

APPROVED BY COUNCIL
OCTOBER 10, 2017



Parkland County
**Technical
Growth
Study**

One Parkland: Powerfully Connected.



Parkland County

Technical Growth Study

OCTOBER 2017

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A scenic rural landscape featuring rolling green hills, a small white barn with a grey roof, and a dirt road in the foreground. The sky is filled with soft, golden clouds, and several birds are seen flying in the upper right corner. The overall mood is peaceful and serene.

PART A **OVERVIEW**



1.0 INTRODUCTION

As part of planning for sustainable growth, Parkland County Council has requested technical analysis to identify growth opportunities throughout the County, to identify a development pattern that supports Council's strategic goals and vision, and to support diversification of the County's economy. The Parkland County Technical Growth Study (TGS) is a comprehensive tool to identify, define and prioritize land use planning decisions in these areas.



With provincial policies moving away from coal-fired electricity production - a major employment generator for Parkland County, the current decline in oil and gas prices, and the new Edmonton Metropolitan Region Growth Plan, Parkland County requires an informed approach to growth that moves beyond “business as usual” to promote and enhance the unique opportunities the County has within the Edmonton Region.

Non-residential uses, such as industrial and commercial development, play an important role in the quality of life for residents by providing goods and services, tax revenue, employment opportunities and community focal points. *Parkland County's Long-Term Strategic Plan: 2040 and Beyond*, identifies economic diversification as an important priority. Parkland County is “open for business” and actively seeking to attract and retain employment. In turn, where there is employment there is also stronger demand for residential uses and better ability to deliver the quality of services residents expect.

Because Parkland County aims to understand how proposed growth opportunities may affect the overall financial health of the municipality, the Technical Growth Study (TGS) does not use a traditional growth study approach. The County's TGS approach defines growth opportunities by identifying Parkland's market niches within the Region, defining the projected population and employment growth associated with those opportunities, and determining where this growth ought to occur in light of engineering considerations and land use planning best practices. The TGS also recommends implementation tools and policies.

To this end, the TGS aims to encourage the diversification of employment and housing opportunities, considering regional market influences and the costs and benefits of developing in certain areas of the County over other areas. The key recommendations of the Technical Growth Study were used to develop policies within Parkland County's new Municipal Development Plan Bylaw 2017-14, scheduled for Council approval in October 2017.



2.0 OBJECTIVES

2.1 Objectives

Using information gathered during the TGS process and a review of existing planning and strategic documents, the following objectives were developed to guide the TGS.



These objectives strongly align with County priorities established through the Parkland County Long Term Strategic Plan:

Agriculture: Diversify agriculture through agri-business and development of agri-business clusters.

Economic Resilience: Create a positive environment for local economic development and offset potential losses from changes in local coal plant operations.

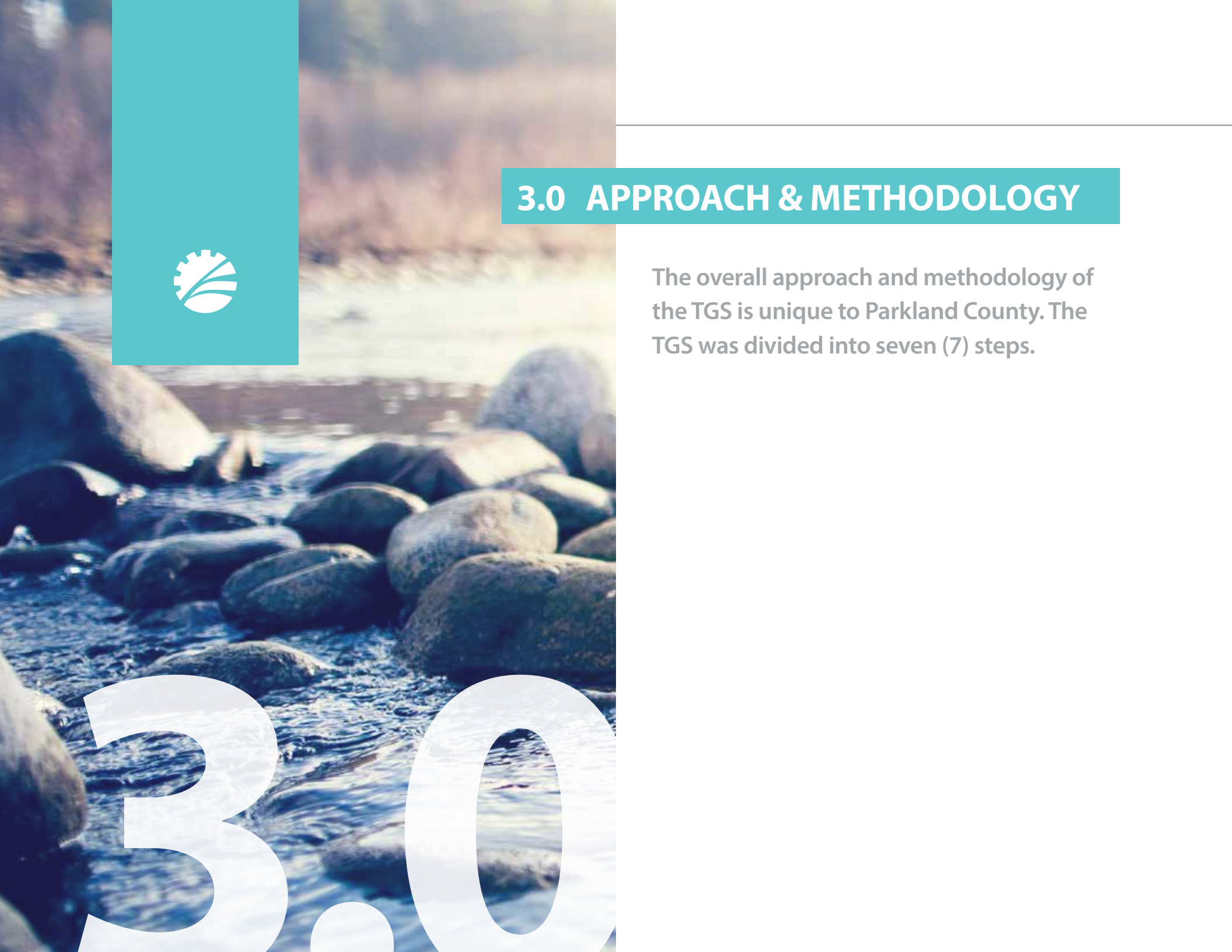
Economic Development: Leverage local assets to establish a diversified economy with quality employment opportunities.

Tourism: Responsibly leverage local environmental assets to create opportunities for tourism.

Environment: Embrace environmental social governance by increasing the number of hectares under conservation enhancement restoration.

Healthy Communities: Create strong, vibrant communities through proximity to amenities, services and recreational opportunities.

Balanced Growth: Balance the service needs of both urban and rural residents working in collaboration with regional partners.



3.0 APPROACH & METHODOLOGY

The overall approach and methodology of the TGS is unique to Parkland County. The TGS was divided into seven (7) steps.

3.0



Because the TGS does not rely only on existing growth trends and projections to determine growth areas within the County, the steps of the TGS required additional analysis to determine what economic diversification opportunities are available and where they might reasonably be located.

Step 1 | Establish Council Development Priorities

What are the key development priorities the County should focus on to achieve the County's fiscal, social and/or environmental goals?

-  › Agriculture and diversified agricultural areas?
-  › Recreation and tourism areas? Lakeshore communities?
-  › Highway business areas?
-  › Hamlet areas? Country residential areas?
-  › Mining & post-mining redevelopment areas?
-  › Others?

As part of Step 1, County Council was asked to identify the “key development priorities the County should focus on to achieve the County’s fiscal, social and/or environmental goals.” Council input was key to ensure TGS outcomes were reasonable and implementable. Parkland County Councilors are uniquely able to provide an in-depth understanding of development projects, community interests, opportunities and constraints related to growth and other local considerations in their Divisions. In addition, during the development of the TGS, Parkland County was undergoing a Municipal Development Plan (MDP) update; therefore, the approved MDP Bylaw 37-2007 was not a reliable account of current County development priorities.



3.0 APPROACH & METHODOLOGY

The second step to completing the TGS was the identification of Strategic Development Areas (SDAs) within the County. SDAs have existing “assets”, such as high quality agricultural land, environmentally-significant areas, hamlets, existing or future regional utility lines, major highway infrastructure, an established country residential community or an employment area. SDAs were used to associate development priorities with an area of land. For example, if agricultural diversification is a key goal, where are the best areas to support secondary agricultural industries in order to achieve this goal?

Step 2 | Identify Strategic Development Areas



- › Identify Strategic Development Areas (SDAs) where public & private investment could be encouraged to achieve County goals and priorities.

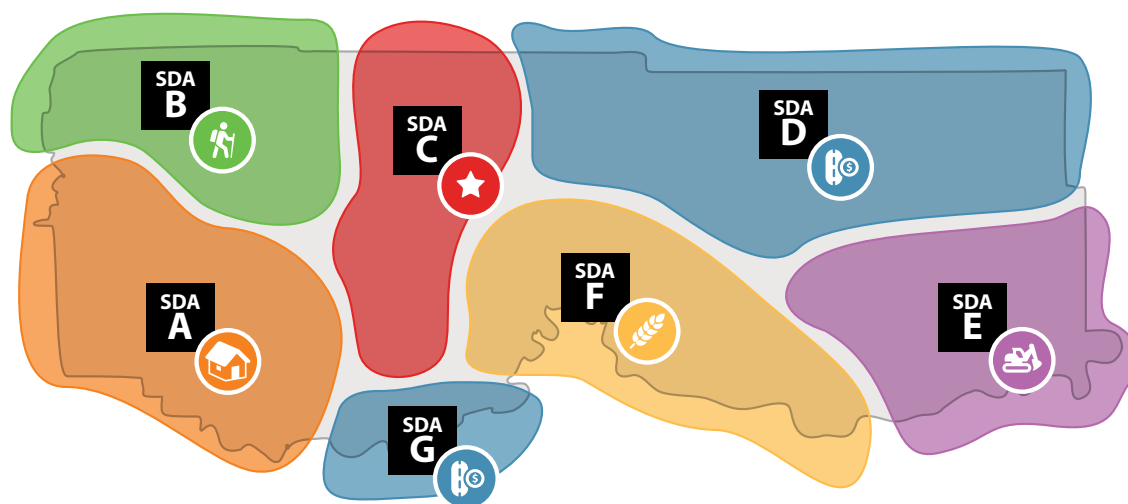




Step 3 | Establish Strategic Development Areas for the Whole County



› Establish Strategic Development Areas throughout the County to identify growth trends and opportunities.



All areas of the County were included as part of an SDA to enable a more detailed analysis of specific growth opportunities in each area. The location of SDAs was determined through:

- Council input;
- Review of regional growth trends and potential niche markets available to Parkland County;
- GIS analysis of development patterns; and
- High-level opportunities and constraints review.

Note: Diagram is for information purposes only. It depicts the general process and methodology used to develop SDA's. For the SDA's identified for Parkland County please refer to Figure 6 of the document.



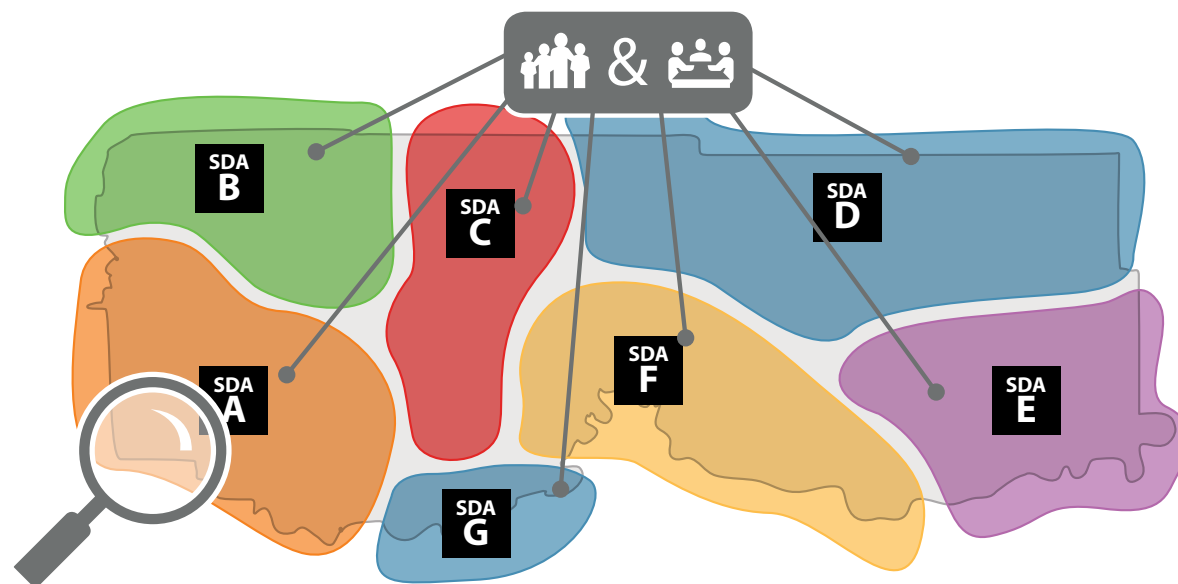
3.0 APPROACH & METHODOLOGY

During Step 4 property tax roll information was used to support the development of population and employment forecasts for each SDA. For the purposes of the analysis, economic forecasts prepared for the Capital Region Board's Edmonton Metropolitan Region Growth Plan¹ were used. These Capital Region forecasts represent an expectation of the economic activity and associated employment and population growth that would occur throughout the region over the next 30 years to the year 2046.

Step 4 | Complete Population and Employment Projections for Each SDA



› Complete population and employment projections for multiple growth scenarios in each SDA to identify SDAs with the strongest growth opportunities.



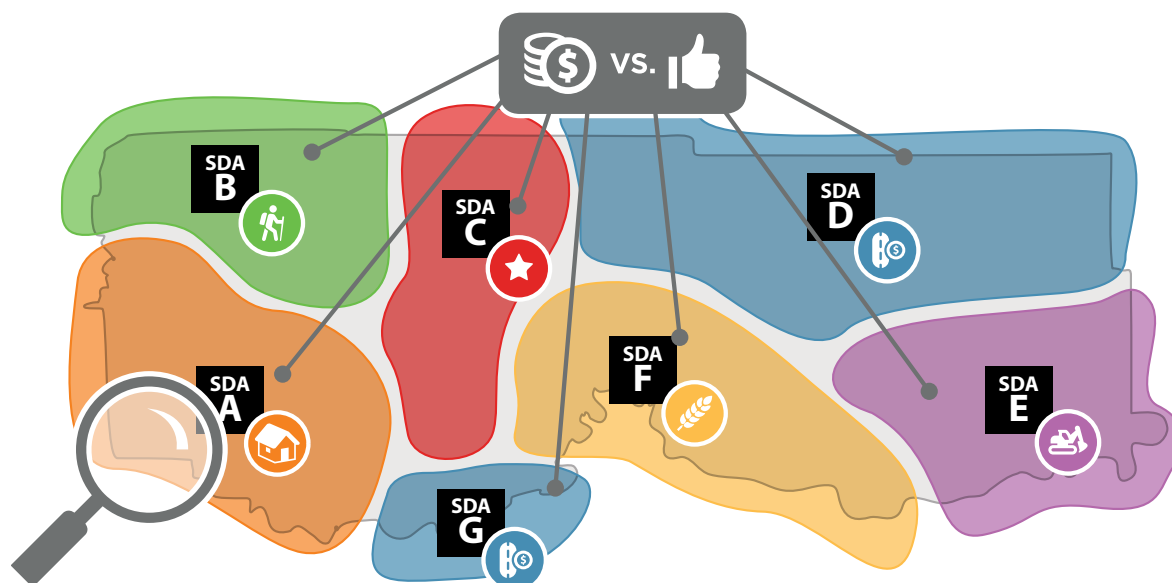
¹ The Edmonton Metropolitan Region Growth Plan was prepared in October 2016 and provides a population and employment projection for Parkland County from 2014-2044. Source: <http://capitalregionboard.ab.ca/Website/files/96/9673a809-4d44-474f-a663-65c6eac75a63.pdf>



Step 5 | Analyze Financial Impacts, Opportunities and Constraints for each SDA



› Analyze the costs and benefits of population and employment growth to determine which area will best meet County objectives.



