



ALBERTA  
REAL ESTATE  
FOUNDATION

# Enabling Housing Choice Project

Preliminary Research

Report #3:

**Housing & the  
Environment**

April 2022



## LAND ACKNOWLEDGMENT

The Enabling Housing Choice Project encompasses all of what we call Alberta, and is the traditional and ancestral territory of many peoples, presently subject to Treaties 6, 7, and 8 including the Blackfoot, Cree, Dene, Saulteaux, Nakota Sioux, Stoney Nakoda, and the Tsuu T'ina Nation and the Métis People of Alberta. We acknowledge the many First Nations, Métis and Inuit who have lived in and cared for these lands for generations. We are grateful for the traditional Knowledge Keepers and Elders who are still with us today and those who have gone before us. We make this acknowledgment as an act of reconciliation and gratitude to those whose territory we reside on and that which we refer to in this research.

RDN is committed to supporting the implementation of the Truth and Reconciliation Commission of Canada's Calls to Action, and believes in the need for meaningful engagement and consent with Indigenous peoples in the community. Colonialism is a current ongoing process, and we need to build our mindfulness of our present participation. As this project specifically touches on development and planning concepts which are built on a colonial system of governance and land use management, we also recognize that we have more work to unpack the systems in which we are upholding and working within.

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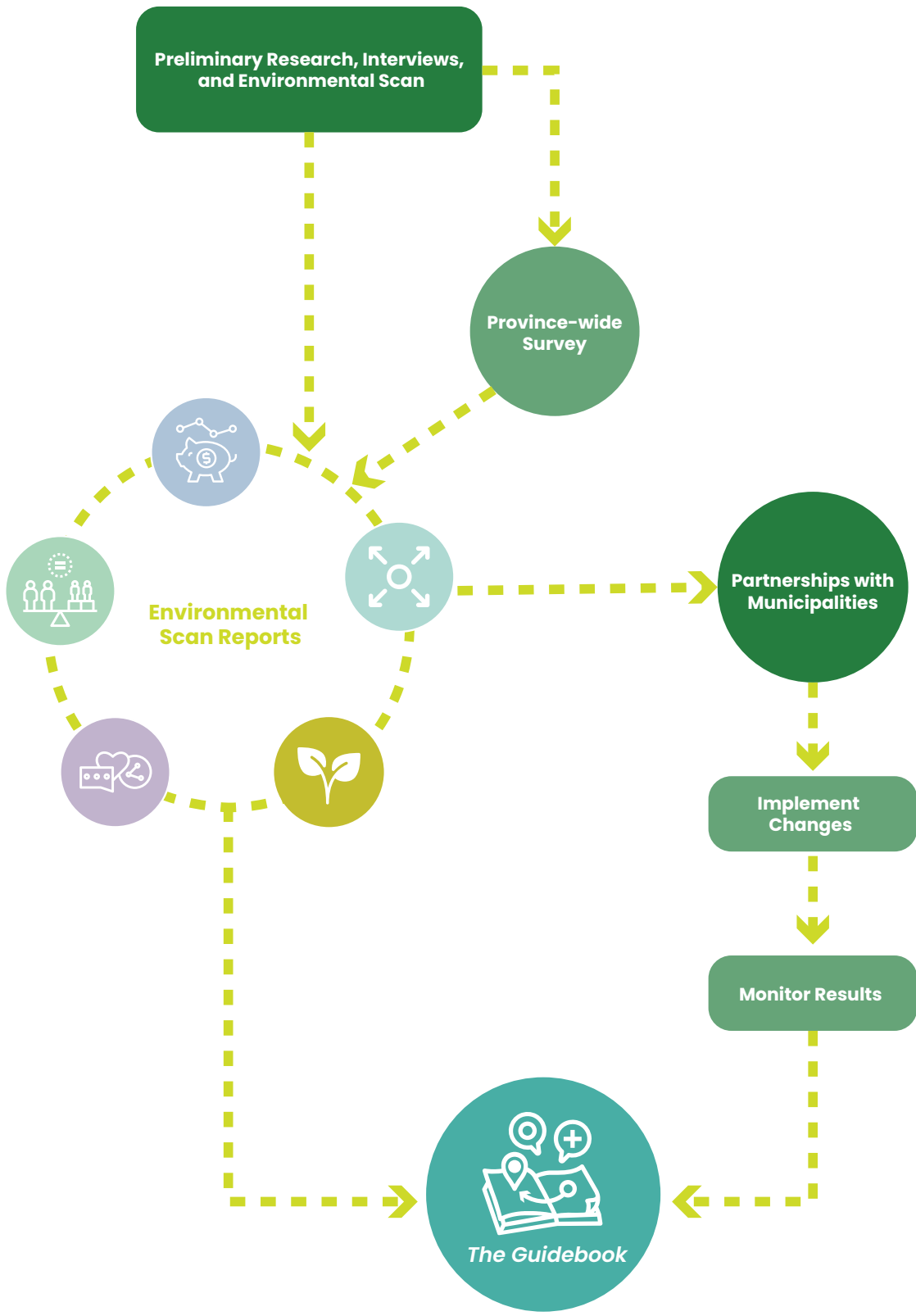
# PROJECT CONTEXT

