

**METROPOLITAN PLANNING IN THE CALGARY REGION: A CASE STUDY OF
FARMLAND PROTECTION IN THE MUNICIPAL DISTRICT OF FOOTHILLS**

by

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Abstract

Following a protracted attempt at voluntary metropolitan planning in the Calgary region, that was characterized by ongoing rural-urban tensions, in 2017, the Government of Alberta mandated seven urban and three rural municipalities to participate on the Calgary Metropolitan Region Board (CMRB) to develop a regional growth strategy. The purpose of this research was to inform metropolitan planning that protects farmland within the context of the CMRB mandate. Using the Municipal District of Foothills, a rural municipality with membership on the CMRB, to focus the research, the local legislative framework for farmland protection was evaluated and land use priorities were identified. Farmland was found to be at risk of conversion and fragmentation to support commercial, industrial, and residential development, and urban growth as a result of deficiencies in the legislative framework that allowed conversion. Based on these findings, it was recommended that Calgary metropolitan planning include policies that enable farmland protection.

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List of Abbreviations

AAMDC	Alberta Association of Municipal Districts and Counties
AgLUP	Agricultural Land Use Planning
ALSA	Alberta Land Stewardship Act
AMSC	Alberta Municipal Services Corporation
AOPA	Agricultural Operations Practices Act
ASB	Agricultural Services Board
AUMA	Alberta Urban Municipalities Association
CMP	Calgary Metropolitan Plan
CMRB	Calgary Metropolitan Region Board
CRP	Calgary Regional Partnership
GF2	Growing Forward 2
ICF	Intermunicipal Collaborative Framework
IDA	Irrigation Districts Act
IDP	Intermunicipal Development Plan
LUB	Land Use Bylaw
LUF	Land Use Framework
MD	Municipal District
MDP	Municipal Development Plan
MGA	Municipal Government Act
NRCB	Natural Resources Conservation Board
PLUP	Provincial Land Use Policies
SDAB	Subdivision Appeal Board
WA	Water Act

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Dedication

For my dad

1. Introduction

Farmland is recognized as a crucial resource supporting the production of food, fuel, fibre, and social goods; however, uncertainty created by climate change, population growth, and energy demands, among other stressors, has increasingly required that farmland be protected to ensure its capacity to provide for future generations (Caldwell, Hilts, & Wilton, 2017). Cities are typically located in areas well-suited to food production resulting in the conversion of the most fertile agricultural lands when urban expansion occurs (Cocklin, Smit, & Johnston, 1987; Francis, et al. 2012; Statistics Canada, 2014; Hofmann, Elgarawany, Larocque, Filoso, & Dennis, 2010). This is especially true in metropolitan regions as farmland has been identified as being most susceptible to conversion when located close to urban areas with high population densities and significant infrastructure (Wang, 2016). By the 1950s researchers in Canada had already started to quantify farmland loss noting that cities were consuming more land than was needed but that overall the amount of farmland consumed decreased as urban populations increased (Crerar, 1962). In Alberta, farmland in the Calgary-Edmonton corridor located along the primary north-south route, Highway 2, between the two metropolises, is particularly vulnerable to fragmentation (Qiu, Laliberté, Swallow, & Jeffrey, 2015; Martellozo, et al., 2015; Alberta Agriculture and Forestry, 2016b). Between 1984 and 2013, land in the corridor committed to urban uses increased by 52% while farmland became more fragmented (Stan & Sanchez-Azofeifa, 2017). Fragmentation further compounds threats of farmland conversion as agricultural uses become less viable on the lands that are left undeveloped driving farmers to stop investing in farmland and opening further opportunities for non-agricultural development and residential growth, especially near urban centres (Tomalty, 2015).

Land use planning policy and legislation in localities across Canada has been found to have varying strengths for protecting farmland from conversion to other uses (Connell, Caldwell, Bryant, Johnston, & Margulis, 2016; Connell & Daoust-Filiatrault, 2018). Likewise, diverse metropolitan planning approaches have been implemented in regions throughout the country (Sancton, 2005). Using the Municipal District (MD) of Foothills, and the urban municipalities with which it holds intermunicipal development plans as a focal point, deficiencies and opportunities for farmland protection within the Calgary metropolitan growth management planning region are considered. It should be noted that in 2018, the municipal Council passed a resolution to rebrand from MD of Foothills to Foothills County and issued a press release quoting Reeve Spilak:

The title of county is recognized national [*sic*] and internationally. Foothills County is a name that distinguishes what this municipality represents. The name is easy to find, remember and say. This is a benefit to the municipality as we continue to encourage industrial and commercial growth – provincially, nationally and worldwide (MD of Foothills, 2018).

The name change is effective January 1, 2019 (Conrad, 2018b). Because the name change occurred during the writing of this thesis and the documents used to support the analysis all referred to the municipality as the MD of Foothills, MD of Foothills or MD will be used throughout to refer to this municipality. The Reeve's statement supports the reasoning for the chosen study area which is currently responding to planning-related policy and legislation changes including recent revisions to Alberta's Municipal Government Act that included provisions for mandating metropolitan planning in the Calgary region.

Although Alberta's pioneering planning approaches, which will be outlined further in section 1.4, set precedents in North American in the early 20th Century, they would later become plagued by rural-urban contentions and would eventually be politicized and

dissolved in the mid-1990s (Climenhaga, 1997). After more than a decade of ongoing planning disputes between rural and urban municipalities, the Province of Alberta (hereafter referred to as the Province) launched a revised attempt at regional planning with the Land Use Framework in an effort to increase cooperation and collaboration by creating seven watershed-based regions and establishing a metropolitan growth planning board for the capital region surrounding Edmonton (Alberta Urban Municipalities Association/ Alberta Municipal Services Corporation, n.d.; Government of Alberta, 2008). The Calgary Regional Partnership (CRP), established in 1999, provided a voluntary model for the southern Alberta metropolitan during this period with municipalities collaborating to respond to regional growth and planning issues (Patterson, 2018). However, the CRP was equally beleaguered by a lack of cooperation and trust between the rural and urban municipalities and was unable to formalize a planning agreement for the region (Patterson, 2013; Ostermann, 2014; Patterson, 2011; High River Online, 2015; Vigliotti, 2013; Cochrane Times, 2015). As a result, in 2015, the Province announced that a growth management board and more formalized planning would also be required for the Calgary region (CBC, 2015; Government of Alberta, n.d.-a). The Calgary Growth Management Board Regulation was passed in 2017 as part of the revisions to the Municipal Government Act. The choice of study area was influenced by the mandate for metropolitan growth management and was defined to gain insight into how urban municipalities within the Calgary metropolitan region that were surrounded by or bordered the MD of Foothills considered or influenced farmland in planning activities. The introductory sections that follow will further define the research questions, objectives, and scope, and delimit the study area to provide context for the project.

1.1 Research Objectives

The primary objective of this research is to inform metropolitan planning that includes provisions for farmland protection. While many influences and land uses threaten farmland, this research focuses on the impacts of urban growth and economic development. These processes are further reflected in the region by residential, commercial, and industrial development in agricultural areas. Focusing on the MD of Foothills, where the majority of farmland currently exists within the boundaries of the defined study area, the research aims to evaluate the strength of the legislative framework for farmland protection and determine land use priorities to help inform metropolitan planning.

1.2 Research Questions

To achieve these research objectives, three research questions guide the investigation in an effort to inform more robust metropolitan planning empowered to protect farmland despite the threats created to arable land by urban growth and economic development. The first question asked, what is the quality of the agricultural land use planning legislative framework in the study area based on Connell and Daoust-Filiatrault's (2018) method of plan evaluation? This method assesses the efficacy, or the power to produce expected outcomes, by evaluating planning documents' capacities for farmland protection against four principles: maximized stability, minimized uncertainty, integration across jurisdictions, and accommodated flexibility. The purpose of this question is to gain a baseline for the region's policy and legislative capacity to protect farmland based on provincial, regional, intermunicipal, and municipal planning documents in order to inform metropolitan-level planning.

The second question further supports the goals of informing metropolitan planning by asking what are the competing land use priorities within the MD of Foothills and how do they impact farmland in the study area? Existing legislation, records of previous Council decisions, and key informant interviews provide insight into land use decisions in the MD of Foothills to aid in determining whether policy and practice align to enable farmland protection or diverge to support urban growth and economic development.

The third question is: how can the answers to the first two questions inform metropolitan planning that protects farmland? The intent of this question is to compare and contrast the findings from the first two questions, along with examples from other Canadian metropolitans, to enable robust metropolitan planning that includes farmland protection in the study area.

1.3 Delimiting the Research

As mentioned above, to gain insight into the extent to which farmland might be protected in the Calgary region under a metropolitan planning approach, this thesis examines metropolitan planning using a case study centered around the MD of Foothills and including the contiguous urban municipalities. The case study area may be seen below in Figure 1. The urban municipalities in the case study area all have intermunicipal development plans in place with the MD and include the city of Calgary, towns of Black Diamond, High River, Okotoks, and Turner Valley, and the village of Longview.

As outlined on the Municipal Government Act Review website (n.d.-a), intermunicipal development plans had provided municipalities with voluntary opportunities for cooperative service delivery and coordinated planning. However, during consultations on proposed revisions to the modernized Municipal Government Act, the Province heard that

some municipalities found the voluntary model to be lacking with potential for service duplication to occur and suggested a mandated approach. As a result, the revised MGA requires all municipalities not represented on the growth management boards to develop intermunicipal collaborative frameworks (ICFs) with adjacent municipalities to improve efficiencies in land use planning, infrastructure development, and servicing (Government of Alberta, n.d.-a).

The remainder of this section outlines limits of the research including the personal situatedness of the researcher and the extent of the research scope. Additional historical and background information on Alberta and the study area will be provided at the end of the introduction; validation of the case study approach is included in the methods section.

The research reflects the researcher's own interests in farmland protection. As noted in the UNBC AgLUP Legislative Framework Toolkit (2016), by undertaking an evaluation of the legislative framework, one is likely to be committed to farmland protection. While all researchers may be expected to have personal interest in their subject of study, it is important to consciously endeavour to separate curiosity from individual goals to avoid intentionally or unintentionally swaying the data collection or analysis towards a particular outcome.

Awareness of one's embeddedness in the study and the assumptions, expectations, reactions, and responses that are present during the research process may provide deeper insight into results but should not be used as justification for conclusions (Finlay, 1998). As a former resident of the Municipal District of Foothills, an aspiring farmer, and a contractor offering services to the Town of Turner Valley, it is important for the researcher to retain awareness of any personal objectives and potential biases in undertaking the research and to strive towards objectivity in collecting and analyzing the data to avoid undue bias. Although there are likely innumerable additional personal experiences and interests that could

unintentionally influence the research, those most related to the study should be tempered as much as possible and considered with increased scrutiny to reduce the potential for leading or erroneous results.

Although, many different activities influence farmland protection, the research focuses on urban growth and economic development including commercial, industrial, and residential development. The research excludes consideration of extractive industry, environmental preservation, recreation, capital investments, employment opportunities, administrative goals, and several other processes that shape land uses. However, each of these activities are worth studying in further detail to add greater depth to metropolitan planning decisions and are recommended topics for future research.

The agency of indigenous peoples in metropolitan planning is also outside the scope of this research project but is recognized as needing greater attention in metropolitan planning and in the case study area more specifically. The Calgary metropolitan region includes Treaty 7 First Nations and the case study area for this project surrounds both the Tsuut'ina Nation that borders the city of Calgary to the west and the Stoney Nakoda Nation reserve in Eden Valley located west of Longview. In revising the Municipal Government Act, that also included provisions for regional growth management of the province's two largest metropolitans, Edmonton and Calgary, the Government of Alberta included a "duty to notify" First Nations (Medeiros, Prince, & Housman, 2017). This duty to notify includes providing an opportunity for First Nations to "make suggestions and representations" and applies when land subject to a municipal development plan or area structure plan is "adjacent to an Indian reserve or Metis settlement" (*Municipal Government Act*, 2018). While these provisions are significant, they would seem to fall short of the duty to consult and exclude First Nations from full participation on the growth management boards.

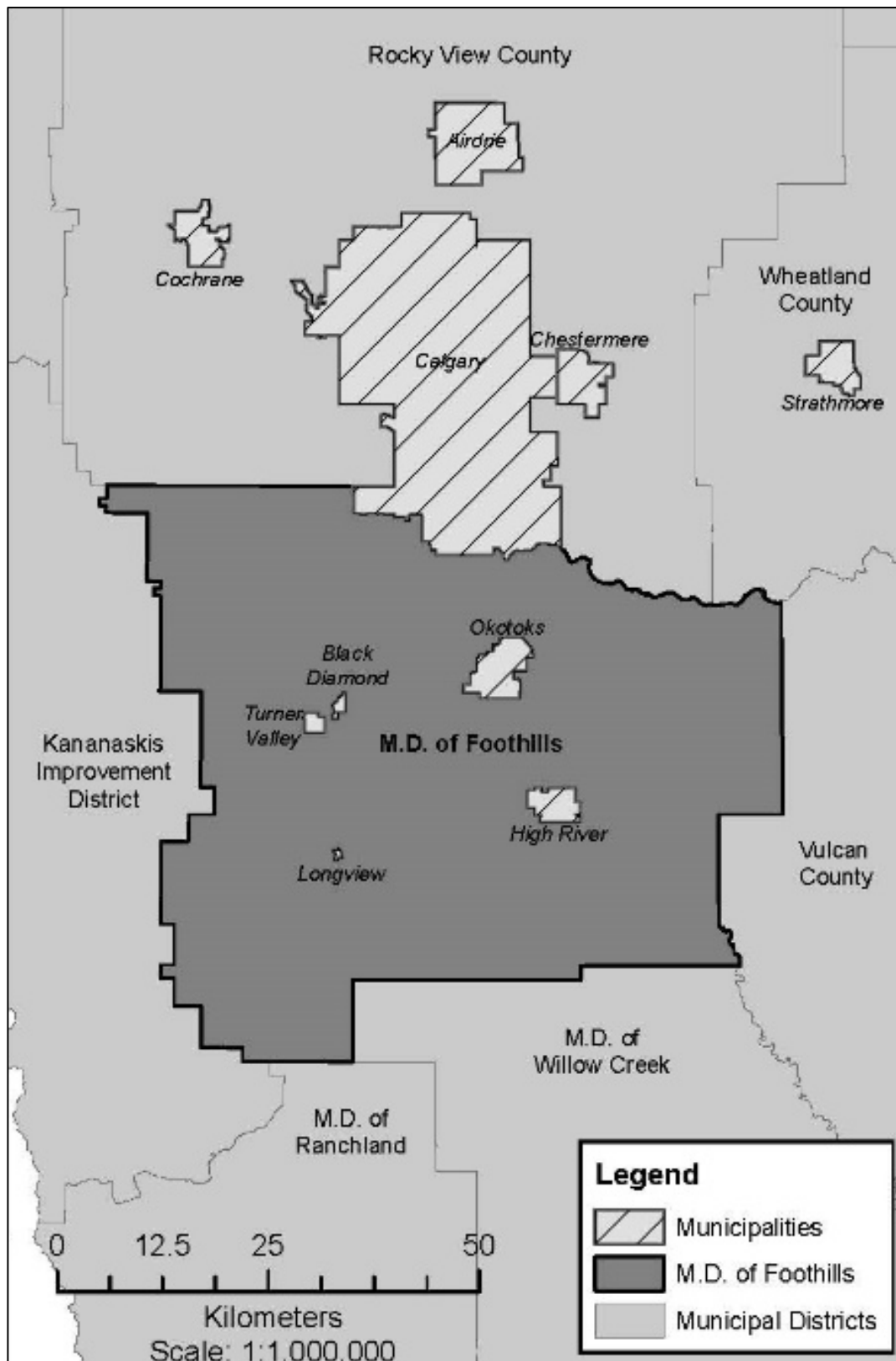


Figure 1: Case study area: MD of Foothills, City of Calgary, Towns of Black Diamond, High River, Okotoks, Turner Valley, Village of Longview

Recent activities in the Calgary region suggest a need for strengthening consultation with neighbouring First Nations and increased accountability from local government for meeting the duty to consult. For example, the installation of the ‘Bowfort Towers,’ created by a New York-based artist, is said to have been inspired by Blackfoot culture, however the surrounding First Nations were “unimpressed” by the artwork, advised they were not adequately consulted by jurisdictional authorities, and suggested a local or indigenous artist should have been commissioned to create a piece for the location (Pimentel, 2017). More successful consultations allowed the completion of Calgary’s Stoney Trail ring road which required negotiation with the Tsuut’ina Nation and compensation for the land needed for the expansion (Salus, 2013; Newton, 2015). Although the Province has made an effort to acknowledge First Nations in local and regional planning, the duty to notify seems to fall short of meeting the duty to consult. Outlining a sufficient framework for the duty to consult in the context of agricultural land use planning would merit an independent research project to address appropriately. Therefore, for the purposes of this study, considering the adequacy of indigenous consultation on metropolitan planning falls outside the scope of the research, however further examination of this topic is recommended in future studies to ensure First Nations’ rights are upheld according to the United Nations Declaration on the Rights of Indigenous Peoples and Canada’s fiduciary responsibilities.

Having defined the study limits and exclusions, an overview of Alberta’s regional and metropolitan planning history as well as a comprehensive characterization of the case study area will provide the basis for the remainder of the research.

1.4 Regional and Metropolitan Planning in Alberta

Regional planning has been defined as “a process, based on law and undertaken by a form of responsible government directed toward influencing development, private or public, in a manner that results, in the areas where people settle and establish regional communities, the best environment and the soundest use of resources that our civilization is capable of effecting” (Gertler, 1972, p. 16-17). An important parallel can be made between regional and metropolitan planning in that metropolitan planning is a more localized form of regional planning with an urban nucleus. Where regional planning tends to be demarcated by contiguous spaces with similar physical characteristics and takes advantage of adjacencies as well as administrative conveniences, metropolitan planning is a more focused subset of regional planning that defines the spatial and administrative limits of a region around a central city (see: Hodge, Hall, & Robinson, 2017; Hodge, 2002; Hall, 1970; Paasi, 2009). As will be seen below, Alberta has a long history of regional planning defined by settlement patterns, resource distribution, and political aims, the boundaries of which have changed over time to support evolving social, economic, and environmental goals. Metropolitan planning has been introduced more recently to establish growth management strategies for the province’s two large city-regions, Edmonton and Calgary.

1.4.1 Regional planning in Alberta. An overview of the history of regional planning in Alberta provides context for the recent introduction of metropolitan planning in the Calgary region including the study area. Climenhaga (1997) offers a comprehensive overview of Alberta’s planning history beginning in 1906 when Alberta established its first planning regulations making it one of the earliest implementers of land use planning in Canada just one year after becoming a province. Subdivision guidelines, Climenhaga notes, were established in 1912 followed by the *Town Planning and Preservation of Natural Beauty*

Act in 1928 that provided a framework for local government planning, although few plans were implemented. As outlined in the Land-Use Framework (2008), in 1948, the Alberta Government, led by Premier Manning, divided the province into ‘Green’ areas to identify public lands for environmental protection and recreation purposes and ‘White’ settlement areas which included agriculture. In the early 1950s, the Province established a provincial planning advisory board and district planning commissions that would serve as the precursor to more formal regional planning (Climenhaga, 1997).

Alberta responded to irregular and unchecked growth, driven by the boom-bust cycles of the oil and gas industry, with regional planning policies and the McNally Commission’s recommendations that were made law in 1957 and included metropolitan planning requirements that prevented sprawl by incorporating virtually all growth under a single municipality thus regulating fringe growth (Miller, 2016; Climenhaga, 1997). Regional planning commissions were finalized under revisions to the *Planning Act* in the 1960s (Alberta Professional Planners Institute, 2014). These commissions created regional plans, advised municipalities on planning matters, and served as the subdivision authority until they were abandoned in the mid-1990s (Alberta Urban Municipalities Association/Alberta Municipal Services Corporation, n.d.). Responding to concerns of the party’s rural voter base, the Progressive Conservatives, led by Ralph Klein, dissolved the regional planning commissions in 1994 (Climenhaga, 1997). Although the regional planning commissions supported efficient land use that enabled organized urban growth, rural development was regularly prevented leaving rural landowners frustrated that their potential economic gain was controlled by nonlocal influence (Ghitter & Smart, 2009).

Following this dissolution of regional planning, the Province introduced the Land Use Policies (1996) that aimed to “help municipalities to harmonize provincial and municipal

policy initiatives at the local land-use planning level” pursuant to the *Municipal Government Act* (MGA). As a result of MGA amendments and the Land Use Policies, municipalities took on the sole responsibility for planning (Climenhaga, 1997). “By empowering municipal governments, the MGA promoted the notion that all municipal governments – regardless of population size or status (urban or rural) – were equal in powers under the MGA and could act accordingly” (Action Consulting Ltd., 2007). Up until 1994, Calgary had annexed lands that positioned the city’s contiguous urban growth decades in advance, however, after the devolution of planning powers to municipalities, rural municipalities increasingly allowed urban uses and subdivision resulting in uncoordinated regional growth and rural-urban tensions (Ghitter & Smart, 2009).

After more than a decade of tensions between rural and urban municipalities and ongoing mediation requirements by the Province, the Government of Alberta undertook consultations to inform a new way forward for provincial planning (AUMA/AMSC, n.d.). The Land Use Framework report (2008) outlines that discussions occurred with a diversity of stakeholders including local landowners, municipal leaders, and planners; agricultural, forestry, transportation and energy associations; conservation and environmental organizations; recreational groups; academics; and First Nations and Métis representatives. The Alberta Land Use Framework was developed out of the discussion to support responsible management of competing economic, social, and environmental land uses with a view to the future (Government of Alberta, 2008). The *Land-Use Framework* (LUF) was legislated under the *Alberta Land Stewardship Act* (ALSA) in 2009 and provided the legal basis for developing seven watershed-based regional plans for the province (Alberta Environment and Parks, 2014).

Priorities for the LUF included finalizing two of these plans, the Lower Athabasca Regional Plan and the South Saskatchewan Regional Plan, as well as establishing supporting legislation for the LUF, and developing metropolitan plans for the Edmonton and Calgary areas (Government of Alberta, 2008). However, many Albertans voiced concerns over these policies in addition to rural municipalities that worried growth would be limited to urban boundaries compromising possible revenue under the Land-use Framework (D'Aliesio, 2008). In response, amendments were made to the ALSA in 2011 to clarify the government's respect for individual property rights, land titles, and freehold mineral titles and to allow Albertans to request reviews of regional plans, title holders to apply for variances, and landowners to seek compensation when policies impacted preferred land uses "in appropriate cases" (Alberta Environment and Parks, 2014).

In 2014 a formal review of the Municipal Government Act was launched and included provisions for the reintroduction of metropolitan planning. As outlined on the Municipal Government Act review website (n.d.), consultations and workshops were held with the public, business and industry, government administrators, municipal taxation and assessment specialists, planning and development professionals and elected officials to support the review. A workbook was created to engage Albertans on various themes related to the legislation and written submissions were encouraged. Open houses were then held in 2016 to present the proposed changes to the Act and receive feedback from the public. Amendments were made under Bill 8, Bill 20, and Bill 21, including the re-establishment of regional growth boards, specifically those for the Calgary and Edmonton metropolitan areas, to align with existing provisions within the LUF. The MGA amendments aimed to "improve municipal relationships, planning processes, and local decision-making," and advance collaborative growth planning (Government of Alberta, n.d.-a).

1.4.2 Metropolitan planning in the Calgary region. The demarcation of the mandated Calgary metropolitan growth management region reflected similar characteristics to those outlined above with the Government of Alberta's definition reflecting a contiguous space between adjacent municipalities based on political, social, and economic goals. The previous voluntary model under the Calgary Regional Partnership provided a different definition for the metropolitan space with wider municipal representation. Both mandated and voluntary metropolitan planning approaches have been used in city-regions across Canada. As Davies (1962) noted in the *Resources for Tomorrow* conference in 1961, voluntary approaches require councils to agree to work together for the benefit of the wider region, however, these models are often cumbersome suffering long planning delays as municipalities work for their own ends and often in competition. While mandated approaches, Davies explained, typically require provincial implementation and oversight and have taken numerous forms with independent boards or municipal council representation. Different models of metropolitan planning will be discussed further in the literature review while the following will provide an overview of the previous voluntary model of metropolitan planning in the Calgary region and the recently mandated approach with relevance to the study area.

Voluntary metropolitan planning in the Calgary region. In 2006 an attempt was made to resolve land disputes through a voluntary planning group that had formed a loose affiliation of members under the Calgary Regional Partnership (CRP) (AUMA/AMSC, n.d.). However, disagreements persisted across a marked rural-urban divide with concerns over density requirements, excessive bureaucracy, limited municipal autonomy, water scarcity, perceived de facto veto power for the City of Calgary, and frustrations over the funding structure resulted in the defection of the rural municipalities and others (Patterson, 2013;

Ostermann, 2014; Patterson, 2011; High River Online, 2015; Vigliotti, 2013; Cochrane Times, 2015). Similar sentiments had been felt for decades preceding the CRP's founding with rural municipalities expressing concerns about divergent values and an uneven power balance in regional planning that favoured urban municipalities (Climenhaga, 1997).

Nicol and Nicol (2015) identified persistent tensions within the CRP particularly between the City of Calgary, which seemed indifferent to concerns raised by other municipalities around water scarcity, and the MD of Foothills, where citizens' groups had formed to oppose the regional development proposals supported by the City. Although historical frictions featured Rocky View County and the City of Calgary, new development proposals had created increased anxiety and frustration in the MD of Foothills. Nicol and Nicol further suggested that compounding the distrust of the City and its decision-makers was the fact that some of the regional municipalities had become effectively obliged to vote with the City on decisions to ensure ongoing access to water for future development. Meanwhile the rural municipalities felt they were being pushed to meet regional density requirements with little regard for municipal autonomy, individual property rights, or infrastructural capacity. After several years of failed attempts to renegotiate contentious aspects of the plan, the MD of Foothills announced on behalf of the municipality as well as Rocky View County and Wheatland County the full revocation of rural membership in the Calgary Regional Partnership in 2009. As noted in Nicol and Nicol's research, this left dislocated urban municipalities scattered across the region to implement the Calgary Metropolitan Plan.

The MD of Foothills Council explained the decision to leave the partnerships stating that the document eroded "the rightful autonomy of Foothills, its land use authority and consequently, the rights of its residents." The MD Council further maintained that the CMP

permitted land use decisions to be made by “urban councillors and others who are neither elected nor accountable to MD residents” (MD of Foothills No. 31, 2009). Several urban municipalities would eventually leave the CRP as well. The Town of High River exited in 2013 citing concerns about costs while Nanton, Banff, and Canmore left in 2016 to proactively avoid forced participation in the metropolitan growth management board; High River later rejoined (Vigliotti, 2013; Nanton News, 2016; Conger, Dahlby, & McMillan, 2016).

Unease persisted over the repeated requests for a legislated solution toward a collective growth management strategy made by the City of Calgary to the Province (Vigliotti, 2013; Cuthbertson 2013; Conger, et. al. 2016). Despite concerns, in 2015, then Municipal Affairs Minister, Deron Bilous, announced that municipalities in the Calgary metropolitan region would be mandated to participate in a growth management board under revisions to the Municipal Government Act (CBC, 2015). Although municipalities expressed anxiety that a regional approach would erode local autonomy, the Province has suggested that metropolitan planning would better serve citizens and reduce redundancies (Cochrane Times, 2015; Government of Alberta, n.d.-a). The Calgary Metropolitan Region Board Regulation came into effect in January 2018 and mandates the board to establish long-term growth and servicing plans by January 2021. The details of developing the mandated approach and the resulting requirements follow.