Given the population and employment projected for each SDA, the project team undertook a review of opportunities and constraints for each SDA. Opportunities and constraints related to available and absorbed land uses, existing and proposed municipal infrastructure, environmental considerations, physical constraints to development (slopes over 15%, oil and gas wells, etc). It also considered the value of tax revenue generated by specific land uses. This analysis was used to identify the costs and benefits of growth in each SDA and prioritize growth in certain SDAs over other SDAs.

In addition, Applications Management Consulting Inc. detailed the financial impacts of certain development typologies and land uses so the net financial effects of these developments on the County could be considered. For example, the net effect of country residential growth on the financial health of the County was developed.



3.0 APPROACH & METHODOLOGY

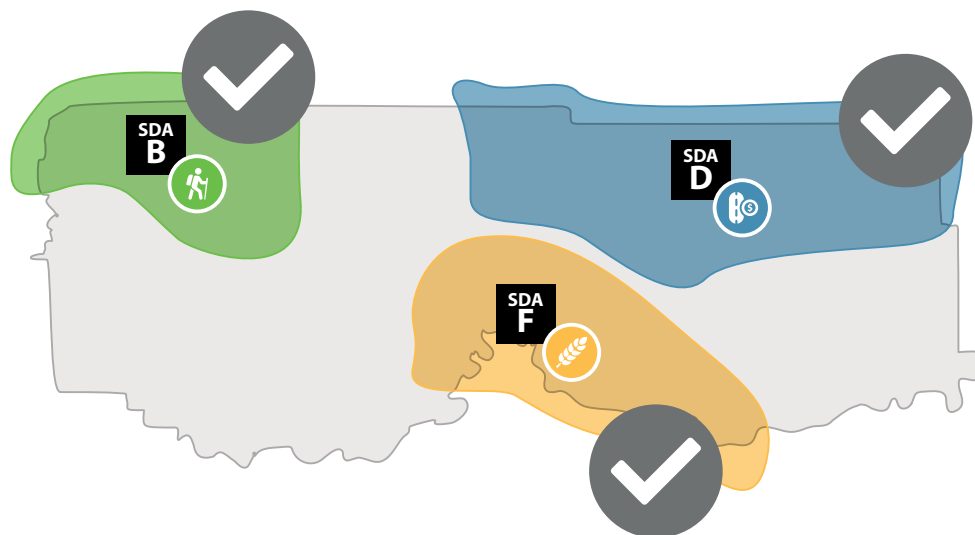
The results of the financial impact analysis were presented to County Council and Administration for review and input, and a preferred development scenario was selected. The selected scenario was chosen based on its alignment with the County's Long Term Strategic Plan, County values, existing and planned infrastructure, planning best practices and social and financial considerations. The selected development scenario was a critical input into the County's Municipal Development Plan Development Concept.

Step 6 | Choose a Development Scenario



› Identify priority areas where public and private investment should be directed to meet the goals of the County.

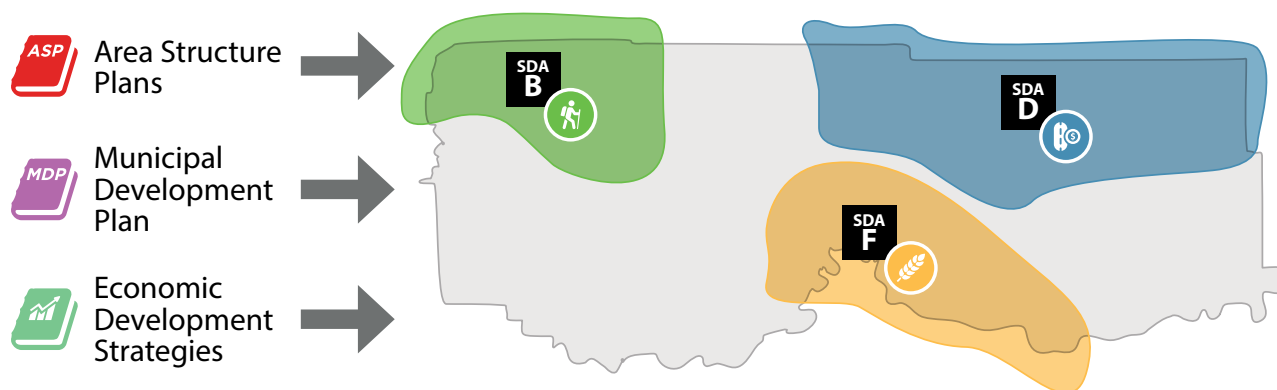
Development Scenario #1





Step 7 | Recommended Implementation Measures

- ✓ Identify implementation measures to direct and manage growth throughout the County.



The results and recommendations of the TGS require a series of implementation measures to be truly effective in directing and managing growth within the County. Step 7 established a series of recommended implementation measures to ensure the TGS is as effective as possible in helping the County achieve its economic, social and environmental goals. Many of these considerations were incorporated into the policies of the County's recently completed Municipal Development Plan.



B



A rural landscape with rolling hills, a small house, and birds in the sky. The scene is captured in a soft, slightly desaturated light, possibly during the golden hour. In the foreground, there's a field of tall grass and a wooden fence post. In the middle ground, a small, simple house with a gabled roof sits on a grassy slope. The background features rolling hills under a sky with scattered clouds and a few birds in flight.

PART B

CONTEXT



4.0 CURRENT & HISTORIC GROWTH TRENDS

Parkland County offers excellent transportation and market access, affordable land prices, low non-residential taxes, over 10,000 acres of industrial land, and strong agricultural opportunities. The County's Community Economic Diversification Department actively promotes business growth and development and tourism in the County, as well as support for both existing businesses and those looking to locate in the County.

4.0



4.1 Historic Population Growth Trends

In 2015, Parkland County released the Parkland County Community Scan and Analysis (“Community Scan”) completed by ISL Engineering and Land Services that documents the County’s historic and current growth trends.² The Community Scan has been used as a resource within the Technical Growth Study (TGS) to provide a baseline understanding of current and historic growth patterns in the County.

Parkland County has the highest population among rural jurisdictions in the Capital Region (ISL, 2015, p.8). The County’s average annual growth rate has exceeded those in Lamont County and Leduc County, but has been lower than Edmonton Metropolitan Census Area and the Province of Alberta (ibid., p.8). Its highest period of growth occurred between 1971 and 1981 when the County’s growth rate varied between 8.2% and 8.9% (ibid., p.5). Since the end of the 1970’s oil boom, the County has experienced population growth at lower rates between 0.9% and 1.9% (ibid., p.5).

The Community Scan noted that the western portion of the County has been growing at a much slower rate than the eastern portion of the County which benefits from proximity to larger regional markets. Electoral Division 5 experienced some overall population decline between 2005 and 2011 while Division 6 experienced significant population decline (see **Figure 1: Parkland County Electoral Divisions**). Division 3, with a strong country residential base and good proximity to regional markets and major transportation corridors, had the highest growth over the 2005 to 2011 period (ibid., p.7).

² ISL Engineering and Land Services (April 2015). Parkland County Community Scan and Analysis: Final Report.



4.2 Historic & Current Population & Employment Trends

The existing hamlets of Carvel, Duffield, Fallis, Gainford and Tomahawk have experienced modest population growth, decline, or a pattern of modest growth and decline since 1971 (ibid., p.6). A notable success has been the Hamlet of Entwistle. Entwistle's population, with its proximity to the Yellowhead Highway and CN Rail's most significant rail corridor into Vancouver, has grown 25% since 1971. Keephills has also grown consistently since 1981, but population growth has slowed in recent years and it remains one of the County's smallest hamlets (ibid., p.6). Parkland Village, a manufactured home park with piped water and wastewater services, is the County's largest urban-style community (ibid., p.6).

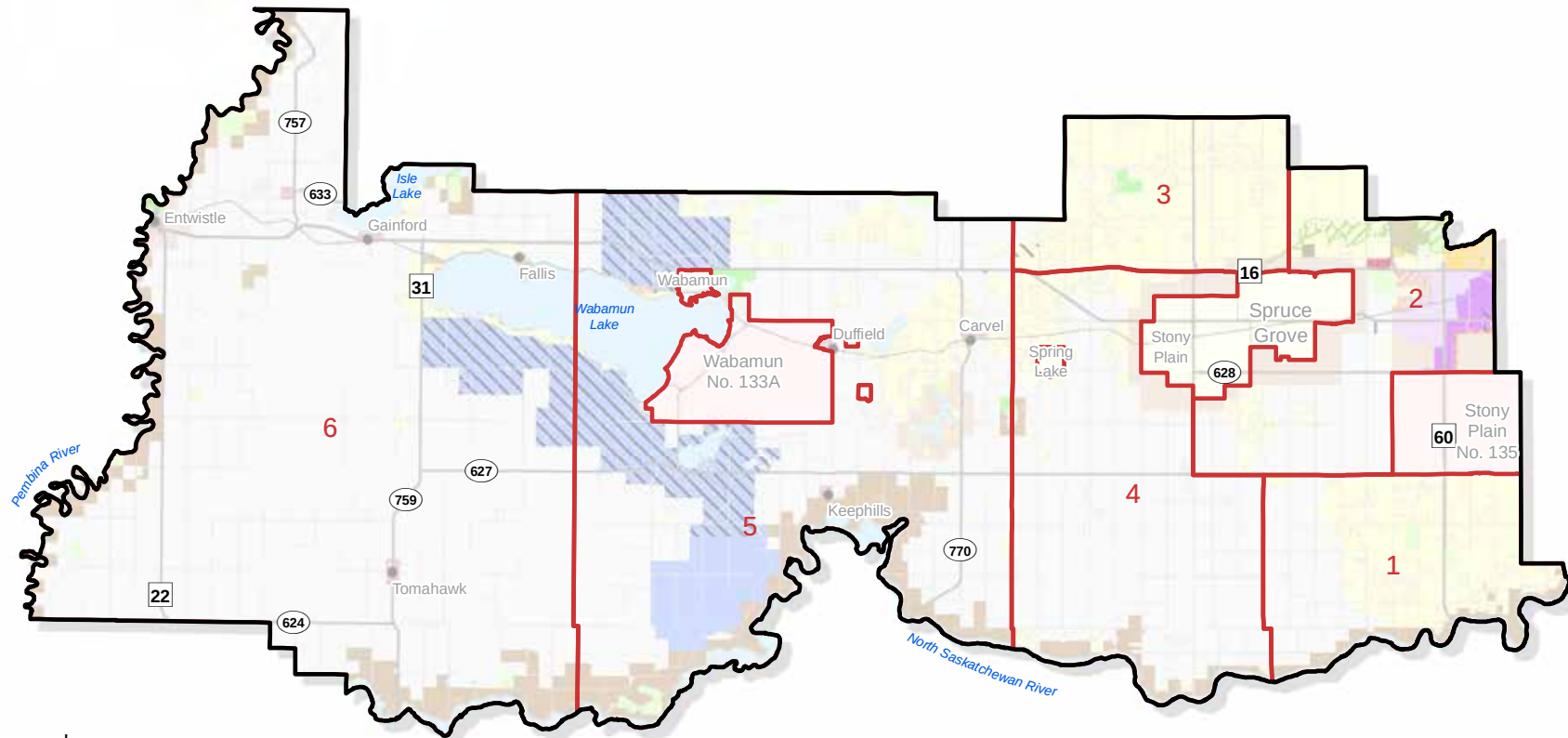
In terms of employment, Acheson Industrial Area has proven a significant source of County revenue and jobs. Acheson has accounted for the majority of growth in commercial and industrial assessed values in Parkland County since 2011 and is a significant and strategic asset for Parkland County (ibid., p.39-40).

Although the County has strong growth in Acheson and a strong overall fiscal outlook, the County is a net exporter of people commuting to jobs outside of the County on a daily basis (ibid., p.45). Parkland has gained jobs in construction, wholesale trade, government, manufacturing and professional, scientific technical and other related business services, but it has lost jobs in agriculture (ibid., p.48). Agriculture showed losses in the four (4) traditional types of agricultural farm operations including an overall 31.6% loss of the number of individual farms with land in crops, summerfallow, cultivated pasture or natural pasture (ibid., p.79). There have been similar drops in the number of individual farms with livestock, especially cattle ranching and farming, which lost 296 farms between 2001 and 2011 (ibid., p.80).

The scenario presented in the Community Scan document indicates that, when looking at current trends, the eastern portion of the County can expect strong growth due to the proximity to Edmonton and the success of the Acheson Industrial Area. The western portion of the County can expect to see continued low rates of population and employment growth due to the erosion of the traditional employment base of agriculture, forestry and mining.



FIGURE 1 | PARKLAND COUNTY ELECTORAL DIVISIONS



Legend

- | | | |
|---|---|---|
| Electoral Division | MHR - Manufactured Home Residential District | RIC - Rural Industrial Commercial District |
| AGG - Agriculture General District | BRR - Bareland Recreational Resort District | RE - Resource Extraction District |
| AGR - Agriculture Restricted District | RC - Rural Centre District | PC - Conservation District |
| ANC - Agriculture Nature Conservation District | EUV - Entwistle Urban Village District | PR - Recreation District |
| CR - Country Residential District | LC - Local Commercial District | PS - Public Service District |
| CRR - Country Residential Restricted District | HC - Highway Commercial District | Direct Control District |
| CRE - Country Residential Estate District | BI - Business Industrial District | Atim Creek Big Lake Overlay |
| LSR - Lakeshore Residential District | MI - Medium Industrial District | Acheson Industrial Commercial Area Overlay |
| RRH - Residential Row Housing District | IRD - Industrial Reserve District | |





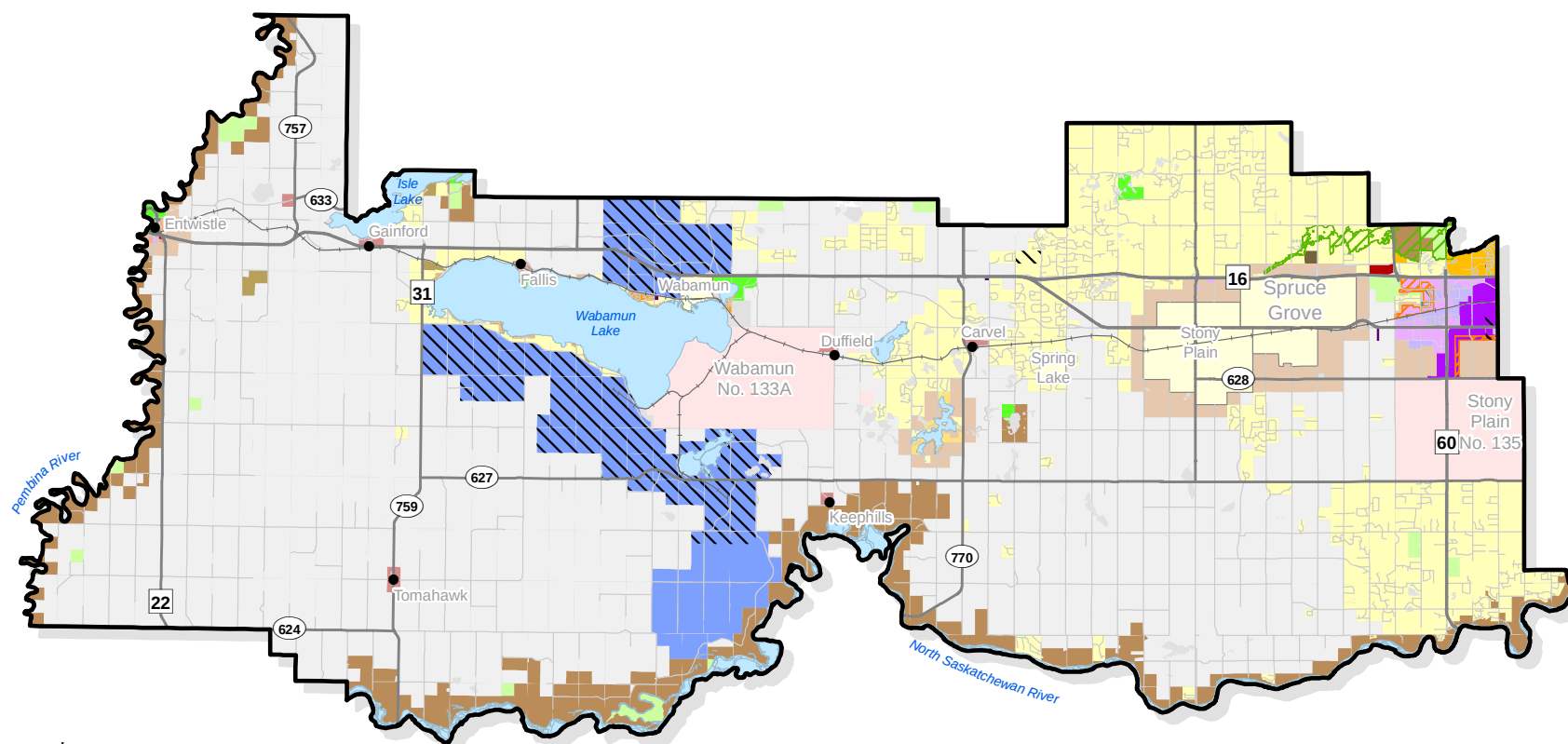
5.0 EXISTING LAND SUPPLY

The County's existing land use supply is shown in the Community Scan document as Map 2: Parkland County Existing Land Use. As described in the Community Scan, Parkland County has ample supply of existing lands designated for each type of land use if current growth trends, development patterns and land use absorption rates continue over a 30-year horizon (ibid.).

