

# HOW CAN WE UNDERSTAND AND ADDRESS ALBERTA'S URBAN SPRAWL?

## URBAN, SUBURBAN, REGIONAL, AND WET GROWTH IN ALBERTA

### UNDERSTANDING ALBERTA'S SPRAWL

Sub(urban) growth -- often described as "sprawl" -- elicits a variety of emotions among elected officials, policymakers, planners, land developers, and residents. The belief that such sprawl is a problem is either passionately supported or strongly rejected, though for some people a comfortable middle ground emerges. Despite the fast pace of growth in Alberta, however, misconceptions, questions, and assumptions remain regarding the impact of sprawl on the urban form.

This project assesses the growth of Alberta's largest municipalities (and their associated regions), with the objectives of developing a systematic understanding of suburban growth in Alberta, providing recommendations about managing growth, and identifying areas for future research.

### CAUSES AND CONSEQUENCES OF SPRAWL

There is no universal definition of urban sprawl, but an area is often said to be sprawling when its growth is low-density, discontinuous, automobile-dependent, absorbs surrounding undeveloped (often high-quality agricultural) land, is far from the core, and creates inefficiencies in infrastructure.

#### CAUSES

Causes for urban sprawl are commonly understood to include:

- Heavy dependence on cars as a public mode of transport.
- Desire for cheaper homes in the suburbs.
- Local government and developers supporting expansion.

Recent research has also recognized the importance of 'public sector sprawl':

- Engineering and planning standards, provincial legislation, building codes, and separation distances necessitating expansion.
- Provincially and municipally-owned developments like large scale hospitals, schools and recreation centres being located on urban fringes.

#### CONSEQUENCES

Commonly-identified consequences of sprawl include:

- Loss of agricultural land and natural areas to development.
- Measurable indications of reduced human health (both mental and physical) in suburban areas.
- Measurable increases in the risk of poverty and homelessness in suburbs.

### ALBERTA LAND INSTITUTE

Launched in 2012, ALI is an independently-funded institute based at the University of Alberta, conducting impartial, policy-driven research in the areas of agriculture, municipal development, water, and governance and regulation.

### RESEARCH OBJECTIVES

This research will help inform policy decisions at the local and provincial levels in Alberta. The research team also hopes that the findings will contribute more broadly to the current national, province-wide, and local debate on urban form. The specific objectives of the research are as follows:

- To systematically explore the concerns about suburban development within the existing literature.
- To examine those concerns within an Alberta context -- specifically the sub(urban) forms in the major cities of Calgary and Edmonton.
- To identify factors responsible for various settlement forms, through empirical analyses.

### DOWNLOAD THE REPORT

This document summarizes and samples the report "Urban, Suburban, Regional and Wet Growth in Alberta." The full report is available for download:

[www.albertalandinstitute.ca/urbanform](http://www.albertalandinstitute.ca/urbanform)



# HOW MUCH LAND IS AFFECTED?

## EDMONTON, CALGARY, AND THE CONVERSION OF AGRICULTURAL LAND IN ALBERTA

### COMPARING TWO SPRAWLING CITIES

Since 2008, growth in the Edmonton area has been managed by the Capital Region Board (CRB), which possesses authority backed by legislation. In Calgary, the similar Calgary Regional Partnership is voluntary. Comparisons between each region may reflect some differences due to specific qualities of each dataset:

#### EDMONTON

As of 2014, 17.7% of the Edmonton Metropolitan Region (24 municipalities, 1,238,447 hectares) has been urbanized, with the urban footprint increasing 312% since 1974. During the same time, population density has reduced by half (from 10.5 persons per hectare to 5.7). From 2007 to 2012, density within the city of Edmonton increased from 20.9 to 21.3 persons per hectare, while density in the region outside the city increased from 4.2 to 4.6 persons per hectare of urban footprint.

#### CALGARY

Limited data were available for the Calgary Regional Partnership region (14 municipalities, 1,735,529 hectares), with that data including 4 rural counties which recently left the CRP, and only covering the years from 2007-2012. During this time, the city experienced a decrease in population density from 24.2 to 23.0 persons per hectare of the urban footprint, while the surrounding region saw an increase from 3.7 to 4.2 persons per hectare of the urban footprint.

### CONVERSION OF FARMLAND

Alberta's most populated areas are also home to the province's highest concentration of high-quality farmland with Class 1 or 2 soil. In the years 2002-2012, some 0.82% of Alberta's land was converted from agriculture uses to developed, with 68.4% of that land being Class 1 or 2.

In the Edmonton area, particularly around the Queen Elizabeth Highway 2 corridor, the rate of conversion was far higher: 4.3% of land was converted from agricultural use to either commercial, industrial, or residential. This conversion coincided with significant population growth: from 1996 to 2011, the population increased by 42%, from 1.9 million to 2.7 million. It should be noted that prior to the formation of the CRB, 28% of development took place on Class 1 and 2 farmland. Five years after the formation of the CRB, only 18% of development took place on such land.

This increased conversion of farmland has not necessarily led to a net loss of agricultural land in the province: Alberta Agriculture and Forestry reports that, though the number of farms decreased by 7.9%, the amount of agricultural land in the province increased by 0.1% between 2011 and 2015. However, different methods identify different amounts of agricultural land, so questions remain.

### TRANSFER DEVELOPMENT CREDITS

Transfer Development Credits (TDCs) have been enabled under the Alberta Land Stewardship Act as a mechanism for protecting prime agricultural land. Commonly used in the United States, TDCs function as a market-based transfer of development rights, which shift growth from protected land onto land which is more suited to increased development, while ensuring those who possess protected land can still benefit.

