurring in each neighbourhood.

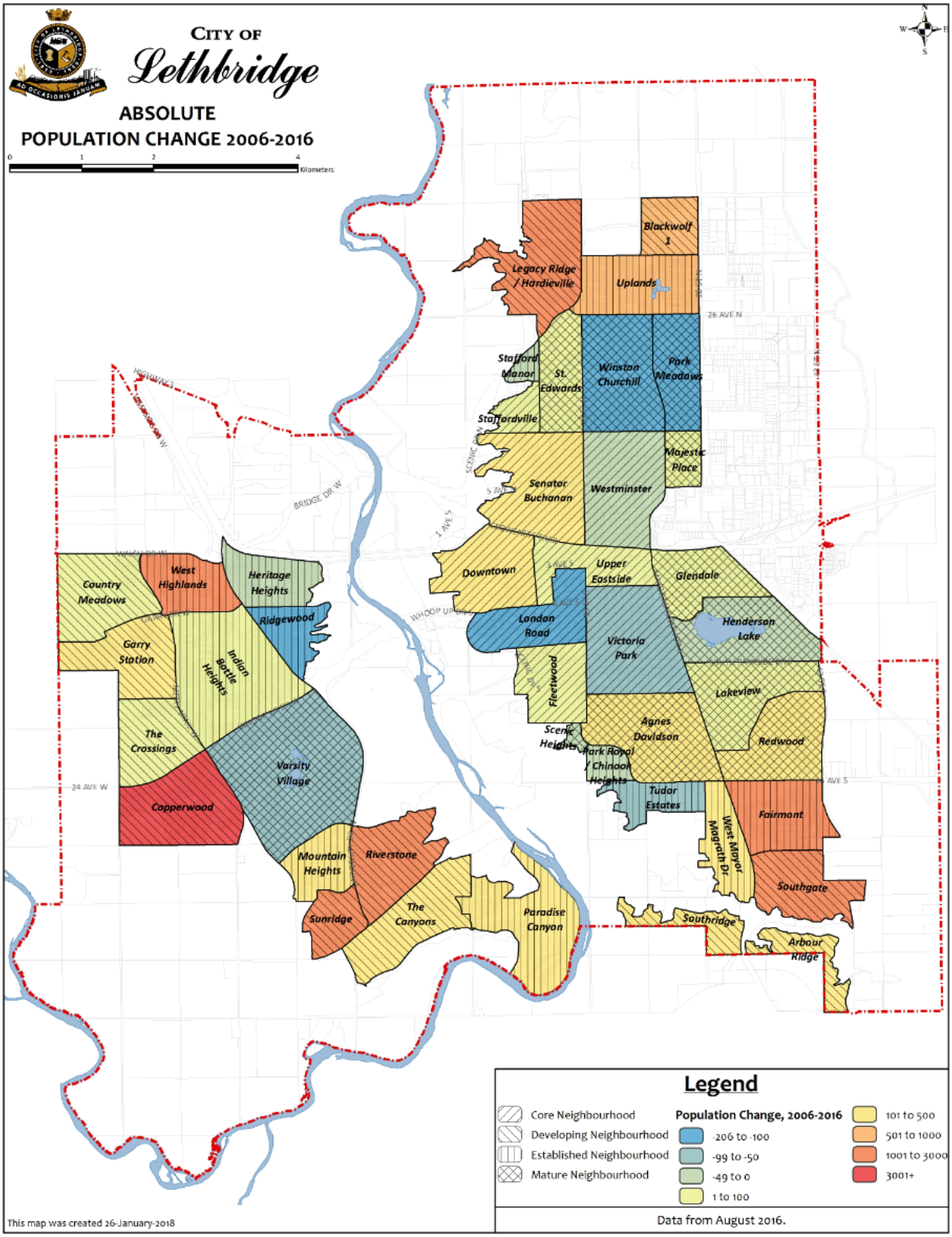
What is the Neighbourhood Lifecycle?

All neighbourhoods change as they go through a typical neighbourhood lifecycle process. When they are first building out, *developing neighbourhoods* experience rapid population expansion as the community develops, new households are formed and household size grows. This growth is typically dominated by young families with young children. Neighbourhoods then tend to stabilize into *established neighbourhoods* for a period of time, which is followed by a population decline as children grow up and leave home. *Mature neighbourhoods* can then experience a variety of transitions and different outcomes over time. Neighbourhood populations may continue to shrink as household size declines for a period, or they may grow again as new generations of residents move in and expand their household size.

In Lethbridge, each City sector and neighbourhood will go through the neighbourhood lifecycle differently. In order to understand Lethbridge neighbourhoods within the context of the neighbourhood lifecycle, we must establish baseline population data to analyze how our neighbourhood demographics have changed over time. Monitoring these changes can indicate neighbourhoods that are maintaining population, or losing population over time.

Figure 19: Neighbourhood Lifecycle (Source: City of Edmonton)

Population changes from 2006-2016 for each residential neighbourhood were calculated using neighbourhood population data from the 2006, 2011, and 2016 Municipal Census. Map 17 below provides an overview of population changes from 2006-2016. Additional statistics on the age distribution were also calculated for each residential neighbourhood, and can be found in Appendix 1.0.

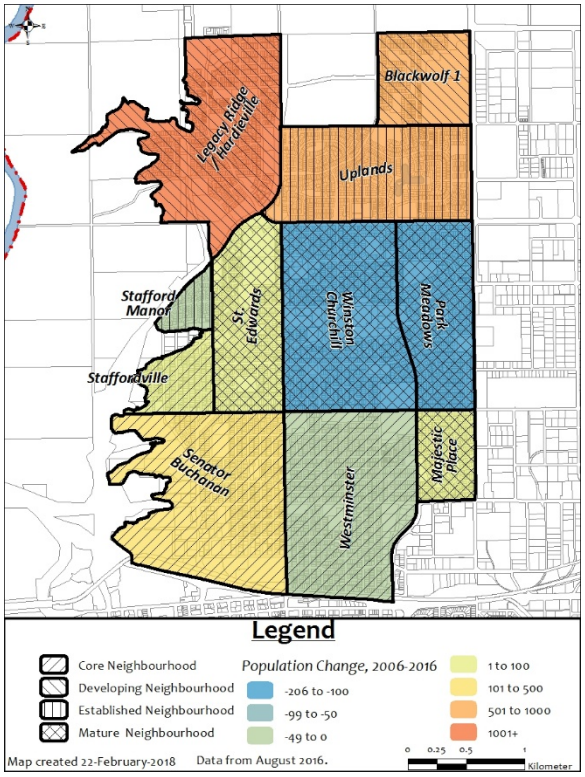


Map 18: Absolute Population Change (2006-2016)

North Lethbridge

From 2006-2016, North Lethbridge neighbourhoods have represented 22% of the City wide population growth. Core Neighbourhoods have remained relatively constant as ageing population is replaced at a fairly equal rate by young adults (Generation Y); among them, Senator Buchanan saw the largest changes over the decade, growing by 1%. All Mature neighbourhoods in North Lethbridge have shown population loss, particularly Park Meadows and Winston Churchill which both showed a 1% decline since 2006. As these neighbourhoods continue to age, they have seen population loss in nearly all age groups.

Uplands was the only established neighbourhood to see population growth at 3%. This growth occurred through most age groups as the neighbourhood finished developing. The largest areas of population growth has come from developing neighbourhoods as families began to move into these new communities. North Lethbridge developing neighbourhoods represented 18% of the city-wide growth since 2006, with the majority of the growth taking place in Legacy Ridge/Hardieville at 14%.



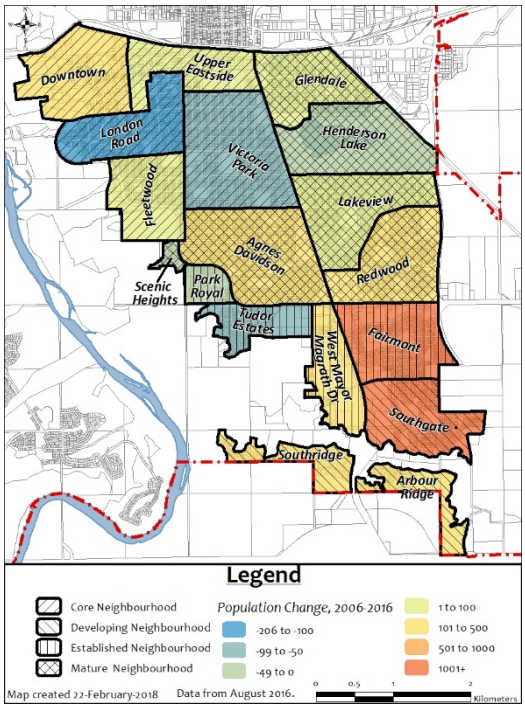
Map 19: Absolute Population Change in North Lethbridge Neighbourhoods (2006-2016)

Neighbourhood	Total Population 2006	Total Population 2011	Total Population 2016	Neighbourhood population growth as % of total City growth from 2006-2016
Core Neighbourhoods	**7,374**	**7,461**	**7,604**	**1%**
Senator Buchanan	1,821	2,037	2,045	1%
Staffordville	1,017	995	1,037	0%
Westminster	4,536	4,429	4,522	0%
Mature Neighbourhoods	**10,869**	**10,707**	**10,679**	**-1%**
Majestic Place	916	983	943	0%
Park Meadows	2,769	2,663	2,648	-1%
St. Edwards	2,750	2,773	2,762	0%
Winston Churchill	4,434	4,288	4,326	-1%
Established Neighbourhoods	**4,455**	**4,965**	**5,039**	**3%**
Stafford Manor	606	600	601	0%
Uplands	3,849	4,365	4,438	3%
Developing Neighbourhoods	**531**	**2,021**	**3,686**	**18%**
Blackwolf 1	0	0	613	3%
Legacy Ridge / Hardieville	531	2,021	3,073	14%
North Lethbridge Total	**23,228**	**25,154**	**27,008**	**22%**

Table 7: North Lethbridge Neighbourhood Populations (2006-2016)

South Lethbridge

Over the past decade, South Lethbridge neighbourhoods have represented 20% of the City wide population growth. Population in core neighbourhoods remained relatively constant since 2006 as ageing population was replaced by young adults (Generation Y). However, London Road was the only neighbourhood in South Lethbridge to show consistent population loss over the decade. Mature neighbourhoods accounted for 3% of the city-wide growth which occurred in Agnes Davidson and Redwood. Growth occurred predominately from the Baby Boomer and senior population, as well as some minor increases of Generation Y individuals in their early to mid-30s and young children (new families).



Map 20: Absolute Population Change in South Lethbridge Neighbourhoods (2006-2016)

Established neighbourhoods saw a 7% growth which mostly occurred in Fairmont, and saw population increases across most age cohorts as the neighbourhood finished developing. However, established neighbourhoods that have been fully developed for a longer period of time and are ageing towards the mature neighbourhood status started to see very minimal amounts of population loss as children began to grow-up and leave home. This includes neighbourhoods such as Park Royal/Chinook Heights and Tudor Estates. Developing neighbourhoods represented 10% of the city wide growth, with majority of growth taking place in Southgate at 8%.

Neighbourhood	Total Population 2006	Total Population 2011	Total Population 2016	Neighbourhood population growth as % of total City growth from 2006-2016
Core Neighbourhoods	**10910**	**10757**	**10846**	**0%**
Downtown	1310	1421	1455	1%
Fleetwood	1447	1434	1448	0%
London Road	3678	3543	3472	-1%
Upper Eastside	416	422	484	0%
Victoria Park	4058	3937	3987	0%
Mature Neighbourhoods	**13376**	**13847**	**13975**	**3%**
Agnes Davidson	4105	4170	4383	2%
Glendale	1890	1986	1977	0%
Henderson Lake	289	292	281	0%
Lakeview	2932	2967	2963	0%
Redwood	3823	4151	4050	1%
Scenic Heights	337	281	321	0%
Established Neighbourhoods	**2938**	**3923**	**4190**	**7%**
Fairmont	1294	2247	2447	7%
Park Royal / Chinook Heights	171	150	156	0%
Tudor Estates	897	832	839	0%
West Mayor Magrath Dr	576	694	748	1%
Developing Neighbourhoods	**519**	**1393**	**2204**	**10%**
Arbour Ridge	0	2	125	1%
Southgate	373	1125	1785	8%
Southridge	146	266	294	1%
South Lethbridge Total	**27743**	**29921**	**31216**	**20%**

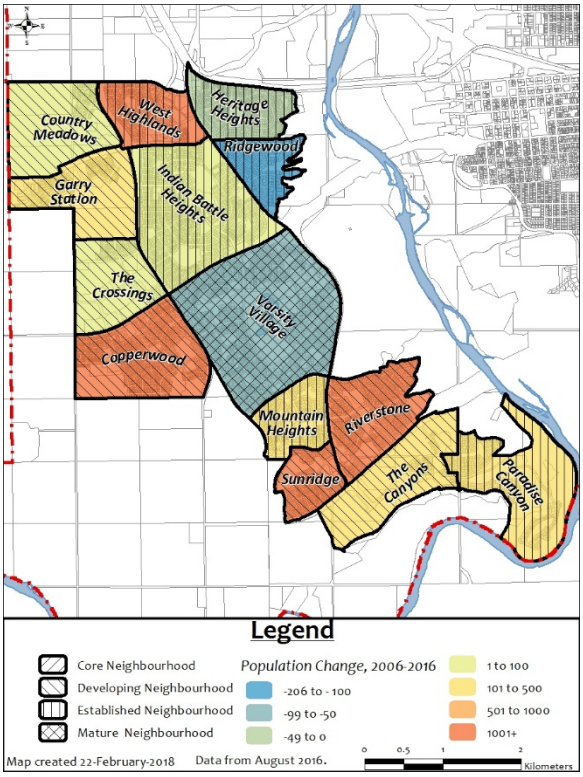
Table 8: South Lethbridge Neighbourhood Populations (2006-2016)

West Lethbridge

From 2006-2016, neighbourhoods in West Lethbridge have represented 59% of the population growth in the City, and is the fastest growing city sector. Varsity Village is the only mature neighbourhood in West Lethbridge, and has seen minimal population change over the past decade. This can be associated with the majority demographic being Generation Y, and increased amounts of student housing opportunities. As students' graduate University move away or to different neighbourhoods, they are typically replaced by new students.

Established neighbourhoods represented 11% of the growth, the majority of which was in West Highlands at 8%, as this neighbourhood finished developing. Ridgewood was the only established neighbourhood to show a loss of population, as the neighbourhood is ageing towards mature neighbourhood status as children grow up and leave home.

Additionally, developing neighbourhoods in West Lethbridge accounted for nearly half of the population growth in the whole City, at 48%. Copperwood was the fastest growing neighbourhood in the City representing 24% of city wide growth from 2006-2016, while Riverstone and Sunridge followed at 9% each.



Map 21: Absolute Population Change in West Lethbridge Neighbourhoods (2006-2016)

Neighbourhood	Total Population 2006	Total Population 2011	Total Population 2016	Neighbourhood population growth as % of total City growth from 2006-2016
Mature Neighbourhoods	**8,384**	**8,298**	**8,300**	**0%**
Varsity Village	8,384	8,298	8,300	0%
Established Neighbourhoods	**16,431**	**18,036**	**18,390**	**11%**
Heritage Heights	2,870	2,901	2,839	0%
Indian Battle Heights	7,923	7,938	8,002	0%
Mountain Heights	1,972	2,102	2,151	1%
Paradise Canyon	770	1,203	1,211	2%
Ridgewood	1,615	1,565	1,465	-1%
West Highlands	1,281	2,327	2,722	8%
Developing Neighbourhoods	**1,409**	**4,865**	**9,955**	**48%**
Copperwood	0	1,826	4,324	24%
Country Meadows	0	22	78	0%
Garry Station	0	22	469	3%
Riverstone	1,252	2,097	2,924	9%
Sunridge	145	890	1,757	9%
The Canyons	12	8	369	2%
The Crossings	0	0	34	0%
West Lethbridge Total	**26,224**	**31,199**	**36,645**	**59%**

Table 9: West Lethbridge Neighbourhood Populations (2006-2016)

Demographic Trends

Lethbridge's neighbourhoods have largely followed the typical neighbourhood lifecycle process, however some discrepancies exist across sectors.

Developing neighbourhoods experience population growth with households composed of young families and then tend to stabilize into our established neighbourhoods. ***Established neighbourhoods*** that finished completion during the decade saw population increases across most age cohorts. However, established neighbourhoods that have been fully developed for a longer period of time and are ageing towards mature neighbourhood status started to see minimal amounts of population loss.

Eventually, children grow up and move out of their family households, which typically describes our ***mature neighbourhoods***, but only in North Lethbridge. The four mature neighbourhoods in the North sector have been losing population from nearly all age groups, as these neighbourhoods continue to age. However, mature neighbourhoods in South Lethbridge such as Redwood and Agnes Davidson have seen population growth over the past decade, predominately from the Baby Boomer and Senior population, as well as some minor increases of Generation Y individuals in their early to mid-30s and young children (new families). This can be a result of the older generations migrating closer to the greater proportion of amenities found in South Lethbridge, such as health services and commercial areas. Additionally, Varsity Village is the only mature neighbourhood which has seen little to no population change over the past decade. This can be associated with a majority demographic of Generation Y, and greater amount of student housing opportunities within close proximity to the University.

Lastly, ***core neighbourhoods*** display unique patterns that do not entirely follow the typical neighbourhood lifecycle. Development in the core neighbourhoods began as early as the late 1890s, and occurred in the downtown and adjacent areas. Historically, these neighbourhoods were the highest populated in Lethbridge. However, as patterns of development began to change and spread outwards, these neighbourhoods saw a reduction in population over time. Over the past decade, the population in core neighbourhoods has remained fairly stable as ageing population is replaced at a fairly equal rate by young adults (Generation Y). As discussed in Chapter 1, many individuals from Generation Y tend to have housing preferences that favor the attributes of our core neighbourhoods. This includes easier access to downtown and surrounding amenities, more walkable neighbourhoods, and a broader range of housing options.

4.2 Neighbourhood Land Composition

Combined, Lethbridge's different land uses and development patterns support a diversity of buildings, landscapes and amenities that create vibrant neighbourhoods and provide a range of opportunities for people to live, work, and play. Development patterns change as the City evolves and different land uses are established in different areas. In order to ensure sustainable development patterns and minimize expenditures on road infrastructure and commuter miles, the City strives to maintain a balance between different uses.

Establishing baseline data of the land composition of all Lethbridge neighbourhoods allows us to gain a greater understanding of how neighbourhoods meet the needs of their residents today, and also identify where improvements can be made to create more diverse, vibrant and "*complete*" neighbourhoods.

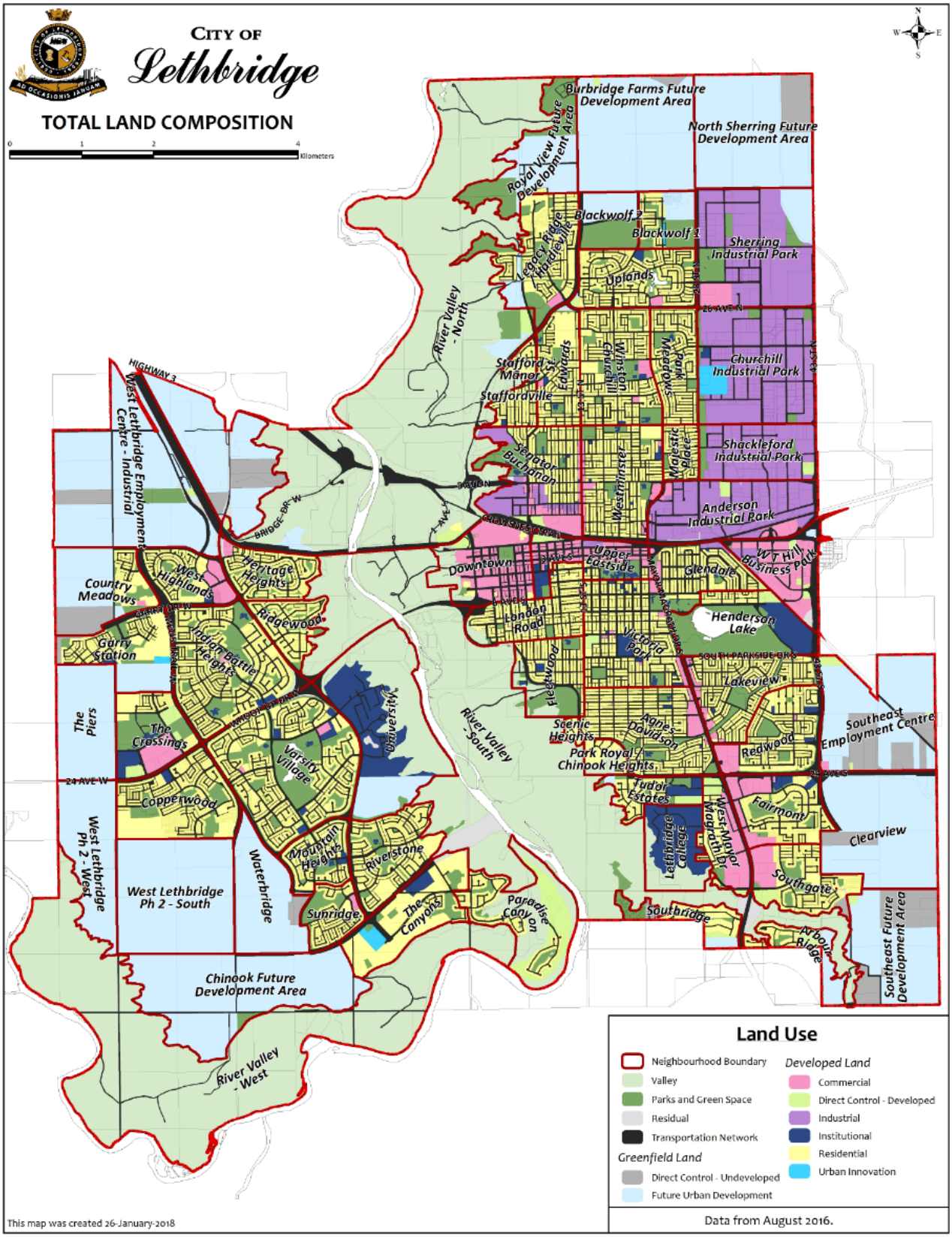
The land composition within each residential neighbourhood was calculated using the total parcel area for each land use, which included separating the transportation network and parks and open space. Large parcels of land across the City that operate as a residential land use (typically apartment buildings and senior housing) but are zoned as direct control, commercial or institutional land uses have been calculated as a general residential land use. This allows increased data accuracy when completing further analysis, such as calculating residential neighbourhood density. Additionally, statistics for developing neighbourhoods only shows the existing land composition (as of 2016). These statistics will change as developing neighbourhoods continue to build out (see Chapter 7 for more detailed land breakdown from outline plans). Map 18 below provides an overview of land use composition within each residential neighbourhood in 2016.

"Complete Neighbourhood"

Refers to a neighbourhood where one has safe and convenient access to the goods and services needed in daily life. This includes a variety of housing options, grocery stores and other commercial services, quality public schools, public open spaces and recreation facilitates, affordable active transportation options and civic amenities. An important element of a complete neighbourhood is that it is built at a walkable and bikeable human scale, and meets the needs of people of all ages and abilities.

Box 2: Complete Neighbourhood Definition (Source: City of Portland. 2012. The Portland Plan)

Figure 20: Complete Neighbourhood (Source: City of Portland.2012. The Portland Plan)



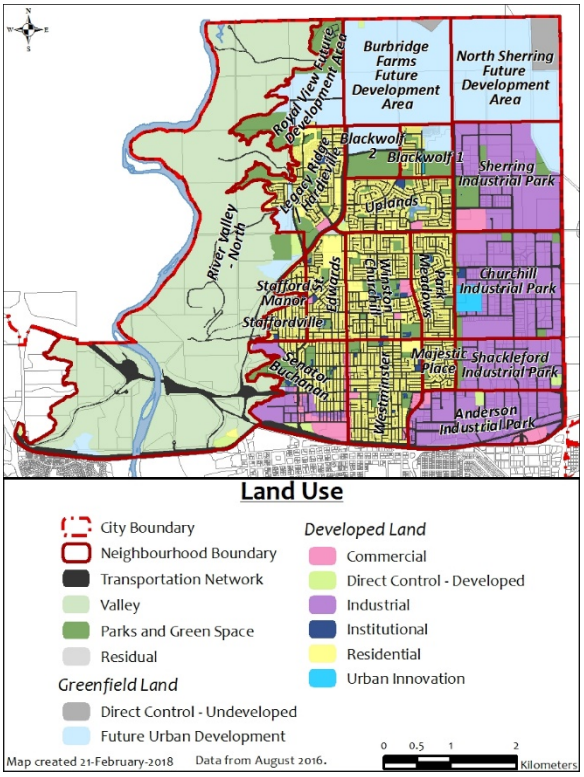
Map 22: Land Composition by Neighbourhood (2016)

North Lethbridge

In North Lethbridge, the land composition of each neighbourhood can vary depending on the era of development, as well as where the neighbourhood is located. Core neighbourhoods tend to include a greater diversity of land use, including commercial, institutional and even some industrial business land uses. The majority of commercial development in core neighbourhoods is located in Westminster and Senator Buchanan along 13th Street North, and predominately developed as street-fronting commercial.

Mature and established neighbourhoods have less diversity of land uses and are made up of over 50% residential uses. Additionally, mature neighbourhoods have the highest percentage of parks and open space, while established neighbourhoods have the lowest.

The developing neighbourhoods are still building towards completion, however, current development patterns are leaning towards the land uses dominated by residential form, with greater proportions of parks and open space. Overall, the percentage of land consumed by the transportation network is relatively similar across North Lethbridge, with the exception of developing neighbourhoods that have not yet reached completion.



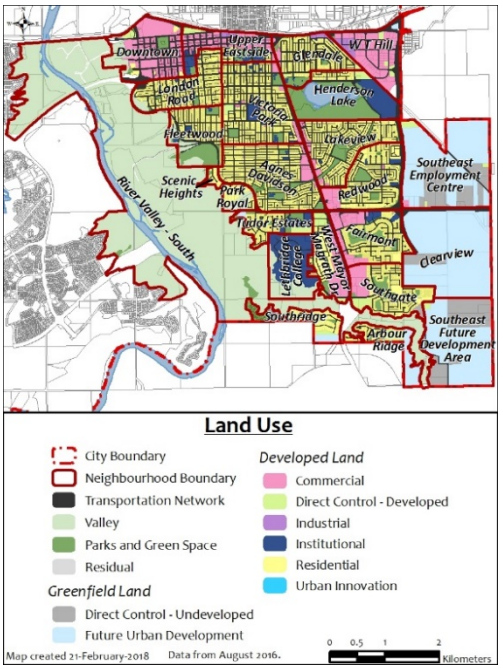
Map 23: North Lethbridge Neighbourhood Land Composition (2016)

Neighbourhood	Residential (%)	Commercial (%)	Institutional (%)	Direct Control / *Urban Innovation	Industrial (%)	Parks & Green Space (ha)	Greenfield Land (FUD or DC) (%)	Transportation Network (%)	Valley (%)	Total Land (ha)
Core Neighbourhoods	**38.4%**	**8.0%**	**1.4%**	**1.1%**	**9.5%**	**9.8%**	**0.1%**	**31.7%**	**0.0%**	**385.9**
Senator Buchanan	23.1%	11.9%	1.1%	2.0%	20.0%	12.6%	0.3%	29.1%	0.0%	183.2
Staffordville	59.4%	0.0%	3.1%	0.5%	0.0%	2.7%	0.0%	34.3%	0.0%	34.0
Westminster	50.8%	5.5%	1.5%	0.2%	0.0%	8.1%	0.0%	33.9%	0.0%	168.8
Mature Neighbourhoods	**55.8%**	**1.3%**	**1.3%**	**0.0%**	**0.0%**	**11.7%**	**0.0%**	**29.9%**	**0.0%**	**398.0**
Majestic Place	59.2%	0.0%	0.0%	0.0%	0.0%	4.9%	0.0%	35.9%	0.0%	38.9
Park Meadows	56.8%	0.0%	0.4%	0.0%	0.0%	11.1%	0.0%	31.6%	0.0%	97.6
St. Edwards	60.7%	0.7%	1.4%	0.0%	0.0%	9.0%	0.0%	28.1%	0.0%	93.4
Winston Churchill	51.7%	2.6%	2.0%	0.0%	0.0%	15.2%	0.0%	28.5%	0.0%	168.0
Established Neighbourhoods	**57.1%**	**1.3%**	**1.2%**	**1.1%**	**0.0%**	**7.9%**	**0.1%**	**31.3%**	**0.0%**	**153.3**
Stafford Manor	66.4%	0.0%	0.0%	1.4%	0.0%	3.1%	0.0%	29.1%	0.0%	16.7
Uplands	56.0%	1.5%	1.4%	1.0%	0.0%	8.5%	0.2%	31.5%	0.0%	136.6
Developing Neighbourhoods	**29.2%**	**1.1%**	**0.8%**	**0.3%**	**0.0%**	**30.4%**	**20.0%**	**18.1%**	**0.1%**	**296.4**
Blackwolf 1	21.7%	1.2%	0.0%	1.2%	0.0%	36.8%	27.4%	11.7%	0.0%	63.9
Blackwolf 2	0.0%	0.0%	0.0%	0.0%	0.0%	44.0%	43.1%	12.9%	0.0%	65.9
Legacy Ridge / Hardieville	43.7%	1.5%	1.5%	0.0%	0.0%	22.5%	7.9%	22.7%	0.2%	166.6

Table 10: North Lethbridge Neighbourhood Land Composition (2016)

South Lethbridge

South Lethbridge neighbourhoods have the greatest mixture of land uses in comparison to the other City sectors, particularly in core neighbourhoods, where street fronting development exists. However, the 14.6% of commercial land in core neighbourhoods includes the downtown which greatly increases the overall percentage. Further, the commercial land seen in established and mature neighbourhoods is attributed to the large highway commercial corridors along Mayor Magrath Drive and 24 Avenue South (Highway 4), and consists predominately of big box stores and strip mall commercial development. Mature neighbourhoods are predominately residential, with the highest proportion of parks and green space in the South sector. As the developing neighbourhoods continue to be developed, it can be expected to see predominately residential land, with the exception of Southgate which will contain a large area of highway commercial land along Mayor Magrath Drive South. Additionally, South Lethbridge neighbourhoods tend to have a higher percentage of institutional land use including the Chinook Regional Hospital in Victoria Park, as well as surrounding specialty medical developments.



Map 24: South Lethbridge Neighbourhood Land Composition (2016)

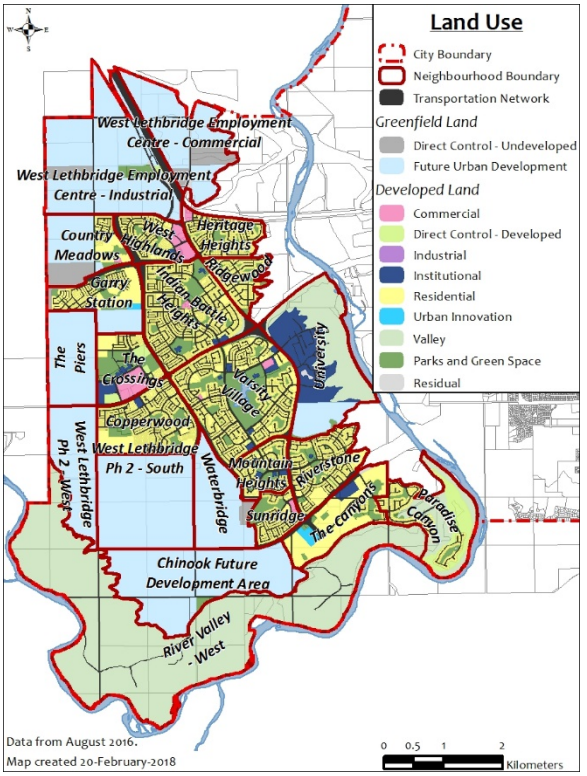
Neighbourhood	Residential (%)	Commercial (%)	Institutional (%)	Direct Control / *Urban Innovation	Industrial (%)	Parks & Green Space (ha)	Greenfield Land (FUD or DC) (%)	Transportation Network (%)	Valley (%)	Total Land (ha)
Core Neighbourhoods	**30.1%**	**14.0%**	**3.4%**	**2.1%**	**0.3%**	**8.2%**	**0.0%**	**35.2%**	**6.7%**	**624.35**
Downtown	2.9%	43.1%	0.0%	2.1%	0.0%	4.4%	0.0%	30.9%	16.7%	133.29
Fleetwood	32.5%	0.1%	2.1%	0.5%	0.0%	23.7%	0.0%	26.5%	14.5%	99.86
London Road	54.2%	0.3%	0.6%	1.4%	0.0%	2.4%	0.0%	36.9%	4.3%	111.80
Upper Eastside	5.4%	26.3%	10.5%	3.1%	2.3%	11.5%	0.0%	40.9%	0.0%	90.61
Victoria Park	45.8%	2.9%	4.8%	2.9%	0.0%	4.7%	0.0%	39.0%	0.0%	188.78
Mature Neighbourhoods	**40.5%**	**4.0%**	**4.7%**	**0.8%**	**0.4%**	**19.3%**	**0.0%**	**30.2%**	**0.1%**	**713.85**
Agnes Davidson	52.3%	4.7%	0.7%	0.0%	0.0%	6.6%	0.0%	35.7%	0.0%	182.24
Glendale	45.9%	2.7%	0.8%	1.8%	2.6%	8.3%	0.0%	38.0%	0.0%	100.74
Henderson Lake	6.5%	0.0%	18.6%	2.7%	0.0%	60.4%	0.0%	11.7%	0.0%	150.06
Lakeview	48.8%	4.5%	0.5%	0.0%	0.0%	10.0%	0.0%	36.2%	0.0%	138.38
Redwood	48.4%	8.2%	2.2%	0.0%	0.0%	8.9%	0.0%	32.3%	0.0%	133.36
Scenic Heights	63.7%	0.0%	0.0%	0.0%	0.0%	9.6%	0.0%	16.6%	10.0%	9.07
Established Neighbourhoods	**37.2%**	**16.7%**	**4.6%**	**4.0%**	**0.0%**	**9.0%**	**1.0%**	**23.8%**	**3.6%**	**292.42**
Fairmont	40.6%	17.9%	3.9%	0.3%	0.0%	12.6%	0.1%	24.6%	0.0%	122.58
Park Royal / Chinook Heights	48.4%	0.0%	0.0%	0.0%	0.0%	2.0%	1.6%	11.6%	36.4%	28.76
Tudor Estates	35.2%	0.0%	14.5%	6.8%	0.0%	12.9%	4.0%	26.6%	0.0%	59.57
West Mayor Magrath Dr	29.9%	32.9%	0.0%	8.9%	0.0%	3.4%	0.0%	24.9%	0.1%	81.51
Developing Neighbourhoods	**39.7%**	**8.3%**	**0.0%**	**8.7%**	**0.0%**	**11.7%**	**16.9%**	**14.4%**	**0.3%**	**204.03**
Arbour Ridge	26.1%	0.0%	0.0%	17.6%	0.0%	4.5%	41.6%	10.2%	0.0%	49.10
Southgate	44.2%	16.5%	0.0%	6.5%	0.0%	10.9%	3.5%	18.4%	0.0%	102.75
Southridge	43.6%	0.0%	0.0%	4.6%	0.0%	20.0%	20.1%	10.7%	1.0%	52.17

Table 11: South Lethbridge Land Compositions[28]

[28] The land composition of Fleetwood shows 23.7% parks and open space, however, this includes 19.67 ha (19.70%) of land from Mountain View Cemetery.

