

Efficient Use of Land Implementation Tools Compendium



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A. Introduction

Introduction

The Alberta Land-use Framework consists of seven basic strategies to improve land-use decision-making in order to achieve Alberta's long-term economic, environmental and social goals¹. It provides a blueprint for improved land-use management and decision-making that addresses Alberta's growth pressures.

One of the Land-use Framework's (LUF) seven strategies is to:

“promote [the] efficient use of land to reduce the footprint of human activities on Alberta's landscape.”

This strategy (LUF strategy 5), the efficient use of land (EUL), was included in the LUF in response to strong calls by Albertans and stakeholders to build on past and existing efforts to promote the efficient use of public and private land and reduce the footprint of human activities on Alberta's landscape.

As stated in the LUF:

“Land is a limited, non-renewable resource, and so it should not be wasted. Land-use decisions should strive to reduce the human footprint on Alberta's landscape. When it comes to land use, other things being equal, less is more — more choices for future generations. This principle should guide all areas of land-use decision-making...”

To help promote the efficient use of land, the Government of Alberta has completed a review of tools and best practices by municipalities in Alberta and other jurisdictions. The results of this review have been compiled into this compendium document to serve as a resource for land-use planners, land users and decision-makers involved in land management planning and decision-making on public and private land.

The Human Footprint

The term “human footprint” can have different meanings and applications (e.g. ecological footprint, carbon footprint, or land footprint) and can be temporary or permanent in nature.

Strategy 5 of the LUF focuses on the built environment of the human footprint and the measurable alteration of landscapes through developments associated with the built environment.

Examples of this type of footprint include urban and rural residential development, commercial and institutional development, industrial development, surface mines, oil and gas well sites and pipelines, utility rights-of-way, infrastructure, transportation routes and recreation trails.

¹ For more information on the Land-use Framework visit the Land Use Secretariat's website at www.landuse.alberta.ca.

In completing this compendium, it was evident that Alberta municipalities and other jurisdictions have been using a variety of tools and best practices to utilize land more efficiently and manage the footprint of the built environment. Generally these tools and best practices can be grouped into the following strategies for promoting the efficient use of land:

1. Reduce the rate at which land is converted from an undeveloped state into the permanent, built environment;
2. Utilize the minimum amount of land necessary for new development, and build at a higher density than current practice;
3. 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 undeveloped lands;
4. Plan, design and locate new development in a manner that utilizes existing infrastructure and minimizes the need for new or expanded infrastructure;
5. Reclaim and/or convert previously developed lands that are no longer required for their original purpose to alternative productive uses in a progressive and timely manner; and
6. Decision-makers, land users and individuals have the information they need to make decisions and choices that support efficient land use.

The **EUL Implementation Tools Compendium** sets out a series of tools and best practices that can be utilized by land-use planners, land users and decision-makers to help implement efficient use of land strategies and reduce the footprint of human activities on Alberta's landscape.

This Compendium should be read in conjunction with the Government of Alberta's related document, Integrated Land Management Tools Compendium, which focusses on approaches to achieving more efficient use of land associated with resource development on public lands.²



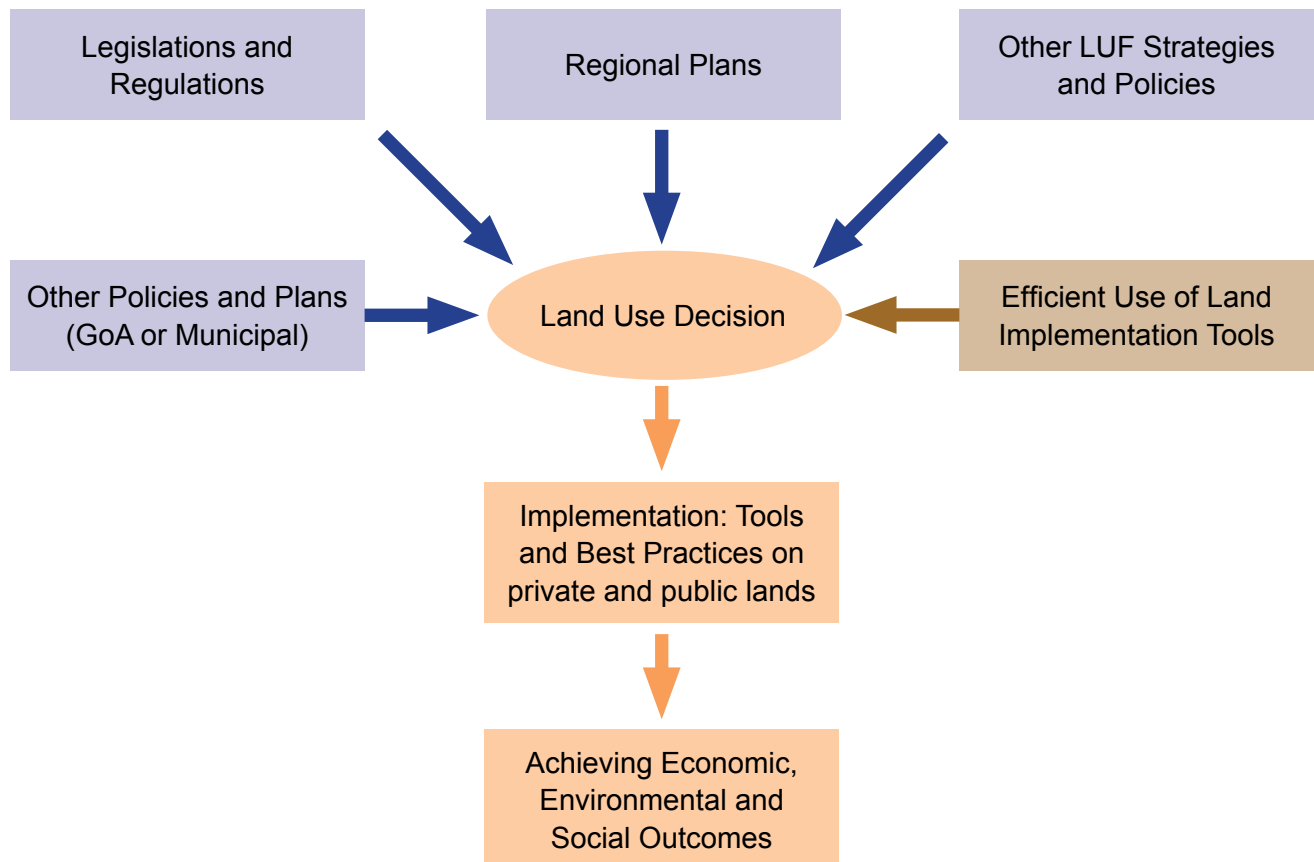
² The Integrated Land Management Tools Compendium is available on www.esrd.alberta.ca and search: ILM Toolbox

Why Should You Use This Compendium?

The key decisions with respect to how best to achieve efficient land-use through appropriate strategies and tools will be made at the local level.

A wide range of potential approaches are available to land-use planners, land users and decision-makers with respect to how to achieve more efficient land-use within their particular context. This Compendium is designed to assist with selecting the right tool for the right situation. Some of these tools are typically applied at the municipal level, others at the regional level. Some are mandatory, while others are voluntary. Some are more appropriate in an urban context, others in a rural context. And many of the tools can be tailored to apply to multiple different contexts.

Role of the Efficient Use of Land Implementation Tools in the Land-use Planning and Decision-Making Process



Who Should Use This Compendium?

Municipal Planners

Municipal planners have a critical role to play in identifying the most appropriate approach to efficient land-use in their communities. They should consider appropriate efficient use of land tools and strategies when developing local planning policies, such as Municipal Development Plans, Area Structure Plans, Concept Plans and Land Use Bylaws, as well as when reviewing individual development and subdivision applications.

Provider of Public Services

A wide range of public service deliverers from school boards to local parks and recreation departments should consider how their decision-making can contribute to more efficient land use.

Landowners and Developers

Landowners and developers can apply the efficient use of land tools and strategies when planning future development. Landowners and developers should be aware of the efficient use of land objectives of their local planning framework, and understand how the tools being applied in their community will affect their decision-making.

Public Land Managers

Several provincial departments are responsible for managing Alberta's public lands. Public land managers in these departments are encouraged to familiarize themselves with the tools in this compendium, and how they can be used to achieve more efficient land use on public lands.

Compendium Purpose

The purpose of this compendium is to present and describe a set of potential tools for implementing efficient use of land strategies, with examples of how each tool has been applied both within Alberta and in other jurisdictions. These tools are intended to demonstrate the wide range of possible options that could be used in Alberta to help promote the efficient use of land.

This compendium is not intended to prescribe where or how these tools should be used. The best approach for achieving more efficient land-use will need to be determined on the basis of local objectives, priorities and the many factors that affect land-use decisions. These include the priorities of the landowner, the concerns of nearby residents, the environmental impacts of development, the financial costs of development, the needs and desires of land users, and much more. The laws of property ownership must also be respected.

Jurisdictions within Alberta, across Canada, and around the world have used various tools and approaches to achieve more efficient land use. This compendium describes many of these tools. It also describes some tools that have not yet been tried in Alberta, but which may have potential for use in the province.

This compendium represents an initial collection of EUL tools. It does not include a complete description of all tools that are potentially available for achieving EUL objectives. This compendium should also be viewed as a living document. It is the intention of the Government of Alberta to update and expand on this compendium over time as new tools and best practices are developed, identified, and tested, and experience is gained in applying these tools in the Alberta context.

This document should not be used as the sole reference for efficient land-use planning in Alberta. Each planner, decision-maker and developer is responsible for seeking other more detailed sources of information related to applicable legislative or regulatory requirements.

Document Structure

For each tool in the compendium, a short description is provided as well as a discussion of how the tool could contribute to more efficient use of land. Because many of the tools are potentially interrelated and mutually supportive, the relationship of each tool to the others in this section is also discussed.

Each of the tools described in the compendium can be applied in a variety of ways. Many of them can be applied as voluntary guidelines or incentives, or where appropriate they can also be made mandatory through local bylaws or other policies. They can be implemented at the local scale by municipalities, at the regional scale, and/or province-wide. They can apply to private urban or rural lands, and/or public lands. Each tool description provides an indication of how the tool is typically applied in other jurisdictions. However, it is important to keep in mind that in most cases this represents just one of many possibilities for how the tool could be applied.

Each tool description also includes a discussion of how the tool is currently used in Alberta, as well as a case study profiling an example of how the tool has been used in Alberta or in another jurisdiction.

For each tool, a series of considerations is also provided. These considerations relate to potential issues or challenges that may be faced in applying the tool in the Alberta context.

B. EUL Tools and Best Practices

Summary of Efficient Use of Land Tools and Best Practices

No.	Tool	How Tool is Typically Implemented		Scale at Which Tool is Typically Applied			Scope			Relevant EUL strategies					
		Mandatory	Voluntary	Local	Regional	Provincial	Urban	Rural	Public	1	2	3	4	5	6
1	Adaptive Reuse		✓	✓			✓	✓		✓	✓	✓	✓	✓	
2	Agricultural Land Conversion Fees		✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	
3	Alternative Development Standards	✓	✓	✓			✓	✓			✓	✓	✓		
4	Building Forms that Reduce the Development Footprint	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	
5	Checklists and Scorecards	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓
6	Cluster Zoning	✓	✓	✓	✓			✓	✓	✓	✓		✓		
7	Cost of Servicing Studies		✓	✓	✓	✓	✓	✓				✓	✓		✓
8	Density Bonusing		✓	✓			✓	✓		✓	✓	✓	✓	✓	
9	Eco-Industrial Parks	✓	✓	✓			✓	✓		✓	✓				
10	Encouraging Living in Land-Efficient Locations		✓	✓			✓			✓	✓	✓	✓	✓	✓
11	Form-Based Codes	✓	✓	✓			✓				✓		✓		
12	Greenbelts and Agricultural Preserves	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
13	Identification of Priority Growth Areas	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
14	Inter-jurisdictional Agreements	✓	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓
15	Land Budgeting	✓	✓	✓	✓		✓			✓		✓		✓	
16	LEED ND Standards		✓	✓			✓				✓	✓	✓	✓	
17	Limiting Residential Lot Creation	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
18	Minimum Density Requirements	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓		
19	Minimum Intensification Requirements	✓		✓	✓	✓	✓			✓		✓	✓	✓	
20	Optimizing Lot Sizes	✓		✓	✓			✓		✓	✓				
21A	Phased Resource Development	✓		✓	✓	✓	✓	✓		✓		✓		✓	
21B	Coordinated Resource Development	✓		✓	✓	✓	✓	✓		✓		✓		✓	
22	Reducing Land Area Dedicated To Parking	✓	✓	✓			✓	✓		✓	✓				
23	Scenario Modeling & Visualization		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
24	Tax Increment Financing		✓	✓	✓		✓					✓	✓		
25	Transfer of Development Credits		✓	✓	✓		✓	✓		✓	✓	✓	✓		
26	Transit-Supportive Land-use & Transit-Oriented Design	✓	✓	✓			✓				✓	✓	✓		
27	Urban Growth Boundaries	✓		✓			✓	✓		✓	✓	✓	✓	✓	
28	Variable Development Levies & Development Impact Fees	✓		✓			✓	✓		✓	✓	✓	✓	✓	
29	Workshops & Education Programs		✓	✓			✓								✓

1. Adaptive Reuse

Description

Adaptive reuse refers to the reuse of buildings and sites for a purpose other than which it was originally built or designed. The types of buildings that most typically become subjects of adaptive reuse include:

- industrial buildings, as cities become gentrified and manufacturing moves away from the urban area;
- civic buildings, which can no longer serve their original functions; and
- community buildings such as churches or schools where the use has changed over time.

Adaptive reuse can also refer to the redevelopment of reclaimed brownfield sites to a beneficial uses such as intensification and the use of existing infrastructure. Adaptive reuse can stimulates neighbourhood rejuvenation.

How Can This Tool Contribute to Efficient Land Use?

- The adaptive reuse of buildings increases land-use efficiency by accommodating growth within the existing footprint of a community. By locating new uses in existing, under-utilized buildings, the need to expand the overall urban footprint to accommodate growth can be reduced; and
- The adaptive reuse of brownfield sites can accommodate new growth and development on formerly derelict, under-utilized lands, thereby reducing the need for new lands to accommodate growth.

Relationship with Other EUL Tools

Policies and programs to promote adaptive reuse of existing buildings can help municipalities achieve intensification targets (#19) as well as increase the overall density of development in existing urban areas (#18). Depending on the location of the reused buildings, adaptive reuse can also support transit-oriented development (#26) and the direction of development to priority growth areas (#13).

Use in Alberta

Adaptive reuse of buildings in Alberta has a long history, in communities of all sizes.



Federal Building, Edmonton



Aerial view (concept) of the Federal Building, Edmonton

The renewal of the Federal Building and adjacent land by the Government of Alberta will increase public space at the Legislature grounds and provide year-round recreational opportunities for visitors. Design highlights include additional water features and green space, a skating rink and a new west entrance pavilion for the Federal Building. The project will also create options for future redevelopment of the grounds and help kick-start the revitalization of the Edmonton's downtown.

The Federal Building is owned by the Government of Alberta and is located on the northeast corner of the Legislature grounds in Edmonton, Alberta.

Based on a 1939 design and constructed in the late 1950s, the 10-storey Tyndal stone building is one of the best surviving examples of art deco design in Canada.

How is this tool typically applied in other jurisdictions?	
Mandatory	
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	

³ www.infrastructure.alberta.ca
Search: Federal Building

⁴ For additional information on LEED rating system, visit www.cagbc.org

The project will preserve the historic character of the Federal Building, while achieving a Leadership in Energy and Environmental Design (LEED) Gold rating³.

Although the Federal Building has been vacant since 1989, work is now underway to restore this important architectural landmark to its former grandeur.

In addition to renewing the Federal Building, government is also constructing a 650-stall underground parkade to replace existing surface parking lots⁴.

The Buffalo Park Centre and Regional Archives is currently undertaking the restoration of the historic Wainwright Hotel in Wainwright, Alberta to be used as their exhibition area and heritage gallery as well as office space and storage for the regional archives.

In 2009 the Alberta Hotel was rebuilt after being dismantled and removed from its original location on the corner of Jasper Avenue and 97 Street in 1984 to make way for the Canada Place development. Originally, the Alberta hotel was a wood structure replaced by the brick and stone Alberta Hotel in 1903, becoming the first building to have an elevator and the most luxurious accommodations in town. The exterior building materials were completely reused and some interior materials were also incorporated into the new building. The Alberta Hotel reconstruction was completed in 2013 and the CKUA radio station now occupies the majority of the building. The lounge area of the original hotel has been converted into a restaurant.

Alberta Hotel
Edmonton



The Mercer Building, located within the historic warehouse district along 104 Street in Edmonton represents the historic appeal of the area. The building was reconstructed in 1922 following a fire to replicate the original structure built in 1911 and was used to store liquor, cigars and wine for J.B Mercer's shop on Jasper Avenue. During the revitalization of 104 Street, the Mercer building along with several other stone and brick buildings, were adaptively reused as residential lofts, food establishments, retail stores and office space.



Mercer Building
Edmonton

The 7th Street Lots is a re-development of three distinct buildings in the warehouse district of Edmonton that includes the adaptive reuse of 2 older structures. The first building, the red brick building, is a conversion of a 1929 warehouse to 40 apartments. The second building located in the middle of the 2 older buildings is a new 36 unit building. The third building is a 1950s yellow brick concrete warehouse converted to 36 units, which includes the addition of twelve new 2-story units on the roof level. An exterior steel framework was added to the third building to accommodate exterior retractable sun-blinds. The third building also contains spaces on the main level for commercial tenants.



7th Street Lofts
Edmonton



3rd Building - 7th Street Lofts,
Edmonton

CASE STUDY

Adaptive Reuse

East Village in Downtown Calgary
City of Calgary, Alberta

Responsibility: Municipality, and Landowner and Developer | How applied: Voluntary | Scale: Local

The 20 hectare (49 acre) East Village is located in the heart of downtown Calgary between the historic Fort Calgary and the downtown business core. In March 2005, a redevelopment plan was approved for the area, followed by a master plan unveiled in September 2009. A \$150 million investment in infrastructure improvements acted as a catalyst for the implementation of the plan, which has resulted in two large-scale mixed use residential projects with roughly 1,200 new condominium units, the East Village Experience Centre, and extensive riverfront redevelopment in the form of RiverWalk and RiverWalk Plaza.

Adaptive reuse of buildings is one of the major focuses of the Master Plan. The Simmons Building is one example of a specific building in the East Village that has undergone adaptive reuse. The original use of the building was by Simmons Canada, a national bedding manufacturing company. The two storey warehouse-style building is standard post-and-beam construction with brick exterior walls. Four years ago, the building underwent adaptive reuse to convert it into an interim office space for the Calgary Municipal Land Corporation, with the intention that the building will be used as an important community commercial space. The project required remediation to remove contaminants from the site such as lead paint, as well as extensive upgrades to fire protection systems, doors, windows, mechanical systems and electrical systems.

Related Examples From Other Jurisdictions:

- As larger-scale shopping districts are developed across North America, many local neighbourhood strip malls are becoming increasingly underused pieces of the suburban



landscape. In an effort to promote and showcase creative design proposals for the adaptive reuse of small-scale strip malls, the University of Alberta's City Region Studies Centre launched an ideas design competition titled Strip Appeal. The design competition promoted creative and innovative approaches for revitalizing blighted strip malls. Strip Appeal received hundreds of entries from all around the world and gained international media attention;

- The King-Spadina district west of Toronto's downtown core was a former warehouse and manufacturing district that had become largely vacant and underutilized by the 1980s. A new planning framework for the neighbourhood was enacted by Toronto City Council in 1996 to attract investment for a broad range of uses in a manner that reinforces the historic built form of the area. The planning framework seeks the retention, conservation, rehabilitation, re-use and restoration of the many historic buildings in the neighbourhood. It included amendments to the Official Plan, Reinvestment Area Zoning, Urban Design Guidelines and a Community Improvement Plan and
- The City of Saskatoon has introduced an incentive program to encourage adaptive re-use of existing vacant or brownfield sites and buildings in established areas within the city. The program provides grants or tax incentives to eligible properties which have been vacant for 48 months consecutively. The incentive amount is calculated based on the increment between the taxes paid upon completion and the existing municipal property taxes, multiplied by five years.

Considerations for Using this Tool in Alberta

- Adaptive reuse of buildings is often used as a tool for conserving historic buildings while at the same time allowing them to evolve to serve modern uses;
- Adaptive reuse of buildings can be expensive, and is often much more expensive than constructing new buildings in greenfield areas. As a result, incentive programs are often required to make the project feasible;
- The adaptive reuse of buildings needs to take into account contemporary building code requirements, which complicate the redevelopment; and
- Depending on the nature of the redevelopment, upgrades to infrastructure may be required.

The East Village
Calgary



Considerations for Using this Tool in Alberta

- While agricultural land conversion fees are primarily used as a tool to protect agricultural lands, they can also have a secondary benefit in terms of efficient land use;
- Does not guarantee more efficient use of land. Development on converted lands could still be low density and inefficient;
- Not currently being used in Alberta, so there are no Alberta precedents upon which to evaluate potential positive or negative impacts;
- Can be implemented at the local level and tailored to local needs and circumstances, allowing municipalities to choose whether and how to use the tool;
- Does not prohibit conversion of agricultural lands, so some development potential would still exist in agricultural areas;
- If the added cost of converting the agricultural land is capitalized into land values, resulting in lower land values, agricultural landowners may be concerned;
- Farmers who wish to continue farming would welcome the revenue from an easement that is purchased on their land using the conversion fee revenues;
- Unless the charges for conversion are high, they could just become a “cost of doing business” that doesn’t result in a significant change to the status quo; and
- Would require administration and oversight, including ongoing enforcement of easement conditions.

2. Agricultural Land Conversion Fees

Description

Agricultural land conversion fees are a tool used in some American states jurisdictions, in which a charge is applied to the conversion of agricultural land to other uses. This can be done at the time of sale by placing a surcharge on the sale of agricultural land, or when an application is made to change farmland to a different land use. Regardless of when the charge is applied, the goal is to place a financial disincentive on converting agricultural land to other uses. Agricultural land conversion fees promote using existing developable lands more efficiently. While in most cases the money gathered through the fee is used to purchase equivalent agricultural land for preservation, a land conversion fee does not necessarily require that all money received be used for this purpose.

How Can This Tool Contribute to Efficient Land Use?

- Conversion fees can reduce fragmentation of agricultural land by reducing the amount of development happening in agricultural areas; and
- If the costs associated with converting the farmland are significant enough, agricultural land conversion fees can provide an economic incentive in favour of infill and redevelopment in existing towns, villages, hamlets and cities. They can also create an incentive to utilize available greenfield development lands more efficiently.

Relationship with Other EUL Tools

Agricultural land conversion fees are primarily used to limit urban development in agricultural areas. As such, they are complementary with policy limits on rural residential lot creation (#17). They can also be used to support policies that seek to reduce the rate at which urban areas expand into surrounding agricultural areas, such as greenbelts (#12) and urban growth boundaries (#27).

Use in Alberta

Agricultural land conversion fees are not currently used in Alberta. One tool that is somewhat similar is conservation offsets, which are provided for under the *Alberta Land Stewardship Act*. Conservation offsets enable municipalities to offset the negative environmental impacts of a particular land-use by requiring environmental benefits through, for example, the protection of environmentally sensitive lands in another area.

CASE STUDY

Agricultural Land Conversion Fees***Conservation Property Tax Exemption Act*****Government of Nova Scotia, Nova Scotia Environment****Responsibility: Province | How applied: Voluntary | Scale: Provincial**

In Nova Scotia, lands used for forestry, agriculture or non-profit uses are exempt from paying annual property taxes. There is a “change of use” tax due when the land is converted from one of these exempt land uses to any other land use. The change of use tax is a one-time fee equaling 20 per cent to 50 per cent of the assessed value depending on the previous use of the land and property taxes are then due annually.

The *Tax Exemption Act* allows a landowner to remove their land from agriculture or forestry use and place it in ecological protection without paying the change of use tax or annual property taxes. To qualify, the land must be protected through a conservation easement, be designated as a protected area (nature reserve or wilderness area) by the Minister of Environment, or be owned by a qualifying land trust.

In order to offset the loss in municipal revenues, the ministry provides municipalities with a grant equal to the annual property taxes that would have been paid.

Related Examples From Other Jurisdictions:

- The City of Davis, California, requires that landowners proposing to rezone or develop agricultural land to a non-agricultural use meet agricultural land mitigation requirements. This includes a requirement that two hectares of agricultural land be preserved for every one hectare of agricultural land that is developed. The City of Davis specifies the type of land that can be used to offset the loss of farmland. Requirements can be partially met (up to 50 per cent) through an in-lieu fee which the municipality then uses to purchase conservation easements;
- The State of Maryland has an Agricultural Transfer Tax program. This tax is calculated at the time of sale of agricultural land. However, the tax can be waived if the new landowner files a Declaration of Intent stating that they will keep the land in agricultural use for 5 years after purchase, after which there is no cost associated with the conversion of land. The cost of the Agriculture Transfer Tax varies according to the amount of land that is being converted. The funds collected through the tax are used to purchase development rights on farmland in Maryland through the Agricultural Land Preservation Program.

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	

Permeable paving of driveways and laneways can reduce stormwater runoff. This can help reduce the amount of land needed for large, centralized stormwater retention facilities.

3. Alternative Development Standards

Description

Alternative development standards refer to standards that are designed to support development that is more environmentally sustainable, land efficient, transit and pedestrian supportive, and so on. All municipalities have standards that new development must meet before it receives approval. These standards can address everything from on-site parking requirements to landscaping to stormwater retention to accessibility. Alternative development standards fall into two general categories:

- planning policies and regulations (e.g. lot dimensions, parking requirements, minimum housing size, frontage, etc.); and
- engineering standards (e.g. the locations, dimensions, and designs of rights-of-way, stormwater systems, utility corridors, etc.).

How Can This Tool Contribute to Efficient Land Use?

- Alternative development standards can facilitate more compact forms of development. For example, standards can be altered to allow narrower lot frontages in residential neighbourhoods, which can result in higher densities. Similarly, standards allowing for greater on-site stormwater retention can reduce the need for larger, land intensive stormwater ponds.

Relationship with Other EUL Tools

Alternative development standards can be used to encourage transit-oriented development (#26), building forms that reduce the overall development footprint (#4), and reductions in land areas dedicated to parking (#22). They can also be designed to facilitate the ability of new development to meet certain LEED criteria (#16). Often, development standards are a major barrier to achieving LEED certification. Alternative development standards can also be used to ensure that development that results from minimum density (#18) or intensification requirements (#19) is compatible with existing uses and contributes to a high quality of place, particularly if used in conjunction with form-based codes (#11).



Permeable paving of driveways

Use in Alberta

The Town of Banff enacted alternative development standards to address its housing shortage and lack of affordable housing. The Town of Banff allowed for smaller lots, narrower streets and reduced parking requirements. This allowed for denser developments and an increase of housing supply in the community.

Fort Saskatchewan altered its bylaws to allow narrower lots. It also reduced the servicing requirements for developers in order to encourage denser development.

The City of Edmonton has reduced its parking requirements for developments in the downtown area and is contemplating doing the same for residential developments in close proximity to LRT stations.

CASE STUDY

Alternative Development Standards

New Parking Standard to Promote Downtown Densification City of Airdrie, Alberta

**Responsibility: Municipal | How applied: Mandatory |
Scale: Local**

The City of Airdrie is located just north of Calgary and in the late 1990s experienced rapid single-family residential growth pressure threatening to turn Airdrie into a bedroom community. Downtown mixed-use development was not keeping pace with new residential growth, leading the city to identify the development of a walkable and vibrant downtown as a key goal. The City of Airdrie decided to conduct a parking study in 2000 which found that only approximately half of on-street parking and one third of off-street parking were being used during peak periods. This led to the revision of the existing parking development standards. Best practices from surrounding municipalities were determined including parking ratios, shared parking policies, centralized parking facilities and other tools

A Downtown Parking Bylaw was passed in 2001. It reduced parking requirements and introduced variances based on shared parking, off-site spaces and cash-in-lieu payments. The intention was to encourage the successful redevelopment and densification of the downtown. The revised parking requirements allowed one condominium development to reduce allocated parking by 50%.

