

# Alternative Governance Models for Managing Rapid Growth

AN EXPLORATION OF HOW ALTERNATIVE GOVERNANCE MODELS MAY HELP  
ALBERTAN COMMUNITIES ADAPT TO RAPID GROWTH

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## Executive Summary

Many communities in Alberta face challenges with unpredictable patterns of rapid growth and subsequent downturn. This research paper examines whether a given governance model is better for adapting to rapid growth. The study was done using a case study approach. The paper looks at four case study areas: Grande Prairie, the Regional Municipality of Wood Buffalo, Edmonton and Calgary. Grande Prairie exemplifies the urban-rural segregation model. The Regional Municipality of Wood Buffalo illustrates the specialized municipality model. Edmonton is an example of the regional planning model. Calgary demonstrates the single-tier metropolitan model. The study focuses on three areas: the history of municipal boundary changes, land development patterns and tax base distribution.

Most of the literature on the subject indicates that rapid growth can have a negative impact on a community ranging from increased crime rates to an inability to keep up with infrastructure demand. Several sources recommend using impact assessment models to predict the effects of rapid growth and using this as a basis for planning. However, the same sources warn that impact assessment models are flawed in numerous ways. Various sources hint at the potential of alternative governance models, but none explore this approach in depth.

The examination of municipal boundary changes indicated that the specialized municipality is the most stable model. The Regional Municipality of Wood Buffalo has not had boundary change since the 1995 amalgamation; whereas Grande Prairie, Edmonton and Calgary have each had numerous boundary changes and attempted boundary changes.

The analysis of land development patterns indicate that the specialized municipality system provided for a more concentrated pattern of development. In the Edmonton-Calgary comparison, Calgary's single-tier model was slightly more successful at containing urban development. However, Calgary continuously annexes land to accommodate its sprawl.

The examination of tax base distribution indicated that the specialized municipality model had the most equal distribution. The specialized municipality model allows rural areas to share their large non-residential assessment bases with the associated urban areas. Calgary had an equal tax distribution, because it covered the metropolitan area, but it lacked a significant non-residential tax base. This is likely due to the incompatibility of large-scale industrial projects with densely populated urban areas.

Overall, the study results indicate that the specialized municipality model has the most potential for improving a municipality's ability to manage rapid growth. The challenge is that the specialized

municipality model would be difficult to apply to cities that are as large as Edmonton and Calgary. Encompassing the surrounding rural areas would create an excessively large municipality. The model is well suited to areas with smaller cities, such as Grande Prairie or Fort McMurray, that are surrounded by rural municipalities. This study provides a broad look at the potential of different governance models, but choosing the appropriate governance model for a region requires a focused study that considers its unique circumstances.

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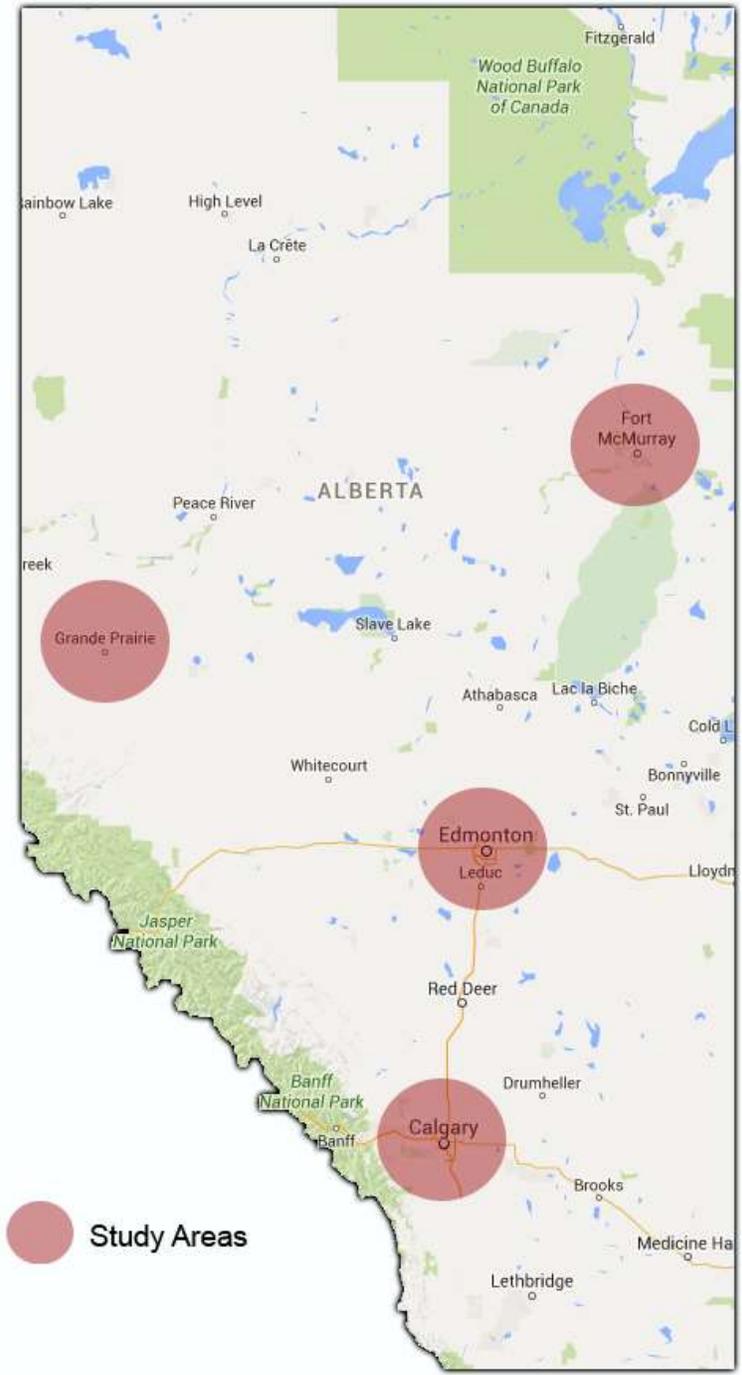
## Introduction

An unpredictable growth pattern is a common thread in resource based communities. Rapid growth places a tremendous strain on a community's infrastructure and services, while the unpredictability of growth patterns makes long-term planning challenging. The existing literature on rapid growth highlights a range of problems such as increases in crime rates and a worsening of income disparity. Various sources suggest methods for adapting to rapid growth. The dominant suggestion is impact assessment modeling, which every source acknowledges as a very flawed tool. Some of the work on the subject hints at exploring alternative governance models as a means for dealing with some of the problems caused by rapid growth. However, none explore the option thoroughly.

This research project uses a comparative case study approach to examine the impact of different governance models on communities dealing with rapid growth in unpredictable cycles. The study looks at 4 case study areas: Grande Prairie, the Regional Municipality of Wood Buffalo, Edmonton and Calgary. See **Map 1. Case Study Areas** for the location of each study area. The Grande Prairie area provides an example of an urban-rural segregation system. The Regional Municipality of Wood Buffalo is an example of a specialized municipality. The Edmonton area is an example of a metropolitan area divided into numerous municipalities that uses a regional planning commission. Calgary is a single-tier municipality that encompasses its metropolitan area. Each system is the result of each areas' unique history; however, they may not be the best choice for current conditions.

The study looks at the history of boundary changes for each area, such as annexations and amalgamations. This provides an understanding of how the current systems were formed and how rapid growth pushed change. The study also looks at growth patterns in each area to see if any governance model allows for greater control of growth. In addition, the study compares the distribution of the tax base in each system. A strong tax base is key to a municipality being able to manage rapid growth, so it is favourable to have an equal distribution of tax base. Through this analysis, the study provides some insights into a preferable governance model for adapting to rapid growth.

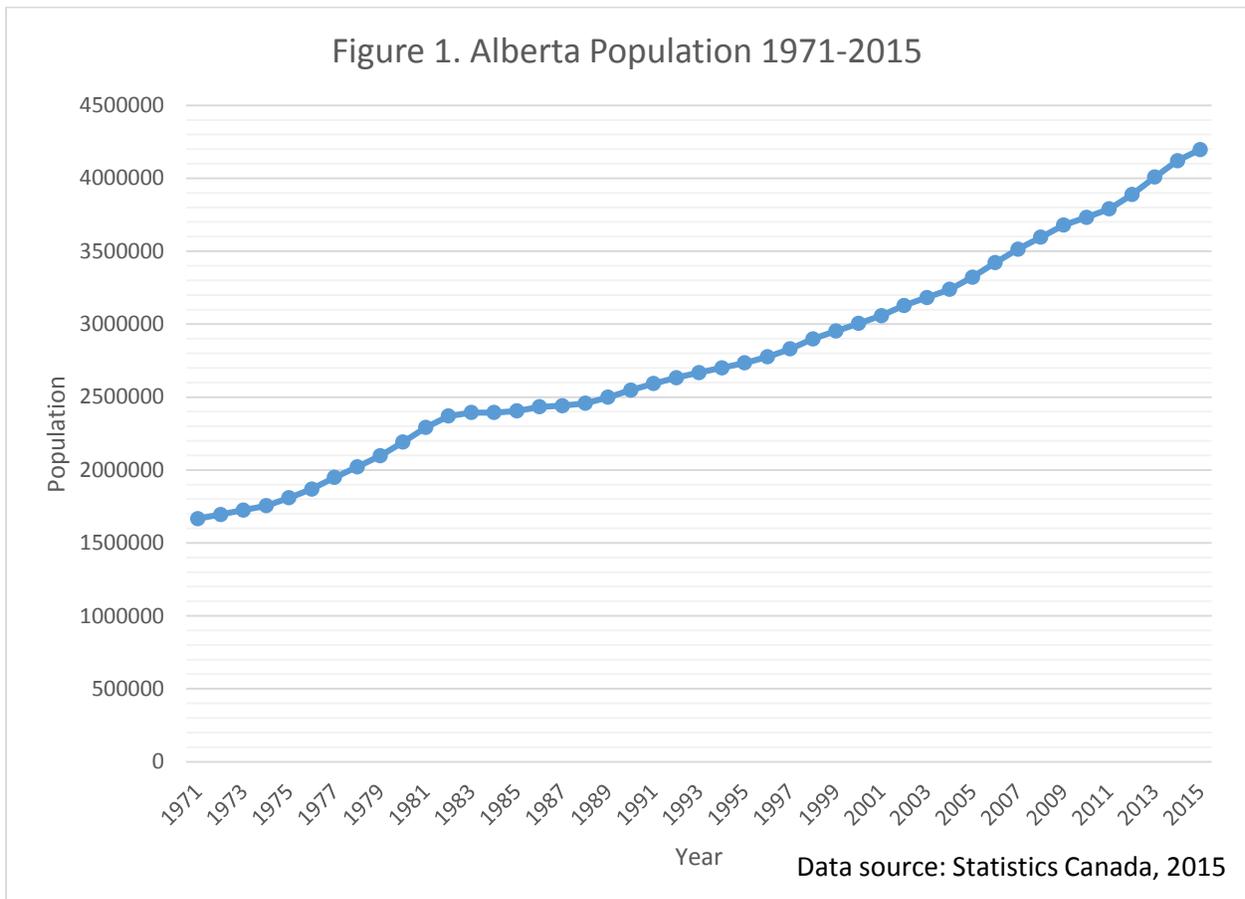
**Map 1. Study Areas Map**

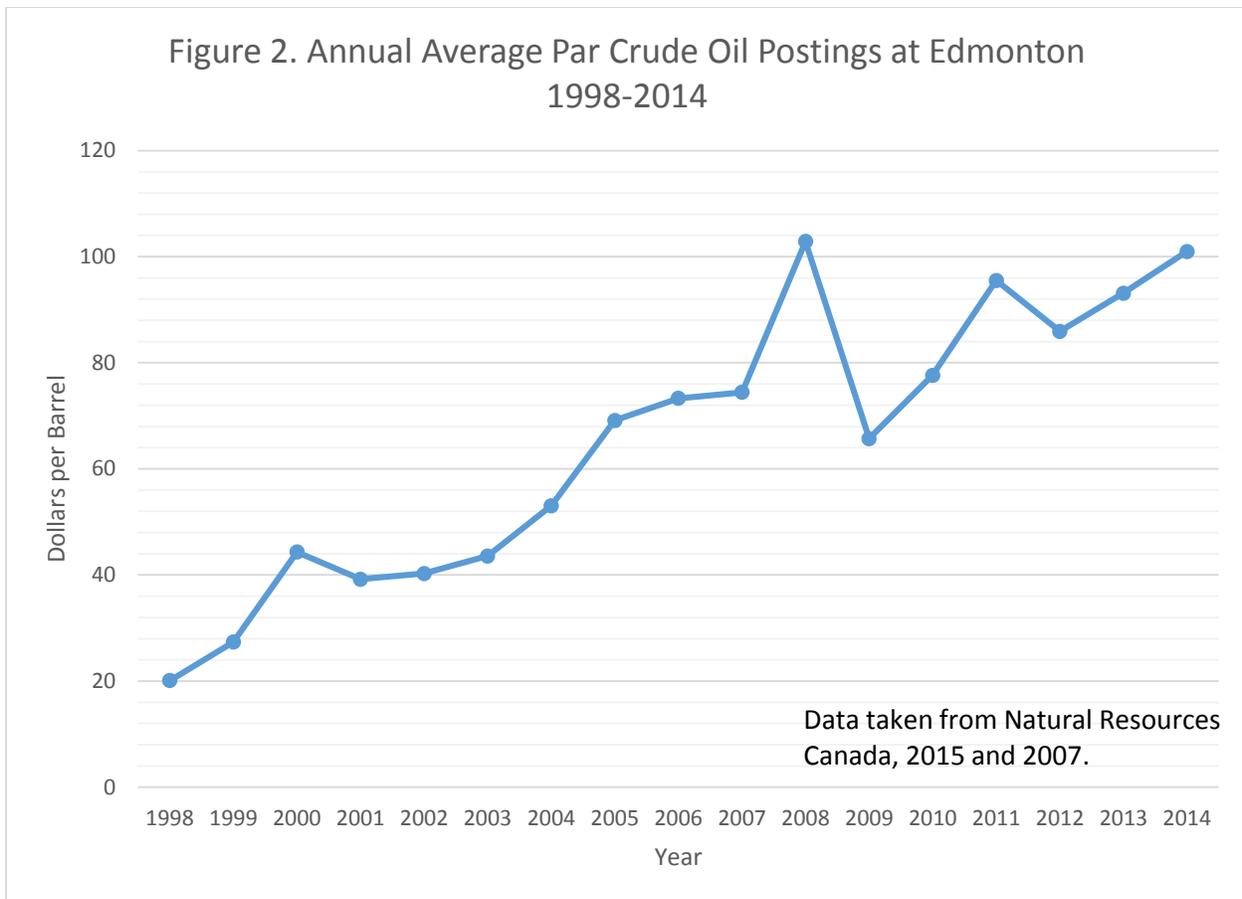


(Map adapted from Google, 2015)

## Background

Alberta has experienced unpredictable periods of rapid growth since the 1970's. These growth patterns followed the performance of the oil and gas industry both in progress and in downturn. **Figure 1. Alberta Population 1971-2015** demonstrates the rapid growth seen in the province. **Figure 2. Annual Average Par Crude Oil Postings at Edmonton 1998-2014** demonstrates the variability of the oil sector.





Because this growth was so closely linked to the unpredictable boom-bust cycles of a resource extraction industry, long-term planning has been difficult for many municipalities. Unpredictable growth presents a number of challenges, such as planning for infrastructure investment and providing adequate services for the new population. Further, rapid growth can create cleavages between urban municipalities and their rural neighbours. Urban municipalities often compete with their rural neighbours for developable land and an industrial tax base. Utilizing an alternative governance model, such as a specialized or metropolitan municipality could potentially help to relieve these tensions. Having the urban centre and the surrounding rural area under a single municipal government may allow for a more equal distribution of tax revenue, as well as greater control of land development.

Like other provincial governments, Alberta has gone through phases of encouraging the merger of local governments. From 1937 to 1962 the province of Alberta pushed for the consolidation of local governments in an effort to deal with rapid growth with measures such as the New Town Act (Walchuk, 1987). The province started encouraging amalgamation again in the mid-1990's, but the decision was left to the municipalities, which tended to address local needs through joint servicing arrangements and

intermunicipal collaboration (Tindal & Tindal, 2009). Currently, the provincial government is undergoing a transition from a Progress Conservative party led government to the New Democratic Party. In the spring, the Municipal Affairs Minister Diana McQueen proposed changes to the Municipal Government Act that would streamline the voluntary amalgamation process (Darcy, 2015). In addition to these changes, the decision regarding Grande Prairie's controversial annexation application will be announced at December's legislature. The discussions at this meeting may reveal the new government's views on local government structure.

## Goals and Objectives

The goal of this project is to determine if there is a governance model that is better for dealing with rapid growth than the others. The objectives of this research are to determine if one governance model is better able to control land development patterns and if this structure provides for more equitable tax distribution.

## Approach

The approach for this research project is a comparative case study analysis. The case areas are: Edmonton, Calgary, Grande Prairie and the Regional Municipality of Wood Buffalo. Edmonton is used as an example of a metropolitan area divided into numerous municipalities that uses a regional planning commission. Calgary is an example of a single-tier municipality that encompasses the entire metropolitan area. Edmonton will be compared to Calgary because both city's experienced rapid growth in connection to the 1970's Alberta oil boom and are close in population, but developed different governance structures. Calgary was able to amalgamate many surrounding municipalities, while Edmonton was not. The analysis will include the municipalities surrounding Edmonton and Calgary. Grande Prairie is an example of an area with a rural-urban split, as the urban municipality, the City of Grande Prairie, is surrounded by the rural municipality, the County of Grande Prairie. The Regional Municipality of Wood Buffalo is an example of a specialized municipality where the rural area is part of the same municipality as the urban Fort McMurray area. The Grande Prairie region will be compared to the Regional Municipality of Wood Buffalo because they are similar in a number of ways. They have a similar population, both are somewhat in a remote Northern area of Alberta and both feature an urban core surrounded by a large rural area. The City and County of Grande Prairie are two separate municipalities, one urban and one rural. The Regional Municipality of Wood Buffalo is an amalgamation

of the former City of Fort McMurray and a neighbouring improvement district. When possible, analysis will also include the subject municipality before and after amalgamation.