West Lethbridge

In comparison to the North and South sectors, West Lethbridge neighbourhoods have the least diverse land uses, and are predominately made up of residential developments. Additionally, there are few neighbourhoods in West Lethbridge that include a mix of commercial and/or intuitional land uses. Commercial areas in West Lethbridge tend to be clustered in only a few neighbourhoods, with the majority located in West Highlands. However, as The Crossings continues to develop it will include a greater mix of land uses. Commercial development in both of these neighbourhoods is developed as a mix of big box commercial and commercial strip mall developments. Neighbourhoods in West Lethbridge also tend to have higher proportions of parks and open space, particularly in Varsity Village which contains Nicholas Sheran Park (a Regional Park).



Map 25: West Lethbridge Neighbourhood Land Composition (2016)

Neighbourhood	Residential (%)	Commercial (%)	Institutional (%)	Direct Control / *Urban Innovation	Industrial (%)	Parks & Green Space (ha)	Greenfield Land (FUD or DC) (%)	Transportation Network (%)	Valley (%)	Total Land (ha)
Mature Neighbourhoods	**42.6%**	**0.8%**	**2.4%**	**0.2%**	**0.0%**	**26.8%**	**0.0%**	**27.4%**	**0.0%**	**315.7**
Varsity Village	42.6%	0.8%	2.4%	0.2%	0.0%	26.8%	0.0%	27.4%	0.0%	315.7
Established	**42.1%**	**2.5%**	**1.2%**	**5.5%**	**0.0%**	**11.5%**	**0.1%**	**26.7%**	**10.4%**	**720.9**
Heritage Heights	58.0%	3.1%	0.0%	0.0%	0.0%	10.5%	0.0%	28.4%	0.0%	84.5
Indian Battle Heights	48.4%	0.6%	1.7%	0.3%	0.0%	14.9%	0.0%	33.1%	1.0%	241.0
Mountain Heights	46.0%	0.0%	4.2%	0.6%	0.0%	14.1%	1.3%	33.8%	0.0%	73.6
Paradise Canyon	20.9%	0.0%	0.0%	22.4%	0.0%	5.4%	0.0%	8.6%	42.7%	169.8
Ridgewood	56.5%	0.0%	0.0%	0.6%	0.0%	16.8%	0.0%	26.0%	0.0%	63.8
West Highlands	36.9%	15.7%	2.0%	0.0%	0.0%	8.5%	0.0%	36.9%	0.0%	88.2
Developing Neighbourhoods	**44.7%**	**2.2%**	**2.6%**	**2.2%**	**0.0%**	**13.5%**	**15.5%**	**19.1%**	**0.1%**	**858.8**
Copperwood	61.7%	0.0%	1.0%	0.0%	0.0%	13.4%	0.0%	23.9%	0.0%	165.4
Country Meadows	16.5%	0.6%	0.0%	0.0%	0.0%	7.4%	70.6%	4.9%	0.0%	138.6
Garry Station	46.9%	0.0%	1.1%	*1.6%	0.0%	9.7%	25.0%	15.8%	0.0%	138.9
Riverstone	57.7%	0.0%	0.2%	0.0%	0.0%	11.4%	0.1%	30.5%	0.0%	128.2
Sunridge	48.2%	0.0%	2.7%	0.0%	0.0%	18.5%	0.0%	30.7%	0.0%	56.6
The Canyons	62.4%	0.0%	4.4%	*4.9%	0.0%	12.1%	0.4%	15.1%	0.6%	140.6
The Crossings	5.3%	20.1%	11.9%	11.3%	0.0%	31.4%	0.0%	20.0%	0.0%	90.6

Table 12: West Lethbridge Land Composition (2016)

Land Composition Trends

Overall, ***core neighbourhoods*** in Lethbridge include the greatest diversity in land uses in the City including commercial, institutional, and some industrial business land (e.g. Senator Buchanan). This is associated with historical patterns of development seen in Lethbridge, when core neighbourhoods surrounding the downtown were the highest populated areas. These neighbourhoods were designed as grid network streets and incorporated the historic urban rail system. They were designed for the pedestrian and included a wide range of amenities. However, in comparison to other neighbourhood characterizations, core neighbourhoods typically have a lower proportion of parks and open space through each neighbourhood, as well as slightly higher proportions of land consumed by the transportation network (due to the grid street network).

Mature neighbourhoods tend to be predominantly residential areas in all three City sectors, with higher amounts of commercial and institutional land uses located in South Lethbridge along Mayor Magrath Drive South. Mature neighbourhoods also have larger proportion of parks and open space in the City, particularly in South and West Lethbridge with regional parks such as Henderson Lake and Nicholas Sheran Park. Curvilinear road networks are the dominant form of transportation network design in mature neighbourhoods, with some areas containing grid street development patterns.

Established neighbourhoods contain the least diverse land uses in the City, and consist predominately of residential land. The exception would be established neighbourhoods in South Lethbridge that contain big box commercial development along Mayor Magrath Drive south, as well as commercial development clustered in West Highlands in the West sector. Additionally, established neighbourhoods have lower proportions of parks and open space.

As ***developing neighbourhoods*** continue to build out, current trends are leading towards neighbourhoods that are predominately made up of residential lands, with commercial and institutional land uses clustered in specific neighbourhoods along major roadways (e.g. The Crossings and Southgate). Developing neighbourhoods are also trending towards containing higher proportions of parks and open space.

Parks and Green Space Accessibility

As discussed in Part 1, there is an important relationship between urban design and a number of public health crises. The walkability of neighbourhoods and the accessibility of varying parks and green spaces is an important component of healthy living. There are a variety of health benefits that can be linked to the access of parks and green space and promoting physical activity including reducing stress, improving physical health and mental wellness, reducing social isolation and creating a strong sense of community belonging[29]. Map 19 below shows the location of parks and green spaces (excluding cemeteries and linear parks) through the city, as well as a 750m walk distance surrounding each park and green space

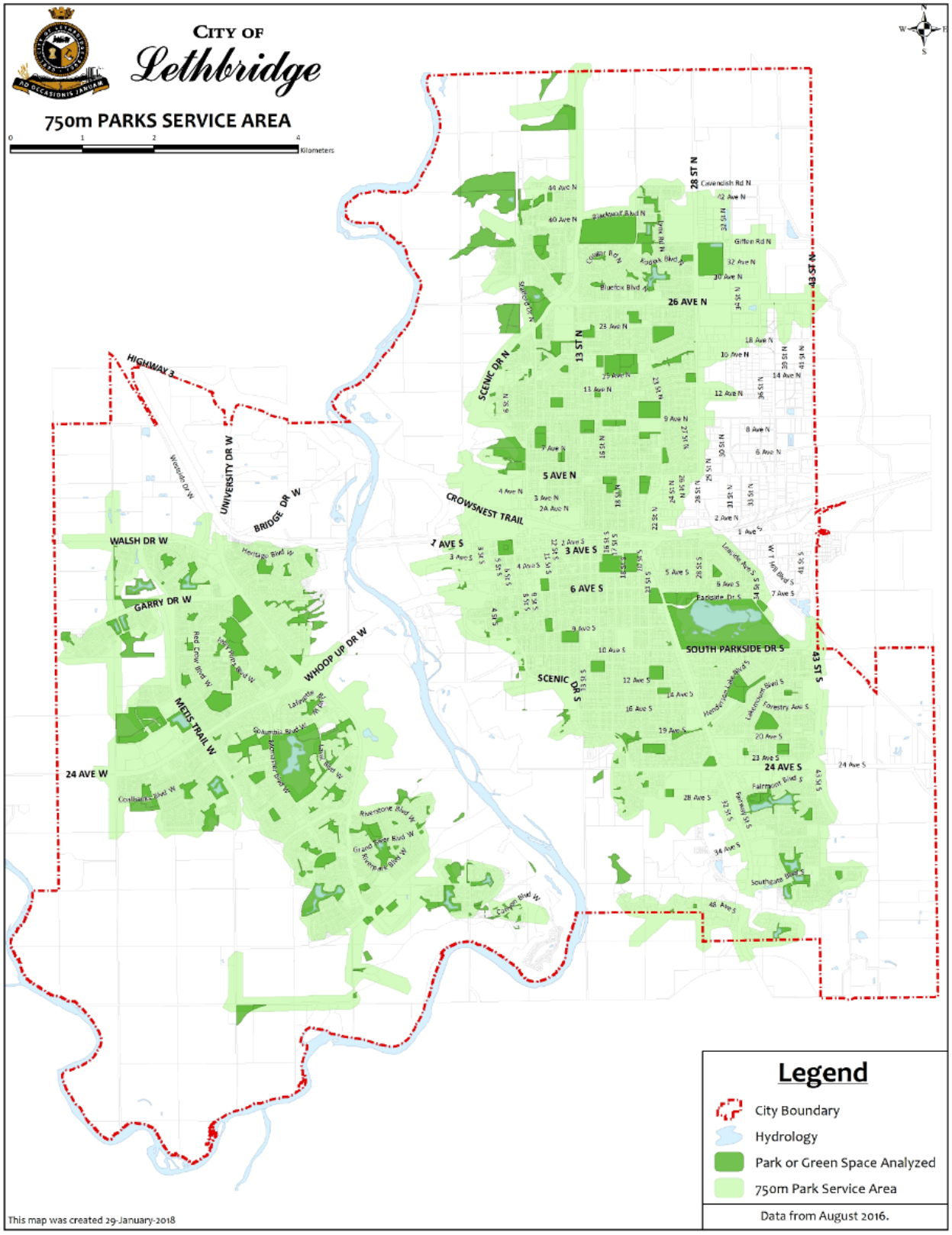
[29] Government of Canada. 2017. *Designing Healthy Neighbourhoods: The Chief Public Health Offices Report on The State of Public Health in Canada 2017.* Url: https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/chief-public-health-officer-reports-state-public-health-canada/2017-designing-healthy-living/2017-designing-healthy-living-eng.pdf

location. This is considered a 'reasonable' walking distance by the Canadian Environmental Health Atlas[30], and provides a benchmark against which we can measure the accessibility of our parks and greenspace. The types of parks and green space included in this analysis can be found in Table 3 (Pg. 43), with the exception of linear parks and cemeteries which have been excluded.

Map 19 shows that nearly all developed areas in Lethbridge are within 750m of parks and green space (with the exception of the industrial area on the east side of Lethbridge). However, it is important to note that core neighbourhoods around the downtown tend to have smaller park sizes in comparison to other areas of the City. Additionally, the River Valley contains parks and green space that provides numerous recreational and cultural opportunities. However, access to the River Valley is limited, and for this reason it was not included within the above analysis.

Additionally, there are other uses that can be measured in terms of walkability and accessibility that have an important relationship with public health. The accessibility of major commercial areas in Lethbridge will be further explored in Chapter 6: Industrial and Commercial Areas. Furthermore, Chapter 7: Greenfield Development will analyze the amount of land consumed by our transportation network across varying neighbourhood development patterns.

[30] Retrieved from: http://www.ehatlas.ca/food-deserts/case-study/food-deserts-edmonton. 24 Jan 2018.



Map 26: Parks and Green Space Accessibility (2016)

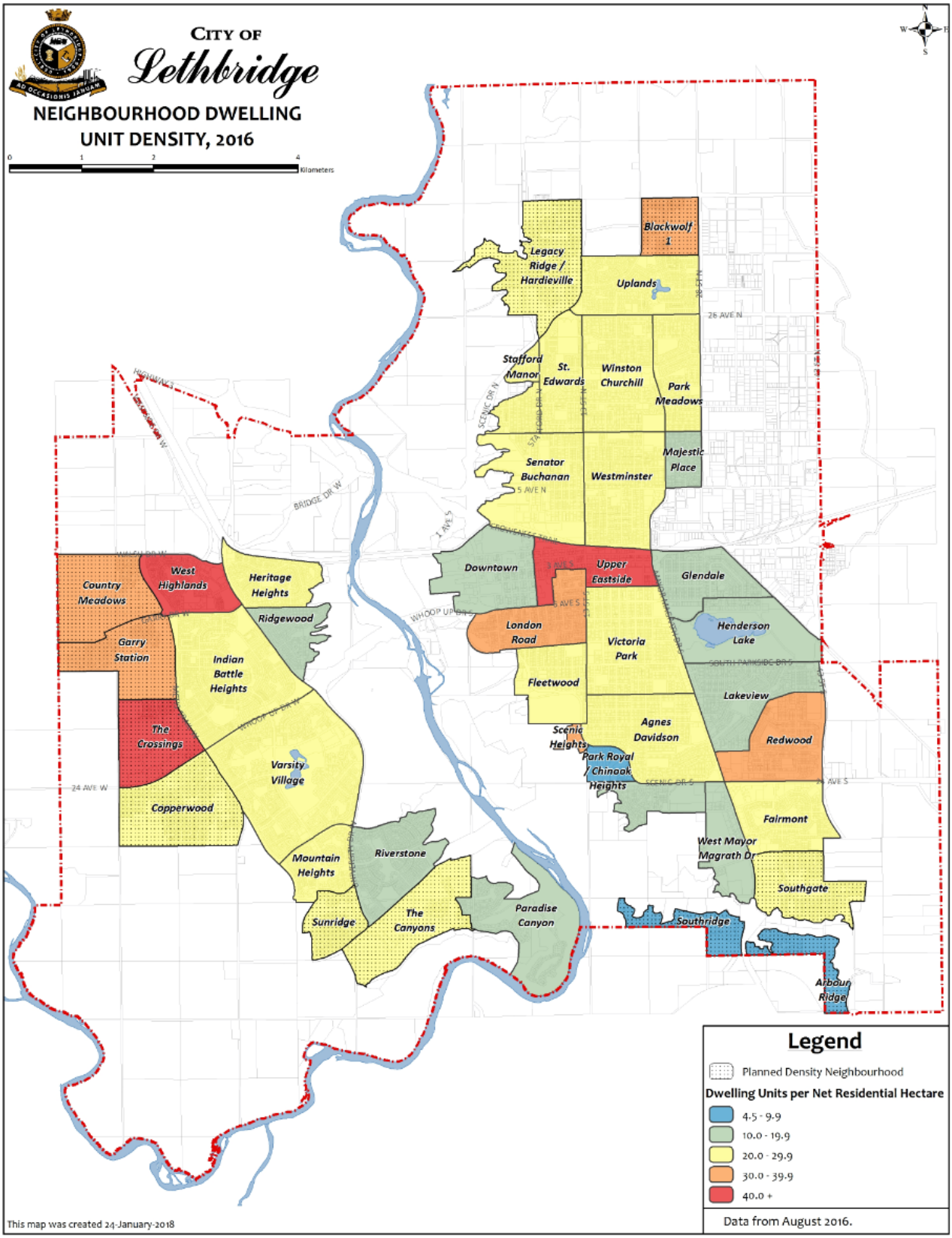
4.3 Neighbourhood Densities

Analyzing dwelling unit density (typically in dwelling units per net residential hectare, or du/nrha) allows us to identify physical patterns of development in our neighbourhoods, as well as differences that emerged as a result of the era in which a neighbourhood was developed (neighbourhood characterization). Focusing on units within a residential area *emphasizes density in building type* (apartments, rowhousing, single detached) and also allows for neighbourhood comparisons, as potential differences in non-residential uses, such as parks, roads, commercial and industrial areas are removed. By monitoring the changes in neighbourhood densities over time we can identify where growth is or is not taking place.

Density of dwelling units was calculated by dividing the number of residential dwelling units in an area by the size of the area identified for residential uses (du/nrha). These calculations were completed using the dwelling unit count from the 2016 Municipal Census as well as calculating the residential land use area in each neighbourhood. However, in the case of downtown Lethbridge, only commercial zoning exists and residential buildings are scattered throughout the downtown. Therefore, the total area of commercial land in downtown was used to calculate the residential density, which leads to an underestimation of the density in downtown Lethbridge.

Map 19 below provides an overview of the dwelling unit density in 2016 for all residential neighbourhoods in the City. Where insufficient dwelling unit data occurred (developing neighbourhoods on the edge of the City that have not reached completion) the planned densities from Outline Plan statistics were used, and are identified by the hatched area within the map.

In addition, the population density (population per net residential hectare - pp/nrha) was also calculated as a supplementary measurement of neighbourhood density, and is included within the residential density tables below. However, in order to emphasize density in building type, du/nrha will be the main focus of analysis.



Map 27: Neighbourhood Dwelling Unit Density (2016)

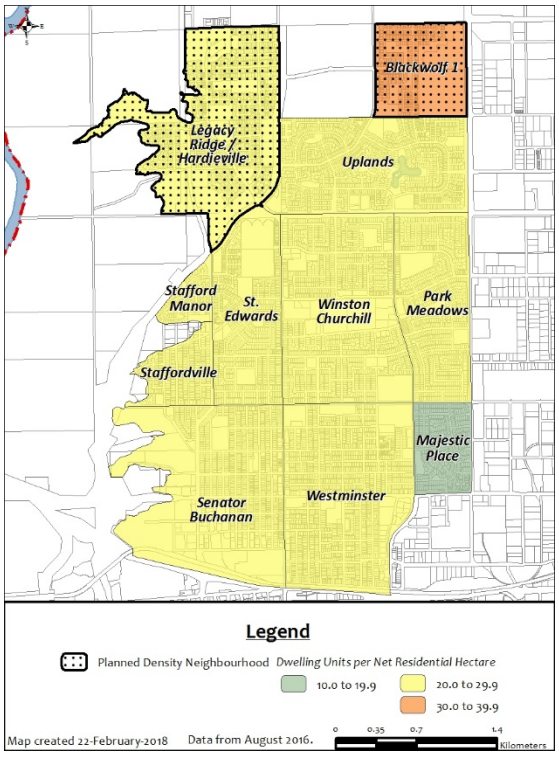
North Lethbridge

In North Lethbridge, the average dwelling unit density of residential neighbourhoods is 21.40 du/nrha, with a *planned* average density of 23.77 du/nrha.

Core neighbourhoods have the highest average density of 24.04 du/nrha, and have a balanced range of densities with a low of 22.65 du/nrha in Staffordville, to a high of over 25.03 du/nrha in Senator Buchanan. Mature neighbourhoods have an average of 21.69 du/nrha, and range from a low of 18.76 du/nrha in Majestic Place, to a high of 25.67 du/nrha in Winston Churchill.

Established neighbourhoods in North Lethbridge have an average density of 20.91 du/nrha, and range from a low of 20.16 du/nrha in Stafford Manor, to a high of 21.66 du/nrha in Uplands. However, these are the only two established neighbourhoods in the sector.

Lastly, developing neighbourhoods currently have a *planned* average density of 30.37 du/nrha. If developing neighbourhoods reach their planned densities, they will range from a low of 26.25 du/nrha in Legacy Ridge / Hardieville, to a high of 34.48 du/nrha in Blackwolf 1. Overall, North Lethbridge neighbourhoods tend to have relatively balanced range densities across the sector.



Map 28: North Lethbridge Neighbourhood Dwelling Unit Density (2016)

Neighbourhood Characterization	Average du/nrha (Planned Average)	Average pp/nrha (Planned Average)
Core	24.04	50.84
Mature	21.69	46.79
Established	20.91	56.17
Developing	17.37 (30.37)	43.27 (70.78)
North Lethbridge	**21.40 (23.77)**	**48.96 (53.96)**

Table 13: North Lethbridge Average Densities (2016)

Neighbourhood	Dwelling Units (du)	Population (pp)	Net Residential Hectares (nrha)	du/nrha	pp/nrha	Planned Residential Density (outline plans)	
						du/nrha	pp/nrha
Core	**3610**	**7604**	**148.18**	**24.36**	**51.32**		
Senator Buchanan	1058	2045	42.26	25.03	48.39		
Staffordville	457	1037	20.17	22.65	51.41		
Westminster	2095	4522	85.74	24.43	52.74		
Mature	**5039**	**10679**	**222.15**	**22.68**	**48.07**		
Majestic Place	432	943	23.03	18.76	40.95		
Park Meadows	1117	2648	55.48	20.13	47.73		
St. Edwards	1259	2762	56.72	22.20	48.69		
Winston Churchill	2231	4326	86.92	25.67	49.77		
Established	**1880**	**5039**	**87.56**	**21.47**	**57.55**		
Stafford Manor	223	601	11.06	20.16	54.32		
Uplands	1657	4438	76.50	21.66	58.02		
Developing	**1463**	**3686**	**86.59**	**16.89**	**42.57**	**28.63**	**69.02**
Blackwolf 1	250	613	13.84	18.06	44.29	34.48	74.92
Legacy Ridge / Hardieville	1213	3073	72.75	16.67	42.25	26.25	66.63
North Lethbridge	**11992**	**27008**	**544.48**	**22.02**	**49.60**		

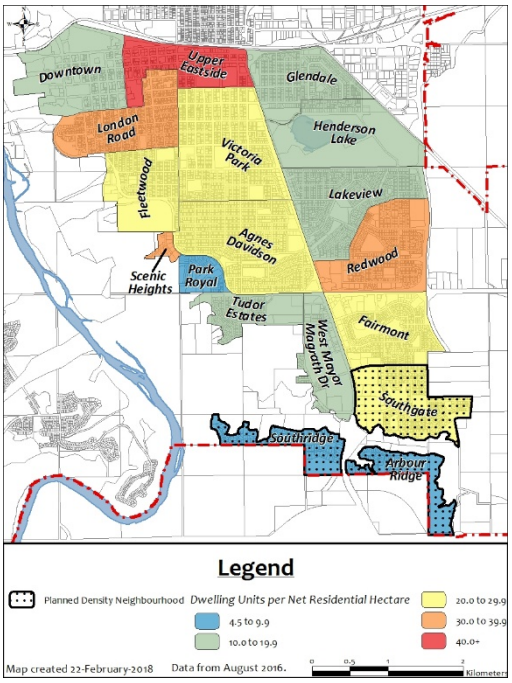
Table 14: North Lethbridge Neighbourhood Densities (2016)

South Lethbridge

In South Lethbridge, the average net residential dwelling unit density is 20.15 du/nrha, with a *planned* average density of 20.92 du/nrha.

Core neighbourhoods in South Lethbridge have the highest average density of 28.17 du/nrha. However this average also includes the downtown which is significantly lower and underestimated at only 15.65 du/nrha. Excluding the downtown, core neighbourhoods would range from a low of 23.72 du/nrha in Fleetwood, to a high of 42.82 du/nrha in Upper Eastside. Mature neighbourhoods have an average density of 23.16 du/nrha, ranging from a low of 13.21 du/nrha in Henderson Lake, to a high of 35.20 du/nrha in Redwood.

Meanwhile, established neighbourhoods have a relatively low average density of 15.69 du/nrha, and range from a low of 4.53 in Park Royal/ Chinook Heights, to a high of 24.95 du/nrha in West Mayor Magrath Dr. Developing neighbourhoods currently have a *planned* average density of 11.33 du/nrha. Developing neighbourhoods in South Lethbridge will have the lowest average densities across the City, even if they reach their planned densities. This can be attributed to in part by the size of the City's south boundary. Developing neighbourhoods range from a low of 6.76 du/nrha in Arbour Ridge, to a high of 22.63 du/nrha in Southgate.



Map 29: South Lethbridge Neighbourhood Dwelling Unity Density (2016)

Neighbourhood Characterization	Average du/nrha (Planned Average)	Average pp/nrha (Planned Average)
Core	28.17	53.56
Mature	23.16	46.62
Established	15.69	32.81
Developing	6.74 (11.33)	20.68 (30.07)
South Lethbridge	**20.15 (20.92)**	**41.16 (42.72)**

Table 16: South Lethbridge Average Density (2016)

Neighbourhood	Dwelling Units (du)	Population (pp)	Net Residential Hectares (nrha)	du/nrha	pp/nrha	Planned Residential Density (outline plans)	
						du/nrha	pp/nrha
Core	**6246**	**10846**	**189.89**	**32.89**	**57.12**		
*Downtown	1094	1455	69.92	15.65	20.81		
Fleetwood	771	1448	32.50	23.72	44.56		
London Road	2105	3472	60.56	34.76	57.33		
Upper Eastside	210	484	4.89	42.82	98.97		
Victoria Park	2066	3987	86.41	23.91	46.14		
Mature	**6699**	**13975**	**289.08**	**23.18**	**48.34**		
Agnes Davidson	1913	4383	95.24	20.09	46.02		
Glendale	901	1977	46.25	19.49	42.75		
Henderson Lake	129	281	9.76	13.21	28.78		
Lakeview	1303	2963	67.55	19.29	43.86		
Redwood	2270	4050	64.49	35.20	62.80		
Scenic Heights	183	321	5.78	31.66	55.53		
Established	**2061**	**4190**	**108.91**	**18.93**	**38.47**		
Fairmont	1240	2447	49.71	24.95	49.22		
Park Royal / Chinook Heights	63	156	13.91	4.53	11.21		
Tudor Estates	319	839	20.95	15.23	40.05		
West Mayor Magrath Dr	439	748	24.33	18.04	30.74		
Developing	**752**	**2204**	**80.95**	**9.29**	**27.23**	**15.10**	**38.72**
Arbour Ridge	29	125	12.83	2.26	9.77	6.76	20.28
Southgate	630	1785	45.38	13.88	39.33	22.63	55.85
Southridge	93	294	22.74	4.09	12.93	4.6	14.07
South Lethbridge	**15759**	**31216**	**668.82**	**23.56**	**46.67**		

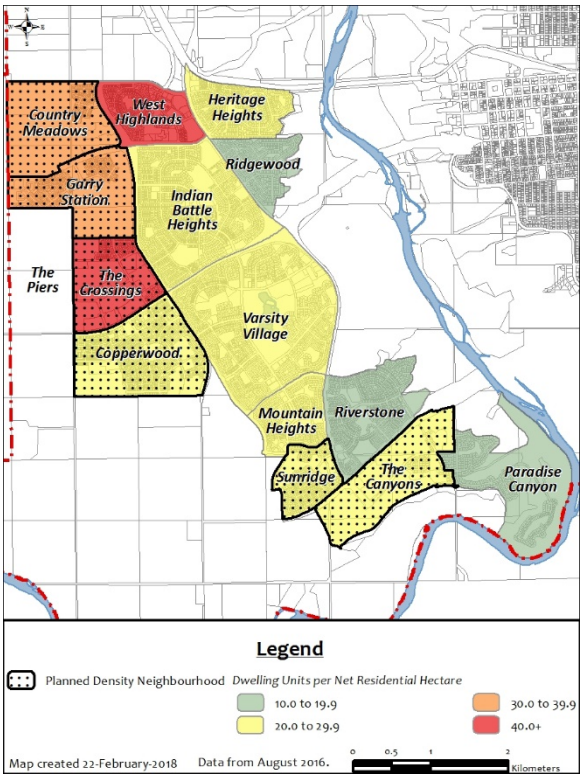
*Table 15: South Lethbridge Neighbourhood Densities (2016) (*Downtown residential area calculated using all developed land)*

West Lethbridge

In West Lethbridge, the average net residential dwelling unit density is 16.75 du/nrha, with a *planned* average density of 27.47 du/nrha. Varsity Village is the only mature neighbourhood in West Lethbridge, and has a dwelling unit density of 26.11 du/nrha.

Established neighbourhoods in West Lethbridge have the highest average density of established neighbourhoods in all three sectors, at 23.97 du/nrha. Established neighbourhoods range from a low of 14.95 du/nrha in Ridgewood, to a high of 43.90 du/nrha in West Highlands.

Lastly, developing neighbourhoods currently have a *planned* average density of 31.20 du/nrha. If developing neighbourhoods reach their planned densities, they will have the highest average densities of developing neighbourhoods city-wide ranging from a low of 21.03 du/nrha in The Canyons, to a high of 46.35 du/nrha in The Crossings.



Map 30: West Lethbridge Neighbourhood Dwelling Unit Density (2016)

Neighbourhood Characterization	Average du/nrha (Planned Average)	Average pp/nrha (Planned Average)
Mature	26.11	61.78
Established	23.97	58.57
Developing	9.22 (31.20)	24.03 (78.90)
West Lethbridge	**16.75 (27.47)**	**41.53 (68.20)**

Table 17: West Lethbridge Average Density (2016)

Neighbourhood	Dwelling Units (du)	Population (pp)	Net Residential Hectares (nrha)	du/nrha	pp/nrha	Planned Residential Density (outline plans)	
						du/nrha	pp/nrha
Mature	**3508**	**8300**	**134.35**	**26.11**	**61.78**		
Varsity Village	3508	8300	134.35	26.11	61.78		
Established	**7254**	**18390**	**300.74**	**24.12**	**61.15**		
Heritage Heights	1064	2839	49.01	21.71	57.93		
Indian Battle Heights	2958	8002	116.70	25.35	68.57		
Mountain Heights	744	2151	33.90	21.95	63.46		
Paradise Canyon	519	1211	32.50	15.97	37.26		
Ridgewood	539	1465	36.06	14.95	40.63		
West Highlands	1430	2722	32.57	43.90	83.57		
Developing	**3614**	**9955**	**386.76**	**9.35**	**25.74**	**36.00**	**91.07**
Copperwood	1580	4324	102.08	15.48	42.36	28.09	67.89
Country Meadows	45	78	22.87	1.97	3.41	32.85	78.90
Garry Station	219	469	65.10	3.36	7.20	30.03	77.26
Riverstone	942	2924	73.93	12.74	39.55	NA	NA
Sunridge	684	1757	27.24	25.11	64.50	28.87	80.34
The Canyons	123	369	90.75	1.36	4.07	21.03	60.81
The Crossings	22	34	4.80	4.49	7.12	46.35	108.20
West Lethbridge	**14376**	**36645**	**821.85**	**17.49**	**44.59**		

Table 18: West Lethbridge Neighbourhood Densities (2016)

Density Trends

In Lethbridge, ***core neighbourhoods*** have the highest average density at 26.11 du/nrha across the City, which is associated with more apartment buildings, and less single detached and row housing. Additionally, single family dwellings in core neighbourhoods were built during the early development of Lethbridge, and are typically designed with narrower lots containing 2 storey homes, leading to more dwelling units in less area. The three densest core neighbourhoods city-wide include Upper Eastside, London Road, and Senator Buchanan[31]. Additionally, core neighbourhoods in South Lethbridge tend to have higher average densities then those in North Lethbridge. However, North Lethbridge has a more balanced range of densities across core neighbourhoods.

Mature neighbourhoods tend to have lower densities than core neighbourhoods with an average density of 23.65 du/nrha. This is associated with more small scale residential and single detached housing in comparison to core neighbourhoods. Additionally, mature neighbourhoods were built post-war and are typically designed with larger lots containing larger "ranch style" single detached dwellings. However, the top three densest mature neighbourhoods are Redwood, Scenic Heights, and Varsity Village, which all contain higher density building types such as apartments and row housing. Mature neighbourhoods in the South and West sectors typically have higher densities than those in the North sector, and once again mature neighbourhoods in the North sector have a more balanced range of densities.