Related Examples From Other Jurisdictions:

- The Pineglade Project in Ottawa is a 165 unit subdivision that was built using alternative development standards. The goal of the altered standards was to make housing more affordable. Alternative standards used for the subdivision include reductions in right-of-way, pavement, and boulevard widths, as well as lot frontage, lot size, setbacks, and amenity areas. An analysis showed that a house in Pineglade cost buyers approximately \$8500 less than a comparable house in a suburban community built using traditional development standards.

4. Building Forms that Reduce the Development Footprint

Description

Utilizing forms of development that reduce the development footprint is a key mechanism for making more efficient use of land.

One example of a land-efficient building form is mixed use development. A mixed use development typically includes retail or other commercial uses at-street level, with office development and/or residential development stacked above on the upper floors.

Secondary suites are another building form that can reduce the footprint of development. Secondary suites are self-contained living units created within existing single-family homes or in buildings that are accessory to single-family homes. They can increase density and reduce the overall development footprint for residential development, without significantly changing the visual character of a neighbourhood. The most common form of secondary suite is a basement apartment that has a separate entrance leading to a self-contained unit in the lower level of a dwelling. Generally, there are minimal changes to the exterior of an existing dwelling to accommodate a basement apartment. Some other, less common types of secondary suites include:

- A garden suite, which is a self-contained, stand-alone dwelling that is accessory to the principal dwelling, generally found in the rear yard; or
- An above or beside garage suite, which is a self-contained dwelling that is located above or beside a detached garage.

How Can This Tool Contribute to Efficient Land Use?

- Reduces the overall development footprint by concentrating multiple land uses within a single building and land parcel;
- Reduces the overall development footprint by accommodating additional residential units within an existing residential building or parcel.

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	



Mixed use in Edmonton, Rail Town
Edmonton



Live/Work Development
Port Credit, Ontario

Relationship with Other EUL Tools

- Mixed use buildings and secondary suites are a key mechanism for increasing rates of intensification (#19) as well as increasing overall density in a community (#18). These forms of development are also typically more consistent with Transit Oriented Development (#26).

Use in Alberta

Many municipalities encourage the development of mixed use buildings through their Municipal Development Plans, Land Use Bylaws, Area Structure Plans and Area Redevelopment Plans. Some also offer incentives for this form of development. One example is the City of Medicine Hat's Downtown Development Incentive Program (DDIP). Launched in 2011, the DDIP includes various incentives available to downtown property owners to assist them to redevelop or initiate new developments in the city centre. The program is administered through the city's Business Support Office. Among the options available to landowners is the Live/Work Residential Development program through which property owners can access up to \$15,000 for the first residential unit and \$5,000 per suite for up to two more units at the same location, as an incentive to develop a residential living space connected to their commercial building. Additional funds are available for up to two more suites on the property if space permits.

Many municipalities in Alberta also offer programs to encourage the development of secondary suites.

The City of Calgary Secondary Suites Program offers a grant of up to \$25,000 to cover 70 per cent of the costs of developing or upgrading a legal secondary suite. In return for the grant, the city requires that recipients rent out their unit at 90 per cent of the average market rent.

The City of Camrose developed a grant program that provides up to \$15,000 to homeowners who complete a renovation to create a new secondary suite or bring to building code an existing secondary suite. The grant can cover up to 70 per cent of the renovation cost. The program was intended to provide affordable housing options throughout the city. As a condition of the grant, the applicant must enter into a five year agreement that outlines maximum rental rates. The grant is available to detached dwellings located within the districts where secondary suites are a prescribed use as per the city's land use bylaw.

The City of St. Albert provides a basement suites guide for residents. The guide provides information about building code requirements, application requirements, permit fees, where basement suites are permitted under the City of St. Albert's Land Use Bylaw, and development regulations.

Considerations for Using this Tool in Alberta

- One of the challenges that some landowners face when trying to construct a secondary suite is meeting the various building code and zoning regulations. For example, in Alberta, secondary suites must meet the Alberta Building Code and Fire Code regulations. These regulations were both updated in 2006 to recognize secondary suites as a distinct type of accommodation from apartments or duplexes. Some examples of the requirements contained within these regulations are a minimum ceiling height of 1.95 metres, a direct exit to the outdoors, emergency escape windows for each bedroom, fire protected walls and ceilings, interconnected smoke alarms, and fire protected walls for furnaces and water heaters;
- Any consideration of building forms that reduce the development footprint must take into account local market conditions to ensure they are viable;
- Mixed use development may not be appropriate in all neighbourhoods, particularly where commercial uses are not desired;
- Mixed use development and secondary suites can also provide a source of lower cost and more affordable housing; and
- Prior to the approval of mixed use and secondary suite development, the capacity of underground infrastructure, such as sewage treatment and sewer pipes, may need to be considered. Potentially, long-term upgrades may be needed to handle future increased capacity requirements.

CASE STUDY

Building Forms that Reduce the Development Footprint

Secondary Suites Program City of Edmonton

Responsibility: City | How applied: Voluntary | Scale: Local

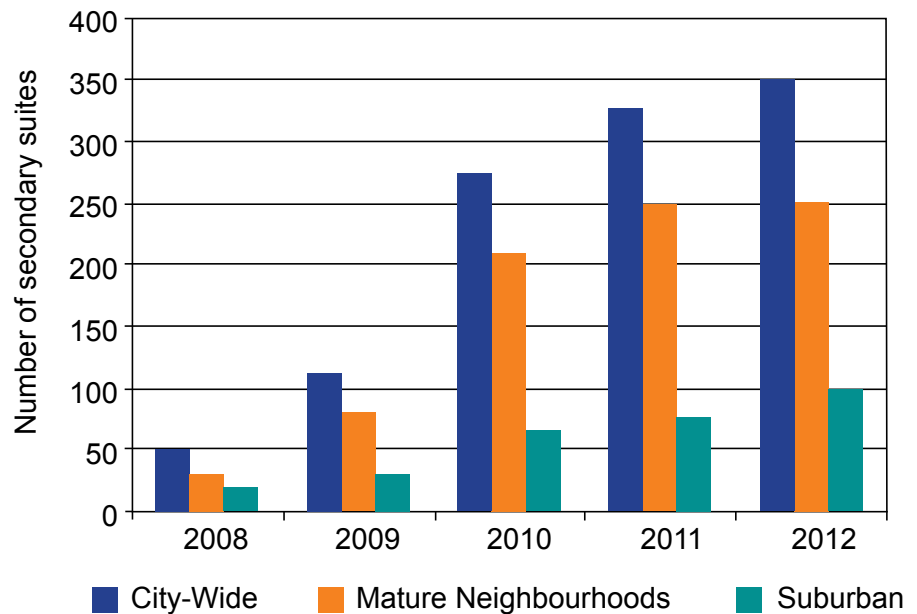
In 2007, Edmonton City Council passed a bylaw introducing the opportunity for secondary suites on a permitted use basis and garage suites on a discretionary use basis in single detached housing in most land-use zones throughout the city. Prior to this change, opportunities for secondary suites were restricted across much of the city as either discretionary uses, or non-permitted uses, and were limited by lot requirements and locational criteria.

There were approximately 140,000 low density lots in Edmonton at the time of the adoption of the Bylaw, of which only 48,000 could previously have been considered for secondary suites. The Bylaw changes opened up opportunities for secondary suites to 130,000 lots. Amendments were made to open up opportunities for garage suites and garden suites as well, allowing consideration of such suites on corners lots, lots fronting a service road, lots backing onto a lane, or lots abutting row housing, apartments or community services.

As a result of these bylaw reforms, permits issued for secondary suites within the City of Edmonton increased significantly.

As part of implementation, the City of Edmonton developed the Cornerstone Grant Program which provides financial assistance to homeowners wishing to create secondary suites.

Number of permits provided for secondary suites in the City of Edmonton (2008-2012)⁵



⁵ Growth Analysis Unit, Planning and Development Department. "Mature Neighbourhood Reinvestment (2012)." Edmonton. City of Edmonton

5. Checklists and Scorecards

Description

Development scorecards or checklists can help ensure that efficient use of land principles are applied as part of individual development applications and as part of the development approvals process. They identify a set of development objectives that a municipality is seeking to achieve. Often, these include objectives related to energy efficiency, water conservation, and other environmental factors. Objectives related to reducing development footprint and prompting the efficient use of land could also be identified. Examples of efficient use of land objectives that could be captured in a checklist or scorecard include:

- density of the proposed development relative to the municipal target;
- location of the development relative to priority growth areas or intensification areas; or
- land area of the development that is dedicated to surface parking.

Typically, either the development proponent, or the person responsible for processing the development application, will complete the checklist or scorecard. Checklists or scorecards can be mandatory or voluntary. As a mandatory tool, development proponents could be required to complete a checklist as part of the development application process. As a voluntary tool, development proponents could be encouraged to complete checklists, and possibly provided with incentives to do so, such as reduced planning application fees or expedited approvals.

How Can This Tool Contribute to Efficient Land Use?

- Can function as educational tools for local developers by translating a municipality's vision for efficient land-use into a set of clear and easily understood objectives that apply at the project level; and
- Can provide decision-makers such as municipal councils with a quick "snapshot" assessment of how a particular development meets the municipality's efficient use of land objectives.

Relationship with Other EUL Tools

Scorecards and checklists are best used as a means of reinforcing other efficient use of land strategies. For example, where a municipality has identified minimum density (#18) or intensification targets (#19), priority growth areas (#13), alternative development

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	✓

Considerations for Using this Tool in Alberta

- Information required for completion of checklists and scorecards should be readily available, or relatively inexpensive for proponents to collect;
- To be most effective, the municipality should have clear targets and expectations with respect to each criteria in the checklist;
- In designing checklists and scorecards, and the decision-making process that goes along with them, municipalities should be careful not to create delays or other impediments to the development approvals process; and
- Checklist and scorecard information can also be used for measuring performance and compliance over the longer term.

standards (#3), or many of the other strategies discussed in this compendium, the checklist becomes a way for the development proponent and the decision-maker to quickly assess the extent to which a particular development has addressed them.

Use in Alberta

While there is limited experience in Alberta using checklists or scorecards, the *Municipal Government Act* does state that within a municipality's land use bylaw, a municipality must establish a method of making decisions on applications for development permits. The provisions must include what needs to be included in an application and may include any other matters necessary to regulate and control the issue of development permits that appear necessary to the local council. Checklists or scorecards could therefore be included as a required or voluntary component of a development application.

CASE STUDY

Checklists and Scorecards

Sustainability Screening Reports and Impact Offset Matrix Town of Canmore, Alberta

Responsibility: City | How applied: Voluntary | Scale: Local

The Town of Canmore uses a Sustainability Screening Process (SSR) to allow developers to present to Council how their proposals achieve the Town's commitment to sustainability as part of The Natural Step for a Sustainable Canmore initiative that began in 2004. The SSR is intended as a tool to help implement several plans and strategies for the town including the MDP, Green Building requirements, Sustainable Economic Development and Tourism Strategy and Environmental Sustainability Action Plan.

Applicants complete an Impact Offset Matrix, a short checklist, to measure how the details of the development compare with the sustainability goals of the community. The checklist is then included within the presentation that the developer gives to Council when considering the merits of the project. The use of the matrix is mandatory. The intention is to promote developments that have a net zero or better impact. Several of the factors considered in the Impact Offset Matrix relate directly or indirectly to efficient land use, such as:

- The length of infrastructure that needs to be developed for the project;

- What percentage of the site is previously developed and what percentage of the site is previously undeveloped; and
- The distance of the development from the wastewater treatment plant.

The process has been in place since 2007 and can be used for statutory plan amendment applications as well as for Development Permit applications.

Related Examples From Other Jurisdictions:

- The City of Kelowna, B.C. provides developers with Sustainability Checklists for commercial or multi-unit residential developments. The intention is to provide a framework for both city staff and Council to quantify the merits of a proposed development. Three checklists are available depending on the type of application: Development Permit, Development Permit with Rezoning, or Rezoning. The aims of the checklists are to protect open space and natural areas, promote compact mixed use development, and discourage out-migration. Land-use management staff reviews the completed checklist and amends it as required in discussion with the applicant. The checklist is then included within the material used by the City Council, staff and advisory bodies to review the merits of the proposal. Examples of checklist provisions that relate to efficient land use include whether the project comprises redevelopment of a brownfield site and the extent to which the project requires extension of existing city infrastructure.
- The City of Dawson Creek, B.C. implemented the use of a Sustainability Checklist in 2009 through their Official Community Plan. Since then the City of Dawson Creek has had a positive experience using the checklist. Developers review and complete the checklist before it is provided to Council and staff as part of the development review process. The municipal government provides several versions of the checklist ranging in detail. The checklist encourages developers to consider the elements of their proposal and how it may impact the surrounding properties and broader context. City staff then prepares a report as part of the development approval process based on a summary of the checklist and other information provided, identifying major gaps as well as accomplishments. Examples of checklist provisions that relate to efficient land use include whether the development is in the Intended Infill / Redevelopment Area and/or on existing residential parcels, and whether any buildings, and particularly heritage buildings, are to be adaptively re-used.

Considerations for Using this Tool in Alberta

- Many Alberta municipalities already have experience using this tool;
- Can be implemented in a variety of ways, including mandatory or incentive-based;
- Has the ability to reduce fragmentation without eliminating development potential;
- When used in conjunction with conservation easements, it can also protect valuable landscapes;
- Does not actually prevent residential development in rural or agricultural areas; it merely focuses it in a more land efficient way. Cluster zoning has been criticized for not actually preserving valuable land but rather allowing “clusters” of sprawl;
- Could hinder the contiguous and orderly expansion of urban areas if several clusters are located at the edge of urban areas;
- Maintaining the retained open space can be a challenge. Maintenance costs could be incurred by the municipality. Retained areas may be too small to support viable agricultural uses;
- Could be at odds with market demand for large rural lots for “country living”;
- In some cases, may require a revisiting of municipal building codes to address proximity of dwellings; and
- On its own, does not prevent multiple residential clusters from being developed across a municipality, which would lead to fragmentation and inefficient land use.

6. Cluster Zoning

Description

Cluster zoning refers to a pattern of residential development, typically in rural areas, where the developed area is clustered together on smaller lots, rather than spread out across the parcel. In Alberta, this is typically referred to as clustered country residential development.

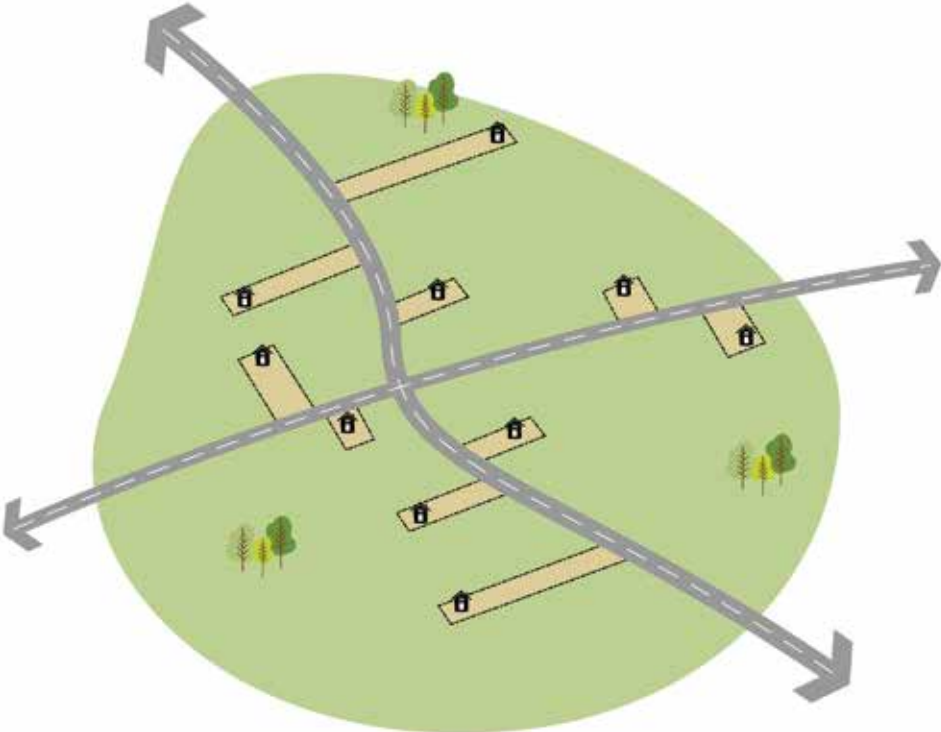
Clustered development is most often implemented by requiring that a minimum percentage of a parcel of land be retained as open space at the time of subdivision. It may also be supported by establishing maximum lot sizes and/or a maximum number of lots for a given area. For example, in Alberta, a typical quarter section is 64.7 ha (160 acre). Under conventional zoning, it might be subdivided into 32 lots of 2.02 ha (5 acre) each, evenly distributed across the quarter section. With cluster zoning, a portion of the quarter section would be left as open space. For example, 50 per cent of the land could be open space, and the remaining 50 per cent would be subdivided into 80 lots of 0.4 ha (1 acre) each, clustered in one portion of the quarter section.

Within this basic principle of locating development close together to reduce the overall development footprint and landscape fragmentation, cluster zoning policies vary in a number of ways. Cluster zoning policies can range from a mandatory requirement to an incentive-based or voluntary tool. In most mandatory approaches, a specially designated area of a municipality, usually on the fringe, is zoned for cluster development. In these areas all new development must preserve a prescribed amount of contiguous open space (the exact amount varies among jurisdictions). An incentive approach would allow the developer to create additional lots if they are smaller in size, and clustered in one area. This approach is sometimes referred to as “density bonusing” (see #8).

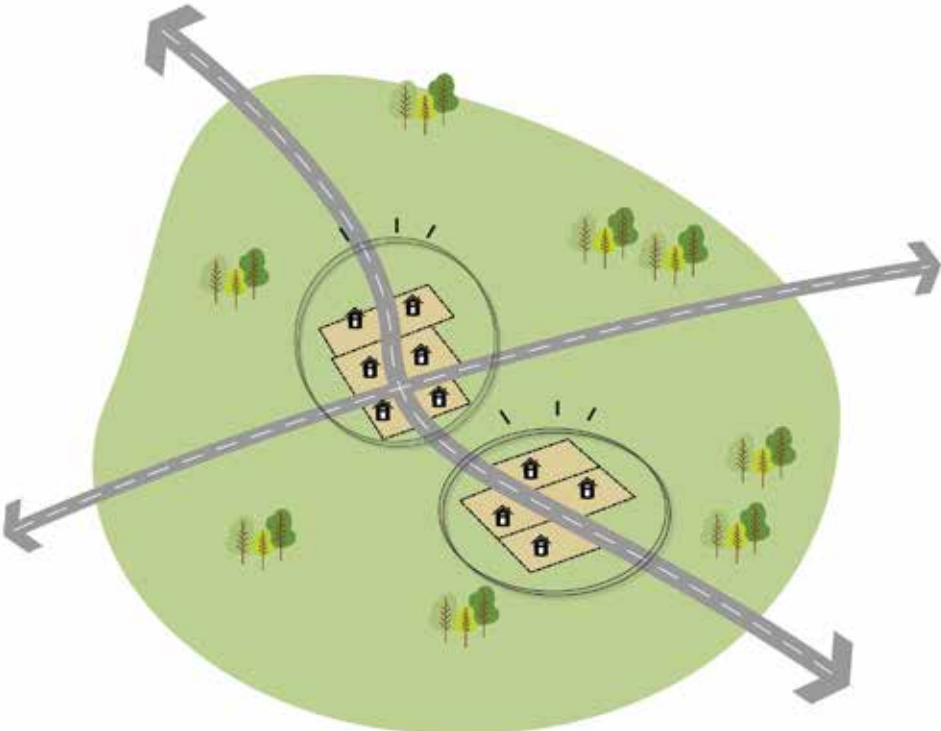
How Can This Tool Contribute to Efficient Land Use?

- Reduces the overall footprint of residential development in rural areas;
- Clustering development in concentrated locations leaves the rest of the land area undeveloped, thereby reducing fragmentation of rural and agricultural lands; and
- Reduces the need to extend infrastructure such as roads across a large area.

Conventional Rural Development



Cluster Zoning Development



How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	✓
Private Land (Urban)	
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

Relationship with Other EUL Tools

Cluster zoning can be used in conjunction with other tools such as greenbelts (#12) and limits on lot creation (#17) to minimize the development footprint in rural areas. It is also a way of achieving minimum density targets (#18) in rural areas. Agricultural land conversion fees (#2) can be used as an incentive to promote cluster zoning, as can density bonusing (#8). Policies to optimize lot sizes (#20) can help maximize the effectiveness of cluster zoning strategies.

Use in Alberta

Cluster zoning, typically called clustered country residential development, is used in a number of Alberta municipalities.

Strathcona County’s Municipal Development Plan promotes conservation design, wherein new development is clustered outside of priority environmental areas. Conservation design principles are applied to country residential and rural subdivisions under approved Area Structure Plans or Conceptual Schemes.

In Mountainview County, multi-lot residential development (between 5 and 48 lots per quarter section) may be allowed within identified growth centres. Lots must be clustered in order to allow the balance of the quarter section to remain as open space or in agricultural operation where appropriate. Development must also be located on the periphery of the quarter section to minimize access roads and use of agricultural land for roads, and should be located adjacent to existing development or approved subdivisions on neighbouring quarter sections.

CASE STUDY

Cluster Zoning

**Capital Region Growth Plan
Capital Region, Alberta**

**Responsibility: Regional Board | How applied: Mandatory |
Scale: Regional**

The Capital Region Growth Plan provides the policy framework for future growth in the Capital Region. One principle of the Plan is to minimize the regional development footprint. The Capital Region Growth Plan identifies four Cluster Country Residential Areas (CCRAs) for the region where cluster style residential development is supported. New Country Residential development within CCRAs must be clustered on smaller lots in order to maximize the retention of open space and optimize servicing. The CCRAs are expected to meet a density target of two dwelling units per gross hectare. Each member municipality which has a Cluster Country Residential Area within its boundary is expected to reflect the principles of the Plan within their planning documents.

Related Examples From Other Jurisdictions:

- West Manchester Township, Pennsylvania identifies “Open Space Residential Zones” that utilize cluster zoning principles. The Open Space Residential Zones require that 45 per cent of the overall parcel must remain open space after it has been developed. They also include smaller minimum lot sizes, depths and widths. These smaller lot sizes, depths and widths allow for the tighter clustering of houses on the developable 55 per cent of each parcel. The Open Space Residential designation requires that the preserved portion of the parcel be the most environmentally sensitive portion. It also requires that the open space be contiguous rather than spread throughout the parcel. As part of the application process, the developer must outline how the preserved open space will be maintained.

Considerations for Using this Tool in Alberta

- The effectiveness of COS studies is dependent on the quality and comprehensiveness of the data available;
- COS studies are more challenging when done on a site-specific basis, or at a smaller scale such as a particular neighbourhood within a municipality, due to the required level of detailed data;
- COS studies are generally less complex and simpler to do as a means of comparing the relative costs of broad growth scenarios, as opposed to determining actual servicing costs associated with a particular site or development; and
- Not all costs associated with inefficient land use are quantifiable in economic terms, so COS studies cannot give a complete, comprehensive picture of the pros and cons of various growth options.

7. Cost of Servicing Studies

Description

Cost of Servicing (COS) studies are a tool for comparing the financial costs to municipalities associated with alternative development scenarios. COS studies can evaluate the costs to provide municipal services and infrastructure to specific areas within a municipality in order to contrast the economic costs of directing growth to one area over another. They can also compare the costs of servicing different forms of development within the same area.

These studies require detailed analysis and a diverse range of accurate data to determine capital and life-cycle costs of municipal services such as transportation, water supply, sanitary sewers and water treatment. The data available must be sufficient to reveal expenditures for initial capital investment, maintenance and replacement or upgrading. Expenditure estimates require a range of inputs such as design costs, labour costs, material costs, equipment costs, and scheduled and unscheduled maintenance costs, and how these costs vary in different contexts.

How Can This Tool Contribute to Efficient Land Use?

- Often, low-density residential development in outlying areas is not only land inefficient, but also economically inefficient, when compared to higher density residential development and/or residential development close to existing services.⁴ COS studies can be used to demonstrate the costs associated with servicing land inefficient forms of development and thereby help promote planning decisions that lead to more efficient use of land.

Relationship with Other EUL Tools

COS studies can be valuable tools for supporting efficient use of land, because they can demonstrate to decision-makers the relationship that typically exists between efficient use of land and economic costs.

⁴ Slack, Enid. "Municipal Finance and the Pattern of Urban Growth." Urban Research. Blogger, 3 Apr. 2012. Web. 04 Sept. 2012.

How is this tool typically applied in other jurisdictions?	
Mandatory	
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	✓
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	
2. Utilize minimum amount of land needed.	
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	✓

Use in Alberta

COS studies have not been widely used in Alberta largely due to the lack of available data to undertake an effective and comprehensive study. In 2006 a Cost of Community Services study was conducted for Red Deer County to provide a look at the relationship between the county's land-use matrix and their 2004 fiscal revenues and expenditures. The study looked at four different land-use categories: Commercial, Industrial, Residential and Working Landscapes (Agriculture). The study found that commercial, industrial and working landscapes all "paid their way" but that residential development did not. It also revealed that industrial land uses contribute more to municipal revenues than commercial uses. The study was not intended as a means to determine the best type of development for the county in the future. The limitation of a COS study is that it only provides a picture of the current situation. However, this study can provide information to decision makers about how they can improve their fiscal bottom line based on the relationship between expenditures, revenues and different land-use types.

CASE STUDY

Cost of Servicing Studies

Cost of Servicing Plan

Halifax Regional Municipality, Nova Scotia

Responsibility: Municipality | How applied: Voluntary | Scale: Regional

The Halifax Regional Municipality (HRM) has used COS studies to evaluate the costs to provide municipal services and transportation links to specific areas within the HRM as part of its Regional Planning Strategy. The COS studies were intended to determine which of the future growth areas achieve the goals in the planning strategy. The studies determined the total cost of servicing specific areas. Factors considered included transportation, water supply and sanitary servicing. The results of the studies are used by Halifax Regional Municipality Council to determine whether or not to approve requests to initiate the updated and detailed process in a specific area.

Related Examples From Other Jurisdictions:

- The Canadian Mortgage and Housing Corporation (CMHC) developed the “Life Cycle Costing Tool for Community Infrastructure Planning” to allow major costs of development to be calculated and compared using alternative development scenarios. The intended users are municipalities or developers who wish to estimate the major costs associated with community development. The tool considers different forms of development with the ability to input different density scenarios. The tool provides long-term cost estimates, particularly those that change with different development patterns, such as linear infrastructure.

8. Density Bonusing

Description

Density bonusing, also known as incentive zoning, typically refers to allowing a density that surpasses either what is currently allowed or what is currently in place on the site in exchange for the developer providing amenities or benefits needed by the community.

How Can This Tool Contribute to Efficient Land Use?

- Density bonusing can reduce the development footprint by accommodating additional residential or commercial uses on a given area of land.
- The actions required of developers in order to qualify for a density bonus can also be tied to the implementation of strategies that achieve more efficient use of land. For example, a municipality could allow additional density in exchange for accommodating parking through structured parking, clustering development, incorporating design elements that reduce the development footprint, or incorporating alternative development standards.

Relationship with Other EUL Tools

Density bonusing can have a direct impact on the achievement of minimum density requirements (#18). Density bonusing can also serve as an incentive to implement many of the other strategies described in this compendium, such as reducing the land area dedicated to parking (#22), clustering development (#6), or utilizing alternative development standards (#3).

Use in Alberta

Several municipalities in Alberta include density bonus provisions within their Municipal Development Plans and Land Use Bylaws. The *Municipal Government Act* allows the Development Authority or Subdivision Authority of any municipality to approve development that does not conform to the existing Land Use Bylaw, subject to certain conditions, and provided the development conforms to the use prescribed for the land. This means that a municipality may approve additional density on a given site.

How is this tool typically applied in other jurisdictions?

Mandatory

Voluntary or Incentive



At what scale or level of government is this tool typically applied in other jurisdictions?

Provincial / State

Regional

Local



Which types of land does this tool typically apply to?

Public (Crown) Land

Private Land (Urban)

Private Land (Rural)



Which EUL strategies could this tool potentially support?