The Enabling Housing Choice Project aims to provide insight on how Albertan municipalities can support growth in their communities and help provide more housing options and choices to their residents through local policy changes and capacity building strategies. In the first stage of our project, we conducted a literature review, subject matter expert interviews, and case studies. We have broken our findings into five main themes, in order to make the relevant information more easily accessible.

This report, *Housing & The Environment*, along with our other four themed reports, can be used by municipalities and communities to help better understand the complexities of housing choice and to help guide the development of sustainable housing strategies. It is important to note that all these themes intersect with each other. A holistic approach to enabling housing choice that considers all of these themes is required to make meaningful change that positively impacts various groups and their unique needs within a community. These preliminary findings will inform the next phases of our project, including the creation of our Guidebook for Enabling Housing Choice.

In this report, we will explore how development affects the built environment, and how the built environment affects people's everyday lives through:

- » The degradation of the natural environment through practices of sprawl in urban and rural areas;
- » The barriers and challenges to combat the prevalence of sprawl; and,
- » The strategies to mitigate the impacts of sprawl and the destruction of natural areas through land use efficiencies.



## OVERVIEW

Housing is intimately linked to the environment. Where people live affects their wellbeing, and society relies on the natural environment to provide food and sustenance. However, housing also impacts the environment with the development and destruction of land, vehicle emissions and pollution, and its carbon footprint (Kingsella, 2019).

**“THE NEXUS BETWEEN THE RESIDENTIAL SECTOR AND ENVIRONMENTAL QUALITY IS RECIPROCAL AND COMPLEX. THE RESIDENTIAL SECTOR GENERATES ENVIRONMENTAL IMPACTS VIA LAND AND MATERIALS USE, ENERGY CONSUMPTION, AND THE TRANSPORTATION ACTIVITY IT ENGENDERS” (OECD, N.D., PARA. 1).**

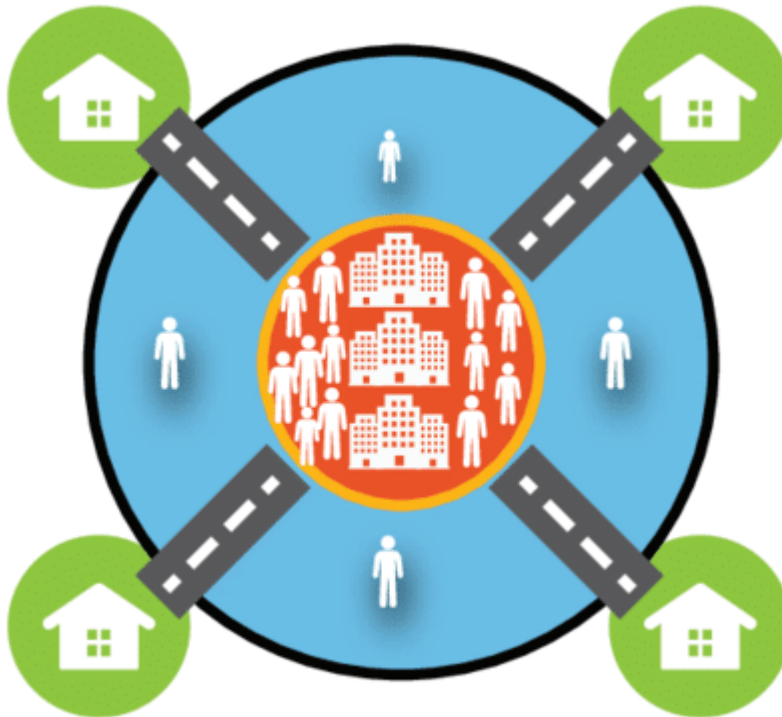
Poor planning can lead to inefficiencies in land use and services which negatively impacts peoples' quality of life and the natural environment. Communities must be strategic about where they encourage development and take into account the location, surrounding infrastructure, and the unique characteristics of their area.