Established neighbourhoods tend to have a lower average density than both mature and core neighbourhoods, with a city-wide average of 20.19 du/nrha. Established neighbourhoods have developed with fewer apartments, and more single detached and row housing than all other neighbourhoods. Similar to mature neighbourhoods, established neighbourhoods were designed post-war, with larger lots containing larger single detached dwellings. However, an exception to this is West Highlands which consists predominantly of apartments and row housing that borders the major commercial development within the neighbourhood. The three densest established neighbourhoods city-wide are West Highlands, Indian Battle Heights, and Fairmont. Lastly, established neighbourhoods in West and North Lethbridge have higher average densities than South Lethbridge, with North Lethbridge having the most balanced range of densities.

In 2016, the average density in ***developing neighbourhoods*** was lower than all other neighbourhood characterizations, however, the existing density in developing neighbourhoods includes residential land that has not been developed and does not contain dwelling units. This results in an overestimation of residential area and lower du/nrha. However, recent ASPs and OPs have trended towards higher *planned* densities that typically are greater than 25.00 du/nrha and contain a more balanced range of housing types. Additionally, homes in developing and future growth neighbourhoods are typically designed with smaller lot sizes then seen in established and mature neighbourhoods, and more 2 storey housing. As developing neighbourhoods continue to build out they are expected to have higher residential densities then most mature and established neighbourhoods. However, we see exceptions of this in South Lethbridge where Arbour Ridge and Southridge border Six Mile Coulee. These neighbourhoods are nearly complete, and as they reach full completion, will continue to develop large single detached homes on

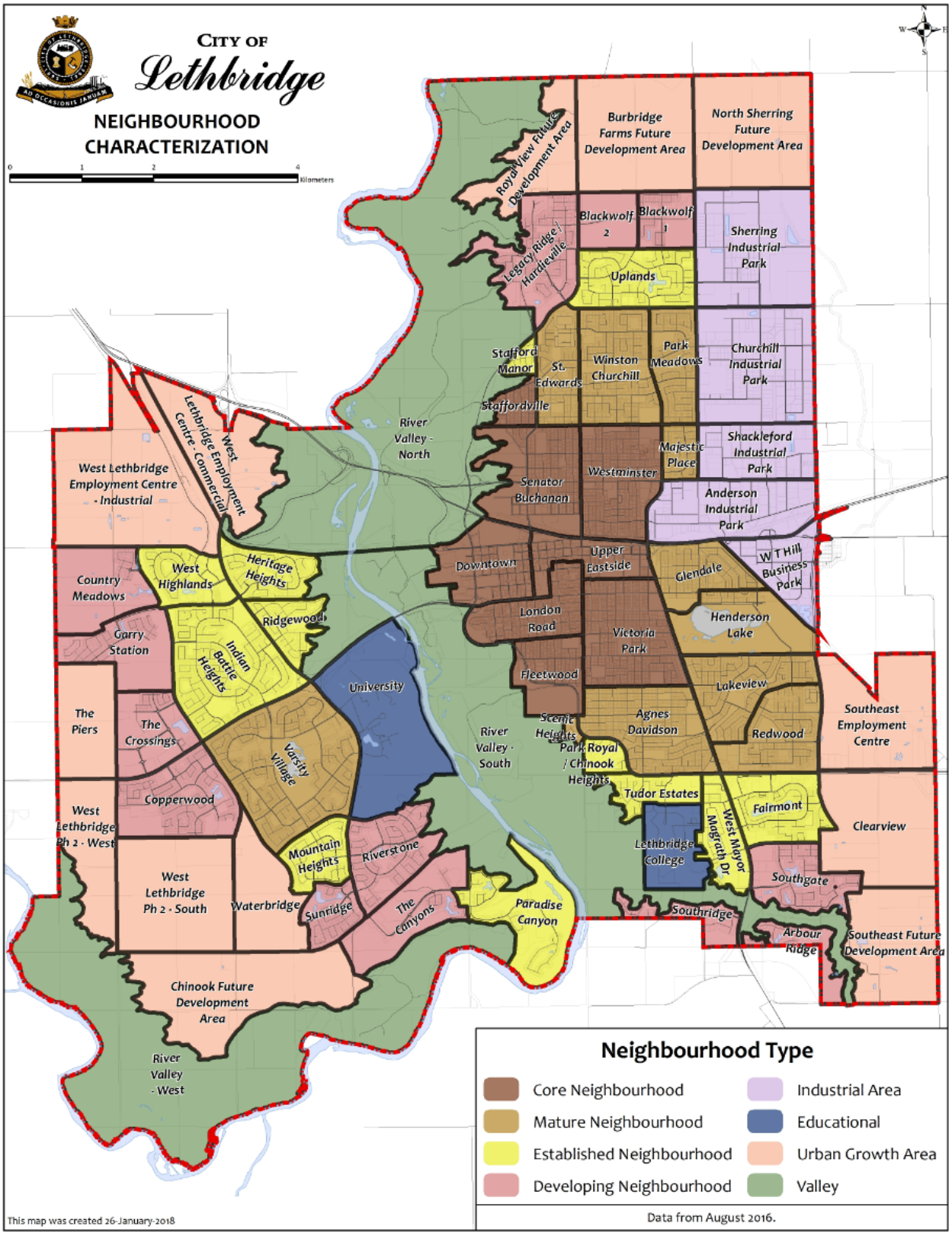
[31] Upper Eastside, London Road, and Senator Buchanan contain greater proportions of senior housing in comparison to other neighbourhoods in the city. This is an additional factor leading to higher densities in these neighbourhoods.

large lots. Furthermore, once a developing neighbourhood is complete its residential density may not be exact to the planned densities seen in OPs. For example, in 2016 Sunridge had already reached 25.11 du/nrha and is expected to exceed the planned 28.87 du/nrha as the neighbourhood reaches completion. Overall, the three densest *planned* developing neighbourhoods are The Crossings, Blackwolf 1, and Country Meadows.

Chapter 5.0 Analyzing Patterns of Growth in Residential Neighbourhoods

As seen above, there are numerous factors that can affect the way our neighbourhoods grow and change over time. The above analysis has provided a starting point for understanding patterns of growth in a Lethbridge context. By analyzing demographics, land composition and density statistics we have established a baseline of where we are today, and are able to monitor changes that occur in the future. Additionally, monitoring how these indicators change over time allows us to identify specific decisions and land use practices that may have led to a more or less efficient use of our residential land.

The following section pieces together the demographic, land composition, and density trends to get an overall understanding of the patterns of growth in Lethbridge neighbourhoods and concludes by identifying strategies to achieve efficient patterns of growth.



Map 31: Neighbourhood Characterizations (2016)

5.1 Core Neighbourhoods

Core neighbourhoods have maintained relatively stable populations as the ageing population is being replaced by young adults at a fairly equal rate. As discussed in part 1, some members of the Generation Y demographic are showing a willingness to forego many previously valued residential attributes (such as suburban communities that are predominately residential, contain larger lots, larger homes, and greater availability of parking) for walkable, mixed-use communities, and are living closer to the diverse amenities found in core neighbourhoods and particularly the downtown. Core neighbourhoods also include higher density development as a result of smaller lot sizes (due to the age of development), more 2 storey single detached homes, higher proportions of apartment buildings, and provide a more diverse range of housing options. This is particularly important as housing costs are becoming an important consideration for Generation Y.

Core Neighbourhoods	Demographic Trends	Land Composition	Density Trends
Overall trends	- Stable population as ageing population is replaced at a fairly equal rate by young adults (Generation Y)	- More complete neighbourhoods with greater diversity in land uses. - Commercial, institutional, and some industrial business land. - Pedestrian orientated development. - Lower proportion of Parks and open space	- Highest average density across the City at 26.11 du/nrha. - More apartment buildings, and less single detached and row housing - Smaller lot sizes with more 2 storey single detached homes
North Lethbridge			- Average density 24.04 du/nrha - North Lethbridge has a relatively balanced range of densities across core neighbourhoods.
South Lethbridge	- London Road only core neighbourhood with consistent population decline	- Chinook Regional Hospital and increased medical services in Victoria Park	- Average density 28.17 du/nrha - Contain two of the three highest densities city-wide (Upper Eastside & London Road).

Table 19: Patterns of Development in Core Neighbourhoods

5.2 Mature Neighbourhoods

The most notable trends seen in mature neighbourhoods in Lethbridge can be an indication of the changing demographics of the population. As previously discussed in Part 1, seniors in Alberta want to live independently as long as possible which is dependent on factors such as cost, access, and proximity to services. For some, this means "ageing-in-place", while others look to downsize from larger homes and relocate to neighbourhoods in proximity to the services they need (e.g. personal care, health care, grocery stores, banking). Additionally, Generation Y continues to seek out areas that include a greater mix of land uses, offer a greater mix of housing options, and are more walkable and accessible neighbourhoods.

In North Lethbridge, mature neighbourhoods are losing population from nearly all age groups as the neighbourhoods continue to age. These areas also have lower proportions of commercial and institutional development, and have higher proportions of single detached housing. Contrastingly, South Lethbridge mature neighbourhoods have higher proportions of commercial and institutional areas, with higher density development located near these areas. These neighbourhoods have seen population growth, particularly from Baby Boomer and senior populations (Silent Generation), as well as small amounts of growth from Generation Y. These trends could potentially be indicating a general migration of the population towards areas with increased access to amenities, as well as access to increased health services (Chinook Regional Hospital and surrounding specialty offices) found in South Lethbridge. Additionally, Varsity Village in West Lethbridge has maintained a stable population and includes higher density development. With close proximity to the University there are increased student housing opportunities (particularly apartments and row housing), and the population remains consistent as students graduate or relocate and are replaced by new students at a fairly equal rate.

Mature Neighbourhoods	Demographic Trends	Land Composition	Density Trends
Overall trends	Variations across sector	Variations across sectors	- Lower densities then core neighbourhoods with an average density of 23.65 du/nrha - More small scale residential and single detached housing compared to core neighbourhoods - Larger lot sizes with larger ranch style homes
North Lethbridge	- Losing population from all age groups as neighbourhoods continue to age	-Predominately residential land use - Minimal commercial and institutional development - less Parks and open space compared to South and West sectors	- Average density 21.69 du/nrha - Relatively balanced densities
South Lethbridge	- Growth of Baby Boomer population, senior population (Silent	-Predominately residential land use	- Average density 23.16 du/nrha

	Generation) and slight Generation Y increases (in Redwood and Agnes Davidson)	-Higher proportion of commercial and institutional development along major arterial roadway (Mayor Magrath Dr S) - Large proportion of Parks and open space (Henderson Lake)	- Higher density development near commercial areas
West Lethbridge (Varsity Village only mature neighbourhood)	- Stable population with minimal changes -Predominately Generation Y demographics	- Close proximity to the University - Minimal commercial development - Large proportion of Parks and open space (Nicholas Sheran Park)	- Average density 26.11 du/nrha - Higher density development (student housing opportunities)

Table 20: Patterns of Development in Mature Neighbourhoods

5.3 Established Neighbourhoods

Overall, the trends seen in established neighbourhoods in Lethbridge has been consistent across sectors as more recent established neighbourhoods have seen population growth, and neighbourhoods ageing towards the mature neighbourhood status begin to see small amounts of population loss. These neighbourhoods have been designed as automobile-orientated development, are predominately residential areas with larger lots and a higher proportion of single detached housing, and include the least diversity of land uses in the City. Commercial development is typically clustered along major arterial roadways such as University Drive in West Lethbridge and Mayor Magrath Drive in South Lethbridge. However, North Lethbridge established neighbourhoods have very minimal commercial and institutional development. Established neighbourhoods also have the lowest average density across all neighbourhood characterizations, with minimal higher density development found surrounding commercial areas (Fairmont and West Highlands).

As established neighbourhoods continue to age, we may begin to see the same trends that are occurring in mature neighbourhoods. Population loss may begin to occur from most age groups, while the older demographic continues to "age in place", or migrates to areas with increased access to amenities and a greater mix of housing types. This may be particularly true in North Lethbridge.

Established Neighbourhoods	Demographic Trends	Land Composition Trends	Density Trends
Overall trends	-Neighbourhoods that finished completion during the decade saw population growth (Fairmont) - Neighbourhoods that are ageing towards the mature neighbourhood status began to see small amounts of population loss (Ridgewood)	- Predominately Residential Land Uses - Least diverse land uses in the City - Lowest proportion of parks and open space - Commercial and institutional areas clustered along major arterial roadways -automobile orientated development	- Lower average densities then core and mature neighbourhoods - Average density 20.19 du/nrha - Less apartments - More single detached and row housing - Larger lot sizes with more single detached housing
North Lethbridge			- Average density 20.91 du/nrha
South Lethbridge		- Big box commercial development along Mayor Magrath Drive South	- Average Density 15.69 du/nrha - Higher density development near commercial areas (Fairmont)
West Lethbridge		- Big Box commercial Development in West Highlands	- Average density of 23.97 du/nrha - Higher density development near commercial areas (West Highlands)

Table 21: Patterns of Development in Established Neighbourhoods

5.4 Developing Neighbourhoods

Overall, developing neighbourhoods have represented the largest proportion of growth seen across the city over the past decade, particularly in West Lethbridge. This growth is seen predominately from young adults (Generation Y) moving into new neighbourhoods and starting families. While some members of Generation Y seek out inner-city lifestyles, it is clear that developing neighbourhoods are still seeing the majority of growth from this demographic. Developing neighbourhoods have also been planned to include higher density development through neighbourhood designs with smaller lots, more 2 storey housing, and a greater mix of housing types in comparison to established and mature neighbourhoods. However, developing neighbourhoods continue to show patterns of development dominated by residential land uses. Additionally, commercial and institutional areas are clustered in neighbourhoods such as The Crossings in West Lethbridge and Southgate in South Lethbridge. However, north Lethbridge developing neighbourhoods have continued to develop with very minimal commercial and institutional land use. There are also larger proportions of parks and open space in developing neighbourhoods. The increased proportion of parks and open space is associated with the storm water facilities included in developing neighbourhoods. These facilities generally include a storm water pond surrounded by greenspace and are typically zoned as parks and recreation land. Storm water facilities will be further explored in Chapter 7: Greenfield Development.

Developing Neighbourhoods	Demographic Trends	Land Composition	Density Trends
Overall trends	- Majority of population growth in the City is taking place in developing neighbourhoods - Predominately families of young adults (older individuals from Generation Y) with children (Generation Z)	- Predominately residential land uses - Commercial and institutional land use nodes around major arterial roadways (The Crossings and Southgate) - Automobile orientated development - Larger proportion of parks and open space	- Recent ASP and OP's have a trend towards higher *planned* densities that are typically greater than 25.00 du/nrha and contain a more balanced range of housing types -smaller lot sizes with more 2 storey buildings - Trends of higher density development around commercial nodes
North Lethbridge		- Minimal commercial and institutional development - Large proportion of parks and open space (Legacy ridge park)	
South Lethbridge			- Least dense neighbourhoods in the City (Arbour Ridge and Southridge)
West Lethbridge	Largest population growth in the City over the past decade		

Table 22: Patterns of development in Developing Neighbourhoods

5.5 Efficient Patterns of Growth

As discussed in Part 1, the SSRP addresses two outcome areas that are dependent on patterns of development occurring in our neighbourhoods: **Efficient Use of Land** and portions of **Community Development.**

In order to consider and meet the objectives of efficient land use and community development in a way that makes sense for Lethbridge, we must continue to design our greenfield areas with a range of housing types and a mix of uses. The common goal is to ensure viable neighbourhoods that maintain healthy populations overtime, and are capable of supporting local services where buying a jug of milk doesn't involve a journey by car. Overall, this will lead to a more efficient use of the land base, and slow the rate at which we absorb undeveloped land into our urban footprint. Additionally, it is important that when greenfield areas are planned, high quality designs for buildings and public spaces can demonstrate the benefits of a range of density and mixed-use development.

There are several approaches that can incorporate the strategies identified in the SSRP and aid in meeting the objectives of efficient land use and community development. They includes diversifying greenfield development *and* planning for infill opportunities:

Greenfield Development

As developing areas continue to see the greatest proportion of growth in Lethbridge neighbourhoods, the city and the development industry must continue to dialogue on the design of new greenfield communities. Taking a holistic view on where density is best accommodated in order to utilize transit and support local businesses will contribute to maintaining population over time. Ensuring densities can be accommodated with corresponding road and utility infrastructure is important, keeping in mind trends in transportation mobility and housing preferences of residents of all ages and incomes. Chapter 7: Greenfield Development will further explore the way we are designing our developing neighbourhoods and urban growth areas within the context of efficient land use and community development.

Infill Development:

As our core, mature, and established neighbourhoods continue to age, we must begin planning for infill development (for all land uses) in order to maximize existing infrastructure, support businesses and services, and enable healthy populations within ageing neighbourhoods. Chapter 8: Infill Development will explore infill development in Lethbridge.

Chapter 6.0 Industrial and Commercial Areas

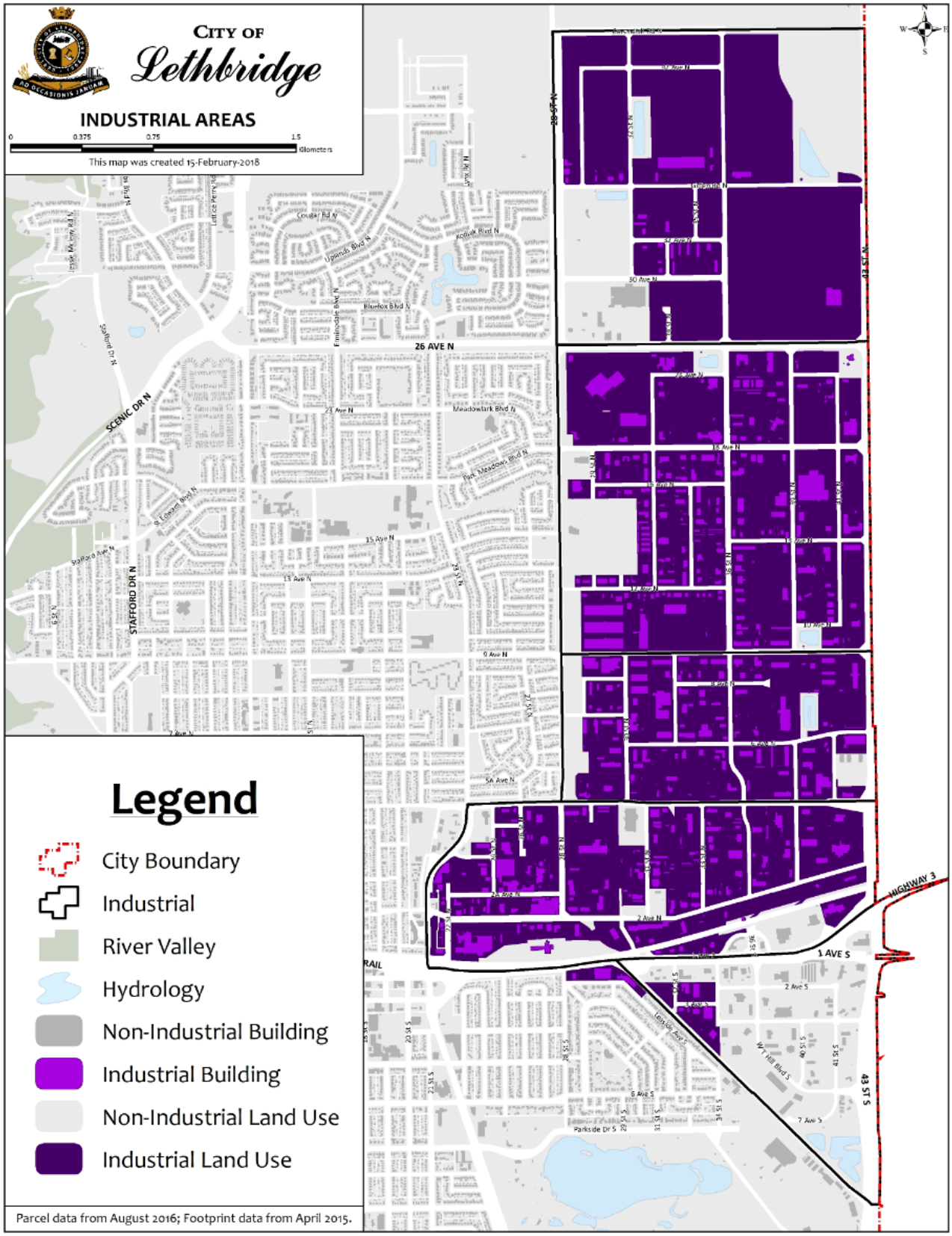
As Lethbridge's neighbourhoods grow and the population continues to increase, so will the need for accessible services and jobs provided by commercial and industrial areas. The pattern and design of commercial and industrial areas can impact the rate at which the footprint of human activities and land is consumed by the built environment. Furthermore, the way we locate and design commercial and industrial land uses can change the way we access them through various means of transportation. The following section will explore commercial and industrial land uses in Lethbridge, identify patterns of development, and establish baseline data to help monitor how these areas change over time.

6.1 Industrial Areas

The five industrial areas (Map 21) in Lethbridge consist predominately of industrial-zoned land with some commercial uses mixed in. These industrial areas support the largest proportion of the Lethbridge workforce at approximately 10,244 employees (based on 2016 employment projections). The ICSP/MDP directs industrial development to eastside of Lethbridge which is considered the most appropriate area in which to situate industrial activities since prevailing winds will direct any nuisances (noise, odors and emissions) produced by industrial activities away from the city's residential districts.

Lethbridge's industrial sector is diverse. Industries participating in this sector are involved in the manufacturing of farm machinery, furniture, housing, agribusiness, metal fabricating, advanced technologies, and food and beverage processing to name a few. There are also some portions of commercial zoning within the industrial areas including the 14 hectare regional commercial site (big box and smaller retail stores and services) located in the south west corner of Sherring Industrial Park.

With a limited supply of areas suitable to support industrial growth, using land in industrial areas efficiently is important to ensure long term economic growth opportunities and stability, and to maximize municipal investments in infrastructure. Gathering data for indicators such as employment density and building density allows us to establish a baseline of where we are today in terms of how effectively we are using our industrial lands. By monitoring how these indicators change overtime, we are able to identify market trends and land use practices that may have led to a more or less efficient use of our land.



Map 32: Industrial Areas (2016)

Industrial Development Patterns

The statistics below represent the existing state (as of 2015/2016)[32] of industrial areas and are subject to change as future development occurs. Businesses in Lethbridge's industrial areas are typically spread out, with large parcels of land containing small building footprints (Map 22). On average, only 18.5% (excluding Sherring Industrial Park, which is in early phases of development) of industrial land use parcels in the Industrial Area are covered by building footprint (including accessory buildings) (Figure 20). This leaves an average of 81.5% of underutilized land that does not contain built form. However, it is important to note that industrial uses may utilize open space for storing materials, products or machinery, and WT Business Park contains commercial land containing auto dealerships that have large parking lots for showcasing new vehicles. Nevertheless, with spread-out development the employment density of Lethbridge's industrial areas is low, with an average of only 18.95 jobs per hectare of industrial parcel area (excluding Sherring Industrial Park). However, these numbers are based on employment projections generated for 2016, which are expected to slightly underestimate employment in industrial areas. This data will be revised upon completion of the 2016 Statistics Canada Census.

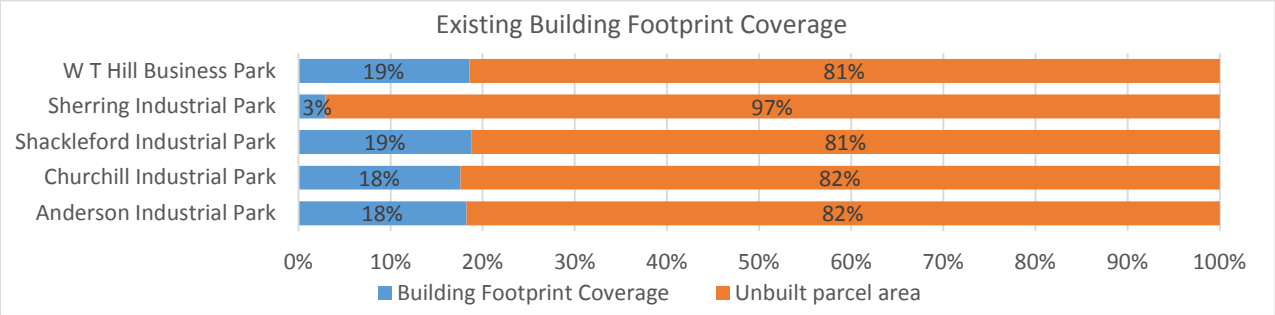


Figure 21: Percentage of Existing Building Footprint Coverage in Industrial Areas (2015)

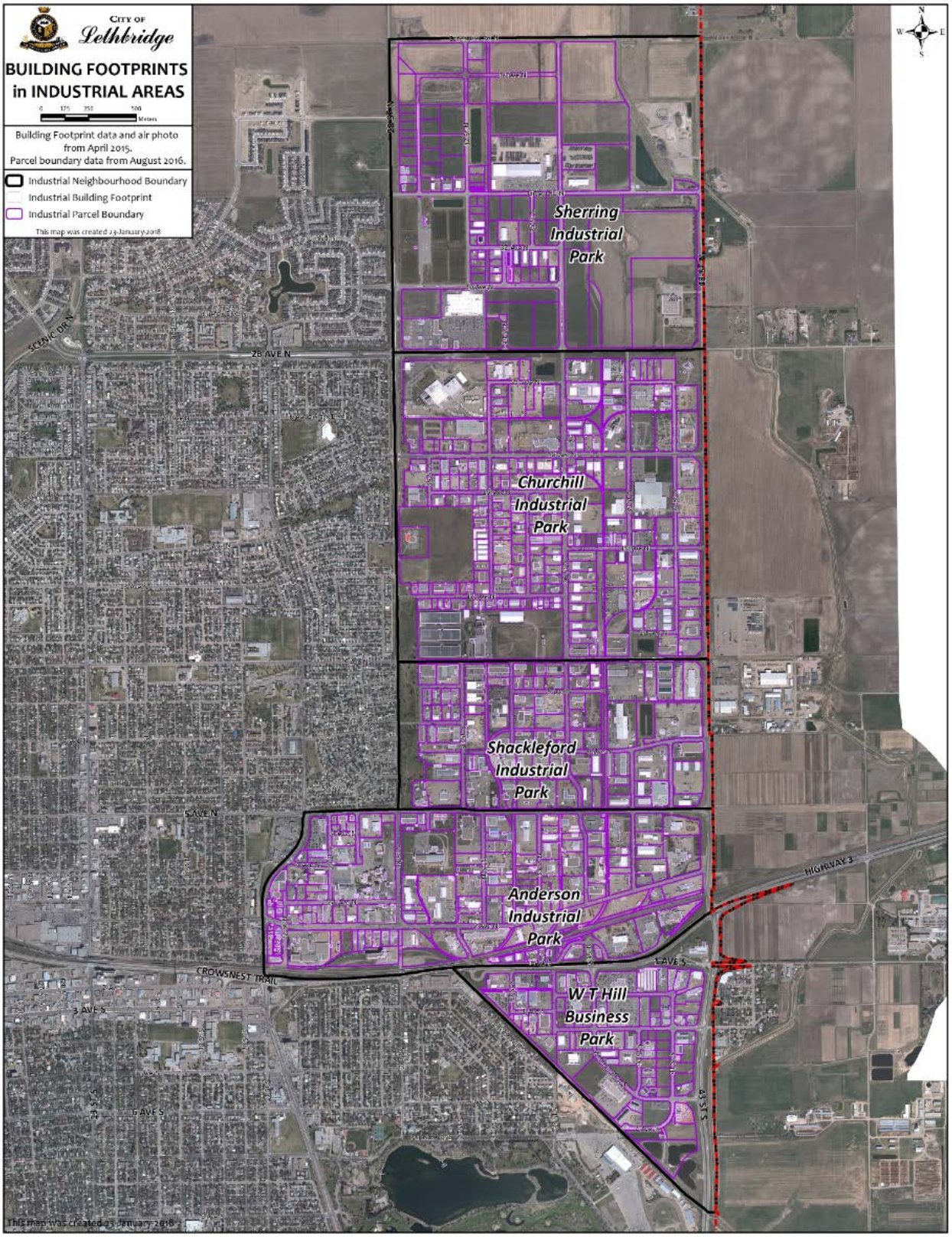
Industrial Areas	Industrial land use Parcels (ha)	Industrial Building Footprints (ha)	Building Footprint coverage (%)
Anderson Industrial Park	129.00	23.53	18%
Churchill Industrial Park	193.71	34.07	18%
Shackleford Industrial Park	98.27	18.48	19%
Sherring Industrial Park	171.52	5.00	3%
W T Hill Business Park	6.58	1.22	19%
Total	**599.08**	**82.3**	**14%**

Table 23: Industrial Areas Existing Building Footprint Coverage (2015)

Industrial Areas	Industrial land use Parcels (ha)	2016 Employment (Projections)	Jobs per Hectare
Anderson Industrial Park	129.00	2958	20.7
Churchill Industrial Park	193.71	3113	14.8
Shackleford Industrial Park	98.27	1915	19.0
Sherring Industrial Park	171.52	926	5.0
W T Hill Business Park	6.58	1332	21.3
Total	**599.08**	**10244**	**14.6**

Table 24: Industrial Areas Existing Job per Hectare (2016)

[32] Building footprint data from April, 2015 aerial photo. Parcel area and employment data 2016



Map 33: Industrial Building Footprints (2016)

Efficient Industrial Land Use Practices

Overall, the pattern of industrial development in Lethbridge overtime has led to an increased development footprint with larger lots and less building area. Several contributing factors would include increased parking and landscaping requirements, corporate branding and image as well as the changing nature of industrial uses itself. Industrial intensification would improve industrial land efficiency by allowing sites to achieve higher density forms of industrial development, and facilitate new growth through the redevelopment of existing underutilized sites[33].

An *Eco-industrial Park (EIP)* is one example of an industrial land use development pattern that increases the density of industrial areas and clusters industries (Figure 22). An EIP consists of a community of manufacturing and service enterprises located together on a common property, in which members seek enhanced environmental, economic and social performance through collaboration in managing resources and integration with the surrounding community. Collaborative strategies and clustering industries can lead to positive benefits such as waste reduction, shared logistic and shipping and receiving facilities, shared parking, green technology, purchasing blocks, multiple-partner green building retrofits, district energy systems and local education and resource centers[34].

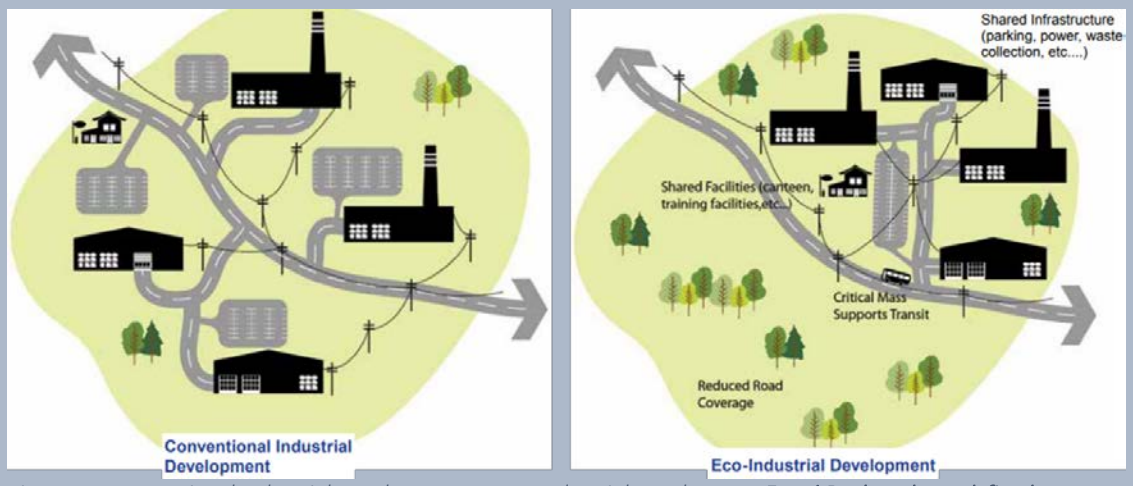


Figure 22: Conventional Industrial Development Vs Eco-Industrial Development ***Error! Bookmark not defined.***

Industrial intensification and increasing the proportion of new development that takes place within already developed or disturbed lands (either through industrial infill or redevelopment) can lead to a number of environmental, social and economic benefits, including:

- Reducing the overall development footprint
- Reducing the rate that agricultural and natural lands are converted to developed land
- Utilize existing infrastructure and minimize the need for new or expanded infrastructure
- Maximize existing infrastructure investments

[33] Metro Vancouver Metropolitan Planning, Environment and Parks. *Discussion Paper: Best Practices for the Intensive Use of Industrial Land*. Oct 29, 2012

[34] Braziller, Clay. *Putting the Eco in Industrial.* Rep. ReNew Canada, N.d. Web. 5 Sept. 2012. Quoted in Alberta Government. *Efficient Use of Land Implementation Tools Compendium.* July 2014.