## Methodology

### Analysis of Boundary Changes Over Time

As part of this study, timelines were created for each study area outlining the history of boundary changes. This includes the establishment of municipalities, status changes, renamings, annexations, withdrawals and amalgamations. The timelines are largely based on provincial documents available on the Government of Alberta's Municipal Affairs website. These timelines illustrate how the municipalities have changed both in terms of structure and physical boundaries. The timelines are in Appendix A: Municipal Boundary Timelines.

### Examination of Land Development Patterns

The project includes an analysis of land development patterns to determine if one governance model allows for greater control of development patterns than the others. This was determined by looking at whether urban style development is occurring on the rural fringe of a municipality, as well as sprawl in general. The analysis favors higher density development in the urban cores, rather than in rural greenfields. The analysis was done visually using images from Google Earth and Bing Maps. To facilitate this analysis, a series of images was created based on satellite photos of each area. The images highlight built up areas. This was done by amplifying the red hues in built up areas and the blue hues in the undeveloped areas to heighten the contrast and then removing the undeveloped areas from the images.

### Analysis of Tax Distribution

A major consideration in most discussion of governmental structures is tax base inequalities between municipalities. By analysing the value of assessment in each municipality, as well as mill rates it is possible to identify inequalities in tax base distribution. For the purpose of comparing tax bases, this study uses equalized assessment values provided by the Province of Alberta. Equalized assessment represents the value of assessable assets within a municipality reported by the municipality, but adjusted by the province to more accurately reflect market values. The analysis compares the assessment that each municipality has to its population. Assessment per capita will help to indicate if the value of assessment in a municipality is proportionate to the number of people that it serves. Further, the study considers mill rates to see if tax base discrepancies lead to higher taxes for residents.

Through this analysis the study considers whether any of governance models provide for a more equitable distribution of taxes. The tax distribution analysis is important to this study because tax revenue is required to invest in the infrastructure improvements and service expansions needed to mitigate the impact of rapid growth.

## Literature Review

The development of a resource extraction industry has a tremendous impact on the surrounding region, creating unique challenges for planners and policy-makers. These communities, often referred to as 'boomtowns' experience rapid growth and often subsequent decline. While there are various different types of 'boomtowns', this study focuses on communities affected by resource extraction industries. This literature review is divided into two parts: impact and mitigation. The impact part examines the effect that boom and bust cycles can have on a community. The mitigation part looks at ways that planners and policy-makers can mitigate the potential negative effects. The literature indicates that there are a range of negative as well as positive impacts, which depend on a range of conditions in the community. Many authors propose potential tools to use as solutions, but with limited guidance on how to use these tools. Some of the examples hint to governance models, namely the regional structure as a factor, though there is little discussion of how different governance models can be used to mitigate the impacts of rapid growth. This gap in the literature merits further exploration.

## Resource Towns - Boomtowns

Throughout the range of literature on the subject, the term 'boomtown' has been used in a variety of contexts. The various researchers and theorists employ the term in a way that fits the context of their study. Generally, people associate the term 'boomtown' with an economic boom, but the term 'boomtown' comes from timber-booms where logs were floated downstream (Jacquet & Kay, 2014). Regardless of the origins of the term, it has become entrenched in the study of communities experiencing rapid growth. This study considers potential solutions from all types of 'boomtowns'; however, it focuses on resource towns. The common thread among resource towns is that they are often dependent on a single commodity, situated in a relatively remote location and characterized by economic volatility and vulnerability (Chapman, Plummer, & Tonts, 2015). These general attributes apply to the majority of the communities discussed in the body of literature reviewed, though there are various exceptions.

## Impact

### Demographic Change

When resource projects are developed they often entail a rapid in-migration of people to the region. In the majority of cases the population increases (Summers & Branch, 1984). This rapid change has a huge impact on local demographics. As they tend to attract a largely male workforce, there is often a high ratio of men to women (Archbold, Dahle, & Jordan, 2014)(Petkova, Lockie, Rolfe, & Ivanova, 2009). The prospect of work often attracts younger people. They tend to have a population mostly between 25 and 35 years of age (Petkova, Lockie, Rolfe, & Ivanova, 2009). Newcomers attracted to resource development are typically young, well-educated and highly skilled; more so than the long-time residents (Summers & Branch, 1984). These young arrivals are nonmetropolitan industrial workers who have larger households than the local area residents generally and are more likely to be child-bearing age (Summers & Branch, 1984). In addition, there is a high population turnover as many people only stay four to five years (Petkova, Lockie, Rolfe, & Ivanova, 2009). Interestingly, industrial development was not found to curb out-migration. One study found that most new people came from within 50 miles and those from further were often managerial or technical personnel (Summers & Branch, 1984). In addition, there is no evidence that the presence of a manufacturing industry increases the level of educational attainment in the host community (Summers & Branch, 1984). The population impact is lessened because of commuting (Summers & Branch, 1984).

### New Versus Longtime Residents

The demographic change can also be reflected in contentions between newcomers and longtime residents. The rapid change and perceived blame for the impact can polarize a community. There is an 'us' and 'them' attitude between newcomers and permanent residents (Petkova, Lockie, Rolfe, & Ivanova, 2009). The newcomers often come from urban centers and have a different set of values, which can cause both the newcomers and permanent residents to feel alienated and wary of each other's intentions (Malamud, 1984). Longtime residents may also be upset by the increased demands placed on the community by the newcomers. Longtime residents often resent paying for the infrastructure expenditures required by the new population (Markusen A. R., 1978). Research has also found that there can be resentment between skilled and unskilled labor. For instance, one study found that resentment was often caused by the fact that unskilled and semiskilled miners earn more and occupy better and cheaper housing than skilled and professional workers (Petkova, Lockie, Rolfe, & Ivanova, 2009).

### Socioeconomic

The development of a resource industry can bring on rapid economic growth for a region. This usually results in more jobs and higher wages. While many people benefit from this growth, these benefits are not necessarily spread equally across the population. In boomtowns, as population goes up so does unemployment, partly because of people migrating to larger centers in search of employment (Chapman, Plummer, & Tonts, 2015). Similarly, as mean income rises, so does the percentage of low-income households (Chapman, Plummer, & Tonts, 2015). The benefits of resource development are not equal across the population. They may raise average income while simultaneously depressing the relative economic state of certain segments of the populations (Summers & Branch, 1984). This wage disparity, coupled with an increased in cost of living can have a terrible impact on disadvantaged members of a community. The development projects seldom result in employment for the disadvantaged unemployed (Summers & Branch, 1984). A community would benefit most from a development project if it created jobs for the local unemployed; however, the benefits are not necessarily to locals. Local hiring is usually greatest in the less-skilled job categories (Summers & Branch, 1984). The more skilled jobs are usually occupied by newcomers with the required skillset. The disparity can also be seen along racial lines. Non-whites are underrepresented and are generally in unskilled or semi-skilled jobs (Summers & Branch, 1984). The rise in cost of living combined with increased economic disparity can put greater strain on a community. There is evidence that as mean income increases, so do expenditures on welfare per capita, which supports the paradox of poverty amongst resource abundance (Chapman, Plummer, & Tonts, 2015). This suggests that the people who would hopefully benefit from the economic growth do not. Further, the increase in wages may be offset by the cost of living. A study of three Australian communities found that all three had a higher per capita income than the regional average, however when this was adjusted to account for cost of living, the per capita incomes were only marginally higher than Perth, the regional base (Lawrie, Tonts, & Plummer, 2011). This indicates that the increased wages may be offset by the increased cost of living for people who work and live in the region.

### First Nations

Resource extraction projects can be harmful to First Nations communities, without necessarily bringing the intended economic benefits. For one, resource extraction practices reflect the dominant Western theme of the conquest of nature, which conflicts with the First Nations' values of unity with nature (Albrecht, 1982). Resource extraction is often done in a manner that does not match the values of First Nations. Because the projects are often managed by an outside firm through a land lease

agreement, the community has little say in what is done. Land leases for resource extraction are often seen as an opportunity for First Nations communities to alleviate the economic disparity that people on reserves face compared to people in neighboring communities (Albrecht, 1982). Poor economic conditions on reserves may lead a community to compromise land stewardship values in the hopes of improving quality of life. While they may profit from a land lease, aboriginals do not typically benefit from the associated employment growth. A study of Australian mining towns found that indigenous peoples had fewer opportunities to work in the mines (Petkova, Lockie, Rolfe, & Ivanova, 2009). Like other minorities, First Nations people are often underrepresented in the workforce of these projects.

### Social Problems

Rapid growth can bring on a number of social problems. There is often an increase in crime. Studies have found that there is more alcohol related crime and more violent crime. (Archbold, Dahle, & Jordan, 2014). Crowded conditions often cause family conflict, depression, child neglect, alcoholism, drug use, suicide and truancy problems that the community lacks adequate resources to address (Malamud, 1984) (Cummings & Mehr, Investments for Urban Infrastructure in Boomtowns, 1977). For instance, in Fort McMurray the crime rate increased to three times the national average (Archbold, Dahle, & Jordan, 2014). Not only are there more crimes, but the rapid growth of a city makes it difficult to navigate. In one example, officers said that finding calls became more difficult because the map changed every month as the city grew (Archbold, Dahle, & Jordan, 2014). There is also an increase in traffic and motor vehicle incidents (Archbold, Dahle, & Jordan, 2014). Aside from criminal activity, there is also an increase in bylaw violations. One study noted more enforcement of dog ordinances, parking regulations and water use restrictions. (Archbold, Dahle, & Jordan, 2014). Though violent crimes are usually what get the most attention, residents are more concerned with the changes that have more of an effect on their quality of life. In Canadian boomtowns citizens are more concerned with the decreased quality of life cause by drug addiction, impaired driving and similar problems, than with violent crime (Archbold, Dahle, & Jordan, 2014).

One of the contributing factors is the nature of the jobs created by a resource industry. For instance, people have atypical work schedules, such as four days on four days off, that allow them to have their permanent residence in a larger center away from the mine (Petkova, Lockie, Rolfe, & Ivanova, 2009). These people are less integrated into the community and this lack of integration is associated with more criminal and anti-social behavior (Petkova, Lockie, Rolfe, & Ivanova, 2009). In addition, the nature of the workers' schedules can affect the rates of certain types of incidents. For

example, driving to and from twelve hour shifts is dangerous, as people fall asleep while driving (Petkova, Lockie, Rolfe, & Ivanova, 2009). Further, there is a large influx of people from out-of-state, who do not have the same mentality of respect as local residents towards police (Archbold, Dahle, & Jordan, 2014).

### Perceived Impact

Research indicates that rapid growth brings on a range of social problems, but the way people perceive these effects is subjective. People experience the changes differently depending on a range of factors including age and relationship to the resource project. One study found that adolescents have a more negative perception of rapid growth than adults (Freudenburg, 1984). The same study found that adolescents in rapidly growing areas, compared to those in nearby communities reported lower ratings of their quality of life, such as feeling alienated and experiencing hostility (Freudenburg, 1984). This demonstrates how different segments of the population experience the changes associated with rapid growth differently. In a study of communities affected by off-shore oil development in Louisiana, United-States, researchers found that individuals experience the impact differently based on their social construction of reality (Forsyth, Luthra, & Bankston, 2007). Despite the range of views about the impact of the off-shore oil project, the majority of respondents believed that the development had a positive impact (Forsyth, Luthra, & Bankston, 2007). While most literature indicates a decreased quality of life, a survey of 430 people in Fort McMurray, Alberta found that most people were satisfied with their family lives and that family life satisfaction and community life satisfaction were not associated (Krahn, Gartrell, & Larson, 1981). These studies demonstrate the difference between the results of studies based on statistics to those based on resident perceptions. The data might suggest that there is a clear problem, but the residents express a positive experience. This could be the result of shortcomings with the quantitative approach. One theorist argues that though a large number of studies have claimed to document serious boomtown caused social problems, a closer look reveals very little reliable data to back up these claims (Merrifield, 1984). Other researchers have also posited reasons why there is the perception of a strong correlation between rapid growth and negative social change. Krahn, Gartrell and Larson argue that some studies exaggerate issues by focusing on problem indicators such as divorce rates and liquor sales (1981). Focusing a study on negative change may skew results towards finding a negative impact. Further, the perceived increase in social problems is not due to an increase in actual per capita rates, but instead to existing problems becoming more public (Merrifield, 1984). New services bring out problems that previously were not treated (Merrifield, 1984). In addition, more incidents are

observed because low-quality housing causes people to spend more time in public places (Merrifield, 1984).

### Psychological Impact

The conditions in these communities can have a negative impact on mental health, which contributes to the social problems. In a study of mining communities, researchers found that miners and their partners had a negative psychological impact due to isolation, boredom, the transient nature of the town, alcohol abuse and unsatisfied sexual needs (Petkova, Lockie, Rolfe, & Ivanova, 2009). These communities can have a huge impact on mental health, typically the men work long, stressful days, their wives spend boring days with little employment and recreational opportunities, children play on unpaved streets, and seniors cannot deal with the more rapid tempo of life (Malamud, 1984). The combination of isolation and demanding work conditions can have a severe impact. In addition, the prospect of a resource industry project can cause problems for the local population. A study of Australian farmers in a region anticipating resource development, found that proposed projects can have a negative impact by causing psychological stress and tensions within the community (Moffatt & Baker, 2013). The negative psychological effect on these communities likely contributes to the associated social issues.

### Local Economy

The introduction of a new industry can have a positive impact on the local economy in a variety of ways. After a new industry opens, retail sales rise and so does the value of real estate (Summers & Branch, 1984). Further, it can help to sustain other local industries. For instance, in Louisiana, the oil industry helped agriculture and shrimping survive as people were able to find work in the off-season (Forsyth, Luthra, & Bankston, 2007). It can have indirect economic effects, such as products being purchased from local firms for the industry (Leistriz, Murdock, & Leholm, 1982). It can also have induced economic effects, such as increased purchase due to higher household incomes provided by the industry (Leistriz, Murdock, & Leholm, 1982). The development of a new industry is often associated with a multiplier effect on the local economy. The multiplier effect is when the local economy sees growth in new businesses and more demand for existing businesses because of the new population. However, some researchers have found that the multiplier effect is not that significant. The local economy multiplier effect is smaller than would be expected because of considerable underemployment, underutilization of existing facilities and the dispersion of direct effects through commuting and area wide trade patterns (Summers & Branch, 1984). The multiplier effect is less significant in areas with more diversified economies (Leistriz, Murdock, & Leholm, 1982).

There are also a number of negative effects on the local economy. Smaller communities do not necessarily see much commercial growth. One study found that commercial services grew in larger centers, rather than the towns, so the growth did not diversify town economies (Petkova, Lockie, Rolfe, & Ivanova, 2009). Expansion of commercial and industrial property in the host community appears to be minimal (Summers & Branch, 1984). Further, rapid growth can hinder the formation of local businesses in several ways. Increased competition for labor causes increased wages (Leistriz, Murdock, & Leholm, 1982). As rents increase, it is more difficult for local businesses to attract and retain employees as they are unable to offer competitive wages (Petkova, Lockie, Rolfe, & Ivanova, 2009). People who are aware of the boom-bust cycle are hesitant to make significant investments in services and facilities (Leistriz, Murdock, & Leholm, 1982). High development costs and the resource industry's high wages hampers the formation of new industries (Malamud, 1984). Resource development is profitable for the large firms who are able to operate such large projects, but small startups with few resources struggle in the conditions created by the boom.

#### Services and Infrastructure

A rapid in-migration to a community puts a severe strain on available services and infrastructure. Providing for the new population can be challenging as the increase in tax revenue lags behind the arrival of new residents. Several researchers have noted that rapid growth creates problems with housing, schools, medical care and social services across the region (Archbold, Dahle, & Jordan, 2014)(Malamud, 1984). Rapid growth has a negative impact on education as there is higher teacher turnover and kids change schools more often (Petkova, Lockie, Rolfe, & Ivanova, 2009). The severity of growth, as in the sheer number of people, may be unassimilatable without significant decline in quality of services and community life, despite adequate housing (Markusen A. R., 1978). Many public officials want manufacturing plants to increase their tax base; however, the increase in fiscal base of the community is often outweighed by the higher cost of providing services to both industry and the expanding population (Summers & Branch, 1984).

Rapid growth has a significant impact on housing. The quick increase in population creates a huge demand for accommodations. As a result, the cost of housing increases (Archbold, Dahle, & Jordan, 2014). Also, temporary workers preferred shared housing arrangements, which drove up the cost of housing and makes it less affordable for permanent residents (Petkova, Lockie, Rolfe, & Ivanova, 2009). The influx of temporary workers not only increases the cost of housing, but also changes the character of neighborhoods. People renting rooms and basement suites in houses take away from the family-

orientation of neighborhoods (Shields, 2012). The isolation of a community can also cause housing to be more expensive. An Australian case study of several mining towns found that housing prices were inflated as banks were hesitant to grant mortgages for isolated areas dependent on mines, and construction prices were high (Petkova, Lockie, Rolfe, & Ivanova, 2009). During the boom times, the value of housing rises, but when the industry declines housing prices drop drastically. People buy \$300-\$400,000 homes that might be worth nothing in five years (Petkova, Lockie, Rolfe, & Ivanova, 2009). The effects of rapid growth on housing and cost of services is partly mitigated by geographical dispersion as people commute from a larger area (Jacquet & Kay, 2014).

### Local Government

Rapid growth can create a number of challenges for local government. One major problem is jurisdictional mismatches. The area that bears the burden of the new population does not necessarily see the economic benefits of the industry. There is the assumption that the impacted jurisdiction will add the energy project to its tax roll, but this is often not the case (Merrifield, 1984). A problem with anticipating tax revenue to pay for the increased demand is that the development often takes place in a different political jurisdiction than the one that bears the cost (Markusen A. R., 1978). If a municipality invests heavily in infrastructure to accommodate the new population, but does not see any tax revenue from the new industry, it will likely have trouble sustaining itself. The jurisdictional mismatch between cities and counties is among the most difficult problems faced by energy development regions (Merrifield, 1984). One example is Edmonton, Alberta which has the burden of providing amenities that are used by residents of adjacent municipalities who benefit from a larger industrial tax base (Kelly, 2009). In the past rural municipalities in Alberta were not able to accommodate urban style development, however, changes to the provincial legislation in 1995 allowed rural municipalities to conduct urban style development on the fringes of cities (Kelly, 2009). As a result large urban centres bear the burden of providing the amenities that attract residents, while many live on the rural fringe to enjoy the lower taxes. The City of Calgary, Alberta fared better than Edmonton as it was able to annex neighbouring municipalities and therefore control growth, while Edmonton had been denied its annexation application by the province (Kelly, 2009). The example of Edmonton and Calgary hint at governance model based approaches to dealing with jurisdictional mismatches.