One major challenge in effectively managing environmental concerns is the cultural barriers to sustainable land use and development. This is prevalent in Alberta because its zoning is prescriptive, being firmly established after World War II (City of Edmonton, 2021). In the 1980s, most regional planning commissions were set aside (Taylor, 2014), and the government started to open up development. This correlated to the desire for single-detached houses, which in turn created strict zoning that greatly segregated different land uses (i.e. low density residential, high density residential, commercial). Low density residential developments on the edges of a community reflect lifestyle trends that are often referred to as urban and rural sprawl.

Sprawl is the “uncontrolled expansion of urban development characterized by low density, degraded land use and insufficient infrastructure provision” (Cheung, 2014, p. 35). Sprawl contributes heavily to the degradation of the natural environment. This report explores the prevalence of sprawl and the barriers and challenges to combating it and then delves into some concepts that work to intensify developed areas and create more housing options to limit the further destruction of natural spaces. However, any development may impede and degrade traditional Indigenous lands. There is a dichotomy when considering development, growth, and planning frameworks while also respecting Indigenous lands and reconciliation. For a more in-depth discussion on how the Enabling Housing Choice Project interacts with reconciliation, please refer to our reconciliation paper.

## SPRAWL AND THE ENVIRONMENT

Sprawl has a major environmental impact and contributes to climate change. While some segregation of land uses can be important, like not having housing next to an industrial refinery, sprawl is a symptom of inefficient segregation of land uses. In this section, the environmental impacts of sprawl and how the social and economic impacts add further complexity to environmental concerns are explored. As shown in the graphic below, the concept of sprawl sees the concentration of development in a central area shown in dark orange, with more road infrastructure needed to service the low density areas in blue. In a typical sprawled community, the downtown or core area may have more services and amenities, but the residents living on the edge of town are too far away to access them easily. This adds pressure to develop more roadways to increase connectivity, developing more natural areas into impervious pavement.



Sprawl trends graphic shows the proximity to a central core and the trend of low density residential development being the predominant housing form in the majority of the surrounding area. (Mercer-Blackman, 2018).

## ENVIRONMENTAL IMPACTS

Sprawl contributes to climate change through the destruction of wetlands, loss of tree canopy covers, and increased pollution (Dunn, 2010). Low density development uses more energy than higher density development (Gurin, 2003). The further sprawled development is from the serviced core area, the more reliance there is on private automobiles, the more roads and amenities need to be expanded and serviced. This type of sprawl consumes large quantities of land, segregates commercial uses and amenities from residential land uses, and creates a dependency on automobiles.

The reliant use of automobiles has lasting negative effects on the environment as the “consumption of fossil fuels is the largest contributor to CO2 emissions” (Wilson & Chakraborty, 2013, p. 8). In Alberta, the transportation sector contributes to approximately 12% of Alberta’s Greenhouse Gas (GHGs) emissions, which is the third largest contributor after oil and gas, and electricity (Government of Alberta, 2022). 79% of all vehicles in Alberta are gasoline burning engines, 11% use diesel, and alternative fuels use up less than 1% of all of Alberta’s registered vehicles (Government of Alberta, 2022).

Additionally, with large amounts of land consumed for low density housing, sprawl contributes to the Urban Heat Island effect (UHI). The UHI effect occurs when “cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat” (United States Environmental Protection Agency, 2022).