5.0



FIGURE 2 | PARKLAND COUNTY EXISTING LAND USE

**Legend**

AGG - Agriculture General District	MHR - Manufactured Home Residential District	IRD - Industrial Reserve District
AGR - Agriculture Restricted District	BRR - Bareland Recreational Resort District	RIC - Rural Industrial Commercial District
ANC - Agriculture Nature Conservation District	RC - Rural Centre District	RE - Resource Extraction District
CR - Country Residential District	EUV - Entwistle Urban Village District	PC - Conservation District
CRR - Country Residential Restricted District	LC - Local Commercial District	PR - Recreation District
CRE - Country Residential Estate District	HC - Highway Commercial District	PS - Public Service District
LSR - Lakeshore Residential District	BI - Business Industrial District	Direct Control District
RRH - Residential Row Housing District	MI - Medium Industrial District	Atim Creek Big Lake Overlay
		Acheson Industrial Commercial Area Overlay





6.0 EDMONTON METROPOLITAN REGIONAL GROWTH PLAN

The Edmonton Metropolitan Region Growth Plan (“Growth Plan”) was prepared in October 2016³. The Growth Plan provides a comprehensive and integrated policy framework for land use planning in the Edmonton Region.

³ Capital Region Board (2016, October 13). *Edmonton Metropolitan Region Growth Plan*. Edmonton, Alberta.



Within the Growth Plan, responsible growth is defined as using land and resources efficiently for the benefit of current and future generations, working towards growth that is financially sustainable, optimizing public investment and maximizing the use of existing and planned infrastructure (Capital Region Board, 2016). It also focuses on conserving the Region's agricultural land base.

The TGS methodology integrates the Growth Plan's regional structure and policy context into its analysis. The Growth Plan identifies a regional structure including three (3) policy tiers and a series of other geographic components including centres, major employment areas and infrastructure corridors to coordinate and plan growth. As included below, **Figure 3: Edmonton Metropolitan Regional Growth Plan – Edmonton Metropolitan Regional Structure to 2044** identifies the components of the regional structure and their locations.

Under the regional structure, Parkland County is subject to the policies and directions of two (2) policy tiers: the Metropolitan Area and the Rural Area. The Metropolitan Area encourages growth directions such as:

- **Intensification of existing development areas;**
- **Compact and contiguous greenfield areas; and**
- **Concentrated growth areas such as employment areas.**

The Rural Area encourages growth directions such as:

- **Growth in existing towns and hamlets;**
- **Mixed land uses; and**
- **Growth and diversification of the agricultural sector.**



6.0 THE EDMONTON METROPOLITAN REGIONAL GROWTH PLAN

As noted in the Growth Plan, contiguous development means focusing growth as part of existing urban communities and planning for logical extension of infrastructure and services (ibid., p21). Encouraging growth within clustered areas of development (“growth areas”) reduces the financial impact of growth, reducing agriculture fragmentation, creating synergies between businesses and communities, and creating strong social networks. Some additional population and employment growth can also be expected throughout the County in agricultural areas. This development would occur through agricultural subdivisions, development of agriculturally-related businesses, home occupations or other land use types; however, the outcomes of the TGS focus on prioritizing growth into growth areas to support future planning and capital budgeting processes.

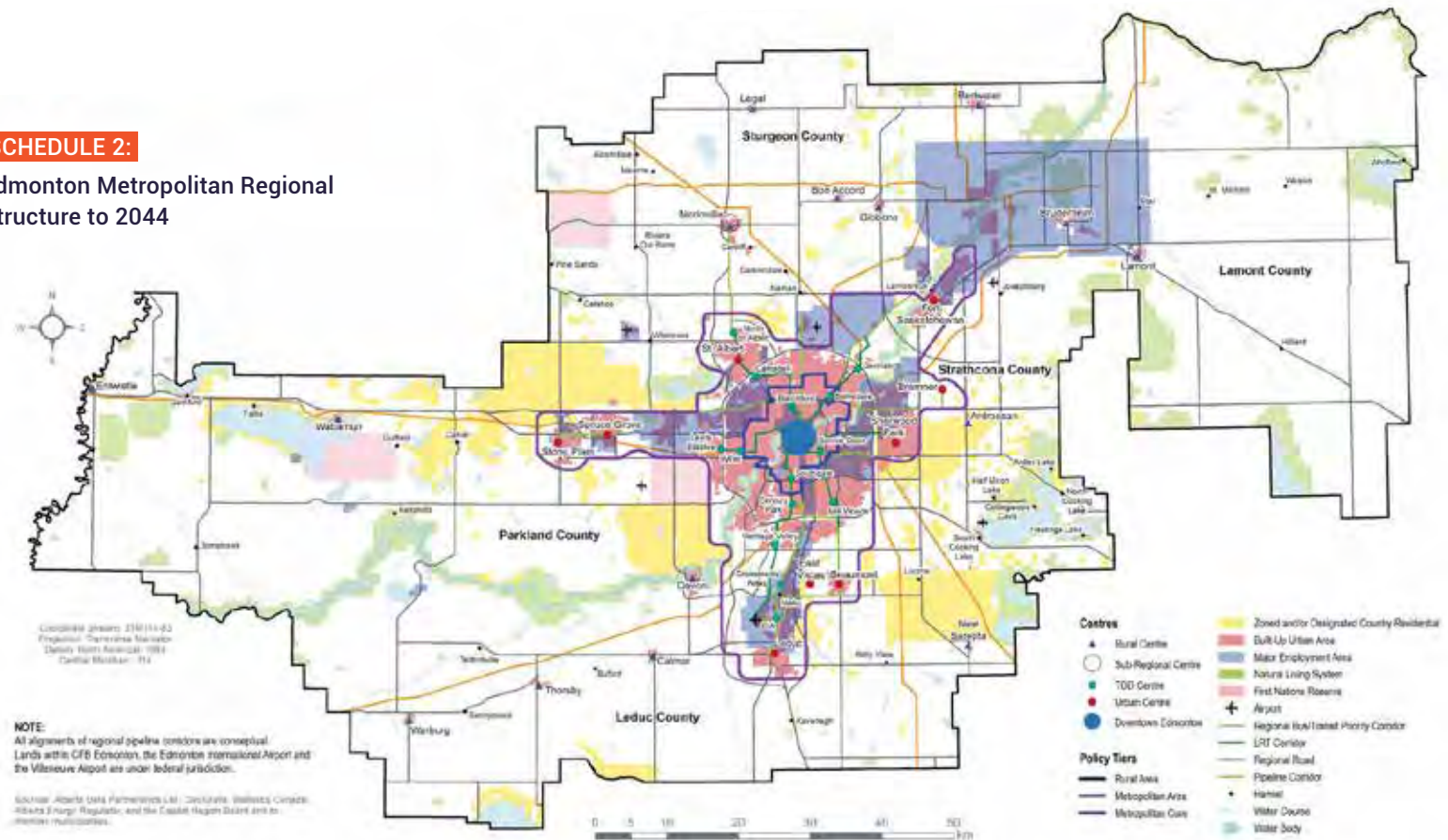
As the guiding framework for regional development, policies within the Metropolitan Area and Rural Area were considered as part of the TGS. It should be noted that existing Area Structure Plans are grandfathered under provision 5.1.1 of the Growth Plan and will remain in effect unless substantially amended. The TGS recommends the substantial updating of certain approved County Area Structure Plans, which would be subject to the Regional Evaluation Framework and regional approval.



FIGURE 3 | EDMONTON METROPOLITAN REGIONAL GROWTH PLAN – EDMONTON METROPOLITAN REGIONAL STRUCTURE TO 2044

SCHEDULE 2:

Edmonton Metropolitan Regional Structure to 2044



EDMONTON METROPOLITAN REGION GROWTH PLAN **RE-IMAGINE. PLAN. BUILD.**



A rural landscape with rolling hills, a small house, and birds in the sky. The scene is captured in a soft, slightly desaturated tone, giving it a nostalgic or artistic feel. The sky is filled with light, wispy clouds, and several birds are seen in flight. The foreground shows a field of tall grass and a wooden fence post. In the middle ground, there's a small, simple house with a gabled roof, surrounded by trees and more hills in the background.

PART C **ANALYSIS**



7.0 GROWTH PRIORITIES

As part of the TGS process, certain growth areas and types of development were prioritized. Prioritizing types of development supports the County in its effort to plan for services, infrastructure upgrades and replacement, capital improvement programs and other programs. Because the prioritization of development types underpins the County's planning and budgeting processes, it is essential that the TGS aligns with the County's strategic values.

7.0



The TGS determined development priorities through workshops with Council, a review of existing County policy, known and anticipated significant future land developments, as well as community values across the County. A few of the key development priorities are highlighted below:

- Growth and diversification in agriculture;
- Economic growth across the County including the western regions;
- Increased economic resilience and diversification;
- Environmental and natural areas protection and conservation;
- Agricultural land conservation;
- Growth in the County's hamlets and related communities;
- Financial sustainability;
- Maintenance of a diverse and viable non-residential tax base; and
- Provision of amenities and services to residents throughout the County.

The Project Team used the priorities identified above to determine the objectives of the TGS (see Section 2.1 of this Study).



8.0 STRATEGIC DEVELOPMENT AREAS (SDAs)

8.1 Initial Opportunities and Constraints Analysis

The Project Team held workshops with County Council and Administration to establish an inventory of potential development locations throughout the County based on the County's growth priorities as described in Section 7 of this Study. These locations were based on Council's understanding of opportunities for growth and their knowledge of trends in their Divisions with support from Administration and the Project Team. This initial inventory provided the Project Team with a framework for identifying Strategic Development Areas (SDAs).



Council identified 17 residential and non-residential areas where growth might be concentrated as well as areas where general country residential or non-residential growth might occur. The consultant team held a workshop on February 22, 2017 to review the selected growth areas and discuss the costs and benefits of promoting growth in each node through County investment. The analysis looked at three (3) key topic areas: (i) land use, (ii) engineering and (iii) economic/growth, to ensure the viability of each growth area and to identify opportunities and constraints. These considerations are summarized in *Table 1: Summary of Opportunities and Constraints Considerations*.

The initial inventory was vetted and refined by the Project Team through an opportunities and constraints analysis. This analysis determined which County-identified opportunities were feasible when regional policies, infrastructure and transportation opportunities, environmental considerations and others factors were considered. **Figure 4: Opportunities and Constraints Analysis** outlines some of the opportunities and constraints identified during the development of the SDAs. In addition to Figure 4, an overview summary of these opportunities is provided in *Table 2: Summary of Opportunities and Constraints Findings*.

TABLE 1 | SUMMARY OF OPPORTUNITIES AND CONSTRAINTS REVIEW

Topic Area	Key Considerations
Land Use	• Existing zoning • Relationship to Edmonton Metropolitan Regional Growth Plan policies • Existing/future land supply within node • Future Annexations • Environmental constraints • Community services
Engineering	• Availability/Possibility of municipal servicing • Transportation/highway access & land requirements for upgrades • Necessary regional infrastructure upgrades (costs to service) • Levy structures and Cost recoveries • Communal servicing potential • Costs of community service improvements
Economics/ Growth	• Existing/future employment demand • Residential growth • Regional and local synergies between land uses • Regional market opportunities • Future Growth in Assessment • Opportunities to support economic diversification



8.0 STRATEGIC DEVELOPMENT AREAS

To supplement County-identified growth trends, GIS mapping was used to illustrate residential and non-residential land absorption using the County's 2015 tax roll data (see **Figure 5: Lands with Assessed Residential and Non-Residential Improvement**). The purpose of this mapping was to illustrate and identify subdivision trends in the County. GIS mapping was also used to identify commuter-sheds around hamlets to identify synergies between land uses, transportation corridors and hamlet growth.

Figure 5 identifies parcels with non-residential improvements over \$50,000 to highlight the location of businesses that are likely contributing jobs and/or services to the local economy where synergies with future businesses could be developed. In addition, Figure 5 shows parcels with residential improvements less than 40 acres in size to illustrate land fragmentation for residential purposes.⁴

Development trends identified in Figure 5 are as follows:

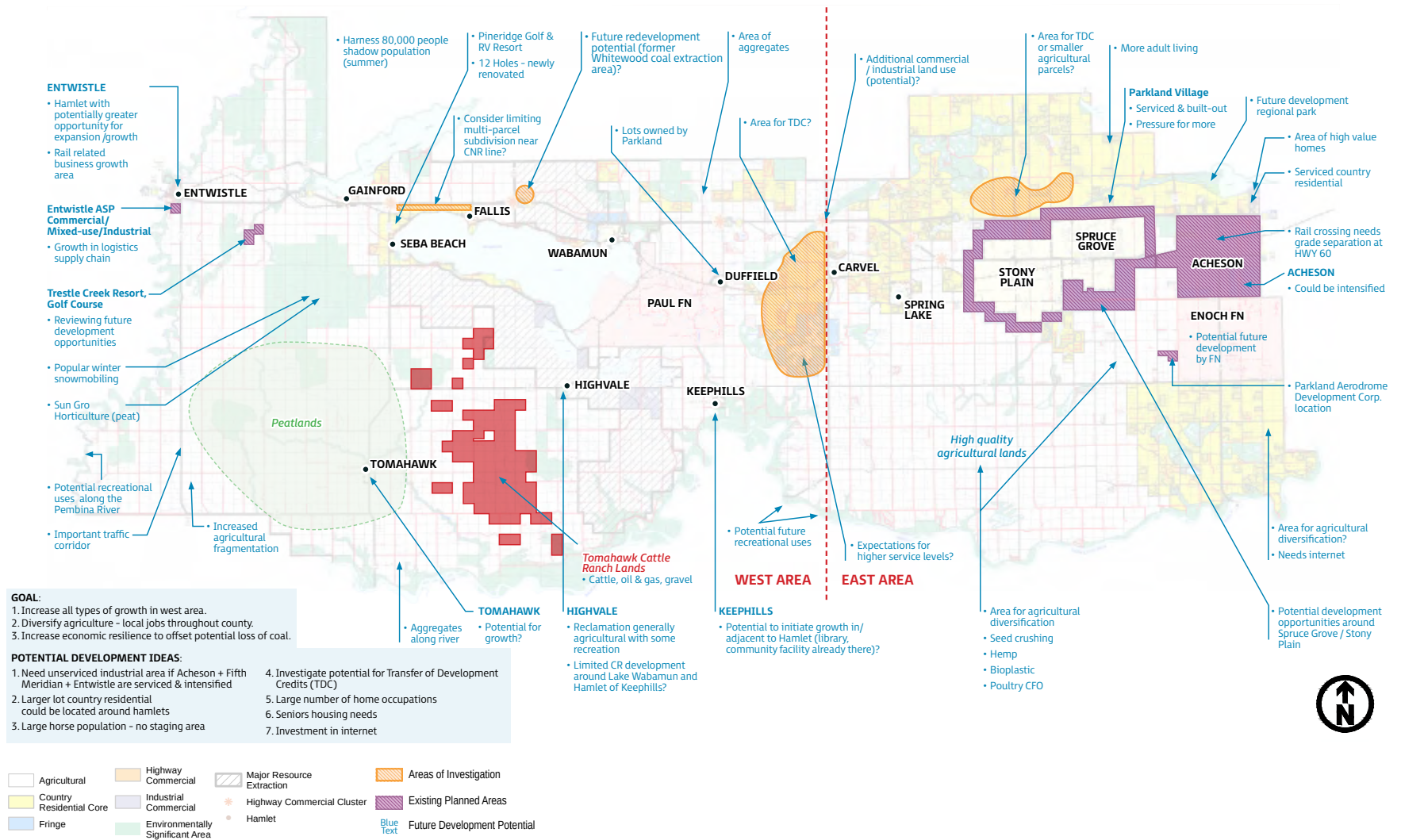
- **There is a strong pattern of dispersed country residential development within the eastern portion of the County.**
- **Agricultural land in the southwest is experiencing fragmentation for larger-lot residential development, especially in areas with close proximity to highways;**
- **Some mixed use development is occurring within the southeast country residential area through diverse agricultural operations and home occupations;**
- **There is scattered business development along the Yellowhead Highway (Provincial Highway 16); and**
- **Business development is scattered throughout the rural area with a focus on natural resource extraction and agri-business developments.**

These trends were considered as part of understanding the logical boundaries of the SDAs to incorporate consideration for clustering of business and residential uses and areas of potential synergy.