### Land Development

Rapid growth can change the nature of land development. For instance, the 1947 Leduc Oil boom led to rapid growth in Alberta, which shifted land development from being predominantly done by municipalities to private developers (Kelly, 2009). This shift meant that municipalities had less control

over land development in their jurisdiction. The race to provide sufficient housing can lead to the creation of neighborhoods lacking amenities. Well-planned housing developments end up unpleasant and unsatisfying places to live in the sense that the lack of services and consumption opportunities is compounded by a sense of geographic distance and isolation (Shields, 2012).

The prospect of making money by leasing land for mineral extraction can lead to a shift in the land market. In some instances, companies lease land from the federal government. In the United-States local governments have insufficient control of land use and disposition in federal leasing cases which, prevents local governments from using zoning or siting agreements to mitigate the industry's impact (Markusen A. R., 1978). Private land leases can create a prospective land market from people hoping to earn their fortunes from the new industry. In his account of the 1920's oil shale boom in Colorado, Andrew Gulliford comments that the real money was in selling land, not in oil shale (Gulliford, 2003). People purchased large areas of land, as well as water rights in predominantly agricultural areas in the hopes of making money off of oil shale (Gulliford, 2003). Similarly, many First Nations communities lease large tracts of land for mineral exploration and in several cases they have attempted to void these leases when faced with the potential impact, most notably the disturbance of the natural environment by large scale strip mining (Albrecht, 1982).

## Mitigation

### Impact Assessment

In many discussions on mitigating the impacts of rapid growth, the authors refer to impact assessment as an important starting point. The basic reasoning is that in order to plan for growth, you need to have an idea of what the impact will be. Impact assessment is essentially trying to predict the future, which is a tremendous challenge. The same authors that note impact assessment as an important starting point also provide a number of criticisms of impact assessment models. Impact models suffer from a range of shortcomings including insufficient analysis of empirical data, shortages of resources and self-interested sponsor objectives (Markusen A. R., 1978). It may be difficult to obtain adequate or accurate industry data, as industry and the federal government have control over what information is available and in some cases there is incentive to misinform (Markusen A. R., 1978). Economic base and input-output models have been criticised for not accounting for changes in the economic structure of the region (Merrifield, 1984). One important dynamic they do not account for is job switching, which on average claims about 30% of the original employment of the local service sector (Merrifield, 1984). Further, many impact models do not account for how policy can affect production

activities (Markusen A. R., 1978). A major force affecting migration is wage differentials, which is not accounted for in most models (Merrifield, 1984). The volatile production patterns of resource industries make it difficult to predict public service demand (Markusen A. R., 1978). There are models that are specialized for boomtowns, such as Boom1; however, they are difficult for planners and policy makers because they require specialized knowledge to use (Markusen A. R., 1978). Impact models are also limited by issues of time and geographic space. For instance, it is hard to assign a geographic boundary to the impact, as workers commute from large distances (Merrifield, 1984). Also, if a study is initiated once rapid growth has already begun, it is difficult to get accurate base data (Merrifield, 1984). Impact models generally do not account for effects that are difficult to quantify. For this reason, social impacts are not explicit outputs in a computerized projection model (Merrifield, 1984). Some authors suggest that policymakers should request a range of impact projections, rather than a single set of projections and that they should ask for carefully specified rationales for these alternatives (Murdock, Leistritz, & Schriener, 1982). Secondly, they should request that the researchers designate the set of projections that they believe is most likely to occur. Further, they should ask that the data and the assumptions used in making the projections being clearly explained in the information given to them (Murdock, Leistritz, & Schriener, 1982). A major challenge for measuring impact is that some industries do not follow simple boom then bust cycle. Jacquet and Kay note that oil and gas communities do not fit into the conventional boomtown model of a singular boom and then bust; rather these communities go through cycles of mini-booms and mini-busts (2014). The complicated cycles of resource industries, which are largely affected by factors outside of the host community, are extremely difficult to predict.

### Investment Strategies

Municipalities need to provide a range of services to residents. They need to know how many people they are serving in order to plan their infrastructure investments. Unfortunately, rapid growth and boom-bust cycles mean a rapid population increase and then an unpredictable population over time. There are three major challenges: estimating population growth over time, obtaining adequate and timely funds to finance infrastructure and determining urban infrastructure demands and how they will be satisfied (Cummings & Mehr, Investments for Urban Infrastructure in Boomtowns, 1977). The population increase may only be for the construction period of the project and then decline during the operational period (Cummings & Mehr, Investments for Urban Infrastructure in Boomtowns, 1977). Longtime residents may want to keep investment at pre-boom levels, but an optimal strategy would be better for the long-run population (Cummings & Schulze, Optimal Investment Strategy for Boomtowns: A Theoretical Analysis, 1978). An optimal strategy is where financing is planned based on investing

enough in order to provide a reasonable standard of service to the initial boom population without creating excessive financial burden for when the population drops. If you invest in infrastructure for the boom period population you bear the higher cost of excess infrastructure after (Merrifield, 1984). Communities dealing with smaller boom and bust cycles have more of a challenge planning investment as the dynamics of municipal supply and demand shift dramatically (Jacquet & Kay, 2014). Some authors have proposed methods for measuring the benefits of infrastructure investment in order to help municipalities make investment decisions; however they are not fully developed (Cummings & Schulze, *Optimal Investment Strategy for Boomtowns: A Theoretical Analysis*, 1978) (Merrifield, 1984). Without a viable alternative municipalities have to rely on impact assessment models to inform investment decisions.

### Financing

In order to provide the services and infrastructure needed to accommodate a large increase in population, municipalities need to find funding. Municipalities have a range of funding options. Some recommend that municipalities should borrow funds to finance infrastructure investment and anticipate increased tax revenue from the boom (Cummings & Schulze, *Optimal Investment Strategy for Boomtowns: A Theoretical Analysis*, 1978). This approach is risky as in some cases the project may never come to fruition or it may not have the anticipated impact. The uncertainty around future energy raises risk premiums, often so high that the financial sector is unwilling to lend funds to or buy bonds from local governments (Markusen A. R., 1978). Another option is impact aid. This refers to when a municipality receives funds to help alleviate the impact of resource development. Impact aid is being used by some governments in the United-States to help local governments alleviate public sector stress (Markusen A. R., 1978). However, in order to provide impact aid, there needs to be a way to predict the impact (Markusen A. R., 1978). Therefore impact aid relies on impact assessment. In Japan, utilities pay a Fixed Assets Tax based on the project's construction cost to the central government, which gives a quarter of the tax income to the impacted town (Malamud, 1984). This tax based method allows the industry to pay for its impact to an extent. Municipalities may choose to charge impact taxes that affect new residents and development, in order to have growth pay for itself; however, many courts in the United-States have found this unconstitutional because of its selectivity (Merrifield, 1984). Local governments can obtain grants from the federal and state or provincial government; they can also negotiate with companies for the pre-payment of taxes or other financial aid (Barrows & Charlier, 1982) (Malamud, 1984). The funding options available to a municipality are generally limited by the

regulations of higher levels of government. Municipalities should consider a range of funding options to finance their investment strategy.

### Planning and Policies

Local governments have a range of tools for handling growth. One option is having a comprehensive plan for the community. In 1958 a group of Cornell University graduate students completed *A Plan for the Development of the Grand Valley of the Colorado River*, a concept for a city of 350,000 residents in anticipation of an oil shale boom (Gulliford, 2003). The plan was the forerunner to the oil shale plans that would come in the 1970's and contained measures for mitigating the environmental impact, creating a diversity of uses, preserving natural heritage among a range of other planning considerations; however the County of Garfield, the municipality in the region did not have the resources to utilize the plan (Gulliford, 2003). This illustrates the problem with planning for growth, as a municipality anticipating growth likely will not have a planning department until the city is large enough to merit it. In a study of Australian mining towns the researchers found that communities that developed haphazardly had a somewhat bleak looking result, while towns with deliberate plans appeared to have the lasting benefit of generating a sense of community (Petkova, Lockie, Rolfe, & Ivanova, 2009). Another study on Australian towns found that towns established as company towns in the 1960's and 70's that had been 'normalized' had a lasting legacy of community infrastructure, housing and services that likely contribute to well-being (Chapman, Plummer, & Tonts, 2015). Cummings and Mehr cite Cuba, New Mexico as an example of a town that was able to benefit from the boom, because it had a substantial excess of capacity in terms of municipal facilities, prior to the boom (Investments for Urban Infrastructure in Boomtowns, 1977). These examples illustrate that proper planning can help to mitigate the impact of rapid growth, at least in terms of providing infrastructure and services. In addition, land use regulations, such as comprehensive plans, zoning and subdivision regulations are key tools for controlling growth (Barrows & Charlier, 1982). The siting of the town itself can make a difference. For instance, the typical practice of placing the town next to the resource projects leads to the development of small hamlets in the region that cannot provide adequate infrastructure; however, placing the town in between several resource projects, like Fort McMurray, Alberta, will concentrate the population (Malamud, 1984). The siting of a town should be done in conjunction with a regional plan of settlement made at the provincial level (Malamud, 1984).

### Governance Models

Regulation has interjurisdictional effects, for instance having development regulations that are too strict might push development to a neighboring community (Barrows & Charlier, 1982). The

interjurisdictional issues related to rapid growth were discussed earlier. While Kelly's discussion of cities in Alberta hinted at changing governance models to mitigate impact (2009), there is little discussion in the literature about alternative governance models as a potential solution. One author suggests that to address jurisdictional mismatches, it is possible to create a special district scheme to allocate resources municipalities based on population impacts, such as in the Minneapolis – St. Paul metropolitan areas in the United-States (Merrifield, 1984). However, this solution is more a method for allocating impact aid than a governance model. It is difficult to recommend one best approach for all communities because they take very different approaches to development policy depending on their needs. In some cases, local governments impose strict regulations to mitigate the impact, while others take a *laissez-faire* approach in order to attract economic development (Barrows & Charlier, 1982). It is worth noting that federal and state or provincial government set the constraints as to what regulatory powers local governments have, which affects how they are able to manage growth (Barrows & Charlier, 1982).

## Conclusion

The current literature on resource towns indicates that they face a range of challenges, which are difficult to predict. These communities often see increased social problems and crime while struggling to provide services to a rapidly growing population. Industry development can raise the average household income, but worsen income disparity in a community. The local economy may benefit from an increased demand for services, but local companies may struggle to grow when there is more competition for labor. Rapid growth creates a huge demand for investment in infrastructure that may not be needed after the initial boom is over. In general, it appears that the effects have equally positive and negative aspects. The literature also contains a range of potential solutions; however, they are very general. Many of the authors indicated that impact assessment was important for planning for growth, but they also pointed out the numerous flaws with impact assessment. A range of mitigation tools are discussed, such as comprehensive planning, impact aid and investment strategies. The research talks about potential tools for mitigation, but none of them look at how effective these tools are. This is likely because that would require a long-term study. It is impossible to recommend a single tool for all boomtowns because they vary so much in character such as the type of industry, the original population and regulatory frameworks. Many acknowledge the role of government and the interjurisdictional issues; however, there is little discussion of alternative governance models. There is a lack of longitudinal studies of communities dealing with smaller boom-bust cycles. The body of research could benefit from a long-term study of how different governance models influence the effects of rapid growth.

## Analysis of Boundary and Structural Change

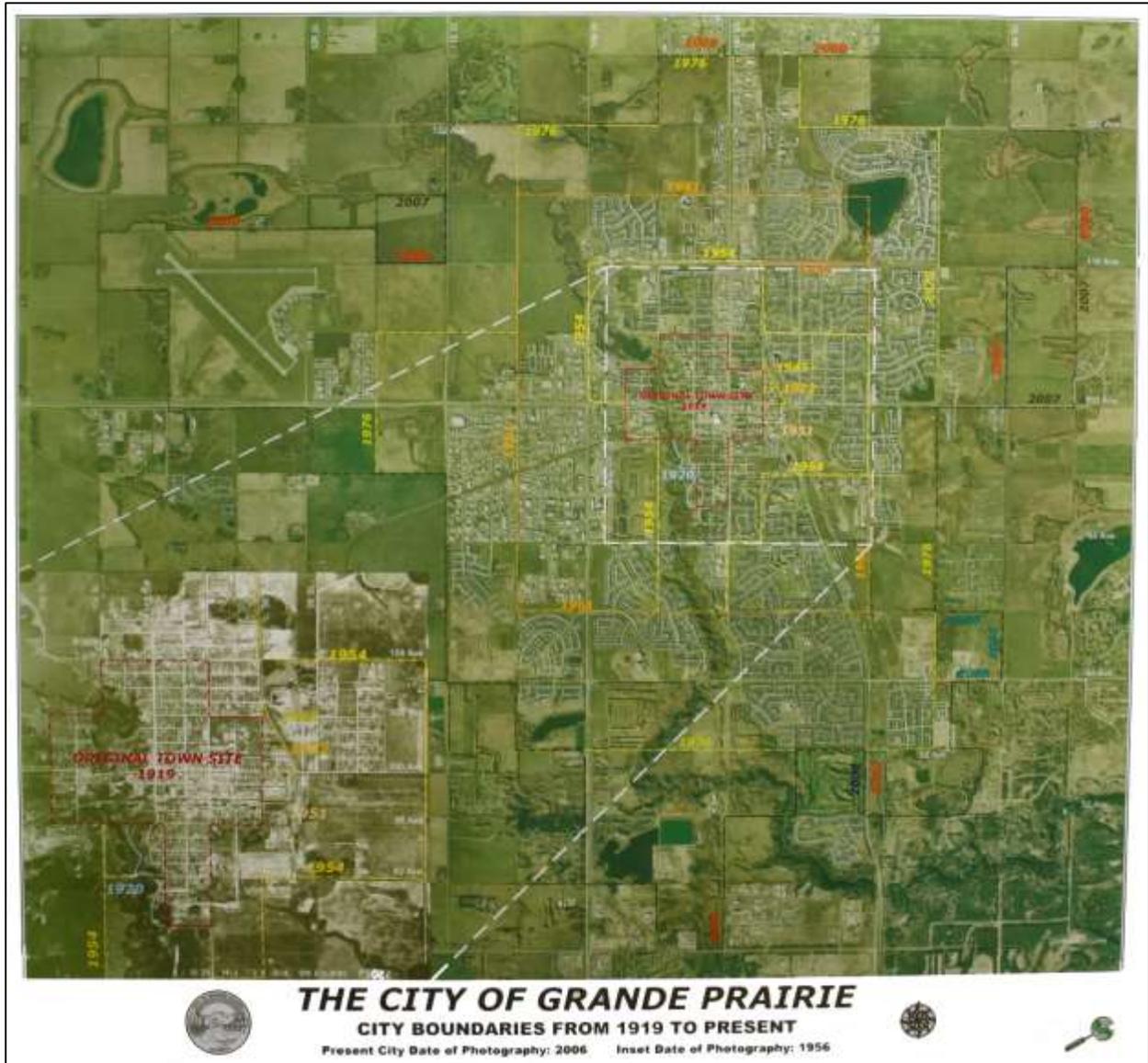
Each of the study areas has a complex history of boundaries changing through annexation, amalgamation, dissolution and withdrawal. In addition to that, they have each experienced numerous structural changes, such as going from town to village, and village to city status. A timeline of these changes can be found in **Appendix A: Municipal Boundary Timelines**.

### Grande Prairie and Wood Buffalo

Since its establishment in 1914, Grande Prairie has had at least 14 annexations. More than half of them have occurred in the past 15 years. See **Map 2. Grande Prairie Annexation History**. This is due to the City's rapid growth. While the piecemeal approach required in an urban-rural split system may work in areas experiencing a slow rate of growth, it does not adapt well to rapid growth. Each annexation is a costly endeavour for both municipalities. The rapid pace of growth has led the City to seek an extremely large area of land to meet the projected 30 year demand. However, this approach assumes a continued pace of development. The current (2015) slowdown in the region exemplifies the flaw in this reasoning. If the rate of growth continues to decline and the annexation is approved, the City will have a large area of land to service that will not likely be developed in the near future. This is troublesome because the hope is that the annexed lands will support a larger industrial tax base that generates the revenue needed to pay for the infrastructure required to accommodate rapid growth.