Mandated metropolitan planning in the Calgary region. According to the Government of Alberta’s MGA Review website (n.d.), in 2014, the Province initiated public consultations to review the Municipal Government Act (MGA) to support amending the legislation that guides municipal planning and development, government and administration, and assessment and taxation. A series of amendments to the MGA were then passed through

the legislature in 2015, 2016, and 2017, including the requirement for a growth management board for the Calgary region to mirror the mandated board already in place in the Edmonton region, with the phased implementation of the revisions occurring between January and April of 2018. During this period, each of the rural municipalities made submissions to Alberta Municipal Affairs (AMA) indicating their opposition to required participation on a growth management board (Rocky View County, n.d.; Cochrane Eagle, 2016; Wheatland County, 2017). Specific concerns related to the proposed voting structure that consisted of a supermajority requiring two-thirds support from members representing at least two-thirds of the region's population, which has been perceived to provide de facto veto power to the City of Calgary while reducing the autonomy of rural municipalities (Conrad, 2016). However, the MGA Review website (n.d.) noted that "[s]ome municipalities in the Calgary region have expressed concern over the voluntary nature of the Calgary Regional Partnership, particularly as it relates to their ability to implement the Calgary Metropolitan Plan and to coordinate land-use decisions and servicing in the region." Ultimately, the Government of Alberta implemented metropolitan planning for the Calgary region by passing the *Calgary Metropolitan Region Board Regulation* as part of the *Modernized Municipal Government Act* in October 2017 with the Regulation having become effective in January 2018.

The Regulation (2017) requires the Calgary Metropolitan Region Board (CMRB) establish a growth plan within 3 years of coming into force that must be reviewed at least once every ten years and a servicing plan that must be reviewed at least every 5 years. Membership on the Board was defined by the Province based on adjacencies with other municipalities with similar growth projections in an effort to reduce service gaps and enable integrated and efficient planning in the area (Alberta Municipal Affairs, n.d.). However, several towns and villages that exist within the boundaries of the rural municipalities will not

have direct membership as they do not meet the population threshold of 5,000 residents (Conrad, 2016). The population requirement responded to issues encountered by the Capital Region Board related to planning delays caused by smaller member municipalities in the Edmonton region (Proulx, 2016). The Regulation (2017) identifies ten municipalities with direct representation on the Board: Airdrie, Calgary, Chestermere, Cochrane, High River, the Municipal District of Foothills, Okotoks, Strathmore, Rocky View County, and a portion of Wheatland County. Those municipalities within the region that do not meet the population threshold must negotiate Intermunicipal Collaborative Frameworks with adjacent municipalities (City of Airdrie, 2017). This means that Black Diamond, Longview, and Turner Valley will create ICFs with the MD of Foothills; Beiseker, Crossfield and Irricana will create ICFs with Rocky View County; and Hussar, Standard, and Rockyford will create ICFs with Wheatland County.

The Regulation (2017) defines the decision-making process outlining that each municipality has one appointed councillor as representative on the board and each of those representatives has one vote. Board decisions require two-thirds support from the members representing at least two-thirds of the population in the Calgary metropolitan region. Further, the Board is mandated to endeavour towards consensus-based decision-making, promote long-term sustainability, ensure environmentally responsible land-use planning, manage growth and use land efficiently, coordinate infrastructure and service delivery, promote economic well-being, and establish the policies for public engagement in alignment with the powers outlined by the Act. The Regulation (2017) requires that the growth plan must include the “identification of agricultural lands” and “policies regarding the conservation of agricultural lands” (s.9) Alberta Municipal Affairs (n.d.) explains that once established, municipal plans, bylaws, and agreements will be required to align with the metropolitan

growth strategy, as well as the South Saskatchewan Regional Plan, as they are created or amended. Additionally, AMA has established that First Nations will be consulted on future growth plans, however, no part of the CMRB's strategy will impact treaty rights or traditional land uses.

The Calgary Metropolitan Region Board started meeting on a regular basis in the spring of 2018 (see: Calgary Metropolitan Region Board, n.d.). In the fall of 2018, the Board published an Interim Growth Plan for the region. The Interim Growth Plan stresses the intention to guide '*regionally significant*' (as formatted in original) land use, population growth, employment opportunities, and infrastructure planning, and will provide an opportunity to review the interim policies to inform the development of the official Growth Plan. Although the Regulation requires the identification and conservation of agricultural lands in the Growth Plan, the Interim Growth Plan does not meet this mandate. The intention of this thesis is to review the legislative framework and land use pressures in a subregion of the Calgary metropolitan area to help fill this gap in planning and inform metropolitan planning that includes farmland protection. The following section defines the subregion that will serve as the study area and is centered on the MD of Foothills.

1.5 Study area

The study area is defined as the Municipal District (MD) of Foothills and the urban municipalities with which it currently holds intermunicipal development plans (IDPs). These urban municipalities include the City of Calgary, the Towns of Black Diamond, High River, Okotoks, and Turner Valley, and the Village of Longview. The MD does not currently hold an IDP with Rocky View County. It does hold an IDP with Wheatland County, however, the area included in this IDP lies outside the area influenced by the Calgary Metropolitan Region

Board and therefore Wheatland County was not considered in the research. It should be noted that the MD also has IDPs with several rural municipalities to the south and is bordered by the Kananaskis Improvement District to the west; however these municipalities were excluded from the study area because they lie outside what the Government of Alberta has identified as the Calgary metropolitan region for the purposes of the CMRB. Having only mandated a portion of Wheatland County to participate in metropolitan planning reflected the stakeholder influence and elasticity of defining regional boundaries as mentioned in the literature. Likewise, the study area is defined based on specific goals and characteristics.

Planning regions are noted as being heterogeneous meaning that what works in one may not work in another (Bryant, Marois, Granjon, & Chahine, 2017). In this instance, the study area is intended to enable an in-depth review of policies, legislation, and competing land uses within the Calgary metropolitan region to inform more comprehensive metropolitan planning that ensures farmland protection. The study area has also been chosen because of the economic development and urban growth pressures on agricultural land in the MD of Foothills. Additionally, like many municipalities across the province, rural-urban based contentions have created regional planning difficulties making the Calgary Metropolitan Region Board a concern especially for rural municipalities like the MD of Foothills (See: Nicol & Nicol, 2015; Francis, 2009; High River Online, 2009). These characteristics and challenges provide an interesting and unique study area for exploring farmland protection.

1.5.1 MD of Foothills. As the major farmland holder and agricultural producer, the MD of Foothills serves as the focal point for the chosen study area to provide context to the overall study area. The Municipal District of Foothills is located immediately south of Calgary and surrounds the towns of Black Diamond, High River, Okotoks, and Turner Valley, the village of Longview, and Eden Valley First Nation (Figure 2). The MD is

bordered by five rural municipalities: Rocky View County, Wheatland County, the MD of Willow Creek, the MD of Ranchland, and Vulcan County, as well as the Tsuut'ina Nation to the north and the Kananaskis Improvement District to the west. Covering approximately 3,600 square kilometres, the MD of Foothills is serviced by two major north-south routes, Highway 2 and Highway 22 (Rise - Alberta Foothills, 2016, p. 5; MD of Foothills No. 31, 2017a). According to Alberta's Regional Dashboard, the MD of Foothills is a rural municipality with significant cropland acres and a comparatively large number of farms and cow-calf operations for Alberta while also having one of the highest commuter populations in the province (Government of Alberta, n.d.-b). The MD is also directly adjacent to Canada's third most populated city, Calgary, and surrounds Okotoks, one of the fastest growing municipalities in the country (Statistics Canada, 2017a). The unique features of the MD of Foothills and its neighbouring urban municipalities form the reasons for using this municipality as the case study site.

According to Statistics Canada, the population of the MD of Foothills was 22,766 in 2016, a 66% increase over the 1996 population of 13,714, while the total population of the MD of Foothills and the municipalities it surrounds more than doubled in the same period from 33,224 in 1996 to 70,797 in 2016 (Table 1). The total number of households increased in the MD of Foothills and all of the adjacent urban municipalities in the last twenty-years (Statistics Canada, 2017b). Current as of 2016, the MD supported 1,083 farms, 322 fewer than reported during the 2006 census and a 23% decrease in just ten years (Government of Alberta, n.d.; Alberta Agriculture and Rural Development, 2008).

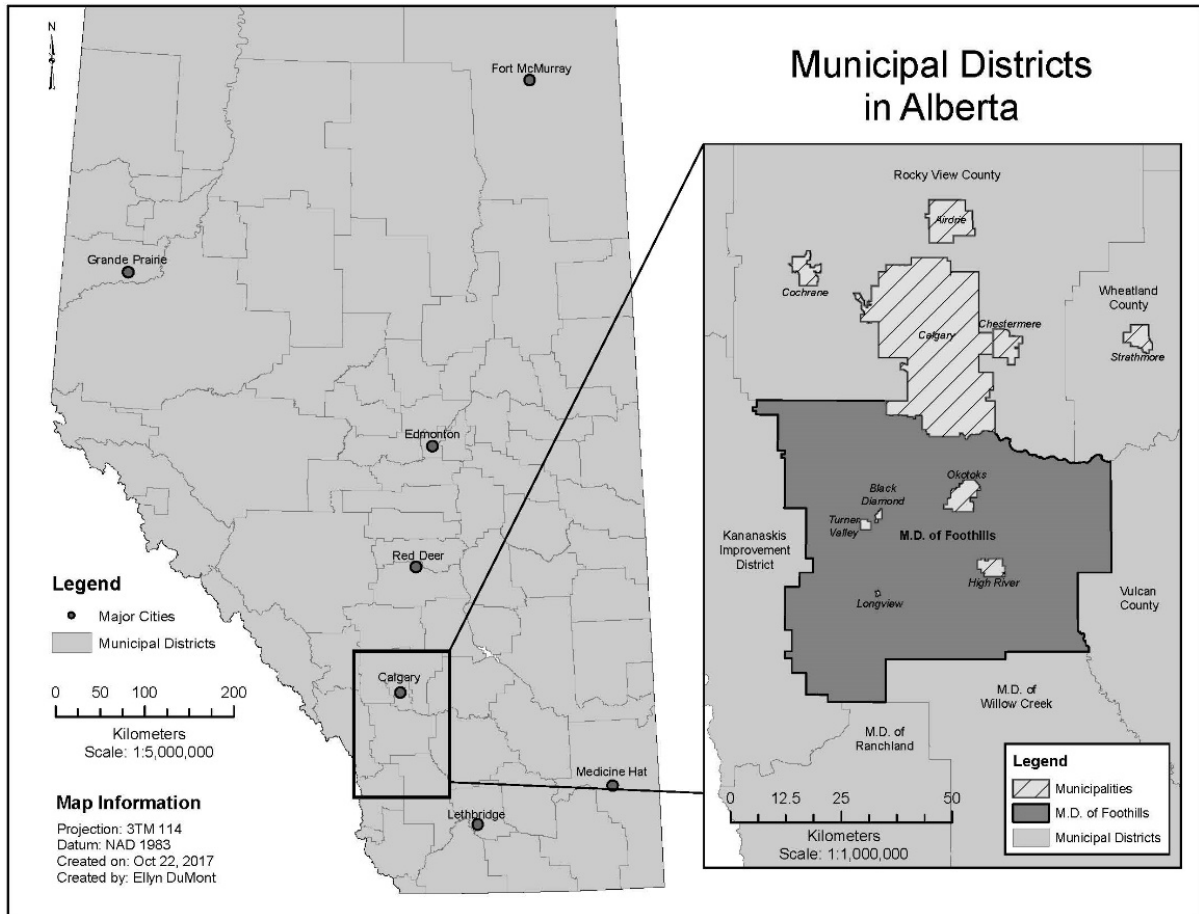


Figure 2: Municipal District of Foothills No. 31 and Surrounding Municipalities

The total land area of the MD of Foothills increased between 1996 and 2006 but decreased slightly between 2006 and 2016 while all the adjacent urban municipalities grew in the last ten-year period (Table 2). In 2010-2011, Calgary and High River formalized annexations of lands from the MD of Foothills, and Okotoks and High River both have ongoing applications for annexation (MD of Foothills No. 31, 2017b). In 2017, the MD of Foothills lost more than \$4 million dollars in tax revenue on abandoned oil and gas lands while the tax-base was split approximately 80-20 percent residential-industrial; however, municipal council hopes to move this closer to 60-40 percent in future to avoid straining residents (Conrad, 2017). The MD also has a significant number of ‘luxury homes’ on large parcels that appeal to those drawn both to the rural residential lifestyle within commuter

distance of Calgary and the opportunities for development (Patterson, 2014). The Highway 2A Corridor between Okotoks and High River covers 8,587 acres of privately-owned land and is slated as the primary location for industrial and commercial development to balance “environmental and social needs with the economic objective for the region” (MD of Foothills No. 31, 2017c). According to 2011 statistics, Alberta Agriculture and Rural Development (2014) reported a majority of farms in the MD of Foothills were cow-calf beef operations with other livestock, including goats, sheep, bison, llamas, alpacas, and horses, also making up a large portion of farming. Hay, grain, and oilseed production were also heavily represented. Few fruit and vegetable producing farms existed in the MD of Foothills, although the census division reported the highest number of greenhouse producers in any Alberta municipality. In 2011, over 100 million dollars’ worth of farm equipment was reported in the municipality and gross farm receipts totalled more than 236 million dollars. A significantly higher number of males to females were represented in the 1,765 farm operators who had an average age of 57 years. Alberta Agriculture and Rural Development reported a total of 1,138 labourers were paid on 322 farms in the MD and approximately half of all operators also performed some non-farm work.

The growth management strategy for the MD of Foothills, *Our Foothills, Our Future*, (2013) divides the municipality into five districts (Figure 3). These districts have historically supported ranching, farming, and natural resource extraction. While agriculture continues to feature prominently across much of the MD, small rural centres are no longer able to support agricultural service providers to the same extent and farm servicing businesses have declined in many of the hamlets and towns. Agriculture continues to dominate in the East District where farmland fragmentation has been limited, while the South Central District is facing significant development pressure despite farming and ranching still dominating land use.

Table 1										
<i>Municipal population and land area statistics 1996 – 2016</i>										
Municipality	1996 Census Population	1996 Land Area (km ²) ¹	2001 Census Population	2001 Land Area (km ²) ²	2006 Census Population	2006 Land Area (km ²) ³	2011 Census Population	2011 Land Area (km ²) ⁴	2016 Census Population	2016 Land Area (km ²) ⁵
Municipal District of Foothills	13,714	3,552.67	16,764	3,668.3	19,736	3,643.6	21,258	3,642.9	22,766	3,636.8
Black Diamond (town)	1,811	3.39	1,866	3.21	1,900	3.21	2,373	3.21	2,700	3.84
High River (town)	7,359	11.58	9,345	11.43	10,716	14.27	12,920	14.27	13,584	21.39
Longview (village)	303	1.04	300	1.09	300	1.09	307	1.09	307	1.10
Okotoks (town)	8,510	15.76	11,664	17.91	17,145	18.55	24,511	19.24	28,881	19.63
Turner Valley (town)	1,527	5.63	1,608	5.45	1,908	5.45	2,167	5.45	2,559	5.79
Calgary (city)	768,082	716.79	878,866	701.79	988,193	726.5	1,096,833	825.29	1,239,220	825.56
Based on Statistics Canada data:										
¹ Statistics Canada, Profile of Census Divisions and Subdivisions, 1996 Census: http://www12.statcan.ca/english/census96/data/profiles/Index-eng.cfm .										
² Statistics Canada, 2001 Community Profiles: http://www12.statcan.gc.ca/english/profil01/CP01/Index.cfm?Lang=E .										
³ Statistics Canada, 2006 Community Profiles: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E .										
⁴ Statistics Canada, Census Profile: http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E .										
⁵ Statistics Canada, Census Profile, 2016 Census: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E .										

Table 2			
<i>Municipal land area change over time (based on data from Statistics Canada)</i>			
Municipality	1996 Land Area (km ²)	2006 Land Area (km ²)	1996-2006 Percentage Change in Land Area (km ²)
Municipal District of Foothills No. 31	3,552.67	3,643.6	2.56%
Black Diamond (town)	3.39	3.21	-5.31%
High River (town)	11.58	14.27	23.23%
Longview (village)	1.04	1.09	4.81%
Okotoks (town)	15.76	18.55	17.7%
Turner Valley (town)	5.63	5.45	-3.2%
Calgary (city)	716.79	726.5	1.35%
Municipality	2006 Land Area (km ²)	2016 Land Area (km ²)	2006-2016 Percentage Change in Land Area (km ²)
Municipal District of Foothills No. 31	3,643.6	3,636.8	-0.19%
Black Diamond (town)	3.21	3.84	19.63%
High River (town)	14.27	21.39	49.9%
Longview (village)	1.09	1.10	0.92%
Okotoks (town)	18.55	19.63	5.82%
Turner Valley (town)	5.45	5.79	6.24%
Calgary (city)	726.5	825.56	8.27%
Municipality	1996 Land Area (km ²)	2016 Land Area (km ²)	1996-2016 Percentage Change in Land Area (km ²)
Municipal District of Foothills No. 31	3,552.67	3,636.8	2.36%
Black Diamond (town)	3.39	3.84	13.27%
High River (town)	11.58	21.39	84.72%
Longview (village)	1.04	1.10	5.77%
Okotoks (town)	15.76	19.63	24.56%
Turner Valley (town)	5.63	5.79	2.84%
Calgary (city)	716.79	825.56	15.17%
Based on Statistics Canada data.			

The South West District is the least fragmented due to the multigenerational landowners and lease owners that continue to ranch along the eastern slopes of the Rockies (MD of Foothills No. 31, 2013). As of 2011, there were 97 leased operations in the MD of Foothills covering over 189,000 acres (Alberta Agriculture and Rural Development, 2014).

The growth management strategy for the MD of Foothills (2013) describes the Northwest District as having experienced a significant amount of country residential development with agriculture and natural resource extraction interspersed. Although

development has been relatively heavy in this district, dense forest and rolling foothills have masked the fragmentation while also maintaining important wildlife corridors. The MD of Foothills growth management strategy further notes that residents of the Northwest District support little to no further development valuing the scenic rural character and mountain vistas afforded in the area. The Central District is the most developed and includes the towns of Okotoks and High River and the Highway 2A corridor where industrial development in the MD is meant to be focused in future (MD of Foothills No. 31, 2013).

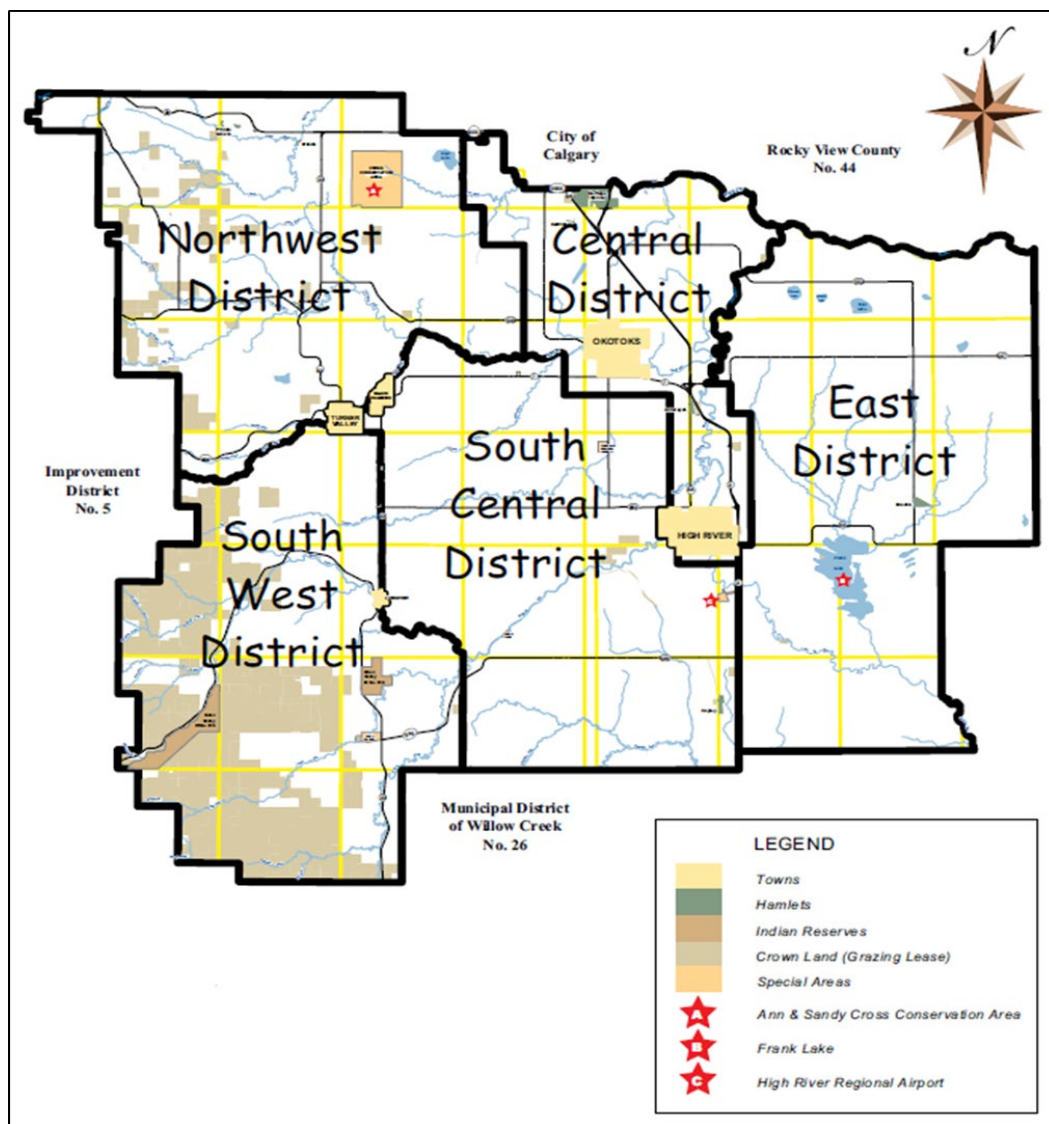


Figure 3: Sub-Districts of the Municipal District of Foothills (MD of Foothills No. 31, 2013)

Using the MD of Foothills as a focal point for the research, the following sections will further support answering the research questions by determining the strength of the local legislative framework for farmland protection and identifying competing land uses in the study area to inform metropolitan planning. The first section has introduced the research objectives and case study site. The second section is a literature review that outlines metropolitan planning, plan evaluation methods, and farmland protection across Canada. Section three outlines the methods and data collection procedures. A summary of the results follows in section four. Section five provides a discussion of the findings with section six offering final conclusions.

2. Literature Review

The purpose of this literature review is to frame the research and provide opportunities to view the study area in context to help inform metropolitan land use planning that supports farmland protection. The literature review focuses on three topics to support answering the research questions. The first topic reviews regional and metropolitan planning approaches in Canada to provide perspective for understanding mandated metropolitan planning in the study area. The second topic outlines plan evaluation methods for assessing the extent of farmland protection and provide justification for adjudicating the legislative framework. The third topic summarizes metropolitan planning in Canadian city-regions to highlight the capacity for farmland protection under different models. Each topic will be presented below followed by a summary of the information and how it guides the research and supports informing farmland protection in metropolitan planning.

2.1 Metropolitan Planning in Canada

Metropolitan planning has been defined as a localized form of regional planning (Hodge, 2002). Focused around a city-centre, metropolitan planning has aimed to resolve competition between agricultural land and urban growth without compromising ecological services, recreational amenities, or economic opportunities (Davies, 1962). Gertler (1972) identified two urban-centred metropolitan regions in Canada: the single-centred region focussed around a single major municipality and many-centred regions focussed around a group of urban centres and the surrounding hinterlands. Like all planning regions, the metropolitan planning region has often been flexible with boundaries defined and redefined by stakeholders to achieve economic, social, political, and environmental goals (see: Glasson and Marshall, 2007; Hodge, Hall, & Robinson 2017; Hall, 1970; Paasi, 2009). Historically,

isolated municipalities could be managed by independent administrations; however, as transportation, communication, and urbanization increased, metropolitan regions emerged to address the complex governance requirements of urban centres whose reach had started to extend beyond previously sharp boundaries (Hamilton, 2013; Davies, 1962). Metropolitan planning in Canada has responded to a number of regional planning issues and priorities and has been both mandated by provinces through top-down legislation to increase efficiency and introduced through bottom-up initiatives driven by neighbouring municipalities to address local stressors. Issues and priorities within metropolitan regions as well as several governance models outlined in the current literature are presented in the following sections to offer examples to inform the research questions.

2.1.1 Issues and priorities. The literature has outlined several issues and priorities within metropolitan regional planning related to social, economic, political, and environmental interests. The 1961 *Resources for Tomorrow Volume 3* conference proceedings, for example, suggested that issues and priorities related to natural and political boundaries have not necessarily aligned in regional planning and have included a broad range of competing priorities that equally apply to metropolitan planning. The priorities identified included economic development, recreation, and natural resource management of water, oil and gas, and forestry materials. The conference also noted issues such as the impacts on wildlife and fisheries; capacity to maintain agricultural lands; opportunities for employment; capital investment requirements; and methods of governance and administration. Further, the conference highlighted a need for more comprehensive development programs in Canada that considered regions within their wider local, regional, provincial, and federal context.

Bassand and Kübler (2001, p.2) also provided four characteristics of metropolitan regions that might similarly be considered issues with capacity to influence planning

priorities. First, that urban sprawl has blurred the boundaries of cities and rural areas as development overflows into suburban areas. Second, that space specialization has facilitated social segregation by facilitating single-use zones including luxury neighbourhoods, distressed neighbourhoods, and business districts. Third, increased movement of people and goods has required supporting and integrated infrastructure. Fourth, that local-global integration has become necessary to ensure metropolitan competitiveness.

Specific to Alberta, recent concerns have focused on the economic, social, and environmental impacts of farmland conversion (Qiu, Laliberté, Swallow, & Jeffrey, 2015). As noted by Spaling and Wood (1998), connected to these issues and priorities are the actors involved in decision-making:

Land use politics in the rural-urban fringe often result in conflicting opinions among planners, developers, farmers and rural residents. A geographic focus of these conflicts is the conversion of agricultural land, particularly prime farmland, as urban centers expand. Wherever prime farmland is being converted to urban or even exurban uses, there are continuing conflicts.

For example, many cities and the adjacent municipalities have lacked coordinated regional growth management strategies to support effective metropolitan development patterns (Hodge, 1998; Heywood, 2006). Contributing to these coordination issues has been a necessity to prioritize farmland as a public good while also balancing individual property rights (Caldwell & Hilts, 2005). Farmland has been seen by landowners as both an investment and retirement fund that has the opportunity of return through rental or sale (Burton, Rivas, Hendricks, Graham, & Schurle, 2006). However, compensation through government incentives to retain land in agricultural uses has generally not been able to compete with compensation offered by developers (Daniels, 1991; see also: Hellerstein et al., 2002). When sold to developers with non-agricultural interests, maintaining additional plots

in agriculture has been found to be more difficult as fragmentation disrupts access to agricultural services (see: Tomalty, 2015; Shi, Phipps, and Colyer, 1997). Originating from the need to curb sporadic growth that has been difficult, if not impossible to service adequately, metropolitan planning has aimed to balance some of these issues by representing the needs of both the metropolitan region and the individual municipalities (Hodge, Hall, & Robinson, 2017).

Having outlined some of the issues and priorities impacting metropolitan planning, the literature review now turns to metropolitan planning models, planning evaluation approaches, and farmland protection in regions across Canada to support the methods and provide background for the results to aid in answering the research question.