- Increase jobs per hectare
- Facilitate the servicing of the area by transit
- Advantages associated with proximity to suppliers, customers, competitors, and workers:
    - Higher business output, both per worker and per area of land
    - Sharing road access, parking facilities and services

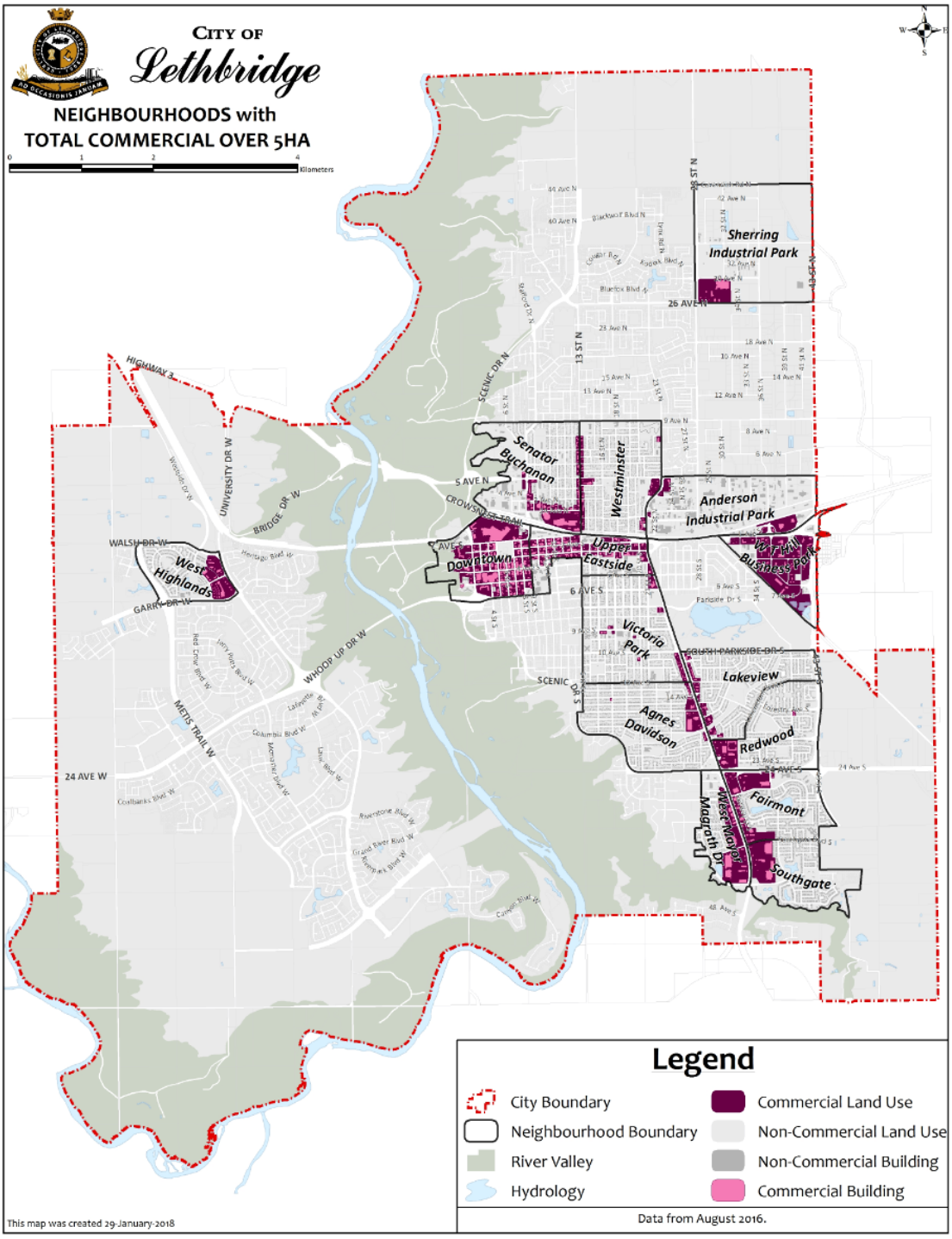
However, there are barriers that can restrict or constrain efficient industrial land use practices including land ownership, parking management, development regulations and road infrastructure. Nonetheless, through the direction of the MDP as well as the Land Use Bylaw, the City of Lethbridge can take steps towards the intensification of the industrial areas. The MDP can establish the general vision and policy direction to locate and encourage intensification of industrial lands, and the Land Use Bylaw can establish many of the regulatory provisions associated with increasing industrial density, such as land use districts, building design requirements and parking.

In order to increase industrial density and become more efficient in the use of industrial lands, it is recommended that further research be conducted to identify opportunities for the intensive use of industrial land in Lethbridge.

6.2 Commercial Areas

In order to create vibrant and complete communities, residents benefit by commercial areas in proximity to where they live, in contrast to driving between city sectors. Whether accessing food, recreation, or a place of employment, commercial areas are accessed almost daily by most of the population within the City. Over the past century, the pattern and design of commercial development has changed dramatically in Lethbridge (and North America). Early commercial development in Lethbridge consisted of “street fronting”, and pedestrian orientated family owned stores located centrally in the downtown and along the streets of core neighbourhoods. However, with the introduction of the automobile and post-war development patterns, commercial development shifted towards “big box” style development, located on major roadways and city outskirts, and is accessible only by car. In addition, large corporate retailers often oversupply parking that consumes unnecessary amounts of land for large surface parking lots. These patterns of development have led to commercial areas requiring more land to build adequate roadways and transportation networks that service them. Overall, using land efficiently while also creating complete and healthy neighbourhoods is greatly dependent on the way we design and locate commercial development.

In Lethbridge, commercial areas are typically clustered through various neighbourhoods and sectors of the city (Map 23). For this reason, they were not identified or characterized in our *Neighbourhood Characterizations.* However, in order to establish a baseline of our commercial land use, we have identified major commercial areas within neighbourhoods that contain greater than five hectares of commercial land.



Map 34: Major Commercial Areas (2015)[34]

[34] The Crossings commercial development in West Lethbridge was not included in this map and analysis. The Crossings commercial area was zoned in 2016, however, this analysis only includes neighbourhoods with commercial buildings that were built by April, 2015 (date the most recent aerial photo was taken to identify building footprints). Construction of the Crossings commercial area did not begin until after April 2015.

Commercial Development Patterns

Similar to industrial areas, monitoring the amount of land on commercial parcels covered by building footprint can act as an indicator of how efficiently commercial land is being developed. This analysis can identify which patterns of commercial development (typically dependent on the era of development) utilizes our land supply in the most efficient way. Additionally, monitoring how commercial building footprint coverage changes in our neighbourhoods over time allows us to identify which factors have led to a more or less efficient use of commercial parcels.

Figures 22-25 below identify the amount of commercial parcel area covered by building footprint within major commercial areas in Lethbridge neighbourhoods. The commercial areas have been organized by city sector, as well as neighbourhood characterizations. Note that the 'unbuilt parcel area' includes surface parking. This partly explains the lower building coverage in newer areas, as parking requirements have increased over time.

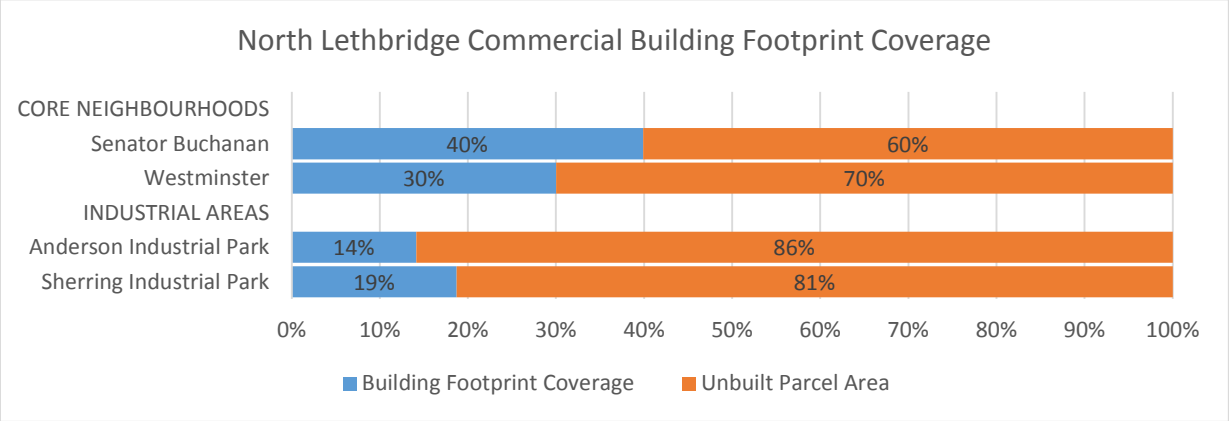


Figure 23: North Lethbridge Building Footprint Coverage in Commercial Areas (2015)

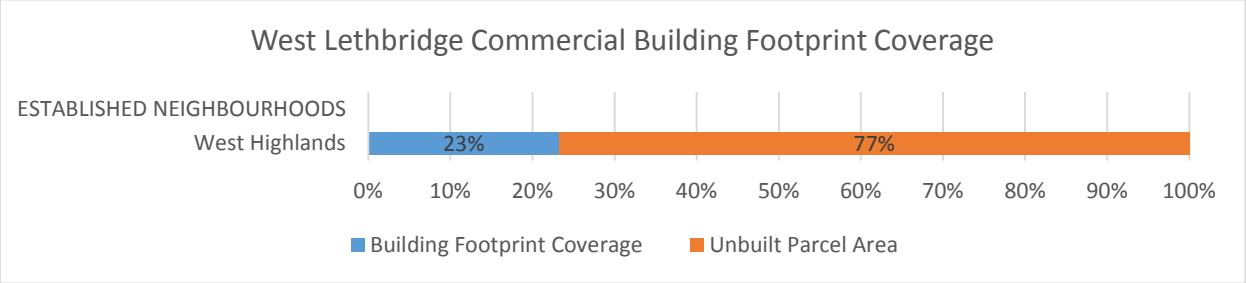


Figure 24: West Lethbridge Building Footprint Coverage in Commercial Areas (2015)

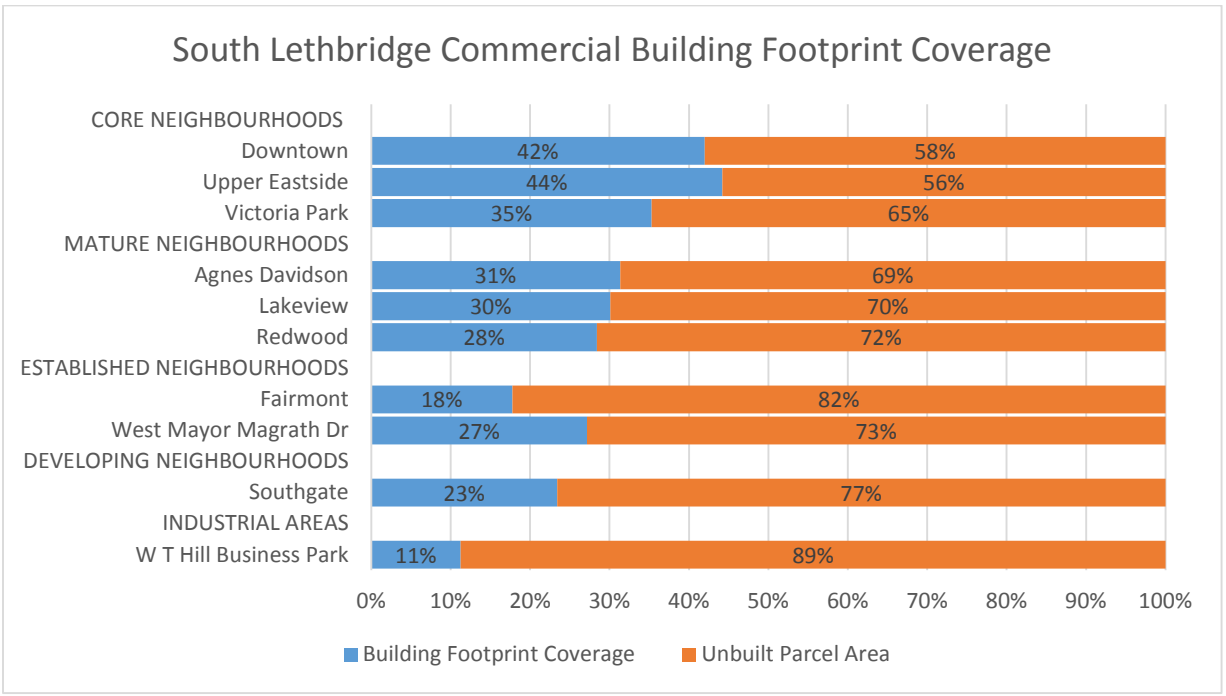


Figure 25: South Lethbridge Building Footprint Coverage in Commercial Areas (2015)

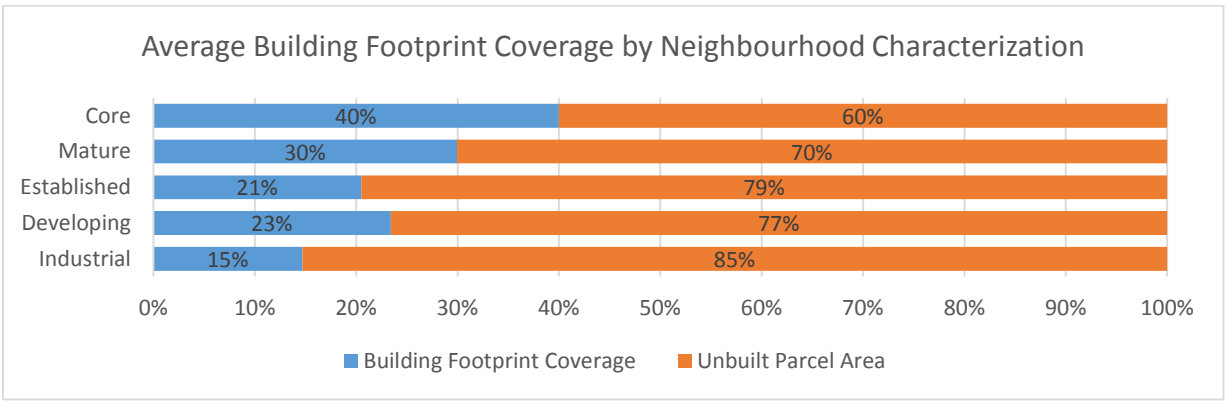


Figure 26: Average Building Footprint Coverage (2015)

The differences between the varying building footprint coverage in each neighbourhood characterization can be related back to the era, location, and design of commercial development. In Lethbridge, commercial development is typically designed in three different patterns, and can be categorized as either "*street-fronting*" commercial, "*big box*" commercial, or commercial *"strip malls"*.

Street Fronting Commercial

Overall, core neighbourhoods have the highest average building footprint coverage at 40% (Figure 25). When core neighbourhoods were developed in the early 1900s, they were designed based on a grid street pattern with minimal to no parking requirements. These neighbourhoods were designed during a time where automobile ownership rates were low, and horse, walking, and later streetcars were the dominant forms of transportation used to access commercial areas. The form of commercial development associated with this era can typically be described as street-fronting commercial. Street-fronting commercial development in Lethbridge is located predominately in the grid pattern street network of downtown and surrounding core neighbourhoods. Map 24 and Figure 26 identify an example of street front commercial development located along 13th Street North. This pattern of commercial development generally consists of smaller commercial parcels containing buildings that are built side by side, with minimal (or no) front, rear, and side setbacks. Today, street-fronting commercial parcels will include very limited on-site parking, usually supplied from rear lanes or on-street, or will be located near a parking lot that services multiple commercial buildings. Typically, street-fronting commercial development encourages access through multi-modal transportation (i.e. pedestrians, cycling, transit, and automobiles), and can be incorporated into residential areas. Street-fronting commercial is the predominate form of commercial development in core neighbourhoods. However, there are still areas that have redeveloped and have incorporated commercial strip malls and big box commercial development patterns into core neighbourhoods (e.g. Westminster Village Mall).

Map 35: Example of Street-fronting Commercial Development (13th Street North) (2015)

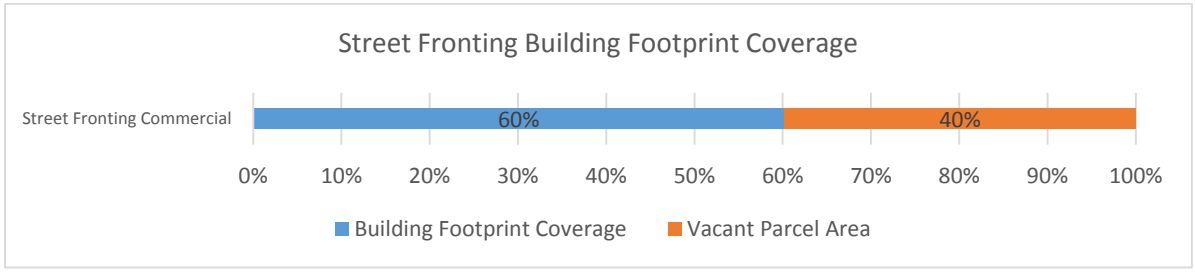


Figure 27: Street-fronting Commercial Building Footprint Coverage (13th Street North) (2015)

Strip Malls & Big Box Commercial Development

Mature, established and developing neighbourhoods in Lethbridge were mostly built during the era of curvilinear street pattern development. This resulted in commercial areas that were designed to be auto-orientated, and are typically located along major arterial roadways for convenient vehicle access (and, to a lesser extent, transit). Commercial strip malls and big box commercial development were the two patterns of commercial development that emerged, and are the dominant forms of commercial development in these neighbourhoods.

Big box commercial development can typically be described as large parcels of land containing one commercial retail unit (CRU) surrounded by a large, surface parking lot. Map 25 and Figure 27 below provide examples of big box commercial development along Mayor Magrath Drive South.

Commercial strip malls are a form of smaller shopping mall where the stores are arranged in a row, developed as one large, one-storey unit with a front sidewalk connecting each commercial unit, and shared, surface parking lots. Map 26 and Figure 28 below provide examples of commercial strip mall development along Mayor Magrath Drive South. Additionally, big box and strip mall commercial areas are frequently used in combination, with both forms of development being located in close proximity to one another, and surrounded by large areas of surface parking.

In Lethbridge, mature neighbourhoods have the second highest average building footprint coverage at 30% (Figure 25), and are predominately associated with strip mall development along major arterial roadways (Mayor Magrath Dr South).

Established and developing neighbourhoods have a low average building footprint coverage of 21% and 23%, respectively (Figure 25). The commercial areas in these neighbourhoods were predominately designed as big box commercial with large, surface parking lots, along with some areas incorporating a combination of big box and strip mall developments.

Lastly, WT Hill Business and Sherring Industrial Parks are the two industrial areas in Lethbridge that contain large portions of commercial land. These industrial areas have developed predominately as stand-alone big box commercial areas with large, surface parking lots. As a result, industrial areas have the lowest average building footprint coverage at only 15% (Figure 25).

Map 36: Example of Big Box Commercial Development (Mayor Magrath Drive S) (2015)

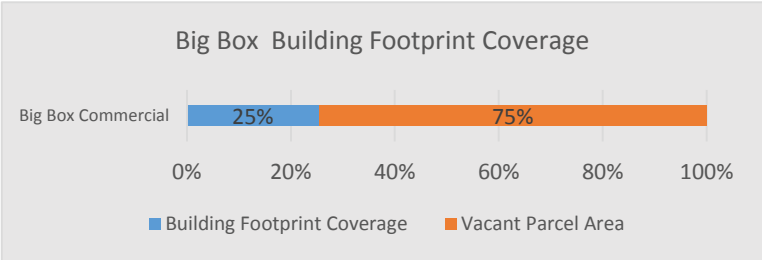
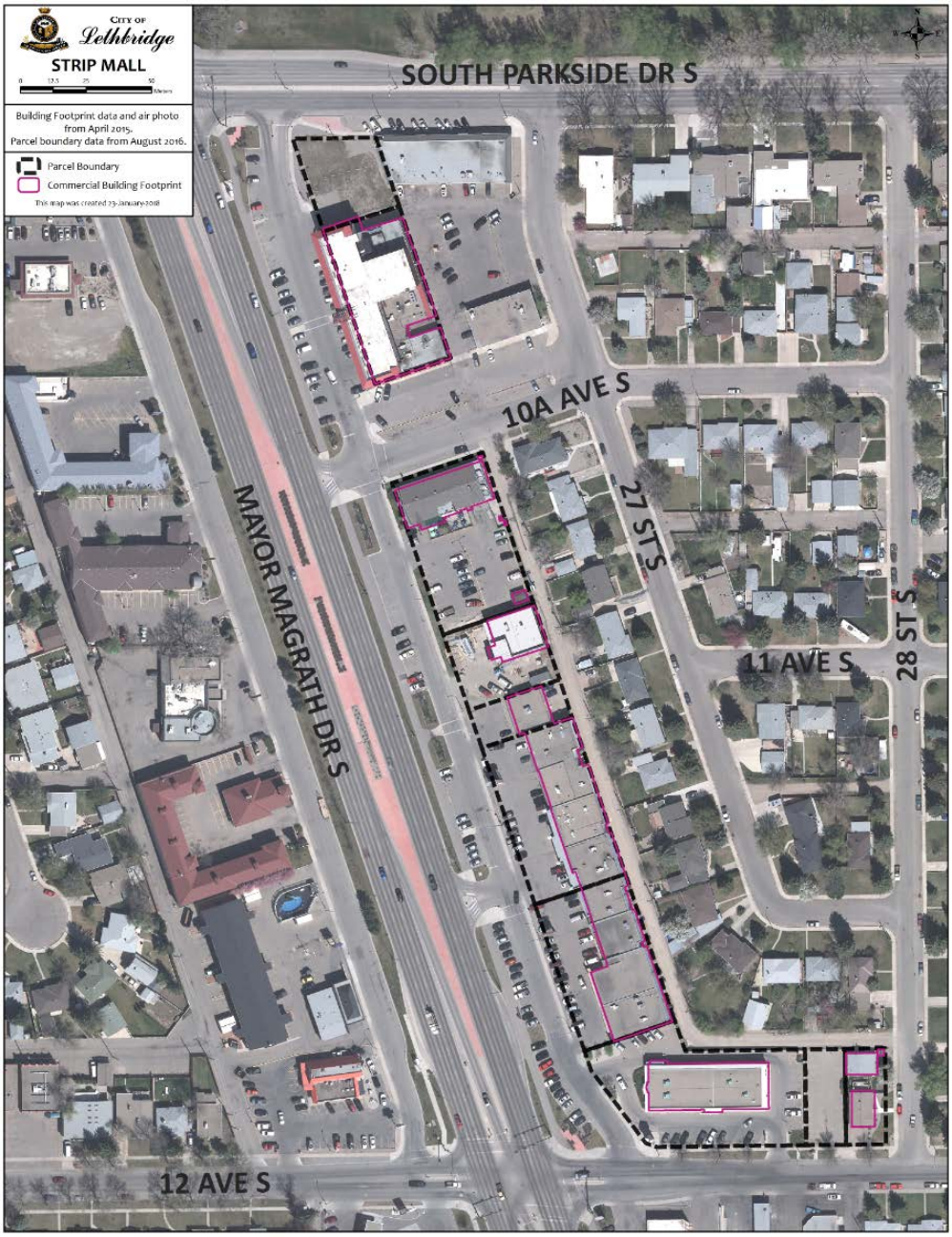


Figure 28: Big Box Commercial Building Footprint Coverage (Mayor Magrath Drive S) (2015)



Map 37: Example of Strip Mall Commercial Development (Mayor Magrath Drive S) (2015)

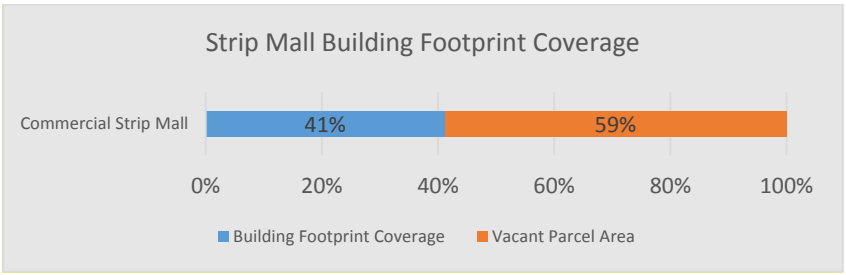


Figure 29: Strip mall Commercial Building Footprint Coverage (Mayor Magrath Drive S) (2015)

Efficient Commercial Land Use Practices

Underutilized Parking

Overall, the emergence of automobile-orientated commercial development has led to an increased development footprint and underutilized land. One of the major issues with big box and strip mall commercial patterns of development is the large parking lots that rarely reach capacity. This concept is also known as "*Black Friday parking*", where parking lots are designed for busy days that may only occur a few times per year. Parking is often one of the most land consumptive uses in most urban areas which increases the rate at which land is converted from an undeveloped state into built environment. Commercial parking requirements are often based on standardized guidelines used by developers, engineers and planners that can result in an overestimation of parking space. As well, corporate retailers often oversupply the amount of parking needed as a business practice. In 2016, City Council amended Land Use Bylaw 5700, for the first time introducing a *maximum* parking regulation. This specifies that developments may not provide greater than 25% over the specified minimum parking provision required for a given land use. Previously, developments had no limit on the amount of parking they could provide.

Complete and Accessible Neighbourhoods

The manner in which large, big box commercial developments have been located and designed on the outskirts of the city on major arterial roadways (particularly Mayor Magrath Drive South) has created vehicle-dependent accessibility issues that can have both environmental and social repercussions. This can include (but is not limited to) increased greenhouse gas emissions from increased vehicle use, as well as accessibility issues for pedestrians, mobility challenged individuals, and for individuals who cannot afford the rising costs of vehicle ownership. As discussed in Part 1, the connection between our built environment and public health has been overlooked for years. However, a growing number of studies are showing the important relationship between urban design and a number of public health crises, including asthma caused by particulates from vehicle exhausts, obesity, heart conditions, and depression exacerbated by lack of physical exercise, stressful living conditions, long commutes, lack of access to fresh food, and isolated, car-oriented neighbourhoods.

Refocusing our current commercial development practices to more neighbourhood-orientated designs (such as street-fronting commercial and neighbourhood grocery stores) located in or near residential neighbourhoods, as well as encouraging higher density residential development near major commercial nodes, can have many positive impacts in terms of efficient land use and environmental, social and community development benefits.

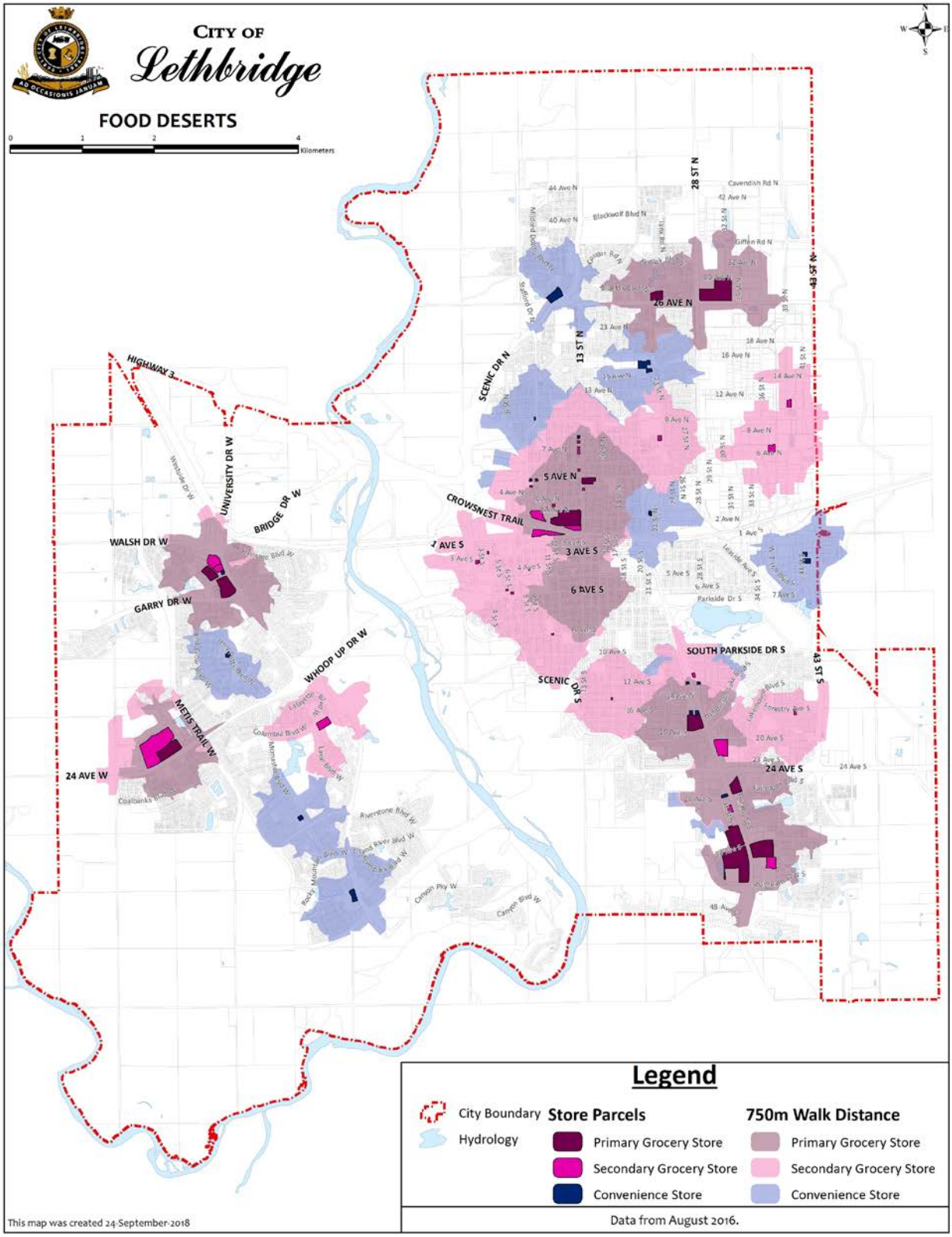
Grocery Stores Example

Map 38 below shows the location of primary grocery stores, secondary grocery stores, and convenience stores throughout the city, as well as a 750m walk distance surrounding each of those stores' locations. This is considered a 'reasonable' walking distance by the Canadian Environmental Health Atlas[35], and provides a benchmark against which we can measure the walkability of our grocery stores. While there are of course other uses that could be measured in terms of walkability (e.g. schools, parks), grocery

[35] Retrieved from: http://www.ehatlas.ca/food-deserts/case-study/food-deserts-edmonton. 24 Jan 2018.

stores are perhaps the most universal use that virtually everyone in a city requires regular access to. Future studies could conduct similar research on other uses considered valuable by residents. While grocery stores are also most frequently visited via motor vehicle, a grocery store within walking distance does at least offer the opportunity for many people to stop in to pick up a small number of items on foot. It also means people who do not own a motor vehicle may be able to save on taxi or bus fares. Even if everyone were to travel via motor vehicle, closer access means less time spent by each vehicle on the road, reducing traffic and using our right-of-ways more efficiently. As seen with some retail purchases, the online sale of goods may also alleviate the need to drive to pick up groceries over time.

For the purposes of this study, a primary grocery store is one which typically sells most or all of the groceries an average customer buys (e.g. Save On Foods, Walmart). A secondary grocery store is one which may be very small (e.g. Urban Grocer), only sell specialized goods (e.g. bulk dried goods, a deli, only meat, a bakery, etc.), or only sell some groceries as part of a wider offering (e.g. London Drugs, Shoppers Drug Mart). A convenience store is a small store selling a narrow selection of food, usually with very little fresh food available (e.g. gas stations). A complete list of the included stores is provided in Appendix 2.



Map 38: Food Deserts (2016)[36]

[36] Map 38 does not include future retail opportunities that are not currently built, but are planned in the southwest.

Map 38 shows that primary and secondary grocery stores in Lethbridge tend to be clustered. There are two clusters in the West Sector, to the west and north. Another cluster exists in the core neighbourhoods within the North Sector. A third cluster exists in the north east of the North Sector. The fourth cluster is located along Mayor Magrath Drive South, to the south east of the South Sector. Approximately 50% of Lethbridge's developed land base (including roadways) is within 750 metres of a primary or secondary grocery store. This leaves approximately 50% of developed land in what could be termed a 'food desert', in terms of reasonable walkable access to groceries.

Notable gaps in access exist around Henderson Park (Glendale, eastern Victoria Park, Lakeview), in the north west of the North sector (Legacy Ridge, Hardieville, Blackwolf), and in much of the west sector (Varsity Village, Copperwood, Heritage Heights, Ridgewood, Mountain Heights, Riverstone).

Encouraging a more even spread of access to these types of retail requires a twin track approach. In planning new areas, space should be included for a large grocery store to locate in parts of the city currently lacking easy access.

Small or specialized grocery stores are also valuable, and in contrast to large stores are more likely to come and go over time. Therefore, in existing neighbourhoods we should seek to provide a regulatory environment that is friendly to these types of commercial activity. In planning new areas we should encourage developers to provide appropriate locations for smaller, likely locally-owned, operators. By only including larger, leasable commercial units, the barrier of entry is too high for everyone except large companies. Suitable smaller commercial lots should be developed with a pedestrian orientation. This will help to build on the advantages of small commercial spaces, such as ease of adapting to different uses, and improve the livability and completeness of neighbourhoods.

By aiming to ensure a more even spread of such essential commercial uses around the city, less time will be spent travelling (even if by motor vehicle). This helps make more efficient use of existing road space, and reduces the need for additional road capacity to be created over time. Of course the same could be said of any use, which is why a mix of uses across the city is an important factor in making efficient use of our land.