⁴ A parcel size of 40 acres was identified using the definitions for residential districts within the County's Land Use Bylaw.



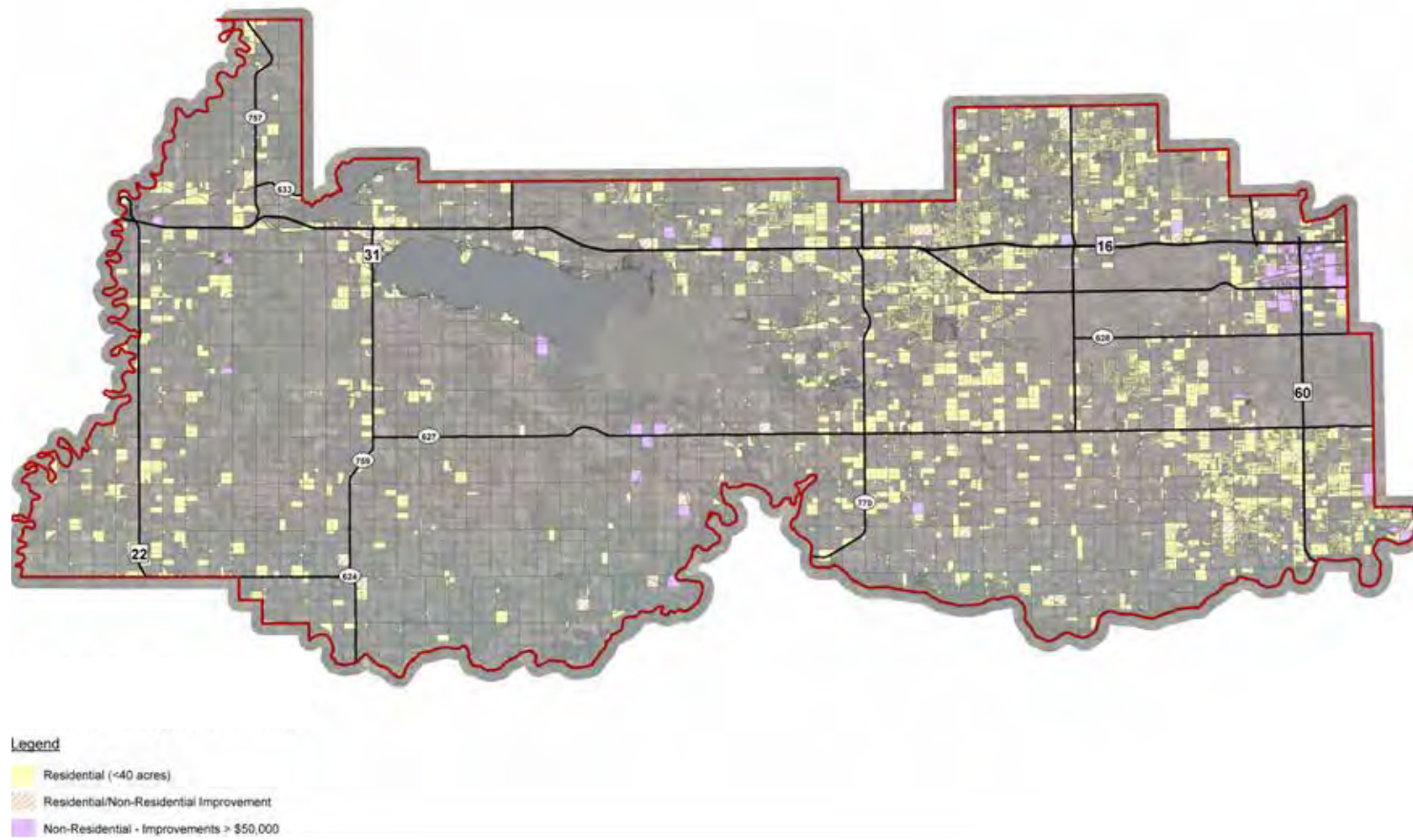
FIGURE 4 | OPPORTUNITIES AND CONSTRAINTS ANALYSIS





8.0 STRATEGIC DEVELOPMENT AREAS

FIGURE 5 | LANDS WITH ASSESSED RESIDENTIAL AND NON-RESIDENTIAL IMPROVEMENT (>\$50,000)



**TABLE 2 | SUMMARY OF OPPORTUNITIES AND CONSTRAINTS FINDINGS**

Consideration	Strengths and Opportunities	Constraints and Weaknesses
Agriculture	• Successful innovation occurring in County, especially in southeast area of County - Opportunity for diversification (seed crushing, hemp, bioplastic, poultry Confined Feeding Operations) • Agricultural diversification supported by Edmonton Metropolitan Regional Growth Plan • Strong market for agricultural products • Processing facilities could be provided/encouraged in Acheson	• Loss of traditional farms and related employment • Fragmentation of agriculture land for residential purposes increasing in southeast portion of County
Non-Residential Development	• Acheson well-serviced for water and wastewater with connections into the regional systems • Strong growth continuing in Acheson • Strong potential for Highway development along Yellowhead Highway, Highway 22 and Highway 60 • Entwistle gaining significant new businesses • Whitewood Coal Extraction Area well situated for growth post-mining • Growth of home occupations important in all areas – SMART Parkland initiatives to provide internet services in future • Good growth potential in areas near Edmonton, Spruce Grove, Stony Plain • Fifth Meridian area has water servicing available through the WILD line (to the east and north) and sanitary servicing through the regional wastewater line to the south • Fifth Meridian north of Highway 16 has no major physical constraints	• Some hamlets and highway areas have servicing constraints/need improved servicing • Access to Yellowhead Highway limited in some areas • Edmonton Metropolitan Regional Growth Plan not specifically supportive of rural business development in agricultural areas that is not agriculturally related • Internet connectivity lacking in certain areas of the County • Growth and intensification of land uses within Acheson requires investment in transportation/rail infrastructure • Constraints due to drainage, stormwater and wells in Acheson may limit developable area • Sensitive groundwater recharge areas in Acheson • Contiguous growth in Fifth Meridian south of Highway 16 is physically- constrained by a ravine



8.0 STRATEGIC DEVELOPMENT AREAS

Consideration	Strengths and Opportunities	Constraints and Weaknesses
Residential	• Entwistle/Evansburg experiencing non-residential growth pressures • Demand for increase in diversity of housing types - aging population; build-out of Parkland Village • Significant amount of existing, zoned country residential – further country residential development is restricted under the Growth Plan • WILD Servicing Line provides potable water through Parkland County to Wabamun - may be opportunity to extended west to Entwistle. • In addition to water and sanitary services, many of the County's Hamlets have internet towers.	• Some hamlets and potential growth areas have servicing constraints that would need to be addressed prior to further growth • Increasing residential populations will add additional demands for County social, utility and transportation infrastructure (costs related to residential growth)



Tourism and Recreation	• Large numbers of existing natural areas, campgrounds and recreation areas – unique in Region • Existing tourism and recreation corridor around Lake Wabamun and west to Entwistle • Shadow population of about 80,000 people in the summer months situated around Lake Wabamun, Entwistle and the Pembina Provincial Park areas. Trestle Creek interested in permanent, year-round housing • Significant horse population in the north part of the county, residential area with no staging area and few opportunities for riding • Demand for ATV/Snowmobile areas	• Ecological function of lakes a potential concern in some areas • Increase in rail traffic on north side of Lake Wabamun may restrict further lakeside development • Settling of land in former coal extraction areas may limit types of growth on south side of lake
Consideration	Strengths and Opportunities	Constraints and Weaknesses
Mining and Extraction	• Good aggregate and coal resources around County • Edmonton Metropolitan Regional Growth Plan allows resource-related employment growth in resource-based areas	• There may be limitations for redevelopment on former coal extraction areas due to settling • Provincial policies around phasing out of coal-fired gas plants will affect existing coal extraction activities – significant potential reduction in employment
Transportation	• CN Rail increasing rail traffic to Vancouver, doubling the length of trains, running trains every 15 minutes • Improvements on Highway 22 south bridge may improve north/south corridor • Highway system provides good access to northern Alberta, BC and Territories markets	• The rail crossing at Highway 60 in the Acheson Industrial Area needs to be grade separated - costly improvement • Access to Yellowhead Highway limited in some areas



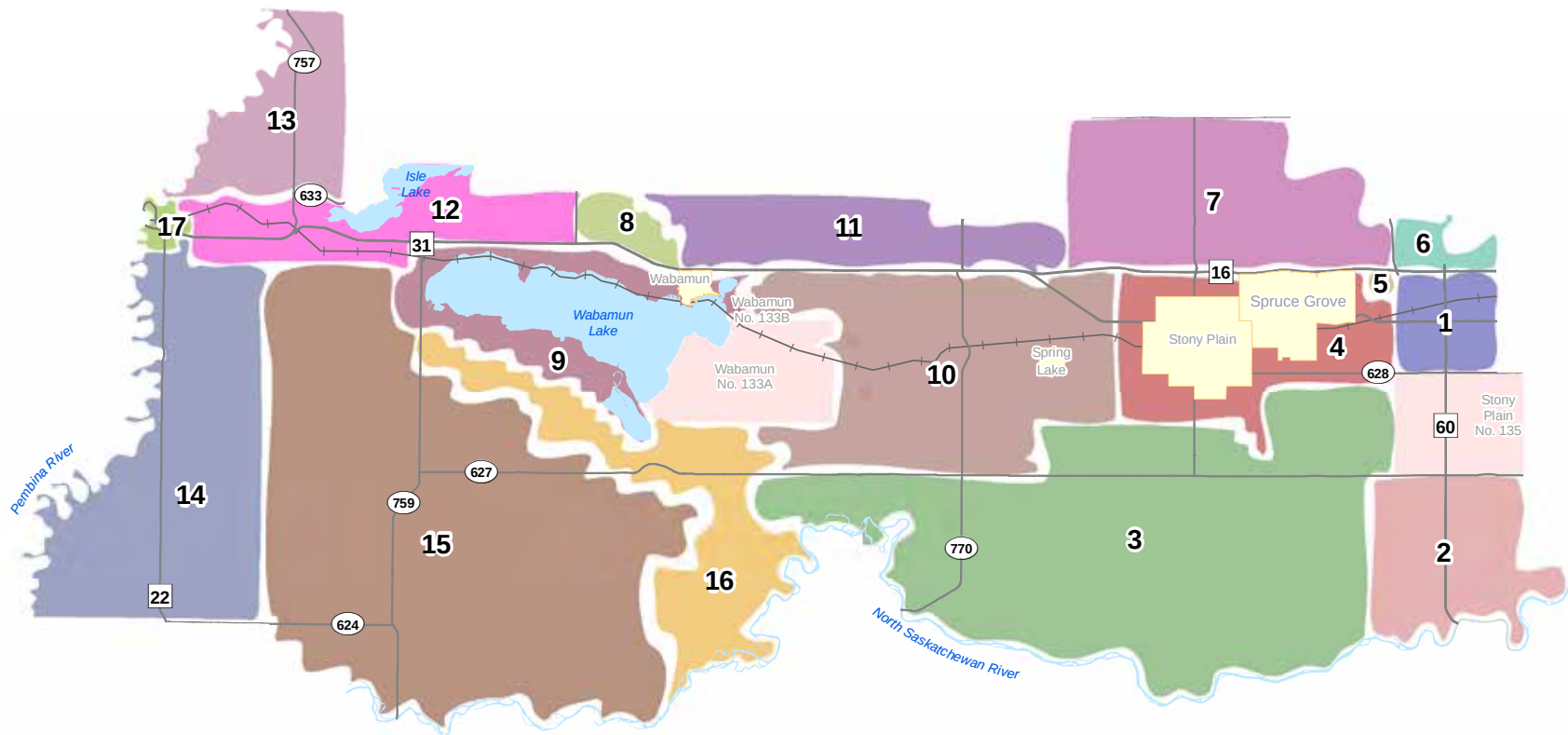
8.2 Strategic Development Areas

Strategic Development Areas are a tool used to undertake population and employment analysis that identifies the amount of growth associated with a defined geographic area. Strategic Development Areas have a land use theme, a clustering of priorities, or a driver industry that uniquely identifies the area. The resulting population and employment forecasts can be used to prioritize development areas and to complete a fiscal impact assessment for each SDA and for the County as a whole.

Building on the opportunities and constraints analysis and in consideration of the initial growth opportunities identified by Council, Strategic Development Areas (SDAs) were created for all areas of the County. The boundaries of individual SDAs generally align with known geographic regions focused around natural features (e.g. SDA 9 - Wabumun Lake), urban centres (e.g. SDA 4 - Stony Plain/Spruce Grove Fringe), employment nodes (e.g. SDA 1 - Acheson) and agricultural areas (e.g. SDA 3, 10, 14 and 16). **Figure 6: Strategic Development Areas** illustrates the SDAs that underpin the TGS for Parkland County.



FIGURE 6 | STRATEGIC DEVELOPMENT AREAS



Legend

- | | | | |
|------------------------------------|-------------------------------------|----------------------------|----------------------------------|
| 1, Acheson | 5, Wagner Natural Area | 9, Wabamun Lake Recreation | 13, Northern Gateway |
| 2, South Country Residential | 6, Big Lake Area | 10, Jackfish Lake Area | 14, Highway 22/Cowboy Trail |
| 3, East Agriculture | 7, North Country Residential | 11, East Highway Corridor | 15, Tomahawk/West Agriculture |
| 4, Spruce Grove/Stony Plain Fringe | 8, Whitewood Extraction/Reclamation | 12, West Highway Corridor | 16, South Extraction/Reclamation |
| | | | 17, Entwistle/Evansburg |





9.0 POPULATION & EMPLOYMENT PROJECTIONS

9.1 Initial Opportunities and Constraints Analysis

Base year population and employment data from 2015 was developed for each of the 17 Strategic Development Areas (SDAs) by Applications Management Consulting Inc. In 2015, it was estimated that Parkland County had 11,472 jobs and 34,310 people as illustrated in **Figure 7: 2015 Employment Allocation by SDA** and **Figure 8: 2015 Population Allocation by SDA**. Types of employment described in this report are identified by their 2-digit NAICS industry classification. A summary of how the NAICS Industry Classifications are defined can be found in *Appendix A: NAICS Industry Classifications*.