2.1.2 Governance structures. As mentioned, recent amendments to Alberta's Municipal Government Act have changed the way planning occurs in the Calgary metropolitan region. As will be seen below, several metropolitan planning approaches have been used in Canada with different outcomes. Awareness of these models will provide background for how the metropolitan planning might be organized to support farmland protection especially as the Calgary region moves from a voluntary model to a mandated metropolitan planning approach.

The *Cities for Citizens: Improving Metropolitan Governance* report by the Organization for Economic Cooperation and Development (2001) notes that metropolitan planning should be specifically tailored to the goals of the respective region and should be democratic, participatory, adaptable, accountable, and transparent to achieve social, economic, and environmental efficiency and sustainability. Canadian metropolitan planning organizational arrangements have varied across the country reflecting each region's unique characteristics and priorities (Hodge, 2002). However, a metropolitan approach to planning

has been expected to increase support for agriculture in the rural-urban fringe area by enabling coordination of land uses (Bryant & Johnston, 1992).

Andrew Sancton (2005) identified five models of metropolitan governance: annexation and mergers that create a single municipal government for the metropolitan, two-tier metropolitan governance, amalgamated two-tier metropolitan governments into a single municipality, demergers, and flexible and innovative structures. Each governance model is discussed below with supporting literature.

Single municipal government. Sancton (2005) has provided amalgamation and successive annexation as means for forming a single municipal government for managing metropolitan decision-making using the Halifax Metropolitan Region (HMR) and Calgary as respective examples of each process. In the case of the HMR, rural-urban tensions were present with dissatisfaction higher among rural residents despite tax revenue moving from urban to rural areas following the amalgamation (Dann, 2004, as cited in Sancton, 2005).

Miller (2016) and Sancton (2005) noted the policy approach of the City of Calgary had been to annex three decades worth of contiguous lands for development opportunities. Although the City presented this as an opportunity to prevent urban sprawl, Miller (2016) explained that this was not the outcome with low density expansion continuing. While Sancton (2005) noted that merging urban, suburban, and rural areas together under a single authority had often been unpopular and accompanied with ongoing pressure for decentralized decision-making.

Two-tier metropolitan governance. Although contentious, the provinces of Ontario and Quebec had imposed metropolitan planning in the Toronto and Montreal regions respectively to improve infrastructure delivery and create cost savings (Miller, 2016). At

different times this form of metropolitan governance has also existed in areas of Manitoba and British Columbia (Sancton, 2005).

Sancton (2005) explained the two-tier metropolitan structure as functioning similarly to other federated systems where the municipal authority has retained autonomy over local decision-making related to zoning and recreational facilities, while the metropolitan authority has provided solutions to metropolitan-wide land use planning and intermunicipal infrastructure. Two-tiered metropolitan governance bodies have been appointed out of local councils or directly elected, and, Sancton noted, have often been fractious with accusations of authorities not fulfilling their roles or overstepping their limits of influence.

Amalgamated two-tier metropolitan governance. Sancton (2005) stated that although frequently driven by a political desire to reduce costs, the amalgamations of two-tiered metropolitans into single metropolitan were rarely based on metropolitan governance and often unpopular in suburban and rural areas. In the case of Ottawa, rural areas were granted disproportionately higher representation in the amalgamated metropolitan region which the Province of Ontario argued was required due to the unique interests and needs of rural municipalities and small towns. However, Sancton questioned why the amalgamation was necessary at all if this was the case suggesting that the rural areas should have retained local self-government.

Demergers. Sancton (2005) referred to demergers in Manitoba and Quebec. In 1991, a rural portion of Winnipeg's unicity was permitted to fully secede. Later in Quebec, the provincial government established a process to permit demergers if elector support reached defined thresholds. Demerged municipalities in Quebec would have to participate in an agglomerated council that would retain powers of the previous amalgamated city with

zoning, some services, and property taxation devolved to the local authority and the central city mayor holding veto power over all proposals to the agglomeration.

Flexible and innovative metropolitan governance. In British Columbia, regional districts were established in the 1960s to facilitate intermunicipal cooperation but not create an additional level of government with two providing metropolitan governance to the Vancouver and Victoria areas (Sancton, 2005).

As explained by Brunet-Jailly and Arcand (2016), Metro Vancouver has utilized indirect democratic representation characterized by the appointment of municipally elected representatives to a regional board. Originally negotiated over fifty years ago, Metro Vancouver has served a federation of local municipalities through a board with forty members representing twenty-four local authorities with a voting structure weighted proportional to the local municipal population. Together the board shared 136 votes in 2014 and has been expanding responsibilities from water, sewer, and waste to include housing, regional planning, air quality, agriculture, health services, emergency services, regional parks, and collaboration. Brunet-Jailly and Arcand concluded that the Metro Vancouver approach has not provided an improved space for democratic engagement or solidarity, rather it has created a forum for collaboration when issues have been addressed more efficiently through cooperation. Similar institutions were created in Quebec in 2000 for Montreal and Quebec City to manage regional planning, waste, regional parks, public transportation and housing, economic development, and regional infrastructure (Sancton, 2005).

Voluntary metropolitan planning. One additional metropolitan governance model has been achieved through voluntary, ground-up development and participation. Voluntary metropolitan planning approaches have offered a locally-driven model providing a sense of autonomy to partners; however, they have been identified as potentially ineffective when it

comes to enforcing plans because member municipalities have had the capacity to refuse to implement the strategies or withdraw from the planning body (Norman, 2012). Louis (1998) argued that where members of regional boards were appointed rather than elected, accountability to residents has the potential to be weaker and unbiased support for regional decision-making may be more difficult. Louis offered that the legitimacy of regional board governance could be improved through the direct election of members, a single vote per municipality on advisory concerns, weighted voting for decision-making, and the inclusion of members at large. Dunmade (2014) argued that policies at the provincial and federal level that incentivized collaboration were necessary for the success of voluntary rural-urban partnerships.

2.2 Plan Evaluation

A variety of approaches have been used to evaluate land use policies at different stages with assessments occurring while plans were in development, during the implementation process, and after they have been executed (Talen, 1996). Faludi (2000) identified plans as falling into two categories: project and strategic. A project plan was defined as the “end-state of a material object and the measures needed to achieve that state” while a strategic plan was recognized as a “momentary record of agreements” that served as reference to coordinate multiple projects and actors in a continuous process toward an undefined future state (p. 303). Therefore, according to Faludi, planning evaluation was also divided into two categories that attempted to determine the extent to which a plan achieved its stated objectives or provided a framework for informing future decision-making. Norton (2008) added ‘development management’ as a third category of planning evaluation to

measure the extent to which growth has been managed. Connell and Daoust-Filiatrault (2018) contributed plan quality as an additional subset of plan evaluation.

Evaluating plans has also served to inform the planning cycle by identifying areas for improvement and supporting iterative adjustments to processes to better achieve intended outcomes (Oliveira & Pinho, 2010). Baer (1997) noted that appropriate evaluation techniques depended on the purpose and scope of plans (as vision, blueprint, remedy, process, for example) and when the plans were evaluated (during the planning process, at implementation, following implementation). Lyles, Berke, and Smith (2016) noted that plan evaluation has often been based on ‘conformance,’ whether a plan has been implemented as proposed and ‘performance,’ whether a plan has induced the outcome, and add ‘influence,’ whether a plan is used in decision-making. Based on their review of municipal plans from Tennessee and Wisconsin, Bunnell and Jepson Jr. (2011), cautiously recommended that planning mandates not be so restrictive as to limit the creativity and ingenuity of planners while also suggesting that any plan has likely been better than no plan.

Connell and Daoust-Filiatrault (2018) developed an evaluation protocol for measuring the quality of agricultural land use planning frameworks in which they identified four complementary and integrated criteria for assessment: stability, uncertainty, integration, and flexibility. This form of evaluation, they explained, considers the policy focus or strength as compared to other plan evaluation methods that assessed the comprehensiveness of documents (Lyles & Stevens, 2014) and the persuasiveness of the discourse included (Norton, 2008). Stability required enforceable, rather than aspirational, policy that would be upheld in court and has been resistant to change in response to changing politics. Connell and Daoust-Filiatrault argued that uncertainty has been minimized by creating consistency across documents and clarity around authorities and responsibilities while ensuring that plan

ambiguities have been reduced. Integration across jurisdictions has helped to support consistent representation of public priorities at and across local-level activities. Finally, flexibility, they explained, has balanced the need to maximize stability and minimize uncertainty while integrating plans across jurisdictions by providing opportunities for application in different contexts. The work of Connell and Daoust-Filiatrault informed the study area analysis and was chosen as a guiding method because of the new planning requirements in the region. The evaluation method measured the efficacy of planning documents to determine the extent of their capacity to achieve the intended results. Evaluating the strength of the current legislative framework in this way provided an opportunity to inform planning by identifying deficiencies that might be addressed in the mandated metropolitan growth strategy and intermunicipal collaborative frameworks. Additionally, the method supported the possibility of a future study to determine whether the amended planning requirements influenced the legislative framework's capacity to protect farmland.

2.3 Farmland Protection in Canada

As noted above, the efficacy of local legislative frameworks for protecting farmland has been evaluated in case studies across Canada. Although legislation and policies have changed and can be expected to change in future with successive governments, existing reports provided an overview of plan quality across the country against which future policy and legislation might build. Connell, Curran and Gimenez (2018) noted the difference between the concepts of 'protection' and 'preservation' in relation to farmland. Protection referred to public land use policy and legislation that governs the right to exploit property including restricting use to ensure agricultural availability of land. Preservation included

broader programs for maintaining the productivity of agricultural land through environmental practices that supported issues like soil conservation, and could be achieved through land trusts and easements that restricted the use of agricultural land. As noted by Caldwell, Wilton, and Proctor (2017), farmland preservation has varied across Canadian provinces influenced by different issues. Quebec, the authors maintained, has provided broad provincial policies while also focusing on peri-urban areas; Ontario has sought to balance farmland as a public good and as privately held property; while British Columbia's bold Agricultural Land Reserve (ALR) program has been successful in curbing farmland loss, reducing urban sprawl, and building public support for farmland preservation. However, in summarizing Troughton's (2017) chapter in the same publication, Caldwell, Wilton, and Proctor observed that the loss of farmers was perhaps more significant than the loss of farmland and therefore increasing the economic viability of the agricultural industry might provide a more valuable focus than targeted farmland preservation in reducing farmland loss. Although many factors contribute to farmland protection, the purpose of this thesis has been to consider policy and legislation in farmland protection.

2.3.1. UNBC AgLUP Project findings. Legislative framework evaluations conducted in locations across Canada found varying levels of efficacy for protecting farmland contained within local planning policies and legislations from very weak to very strong as summarized below in Table 3. Although the province's planning documents have since been amended, Prince Edward Island was found to have a very weak legislative framework. The very weak efficacy rating was based on policy and legislation that protected individual ownership over public interests with limited planning in place across the province.

Alberta and New Brunswick were considered to have weak legislative frameworks due to the sparseness of legislation and policy for protecting farmland and the

decentralization of planning responsibilities that rested with municipalities. In addition, Alberta's legislative framework was noted as having weak language and favouring individual rights in policy that was intended only for guidance purposes. Recent changes to Alberta's MGA may have future potential to improve the efficacy of local legislative frameworks by requiring additional intermunicipal planning documents and metropolitan growth strategies for the Edmonton and Calgary regions.

Moderate legislative frameworks were found in Manitoba, Newfoundland, Nova Scotia, and Saskatchewan where provincial documents outlined land use planning requirements with specific support for agricultural lands present to varying degrees. However, enforcement of planning requirements varied within each province leading to the moderate evaluation.

Very strong legislative frameworks were identified for British Columbia, Ontario, and Quebec owing to the comprehensiveness of provincial planning policies and legislation that featured strong language, could stand up to court challenge, prevented farmland conversion, and were supported by quasi-judicial boards.

As demonstrated in the results of the UNBC AgLUP Project, the efficacy of legislative frameworks to protect farmland varied based on local, regional, and provincial policies and legislation. Farmland protection in several metropolitan regions in Alberta and Canada will be discussed further in the following sections.

2.3.2 Farmland in Alberta's metropolitan regions. Agricultural lands have faced a number of competing uses and demands in southern Alberta (Bentley, 2016). Competition has been observed between agriculture, conservation, and economics, in the Calgary region, influenced by differences in cultural values held by farmers, ranchers, and country residential landowners (Benoit, Johnston, MacLachlan, & Ramsey, 2018). Farmland fragmentation has

been observed across the province evidenced by an increase in the number of agricultural plots and a decrease in farm size which has been especially clear in the Edmonton-Calgary corridor (Qiu, Laliberté, Swallow, & Jeffrey, 2015; Alberta Agriculture and Forestry, 2016a). Land use stresses in the province have also been heightened by the oil and gas economy which has paralleled urban growth and supported rapid population growth particularly in the Calgary and Edmonton metropolitan areas (Nicol & Nicol, 2015; Miller & Smart, 2011). Martellozo, et al. (2015) found a significant amount of agriculture on good and very-good soil in the Calgary-Edmonton corridor was lost to urban growth between 1988 and 2010. Although, the authors results revealed a net gain in agricultural lands, the increase reflected conversion of lower soil quality lands as urban expansion displaced agricultural uses. To curb the loss of Alberta's most productive agricultural lands Martellozo, et al., recommended comprehensive regional planning especially for these metropolitan regions and the corridor that connects them. Features of the current state of farmland will be presented in further detail for each of Alberta's two largest metropolitan areas, Calgary and Edmonton, in the sections that follow.

Calgary. As mentioned earlier, Sancton (2005) identified the City of Calgary's annexation model as representing a single municipality method of metropolitan planning governance. This has been reflected in the City of Calgary's growth management strategy which has included securing a 30-year supply of developable land through annexation with the aim of reducing sprawl and disorganized development while increasing density compared to the rural residential development occurring beyond its borders (City of Calgary, 2004, as cited in Sancton, 2005). Annexations to support the goal of orderly development have consisted largely of agricultural lands adjacent to the city (Conger, Dahlby, & McMillan, 2016). Calgary's municipal and intermunicipal planning documents also affirmed goals of

limiting premature subdivision of active farmland and scattered development beyond the city that would be difficult to service but did not explicitly indicate the protection of farmland from future conversion (see, for example: Calgary, 2009; Calgary-MD of Foothills, 2017). Similar policies were also included in the Calgary Metropolitan Plan and created anxieties among the adjacent rural municipalities about imposed restrictions on their residents' land use interests (Taylor, Burchfield, & Kramer, 2014). Although the Calgary Regional Partnership had attempted more collaborative metropolitan planning in developing the Calgary Metropolitan Plan (CMP), lack of consensus on the policies, and their impact on municipal autonomy and landowners' rights, resulted in the rural municipalities withdrawing from the membership and declining to endorse the Plan leaving only scattered urban municipalities (Nicol & Nicol, 2015).

Irrespective of the resulting gap created by the withdrawal of rural partners, farmland protection seemed to be lacking in the CMP with agriculture mainly identified in the document in the context of urban economic opportunity and rural development (see: Calgary Regional Partnership, 2014). A similar lack of policy consensus, with potential impact on farmland protection, was identified by Benoit (2016) within two of the metropolitan region's rural municipalities, the MD of Foothills and Rocky View County. Benoit found that conflict persisted "between agriculture and conservation goals, between private property rights and the public good, and between the degree of public acceptance for voluntary and market-based, versus regulatory approaches to land stewardship" (p. 177) and recommended a mixed policy approach to land use planning to balance these interests. Other researchers have suggested increased densification within Calgary to limit sprawl and thereby protect farmland by reducing its conversion to urban land uses (see: Haarsma & Qiu, 2017; Wang & Qiu, 2017). Outside the city, density of residential development in the MD of Foothills has

decreased with distance from Calgary and Highway 2 and has been found to be even further reduced in rural municipalities at greater distances (Duke, Quinn, Butts, Lee-Ndugga, & Wilkie, 2003). Intensification of development in the city could reasonably be expected to provide some level of farmland protection within the Calgary metropolitan region, at least within the areas directly adjacent to the city.

Restricting future development to protect agricultural lands through regulation, however, has held potential to inflict opportunity costs disproportionately against rural municipalities that might otherwise gain revenue from increased property tax and associated development permits (See: Naidoo et al., 2006; Wang, 2016). Overall, the literature has suggested that the City's identified planning objectives aligned with farmland protection while the rural municipalities' view on planning focused more on individual property rights suggesting increased risk of support for scattered development that would further fragment agricultural lands in the Calgary metropolitan region. Although the single municipality approach to metropolitan planning has been straightforward, especially in the absence of competing urban municipalities, annexation battles have occurred with pressure for autonomy likely to remain in adjacent urban and rural municipalities (Sancton, 2005).

Edmonton. In 2008, the Capital Region Board was established by the Province to create an integrated growth plan for 24 municipalities in the metropolitan region (Wang, 2015).

Following the latest revisions to Alberta's MGA, the Capital Region Board has been renamed the Edmonton Metropolitan Region Board, membership has been reduced to 13 regional municipalities (reflecting the recently introduced population threshold for membership of 5,000 residents), and the organization's mandate has been expanded to include the development of a servicing plan (Edmonton Metropolitan Region Board, n.d.). Like Calgary, Spaling and Wood (1998) noted, Edmonton had used annexation of large sections of

agricultural land to control urban growth and development immediately outside the city's borders. Spaling and Wood further explained that, although Edmonton recognized the value of the land for agricultural production, it was only a temporary use that would allow for future contiguous urban development. However, under the Edmonton Metropolitan Region Growth Plan that was approved by the Province in October 2017, agriculture has featured as one of six key policy areas and has been fully integrated with the other five policies. Agriculture has been recognized throughout the Plan as an economic development opportunity and ecological service provider, as needing adequate transportation routes, and as being vulnerable to urban sprawl and uncoordinated growth that has required additional infrastructure corridors further fragmenting farmland (see: Edmonton Metropolitan Region Board, 2017). Calgary and Edmonton had pursued similar planning approaches focusing on annexation to support orderly urban growth before being mandated to participate in metropolitan planning by the Government of Alberta. The full impact of this shift on farmland remains to be seen, but several examples from other metropolitan regions in Canada have provided some insight into what might be expected in the revised planning model.

2.3.3 Farmland in Canada's metropolitan regions. Examples of metropolitan planning intended to support economic development while managing urban growth and protecting farmland have been explored across Canada. Several sites have provided parallels to the study area with agricultural land uses influenced by adjacent urban centres. These examples have offered some insight into metropolitan planning that might inform similar activities in the Calgary region. The case studies of most interest included the Greater Golden Horseshoe of Toronto, the Vancouver metropolitan area, Corman Park that surrounds Saskatoon, and the City of Brandon.

Table 3			
<i>Efficacy of provincial legislative frameworks (as adapted by the author from reports of the UNBC AgLUP Project)</i>			
Province	Efficacy at evaluation date	Strengths	Weaknesses
Prince Edward Island	Very weak (n.d.)	<ul style="list-style-type: none"> - Task force had been established on land use policy to make recommendations for farmland protection - Right to farm legislation - Limits on private and corporate ownership to encourage stewardship 	<ul style="list-style-type: none"> - Minimal planning existed across the province - Municipal plans and zoning bylaws sparse with decision-making resting with ministers - Protection of private rights over public interests
Alberta	Weak (2015)	<ul style="list-style-type: none"> - Right to farm act 	<ul style="list-style-type: none"> - Farmland protected in policy only - Municipalities responsibility for planning; limited provincial oversight - Weak language - Policy for guidance only - Support for individual rights
New Brunswick	Weak (n.d.)	<ul style="list-style-type: none"> - Provincial act for farmland protection 	<ul style="list-style-type: none"> - No provincial-level policy; responsibility for farmland protection rested with municipalities - Limited provisions for preventing encroachment onto farmland
Manitoba	Moderate (2016)	<ul style="list-style-type: none"> - Policies specific to farmland protection and supporting livestock operations - Other policies directed development away from agricultural areas 	<ul style="list-style-type: none"> - Lacked land reserves - Decisions vulnerable to political whims - Agriculture omitted as resource - Other land uses were able to take precedence over agriculture - Somewhat limited integration between local and provincial policy
Newfoundland	Moderate (n.d.)	<ul style="list-style-type: none"> - Established agricultural zones - Planning act established regions, supported municipal planning, had potential to support agriculture - Provincial agency to support agriculture - Ministerial review was required for regional and municipal plans - Aspirational policies - Committee for coordinating resource development 	<ul style="list-style-type: none"> - Agricultural zones identified however only a limited number had been approved

Table 3			
<i>Efficacy of provincial legislative frameworks (as adapted by the author from reports of the UNBC AgLUP Project)</i>			
Province	Efficacy at evaluation date	Strengths	Weaknesses
Nova Scotia	Moderate (2016)	<ul style="list-style-type: none"> - Guiding principles to support land use planning decisions 	<ul style="list-style-type: none"> - Policy statements focused more on food industry than farmland protection - Enforceable statements only applied to municipalities with development plans - Municipal development plans only addressed certain issues and did not cover the whole municipality - Conditional language that lacked clarity - Some rural municipalities seemed to have avoid agricultural land use planning - Consequences for nonconformance with provincial planning principles were weak
Saskatchewan	Moderate (2016)	<ul style="list-style-type: none"> - Provincial oversight specific to agriculture - Policies to support prevention of premature conversion of farmlands, retention of quarter-sections, encourage consideration of quality of farmlands in decision-making - Consistencies required between local and provincial documents - Central approval authority for statutory plans 	<ul style="list-style-type: none"> - Limited reference to agriculture and value-added agri-business in provincial documents - Policy with focus on growth and development that did not consider agriculture
British Columbia	Very strong (2015)	<ul style="list-style-type: none"> - Agriculture-specific legislation - Agricultural land reserves - Quasi-judicial board including mandate for farmland protection - Regionally-based decision-making - Municipal planning regulations that include provisions for agriculture - Integration with provincial legislation - Right to farm act 	<ul style="list-style-type: none"> - Omission of regulations to address foreign ownership

Table 3			
<i>Efficacy of provincial legislative frameworks (as adapted by the author from reports of the UNBC AgLUP Project)</i>			
Province	Efficacy at evaluation date	Strengths	Weaknesses
Ontario	Very strong (2015)	<ul style="list-style-type: none"> - Strong, clear language - Documents hold up to court challenge and supported local planners - Legislative documents could not be easily changed - Reluctance towards conversion when future restoration infeasible - Procedures for conflict resolution - Regular review - Quasi-judicial board to support decision-making 	<ul style="list-style-type: none"> - Non-farm uses permitted - Opportunities for conflicts between planning authorities
Quebec	Very strong (2015)	<ul style="list-style-type: none"> - Act protected farmland supported by quasi-judicial board - Approval required by tribunal before conversion permitted - Provincial ministry responsible for prioritizing agricultural land and development to ensure economic vitality - Plans required to conform to ministry and could be amended by ministry, if necessary - Centralized decision-making - Municipal regional counties required to have plans for agricultural zones - Protecting farmland as a public priority - Limited regional and local-level decision-making related to farmland 	<ul style="list-style-type: none"> - Rural development limited by restrictive nature of documents

Toronto, Ontario. The aim of the Greater Golden Horseshoe that was developed around Toronto and has formed part of Ontario's Greenbelt, has been to protect farmland in the metropolitan region from urban development (Pond, 2009). The region's large population and economic significance led the Province of Ontario to develop a plan for the Greater Golden Horseshoe. A legislative framework that includes the *Places to Grow Act* and the *Growth Plan for the Greater Golden Horseshoe* has encouraged densification and directed urban growth in the Greater Golden Horseshoe (Lehrer & Wieditz, 2009). Although it has outlined opportunities to protect agricultural lands, farmers were troubled by the plan viewing it as restrictive to agricultural operations and speculative land economies that had the potential for revenue generation (Cadieux, Taylor, & Bunce, 2013; Caldwell & Hilts, 2005). Tomalty (2015) has noted leap-frog development has also been observed as a challenge in the region; resulting from land speculation by developers and municipal pursuits for increasing tax revenue, sprawl has occurred just beyond the boundaries of the greenbelt on vulnerable agricultural lands. Overall, Epp, Caldwell, and Bryant (2019) found that although farmland continues to be lost in the region, development has densified and has started occurring contiguous to urban centres achieving a robust approach to farmland protection that has included slowing the conversion of farmland to non-agricultural uses (see also: Taylor, 2010). As noted by Sancton (2005), Toronto's metropolitan approach had reflected a two-tier model of governance with both municipal and regional decision-making levels present. As of 1998, Toronto has been governed as a single amalgamated city surrounded by four regional municipalities as upper tier authorities to 24 additional municipalities (Williams, 1999). Both models offer opportunities to inform metropolitan planning in the Calgary region.

Vancouver, British Columbia. The Vancouver metropolitan region has a long history of collaborative regional planning between municipalities driven by citizens' groups (Taylor,

2010). In the 1970s, British Columbia responded to sprawling metropolitan growth by establishing the Agricultural Land Reserve policy which had been intended to preserve farmland but became an effective urban growth boundary (Smith & Haid, 2004). The growth strategy for the region, *Metro Vancouver 2040: Shaping our Future* provides a long-term growth strategy for the signatory municipalities outlining agricultural protections that specifically support food production (Greater Vancouver Regional District, 2010). Abbott (2012) has explained, that in response to increasing urban growth, the Vancouver metropolitan region municipalities identified areas that would be preserved indefinitely with the intention of only allowing growth in the leftover areas which the Greater Vancouver Regional District inventoried and mapped for the region creating the Green Zone. Abbott has further noted, that because the municipalities were involved in defining the Green Zone they were more accepting of the resulting policies. The Agricultural Land Reserve policy has promoted growth containment and intensification in Vancouver, especially compared to Calgary and Toronto which have had only temporary limits on continued outward expansion (Taylor & Burchfield, 2010; Smart Growth BC, 2002). However, Berelowitz (2005) has noted that several loop-holes exist within the ALR that may permit surrounding municipalities to erode the agricultural lands outside Vancouver potentially impacting the city's balance of urban and environmental amenities. Sancton (2005) has identified the Vancouver region's method for metropolitan planning as flexible and innovative. Although the Calgary region had been less successful in more flexible and innovative attempts at metropolitan planning through the Calgary Regional Partnership, opportunities for participation that empower municipalities might be mirrored to increase the likelihood of cooperation and conformance with decisions.

Corman Park, Saskatchewan. The Rural Municipality of Corman Park and the City of Saskatoon, which it surrounds, have constituted the Corman Park – Saskatoon Planning District and have held membership on the Saskatoon North Partnership for Growth (Corman Park - Saskatoon Planning District, 2017). The Corman Park-Saskatoon Planning District has had a long history of planning for the Regional Municipality of Corman Park and the city of Saskatoon it surrounds with the first zoning bylaw adopted in 1956 (Corman Park, n.d.). A draft regional plan was endorsed in principle in September 2017 by the five members of the Saskatoon North Partnership for Growth (Saskatoon North Partnership for Growth, 2017a). The regional plan has directed municipalities to support agriculture and farming as well as value-added activities and agri-tourism to further economic growth. However, agricultural lands have been vulnerable to subdivision under the plan in support of economic development initiatives. Similarly, the Official Community Plan has made strong statements towards farmland protection that contradicted the goals of the plan (Saskatoon North Partnership for Growth, 2017b). Significant conflicts have occurred between the member municipalities related to land use decisions revealing that regional planning must be supported by an effective policy framework, that changing decision-making processes within a regional planning context has potential to be tumultuous, and that economic development has been linked to the politics of planning (see: Thomarat, 2007; Bolstad, Mathur, & MacKnight, 1981). As the Calgary region moves towards mandated metropolitan planning, Corman Park has the potential to offer lessons about ensuring consistency across documents and the need to integrate economic development activities with planning. In addition, Corman Park has offered a reminder to look for learning opportunities to avoid or resolve conflicts while transitioning to a new decision-making model.