Although UHI can be experienced in rural or urban areas, the effect is more extensive in urban areas because there is more developed land. Smaller and rural communities are still affected by this phenomenon as

**“ UHI NEGATIVELY IMPACTS NOT ONLY RESIDENTS OF URBAN-RELATED ENVIRONS, BUT ALSO HUMANS AND THEIR ASSOCIATED ECOSYSTEMS LOCATED FAR AWAY FROM CITIES” (URBAN HEAT ISLANDS, 2021).**

UHI is a factor of climate change, and climate change affects all communities, whether rural or urban. A study in Toronto explored the UHI effect across their different neighbourhoods where satellite thermal images concluded: “suburban areas experience higher thermal admittance properties” (Wang et al., 2016, p. 6). A few of the main factors contributing to UHI are large surfaces of materials (mainly asphalt and concrete), the concentration of heat-generating activities released from fuel combustion (including cars), and reduced vegetation (Wang et al., 2016). These are all common attributes of sprawled neighbourhoods and can be applied to many of the sprawling communities across Alberta. With the increasing effect of air pollution and the UHI effect, sprawl directly contributes to climate change (Chakraborty & Wilson, 2013).

## **LINKING ENVIRONMENT AND SOCIAL IMPACTS**

The location of housing has varying effects on a resident’s quality of life and social wellbeing. Affordable or multi-unit housing, in particular, is often condensed in neighbourhoods experiencing economic decline, creating ghettos (Aurand, 2007). Historically, these areas were in the inner city suburbs, and high-income families would move out of the inner city to live in newer suburbs in the outer city ring, contributing to



urban sprawl (Aurand, 2007). While there are often amenities to support the multi-unit family homes in the inner city and downtown areas, this creates segregation of people and concentrates poverty.

Because there is a distinct separation of land use in sprawled suburbs – where residential uses are typically isolated - amenities are not clustered together and people who live in higher densities must still use automobile transportation or transit (if available). If there is no thought given to the location of higher density zoning, this can be seen as disjointed development. For example, putting an apartment building within a neighbourhood with only residential uses surrounding it means its residents lose the ability to walk to a grocery store and may have to resort to the use of automobiles. If residents cannot reap the benefits of using active transportation, adding high densities in sprawled areas does not only put residents at a disadvantage, but does not help in bettering the natural environment. There are positive and negative outcomes for both locating density in the core area and in the suburbs that must be considered when rezoning for and encouraging higher density housing. Promoting a diversity of housing in communities is only beneficial when it is done thoughtfully and considers the people and the environment.

Additionally, sprawl makes it difficult to set the boundaries between urban and rural areas, leading to the loss of green space and agricultural land. Access to green space and the natural environment is essential for the health and wellbeing of residents (Government of Canada, 2022). Natural spaces can help reduce noise in urban areas, provide shade and cooling, and reduce environmental impacts such as flooding and air pollution. The quality and quantity of natural spaces may be limited in sprawled neighbourhoods because of the destruction of the natural environment for the sake of housing development.

Sprawl development often encroaches on prime agricultural land, like in the image below. Agricultural land has innate value to support local food production, as well as in combating climate change if sustainable farming practices like low-tilling and planting cover crops (Rienschke & Jakhar, 2019). Through the annexation of land and sprawling neighbourhood development, the prime agricultural land that is left becomes even more rare and expensive which creates problems relating to food insecurity (Szabo, 2015). Farmers often “sell their land for non-agricultural uses” (Szabo, 2015) because the financial incentive to sell to a developer is more lucrative than remaining on the land. When agricultural land is expensive, farmers cannot sustain their livelihoods and provide high-quality products for their local market. This pushes farmers further away from the markets they could serve and encourages monoculture crops to maximize profits. This cycle of sprawl and loss of agricultural land cuts off access to a diversity of healthy food options which has negative social impacts particularly on lower income families (Intergovernmental Panel on Climate Change, 2019).

## LINKING ENVIRONMENTAL AND ECONOMIC IMPACTS

Low-density neighbourhoods consume more land per person than high-density neighbourhoods, which means more infrastructure and services per capita are required to support residents (Gurin, 2003). In addition, focusing on new community development to meet housing demand requires the additional investment in more infrastructure to support these areas. This leads to increased expenses for municipalities to provide services like sewer, roads, police, and snow removal for all their residents. In turn, this can lead to an increase in property taxes for homeowners and businesses.

While the cost of sprawl is high for a municipality, it can be challenging to weigh this factor properly when making development and land use decisions. When development proposals are made, councils have many different influences like cultural and social considerations. Even though the cultural and social aspects sometimes prevent development from occurring, a tool to convince the councils otherwise is to explain the economics of the development. For example, a council may be encouraged to approve higher density development applications if they can see that these types of developments could help to lower property taxes.