Chapter 7.0 Greenfield Development

This chapter will examine some key aspects of greenfield development in Lethbridge, with a focus on benchmarking the situation today so that future updates to the strategy can assess what progress has been made. This will concentrate on the way we design new residential neighbourhoods, which make up the bulk of the city's ongoing greenfield development, and how we can design in a way that uses land and infrastructure more efficiently.

Greenfield development typically involves replacing existing agricultural land uses, or even natural habitat. SSRP Efficient Use of Land strategy 5.1.1 states that land-use planners and decision-makers are encouraged to *'reduce the rate at which land is converted from an undeveloped state into permanent, built environment.'* This does not imply halting development in growth areas; rather, that greenfield development of public and private spaces should continue to make as efficient use of that land as possible.

Lethbridge's population is growing, and greenfield development is required to accommodate that population. SSRP Community Development strategy 8.4 states that municipalities should *'work together to anticipate, plan and set aside adequate land with the physical infrastructure and services required to accommodate future population growth and accompanying community development needs.'*

So while greenfield development is required to accommodate Lethbridge's population growth, a process of continuous examination and evaluation must be followed in order to ensure we are continuing to improve the efficiency with which we develop new areas of the city. It is easier to design a neighbourhood to be land use efficient from the outset, rather than trying to retrofit a more efficient land use pattern. This topic has been widely explored in terms of the difficulties of retrofitting suburbia. Though parcels of developable land can be subdivided or combined, once a pattern of infrastructure and utility right-of-ways is established it is likely to remain largely static. It is therefore important that Lethbridge's newly built areas be designed from the outset with a view to not only use land efficiently in their initial development, but to also be capable of accommodating potential future redevelopment when the neighbourhood reaches that stage in its lifecycle.

Greenfield development that makes efficient use of public and private land can have numerous benefits for stakeholders, including: reduced natural habitat loss, increased walkability and reduced transportation emissions, lower infrastructure construction and maintenance costs, increased development yield, and increased viability for local businesses and services.

7.1 Natural & Agricultural Land

SSRP strategy 8.20 states that municipalities are expected to *'limit the fragmentation of agricultural lands and their premature conversion to other non-agricultural uses.'* As shown in Table 2, in 2016 Lethbridge contained 3,006.48 ha of greenfield land. This land is situated mostly on the edge of the city in future growth areas, with some smaller areas located on the edge of the river valley. While this is not all agricultural land, it provides a simple baseline figure which can easily be measured in future years to compare if there is an increase or decrease and how that relates to the overall efficient use of land.

7.2 GREENFIELD DEVELOPMENT PATTERNS IN THE CONTEXT OF EFFICIENT LAND USE

Street layout

Lethbridge's evolution has seen typical street layouts evolve from the use of a grid up until the mid-20th century, to curvilinear layouts designed around the automobile, then more recently to the modified grid, which seeks to provide some of the advantages of both grid and curvilinear layouts. The street layout of an area has a wide range of both intended and unintended consequences for characteristics such as permeability, travel times, multi-modal transportation, accessibility of goods and services, efficiency of land use in terms of road area, and delivering social and environmental outcomes.

In addition, individual streets within each street layout type may or may not include rear lanes. While rear lanes are very common in older grid neighbourhoods, they became less common in the 1980s to 2000's as developers have sought to reduce road costs and increase the available net developable area, while still maintaining fairly large lot widths to accommodate housing styles at the time. Since the 2000's lanes are used more frequently as lots widths have narrowed and two-storey homes become the norm. Without a corresponding decreases in road width, areas with lanes as well do create more area to be maintained.

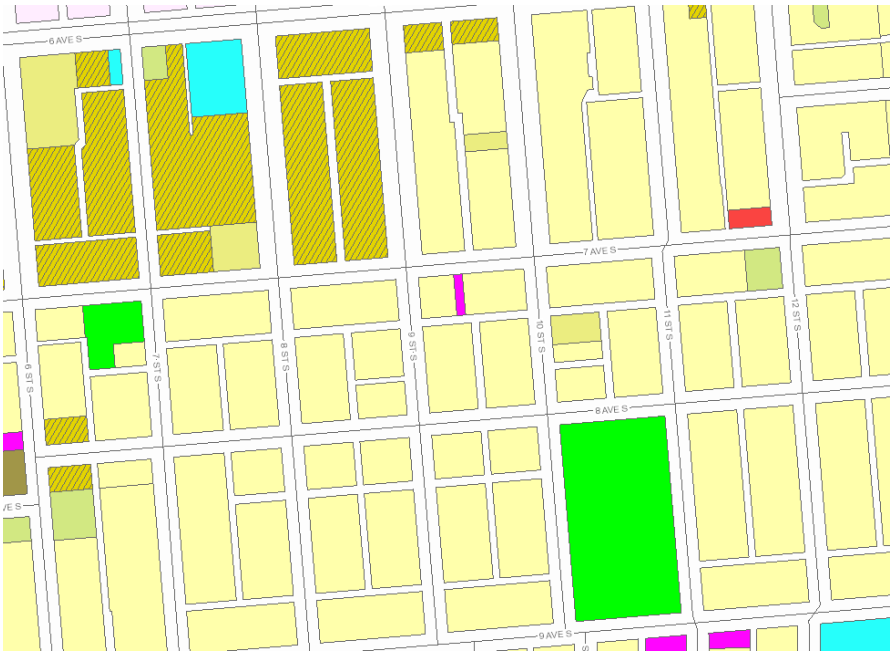


Figure 30: Example of a grid street layout (London Road)

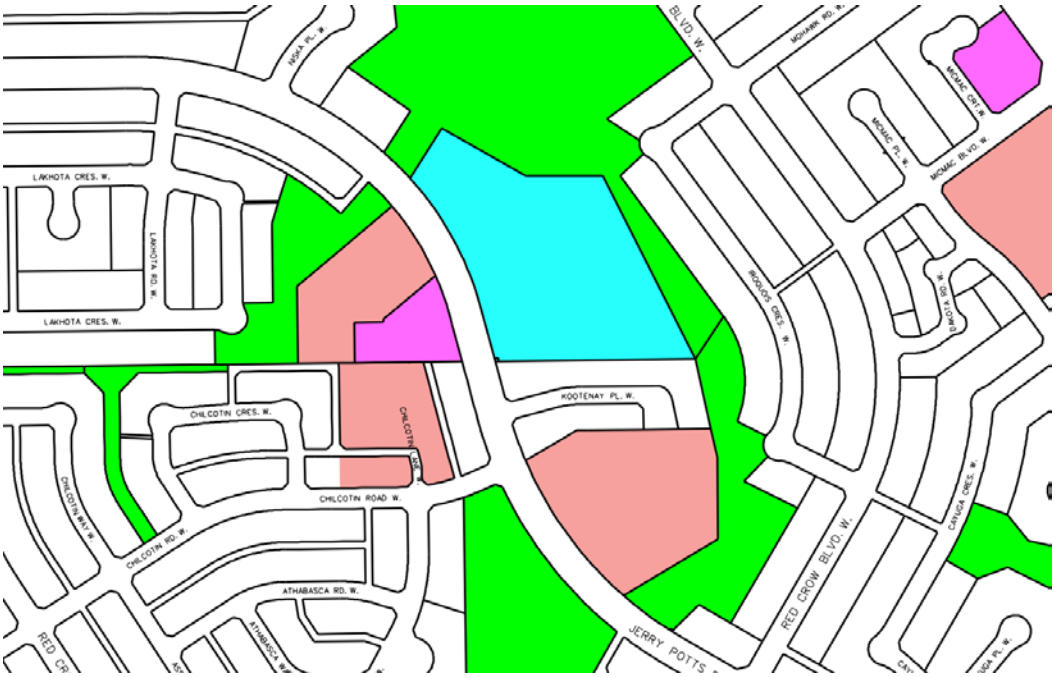


Figure 31: Example of a curvilinear street layout (Indian Battle Heights Outline Plan)

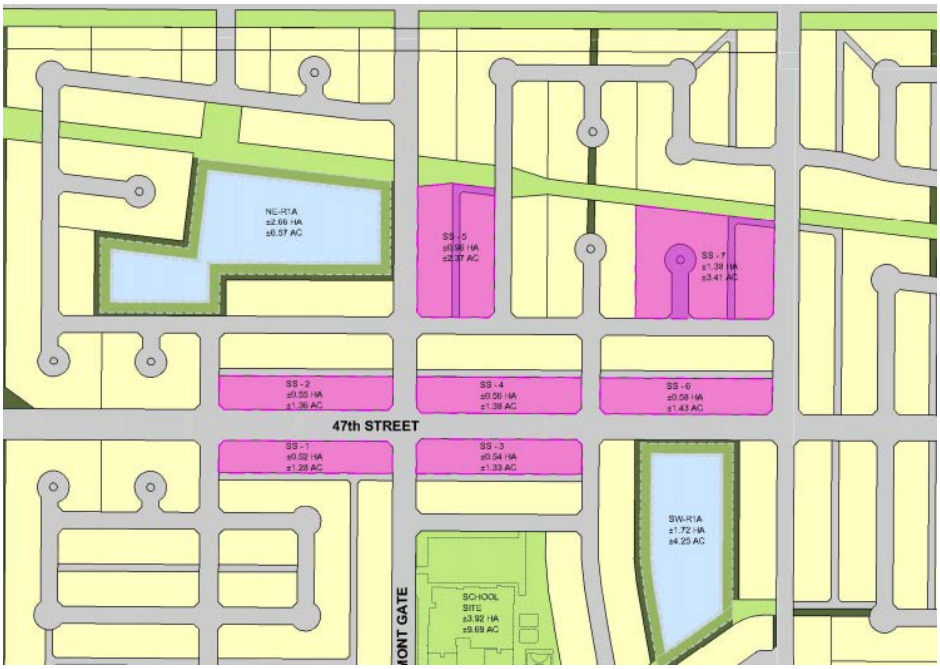


Figure 32: Example of a modified grid street layout (Discovery Outline Plan)

In each sector of the city a grid, modified grid and curvilinear neighbourhood were selected for study (however, note that no grid neighbourhoods exist in the west sector). In order to help benchmark how we design new neighbourhoods today, all modified grid and curvilinear neighbourhoods selected for study had their Outline Plans adopted or amended since 2002, with all but one since 2010. The two grid neighbourhoods selected for study are examples of 'traditional' street layouts typically seen in older Lethbridge neighbourhoods. These were designed and built at a time when demands and expectations for neighbourhoods were quite different from today. However, they still function well and in some ways are seen as being among the more desirable places to live in Lethbridge, for characteristics such as tree-lined boulevards and pedestrian/street-oriented housing, so it is worthwhile comparing them to new communities being designed and built to modern standards.

Composition of Gross Developable Area (GDA) in selected study areas

The development of greenfield land requires the expansion of infrastructure to service the new neighbourhoods. The growth of the urban footprint associated with infrastructure development is larger in new areas based on changing infrastructure standards, as roadways and utility facilities and corridors can cover large areas of land.

When development does occur, what form it takes and how it is distributed across the landscape is a key determinant of how much infrastructure will be needed to service it and how much land will be required to accommodate that infrastructure. Table 24 below sets out the percentage of the Gross Developable Area (GDA) of each studied Outline Plan or neighbourhood that is devoted to Net Developable Area, roadways, stormwater management, and parks, schools and open space.

Sector	Outline Plan / Neighbourhood	Outline Plan Approved	Layout	Net Developable Area (% of GDA)	Roadways (% of GDA)	Stormwater (% of GDA)	Parks, Schools & Open Space (% of GDA)
South	London Road	N/A	Grid	56.4	36.9	0.0	6.7
	Discovery	2017	Modified grid	53.5	28.0	7.1	11.3
	Fairmont	2002	Curvilinear	67.3	17.3	2.0	13.4
West	The Piers	2017	Modified grid	59.9	25.9	4.8	9.4
	Copperwood 2	2012	Curvilinear	58.1	26.3	4.1	11.6
North	Blackwolf 1	2014	Modified grid	49.0	26.4	11.9	12.7
	Legacy Ridge 1	2010	Curvilinear	60.1	22.3	3.4	14.2
	Westminster	N/A	Grid	58.0	33.9	0.0	8.1
		Average grid		**57.2**	**35.4**	**0.0**	**7.4**
		Average modified grid		**54.1**	**26.8**	**7.9**	**11.1**
		Average curvilinear		**61.8**	**22.0**	**3.1**	**13.1**
		Average all types		**57.7**	**28.1**	**3.7**	**10.5**

Table 25: Composition of Gross Developable Area in selected study areas

Of the non-developable area, roadways represent by far the largest category in every OP/neighbourhood, at an average of 28.1% of GDA. This is most extreme in London Road, where roadways account for 36.9% of GDA. The next largest category is parks, schools and open space at an average of 10.5%, with the largest being Legacy Ridge 1 at 14.2% of GDA. Stormwater management areas are the third largest category at an average of 3.7% of GDA, with Blackwolf 1 being the largest at 11.9% of GDA. It is notable that although stormwater management areas have been an infrastructure category that has grown in size

and importance in modern communities, they still represent a far smaller fraction of GDA than roadways. It should be noted that some stormwater areas that are dry ponds also perform a dual function as open space. The City should be open to innovative ways to make further use of stormwater pond areas such as this, or to reduce stormwater pond area where possible. For example, there may be opportunities for innovation and proposals from industry in Complete Streets projects, or as part of the planned development of Infill Infrastructure Standards.

The following graph allows a direct visual comparison between the composition of GDA in the studied areas:

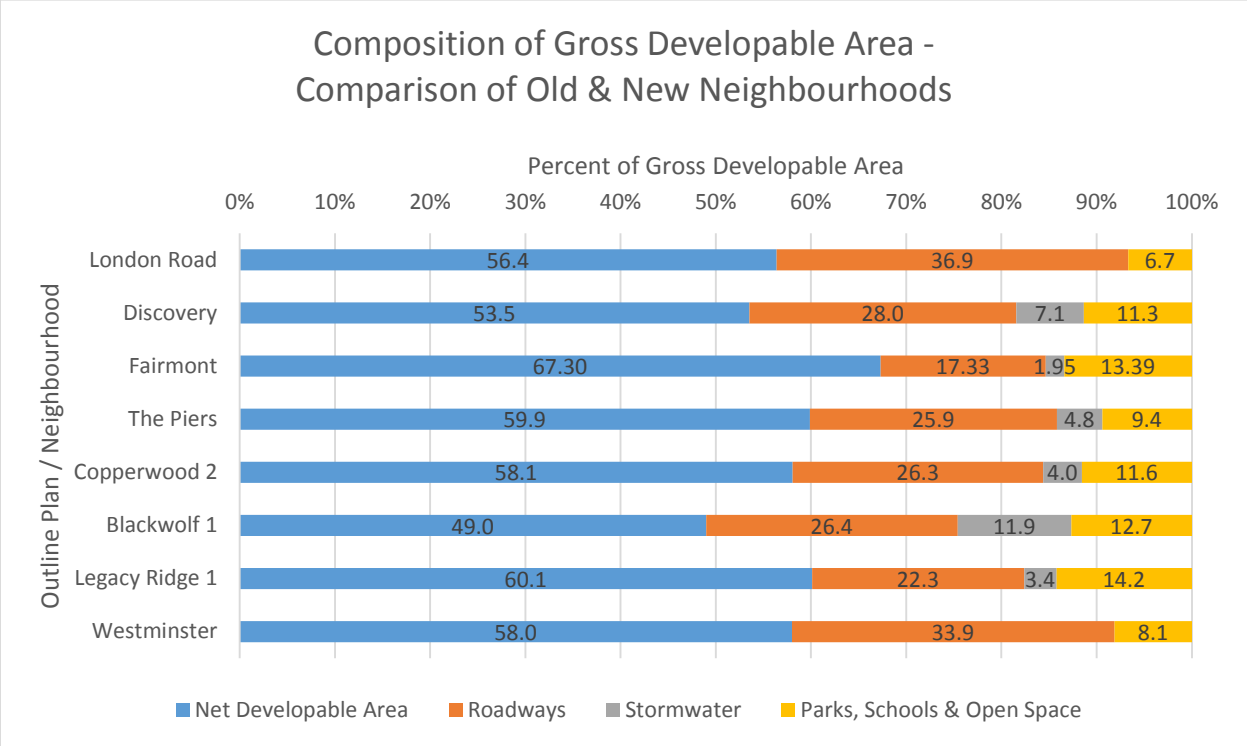


Figure 33: Composition of Gross Developable Area- Comparison of Old & New Neighbourhoods

From the above graph we can see that Fairmont includes a significantly higher NDA than the other areas studied. This appears to be due to its lower proportion of land used for roadways and stormwater facilities, relative to most of the other areas.

Composition of GDA by street layout type

The following table allows a direct visual comparison between the composition of GDA for the averages of each street layout type (grid, modified grid, and curvilinear):

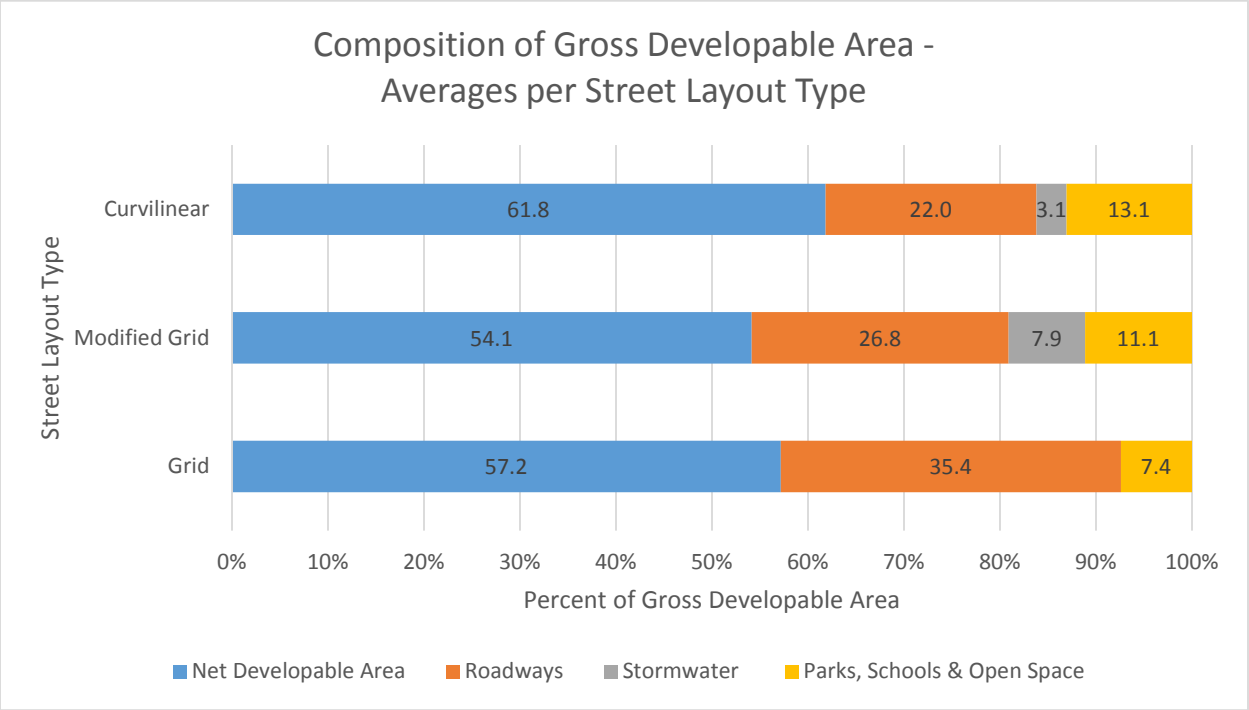


Figure 34: Composition of Gross Developable Area- Averages per Street Layout Type

From this we can see that the NDA for each is broadly similar, though curvilinear comes out as most efficient. This is because the curvilinear areas studied had significantly lower percentages of roadway area than the areas on a grid or modified grid layout due roadway design and the absence of laneways. It is important to note that older neighbourhoods do not include a formal stormwater management provision, which helps pull the grid layout ahead of the modified grid layout in this comparison. The older neighbourhoods also tend to include rear lanes on every street, pushing up the roadway percentage. It should be noted that older neighbourhoods like London Road and Westminster use their road network as an informal stormwater retention system. Similarly, the older neighbourhoods studied do not include as much park or school space as newer neighbourhoods.

Composition of GDA per dwelling unit

Analyzing the selected study areas' GDA composition purely by percentage does not tell the whole story about land use efficiency. For example, a very low density residential area such as Gold Canyon Estates may at first appear efficient due to only devoting 16.97% of GDA to roadways. However, if viewed in terms of roadway area per dwelling unit, it becomes clear that a larger than average amount of roadway infrastructure is required to support a single dwelling unit. This is important, as SSRP Community Development Strategy 8.17 states that municipalities should *'complement their municipal financial management strategies, whereby land use decisions contribute to the financial sustainability of the municipality.'* The maintenance of public infrastructure is paid for by the tax base, and a smaller amount of public infrastructure per dwelling unit and per the taxes collected for the dwelling unit would seem to

contribute toward greater financial resiliency of the City as a whole. The graph below shows the surface area of the different non-developable uses per dwelling unit for the selected study areas.

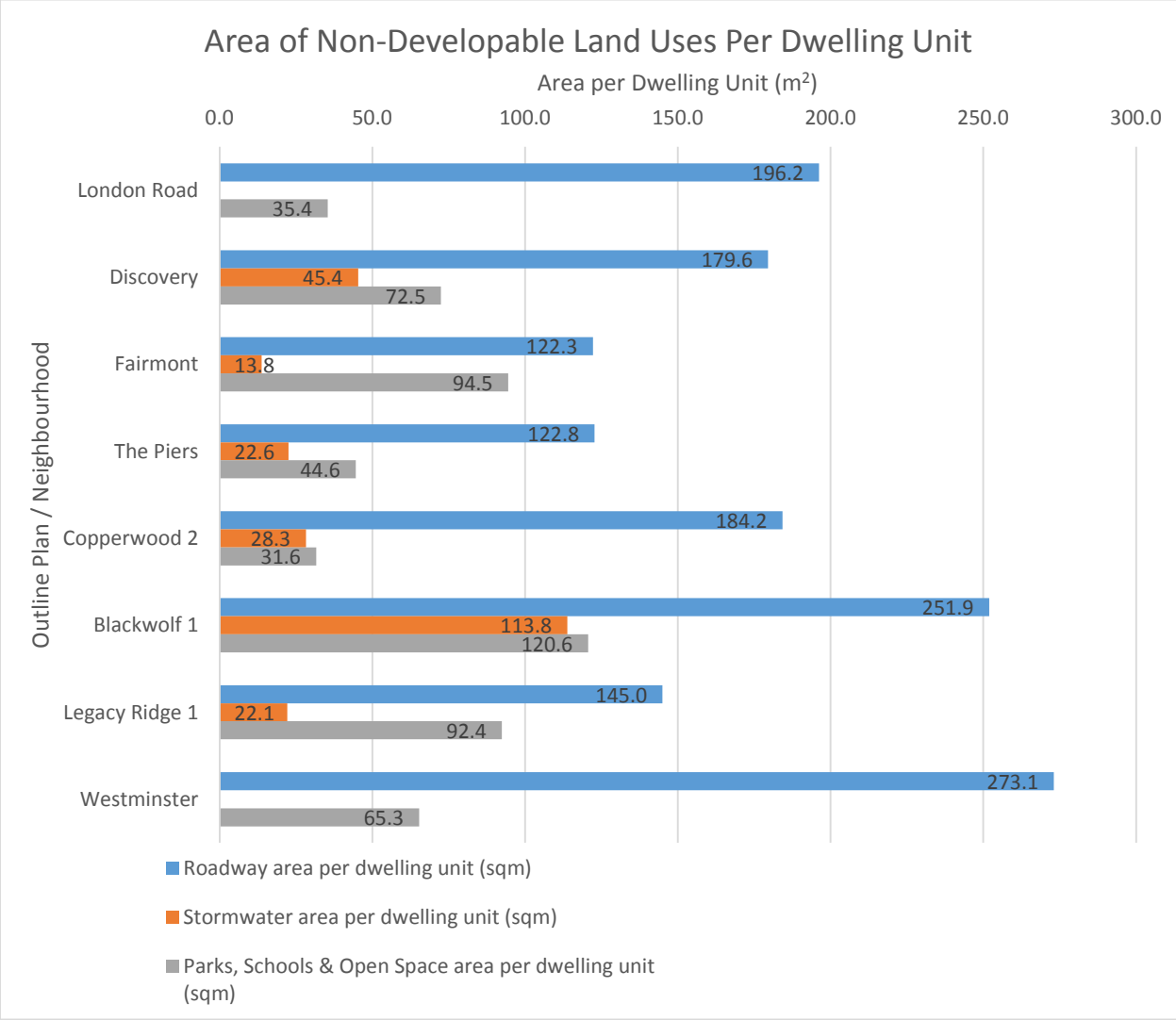


Figure 35: Area of Non-Developable Land Uses per Dwelling Unit

Using this metric we can see that Fairmont includes the smallest roadway area per dwelling unit (122.3 m^2), while Westminster includes the largest roadway area per dwelling unit (273.1 m^2). While Westminster and London Road have similar layouts, London Road's higher density (see Chapter 3) means it makes more efficient use of its roadway network than Westminster. Of the modern areas (i.e. excluding London Road and Westminster), Blackwolf 1 includes the largest roadway area per dwelling unit (251.9 m^2). This is over double the roadway area per dwelling unit seen in Fairmont or The Piers.

Excluding London Road and Westminster (which do not include stormwater management areas), Legacy Ridge 1 includes the smallest stormwater area per dwelling unit (22.1 m^2) while Blackwolf 1 includes the largest stormwater area per dwelling unit (113.8 m^2).

Finally, Copperwood 2 includes the smallest area of parks, schools and open space per dwelling unit (31.6 m^2) while Blackwolf 1 includes the largest such area per dwelling unit (120.6 m^2).

There are limitations to comparing these areas in this way. For example, a park, school or open space area will likely serve more than just the Outline Plan area it is located within. Additionally, the current MGA allows a municipality to require that a developer provide 10% of the GDA of a neighbourhood as municipal reserve that benefits the public good by providing space for schools and recreation. No such provision existed when core and mature neighbourhoods where developed. Similarly, the provision of stormwater ponds depends upon site specific drainage patterns of the area. For example, the natural lay of the land may displace stormwater off of one site better then another site that is relatively flat. In addition, stormwater management areas may well serve multiple Outline Plan areas and/or neighbourhoods.

Overall, modified grid and curvilinear areas face different challenges. For these reasons, it is beneficial to average out these 'non-developable land uses' from the studied areas, categorised by their street layout type. This shows us that modified grid areas have an average non-developable land use area of 324.6 m^2 per dwelling unit, while curvilinear areas have an average non-developable land use area of 244.8 m^2 per dwelling unit. These figures will be useful in future to gauge how new Outline Plans compare to recent trends, and by ensuring these figures are improved upon, land use efficiency may be improved.

7.3 RESIDENTIAL DENSITY & HOUSING TYPES

Having examined non-developable areas, this section now examines densities of residential development in the studied areas. SSRP Community Development strategy 8.14 states that municipalities are expected to: *'Feature innovative housing designs, range of densities and housing types such as mixed-use, cluster developments, secondary suites, seniors' centers and affordable housing. Provide the opportunity for a variety of residential environments which feature innovative designs and densities and which make efficient use of existing facilities, infrastructure and public transportation.'*

Figure 36 shows the breakdown of low and medium/high residential development in the studied areas, excluding London Road and Westminster (for which no breakdown is available). Older neighbourhoods such as London Road and Westminster were developed before Outline Plans were required for a neighbourhood, and Area Redevelopment Plans for these neighbourhoods do not typically include a breakdown of low, medium, and high density residential developable area. As a result, the breakdown of residential density for low and medium/high densities is recorded as 'unknown' for these neighbourhoods. However, the overall density for these neighbourhoods has been included using data from the *Neighbourhood Densities* section in Chapter 4 above.

Outline Plan	Outline Plan Approved	Layout	Net Developable Area (% of GDA)	Low density res. area (% of GDA)	Low density res. average density (u/ha)	Medium/ High density res. area (% of GDA)	Medium/ high density res. average density (u/ha)	Overall res. density (u/ha)
London Road	N/A	Grid	56.4	42.7	Unknown	12.7	Unknown	35
Discovery	2017	Modified grid	53.5	41.6	22	9.2	70	30
Fairmont	2002	Curvilinear	67.3	35.8	17.4	6.6	68.6	25
The Piers	2017	Modified grid	59.9	47.0	25	12.9	56	32
Copperwood 2	2012	Curvilinear	58.1	47.1	20	10.9	28	25
Blackwolf 1	2014	Modified grid	49.0	42.4	19	6.6	37	21
Legacy Ridge 1	2010	Curvilinear	60.1	45.3	22	8.5	66	29
Westminster	N/A	Grid	58.0	44.6	Unknown	6.4	Unknown	24
		Average grid		43.7	?	9.6	?	29.5
		Average modified grid		43.7	22.0	9.6	54.3	27.7
		Average curvilinear		45.6	19.3	9.3	49.7	25.7
		Average all types		43.3	20.7	9.2	52.0	27.6

Figure 36: Low, Medium and High Residential Densities (comparison of old and new neighbourhoods)

Figure 37 below compares the overall average residential density in each neighbourhood, which includes all low, medium, and high density developments.

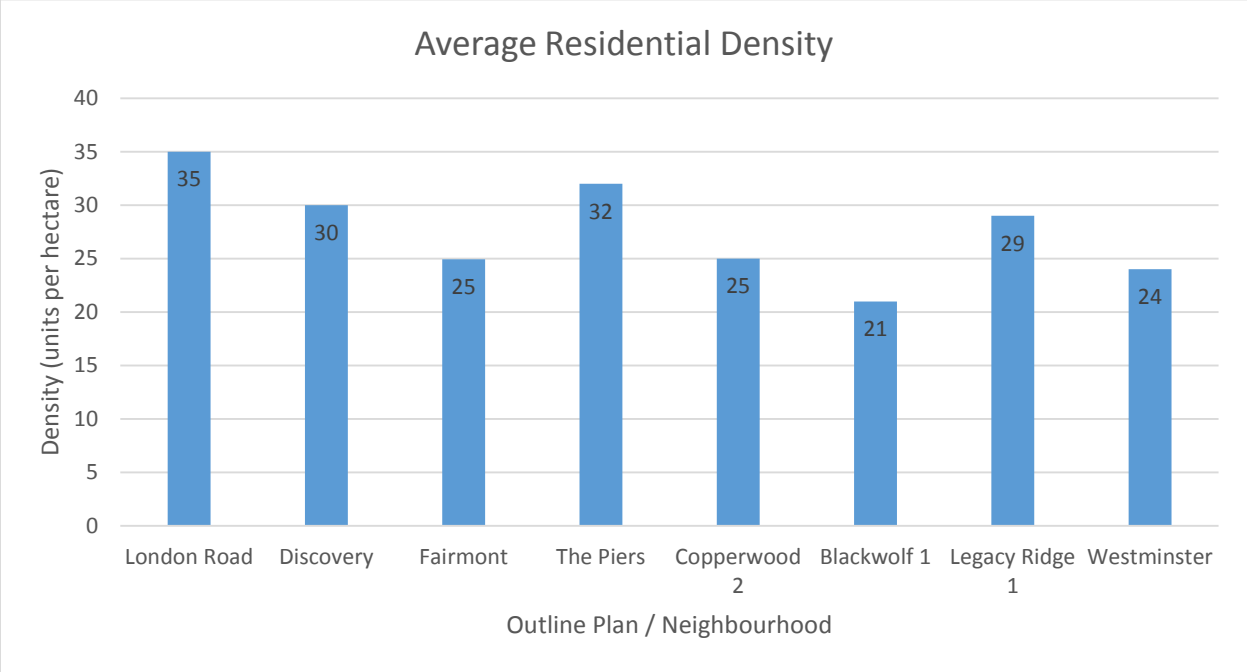


Figure 37: Overall Average Residential Densities (comparison of old and new neighbourhoods)

This shows a fairly large variation in residential densities, with London Road most dense at 35 u/ha and Blackwolf 1 least dense at 21 u/ha. Typically, anything over 37 u/ha (and below 100 u/ha) in Lethbridge is considered medium density. The average density of all these areas combined is 27.6 u/ha, or excluding London Road, Westminster and Fairmont, the average density of the recently approved (since 2010) Outline Plan areas is 27.4 u/ha.

There is no evidence in these figures of a particular street layout type being linked to higher densities. Rather, it seems to be down to the individual Outline Plan and its developer's choices based on what they think will meet market demand. In terms of future redevelopment opportunity for higher densities, a grid or modified grid layout may have some advantages over curvilinear. For example, the combination of parcels is likely to be easier on a straight vs. curved street, and the presence of rear lanes may help facilitate different housing forms such as the addition of garden suites. Similarly, the addition of any neighbourhood retail or other businesses to help make neighbourhoods more walkable is likely to be more difficult within a curvilinear layout. In these ways, while curvilinear layouts appear to offer some immediate advantages in terms of Net Developable Area efficiency, they may have more limited options later on as neighbourhoods reach the stage where some redevelopment and intensification is desirable. Additionally, curvilinear street layouts also tend to be less walkable than grid or modified grid layouts as routes tend to be longer and there are fewer connection points. What can be recognized is that there will be differences between densities in older and newer areas.