Brandon, Manitoba. The Brandon and Area Planning District (BAPD) has intended to increase coordination between the three partner municipalities, the City of Brandon, the Rural Municipality of Cornwallis, and the Rural Municipality of Elton, especially in relation to land use planning. The BAPD Fringe Area Growth Strategy had been created to integrate economically and environmentally sustainable growth and align infrastructural expansion with limited agricultural protections (Brandon and Area Planning District, 2013a). The BAPD Development Plan has also supported urban expansion and development into fringe areas (Brandon and Area Planning District, 2013b). Although this growth strategy might be appealing to municipalities in the Calgary region with interests in urban expansion, this site provides lessons on improving farmland protection in metropolitan planning.

2.4 Conclusion

The literature review has provided background on metropolitan planning, plan evaluation methods, and the current state of farmland protection in Canada to enable answering the research questions. The research questions focus on determining the strength of the local legislative framework, identifying land use priorities impacting farmland, and informing metropolitan planning.

As demonstrated in the literature, several issues and priorities have been identified in metropolitan planning, reflected in attempts to balance competing land uses, coordinate services, and account for private property rights and public goods while managing urban growth. A number of metropolitan planning approaches have been used across Canada with varying levels of success in addressing these issues and priorities. These models have included single municipalities exercising annexations to coordinate growth, two-tiered systems to enable local and regional planning, amalgamated two-tier approaches to support a

single decision-making body, demergers from previous municipal agglomerations, flexible and innovative approaches with varying decision-making points, and voluntary, bottom-up initiatives. The Calgary region has experienced the annexation, voluntary, and most recently, two-tiered approaches to metropolitan planning making it an interesting study area.

The plan evaluation method used to support this research, has been identified as existing within a range of options for assessing planning that consider the efficiency of plan development, the efficacy of planning documents, and the effectiveness of plan implementation. For the purposes of this research, plan efficacy was chosen as a method to help inform future metropolitan planning documents that support farmland protection. Finally, the literature provided an overview of farmland protection in several metropolitan regions across Canada to identify lessons that might be applied to improve farmland protection in metropolitan planning. The information presented in the literature review will support the methods, analysis, and discussion in the following sections.

3. Methods

The research employed a case study method to focus the evaluation of the legislative framework's efficacy for farmland protection and the land use planning priorities. Focusing the research in this way provided an opportunity to develop a comprehensive understanding of land use planning activities in a portion of the Calgary metropolitan region. The research depended on content analysis of land use planning policy and legislation as well as land use bylaw amendments and Council minutes from the MD of Foothills. Policy and legislation analysis supported the legislative framework evaluation while bylaw changes and municipal Council minutes were used to aid in identifying land use issues and priorities impacting farmland in the evaluation area. Key informant interviews provided additional insight into the planning priorities present in the study area.

The case study method has been recognized as providing an opportunity to achieve thorough and contextualized knowledge about particular research issues (Yin, 2009; Meyer, 2015; Baxter & Jack, 2008). The nature of this project's research objective, to inform metropolitan planning that protects farmland, supported the use of a focused case study to answer the related research questions about the strength of the legislative framework for farmland protection and the impact of local land use planning priorities on agricultural lands.

Meyer has argued that case studies should not be used to develop or test theories (Meyer, 2015). However, Flyvbjerg (2006) has contended that while case studies do have the capacity to contribute to theory, theory development and testing has been overvalued in research with case studies offer alternative opportunities for deeper, contextualized understanding valuable to collective knowledge. As noted by Benoit, Johnston, MacLachlan, and Ramsey (2018), the Calgary region has been identified as having characteristics

“particularly, ill-suited for ‘one-size-fits-all’ planning approaches developed in other geographic and political contexts” (p. 214). Therefore, this research has sought to examine the study area in greater depth and detail to fully understand local complexities while providing a comprehensive evaluation of the efficacy of the legislative framework for farmland protection.

Data were gathered through content analysis of publicly available documents, including municipal development plans, municipal growth plans, intermunicipal development plans, economic strategies, land use bylaws, and Council minutes, and key informant interviews. Content analysis was guided by Connell and Daoust-Filiatrault (2018) method to evaluate the strength of the study area’s overall legislative framework for farmland protection. This evaluation method was chosen because it provided an opportunity to establish the strength of the legislative framework prior to the creation and implementation of metropolitan and intermunicipal planning documents required as a result of recent revisions to Alberta’s MGA. Deficiencies identified within the legislative framework were intended to inform municipalities and regional planning bodies to improve farmland protection in developing these documents. Further, future studies could be conducted to compare the before and after state of the legislative framework to determine whether the amended planning requirements improved farmland protection. Additional content analysis involved reviewing recent MD of Foothills council minutes and land use bylaw amendments paralleling an approach recently used by Epp and Caldwell (2018). Key informant interviews were conducted with a small number of regional experts chosen because of the anticipated knowledge of local and regional planning and economic development activities associated with their respective professional roles. Using key informants has allowed quality data to be collected in a short period of time but has the potential to be limited by political or social

influences on the expert and a detached experience from the majority population (Marshall, 1996). In this instance, limited time and resources, and an interest in local planning expertise made key informants a valuable option for gathering additional detail about the study area. Rationalization for depending on a single study area, a description of the content analysis, and an overview of the key informant interview process and its limitations will be further outlined below to contextualize the results that follow in the next section.

3.1 Case Study Method

Case studies have enabled a comprehensive view of actual events and have been particularly useful in situations where context is important (Yin, 2009). The use of case studies has also been identified as holding relevance to planning evaluation where past activities and the underlying assumptions that influence actors have been relevant to assessments (Faludi, 2000). Furthermore, planning regions have been recognized as heterogeneous spaces meaning that what works in one may not work in another (Bryant, Marois, Granjon, & Chahine, 2017). Sancton (2005), for example, has asserted that “it is almost impossible to generalise about the institutional arrangements for the governance of Canadian metropolitan areas” (p. 326) due to the diversity of local needs and provincial influences. However, some commonalities have existed in metropolitan planning spaces across the country including goals to increase economic competitiveness (Boudreau, Hamel, Jouve, & Keil, 2007). Case studies therefore have offered opportunities to gather contextual information that may be applied to similar instances (Gerring, 2004). Nash and Shurtleff (1956) argued generalizations cannot be made without comparing a multitude of case studies. Consequently, the case study of the MD of Foothills was intended to add to the planning body of knowledge to support future metropolitan land use decisions in the region while also

providing sufficient detail to facilitate future comparisons with other metropolitan planning regions. Case studies employ multiple quantitative and qualitative methods of investigation including participant observation, interviews, examination of physical material, and document analysis (Yin, 2009). As will be further outlined below, this study employed the use of document content analysis and key informant interviews to support the case study.

3.2 Content Analysis

The evaluation of the local legislative framework employed content analysis and was guided by the method outlined by Connell and Daoust-Filiatrault (2018). Plan evaluation, as presented in the literature review, has considered the efficiency of the development of documents, the efficacy or quality of those documents as they written, and their effectiveness in implementation. Efficacy, as used by Connell and Daoust-Filiatrault (2018), provided a measure of the documents themselves and their capacity to produce desired outcomes. An assessment of efficacy, they explained, evaluates the text of a document and not the application of a plan against a set of predetermined, normative criteria. Efficacy evaluation has served as a valuable assessment approach because the Calgary Metropolitan Region Board's documents have yet to be completed but might still be considered in normative terms. Equally, the documents cannot be tested for their effectiveness having not yet been finalized or applied. Documents were assessed against pre-established criteria for measuring the extent to which the legislative framework maximized stability, minimized uncertainty, was integrated across jurisdictions, and accommodated flexibility for protecting farmland. These criteria were used to determine the quality of plans and strategies by comparing the document text with its intended result. In this way, Connell and Daoust-Filiatrault established a structure for assessing a document's efficacy – its power to produce an expected outcome –

rather than its effectiveness, which might measure the result. This portion of the content analysis was further guided by the process described in the UNBC AgLUP Assessment Toolkit for evaluating the strength of legislative frameworks for protecting farmland which outlines a number of steps to assess documents and review the legislative framework as a whole. Each of those steps undertaken has been outlined in the legislative framework evaluation section that follows.

3.2.1 Legislative framework evaluation. To measure the efficacy of the study area's legislative framework for farmland protection, documents last updated prior to the MGA amendments coming into force were evaluated as they had not yet been updated to reflect the revised planning requirements. An evaluation of these documents also provided a baseline for understanding the area's legislative framework as the metropolitan planning was underway. Guided by the UNBC AgLUP Assessment Toolkit, relevant documents were collected and analyzed to determine the strength of the legislative framework.

Data collection. Available intermunicipal development plans, municipal development plans, land use bylaws, growth strategies, and economic development plans, were collected to complete the analysis and determine the overall efficacy of the sub-region's planning documents and their capacity to achieve the desired effects. Intermunicipal development plans, until the most recent revisions to the MGA, were voluntary arrangements negotiated between municipalities. However, the Government of Alberta (n.d.-a) argued on the MGA review website that these ad hoc agreements could result in service duplication where a more formalized approach was expected to increase efficiencies. The Government's solution was to "implement mandatory regional planning mechanisms for land use planning, and require municipalities to work together regarding service delivery and cost-sharing" through Intermunicipal Collaboration Frameworks (ICFs) that were regulated to be established by

April 1, 2020 between adjacent municipalities where one or both municipalities were not represented on a growth management board. As summarized on the Government of Alberta website (n.d.-c), the ICF Regulation required municipal councils adopt matching bylaws outlining municipal, intermunicipal, and contracted service delivery, and cost-sharing to support integrated and strategic planning, and efficient allocation of resources. ICFs, the website states, must address transportation, recreation, water and wastewater, solid waste, emergency services, and any other services that benefit residents in more than one municipality represented by the Framework and may also include service implementation details and provisions for cooperative infrastructure development.

Municipal development plan requirements were similarly amended under the recent MGA revisions. Previously, only municipalities with populations over 3,500 had to establish MDPs although many smaller municipalities, including all of those in the study area, had elected to create MDPs. All municipalities, regardless of size, have since been required to establish MDPs by April 1, 2021 under the updated legislation (Government of Alberta, n.d.-a).

Land use bylaws have been required by the MGA for all municipalities and have been intended to provide support for planning and economic development by establishing guidelines for growth, outlining permitting procedures, and defining land use districts that align with provincial land use policies and supporting legislation, as well as regional plans (Government of Alberta, 2018). Growth strategies have been established in some municipalities as non-statutory documents that support other plans and policies to ensure the accommodation of appropriate long-term residential and commercial growth that aligns with land availability (see: Town of Cochrane, 2013; Town of High River, 2013; O2 Planning + Design Inc., 2016). Likewise, economic development plans were developed by some

municipalities to identify and target industries that would be compatible with local amenities and goals (see: Rynic Communications, 2017; Town of Okotoks, 2016; Town of Turner Valley, 2012).

An electronic copy of the most recent version of each document was collected and saved to support searches, coding, and note taking. Although an evaluation of Alberta's legislative framework was available through the UNBC AgLUP Project, provincial documents were also reviewed to ensure contextual awareness, account for amendments, and confirm relevance. Many of the required documents or document revisions outlined in the modernized MGA have not yet been completed thus creating opportunities for municipalities and the region to further consider agriculture in local legislative frameworks.

Data analysis. As recommended by the Assessment Toolkit, a large number of documents were initially identified for evaluation. This process was iterative and required reanalyzing previously considered documents to ensure the documents were relevant to the analysis. This preliminary review aided in determining which documents were relevant to the legislative framework and supported amendments after it was determined some of the legislation and policy documents were not directly relevant to the local legislative framework while others, that had not been included to start, were identified and added. This process supported a contextual understanding of the documents and facilitated the identification of both relevant documents and statements which were applicable to the legislative framework analysis process.

Identification of relevant statements. Based on the above process, the first iteration of the Legislative Framework Table was established. Each document was reviewed and statements relevant to maximizing stability, minimizing uncertainty, integrating across jurisdictions, and accommodating flexibility were identified and classified by their purpose

(vision, driving issue, concern, goal, objective, policies, or action/recommendation) and their level of influence (high, medium, or low).

Following the key informant interviews, several additional documents were identified and added to the Legislative Framework Table. Relevant statements to maximizing stability, minimizing uncertainty, integration across jurisdictions, and accommodating flexibility were gathered, and the following steps were completed including the additional documents. This process aimed for improving validity and reliability by continually reviewing and updating the analysis.

Document content analysis. Documents were then analyzed for their general content and assessed for their legislative depth and breadth. The content analysis involved reviewing the local legislative framework documents for the level of detail included related to five areas. The first was the legislative context and considered the extent to which documents referenced and integrated provincial legislation and policy related to agriculture. The second considered whether the agricultural background was included and if any reference was made to agricultural plans. The third assessed the documents' visions, goals, and objectives for agriculture and looked for actions and recommendations. The fourth considered the level of reference to local agricultural land use policies and the fifth confirmed whether agriculture was identified on local land use maps. Determining the depth and breadth of the legislative framework documents involved considering the level of detail related to provincial and agricultural land use policies and legislation, land use planning tools, and governing bodies.

Legislative framework strength evaluation. Looking at all of the material collected, the statements were further organized to identify the relevance to maximizing stability, minimizing uncertainty, integrating across jurisdictions, and accommodating flexibility. A preliminary score out of seven from 1-very weak to 7-very strong was assigned as an overall

impression of the legislative framework. Next each principle was evaluated based on a five-point scale from 1-very weak to 5-very strong. Reviewing the scores for each of the four principles, the first score of overall impression was revisited to assess how each principle contributed to the general analysis of the legislative framework.

The principle scores were then weighted according to the Assessment Toolkit's scoring system. The Assessment Toolkit identified maximizing stability as the cornerstone of the strength of policy focus and was therefore weighted more heavily than the other principles. To gather an overall score, the initial rating for maximizing stability was doubled. Minimized uncertainty was weighted against a wider scale from 0.5 to 7.5 that essentially provided bonus points if uncertainty within the legislative framework was lower and removed points if uncertainty within the legislative framework was higher. Integrating across jurisdictions did not influence the score unless there was significant integration with an already strong provincial legislative framework. According to the Assessment Toolkit, accommodating flexibility was considered last with a reward or penalty assessed against the flexibility score depending on the combined scores of the first three principles on a 3-option scale of less than 5, 5 to 10, and 11 or higher.

Although the UNBC Assessment Toolkit provided a process for evaluation that supported a level of objectivity in the results, it also noted that users would likely have an interest in farmland preservation. This created risks for bias to enter the research findings. Each step in the evaluation was completed a number of times with documents added and removed throughout the process as more information was gained about their relevance. While the evaluation method provided a number of predetermined normative criteria against which to measure the efficacy of documents thereby limiting the influence of bias, possibilities for interpreting document wording in the positive or negative, depending on the researcher's

interest in farmland protection, remained. The final step in the evaluation method recommended considering the collected results as a whole before making a determination of the overall strength of the legislative framework for farmland protection. This step reduced bias by requiring a reconsideration of the content analysis, breadth and depth of the content, and presence of statements reflective of the four principles as a full set of information. Where temporary conclusions may have been drawn in each step throughout the process, this final review recontextualized the information gathered to provide a more accurate final assessment of the legislative framework for the respective municipalities and study area.

3.2.2 Priority land uses. Identifying priority land uses and their impact on farmland in the study area was supported by content analysis of additional MD of Foothills' documents. Amendments to the land use bylaw and council minutes provided an indication of how land use decisions were prioritized and what impact these decisions had on agricultural lands within the study area.

Data collection. The MD of Foothills' Planning Amendments to the Land Use Bylaw (2018) document, a consolidated list of updates to the Land Use Bylaw that were passed through third reading by Council, as well as the Council meeting minutes from the previous year (July 2017 to June 2018), were used to gather additional detail about land use priorities in the MD of Foothills. The Planning Amendments document provided a record of updates to the Land Use Bylaw since 1983. During the research period, publicly accessible Council meeting minutes were available on the municipal website and provided a record of public sections of the Council meetings, and all decisions.

The review of recent amendments to the MD's planning documents was similar to a method employed by Epp and Caldwell (2018) in which plan amendments were reviewed to develop a quantitative analysis of land redesignations from farmland to other uses. Epp and

Caldwell concluded that because land use decisions have often been made at the municipal level, “[m]easuring approvals at [the municipal level] can help to describe large regional trends, successes and failures in helping to guide growth” (p. 174). This expectation supported the overall intent of this research – to inform metropolitan planning that accounted for farmland in growth strategies.

Data analysis. Based on the Planning Amendments document, land use conversions to and from agriculture within the MD of Foothills over the previous five-year period (July 2013 to June 2018) were tabulated as one indicator of land use priorities. In the absence of meeting minutes from previous years, the count was completed to identify any patterns or trends in land use conversion related to agricultural uses.

A review of the previous year’s Council meeting minutes from the MD of Foothills was also completed to provide additional depth to the results from the land use conversion table in the absence of a key informant interview participant from the municipality. Council decisions related to land use bylaw amendments, development permits, subdivision, and redesignations facilitated the identification of patterns and themes in approvals as an additional method for determining land use priorities within the municipality.

3.3 Key Informant Interviews

The key informant interviews were intended to gain insight from administrative staff with expertise in planning and economic development. “Key informants are those whose social positions in a research setting give them specialist knowledge about other people, processes or happenings that is more extensive, detailed or privileged than ordinary people, and who are therefore particularly valuable sources of information to a researcher, not least in the early stages of a project” (Payne & Payne, 2004).

Key informant interviews with municipal administrators representing economic development and planning interests further supported the research and data collection. Interview participants were asked about municipal goals and objectives for planning and the interactions with three major themes: agriculture, economic development, and urban growth. Key informants were also asked to comment on regional and metropolitan planning. Because interviews were only secured with key informants from 5 of the 7 municipalities in the study area, and because the MD of Foothills was the research focal point but no key informants from this municipality agreed to participate due to an identified lack of time, available council meeting minutes from the MD were later included to build a more comprehensive set of data. Content analysis of the meeting minutes helped to inform the second research question and interpret how the information reflected the municipality's land use priorities.

3.3.1 Identification of key informants. Key informants were originally proposed based on their anticipated expertise of planning and community economic development within the region given their roles as local planners, community services or economic development department managers, or chief administrative officers for the case study municipalities. Fourteen key informants holding these roles were identified. Two key informants from each municipality were identified in most cases. These municipalities included the MD of Foothills and the Towns of Black Diamond, High River, Okotoks, and Turner Valley. One key informant from the City of Calgary's planning department and one key informant from Calgary Economic Development were identified. Because the Village of Longview was known to have a small administrative staff, only one key informant was selected from this municipality. In addition, a project officer for land planning with the Calgary Metropolitan Region Board was anticipated to have expertise relevant to the research.

3.3.2 Interview process. The key informant interviews followed a careful protocol and included initial contact by email to introduce the research followed by an in-person interview conducted at their professional office. The interviews followed a preestablished set of questions and were recorded to ensure accuracy during analysis. The interview process was however, limited by the number of key informants who agreed to participate.

Invitation to participate. Originally, fourteen key informants were contacted to participate in an interview. Following the ethics protocol approved by the University of Northern British Columbia's Research Ethics Board, an email was sent to proposed interview participants explaining the project with the introductory letter and consent form in Appendix B attached. This communication provided a brief overview of the research objectives and outlined an interest in understanding how municipal activities might be influenced by agriculture and agricultural land use planning in the MD of Foothills. Seven key informants agreed to participate from Black Diamond, Calgary, High River, Longview, and Turner Valley. Follow up attempts were made with administrative staff from the Town of High River, the Town of Okotoks, and the MD of Foothills. Personal leave, staff turnover, and employee shortages were cited as the primary reasons for the key informants' inability to participate. However, one key informant seemed to not understand the goals of the project, while the proposed participant from the Calgary Metropolitan Region Board indicated that they were not able to comment while policies were in development. Attempts were also made to reach council members with relevant board appointments for the Towns of High River and Okotoks and the MD of Foothills. Council members for High River and the MD declined to participate. A councillor for the Town of Okotoks indicated interest in the study but advised that the mayor would be more knowledgeable on the research subject and forwarded the request to the mayor copying the researcher; despite follow up, no response was received.

Interview procedure. Interviews were conducted at each individual's office building in closed rooms. Each interview was recorded using a digital recording device. Before beginning the recording, each key informant was asked to reconfirm their consent to participate as indicated by signing the consent form, and any questions or concerns related to the interview process were addressed. The interviews lasted between approximately 20 and 90 minutes with consideration given to the key informants' schedules and were based on a set of pre-established questions although discussions were allowed to flow naturally.

Interview questions. The interview questions were divided into three primary topics, guided by the primary research objectives, with related sub-questions (See Appendix C for the interview guide). The first topic was concerned with local levels of decision-making and specifically the extent to which farmland protection and agricultural land use planning in the MD of Foothills influence economic development, planning, and urban growth in adjacent urban municipalities. The second topic focused on regional planning as represented by the South Saskatchewan Regional Plan (SSRP) which was developed out of the Province's Land-Use Framework and applies to the largest and most diverse geographical area. The third set of topic questions asked participants to comment on the anticipated role of the Government of Alberta's mandated Calgary Metropolitan Region Board for the respective municipality and metropolitan region.

Limitations of the interview process. Several limitations to the interview process were present. While scheduling interviews, few key informants agreed to participate and despite efforts to find alternate interviewees, participation remained low. Following the interviews, analysis suggested that more directed interview questions might have yielded deeper insights.

Unfortunately, staff turnover across the region and employee leave during the study period resulted in significantly reduced interviews despite attempts to contact other potential key informants including CAOs and councillors. During the interview process it was also mentioned that changes to the Municipal Government Act and the new requirements for intermunicipal collaborative frameworks (ICFs) had created increased work for administrations which may be disproportionately burdensome to rural municipalities creating reduced capacity to commit to interviews. The MD of Foothills, for example, could be expected to have to develop or revise agreements with upwards of ten adjacent municipalities. In some cases, the managers contacted recommended staff members while other administrations recommended a single contact to speak to both municipal planning and economic development activities. In municipalities where several attempts to follow up with administrative staff were unsuccessful, councillors were contacted to participate although these attempts were similarly unfruitful in securing municipal insight.

As interviews with many municipalities only occurred with either a planner or an economic development officer, and because contacts from Okotoks and the MD were unwilling or unable to contribute to the research, participant saturation was not possible. Additionally, non-participation bias was possible in that information of greatest importance to the MD of Foothills was potentially not shared. However, because of the nature of the research questions and the roles of the key informants within the municipalities, the interviews were designed to gain further depth and insight into important elements or deficiencies within existing policies and mandates, and to confirm relevant documents to the research. Further, the intention had been to gain geographic representation within the Calgary region among persons with knowledge of local, regional, and provincial planning which was supported by the key informants' participation on regional boards and committees as well as

their experience in other local municipalities. Additionally, the primary themes identified were duplicated in individual interviews suggesting a sufficient level of data saturation even in the absence of participant saturation.

3.3.3 Analysis of interview data. Each interview was recorded and then transcribed into individual Microsoft Word documents for analysis. The set of interview transcripts was reviewed to get a general sense of responses and identify major themes. Each interview transcript was then reviewed more thoroughly, and notes and codes were applied to relevant, recurring, and unexpected statements. The notes and codes were then considered to determine more specific themes and validate or revise the themes that were highlighted during the preliminary review.

The findings were grouped according to five primary themes: agriculture, economic development, urban growth, regional planning, and metropolitan planning. Several additional subthemes were identified including water, oil and gas, and collaborative partnerships which will be outlined further in the results section. Microsoft Word and Excel were used to organize and code the data because of the researcher's familiarity with the programs' functionalities and options for grouping the data.

3.4 Conclusion

This section has outlined the methods that guided the investigation and the reasons for choosing a case study approach supported by content analysis and key informant interviews to enable answering the research questions. Using a specific study area facilitated a comprehensive view of planning issues. Content analysis enabled an evaluation of the legislative framework's capacity for farmland protection and an indication of land use priorities. Key informant interviews provided further insight into planning goals and

objectives and the extent to which they aligned with farmland protection. The following section presents the results of the application of these methods.

4. Results

To understand the concerns around representation, and to gain insight into the extent to which farmland may be protected in the Calgary region, the work reported in this thesis examined metropolitan planning from the perspective of the MD of Foothills. Content analysis and key informant interviews were used to answer the three primary research questions. First, what was the quality of the agricultural land use planning legislative framework in the study area based on Connell and Daoust-Filiatrault's (2018) method of plan evaluation? The purpose of this question was to provide context to the study area by evaluating the extent to which provincial, regional, intermunicipal, and municipal planning policies, legislation, bylaws, and plans were positioned to protect farmland. Documents were measured against four principles: maximized stability, minimized uncertainty, integration across jurisdictions, and accommodated flexibility.

Second, how did the MD of Foothills balance conflicting land uses in municipal and intermunicipal planning based on previous actions and proposed future strategies? Additional content analysis and key informant interviews were used to determine the land use priorities of the MD and adjacent municipalities, especially as they related to agriculture, economic development, and residential growth.

The third question asked, how can the answers to the first two questions inform metropolitan planning that protects farmland? Considering the results of the first two questions and comparing the local findings with examples from across Canada offered answers to the final question which will be further developed in the discussion section.

The results of the research have been summarized in the three sections that follow. The first overviews the analysis of the study area's legislative framework outlining the results

of each step in the evaluation process and the overall capacity for farmland protection in the sub-region. The second presents the outcome of additional content analysis conducted using MD of Foothills' council minutes and approved land use bylaw amendments. The third provides a summary of the information gathered through key informant interviews.

4.1 Strength of Legislative Framework for Protecting Farmland

The strength of the legislative framework was determined by evaluating the efficacy of relevant policies and legislation for protecting farmland in the study area following the UNBC AgLUP Assessment Toolkit and guided by the work of Connell and Daoust-Filiatrault (2018). The results of each step of the assessment have been summarized below including identifying the documents relevant to the local legislative framework, noting the relevant statements for farmland protection within the documents, analyzing the document contents, and evaluating the overall strength of the legislative framework.

4.1.1 Identify the legislative framework. As presented in Tables 4a, 4b, and 4c below, the first step in assessing the legislative framework for protecting farmland was to include all the relevant policies, legislation, and governance structures in the Legislative Framework Table for each level of government. As mentioned earlier, in gathering the legislation and policy and conducting the preliminary assessment, several documents were deemed unnecessary to the evaluation and removed while others were identified as significant and added. Identifying the relevant materials was also supported by the interviews which necessitated an iterative approach to all steps of the evaluation as several additional policies or more recent document versions were recommended by key informants. Table 4a provides the policy, legislation, and governance developed and mandated at the Provincial

level; Table 4b lists the intermunicipal development plans for the study area; and Table 4c identifies the municipal level policy, legislation, and governance.

4.1.2 Identify relevant statements on farmland protection

Relevant statements from the analyzed documents are summarized in Tables 5a, 5b, 5c, and 5d to guide the evaluation and will be presented and discussed in full detail in section 4.1.4. Several patterns within these tables may be identified. First, the MD of Foothills had, as might be expected, a disproportionately high number of relevant statements owing to the fact that it was the primary holder of agricultural lands and the only rural municipality in the study area. Second, all of the urban municipalities' land use bylaws identified urban reserve districts that permit agricultural uses until development has become necessary. Third, all of the municipal development plans except those for Longview and Turner Valley alluded to a need to minimize the impact of development on agriculture. Likewise, all of the intermunicipal development plans except for the MD of Foothills-Okotoks IDP identified an interest in preventing the premature conversion of agricultural land to other uses. Fourth, the IDPs also required referrals to neighbouring municipalities for extensive agricultural operations. Reviewing these relevant statements in full detail aided in evaluating the strength of the legislative framework.