Existing data for industry-specific Parkland County employment in 2014, according to traffic zone, was used as a starting point in estimating base year employment. The traffic zone data was then advanced one year to 2015 by applying actual industry-specific employment growth rates within the Capital Region, retrieved from Statistics Canada's CANSIM database. The 99 traffic zones that comprise Parkland County were then converted to reflect the 17 Strategic Development Areas to be used in this analysis. This conversion was performed using overhead GIS maps of both the traffic zone and SDA systems, based on estimated business activity within each zone.

Note: The County's estimated population in 2016 is 32,097 people. For the purposes of analysis, the 2015 data was used to form the base scenario.



For employment, geographically the bulk of the jobs (2655) were located within SDA 1 - Acheson. Other significant employment areas included SDAs 7 and 10, both with over 1,100 jobs within the SDA. The overall concentration of jobs was largely within the east part of the County, with a minority of the jobs west of Wabamun Lake – SDA 9. Population within the County was distributed in a similar pattern to employment opportunities, highlighting the relationship between population and employment growth, with strong distribution of residential development in the east area of the County.

The 17 Strategic Development Areas across the County have a range of employment and population. A description of the 2015 estimated employment and population for each SDA is provided below:

SDA 1	SDA 1 is Acheson Industrial Area which lies between Edmonton and Spruce Grove along Highway 16, Highway 16A, and the CN Rail mainline. As of 2015 it is estimated that Acheson has over 2,500 jobs. These jobs are primarily associated with Mining, quarrying, and oil and gas extraction, Construction, and Manufacturing. This SDA is the largest employment centre in the County. 2015 Population for SDA 1 was 457.
SDA 2	SDA 2 is located in the southeast corner of Parkland County. As of 2015, it is estimated that SDA 2 has over 500 jobs. These jobs are primarily associated with Mining, quarrying, and oil and gas extraction, and Construction. 2015 Population for SDA 2 was 4802.
SDA 3	SDA 3 is located south of the Town of Spruce Grove and Town of Stony Plain. As of 2015, it is estimated that SDA 3 has over 700 jobs. These jobs are primarily associated with Mining, quarrying, and oil and gas extraction, and Agriculture. 2015 Population for SDA 3 was 4389.
SDA 4	SDA 4 borders the Town of Stony Plain and Town of Spruce Grove. As of 2015, it is estimated that SDA 4 has over 500 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, and Construction. 2015 Population for SDA 4 was 2019.

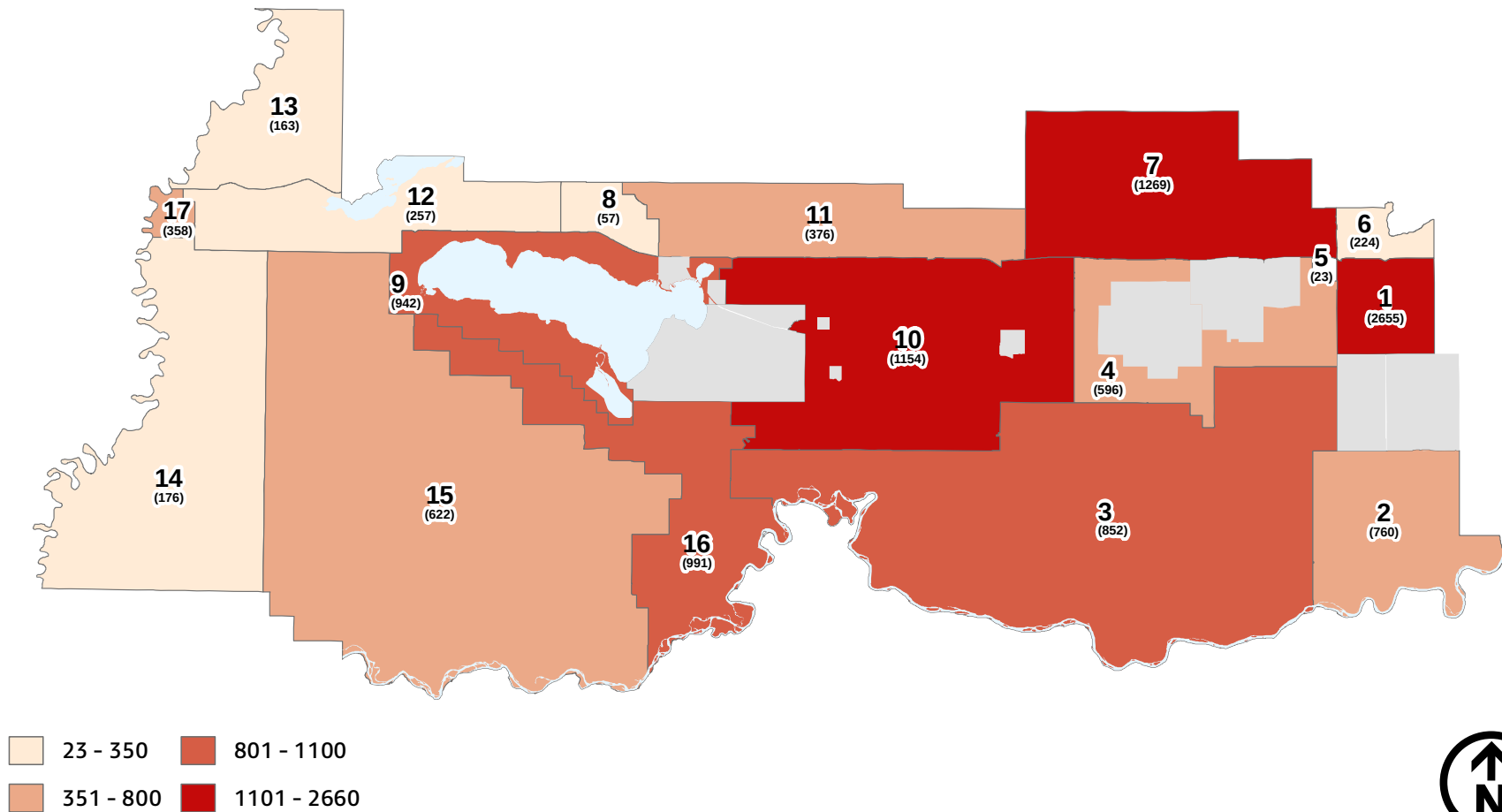


9.0 POPULATION AND EMPLOYMENT PROJECTIONS

SDA 5	SDA 5 is located south of Highway 16 and east of the Town of Spruce Grove. This area is primarily made up of the Wagner Natural Area, which is an environmental reserve. 2015 Population for SDA 5 was 99.
SDA 6	SDA 6 is located north of Highway 16 and the Acheson Industrial Area. As of 2015, it is estimated that SDA 6 has over 200 jobs. These jobs are a mix of Construction, Education, and Other Services. 2015 Population for SDA 6 was 831.
SDA 7	SDA 7 is located north of Highway 16, directly north of the Town of Spruce Grove and Town of Stony Plain. As of 2015, it is estimated that SDA 7 has approximately 1,200 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, Construction, and Other Services. This SDA is the second largest employment centre in the County. 2015 Population for SDA 7 was 8384.
SDA 8	SDA 8 is located north of Highway 16, just north of Wabamun Lake. As of 2015, this area is estimated to have limited employment. 2015 Population for SDA 8 was 142.
SDA 9	SDA 9 is located in the area around Wabamun Lake. As of 2015, it is estimated SDA 9 has approximately 800 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, and Utilities. 2015 Population for SDA 9 was 860.
SDA 10	SDA 10 is located in the center of Parkland County, just south of Highway 16, between Town of Stony Plain and Wabamun Lake. As of 2015, it is estimated that SDA 10 has approximately 1,200 jobs. These jobs are primarily associated with Agriculture, Mining, quarry, oil and gas extraction, Construction and Education. This SDA is the third largest employment centre in the County. 2015 Population for SDA 10 was 6519.
SDA 11	SDA 11 is located in the center of Parkland County, just north of Highway 16. As of 2015, it is estimated that SDA 11 has approximately 400 jobs. These jobs are a mix of various industries. 2015 Population for SDA 11 was 2195.
SDA 12	SDA 12 is located north of Highway 16, in the northwest portion of the County. As of 2015, it is estimated that SDA 12 has approximately 300 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, and Construction. 2015 Population for SDA 12 was 539.



FIGURE 7 | 2015 EMPLOYMENT ALLOCATION BY SDA



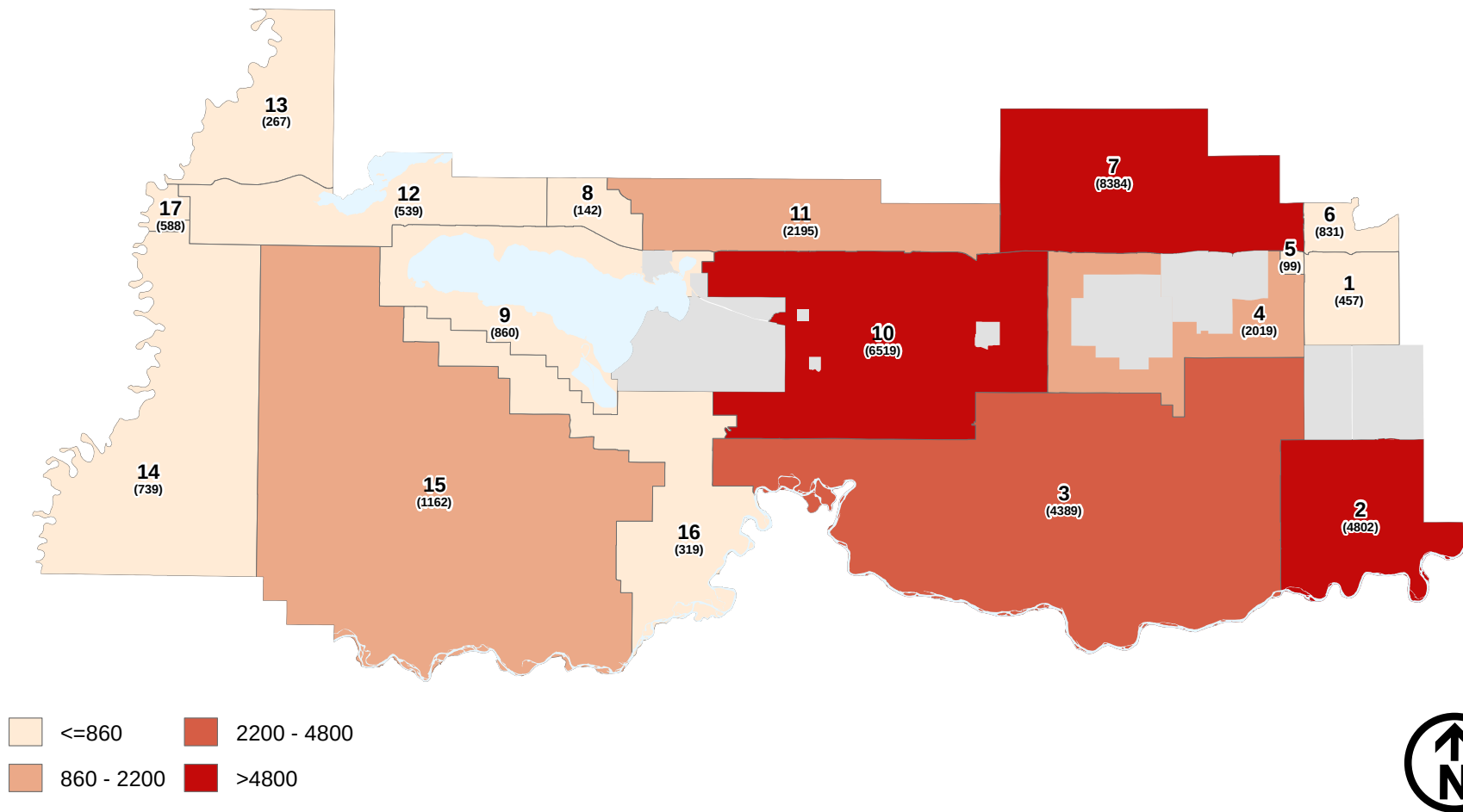


9.0 POPULATION AND EMPLOYMENT PROJECTIONS

SDA 13	SDA 13 is located north of Highway 16, and west of Highway 757, in the northwest portion of the County. As of 2015, it is estimated that SDA 13 has approximately 200 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, and Construction. 2015 Population for SDA 13 was 267.
SDA 14	SDA 14 is located south of Highway 16, in the west portion of the County. As of 2015, it is estimated that SDA 14 has approximately 200 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, and Construction. 2015 Population for SDA 14 was 739.
SDA 15	SDA 15 is located south of Wabamun Lake. As of 2015, it is estimated that SDA 15 has approximately 600 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, Agriculture, and Construction. 2015 Population for SDA 15 was 1162.
SDA 16	SDA 16 is located south of Wabamun Lake. As of 2015, it is estimated that SDA 16 has approximately 1,000 jobs. These jobs are primarily associated with Mining, quarrying, oil and gas extraction, Utilities. This includes employment associated with Keephills Generating Station, and Highvale Mine. This SDA is the fourth largest employment centre in the County. 2015 Population for SDA 16 was 319.
SDA 17	SDA 17 is made up primarily of the boundaries of Entwistle. As of 2015, it is estimated that SDA 17 has approximately 350 jobs. These jobs are a mix of services. 2015 Population for SDA 17 was 588.



FIGURE 8 | 2015 POPULATION ALLOCATION BY SDA





9.0 POPULATION AND EMPLOYMENT PROJECTIONS

9.2 Industry-Specific Employment Growth

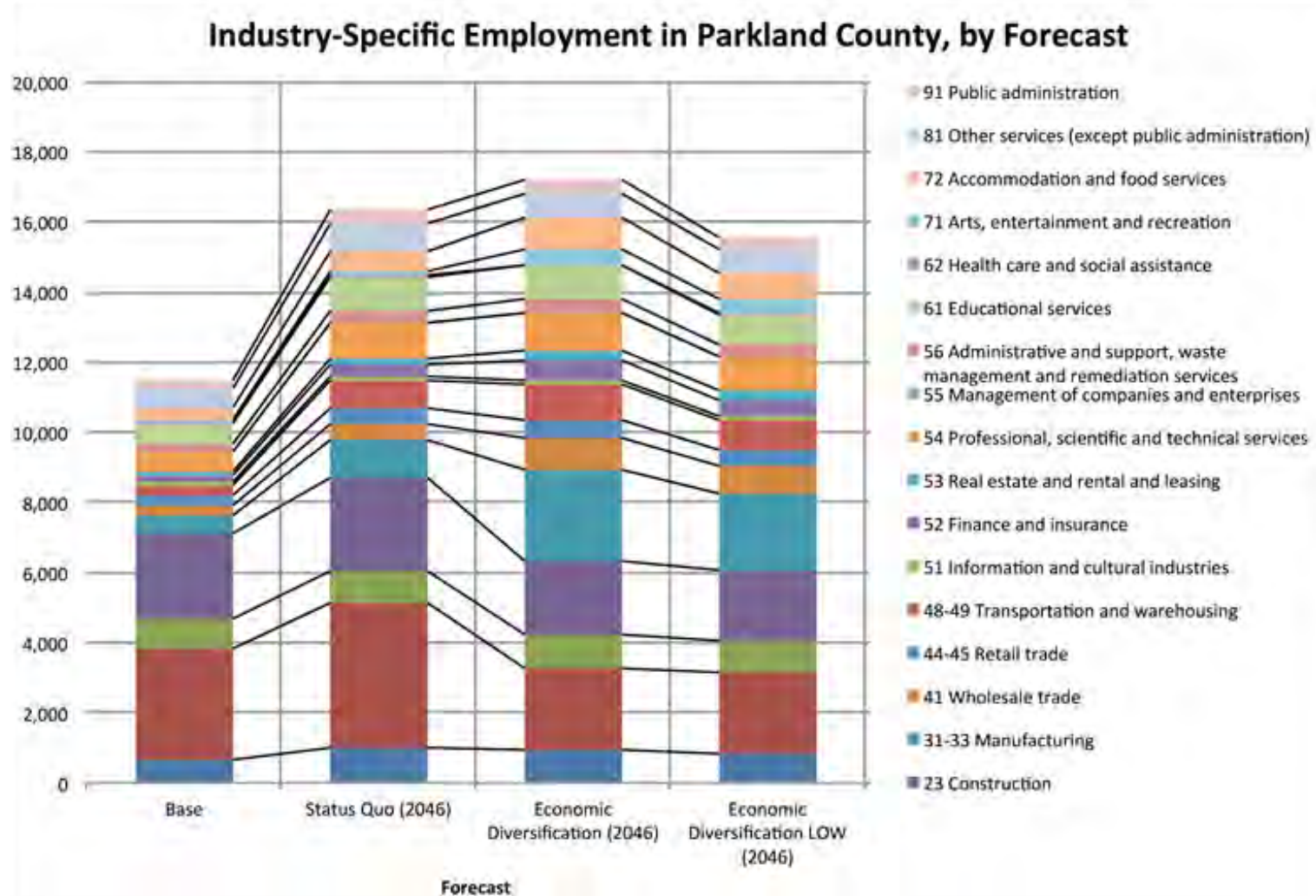
As noted above, a key goal of the TGS is to understand and support the diversification of the County's employment base. The TGS and the associated Financial Impact Assessment (FIA), developed by Applications Management Consulting Inc., examine the financial impacts of growth based on three economic scenarios: Status Quo, Economic Diversification, and Economic Diversification - Low. Forecasts were developed using base year (2015) on estimates for population and employment for each of the 17 Strategic Development Areas (SDAs) in Parkland County.