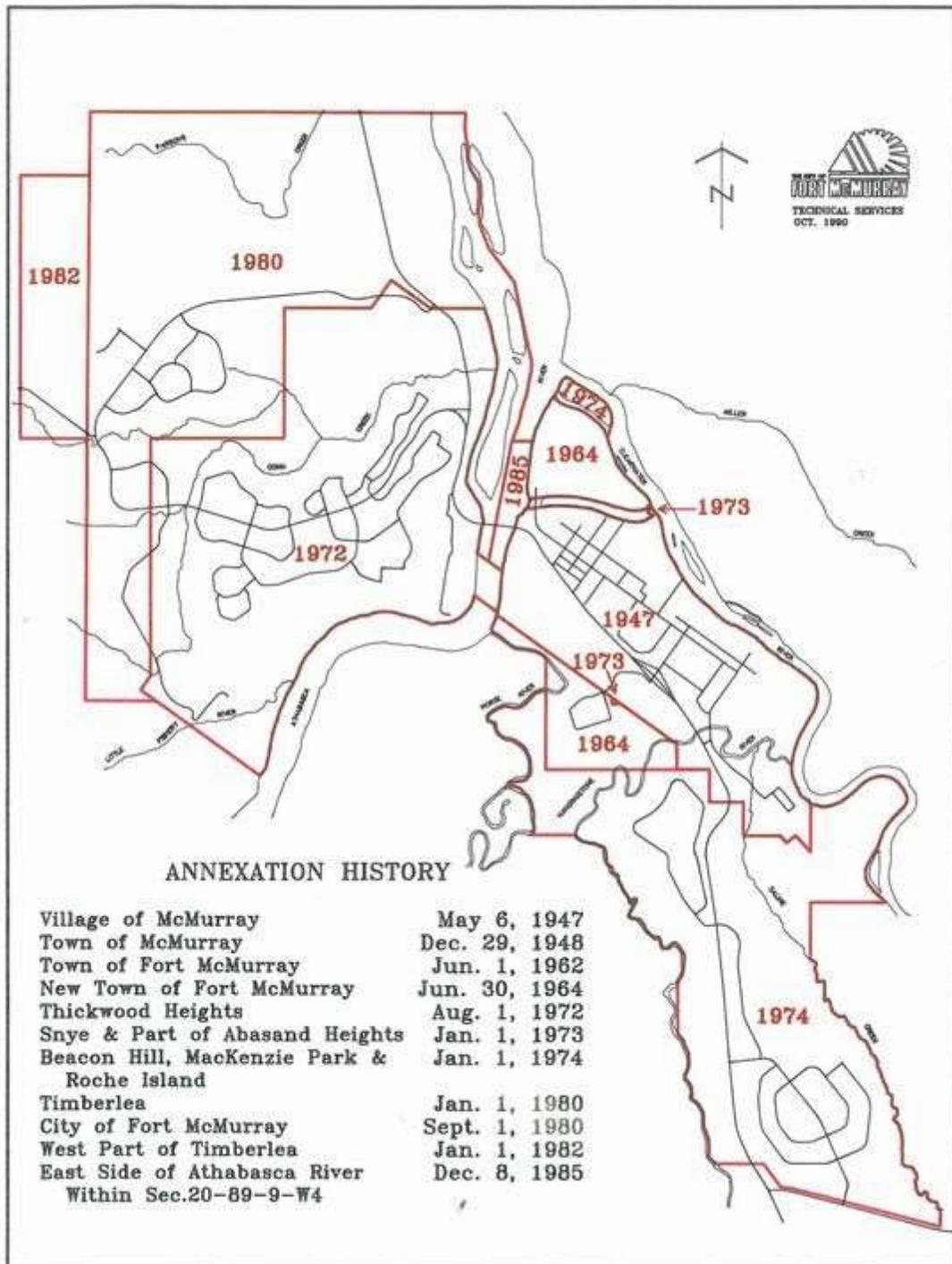
Comparatively, the Regional Municipality of Wood Buffalo has not had any annexations since 1985. Refer to **Map 3. Fort McMurray Annexation History**, for a visual timeline of annexation in the area. Since the amalgamation that created the Regional Municipality of Wood Buffalo in 1995, the only change has been an enlargement of the Urban Service Area through a boundary change. The specialized municipality system has provided Wood Buffalo with a flexible enough system to experience rapid growth without constant boundary changes.

Map 2. Grande Prairie Annexation History



(Map source: The City of Grande Prairie, 2006)

Map 3. Fort McMurray Annexation History



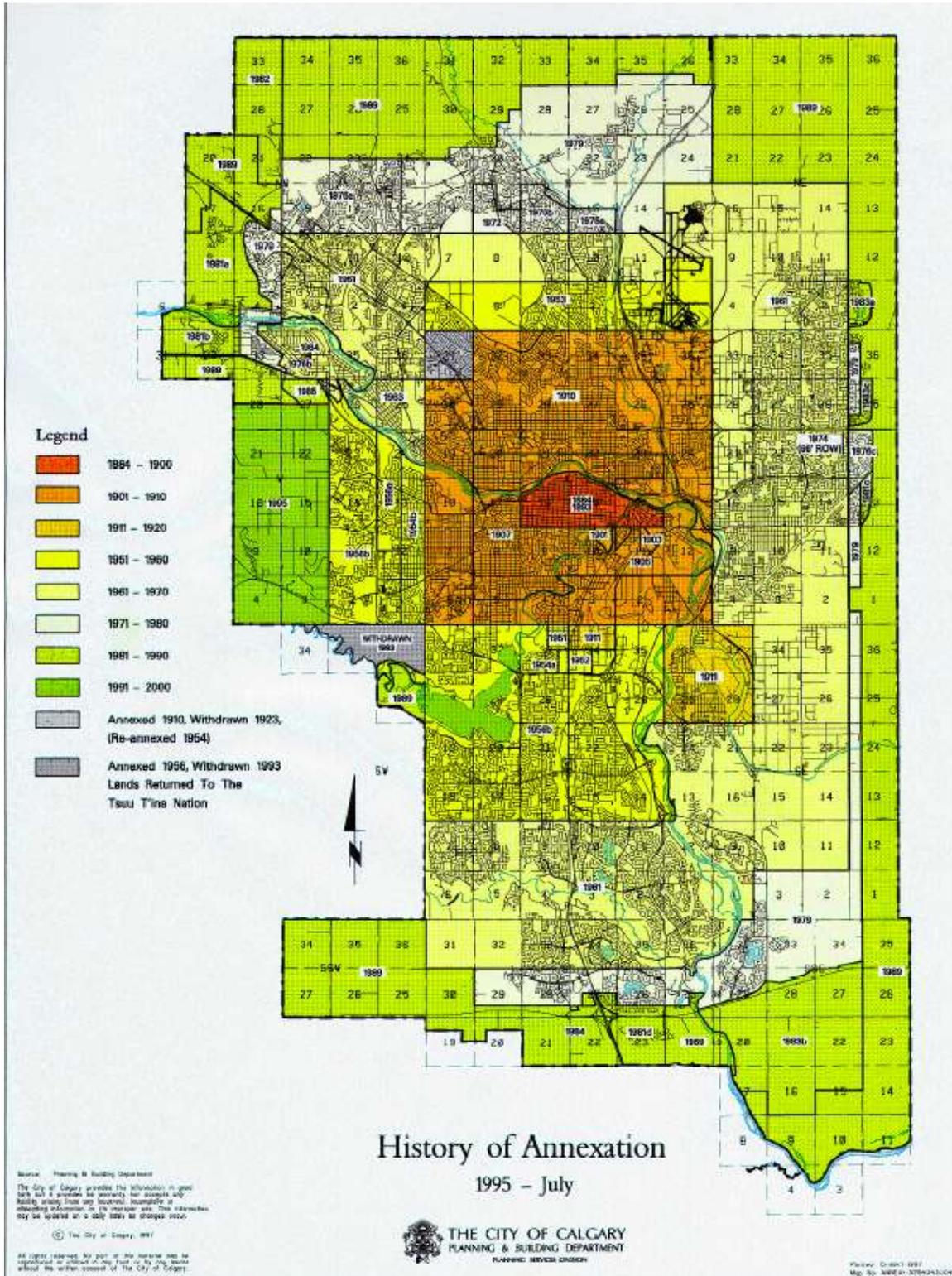
(Map source: The City of Fort McMurray Technical Services, 1990)

## Calgary and Edmonton

A 1956 report recommended that the boundaries of Edmonton and Calgary be expanded to cover their full metropolitan areas (McNally Commission, 1956). The reasoning for this was that it is unfair for wide variations in tax bases to exist between local governing bodies (McNally Commission, 1956). As a result of the McNally report, Calgary had expanded to encompass the whole urbanized area by 1961 (Task Force on Urbanization and the Future, 1973). See **Map 4. Calgary Annexation History** for a visual representation of Calgary's annexations. Through piece-meal annexations, Edmonton was able to reach the size that the McNally report recommended (Masson, 1979). Refer to **Map 5. Edmonton Annexation History** for a visual representation of Edmonton's annexations. Since the McNally report was published, the nature of these areas have changed significantly. The pace of development in both cities greatly increased in the 1970's, significantly affecting the conditions for local municipalities. This rapid growth only exacerbated the inter-municipal inequalities that the McNally report warned against.

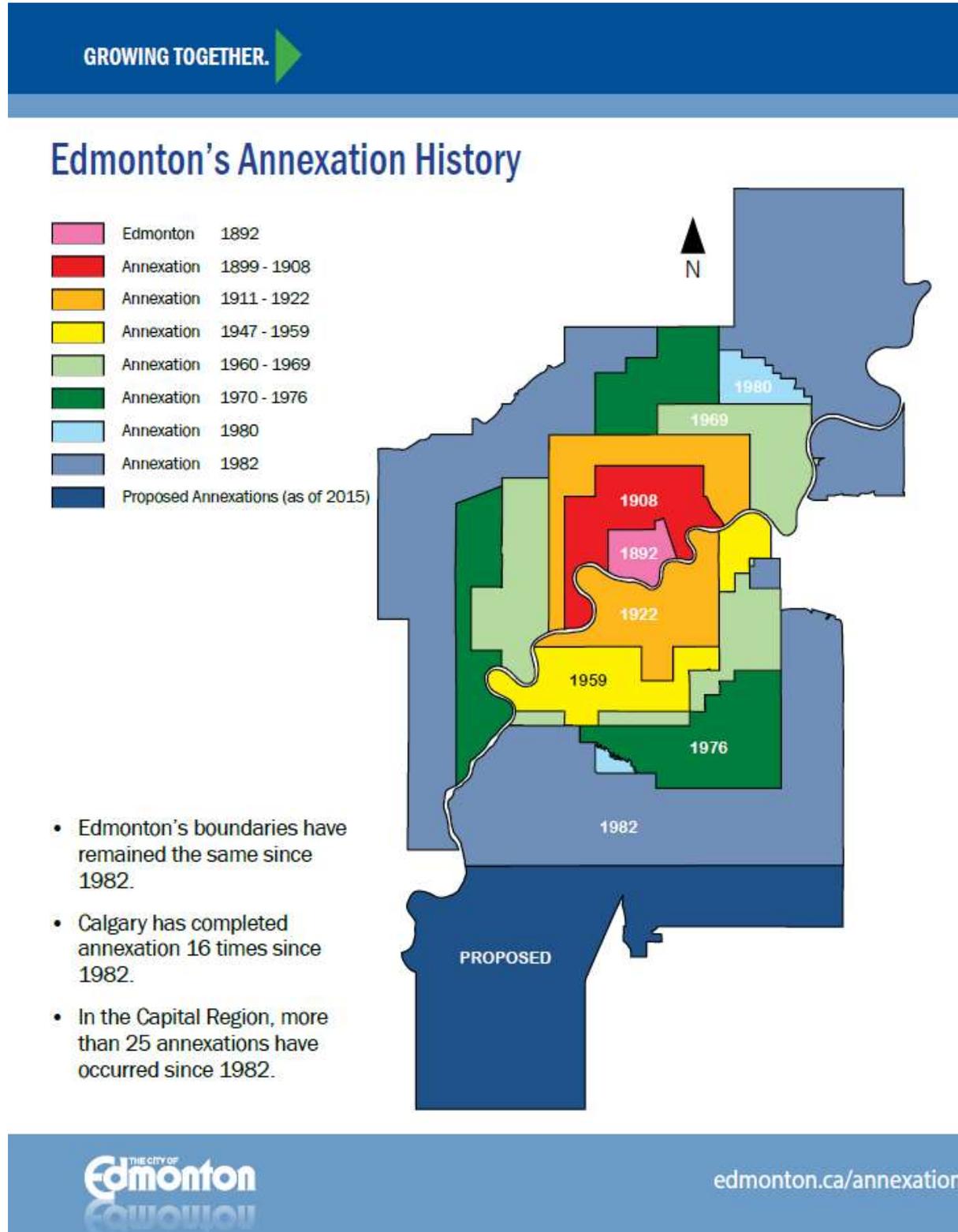
Edmonton has been in endless annexation and amalgamation battles with surrounding municipalities. Edmonton finds itself fringed by four cities and four urbanizing rural municipalities. Calgary on the other hand, through annexation, has been able to expand its boundaries to encompass over 90% of its regional population. In 2006, the City of Calgary contained 91.5% of the population of its census metropolitan area, whereas Edmonton has 70.6% of the population of its CMA. (Tindal & Tindal, 2009). Edmonton's attempts at annexation have been more controversial than Calgary's, largely because of the assessment rich 'refinery row' area in Strathcona County (Maslove, Graham, & Phillips, 1998). Further, Edmonton is surrounded by long-standing municipalities that oppose annexation applications, while Calgary is not (Sancton, 2009). Edmonton has not had a successful annexation since 1982. It actually lost land to annexation from the City of St-Albert in 2002. Calgary, on the other hand, has had eight successful annexations since 1982.

Map 4. Calgary Annexation History



(Map source: The City of Calgary Planning & Building Department, 1997)

Map 5. Edmonton Annexation History



(Map source: The City of Edmonton, 2015)

## Land Development Pattern Analysis

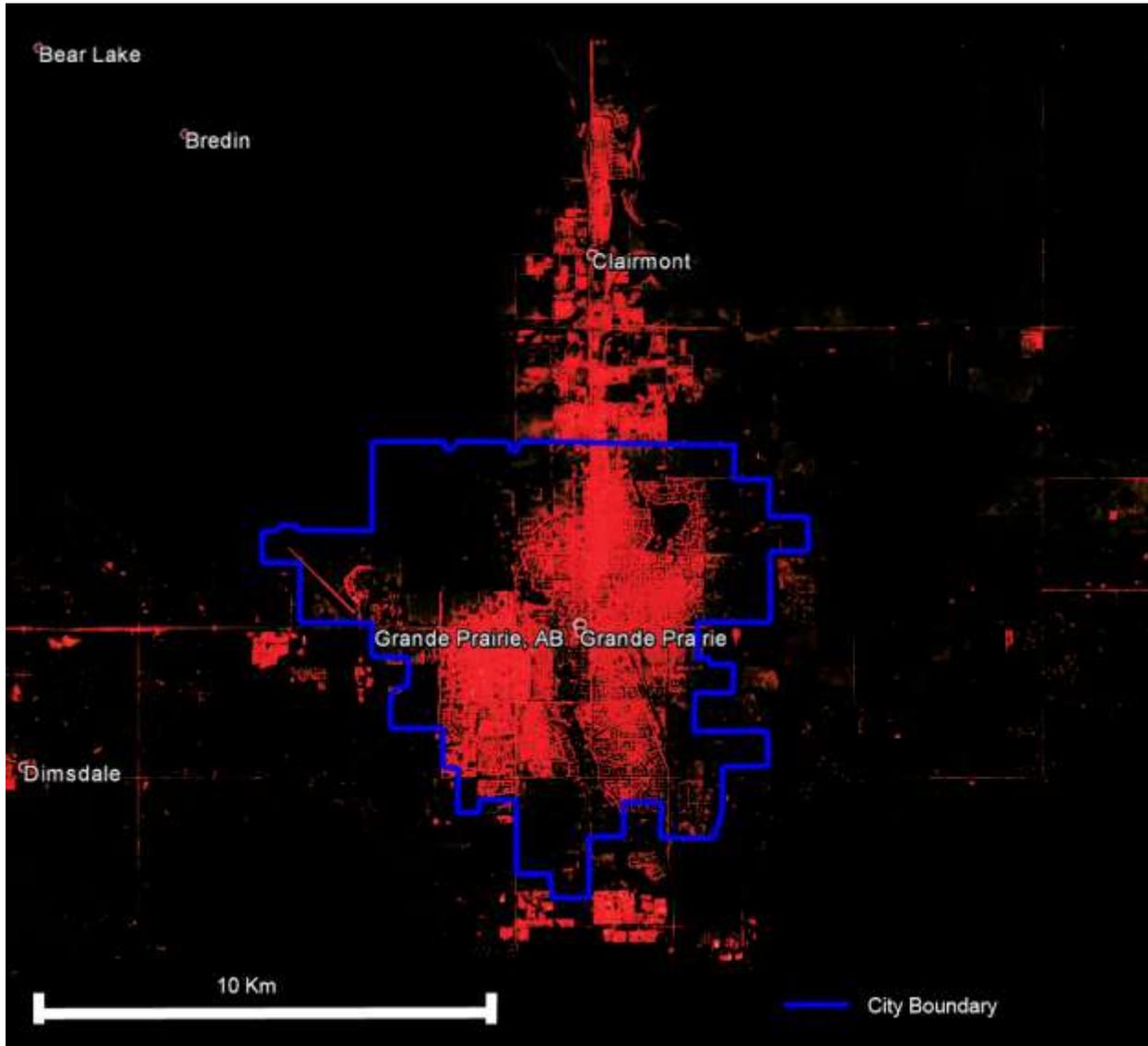
The basis for the land development pattern analysis is that 'sprawl', as in non-contiguous low-density development has a negative impact. This is for a variety of reasons. It has a negative environmental impact by increasing the amount of land used for buildings and infrastructure. It also increases the distance that people need to travel by automobile, increasing pollution from emissions. It also increases the cost of providing infrastructure and services. For instance, it requires more roads and longer water and sewer trunk lines that all need to be maintained. It increases the travel distance for services such as snow removal, garbage pick-up and postal delivery. One study, on the Greater Toronto Area estimated that a more compact and efficient land development pattern would save the city \$1 billion annually based on the capital required to sustain current development patterns, as well as other associated costs including those related to air pollution, health care and automobile accidents (Report of the GTA Task Force , 1996). Further, there is the impact of the added travel time for accessing services and employment on the daily lives of residents.

A study conducted in the United-States concluded that there is a strong connection between political fragmentation and urban sprawl (Carruthers & Ulfarsson, 2002). Having multiple municipalities in a metropolitan area increases sprawl as municipalities compete for investment and there is no unified plan for regulating growth across the metropolitan area. Regional planning commissions attempt to control development, but often fail to prevent sprawl (Carruthers & Ulfarsson, 2002).