Table 4a		Legend: <i>Acts, bylaws, official plans</i>	
<i>Provincial legislative framework documents</i>		Enforceable policy, regulation pursuant to acts Aspirational policy	
	Policy	Legislation	Governance
Provincial documents	<ul style="list-style-type: none"> - Alberta Land Use Framework (2008) - Moving Alberta Forward (2011) 	<ul style="list-style-type: none"> - <i>Agricultural Operation Practices Act (2000; rev. 2002)</i> - <i>Agricultural Service Board Act (2000)</i> - <i>Alberta Land Stewardship Act (2009)</i> - Land Use Policies (1996) - <i>Municipal Government Act (2000; rev. 2018)</i> - <i>Natural Resources Conservation Board Act (1991; rev. 2000)</i> - <i>Soil Conservation Act (2000)</i> - <i>Water Act (2000)</i> 	<ul style="list-style-type: none"> - <i>National Resources Conservation Board</i>
Required integration	LUF/ALSA: Regional plans like the SSRP must conform to LUF/ALSA.		
Regional documents		<ul style="list-style-type: none"> - South Saskatchewan Regional Plan (2014; rev. 2018) 	
Required integration	- SSRP/ALSA/LUF: CMRB policy and legislation must conform to SSRP, ALSA, LUF.		
Metropolitan documents		<ul style="list-style-type: none"> - <i>Calgary Metropolitan Region Board Regulation (2017)</i> - Calgary Region Metropolitan Plan (forthcoming) 	<ul style="list-style-type: none"> - <i>Calgary Region Metropolitan Board</i>

Table 4b		Legend: <i>Acts, bylaws, official plans</i>	
<i>Intermunicipal legislative framework documents</i>		Enforceable policy, regulation pursuant to acts	
		Aspirational policy	
	Policy	Legislation	Governance
Required integration	<ul style="list-style-type: none"> - CMRB: IDPs and ICFs must conform to CMRB plans and policies. - MGA: Councils may adopt IDPs or Minister may require IDPs that conform to ALSA; ICFs will be required between municipalities outside of growth management areas. 		
Intermunicipal documents		- <i>Black Diamond-MD of Foothills-Turner Valley Intermunicipal Development Plan (2002)</i>	- <i>Inter-Municipal Negotiating Committee (Black Diamond, MD of Foothills, Turner Valley)</i>
		- <i>Calgary-MD of Foothills Intermunicipal Development Plan (2017)</i>	- <i>Intermunicipal Negotiating Committee (Calgary, MD of Foothills)</i>
		- <i>High River-MD of Foothills Intermunicipal Development Plan (2012)</i>	- <i>Intermunicipal Negotiating Committee (High River, MD of Foothills)</i>
		- <i>Longview-MD of Foothills Intermunicipal Development Plan (2003)</i>	- <i>Intermunicipal Negotiating Committee (Longview, MD of Foothills)</i>
		- <i>MD of Foothills-Okotoks Intermunicipal Development Plan (2016)</i>	- <i>Intermunicipal Negotiating Committee (MD of Foothills, Okotoks)</i>

Table 4c		Legend: <i>Acts, bylaws, official plans</i>	
<i>Local legislative framework documents</i>		Enforceable policy, regulation pursuant to acts Aspirational policy	
	Policy	Legislation	Governance
Required Integration	<ul style="list-style-type: none"> - SSRP: Municipal governments required to ensure policy and legislation conforms with SSRP policies and use SSRP to inform future policy and legislation. - CMRB: Municipal governments within Calgary Metropolitan Region as defined by Province must ensure future policy and legislation conforms to CMRB plans and policies. - IDPs: Municipal governments must ensure conformance to IDPs they have passed as bylaws. 		
Local documents	<ul style="list-style-type: none"> - Black Diamond Municipal Sustainability Plan (2008) - Black Diamond Community Economic Development Plan (2017) - Black Diamond Growth Study (2011) - Turner Valley and Black Diamond Growth Strategy (2016) 	<ul style="list-style-type: none"> - Black Diamond Land Use Bylaw (1998; current as of 2007) - <i>Black Diamond Municipal Development Plan (2001)</i> 	<ul style="list-style-type: none"> - <i>Intermunicipal Subdivision and Development Appeal Board (Black Diamond, Longview, Turner Valley)</i>
	<ul style="list-style-type: none"> - Calgary Economic Development Strategy (2010; rev. 2014) - Calgary Eats! A Food System Assessment and Action Plan for Calgary (2012) 	<ul style="list-style-type: none"> - Calgary Land Use Bylaw (2007) - <i>Calgary Municipal Development Plan (2009)</i> 	<ul style="list-style-type: none"> - <i>Calgary Subdivision and Development Appeal Board</i>
	<ul style="list-style-type: none"> - <i>High River Town Plan and Growth Strategy (2013)</i> 	<ul style="list-style-type: none"> - High River Land Use Bylaw (2017) - <i>High River Town Plan and Growth Strategy (2013)</i> 	<ul style="list-style-type: none"> - <i>High River Subdivision and Development Appeal Board</i>
		<ul style="list-style-type: none"> - Longview Land Use Bylaw (2017) - <i>Longview Municipal Development Plan</i> 	<ul style="list-style-type: none"> - <i>Intermunicipal Subdivision and Development Appeal Board (Black Diamond, Longview, Turner Valley)</i>

Table 4c		Legend: <i>Acts, bylaws, official plans</i>	
<i>Local legislative framework documents</i>		Enforceable policy, regulation pursuant to acts	
		Aspirational policy	
	Policy	Legislation	Governance
	- MD of Foothills Growth Management Strategy (2013)	- MD of Foothills Land Use Bylaw (2014; current as of 2018) - <i>MD of Foothills Municipal Development Plan (2010; current as of 2017)</i>	- <i>MD of Foothills Subdivision Appeal Board</i> - <i>MD of Foothills Agricultural Services Board</i>
	- Okotoks Economic Development Strategic Plan (2016)	- Okotoks Land Use Bylaw (1998; current as of 2018) - <i>Okotoks Municipal Development Plan (1998; current as of 2016)</i>	- <i>Okotoks Subdivision and Development Appeal Board</i>
	- Turner Valley Economic Development Plan (2012) - Turner Valley and Black Diamond Growth Strategy (2016)	- Turner Valley Land Use Bylaw (2003; current as of 2012) - <i>Turner Valley Municipal Development Plan (2014)</i>	- <i>Intermunicipal Subdivision and Development Appeal Board (Black Diamond, Longview, Turner Valley)</i>

Table 5a

Relevant statements summary: Maximize stability

Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
<p>Natural capital: limit fragmentation (MD of Foothills Municipal Development Plan, 2010)</p> <p>Rural character: preserve ag (MD of Foothills Municipal Development Plan, 2010)</p> <p>“The MD of Foothills encompasses a diverse rural landscape in which leadership and planning <i>support a strong agricultural heritage</i>, vibrant communities, a balanced economy and the stewardship of natural capital for future generations.” (MD of Foothills Municipal Development Plan, 2010)</p>	<p>Ag as main land use in MD (MD of Foothills Municipal Development Plan, 2010)</p> <p>Rural Character: “...should manage new land uses and subdivision in the MD to retain rural quality and <i>preserve agricultural lands.</i>” (MD of Foothills Municipal Development Plan, 2010)</p>	<p>“<i>Conserve and protect</i> the maximum amount of land in the MD as natural capital for use by the agricultural industry today and for future generations.” (MD of Foothills Municipal Development Plan, 2010)</p>	<p><i>Prioritize ag land; minimize loss of ag land; support ag industry; support existing ag ops and right to farm;</i> partner with and encourage ag industry to protect environmentally-significant lands, promote soil and water conservation; encourage responsible water use in ag (MD of Foothills Municipal Development Plan, 2010)</p>	<p>Agriculture policies: All land ag land unless zoned otherwise; maintain integrity of ag land & <i>discourage</i> fragmentation; ag land use and services <i>encouraged</i> & non-ag uses permitted where impact on ag minimal; farmland conversion shall consider: MDP, planning hierarchy, ag assessments, adjacent land uses, referrals sent to Province; first parcel out may be supported if: parcel small as possible (2-20.99 acres), where possible, subdivision will respect natural capital, year round road access met, <i>does not negatively impact adjacent ag uses</i>, meets LUB req’s, zoned for</p>		<p>Exception: Okotoks limited reference to ag lands</p>

Table 5a						
<i>Relevant statements summary: Maximize stability</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
Shared value of protecting ag. with MD (High River Municipal Development Plan and Growth Management Strategy, 2013)				<p>subdivision; subdivision of fragmented parcel may be supported if: parcel is entire area of fragment, building site exists, year-round access exists, <i>does not negatively impact adjacent ag uses</i>, meets servicing req's, zoned for subdivision; ag important in all districts & predominant use in some where conversion is discouraged. (MD of Foothills)</p> <p>CFO policies (right to farm): ensure CFOs meet MDS; <i>encourage</i> CFOs to own land in MDS; ensure additional boundary between MDS and urban uses, IDP areas, adjacent dwellings; CFOs should locate</p>		

Table 5a						
<i>Relevant statements summary: Maximize stability</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
				where minimum conflict with other land uses & consider future expansion areas; other uses & subdivision <i>discouraged</i> in MDS of existing CFO; direct CFOs to parcels of 160+ acres. (MD of Foothills, Municipal Development Plan, 2010)		

Table 5b						
<i>Relevant statements summary: Integrate across jurisdictions</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
				Referrals required from adjacent municipalities for intensive ag (Intermunicipal Development Plans) Policies consistent with PLUP and support protection		IDPs evidenced horizontal integration Exception: MD of Foothills-Okotoks Intermunicipal Development Plan – no reference to ag

Table 5b						
<i>Relevant statements summary: Integrate across jurisdictions</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
				<p>of ag land from premature conversion (Black Diamond-MD of Foothills-Turner Valley Intermunicipal Development Plan, 2002; Longview-MD of Foothills Intermunicipal Development Plan, 2003)</p> <p>MDPs must contain "...policies respecting the protection of agricultural operations within [municipal] boundaries..." (Calgary Municipal Development Plan, 2009)</p>		

Table 5c						
<i>Relevant statements summary: Minimize uncertainty</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
		<p><i>Minimize</i> impact of development on ag (IDPs except MD of Foothills-Okotoks, MDPs except Longview and Turner Valley)</p> <p>“Support a variety of residential development forms in appropriate locations which serve to <i>minimize</i> the fragmentation of agricultural lands, the impact on the natural environment, and the long term financial implications to the MD.” (MD of Foothills Municipal Development Plan, 2010)</p> <p>“The goal of the Growth Management Strategy is to support growth and the development in</p>	<p>Ensure efficient land use for residential development to <i>minimize</i> fragmentation & conversion of ag land (MD of Foothills Municipal Development Plan, 2010)</p> <p>Identification of districts to direct growth (MD of Foothills Growth Management Strategy, 2013)</p> <p>“Our location adjacent to a major urban centre creates significant growth pressure and opportunities for development while our abundance of productive agricultural lands and significant natural areas <i>require stewardship and a</i></p>	<p>Urban reserve districts identified to prevent premature conversion by permitting ag until urban development required; also permitted use in floodplains (urban LUBs)</p> <p>Ag in urban areas expected to be converted to urban uses eventually (IDPs except Calgary-MD of Foothills; MD of Foothills-Okotoks)</p> <p>Identify ag lands, reduce farmland fragmentation, direct non-agricultural land uses to areas that do not compromise agricultural lands or operations, mitigate conflicts between ag/non-ag uses (SSRP, 2018)</p>	<p>“...suggested strategies for supporting agriculture in the MD: Re-Affirm commitment to discourage conversion and fragmentation of Agricultural Lands; Identify areas in the MD where Agriculture is and will continue to be the dominant land use; Acknowledge that agricultural land is a key resource on which the region’s economic prosperity and quality of life depends and support the continued diversification of rural industry; Support the growth of on-farm operations that result in value-added to farm</p>	<p>MD of Foothills Municipal Development Plan policies language weaker than goals and objectives; MD MDP statements stronger than MD of Foothills Growth Management Strategy statements</p>

Table 5c						
<i>Relevant statements summary: Minimize uncertainty</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
		such a way as to not compromise our rural character, hamper agricultural production or adversely impact critical natural areas. The following six objectives are designed to articulate this goal. The MD will endeavour to: Provide a planning framework; Preserve rural character and scenic vistas; Support agriculture; Protect environmentally sensitive areas; Address water and servicing requirements; plan for industrial and commercial development.” (MD of Foothills Growth Management Strategy, 2013)	<i>measure of protection.”</i> (MD of Foothills Growth Management Strategy, 2013) “The MD will endeavour to... support agriculture.” (MD of Foothills Growth Management Strategy, 2013)	Subdivision (except first parcel out) and redesignation generally not permitted in Calgary Growth Area to support future annexation and efficient development (Calgary-MD of Foothills Intermunicipal Development Plan, 2017)	produce, such as packing, processing, cooking, tasting or farm gate sales; Develop creative strategies for managing development in predominantly agricultural areas.” (MD of Foothills Growth Management Strategy, 2013)	

Table 5d						
<i>Relevant statements summary: Accommodate flexibility</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
	MD interest in: “Impact of development on agricultural lands and agricultural operations.” HR interest in: “limiting impact of urban development on existing agricultural operations and mitigating impacts that those agricultural operations might have on urban development.” (High River-MD of Foothills IDP, 2012)		Not limit ag nor urban development (Calgary-MD of Foothills Intermunicipal Development Plan, 2017)	Residential parcel proposals <i>shall consider impact on ag ind.</i> (MD of Foothills Municipal Development Plan, 2010) Commercial recreation proposals <i>shall consider ag suitability of land</i> (MD of Foothills Municipal Development Plan, 2010) Setbacks and development permits required for intensive ag. (MD of Foothills LUB, 2014) Setbacks and buffers identified for interface areas, and/or compatible land uses in transitional areas (IDPs)		

Table 5d						
<i>Relevant statements summary: Accommodate flexibility</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
				<p>Agricultural lands minimum parcel size 21 acres (MD of Foothills LUB 2014)</p> <p>Parcel sizes outlined (MD of Foothills Municipal Development Plan, 2010; Longview-MD of Foothills Intermunicipal Development Plan, 2003)</p> <p>Land use/urban design: “providing an efficient land use concept to avoid leap-frog and haphazard development as well as premature losses of higher capability agricultural lands, thereby minimizing capital, maintenance and social costs” (Okotoks Municipal</p>		

Table 5d						
<i>Relevant statements summary: Accommodate flexibility</i>						
Vision	Driving Issues, Concerns	Goals	Objectives	Policies	Actions/ Recommendations	Comments
				Development Plan, 2016)		

4.1.3 Analyze document contents. The legislative framework assessment for the MD of Foothills and the study area was based on the analysis of 31 legislative and policy documents. These documents included the South Saskatchewan Regional Plan, five intermunicipal development plans; a joint growth strategy; 14 municipal development plans and land use bylaws; and nine supporting policies made up of growth strategies and economic development plans. The content analysis was based on reviewing the breadth and depth of statements relevant to agricultural land use planning, including the level of detail and frequency of reference. The results of the analysis are presented below in Tables 6 and 7 and will support the overall evaluation of the legislative framework's capacity for farmland protection.

Table 6 outlines the level of detail present in 5 content areas in each document. At the regional level, the South Saskatchewan Regional Plan made significant reference to the Land-use Framework and Alberta Land Stewardship Act (ALSA) however the reference was outside of the agricultural context. The SSRP noted, rather, the relevance of the Land-use Framework to overall economic, social, and environmental goals; cumulative effects management of development on air, water, land, and biodiversity; and the reducing the amount of land lost to permanent built environment, including rural residential development. The SSRP identified the ALSA as the legal basis for the Land-use Framework and associated regional plans with a brief note outlining that the legislation had expanded the definition of easements to include agricultural lands. Additionally, while the SSRP offered background, visions, and goals supportive of agriculture, the regulations and maps omitted agriculture. At the intermunicipal level, vision, goals, and objectives for agriculture were generally lacking, but regulations were moderately well detailed, except in the case of the MD of Foothills-Okotoks IDP. The MD of Foothills-Okotoks IDP was deficient in all but legislative context

which was only minimally outlined. The Calgary-MD of Foothills IDP was similarly weak in detail but included minimal reference to regulations. The Longview-MD of Foothills IDP was slightly more detailed followed by the Black Diamond-MD of Foothills-Turner Valley IDP. Although the High River-MD of Foothills IDP provided minimal details in most categories, it was the only document at the intermunicipal level to represent all of the content areas and included an extensive set of maps outlining agriculture. Intermunicipal policy was limited in the study area with the only identified document being a joint growth strategy between Black Diamond and Turner Valley that provided nominal reference to urban agriculture.

Within municipal legislation, the MD of Foothills provided the most consistent detail across the content areas with the MDP including a hierarchy of planning diagram to support the legislative context and the Land Use Bylaw providing 52 maps from across the municipality all outlining agricultural land use locations. High River exhibited a moderate level of detail in its Town Plan and Land Use Bylaw across all content areas. The remainder of municipalities had documents that were lacking in different content areas with the MDPs for Calgary, Okotoks, and Turner Valley having the greatest number of content omissions.

Municipal-level policies also included a moderate level of detail in all content areas in High River's Growth Strategy with some content omissions present in all other municipalities' policy documents. The MDP for the MD of Foothills exhibited moderate levels of detail across legislative context, background, and visions, goals, and objectives, was weak in detail on regulations, and did not include any maps outlining agriculture. Calgary Eats! A Food System Assessment and Action Plan for Calgary included a high level of detail on background, vision, goals, and objectives, and featured a comprehensive set of maps, but had a minimal level of legislative context detail and omitted any regulations. The remaining

policy documents offered limited information in many of the content areas, however, the Black Diamond Economic Development Plan did provide a high level of detail related to visions and actions for achieving them. Specifics of the level of detail each document provided for the 5 content areas is listed in a series of notes in Appendix A.

To fully evaluate the strength of the legislative framework for the MD of Foothills and the study area, the depth and breadth of the legislative context as well as the level of integration was assessed. The detail of the legislative content is summarized in Table 7. As can be seen, the MD of Foothills' policies and legislation included a moderate level of detail across a majority of legislative and governance documents compared to the other municipalities. This was reflective of the MD's unique classification in the study area as the only rural municipality and therefore the only municipality that would undertake activities that would be subject to the Water Act, Agricultural Operations and Practices Act, and the Natural Resources Conservation Board. Although the MD demonstrated a moderate level of vertical integration, overall the municipalities in the study area demonstrated a weak level of vertical integration. However, horizontal integration seemed to be a priority for the municipalities in the study area with three providing a high level of detail on intermunicipal development plans in their individual municipal development plans, two providing moderate detail, one providing minimal detail, and only one, Turner Valley, having omitted any information on the intermunicipal development plan it held with its neighbours. A further discussion of the level of integration across jurisdictions will follow in section 4.1.4.

Table 6					
<i>Document contents</i>					
Document	Legislative Context	Background	Vision, Goals, Objectives	Regulations (enforceable policies, procedures)	Maps
Regional					
South Saskatchewan Regional Plan	(1) ✓	(2) ✓✓✓	(3) ✓✓✓	(4) –	(5) –
Intermunicipal Legislation					
Black Diamond-MD of Foothills-Turner Valley Intermunicipal Development Plan	(6) ✓	(7) ✓	(8) –	(9) ✓✓	(10) ✓
Calgary-MD of Foothills Intermunicipal Development Plan	(11) ✓	(12) –	(13) –	(14) ✓	(15) –
High River-MD of Foothills Intermunicipal Development Plan	(16) ✓	(17) ✓	(18) ✓	(19) ✓	(20) ✓✓✓
Longview-MD of Foothills Intermunicipal Development Plan	(21) ✓	(22) ✓	(23) –	(24) ✓✓	(25) –
MD of Foothills-Okotoks Intermunicipal Development Plan	(26) ✓	(27) –	(28) –	(29) –	(30) –
Intermunicipal Policy					
Black Diamond-Turner Valley Joint Growth Strategy	(31) ✓	(32) –	(33) –	(34) –	(35) –
Municipal Legislation					
Black Diamond Land Use Bylaw	(36) ✓			(37) ✓✓	(38) ✓
Black Diamond Municipal Development Plan	(39) ✓	(40) ✓	(41) –	(42) –	(43) ✓
Calgary Land Use Bylaw	(44) –			(45) ✓	(46) –
Calgary Municipal Development Plan	(47) ✓✓	(48) –	(49) –	(50) ✓✓	(51) –
High River Land Use Bylaw	(52) ✓			(53) ✓✓	(54) ✓
High River Town Plan – Part 1: Town Plan	(55) ✓✓	(56) ✓	(57) ✓	(58) ✓✓	(59) ✓
Longview Land Use Bylaw	(60) ✓			(61) –	(62) –
Longview Municipal Development Plan	(63) ✓	(64) ✓	(65) ✓	(66) –	(67) –
MD of Foothills Land Use Bylaw	(68) ✓✓			(69) ✓✓✓	(70) ✓✓✓
MD of Foothills Municipal Development Plan 2010	(71) ✓✓✓	(72) ✓	(73) ✓✓✓	(74) ✓✓✓	(75) ✓
Okotoks Land Use Bylaw	(76) ✓			(77) /	(78) /
Okotoks Municipal Development Plan	(79) ✓	(80) ✓✓	(81) –	(82) –	(83) –
Turner Valley Land Use Bylaw	(84) –			(85) –	(86) –
Turner Valley Municipal Development Plan	(87) ✓	(88) –	(89) –	(90) –	(91) –

Document	Legislative Context	Background	Vision, Goals, Objectives	Regulations (enforceable policies, procedures)	Maps
Municipal Policy					
Black Diamond Economic Development Plan	(92) –	(93) ✓	(94) ✓✓✓	(95) –	(96) –
Black Diamond Growth Study	(97) –	(98) –	(99) –	(100) –	(101) ✓
Black Diamond Municipal Sustainability Plan	(102) –	(103) –	(104) –	(105) –	(106) –
Calgary Eats! A Food System Assessment and Action Plan for Calgary	(107) ✓	(108) ✓✓✓	(109) ✓✓✓	(110) –	(111) ✓✓✓
Calgary Economic Development Strategy	(112) –	(113) –	(114) –	(115) ✓	(116) –
High River Town Plan – Part 2: Growth Strategy	(117) ✓✓	(118) ✓	(119) ✓	(120) ✓✓	(121) ✓
MD of Foothills Growth Management Strategy	(122) ✓✓	(123) ✓✓	(124) ✓✓	(125) ✓	(126) –
Okotoks Economic Development Strategy	(127) –	(128) –	(129) –	(130) –	(131) –
Turner Valley Economic Development Plan	(132) –	(133) ✓	(134) –	(135) –	(136) –

See further details in Appendix A: Notes on table 6.

Table 7												
<i>Depth and breadth of legislative context</i>												
Source	Legislative Content (legislation and policies)						Land Use Planning Tools			Governance		
	LUF / ALSA	GF2	MGA	WA	IDA	AOPA	LUB	IDP	MDP	MD ASB	NRCB	SDAB
Black Diamond Economic Development Plan	–	–	✓	–	–	–	✓✓✓	–	✓✓	–	–	–
Black Diamond Growth Study	–	–	–	–	–	–	–	(1) ✓✓	✓✓	–	–	–
Black Diamond Land Use Bylaw – Consolidated	–	–	✓✓	–	–	–	/	–	–	–	–	✓✓✓
Black Diamond Municipal Development Plan	(2) ✓	–	✓✓	–	–	–		✓✓	/	–	–	✓
Black Diamond Municipal Sustainability Plan	–	–	–	–	–	–	–	–	–	–	–	–
Black Diamond Strategic Plan	–	–	–	–	–	–	–	–	–	–	–	–
Calgary Eats! A Food System Assessment and Action Plan for Calgary	✓	–	✓	–	–	–	✓✓✓	–	✓✓✓	–	–	–
Calgary Economic Development Strategy	–	–	✓	–	–	–	✓	–	✓	–	–	–
Calgary Land Use Bylaw	–	–	✓✓✓	–	–	–	/	–	–	–	–	✓✓✓
Calgary Municipal Development Plan	(3) ✓✓	–	✓	–	–	–		✓	/	–	–	✓

Table 7												
<i>Depth and breadth of legislative context</i>												
Source	Legislative Content (legislation and policies)						Land Use Planning Tools			Governance		
	LUF / ALSA	GF2	MGA	WA	IDA	AOPA	LUB	IDP	MDP	MD ASB	NRCB	SDAB
High River Land Use Bylaw	–	–	✓✓✓	–	–	–		–	–	–	–	✓✓✓
High River Town Plan – Part 1: Town Plan; Part 2: Growth Strategy	(4) ✓✓✓	–	–	–	–	–	–	(5) ✓✓✓	✓✓✓	–	–	–
Longview Land Use Bylaw	–	–	✓✓	–	–	–		–	✓	–	–	✓✓✓
Longview Municipal Development Plan	–	–	✓✓	–	–	–	✓✓	✓✓		–	–	(6) ✓
MD of Foothills Growth Management Strategy	✓✓	–	✓	–	–	–	✓	✓✓✓	✓✓✓	–	–	–
MD of Foothills Land Use Bylaw	–	–	✓✓✓	✓	–	✓		✓✓	✓✓	–	✓	✓✓✓
MD of Foothills Municipal Development Plan 2010	✓✓✓	–	✓✓✓	✓	–	✓✓	✓✓✓	✓✓✓		–	✓	✓
Okotoks Economic Development Strategy	–	–	–	–	–	–	✓	–	✓✓	–	–	–
Okotoks Land Use Bylaw	–	–	✓	–	–	–		–	✓✓	–	–	✓✓✓
Okotoks Municipal Development Plan	✓✓	–	✓	–	–	–	✓✓✓	✓✓✓		–	–	–

Table 7												
<i>Depth and breadth of legislative context</i>												
Source	Legislative Content (legislation and policies)						Land Use Planning Tools			Governance		
	LUF / ALSA	GF2	MGA	WA	IDA	AOPA	LUB	IDP	MDP	MD ASB	NRCB	SDAB
Turner Valley Economic Development Plan	–	–	–	–	–	–	–	✓	✓✓	–	–	–
Turner Valley Land Use Bylaw	(7) ✓	–	✓	–	–	–		–	✓	–	–	✓✓✓
Turner Valley Municipal Development Plan	–	–	✓	–	–	–	✓✓	–		–	–	✓

- (1) Also references MD of Foothills MDP.
- (2) Refers to PLUP; document published before LUF/ALSA.
- (3) Also references draft CMP.
- (4) Also references CMP.
- (5) Also references MD of Foothills MDP.
- (6) Makes minimal reference to subdivision authority.
- (7) Refers to PLUP.

4.1.4 Evaluate strength of overall framework.

The local legislative framework for the MD of Foothills was moderate to weak with the overall legislative framework for the study area being very weak as summarized below in Table 8. The strength of each principle is discussed further below supported by examples of relevant information from the MD of Foothills planning documents, the intermunicipal development plans, and the urban municipal planning documents.

Table 8				
<i>Legislative framework strength</i>				
Municipality	Maximize stability	Integrate across jurisdictions	Minimize uncertainty	Accommodate flexibility
MD of Foothills	2	3	3	3
City of Calgary	1	3	1	2
Town of Black Diamond	–	2	1	2
Town of High River	1	3	2	2
Village of Longview	–	2	1	2
Town of Okotoks	–	2	–	1
Town of Turner Valley	–	2	1	2

Maximize Stability. As defined in the UNBC AgLUP Assessment Toolkit (2016), a stable legislative framework for protecting farmland was identified as one that “...is not easily changed at the whim of shifting political interests; it is well-entrenched in acts of legislation, policy, and governance structures that are based on clear, concise language, and can hold up to court challenge” (p. 4). Stability, therefore, has been identified as clear statements of intent to protect farmland within the goals and objectives.