1. Reduced rate of land conversion.



2. Utilize minimum amount of land needed.



3. Utilize already developed or disturbed lands.



4. Maximize the use of existing infrastructure.



5. Disturbed lands are reclaimed or reused.



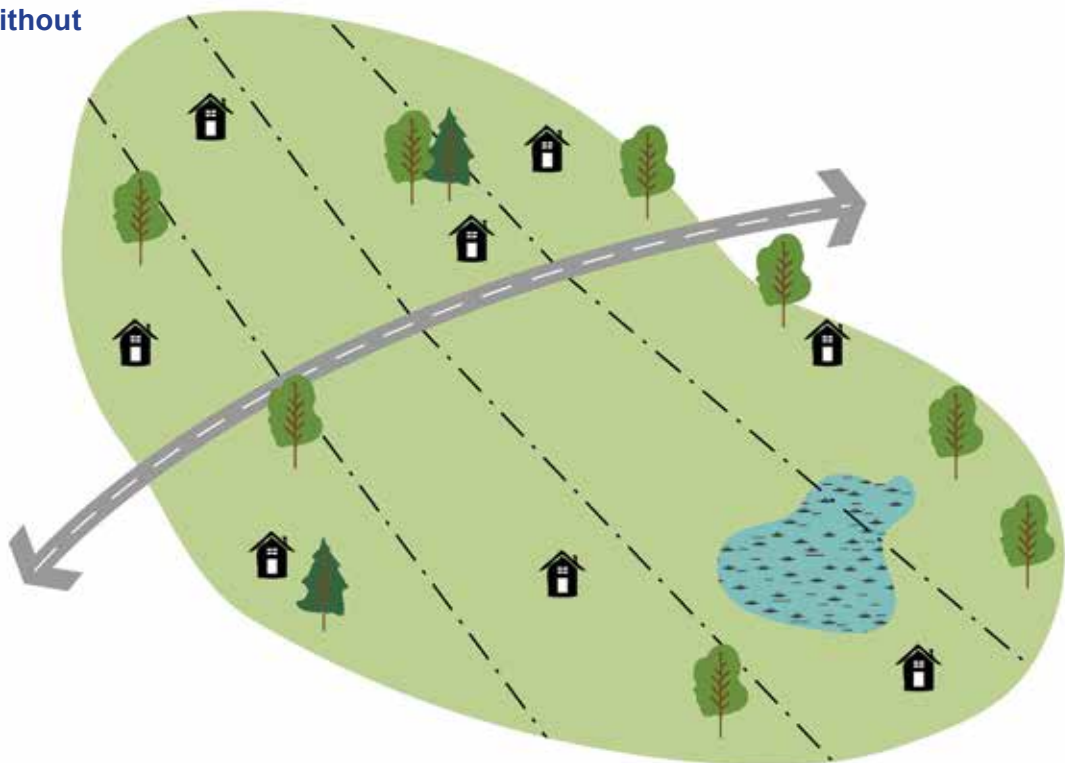
6. The information needed for decisions that support efficient land use.



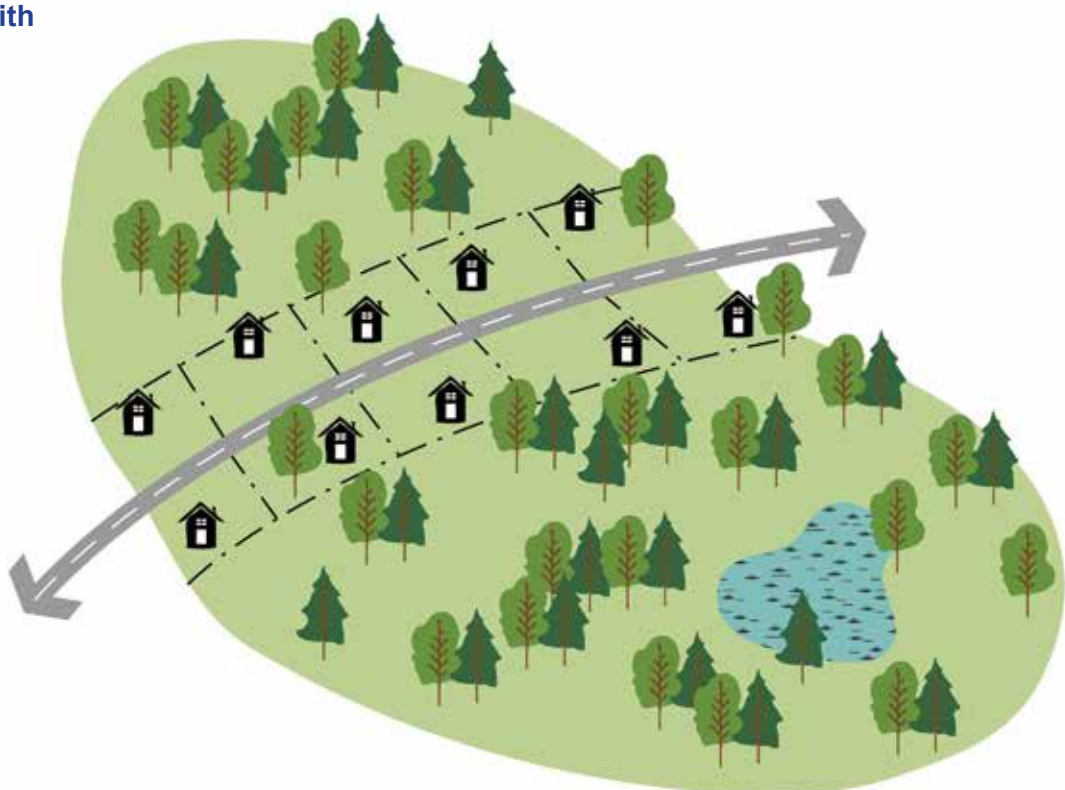
Strathcona County has pioneered the use of density bonusing as a tool for conservation. It allows a maximum of eight country residential lots within the Agriculture Small Holdings Policy Area of the Municipal Development Plan. An additional two parcels per quarter section may be considered based on the over-dedication of Municipal Reserves and/or dedication of conservation easements to the satisfaction of Strathcona County. The policy requires a conceptual scheme be adopted for the site.

The City of Calgary uses density bonus as an incentive for developers to employ conservation subdivision design when subdividing for residential purposes. For example, density bonusing has been considered regarding a subdivision in the Rocky Ridge Area Structure Plan (ASP). The primary objective of this plan is to accommodate future demand for urban housing. The approach would increase allowable density conditional on the developer providing an increased percentage of environmental reserve (ER) than would normally have been required. The existing density policies in the Rocky Ridge ASP were used as the base density. Three levels of bonus density were suggested with a prescribed percentage of ER dedication above what would otherwise qualify as ER: (a) 5 units per 0.4 ha (1 acre) on the gross parcel area in exchange for 15 per cent ER dedication increase; (b) 10 units per 0.4 ha (1 acre) on the gross parcel area in exchange for 20 per cent ER dedication increase; or (c) 15 units per 0.4 ha (1 acre) on the gross parcel area in exchange for 25 per cent ER dedication increase.

Subdivided property without density bonusing



Subdivided property with density bonusing



CASE STUDY

Density Bonusing

Beltline Area of Calgary
City of Calgary, Alberta

Responsibility: Municipality | How applied: Voluntary | Scale: Local

The City of Calgary has developed a density bonusing strategy that applies to the Beltline Area and that is implemented through the Beltline Area Redevelopment Plan (ARP). The Beltline has been divided into four areas:

- Area A: Primarily residential or expected to be developed as primarily residential and appropriate for lower density compared to other areas;
- Area B: Along major roads and adjacent to primarily residential areas or Stampede Park. Appropriate for higher density because of proximity to transit and 17 Avenue South;
- Area C: The highest density area, due to its proximity to the downtown and major transportation corridors; and
- Area D: Pedestrian-oriented and appropriate to provide a transition from the high density development close to downtown and lower density development to the south.

Properties affronting on a specific category are assigned the corresponding density regime with a base density and a maximum density. The ARP then outlines several principles that the development must achieve to be deemed appropriate for higher density. Included within those principles is that the developer must provide “items or features that provide a perpetual or enduring benefit to the community in which the density is being accommodated”. Items or features that provide a perpetual or enduring benefit to the community are organized into five categories:

1. Community amenity space;
2. Publically accessible private open space;
3. Affordable housing units;
4. Heritage designation; and
5. Incorporation of sustainable building features.

Within category five, the ARP lists reducing the development footprint as one of the benefits that can be provided in exchange for higher density provisions.

9. Eco-Industrial Parks

Description

An Eco-Industrial Park (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. By working together, the community of businesses seeks a collective benefit that is greater than the sum of the individual benefits each company would realize by only optimizing its individual performance. Collaborative strategies that can be pursued in EIPs include waste reduction, shared logistic and shipping and receiving facilities, shared parking, green technology purchasing blocks, multi-partner green building retrofits, district energy systems and local education and resource centres.⁵

How Can This Tool Contribute to Efficient Land Use?

- Sharing road access, parking facilities, and services such as training centres, cafeterias and daycare centres can reduce the overall development footprint of an EIP.
- Clustering industrial buildings can reduce the overall development footprint and also facilitate the servicing of the area by transit.

Relationship with Other EUL Tools

By bringing together and coordinating the planning of multiple industries, EIPs can provide an ideal foundation for implementing a number of the efficient use of land tools and strategies discussed in this compendium, such as reduced parking areas (#22) and alternative development standards (#3).

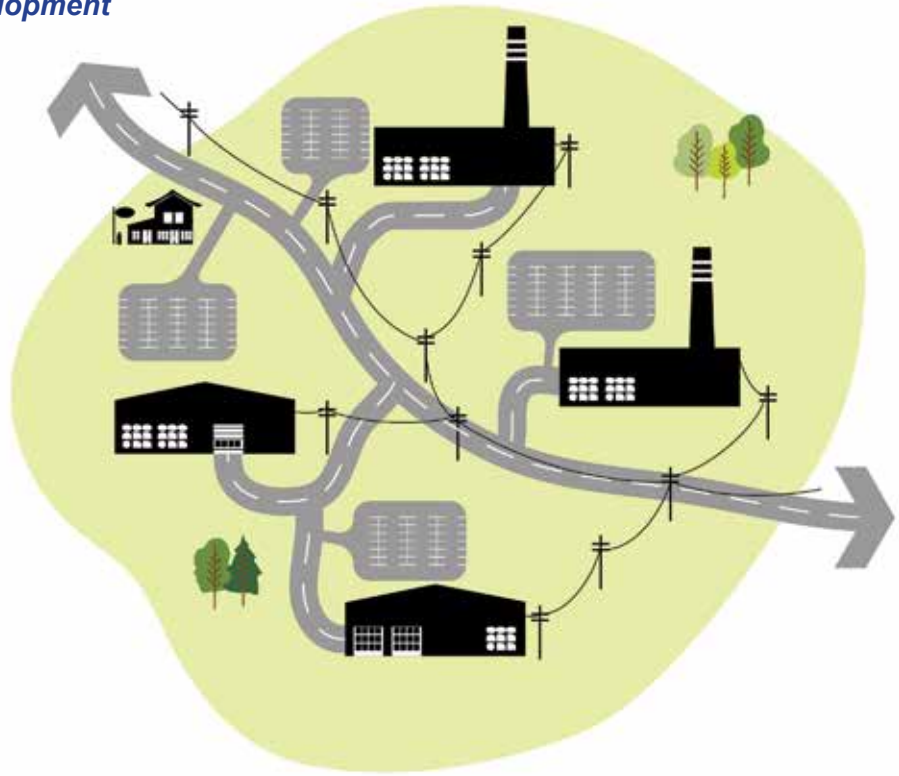
Considerations for Using this Tool in Alberta

- While municipalities can include Eco-Industrial Park standards in their Land Use Bylaws, most Eco-Industrial Park programs include extensive use of incentives;
- Many of the standards and objectives typically associated with Eco-Industrial Parks are equally applicable to all industrial parks, and consideration can be given to incorporating many of these standards into all industrial parks and business parks;
- Eco-Industrial Park standards should be sufficiently flexible to make the subject area attractive to a wide range of industries; and
- The standards applied to an Eco-Industrial Park will need to take into account health, safety and other standards as well.

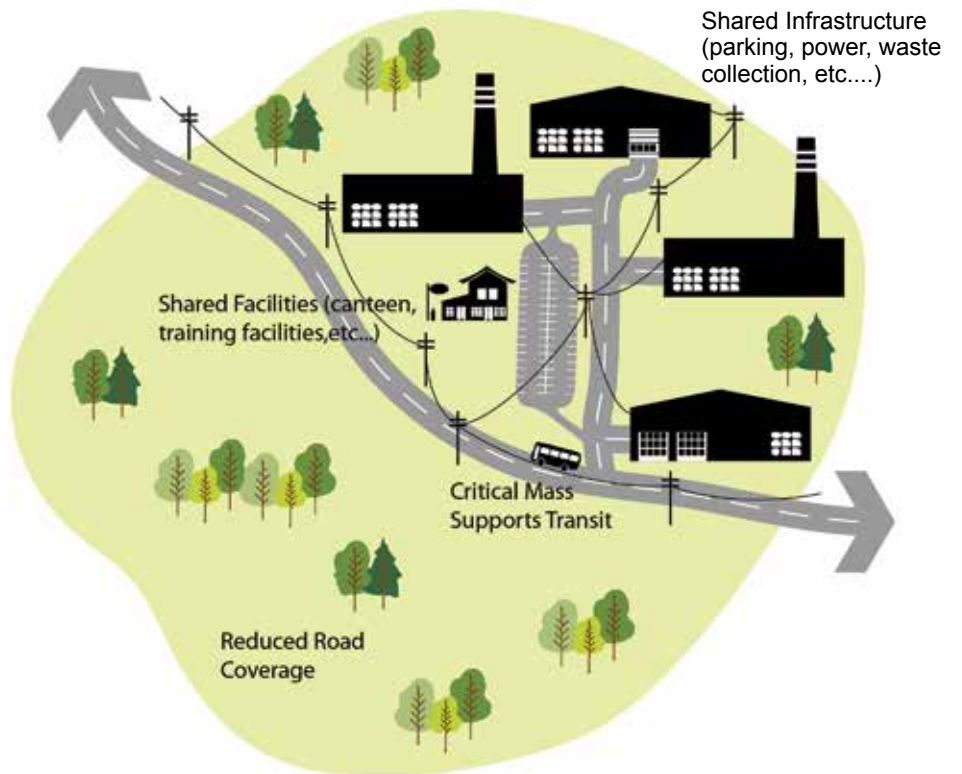
⁵ Braziller, Clay. Putting the Eco in Industrial. Rep. ReNew Canada, n.d. Web. 5 Sept. 2012.

Hypothetical Eco-Industrial Development

Conventional Industrial Development



Eco-Industrial Development



Use in Alberta

Municipalities in Alberta can provide for Eco-Industrial Parks through their Land Use Bylaws and/or MDPs. MDPs can establish the general vision and policy direction to locate Eco-Industrial Parks in particular locations, and Land Use Bylaws can establish many of the regulatory provisions associated with eco-industrial parks, such as land uses and parking.

Edmonton's Energy and Technology Park Area Structure Plan (ASP) provides a framework to encourage the development of ancillary petrochemical industries in the northeast part of the city. The ASP intends to provide industrial growth in an eco-industrial form that promotes economic and ecological values while optimizing efficient land use. The main mechanism for achieving this is to locate complementary industries that are integrated and work together in refining chemicals into market products within the area. Other aspects of the plan include provisions to allow alternative infrastructure solutions, a walking and cycling network to support recreational use and alternative transportation methods, development design guidelines that promote sustainability, and an integrated natural areas system.

The Regional Municipality of Wood Buffalo's Land Use Bylaw includes a district intended to apply certain eco-industrial principles to industrial development. One example of where these provisions apply is the 53 ha TaigaNova Eco-industrial Park. Among the directions for this site that are relevant to the efficient use of land are:

- providing a report regarding the feasibility of pooling backup systems with other buildings;
- providing a statement describing opportunities considered to maximize land-use efficiency and whether strategies were implemented and how; and
- description of opportunities that were considered for coordinated heating/cooling; and obtaining resource needs and waste production information regarding businesses on nearby sites from the Development Authority.

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	
4. Maximize the use of existing infrastructure.	
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

CASE STUDY

Eco-Industrial Parks

INNOVISTA: An Eco-Industrial Park Hinton, Alberta

**Responsibility: Municipal | How applied: Mandatory |
Scale: Local**

Hinton is located in west-central Alberta. It was the first municipality in Canada to establish an eco-industrial zoning district in its Land Use Bylaw. The INNOVISTA development is located within this district. The municipality received federal funding to pilot the project and to pioneer the concept of developing an eco-industrial park on greenfield lands. The concept of INNOVISTA was developed in 2003 with guidelines following in 2006 and subdivision in 2008.

INNOVISTA is a 44 hectare (108.7 acre) site, including 13 hectares (32.1 acres) of parks and ecological reserves. In focusing on efficient land use, INNOVISTA was planned to have significantly less road surface area than a traditional industrial park, while still maintaining road frontage for all lots. Road coverage in INNOVISTA is only 7 per cent, compared to 12 per cent in a standard industrial park and development must adhere to a maximum permeable surface percentage in order to retain natural vegetation. Where possible, utility corridors were built to double as trails and two footbridges enable pedestrians, cyclists and light electrical vehicles to access the site, all of which reduce demand for parking space. Trails and park space are also designed to function as stormwater management facilities. INNOVISTA also offers shared services, group purchasing and central storage facilities.

The design guidelines for the INNOVISTA EIP include a number of provisions intended to encourage efficient land use:

- minimize overall development footprint (including building, warehousing, access roads and parking) by considering stackable or alternative warehousing techniques, using joint logistics facilities, clustering buildings, and reducing setbacks;
- facilitate shared service areas amongst buildings and with adjacent parcels (e.g., waste collection and sorting, shipping and receiving, parking, outdoor lunch areas);
- minimize the width and area of paved surfaces;
- where appropriate, consider travel lanes or paths for small, on-site, low-impact transportation modes such as small electric delivery vehicles or small landscape maintenance vehicles;
- to reduce parking demand, provide bicycle end of trip-facilities such as showers and secure bicycle storage;
- minimize the size of parking areas;
- share parking facilities with adjacent parcels where possible; and
- design parking spaces so that a portion of the vehicle hangs over into a landscape strip where possible.

10. Encouraging Living in Land-Efficient Locations

Description

Many of the strategies discussed in this compendium relate to encouraging efficient use of land by directing new development to locate in areas where available land can be used more efficiently. A related strategy is to encourage individuals to choose to live and work in these more land efficient locations. Land efficient locations could include areas that have been previously developed, but that are now under-utilized. They could also include locations where concentrations of development, higher densities, and/or a greater mix of uses help to reduce the overall development footprint per capita.

One strategy for encouraging individuals to choose to live and work in more land efficient locations is the use of educational or incentive programs that highlight the potential individual cost savings. For example, research shows that lower transportation costs can make living in land efficient locations more affordable. According to a report by The Neptis Foundation, in the Toronto region it was calculated that for every kilometer away from a Central Business District a family lives, they spend 10 cents per day in transportation costs. That means, on average, a family that lives 50 kilometers away from a CBD spends an additional \$1,600 more per vehicle each year on travel than a family that lives five kilometres from a CBD. That amounts to an extra \$11.52 per day and \$4,200 a year for a family that owns two vehicles.⁶

Location cost calculators are an example of an educational tool to encourage living in land-efficient locations. Homebuyers are often unaware of the cost-savings that could be associated with living in land-efficient areas. Location cost calculators can help families predict their transportation costs and better determine the true affordability of their housing choices. Location cost calculators take into account the proximity of the dwelling to shops and services, public transit and employment.

Transportation Savings Mortgage programs are an emerging area of interest in Canada and have been used with some success in the United States. They are an example of an incentive tool to encourage living in land-efficient locations. They reward homebuyers for choosing to purchase a home in a land-efficient area. Several of these products have been offered in the United States, including the Location Efficient Mortgage and the Smart Commute Mortgage. These programs differ from traditional mortgages in their risk assessment process. Traditionally, lenders assess risk and available credit based on a predetermined ratio between household income and a variety

How is this tool typically applied in other jurisdictions?	
Mandatory	
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	✓

⁶ Miller, Eric J., and Et Al. Travel and Housing Costs in the Greater Toronto Area: 1986-1996. Publication. Toronto: Neptis Foundation, 2004. Web. 15 Aug. 2012. www.neptis.org/library.

Considerations for Using this Tool in Alberta

- To be effective, location cost calculators require extensive data that is not always available in all jurisdictions;
- Location cost calculators are typically an imperfect measure, as they cannot take into account a variety of local factors that also affect the cost of living in a particular location;
- Mortgage-based incentive programs have been criticized for encouraging people to purchase homes that are more expensive than they could otherwise afford, which leads to concerns about personal debt loads; and
- Choosing to live or work in a land-efficient location does not guarantee that an individual will exhibit the behaviours that make the location land-efficient, such as walking to stores and services, or utilizing transit.

of factors including household debt and available down payment. Transportation Savings Mortgage programs consider the cost savings of location-efficiency in their risk assessment. As a result, homebuyers who locate in location-efficient areas can qualify for a larger mortgage.

How Can This Tool Contribute to Efficient Land Use?

- Educational or incentive programs that highlight the cost savings associated with more land-efficient locations can encourage people to choose to live and/or work in these areas, rather than in less land efficient locations elsewhere in a municipality.

Relationship with Other Tools

Many of the strategies discussed in this compendium relate to encouraging efficient use of land by directing new development to locate in areas where available land can be used more efficiently, for example priority growth areas (#13), intensification targets (#19) and Transit Oriented Development (#26). Strategies to inform individuals about the individual economic benefits of choosing to locate in some of these areas can help ensure the success of these other strategies.

Use in Alberta

There are no Location Cost Calculators that have been designed specifically for use in Alberta. Similarly, as a product, Transportation Savings Mortgages are not currently available in Alberta.

CASE STUDY

Encouraging Living in Land-Efficient Locations

H+T Index

Center for Neighbourhood Technology, U.S.

Responsibility: Third Party | How applied: Voluntary |

Scale: Local

The H+T Index is an affordability index available online that examines transportation costs at a neighborhood level. Created by the Center for Neighbourhood Technology (CNT), it allows users to view housing and transportation data as maps, charts, and statistics for nearly 900 urban and semi-urban areas in the United States. This tool is not yet available in Canada.

The methodology for the H+T Index is drawn from peer reviewed research findings and nationally available datasets. The model considers all travel undertaken as part of a household's daily routine. The user inputs their city, county or region into the calculator and the calculator provides two maps: "Housing Costs as a Percentage of Income" and "Housing + Transportation Costs as a Percentage of Income." The output is meant to reveal what a typical household's housing affordability is in a certain area when typical transportation trends are included. The tool is not specific to individual addresses.

Related Examples From Other Jurisdictions:

- The Walk Score is an online tool that rates the walkability of any location at the neighbourhood scale. The principles considered to have high "walkability" correlate with location-efficiency, such as proximity to key amenities and connectivity. Amenities within 0.25 miles receive maximum points and no points are awarded for amenities further than one mile. The Walk Score can give homebuyers an idea of the location-efficiency of a certain property and help influence their decision to live in a more efficient or "walkable" location. The Pembina Institute suggests making the Walk Score part of real estate listings in the short term and including it as part of a comprehensive location efficiency cost and assessment in the long term. Many real estate listings in Alberta now show the property's Walk Score.
- The Smart Commute Mortgage program is a program of the Federal National Mortgage Association (Fannie Mae) in the U.S. In the pilot program offered in the City of Atlanta, homebuyers who locate within a half-mile of a MARTA (Metropolitan Atlanta Rapid Transit Authority) bus or rail stop, have only one car, and will use transit for daily commuting, qualify for proportionally higher mortgages and receive a six-month MARTA pass.

11. Form-Based Codes

Description

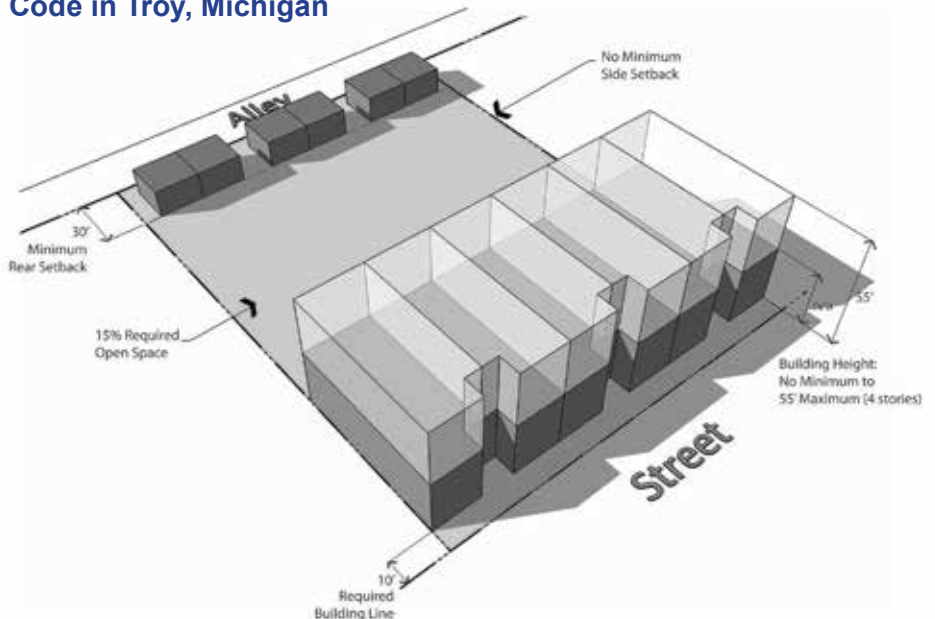
Form-based zoning codes control development by regulating its physical aspects, as opposed to traditional zoning that focuses on regulating the use of land. By regulating the dimensions of buildings, streets and open space, form-based codes aim to facilitate development that is more pedestrian-friendly and compact than traditional zoning.

Form-based codes can differ in terms of the scales they address, and can be applied to anything from a single street to an entire city. However, they are most commonly implemented in small areas as part of urban redevelopment projects. They are typically easier to understand because they make more use of diagrams and graphics than traditional land-use zoning.

How Can This Tool Contribute to Efficient Land Use?

- Form-based codes can be designed to promote more compact, mixed use developments that are transit-supportive and pedestrian-friendly. This can create more efficient land use by increasing densities, and reducing the need for road and other infrastructure that is typically required by conventional development.

Excerpt from Form-Based Code in Troy, Michigan



How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

Relationship with Other EUL Tools

Form-based codes can be used to encourage transit-oriented development (#26), adaptive reuse of existing buildings (#1) and building forms that reduce the overall development footprint (#4). They can also be designed to encourage or require the use of alternative development standards (#3) and/or to ensure that development meets certain LEED criteria (#16). Form-based codes can also be used to ensure that development that results from minimum density (#18) or intensification requirements (#19) is compatible with existing uses and contributes to a high quality of place.

Use in Alberta

While most experience with form-based codes has been in the United States, some Alberta municipalities have experience working with form-based codes or variations of form-based codes.

Calgary's East Village Redevelopment Plan (2004) uses a form-based approach to zoning. It mandates certain styles of buildings, such as walk-ups and high-rise residential buildings, for specific areas of the site.

Sylvan Lake created a 'Pattern Book' to guide development in certain areas of the town. The Pattern Book is similar to a form-based code in that it contains graphics that describe the types of buildings required in each zone.

Considerations for Using this Tool in Alberta

- Form-based codes can incorporate a number of standards that would support efficient land use;
- Form-based codes can facilitate mixed-use developments and create more visually coherent and coordinated neighbourhoods;
- If designed properly, can simplify and streamline the development process for both developers and regulators;
- Highly adaptable to local contexts – can be applied in large and small municipalities alike;
- Form-based codes require consensus amongst developers, planners and the public on the type of development that is desired. If consensus cannot be reached, the process may never get off the ground;
- Changes to tried-and-true zoning codes may not be readily accepted by community members, developers, and elected officials;
- Many municipalities lack the staff and expertise necessary to undertake the creation and implementation of a form-based code; and
- Form-based codes can be more expensive to craft and administer than conventional zoning regulations.

CASE STUDY

Form-Based Codes

SmartCode

Various jurisdictions in the U.S.