## Results of Visual Analysis

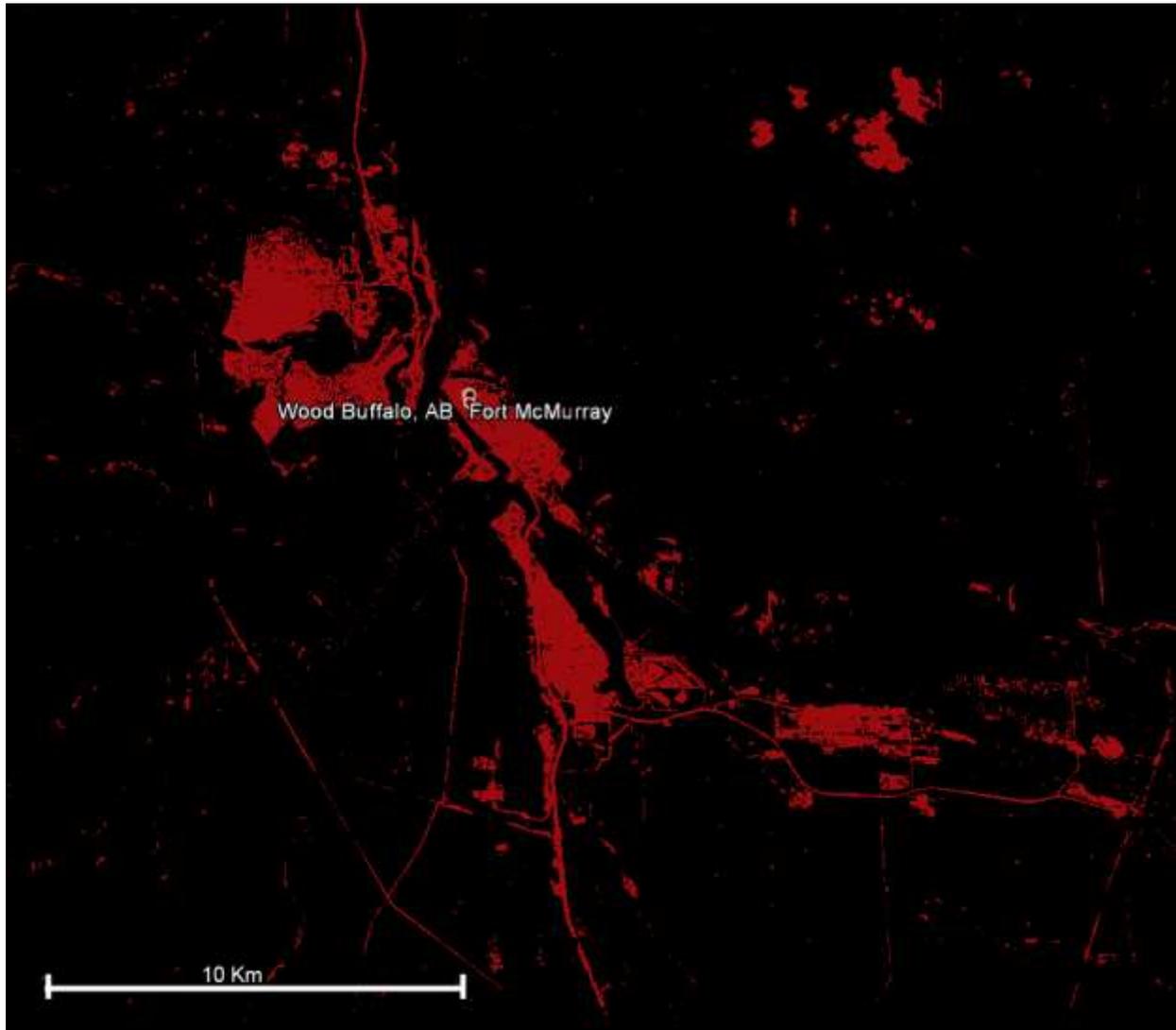
### Grande Prairie and Wood Buffalo

In the Grande Prairie study area, most of the urban and suburban style development is within 11km of the urban core. There are however several hamlets and towns, such as Sexsmith and Beaverlodge in the Grande Prairie area. See **Map 6. Grande Prairie Development Patterns**. The majority of it is low density residential, typical to suburban areas. This type of development has occurred in the County, but almost entirely adjacent to the City boundary. This is likely due to the availability of water service, which is controlled by the jointly owned Aquatera. In the case of Grande Prairie, servicing is most likely the limiting factor, rather than policy.

**Map 6. Grande Prairie Development Patterns**

(Map adapted from “Image City of Grande Prairie, Image County of Grande Prairie No. 1.” Google, 2012)

The Regional Municipality of Wood Buffalo has a much denser urban form. All of the urban/suburban style development is within 7km of the city centre. Wood Buffalo has a larger population than the City and County of Grande Prairie combined. Like Grande Prairie, it is predominantly low density housing. See **Map 7. Regional Municipality of Wood Buffalo Development Patterns.**

**Map 7. Regional Municipality of Wood Buffalo Development Patterns**

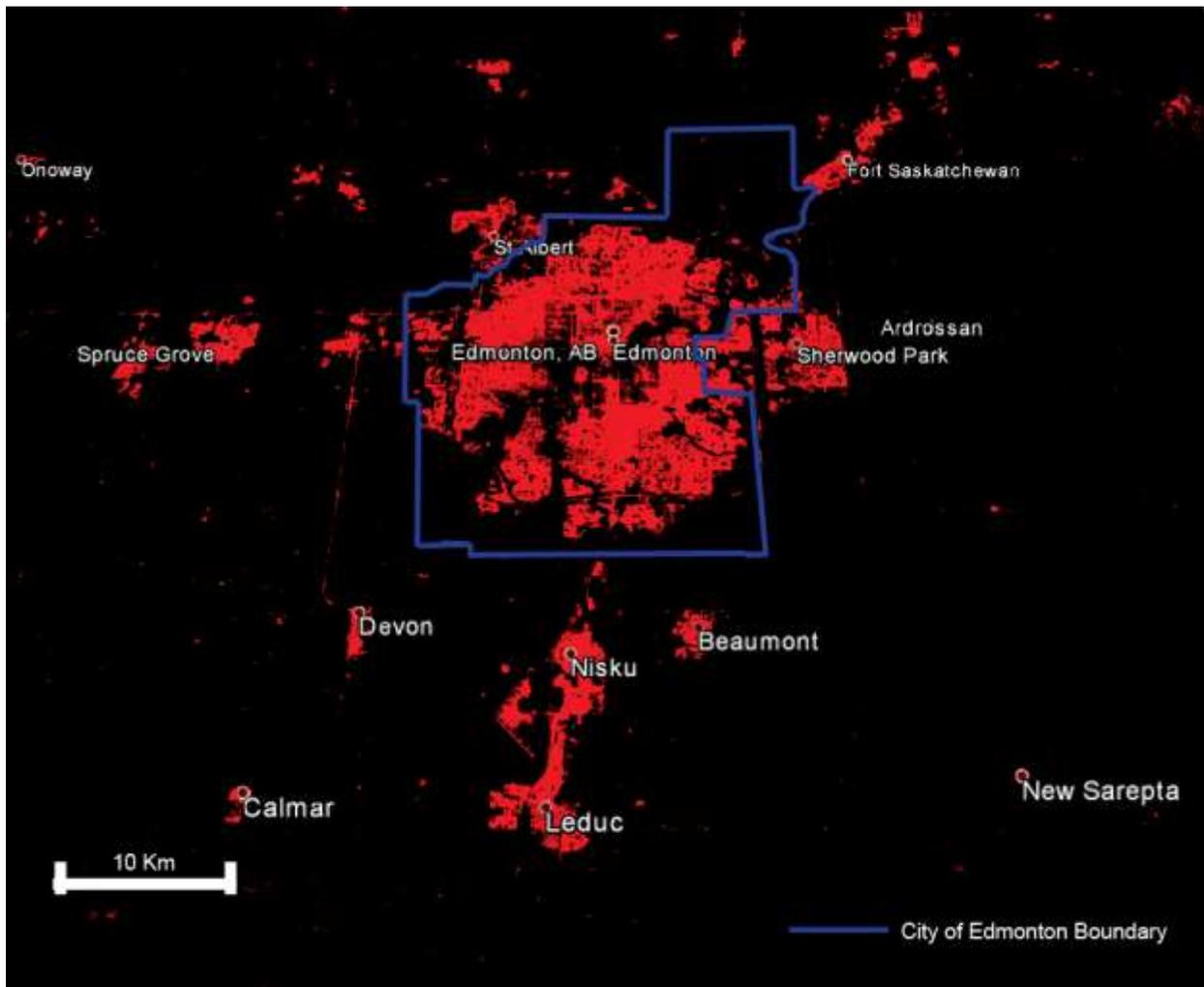
(Map adapted from "Image Regional Municipality of Wood Buffalo." Google, 2012)

The Regional Municipality of Wood Buffalo has a slightly more compact development pattern. While some of this may be due to the political structure allowing for greater control of development, as there is no competition for investment, there are a range of contributing factors. A lot of the undeveloped land in Wood Buffalo is crown land and as such does not have private owners trying to attract development. In Grande Prairie, most of the land is privately owned. Wood Buffalo may also have servicing limitations that restrict development.

## Edmonton and Calgary

The Edmonton study area is extremely sprawled, with urban development as far as 34km from the urban core. There are gaps between urban development areas of up to 7km. Each of the surrounding municipalities has its own urban core. The two largest of these urban centres, St-Albert and Sherwood Park are directly on Edmonton's periphery. Refer to **Map 8. Edmonton Area Development Patterns**. The regional planning approach has failed to achieve contiguous development.

### Map 8. Edmonton Area Development Patterns

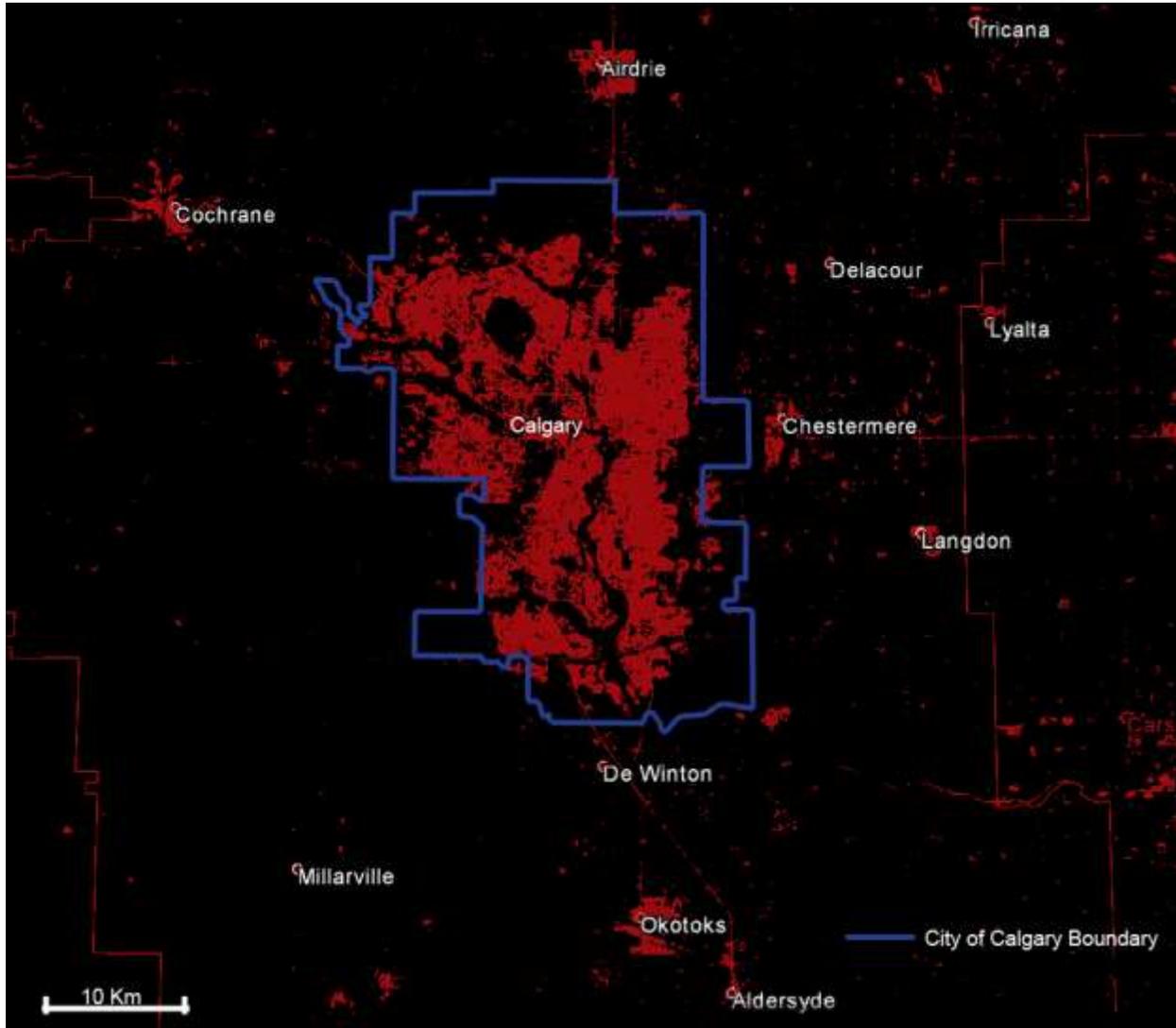


(Map adapted from "Image Landsat, Image City of Leduc." Google, 2015)

Calgary itself is a sprawled city. There are many areas of low density development, isolated by unused land. While the urban area itself is sprawled, the pattern of urban/suburban development is somewhat contiguous, compared to Edmonton. Calgary also has other urban centres in the region, such

as Airdrie and Okotoks. However, they are at more of a distance from Calgary, rather than directly on its periphery. See **Map 9. Calgary Area Development Patterns**.

**Map 9. Calgary Area Development Patterns**



(Map adapted from “Image Landsat.” Google, 2013)

This analysis is supported by the relative population densities of each metropolitan area. The Calgary Census Metropolitan Area has a population density of 1,329 people per square kilometer, while the Edmonton Census Metropolitan Area has 123 people per square kilometer (Statistics Canada, 2011) (Statistics Canada, 2011). The Calgary metropolitan area is more than 10 times as dense as Edmonton’s.

## Tax Base Analysis

### Grande Prairie and Wood Buffalo

There is a significant difference in the value of assessment between the City of Grande Prairie and the County of Grande Prairie. Refer to **Table 1. Equalized Assessment per Capita Grande Prairie Area** for assessment figures. In 2014, the per capita value of equalized assessment in the County of Grande Prairie was \$203,144.50 more than the City of Grande Prairie. This indicates that the County has significantly more assessment per person than the City. There is clear inequality in tax base distribution.

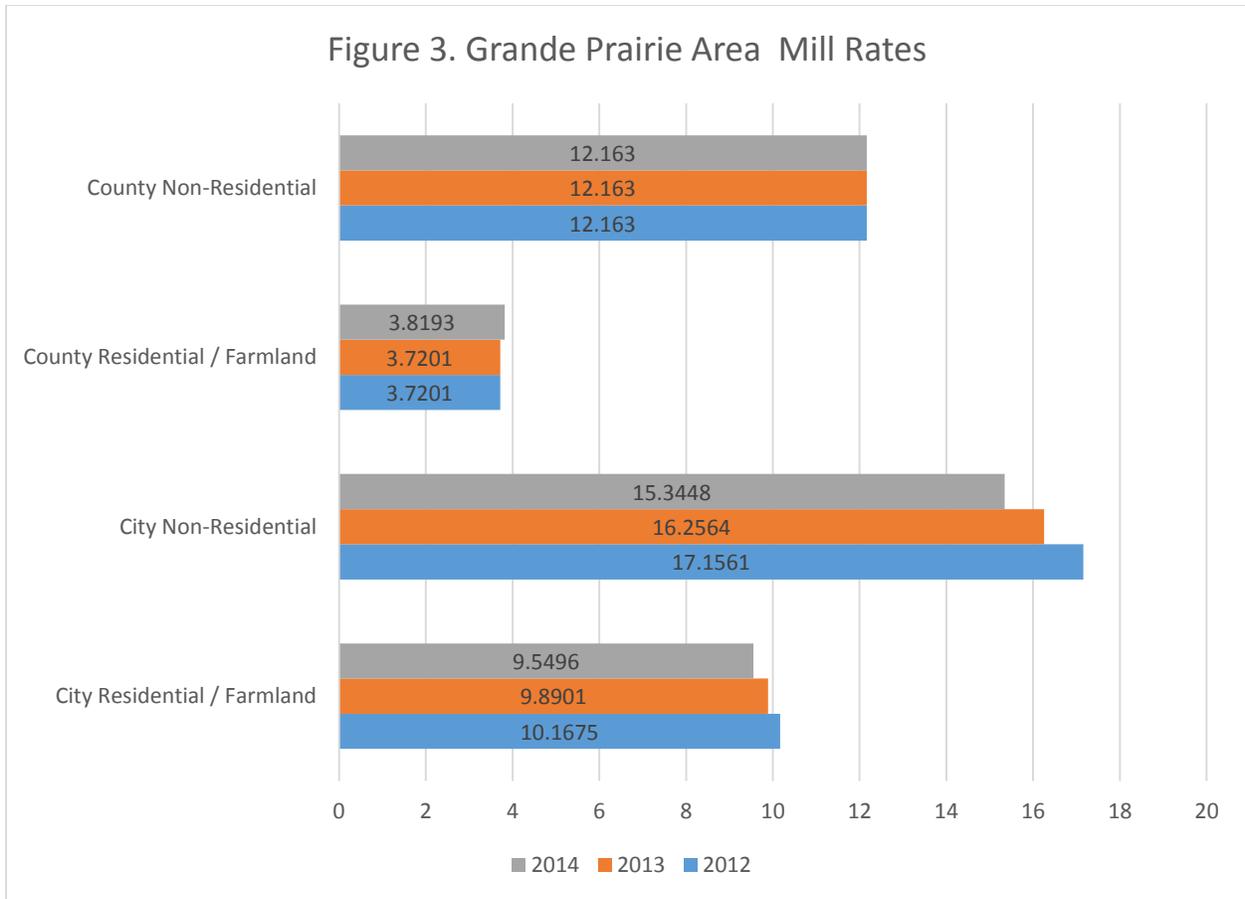
**Table 1. Equalized Assessment per Capita Grande Prairie Area**

Assessment per Capita	2012	2013	2014
City of Grand Prairie	\$125,871.10	\$128,196.10	\$142,770.30
County of Grande Prairie	\$303,276.30	\$320,883.40	\$345,914.80