An example of rural development is seen encroaching on agricultural land. (Sawe, 2019).

# MOVING TOWARDS SUSTAINABILITY

While each community, population and geographical size are unique, there are many principles of thoughtful strategies that can help municipalities achieve more sustainable development. This section explores some of the concepts municipalities can use to encourage sustainable and environmentally responsible development. These concepts share some similarities, but also include clear distinctions which may resonate more with the community.

**“ SUSTAINABLE URBAN AND RURAL DEVELOPMENT IS ABOUT IMPROVING THE QUALITY OF LIFE IN A LOCALITY, INCLUDING ECOLOGICAL, CULTURAL, POLITICAL, INSTITUTIONAL, SOCIAL AND ECONOMIC COMPONENTS WITHOUT LEAVING ANY BURDEN—E.G., THE RESULT OF A REDUCED NATURAL CAPITAL AND AN EXCESSIVE LOCAL DEBT—ON FUTURE GENERATIONS.” (MULTIDISCIPLINARY DIGITAL PUBLISHING INSTITUTE, 2022)**

## SMART GROWTH

Municipalities should evaluate how they want to grow more sustainably. Smart growth principles promote the efficient use of land, improving social, environmental, and economic outcomes. The priority of smart growth is to increase residential density and transit use (Filion & McSpurren, 2007). When people live in higher densities and use more transit, the municipality is more efficient and leaves less of an ecological footprint. Municipalities can utilize smart growth concepts by implementing land use policies prioritizing certain development permits to achieve their goals and to give more agency to landowners. This could be done through fast-tracking development approvals that encourage activities like infill and intensification in existing neighbourhoods. They can also provide financial incentives like subsidizing different forms of housing (Sewell et al., 2003).

## TRANSIT ORIENTED DEVELOPMENT

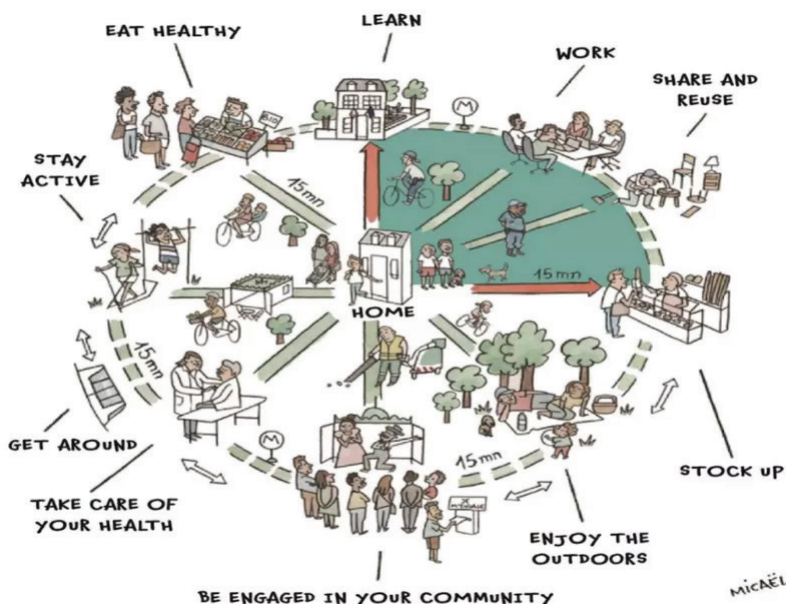
Transit Oriented Development (TOD) is a concept that concentrates development and housing around transit services (Ibraeva et al., 2020). Many municipalities use TOD principles with successful outcomes, but they must be strategic about where density is encouraged to maximize services and amenities. Allowing higher densities where there are more services (including transit) will enable more people to live car-free. If more diverse and dense forms of housing are planned like this, it also provides better access

to grocery stores, schools, and other services for low-income families (Mueller et al., 2018).

Although TOD has had many successful results, the outcomes from community to community are diverse, and locale should always be noted. Successful TOD relies on a variety of factors such as “the socio-economic level of a neighbourhood, habits and long-established preferences of residents, and regional accessibility conditions” (Ibraeva et al., 2020, p. 111). TOD also tends to be urban-focused, as transit is often underdeveloped or nonexistent in smaller and more rural areas. However, the principles of encouraging density near areas of the highest amenities and service levels can be applied to any size of municipality.