Responsibility: Local | How applied: Mandatory or Voluntary | Scale: Local

The SmartCode is a model form-based code created in the U.S. that combines zoning, subdivision regulations, municipal bylaws and urban design guidelines into a single document. It is intended to be integrated into a jurisdiction's plan and zoning bylaws once it has been calibrated to local contexts. It is appropriate for any size of area from large cities, to suburban municipalities, to small towns.

The SmartCode divides a region into successive zones from rural to urban-core, requiring that new development attain physical standards that are appropriate to its zone. Many of these standards relate to the efficiency of land use. The SmartCode details the specific densities, block sizes, types of parks, parking requirements, etc. that are permitted in each zone in order to minimize wasted land.

Although it can be applied to an entire city or region, most jurisdictions have adopted the SmartCode for specific areas. For example, Fort Myers, Florida adopted the SmartCode for its downtown area. Cities such as Flowood, Mississippi and Lawrence, Kansas adopted SmartCodes, but made them optional rather than mandatory – it is up to the landowner to decide which zoning regime he or she would like to select. Some municipalities use incentives to encourage landowners to select the SmartCode for their developments.

12. Greenbelts and Agricultural Reserves

Description

Greenbelts and agricultural reserves are tools designed to protect large, contiguous natural or agricultural areas, typically surrounding a major urban region. In some cases, greenbelts are established around a single town or city. In other cases, greenbelts are defined on a regional basis around an entire urban region.

Greenbelts are regulatory tools that set out a designated area that is to be preserved for agricultural uses and/or natural areas. Greenbelt policies typically work by strictly limiting the allowed uses within the designated greenbelt area. Allowed uses typically include agricultural activities as well as recreation and conservation uses. Other uses are not allowed within the designated greenbelt area. Most, if not all, greenbelt policies do make allowances for existing communities and other uses that pre-date the adoption of the greenbelt.

How Can This Tool Contribute to Efficient Land Use?

- The primary goal of greenbelts is typically to protect valued landscapes, but they can promote efficient use of land by limiting the expansion of cities, towns or urban regions. This can help foster a market for higher density development and intensification in urban regions outside of the greenbelt.

Relationship with Other EUL Tools

Greenbelts are often used in conjunction with tools that limit the expansion of urban areas, such as urban growth boundaries (#27). Greenbelt policies may include various provisions related to controlling development within the greenbelt, such as limits on lot creation (#17), cluster zoning (#6), optimizing lot sizes (#20) and/or agricultural land conversion fees (#2). Careful and consistent land budgeting (#15) is also important for making sure that the greenbelt does not restrict land supply to the point of driving up land values and house prices.

Current Use in Alberta

There are currently no greenbelts in effect in Alberta that are designed to limit the expansion of urban areas and achieve more efficient land use. While Calgary has implemented a greenway and Edmonton has protected its river valley, these protected areas are for recreation and open space.

Considerations for Using this Tool in Alberta

- Greenbelts are often met with opposition from rural landowners and farmers who are concerned about loss of development potential on their lands;
- Successful greenbelts cover large areas that cross multiple local jurisdictions, so they require regional coordination;
- Particularly useful for controlling urban expansion where natural features and topography do not create a natural urban boundary;
- Can negatively affect property values due to decreased development potential. This might result in demands for compensation;
- If not configured correctly, greenbelts can result in development leap-frogging the greenbelt area, leading to inefficient use of land and infrastructure;
- Can be a very inflexible tool, that doesn't account for variations of local conditions within the greenbelt area; and
- Some have argued that regional planning that identifies environmentally significant open space systems and then coordinates where growth can occur is more effective than establishing rigid greenbelts.

CASE STUDY

Greenbelts and Agricultural Reserves

Greenbelt Plan
Province of Ontario

Responsibility: Provincial | How applied: Mandatory | Scale: Regional

Ontario's Greenbelt Plan is a provincial plan adopted under the Greenbelt Act. It designates a 730,000 ha (1.8 million acre) area of rural lands, agricultural lands, and natural areas surrounding Ontario's heavily urbanized Greater Golden Horseshoe region as a permanently protected greenbelt.

The Greenbelt Plan defines three broad land-use categories:

- the Agricultural System (made up of specialty crop areas, prime agricultural areas and rural areas);
- the Natural System; and
- Settlement Areas (made up of existing towns, villages and hamlets).

Within each of these land-use categories, the Greenbelt Plan defines various permitted uses. For example, in Prime Agricultural Areas, the only permitted uses are agricultural, agriculture-related and secondary uses which include home based businesses. The permitted uses generally do not allow residential development outside of settlement areas. In addition, the Greenbelt Plan lays out strict restrictions regarding when settlement areas can expand. Aggregate extraction and the development of new infrastructure are generally permitted throughout the Greenbelt.



Ontario's Greater Golden Horseshoe Greenbelt

Related Examples From Other Jurisdictions:

- In the United Kingdom, greenbelts have been in place for over 60 years and protect 14 per cent of the total land area of England. The purpose of England's greenbelts is to control sprawl, prevent neighbouring towns from merging into one another, safeguard the countryside from encroachment, preserve historic towns, and assist urban regeneration by encouraging recycling of derelict land.
- In Scotland, where more than 150,000 hectares of land lies within greenbelts, they are given a wider purpose than in England, including establishing a clear definition of the physical boundaries of towns. They are also often used as strategic land reserves for future growth.
- British Columbia's Agricultural Land Reserve (ALR) identifies priority agricultural use areas where agriculture was determined to be the best use for the land. The reserve is administered by the Agricultural Land Commission (ALC) appointed by the Minister of Agriculture and Lands. The ALR was established in 1973 and includes 4.7 million hectares (11.6 million acres) of land. The ALR is used to encourage farming and regulate non-agricultural uses. If a person wishes to subdivide land or introduce a non-agricultural development on land within the ALR, the application goes to the ALC for approval. Local municipalities are expected to reflect the intention of the ALR within local land-use policies, although the ALR policies are not intended to replace local land-use policies.

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	✓
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	✓
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	

Considerations for Using this Tool in Alberta

- Where growth pressures are high, and where these pressures affect multiple municipalities, this tool could provide a framework for getting individual municipalities to agree on which areas are most appropriate for growth;
- Priority growth areas could help local, provincial and federal governments coordinate and prioritize their infrastructure spending;
- Clear guidelines or criteria would be needed to ensure that priority growth areas are located such that development within them actually results in more efficient land-use and a reduced development footprint;
- Identification of priority growth areas can create “winners and losers” both in terms of municipalities within a region, and landowners within a community;
- Market realities may limit the demand for residential, commercial and other forms of development within priority growth areas;
- Priority growth areas would have little relevance in areas where there is little growth pressure; and
- Design guidelines would be needed to ensure that development in priority growth areas is sensitive to the local context.

13. Identification of Priority Growth Areas

Description

Directing development to “priority growth areas” is a key strategy that has been employed in many local and regional plans. What constitutes a “priority growth area” varies across jurisdictions. Typically, they include transit nodes, transit corridors, former industrial areas, depressed or blighted areas in communities that are in need of new investment, or areas that have available infrastructure capacity.

Once identified, priority growth areas are often supported by policies requiring a certain proportion of future growth to occur in these locations. The policy tools may also be supported by incentives or infrastructure investments that are designed to attract development to the priority growth areas.

How Can This Tool Contribute to Efficient Land Use?

- Depending on how they are identified and where they are located, priority growth areas can contribute to efficient land use by directing development to areas with existing infrastructure capacity, thereby reducing the need to extend new infrastructure. They can also reduce the footprint of the built environment by shifting development pressure from previously undeveloped greenfield lands to brownfields, greyfields or other previously disturbed lands.

Relationship with Other Tools

Identifying priority growth areas within existing urban areas can help reinforce urban growth boundaries (#27), greenbelts (#12), limitations on residential lot creation in rural and agricultural areas (#17) and the achievement of minimum intensification targets (#19). Associating priority growth areas with areas of high transit service can assist with achieving transit-supportive land use and transit-oriented development (#26). If associated with brownfield sites, or transit nodes, directing development to priority growth areas can also help meet certain LEED criteria (#16). Priority growth areas can also be used as the basis for variable development levies (#28) or tax increment financing (#24) incentive programs (e.g. development in priority growth areas could qualify for lower development levies or tax increment financing).

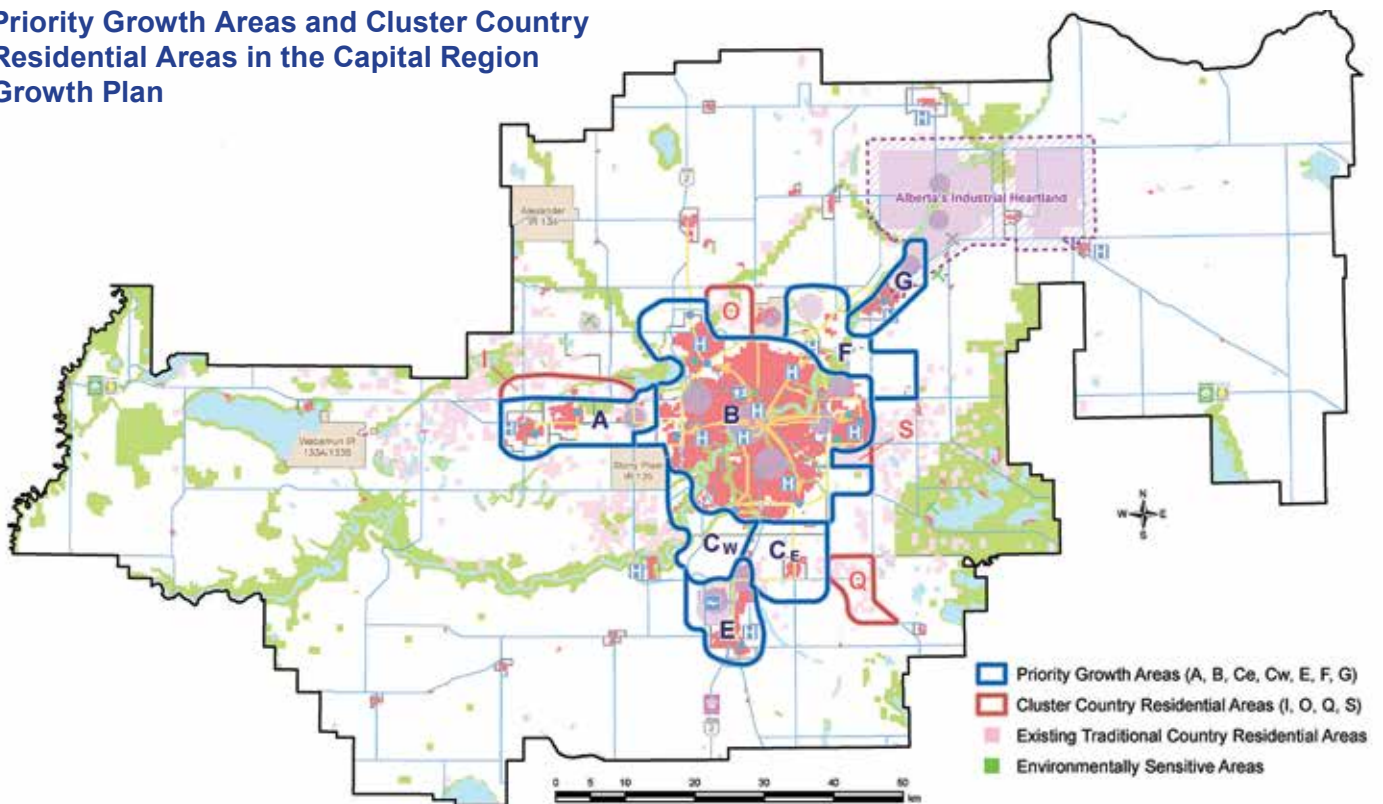
Use in Alberta

A number of Alberta municipalities use some form of priority growth area designation in their local planning.

The Capital Region Growth Plan identifies seven Priority Growth Areas (PGAs), comprising Edmonton, Fort Saskatchewan, Sherwood Park, a new growth node in Strathcona County, Beaumont, Leduc, Spruce Grove, Stony Plain and St. Albert. The PGAs were defined by a series of transportation, infrastructure and land-use criteria. Key criteria were (a) proximity to existing or planned employment areas, transit corridors, utility corridors, social infrastructure, rail and road corridors, and existing urban areas (b) opportunities for redevelopment and intensification of existing urban areas, disturbed lands or reclaimed areas and (c) available land supply.

Calgary's MDP identifies Activity Centres and Corridors that are to receive priority for growth. These areas are required to meet "intensity thresholds" which are essentially minimum density requirements.

Priority Growth Areas and Cluster Country Residential Areas in the Capital Region Growth Plan



CASE STUDY

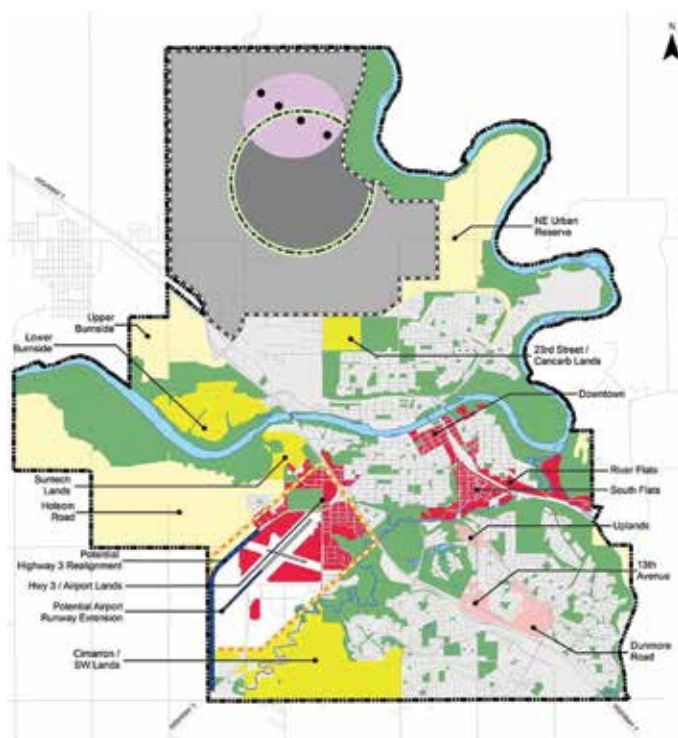
Identification of Priority Growth Areas

**Medicine Hat Growth Management Strategy and MDP
City of Medicine Hat, Alberta**

**Responsibility: Municipality | How applied: Mandatory |
Scale: Local**

As a precursor to developing its new Municipal Development Plan, the City of Medicine Hat undertook a Growth Management Strategy to define where, when and how Medicine Hat should grow in the future. The strategy concluded that the city had a significant surplus of available greenfield lands to accommodate future growth. The city undertook a process of identifying Priority Greenfield Areas to determine which available greenfield areas would be the priority for future development. The prioritization of greenfield areas was based on (a) a desire to encourage contiguous growth within Medicine Hat, (b) the ease and cost of providing servicing and transportation infrastructure and (c) infrastructure investments that had already been made. As a result of this analysis, four sites were identified as Priority One Greenfield Areas and three sites were identified as Priority Two.

The City of Medicine Hat's 2012 Municipal Development Plan implements these growth management directions. It states that areas identified as Priority One Greenfield Areas will be considered suitable for future development during the first 30 years. Development will not be allowed in areas identified as Priority Two Greenfield Areas until the total aggregated capacity of the Priority One areas is within 5 years of build-out.



City of Medicine Hat - Municipal Development Plan Land-use Schedule (2012)

Related Examples From Other Jurisdictions:

- Ontario's Growth Plan for the Greater Golden Horseshoe (2006) identifies 25 "urban growth centres" across the region. These are typically the downtown areas or central business districts of the region's large and mid-sized cities. The Growth Plan requires that municipalities accommodate a minimum density of development within these areas, and that municipalities and the province make these locations focal areas for infrastructure and other investment.
- The State of Maryland passed the Priority Funding Areas Act in 1997. This legislation directs state government spending for projects that support growth (e.g. sewers, roads, economic development assistance) to Priority Funding Areas. Maryland's Priority Funding Areas are quite broad. Areas that qualify as Priority Funding Areas are every municipality, as they existed in 1997; areas inside the Washington Beltway and the Baltimore Beltway; and areas already designated as enterprise zones, neighborhood revitalization areas, heritage areas and existing industrial land.

How is this tool typically applied in other jurisdictions?

- | | |
|------------------------|---|
| Mandatory | ✓ |
| Voluntary or Incentive | ✓ |

At what scale or level of government is this tool typically applied in other jurisdictions?

- | | |
|--------------------|---|
| Provincial / State | ✓ |
| Regional | ✓ |
| Local | ✓ |

Which types of land does this tool typically apply to?

- | | |
|----------------------|---|
| Public (Crown) Land | |
| Private Land (Urban) | ✓ |
| Private Land (Rural) | ✓ |

Which EUL strategies could this tool potentially support?

- | | |
|--|---|
| 1. Reduced rate of land conversion. | ✓ |
| 2. Utilize minimum amount of land needed. | ✓ |
| 3. Utilize already developed or disturbed lands. | ✓ |
| 4. Maximize the use of existing infrastructure. | ✓ |
| 5. Disturbed lands are reclaimed or reused. | ✓ |
| 6. The information needed for decisions that support efficient land use. | |

Considerations for Using this Tool in Alberta

- Inter-jurisdictional agreements have been widely used in Alberta and a number of precedents are available to guide those municipalities looking to put agreements in place;
- Inter-jurisdictional agreements are a highly flexible tool that can be adapted to meet local priorities;
- Inter-jurisdictional agreements provide a mechanism for supporting efficient land-use while at the same time ensuring that lower growth communities can share in the benefits of development;
- Both types of inter-jurisdictional agreements can help ensure development on either side of political boundaries reflects the common and individual interests of the municipalities involved by identifying mutually agreed upon objectives and policies; and
- An advantage of a non-statutory agreement is that it brings municipalities to the table in a non-binding format which can foster open communication and cooperation on important issues. These agreements can also provide a basis for future communications and opportunity for more detailed or statutory plans.

14. Inter-jurisdictional Agreements

Description

Growth and development are inherently trans-boundary, particularly when growth pressures from urban areas spill into surrounding rural areas. Inter-jurisdictional agreements provide an opportunity for the coordination of planning and/or servicing between two or more municipalities to achieve a variety of goals. There are two approaches to inter-jurisdictional agreements in relation to land-use planning in Alberta, the first being Inter-municipal Development Plans (IDPs) and the second being voluntary multi-jurisdictional agreements.

An IDP is a statutory plan that is prepared and adopted by bylaw by two or more neighbouring municipalities in accordance with the Municipal Government Act (MGA). The MGA outlines specific requirements for IDPs, and also allows flexibility for municipalities to include in them a wide range of policy objectives. An IDP may provide for future land-use within the subject area and any other matter relating to the physical, social or economic development of the area that the municipalities consider necessary. Often IDPs involve an urban and a rural municipality and are intended to address growth pressures at the rural-urban fringe. In addition to outlining objectives and policies to guide future land-use decisions, IDPs outline a referral process to allow each municipality to provide input on development decisions within the subject area.

Inter-jurisdictional agreements can also be non-binding in nature and rely on the voluntary participation of the municipalities involved. Voluntary multi-jurisdictional agreements can involve joint resources to research, develop or implement policies that aim to address specific objectives.

How Can This Tool Contribute to Efficient Land Use?

A number of efficient use of land objectives can be addressed through inter-jurisdictional agreements, such as:

- Directing growth in the rural municipality to existing hamlets or villages, and avoiding non-contiguous development at the rural-urban fringe;
- Ensuring that planning on both sides of the border allows for efficient and orderly development over the long-term; and
- Directing, promoting or limiting growth by identifying where and what type of development is most beneficial to all municipalities involved;

- Making it clear where, if at all, urban services such as sewer and water can easily be extended and directing development to these areas;
- Concentrating development and allowing for higher densities in targeted areas in order to minimize the amount of land required for development;
- Avoiding “leap-frog” development and ensuring that growth in the rural municipality is contiguous and compatible with development within the urban municipality;
- Identifying opportunities for shared use of infrastructure and services that can reduce the development footprint of these facilities;
- Identifying mutually agreed upon environmentally sensitive areas and other areas where development may not be appropriate;
- Restricting lower density country residential developments within the inter-municipal fringe area that may negatively impact future higher density urban development; and
- Restricting further expansion of extensive agricultural operations as well as livestock operations that may negatively impact future urban development within the inter-municipal fringe area.

Relationship with Other EUL Tools

Many of the efficient use of land strategies and tools discussed in this compendium can fail to have the desired affect if they are undermined by the actions of a neighbouring municipality. Inter-jurisdictional agreements, therefore, can be a mechanism for implementing or reinforcing various efficient use of land strategies, such as identifying priority growth areas (#13), establishing urban growth boundaries (#27), or establishing cluster zoning areas (#6). The policy context that would be provided by an inter-jurisdictional agreement could also help determine which tools would be most appropriate to apply in a given situation in order to achieve the desired efficient use of land objectives.

Use in Alberta

Inter-jurisdictional agreements are a commonly used planning tool in Alberta. These take the form of both voluntary agreements as well as statutory agreements under the *Municipal Government Act*.

The City of Edmonton – Strathcona County Joint Planning Study (JPS) is an example of a non-statutory inter-jurisdictional study. The JPS was initiated to enable the municipalities to coordinate future planning along their shared borders. In relation to efficient land use, the study specifically made recommendations on how to achieve

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	✓
Local	
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	✓

⁷ County of Brazeau and Town of Drayton Valley County of Brazeau and Town of Drayton Valley Intermunicipal Development Plan. Intermunicipal Development Plan. Lovatt Planning Consultants Inc., May 2011. Web. 4 Sept. 2012. <<http://www.draytonvalley.ca/planning-and-development>>.

coordinated transportation planning and manage drainage issues and apply risk management techniques. Coordination of these and other municipal responsibilities is intended to ensure that land resources on either side of the boundary are used efficiently, and to reduce duplication of servicing and infrastructure.

In 2012, Brazeau County and the Town of Drayton Valley completed an inter-municipal development plan (IDP) which includes a long term land-use strategy and Growth Management Plan. The IDP aims to “provide for the effective coordination of future land uses and growth management, economic development, transportation systems and municipal infrastructure”.⁷ The main objectives of the Growth Management Plan portion of the IDP reflect principles of efficient land use. It aims to accommodate the majority of future residential growth by optimizing existing developed areas first, and then allowing new development in the form of relatively compact, serviced residential communities. Minimum lot sizes were used to encourage more clustered development and development staging was used to ensure optimization of existing developed areas. Similar objectives were applied in identifying lands proposed for commercial and industrial developments by focusing on land capable of being serviced or in close proximity to existing developments.

CASE STUDY

Inter-jurisdictional Agreements

**JEDI (Joint Economic Development Initiative) Alberta
City of Wetaskiwin, County of Wetaskiwin No. 10 and Town of Millet**

**Responsibility: Municipality | How applied: Voluntary |
Scale: Regional**

JEDI Alberta is a not-for-profit regional partnership between the City of Wetaskiwin, the Town of Millet and the County of Wetaskiwin No. 10 that aims to foster sustainable industrial growth throughout this region. The initiative supports sustainable growth and diversification of industrial enterprise while preserving the integrity of the natural environment and the communities they serve. Support services include site selection information and collaboration, business development, labour development and other related support. The JEDI Alberta program offers users in-depth knowledge on the region and outlines the strategic advantages of locating industry there. JEDI Alberta was one of the first municipal partnerships of its kind in Alberta to enter into a Cost and Revenue Sharing Master Agreement. This initiative encourages efficient land use by encouraging industrial development to occur in areas that are contiguous, close to transportation, and that can be serviced most efficiently.

15. Land Budgeting

Description

Municipalities prepare land budgets in order to determine how much additional land is needed to accommodate future growth. Land budgeting is an important means by which municipalities seek to manage land and housing supply and, by extension, land and housing prices. The intent is to avoid major land supply shortages that could drive up housing prices, or major land surpluses.

In many municipalities, the land budgeting process only considers peripheral or “greenfield” land as potential future land supply. However, many cities have considerable amounts of underutilized industrial land (“brownfields”) or underutilized commercial or residential lands (“greyfields”) within their urban areas. Land budgeting can be used to inventory these available lands, and to ensure that they are included as part of the available future land supply.

How Can This Tool Contribute to Efficient Land Use?

- Maintaining an inventory of brownfield, greyfield and other lands inside existing urban areas can help highlight these areas as development opportunities to potential developers and investors;
- Allocating a proportion of future growth to existing urban lands through the land budgeting process can reduce development pressure on greenfield lands on the periphery, and thereby support redevelopment and intensification within existing urban areas.

Relationship with Other Tools

Land budgeting can be used to provide the rationale and justification for establishing urban growth boundaries (#27) or greenbelts (#12). It can also support minimum intensification targets (#19) and the identification of priority growth areas (#13) by including these areas within the land budgeting assumptions.

How is this tool typically applied in other jurisdictions?

- | | |
|------------------------|---|
| Mandatory | ✓ |
| Voluntary or Incentive | ✓ |

At what scale or level of government is this tool typically applied in other jurisdictions?

- | | |
|--------------------|---|
| Provincial / State | |
| Regional | ✓ |
| Local | ✓ |

Which types of land does this tool typically apply to?

- | | |
|----------------------|---|
| Public (Crown) Land | |
| Private Land (Urban) | ✓ |
| Private Land (Rural) | |

Which EUL strategies could this tool potentially support?

- | | |
|--|---|
| 1. Reduced rate of land conversion. | ✓ |
| 2. Utilize minimum amount of land needed. | |
| 3. Utilize already developed or disturbed lands. | ✓ |
| 4. Maximize the use of existing infrastructure. | |
| 5. Disturbed lands are reclaimed or reused. | ✓ |
| 6. The information needed for decisions that support efficient land use. | |

Considerations for Using this Tool in Alberta

- Land budgets are already common practice in most municipalities. The potential exists to broaden the scope of these assessments without creating a substantial new burden on municipalities;
- Has the potential to inform provincial decisions on release of Crown lands;
- Coordination of land budgeting between neighbouring municipalities could reduce the inefficient use of land that often results from competition for development, and facilitate the orderly development of municipalities;
- Requiring municipalities to consider urban infill and redevelopment opportunities for some of their future growth may not be supported by rural and suburban municipalities who might see it as a mechanism for shifting growth from their communities to the larger centres;
- Without additional tools to facilitate or require infill and intensification within existing urban areas, or to restrict development outside of existing urban areas, land budgets that assume high rates of infill and intensification could result in mismatches between where the lands supply is, and where the demand is; and
- May require different approaches for different contexts. Land budgeting is less relevant to municipalities with little development pressure.

Use in Alberta

Although there is no formal requirement in Alberta for municipalities to prepare land budgets, the MDPs of most municipalities identify a land supply target. This target varies across municipalities. For example, Calgary's MDP states that the city should maintain up to a 15-year planned land supply, whereas Cochrane's MDP requires the town to maintain a 30-year land supply. To meet these land supply targets, most municipalities in Alberta complete land supply/demand evaluations for all major land uses when preparing their MDPs. However, these evaluations are typically done for the purpose of regulating overall land supply and planning for infrastructure needs. They are not generally geared towards supporting efficient use of land objectives.

CASE STUDY

Land Budgeting**Strategic Housing Land Availability Assessments
United Kingdom**

**Responsibility: National Government | How applied: Mandatory |
Scale: Local**

In the late 1990s and early 2000s, the United Kingdom faced a housing shortage and corresponding high housing prices. The federal government addressed this problem in 2006 through its Planning Policy Statement (PPS) 3, which mandated that all municipalities undertake Strategic Housing Land Availability Assessments.

These assessments required local planning authorities to:

- identify sites with potential for housing;
- assess the potential of the sites for housing; and
- assess when the sites are likely to be developed.

PPS 3 goes beyond traditional land budgeting, however, because it explicitly requires local planning authorities to consider the development potential of sites that might otherwise be overlooked, such as:

- vacant or derelict land and buildings;
- surplus public sector land; and
- land not currently being used for residential purposes but that may be suitable for redevelopment for housing (e.g. commercial buildings, parking lots, brownfields, etc.)

The national government also maintains a national database of potential redevelopment sites, based on the findings of the local assessments.

Related Examples From Other Jurisdictions:

- The Government of Ontario has developed a Projection Methodology Guideline to assist municipalities in completing land budgets. The guideline encourages municipalities to consider opportunities for redevelopment inside existing urban areas, including brownfield redevelopment.