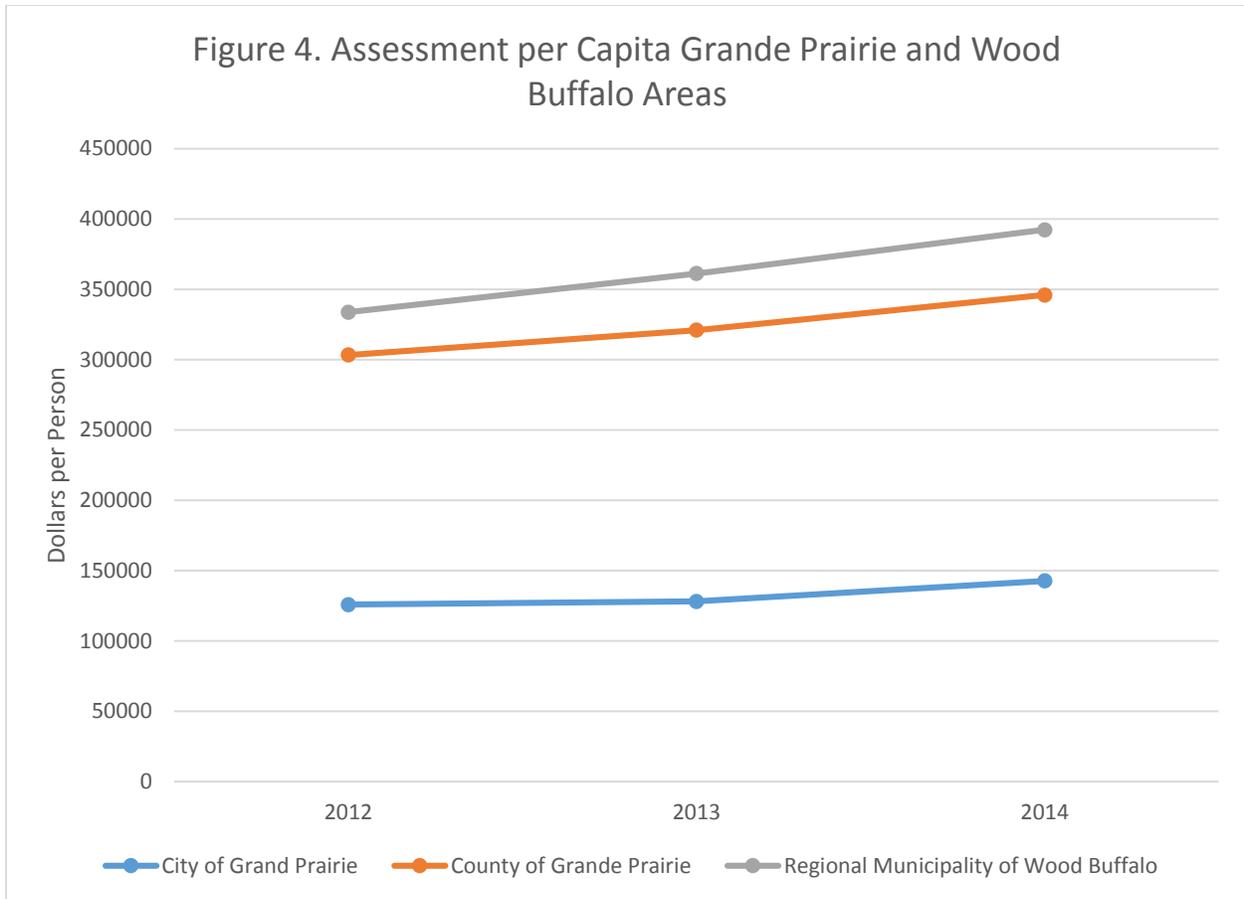
Residential/Farmland per Capita	2012	2013	2014
City of Grand Prairie	\$88,381.00	\$89,132.00	\$98,750.00
County of Grande Prairie	\$122,945.00	\$130,038.00	\$140,504.00

Non-Residential per Capita	2012	2013	2014
City of Grand Prairie	\$37,490.00	\$39,064.00	\$44,021.00
County of Grande Prairie	\$180,331.00	\$190,846.00	\$205,411.00

This inequality is further exemplified in the relative mill rates. While the non-residential mill rates are not that different, residential mill rates in the City are nearly triples those of the County, see **Figure 3. Grande Prairie Area Mill Rates**. This is likely because the County has significantly more non-residential assessment. The County has nearly five times as much non-residential assessment as the City. The revenue from non-residential taxes allows the County to set residential mill rates low.



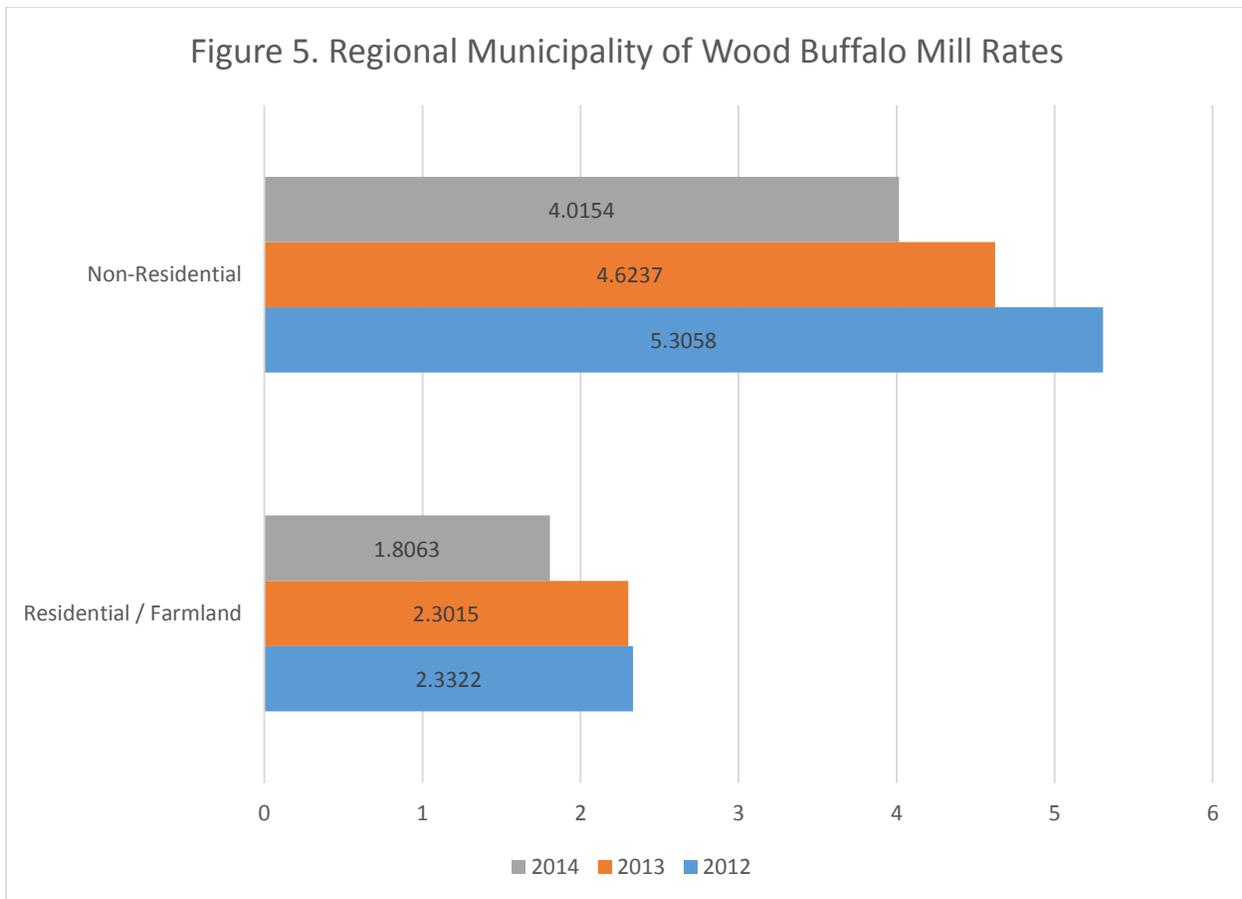
If the City and County of Grande Prairie amalgamated they would have approximately \$244,342.55 of equalized assessment per capita. Essentially, this would even out the inequalities in tax base. However, there is no incentive for the County to support amalgamation, as they have such a large advantage in the current system. This is worsened by the fact that the City needs to provide more services than the County, such as transit and shelters.



The Regional Municipality of Wood Buffalo has the advantage of a very large non-residential tax base. See **Table 2. Regional Municipality of Wood Buffalo Equalized Assessment per Capita**. Because of the specialized municipality structure, the assessment base is shared between the urban and rural areas. This provides a more equal distribution of the tax base. Refer to **Figure 4. Assessment per Capita Grande Prairie and Wood Buffalo Areas** for a comparison of assessment in each area.

**Table 2. Regional Municipality of Wood Buffalo Equalized Assessment per Capita**

<b>Regional Municipality of Wood Buffalo</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Assessment per Capita	\$333,733.20	\$361,140.10	\$392,224.20
Residential /Farmland per Capita	\$111,205.00	\$121,983.00	\$126,965.00
Non-Residential per Capita	\$222,528.00	\$239,157.00	\$265,259.00



The Regional Municipality of Wood Buffalo has very low mill rates, especially when compared to Grande Prairie. See **Figure 5. Regional Municipality of Wood Buffalo Mill Rates**. This is likely because of the large non-residential tax base. In the case of Wood Buffalo, tax revenue from industry helps to provide services to the community that hosts the bulk of its workers. The specialized municipality system provides for a more equitable distribution of tax base than the rural-urban segregation system.

### Calgary and Edmonton

In the Edmonton study area, the counties have significantly more assessment per capita. The City of Edmonton is not the only municipality in the region suffering from this imbalance. For instance, the City of St-Albert has nearly the same assessment per capita as Edmonton. Refer to **Table 3. Edmonton Area Equalized Assessment per Capita**. Strathcona County and Leduc County both have nearly double the assessment per capita of their city neighbours. Like in the case of Grande Prairie, this is because of the large non-residential tax base in the counties. However, Strathcona County is actually a specialized municipality, like the Regional Municipality of Wood Buffalo, with a city like urban centre called Sherwood Park. Strathcona County does very well in this system as the large industrial tax base in

the rural areas helps pay for services in the urban centre. However, there is still a huge imbalance between the neighbouring cities and the counties.

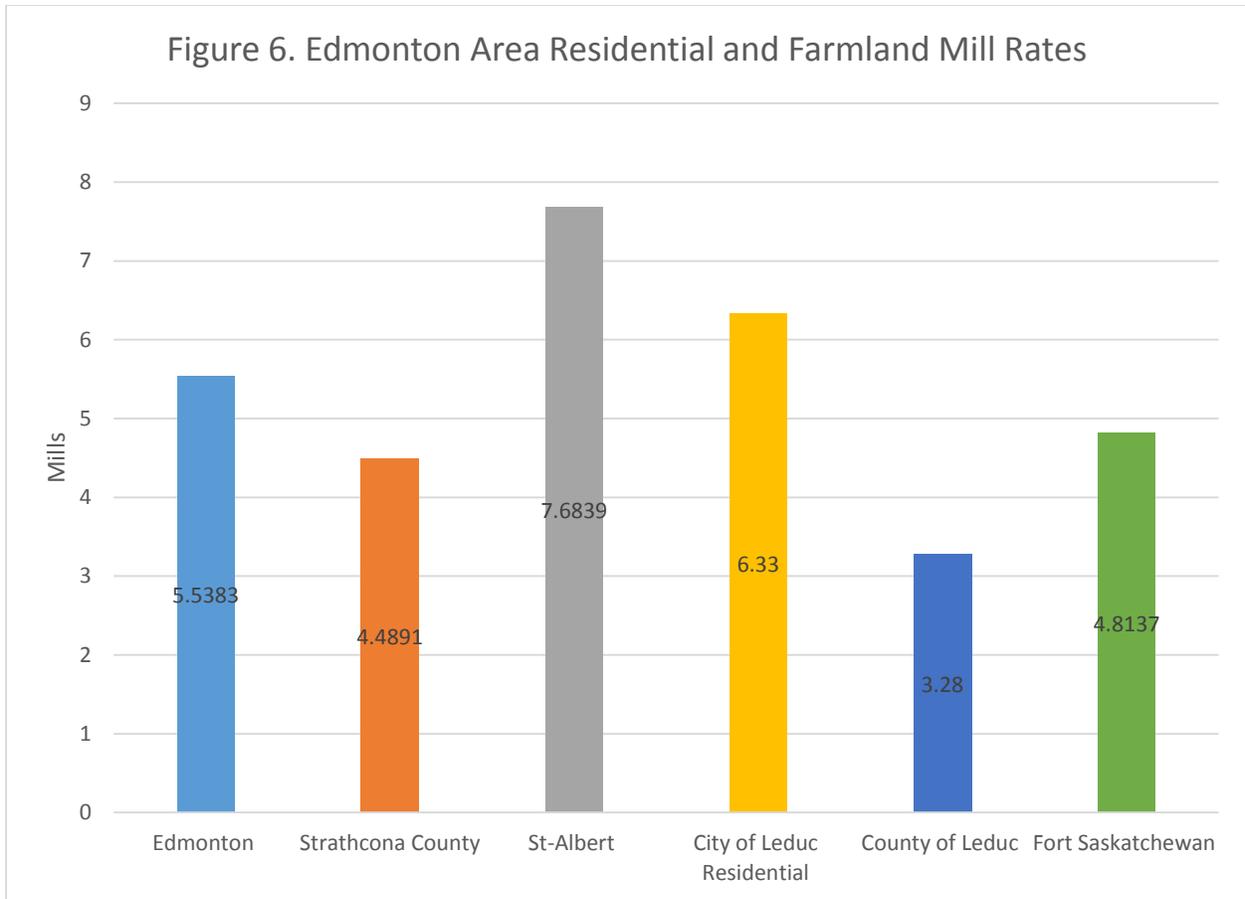
**Table 3. Edmonton Area Equalized Assessment per Capita**

Assessment per Capita	2012	2013	2014
City of Edmonton	163099.66	165784.2	164043.2
Strathcona County	268038.41	300335.8	310951.3
City of St. Albert	159594.39	157842.9	162478.3
City of Leduc	148757.7	148303.1	156400.6
Leduc County	429231.98	461784	494329.1
City of Fort Saskatchewan	218435.9	212482.9	177422.6

Residential/Farmland per Capita	2012	2013	2014
City of Edmonton	120,940	122,460	119,810
Strathcona County	159,472	159,620	163,338
City of St. Albert	142,198	139,282	142,249
City of Leduc	111,067	109,185	111,839
Leduc County	158,209	164,240	175,815
City of Fort Saskatchewan	120,582	116,686	120,814

Non-Residential per Capita	2012	2013	2014
City of Edmonton	42,160	43,324	44,233
Strathcona County	108,566	140,715	147,613
City of St. Albert	17,397	18,561	20,229
City of Leduc	37,691	39,118	44,561
Leduc County	271,023	297,544	318,514
City of Fort Saskatchewan	97,854	95,797	56,608

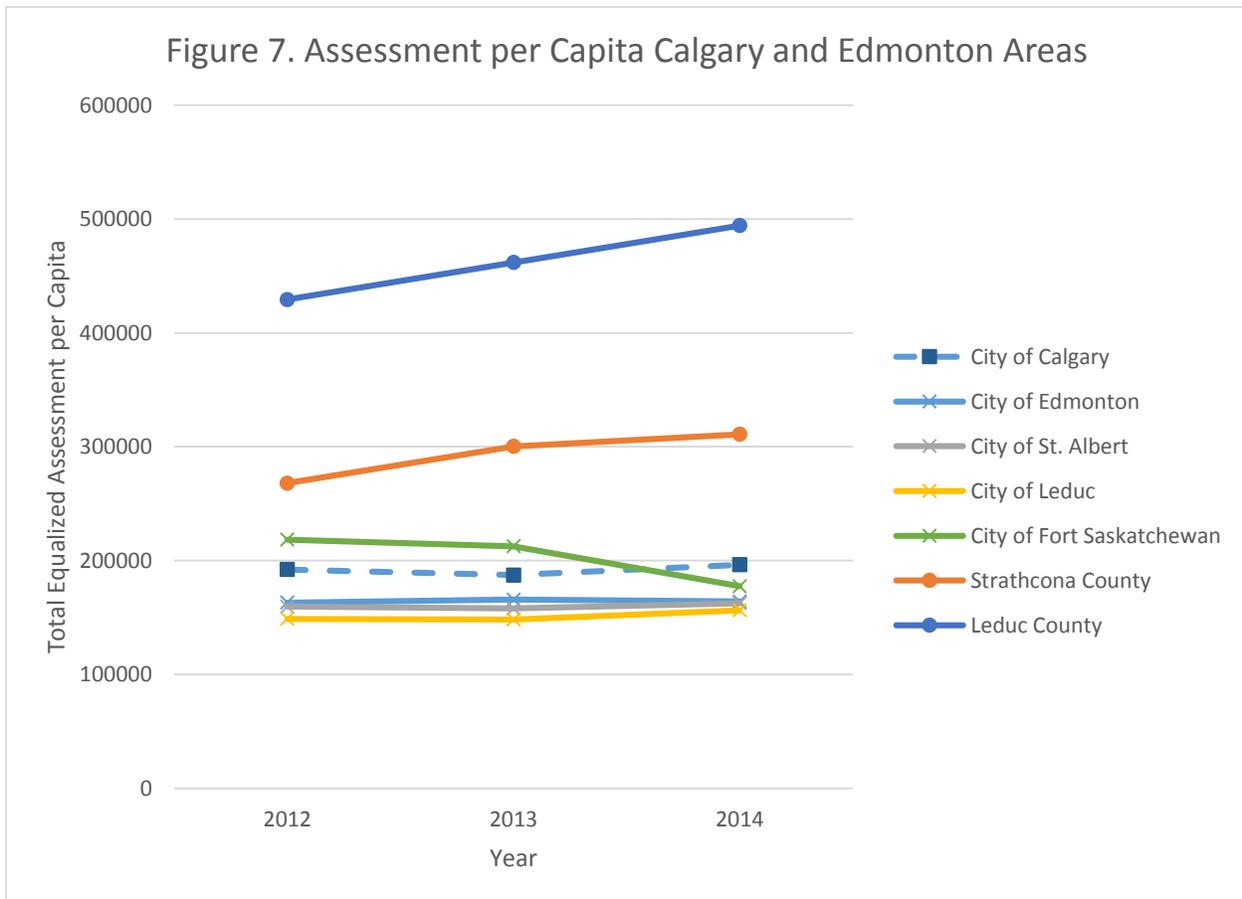
These inequalities can also be seen to an extent, in the mill rates. Refer to **Figure 6. Edmonton Area Residential and Farmland Mill Rates**. The counties have lower mill rates than the cities. St-Albert fairs the worst with the highest residential mill rates in the region. The City of St-Albert has the lowest non-residential assessment per capita. It is a bedroom community, meaning that it is predominantly residential and residents commute to another municipality for work. The city lacks the non-residential assessment to subsidize its residential servicing demands. The other cities in the metropolitan area face the same challenge to some degree. The system of competing municipalities under a regional planning commission has not led to any sort of tax base equity.



Interestingly, the City of Calgary does not fair better than the city’s in the Edmonton area, in terms of non-residential assessment per capita. See **Table 4. Calgary Equalized Assessment per Capita**. This may be because of the incompatibility of dense urban development with heavy industrial uses. The lack of a large industrial tax base may simply be the result of this incompatibility, which is why rural municipalities are at such an advantage in this area. This interpretation highlights the benefit of the specialized municipality model, as the urban and rural areas share a tax base.