7.4 MIX OF LAND USES

SSRP Community Development strategy 8.11 states that municipalities are expected to *'provide an appropriate mix of uses in an orderly, efficient, safe and economical manner.'* By encouraging an appropriate mix of uses within walking distance of peoples' homes (approximately 750m), the opportunity is provided for alternatives to motor vehicle travel. This is linked to land use efficiency, as at the macro scale reducing the need to travel means less land has to be dedicated to meeting travel needs (e.g. roads, parking lots). The following table shows the commercial area (as a % of GDA) in each of the studied areas.

Outline Plan	Approved	Layout	Commercial area (% of GDA)
London Road	N/A	Grid	0.3
Discovery	2017	Modified grid	0.03
Fairmont	2002	Curvilinear	18.9
The Piers	2017	Modified grid	0.0
Copperwood 2	2012	Curvilinear	0.0
Blackwolf 1	2014	Modified grid	0.0
Legacy Ridge 1	2010	Curvilinear	6.3
Westminster	N/A	Grid	5.5

Figure 38: Commercial Area as a Percentage of GDA[37]

Most of the studied areas (including two thirds of the new areas) do not include any commercial development. London Road includes just 0.3% commercial but is located immediately adjacent to the downtown, meaning much of the neighbourhood is still within walking distance of a variety of retail, services and workplaces. Westminster includes the eastern half of a portion of 13th Street North, resulting in a significant 5.5% of GDA as commercial space. The Piers is located immediately adjacent to The Crossings commercial and recreational amenities and residents benefit from that proximity. The Fairmont neighbourhood includes a large commercial area at 18.9% of GDA which serves local and regional needs. Legacy Ridge 1 includes local commercial uses making up 6.3% of the GDA. Blackwolf 1 is just north of a regional commercial hub, and while not within comfortable walking distance, is still accessible via the pathway system for cyclists. The Discovery OP also contains a commercial area that is more orientated to local needs.

Chapter 6 examines the land use efficiency of commercial development. This section also explores the walk distances to reach services and amenities such as a grocery store.

[37] Commercial area in Discovery is planned but not developed

Chapter 8.0 Infill Development

8.1 What is Infill?

Infill development is a term generally used to describe development taking place within already built-up areas, as opposed to greenfield development. The term infill implies that land surrounding the parcel is mostly built-out, and what is being built is essentially 'filling in' the gaps. Infill development can take place on land that has been previously developed (i.e. brownfield or greyfield development), or it can be a vacant parcel of land in an otherwise built-up area that is being developed for the first time.

Infill development offers an opportunity to use our land resources more efficiently while minimizing the outward spread of the City's urban footprint. However, accurately analyzing how much developable land is available for different forms of infill is a difficult task. There are many factors that can determine whether a site is appropriate for redevelopment or intensification, and these may change over time (e.g. parking and transportation constraints, utility concerns).

While infill can take place in any part of the City, it tends to be concentrated in older residential neighbourhoods which have reached a stage in their lifecycle where redevelopment becomes more attractive as housing stock is in need of rejuvenation and lot sizes may be larger. This chapter will therefore focus on the types of infill development commonly seen in these neighbourhoods.

Types of Infill

Some types of infill development seen in Lethbridge include:

Building on a vacant parcel

This is not very common in core and mature neighbourhoods, as the vast majority of suitable land has already been developed. However, some isolated parcels do exist - particularly those that are more difficult to develop, such as those close to the coulee edge.

Intensification of existing dwellings

Intensification of existing residential developments can include splitting a dwelling into multiple units. Most commonly, a secondary suite can be created within a single detached dwelling, usually in the form of a basement suite. A single detached dwelling is also sometimes split to create a duplex, triplex or even a fourplex. Intensification can offer an increased number of dwelling units and increased residential density, while maintaining the aesthetic of a predominantly single detached dwelling neighbourhood.

Constructing additional residential buildings on an existing parcel

This could include adding a second, separate dwelling unit to a single parcel, such as a detached garage with a suite above, or a laneway suite. When a second dwelling unit is added to an existing parcel it is sometimes termed an 'accessory dwelling unit' or ADU.

Demolition and replacement

This is a common form of redevelopment in mature neighbourhoods where the value of an existing structure on a parcel is low enough that wholesale demolition and building anew becomes economically

viable. Often, a single detached dwelling is simply replaced with another. This may or may not include intensification, such as adding a secondary suite. Another form of redevelopment which is less common in Lethbridge is to combine multiple parcels and replace existing dwellings with a higher density building form, such as an apartment building.

8.2 Why Infill is Desirable

Demographic Trends

As explored in Chapter 3, core and mature neighbourhoods in Lethbridge have largely followed national and international trends that have seen shrinking household sizes since the mid-20th century. This is linked to many factors, including but not limited to:

- lower fertility rates
- increased life expectancy (more likely to have 'empty nesters' alone in a house for longer)
- increased divorce rates
- increased average age for marriage and/or starting a family
- young adults more likely to live on their own

Nationally, the average number of persons per household fell from 4.3 in 1941 to 2.5 in 2011. In mature neighbourhoods, this tends to lead to a falling population. For example, the population of the London Road neighbourhood fell from a peak of around 5,000 people in 1957 to just 3,472 in 2016, a drop of over 30%. Attempts to increase density in suitable locations within older neighbourhoods should therefore not necessarily be seen as attempting to change the character of a neighbourhood, but as returning the population to its previous level.

Efficient use of land and infrastructure

Land use and transportation

A falling population in a neighbourhood can lead to problems related to inefficient use of land and infrastructure. The neighbourhood may no longer be able to support previously existing amenities and services such as a school or grocery store, leading to their closure. This in turn can make the neighbourhood less walkable, with residents having to travel further afield to access facilities and services. While a shrinking population might suggest lower traffic volumes, the need to travel further could offset this, meaning the same transportation infrastructure is being supported by fewer taxpayers.

Heating

While the population of a mature neighbourhood may be spread more thinly than in the past, the required infrastructure to service that area has remained the same or even had its capacity increased to satisfy modern lifestyles. Utilities must be maintained and upgraded over time, and while a modern single detached dwelling typically has far higher performing construction materials (e.g. in terms of heat retention) than an older one, newer homes tend to be significantly larger in volume than those they replace.

Average household energy use in Alberta in 2011 was 145 Gigajoules (GJ) for dwellings constructed pre-1946 and only 130 GJ for dwellings constructed in 1996 or later, while energy consumed per m^2 of heated area fell from 1.11 GJ for dwellings constructed pre-1946 to 0.91 for dwellings constructed in 1996 or

later. In 2011 in Canada, a single person household used an average of 72 GJ of energy for heating while a household with 5 or more people used 149 GJ. So as the population of an area is spread between more households, the energy consumption per capita increases. Housing type also has an effect. On average, in 2011 an Albertan apartment used 50 GJ of energy for heating versus 102 GJ used to heat a multi-unit dwelling and 151 GJ to heat a single detached home.[38] This suggests that a single detached dwelling could be replaced with three apartments without putting any additional strain on energy supply for heating (likely natural gas or electricity). One way to maximize the efficient use of existing utilities, therefore, may be to encourage more apartment and multi-unit developments.

Electricity

While modern homes typically feature more electrical appliances than in the past, many of those have in turn become more energy efficient. Alberta has seen average electricity consumption per household fall slightly from 26 GJ in 2007[39] to 24.8 GJ in 2015[40]. However, the desire to decarbonize our energy means that even the most energy-intensive appliances such as space and water heating (which together account for 78% of residential energy consumption[41]) and motor vehicles may need to switch from fossil fuels to electricity. If this switch occurs then household electricity demand will increase substantially in the coming decades, while natural gas use recedes. This turn could likely to be at least partially offset by continuing efforts to increase the energy-efficiency of household appliances, as well as the rapidly growing uptake in home renewable energy generation such as solar photovoltaics and solar water heating, as well as home energy storage. District heating on a larger area scale may also be a future option.

Potable water

Per capita residential water use also appears to have fallen in Canada in recent years. This may be due to a combination of several factors, such as: increased use of water metering; improved efficiency of home appliances and fittings; and greater awareness of environmental issues. The data suggests that existing water infrastructure may be capable of supporting an increase in population or residential units without increasing the supply or upgrading delivery infrastructure. However, this may only be true on a macro scale, and water supply to a specific location will always be dependent on local factors.

[38] Households and the Environment: Energy Use (2011). Statistics Canada. http://www.statcan.gc.ca/pub/11-526-s/11-526-s2013002-eng.pdf
[39] Statistics Canada. https://www.statcan.gc.ca/pub/11-526-s/2010001/t004-eng.htm
[40] Statistics Canada. http://www5.statcan.gc.ca/cansim/a47
[41] Energy Efficiency Trends in Canada. http://oee.nrcan.gc.ca/Publications/statistics/trends07/pdf/Chapter3_e.pdf

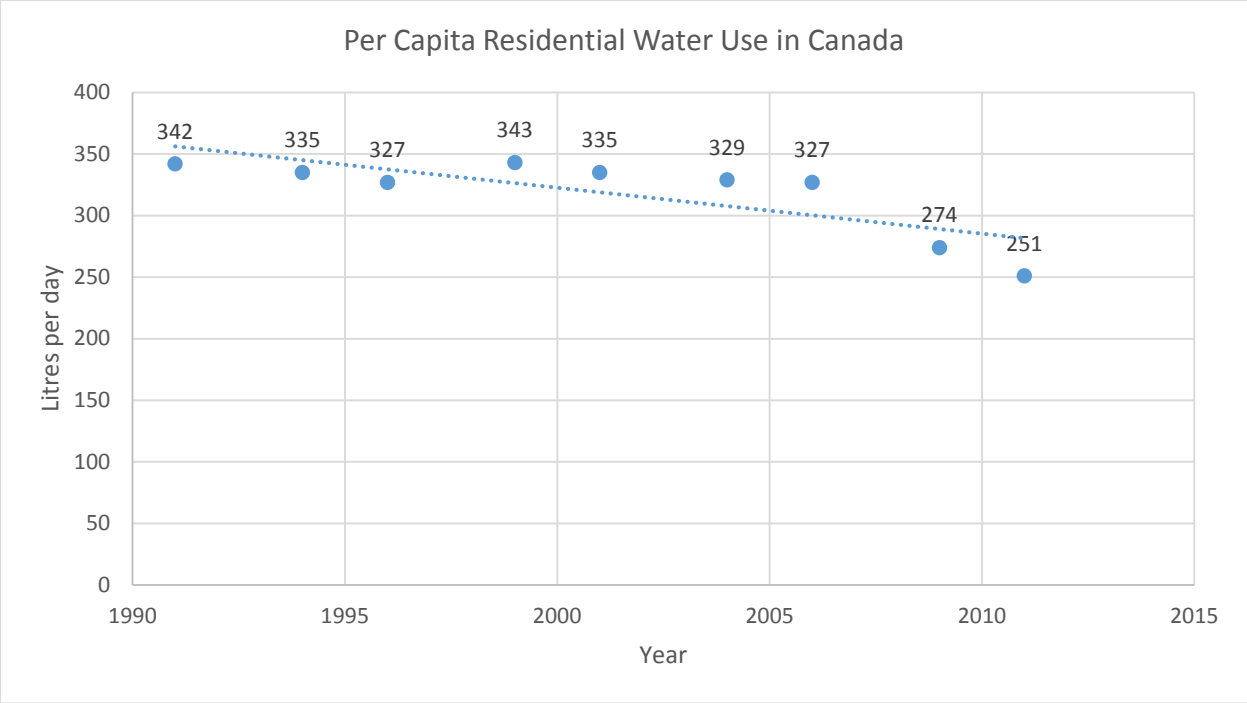


Figure 39: Per Capita Residential Water Use in Canada[42]

Environmental benefits

By pursuing a compact urban form and minimizing outward expansion into previously undeveloped or agricultural land, Lethbridge can avoid consuming natural habitat which acts as a carbon sink. To minimize the effects of carbon consumption, a more compact urban form would bring everyone closer to their destinations, meaning shorter travel distances, less traffic, greater travel mode choice (e.g. walking and cycling become convenient for more trips), and reduced vehicle emissions.

Whenever a building is constructed, there is a certain amount of 'embedded carbon' invested in that building. This is from the energy used in the act of construction itself (digging, transportation of materials, use of machinery and tools, etc.) but also the energy used to manufacture the construction materials. For example, in 2015 cement and concrete product manufacturing represented 14% of Canada's total manufacturing sector emissions.[43] Maintaining and retrofitting an older building rather than demolishing and building new may therefore be less carbon-intensive.

To meet our 2030 emissions targets, Canada must reduce our energy consumption from buildings and construction by 42%. Retrofitting existing buildings is a crucial part of this. More efficient buildings also mean more efficient use of existing utilities and servicing, which leaves greater capacity for densification. To achieve this we must focus on creating an urban form that is adaptable and flexible.

[42] Environment Canada's Municipal Water and Wastewater Survey; Statistics Canada's Households and the Environment, Catalogue no. 11-526-XIE; Statistics Canada's Survey of Drinking Water Plants, Catalogue no. 16-403-X.
[43] Overview of 2015 Reported Emissions. Environment and Climate Change Canada. 2017.

8.3 Recent Trends & Infill Potential

2016 snapshot

In 2016, the City of Lethbridge issued permits to demolish 16 dwellings and one commercial unit. To date, 13 of these sites have had permits approved for new developments to replace them. The types of buildings demolished and the replacement dwellings are shown in the chart below:

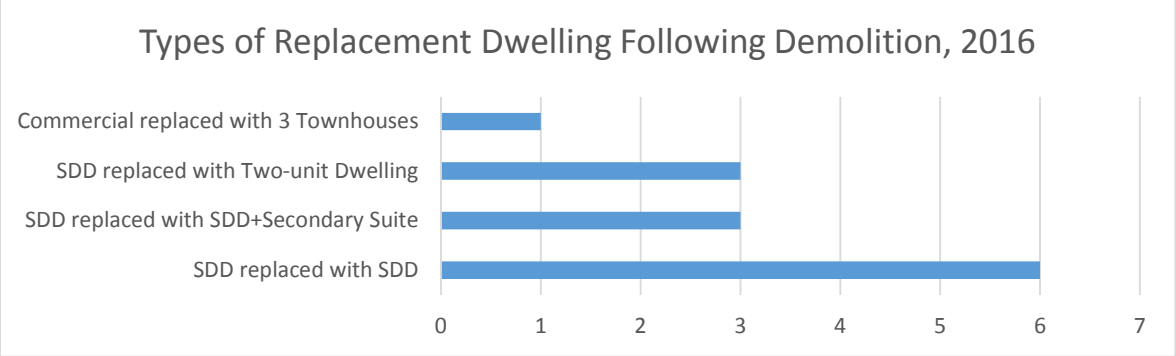


Figure 40: Replacement Dwelling following Demolition (2016)

In total, this represents one commercial unit and 12 dwelling units being replaced with 21 dwelling units; this is a net gain of 9 dwelling units and a net loss of one commercial unit.

Mature neighbourhoods

In recent years, Lethbridge has seen an increase in the number of redevelopments in some core and mature neighbourhoods. The graph below shows the number of permits issued for residential developments in recent years in the London Road neighbourhood.

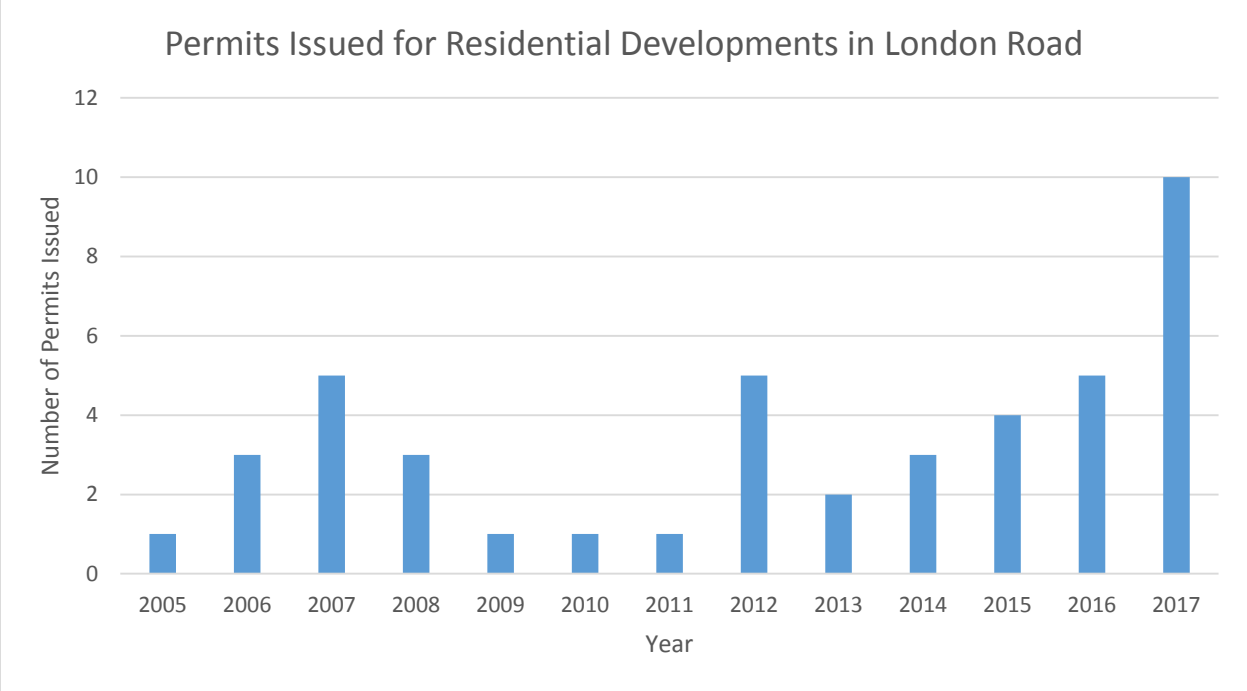


Figure 41: Development Permits Issued in London Road (2005-2017)

There are likely numerous reasons behind this, including but not limited to those set out below.

Economics

Popular targets for redevelopment include small, sometimes poorly maintained, older houses on large parcels of land in core and mature neighbourhoods. When the value of the land is not too high, and the value of the existing structure on the land has fallen to little or nothing, a property can become very attractive for redevelopment. Typically, the existing home is demolished and a larger new home is constructed in its place. It is also quite common for one of these homes to include a secondary suite.

Walkability

Walkable neighbourhoods have become more desirable, partly as a response to concerns around modern sedentary lifestyles and the environmental harm caused by motor vehicle emissions. Core and mature neighbourhoods in Lethbridge tend to be more walkable, due to them being closer to downtown, and to being developed in an era when a finer-grained mix of land uses was the norm. In addition, older neighbourhoods built on a grid system are inherently more permeable for traversing by foot than curvilinear neighbourhoods, resulting in reduced walk distances (see *Figure 48*, below). Many older neighbourhoods also present a more safe and pleasant walking environment, with fewer front driveways and garages and more street-oriented homes providing 'eyes on the street'.

Figure 42: possible locations which can be reached with a one mile walk in a grid street layout (left) and a curvilinear street layout (right)[44]

Infill potential

There are few remaining vacant sites in mature neighbourhoods. Rather, infill development typically takes the form of replacing an existing single detached dwelling with new construction. Where the parcel is large enough, developers often try to replace an existing single detached dwelling (SDD) with multiple dwellings. These are typically in the form of duplexes, triplexes or fourplexes, and can be designed in the

[44] Lawrence Frank & Co. and the Sightline Institute. Retrieved from: https://www.healthyplaces.org.au/userfiles/file/Connectivity%20June09.pdf

form of apartments or townhouses. Assessing the potential for infill such as this - which is not just a straight replacement of a single detached dwelling - is difficult, as it involves a combination of many factors which are unique to each site. These include, but are not limited to:

- current land use designation
- parcel size and orientation
- design of the proposed redevelopment
- street and lane frontage availability
- utilities and servicing
- stormwater retention/drainage
- Fire & EMS access

Today, most proposed redevelopments must be assessed on a case by case basis. This creates a much higher degree of uncertainty for potential developers, when compared with greenfield development. In order to encourage greater levels of infill development in future, options should be explored for providing greater certainty around requirements.

8.4 Constraints on Infill

Availability

Availability of sites suitable for new build infill is a current constraint, though not a pressing one. Someone willing to spend the money to build a custom new house is likely looking for land in a relatively desirable core or mature neighbourhood, but at a price that makes redevelopment economical. There does not appear to be a drastic shortage of such sites, as such redevelopment projects have been popular in recent years. As land values rise in one neighbourhood, it increases the likelihood that redevelopments will move to target lower-cost land in another neighbourhood. From the City's perspective, this is a positive mechanism as it helps to spread redevelopment investments to different neighbourhoods, and avoids an over-concentration of investment in one area.

Consumer choice

Redeveloping in an existing neighbourhood is likely to remain more complicated and difficult for the end consumer than buying a new build home in a new neighbourhood. Redevelopment carries with it certain risks and uncertainties that come with applying for permits (and rezonings in some cases), managing design and construction, etc. The City can address this constraint by seeking to make the process of rezoning or obtaining permits as straightforward and predictable as possible.

Upgrading to modern standards

It can be difficult to upgrade old buildings to modern standards. For example, an old house that is being converted to apartments may struggle to meet modern building and fire codes. Some narrow lots in older neighbourhoods may not meet with modern setback requirements. In such scenarios in recent years, City staff have used waivers. Modern off-street parking requirements may necessitate curb cuts and cause the removal of street trees and the introduction of front garages where these are not characteristic of the neighbourhood.

While some regulations are at provincial level, there may be a larger conversation to be had about regulations set by the City which could be waived for redevelopments in older neighbourhoods. For

example, in the case of a parcel with no rear lane access, there may be greater value to the community in waiving an off-street parking requirement if it allows the boulevard and street trees to remain in place.

Servicing

Upgrading servicing to a parcel to facilitate redevelopment can be prohibitively expensive, which can skew the economics against a proposal. This is especially true in the case of redevelopment from single to multi-family dwellings, as additional requirements are introduced. For example, when constructing a development of three or more dwellings, the City's Drainage Bylaw requires the parcel to be serviced by the stormwater drainage system. If the parcel is in part of a core or mature neighbourhood not currently serviced for stormwater, the connection can cost tens of thousands of dollars. The burden of paying for this connection falls on the applicant/developer, even though owners of adjacent parcels may also benefit from their street now being serviced for stormwater.

Information on servicing availability is not readily available until someone proposes a development and starts the review process. This creates uncertainty for developers and prospective property buyers. Individual City departments also have varying plans about when and how to upgrade existing utilities and services, both as lifecycle repairs and to meet changing needs. As an example of the latter, the growing uptake of electric vehicles will likely require the upgrading of electrical supply to areas with older utility infrastructure.

Objections from surrounding residents

Some infill projects will inevitably lead to concerns from surrounding residents, and sometimes from a Neighbourhood Association. Some common objections raised in Lethbridge include:

- Surrounding residents and/or the Neighbourhood Association do not like the design of a proposed new development (e.g. too large, not in character with the neighbourhood).
- The proposed new development adds additional dwelling units, thereby increasing density, and will lead to increased traffic, street parking issues, etc.
- The proposed new development will bring in lower income residents, may lower surrounding property values, attract anti-social behavior, etc.

While an infill development that is a permitted use may not be held up by objections from the public, a proposal for a discretionary use or a rezoning (e.g. replacing a single detached dwelling with multiple units) can experience delays or even outright refusal by the development authority due to objections from the public. It is important for developers to try to work with neighbours from an early stage in order to build understanding and try to develop a proposal that reasonably mitigates concerns.

Levies

The Municipal Government Act allows the City to charge a redevelopment levy if it chooses. Currently, only the London Road neighbourhood has in place such a levy. This was introduced in the previous London Road Area Redevelopment Plan (ARP) in 1982. The levy was initially set at $750 per net additional dwelling unit created through a multi-family redevelopment. The money was to be used for creating additional park space for the neighbourhood. The levy was later lowered to $500 per unit in 1986. The current London Road ARP (2018) includes a redevelopment levy of $1,500 per net additional dwelling unit, with the exception of single detached dwellings, duplexes, and secondary suites.

The MGA limits the uses for the revenues from redevelopment levies. The money may only be used for: *'land for a park or land for school buildings designed for the instruction or accommodation of students, or land for new or expanded recreation facilities, or both.'* As the use is limited to *land*, this means the money cannot be used for upgrading of existing facilities such as existing parks or recreation facilities. In an almost fully developed area such as London Road, there is therefore little option but to use the money to buy up existing properties. This is what was done in 1982 when three existing properties were purchased and the homes on them demolished to enable the creation of London Road Park.

Within Alberta, Medicine Hat is unique in issuing an off-site levy on redevelopments, where one hasn't been charged before on that parcel.

The use of levies should be carefully considered, as they can act as a deterrent to redevelopment. It is important to ensure any levy is set at a level which works with the economics of redevelopment in a given area. A wider review of levies and redevelopment financing is planned as one of the implementation steps of the new London Road ARP (2018).

Part 3: Community Values & Recommendations

Chapter 9.0 Summary of Community Input

Chapter 9 summarizes input received by the project team through work with the ELUS Technical Working Group, Community Liaison Group and from the public at-large. Over the course of the project, a number of opportunities were given for the project team and for the community to provide input into the outcomes of the ELUS. Engagement took on a variety of forms, including surveys, open houses, a facilitated meeting, community events and "Kitchen Table Conversations". There were also less formal opportunities given to provide feedback, including a project email address, and a community Chalkboard that was placed in various locations around the City during the project. Much of this engagement was carried out under the banner of 100K+ Conversations, as a way of prompting community residents, staff and organizations in the City to think about the future of Lethbridge and what that future means for themselves, their families and organizations, their work, their neighbourhood, for us as a City, and our region.

Between November 2015 and January 2017, 100K+ Conversations affiliated engagement activities generated more than 32,000 individual pieces of input data, much of which specifically pertains to efficient land use strategy outcomes in our City. Chapter 9 highlights three specific types engagements that took place during the ELUS project and summarizes the feedback received in relation to Efficient Land Use. The three engagement activities include: Kitchen Table Conversations, 100K+ Surveys, and Technical Working Group/Community Liaison Group Meetings.

Kitchen Table Conversations

Kitchen Table Conversations (KTC)s were imagined as a way of sparking conversations between community members about the future, similar to the way many families talk around the dinner table, or colleagues around a boardroom table. City staff created a simple-to-use toolkit to allow community members and organizations to lead their own conversations, or where desired, have a member of City Staff help provide facilitation. In all, 29 separate KTCs were held between September 2016 and February 2017, including the participation of over 500 people. Conversations took many forms—from a temporary art installation at the Helen Schuler Nature Centre, workshops with elementary school students, walking conversations led by local environmental experts, to facilitated meetings with local organizations like Economic Development Lethbridge, the Chamber of Commerce and Lethbridge Public Library. Each KTC was documented and summarized and is available to review on the City's website[45].

100K+ Conversations Surveys 1 and 2

Between March and December, 2016, two broad community surveys were used to gather community feedback. The first survey asked respondents to state their level of agreement with each of the current City's ICSP/MDP policies as a way of generating feedback to inform the SSRP Compliance Initiative and subsequent review of the ICSP/MDP. In total there were 604 responses. Survey two was designed to take a deeper look at specific themes highlighted in Survey 1, specifically focusing in on Efficient Use of Land and Environmental and Historic Resources. In total there were 575 responses. Summary reports for both surveys are available on the City's website[45].

Technical Working Group and Community Liaison Group Comments

Between November, 2015 and February, 2017, 18 meetings were held with the TWG and 3 with the CLG. The focus of these meetings began with providing background information on the SSRP and planning policy in Lethbridge, and then shifted into gathering specific feedback from staff, stakeholders and community residents about Efficient Land Use in Lethbridge. During these meetings feedback was collected to inform the ELUS and the recommendations made towards the MDP review process (see Chapter 10).

The sections below provide a glimpse of the feedback provided through these three key methods. More information on 100K+ Conversations and Kitchen Table Conversations, including summary reports, can be found on the City's website[45].

Kitchen Table Conversation Participants

Alberta Health Services (x3)

Martha's House Resident Council (x2)

City of Lethbridge Planning and Development Services Department (x3)

EnvS Task Force

Canadian Home Builders Association Lethbridge Region

Economic Development Lethbridge

Chinook Food Connect and Healthy Lethbridge

Volunteer Lethbridge

Lethbridge Evangelical Ministerial Association

City of Lethbridge Waste and Recycling Services Department

Lethbridge Chamber of Commerce

Southern Alberta Group for the Environment

Invasion Art Show (Exhibit at Helen Schuler Nature Centre)

Dr. Gerald B. Probe School

Lethbridge Public Library

South Saskatchewan Regional Plan First Nation Sub-table

Institute of Transportation Engineers (Lethbridge Chapter)

Lakeview Elementary School

City of Lethbridge Youth Advisory Council

Lethbridge College Ecosystem Management Students

Father Leonard Van Tighem School (x2)

Ecole Agnes Davidson School

Box 3: Kitchen Table Conversation Participants

[45] 100K+ Conversations: http://www.lethbridge.ca/City-Government/Get%20Involved/Pages/100K+.aspx

9.1 Efficient Land Use Community Feedback

Kitchen Table Conversations

Below is a summary of some of the key themes (in no specific order and no numerical value) raised by Kitchen Table Conversation participants that relate to efficient land use:

As a community…

1. *We need to explore innovative approaches when designing new neighbourhoods and retrofitting existing neighbourhoods that minimize our urban footprint and reduce the environmental, social, and financial impacts that come with urban expansion*

2. *We need to consider the unique strengths, opportunities and challenges that each of our diverse neighbourhoods face, and consider these differences when planning for future growth*

3. *We need to continue to provide a range of housing options that are accessible and inclusive regardless of age, culture or socioeconomic status*

4. *We need to encourage the revitalization, redevelopment, and infill of existing neighbourhoods in order to maintain their vibrancy, attract a variety of new families, and use vacant or underutilized lands efficiently. This needs to occur in a manner that respects the aesthetics, character, and heritage of existing neighbourhoods*

5. *We need to encourage accessible commercial, residential and mixed-use development in the downtown that will attract new residents and create a positive community culture in the heart of our city*

6. *We need to explore more multi-modal systems of transportation (e.g. pedestrians, cycling, transit, and vehicles) that are well designed and accessible for all individuals*

7. *We need to encourage more residents to be engaged in their communities, and also provide opportunities for a greater diversity of people to get involved*

8. *We need our municipal government and administration to lead by example and explore reducing red tape that is currently restricting innovation*

100K+ Surveys

Below is a summary of the key points raised by respondents that relate to Efficient Land Use:

Survey 1

100K+ Conversations Survey 1 went through each of the policy areas of the ICSP/MDP (2010). For each policy it asked respondents to state whether the "Agree", "Disagree" or "Neither". The intention was to highlight key areas of community interest (based on strong agreement or disagreement) that could be analyzed in further detail in a subsequent survey. The following table lists the policy areas that relate to efficient land use and respondent's agreement/disagreement with the policy statement.

Table 26: 100K+ Conversations Survey 1 Efficient Land Use Policy Questions

Policy 6.2.1 Lethbridge Has a Range of Housing that Meets Everyone's Needs	Agree / Strongly Agree	Disagree / Strongly Disagree	Neither
Lethbridge provides a range of safe and accessible housing that meets everyone's needs	53%	25%	12%
Lethbridge has a range of housing types throughout the city	72%	8%	20%
Lethbridge encourages and facilitates adequate housing for all income groups	44%	24%	33%
Lethbridge supports and assists seniors to remain in their homes for as long as possible.	34%	48%	18%
Policy 6.4.1 Lethbridge is a Compact City			
Lethbridge is a compact city that minimizes its urban footprint and uses land efficiently.	31.3%	30.0%	38.7%
Lethbridge's new neighbourhoods are designed in a way that uses land efficiently.	37.5%	32.5%	30.0%
Lethbridge's existing neighbourhoods are redeveloping in a way that respects built-form and character	53.8%	25.0%	21.2%
Lethbridge supports redevelopment of existing neighbourhoods through sufficient planning	36.2%	42.5%	21.2%
Lethbridge encourages redevelopment in appropriate locations (e.g. along corridors, in the downtown, near the University and College and near existing amenities).	46.3%	36.2%	17.4%
Lethbridge reduces parking requirements as alternative transportation options become increasingly available.	23.8%	38.8%	37.5%
Lethbridge promotes multi-level and mixed-use redevelopment in existing commercial areas.	41.3%	41.3%	17.4%
Downtown is the primary location for mixed-use redevelopment.	50.0%	38.7%	11.3%
13th Street North and 3rd Avenue South are secondary locations for mixed-use redevelopment.	57.5%	31.3%	11.2%

Policy 6.4.4 Lethbridge is Expanding in Responsible Manner			
Lethbridge is expanding in a responsible and orderly manner	55.0%	18.8%	26.2%
Lethbridge protects agricultural land from premature subdivision and development	36.3%	43.8%	20.0%
Lethbridge has an adequate supply of land that is planned and serviced to meet market demand	55.5%	38.7%	6.2%
Lethbridge encourages and promotes growth patterns that maximize existing infrastructure and service	35.0%	32.5%	32.5%
Lethbridge supports a range of new growth areas for residential, commercial, and industrial development	46.3%	38.6%	15.0%
Policy 6.4.5 Lethbridge is a Planned City that Exhibits Quality Urban Design			
Lethbridge is a planned city with a well-designed built environment	56.3%	21.2%	22.5%
Lethbridge provides opportunities to "live, work, shop, and play" in proximity to one another	51.3%	15.0%	33.8%
Lethbridge encourages and promotes a diverse range of housing that is incorporated into all new neighbourhoods	37.5%	31.3%	31.2%
Lethbridge ensures the built environment meets the physical accessibility needs of its residents	47.5%	32.5%	19.9%

The summary presented here is not exhaustive, but does highlight areas where additional attention is needed, such as assisting seniors to remain in their own homes for as long as possible, supporting redevelopment of existing neighbourhoods through sufficient planning, and protecting agricultural lands from premature subdivision and development.