16. LEED-ND Standards

<p>How is this tool typically applied in other jurisdictions?</p> <p>Mandatory</p> <p>Voluntary or Incentive ✓</p>
<p>At what scale or level of government is this tool typically applied in other jurisdictions?</p> <p>Provincial / State</p> <p>Regional</p> <p>Local ✓</p>
<p>Which types of land does this tool typically apply to?</p> <p>Public (Crown) Land</p> <p>Private Land (Urban) ✓</p> <p>Private Land (Rural)</p>
<p>Which EUL strategies could this tool potentially support?</p> <ol style="list-style-type: none"> 1. Reduced rate of land conversion. 2. Utilize minimum amount of land needed. ✓ 3. Utilize already developed or disturbed lands. ✓ 4. Maximize the use of existing infrastructure. ✓ 5. Disturbed lands are reclaimed or reused. ✓ 6. The information needed for decisions that support efficient land use.

Description

The Leadership in Energy and Environmental Design for Neighbourhood Development (LEED-ND) rating system is a third-party certification program to guide and assess sustainable community development. LEED-ND was developed by the United States Green Building Council (USGBC) in collaboration with the Congress for New Urbanism and Natural Resources Defence Council. New developments achieve points towards certification based on the principles of smart growth, urbanism, and green buildings. The Canadian Green Building Council (CaGBC) has developed an Alternative Compliance Path for the LEED-ND rating system that provides clarity and guidance for Canadian projects.⁸

As with other LEED rating systems, LEED-ND has four levels of certification – Certified, Silver, Gold, and Platinum – based on the number of points a development achieves. The LEED-ND rating system is made up of prerequisites, which all projects under consideration must satisfy, and credits, which the developer can choose from in order to earn points towards one of the certification levels. Eligible projects can vary widely in their scope and character. Small infill projects qualify, as do large master planned communities. LEED ND is not designed to rate municipal plans or policies, but rather actual development projects.

Some municipalities offer incentives to developers to build to LEED standards. These incentives usually come in the form of fast-tracked development applications or reduced development fees. Municipalities can also facilitate LEED standard development by reviewing their local zoning bylaws to ensure that they do not include any barriers to achieving LEED certification.

How Can This Tool Contribute to Efficient Land Use?

- Many of LEED-ND's prerequisites and credits relate to efficient use of land. For example, LEED-ND in the U.S. includes points for density (10 dwelling units per 0.4 hectares (1 acre) or a Floor Area Ratio greater than 0.75) and for redevelopment of brownfield land.

⁸ For additional information visit www.cagbc.org

Relationship with Other Tools

Achieving LEED-ND standards could facilitate reaching minimum density targets (#18). It could also provide added support for transit-oriented design (#26) and building forms that reduce the overall development footprint (#4). Developments pursuing LEED-ND certification may require or benefit from alternative development standards (#3). The LEED-ND standard of using no more than 20% of the total development footprint area for new off street parking facilities could help to reduce land area dedicated to parking (#22). Variable development levies can be used to provide an added financial incentive to achieving LEED standards (#28).

Use in Alberta

As part of developing LEED-ND in Canada, a series of pilot project sites were identified in early 2007. Five of these are in Alberta:

- Currie Barracks, Calgary (Stage 2 LEED ND Gold certification)
- Harmony, Rockyview County (under construction)
- Strathearn Master Plan, Edmonton (Stage 2 LEED ND Silver certification)
- The Village at Griesbach, Stage 8, Edmonton (Stage 2 LEED ND Gold certification)
- TwinHills CENTRO, Calgary (under construction)

Some municipalities also promote LEED or similar standards through their MDPs. For example, the City of Calgary's MDP includes a policy that strongly encourages the use of energy design and management systems such as LEED, BuiltGreen Alberta, Go Green, or an equivalent rating system, to encourage energy efficiency in buildings. Similarly, the City of Medicine Hat's MDP states that developers are encouraged to build and design subdivisions and developments that meet environmental standards such as LEED or BuiltGreen Alberta.

In the spring of 2007, the City of Calgary passed the Calgary Building Permit Bylaw, which allows for a fee reduction for all private projects pursuing LEED or BuiltGreen certification.

Development authorities can also require some LEED standards as conditions attached to a discretionary use approval. Such a condition could also be added to a permitted use approval, as long as it does not render the development of the permitted use impractical. In addition, the Development authority could incentivize the meeting of LEED standards by varying the rules for a discretionary use as part of the approval process if LEED was proposed.

Considerations for Using this Tool in Alberta

- LEED is a broadly accepted standard.;
- Consistent application of LEED standards can lead to improved quality of development in Alberta;
- More frequent use of LEED in Alberta would help to "normalize" sustainable development and test new technologies and approaches;
- While LEED-ND standards are theoretically achievable in rural areas and small towns, the significance given to density, transit use, and other factors would make achieving these standards difficult outside of cities;
- LEED is quantifiable and measureable. There's a third-party certification process, further ensuring substance behind the claims;
- There is a fee for LEED certification and many developers hire LEED certified professionals to help in the planning and design stages. This adds to the cost of development;
- Achieving LEED certification can be a time-consuming process;
- Developments can achieve the same results in terms of environmental sustainability without going through the LEED process; and
- LEED is a program developed by a third-party organization. Municipalities can also create their own programs to achieve the same results.

CASE STUDY

Leed ND Standards

Various

Responsibility: Municipal | How applied: Voluntary / Incentive | Scale: Local

A number of municipal jurisdictions, mainly in the United States, offer incentives to developers to encourage them to pursue LEED certification. For example:

- In 2006, Sarasota County, Florida approved a Green Development Incentive Resolution that provides fast-track permitting for residential and commercial developments that are pursuing LEED certification;
- Mecklenburg County, North Carolina offers permit fee rebates to projects with proof of LEED certification. Rebates increase proportionate to the level of certification achieved; and
- The Green Neighborhood Grant Act in Illinois State enables the Department of Commerce and Economic Opportunity to fund three LEED-ND projects annually up to 1.5 per cent of the total development cost.

In general, requiring certification as a condition of approval for developments is not necessary, and the legality of such an approach is questionable because it would rely on the actions of a third party to secure public approvals. However, an analysis of the project proposal against LEED-ND criteria can allow decision-makers to see how the project measures up without mandating certification. For example:

- In 2009, Oakland, California proposed a series of minimum environmental thresholds for new development, including a requirement that new developments greater than 60,000 square feet must submit a checklist based on LEED criteria for the city to review.

Some jurisdictions choose to require certification, but only for projects receiving a certain level of financial support. For example:

- East Lansing, Michigan created a green building ordinance requiring private development projects receiving over 15 per cent municipal incentives to achieve at minimum LEED Silver certification.

17. Limiting Residential Lot Creation in Rural and Agricultural Areas

Description

In order to enjoy a more rural lifestyle, many people choose to live in “acreage”-style developments outside of developed areas, but they don’t necessarily want to use their land for agricultural purposes. This style of development is often called country residential development or rural multi-lot subdivisions. It may also include “first parcel out” development. It occurs on large lots created through the subdivision of original quarter sections into residential lots. In some situations, this type of development can lead to the fragmentation of productive agricultural lands. It can also facilitate the introduction of incompatible residential land uses into farming areas, which could hinder farming operations due to concerns about odour, dust, noise, etc. Country residential development also tends to be lower density, resulting in higher land consumption per household.

There are a variety of policy tools that different jurisdictions have used to control the proliferation of extensive residential lot creation in rural and agricultural areas. These tools vary from restricting the number of lots allowed in a specific area to outright banning the creation of new rural residential lots.

How Can This Tool Contribute to Efficient Land Use?

- Reduces the proliferation of residential uses in agricultural or other resource areas, thereby reducing fragmentation of important resource landscapes;
- Shifts residential development to nearby towns, hamlets and other developed areas, thereby reducing the need to extend infrastructure such as roads; and
- Shifts residential development to what are generally smaller lots within existing towns, villages and hamlets.

<p>How is this tool typically applied in other jurisdictions?</p> <p>Mandatory</p> <p>Voluntary or Incentive</p>	<p>✓</p>
<p>At what scale or level of government is this tool typically applied in other jurisdictions?</p> <p>Provincial / State</p> <p>Regional</p> <p>Local</p>	<p>✓</p> <p>✓</p> <p>✓</p>
<p>Which types of land does this tool typically apply to?</p> <p>Public (Crown) Land</p> <p>Private Land (Urban)</p> <p>Private Land (Rural)</p>	<p>✓</p> <p>✓</p> <p>✓</p>
<p>Which EUL strategies could this tool potentially support?</p> <p>1. Reduced rate of land conversion.</p> <p>2. Utilize minimum amount of land needed.</p> <p>3. Utilize already developed or disturbed lands.</p> <p>4. Maximize the use of existing infrastructure.</p> <p>5. Disturbed lands are reclaimed or reused.</p> <p>6. The information needed for decisions that support efficient land use.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

Considerations for Using this Tool in Alberta

- Suitable for areas experiencing rapid growth pressures on rural and agricultural lands, and where there is significant urban-rural tension. Less relevant in slower growth areas, or where there are few alternatives to rural residential development;
- Can be implemented at the local level and tailored to local needs and circumstances;
- Facilitates the future expansion of towns and cities (i.e. they don't have to leapfrog over country residential developments or try to accommodate them within the new urban fabric);
- By limiting the residential development potential on rural and agricultural lands, could lessen development speculation and the high land prices that go with it. Conversely, in some cases, restricting new residential land uses could reduce overall supply, and drive up prices;
- May be opposed by landowners who would view controls on residential development as an infringement on their property rights;
- Some rural municipalities may be concerned that this sort of policy would make them "land banks" for the future expansion of urban municipalities; and
- Requires consistent application across a wide area, otherwise country residential development would just shift to neighbouring municipalities.

Relationship with Other EUL Tools

Limiting residential lot creation in rural and agricultural areas can be used to reinforce the effectiveness of urban growth boundaries (#27) and greenbelts (#12) and to facilitate the achievement of minimum intensification (#19) and density (#18) targets. Limits on residential lot creation in rural and agricultural areas can be supported by the use of agricultural land conversion fees (#2) and optimum lot size policies (#20).

Use in Alberta

This form of development is a common feature of many municipalities in Alberta. It is generally seen as an important part of the overall housing mix in the province. Municipalities use various planning tools to control or limit this particular land use. Many municipalities seek to shape or direct rural residential development through cluster zoning (#6), or by directing country residential development to lands of lesser agricultural capability through their Land Use Bylaws. It is also common for MDPs to establish a maximum number of country residential lots that can be subdivided from a quarter section.

CASE STUDY

Limiting Residential Lot Creation**Municipal Development Plan****Municipal District of Rockyview No. 44, Alberta**

Responsibility: Municipality | How applied: Mandatory | Scale: Local

The MD of Rockyview limits the creation of residential lots within agricultural areas through their Municipal Development Plan and Land Use Bylaw. Within areas designated Agricultural, residential lot creation is limited to the separation of one existing farmstead per quarter section with a minimum lot size of 1.6 ha (4 acre) and a maximum lot size related to the existing footprint of the farmstead. Separation of the farmstead requires the redesignation of the subject lands to the Farmstead District within the LUB. The remainder of the parcel must remain as agricultural. The creation of one vacant residential parcel from a previously unsubdivided quarter section is also allowed with the redesignation of the subject lands to a Residential Land-use District within the LUB. The minimum and maximum lot sizes are determined within each district. Further subdivision of country residential parcels is not permitted unless authorized by an approved Area Structure Plan or Conceptual Scheme policy and the remainder of the quarter section is able to be maintained for agricultural use.

Related Examples From Other Jurisdictions:

- In Ontario, the Ontario Provincial Policy Statement (PPS) forms the basis for local land-use planning. All planning decisions made by municipalities must be consistent with the PPS. It states that residential lot creation is not allowed in Prime Agricultural Areas. The Province defines Prime Agricultural Areas as places that have high value soils or lands that are suitable for specialty crops, or areas that have a local concentration of farms. The Growth Plan for the Greater Golden Horseshoe provides additional direction with respect to lot creation on rural lands that are not prime agricultural lands. It states that multiple lot residential development (defined as the creation of three or more units) is not permitted in rural areas.
- Manitoba's Provincial Planning Regulation aims to minimize the fragmentation of land designated for agricultural use. Designated agricultural land must be maintained in a minimum parcel size of at least 32 ha (80 acre) and only one subdivided parcel is permitted per 32 ha (80 acre) title. Subdivision can only occur in limited circumstances. For example, if the parcel will be used for a specialized agricultural operation that requires a smaller land holding, will separate out an existing farmstead, or is proposed for a commercial or industrial use that supports agriculture.

Considerations for Using this Tool in Alberta

- Minimum density targets are already being used by many municipalities in Alberta as part of their MDPs and other planning documents;
- Minimum density targets can be tailored to a wide range of contexts. However, they are less relevant in low growth rural municipalities;
- Currently there is no consistency in how municipalities in Alberta are measuring density (e.g. net vs. gross, persons vs. units), or in their actual density targets;
- Density targets establish clear ground rules for developers and also provide some certainty to existing residents about the form that new development near them will take;
- Without coordination, efforts by one municipality to require higher densities can be undermined if a neighbouring municipality allows lower densities;
- Higher densities without careful attention to design can negatively affect the livability and desirability of neighbourhoods;
- Proposals for higher density development in or near established neighbourhoods are often met with community opposition; and
- The market in some communities may not be supportive of higher density forms of housing or higher density forms of commercial and employment development.

18. Minimum Density Requirements

Description

Minimum density requirements establish the minimum amount of development that is allowed on a given area of land. With respect to residential development, minimum density requirements are most often expressed as residential units per hectare, or people per hectare. With respect to industrial and commercial development, minimum density targets can be expressed as jobs per hectare, or as “floor area ratio (FAR).” FAR bases the measurement of density on the square footage of the building relative to the size of the lot.

Approaches to establishing minimum density requirements can vary in a number of key ways, including:

- the spatial scale at which the target applies (e.g., at the level of each individual property, or averaged across an entire neighbourhood or municipality);
- the context in which the target is applied (e.g., urban, rural);
- the type of uses that the target applies to (e.g., residential, employment or both); and
- the way in which the target is calculated (e.g., on a net developable basis or on a gross basis).

How Can This Tool Contribute to Efficient Land Use?

- Higher density development utilizes less land by concentrating more development on each available parcel.
- Concentrating development through higher densities reduces the need to extend infrastructure such as roads and sewers over long distances.

Relationship with Other EUL Tools

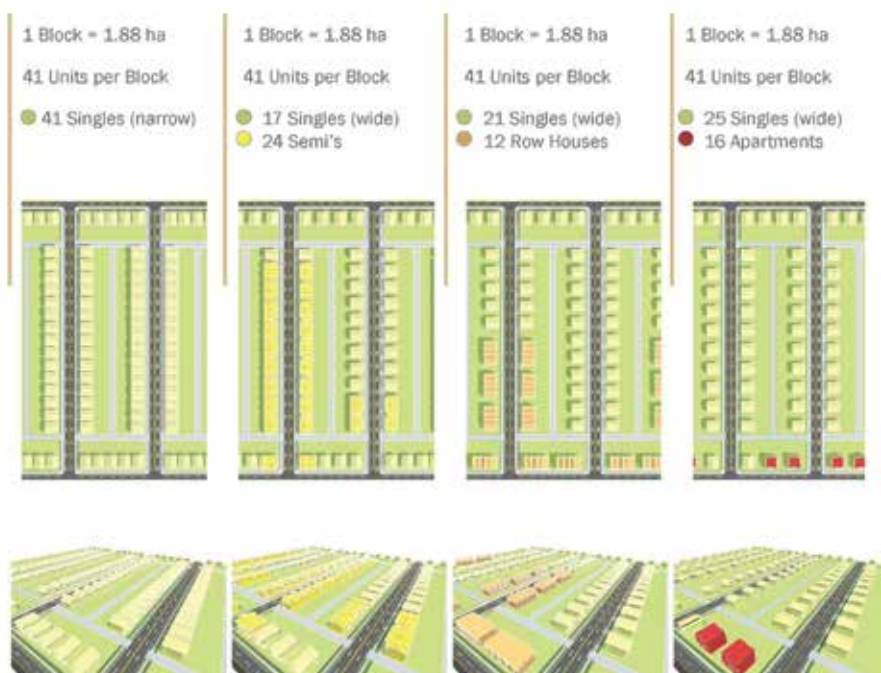
Minimum density requirements can be used on their own as a tool to achieve more efficient land use. They can also be used in support of other tools. For example, having clear minimum densities can simplify the land budgeting process (#15). Higher density development is also supportive of alternative development standards (#3), transit-supportive land-use (#26) and it is a key criteria in achieving LEED development standards (#16). Minimum density requirements can also be used to reinforce or implement limitations on residential lot creation in rural and agricultural areas (#17) as well as cluster zoning

policies (#6). The achievement of minimum density requirements can be supported by building forms that have lower development footprints (#4), density bonusing (#8) and variable development levies (#28).

Use in Alberta

A number of municipalities in Alberta have adopted minimum density policies in their Municipal Development Plans. For example, Cochrane’s MDP has a goal of ensuring that all new subdivision areas meet a minimum residential density of 19.8 dwelling units per gross developable hectare. The City of Medicine Hat’s MDP states that all greenfield areas will achieve a minimum density target of at least 17 dwelling units per gross hectare. The City of Red Deer sets a minimum residential density target for new neighbourhoods of 14.8 units per net developable hectare. The City of Grand Prairie takes a slightly different approach. Rather than setting its density target in units per hectare, it establishes a minimum target of twenty-five percent medium and/or high density residential units for all neighbourhood development 64 hectares (160 acre) or greater.

Four Examples of Block Layouts at 22 units per hectare



How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	✓
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

CASE STUDY

Minimum Density Requirements

Capital Region Growth Plan
Capital Region, Alberta

Responsibility: Regional | How applied: Mandatory |
Scale: Regional

The Capital Region Growth Plan identifies seven Priority Growth Areas (PGAs), four Cluster Country Residential Areas (CCRAs), and Traditional Country Residential Development Areas (TCRD) within the region. The Plan sets density targets for each PGA as well as a single target for all CCRAs and TCRDs. PGAs are locations where growth is directed due to existing or planned multi-modal transportation corridors, proximity to existing urban areas and ability to efficiently utilize or extend existing infrastructure. CCRAs are rural lands that will be subdivided to create multiple residential lots in line with conservation design principles. Every municipal statutory plan must reflect the density target assigned to any PGA, CCRA or TCRD within its boundaries and demonstrate how the density target will be achieved.

Density targets for the PGAs range from 25 to 45 dwelling units per net residential hectare. Net residential area is defined as land required for residential purposes excluding environmental and municipal reserve, roadways, public utilities and other non-residential uses. The density targets are intended to be achieved within the 35 year time horizon of the Growth Plan.

The established density target for CCRAs is 2 dwelling units per gross hectare which could result in approximately 129 lots per quarter section depending on the lands' characteristics. The density target for TCRD is a maximum of 50 lots per quarter section.

Related Examples From Other Jurisdictions:

- Ontario's Growth Plan for the Greater Golden Horseshoe includes a requirement that all future greenfield development achieve a minimum density of 50 people and jobs combined per gross hectare. The target is applied at the level of each region or county. The regions and counties are then responsible for allocating density targets to each of their constituent lower-tier municipalities. The Ontario target is unique in two ways. First, it is a measure of people and jobs per hectare, so it applies to both residential and non-residential development. Municipalities have the discretion to meet the target by allowing lower employment densities as long as these are offset by higher residential densities. Second, the Ontario target is applied on a gross basis. This means that lands that are removed from the developable area for roads, parks, schools, etc. cannot be removed from the density calculation.

19. Minimum Intensification Requirements

Description

Intensification refers to development that takes place through infill or redevelopment within existing urban areas. Examples of intensification include development on a vacant lot in an existing town, redeveloping a brownfield or former industrial area, or re-using an abandoned building for a new use. Intensification within existing urban areas is typically seen as the main alternative to urban sprawl. When more growth is accommodated through infill and intensification, less development needs to take place in previously undeveloped greenfield areas.

Many jurisdictions have developed intensification targets as part of local or regional growth strategies. These targets establish the proportion of growth that is to occur through intensification. The approaches used vary in terms of the targets that are established, the definitions that are used for “intensification,” and the scale at which the targets are applied.

How Can This Tool Contribute to Efficient Land Use?

- By directing more growth to under-utilized lands within existing urban areas, minimum intensification requirements can reduce the need for new development in previously undeveloped areas; and
- Infill and intensification can in many cases utilize existing roads, sewers and other infrastructure, thereby reducing the need to extend this infrastructure into previously undeveloped areas.

Relationship with Other EUL Tools

Minimum intensification targets can help reinforce urban growth boundaries (#27), greenbelts (#12) and limitations on residential lot creation in rural and agricultural areas (#17). Intensification targets can also help direct development to priority growth areas (#13) and encourage adaptive reuse of existing buildings (#1). Having clear targets for intensification simplifies the land budgeting process (#15). The location of development on brownfields or within previously developed or disturbed areas is also an important criterion in achieving LEED development standards (#16).

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	✓
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	

Considerations for Using this Tool in Alberta

- Many cities in Alberta have significant opportunities to accommodate intensification (e.g. brownfields, older commercial areas, etc.);
- With limited funds for municipal and provincial infrastructure investment, intensification presents an opportunity to grow communities on existing infrastructure. However, intensification still requires infrastructure investment, such as the upgrade and expansion of schools, community facilities, and transit;
- Increasing intensification could cause concern amongst municipalities that surround larger centres who may fear loss of future growth;
- Intensification is often opposed by existing residents, particularly in what are perceived as stable or mature neighbourhoods;
- There are a limited number of developers in Alberta that have experience undertaking intensification projects;
- Market realities may limit the demand for residential, commercial and other forms of development within existing urban areas;
- Intensification targets typically have less relevance in small towns, although many small towns do have brownfields and under-utilized buildings and areas where intensification could occur; and
- Design guidelines would be needed to ensure that intensification is sensitive to the local context.

Use in Alberta

Minimum intensification targets are not commonly used in Alberta. One exception is the City of Edmonton's MDP, *The Way We Grow*, which encourages "a minimum of 25 per cent of city-wide housing unit growth to locate in the downtown and mature neighbourhoods." In 2009, the City of Edmonton prepared and approved Residential Infill Guidelines. These guidelines identify appropriate forms of residential infill in mature Edmonton neighbourhoods. The City of Edmonton has also considered "fast-tracking" infill applications as an incentive for intensification; however, this has not yet been implemented.

The City of Medicine Hat's MDP establishes a goal of accommodating 40 per cent of the city's growth over the next 50 years, or approximately 22,000 additional people, through intensification. The MDP identifies four neighbourhoods within the city as Priority One Intensification Areas which are anticipated to be redeveloped first, and two Priority Two Intensification Areas which are anticipated to be redeveloped over the longer term.

CASE STUDY

Minimum Intensification Requirements**Growth Plan for the Greater Golden Horseshoe
Province of Ontario, Canada****Responsibility: Province | How applied: Mandatory | Scale:
Regional**

Ontario's Greater Golden Horseshoe region encompasses more than 100 municipalities, including the City of Toronto. In 2006, the Ontario government approved a Growth Plan for this region. All municipal planning decisions must conform to the policies of the Growth Plan. One of the cornerstone policies of the Growth Plan is the requirement that 40% of each year's residential development be accommodated through intensification. While the target applies to all municipalities across the region, smaller communities and rural municipalities at the fringe of the Greater Golden Horseshoe are given the opportunity to request an alternative target. To implement the policy, the Province of Ontario delineated and mapped the "built boundary" for every municipality. This boundary defines the extent of the already developed area of each municipality as of the time the policy came into effect. Any development that takes place within the built boundary is classified as "intensification" and any development outside of the built boundary is classified as "greenfield development."

Related Examples From Other Jurisdictions:

- The Sydney Metropolitan Strategy is a plan by the state government of New South Wales for the growth and development of Sydney, Australia. The Strategy has a target of accommodating 70 per cent of growth through infill development and the remaining 30 per cent through greenfield development; and
- As part of the Metro Vancouver 2040: Regional Growth Strategy, the Greater Vancouver Regional District intends to intensify and focus growth in designated areas. Targets have been set for the number of dwelling units and employees for each designated area for the years 2021, 2031, and 2041.

Considerations for Using this Tool in Alberta

- This tool can be tailored to support the needs of specific areas according to their dominant agricultural industry;
- In wealthy or high-growth areas, the application of minimum lot sizes can actually result in less efficient use of land through the proliferation of large, luxury residential estates;
- Depending on the approach taken, there may be no actual limit on the number of lots created, only the size, so agricultural areas could still see significant rural residential development and a high degree of fragmentation;
- Larger lots could actually serve to disperse residential development more widely across this landscape, as opposed to promoting more efficient, compact residential development;
- Could be opposed by landowners who would view controls on lot sizes and subdivision as an infringement on their property rights;
- Potential for conflicts in areas where there are diverse agricultural operations that have varying land requirements (e.g. a minimum lot size established to protect one type of agricultural operation could be inappropriate for another); and
- Optimal lot sizes need to take into account other considerations, such as servicing requirements and adjacent land uses.

20. Optimizing Lot Sizes

Description

Optimizing lot sizes refers to establishing minimum or maximum lot sizes for the purpose of making more efficient use of land.

A minimum lot size policy is a tool that is used in some jurisdictions to restrict the intensity of development that can occur within an area, usually a valued natural landscape or agricultural region. The minimum lot size is generally set at a level that ensures the parcels can continue to support viable agricultural uses, and/or maintain the agricultural or natural character of the area. It is also sometimes assumed that the higher land costs associated with large parcels will discourage new residential development in the area. In other words, it is hoped that the large lot size will prove cost-prohibitive to converting the land to residential uses or, if the land is converted, that the parcels will still be large enough to be viable in the future for agricultural use.

A maximum lot size policy is a tool that can be used to minimize the amount of land that is converted to residential uses. The intent of maximum lot size policies is to maintain as much of the land area as possible in an undeveloped state.

How Can This Tool Contribute to Efficient Land Use?

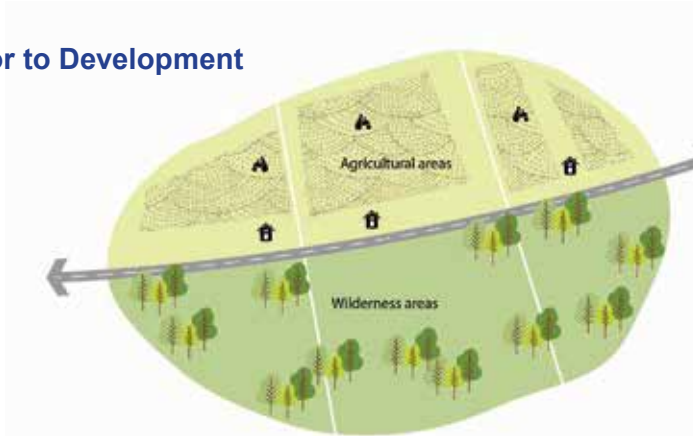
- Limits the overall development potential within the area that it is applied;
- Focuses development in a more concentrated area; and
- Maintains a greater proportion of the land base in an undeveloped state, with parcel sizes large enough to ensure the ongoing viability of agricultural uses.

Relationship with Other EUL Tools

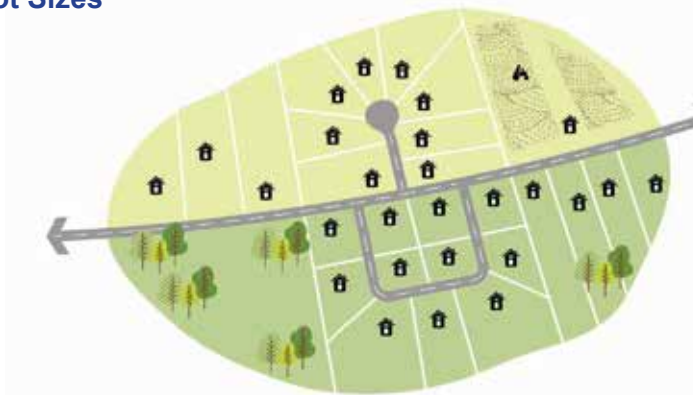
Optimizing lot sizes can be used to discourage residential development in agricultural areas. As such, they can help reinforce urban growth boundaries (#27) and greenbelts (#12). They can also be used in conjunction with tools that limit residential lot creation in rural and agricultural areas (#17) or as a companion tool to transfer of development credit schemes (#25). The effectiveness of minimum lot sizes in making residential lot creation more cost-prohibitive can be augmented through the use of agricultural land conversion fees (#2). The effectiveness of lot size policies in reducing fragmentation of agricultural lands can be supported with the use of cluster zoning (#6).