To date, TDCs have not been well-used in Alberta. This may be because the various components that constitute a TDC -- sending area, usual conservation area, receiving area, usual development area, and the system of credit -- have not been put in place. Additional leadership from the provincial government will be necessary in order to make use of TDCs practical for municipalities in Alberta.

### ADDITIONAL FARMLAND RESEARCH

In order to understand the impact of urban sprawl on agricultural land, the research team on this project has worked with the team from another Alberta Land Institute research project: **Economic Evaluation of Farmland Conversion and Fragmentation in Alberta.**

That research project was completed in 2016, and its reports can be found on the Alberta Land Institute website:

[www.albertalandinstitute.ca/fragmentation](http://www.albertalandinstitute.ca/fragmentation)



# WHAT CAN WE DO DIFFERENTLY?

## RECOMMENDED NEW APPROACHES FOR REGIONAL PLANNING IN ALBERTA

### SEVEN RECOMMENDATIONS

After a thorough review of the literature related to (sub)urban growth, and the application of this information to the Alberta context, the research team has developed seven recommendations that can reshape the way Alberta manages municipal growth, and regional planning.

1. The provincial government should consider using water as a tool to manage regional growth across the province and integrate it with the “efficient use of land” strategy in the Land Use Framework.
2. Strategy 5 (efficient use of land) in the Land Use Framework should be made a legally binding regulatory component of the regional plans.
3. Alberta cities will have to design their model of development charges and/or any other form of levies to ensure that the cost of new developments can be fully covered. The Municipal Government Act should allow municipalities to charge developers for other forms of infrastructure such as community facilities for recreation, library, police stations and others.
4. For metropolitan areas such as Calgary, Red Deer, Lethbridge, and Medicine Hat, the provincial government should consider creating mandatory growth management boards, like Edmonton’s Capital Region Board.
5. The provincial government should establish regional governance structures to manage each region as identified in the Province’s Land Use Framework.
6. The provincial government should allow these regional bodies to not only devise policy framework with respect to land use, transportation, and housing, but also provide services such as transit, police, fire, water, and others as per individual municipal needs, along the lines of British Columbia’s regional districts.
7. The provincial government should work with the municipal governments—both urban and rural—to encourage and facilitate various components of the Transfer of Development Credits (such as sending area, receiving area, and the credit transfer system), enabled by the Alberta Land Stewardship Act.

Upcoming revisions to the Municipal Government Act (expected to be proclaimed in 2017) may directly address some of these recommendations, especially 3 and 4.

### WET GROWTH

Wet growth is about understanding the carrying capacity of a watershed area and identifying the critical threshold at which point the intensity of land use begins to impede the proper functioning of the ecological processes in the area.

This approach is highly relevant in southern Alberta, as the South Saskatchewan River Basin is now fully allocated -- no new water licenses are being issued in the Calgary region. This limitation could significantly alter future urban growth in the city and the surrounding region, and has led to Canada’s first water trading market.

### BRITISH COLUMBIA MODEL

Regional planning districts have worked successfully in British Columbia for 60 years, because they function on a flexible basis. Regional districts provide regional governance and services for the region as a whole, as well as the administrative framework for inter-municipal or sub-regional service partnerships.

Rural areas and urban municipalities participate differently in this system: rural areas elect directors to the regional board and receive services directly from the region, while urban areas elect municipal representatives and receive services from the municipality. Essentially, regions choose which services to provide and at what scale, providing significant flexibility to accommodate the varying needs found in different areas.



# WHAT RESEARCH COMES NEXT?

## FUTURE RESEARCH RELATED TO URBAN PLANNING IN ALBERTA

### FUTURE RESEARCH

Recommendations from this work warrant additional study. Future research questions that might be considered include:

#### WET GROWTH

The concept of wet growth needs systematic exploration in the Alberta context, to answer important questions such as:

- What are the analytical and mapping tools available to measure land development capacity in watershed areas?
- How might wet growth fit in with the current Land Use Framework?
- What changes to legislation might be necessary to put this idea to work?

#### MADE-IN-ALBERTA REGIONAL GOVERNANCE MODEL

In order to understand the regional governance options available to Alberta, it will be necessary to conduct a more thorough analysis of regional planning models and approaches, as well as governance and growth management boards. This analysis must consider these factors both as they exist in other provinces and as they presented in Alberta in the past. Any study should also include an in-depth examination of legislative frameworks related to regional planning in other jurisdictions, and an assessment of their effectiveness.

#### MUNICIPAL REVENUE TOOLS IN THE MUNICIPAL GOVERNMENT ACT

Newly proposed changes to off-site levies in the Municipal Government Act and the move towards the Big City Charters could create alternative methods for financing new growth and infrastructure in Alberta cities. Additional research on these initiatives would enhance the understanding of options available to municipalities.

#### ADDITIONAL DATA FOR THE CALGARY REGION

Because the Calgary Regional Partnership does not assemble spatial data in the way that the Capital Region Board is able to, comprehensive information is not available for the Calgary area. Academic research may be able to assist in creating new datasets, and to create a system that enables ongoing collection of information.

#### TRANSFER DEVELOPMENT CREDITS IN ALBERTA

A detailed review of the feasibility and implementation of Transfer of Development Credits in Alberta would be valuable, including an exploration of how TDCs would potentially affect the nature and degree of economic benefits to rural land owners. Future research might also consider other tools which might work alongside or independent of the development credit program.

### RESEARCH TEAM

This project is led by Principal Investigator **Dr. Sandeep Agrawal**, Inaugural Director of the University of Alberta's Urban and Regional Planning Program (Department of Earth and Atmospheric Sciences).

Working with Dr. Agrawal were research assistants **Lynne Mbajjorgu**, **Bryce Schmode**, **Kelly Bennett**, and **Brent Dragon**.

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