The full Survey 1 summary is available on the City's website[45].

Survey 2

100K+ Conversations Survey 2 took a deeper look at certain aspects of Efficient Land Use that were highlighted by feedback received in Survey 1. The survey also asked future focused questions around Land Use to guide the ELUS and upcoming ICSP/MDP review.

Survey 2 was focused on four main Efficient Land Use themes: ***Urban Footprint***, ***A Compact City***, ***Diverse Range of Housing Types***, and ***Quality Urban Design.***

Urban Footprint Questions:

1. *Is minimizing your urban footprint important to you and your family?*
2. *Should we as a community do more to minimize our urban footprint?*
3. *Why do you believe it is important for us as a community to minimize our urban footprint?*
4. *Are there actions you and your family would support to minimize the urban footprint of Lethbridge?*
5. *Do you have any other comments about protecting water quality? (Open-ended)*

Box 4: Survey 2 Urban Footprint Questions

Urban Footprint

For the *Urban Footprint* theme, respondents were asked about how important minimizing our urban footprint is to their family and for us as a community. Respondents answered these questions on a scale of 1-10, 1 being not important at all, and 10 being very important:

When asked *how important* minimizing the urban footprint is to *you and your family* only 25% of respondents ranked the importance of minimizing the urban footprint below a 5/10, with 70% ranking above. The overall rating average was 7/10.

When asked *how important it is for us a community* to minimize our urban footprint the results were very similar to the previous question. 25% of respondents ranked the importance of minimizing the urban footprint below a 5/10, with 70% ranking above. The overall rating average was 7/10.

When asked to *why* it is important to minimize our urban footprint 37.5% indicated social well-being, 30.7% environmental, and 14.6% economic.

When asked which *actions* would be supported to minimize the urban footprint respondents were very supportive of encouraging redevelopment in the downtown (74.3%). Encouraging mixed-use development, redevelopment along commercial corridors, and near college and university were all supported by approximately 50% of respondents. The least supported actions were increasing residential densities in existing neighbourhoods and reducing parking requirements. 11% of respondents suggested other possible actions, including:

- *Stop approving subdivisions with winding road. Move back to grid system.*
- *Huge buildings sit empty throughout the city. Need to better utilize these sites.*
- *Cannot encourage smaller and fewer roads without better alternative transportation options.*
- *Place a limit on city expansion – growth boundaries*
- *Better transportation planning.*
- *Move to a form and function land use bylaw.*
- *Increase densities in ALL neighbourhoods*

Compact City & Diverse Range of Housing Types

For the Compact City and Diverse Range of Housing Types themes, respondents were asked if they would support a particular *action* to minimizing our urban footprint **in Lethbridge**, then asked if they would support this *action* in **their neighbourhood,** and lastly were asking if they would support this *action* on **their street**. Respondents were given the option respond with yes, no, I don't have enough information, prefer not to answer, or other. Below is a summary of the findings:

Residential Densification

When asked if respondents support the idea of residential densification:

Support for Residential Densification Summary				
	Yes	No	Not Enough Information	Prefer Not to Answer
City	56.2%*	26.8%	16.5%	0.5%
Neighbourhood	41.1%	46.4%	12.5%	0.0%
Street	33.2%	53.9%	12.4%	0.5%

Table 27: Support for Residential Densification Summary (Survey 2)

**Nearly 10% indicated other, and provided reasons in a written response. All responses were some form of Yes, but. This essentially raises the "Yes" response to 56.2% - with the understanding that there are conditions in the minds of the public (All survey responses found on project website).*

A significant amount responded that they didn't have enough information, the reason this is potentially significant is with adequate education/information provided this could potentially result in a significant swing either way. The take-away is that a better understanding on densification to the public is valuable to properly address the level of support.

When asked if you and your family support the idea of residential densification in **your neighbourhood** or on **your street**, it appears the level of support drops from the previous question when asked about the City as a whole. This is not surprising as many support the idea when it is somewhere else, but not directly where they live – often referred to as NIMBY (not in my backyard).

Mix of Housing Types

When asked if respondents support the idea of a mix of housing types:

Support for Mix of Housing Types Summary				
	Yes	No	Not Enough Information	Prefer Not to Answer
City	86.9%	7.9%	4.7%	0.5%
Neighbourhood	70.3%	22.9%	5.2%	1.6%
Street	54.7%	38.0%	5.2%	2.1%

Table 28: Support for Mix of Housing Types Summary (Survey 2)

Similar to the previous questions on residential densification, when asked if you support the idea of a mix of housing in **your neighbourhood** or on **your street**, the level of support decreases from when asked about the City as a whole. Additionally, many of those who support a mix of housing had further comments to what needs to be considered, this was included in written responses to why they answered the way they did. A summary of the most reoccurring written response themes included:

- Parking and roadway safety issues need to be addressed

- Important to create inclusive neighbourhoods with a mix of housing for everyone, not exclusive neighbourhoods that are affordable to only some of the population
- Everyone deserves to live in nice neighbourhoods
- Preference for small and medium scale housing types (single-detached, suites, duplex, townhouses), minimal support for large-scale housing (apartments)
- Mixing housing types into neighbourhoods needs to be done in a manner that preserves neighbourhood character, and in appropriate locations
- Adequate planning process needs to be in place
- Support a mix of housing types but not in all communities, should have the option to choose neighbourhoods that suites your style

Similar to the previous questions on residential densification, when asked if you support the idea of a mix of housing in your neighbourhood or on your street, the level of support decreases from when asked about the City as a whole.

Appropriate locations for Redevelopment

When provided with a variety of areas that are all deemed to be appropriate (as determined by our existing ICSP/MDP) for redevelopment to take place, and then asked to rank these for most appropriate, the downtown and along commercial corridors was ranked 1 and 2. This indicates that there are certain areas that we should place a higher focus for higher intensity redevelopment to take place, and the other areas although appropriate for some level of redevelopment but it should be less of a focus.

Answer Options	% of 1 and 2 Ratings	% of 5 and 6 Ratings	Rating Average	Overall Ranking
Along Commercial Corridors	42.0%	23.0%	3.09	2
Downtown	66.5%	14.8%	2.30	1
Central Neighbourhoods	23.6%	25.9%	3.39	4
Mature Neighbourhoods	15.1%	62.6%	4.59	6
Close Proximity to University and College	31.3%	25.9%	3.36	3
Close Proximity to Hospital	13.1%	49.2%	4.32	5

Table 29: Appropriate locations for Redevelopment (Survey 2)

Respondents were also asked if there are any other areas that you think are also appropriate for redevelopment to take place. This question was an open answer and there were lots of good ideas shared by respondents. The first list below contains suggestions of areas that were mentioned multiple times. This list does not include all suggestions from respondents; a more comprehensive list of suggestions and extended comments can be found on the project website[45].

Areas Mentioned Multiple Times:

- Along/near major roadways (Highway 3, Highway 4, 43rd Street)
- Along/near Regional Parks (Henderson, Nicholas Sheran)
- Older underutilized shopping areas (Big Box Areas, Former Safeway and Sobeys, Park Meadows Mall, Mayor Magrath Drive, etc.)
- Older neighbourhoods where properties are rundown or vacant.
- Downtown
- Hardieville
- Along transit and cycling routes

- Industrial areas
- Near University

Quality Urban Design

When asked if your neighbourhood offers opportunity to "live, work, shop, and play"[46] within close proximity, the majority at 57.2% answered yes. However, a large portion 41.2% answered no. When compared to which sector of the city and which neighbourhood type it starts to produce some more interesting talking points:

Location - Sector	Yes	No	Prefer Not to Answer
North Lethbridge	47%	49%	4%
South Lethbridge	83%	17%	0%
West Lethbridge	47%	53%	0%
County/Surrounding	36%	55%	9%

Table 30: Opportunities to "live, work, shop, and play" by City sector (Survey 2)

Location – Neighbourhood Type	Yes	No	Prefer Not to Answer
Core	77%	19%	4%
Mature	39%	61%	0%
Established	50%	49%	1%
Developing	57%	43%	0%
County/Surrounding	36%	55%	9%

Table 31: Opportunities to "live, work, shop, and play" by neighbourhood (Survey 2)

Only 17% of respondents in South Lethbridge answered no, whereas approximately 50% in the other sectors answered no. When split by neighbourhood type, only 19% of respondents in Central neighbourhoods answered no, whereas over 40% of respondents in other neighbourhoods answered no, with a high of 61% in mature neighbourhoods. This indicates that the greatest amount of respondents believe that South side, Central Neighbourhoods offer the best "live, work, shop, play" environment.

When asked which component (Live, Work, Shop, Play) do you and your family believe is missing from your neighbourhoods:

Location – Sector	Live	Work	Shop	Play
North	5%	21%	32%	33%
South	53%	21%	18%	33%
West	38%	48%	45%	27%
County/Surrounding	4%	10%	5%	7%

Table 32: Component (Live, Work, Shop, Play) missing by City sector (Survey 2)

[46] "Live, work, shop, and play" refers to providing adequate housing to suit your needs (live), includes places of employment in close proximity to your residence (work), offers a variety of shopping opportunities (shop), and provides recreational opportunities, particularly parks and open space (play).

Location – Neighbourhood Type	Live	Work	Shop	Play
Core	16%	10%	11%	16%
Mature	32%	21%	24%	25%
Established	37%	34%	40%	27%
Developing	11%	25%	20%	25%
County/Surrounding	4%	10%	5%	7%

Table 33: Component (Live, Work, Shop, Play) missing by neighbourhood (Survey 2)

For respondents who indicated there was a variety of housing types missing from their neighbourhoods, the highest percentage came from the South sector and Established neighbourhood type. A very low percentage came from the North sector and the Developing neighbourhood type.

For respondents who indicated there were employment opportunities missing from their neighbourhood, the highest percentage came from the West sector and the Established neighbourhood type. A lower percentage came from the North and South sectors, and the Central neighbourhood type.

For respondents who indicated there was retail, food, and entertainment missing from their neighbourhood, the highest percentage came from the West sector and the Established neighbourhood type. A lower percentage came from the South sector, and the Central neighbourhood type.

For respondents who indicated there were recreational and social opportunities missing from their neighbourhood, the distribution was almost even across all sectors and neighbourhood types in the city.

When asked how far you would be willing to walk to work, shop, or play:

How Far Would You Walk Summary					
	1 Block (less than 3minutes)	2-5 Blocks (5-15minutes)	6-10 Blocks (15-30 minutes)	Unlimited (always walk)	Never
Work	1.1%	40.7%	50.3%	1.1%	6.9%
Play	3.1%	55.4%	37.8%	2.6%	1.0%
Shop	8.9%	55.0%	27.7%	0.0%	8.4%

Table 34: How far are you willing to walk to work, shop, or play (Survey 2)

If you could create situations where work, play, and shopping was located within 10 blocks of where people live you could potentially have roughly 30%-50% of people walking rather than driving their vehicles.

Technical Working Group and Community Liaison Group Comments

At the June 20, 2016 EnviS and ELUS Open House a "What we've heard so far" poster was presented to the public. The contents of that poster were confirmed by members of the TWG and CLG and community members were given the chance to provide feedback. The 9 key "What we've heard so far" messages (in no specific order and no numerical value) for efficient land use include:

1. *We need to ensure we are not overextending ourselves with new growth by exploring a more balanced paradigm that includes both greenfield and redevelopment in order to benefit the City as a whole*

2. *We need to ensure that all neighbourhoods and areas of the City have a role to play in becoming a compact city that uses out land, infrastructure and services more efficiently*

3. *We need to develop new neighbourhoods in an inclusive and connected manner with a greater mix of uses that allow a greater variety of people regardless of socioeconomic status to truly live, work, shop, and play in the same area*

4. *We need to balance the ambience and character of our existing neighbourhoods with the infill and redevelopment of vacant and underutilized lands*

5. *We need to continue efforts to support our downtown as the central and vibrant heart of our City*

6. *We need to continue providing more housing options (suites, duplexes, multi-family, etc.) that are affordable, accessible, and truly attainable to vulnerable and at-risk populations as well as housing that accommodates various family structure/sizes*

7. *We need out municipal government and administration to lead by example and explore reducing red tape that is currently restricting innovation*

8. *We recognize our City is well designed for vehicles but need to better understand and recognize the important relationship between land use and transportation including design and exploring a more multi-modal system*

9. *We need to pay attention to the requirements for large infrastructure investments and how they are designed (e.g. innovative and attractive storm water solutions, roadway designs, 3rd bridge)*

Chapter 10.0 Considerations

10.1 Efficient Use of Land Best Practices and Considerations

The considerations presented below are meant to guide conversations during the update to the MDP. **Therefore none of the considerations presented are binding, nor will they necessarily be found in the updated MDP**. Final decision-making authority for the content of the MDP lies with City Council.

10.1.1 General

Consideration	Rationale	Implementation
1. Accommodating increases in density in neighbourhoods needs a context-sensitive approach based on meeting community design and infrastructure criteria.	Each neighbourhood is unique, and many local factors need to be taken into account when determining appropriate density increases. However, this should not be used as a way to avoid density increases, as there are many approaches which are sensitive to existing characteristics (e.g. secondary suites can maintain the appearance of a low-density residential area).	MDP to set high level policies, allowing some flexibility based on context.
2. The criteria for accommodating density increases should be determined based on the age and classification, geographic location, street-layout, and demographic profile of the neighbourhood.	Factors affecting how density increases can be accommodated include neighbourhood age (including street layout type, e.g. curvilinear, grid or modified grid), what stage in the neighbourhood's life-cycle has been reached, location in relation to other land uses and transportation links, and demographics such as age distribution.	MDP to include criteria for accommodating density based on sensitivity to local factors.
3. The criteria for accommodating density increases should be incorporated into the MDP and will act as a guiding principle for ASPs, ARPs, and land use redesignations.	The MDP should provide defined criteria within its policies. ASPs, ARPs, and land use redesignations (rezonings) will implement this direction (i.e. while the MDP will set the guiding principles and criteria, existing tools shall be used for implementation).	MDP to include criteria for accommodating density based on sensitivity to local factors.
4. The City's approach to residential, industrial, and commercial efficient land use should be defined in the MDP.	Differing approaches and measurements of efficient land use will be required for different categories of use. The MDP must set out the approach to be used for each.	MDP to set out approach to efficient land use for broad use categories.
5. The MDP should encourage the preservation of natural grasslands and continued use of agricultural lands until conversion to a permanently developed state.	Pursuing a compact urban form and avoiding premature development of agricultural lands and natural grasslands can help to maximize infrastructure investments and maintain existing agricultural operations. Conversion of land should not occur until adequate planning is in place and land is capable of sustaining development.	MDP to include policy encouraging the preservation of natural grasslands and continued use of agricultural lands until

		CONVERSION TO A PERMANENTLY DEVELOPED STATE

10.1.2 Industrial

CONSIDERATION	RATIONALE	IMPLEMENTATION
6. MDP TO ESTABLISH VISION AND POLICY DIRECTION TO LOCATE AND ENCOURAGE INTENSIFICATION OF INDUSTRIAL AREAS.	THE MDP SHOULD SET THE HIGH-LEVEL POLICY DIRECTION FOR APPROPRIATE INDUSTRIAL AREA DEVELOPMENT, INCLUDING ENCOURAGING INTENSIFICATION OF LAND USE.	MDP TO INCLUDE APPROPRIATE POLICY ON INDUSTRIAL AREA LOCATION AND INTENSIFICATION.
7. CONDUCT FURTHER RESEARCH TO IDENTIFY OPPORTUNITIES FOR THE INTENSIFIED USE OF INDUSTRIAL LAND IN LETHBRIDGE.	THERE IS A NEED FOR GREATER UNDERSTANDING OF LETHBRIDGE'S INDUSTRIAL BASE, ITS LAND REQUIREMENTS, AND HOW MUCH MORE EFFICIENT THIS LAND USE CAN BE MADE.	FUTURE STUDY FOCUSED ON INDUSTRIAL LAND USE IN LETHBRIDGE.
8. A REVIEW OF INDUSTRIAL DISTRICTS IN THE LAND USE BYLAW SHOULD BE UNDERTAKEN TO DETERMINE IF CURRENT REGULATIONS HAVE PROVISIONS THAT CONSTRAIN INDUSTRIAL DENSITY POTENTIAL (SUCH AS OVERLY-RESTRICTIVE BUILDING HEIGHT LIMITS, PARKING REQUIREMENTS, BUILDING SETBACKS, FLOOR AREA RATIOS OR SITE COVERAGE LIMITS).	SOME CURRENT LUB REQUIREMENTS FOR INDUSTRIAL DISTRICTS MAY BE RESULTING IN LESS EFFICIENT LAND USE THAN WOULD OTHERWISE OCCUR.	REVIEW OF LUB INDUSTRIAL DISTRICTS TO IDENTIFY POTENTIAL FOR LUB AMENDMENTS, AND ENGAGE RELEVANT STAKEHOLDERS
9. SUPPORT TRANSIT-ORIENTED DEVELOPMENT IN INDUSTRIAL AREAS.	SOME INDUSTRIAL ACTIVITIES EMPLOY LARGE NUMBERS OF PEOPLE. SUPPORTING TRANSIT-ORIENTED DEVELOPMENT CAN REDUCE TRAFFIC AND THE NEED FOR PARKING.	MDP TO SUPPORT APPROPRIATE DEVELOPMENT PROPOSALS BY EXPLORING REDUCING PARKING REQUIREMENTS FOR TRANSIT-ORIENTATED DEVELOPMENTS.

10.1.3 Commercial

CONSIDERATION	RATIONALE	IMPLEMENTATION
1. MDP TO ENCOURAGE MAXIMIZING THE EFFICIENT USE OF COMMERCIAL LAND AND INCREASING BUILDING FOOTPRINT COVERAGE ON COMMERCIAL LOTS BY:	LETHBRIDGE EXHIBITS MANY LARGE SURFACE PARKING LOTS WHICH MAKE INEFFICIENT USE OF LAND. MINIMUM PARKING REQUIREMENTS SHOULD BE REVISITED, WITH A VIEW TO FINDING EFFICIENCIES. SOME OLDER	MDP TO SET OUT MORE DETAILED POLICY AROUND REDUCING LAND

• Planning for smaller lot sizes • Reducing the land dedicated to parking • Monitoring the impact of 2016 LUB amendment (maximum parking provision). Consider lowering some parking minimums, in general requirements and in special circumstances, e.g. for heritage buildings, in ARPs for older neighbourhoods, downtown, in transit-accessible locations, etc.	buildings cannot accommodate modern parking standards, and exceptions should be made possible.	dedicated to surface parking.
2. Conduct parking study to analyze where parking has been oversupplied and determine a more sustainable parking requirement for the Land Use Bylaw.	Minimum and maximum parking requirements should be analyzed with a view to finding potential reductions where practical.	Potential LUB amendments.
3. Continue to encourage accessible commercial development patterns that accommodate multimodal transportation through appropriate Land Use Bylaw regulations.	While many modern commercial developments are auto-oriented, they must also be easily and safely accessible by foot, wheelchair, cycle, transit or other modes.	Monitor recent LUB amendments which improved mobility and accessibility requirements. e.g. minimum cycle parking, accessibility improvements.
4. Where appropriate, encourage street-fronting and neighbourhood commercial development in neighbourhoods with a grid or modified grid street layout.	Grid and modified grid neighbourhoods can best accommodate street-fronting and neighbourhood commercial development. Appropriate locations should be sought in order to increase neighbourhood walkability, reduce motor vehicle dependence and make more efficient use of existing roadways.	MDP to Support relevant rezonings. include such developments in ARPs and future OPs.
5. When preparing either ARPs or ASPs consider how to balance commercial development between city sectors.	Some areas of the city are better served by commercial development than others which was made evident through the food desert analysis found in Chapter 6. For example, the south-west currently has little commercial space. Balancing commercial development between sectors improves walkability and makes more efficient use of existing roadways.	In ARP and ASP preparation, encourage appropriate commercial development in underserved city sectors.
6. Encourage increased residential density in proximity to existing or planned commercial areas.	Increased residential density around commercial areas can help to create walkable clusters of development, with benefits for residents and businesses.	In ARP and ASP preparation, encourage increased residential density around

		existing or planned commercial areas.
7. Encourage commercial development around higher density residential areas.	Areas that are capable of supporting local business (e.g. surrounding the university and college, downtown, etc.) are appropriate areas for considering commercial development.	In ARP and ASP preparation, encourage commercial development around higher density residential areas.

10.1.5 Greenfield Development

Consideration	Rationale	Implementation
1. Encourage a greater mix of land use within developing neighbourhoods in locations that support local businesses, transit use, and access to amenities.	Mixing land uses provides many benefits, such as walkability, increased social interaction and community-building, reduced need for motor vehicle travel, reduced pollution and emissions, and more efficient use of infrastructure.	Strengthen MDP policies related to designing greenfield areas, to provide for a greater mix of land uses in ASPs and OPs.
2. Encourage the design of more accessible and walkable neighbourhoods through use of the modified grid street layout and the incorporation of green corridors.	The modified grid street layout holds some advantages over curvilinear in terms of walkability, shorter driving distances, and more flexibility to adapt and redevelop over time.	MDP policy should encourage use of the modified grid street layout in ASPs and OPs for new neighbourhoods.
3. Maximize use of existing infrastructure through careful phasing.	As Outline Plans are built out, phasing should always be planned to maximize use of existing infrastructure. Infrastructure expansion should be avoided until necessary.	MDP policy to encourage use of phasing to maximize use of existing infrastructure and avoid expansion until necessary.
4. Set targets to improve on the average non-developable public and private land use areas per dwelling unit identified in chapter 7. Outline plans that do not achieve these targets should not be supported in the absence of exceptional circumstances (e.g. the OP includes a large regional park).	Among the Outline Plans and neighbourhoods studied in chapter 7, calculations were made of: the average roadway area per dwelling unit; parks, schools and open space area per dwelling unit; and stormwater area per dwelling unit. Seeking to keep these areas low on a per-dwelling-unit basis helps make more efficient use of land, and can help spread construction and long-term maintenance and replacement costs, contributing to lowered costs for taxpayers.	Investigate developing a qualitative or quantitative target in the MDP that all future Outline Plans shall achieve in terms of maximum non-developable land use area per dwelling unit. The target should be dependent on context, e.g. the

		inclusion of non-developable uses serving a wider area.
5. Include minimum average density requirements in future Outline Plans. Outline plans that do not achieve the minimum average density should not be supported in the absence of mitigating measures such as a large public use, or a geographical or utility feature that cannot be relocated.	The average density of the recently approved Outline Plan areas studied in this chapter is 27.4 u/ha. A requirement should be set that all future Outline Plans achieve at least a set minimum level of density. It will be up to developers to decide how that average density should be achieved, through a mix of individual housing types and densities. It is recommended that future Outline Plans be required to produce a density of at least 27.5 u/ha. This will help to encourage continued efficient use of land in future developments.	Consider an MDP policy to require all future Outline Plans achieve a minimum average density of 27.5 u/ha.
6. Amendments to existing ASPs or Outline Plans to create less walkable and multimodal-friendly transportation networks will not be supported in the absence of mitigating measures.	Where developers seek to amend approved ASPs or OPs, support should not be given for changes that would result in a less walkable and/or less multimodal-friendly transportation network.	MDP policy to not support amendments to approved ASPs or OPs which would result in a less walkable and/or less multimodal-friendly transportation network.

10.1.4 Residential Infill Development

Consideration	Rationale	Implementation
1. Infill development should continue to be encouraged by the City.	Infill development helps to direct investment and renewal toward older neighbourhoods. Increasing the number of dwelling units helps to offset the loss of population through shrinking average household sizes. This helps make more efficient use of land and infrastructure, and provides more customers to help support local businesses. retrofitting existing buildings also has sustainability benefits, by reusing existing materials and cutting construction waste.	Develop ARPs for core, mature and established neighbourhoods which encourage appropriate infill development.
2. Encourage renovation or redevelopment of buildings in poor condition by supplying information and education to residents.	Identified within community input that a better understanding of renovation and redevelopment processes are needed	Produce brochures for City Hall and information on the city website.
3. Encourage residential and mixed-use infill development in core, mature and established neighbourhoods to retain population, and support existing and new businesses and amenities.	As demographic changes over previous decades have led to shrinking populations in many older neighbourhoods, infill development can increase the numbers of residential units available and help to maintain or increase population.	Develop ARPs for core, mature and established neighbourhoods which encourage appropriate infill development.

4.	Encourage greater mix of land uses in core, mature and established neighbourhoods.	Mixing land uses provides many benefits, such as walkability, increased social interaction and community-building, reduced need for motor vehicle travel, reduced pollution and emissions, and more efficient use of infrastructure.	Encourage greater mix of land uses through appropriate policies in ARPs.
5.	Continue to encourage higher density development around commercial nodes and corridors, and institutional nodes where access to transit is available.	Increasing density around commercial nodes and corridors helps to support existing and new businesses, as well as creating a walkable living environment for residents. Access to transit allows people to travel further without a motor vehicle, making more efficient use of our transport infrastructure.	Encourage higher density development around commercial nodes and corridors in ARPs.
6.	Undertake a cross-departmental study with industry, community, and city staff on possible steps to bridge the gap between identifying areas for redevelopment and intensification in ARPs, and targeting appropriate upgrades to servicing and utilities.	Area Redevelopment Plans fulfil the role of investigating and building community consensus around the best types and locations of infill and increases in density. In this way, ARPs can identify priority growth areas. But there is a gap between identifying appropriate locations for redevelopment and filling gaps in infrastructure and servicing. The current system, which puts the onus almost solely on the prospective developer, acts as a constraint on redevelopment potential.	Future cross-departmental study on bridging the gap between ARP direction and upgrades to servicing & utilities.
7.	Undertake a cross-departmental study into opportunities to reduce the burden on smaller-scale redevelopment projects.	Placing a greater financial and regulatory burden on multi-family developments – even when replacing like-for-like (e.g. replacing an existing single detached dwelling with a new single detached dwelling, or a triplex with a triplex, etc.) – acts to discourage developers from pursuing such projects and can even encourage a lowering of density. Similarly, where a like-for-like replacement of a single detached dwelling is proposed, powers for Development Officers to waive Land Use Bylaw regulations for aspects such as off-street parking should be considered. For example, where a home has existed and functioned successfully for decades without a front driveway, there does not seem to be much logic to support a requirement that necessitates curb cuts into the boulevard and the removal of street trees where these are valued by the community. Moves like this could also help to lower construction costs and help new development better fit in with surrounding properties.	Future cross-departmental study into opportunities to reduce the burden on smaller-scale redevelopment projects.
8.	Ensure green space is provided in core neighbourhoods through ARPs.	Some older neighbourhoods do not contain a proportion of green space which would be considered adequate by today's standards. While some neighbourhoods such as London Road are located adjacent to the River Valley, this space may not be accessible to all.	ARPs for core neighbourhoods to identify need and potential locations for additional green space.
9.	A method of recording infill redevelopments should be created	In order to allow useful monitoring of infill development trends and challenges, the data gap needs to be filled. This will	Develop an administrative

to ensure good data is available for future comparisons and studies. This should distinguish between the types of infill identified in chapter 7.	allow the City to learn about what types of infill development are popular and economical, and how it can be effectively facilitated.	process to track this information. Monitoring & Evaluation Tool to be created for London Road ARP.
10. Set targets to improve on the average non-developable public and private land use areas per dwelling unit (as identified in chapter 7).	Among the Outline Plans and neighbourhoods studied in chapter 7, calculations were made of: the average roadway area per dwelling unit; parks, schools and open space area per dwelling unit; and stormwater area per dwelling unit. Seeking to keep these areas low on a per-dwelling-unit basis helps make more efficient use of land, and can help spread construction and long-term maintenance and replacement costs, contributing to lowered costs for taxpayers. In the context of ARPs, this could be achieved through a target figure which all future redevelopments should achieve. This would help to focus on the need to repopulate older areas which have seen population loss through shrinking household sizes.	Investigate developing a qualitative or quantitative target in the MDP that all future ARPs shall achieve in terms of maximum non-developable land use area per dwelling unit. The target should be dependent on context, e.g. current starting point, and the inclusion of non-developable uses serving a wider area.