Minimum Lot Sizes as a Tool of Efficient Land Use

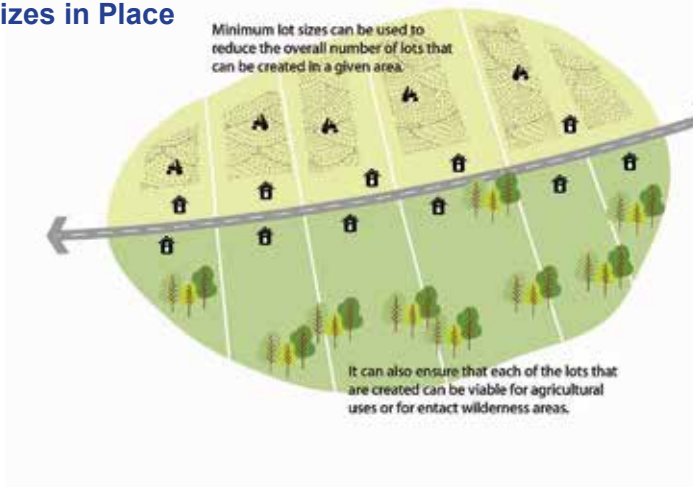
Rural Area Prior to Development



No Minimum Lot Sizes



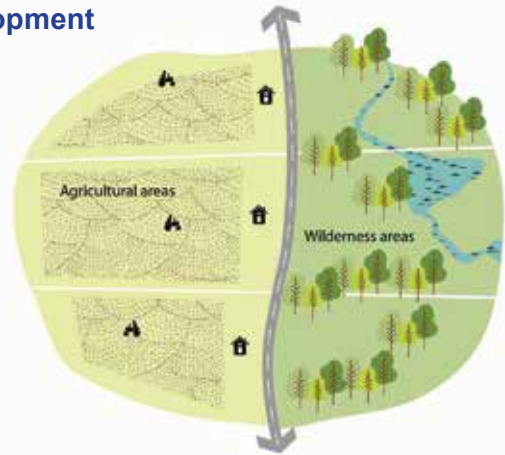
Minimum Lot Sizes in Place



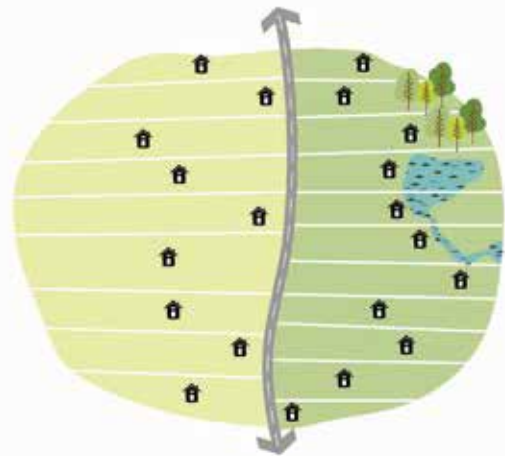
<p>How is this tool typically applied in other jurisdictions?</p> <p>Mandatory ✓</p> <p>Voluntary or Incentive</p>
<p>At what scale or level of government is this tool typically applied in other jurisdictions?</p> <p>Provincial / State</p> <p>Regional ✓</p> <p>Local ✓</p>
<p>Which types of land does this tool typically apply to?</p> <p>Public (Crown) Land</p> <p>Private Land (Urban)</p> <p>Private Land (Rural) ✓</p>
<p>Which EUL strategies could this tool potentially support?</p> <ol style="list-style-type: none"> 1. Reduced rate of land conversion. ✓ 2. Utilize minimum amount of land needed. 3. Utilize already developed or disturbed lands. ✓ 4. Maximize the use of existing infrastructure. 5. Disturbed lands are reclaimed or reused. 6. The information needed for decisions that support efficient land use.

Maximum Lot Sizes as a Tool of Efficient Land Use

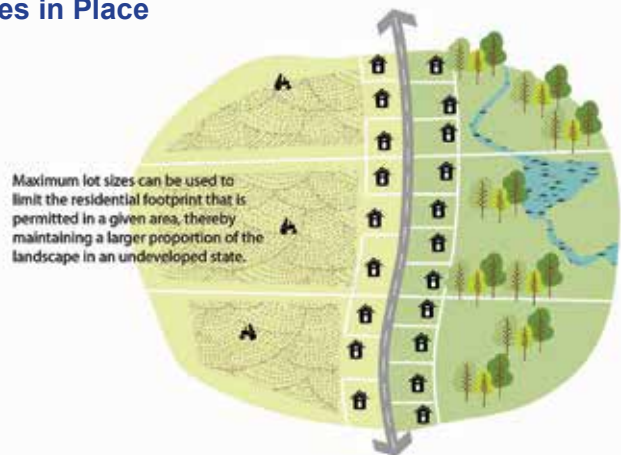
Rural Area Prior to Development



No Maximum Lot Sizes



Maximum Lot Sizes in Place



Use in Alberta

Many rural municipalities in Alberta establish minimum or maximum lot sizes in agricultural areas through their MDPs and Land Use Bylaws. A number of jurisdictions allow subdivision of a typical quarter section of 65 ha (160 acres) into two 32 ha (80 acre) parcels, plus a 'first parcel' out in each 32 ha (80 acre) parcel, which often has a maximum allowable size of 2.02 ha (5 acres). Thus, a typical quarter section could have two 2.02 ha (5 acre) parcels and two 30 ha (75 acre) parcels. The primary intent of these policies is typically to maintain an agricultural landscape and way of life.

Optimizing Lot Sizes

**County of Vermilion River Municipal Development Plan
Country of Vermilion River, Alberta**

Responsibility: Local | How applied: Mandatory | Scale: Local

The County of Vermilion River is a predominantly rural municipality that is under development pressure, especially in areas bordering the City of Lloydminster. Its MDP discourages the premature subdivision and development of good agricultural land by limiting the number of parcels permitted as well as restricting the size of the parcels allowed.

Minimum and maximum parcel sizes are determined based on the proposed use and the current development located on the proposed site. The county requires a minimum agricultural parcel size of 80 acres and does not allow 80 acre split of a previously un-subdivided quarter section. Country residential lot sizes are determined based on whether the proposed subdivision is vacant or it is to separate out an existing farmstead. Vacant country residential lots must be a minimum of 0.8 hectares (2 acres) in order to allow for private sewage disposal and water wells and must not exceed a maximum of 2 hectares (5 acres). Vacant country residential lots may exceed the maximum if the applicant can demonstrate that the additional area includes topographical features such as large sloughs, treed areas and poor quality farmland.

Related Examples From Other Jurisdictions:

- In New South Wales, Australia, the government has published a best practices guide that examines two ways to set a minimum lot size. The first method identifies the land needs of key agricultural industries and uses this data to generate a minimum lot size. The second examines production levels of existing farms and uses market prices and estimated overhead costs to determine the minimum lot size needed to break even as a farmer.

21. Integrated Resource Development

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	✓
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	
5. Disturbed lands are reclaimed or reused.	✓
6. The information needed for decisions that support efficient land use.	

Description

Integrated resource development requires a strategic planning approach to ensure that resource development is in harmony with current and future opportunities for community development. This can be achieved by:

- Identifying areas of resource development opportunity;
- Protecting these areas until the resource has been exhausted or by identifying methods to integrate resource development with other development;⁹
- Ensuring information on the locations of abandoned and in use resource infrastructure is available to land users, land developers and land-use decision makers; and
- Introducing tools to encourage the redevelopment of reclaimed resource development sites.

21A. Phased resource development refers to an approach to resource development that seeks to exhaust surface and subsurface resources prior to allowing any development that would permanently preclude the exploitation of the resource. Examples include mining aggregates prior to allowing residential development on the surface, or logging trees prior to undertaking subsurface mining and, ultimately, some other desired end use of the land.

21B. Coordinated resource development refers to an approach to resource development that seeks to allow resource development and community development to occur at the same time. For example, placing gas wells on production prior to community development. Coordinated resource development requires a strategic planning approach to ensure the development of resources in a manner that permits community development. It requires that land developers are aware of regulatory setbacks from resource infrastructure that may be in place in their jurisdiction (e.g., in Alberta the setback is typically 100 metres).

How Can This Tool Contribute to Efficient Land Use?

- Phased Resource Development ensures that resource development occurs prior to community development, maximizes the production of the land base, and reduces the overall need for new land to support resource development or urban development. Phased resource development can also result in reduced infrastructure costs for municipalities as they can re-use, where possible, existing infrastructure; and

⁹ For information on additional tools for the efficient use of public lands and the reduction of the resource development footprint, see the Integrated Land Management Tools Compendium available on Alberta Environment and Sustainable Resource Development's website.

- Coordinated Resource Development ensures that resource development does not prevent community development and allows the land base to support community growth and economic development goals simultaneously. Coordinated resource development can allow industry and local governments to share the costs of infrastructure (roads).

Relationship with Other EUL Tools

Phasing of resource extraction may be addressed through inter-jurisdictional agreements (#14) and may be supported by the use of urban growth boundaries (#27) to limit development in resource areas.

Coordinating of resource development may also be addressed through inter-jurisdictional agreements (#14) and may be supported by the use of urban growth boundaries (#27) to limit development in resource areas. Coordination can be supported by the identification of priority growth areas (#13), ensuring that resource infrastructure is in place prior to community development.

Use in Alberta

Phased resource development is not widely instituted in Alberta municipalities. The Government of Alberta and municipalities have worked with industry in some cases to ensure that surface resources such as timber are harvested prior to clearing land to access subsurface resources such as oil sands or natural gas. Municipalities can use statutory plans (e.g., an Area Structure Plan) and Land Use Bylaws to identify resource areas, and to prohibit or limit urban development in these areas until such time as the resource has been developed.

Coordinated resource development has been used in Alberta in Medicine Hat with conventional gas development and in Drayton Valley with conventional oil development. Municipalities can use statutory plans, Land Use Bylaws and other information tools (e.g., GeoDiscover, Alberta) to identify resource areas and existing resource infrastructure such as wells, pipelines, facilities, and roads, to coordinate urban development and resource development. The Government of Alberta, through Municipal Affairs, has released two bulletins that identify planning opportunities to accommodate abandoned wells in municipal bylaws and plans.

Considerations for Using this Tool in Alberta

- A good understanding of the resource development potential of the area and information on the locations of existing resource infrastructure must be available to land users and land-use decision makers;
- Close collaboration amongst land users, particularly amongst land developers that share an interest in a specific area of land, enables integrated resource development;
- Integrated resource development requires that land-use decision makers, particularly municipal planners, have the capacity to dedicate resources to participate in necessary collaborating and planning exercises;
- Converting resource areas to subsequent uses, such as community development, may be difficult if the resource developer wishes to maintain the site for possible future development, if and when new technologies allow for further exploitation; and
- The phasing of resource development should be determined through established municipal planning and integrated resource management planning processes that include public and stakeholder consultation. Inter-jurisdictional agreements provide a mechanism for defining the terms and conditions for phased resource development.

CASE STUDY

Phased Resource Development

The City of Brampton Official Community Plan: Resource Extraction Policies

City of Brampton, Ontario

Responsibility: Municipality | How applied: Mandatory | Scale: Local

The City of Brampton includes policies within its Official Plan that are intended to protect the shale resource located within their urban boundary in advance of urban development. These policies recognize that, ultimately, population growth will require urban development on lands where shale resources exist. However, Brampton's Official Plan protects the shale resource from urban development for a certain period of time, by allowing resource extraction to occur prior to urban development subject to the property being zoned for mineral extraction and issuance of a license. The policy also requires that the development of the shale resource not hinder the future urban development of the lands. Key policies in this regard include:

- Design of the extraction, operation and rehabilitation of any shale extraction operation in a manner that does not preclude the long term use of the lands for urban purposes;
- Requires a warning clause for all residential plans of subdivision within 500 metres of the shale extraction area advising prospective homebuyers of the potential for impacts due to the possible interim use of lands in the area for shale extraction; and
- Recognizes that long range planning should proceed on the basis that all lands in the area will ultimately be used for urban purposes.

Related Examples From Other Jurisdictions:

- Ontario's Provincial Planning Statement recognizes the need to protect mineral resources for their economic, environmental and social benefits in order to ensure the long-term prosperity and well-being of the province. The policies aim to protect the long-term resource supply and ensure rehabilitation after the resource has been exhausted. For example, it states that in areas adjacent to or in known deposits of mineral aggregate resources, any activities which would preclude or hinder the establishment of new operations or access to the resources shall only be permitted if (a) the resource use would not be feasible, or (b) the proposed land-use or development serves a greater long-term public interest and (c) issues of public health, public safety and environmental impact are addressed.

CASE STUDY

Coordinated Resource Development

The City of Medicine Hat Guidelines for the Drilling, Construction and Operation of Oil Facilities

City of Medicine Hat, Alberta

Responsibility: Municipality | How applied: Voluntary | Scale: Local

Within its Intermunicipal Development Plan, the City of Medicine Hat has included policies intended to coordinate energy development and other land uses (e.g. subdivision development). The municipality recognized that the development of the Glauco C oilfield would occur within the corporate limits of Medicine Hat and established Guidelines for the Drilling, Construction and Operation of Oil Facilities in and around the City of Medicine Hat. Gas and oil wells are considered a part of the landscape and are incorporated in the planning process like other types of infrastructure. For example, over the last decade, several gas wells were proposed to be drilled and considered in the subdivision approval process. Upon approval of the Subdivision Plan or Area Structure Plan, the wells were drilled and placed on production prior to subdivision construction. Key best practices in Medicine Hat include:

- Minimization of the oil facilities' adverse visual impacts on adjacent residential development;
- Use of minimal land through effective planning of oil facilities while ensuring safe operation and protection of adjacent development; and
- Reclamation of disturbed landscape in a manner that blends into the surrounding topographic features.

22. Reducing Land Area Dedicated To Parking

Considerations for Using this Tool in Alberta

- Alternative parking standards that reduce the overall parking supply are most appropriate in locations where alternative transportation modes such as transit are widely available;
- Some parking strategies, such as structured parking, reducing minimum parking standards, and cash-in-lieu of parking to support public parking facilities may be more appropriate in urban areas, whereas other strategies such as shared parking and increasing the capacity of existing parking facilities through design approaches may also be appropriate in smaller towns; and
- In some cases, consideration could be given to phasing the implementation of parking standards, to match the phased introduction of transit infrastructure. For example, higher parking supply could be allowed in the short term, provided it is located and designed to allow it to be “phased out” over time as new transit is introduced.

Description

Parking is one of the most land consumptive uses in most urban areas. Planners and municipalities often base parking requirements on standardized guidelines. These conditions can result in surface parking taking up more than 50 per cent of the land area in a given development.⁹ It is not uncommon for urban areas to have up to 10 parking spaces for every car. The amount of land dedicated to parking can reach approximately 1,000 ft² of parking pavement per capita.¹⁰

How Can This Tool Contribute to Efficient Land Use?

Recognizing that parking can account for a significant proportion of the development footprint, many municipalities have implemented specific strategies targeted at reducing the amount of land taken up for surface parking.

- Reduce or eliminate minimum parking requirements: Many cities have opted to reduce or eliminate minimum parking requirements, particularly in areas where the availability of alternative transportation options reduces the need for driving;
- Maximum parking requirements: While most municipalities establish minimum parking requirements, maximum parking limits are less common. Maximum parking requirements place a hard cap on the number of parking spaces that can be built as part of a new development;
- Structured parking: The development footprint of parking can be reduced through structured or underground parking. Although more expensive to build, structured or underground parking is more land efficient than surface parking;
- Shared parking: Zoning standards typically establish a minimum parking requirement for each land use. However, different types of land uses demand parking at different times of the day. For example, office places tend to attract the greatest number of users during the day, whereas residential areas and entertainment uses attract a greater proportion of users during evenings and weekends. The result is that, at any given time, half of the parking supply in a typical community can be going unused. Shared parking is the joint use of available parking spaces by two or more land uses, in order to reduce the overall supply of parking required in an area.

⁹ U.S Environmental Protection Agency. Washington, DC. Parking Spaces / Community Places. Washington: U.S Environmental Protection Agency, 2006. Print. EPA 231-K-06-001, p. 6

¹⁰ Condon, Patrick, 2010. Seven Rules For Sustainable Communities. (Island Press). p. 10

- **Cash-in-lieu of Parking:** Cash-in-lieu programs allow developers to meet their minimum parking requirements by contributing cash to a common municipally-managed fund, rather than providing the required parking on-site. The monies raised through cash-in-lieu programs are then used by the municipality to develop centralized, municipally owned parking facilities. This approach can result in a more efficient use of land because it provides opportunities for meeting minimum parking requirements through shared spaces, and it also can create the economies of scale necessary to support structured parking. Cash-in-lieu programs have been applied in a number of Alberta municipalities (e.g., Canmore, Cochrane, Calgary, Banff, Okotoks), usually allowing for the acceptance of payments for between 25 and 50 per cent of the required parking.
- **Increase Capacity of Existing Parking Facilities:** In order to make more efficient use of land already dedicated to parking, and lower the amount of land required for new surface parking, the design of parking facilities can be optimized to increase capacity. Examples could include utilizing corners/edges for small cars, scooters and motorcycles or changing on-street parking from parallel to angled.
- **Reduce Parking Demand:** If demand for parking is reduced, the overall supply of parking can be reduced, thereby resulting in a smaller development footprint. A number of strategies exist that can reduce parking demand. Charging users for parking is a market-based approach that passes the cost of parking to users, and encourages the use of other transportation modes. One study asserts that each 1 per cent increase in parking fees is accompanied by a 0.3 per cent decrease in demand.¹¹ Employer managed cash-out programs allow employees to choose a transportation benefit such as a transit pass in place of a free parking space.

¹¹ United States of America. U.S Environmental Protection Agency. Washington, DC. Parking Spaces / Community Places. Washington: U.S Environmental Protection Agency, 2006. Print. EPA 231-K-06-001, p. 30.

Relationship with Other EUL Tools

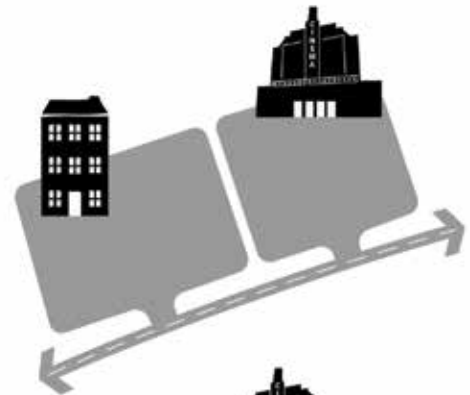
Strategies aimed at reducing parking supply can be effective as standalone tools for achieving more efficient use of land. They can also support other efficient use of land strategies. For example, the costs of providing parking can be one of the major limiting factors in making higher density development cost effective (#18), or in promoting intensification and infill (#19). It can also be a barrier to the more widespread development of secondary suites (#4).



Structured parking facility above ground floor retail.

Reducing Land Area Dedicated to Parking

Conventional Parking



Shared Parking - Daytime Office/Evening Movie Theatre



Parking Garage



Use in Alberta

The primary tool available to municipalities for establishing parking requirements is their Land Use Bylaw. The Municipal Government Act (MGA) allows for the establishment of a Land Use Bylaw that can require the provision and maintenance of parking on private lands. The MGA also includes other provisions that could be used to address parking issues:

- A municipal council can establish a business revitalization zone which could provide the mechanism for the development, improvement and maintenance of public parking on municipally-owned lands;

- The inclusion of conditions attached to a development permit to construct or pay for the construction of off-street or other parking facilities (which could include facilities on municipally-owned land); and
- The inclusion of conditions of subdivision approval to construct or pay for the construction of off-street or other parking facilities (which could include facilities on municipally-owned land).

In Canmore, Alberta, under their Land Use Bylaw, the development authority may accept a cash-in-lieu payment for the difference between the total number of required parking stalls and the number of parking stalls provided for the development. The policy applies to all new developments and re-developments within the Town Centre and Gateway Commercial land-use districts. The parking cash-in-lieu fee is reviewed every year. In 2008, the cash-in-lieu fee was established at \$40,000 per stall based on 80 per cent of \$50,000 per stall cost of construction.

The City of Red Deer has established several parking strategies in an effort to relax parking requirements under the right circumstances. For example, the Red Deer MDP states that a site that houses multiple, but complimentary facilities can make use of shared parking in order to use land efficiently. The decision to allow shared parking is made on a case-by-case basis. This policy is reflected in the Riverside Meadows Area Redevelopment Plan (ARP) which includes an Overlay District that includes a similar policy intended to relax parking requirements under the appropriate circumstances.

How is this tool typically applied in other jurisdictions?	
Mandatory	✓
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	
4. Maximize the use of existing infrastructure.	
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

CASE STUDY

Reducing Land Area Dedicated to Parking

Parking Policy Framework City of Calgary, Alberta

Responsibility: Municipality | How applied: Mixed | Scale: Local

Calgary's MDP sets out several broad policy directions related to minimizing the amount of land dedicated to parking, including:

- modified parking standards;
- in-lieu fees;
- maximum parking standards;
- reduced parking standards for higher-density housing and businesses located close to major transit stops;
- increasing parking costs and decreasing parking availability; and
- shared parking.

The Parking Policy Framework for Calgary, which was approved by City Council in June of 2011 and is to be implemented in phases between 2012 and 2014, is intended to help implement these directions. Elements of the framework that are relevant to the efficient use of land are described below.

- The Downtown Long-Stay Vehicle Parking Strategy aims to manage long-stay parking spaces in the downtown to achieve a 60 per cent transit mode share for all work travel;
- The City of Calgary's cash-in-lieu program permits new office and commercial developments in the "Restricted Parking Area" of the downtown to provide a maximum of 50 per cent of their required parking on-site. The developer would then make a cash-in-lieu payment for the balance, which goes towards the construction and maintenance of centralized public parking;
- No new surface parking lots or standalone parking structures should be created downtown with the exception of facilities constructed with cash-in-lieu fees by the city in strategic locations; and
- The framework encourages the city to consider expanding the number of uses that have no minimum parking requirements.

Calgary's LUB also includes directions related to reducing the amount of land dedicated to parking. For example, it includes parking maximums close to LRT stations, and policies that allow the relaxation of the required number of parking spaces when a transportation demand management measure has been approved by the development authority, and where its implementation is required as a condition in the development permit.

Related Examples From Other Jurisdictions:

- Markham, Ontario's Comprehensive Zoning Bylaw for its central area reduces the minimum parking standard based on an assumed 25 per cent transit mode split, and also includes a maximum parking standard. However, recognizing that it would take some time for higher order public transit to be extended into the area and for municipal parking garages to be constructed, a holding provision was created, which permits the establishment of parking beyond the maximum standard provided certain conditions are met. For example, the extra surface parking must be designed and located in such a manner that it creates viable future development parcels;
- The City of Toronto's Design Guidelines for 'Greening' Surface Parking Lots include policies aimed at reducing the development footprint of surface parking. The guidelines address techniques for reducing driveways, drive aisles, turning radii and so on, in order to reduce the overall land area for parking; and
- In 1972, Portland, Oregon froze the amount of parking spaces downtown at 45,000, and has since implemented a comprehensive suite of programs to reduce parking requirements. Parking minimums are not applied to the city's densest commercial and residential neighbourhoods. Further, minimums do not apply to any sites within 500 feet of a transit line that provides service at least every 20 minutes during peak hours. If a developer arranges shared parking or bike parking, they also receive reduced minimums. Bicycle parking may substitute up to 25 per cent of required car parking spaces; for every five bike parking spaces a developer builds, one fewer car parking space may be constructed.

23. Scenario Modeling and Visualization

Considerations for Using this Tool in Alberta

- Scenario modeling and visualization can be effective tools for facilitating public input during planning processes, particularly at the municipal or regional scale;
- While several open source scenario and visualization tools are available, many have been developed in the U.S. and Canadian data may not be available to support the use of these tools locally;
- Scenario visualization and modelling tools may be cost prohibitive for smaller communities; and
- Scenario visualization and modelling tools are best used to stimulate discussion as part of broad consultation processes. They are more effective as a decision support tool, as opposed to a decision-making tool.

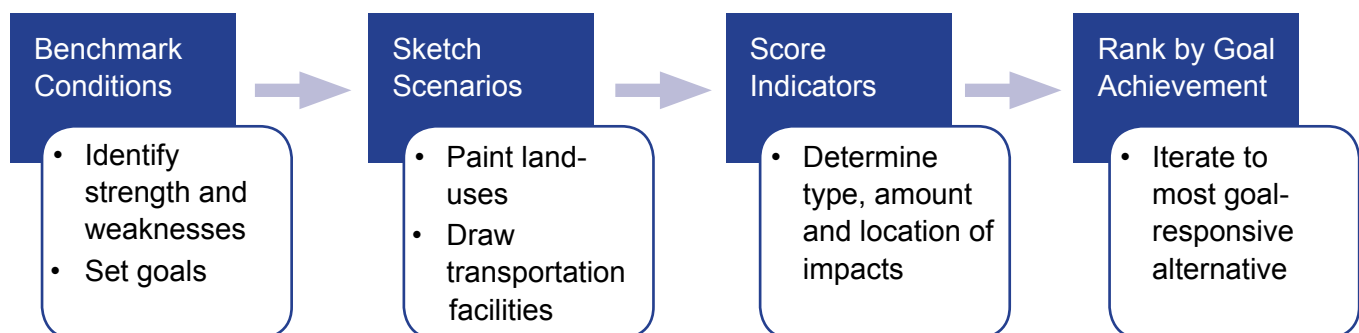
Description

Scenario modeling and visualization refers to the use of graphical tools to communicate to the public and stakeholders the implications of alternative growth and development options. Scenario modeling and visualizing has emerged as a key tool for a range of planning scales from site planning to regional planning. Computer-based scenario modeling and visualization programs can allow users to understand the implications of different planning decisions. The outputs are illustrated using a wide range of visual formats including 3D models, 2D maps, renderings and charts and graphs.

The intent of scenario modeling and visualization tools is to evaluate different community designs and scenarios and how they achieve community goals, such as efficient use of land. Models can be static by using inputs provided by technical experts with the outcomes presented to the public or decision-makers; or they can be interactive by allowing any individual to insert data and generate different outcomes.

A typical scenario modeling process occurs in four steps. Inputs are generally taken from current benchmark conditions and predetermined community goals. Multiple scenarios are “sketched” using inputs such as land use, density, community design and location of transportation facilities. With some tools, score indicators are then used to evaluate the type, amount and location of impacts of the various “sketched” scenarios. Each scenario can then be ranked based on its ability to achieve the community goals outlined in the beginning steps.

Typical Four-Step Process for Scenario Modelling



How Can This Tool Contribute to Efficient Land Use?

- Highlights for the public and decision-makers the implications of alternative growth options. For example, visualizations can be created that compare the future development footprint in a community under various density and intensification scenarios;
- Illustrates how higher density developments can be integrated into a specific parcel of land, which may help to alleviate the concerns of residents regarding some efficient use of land strategies, such as higher density development and intensification.

Relationship with Other EUL Tools

Scenario modeling and visualization is a decision-support tool. Its purpose is to assist decision-makers in understanding the implications of using many of the strategies and tools identified in this compendium. For example, scenario modeling tools can allow users to vary development densities (#18), intensification rates (#19), or the locations of priority growth areas (#13), and then visualize how these assumptions would affect the overall footprint of future development.

Use in Alberta

A handful of municipalities in Alberta have used scenario visualization and modeling tools as an input to their growth management and planning processes. Many of these tools are available “off-the-shelf” for a fee, and can then be adapted to the needs of a particular municipality.