## THE 15-MINUTE NEIGHBOURHOOD

The clustering of development can be seen in the concept of 15-minute neighbourhoods. The 15-minute neighbourhood is a concept that prioritizes walkability and proximity to amenities. Often referred to as “complete neighbourhoods,” the idea is that residents can get all their basic needs within a 15-minute walk of their home (Herriges, 2019). It is important to note, however, that there is ableism embedded in this concept, as people walk differently and many cannot walk at all. As shown in the image below, amenities and businesses are clustered together, which creates a reciprocal relationship with the nearby residents. As businesses rely on local sales, residents can patronize places conveniently located close to home.



Activities and amenities that residents would access throughout their neighbourhoods, in proximity to their homes (Chamberlain, 2022).



These types of neighbourhoods can be dispersed around a town or city, and more than one 15-minute neighbourhood can exist in a community. With the addition of density, many 15-minute neighbourhoods have ‘Third Places,’ which are community gathering spaces for people to enjoy the public realm (Herriges, 2019).



**“ A THIRD PLACE IS A COMMUNITY GATHERING SPACE WHERE YOU CAN MEET A FRIEND, KILL SOME TIME, OR HAVE A SERENDIPITOUS ENCOUNTER WITH A NEIGHBOR. IT CAN BE A PRIVATE BUSINESS, PUBLIC PARK OR PLAZA, OR A CIVIC SPACE LIKE A PUBLIC LIBRARY. EVERY 15-MINUTE NEIGHBORHOOD NEEDS A GOOD THIRD PLACE OR TEN” (HERRIGES, 2019).**

The attributes of 15-minute neighbourhoods encourage walkability for vibrancy in the neighbourhood. By concentrating businesses, housing, amenities, and public spaces in one area, 15-minute neighbourhoods mix different land uses to create centralized hubs, often called “nodes.” These nodes create a space where residents can live and have all their needs met, without the use of private automobiles. This concept strategically places densities in areas that would provide residents with the benefits of mixed housing types.

### **CREATING SERVICE AND AMENITY HUBS**

The area of smaller municipalities may already enable all local services and amenities to be walkable. As well, Transit Oriented Development can also be a challenge in small communities as some areas have a lack of transit centres or none at all. In these cases, communities cannot cluster their development around transit services. However, they can still cluster commercial areas and amenities into nodes that would benefit the community, especially if higher density residential housing is also assembled there.

By clustering amenities and higher density housing, smaller communities can create service hubs that can enhance the communities’ vibrancy. The impact of clustering services can also make more sustainable towns by concentrating development and using less green space. Clustering amenities and housing can provide for a more sustainable lifestyle and can enhance the charm of small towns as it enriches the development and use of Main Streets or downtowns. Great examples of this in Alberta are the mountain towns of Canmore, Jasper, and Banff- shown below.



**Main Street in Banff, Alberta (Serjeant, 2012).**

## CASE STUDY

Many communities have trouble making policies to reduce their environmental impact and provide adequate services and amenities for their sprawling neighbourhoods. To demonstrate a strategy in action to tackle this problem, we are highlighting the City of Medicine Hat. Their new Municipal Development Plan focuses on creating service and amenity hubs across their city while reducing their environmental impact and growing their urban forest (City of Medicine Hat, 2020).