Maximizing stability was somewhat weak in the MD of Foothills and very weak in the remainder of the study area. The introduction to the MD of Foothills’ MDP2010

highlighted that the plan was based on “strengthening the intention to maintain agriculture as the dominant land use in the MD” (p. 3). While the aim of this statement suggested the municipality aspired to protect farmland, it was ambiguous and therefore contributed to reducing stability and increasing uncertainty. The vision for the document leaned more towards a general need to support the ‘rural landscape’ than agricultural land, “[t]he MD of Foothills encompasses a diverse rural landscape in which leadership and planning support a strong agricultural heritage, vibrant communities, a balanced economy and the stewardship of natural capital for future generations” (p. 4). Furthermore, the MDP2010 noted that “while not all areas of the MD will remain undeveloped, we should manage new land uses and subdivision in the MD to retain rural quality and preserve agricultural lands” (p. 7). Qualifying the preservation of agricultural land with the expectation that the MD would continue to develop contributed to reduced stability and increased uncertainty.

The MDP2010 also included an Agriculture section. This section uses ‘conserve,’ ‘preserve,’ and ‘protect’ in reference to agriculture land, but the document does not define the terms explicitly. Positively, the goal for agriculture was to “[c]onserve and protect the maximum amount of land in the MD as natural capital for use by the agricultural industry today and for future generations” (p. 11). While the goal focused on the agricultural industry and includes several aligning objectives, it was also supported by two objectives specific to agricultural land: “[m]ake the preservation of agricultural land a priority for the Municipal District of Foothills No. 31” and “[m]inimize the loss of agricultural land by limiting the amount of land removed from agricultural use” (p. 11). The first statement supported stability by aligning agricultural land preservation with the MD’s priorities. However, the second statement suggested that land would continue to be removed from agricultural uses.

The policies that support the MDP2010’s goal and contribute to stability included:

1. All lands in the MD are deemed to be agricultural lands unless zoned for other uses.
2. The MD supports maintaining the integrity of the agricultural land base and discourages the fragmentation of agricultural land, including the subdivision of land into smaller agricultural parcels.
7. While it should be noted that Agriculture continues to be an important use through all districts in the municipality; the Growth Management Strategy for the MD of Foothills identifies that Agriculture is the predominant land use in the East District and the South West District, and that this should remain so. Conversion of agricultural land to other uses in these areas is discouraged (p. 12-13).

Policy 1 omitted any direct statement to protect farmland and included a caveat that seemed to allow for redesignating lands from agriculture to other uses minimizing stability and contributing to increased uncertainty. Policies 2 and 7 used weak language discouraging, but not prohibiting, the conversion of farmland even in areas identified by the municipality as primarily intended to be agricultural. These policies further minimized stability. Policies 4, 5, and 6 made provisions for farmland conversion and subdivision and will be discussed below in relation to their contribution to uncertainty. Overall, the MDP2010 suggested a willingness to convert farmland to other uses within the MD of Foothills.

Although the municipality's Growth Management Strategy (2013) noted that during consultations residents indicated a desire for productive agricultural lands to be preserved and were concerned about farmland fragmentation, the strategies outlined within the document did not go as far to support these interests. The objectives stated that "The MD of Foothills will endeavour to... support agriculture" (p. 21, 35). This objective was weak both in that it omitted to refer to agricultural lands and that it failed to commit to any assurances for the long-term viability of agriculture in growth management planning in the rural municipality and therefore reduced stability.

The High River-MD of Foothills IDP contributed to moderate stability by including the following:

Agricultural designations are intended to support continued low intensity agricultural production into the foreseeable future. Subdivision of these lands, even into smaller agricultural parcels will generally not be supported other than to remove a first parcel out from an un-subdivided quarter.

Intense development of these lands has generally been ruled out either due to the suitability of the land for agriculture or because of its unsuitability for future urban growth. (p. 36).

Although the wording did leave opportunity for agricultural lands to be developed, the intention seemed to align with disallowing conversion in most cases.

Both the Black Diamond-MD of Foothills-Turner Valley IDP (2002) and the Longview-MD of Foothills IDP (2003) stated at the outset of the 'Plan' section that: "Agricultural land should be protected from premature development and from inappropriate development which may negatively affect agricultural operations" (p. 5; p. 6). Unfortunately, the statement provided minimal stability and contributed to uncertainty. The qualifier 'should' suggested that protecting farmland from premature development was desirable but not required. Similarly, farmland was only protected from 'premature development' which suggested that conversion should be expected in future.

The MD of Foothills-Okotoks IDP made no mention of agricultural lands contributing to weakened stability. The Calgary-MD of Foothills IDP similarly provided no contribution to stability and states only, "[it is not] the intent to limit general agricultural uses on lands used for agricultural production within the Interface Area" (p. 13). Additionally, the document was directed toward supporting coordinated urban growth in future reducing stability and increasing uncertainty.

Evidence of stability within the legislative framework for farmland protection was non-existent in most of the urban municipalities' documents. Black Diamond, Longview, Okotoks, and Turner Valley did not include any statements that reflected maximizing

stability for farmland protection within their documents. However, the Town of High River's Growth Strategy (2013) identified many shared values with the MD of Foothills, including "using land more efficiently and protecting agriculture" (p. 63). This statement for 'protecting agriculture' was clearly stated but was positioned as background information and thus contributed only moderately to stability. Like the MD of Foothills' MPD2010, the document's objectives offered greater support to the agricultural industry than to agricultural lands, however, there seemed to be some overlap in the representation of the activity and the resource. For example, the Growth Strategy also included a policy to "[r]espect and support existing agricultural operations that are located within the town boundary until such time as those are required for urban growth purposes" (p. 66). Besides conflating operation and land, this statement reduced stability and increased uncertainty by omitting a clear commitment to protecting agricultural lands. The document concluded that the Growth Strategy was intended to be proactive and visionary and that the "town will mitigate the fragmentation of agricultural land" (p. 136). Although this was positive, especially given High River was an urban municipality, it contributed to only weak stability as it provided no clear indication that farmland would be protected.

Calgary's MDP contributed to the legislative framework's stability by including the following sustainability principle: "[p]reserve open space, agricultural land, natural beauty and critical environmental areas" (p. 1-7). To meet MGA requirements, the City's MDP also included a policy to "[p]rotect existing agricultural operations by maintaining appropriate definitions and land use designations in the Land Use Bylaw" (s.4-3). The use of the term 'protecting' within the policy supported stability however, the use of 'existing' reduced long-term stability. Additionally, the statement reflected commitment to the agricultural industry

rather than agricultural land creating some uncertainty by suggesting that the land use designation was only applicable until an operation relocated.

Viewed together, these statements from the local legislative framework contributed to very weak stability for the overall study area. Although there seemed to be a limited intention towards preserving farmland in the short-term across most of the study area, evidenced mostly through intermunicipal development plans, agriculture was generally presented as an interim land use until further development was required.

Integrate Across Jurisdictions. Integration within a legislative framework has been identified as creating cohesion across provincial, regional, and local levels of government and ensuring that local-level policies align with broader public priorities (UNBC AgLUP Project, n.d.). Integration across jurisdictions was moderate in the MD of Foothills and moderate to weak overall for the study area. The MD of Foothills provided a comprehensive hierarchy diagram within its MDP2010 to demonstrate the relationship between various local, regional, and provincial planning documents including the MGA, the Land Use Framework, the South Saskatchewan Regional Plan, the Calgary Metropolitan Region Plan, and intermunicipal development plans as well as a number of local planning documents like the Municipal Development Plan and Municipal Growth Strategy. In addition, the MDP2010 made various high-level statements to align with the requirements outlined in each of the vertically and horizontally-oriented policies and legislation and included the local applications of the *Agricultural Operations and Practices Act*. The MD's Growth Management Strategy made similar reference to the provincial documents with limited reference to agriculture. One exception to this was a summary of the requirements related to agriculture in the Provincial Land Use Policies, 1996, and a set of suggestions demonstrating a moderate level of integration with the PLUPs.

The Black Diamond-MD of Foothills IDP (2002) and the Longview-MD of Foothills IDP (2003) both made reference to the PLUPs that, “support the protection of agricultural lands from premature conversion to other uses” (p. 5, p. 6). These IDPs also noted the required alignment with the MGA, but were completed prior to the LUF or ALSA being finalized and therefore made no reference to these documents or the SSRP. These IDPs reflected a moderate level of integration when considered against their publication date. The High River-MD of Foothills IDP (2012) and the MD of Foothills-Okotoks IDP (2016) provided moderate integration with the MGA and the SSRP. Similarly, the Calgary-MD of Foothills IDP (2017) provided moderate integration with the MGA and the SSRP and mentioned the ALSA. Horizontal integration was also represented in the intermunicipal development plans which identified policies for areas of mutual interest. Generally, these interface areas supported agricultural as an interim land use until it was considered necessary to develop for urban uses. The Calgary-MD of Foothills IDP (2017), for example, addressed the Calgary Growth Area and requirements that allowed first parcel out but otherwise discouraged subdivision or redesignation to support prospective annexation and efficient long-term urban development rather than agricultural uses. As defined in the MD’s MDP2010, first parcel out referred to “[a] single lot or parcel created from a previously un-subdivided quarter section. First parcels out are not intended to be further subdivided” (p. 46). IDPs also referenced the partner municipal development plans usually identifying the MD’s interest in agricultural pursuits and the adjacent municipalities’ interests in urban development except in the case of the MD of Foothills-Okotoks IDP (2016) which omitted any reference to agriculture.

Within urban municipal documents, only Calgary’s MDP (2009) explicitly noted the MGA’s requirement for municipal development plans to “contain policies respecting the

protection of agricultural operations within [municipal] boundaries” (s. 4.3.2) and outlined several supporting policies accordingly. All other urban MDPs referenced the MGA but omitted any requirement to consider agricultural operations. Calgary, High River, and Okotoks also referenced the province’s Land Use Framework in their municipal development plans while Black Diamond’s MDP referred to the Provincial Land Use Policies. Horizontal integration in the study area was also evident within municipal development plans that in some cases referenced other municipal development plans. For example, the High River municipal development plan identified shared values with the MD of Foothills including protecting agriculture and opportunities to benefit from the Highway 2A industrial corridor within the MD. The Okotoks MDP made similar statements to work with the MD of Foothills on growth that would support the goals of both municipalities despite Okotoks’s documents having tended to omit agriculture.

Within urban municipal documents, vertical integration was moderate with most making cursory reference to relevant policies and legislation. However, the Calgary and High River municipal development plans also mentioned the ALSA and the Calgary Metropolitan Plan and provided additional detail to the integration requirements listing aligning policies.

The province of Alberta was found to have a weak legislative framework owing to the focus placed on accommodating flexibility (see: Benoit, Johnston, Mackenzie, & Connell 2015; UNBC AgLUP Project, n.d.). Although the legislative framework documents for the study area demonstrated integration across jurisdictions, the overall ratings were weak to moderate as a result of the upper-level framework and the age of the documents.

Minimize Uncertainty. Uncertainty in a legislative framework have been identified by loop-holes, ambiguous language, exceptions, gaps, and open-ended conditions in planning

documents and was reflected in the possibility of inconsistent application of rules and regulations (UNBC AgLUP Project, n.d.).

Minimizing uncertainty was moderate in the MD of Foothills and very weak overall for the study area. Within the MD of Foothills' MDP2010 Agriculture section, the following three policies existed to enable the conversion and subdivision of agricultural land leading to uncertainty by opening opportunities for farmland fragmentation:

4. When considering the conversion of agricultural lands to other uses the Municipality shall consider the following:
 - 4.1 Guidance and policy contained within the Municipal Development Plan and other approved plans in the Planning Hierarchy found in Appendix A of this MDP.
 - 4.2 Present or proposed use of lands in the vicinity, including that of confined feeding operations
 - 4.3 Impact the proposed use will have on the existing or potential agricultural use of the property and properties that may be affected.
 - 4.4 Information contained within the farmland assessment records maintained by the Municipality.
 - 4.5 Response to referrals sent to Provincial government departments.
5. The subdivision of one parcel from a previously un-subdivided quarter section may be supported if the following criteria are met to the satisfaction of the Municipal District:
 - 5.1 The parcel is as small as possible while encompassing the structures, shelterbelts, well and septic fields necessary to the use, but not less than 2 acres in size and where possible, not larger than 20.99 acres.
 - 5.2 Where possible, given the other criteria in this subsection, the subdivision will be designed in a manner that respects natural capital, including but not limited to soils, vegetation, water bodies and their associated riparian areas, and views.
 - 5.3 The parcel has year round physical and legal access to a developed MD roadway.
 - 5.4 Subdivision of the parcel does not negatively impact adjacent agricultural uses
 - 5.5 All provisions of the Land Use Bylaw have been met.
 - 5.6 The parcel has been zoned to allow for the subdivision.
6. The subdivision of a fragmented parcel from a previously *unsubdivided quarter section* may be supported if the following criteria are met to the satisfaction of the Municipal District:
 - 6.1 The parcel is the entire area of the fragment.

- 6.2 A suitable building site exists.
- 6.3 Available legal and year round physical access sufficient to meet the needs of the proposed use.
- 6.4 Proposed use of the parcel does not negatively impact adjacent agricultural uses.
- 6.5 Applicant demonstrates that the parcel can be serviced onsite as per Provincial and Municipal regulations.
- 6.6 The parcel has been zoned to allow for the subdivision (p. 12-13).

The Agriculture section, however, also outlined the below policies for allowing confined feeding operations reducing uncertainty by ensuring that provisions were in place to support the right to farm:

The MDP2010 notes under a section titled ‘Planning for Growth,’

The Calgary Region, of which we are a part, projects a population of around three million people by 2050. We can expect significant growth pressure in that same time period. As well, we can expect the towns within our borders to see similar or even greater growth. This pressure requires leadership that directs growth to create vibrant communities, economic opportunities, limits fragmentation of agricultural land, and supports conservation of the natural environment (p. 5).

Although directing anticipated growth to certain areas of the MD in alignment with the Municipal Growth Strategy and the districts it defined reduced uncertainty, the weak language used around ‘fragmentation of agricultural land’ contributed to uncertainty by leaving open-ended to what extent this activity would be limited and suggesting that farmland fragmentation should be anticipated. Within the MGS a section entitled, ‘Supporting Agriculture’ included a list of “some suggested strategies to support agriculture in the MD”:

- Re-Affirm commitment to discourage conversion and fragmentation of Agricultural Lands;
- Identify areas in the MD where Agriculture is and will continue to be the dominant land use;

- Acknowledge that agricultural land is a key resource on which the region's economic prosperity and quality of life depends and support the continued diversification of rural industry;
- Support the growth of on-farm operations that result in value-added to farm produce, such as packing, processing, cooking, tasting or farm gate sales;
- Develop creative strategies for managing development in predominantly agricultural areas (p. 24).

While items 2, 3, and 4 contributed to minimizing uncertainty by affirming a commitment to agriculture in the MD of Foothills, items 1 and 5 contributed to uncertainty through the use of vague language and by suggesting that even in areas currently dominated by agriculture, future development should be expected without including any recommendations for how this might occur.

The intermunicipal development plans in the study area generally contributed to reducing uncertainty by defining areas that might be subject to future development. For example, the Black Diamond-MD of Foothills-Turner Valley IDP (2002) and the Longview-MD of Foothills IDP (2003) stated, “[f]or the purposes of this Intermunicipal Development Plan, the definition of higher capability agricultural land as contained in the MD of Foothills Municipal Development Plan and Land Use Bylaw will be used to evaluate agricultural land within the MD of Foothills” (p. 6; p. 5). However, neither IDP went on to integrate ‘higher capability agricultural land’ into the policies creating uncertainty by failing to outline how this classification could be expected to influence land use planning decisions within the interface area.

The High River-MD of Foothills IDP (2016) defined some land as “(ATL) – Agricultural Transition Lands recognizing that once further study and requisite planning has been completed, they could transition from agriculture into other uses” (p. 38). By explicitly identifying these areas and requiring a study to ensure the future land uses were compatible,

the IDP reduced uncertainty. The IDP also stated, “[s]ubdivision of lands designated as (A) in the Future Land Use Scenario should not be supported other than to remove a first parcel out from an un-subdivided quarter section” (p. 34). Although, the statement appeared to contribute to reducing uncertainty, the ‘Future Land Use Scenario’ was not finalized and therefore did not diminish uncertainty. The absence of agriculture from the MD of Foothills-Okotoks (2016) provided a glaring omission creating uncertainty for farmland.

Although Okotoks lacked focus on agricultural lands in its planning documents, the municipality’s MDP did include a land use policy to mitigate leap-frog development: “providing an efficient land use concept to avoid leap-frog and haphazard development as well as premature losses of higher capability agricultural lands, thereby minimizing capital, maintenance and social costs” (p. 49). Unfortunately, the policy contributed to uncertainty by suggesting that higher capability agricultural lands would be subjected to development in the long-term. Calgary’s MDP includes a policy to “[p]revent the premature fragmentation of agricultural land” (s. 4-3). Likewise, High River’s Town Plan’s policies included a statement to “[r]espect and support existing agricultural operations that are located within the town boundary until such time that those lands are required for urban growth purposes” (p. 40). These policies contributed to uncertainty by allowing the future division of farmland under undefined circumstances. Black Diamond, Longview, and Turner Valley’s municipal development plans provided no relevant statements minimizing uncertainty.

Land use bylaws for all of the urban municipalities in the study area included urban reserve districts where agriculture was a permitted land use until urban development required conversion creating uncertainty by omitting to define what would constitute a requirement for urban development.

Accommodate Flexibility. Flexibility within a legislative framework for farmland protection has been noted as balancing the restrictions created in maximizing stability and minimizing uncertainty and has usually been enabled through governance mechanisms including commissions, committees, and application processes (UNBC AgLUP Project, n.d.). Accommodating flexibility was moderate in the MD of Foothills and somewhat weak in the study area. Although buffers between incompatible land uses were outlined in many of the local legislative framework documents, only infrequently did requirements for transitional areas refer specifically to agricultural uses. The MD's Land Use Bylaw required setbacks and development permits for intensive agriculture and identified minimum separation distances as per the AOPA. Parcel sizes were also outlined for different areas in the MD's Land Use Bylaw depending on district.

The MDP2010 stated that the MD of Foothills has taken a balanced approach to residential development and “directs residential growth to fragmented lands and identified growth areas in the form of clustered development, and hamlet style developments and away from un-frAGMENTED agricultural lands” (p. 19). The MDP2010 also stated that proposals for commercial recreation development would be considered on the basis of “[a]gricultural capability of the lands” (p. 26). Under the Agriculture section of the MDP2010, the municipality affirmed that it would “[s]upport existing agricultural operations and the ‘right to farm’” (p. 11). These statements reflected a strong capacity to accommodate flexibility within the MDP2010. In addition, the MDP offered evaluation criteria to consider when farmland conversion was proposed, outlined in the Agriculture Policies 4, 5, and 6, however, as was discussed in the previous section these policies contributed to uncertainty rather than accommodating flexibility.

The MD's Municipal Growth Plan accommodated flexibility by identifying areas for development where agricultural lands might be impacted. For example, it states:

- “Support moderate growth and development in [the South Central District], particularly in locations where there is infrastructure nearby and where agricultural operations are less likely to be affected” (p. 30).
- “Be cognizant of potential impacts on agriculture when considering development applications particularly south of the Highwood River [in the South Central District]” (p. 30).
- “Identify the South West District as the district of the MD least able to support development due to the high value of the lands for agriculture and natural processes such as water production” (p. 30).
- “It is unlikely that subdivision beyond the first parcel out of an unsubdivided quarter section will be supported in most of [the South West District] unless supported by a comprehensive plan” (p.30).
- “Identify the East District as the district of the MD where Agriculture is and will continue to be the dominant land use” (p. 28).

These statements accommodated flexibility in the municipality by recognizing the potential negative impacts of development on agriculture, identifying areas where the land was suitable for agriculture, outlining provisions for allowing development, and directing growth accordingly. The MGS also stated, “[l]and use redesignation will be carefully considered to avoid creating land use conflicts particularly with respect to long established agricultural operations” (p. 30). This accommodated flexibility by mitigating negative impacts on the industry.

To some extent all of the intermunicipal development plans accommodated flexibility by identifying interface areas that were expected to be impacted by growth and proactively defining development guidelines, including referral requirements and approval processes. The High River-MD of Foothills IDP (2012) noted, both municipalities “prefer to direct development towards less favourable agricultural lands” (p. 48). The IDP further recommended that conflicting land uses might be avoided by, “designat[ing] areas around

urban municipalities where development will be encouraged or supported and other areas where development will generally be discouraged in favour of preserving un-fragmented agricultural parcels” (p. 36). The Black Diamond-MD of Foothills-Turner Valley IDP (2002) and Longview-MD of Foothills IDP (2003) referenced buffer zones for separating incompatible land uses: “Municipalities are encouraged to minimize conflicts between intensive agricultural operations and incompatible land uses through the use of reciprocal setback distances and other mitigative measures” (p. 9; p. 8).

No reference was made to agricultural uses or buffers in the MD of Foothills-Okotoks IDP (2016). The Calgary-MD of Foothills IDP (2017) stated “[w]here it is not possible to mitigate an identified constraint, development should not be supported” (p. 12). Although this requirement of the Calgary-MD of Foothills IDP was not specific to agriculture, nor did the examples where this might be expected to occur refer to agriculture, it did support flexibility by reducing the likelihood that adjacent land uses would conflict within the interface area.

The majority of urban municipalities’ documents did not contribute to accommodating flexibility. However, High River accommodated flexibility through policy requiring buffers intended to mitigate negative impacts between adjacent agricultural operations and non-agricultural land uses: “[a]ny development proposal adjacent to an existing agricultural operation shall incorporate buffering” (p. 40). Most urban municipalities supported agriculture as a temporary land use in urban reserve districts until development was required, however, this contributed more to uncertainty than to accommodating flexibility.

While the MD of Foothills accommodated flexibility it frequently contributed to increasing uncertainty thus reducing the overall strength of flexibility. Although the urban

municipalities were generally not positioned to accommodate flexibility internally, they did contribute to flexibility in the interface areas defined in the IDPs resulting in a somewhat weak capacity for accommodating flexibility.

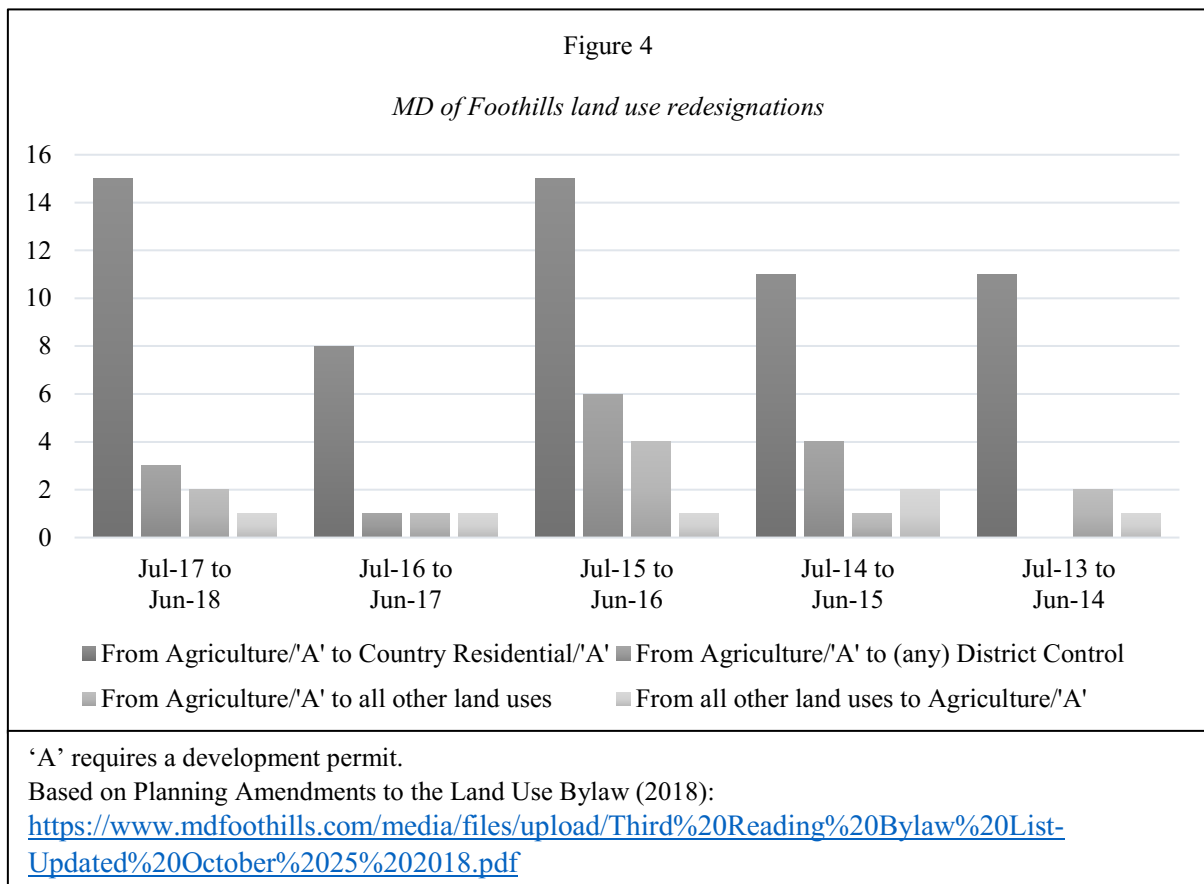
Overall, the MD of Foothills had a moderate to weak legislative framework for protecting farmland with statements that reflected opportunities for interpretation. Although the intermunicipal development plans tended to bolster the study area's legislative framework, the urban municipalities did not often provide improved capacity for protecting farmland.

4.2 MD of Foothills Land Use Redesignations and Priorities

In the absence of key informants from the MD of Foothills, additional documents were reviewed to help determine municipal land use priorities. Land use conversions to or from agriculture within the MD of Foothills between July 2013 and June 2018 were analyzed. Data were collected from the Planning Amendments to the Land Use Bylaw (2018) document which listed all land use revisions that passed third reading by Council.

As outlined below in Figure 4, in the last 5-year period between 10 and 25 amendments to the land use bylaw involved redesignating agricultural land to other land uses annually. Of those, the majority redesignated agricultural land to country residential uses – between 8 and 15 annually. In each year, only one redesignation occurred from other land uses to agricultural land use. The results of the count reveal that in each year the majority of agricultural land use conversions, including parcels with caveats, were to country residential uses. Examples existed of conversions from other land uses to agriculture, usually where future rezoning was anticipated.

A review of Council meeting minutes from July 2017 to June 2018 was also conducted in an attempt to identify land use priorities. Although the results could not be taken as a characterization of the full breadth of Council or administrative goals or interests, as they only represented those activities that were brought forward for decision, and only over the past year, they did reveal several patterns. First, agriculture was a consideration in bylaw amendments with decisions for refusal of subdivision or redesignation referring to non-conformance with policies in the Municipal Development Plan and South Saskatchewan Regional Plan related to agricultural land uses.