<p>How is this tool typically applied in other jurisdictions?</p> <p>Mandatory</p> <p>Voluntary or Incentive</p>	<p>✓</p>
<p>At what scale or level of government is this tool typically applied in other jurisdictions?</p> <p>Provincial / State</p> <p>Regional</p> <p>Local</p>	<p>✓</p> <p>✓</p>
<p>Which types of land does this tool typically apply to?</p> <p>Public (Crown) Land</p> <p>Private Land (Urban)</p> <p>Private Land (Rural)</p>	<p>✓</p> <p>✓</p>
<p>Which EUL strategies could this tool potentially support?</p> <p>1. Reduced rate of land conversion.</p> <p>2. Utilize minimum amount of land needed.</p> <p>3. Utilize already developed or disturbed lands.</p> <p>4. Maximize the use of existing infrastructure.</p> <p>5. Disturbed lands are reclaimed or reused.</p> <p>6. The information needed for decisions that support efficient land use.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

CASE STUDY

Scenario Modeling and Visualization

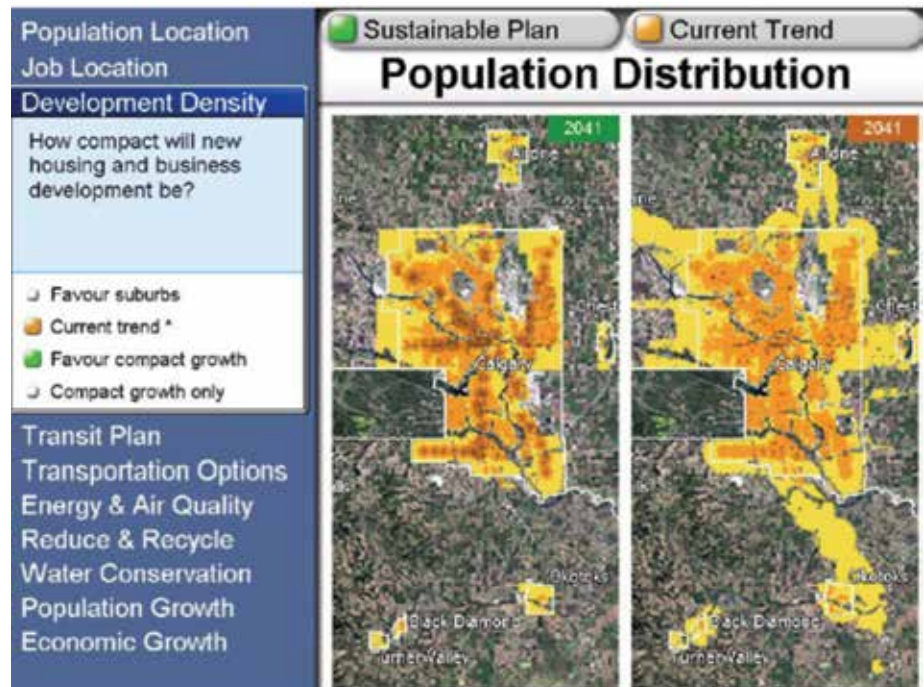
imagineCalgary
City of Calgary, Alberta

Responsibility: Municipality | How applied: Voluntary | Scale: Local

The City of Calgary used a scenario exploration tool to perform forty visioning sessions as part of the larger community visioning project imagineCalgary. Launched in 2005, imagineCalgary was an eighteen month public consultation project which used various public engagement methods to gather input to inform a long-range urban sustainability plan.

The City of Calgary used software that showed participants the long-term outcomes of different growth scenarios that considered a diverse set of factors including population growth, housing, land-use types, public and private transportation infrastructure, transportation policies, economic growth, energy, air pollution, solid waste and water conservation. In addition to the forty CalgaryQuest sessions, the project also included interviews, information booths at festivals and events, and focused visioning sessions with a diverse range of community members. It shows housing density and the development footprint, with darker yellows indicating more compact development and lighter colours representing lower density development.

Alternate Scenarios Developed for imagineCalgary



Related Examples From Other Jurisdictions:

- Over the past decade, Sussex County, Delaware’s population has grown over 23 per cent. As a result, Milford, a city within Sussex County, has identified the need to extend its urban boundary into the surrounding county. To explore the land-use options, the University of Delaware used CommunityViz to develop a new Land-use Model. The model uses 40.5 ha (100 acre) tiles in a grid across Sussex County to illustrate potential development patterns. A palette of colours, called crayons, represented thirteen typical land-use types, each with its associated residential and non-residential densities, population, employment, tax, water and wastewater usage, and traffic generation characteristics. To help everyone visualize the land uses, the team created three dimensional models for each of the thirteen land-use types. These models were then used as the basis for a series of community workshops that ultimately identified a preferred growth scenario.
- In 2003, the Sacramento Area Council of Governments (SACOG) in California used computer based visualization and scenario modeling in their award-winning regional growth analysis called Blueprint. The intent was to show the impact of different development alternatives in order to determine the most appropriate development footprint to achieve regional goals. SACOG worked with elected officials and the public to compare the effects of different development scenarios on the region’s transportation system, air quality, housing, natural resource protection and other issues. The visualization and scenario modeling tool are used to model and visualize the different scenarios as well as facilitate dozens of interactive planning workshops.

Resources

- Opening Access to Scenario Planning Tools by the Lincoln Institute of Land Policy provides an in-depth look at the different computer based visualization and modeling tools available. It also provides case study examples where the programs have been used.

24. Tax Increment Financing

Considerations for Using this Tool in Alberta

- TIF is appealing because it does not require municipalities to raise taxes or spend general revenue to support redevelopment;
- Even though TIF initially benefits only its particular district, the entire community can be energized and benefit in the long run;
- TIF can leverage private investment in a community;
- Residents and small businesses may fear that TIF will lead to gentrification that could displace them, either by forcibly acquiring their land or by pricing them out of their own neighborhoods;
- TIF does carry financial risk if the additional tax revenues that are generated are insufficient to pay for the initial public investments;
- Some may object to the use of public TIF revenues to support private development;
- Some question the economic rationale for TIF, arguing that the increased property assessment brought about by the TIF will occur at the expense of other areas, as business and development activities merely shift from one area of the city to another;
- There needs to be specific criteria for where TIF can be used in order to avoid subsidizing “pet” projects or investments in risky projects; and
- Some have argued that TIF is best suited to the U.S. municipal context where municipalities have broader powers to issue bonds.

Description

Tax Increment Financing (TIF), also called a Community Revitalization Levy, is a financing tool that has been used for community redevelopment and improvement projects in many U.S. and Canadian municipalities. While state and provincial governments establish enabling legislation, local governments typically initiate and administer TIF. Cities use TIF to finance public infrastructure, land acquisition, demolition, and all forms of local improvements. TIF is usually applied in downtown areas that are in need of revitalization, brownfield sites, or in blighted areas.

Although there are many different variations of TIF, the basic principle is that redeveloping an area will generate a future increase in property tax revenues. To spur the redevelopment, the municipality undertakes infrastructure rehabilitation, land assembly, land write-downs and other improvements, and uses the promise of future tax revenues to finance the up-front improvements. Once a TIF district is identified, the annual property tax revenues accruing to all taxing authorities within the district (the municipality, school boards, and so on) are “frozen” at pre-revitalization levels. For a period of time, generally 15 to 35 years, all or some portion of the tax generated above the pre-revitalization level is used to finance the improvements. This can either be done on a “pay-as-you-go” basis, or by municipal borrowing or bond issues that are paid back using the incremental tax increases. Redevelopment is usually implemented by the private sector, under the auspices of a city board or a community redevelopment agency, which controls the use of the TIF funds.

How Can This Contribute to Efficient Land Use?

- TIF is generally applied to spur growth and redevelopment in areas such as brownfields or blighted neighbourhoods. By shifting development to these areas, it reduces development pressure on previously undeveloped greenfield areas, thereby reducing the overall built environment footprint.

Relationship with Other EUL Tools

TIF can be used as a financial incentive to support other tools such as directing growth to priority growth areas (#13), meeting minimum density (#18) and intensification requirements (#19), or creating transit-oriented developments (#26) around key transit nodes or corridors. The financial incentives provided through TIF can be augmented by additional financial incentives through variable

development levies (#28). To ensure that redevelopment of TIF neighbourhoods result in more efficient land uses, the TIF program can be supported by the use of form-based codes (#11) that direct the future redevelopment of the site.

Use in Alberta

The *Municipal Government Act* allows any municipality to establish a Community Revitalization Levy (CRL) area. A CRL area is a specially designated area that is established with the overall intent of hastening the redevelopment of property within the area. Like TIF programs elsewhere, the CRL utilizes funds obtained from the incremental increase in tax assessments. Once a CRL bylaw is approved, the existing tax assessment on properties within the CRL area is recorded and set as the “base” tax rate. Any future increase in property tax assessment in the area above this base rate becomes the “incremental” tax revenue which is used to finance improvements in the CRL area. The base tax revenue continues to go to general revenue. The CRL repayment period is set for 20 years. CRL Plans need to include a Funding Plan that identifies the specific projects and activities to be funded by the levy. One prominent example of the use of the CRL in Alberta is the City of Calgary’s Rivers District, which was approved in 2006. Edmonton has also drafted CRL Plans for several areas, including The Quarters and the Belvedere Community.

How is this tool typically applied in other jurisdictions?	
Mandatory	
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	
2. Utilize minimum amount of land needed.	
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

CASE STUDY

Tax Increment Financing

Rivers District Community Revitalization Plan
City of Calgary, Alberta

Responsibility: Municipal | How applied: Mandatory | Scale: Local

A Community Revitalization Levy (CRL) was specifically created to help fund the implementation of the Rivers District Community Revitalization Plan adopted in 2007. The plan affects an area of downtown Calgary which has seen a lack of investment and extreme deterioration over the last quarter century. The funds were borrowed by the City of Calgary, equalling the estimated increase in tax revenue resulting from the redevelopment of the area. The funds were intended to establish and fund the Calgary Municipal Land Corporation (CMLC). CMLC's mandate is to fund and implement the Master Plan for the area, which includes a need for extensive infrastructure renewal. CMLC also purchases large tracts of land in the area and sells the land to developers who agree to follow the Master Plan.

Related Examples From Other Jurisdictions:

- Manitoba's Municipal Act enables municipalities to pass a by-law establishing tax increment financing programs in designated areas of the municipality for the purpose of encouraging investment or development in those areas. The TIF program can provide that some or all of the incremental municipal taxes coming from the designated area be placed into a reserve fund that can be used to give financial assistance to individual land developers or to invest in various services, facilities and utilities.
- The TIF program is the dominant economic development initiative of the City of Chicago. With 125 TIF districts in the city, covering nearly 30 per cent of the land area, and nearly \$400 million in TIF funds, the program touches all parts of the city. State law only allows cities or towns to create TIF programs in areas that are "blighted" or in danger of becoming blighted. Once a TIF area and program is approved, the municipality carries out an assessment to define the current property value and tax rates. The TIF project then obtains its funding for redevelopment from the subsequent increases in property value assessment and related taxes in the area. Some TIF areas operate only on the basis of the new funds generated ("pay-as-you-go"), others are "front-end funded" by issuing bonds to finance the improvements, with the bonds being repaid using the increased tax revenue. TIF funding can be used for infrastructure or other public improvements (e.g., schools, parks, public buildings) or to directly subsidize private residential, commercial or industrial development. The TIF program in Chicago has been criticized because many of the areas included for funding are not legitimately "blighted." There are concerns over the lack of transparency as to what areas qualify for TIF and how TIF dollars are spent.

25. Transfer of Development Credits

Description

Transfer of development credits (TDCs) works by directing development away from areas of environmental, aesthetic or agricultural value and redirecting it into higher density clusters. To achieve this, two types of areas are identified: Sending Areas and Receiving Areas. The Sending Area is the area that the municipality wishes to protect from development, such as an agricultural area or natural area. The Receiving Area is a location where additional density could be accommodated. The goal of the TDC program is to “send” development from the Sending Area to the Receiving Area. To do this, development credits are sold or transferred by landowners in the Sending Area to landowners in the Receiving Area. This has the effect of reducing or eliminating development potential in the Sending Area while increasing it in the Receiving Area. The credits that are gained from the Sending Area can be used in the form of development bonuses (e.g., additional density, additional building heights, reduction in parking requirements, etc.) in the Receiving Area.

Relationship with Other EUL Tools

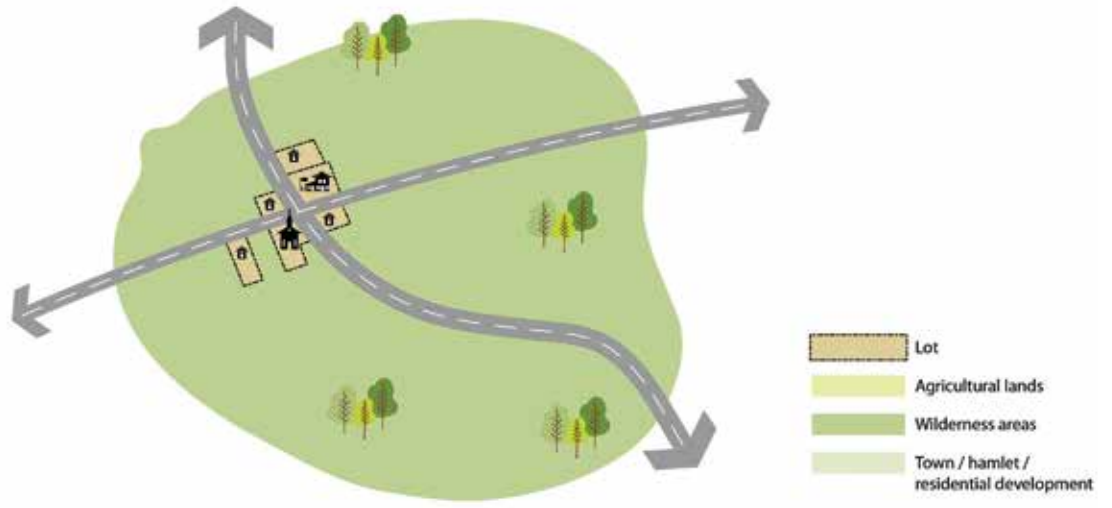
A TDC program can be used as a standalone tool for achieving more efficient use of land, but it can also be used in conjunction with other tools. Priority Growth Areas (#13) can be identified as Receiving Areas, so that additional growth and development can occur in those locations. Greenbelts or Agricultural Reserves (#12) can be identified as Sending Areas in order to direct development away from them. TDCs can also be used to further enhance cluster zoning strategies (#6). By permitting greater densities in Receiving Areas, TDCs can help to achieve minimum density (#18) or intensification (#19) requirements. As discussed in Box 1, TDCs are also typically used in conjunction with conservation easements to permanently protect lands in the Sending Areas.

Considerations for Using this Tool in Alberta

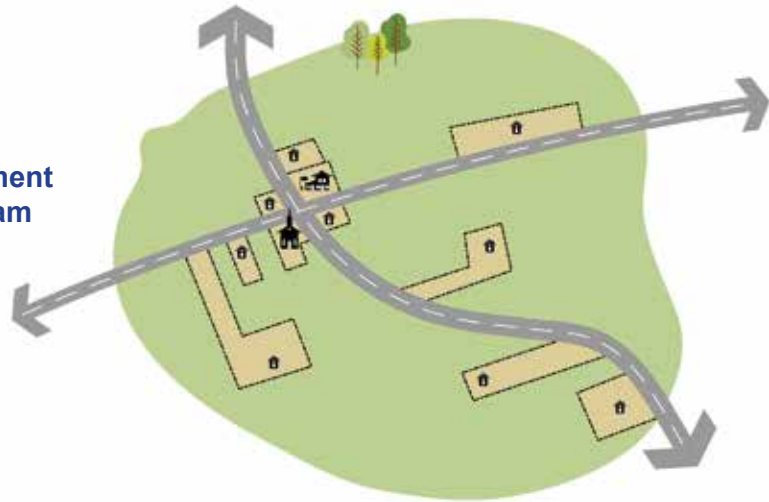
- In order to have an effective TDC program, there needs to be a program administrator and system in place to track where the credits are coming from and where they are being applied on a property-by-property basis;
- In the case of a property in the Sending Area, an instrument, typically a conservation easement, would need to be registered on title with the TDC program authority as a concerned party. This instrument would need to state that the subdivision potential of the sending property has been removed and credited to another area and that it cannot be removed without the consent of the landowner and the TDC program authority;
- A legal acknowledgement would be needed concerning where the development credits would be applied in the Receiving Area. This can be applied to the registered title of a property (or multiple properties) as an instrument or another tracking system, to be determined by the TDC program administrator; and
- To be effective, there needs to be a viable development market in the Receiving Area so that the development credits have sufficient value.

Theoretical TDC Program

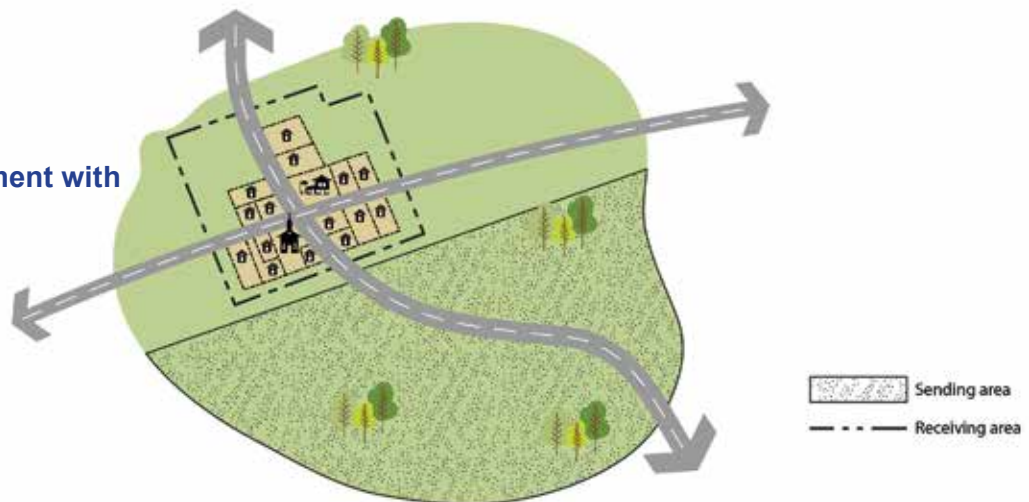
Rural area prior to development



Residential development without a TDC program



Residential development with a TDC program



How Can This Tool Contribute to Efficient Land Use?

- Slows the outward rate of urban development onto rural, countryside and agricultural lands that are identified as Sending Areas and directs this development to more suitable lands identified as Receiving Areas;
- Receiving Areas are typically locations where new development can take advantage of existing services, and/or in locations where higher density forms of development would be more likely and more appropriate.

Use in Alberta

In Alberta, the use of TDCs is enabled under the *Alberta Land Stewardship Act (ALSA)*. The ALSA states that a TDC scheme can only be established in accordance with a regional plan, a local authority (if approved by the Lieutenant Governor in Council), or two or more local authorities (with a formal agreement or arrangement). The Sending Area in a TDC scheme must be for one or more of the following purposes:

- the protection, conservation and enhancement of the environment, natural scenic or esthetic values, agricultural land, or land for agricultural purposes; and/or
- providing for recreational use, open space use, environmental education use, scientific study or historical preservation.

TDC schemes must identify all parcels which are to be conserved (i.e. the Sending Area) and developed (i.e. the Receiving Area), and what value will be assigned to a “stewardship unit”, which is the name given to development credits under the ALSA. Municipalities can pursue a TDC scheme in the absence of the regulation, but require approval from the Lieutenant Governor in Council to do so.

Through Strathcona County, Alberta’s involvement with the Beaver Hills Initiative there has been ongoing work to determine the feasibility of a TDC program to preserve the sensitive Beaver Hills Moraine area that surrounds Elk Island National Park.

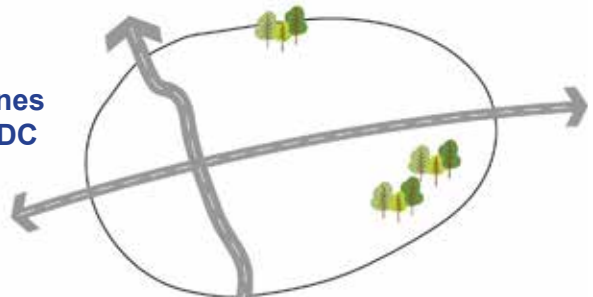
Wheatland County, Alberta developed a Subdivision Credit Application Transfer (SCAT) program in 2006-2007. The program was designed to protect agricultural land from fragmentation without removing the economic benefit a landowner may receive from development of a first parcel out of a quarter section. In Wheatland County’s SCAT program, the overall density in the areas included within the program remain neutral by displacing and clustering development from a Sending Area to a Receiving Area. Transfers must occur on lands that are adjacent, and therefore often occur between parcels owned by a single landowner. When transfers do occur between two landowners, it is negotiated privately between the sending and the receiving landowner. Wheatland County maintains a record of “Subdivision Credit” exchanges, but there is no instrument registered on either title.

How is this tool typically applied in other jurisdictions?	
Mandatory	
Voluntary or Incentive	✓
At what scale or level of government is this tool typically applied in other jurisdictions?	
Provincial / State	
Regional	✓
Local	✓
Which types of land does this tool typically apply to?	
Public (Crown) Land	
Private Land (Urban)	✓
Private Land (Rural)	✓
Which EUL strategies could this tool potentially support?	
1. Reduced rate of land conversion.	✓
2. Utilize minimum amount of land needed.	✓
3. Utilize already developed or disturbed lands.	✓
4. Maximize the use of existing infrastructure.	✓
5. Disturbed lands are reclaimed or reused.	
6. The information needed for decisions that support efficient land use.	

How a TDC Scheme Works

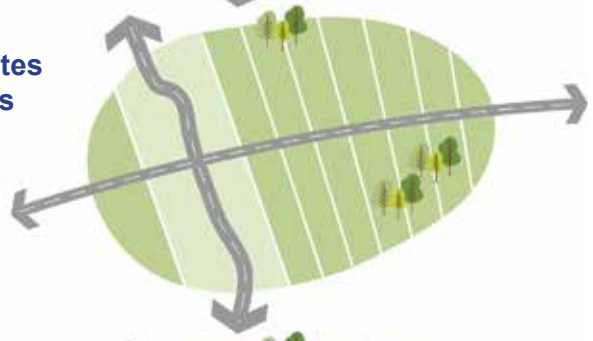
1. Municipality determines the area to which the TDC program will apply.

 TDC Program Area



2. Municipality designates TDC conservation areas and TDC receiving areas.

 Receiving areas
 Sending areas



3. Municipality assigns a 'development credit' to each parcel.

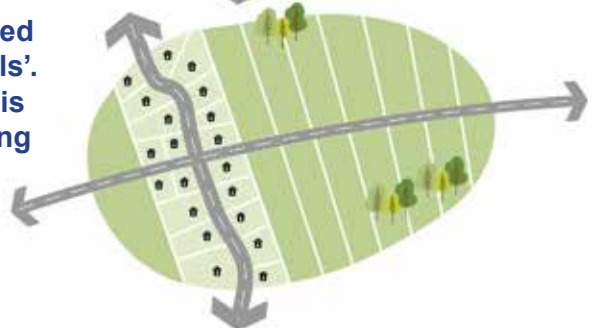
 Development credit



4. Developers in the receiving areas acquire 'credits' from other parcels in the sending areas.



5. Development is carried out on 'receiving parcels'. Development potential is extinguished on 'sending parcels'.



CASE STUDY

Transfer of Development Credits

Municipal District of Bighorn No. 8, Alberta

Responsibility: Municipality | How applied: Mandatory | Scale: Local

In 2007, the MD of Bighorn amended their MDP and Land Use Bylaw (LUB). It allows landowners with lands in the Conservation Easement (CE) District to reduce or eliminate the subdivision potential of their parcel, in exchange for increasing by the same amount the subdivision potential on another parcel within the Small Holdings area that is designated under the LUB as a Transfer of Subdivision Density (TSD) District. In other words, the CE District acts as the Sending Area, while the TSD District acts as the Receiving Area. Lands in the Sending Area must be placed under a conservation easement when the subdivision potential has been transferred.

Related Examples From Other Jurisdictions:

- Boulder County, Colorado operates a Transfer of Development Rights program in the United States. The purpose of this program is to protect agricultural land, rural open space and character, scenic vistas, natural features, and environmental resources while directing development to existing urban centres. In this system, any piece of land that is 14 ha (35 acre) or greater is eligible as a Sending Area while Receiving Areas are to be primarily in two unincorporated urban centres. The transferable development credit is 1 unit per 14 ha (35 acre), with an additional unit available if the water rights are transferred as well. This system is operated entirely by the municipal government.
- The City of Vancouver's Heritage Density Transfer System is an example of a TDC program in an urban setting. The program is a combination of a Density Bonus program and a TDC program. The intention of the program is to achieve various public objectives such as protecting historical buildings in designated districts and preserving open space. The City of Vancouver negotiates with the owner of a heritage building to provide financial incentives that equal the financial gain that would occur if the owner decided to redevelop instead. The negotiations may include bonus floor space or "heritage density" that may be developed on site or transferred to another site. In exchange for the heritage density, the landowner agrees to perform specific reinvestments in the property that are documented within a Heritage Revitalization Agreement, which is registered on title.

For More Information about Conservation Easements

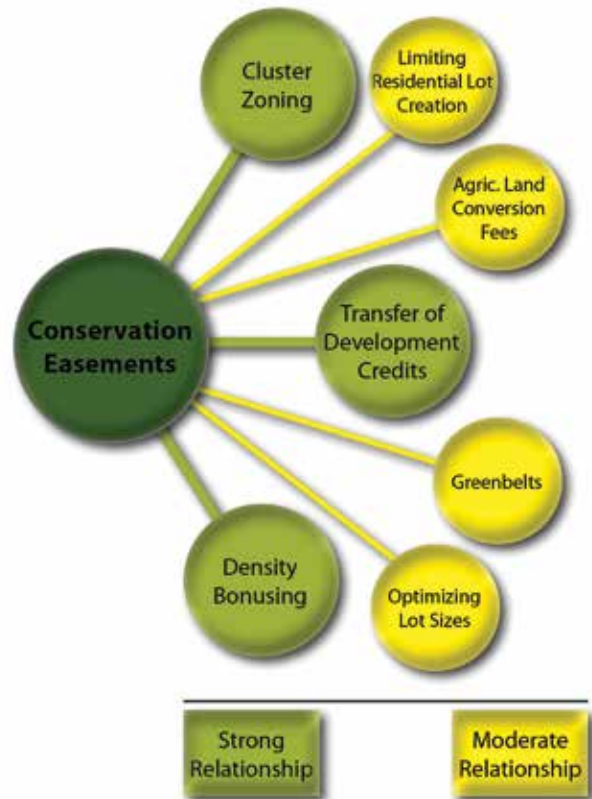
- “Conservation Easements: Pluses and Pitfalls” outlines the role of conservation easements in Canada and how they can be employed to protect the natural environment;
- The Alberta Land Stewardship Act is a valuable resource regarding the legal mechanisms applicable to conservation easements, including limitations or requirements for when conservation easements can be used. Additional information on conservation easements can be found on the Alberta Land-use Framework web site; and
- The Environmental Law Centre in partnership with Duck’s Unlimited and the Alberta Law Foundation published “Legal Aspects of Conservation Easements” by Jason Unger. This resource provides an overview of what conservation easements are, the legal aspects of their use and what they are intended to achieve.

Box 1: Conservation Easements as a Supporting Tool for Efficient Land Use

Although conservation easements are primarily used as a tool for preserving land for environmental reasons, they can also be a useful tool for promoting efficient land use. A conservation easement is a voluntary legal agreement between a landowner and a government agency or a qualified organization to conserve the ecological integrity of the land by limiting the amount and type of development that can occur on a property. A conservation easement is attached to the land title and may be granted for a specified term, but typically it is granted in perpetuity. Under a conservation easement the land remains in private ownership, allowing the landowner to continue to manage and own the land while limiting the developable potential of the land. A conservation easement may only be modified or terminated by agreement between the grantor and the grantee, or by order of the Designated Minister.

In Alberta, conservation easements are provided for under the *Alberta Land Stewardship Act*. Under that Act (Division 2), conservation easements may be granted for the following purposes:

- protection, conservation and enhancement of the environment, including biodiversity;
- protection, conservation and enhancement of natural scenic or esthetic values, or agricultural land; or
- recreational use, open space use, environmental education, research and scientific study.



As shown in the figure, conservation easements can be effective as a supporting tool for several efficient use of land implementation tools.

26. Transit-Supportive Land-Use and Transit-Oriented Design

Description

Transit-supportive land-use or transit-oriented design (TOD) refers to development that supports the efficient delivery of transit services. Typically this involves focusing growth around transit stations, along transit corridors, and developing at higher densities. Many jurisdictions have adopted guidelines to encourage transit-supportive land use and transit-oriented design.