**Table 4. Calgary Equalized Assessment per Capita**

Calgary	2012	2013	2014
Assessment per Capita	192077.5	187204.4	196380
Residential/Farmland per Capita	148,239	142,805	144,511
Non-residential per Capita	43,839	44,400	51,869



## Discussion

The findings of the study suggest that a specialized municipality is the best governance model of the four options explored. The specialized municipality system, as exemplified by the Regional Municipality of Wood Buffalo, has not had to deal with inter-municipal boundary changes and disputes. Each of the other systems seen in Grande Prairie, Edmonton and Calgary have faced numerous boundary changes and disputes. Further, the specialized municipality system allows for better control of land development. It allows for the concentration of development within an urban core. Though Calgary fared slightly better than Edmonton, it does not control development. Calgary continuously expands to

accommodate sprawl, rather than requiring higher densities. However, Calgary likely faces development demands that are much greater than Wood Buffalo. The specialized municipality system is useful for areas with a small urban centre such as Wood Buffalo and Grande Prairie, but may not scale well to larger urban areas such as Edmonton and Calgary. The specialized municipality also provided a more equitable tax distribution, as seen in Wood Buffalo. It was useful for sharing a tax base between rural and urban areas. Calgary did not have a better tax base than the other cities, likely due to a lack of a large non-residential base. This suggests that the single-tier model is not necessarily a better system. Though the Edmonton area has the large industrial base known as 'refinery row', which could have an impact if it was shared with the region rather than solely in Strathcona County.

The findings highlight the fact that the best governance model for an area depends heavily on a wide range of factors. In the Edmonton and Calgary examples, the sheer size of each metropolitan area makes it difficult to govern effectively. Well the fractured system seen in Edmonton gives each community greater control, it makes it more difficult to share resources and manage growth. In this sense, the single-tier system may be the most effective. Though there is the concern that some areas within a single-tier system may not receive the same consideration as others, for political or other reasons.

In the comparison of Grande Prairie and the Regional Municipality of Wood Buffalo, it appears that the specialized municipality system would be best for this type of area. Amalgamating the City and County of Grande Prairie would provide greater control over development and an equal distribution of tax base. However, this change would be disadvantageous to many rural residents who may face higher taxes, without an increase in services. A more focused study could assess which system would improve conditions for the largest number of residents. Based on the relative populations, the specialized municipality system would benefit the most people.

## Conclusion

Unpredictable growth patterns are a major problem for Albertan municipalities. Rapid growth strains the community's resources, while downturns decrease revenue and demand. This makes planning for infrastructure investment extremely difficult. As discussed in the literature review, rapid growth comes with a number of issues. Further, there is no proven method for adapting. Exploring alternative governance models may provide municipalities with a new option. The study explored the urban-rural segregated model in Grande Prairie, the specialized municipality model in the Regional Municipality of Wood Buffalo, the regional planning model in Edmonton and the single-tier model in

Calgary. The examination of historical boundary changes revealed that the specialized municipality model led to fewer changes compared to the others. The examination of land development patterns suggested that the specialized municipality offered the greatest control over development, though the single-tier model was better than the regional planning model. Similarly, the specialized municipality model offered a more equitable distribution of tax base. Though the single-tier model equally distributed the tax base, Calgary did not have a higher non-residential assessment per capita. This is likely due to the incompatibility of large industrial projects with urban areas. Therefore, there needs to be a balance between urban and rural. This balance is best achieved in the specialized municipality model. However, it would be difficult to apply the specialized municipality model to large urbanized metropolitan areas such as Edmonton and Calgary. The findings suggest that the specialized municipality model would be the best of the four for Grande Prairie. Recommending a change in municipal models for a given area would require a specialized study focused on the area. However, this broad study indicates that the specialized municipality model has several advantages.

## References

- Albrecht, S. L. (1982). Unique Impacts of Rapid Growth on Minority Groups: The Native American Experience. In B. A. Weber, & R. E. Howell, *Coping with Rapid Growth in Rural Communities* (pp. 171-192). Boulder: Westview Press, Inc.
- Archbold, C. A., Dahle, T., & Jordan, R. (2014). Policing "The Patch": Police Response to Rapid Population Growth in Oil Boomtowns in Western North Dakota. *Police Quarterly*, pp. 386-413.
- Barrows, R., & Charlier, M. (1982). Local Government Options for Managing Rapid Growth. In B. A. Weber, & R. E. Howell, *Coping with Rapid Growth in Rural Communities* (pp. 193-220). Boulder: Westview Press, Inc.
- Board of Public Utility Commissioners. (1940, January 15). *Order No. 9111*. Retrieved from MunicipalAffairs.gov.ab.ca: [http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_9111.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_9111.pdf)
- Board of Public Utility Commissioners. (1948, January 15). *Order No. 11214*. Retrieved from MunicipalAffairs.gov.ab.ca: [http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Order\\_11214\\_1947\\_No58.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Order_11214_1947_No58.pdf)
- Calgary Herald. (2007). Calgary grows out: A historic look at city expansion. *Calgary Herald*.
- Calgary Herald. (2011, June 12). *Gallery: The roots of Calgary's annexed neighbourhoods*. Retrieved from CalgaryHerald.com: <http://www.calgaryherald.com/opinion/oped/Gallery+roots+Calgary+annexed+neighbourhoods/5818843/story.html>
- Carruthers, J. I., & Ulfarsson, G. F. (2002). Fragmentation and Sprawl: Evidence from Interregional Analysis. *Growth and Change*, 312-340.
- Chapman, R., Plummer, P., & Tonts, M. (2015). The Resource Boom and Socio-economic Well-being in Australian resource Towns: A Temporal and Spatial Analysis. *Urban Geography*, pp. 629-653.
- Cummings, R. G., & Mehr, A. F. (1977). Investments for Urban Infrastructure in Boomtowns. *Natural Resources Journal*, pp. 223-240.
- Cummings, R. G., & Schulze, W. D. (1978, June). Optimal Investment Strategy for Boomtowns: A Theoretical Analysis. *The American Economic Review*, pp. 374-385.
- Darcy, H. (2015, March 16). *Alberta kicks off Municipal Government Act Overhaul*. Retrieved from Calgary Herald: <http://calgaryherald.com/news/local-news/alberta-kicks-off-municipal-government-act-overhaul>
- Department of Municipal Affairs. (1968, December 19). *Ministerial Order No. 421/68: To Provide for the Renumbering of Certain Improvement Districts*. Retrieved from MunicipalAffairs.gov.ab.ca: [http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/IDST/0179/Improvement\\_District\\_No\\_24\\_Wood\\_Buffalo\\_Gaz\\_MO\\_421\\_68\\_1969\\_No1.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/IDST/0179/Improvement_District_No_24_Wood_Buffalo_Gaz_MO_421_68_1969_No1.pdf)

- Forsyth, C. J., Luthra, A. D., & Bankston, W. B. (2007). Framing Perceptions of Oil Development and Social Disruption. *The Social Science Journal*, pp. 287-299.
- Freudenburg, W. R. (1984, October). Boomtown's Youth: The Differential Impacts of Rapid Community Growth on Adolescents and Adults. *American Sociological Review*, pp. 697-705.
- Google. (2012, July 30). Image City of Grande Prairie, Image County of Grande Prairie No. 1. *Google Earth*. Google.
- Google. (2012, jUNE 20). Image Regional Municipality of Wood Buffalo. *Google Earth*. gOOGLE.
- Google. (2013, April 9). Image Landsat. *Google Earth*. Google.
- Google. (2015). *Alberta*. Retrieved from Google Maps:  
<https://www.google.ca/maps/place/Alberta/@54.4153262,-119.4832431,6z/data=!3m1!4b1!4m2!3m1!1s0x5309b282a82419b5:0xb0a9479a409b8e9e>
- Google. (2015, October 27). Image Landsat, Image City of Leduc. *Google Earth*. Google.
- Gulliford, A. (2003). *Boomtown Blues: Colorado Oil Shale, Revised Edition*. Denver: University Press of Colorado.
- Hole, L. E. (2002, February 27). *Order in Council 78é2002*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_OC\\_78\\_2002\\_No1.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_OC_78_2002_No1.pdf)
- Hunt, J. D. (1920, June 22). *Lands Annexed to Town of Grande Prairie*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_June1920.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_June1920.pdf)
- Hunt, J. D. (1922, May 10). *Orders in Council: Alterations in Boundaries of Town of Grande Prairie*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_May1922.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_May1922.pdf)
- Jacquet, J. B., & Kay, D. L. (2014). The Unconventional Boomtown: Updating the Impact Model to Fit New Spatial and Temporal Scales. *Journal of Rural and Community Development*, pp. 1-23.
- Kelly, D. (2009). *\$100,000 an Acre: A Candid History of the Land Development Industry in Alberta*. Edmonton: 721805 Alberta Ltd.
- Krahn, H., Gartrell, J., & Larson, L. (1981). The Quality of Life in a Resource Community. *The Canadian Journal of Sociology*, pp. 307-324.
- Lawrence, D. (2011). Big Spirit of the Past: William McMurray. *Wood Buffalo: Big Spirit*, p. 14.
- Lawrie, M., Tonts, M., & Plummer, P. (2011, June 1). Boomtowns, Resource Dependence and Socio-economic Well-being. *Australian Geographer*, pp. 139-164.

- Leistriz, F. L., Murdock, S. H., & Leholm, A. G. (1982). Local Economic Changes Associated with Rapid Growth. In B. A. Weber, & R. E. Howell, *Coping with Rapid Growth in Rural Communities* (pp. 25-62). Boulder: Westview Press, Inc.
- Lightbody, J. (2006). *City Politics, Canada*. Peterborough: Broadview Press.
- Local Authorities Board. (1964, March 31). *Board Decision, Board Order No. 1234*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_BO\\_1234\\_1964\\_No42.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_BO_1234_1964_No42.pdf)
- Local Authorities Board. (1973, August 31). *Board Order No. 6474*. Retrieved from MunicipalAffairs.gove.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Board\\_Order\\_6474\\_1974\\_No23.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Board_Order_6474_1974_No23.pdf)
- Local Authorities Board. (1979, August 15). *Order No. 11428*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Order\\_11428\\_1979\\_No15.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Order_11428_1979_No15.pdf)
- Local Authorities Board. (1979, August 15). *Order No. 11596*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Order\\_11596\\_1980\\_No12.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Order_11596_1980_No12.pdf)
- Lougheed, P. (1976, March 23). *Annexation of Territory to the City of Grande Prairie Authorized*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC38776.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC38776.pdf)
- Lynch-Stauton, F. (1981, December 16). *Order in Council Amended (O.C. 1230é81)*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_OC\\_1230\\_81\\_1981\\_No7.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_OC_1230_81_1981_No7.pdf)
- Macleod, M. J. (1910, July 6). *Establishment of Villages*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Establishment\\_of\\_West\\_Edmonton\\_1910\\_No67.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Establishment_of_West_Edmonton_1910_No67.pdf)
- Macleod, M. J. (1910, January 20). *Order 009*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Establishment\\_of\\_North\\_Edmonton\\_1910\\_No68.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Establishment_of_North_Edmonton_1910_No68.pdf)
- Malamud, G. W. (1984). *Boomtown Communities*. New York: Van Nostrand Reinhold.
- Markusen, A. R. (1978). *Socioeconomic Impact Models for Boomtown Planning and Policy Evaluation*. Berkeley: Western Regional Science Association.
- Maslove, A. M., Graham, K. A., & Phillips, S. D. (1998). *Urban Governance in Canada: Representation, Resources and Restructuring*. Toronto: Hartcourt Brace & Company, Canada.

- Masson, J. K. (1979). *Edmonton: The Unsettled Issues of Expansion, Governmental Reform and Provincial Economic Diversification*. Edmonton: University of Alberta.
- McNally Commission. (1956). *Report of the Royal Commission on the Metropolitan Development of Calgary and Edmonton*. Edmonton: Queen's Printer.
- Merrifield, J. (1984, April). Impact Mitigation in Western Energy Boomtowns. *Growth and Change*, pp. 23-28.
- Minister of Municipal Affairs. (1954, December 30). *Formation of the Municipal District of Calgary No. 44*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0269/Municipal\\_District\\_of\\_Rocky\\_View\\_No\\_44\\_Formation\\_of\\_MD\\_of\\_Calgary\\_No%2044\\_1955\\_No62.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0269/Municipal_District_of_Rocky_View_No_44_Formation_of_MD_of_Calgary_No%2044_1955_No62.pdf)
- Moffatt, J., & Baker, P. (2013). Farmers, Mining and Mental Health: The Impact on a Farming Community When a Mine Is Proposed. *Rural Society*, pp. 60-74.
- Murdock, S. H., Leistriz, F. L., & Schriener, E. (1982). Local Demographic Changes Associated with Rapid Growth. In B. A. Weber, & R. E. Howell, *Coping with Rapid Growth in Rural Communities* (pp. 63-96). Boulder: Westview Press, Inc.
- Perrie, J. (1917, October 15). *Notice*. Retrieved from [MunicipalAffaires.gov.ab.ca](http://www.municipalaffaires.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_Oct1917.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_Oct1917.pdf)
- Petkova, V., Lockie, S., Rolfe, J., & Ivanova, G. (2009, October). Mining Developments and Social Impacts on Communities: Bowen Basin Case Studies. *Rural Society*, pp. 211-228.
- Province of Alberta. (1913, April 15). *The Alberta Gazette Vol. 9 No. 7: Change in Number of Rural Municipalities*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_of\\_Grande\\_Prairie\\_No\\_1\\_Change\\_in\\_Number\\_of\\_Rural\\_Municipalities\\_to\\_No\\_739\\_1913\\_No28.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_of_Grande_Prairie_No_1_Change_in_Number_of_Rural_Municipalities_to_No_739_1913_No28.pdf)
- Province of Alberta. (1919, March 31). *The Alberta Gazette Vol. 15 No. 6: Proclamation*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_Mar1919.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_Mar1919.pdf)
- Province of Alberta. (1957, October 15). *The Alberta Gazette Vol. 53 No.19: Proclamation*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_Oct1957.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_Oct1957.pdf)
- Province of Alberta. (1967, January 17). *Improvement District No. 150 Constituted*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/IDST/0179/Improvement\\_District\\_No\\_24\\_Wood\\_Buffalo\\_OC\\_87\\_1967\\_No2.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/IDST/0179/Improvement_District_No_24_Wood_Buffalo_OC_87_1967_No2.pdf)
- Province of Alberta. (1994, December 21). *Order in Council 817/94*. Retrieved from [MunicipalAffairs.gov.ab.ca](http://www.municipalaffairs.gov.ab.ca):

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/SMUN/0508/Regional\\_Municipality\\_of\\_Wood\\_Buffalo\\_Gaz\\_OC\\_817\\_94\\_1995\\_No6%20.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/SMUN/0508/Regional_Municipality_of_Wood_Buffalo_Gaz_OC_817_94_1995_No6%20.pdf)

Province of Alberta. (1996, August 14). *Order in Council 354/96*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/SMUN/0508/Regional\\_Municipality\\_of\\_Wood\\_Buffalo\\_OC\\_354\\_1996\\_No5.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/SMUN/0508/Regional_Municipality_of_Wood_Buffalo_OC_354_1996_No5.pdf)

Province of Alberta. (1999, April 14). *Order in Council 152/99*. Retrieved from MunicipalAffairs.gov.ab.ca: [http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_of\\_Grande\\_Prairie\\_No\\_1\\_Gaz\\_OC\\_152\\_99\\_1999\\_No10.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_of_Grande_Prairie_No_1_Gaz_OC_152_99_1999_No10.pdf)

Province of Alberta. (2000, November 29). *Order in Council 476/2000*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC4762000.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC4762000.pdf)

Province of Alberta. (2001, February 12). *Order in Council 92/2001*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0132/Grande%20Prairie%20%20OC92\\_2001.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0132/Grande%20Prairie%20%20OC92_2001.pdf)

Province of Alberta. (2005, April 5). *Order in Council 169/2005*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0046/Calgary\\_OC\\_169\\_2005%20%20%20.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0046/Calgary_OC_169_2005%20%20%20.pdf)

Province of Alberta. (2005, October 5). *Order in Council 471/2005*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC4712005.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC4712005.pdf)

Province of Alberta. (2005, January 26). *Order in Council 52/2005*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0046/City\\_of\\_Calgary\\_OC\\_52\\_2005\\_%20%20%20.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0046/City_of_Calgary_OC_52_2005_%20%20%20.pdf)

Province of Alberta. (2006, August 23). *Order in Council 405/2006*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC4052006.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC4052006.pdf)

Province of Alberta. (2006, August 23). *Order in Council 405/2006*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_of\\_Grande%20Prairie\\_No\\_1\\_OC\\_405\\_2006\\_No5.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_of_Grande%20Prairie_No_1_OC_405_2006_No5.pdf)

Province of Alberta. (2007, March 21). *Order in Council 108/2007*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC1082007.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC1082007.pdf)

Province of Alberta. (2007, august 1). *Order in Council 333/2007*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0046/Calgary\\_OC\\_333\\_2007\\_%20%20%20.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0046/Calgary_OC_333_2007_%20%20%20.pdf)

Province of Alberta. (2008, July 30). *Order in Council 364/2008*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_OC3642008.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_OC3642008.pdf)

Province of Alberta. (2009, July 21). *Order in Council 406/2009*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0132/City\\_Grande\\_Prairie\\_OC406-2009.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0132/City_Grande_Prairie_OC406-2009.pdf)

Province of Alberta. (2009, September 14). *Order in Council 440/2009*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/HMLT/0116/U.S.A.\\_Fort\\_McMurray\\_OC440-2009.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/HMLT/0116/U.S.A._Fort_McMurray_OC440-2009.pdf)

Public Utilities Board. (1961, November 15). *Alberta Gazette: Order No. 25808*. Retrieved from MunicipalAffairs.gov.ab.ca:

[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0132/County\\_Grand\\_Prairie\\_No1\\_25806.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0132/County_Grand_Prairie_No1_25806.pdf)

Report of the GTA Task Force . (1996). *Greater Toronto (Golden Repot)*. Toronto: Queen's Printer.