One example was recorded as follows in the June 27, 2018 Council minutes:

Moved that the subdivision of four 2.99 +/- acre Country Residential parcels and two 0.33 +/- acre and 0.84 +/- acre Municipal Reserve

pathways from SW 17-21-01 W5M be refused for the following reasons:

The application does not conform to the intent of the South Saskatchewan Regional Plan (SSRP) regarding the protection of agricultural lands. The SSRP directs Municipalities to limit fragmentation of Agricultural lands and limit premature fragmentation to other non-agricultural uses, especially within areas where agriculture has been identified as a primary land use in the region. (Pg. 111 SSRP);

In consideration of Objectives 1 & 2 and Policies 1, 2 & 4 of the Agriculture Section of the MDP2010, Council is of the opinion that the application did not provide sufficient merit in the proposal to consider removing the subject lands from the Agricultural land use district.

However, a second pattern included authorizing the redesignation of agricultural land to country residential uses which was also reflected in previous years as outlined above in Figure 4. Fifteen approvals for redesignating agricultural land to country residential uses were recorded in the Council minutes for the period of July 2017 to June 2018 during 10 separate meetings. The redesignation of agricultural land to country residential uses suggested farmland was being fragmented by smaller residential lots which may have implications for the viability of agriculture in the municipality in future if fragmentation continues.

Third, Council decisions reflected support for economic development by approving amendments and development permits that facilitated the establishment, continuation, and expansion of small businesses in the MD. Several of these approved businesses were small hobby farm operations. The recent move to change the municipality's name from the 'MD of Foothills' to 'Foothills County' was similarly motivated by a desire to draw industrial and commercial development to increase non-residential assessment and attract international investors who were expected to more readily recognize 'county' (Conrad, 2018a; Conrad,

2018b; Gillis, 2018). Additionally, industry located in this part of the MD has the potential to provide agricultural services including processing and transportation which could benefit the agriculture sector and motivate the MD to further the municipal growth strategy “to endeavour to support agriculture” (MD of Foothills, 2013).

Fourth, decisions acknowledged the need to coordinate growth internally and externally by directing certain land uses to specific areas. For example, the MD referenced High River’s lack of support for ad hoc development and directed certain land uses to the Highway 2A industrial corridor to avoid conflicts with the adjacent municipality while also ensuring alignment with policies outlined in the MDP2010. For example, one development permit was approved during the July 5, 2017 meeting conditional on also meeting the Town of High River’s requirements for the operation.

4.3 Key Informant Interview Results

Thematic analysis of the interview transcripts guided the assessment and organization of the interview data (see: Aronson, 1995). Using this method of analysis, responses were grouped according to the predetermined themes that guided the research, agriculture, economic development, urban growth, regional, and metropolitan planning. Additional repeated patterns were identified in the interview transcripts and provided the basis for considering subthemes.

Interviews with key informants grouped the above themes into three topic areas with related sub-topics. The first topic tied together the first three themes and addressed whether farmland protection and agricultural land use planning in the MD of Foothills influences economic development, planning, and urban growth in the neighbouring urban municipalities. The second topic also represented a research theme focused on the

development and application of the South Saskatchewan Regional Plan (SSRP). Similarly, the third topic aligned with one of the primary research themes and related to anticipated local and regional impacts of the Calgary Metropolitan Region Board. Several additional subthemes with the potential to impact farmland in planning were revealed during the interview process and subsequent analysis. These included the influence of oil and gas and water on planning in the region, residential development, and intermunicipal collaboration. All key informants were from urban municipalities although some interview participants had previous experience in the adjacent rural municipalities of Rocky View County and Wheatland County which provided some additional context and insight into regional approaches to agriculture. Participants had agreed to the use of their real names however; a decision was later made to use pseudonyms to refer to the interviewees.

4.3.1 Agriculture. Agriculture was among the guiding themes for the research and featured in the first set of interview topics. As such, it provided a relevant theme for organizing the interview results which also revealed urban agriculture as a related sub-theme. As the interview participants all worked for urban municipalities, the perspectives on agriculture focused on economic development and urban growth. However, some insights were available from their knowledge of regional activities, participation on intermunicipal boards and committees, and, in some cases, experience working in other municipalities in the Calgary area.

The MD of Foothills was noted as creating fewer regional concerns compared to Rocky View County in terms of development activities and aspirations. This was partially related to the MD's perceived interest in preserving farmland. Interviewees from Calgary, D. Cardinal and E. Wright, indicated that the MD of Foothills had greater interest in preserving farmland than Rocky View County and that Calgary, as a result, had fewer development-

related concerns with the MD than with Rocky View County. It was also suggested that the metropolitan growth management board was more concerned about achieving coherent development between Rocky View County and neighbouring municipalities than with the MD of Foothills.

E. Wright explained that although Calgary Economic Development (CED) did not have an explicit statement on farmland protection it did support the City of Calgary's development objectives. These objectives focused on developing existing greenfield land which was undeveloped land within the municipal boundary, rather than expanding into surrounding greenfield that was not serviced and where development might impact other municipalities implying that further outward development would have consequences for agricultural land. E. Wright noted, "It's a tricky thing, trying to protect agriculture." Referencing the ALR system in British Columbia and the greenbelt around Toronto, Ontario, E. Wright, explained that neither system really restricted growth with the ALR allowing conversion of agricultural lands surrounding urban centres in exchange for redesignating land as agricultural in more remote areas, while the Ontario government had to create an additional act to try to control the growth that went beyond the greenbelt. These lessons learned might be applied to the Calgary metropolitan area in plan development.

O. Peterson reported that in Alberta, and with specific reference to an adjacent rural municipality, "...a lot of the policies are preserve, preserve, preserve ag land, yet, subdivisions are happening all over the place... Well, when we have policies that say further fragmentation of agricultural land is discouraged, we can bring that forward in our reports [and] recommend refusal. However, in [they county's] case, we saw a fair amount of that get overturned – our recommendations – based on council's wishes of the day." It was further implied that policies could be more open-ended than intended and that varied interpretations

or personal affiliations had been able to influence decision-making that had potential to threaten farmland.

Confined feeding operations were mentioned briefly by two participants, but only to identify that there were not any intensive livestock facilities in the vicinity that might impact future growth plans by the municipality. O. Peterson also noted that the area outlined in the IDP was “...like an urban reserve. That land within that zone that sits in Foothills is almost urban reserve unofficially as well for [the MD]” and that it was conceivable those lands would be developed in future. O. Peterson further noted that while the MD of Foothills controlled the adjacent land and could permit country residential or industrial development in the area, it was unlikely that the municipality would develop the area in such a way as to limit Turner Valley’s future urban expansion into the area.

Recent revisions to the High River land use bylaw to increase density were identified by H. Ewan as reflecting that the town “value[s] agricultural property, and we’re not looking at encroaching on anymore land.” Although the legislative framework assessment suggested limits to this assertion, and given O. Peterson’s earlier comments about policy and decision-making not necessarily aligning, it did provide some security to farmlands in the MD of Foothills adjacent to High River.

Related to the agriculture theme, G. Burrows noted that Rocky View County had an agriculture plan and suggested that the MD should consider developing one as well. The lack of an agricultural plan for the rural municipality seemed to create a somewhat significant gap in the legislative framework for farmland protection.

Urban Agriculture. Urban agriculture was also highlighted as being of interest to the urban municipalities, but was focused more on farming and gardening as a lifestyle option to attract and retain residents in urban areas than as a viable agricultural and food security

opportunity. G. Burrows suggested that regionally determined densities limited opportunities for the smaller urban municipalities to remain competitive in the housing market and that larger lot sizes available outside of Calgary could be promoted to those looking to pursue urban farming. While this interest in urban agriculture suggested a desire towards diversified land uses within municipal limits, it provided limited insight into farmland protection from further urban growth outside existing municipal boundaries. D. Cardinal reasoned that the Calgary Eats! approach failed to adequately understand or represent the role of the region or how agriculture worked across the province, and further that it has not created food security for vulnerable populations so much as it had supported niche farming that would only be accessible to elites.

4.3.2 Economic development. A second research theme and topic in the interview questions focused on economic development and the extent to which it influenced or was influenced by agriculture.

Agriculture. E. Wright explained, that from an economic development perspective, Calgary Economic Development (CED) identified the agricultural region as extending from Red Deer (a small city about 150km north of Calgary) to the border of the United States (about 300km south of Calgary) with Calgary providing “one end of a pipeline for [agricultural producers] to get their product to market...” Although Calgary had generally not been directly involved in the agricultural market, it had facilitated connections between producers, services, and processing companies, and supported agri-business as potential opportunities to reduce vacancy rates in the downtown core created by the most recent bust in the oil and gas sector. Corporate offices for one of the world’s largest agri-businesses were noted as being located in Calgary. Calgary Economic Development additionally supported innovative agri-technologies, with vertical farming, aquaculture, and indoor growing in

unused warehouses reflecting some examples of this niche. E. Wright further mentioned, that for Calgary, distribution was a bigger driver for supporting the agricultural industry compared to food and beverage processing plants that were more likely to conflict with other land uses, create odours, and be heavy water users and heavy waste water producers. While these economic development activities did not necessarily influence surrounding agricultural lands, they did support the industry which might encourage regional farmland protection to support these businesses especially as Calgary continues to diversify in an effort to fill vacancies created by the recent downturn in the oil and gas industry.

H. Ewan reflected similar intentions to Calgary in High River which was actively looking to attract agri-technology to support producers and worked closely with the MD of Foothills to leverage food processing and distribution centres in the Highway 2A industrial corridor north of the town and outside the residential area. A major agri-technology business had also recently located its Canadian office in High River. Although attracting agri-business to the town did not directly influence farmland protection, funneling processing and similar businesses to the industrial core encouraged concentrated commercial and industrial development which could reasonably be expected to reduce stresses on regional agricultural lands where businesses might otherwise have to locate.

G. Burrows provided examples of businesses and restaurants in Black Diamond and Turner Valley that featured local produce and value-added products as business highlights referring to the ease of access to agricultural producers within the region. The recent Black Diamond economic development plan had also featured attracting processing businesses for agricultural outputs. G. Burrows suggested that agri-tourism similarly provided an economic development opportunity with potential for tourists to visit both a value-added business located in the town, like a brewery, and a working farm that might supply the brewery

located in the surrounding rural agricultural area. A similar niche was identified in Turner Valley as an opportunity for tourism, although the existing inputs from farms in the adjacent MD to local businesses was omitted despite this being the case. If Black Diamond and Turner Valley were to pursue agri-tourism as an economic development opportunity, they would likely have a vested interest in retaining farmland in the region although these pursuits would be unlikely to have a direct influence on farmland protection.

G. Burrows also mentioned that many farms were supplemented with off-farm income and that supporting home-based businesses could help to sustain agriculture in the region as many farmers already operated a second business out of the same property.

Servicing agricultural operators. Several interviewees identified the small municipalities south of Calgary as having services to support the agricultural operators located in the region including banks, hospitals, schools, clubs, and agricultural suppliers like feed stores. However, W. Robertson noted that many of the family farms that once existed have since been amalgamated and, although at one time area farmers used services in the small urban centres, fewer farmers have been sending children to school, getting groceries, or buying fuel in these municipalities. Previously, farmers provided a market for economic development, but increasingly economic development has been driven by Calgary, tourism, and retiring baby boomers.

Oil and gas. Five out of the seven interview participants mentioned the influence of oil and gas on planning. Both D. Cardinal and E. Wright highlighted the importance of oil and gas for Calgary's economic prosperity with D. Cardinal commenting that the current downtown vacancy rate, related to the recent downturn in the oil and gas economy, created fiscal risk to the City as a result of the reduced assessment base. D. Cardinal further explained that "...part of a function of the slowing economy was that suburban growth grows

faster... because the product is more affordable on the periphery. So, I would say that there's a market for affordable single-family dwellings again.” Growth on the periphery of the city posed a threat to farmland as it was likely to drive further conversion, fragmentation, and development of the agricultural land in the region.

While oil and gas had created opportunities in some municipalities, in Turner Valley, K. Spencer and O. Peterson referred to the hindrance of oil and gas. Littered with abandoned underground oil and gas infrastructure, large portions within the town’s limits could not be further developed without prohibitively costly reclamation. Additionally, O. Peterson identified a potential for public perception of the oil and gas infrastructure to constrict development. As the abandoned infrastructure restricted further development on lands within Turner Valley, there was likely increased risk to farmland on the periphery as the town would necessarily have to grow outwards to pursue residential development. Overall, there was a general sense that regardless of the relationship with oil and gas, the industry has impacted the region’s planning and economic development.

Water. Water availability and licences were highlighted as impacting future regional development to such an extent that economic developers were actively seeking businesses with low water consumption and waste water production. H. Ewan, for example, reported that High River was looking for “innovators” that used water efficiently because the region could not support additional water intensive processing. E. Wright similarly noted that efforts were made to support operations that could prove low water use requirements. G. Burrows mentioned that water licenses for the Sheep River would need to be secured to support future growth. While D. Cardinal and K. Spencer asserted that new water licences would not be issued in the region. From the perspective of increasing urban growth, farmland in the region

may be protected indirectly by the fact that limited water licenses in the region will necessarily restrict development.

4.3.3 Urban growth. Urban growth provided a third primary theme driven by the research questions. Key informants from Calgary indicated an interest in coordinating with the rural municipalities to ensure development occurring outside the city limits supported future urban growth. D. Cardinal maintained that, from the City's perspective, agriculture is the ideal land use for the areas surrounding Calgary because this land use facilitated coherent future growth and complete communities, defined as having mixed uses including residential, employment, and recreation where residents did not have to commute long distances for shopping or work, especially when fragmentation has not occurred. Furthermore, the City supported the preservation of agriculture as a function of a working landscape with D. Cardinal noting that "if you keep all this land available for development, agriculture's fundamentally the best use... of lands beyond our boundary, as compared to country residential... concentrated hamlets or, we call it rurban development." Similarly, G. Burrows noted that Black Diamond would look at municipal growth and development where it could occur most efficiently even if proposed lands were well-suited for agriculture. Although these urban goals for maintaining lands beyond their borders in agriculture were immediately beneficial to farmland protection, they created long-term threats to farmland.

G. Burrows further observed:

...the rural municipalities are pursuing development that could just as easily occur in a city or in an urban area... they're competing with these urban areas for the tax revenue that that development brings, but they should focus what they have that urban municipalities don't have – and that's land, agricultural land based on agricultural industry... they should focus on making their municipalities a great place to farm... Their economic initiative should be focused on agriculture...

These statements suggested that agriculture was not necessarily the current focus of the regional rural municipalities and that pursuing development might pose a threat to farmland while also contributing to rural-urban tensions.

4.3.4 Regional planning. The fourth research theme focused on regional planning and aligned with a set of interview topic questions. E. Wright affirmed that “Calgary is the region.” This sentiment was present in a number of interviews, with key informants from the smaller municipalities of Turner Valley, Black Diamond, and Longview recognizing that Calgary had offered opportunities to nearby municipalities. For example, G. Burrows stated that “[Black Diamond’s] prosperity is... mainly because we're in the Calgary region... we exist because we're in the Calgary economic area.” All interview participants eluded to partnerships that existed between the sub-region’s municipalities suggesting that cooperation and collaboration between municipalities occurred regularly.

4.3.5 Metropolitan planning. Interviewees suggested that administrative employees had concerns about the approach to metropolitan growth management in the Calgary region, highlighting a perceived lack of consultation and representation from local experts in the planning and economic development fields. Although interview participants respected that elected officials would ultimately make the planning decisions, it was also clear that the key informants appreciated that most councillors were not experts in the field and more could be done to support coherent and informed metropolitan planning.

Inconsistencies in interpretation of metropolitan planning scope. Of note was an inconsistent interpretation of the influence of the developing metropolitan plan. Conflicting results related to the anticipated influence of the metropolitan plan. One participant stated that they were not aware of any economic development initiatives being considered by the growth management board and that planning focused more on infrastructure. However,

another participant expressed frustration that economic development experts were not being consulted directly even though the growth management boards were required to include economic development in their considerations. Likewise, the scope of the metropolitan plan, once developed, was understood differently between interview participants with some believing that without representation on the board, the respective municipality was not subject to the growth plan while another thought that all municipalities within the region would be subject to any plans established by the CMRB. Several participants from across the region also expressed frustration that Black Diamond and Turner Valley, which had been active members of the CRP before its dissolution, did not have representation on the board.

Intermunicipal collaborative frameworks. D. Cardinal noted that in addition to having to participate on the growth management boards, the rural municipalities would be required to develop intermunicipal collaborative frameworks (ICFs) with neighbouring municipalities as part of the revised MGA. “So... especially for Foothills and Rocky View, they not only have to be members of the board, but they have to do all this other work with their communities that they share boundaries with. So, they're really disadvantaged by this.” W. Robertson identified a similar disadvantage for the MD of Foothills and suggested that, because of the MD’s requirement to negotiate plans with a number of municipalities, a template would likely be developed: “So, I'm assuming what they're gonna do is they're gonna try and come up with a template and then try to use that template and squeeze everybody into that template.” This would parallel the MD’s current approach to some of its IDPs, some of which have been very similar. W. Robertson also referenced the hierarchy of planning documents noting that the municipal development plan would have to align with intermunicipal development plans and the intermunicipal collaborative frameworks.

Municipal autonomy. Interview participants also suggested that the approach to the growth management boards might impede or be perceived to impede municipal autonomy. A majority of key informants expressed concerns about the exclusion of the smaller municipalities from the Calgary Metropolitan Region Board. D. Cardinal stated that the City of Calgary had raised concerns about excluding the smaller municipalities from the growth management board but that the membership had been driven by a desire to balance the politics rather than implemented to support effective regional planning. K. Spencer noted that some residents were concerned about what the planning might mean locally and that it might restrict individual plans for using land as a retirement fund. The sale of land to developers would threaten farmland.

G. Burrows identified an additional fear that smaller municipalities might be confined to density requirements that did not align with the lifestyle offered on the larger lots available in the small towns located outside the city. These concerns related to the longevity of the smaller urban municipalities should they lose their competitive advantage. However, increased density across the region would be likely to reduce pressure on agricultural land as urban municipalities intensified development within their borders rather than sprawling onto adjacent farmland.

4.4 Conclusion

The research results revealed that farmland protection has been lacking in the local legislative framework and that agriculture has largely been an interim land use until built development becomes possible. The legislative framework evaluation showed farmland protection had been lacking in policy and legislation and many opportunities for decision makers to convert land from agricultural uses to other uses were present. While recent MD of

Foothills' decisions suggested continued risks of farmland fragmentation with most land use redesignations converting agricultural to country residential, a fulsome understanding of the MD's visions and goals for farmland was limited due to non-participation in the interviews. However, information provided by other key informants, and the intention to prevent further subdivision in the interface area outlined in the Calgary-MD of Foothills intermunicipal development plan, suggested the potential for further rural residential development to encroach on previously undeveloped agricultural lands in the MD of Foothills. Urban municipalities expected development to be limited on immediately adjacent farmland located in the MD of Foothills to support efficient future growth and servicing. The discussion that follows will examine these results further within the context of the research questions that looked to identify the strength of the legislative framework, local land use priorities, and lessons for metropolitan planning.

5. Discussion

The purpose of this research is to inform metropolitan planning that enables farmland protection. To achieve this, the research answers three primary questions: What is the strength of the local legislative framework for farmland protection in the study area? What are the local land use priorities and how do they impact farmland in the study area? How can the answers to the first two questions inform metropolitan planning?

Based on the results of the legislative framework assessment, and the identification of land use priorities in the MD of Foothills – through content analysis and key informant interviews – farmland in the study area seems to be at risk of further fragmentation and conversion, particularly to country residential development. Recognizing this threat to farmland and considering examples from other metropolitan regions suggest a regional approach is most likely to provide security to public goods like agricultural land which could be achieved in the study area through comprehensive metropolitan planning. These observations will be discussed further in four sections. The first section considers metropolitan planning in the study area; the second examines implications for competing land uses in metropolitan land use planning. The third section provides opportunities for strengthening the legislative framework through metropolitan planning and the fourth provides lessons for enabling farmland protection in other metropolitan planning regions. The discussion concludes with a summary of the study limitations which outline that the study focuses on planning practice while several additional factors including, municipal assessment goals, recreation opportunities, water limitations, and public perception should be considered to provide a complete view of planning decisions and their impacts on farmland in a metropolitan setting.

5.1 Metropolitan Planning and Farmland Protection in the Study Area

As noted in the literature review, several different models of metropolitan planning have been used in Canadian regions. These models include single municipalities organized through annexation, two-tiered systems with local and regional decision-making mandated by provincial governments, amalgamated two-tier systems that centralize decision-making, demergers that have allowed secession from conglomerated decision-making, and flexible and innovative and voluntary approaches driven by citizens' groups and local actors.

Previously the City of Calgary had depended on annexation to ensure the municipality had the land necessary for future growth allowing the City to effectively control and coordinate the development of land in alignment with servicing requirements and infrastructural availability. This reflected what Sancton (2005) defines as a single city metropolitan. More recently, the single city approach was expanded to a voluntary model organized through the Calgary Regional Partnership. However, the CRP was beleaguered by defection and unwillingness by all members to implement the strategies developed consistently reflecting weaknesses of the voluntary model identified in the literature review. The current mandated two-tiered metropolitan approach organized under the Calgary Metropolitan Region Board has the opportunity to learn from other metropolitan planning regions, particularly, the two-tiered models that have been used in parts of British Columbia, Ontario, Manitoba, and Quebec at different times. Additionally, changes to the decision-making model have been experienced in the Regional Municipality of Corman Park-Saskatoon and Brandon that can likely provide lessons to the Calgary metropolitan, especially as Calgary moves from a voluntary metropolitan approach to a mandated approach. Although reviewing the impacts of changes to the metropolitan planning model are worth considering further, this issues falls outside the scope of this project.

The Province of Ontario has implemented a greenbelt area that limits fragmentation within its boundaries in the Toronto area, however, leap-frog development has occurred in the region to some extent as a result. Land speculation immediately outside the greenbelt increased real estate prices reducing the ability of farmers to expand operations and contributing to further farmland fragmentation (Tomalty, 2015). Current development activities in the MD of Foothills suggest that farmland adjacent to urban municipalities is likely to continue to be fragmented and converted to other uses creating potential for development to continue to expand onto agricultural lands located at greater distances from urban centres. However, creating protected agricultural areas does have potential to increase land speculation at the edges thus risking further development. Although Calgary exists as a lone large city in the region without major urban municipalities beyond any potential greenbelt area, as is the case in Toronto, caution should still be applied in developing farmland protection policies.

Metropolitan Vancouver implemented a similar, but more effective approach to protecting farmland to Toronto. Municipalities were involved in defining agricultural lands that would be protected from any future growth and committed to only permitting growth on the remaining land. Municipalities were empowered in the process and were therefore more willing to implement the associated policies as a result (Abbott, 2012). Given the history of animosity between rural and urban municipalities in the Calgary region, enabling individual municipalities to participate in defining protected farmland is worth considering further in Calgary metropolitan planning to ensure local commitment. Resistance to protection is more likely to be present in the MD of Foothills because, as a rural municipality, it would be more impacted by restrictions on development due to forgone assessment and development revenues. Meanwhile, urban municipalities could reasonably be expected to support

restrictions on development and expansion into farmland as they would not be subject to losing potential revenue. Further, the urban municipalities have indicated a desire towards maintaining unsubdivided and undeveloped farmland on their borders to support future urban growth that enables efficient servicing and infrastructure development. As will be seen below, metropolitan planning that protects farmland may be further informed by existing land use priorities and deficiencies in the legislative framework.

5.2 Competing Land Use Priorities

Data gathered through the legislative framework assessment, an analysis of MD of Foothills Council minutes and Land Use Bylaw amendments, as well as key informant interviews, aided in identifying the primary land use priorities that may support or threaten farmland in the study area. These competing priority land uses, each of which will be discussed below, include agriculture, country residential development, and commercial and industrial business. Several other land uses, including recreation (outdoor sports, equestrian, rodeo grounds), infrastructure (transportation, utilities, public facilities), and environmental services (wetlands, watersheds, wildlife corridors, scenic vistas) also influence land use decisions and agriculture to a lesser extent. Additionally, although future outward urban growth does not appear to be a priority, it remains a potential long-term threat to farmland in the study area.

Agriculture appears to be a priority land use within the MD of Foothills as evidenced in the MD's planning documents and Council decision-making. Although loopholes exist in the legislation and policy that leave farmland vulnerable to fragmentation and conversion, Council actions suggest that some effort will be made to retain farmland in agricultural use. While agriculture provides an opportunity for maintaining undeveloped farmland in the MD

of Foothills, the urban municipalities also preferred this land use for agricultural lands immediately adjacent to their borders. Although, this preference may facilitate farmland protection in the short-term it is likely to pose a long-term risk as urban municipalities look to expand. This is especially evident in the Calgary-MD of Foothills interface area outlined in the intermunicipal development plan that indicates the City would prefer agricultural land to be maintained in the immediate to support future coordinated urban development. While zoning is present in each municipality and is coordinated through intermunicipal development plans in some areas including the Highway 2A industrial corridor, metropolitan planning has the potential to further outline areas for different development uses as well as for protecting farmland.

Commercial and industrial business, which support economic development, are also land use priorities evidenced in the data. Additionally, the recent initiative to rebrand from ‘Municipal District’ to ‘County’ has been presented by Council as being driven by a desire to increase investment based on the understanding that ‘County,’ and the associated opportunities in this type of municipality, were more familiar to investors. While key informant interviews with experts from the MD of Foothills would have helped to confirm the municipality’s land use priorities, a review of recent Council minutes and land use bylaw amendments reveal patterns for support of economic development land uses. Many of the recent approvals supporting economic development enabled small agricultural operators in the MD to operate home-based businesses and directed more intensive operations to the Highway 2A industrial corridor. These decisions facilitate the retention of farmland by reducing the need to convert or further fragment agricultural lands to support other economic development activities. However, given the MD Council’s apparent interest in expanding economic development and the weaknesses present in the legislative framework, risks to

farmland remain especially as limited provisions exist for restricting further growth into as yet unfragmented farmland.

Several urban municipalities identified agricultural producers as providing economic development opportunities to businesses located in the urban centres that offer services, access to markets, and processing. Metropolitan planning may provide opportunities to align economic development with agricultural producers while also allowing cost and revenue sharing between municipalities to enable rural and urban municipalities to leverage their resources most effectively, respectively agriculture and infrastructure resources, as suggested by one interview participant.

Country residential development is another identified land use priority within the study area that creates significant threats to farmland. Although, the MD of Foothills has indicated that it will direct further residential development to already fragmented areas, the limits on expansion of these areas is not well established creating future risks for farmland conversion. Additionally, as will be discussed further below, the legislative framework for farmland protection in the MD of Foothills leaves potential for growth and development to occur even in areas where the primary land use is identified as agricultural. This ambiguity in the framework suggests that agriculture is a lower priority than other uses, at least for the rural municipality, and leaves Council with the option for further conversion. Although municipal autonomy is valued highly in the region and rural municipalities are particularly concerned about decisions being made by urban municipalities, a metropolitan approach to agricultural land is likely to increase the possibility that farmland will be protected.

Despite residential growth creating threats to farmland in the MD of Foothills, urban growth across the study area seems to be a low priority in the immediate and therefore not a pressing threat to agricultural land currently. Although several municipalities are looking into

options for outward expansion, the City remains the largest potential threat to farmland but is increasingly committed to densification. The Calgary-MD of Foothills IDP (2018), makes it clear that the City wants to maintain agricultural land uses on its southern border to ensure any future growth occurs in an orderly fashion and is easy to service by effectively retaining bare land.