### MEDICINE HAT: CENTRAL HUBS

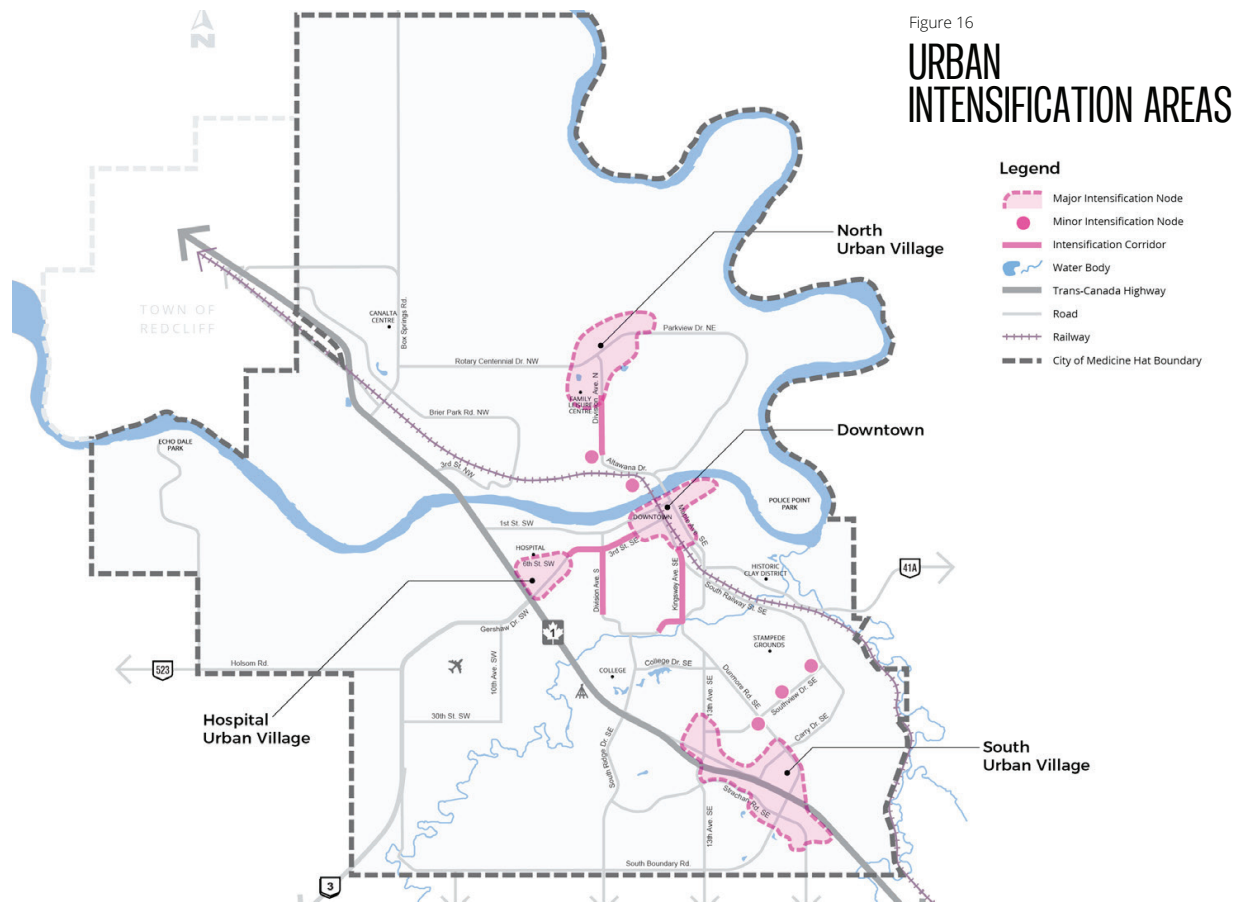
The City of Medicine Hat is a medium-sized city with a population of over 65,000 (Government of Alberta, 2021). The city is located in southeast Alberta along the South Saskatchewan River, surrounded by open fields. Because Medicine Hat does not have any geographical constraints, sprawl development was common. Over time, however, it became clear to the municipality that servicing the developments on the edges of the city was getting expensive and that it was not feasible to provide these communities with the same level of service as other established communities.. They also wanted to reconcile the impact that sprawl has had on the natural environment, and worked to include new provisions into their new Municipal Development Plan (MDP). The four major environmental priorities from their new MDP include:

1. The sensitive areas of their prairie landscape should be conserved and managed;
2. Water management practices reflecting their semi-arid desert climate and their constrained watershed should be implemented;
3. Reduce the overall environmental impact of their city; and
4. Expand and maintain the city's urban forest in all viable public spaces (City of Medicine Hat, 2020, p. 52).

When creating and adopting their new MDP, the myMH Master Plan, the planners put more emphasis on understanding the context of their city. They were interested in planning concepts like 15-minute neighbourhoods and applied the same principles from this concept to centralize their services and densify the core area while also creating three urban villages (City of Medicine Hat, 2020).