For the purposes of this analysis, economic forecasts prepared for the entire Edmonton Capital Region were used. These Capital Region forecasts represent an expectation of the economic activity and associated employment and population growth that will occur throughout the region over the next 30 years. These economic forecasts were conducted using two fundamentally different approaches, and include a Status Quo Forecast and an Economic Diversification Forecast.

The two (2) forecast approaches are defined as follows:

- **Status Quo Approach generally assumes that the composition of industry-specific employment within the Capital Region remains centred on the energy sector through the duration of the forecast. Key driver industries include the oil and gas sector (along with supporting industries), construction, and professional, scientific and technical services.**
- **Economic Diversification Approach provides a significantly different approach to growth, where the energy (and related) sector will continue to be an important contributor to economic growth, but play a significantly smaller role in the shape of the future economy. In this alternate Economic Diversification Forecast, specialized "value added" agriculture, selected sub-sectors of manufacturing (including beverage and tobacco products, textiles, clothing, leather, and transportation equipment), and the tourism sector are expected to play a significantly greater role in regional growth. Industry-specific employment growth for both forecasts was developed by applying a combination of recently updated short-term (2016-2020) Capital Region Board (CRB) employment forecasts developed by Applications Management Consulting Inc., consistent with the aggregate (total) long-term (2044) growth projected in the CRB forecasts. Long-term CRB forecast employment control totals were modified somewhat to accommodate the change to the base year (2014 to 2015), extension of the forecast year (2044 to 2046), and the potential employment differences that arise from incorporating Applications' own short-term forecasts.**

Figure 9: Industry-Specific Employment Forecast (2046) on the following page highlights the change in industry-specific employment within the County from 2015 to 2046 within three different growth scenarios described in the pages thereafter.

**FIGURE 9 | INDUSTRY-SPECIFIC EMPLOYMENT FORECAST (2046)**



9.3 Growth Scenarios and Forecasts

Given the industry-specific diversification anticipated in Section 9.2 of this Study, the following three growth scenarios were developed for the TGS:

1. STATUS QUO SCENARIO

The Status Quo forecast assumes little to no changes in the direction of policy intervention or strategic investment by the County going forward. In this scenario the total population is estimated to reach 48,270 by 2046; with employment growing to 16,341 jobs. This forecast assumes that the Capital Region economy continues to remain centred on the energy sector and its related support industries.

2. ECONOMIC DIVERSIFICATION - HIGH SCENARIO

The scenario of Economic Diversification projects the County's population to reach an estimated total of 50,760 with 17,185 total jobs. This forecast assumes that the energy sector plays a smaller role in shaping the future of the Capital Region economy. Instead, sub-sectors such as "value added" agriculture, tourism, and specialized manufacturing contribute more meaningfully to the County's growth. Geographically, job growth is concentrated within the County's priority employment areas (Acheson & Fifth Meridian) and priority growth hamlet - Entwistle. The Economic Diversification - High Scenario will be referenced as "**Economic Diversification Growth Scenario**".

3. ECONOMIC DIVERSIFICATION – LOW SCENARIO

The scenario of Economic Diversification – Low anticipates an estimated total population of 45,913 with 15,544 total jobs. This forecast maintains similar assumptions to those of the Economic Diversification Scenario, but assumes that growth in key industries will be slower through the duration of the forecast. Once again, the geographical concentration of jobs within the County is focused within the priority employment areas (Acheson & Fifth Meridian) and priority growth hamlet - Entwistle. This forecast applies the same assumptions as the Economic Diversification Scenario, but assumes that growth in key industries will be slower through the duration of the forecast. The magnitude of the slowdown in key industry growth is based on the "high" and "low" Capital Region Board population and employment forecasts.

For each population and employment scenario (forecast to 2046), an alternate "Entwistle Growth" projection was also developed. This growth variation reflects a greater degree of success in the long-term promotion of Entwistle as a sub-regional hub, and shifts a slightly greater portion of population and employment growth to the western regions of the County (SDAs 13, 14 and 17). For the County in aggregate, population and employment growth forecasts are the same for both the "Entwistle Growth" and standard forecast scenarios.

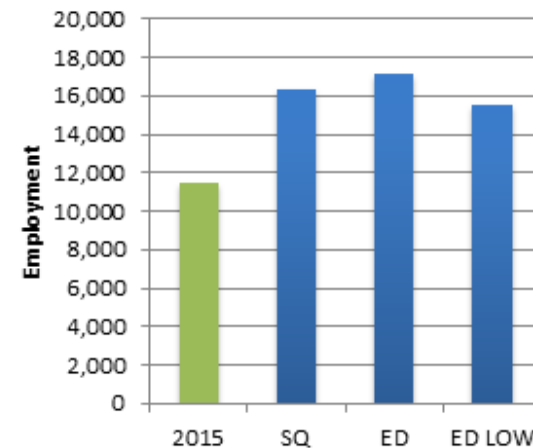
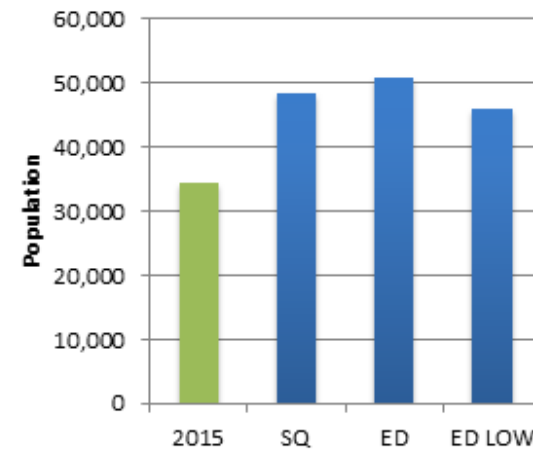
Note: Growth scenarios and forecasts provided in this section reflect information available at the time of drafting of the report. Forecasts should be updated to reflect emerging data and information. Forecasts should inform but not be used as sole means to influence corporate and strategic planning initiatives.



General assumptions used across each forecast scenario:

- **The Acheson Industrial Area (SDA 1) will continue to be a hub of economic activity and employment within the County.**
- **Protection of agricultural lands is emphasized, with economic opportunities provided to ag-industry and value-added projects. Priority agricultural areas include the South East (SDAs 3 and 10), West (SDAs 14 and 15) and Small Holdings (SDAs 3 and 4).**
- **Creation of tourism/recreation and associated infrastructure investment by the County. Priority areas include Wabamun (SDAs 8, 9, 11, 12, and 14) and Devon Dunes (SDA 2).**
- **Over the forecast period, coal is phased out and the Highvale (SDA 15) and SunHills (SDA 16) mines are shut down and redeveloped. Energy production is transitioned to natural gas and renewables, but these projects require significantly fewer workers to maintain production.**
- **The Wagner Natural Area (SDA 5) remains undeveloped for both residential and non-residential purposes.**
- **Entwistle (SDA 17) is designated a priority growth hamlet, and acts as a sub-regional centre. It services all growth, possesses a range of land uses, and accommodates a range of housing types and densities.**

Population & Employment Forecasts (2015 and 2046) – Entwistle Growth Scenarios, Parkland County





9.0 POPULATION AND EMPLOYMENT PROJECTIONS

FIGURE 10 | POPULATION FORECASTS (2015 TO 2046) - ENTWISTLE SCENARIO, BY SDA

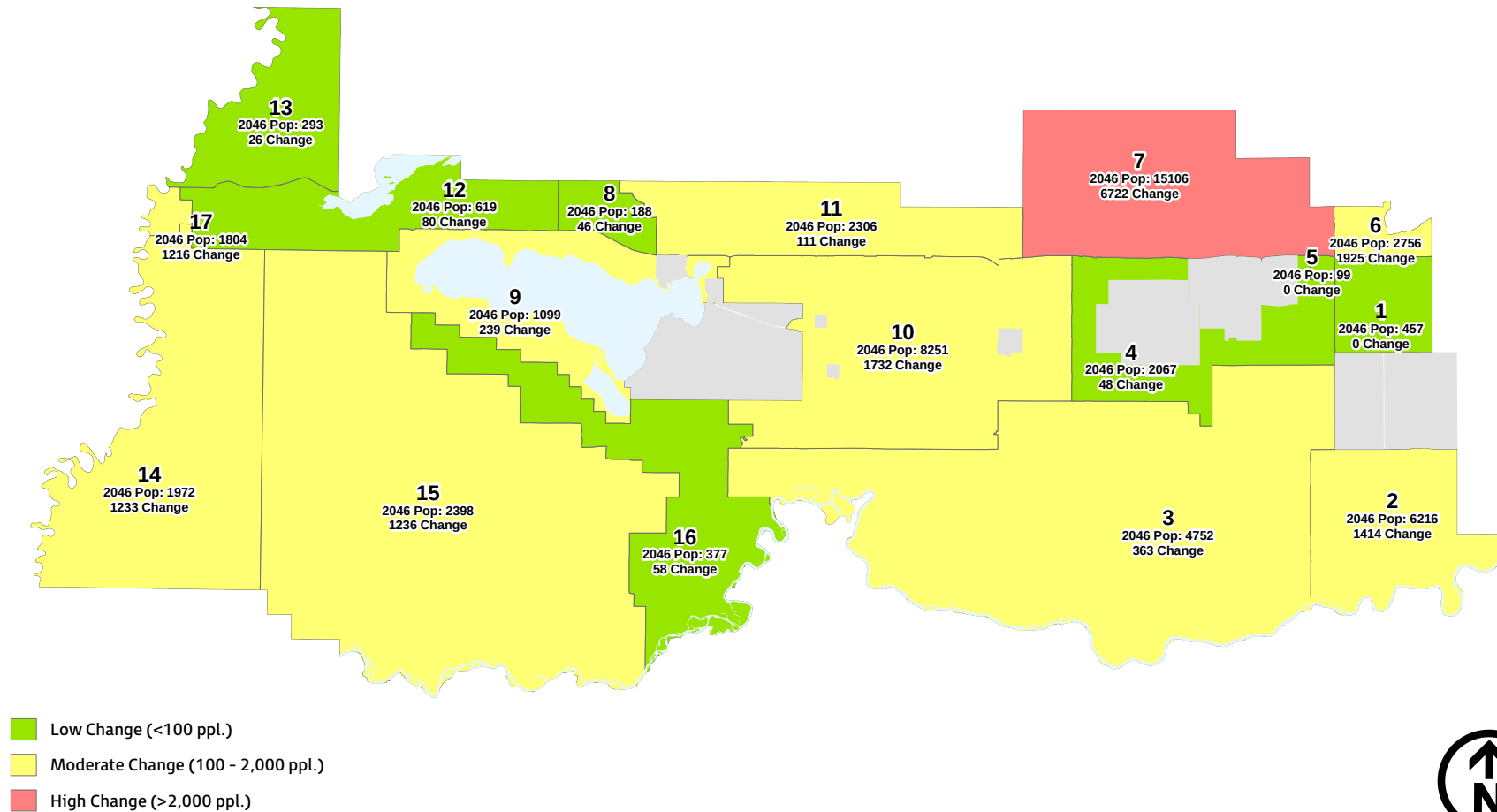
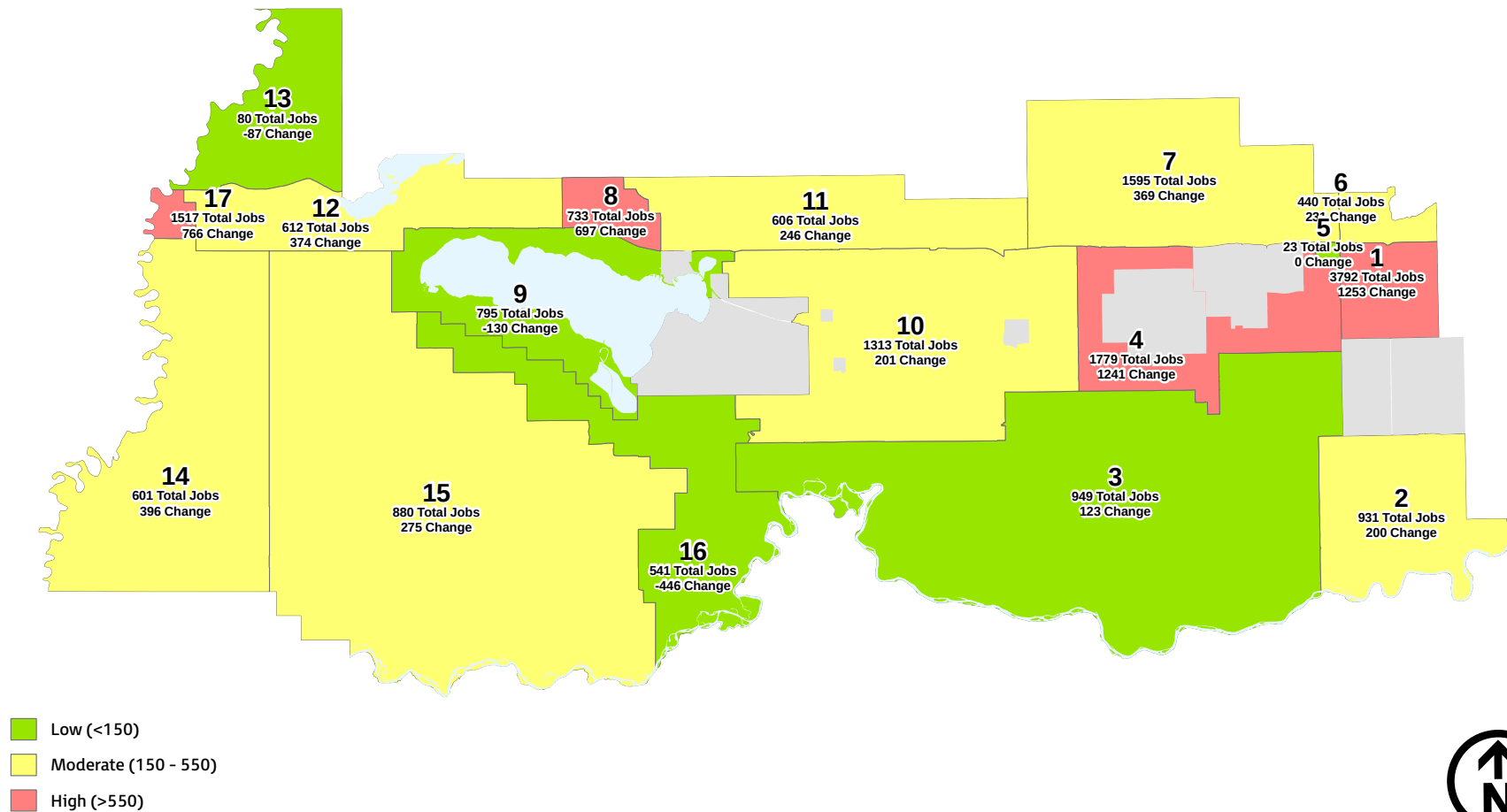