Okotoks created one area of concern for the long-term integrity of agriculture in the region as the municipality made very limited reference to agriculture in its planning documents. In addition, Okotoks has been one of Canada's fastest growing municipalities creating a threat that the town will continue to expand outward onto the surrounding farmlands. Most concerning is that the MD of Foothills-Okotoks IDP, negotiated by both municipalities, makes no reference to agricultural land. While the interface area outlined in the intermunicipal development plan is slated for growth, the omission of any mention of agricultural lands or priorities places no restrictions on ongoing urban expansion. Once the limit of the current interface is reached, a priority for farmland protection beyond that boundary does not exist and suggests any commitment to agricultural lands made by the MD of Foothills are somewhat dubious.

These weaknesses in the legislative framework for farmland protection create the most significant threats to agricultural land as they do not limit the opportunities for conversion. Metropolitan planning may offer opportunities to fill these gaps and define more clearly across the region where growth and development can and cannot occur and equally where farmland conversion is prohibited rather than stipulating any criteria for redesignation and further development similar to what occurs with the Agricultural Land Reserve in British Columbia and the green zones in Metropolitan Vancouver.

5.3 Strength of Legislative Framework for Protecting Agriculture

The local legislative framework for farmland protection in the MD of Foothills was found to have a moderate to weak level of strength for protecting farmland while the legislative framework for the study area overall was weak. This was reflected in the four principles established by Connell and Daoust-Filiatrault (2018) for measuring plan efficacy: maximizing stability, integrating across jurisdictions, minimizing uncertainty, and accommodating flexibility.

Understanding the strength of the legislative framework for farmland protection, both in the MD of Foothills where a high quantity of farmland exists and in the study area that included urban municipalities, metropolitan planning might consider opportunities for filling gaps within the existing policy and legislation to protect farmland. For example, strong statements for protecting farmland are lacking across the study area legislative framework reducing stability. Maximizing stability was found to be somewhat weak in the MD of Foothills and very weak in the remainder of the study area. The MD's planning documents failed to make clear, strong statements for farmland protection often using convoluted phrasing that reduced stability within the framework. The remainder of the study area provided limited statements for farmland protection contributing to an overall very weak legislative framework for farmland protection. Metropolitan planning may provide an opportunity to strengthen the legislative framework for farmland protection by committing the region to farmland protection through strong statements that require municipal integration.

Integrating metropolitan planning with upper-level regional and provincial policy and legislation and lower-level intermunicipal development plans and municipal developments plans is an additional opportunity to ensure expectations for farmland are consistent across

the region thereby contributing to reducing uncertainty. Integration across jurisdictions was determined to be moderate in the MD of Foothills and moderate to weak overall for the study area. As the only rural municipality, and the primary location of agricultural land in the study area, the MD of Foothills had greater requirement to elucidate the integration of planning documents with upper-level framework documents like the *Agricultural Operations and Practices Act* and expand on the integration of regional and provincial policies for protecting farmland. The remainder of the study area planning documents made reference to regional and provincial planning alignment requirements but tended not to include significant descriptions of integration with agricultural land use policies. Intermunicipal development plans and references to other municipalities' documents demonstrated strong horizontal integration of planning documents across the study area. Metropolitan planning has the potential to improve integration by enabling and empowering municipal contributions to policy development thereby increasing the willingness of municipalities to apply the established policies locally.

The assessment revealed that minimizing uncertainty is moderate in the MD of Foothills and very weak overall for the study area. Across the legislative framework, documents for both the MD of Foothills and the urban municipalities tended to use weak language and frequently included qualifiers that permitted farmland fragmentation. Only the MD of Foothills reduced some uncertainty by outlining requirements for considering farmland conversion. Metropolitan planning can minimize uncertainty by defining clear boundaries for non-agricultural land use as well as conditions and timelines for future development within the region.

Accommodating flexibility within metropolitan planning might include policies for complementing these conditions by outlining requirements for buffers and setbacks as well as

other measures to mitigate impacts on adjacent farmland. In addition, study areas could be defined at the metropolitan level requiring municipal collaboration for completing agricultural assessments to determine whether land is suitable for development or should remain in agricultural use. Accommodating flexibility was found to be moderate in the MD of Foothills and somewhat weak in the study area. Within the MD of Foothills' planning documents, development was directed to specific divisions of the municipality and included statements supporting consideration of agricultural land suitability and measures to mitigate negative impacts on farmland in planning decisions. Although the urban municipalities made some provisions for buffers and setbacks to mitigate land use conflicts, few referred specifically to the interface of agriculture and other land uses.

To enable a stronger legislative framework, metropolitan planning in the Calgary region will require visions, goals, objectives, and policies for farmland protection written in clear, concise language that can hold up to court challenge. Metropolitan planning will further need to integrate policies with the SSRP, the revised MGA, the LUF, the ALSA, and the AOPA. Well-defined urban growth boundaries will also be necessary, supported by buffers, setbacks, and other measures to mitigate impacts on adjacent farmland.

Many opportunities exist for the Calgary metropolitan region to develop comprehensive planning that protects farmland by building on lessons learned from other metropolitan examples in Canada, reflecting on competing land uses from a metropolitan scale rather than a municipal perspective, and committing to strengthening the local legislative framework by resolving identified deficiencies.

5.4 Lessons Learned for Metropolitan Planning in Canada

Each metropolitan planning region has unique characteristics and land use priorities driven by the social, economic, environmental, and political goals of local stakeholders. The Calgary region and the study area presented in this research are no exception; however, some lessons may be learned from the research that might inform metropolitan planning in other areas of Canada.

First, the legislative framework for farmland protection has potential to be strengthened through metropolitan planning. Policy and legislation at the metropolitan level may be applied to address land use issues that extend beyond individual municipalities but are not so wide reaching as to be regional in scope. While intermunicipal policy and legislation address land use issues along the borders of immediately adjacent municipalities, they fail to provide coordinated development beyond the interface areas. Without restrictions uncoordinated leap-frog development becomes possible in rural municipalities outside of the intermunicipal planning area. This creates risks to farmland while also hindering efficient urban growth and servicing in future. Metropolitan planning may prevent these problems by creating a more holistic approach to development between municipalities that could be outlined in the legislative framework to establish accountability across municipalities for responsible development and farmland protection.

Second, by coordinating land use priorities across the municipalities, metropolitan planning can reduce land use conflicts. Municipal land use priorities serve municipal interests that may not necessarily align with adjacent municipalities or support the social, economic, and environmental objectives for the metropolitan area. Metropolitan planning provides opportunities to determine land use priorities at a broader level and demarcate specific areas to specific uses to limit conflict. Farmland may be protected from further development if

agricultural uses are not located near incompatible land uses. Metropolitan planning allows municipal land use priorities to be considered in context enabling more compatible adjacencies in current and future land use designations to prevent conflict that might further compromise farmland.

Third, while concerns over municipal autonomy and competition reasonably exist in metropolitan governance, innovative and flexible models can empower municipal participation and implementation of metropolitan planning goals. Although a voluntary planning model is likely preferable, historic competition or conflict may hinder the effectiveness of this approach. While a mandated approach may not be ideal in overcoming animosities, it has potential to facilitate collaboration and compromise by requiring certain targets or implementation dates are achieved through provincial enforcement. Municipal autonomy may be maintained through active engagement in decision-making at the metropolitan level. Additionally, competition between municipalities may be reduced by establishing planning objectives at the metropolitan level and integrating innovative cost and revenue sharing models. These options may further protect farmland by directing growth and development to specific areas across the metropolitan without compromising potential revenue to individual municipalities.

Fourth, metropolitan planning has potential to encourage agriculture to be leveraged by supporting land uses that are more compatible with available services, infrastructure, and resources. Urban municipalities lack capacity to develop agriculture but often have the infrastructure and servicing available to support processing plants, distribution warehouse, and access to local, provincial, national, and international markets to support the agricultural industry. Rural municipalities have the land to support many different uses including agriculture; however, often lack the necessary infrastructure and servicing for value-added

businesses. Metropolitan planning offers opportunities to contextualize development to encourage agriculture in rural municipalities and value-added activities in urban municipalities. However, provincial mandates and innovative cost and revenue sharing incentives may have to be established leverage these economies of scale within metropolitan planning.

Metropolitan planning in Canada might learn from the results of this research to increase farmland protection by updating policy and legislation to eliminate loopholes, coordinating land uses, actively engaging with the metropolitan planning process, leveraging agriculture in rural areas where farmland exists, and working towards creative solutions and incentives for farmland protection.

5.5 Study Limitations

The primary research objective was to inform metropolitan planning that includes farmland protection based on information gathered through two research questions that sought to evaluate the strength of the local legislative framework for farmland protection and identify land use priorities. The results, therefore, provide insight into opportunities to improve planning documents' efficacy but do not address the efficiency of developing said documents or the effectiveness of their application, each of which provide assessment points as identified by Connell and Daoust-Filiatrault (2018). Each of these assessment opportunities may also be influenced by public priorities that could reflect desires to increase municipal assessment, support for landowner interests, development of recreation opportunities, expansion of extractive industry, enabling environmental preservation, pursuing capital investments, securing employment opportunities, or achieving administrative objectives. Opportunities for further research within the study area and the

Calgary metropolitan region include assessing the efficiency and effectiveness of metropolitan planning to provide a complete view of planning priorities as well as exploring innovative solutions for cost and revenue sharing to the benefit of municipalities.

6. Conclusion

The purpose of this research was to inform metropolitan planning that protects farmland. While many influences and land uses threaten farmland, this research focused on the impacts of residential, commercial, and industrial development in agricultural areas. Focusing on the MD of Foothills, where the majority of farmland currently exists within the boundaries of the defined study area, the research evaluated the strength of the legislative framework and identified several land use priorities to inform metropolitan planning.

The research has identified that the current legislative framework for farmland protection in the study area is moderate to weak. In addition, agriculture continues to compete with other economic development uses, residential development, and urban growth for farmland driven by the aims of individual municipalities. However, the recent renewal of metropolitan planning in the Calgary region provides an occasion to resolve deficiencies in the legislative framework and conflicts in land use planning by developing a comprehensive metropolitan plan that protects farmland. Farmland protection may be achieved in the metropolitan plan by using strong language that is not easily challenged, outlining clear requirements for integration with upper and lower-level policies and legislation, defining strict growth boundaries and requirements for development, and maintaining opportunities for future development within the growth boundaries through covenants that include measures for mitigating conflict with agriculture. Coordinating land uses at the metropolitan level through collaborative decision-making that empowers individual municipalities increases potential to leverage agriculture as a valuable regional land use while also ensuring municipal support for planning activities.

Future research might consider the efficiency of the metropolitan plan development and the related decision-making structure. The effectiveness of the metropolitan plan, once in place, would also offer a valuable opportunity for evaluation to determine whether the efficacy and the effectiveness align. Similarly, a future comparison of the current legislative framework, before the completion of the metropolitan plan, with the future legislative framework, including the updates to the Municipal Government Act, finalized metropolitan plan, and intermunicipal collaborative frameworks, would provide valuable insight into where deficiencies in protecting farmland were resolved or persist. A further study might evaluate the legislative framework for the entirety of the Calgary metropolitan region. Given the similarities between the Calgary and Edmonton metropolitan region boards, a comprehensive study and comparison of both might further highlight why weaknesses exist in the legislative framework for farmland protection in either metropolitan region.

Additional research might focus on the boom-bust impacts on farmland protection in the Calgary metropolitan region, the capacity of land trusts to maintain farmland given Alberta's propensity for free-market solutions, local perspectives on agriculture as a land use priority, and property owners' rights and their responsibilities to the collective. Further research might examine whether farmland is most valued in the Calgary metropolitan region for agricultural purposes, cultural heritage, environmental services, recreational opportunities, or scenic appeal and the extent to which these functions support farmland protection. Finally, both flooding and water scarcity have had significant impacts on the region making the impacts of watersheds on agriculture and development another area of research worth pursuing to better understand farmland protection and the reasons for its pursuit.

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Appendices

A. Notes on Table 6

- (1) Significant reference to ALSA, LUF outside agricultural context.
- (2) Significant background on agriculture.
- (3) Significant reference to visions and goals for agriculture in Introduction, Implementation Plan, Strategic Plan.
- (4) Agriculture not included in regulations except for single definition; grazing lands have minimal inclusion.
- (5) 17 maps included throughout document; outline White and Green areas, conservation areas; no direct reference to agriculture, one reference to rangelands.
- (6) Refers to MGA; references PLUP in agricultural context; document published before LUF/ALSA.
- (7) Brief overview of agriculture.
- (8) No vision, goals, objectives for agriculture identified.
- (9) Agricultural land should be protected from premature and inappropriate development in accordance with PLUP (p. 6); document published before LUF/ALSA.
- (10) 2 maps included, geographical context and plan and policy areas; second outlines agriculture.
- (11) Reference to alignment with SSRP, ALSA, MGA but not in agricultural context.
- (12) Brief reference to agriculture in MD growth strategy.
- (13) No visions, goals, objectives for agriculture identified.
- (14) Statement supporting first parcel out on quarter section; statements advising that redesignation from agriculture to other land uses will generally not be supported.
- (15) 5 maps however, none show agriculture.
- (16) Refers to SSRP within context of “Provincial Land Use Strategy” and MGA (p. 10); no mention of agriculture.
- (17) Overview of cultural/historical significance of agriculture.
- (18) Minimal goal to “Discuss the importance of minimizing the impact of development on agriculture” (p. 8).
- (19) Subdivision should not be supported on agricultural lands except first parcel out of quarter section; further annexation of agricultural land possible.
- (20) 12 maps with 6 specifically outlining agriculture.
- (21) Refers to MGA; references PLUP in agricultural context; document published before LUF/ALSA.
- (22) Brief overview of agriculture.
- (23) No vision, goals, objectives for agriculture identified.
- (24) Agricultural land should be protected from premature and inappropriate development in accordance with PLUP (p. 5); document published before LUF/ALSA.
- (25) 2 maps included, geographical context and plan and policy areas; agriculture not outlined in either.

- (26) Refers to SSRP within context of “Provincial Land Use Strategy” and MGA, and future alignment with metropolitan growth strategy (p. 1); no mention of agriculture.
- (27) No background of agriculture or any reference to agriculture, farming, or country residential in document.
- (28) No vision, goals, objectives for agriculture identified.
- (29) No statements referring to agriculture.
- (30) 3 maps included; agriculture not outlined.
- (31) References MGA, ALSA, SSRP with passing reference to agriculture.
- (32) Agriculture not included in the Overview or Context.
- (33) Vision does not include agriculture.
- (34) No inclusion of agriculture in future state.
- (35) Numerous maps; no reference to agriculture.
- (36) Reference to MGA.
- (37) AG – Agricultural District for agriculture / to prevent premature or scattered development; A – Agricultural District to recognize existing agriculture.
- (38) 1 land use map with agricultural districts identified.
- (39) Reference to MGA version that omits agriculture under s.632.
- (40) Agriculture recognized as important to economy.
- (41) No vision, goals, objectives for agriculture identified.
- (42) No statements referring to agriculture.
- (43) Land use map includes agricultural lands.
- (44) Brief mention of MGA; no reference to LUF or ALSA.
- (45) Agriculture may be allowed in utility corridors or Future Urban Development; temporary use until urban development occurs.
- (46) Large number of maps refer only to Future Urban Development; agriculture may be temporary use until urban development occurs.
- (47) Significant detail related to integration of policy with provincial policy and legislation including agriculture; also references draft CMP by CRP.
- (48) No background on agriculture provided.
- (49) No visions, goals, objectives specific to agriculture provided.
- (50) Includes agricultural policies in alignment with MGA requirements.
- (51) 6 maps; none identify agriculture; one identifies major development influences highlighting country residential and small lot development at 2006 in MD.
- (52) Refers to MGA.
- (53) Refers to Rural, Non-Intensive Agriculture and Urban Agriculture.
- (54) 3 maps; no reference to agriculture.
- (55) Refers to MGA, LUF, ALSA, SSRP.
- (56) Cultural and heritage value of agriculture.
- (57) Vision for agricultural preservation and urban agriculture.
- (58) Several policies supporting agriculture.
- (59) 16 maps; one reference to agriculture in context of Highway 2A industrial corridor.
- (60) References MGA outside agriculture context.

- (61) Urban Reserve District allows agriculture but must consider close proximity to urban uses and probable future urban development.
- (62) 1 map; no reference to agriculture; Urban Reserve District.
- (63) Refers to MGA not in agricultural context.
- (64) Agriculture identified as key economic industry as well as oil and gas and tourism.
- (65) Strike a balance between agriculture and other land uses.
- (66) Industrial development requires a plan regarding agriculture and other activities.
- (67) 3 maps; no reference to agriculture.
- (68) References MGA and outlines local applications of AOPA.
- (69) Significant inclusion of agriculture in policies and relation to other land uses.
- (70) 52 maps all outlining agricultural land use areas.
- (71) Refers to MGA, LUF, SSRP, AOPA and provides Hierarchy of Planning Documents diagram.
- (72) Provides limited background on agriculture despite “intention to maintain agriculture as the dominant land use” in introduction.
- (73) Agricultural land use goals and objectives identified.
- (74) Policies support goals and objectives.
- (75) 4 maps; none directly identify agricultural lands, one refers to grazing lands.
- (76) References MGA.
- (77) One reference to extensive agriculture in Urban Holdings District, but map refers to Agricultural District; multiple references to agricultural related businesses.
- (78) Land Use Map identifies extensive Agricultural District land use area; Land Use Bylaw only refers to Urban Holdings District for agricultural purposes.
- (79) References MGA, LUF, SSRP, CMP outside context of agriculture.
- (80) Historical significance of agriculture.
- (81) No vision, goals, objectives for agriculture.
- (82) One policy statement related to agriculture.
- (83) 14 maps and figures outlining land use; no reference to agriculture; one map outlining proposed annexation area.
- (84) Refers to MGA and PLUP; no reference to agriculture.
- (85) Minimal reference to Agricultural Related Businesses (also Veterinary Clinics, Abattoirs) under General Industrial District Permitted and Discretionary Uses.
- (86) Supplementary maps; agriculture not outlined.
- (87) Refers to MGA; no reference to agriculture.
- (88) Background refers to historical significance of oil and gas, recreation opportunities; agriculture not included.
- (89) Includes vision and objectives for municipal development; does not outline agriculture.
- (90) No agricultural policies included.
- (91) 4 maps included; agriculture not outlined.
- (92) No reference to provincial policy or legislation.
- (93) Minimal inclusion; agriculture exists in close proximity.

- (94) Significant inclusion of agricultural services / value-added products as opportunity for economic development including vision and actions.
- (95) No policies; strategic document.
- (96) No maps.
- (97) No reference to provincial policy or legislation.
- (98) Reference to local economy serving agriculture in surrounding area.
- (99) No vision, goals, objectives related to agriculture.
- (100) No policies; strategic document.
- (101) 8 maps; one referencing agriculture.
- (102) No reference to provincial legislation or policy.
- (103) Serves surrounding agricultural areas; minimal opportunities for economic development.
- (104) No vision, goals, objectives for agriculture
- (105) No agricultural policies.
- (106) No maps.
- (107) Passing reference to LUF.
- (108) Document is specific to agriculture in urban setting.
- (109) Significant vision, goals, objectives for urban agriculture, food security; comprehensive action plan with recommendations for legislation and land use planning.
- (110) Many recommendations; limited enforceability.
- (111) Numerous maps outlining agricultural lands and land suitability ratings across Alberta.
- (112) No reference to provincial legislation or policy.
- (113) Agriculture excluded from CED focus; other organizations focus on agriculture sector.
- (114) Agriculture vision not included.
- (115) Brief inclusion of emerging opportunities to support agriculture.
- (116) No maps.
- (117) Refers to MGA, LUF, ALSA, SSRP.
- (118) Cultural and heritage value of agriculture.
- (119) Vision for agricultural preservation and urban agriculture.
- (120) Several policies supporting agriculture.
- (121) 16 maps; one reference to agriculture in context of Highway 2A industrial corridor.
- (122) Refers to MGA, LUF, ALSA, SSRP with some references to agriculture.
- (123) Provides significant agricultural background.
- (124) Provides stronger goals and objectives than policies for agriculture, agricultural lands.
- (125) Weak agricultural policies, for example: "The MD will endeavour to support agriculture" (p. 21).
- (126) 1 map; no reference to agriculture; reference to grazing lease land.
- (127) No reference to provincial policy or legislation.
- (128) No inclusion of agriculture in document.
- (129) No vision, goals, objectives related to agriculture

- (130) No policies; strategy document.
- (131) No maps.
- (132) No reference to provincial documents.
- (133) Very limited overview of agriculture and historic value of ranching.
- (134) No objectives for agriculture despite being key economic sector.
- (135) N/A – no policies on agriculture included.
- (136) 5 maps; agriculture not included

B. Interview Introduction and Participant Consent Form

Selected key informants were provided with the following information letter and consent form to introduce the research and gain signed agreement to the terms of participation.



INFORMATION LETTER / CONSENT FORM

Metropolitan Planning in the Calgary Region: A Case Study of the Municipal District of Foothills

June 18, 2018

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PARTICIPANT INFORMATION LETTER

Invitation to Participate and Project Purpose

Given your role as [title] within the [municipality name], I am seeking your insight into agricultural land use planning and rural economic development in the Calgary Region. Specifically, I am looking to understand whether and how the [municipality name]'s economic development and planning activities influence or are influenced by agriculture and agricultural land use planning in the MD of Foothills.

This research is particularly relevant to both the [municipality name] and the region given that the Calgary Metropolitan Region Board Regulation came into force January 1, 2018 with implications for all the municipalities within the region.

The objective of the project is to inform planners, developers, decision-makers, and researchers on agricultural land use planning practices.

Participation

Participation is entirely voluntary; you are in no way obligated to participate in this research. You have the right to refuse to answer any questions or withdraw from the study at any time without providing a reason. Should you choose to withdraw from the study any information you have provided up to that point will also be withdrawn and securely destroyed, unless you explicitly consent to the information being retained and analysed.

Interview Process

Should you agree to participate, an interview of approximately one-hour will be conducted at a time and location of your choosing or by phone in the event an in-person interview is not possible. The interview will be structured around questions on the following:

The current state of agricultural land use planning in the Calgary metropolitan area specific to the MD of Foothills and adjacent urban municipalities and:

- a. Farmland protection;
- b. Economic development; and
- c. Urban growth.

The interview will be audio recorded for accuracy. Following the interview, the recorded material will be transcribed by a third-party subject to a confidentiality agreement. Handwritten notes may be collected throughout the meeting. It is your right to request all or part of the interview not be recorded.

A verbatim transcript will be sent to you for review as soon as possible after the interview is complete.

Confidentiality, Anonymity, and Data Storage

Due to the small sample size of participants, and given your role within the municipality, your anonymity cannot be guaranteed. Your name may be directly attributed to your contributions; however, any inclusion will be confirmed with you in advance.

All consent forms, audio recordings, and transcripts will be kept secure in a password protected computer with password protected files; only the researcher and the thesis supervisor will have access to the interviews. Five years following the completion of the thesis, all interview materials including hand-written notes, audio files, and the transcription of your interview, will be destroyed. Any paper-based materials will be shredded; electronic files will be digitally deleted.

Potential Risks of Participation

Potential risks of participating in the project are expected to be minimal, but may include psychological or emotional risks of feeling uncomfortable, embarrassed, or upset and/or social risks that may involve loss of status or respect.

To mitigate these risks, no confidential material or information belonging to the municipality or any boards or committees with which it is affiliated will be requested or distributed. Additionally, participants may refrain from answering any question presented and it is expected that participants may be unable to answer some questions. No personal or professional harm to the interview participant is anticipated from declining to answer or from having insufficient knowledge of a particular subject to respond to any or all of the questions presented.

Potential Benefits of Participation

Potential benefits of participating in the project may include informing planners, decision-makers, residents, and researchers on agricultural land use planning and rural economic development issues and practices to improve future policies and outline areas in need of further study.

Compensation

No compensation will be provided for participating in the project.

Conflict of Interest

The primary researcher is known to several of the proposed interview participants and other staff within the study area. The researcher is a former resident of the MD of Foothills and several family members still reside in the municipality. The researcher maintains friendships with one of the MD's present councillors and one of the MD's past councillors as well as municipal administrative staff across the region.

Additionally, the primary researcher holds a contract for services with the Town of Turner Valley for communications consultation and provides website and social media maintenance as well as updating marketing material with annual revisions to dates, fees, and contact information.

No social, economic, professional, or political gains to the researcher are anticipated from this research.

To further mitigate any potential conflict, all material collected will be maintained confidentially by the researcher and their supervisor and no interview material will be shared among interview participants.

Study Results

The results from this study will be used for the completion of a Master of Arts thesis. The results may also be presented as part of the thesis defence and in writing for publication in journals. The audience for this work includes planners, elected officials, and other researchers, and is intended to contribute to further understanding agriculture, economic development, and urban growth in regional land use planning.

A 1-2 page summary of the results will be provided by email to interview participants. To request a full electronic copy of the completed research project, please contact me by phone or email at 587-227-7513 or ruddock@unbc.ca.

Questions and Comments About the Project

Should you have any questions about the research, please contact me by phone or email at 587-227-7513 or ruddock@unbc.ca.

Complaints About the Project

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the UNBC Office of Research at 250-960-6735 or by e-mail at reb@unbc.ca.

Participant Consent and Withdrawal

Participating in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to participate, you may choose to withdraw from the study at any time without giving any reason and without any negative impact on you.

If you agree to participate, please complete and return the Consent Form on the following page.

CONSENT FORM – INTERVIEW PARTICIPATION

I have read or been described the information presented in the information letter about the project:

YES ☐

NO ☐

I have had the opportunity to ask questions about my involvement in this project and to receive additional details I requested:

YES ☐

NO ☐

I understand that if I agree to participate in this project, I may withdraw from the project at any time up until the report completion, with no consequences of any kind. I have been given a copy of this form:

YES ☐

NO ☐

I agree to be recorded (audio only):

YES ☐

NO ☐

I agree that my name can be used; an additional consent form to this effect will be provided in advance of publication should your name be included in the final dissertation:

YES ☐

NO ☐

Follow-up information, including a transcription of the recorded interview and/or study results, can be sent to me at the following e-mail or mailing address:

YES ☐

NO ☐

Signature:

Name of Participant (printed):

Date:

Email Address:

Mailing Address (if hard copies requested):

C. Interview Questions

1. Agriculture, Economic Development, and Urban Growth in Municipal Planning

- a. What are the municipality's overall planning goals and priorities?
- b. What threats and opportunities does the municipality anticipate in attempting to achieve these goals and priorities?

1.1 Agriculture and Farmland Protection

- a. What is the municipality's perspective on farmland protection? Why?
- b. What other land uses does agriculture support or impede in this municipality?

1.2 Economic Development

- a. What are this municipality's major economic development goals? Would they be supported or impeded by farmland protection? By urban growth? By regional economic development?
- b. How, if at all, would this municipality's economic development strategy be impacted by neighbouring municipalities? By the CMRB?

1.3 Urban Growth

- a. What are this municipality's major goals for urban growth? Would they be supported or impeded by farmland protection? By regional economic development?
- b. How, if at all, would this municipality's residential development and urban growth strategy be influenced by neighbouring municipalities? By the CMRB?

2. Provincial Regional Planning – South Saskatchewan Regional Plan (SSRP)

- a. Is the provincial land use framework, in this case represented by the South Saskatchewan Regional Plan (SSRP), effective at providing the necessary decision-making tools to support municipal land use planning?
- b. Was municipal representation and consultation on the development of the SSRP sufficient? Why or why not? How could deficiencies have been prevented?

3. Metropolitan Planning – Calgary Metropolitan Region Board (CMRB)

- a. Will the metropolitan planning approach, in this case facilitated by the Calgary Metropolitan Region Board (CMRB), provide adequate autonomy and support to municipal governments?
- b. Will the municipal representation and consultation on a metropolitan growth strategy be sufficient? Why or why not? How could deficiencies be resolved?