As shown in the mapping on page 15, these urban villages highlight areas that the city hopes to intensify development in. These urban villages are strategically located along major transportation corridors with provisions to develop underutilized spaces like surface parking lots.

Additionally, to connect these urban villages together, the myMH Master Plan aims to make meaningful links between them on already developed roadways “to support higher density development” (City of Medicine Hat, 2020, p. 68).



Urban Intensification Areas depicting urban villages in pink (City of Medicine Hat, 2020).

These efforts will help the City of Medicine Hat achieve their goal to be champions of environmental stewardship. This is supported by encouraging density in their core areas by incentivizing infill and making the core the most service rich. While they do not inhibit residents and developers from building what they want on the outskirts of town, they do so knowing that there would not be a lot of amenities nearby. This urban transect image below from the myMH Master Plan demonstrates the urban form as well as the servicing and amenity levels that residents can expect based on where they choose to live.

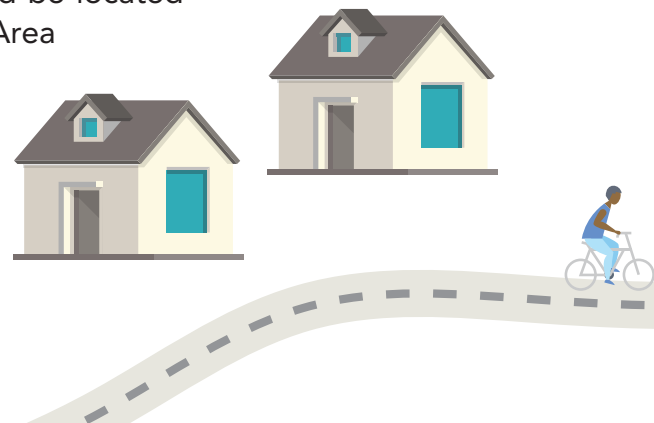
It is important to note that although this plan was recently adopted, there are already many positive changes being seen through this plan, such as Medicine Hat’s incentive grants which includes the Infill Incentive. The Infill Incentive encourages developers to construct and develop infill properties through a combined maximum of \$25,000 grant for each project (City of Medicine Hat, 2022). Although there have been changes, the full impact of the plan will not be seen for some time.

## NEXT STEPS

Municipalities must use land more efficiently to combat climate change and to support the environment. Sprawl is no longer viable to create sustainable communities. Implementing sustainable growth strategies within municipal policies is essential in combating the environmental concerns that occur with sprawl. Social and economic considerations can also be developed in conjunction with environmental concerns to better the entire system of land use. Being able to strategically develop density in targeted areas will create a more sustainable and healthy lifestyle for residents. Through the different ways of being more efficient with land uses by Transit Oriented Development, 15-minute neighbourhoods, or the clustering of amenities, municipalities must look at their locale and determine what strategies work best for them.

To promote land use efficiencies, municipalities must make density one of its goals. This could mean developing community engagement plans to encourage residents to accept and embrace higher densities. This could also mean creating the incentives needed to encourage developers to invest in infill and higher densities like the City of Medicine had promoted. Municipalities must think about smart growth principles to effectively implement density so that residents and the municipalities themselves can live a more sustainable lifestyle. Note that higher densities do not always mean large high rises, but could mean duplex housing or row housing. Looking at the context of a neighbourhood's characteristics is also essential in implementing density because density should be established where residents can reap the benefits.

The clustering of amenities and services is important in aiding in land use efficiencies, whether it is through Transit Oriented Development, 15-minute neighbourhoods, or the mere clustering of amenities. Letting market forces cluster themselves is not enough to promote land use efficiency. Municipalities must advocate for land use efficiency by planning where commercial, retail, and services should be located and create hubs of nodes. This can be done in the Area Structure Plans or Neighbourhoods Structure Plans, but they must be implemented in regulation and policy. If municipalities are committed to creating a smaller ecological footprint, it should be shown in their legal documents and plans.





## GET INVOLVED

Our Sustainable Housing Initiative (SHI) Enabling Housing Choice Project team is working to support communities across Alberta to create innovative and transformative local policies that promote housing diversity, access and choice. If you are interested in learning more about the project, current partnership opportunities, and research, please get in touch by contacting us here at [housingchoice@ruraldevelopment.ca](mailto:housingchoice@ruraldevelopment.ca) or by visiting our [webpage](#).



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