FIGURE 11 | EMPLOYMENT FORECASTS (2015 TO 2046) - ENTWISTLE SCENARIO, BY SDA



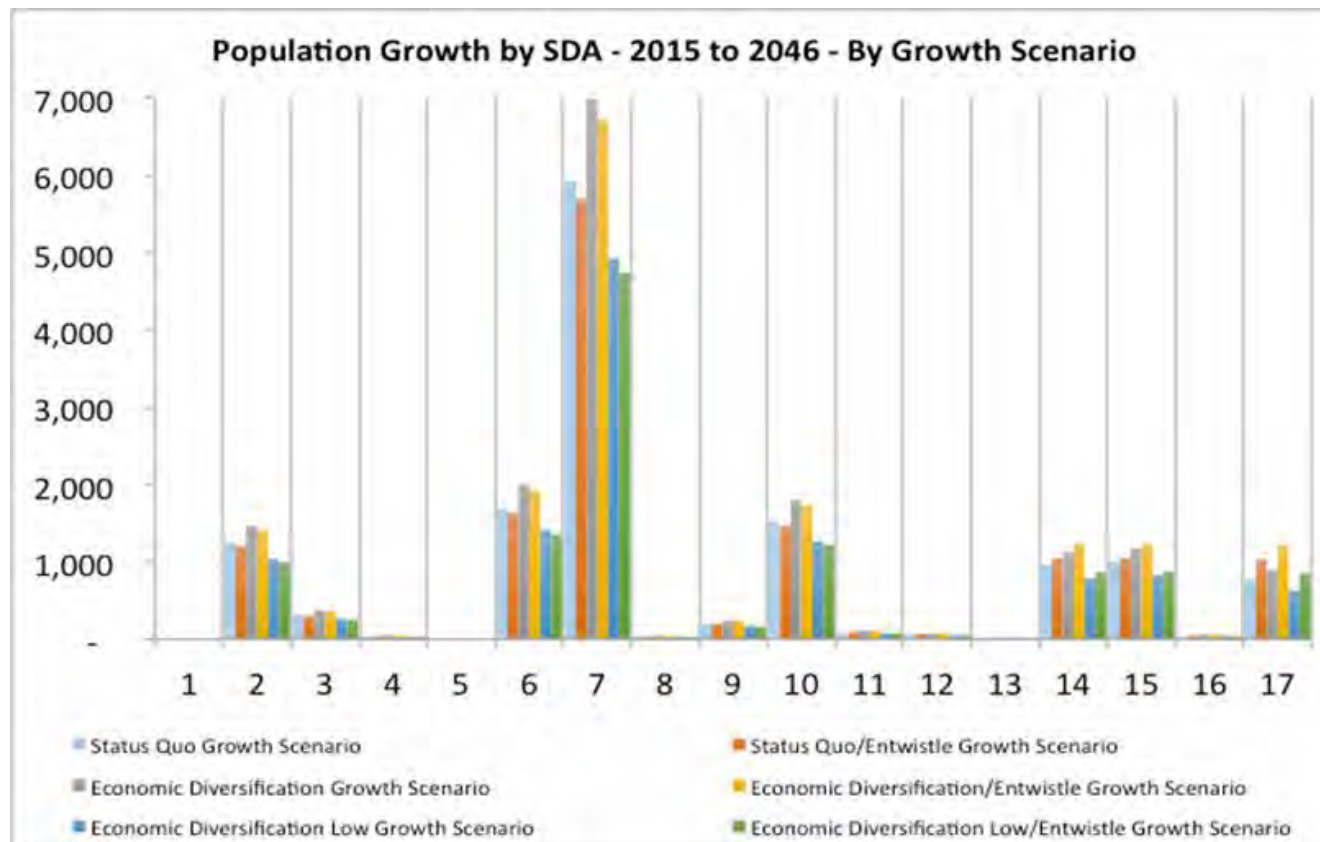


9.0 POPULATION AND EMPLOYMENT PROJECTIONS

The population growth for Parkland County ranges from 11,603 to 16,450 people.

Figure 12: Population Growth by SDA – 2015 to 2046 – By Growth Scenario illustrates the distribution of population growth across the SDAs and scenarios.

FIGURE 12 | POPULATION GROWTH BY SDA – 2015 TO 2046 – BY GROWTH SCENARIO

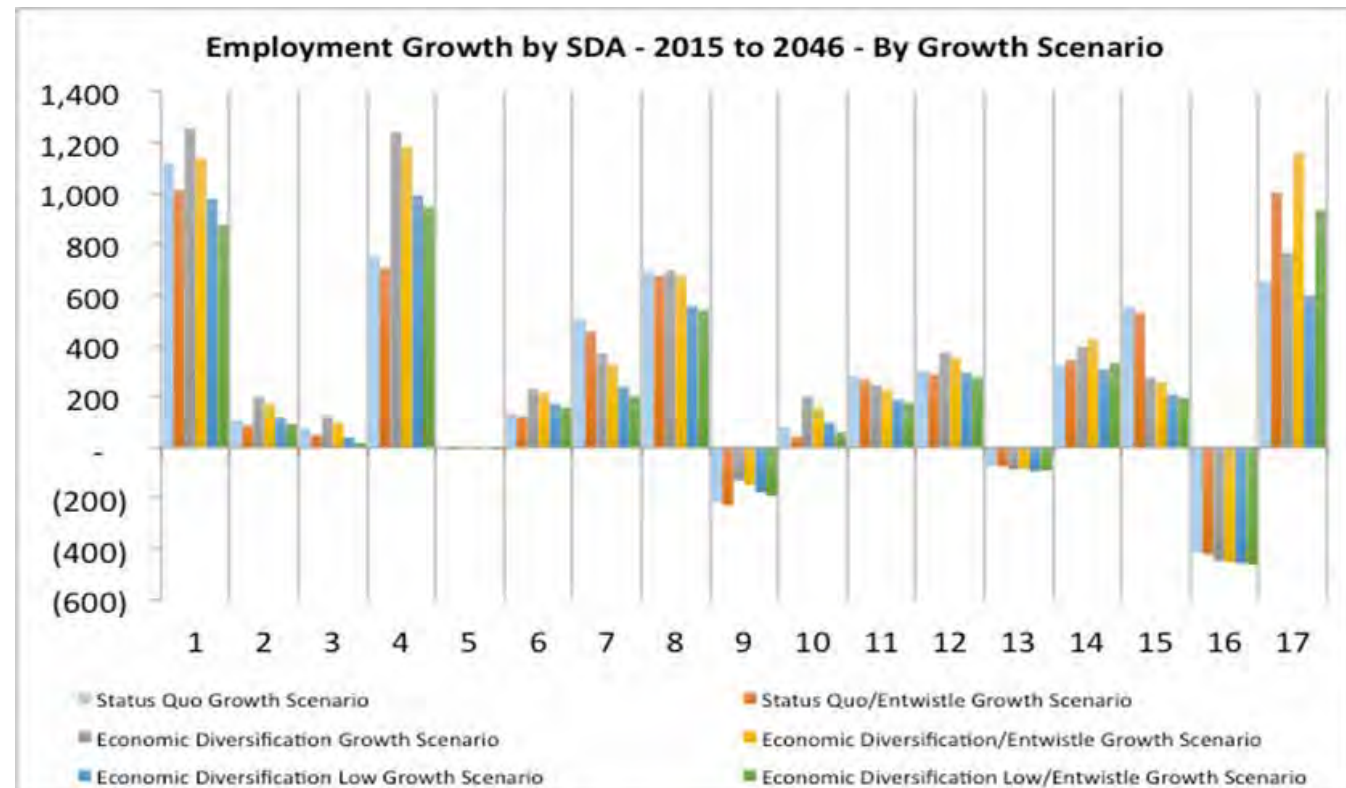




The employment growth for Parkland County ranges from 4,071 to 5,712 jobs.

Figure 13: Employment Growth by SDA – 2015 to 2046 – By Growth Scenario illustrates the distribution of employment growth across the SDAs and scenarios.

FIGURE 13 | EMPLOYMENT GROWTH BY SDA – 2015 TO 2046 – BY GROWTH SCENARIO

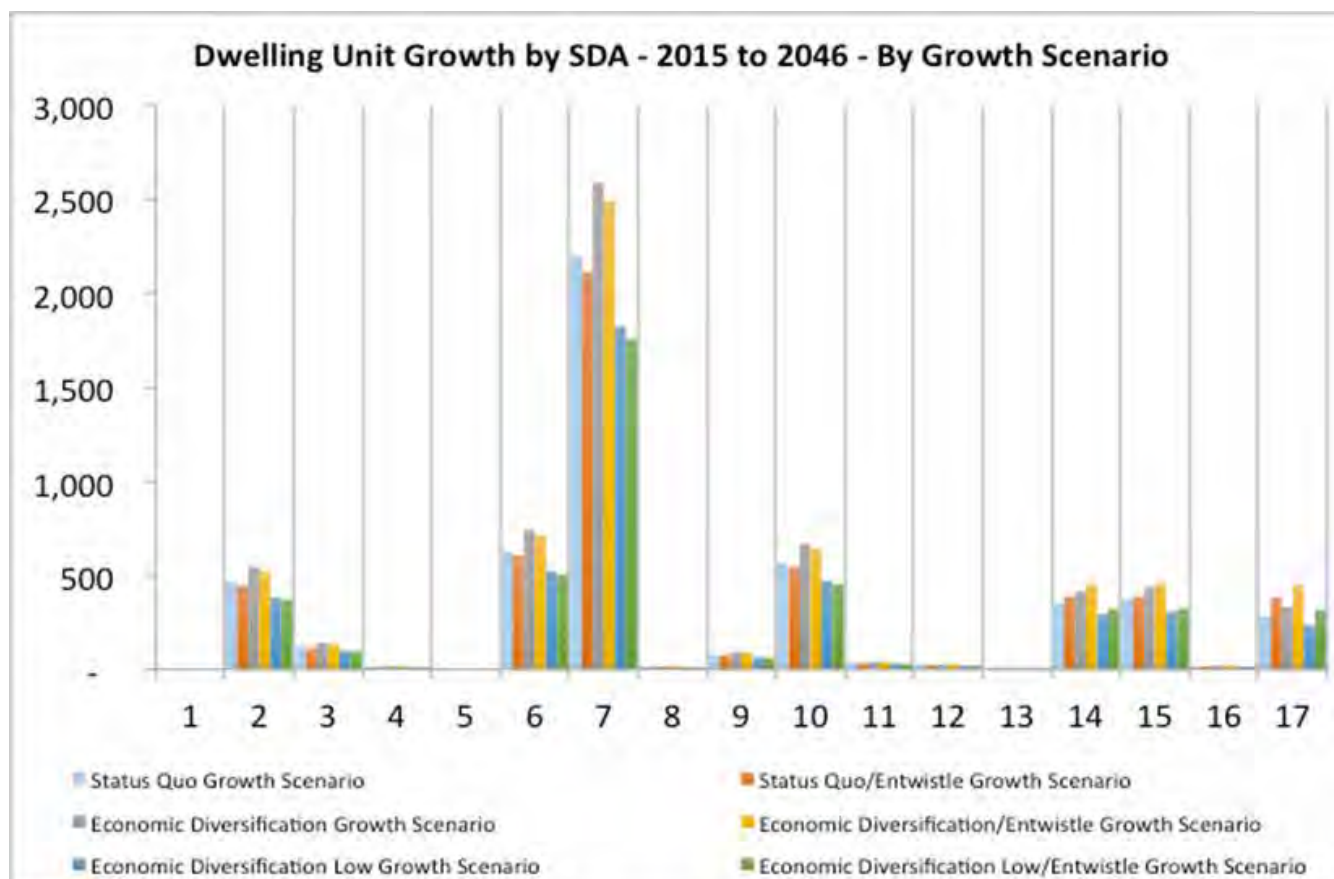




9.0 POPULATION AND EMPLOYMENT PROJECTIONS

The growth in dwelling units for Parkland County ranges from 4,298 to 6,093. **Figure 14: Dwelling Unit Growth by SDA – 2015 to 2046 – By Growth Scenario** illustrates the distribution of dwelling unit growth across the SDAs and scenarios.

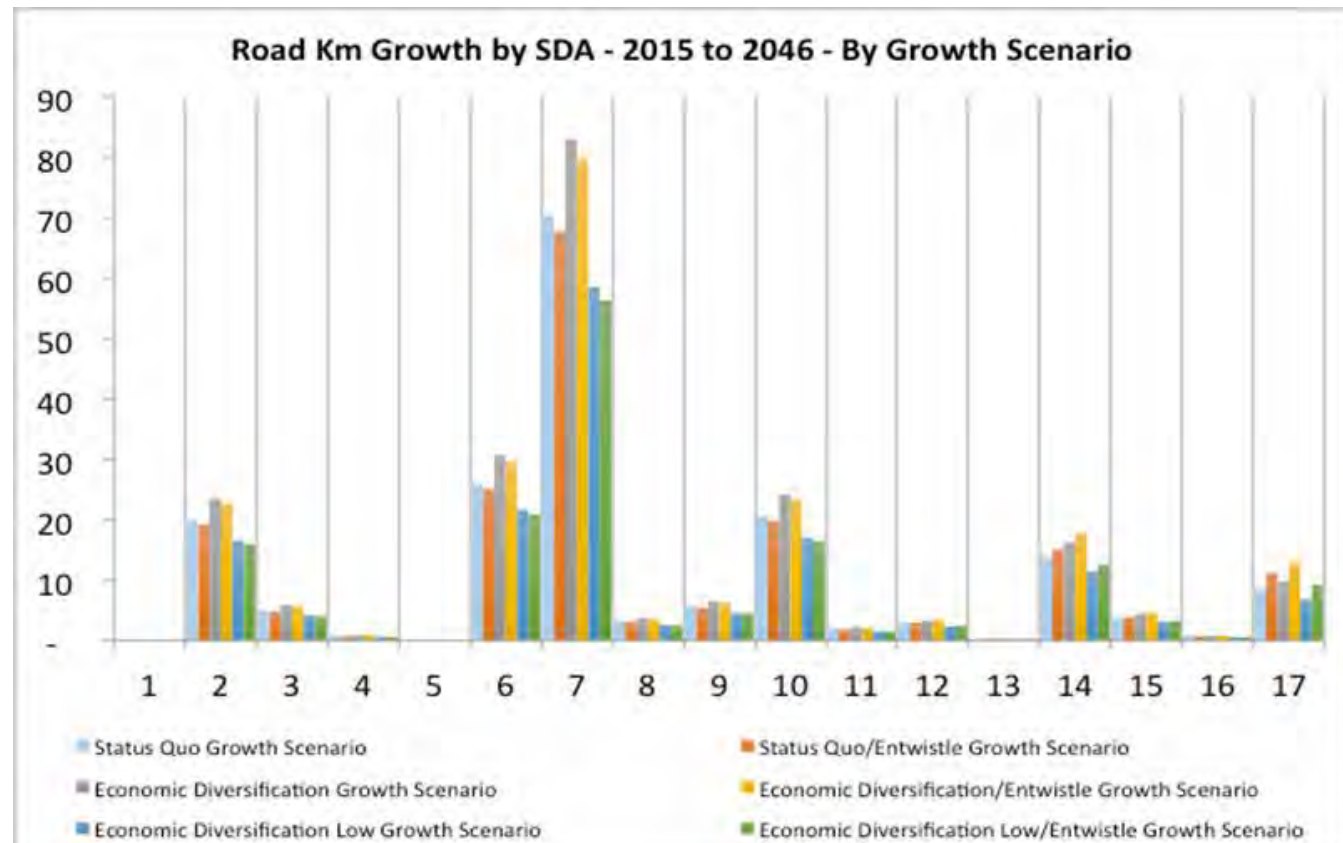
FIGURE 14 | DWELLING UNIT GROWTH BY SDA – 2015 TO 2046 – BY GROWTH SCENARIO





The growth in road kilometers for Parkland County ranges from 151 to 216 km. **Figure 15: Road KM Growth by SDA – 2015 to 2046 by Growth Scenario*** illustrates the distribution of road kilometer growth across the SDAs and scenarios.