Sancton, A. (2009). A Review of Canadian Metropolitan Regions: Governance and Government. In D. Phares, *Governing Metropolitan Regions in the 21st Century* (pp. 221-236). New York: M.E.Sharpe.

Shields, R. (2012). Feral Suburbs: Cultural Topologies of Social Reproduction, Fort McMurray, canada. *International Journal of Cultural Studies*, pp. 205-215.

Statistics Canada. (2011). *Focus on Geography Series, 2011 Census*. Retrieved from Statcan.gc.ca: <https://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-cma-eng.cfm?LANG=Eng&GK=CMA&GC=835>

Statistics Canada. (2011). *Focus on Geography Series, 2011 Census: Census subdivision of Calgary, CY - Alberta*. Retrieved from Statcan.gc.ca: <https://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?Lang=eng&GK=CSD&GC=4806016>

Summers, G. F., & Branch, K. (1984). Economic Development and Community Social Change. *Annual Review of Sociology*, pp. 141-166.

Task Force on Urbanization and the Future. (1973). *Issues in Local Government*.

- The Board of Public Utility Commissioners. (1948, December 31). *Order No. 11630*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/BO%2011630%20City%20Edmonton.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/BO%2011630%20City%20Edmonton.pdf)
- The Board of Public Utility Commissioners. (1951, April 27). *Order No. 13057*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_13057.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_13057.pdf)
- The Board of Public Utility Commissioners. (1954, June 3). *Order No. 15504*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_15504.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_15504.pdf)
- The Board of Public Utility Commissioners. (1959, August 21). *Order No. 24133*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/RMUN/0133/County\\_Grand\\_Prairie\\_No1\\_24133.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/RMUN/0133/County_Grand_Prairie_No1_24133.pdf)
- The City of edmonton. (2015). *Edmonton's Annexation History*. Retrieved from Edmonton.ca:  
[http://www.edmonton.ca/city\\_government/documents/edmonton\\_annexation\\_history.pdf#search=annexation history map](http://www.edmonton.ca/city_government/documents/edmonton_annexation_history.pdf#search=annexation%20history%20map)
- The City of Fort McMurray Technical Services. (1990, October). *Annexation History*. The City of Fort McMurray, Alberta, Canada: The City of Fort McMurray.
- The City of Grande Prairie. (2006, June 8). *The City of Grande Prairie: City Boundaries from 1919 to Present*. City of Grande Prairie, Alberta, Canada: The City of Grande Prairie.
- Tindal, C. R., & Tindal, S. N. (2009). *Local Government in Canada, Seventh Edition*. Toronto: Nelson Education.
- Trowbridge, E. (1912, October 14). *Extension of City Boundaries*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Extension\\_of\\_City\\_Boundaries\\_1912\\_No65.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Extension_of_City_Boundaries_1912_No65.pdf)
- Trowbridge, E. (1912, July 31). *Extension of City Boundaries*. Retrieved from MunicipalAffairs.gov.ab.ca:  
[http://www.municipalaffairs.gov.ab.ca/cfml/pdf\\_search/pdf/CITY/0098/Edmonton\\_Gaz\\_Extension\\_of\\_City\\_Boundaries\\_1912\\_No66.pdf](http://www.municipalaffairs.gov.ab.ca/cfml/pdf_search/pdf/CITY/0098/Edmonton_Gaz_Extension_of_City_Boundaries_1912_No66.pdf)
- Walchuk, W. (1987). *Alberta's Local Governments: People in Community Seeking Goodness*. Edmonton: Alberta Municipal Affairs.
- Williams, M. (2013). *Ramsay Historical Context Paper*. Calgary: The City of Calgary.

## Appendix A: Municipal Boundary Timelines

### Municipal Boundary Timeline for the Grande Prairie Study Area

1912	<b>Establishment</b> of Rural Municipality of Grande Prairie No. 709.
1913	<b>Renumbering</b> of Rural Municipality of Grande Prairie No. 709 to Rural Municipality of Grande Prairie No. 739.
1914	<b>Establishment</b> of the Village of Grande Prairie.
1918	<b>Addition</b> of lands to the Village of Grande Prairie. (Document does not indicate from which district)
1919	<b>Status change</b> the Village of Grande Prairie becomes the Town of Grande Prairie.
1920	<b>Annexation</b> of land to Town of Grande Prairie. (Document does not indicate from which district)
1922	<b>Annexation</b> of land to Town of Grande Prairie. (Document does not indicate from which district)
1929	<b>Establishment</b> of the Village of Beaverlodge by withdrawal from Improvement District No. 771.
1940	<b>Withdrawal</b> of private land from the Town of Grande Prairie to the Municipal District of Bear Lake.
1943	<b>Establishment</b> of the Municipal District of Grande Prairie No.78 by merging Municipal Districts Grande Prairie No. 739, Bear Lake No. 740, all of Improvement Districts Nos. 741, 742, 771, 771, part of Improvement District No. 769 and part of Improvement District No. 770.
1945	<b>Renumbering</b> of Rural Municipality of Grande Prairie No. 739 to Rural Municipality of Grande Prairie No. 127.
1951	<b>Establishment</b> of the County of Grande Prairie No. 1 by incorporating the Municipal District of Canada Prairie No. 127, part of Improvement District No. 132, part of Improvement District No. 134 and all of Grande Prairie School Division No. 14 except that portion of the School Division lying to the south of the Wapiti River.
1951	<b>Annexation</b> of County of Grande Prairie No. 1 land to the Town of Grande Prairie.
1954	<b>Annexation</b> of County of Grande Prairie No. 1 land to the Town of Grande Prairie.
1956	<b>Status change</b> the Village of Beaverlodge becomes the Town of Beaverlodge.
1958	<b>Status change</b> the Town of Grande Prairie becomes the City of Grande Prairie.
1959	<b>Annexation</b> of County of Grande Prairie No. 1 land to the City of Grande Prairie.
1961	<b>Annexation</b> of County of Grande Prairie No. 1 land to the City of Grande Prairie.
1976	<b>Annexation</b> of County of Grande Prairie No. 1 land to the City of Grande Prairie.

- 1999            **Annexation** of County of Grande Prairie No. 1 land to the Town of Beaverlodge.
- 2001            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2005            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2006            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2007            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2008            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2009            **Annexation** of County of Grande Prairie No. 1 land to the City of Grande Prairie.
- 2014            **Application to Annexe** County of Grande Prairie No. 1 land to the City of Grande Prairie.

## Municipal Boundary Timeline for the Wood Buffalo Study Area

- 1947        **Amalgamation** of the McMurray settlement and the Waterways settlement forming the Village of McMurray.
- 1948        **Status change** the Village of McMurray becomes the Town of McMurray.
- 1962        **Name change** of the Town of McMurray to the Town of Fort McMurray.
- 1964        **Status change** the Town of Fort McMurray becomes the New Town of Fort McMurray.
- 1972        **Annexation** of Improvement District No. 143 land to the New Town of Fort McMurray.
- 1973        **Annexation** of Improvement District No. 143 land to the New Town of Fort McMurray.
- 1974        **Annexation** of Improvement District No. 143 land to the New Town of Fort McMurray.
- 1980        **Status change** the New Town of Fort McMurray becomes the City of Fort McMurray.
- 1980        **Annexation** of Improvement District No. 143 land to the City of Fort McMurray.
- 1982        **Annexation** of Improvement District No. 143 land to the City of Fort McMurray.
- 1985        **Annexation** of Improvement District No. 143 land to the City of Fort McMurray.
- 1995        **Amalgamation** of Improvement District No. 143 and the City of Fort McMurray to form a specialized municipality named the Municipality of Wood Buffalo.
- 1996        **Name change** of the Municipality of Wood Buffalo to the Regional Municipality of Wood Buffalo.
- 2009        **Boundary change** of service areas. The Urban Service Area is enlarged by taking a portion of the Rural Service Area.

### Municipal Boundary Timeline for the Edmonton Study Area

1892	<b>Establishment</b> of the Town of Edmonton.
1899	<b>Establishment</b> of the Village of St-Albert.
1899	<b>Establishment</b> of the Village of Leduc
1899	<b>Establishment</b> of the Village of Fort Saskatchewan.
1904	<b>Status change</b> of the Town of Edmonton to the City of Edmonton.
1904	<b>Status change</b> of the Village of Fort Saskatchewan to the Town of Fort Saskatchewan.
1904	<b>Status change</b> of the Village of St-Albert to the Town of St-Albert.
1906	<b>Status change</b> of the Village of Leduc to the Town of Leduc.
1910	<b>Establishment</b> of the Village of North Edmonton.
1910	<b>Establishment</b> of the Village of West Edmonton.
1912	<b>Annexation</b> of Industrial Heights and Kennedale subdivisions to the City of Edmonton.
1912	<b>Annexation</b> of the Village of North Edmonton to the City of Edmonton.
1912	<b>Amalgamation</b> of the City of Edmonton and the City of Strathcona.
1943	<b>Establishment</b> of the Municipal District of Strathcona No. 517 by the merger of the Municipal District of Clover Bar No. 517 and the Municipal District of Strathcona No. 518.
1944	<b>Establishment</b> of the Municipal District of Leduc No. 489 by the merger of the Municipal District of Blackmud No.488, the Municipal District of Liberty No. 489 and the Municipal District of Pioneer No.490.
1945	<b>Renumbering</b> of the Municipal District of Leduc No. 489 to the Municipal District of Leduc No. 75.
1948	<b>Annexation</b> from the Municipal District of Strathcona No. 83 to the City of Edmonton.
1949	<b>Withdrawal</b> of private lands from the Town of St-Albert to the Municipal District of Morinville No. 91.
1950	<b>Annexation</b> from the Municipal District of Strathcona No. 90 to the City of Edmonton.
1957	<b>Status change</b> of the Town of St-Albert to the New Town of St-Albert.
1962	<b>Status change</b> of the Municipal District of Strathcona No. 83 to the County of Strathcona No.20
1962	<b>Status change</b> of the New Town of St-Albert to the Town of St-Albert
1964	<b>Establishment</b> of the County of Leduc No. 25 by the merger of the Municipal District of Leduc No. 75 and Leduc School Division No. 49.

- 1964        **Annexation** of the Town of Jasper Place and portions of the County of Strathcona No. 20 and the Municipal District of Stony Plain No. 84.
- 1973        **Annexation** from the County of Strathcona No. 20 to the City of Edmonton.
- 1977        **Status change** of the Town of St-Albert to the City of St-Albert.
- 1979        **Annexation** from the County of Strathcona No. 20 to the City of Edmonton.
- 1979        **Annexation** from the Municipal District of Sturgeon No. 90 to the City of Edmonton.
- 1981        **Annexation** from the County of Parkland No. 31, the Municipal District of Sturgeon No. 90 and the County of Strathcona No. 20 to the City of Edmonton.
- 1983        **Status change** of the Town of Leduc to the City of Leduc.
- 1985        **Status change** of the Town of Fort Saskatchewan to the City of Fort Saskatchewan.
- 1995        **Name change** of the County of Strathcona No. 20 to Strathcona County.
- 1996        **Status change** of Strathcona County to a specialized municipality.
- 1998        **Name change** of the County of Leduc No. 25 to Leduc County.
- 2002        **Annexation** from the City of Edmonton to the City of St-Albert.
- 2010        **Dissolution** of the Village of New Sarepta to a hamlet of Leduc County.

## Municipal Boundary Timeline for the Calgary Study Area

1884	<b>Establishment</b> of the Town of Calgary.
1894	<b>Status change</b> of Town of Calgary to City of Calgary.
1899	<b>Establishment</b> of the Village of Rouleauville.
1901	<b>Annexation</b> of Stampede Park to the City of Calgary.
1903	<b>Annexation</b> of Alyth industrial area to the City of Calgary.
1906	<b>Annexation</b> of Ramsay land to the City of Calgary.
1907	<b>Annexation</b> of the Village of Rouleauville to the City of Calgary.
1907	<b>Annexation</b> of Inglewood, part of Bonnybrook and Highfield, Erlton, Roxboro, Mission, Elbow Park, Mount Royal, Lower Mount Royal, South Calgary, Bankview, north half of Altadore, Garrison Woods, Knob Hill, Scarboro, Sunalta, Westmount, West Hillhurst, Hillhurst, Sunnyside, south half of Crescent Heights, north half of Bridgeland and west corner of Charleswood to the City of Calgary.
1908	<b>Establishment</b> of the Village of Crescent Heights.
1910	<b>Annexation</b> of the Village of Crescent Heights to the City of Calgary.
1910	<b>Annexation</b> of CFB Calgary, Mount Royal College, Rutland Park, Killarney, Shaganappi, Spruce Cliff, Parkdale, St. Andrews Heights, University Heights, east two-thirds of University of Calgary campus, University Research Park, south half of Brentwood, Charleswood, Banff Trail, Motel Village/McMahon Stadium, Collingwood, capitol Hill, south corner of Nose Hill Park, Cambrian Heights, North Haven, Mount Pleasant, Rosemont, Highwood, Highland Park, Tuxedo Park, Balmoral, Winston Heights, Mountview, Greenview, McCall Park, Pegasus, Vista Heights, Airways, Mayland Heights, part of Albert Park, remainder of Bonnybrook, Elboya/Stanley Park, Britannia, Riverdale, North Glenmore Park (community) and the remainder of Altadore to the City of Calgary.
1910	<b>Development</b> of the Forest Lawn hamlet.
1911	<b>Annexation</b> of Ogden, Lynnwood, Millican Estate, Lynnwood Ridge, Ogden Yards, parts of Foothills Industrial, northwest corner of Riverbend and part of Manchester to the City of Calgary.
1923	<b>Withdrawal</b> of University Industrial Park, south half of Brentwood, and west corner of Charleswood from City of Calgary.
1951	<b>Annexation</b> of Windsor Park to the City of Calgary.
1952	<b>Annexation</b> of remainder of Manchester Industrial and east of Chinook Centre to the City of Calgary.

- 1953 **Annexation** of north half of Brentwood, south third of Nose Hill Park, Beaverdam, Upper North Haven, Thorncliffe, Deerfoot Business Centre, Skyline, McKnight Aviation Park and south half of Calgary International Airport runways to the City of Calgary.
- 1954 **Establishment** of the Municipal District of Calgary No. 44 by the merger of parts of Improvement District No. 46, Municipal District of Serviceberry No. 43, Municipal District of Conrich No. 44, Municipal District of Springbank No. 45, Municipal District of Kneehill No. 48 and Municipal District of Mountain View No. 49.
- 1954 **Annexation** of Meadowland Park, east halves of Glamorgan, Glenbrook, Glendale, and Wildwood and Rosscarrock to the City of Calgary.
- 1954 **Re-Annexation** of lands withdrawn in 1923 to the City of Calgary.
- 1956 **Renaming** of the Municipal District of Calgary No. 44 to the Municipal District of Rocky View No. 44.
- 1956 **Annexation** of all remaining areas south of 50<sup>th</sup> Avenue S., north of Anderson Road, west of the Bow River, and east of 37<sup>th</sup> Street, including Glenmore Reservoir, CFB Currie, Chinook Centre and all areas west of 45<sup>th</sup> Street S.W., east of 69<sup>th</sup> Street S.W., north of Glenmore Trail, and south of Bowdale Crescent and Bow River, including Edworthy Park and West Hills to the City of Calgary.
- 1961 **Annexation** of the Town of Midnapore, the Town of Forest Lawn, everything south of Anderson Road and north of 162<sup>nd</sup> Avenue S.W./Sun Valley Boulevard S.E., Douglasdale and Douglas Glen, northwest corner of Mountain Park, most of Riverbend, Eastlake Industrial Centre, Dufferin Industrial, Southbend Business Park, remainder of Foothills Industrial, Erin Woods, Dover, all residential and industrial areas of 68<sup>th</sup> Street E., east of Barlow Trail, and south of the future extension of Airport Trail (approximately 95<sup>th</sup> Avenue N.E.), most remaining airport lands, Huntington Hills, middle third of Nose Hill Park, south half of Edgemont, Dalhousie, Varsity/Varsity Acres, Silver Springs, Ranchlands, and northeast corner of Scenic Acres to the City of Calgary.
- 1963 **Annexation** of the Town of Montgomery, the remainder of the University of Calgary Campus and Point McKay to the City of Calgary.
- 1964 **Annexation** of the Town of Bowness to the City of Calgary.
- 1972 **Annexation** of the remainder of Beddington and part of Sandstone to the City of Calgary.
- 1976 **Annexation** of Abbeydale, Sarcee Trail/Trans-Canada Hwy interchange, Hawkwood, most of Crowfoot Towne Centre and Arbour Lake to the City of Calgary.
- 1979 **Annexation** of most of the north half of Edgemont, east half of the Hamptons, most of Hidden Valley, Sandstone, Harvest Hills, Coventry Hills, Panorama Hills, northwest airport lands, Freeport Business Park, west half of Monterey Park, west half of Applewood Park, McKenzie Towne, Copperfield, New Brighton, remainder of Mountain

- Park, McKenzie Lake, Sundance, Somerset, Bridlewood, the remainder of Scenic Acres, and Watergrove Trailer Park to the City of Calgary.
- 1981 **Annexation** of most of Tuscany, the east half of Applewood Park, most of Chaparral and Valley Ridge to the City of Calgary.
- 1982 **Annexation** of Calgary Research and Development Park and the east half of Royal Oak to the City of Calgary.
- 1983 **Annexation** of Coral Springs, the southeast portion of Monterey Park, Cranston, Auburn Bay and Seton to the City of Calgary.
- 1984 **Annexation** of the south portion of Shawnessy Towne Centre to the City of Calgary.
- 1985 **Annexation** of Winter Heights to the City of Calgary.
- 1989 **Annexation** of Canada Olympic Park, Crestmont, Rocky Ridge, the remainder of Royal Oak, Tuscany and Arbour Lake, Sherwood, Kincora, Evanston, Silverado, Weaslehead Park, and extensive undeveloped land along Calgary's periphery to the City of Calgary.
- 1993 **Withdrawal** of CFB Currie lands, returned to Tsuu T'ina.
- 1995 **Annexation** of East Springbank region to the City of Calgary.
- 2005 **Annexation** of lands to from the Municipal District of Rockyview No. 44 to the City of Calgary.
- 2005 **Annexation** of lands to from the Municipal District of Foothills No. 31 to the City of Calgary.
- 2007 **Annexation** of lands to from the Municipal District of Rockyview No. 44 to the City of Calgary.
- 2009 **Renaming** the Municipal District of Rocky View No. 44 to Rocky View County.