Appendices

APPENDIX 1.0 POPULATION AND DEMOGRAHPIC TABLES

City Sectors Historical Growth

Sector	1955	1965	1975	1985	1994*	2005	2015
North Lethbridge	9095	12822	17835	21706	21745	22911	26751
South Lethbridge	19205	24003	26315	26398	26197	27884	31337
West Lethbridge	0	0	372	11797	16996	26407	36716
City Total	28300	36825	44522	59901	64938	77202	94804

*Table 35: Population Growth by Sector (*1994 data used as 1995 was unavailable.)*

Sector	1955-1964	1965-1974	1975-1985*	1985-1994	1995-2005**	2005-2014
North Lethbridge	3727	5013	3871	39	1166	3840
South Lethbridge	4798	2312	83	-201	1687	3453
West Lethbridge	0	372	11425	5199	9411	10309
City Total	8525	7697	15379	5037	12264	17602

*Table 36: Population Growth by Decade (*1985 data used as 1984 was unavailable. **2005 data used as 2004 was unavailable)*

Age Distribution Tables

North Lethbridge- 2006 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
North Lethbridge	**1,272**	**1,322**	**1,476**	**1,614**	**1,995**	**1,757**	**1,551**	**1,472**	**1,839**	**1,831**	**1,698**	**1,308**	**983**	**863**	**786**	**640**	**457**	**207**	**170**
Core	**455**	**377**	**427**	**479**	**818**	**774**	**558**	**430**	**564**	**578**	**478**	**341**	**241**	**213**	**209**	**196**	**127**	**68**	**41**
Senator Buchanan	80	74	104	103	182	181	128	113	136	155	119	92	70	65	71	65	45	26	12
Staffordville	69	67	59	59	104	106	77	64	66	86	62	53	37	38	30	24	6	4	6
Westminster	306	236	264	317	532	487	353	253	362	337	297	196	134	110	108	107	76	38	23
Developing	**26**	**27**	**49**	**33**	**46**	**41**	**43**	**35**	**47**	**34**	**39**	**24**	**25**	**14**	**14**	**21**	**10**	**2**	**1**
Blackwolf 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Legacy Ridge / Hardieville	26	27	49	33	46	41	43	35	47	34	39	24	25	14	14	21	10	2	1
Established	**295**	**336**	**355**	**344**	**330**	**241**	**312**	**358**	**430**	**453**	**343**	**227**	**144**	**110**	**89**	**45**	**32**	**8**	**3**
Stafford Manor	44	45	47	39	35	44	47	57	62	61	47	22	17	15	16	4	2	1	1
Uplands	251	291	308	305	295	197	265	301	368	392	296	205	127	95	73	41	30	7	2
Mature	**496**	**582**	**645**	**757**	**796**	**697**	**638**	**649**	**798**	**766**	**836**	**716**	**573**	**526**	**474**	**378**	**288**	**129**	**125**
Majestic Place	30	47	41	53	51	45	40	53	63	63	72	63	53	87	61	51	34	5	4
Park Meadows	152	174	176	188	217	185	173	186	214	177	228	224	162	123	81	60	34	11	4
St. Edwards	123	141	164	194	230	211	185	166	202	210	206	158	152	121	131	83	55	12	6
Winston Churchill	191	220	264	322	298	256	240	244	319	316	330	271	206	195	201	184	165	101	111

Table 37: North Lethbridge Neighbourhood Age Distribution (2006)

North Lethbridge- 2011 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
North Lethbridge	**1,652**	**1,251**	**1,382**	**1,615**	**2,061**	**2,186**	**1,780**	**1,606**	**1,578**	**1,822**	**2,010**	**1,604**	**1,342**	**970**	**752**	**695**	**508**	**265**	**147**
Core	**546**	**386**	**338**	**406**	**716**	**863**	**617**	**506**	**442**	**507**	**587**	**427**	**331**	**218**	**170**	**164**	**138**	**60**	**39**
Senator Buchanan	133	97	85	110	206	238	152	125	133	144	174	125	86	64	43	45	46	19	12
Staffordville	94	51	46	58	96	88	72	74	58	50	76	58	49	41	32	27	20	1	4
Westminster	319	238	207	238	414	537	393	307	251	313	337	244	196	113	95	92	72	40	23
Developing	**206**	**117**	**100**	**105**	**162**	**282**	**241**	**162**	**135**	**116**	**111**	**71**	**46**	**36**	**30**	**25**	**30**	**25**	**20**
Blackwolf 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Legacy Ridge / Hardieville	206	117	100	105	162	282	241	162	135	116	111	71	46	36	30	25	30	25	20
Established	**295**	**296**	**371**	**408**	**337**	**312**	**271**	**337**	**390**	**470**	**486**	**341**	**241**	**161**	**91**	**92**	**43**	**17**	**6**
Stafford Manor	43	35	47	49	40	43	44	42	52	41	55	35	27	18	13	10	4	1	1
Uplands	252	261	324	359	297	269	227	295	338	429	431	306	214	143	78	82	39	16	5
Mature	**596**	**449**	**571**	**693**	**835**	**715**	**644**	**597**	**608**	**724**	**823**	**763**	**722**	**554**	**459**	**413**	**296**	**163**	**82**
Majestic Place	56	51	55	53	71	56	44	53	55	74	69	60	68	47	57	55	38	17	4
Park Meadows	138	115	145	190	182	167	153	153	184	193	201	204	227	152	124	82	38	14	1
St. Edwards	180	108	135	171	218	212	209	167	151	192	215	197	177	155	111	87	62	21	5
Winston Churchill	222	175	236	279	364	280	238	224	218	265	338	302	250	200	167	189	158	111	72

Table 38: North Lethbridge Neighbourhood Age Distribution (2011)

North Lethbridge- 2016 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
North Lethbridge	**1,595**	**1,673**	**1,392**	**1,584**	**1,907**	**2,136**	**2,199**	**1,838**	**1,775**	**1,571**	**1,912**	**1,934**	**1,571**	**1,331**	**911**	**643**	**553**	**326**	**197**
Core	**456**	**481**	**400**	**397**	**647**	**724**	**718**	**580**	**526**	**415**	**521**	**539**	**384**	**270**	**201**	**141**	**117**	**61**	**26**
Senator Buchanan	99	125	84	94	189	208	194	146	138	134	137	166	116	69	49	33	35	19	10
Staffordville	65	79	52	44	75	105	85	85	71	54	71	67	54	47	36	27	15	5	0
Westminster	292	277	264	259	383	411	439	349	317	227	313	306	214	154	116	81	67	37	16
Developing	**338**	**314**	**196**	**162**	**241**	**359**	**450**	**350**	**279**	**198**	**171**	**176**	**138**	**95**	**49**	**49**	**40**	**48**	**35**
Blackwolf 1	55	40	37	32	50	87	79	57	45	36	26	31	13	15	5	3	1	1	0
Legacy Ridge / Hardieville	283	274	159	130	191	272	371	293	234	162	145	145	125	80	44	46	39	47	35
Established	**263**	**293**	**309**	**421**	**356**	**300**	**326**	**258**	**360**	**366**	**462**	**464**	**303**	**243**	**142**	**77**	**56**	**27**	**13**
Stafford Manor	41	45	35	44	41	51	38	21	49	40	46	55	30	29	15	11	10	0	0
Uplands	222	248	274	377	315	249	288	237	311	326	416	409	273	214	127	66	46	27	13
Mature	**534**	**583**	**486**	**603**	**658**	**749**	**701**	**648**	**608**	**589**	**756**	**752**	**744**	**722**	**518**	**375**	**340**	**190**	**123**
Majestic Place	33	67	46	53	33	68	53	55	55	52	69	70	70	71	40	48	33	22	5
Park Meadows	140	144	114	157	168	182	180	147	138	155	200	174	206	215	141	98	64	20	5
St. Edwards	149	158	120	142	191	198	189	214	176	148	186	202	205	169	137	79	60	29	10
Winston Churchill	212	214	206	251	266	301	279	232	239	234	301	306	263	267	200	150	183	119	103

Table 39: North Lethbridge Neighbourhood Age Distribution (2016)

South Lethbridge- 2006 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
South Lethbridge	**1,168**	**1,085**	**1,213**	**1,942**	**3,038**	**2,002**	**1,395**	**1,365**	**1,797**	**1,868**	**1,972**	**1,665**	**1,485**	**1,421**	**1,441**	**1,341**	**1,100**	**647**	**373**
Core	**430**	**359**	**377**	**581**	**1,142**	**914**	**624**	**533**	**665**	**726**	**757**	**571**	**492**	**464**	**455**	**536**	**574**	**425**	**287**
Downtown	2	1	1	12	37	39	20	20	22	27	46	72	92	128	154	188	198	160	91
Fleetwood	69	43	63	92	204	171	95	79	87	98	117	66	61	69	37	43	30	14	9
London Road	155	153	129	191	451	393	249	211	251	258	266	187	134	114	101	116	133	98	90
Upper Eastside	4	11	15	23	40	36	23	30	37	27	41	36	23	17	13	12	12	10	5
Victoria Park	200	151	169	263	410	275	236	193	268	316	287	210	182	135	150	177	201	143	92
Developing	**31**	**27**	**27**	**34**	**29**	**21**	**26**	**33**	**45**	**39**	**31**	**34**	**28**	**29**	**34**	**28**	**17**	**5**	**1**
Arbour Ridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Southgate	27	23	25	30	24	20	23	28	39	33	24	25	14	16	12	9	2	1	0
Southridge	4	4	3	4	6	2	3	5	5	6	7	9	13	13	22	20	14	4	1
Established	**121**	**125**	**158**	**185**	**148**	**88**	**83**	**137**	**193**	**205**	**251**	**259**	**206**	**219**	**217**	**180**	**120**	**37**	**6**
Fairmont	73	65	69	79	56	53	53	78	116	87	100	104	81	103	71	56	36	11	1
Park Royal / Chinook Height	3	11	15	17	9	5	0	7	9	22	18	6	15	16	6	5	2	5	0
Tudor Estates	29	34	62	72	68	23	17	32	47	71	104	111	58	47	51	40	25	6	0
West Mayor Magrath Dr	16	15	11	17	14	6	13	20	22	25	29	38	53	53	89	78	58	15	5
Mature	**576**	**562**	**637**	**963**	**1,513**	**948**	**645**	**648**	**880**	**879**	**921**	**788**	**754**	**703**	**727**	**593**	**382**	**179**	**79**
Agnes Davidson	180	157	193	289	486	298	207	182	273	269	273	205	211	233	231	213	129	50	26
Glendale	86	99	112	129	160	146	106	104	167	136	136	132	100	75	81	55	41	22	5
Henderson Lake	15	15	16	19	15	11	8	19	23	15	39	22	11	17	15	14	12	1	2
Lakeview	130	153	145	205	258	182	150	159	180	214	202	155	171	166	170	148	90	44	13
Redwood	149	125	167	281	442	285	160	178	225	237	263	261	256	207	225	162	107	60	33
Scenic Heights	16	13	4	40	152	27	14	7	12	8	8	14	6	5	5	1	3	2	0

Table 40: South Lethbridge Neighbourhood Age Distribution (2006)

South Lethbridge- 2011 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
South Lethbridge	**1,429**	**1,246**	**1,177**	**1,836**	**2,916**	**2,244**	**1,840**	**1,512**	**1,589**	**1,871**	**2,107**	**2,024**	**1,875**	**1,586**	**1,410**	**1,342**	**1,267**	**825**	**503**
Core	**431**	**343**	**322**	**438**	**978**	**943**	**727**	**542**	**570**	**629**	**790**	**734**	**610**	**487**	**452**	**454**	**528**	**462**	**318**
Downtown	1	0	0	8	26	32	36	19	16	27	44	80	95	120	147	201	237	202	131
Fleetwood	71	52	42	72	188	176	128	77	90	92	93	100	70	49	54	30	27	19	4
London Road	177	141	114	151	363	370	277	221	233	218	291	236	183	125	103	95	103	81	61
Upper Eastside	11	4	12	25	33	40	35	20	23	36	39	37	35	18	11	11	12	11	9
Victoria Park	171	146	154	182	368	325	251	205	208	256	323	281	227	175	137	117	149	149	113
Developing	**132**	**113**	**82**	**77**	**68**	**90**	**119**	**102**	**101**	**106**	**100**	**94**	**76**	**63**	**31**	**23**	**8**	**4**	**4**
Arbour Ridge	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Southgate	120	82	59	56	60	88	115	88	71	83	78	65	55	50	25	16	7	4	3
Southridge	12	31	23	21	8	2	4	14	30	23	22	28	20	13	6	7	1	0	1
Established	**140**	**175**	**175**	**218**	**197**	**117**	**110**	**131**	**188**	**234**	**303**	**305**	**305**	**283**	**289**	**259**	**254**	**137**	**103**
Fairmont	105	125	116	136	115	83	86	102	128	155	153	147	133	131	139	113	117	79	86
Park Royal / Chinook Height	2	4	12	10	12	6	0	1	9	7	21	20	11	11	14	4	4	1	1
Tudor Estates	28	36	35	65	51	21	19	23	36	53	95	86	104	45	45	38	36	14	2
West Mayor Magrath Dr	5	11	12	8	19	7	5	6	15	19	34	52	58	95	91	103	97	43	14
Mature	**705**	**587**	**589**	**832**	**1,484**	**1,056**	**855**	**709**	**718**	**891**	**900**	**885**	**874**	**750**	**635**	**604**	**475**	**221**	**77**
Agnes Davidson	207	189	184	250	491	352	241	202	201	260	271	247	252	205	193	186	155	66	18
Glendale	105	91	93	127	195	166	143	112	129	152	150	111	127	86	59	62	36	28	14
Henderson Lake	8	10	21	17	23	13	12	8	17	29	21	34	19	13	14	12	11	8	2
Lakeview	147	138	155	169	301	189	174	150	163	211	202	184	154	164	153	146	103	50	14
Redwood	217	156	130	248	427	277	262	212	202	221	248	288	310	277	215	196	168	68	29
Scenic Heights	21	3	6	21	47	59	23	25	6	18	8	21	12	5	1	2	2	1	0

Table 41: South Lethbridge Neighbourhood Age Distribution (2011)

South Lethbridge- 2016 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
South Lethbridge	**1,566**	**1,486**	**1,329**	**1,722**	**2,687**	**2,197**	**2,024**	**1,698**	**1,612**	**1,614**	**1,988**	**2,122**	**2,169**	**1,961**	**1,647**	**1,296**	**1,198**	**906**	**633**
Core	**436**	**392**	**350**	**419**	**812**	**897**	**790**	**609**	**583**	**557**	**641**	**751**	**758**	**621**	**527**	**448**	**441**	**436**	**379**
Downtown	1	2	1	6	27	33	23	24	25	23	33	75	116	122	164	185	206	211	177
Fleetwood	77	69	40	76	148	159	134	119	74	91	90	91	92	56	46	38	30	8	10
London Road	166	133	134	142	302	346	305	208	242	202	202	239	232	195	126	87	82	71	58
Upper Eastside	11	17	15	31	28	42	34	32	35	32	35	36	46	31	18	12	8	13	10
Victoria Park	181	171	160	164	307	317	294	226	207	209	281	310	272	217	173	126	115	133	124
Developing	**178**	**212**	**188**	**130**	**101**	**69**	**147**	**195**	**156**	**166**	**162**	**129**	**111**	**94**	**85**	**45**	**27**	**5**	**3**
Arbour Ridge	14	19	11	11	2	2	6	14	12	10	9	4	3	2	5	0	0	0	0
Southgate	155	174	145	93	81	60	138	170	126	120	121	100	93	73	67	40	21	5	3
Southridge	9	19	32	26	18	7	3	11	18	36	32	25	15	19	13	5	6	0	0
Established	**152**	**176**	**168**	**171**	**206**	**97**	**147**	**138**	**157**	**198**	**264**	**305**	**360**	**386**	**332**	**314**	**249**	**203**	**168**
Fairmont	98	116	109	110	105	66	94	97	102	139	170	162	185	166	154	159	134	139	143
Park Royal / Chinook Height	8	5	8	9	8	6	8	5	7	5	10	17	17	11	13	9	6	1	3
Tudor Estates	44	51	45	40	51	20	41	28	35	39	54	80	84	99	43	29	35	17	4
West Mayor Magrath Dr	2	4	6	12	42	5	4	8	13	15	30	46	74	110	122	117	74	46	18
Mature	**789**	**690**	**610**	**759**	**1,339**	**1,104**	**924**	**740**	**703**	**686**	**910**	**928**	**932**	**854**	**700**	**485**	**479**	**261**	**82**
Agnes Davidson	279	235	198	236	483	362	314	240	207	207	267	268	257	233	181	152	150	89	25
Glendale	116	97	108	113	159	161	144	131	114	105	164	130	127	115	87	29	51	20	6
Henderson Lake	19	13	5	15	21	24	12	12	9	11	25	12	34	28	15	8	9	6	3
Lakeview	152	135	140	186	280	221	179	156	166	151	195	215	195	155	142	121	106	52	16
Redwood	198	194	150	184	338	282	249	183	195	204	239	283	305	316	270	174	161	93	32
Scenic Heights	25	16	9	25	58	54	26	18	12	8	20	20	14	7	5	1	2	1	0

Table 42: South Lethbridge Neighbourhood Age Distribution (2016)

West Lethbridge- 2006 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
West Lethbridge	**1,722**	**1,542**	**1,672**	**2,733**	**5,026**	**2,417**	**1,804**	**1,618**	**1,615**	**1,748**	**1,687**	**1,233**	**777**	**512**	**359**	**278**	**197**	**134**	**68**
Developing	**140**	**129**	**99**	**84**	**97**	**93**	**133**	**157**	**101**	**103**	**109**	**63**	**45**	**27**	**17**	**9**	**2**	**2**	**0**
Copperwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Country Meadows	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Garry Station	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverstone	127	109	87	77	77	82	115	139	90	97	103	58	42	24	17	7	2	2	0
Sunridge	11	20	13	7	20	11	17	16	10	6	6	4	2	1	0	1	0	0	0
The Canyons	2	0	0	0	0	0	1	2	1	0	0	0	1	2	0	1	0	0	0
The Crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Established	**1,138**	**1,020**	**1,145**	**1,447**	**2,369**	**1,518**	**1,228**	**1,094**	**1,137**	**1,144**	**1,040**	**775**	**447**	**312**	**227**	**179**	**118**	**60**	**33**
Heritage Heights	226	192	210	223	256	196	233	206	260	238	197	176	97	79	40	22	16	3	0
Indian Battle Heights	619	506	538	721	1,267	905	678	564	538	461	417	242	151	109	78	70	36	17	6
Mountain Heights	139	175	161	164	304	156	163	169	119	134	105	78	40	30	17	8	7	2	1
Paradise Canyon	29	32	46	51	33	23	37	51	57	89	85	92	72	30	26	8	8	1	0
Ridgewood	51	83	161	182	91	40	43	69	128	198	215	168	69	42	38	25	7	3	2
West Highlands	74	32	29	106	418	198	74	35	35	24	21	19	18	22	28	46	44	34	24
Mature	**414**	**371**	**406**	**891**	**2,263**	**770**	**404**	**338**	**353**	**467**	**520**	**375**	**271**	**164**	**107**	**89**	**77**	**72**	**35**
Varsity Village	414	371	406	891	2,263	770	404	338	353	467	520	375	271	164	107	89	77	72	35

Table 43: West Lethbridge Neighbourhood Age Distribution (2006)

West Lethbridge- 2011 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
West Lethbridge	**2,147**	**1,943**	**1,850**	**2,780**	**5,414**	**3,118**	**2,358**	**1,956**	**1,833**	**1,742**	**1,886**	**1,627**	**1,297**	**837**	**512**	**314**	**227**	**136**	**86**
Developing	**486**	**423**	**330**	**315**	**510**	**540**	**526**	**440**	**377**	**260**	**210**	**160**	**123**	**84**	**46**	**22**	**9**	**2**	**2**
Copperwood	213	131	97	121	237	318	261	148	105	79	48	27	19	9	11	1	1	0	0
Country Meadows	1	1	0	2	1	1	1	2	0	2	2	3	3	2	1	1	0	0	0
Garry Station	1	1	0	2	1	1	1	2	0	2	2	3	3	2	1	1	0	0	0
Riverstone	186	234	173	132	105	92	170	221	211	147	125	112	79	57	26	17	6	2	2
Sunridge	86	56	59	58	166	129	94	67	61	29	33	15	19	13	6	2	1	1	0
The Canyons	0	0	0	0	0	0	0	0	0	2	1	0	1	1	1	0	1	0	0
The Crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Established	**1,229**	**1,125**	**1,126**	**1,437**	**2,598**	**1,605**	**1,299**	**1,167**	**1,113**	**1,102**	**1,180**	**995**	**797**	**486**	**303**	**199**	**143**	**78**	**49**
Heritage Heights	177	188	184	223	312	187	163	202	189	229	235	195	179	100	71	44	14	9	0
Indian Battle Heights	536	517	474	647	1,378	818	627	530	475	473	439	354	243	166	110	70	51	17	13
Mountain Heights	165	153	202	181	234	181	156	146	166	118	142	92	74	43	30	11	10	3	0
Paradise Canyon	80	67	80	83	62	48	73	92	91	84	119	93	89	90	28	15	5	4	0
Ridgewood	65	71	96	157	114	47	51	65	77	123	181	202	163	62	40	26	17	5	3
West Highlands	207	129	91	146	498	325	230	132	116	76	65	59	50	26	24	33	46	41	33
Mature	**405**	**380**	**384**	**657**	**2,080**	**940**	**508**	**333**	**328**	**352**	**469**	**451**	**354**	**251**	**155**	**88**	**73**	**55**	**35**
Varsity Village	405	380	384	657	2,080	940	508	333	328	352	469	451	354	251	155	88	73	55	35

Table 44: West Lethbridge Neighbourhood Age Distribution (2011)

West Lethbridge- 2016 Municipal Census

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
West Lethbridge	**2,531**	**2,576**	**2,235**	**3,239**	**5,662**	**3,643**	**2,975**	**2,418**	**2,164**	**1,881**	**1,899**	**1,851**	**1,666**	**1,305**	**789**	**459**	**318**	**201**	**117**
Developing	**1,001**	**859**	**712**	**641**	**1,092**	**1,042**	**1,055**	**897**	**742**	**523**	**451**	**312**	**264**	**170**	**107**	**54**	**26**	**8**	**3**
Copperwood	557	365	251	268	498	554	608	439	279	179	135	71	54	33	17	12	0	4	0
Country Meadows	10	1	0	1	13	27	10	3	4	2	1	1	1	0	4	0	0	0	0
Garry Station	46	39	40	25	43	67	58	50	33	16	16	19	10	4	1	0	1	0	0
Riverstone	207	287	285	220	159	126	184	244	283	237	196	152	138	95	61	27	19	2	2
Sunridge	134	119	106	100	365	253	157	122	106	64	65	50	48	30	20	11	5	1	1
The Canyons	43	46	27	25	10	8	35	36	34	24	36	18	11	7	3	4	1	1	0
The Crossings	4	2	2	2	4	6	3	2	3	1	2	1	2	1	0	0	0	0	0
Established	**1,071**	**1,239**	**1,133**	**1,346**	**2,424**	**1,539**	**1,319**	**1,101**	**1,062**	**1,053**	**1,098**	**1,098**	**945**	**780**	**459**	**284**	**212**	**142**	**85**
Heritage Heights	132	165	186	202	288	185	159	135	189	185	249	205	190	161	91	68	32	13	4
Indian Battle Heights	496	569	508	618	1,199	799	636	510	458	454	437	416	330	222	159	96	56	30	9
Mountain Heights	163	171	139	182	316	160	164	137	119	132	103	120	82	77	39	27	12	5	3
Paradise Canyon	69	81	73	72	68	37	67	61	83	82	89	116	97	109	66	23	16	1	1
Ridgewood	53	78	100	98	83	58	50	64	78	85	125	159	169	144	57	31	21	11	1
West Highlands	158	175	127	174	470	300	243	194	135	115	95	82	77	67	47	39	75	82	67
Mature	**438**	**456**	**375**	**680**	**1,733**	**1,025**	**573**	**406**	**340**	**278**	**314**	**420**	**439**	**336**	**216**	**115**	**77**	**50**	**29**
Varsity Village	438	456	375	680	1,733	1,025	573	406	340	278	314	420	439	336	216	115	77	50	29

Table 45: West Lethbridge Neighbourhood Age Distribution (2016)

APPENDIX 2.0 NEIGHBOURHOOD LAND COMPOSITION TABLES

North Lethbridge Neighbourhoods

Neighbourhood	Residential (ha)	Commercial (ha)	Institutional (ha)	Direct Control / *Urban Innovation	Industrial (ha)	Parks & open Space (ha)	Greenfield Land (FUD or DC) (ha)	Transportation Network (ha)	Valley (ha)	Total Land (ha)
Core Neighbourhoods	**148.18**	**30.97**	**5.56**	**4.22**	**36.61**	**37.63**	**0.51**	**122.25**	**0.00**	**385.94**
Senator Buchanan	42.26	21.77	1.93	3.72	36.61	23.04	0.51	53.39	0.00	183.22
Staffordville	20.17	0.00	1.06	0.18	0.00	0.90	0.00	11.65	0.00	33.97
Westminster	85.74	9.21	2.58	0.32	0.00	13.69	0.00	57.21	0.00	168.75
Mature Neighbourhoods	**222.15**	**5.04**	**5.10**	**0.07**	**0.00**	**46.68**	**0.00**	**118.92**	**0.00**	**397.96**
Majestic Place	23.03	0.00	0.00	0.00	0.00	1.93	0.00	13.97	0.00	38.93
Park Meadows	55.48	0.00	0.43	0.00	0.00	10.86	0.00	30.83	0.00	97.60
St. Edwards	56.72	0.66	1.34	0.00	0.00	8.42	0.00	26.27	0.00	93.40
Winston Churchill	86.92	4.38	3.34	0.07	0.00	25.47	0.00	47.84	0.00	168.03
Established Neighbourhoods	**87.56**	**1.99**	**1.89**	**1.63**	**0.00**	**12.07**	**0.21**	**47.95**	**0.00**	**153.30**
Stafford Manor	11.06	0.00	0.00	0.24	0.00	0.51	0.00	4.85	0.00	16.67
Uplands	76.50	1.99	1.89	1.39	0.00	11.55	0.21	43.09	0.00	136.63
Developing Neighbourhoods	**86.59**	**3.29**	**2.45**	**0.75**	**0.00**	**90.04**	**59.19**	**53.77**	**0.35**	**296.43**
Blackwolf 1	13.84	0.75	0.00	*0.75	0.00	23.53	17.54	7.51	0.00	63.93
Blackwolf 2	0.00	0.00	0.00	0.00	0.00	29.02	28.41	8.50	0.00	65.93
Legacy Ridge / Hardieville	72.75	2.54	2.45	0.00	0.00	37.48	13.24	37.76	0.35	166.56

Table 46: North Lethbridge Neighbourhood Land Composition by Hectares (2016)

South Lethbridge Neighbourhoods

Neighbourhood	Residential (ha)	Commercial (ha)	Institutional (ha)	Direct Control / *Urban Innovation	Industrial (ha)	Parks & open Space (ha)	Greenfield Land (FUD or DC) (ha)	Transportation Network (ha)	Valley (ha)	Total Land (ha)
Core Neighbourhoods	**188.21**	**87.13**	**21.46**	**13.00**	**2.05**	**51.44**	**0.00**	**219.49**	**41.56**	**624.35**
Downtown	3.85	57.41	0.00	2.76	0.00	5.92	0.00	41.13	22.21	133.29
Fleetwood	32.50	0.12	2.14	0.48	0.00	23.64	0.00	26.46	14.53	99.86
London Road	60.56	0.31	0.66	1.51	0.00	2.64	0.00	41.30	4.82	111.80
Upper Eastside	4.89	23.80	9.56	2.80	2.05	10.44	0.00	37.07	0.00	90.61
Victoria Park	86.41	5.48	9.11	5.44	0.00	8.80	0.00	73.54	0.00	188.78
Mature Neighbourhoods	**289.08**	**28.40**	**33.69**	**5.85**	**2.57**	**137.75**	**0.02**	**215.58**	**0.91**	**713.85**
Agnes Davidson	95.24	8.58	1.25	0.00	0.00	12.10	0.02	65.05	0.00	182.24
Glendale	46.25	2.70	0.79	1.83	2.57	8.32	0.00	38.28	0.00	100.74
Henderson Lake	9.76	0.00	27.98	4.02	0.00	90.71	0.00	17.59	0.00	150.06
Lakeview	67.55	6.20	0.71	0.00	0.00	13.84	0.00	50.08	0.00	138.38
Redwood	64.49	10.93	2.96	0.00	0.00	11.90	0.00	43.08	0.00	133.36
Scenic Heights	5.78	0.00	0.00	0.00	0.00	0.87	0.00	1.51	0.91	9.07
Established Neighbourhoods	**108.91**	**48.79**	**13.48**	**11.60**	**0.00**	**26.42**	**2.96**	**69.70**	**10.57**	**292.42**
Fairmont	49.71	21.98	4.81	0.34	0.00	15.40	0.13	30.21	0.00	122.58
Park Royal / Chinook Heights	13.91	0.00	0.00	0.00	0.00	0.57	0.46	3.35	10.48	28.76
Tudor Estates	20.95	0.00	8.66	4.03	0.00	7.70	2.38	15.85	0.00	59.57
West Mayor Magrath Dr	24.33	26.81	0.00	7.23	0.00	2.75	0.00	20.29	0.08	81.51
Developing Neighbourhoods	**80.95**	**16.95**	**0.00**	**17.75**	**0.00**	**23.85**	**34.50**	**29.47**	**0.55**	**204.03**
Arbour Ridge	12.83	0.00	0.00	8.65	0.00	2.23	20.41	4.99	0.00	49.10
Southgate	45.38	16.95	0.00	6.72	0.00	11.17	3.63	18.89	0.01	102.75
Southridge	22.74	0.00	0.00	2.39	0.00	10.45	10.47	5.60	0.54	52.17

Table 47: South Lethbridge Neighbourhood Land Composition by Hectares (2016)

West Lethbridge Neighbourhoods

Neighbourhood	Residential (ha)	Commercial (ha)	Institutional (ha)	Direct Control / *Urban Innovation	Industrial (ha)	Parks & open Space (ha)	Greenfield Land (FUD or DC) (ha)	Transportation Network (ha)	Valley (ha)	Total Land (ha)
Mature Neighbourhoods	**134.35**	**2.38**	**7.55**	**0.55**	**0.00**	**84.47**	**0.00**	**86.36**	**0.00**	**315.65**
Varsity Village	134.35	2.38	7.55	0.55	0.00	84.47	0.00	86.36	0.00	315.65
Established Neigbourhoods	**303.69**	**17.91**	**8.94**	**39.65**	**0.00**	**82.64**	**0.95**	**192.27**	**74.84**	**720.90**
Heritage Heights	49.01	2.59	0.00	0.00	0.00	8.89	0.00	23.99	0.01	84.49
Indian Battle Heights	116.70	1.50	4.10	0.78	0.00	35.86	0.00	79.67	2.34	240.95
Mountain Heights	33.90	0.00	3.07	0.45	0.00	10.40	0.95	24.88	0.00	73.64
Paradise Canyon	35.45	0.00	0.00	38.01	0.00	9.24	0.00	14.64	72.49	169.84
Ridgewood	36.06	0.00	0.00	0.41	0.00	10.72	0.00	16.58	0.00	63.77
West Highlands	32.57	13.82	1.77	0.00	0.00	7.52	0.00	32.51	0.00	88.20
Developing Neighbourhoods	**383.77**	**19.12**	**21.95**	**19.32**	**0.00**	**116.35**	**133.29**	**164.10**	**0.94**	**858.83**
Copperwood	102.08	0.00	1.66	0.00	0.00	22.12	0.00	39.55	0.00	165.41
Country Meadows	22.87	0.89	0.00	0.00	0.00	10.19	97.83	6.81	0.00	138.59
Garry Station	65.10	0.00	1.46	*2.20	0.00	13.47	34.77	21.90	0.00	138.90
Riverstone	73.91	0.00	0.32	0.00	0.00	14.63	0.14	39.15	0.05	128.19
Sunridge	27.24	0.00	1.51	0.00	0.00	10.45	0.00	17.36	0.00	56.56
The Canyons	87.78	0.00	6.25	*6.88	0.00	17.02	0.56	21.24	0.88	140.62
The Crossings	4.80	18.23	10.74	10.24	0.00	28.48	0.00	18.08	0.00	90.56

Table 48: West Lethbridge Neighbourhood Land Composition by Hectares (2016)

APPENDIX 2.0 FOOD DESERT GROCERY STORES LIST

Grocery store's used to create Map 27: Food Deserts, organized as primary and secondary grocery stores:

Primary Grocery Stores

Name	Address
COSTCO WHOLESALE	3200 MAYOR MAGRATH DR S
LONDON ROAD MARKET LTD	538 13 ST S
REAL CANADIAN SUPERSTORE	3515 MAYOR MAGRATH DR S
REAL CANADIAN WHOLESALE CLUB, THE	1700 MAYOR MAGRATH DR S
SAFEWAY	2750 FAIRWAY PLAZA RD S
SAFEWAY	550 UNIVERSITY DR W
SAVE ON FOODS	1240 2A AVE N
SAVE ON FOODS	401 HIGHLANDS BLVD W
SIMON'S NO FRILLS	425 13 ST N
SOBEYS UPLANDS	325 BLUEFOX BLVD N
TROY'S NO FRILLS	110 CARINTHIA RD W
WAL-MART CANADA CORP	3055 26 AVE N
WAL-MART CANADA CORP	3700 MAYOR MAGRATH DR S

Table 49: Primary Grocery Stores (2016)

Secondary Grocery Stores

Name	Address
6TH STREET GUARDIAN PHARMACY	528 6 ST S
ASIAN SUPER MARKET	640 13 ST N
BHARAT STORE	736 13 ST N
BULK BARN	3700 MAYOR MAGRATH DR S
BULK BARN	340 UNIVERSITY DR W
DOLLAR TREE STORE #40023	905 1 AVE S
DOLLAR TREE STORE #40080	1240 2A AVE N
DOLLARAMA	3055 26 AVE N
DOLLARAMA	3755 MAYOR MAGRATH DR S
DOLLARAMA	1131 MAYOR MAGRATH DR S
DOLLARAMA	340 UNIVERSITY DR W
DOLLARAMA L.P.	104 13 ST N
DRAFFIN`S DISPENSARY	601 6 AVE S
FRANK`S DELI & CONFECTIONERY	3902 FORESTRY AVE S
GORKHA DEPARTMENT STORE	724 13 ST N
LAKEVIEW BAKERY 2001 LTD	405 STAFFORD DR N
LETHBRIDGE FOOD MARKETING LTD	3905 10 AVE N
LETHBRIDGE MEATS & SEAFOODS LTD	3621 6 AVE N
M & M MEAT SHOPS	219 12 ST N
M & M MEAT SHOPS #452	3700 MAYOR MAGRATH DR S
M&M FOOD MARKET STORE #530	20 AQUITANIA BLVD W
NAKAGAMA`S	322 2 AVE S
NEIGHBOURHOOD BAKEHOUSE LTD, THE	1402 17 ST S
NILE VALLEY RETAIL STORE, THE	520 13 ST N
NORBRIDGE VILLAGE MARKET	722 23 ST N

NUTTERS	920 2A AVE N
O/A LA INTERNATIONAL FOODS	3001 32 ST S
REXALL/PHARMA PLUS PHARMACIES #7517	110 CARINTHIA RD W
SHOPPERS DRUG MART	110 COLUMBIA BLVD W
SHOPPERS DRUG MART	2025 MAYOR MAGRATH DR S
SHOPPERS DRUG MART	380 UNIVERSITY DR W
SHOPPERS DRUG MART	3055 26 AVE N
THRIFTWAY PHARMACY (1988) LTD	704 13 ST N
UMAMI SHOP	812 4 AVE S
URBAN GROCER	1016 9 AVE S
VESTELYN VARIETIES	321 13 ST N
WOODEN SHOE BAKERY & CAFE, THE	210 3 AVE S

Table 50: Secondary Grocery Stores (2016)

Convenience Stores

Name	Address
7-ELEVEN FOOD CANADA INC	1702 23 ST N
7-ELEVEN STORE #37769	2653 SCENIC DR N
EASTSIDE GAS KING	213 MAYOR MAGRATH DR N
FAS GAS OIL	4103 4 AVE S
FAS GAS STAFFORD DRIVE SERVICE	431 STAFFORD DR N
GONZO`S GAS `N GO	913 9 AVE N
LAKEVIEW GAS KING	2710 12 AVE S
LETHBRIDGE GAS PLUS	168 JERRY POTTS BLVD W
MAC`S CONVENIENCE STORE	325 BLUEFOX BLVD N
MAC`S/ESSO	2515 HIGHLANDS RD W
MAC`S/SHELL	2730 MAYOR MAGRATH DR S
MACS	123 SUNRIDGE RD W
MOHAWK MAYOR MAGRATH	1202 MAYOR MAGRATH DR S
NEIGHBOUR'S MART	740 13 ST N
NO FRILLS GAS BAR	110 CARINTHIA RD W
NORTHSIDE GAS KING	944 5 AVE N
PETRO CANADA	1606 MAYOR MAGRATH DR S
PETRO CANADA WEST	991 COLUMBIA BLVD W
SOUTH COUNTRY CO-OP @ CHINOOK GAS BAR	4140 4 AVE S
SOUTH COUNTRY CO-OP @ WESTGATE GAS BAR	550 UNIVERSITY DR W
SOUTHVIEW GAS KING	2610 16 AVE S

Table 51: Convenience Stores (2016)