How Can This Tool Contribute to Efficient Land Use?

- Transit-supportive development is typically higher density than traditional development, which means a lower development footprint per capita;
- Transit-supportive development is typically focused around transit stations and along transit corridors, which can support intensification within urban areas; and
- Transit-supportive development reduces the need for land-intensive infrastructure, such as roads and surface parking.

Relationship with Other EUL Tools

Transit-supportive land use and transit-oriented design can provide a means for meeting minimum density (#18) and minimum intensification requirements (#19). Often, areas around transit stations and along transit corridors are identified as priority growth areas (#13). Designing development in a manner that supports transit use also helps to achieve LEED standards (#16).

Use in Alberta

Transit-supportive land use and transit-oriented design is a common feature of many municipal plans in Alberta.

The City of Edmonton's MDP and Transportation Master Plan are based on the principle that "land use and transportation are inherently linked." Great emphasis is placed in the Edmonton MDP on transforming the urban fabric of the city through a much greater emphasis on transit-oriented development. In February 2012, the City of Edmonton adopted a comprehensive set of Transit-Oriented Development Guidelines to help implement these plans.

How is this tool typically applied in other jurisdictions?

- | | |
|------------------------|---|
| Mandatory | ✓ |
| Voluntary or Incentive | ✓ |

At what scale or level of government is this tool typically applied in other jurisdictions?

- | | |
|--------------------|---|
| Provincial / State | |
| Regional | |
| Local | ✓ |

Which types of land does this tool typically apply to?

- | | |
|----------------------|---|
| Public (Crown) Land | |
| Private Land (Urban) | ✓ |
| Private Land (Rural) | |

Which EUL strategies could this tool potentially support?

- | | |
|--|---|
| 1. Reduced rate of land conversion. | |
| 2. Utilize minimum amount of land needed. | ✓ |
| 3. Utilize already developed or disturbed lands. | ✓ |
| 4. Maximize the use of existing infrastructure. | ✓ |
| 5. Disturbed lands are reclaimed or reused. | |
| 6. The information needed for decisions that support efficient land use. | |

Considerations for Using this Tool in Alberta

- Calgary and Edmonton both have extensive LRT systems that have high potential for supporting TOD;
- TOD has many benefits beyond supporting efficient land use. For example, by supporting transit use, TOD can contribute to reductions in greenhouse gas emissions and other harmful pollutants;
- The application of TOD is limited to municipalities with high levels of transit service, so it is less relevant to smaller municipalities;
- In some neighbourhoods, there may be a limited market for the higher-density housing forms that TOD requires;
- For TOD to be successful, it requires significant investments in transit infrastructure;
- Successful TOD often requires an active role for the public sector, for example assembling land, financing, and building partnerships amongst landowners; and
- TOD can be difficult to achieve if it has to compete with an abundance of low density, low cost housing in suburban areas.

The City of Red Deer’s MDP states the municipality shall “encourage Transit Oriented Development by promoting higher density development in proximity to transit stops and along transit corridors, managing parking to encourage walking and transit use, making appropriate provision for both vehicular and pedestrian circulation and creating a sense of place.” The City of Red Deer’s Integrated Movement Study will look more closely at how citizens in the community move around and how this will and should affect future growth. A key part of the study will be to look at the relationship between land use, neighbourhood development and transportation.

Transit-oriented development is also encouraged in the most recent Lethbridge, Okotoks, and Grand Prairie MDPs.

CASE STUDY

Transit-supportive Land-use and Transit-oriented Design

Transit Oriented Development Policy Guidelines City of Calgary

Responsibility: Local | How applied: Voluntary | Scale: Local

The City of Calgary adopted Transit Oriented Development (TOD) Policy Guidelines in 2004. The guidelines were developed, in part, in response to the failure of broader planning policies to generate TOD around key light rail stations.

The guidelines are intended to guide the development or redevelopment of properties within 600 metres of an existing or planned Light Rail Transit (LRT) or Bus Rapid Transit (BRT) station according to six planning objectives:

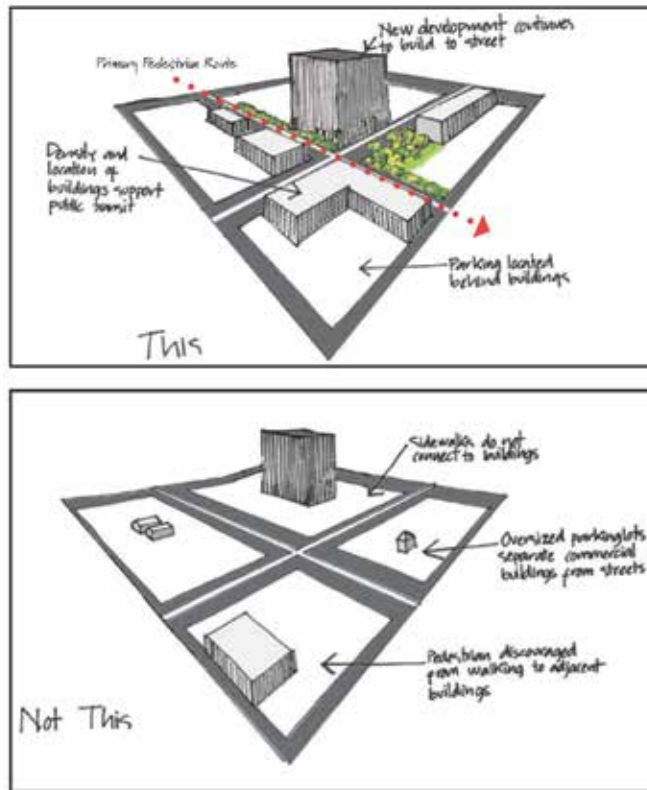
- Ensure transit-supportive land uses;
- Increase density;
- Create pedestrian-oriented design;
- Make each station area a “place”;
- Manage parking, bus and vehicular traffic; and
- Plan in context with local communities.

For each of these planning objectives, a handful of design guidelines identify TOD options around different station types. The objectives and guidelines are intended to help developers, municipal staff and residents promote and implement TOD at all stages of the planning application process, including:

- Station Area Plans;
- Area Structure Plans and Area Redevelopment Plans;
- Land-use redesignations;
- Subdivision applications; and
- Development permit applications.

Prior to releasing the guidelines, the City of Calgary released a Transit Oriented Development – Best Practices Handbook that examined best practices in TOD from across North America. Calgary’s Municipal Development Plan (2009), the Calgary Transportation Plan (2009), and the Sustainable Suburbs Study (1995) also contain city-wide policy directions that seek to encourage transit-supportive land use.

Excerpts from City of Calgary TOD Policy Guidelines



Related Examples From Other Jurisdictions:

- In 2007, the City of Ottawa prepared Transit-Oriented Development Guidelines. The application of transit-oriented design is thought to be very successful in Ottawa and many important recent developments adjacent to transit stations likely would not have taken place if it weren't for the City of Ottawa's transit-oriented design policies;
- Ontario's Transit-Supportive Land-use Planning Guidelines, first adopted in 1992 and updated in 2011, is one of the earliest provincial-level TOD guidelines. These guidelines are intended to promote voluntary application of TOD by developers and municipalities; and
- In 2004, the Canadian Institute of Transportation Engineers (CITE) published Promoting Sustainable Transportation Through Site Design. Based on an international review of best practices, the guide recommends site design practices and supporting initiatives to enhance sustainable travel modes, including transit.

27. Urban Growth Boundaries

Description

Urban growth boundaries (UGBs) limit or control the expansion of cities or towns into surrounding rural, countryside or agricultural areas by defining the areas within which urban development is allowed to occur.

UGBs typically encompass existing urbanized areas of towns and cities, as well as an area of undeveloped, greenfield land that is sufficient to accommodate future growth for a specified period of time.

Illustration of a Theoretical Urban Growth Boundary



UGBs can either be delineated by a provincial or state government or, more typically, senior levels of government can require municipalities to identify them.

A variation on UGBs is Urban Service Areas or Urban Service Boundaries. Urban Service Areas define the area to which urban services, particularly water and wastewater services, will be extended. In other words, rather than regulating land-use on either side of the boundary, as is the case with UGBs, Urban Service Boundaries regulate the availability of servicing. A weakness with the Urban Service Boundary approach is that it does not necessarily prevent large lot residential development or industrial or commercial development from taking place outside of the urban boundary. It would just require them to utilize private servicing.

How Can This Tool Contribute to Efficient Land Use?

- Slows the outward rate of urban development onto rural, countryside and agricultural lands by directing this development to lands inside the boundary;
- Provides an incentive to make more efficient use of available greenfield land inside the boundary, through higher densities or more compact forms of development;

How is this tool typically applied in other jurisdictions?

Mandatory ✓
Voluntary or Incentive

At what scale or level of government is this tool typically applied in other jurisdictions?

Provincial / State
Regional
Local ✓

Which types of land does this tool typically apply to?

Public (Crown) Land
Private Land (Urban) ✓
Private Land (Rural) ✓

Which EUL strategies could this tool potentially support?

1. Reduced rate of land conversion. ✓
2. Utilize minimum amount of land needed. ✓
3. Utilize already developed or disturbed lands. ✓
4. Maximize the use of existing infrastructure. ✓
5. Disturbed lands are reclaimed or reused. ✓
6. The information needed for decisions that support efficient land use.

Considerations for Using this Tool in Alberta

- Urban growth boundaries are particularly useful in areas where there are no geographical constraints (e.g. mountains, lakes, major rivers) to the outward expansion of cities and towns;
- Some Alberta municipalities already identify de facto urban growth boundaries through their MDPs;
- Would have minimal effect in smaller communities where there is little pressure to expand;
- Can help foster a market for urban infill and higher density development by reducing the potential for continuous greenfield expansion;
- To be successful, would require coordination of planning between neighbouring municipalities. For example, a consistent set of “rules” for urban growth boundary identification and expansion would limit the ability of one municipality to undermine the efforts of a neighbour to encourage higher densities or intensification rates;
- Could lead to “leapfrog development” if a single municipality attempts to enforce an urban growth boundary on its own;
- Could be used to direct growth away from environmentally sensitive areas or other areas that a municipality wishes to be “off-limits” to urban development; and
- May be perceived by some landowners outside of the boundary as an infringement on property rights.

- Provides an incentive to accommodate growth through intensification of under-utilized lands inside the boundary, such as brownfields and greyfields; and
- Enables a more rationalized approach to expansion of urban areas.

Relationship with Other EUL Tools

Urban Growth Boundaries are most effective when combined with tools that limit the types of development that are permitted outside of the boundary, such as limits on lot creation (#17), greenbelts (#12) or inter-jurisdictional agreements (#14). They can also be supported by tools that promote more efficient use of lands inside the boundary, such as minimum intensification (#19) or minimum density (#18) requirements. UGBs can help direct development to priority growth areas inside the boundary (#13). Careful and consistent land budgeting (#15) is also important for making sure that the boundaries incorporate a sufficient amount of developable land to accommodate forecasted growth.

Use in Alberta

Municipalities can use their Municipal Development Plans (MDPs) to establish urban growth boundaries within their jurisdictions. For example, the new MDP for Edmonton envisions a population of 1,150,000 people within a 30 year planning horizon. The MDP’s Development Concept designates the land area, in effect the UGB, within which its population and employment targets will be met. Municipalities can also work together through inter-jurisdictional agreements, such as Inter-municipal Development Plans, to establish boundaries directing where urban growth will occur and, conversely, where it will not.

CASE STUDY

Urban Growth Boundaries

**Growth Plan for the Greater Golden Horseshoe
Province of Ontario, Canada**

**Responsibility: Province | How applied: Mandatory |
Scale: Regional**

Ontario's Greater Golden Horseshoe region encompasses more than 100 municipalities, including the City of Toronto. In 2006, the Government of Ontario approved a Growth Plan for this region. All municipal planning decisions must conform to the policies of the Growth Plan.

The Growth Plan does not delineate urban growth boundaries (referred to as "settlement area boundaries"). These are delineated by each municipality. But the province's Growth Plan does set out a number of tests that must be met before a municipality can expand its "settlement area boundary".

- Expansions can only bring into the urban area enough land to accommodate a maximum of 20 years of future growth;
- In determining the amount of land needed to accommodate 20 years of growth, municipalities must assume that future development occurs at the provincially defined minimum density rate, and they must assume that the provincially defined minimum intensification rates will be met;
- It must be demonstrated that the infrastructure required to accommodate the expansion can be provided in a financially and environmentally sustainable manner; and
- If the expansion would be onto prime agricultural lands, it must be demonstrated that no reasonable alternatives exist that could avoid prime agricultural lands.

The Growth Plan also states that only municipalities, not private landowners, can initiate an expansion to a settlement area.

Related Examples From Other Jurisdictions:

- The State of Oregon requires every one of its 241 incorporated cities to draw a UGB around itself with enough land to accommodate 20 years of development.
- The District of Saanich, B.C. established an Urban Containment Boundary (UCB) in 1964. It delineates the catchment area that can be serviced by gravity into the sanitary sewer system. In the 1980's, Council hardened the UCB into a growth boundary to protect rural areas and to encourage more dense development.

Considerations for Using this Tool in Alberta

- Municipalities in Alberta already charge development levies, so the concept itself is not new to province;
- Municipalities can still have significant flexibility to tailor their development levies to reflect their own needs, aspirations, and contexts;
- The principle of varying development levies to incent more efficient land use is applicable in both urban and rural contexts;
- Charging different levies based on density, location, or other factors, would need to be supported by evidence that the actual servicing costs will vary according to these same factors; otherwise, objections could be raised over the fairness of the system;
- If demand for lower density, less efficient forms of development is high enough, variations in development levies alone may not be sufficient to shift development patterns;
- In places where municipalities within a region compete for residential and industrial development, there may be a 'race to the bottom' by municipalities that use low development levies to attract development;
- If development levies were raised to reflect the true costs of low-density housing, there may be places where house prices would become less affordable; and
- If a municipality lowers or waives development charges to encourage development in particular areas, the costs of servicing those areas may have to be subsidized in other ways.

28. Variable Development Levies & Development Impact Fees

Description

Most municipalities apply some sort of development levy or development impact fee on new development. The intent of these levies is primarily to recover from developers the infrastructure costs for servicing the new development. Depending on the jurisdiction, this can include physical infrastructure such as roads, sewers, transit and utilities and/or services such as police and fire protection.

Although many jurisdictions apply uniform fees on all new development, some use variable development levies. Variable development levies are intended to better reflect the true cost of servicing different forms of development while at the same time incenting more efficient use of land. Variable development levies may, for example, charge lower fees for new development that is located in a priority area, such as a brownfield or near transit. They may also charge lower fees for higher density development.

How Can This Tool Contribute to Efficient Land Use?

- Variable development levies can help change the economics of land development by making it more expensive to develop land inefficiently (e.g., in peripheral areas or in low-density forms) and less expensive to develop land efficiently.

Relationship with Other EUL Tools

Variable development levies can be used to provide an added financial incentive in support of policy measures that seek to achieve minimum intensification (#19) or minimum density (#18) requirements, or that seek to direct growth to priority growth areas (#13). Development levies could also be varied to incent the use of alternative development standards (#3), transit-oriented design (#26), or building forms that reduce the development footprint (#4), or to encourage clustering of development in rural and agricultural areas (#6).

Use in Alberta

Development levies are currently charged on new development in Alberta municipalities as a means of recovering infrastructure servicing costs from developers. The *Municipal Government Act* does allow development levies to vary based on the infrastructure demands of development, but no examples were found of municipalities in Alberta that design their development levies with the specific intent of achieving efficient use of land. However many municipalities such as Fort McMurray, Regional Municipal of Wood Buffalo, do vary their charges according to housing type.

CASE STUDY

Variable Development Levies and Development Impact Fees

Kelowna Development Cost Charge Bylaw City of Kelowna, British Columbia

Responsibility: Local | How applied: Mandatory | Scale: Local

Kelowna's Development Cost Charge Bylaw seeks to charge developers for the true cost of new development in order to assist local government in paying the capital costs of providing infrastructure. The amount of the charge varies according to the type of land use, the location within the city, and the density of the development. The City of Kelowna's intent is to incentivize development in areas that are designated for more intensification and to have a more accurate cost recovery for those lands outside of the urban centre areas. For example, because building at higher densities within a built-up area costs the municipality less per unit to service, the development charge for such developments is significantly less than for a low-density development in a greenfield area.

The Development Cost Charge in Kelowna is underpinned by a detailed 20 year servicing plan undertaken by the municipality. This plan projects growth in the municipality and groups that growth according to land-use (e.g., residential, industrial, commercial, institutional) and type of development (e.g., residential housing type). This growth is then assigned to different areas based on where new growth is likely to occur. The amount of growth and its location is then used to anticipate the major servicing projects that will be needed to accommodate the new growth. A portion of the associated cost of these projects is borne by the City of Kelowna, to reflect the benefit of the new infrastructure to the existing community. The rest is spread amongst the different land uses in a manner reflective of the demand each sector is projected to place on new infrastructure, taking into account the density of the development and its location within the community.

The City of Kelowna has also recently updated their Official Community Plan to include a Permanent Growth Boundary, which clearly outlines where growth is anticipated and the preservation of lands designated as resource protection areas.

How is this tool typically applied in other jurisdictions?

Mandatory ✓
Voluntary or Incentive

At what scale or level of government is this tool typically applied in other jurisdictions?

Provincial / State
Regional
Local ✓

Which types of land does this tool typically apply to?

Public (Crown) Land
Private Land (Urban) ✓
Private Land (Rural) ✓

Which EUL strategies could this tool potentially support?

1. Reduced rate of land conversion. ✓
2. Utilize minimum amount of land needed. ✓
3. Utilize already developed or disturbed lands. ✓
4. Maximize the use of existing infrastructure. ✓
5. Disturbed lands are reclaimed or reused. ✓
6. The information needed for decisions that support efficient land use.

Considerations for Using this Tool in Alberta

- Many municipalities in Alberta have experience delivering workshops and other education programs as part of new land-use planning initiatives;
- Any education program should consider the broad range of stakeholders who will be impacted by the change in policy, including the public, developers, and decision-makers; and
- While a significant amount of “off-the-shelf” material exists regarding planning for efficient land use, the most successful programs are those that are tailored to the local context, and based on the local planning framework.

29. Workshops and Education Programs

Description

Achieving efficient land use depends on collaboration between the private and public sectors. While the public sector may establish policies, objectives and programs to promote efficient land use, it is the local building and development community that designs and builds the actual developments that shape our communities. If a municipality is going to be successful in achieving efficient land use, it will be critical to have the understanding and participation of the land development community. Therefore, it is critical that these stakeholders have a clear understanding of the municipality’s vision for efficient land use.

Several jurisdictions have initiated education programs for the local development community, particularly when trying to implement a new policy direction. Initiatives typically include training workshops, public forums, toolkits and best practices guides or publications.

How Can This Tool Contribute to Efficient Land Use?

- Workshops and education programs can help inform the development community about the efficient land-use objectives of a municipality, and how the municipality intends to see these implemented; and
- Workshops and education programs targeted at the general public, stakeholders, and/or decision-makers can help build support for efficient land-use objectives and programs.

Relationship with Other EUL Tools

Most of the efficient use of land strategies described in this compendium will need the understanding of builders and developers if they are going to be successful. For example, strategies to promote building forms that reduce the development footprint (#4), alternative development standards (#3), minimum density requirements (#18), and many others will need to be understood by the public and the development industry if they are going to be successful.

Use in Alberta

Workshops and education programs targeted at a wide range of audiences are commonly used in many Alberta municipalities, and are typically associated with the introduction of a new municipal policy or program. The City of Calgary, for example, developed a series of educational videos titled “Municipal Development Plan Explained” after the adoption of their new MDP in 2012. The education and outreach program was targeted at both developers and the general public. Each video focuses on a particular portion of the plan or explains a specific principle reflected within the plan. Several of the videos are of particular relevance to efficient land use. The Shaping A More Compact City video explains the policies within Part 2 of the MDP which aim to promote initiatives such as mixed-use development and transit supportive centers and corridors.

CASE STUDY

Workshops and Education Programs

Planning Academy City of Edmonton

Responsibility: Municipality | How applied: Mixed | Scale: Local

The City of Edmonton’s Planning Academy aims to help the public better understand the planning process and how to become involved. The program consists of core courses and elective courses, usually between three to six hours in length. Participants that complete three core courses and one elective course receive a Certificate of Participation. The program is voluntary and participants are required to contribute a small fee (\$25 or \$35 depending on the course). City staff facilitates each course. The courses are appropriate for individuals with a range of knowledge of the planning process and use “real life” activities to increase participants’ understanding of the material.

The core courses offered are:

- Land-use Planning: The Big Picture – This course offers an introduction to what urban planning is, why communities need to plan, and how past planning influences Edmonton’s future;
- Getting a Grip on Land-use Planning – This course explains the roles, rights and interests of the various stakeholders throughout the community planning process. It also explores how land-use decisions are made, what laws govern those decisions, and how the relationships between rules and regulations result in the management of development in the City; and
- Come Plan with Us: Using your Voice – This course teaches participants effective ways to demonstrate their support or opposition for development projects by knowing how to interpret development notices and how to give effective presentations to City Council.

The elective courses offered include:

- Transportation Planning – This course provides an overview of how the transportation network is planned, and the relationship between transportation and other development decisions;
- Urban Design – This course identifies why urban design is important and the role it plays in every person’s life. It includes a walking tour to show participants examples of urban design in Edmonton; and
- Transit Oriented Development – This course introduces the principles of transit oriented development.

<p>How is this tool typically applied in other jurisdictions?</p> <p>Mandatory</p> <p>Voluntary or Incentive ✓</p>
<p>At what scale or level of government is this tool typically applied in other jurisdictions?</p> <p>Provincial / State</p> <p>Regional</p> <p>Local ✓</p>
<p>Which types of land does this tool typically apply to?</p> <p>Public (Crown) Land</p> <p>Private Land (Urban) ✓</p> <p>Private Land (Rural)</p>
<p>Which EUL strategies could this tool potentially support?</p> <ol style="list-style-type: none"> 1. Reduced rate of land conversion. 2. Utilize minimum amount of land needed. 3. Utilize already developed or disturbed lands. 4. Maximize the use of existing infrastructure. 5. Disturbed lands are reclaimed or reused. 6. The information needed for decisions that support efficient land use. ✓

Related Examples From Other Jurisdictions:

- Canada Mortgage and Housing Corporation offers the Sustainable Planning and Development for Small Communities Workshop to participants interested in learning about community sustainability. The workshop is tailored to small communities and targets decision makers and public participants, including developers. The workshop explores various community sustainability topics and is delivered through an informative workbook and series of presentations. The workshop is offered at various times throughout Canada;
- Through education and outreach conducted to support the Oregon Transportation and Growth Management Program, the State of Oregon uses workshops, lecture series, conferences, publications and other public forums to educate a broad range of stakeholders about its transportation and growth management strategies. Topics such as revitalization, connectivity, pedestrian friendly design, density and community design, walkability, mixed use development and transit-oriented development are explored. The events and publications are offered to communities of all sizes in Oregon, and predominantly target local governments and specialized audiences. Although there is no fee, each community is asked to provide a venue, identify key issues to address, provide relevant background material and promote the event; and
- SmartGrowthBC provides various programs intended to help community groups and individuals understand the relationship between fiscal, social and environmental elements of a community and responsible land-use and development. The programs offered are targeted to community groups, businesses, developers, planners, municipalities and the public. One of these programs is the Smart Growth on the Ground (SGOG) program, an intensive planning and design charrette process. Depending on the particular group or community the SGOG program focuses on principles such as infill development, higher density more compact community design, walkability, transit oriented development and other principles that reflect the efficient use of land.

C. Appendices

Appendix A: Acronym Glossary

ALC	Agricultural Land Commission	LEM	Location Efficient Mortgage
ALR	British Columbia's Agricultural Land Reserve	LRT	Light Rail Transit
ALSA	Alberta Land Stewardship Act	LUB	Land Use Bylaw
ARP	Area Re-development Plan	LUF	Land-use Framework
ASP	Area Structure Plan	JPS	Joint Planning Study
BRT	Bus Rapid Transit	JEDI	Joint Economic Development Initiative
CaGBC	Canadian Green Building Council	MARTA	Metropolitan Atlanta Rapid Transit Authority
CCRA	Cluster Country Residential Area	MDP	Municipal Development Plan
CE	Conservation Easement	MGA	Municipal Government Act of Alberta
CITE	Canadian Institute of Transportation Engineers	MR	Municipal Reserve
CMHC	Canadian Mortgage and Housing Corporation	NRA	Net Residential Area
CMLC	Calgary Municipal Land Corporation	NWBPA	North West Brampton Policy Area
CMP	Calgary Metropolitan Plan	PGA	Capital Region Growth Plan Priority Growth Area
CNT	Center for Neighbourhood Technology	PPS	Ontario Provincial Policy Statement
COCS	Cost of Community Services Study	RAP	Regulatory Alignment Project for Upstream Oil and Gas and Oil Sands
COS	Cost of Servicing Study	REP	Regulatory Enhancement Project
CRL	Community Revitalization Levy	RDA	Edmonton Restricted Development Area Regulation
CTR	Commute Trip Reduction	SSP	Sustainability Screening Process
DDIP	Downtown Development Incentive Program	SACOG	Sacramento Area Council of Governments
EIP	Eco-Industrial Park	SH	Small Holdings
ER	Environmental Reserve	SCAT	Subdivision Credit Application Transfer
ERE	Environmental Reserve Easement	SGOG	Smart Growth on the Ground
EUL	Efficient Use of Land	TIF	Tax Increment Financing
FAR	Floor Area Ratio	TSD	Transfer of Subdivision Density
FTDA	Frequent Transit Development Area	TOD	Transit Oriented Development
HRM	The Halifax Regional Municipality	TDC	Transfer of Development Credits
IDP	Inter-municipal Development Plan	TNS	The Natural Step
ILM	Integrated Land Management	UGB	Urban Growth Boundary
ISB	Infrastructure Services Building	UCB	Urban Containment Boundary
LEED-ND	Leadership in Energy and Environmental Design for Neighbourhood Development		

Appendix B: Definitions

Accessory	A use customarily related and subordinate to the main building on the same parcel of land.
Brownfield	Land previously used for industrial or some commercial uses and may be vacant or under-used, but has the potential to be redeveloped once it is remediated (e.g., gas stations).
Discretionary Use	Refers to a use in a land use bylaw where a development authority may issue a development permit under its own discretion.
Dominion Land Survey	The framework for the layout of the Prairie provinces and is the method used to divide most of western Canada into one-square-mile (2.6 km ²) sections.
First (1st) Parcel Out	Creation of a single lot from a quarter section of land that has not previously been subdivided.
Floor-area Ratio	A measure of the intensity of the site being developed. The ratio is generated by dividing the building area by the lot or parcel area.
Greenfield	Land previously undeveloped and may have not been subdivided that has mainly been used for agricultural purposes.
Greyfield	Lands and buildings previously constructed for retail or commercial development (e.g., strip malls) that may be deemed obsolete and less efficient in comparison to modern developments (e.g., shopping centres), but have a value for redevelopment. A greyfield may be referred to as infill.
Infill	The re-development of land within a built-up area or an existing development for further construction.
Instrument	A document relating to or affecting the transfer of land, land dealings, or evidencing title to land. An “instrument” can include, but is not limited to a grant, certificate of title, conveyance, assurance, deed, map, plan, will, mortgage or encumbrance; a judgment or order of a court.
Intensification	Occurs when an existing building, site or area within an existing urban area is developed or redeveloped at a density higher than what currently exists.
Parcel	May also be referred to as a lot or lot of land.
Permitted Use	Refers to a use in a land use bylaw where the development authority may issue a development permit that conforms to the bylaw.
Quarter section	An intact parcel of land that that was created under the Dominion Land Survey and may have not been previously subdivided. It was a common size of a tract in homesteading in western Canada.

Servicing

May include the infrastructure or facilities used for supplying utilities or commodities (i.e., water, electricity, gas, waste treatment facilities, water treatment facilities, roads to provide or improve access to service the development or uses.

Walkability

A measure of how friendly an area is to walking. Factors influencing walkability include the presence and quality of footpaths and sidewalks, traffic and road conditions, land use patterns, green space, the proximity and number of buildings, safety and more.