FIGURE 15 | ROAD KM GROWTH BY SDA – 2015 TO 2046 BY GROWTH SCENARIO



*Base data compiled by Applications Management.



10.0 FINANCIAL IMPACTS OF GROWTH

10.1 Financial Impact Analysis - Introduction

Applications Management Consulting Inc. was retained to complete a Fiscal Impact Analysis (FIA). Analysis generated as part of the FIA was used to inform the recommendations of the TGS.

10.0



The FIA identifies the specific costs and revenues that can be anticipated through development based on the preferred growth scenarios of the TGS. This information was used to preference some development types over others and to work towards a more financially sustainable development pattern.

The FIA acknowledges that development and growth have associated costs and revenues for a municipality. Municipalities strive for an appropriate balance between costs and revenues while maintaining other important community values (e.g. social & environmental).

The FIA analysis, completed by Applications Management Consulting (AMC), is provided in *Appendix C: Fiscal Impact Analysis* of this report. The text provided in Section 10 of this Study represents a summary version of AMC analysis.

The Fiscal Impact Analysis was conducted using AMC's Municipal Fiscal Impact Model. This model incorporates assumptions about growth, as well as the significant factors important to determining the financial picture of the County.

Note: Findings presented in this section are approximate and utilized current information available at the time. Findings represent potential future scenarios and in no way reflect operational or capital budgeting commitments. Findings should in no way be used as the sole means to inform future corporate or strategic planning initiatives.

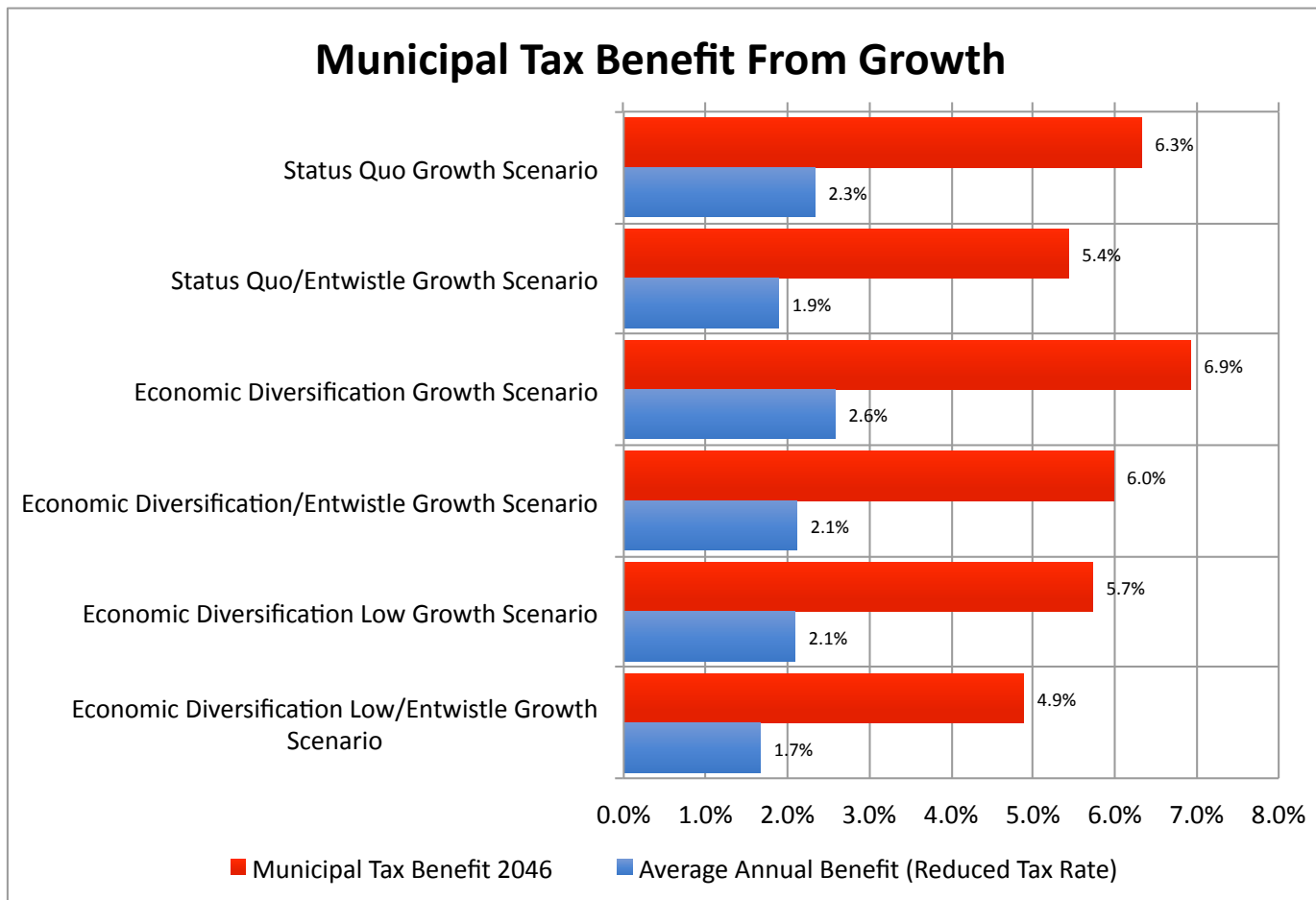


10.2 Financial Impact Analysis Results – Overall County

To determine the financial implications of growth, a Base Case financial forecast has been prepared for the County that assumes the County would not experience any new growth – a No Growth Scenario. This Base Case has been compared against each of the six (6) Growth Scenario forecasts described above. In each of the forecasts, over the medium and long term, blended growth is expected to result in a net benefit to the County as expressed by the County having lower municipal tax rates with growth than would be the case without growth. It must be specifically identified that residential growth alone is a net cost to the County. While the tax benefits of growth vary across scenarios and vary across the forecast timeframe, the analysis of each scenario indicates that growth can have a net positive impact on the financial position of the County.

This is exemplified by an average annual tax benefit that would occur as a result of growth forecast for the County. This benefit ranges from 1.7% to 2.6% per year, depending on the growth scenario. Further, the benefits of growth tend to increase over time, resulting in a municipal tax rate benefit at the end of the forecast ranging from 4.9 % to 6.9%, depending on the growth scenario. See **Figure 16: Average Municipal Tax Benefit – From Growth**

Note that these results are based on the analysis of real 2015 dollars, which excludes inflation. Further, the tax rate benefit from growth means that tax increases will be lower with the growth scenario than would be the case without growth. This does not mean that tax rates will go down over time, but rather the rate of tax increase will be lower when growth occurs. For a more detailed explanation of the analysis please see section 1.2 of **Appendix C: Fiscal Impact Analysis**.


FIGURE 16 | AVERAGE MUNICIPAL TAX RATE BENEFIT BASED ON GROWTH SCENARIOS




10.3 Financial Impact Analysis Results - by SDA

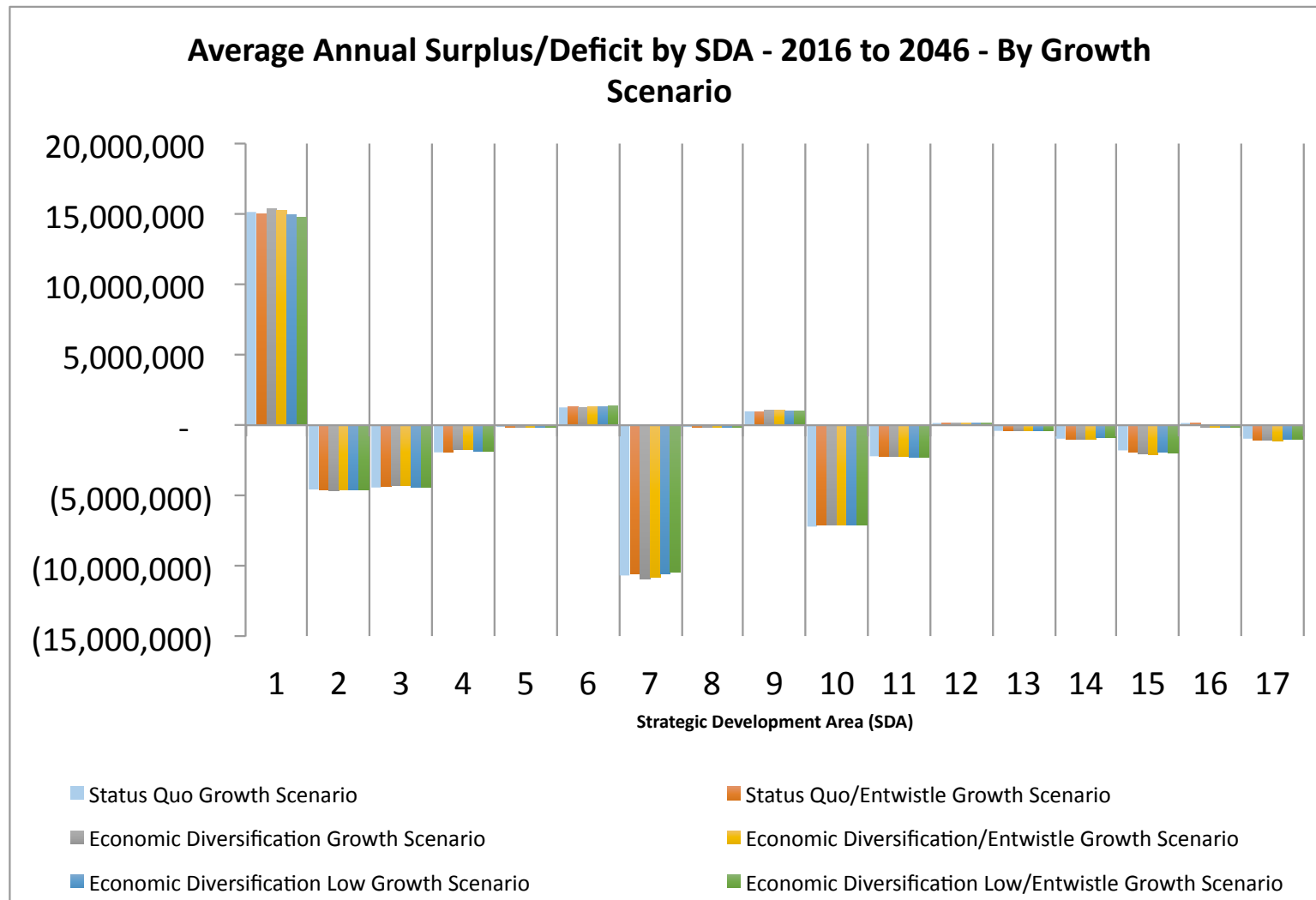
An analysis of the financial position of each SDA included all the cost and revenue factors included in the County Wide analysis with the exception of tax revenues from linear assessment. Based on this analysis, the net contribution (positive/negative) to the County bottom line is summarized in **Figure 17: Average Annual Surplus/Deficit by SDA and Growth Scenario.**

The average annual net surplus or deficit that each SDA contributes to the County's total financial position is comprised of three SDAs that make a positive contribution – generate a positive total revenues - with the others being in a net deficit position.

The three positive contributing SDAs are as follows:

- **SDA 1: This is the Acheson industrial area and has relatively low municipal costs that are applied against significant non-residential tax revenues generated from both existing and future development in this area.**
- **SDA 6: This is primarily a Country Residential area that has significant assessment per unit. It is expected that future residential growth will be higher valued properties, which in conjunction with some non-residential growth, results in this area being a net contributor to the County total revenue. Please see Section 10.5 for further information.**
- **SDA 9: The decommissioning of existing coal fired power generating facilities in this SDA reduces its net contribution to the County's total revenues. However, with conversion of some units to natural gas and alternative development projected for the area, SDA 9 will continue to be a positive contributor to the County's bottom line.**

It is noteworthy that the County's two most densely country residential SDAs (7 & 10) have the largest negative financial impact on the County. This is a result of both the existing amount of country residential development as well as the relatively significant population growth allocations to these areas in the Growth Scenarios. The other SDAs which have been allocated some significant population growth have offsetting non-residential activity that improves their net deficit position. This includes SDAs 2, 3, and 17.


FIGURE 17 | AVERAGE ANNUAL SURPLUS/DEFICIT BY SDA AND GROWTH SCENARIO




10.4 Financial Impact Assessment - Hamlets

Established hamlets exist in SDA 10, 15 and 17. The results for SDA 10 and 15 include assumptions related to growth of these hamlets as well as other activity in each SDA. To evaluate the fiscal impact of hamlet development, the FIA focuses on SDA 17 and the implications of growth of Entwistle on the County's fiscal position.

10.4.1 COST/REVENUE ALLOCATIONS

As noted above, an allocation of costs and revenues from the County wide estimates to each SDA use a combination of factors including population, employment and length of roads. In the case of Entwistle, these estimates were compared to historical data for villages in Alberta that were approximately 400 people in size. Currently SDA 17 is a net drain on the County's fiscal position by approximately \$0.7 million per year. In each of the Growth Scenarios, this deficit is projected to increase. The amount of the increase in deficit depends on the Growth Scenario. Over the forecast period, the annual deficit is projected to increase to approximately \$1.2 to \$1.4 million per year.

The increase in deficit of SDA 17 occurs in spite of employment growth exceeding population growth in each of the Growth Scenarios. Thus, while population growth is significant, and contributes to an increasing net cost of SDA 17, the increase in jobs and associated non-residential assessment is not sufficient to offset this increase in costs.

This result is typical of analysis of urban municipalities. Residential development is, in almost all instances, subsidized by non-residential development. Complicating this reality for Parkland County is the application of municipal tax rates to the SDA that balance the County wide requirement for revenues and are not customized to the balance of growth and costs associated with delivering municipal services in the SDA.

A more favourable financial result could be achieved for SDA 17 were it to be identified as a special benefiting area or if Parkland County were to become a Specialized Municipality with the power to levy different municipal tax rates in designated urban areas where service levels and associated costs are different than for the rest of the municipality.



10.5 Financial Impact Analysis Results - Country Residential (CR)

SDAs that have large amounts of existing and allocated CR development and growth are projected to have a significant net negative financial impact on the County's fiscal position. A notable exception to this general result is SDA 6 which is primarily CR development, but provides a positive net contribution to the fiscal position of the County. This is due to the relatively high value of residential properties projected to be developed in the future, which is consistent with the current development in the SDA. As well, there is some commercial development projected for SDA 6 which contributes to this area being a positive contributor to the County's financial position in each of the growth scenarios.

10.5.1 COUNTRY RESIDENTIAL FINANCIAL IMPACTS

It is difficult to determine the financial implications of Country Residential development because these impacts depend on a wide array of factors and circumstances. For example, if a vacant approved CR lot has one housing unit developed on it which houses three people, the impact on the County's demand for services will be negligible. No new roads or additions to services will be required. The traffic impacts resulting from this additional dwelling unit and family will be negligible. In this example, the additional dwelling unit will generate municipal property tax revenues and no significant incremental costs to the County, resulting in a net benefit to the financial position of the County.

At the other end of the development spectrum, if there is a selection of CR development that is located in a part of the County with a lot of existing CR development and population, there would be potentially an increase in the population of the County. The County would inherit responsibility for new or upgraded internal roads and there would likely be considerable increase in demand for municipal services from the County and perhaps from the County's urban neighbours. In this example given, it is clear the County would face some significant additional costs to provide services to this development. The important question from a County financial perspective is whether the tax and non-tax revenues generated from this development would be sufficient to offset these costs.



10.0 FINANCIAL IMPACTS OF GROWTH

10.5.2 COUNTRY RESIDENTIAL (CR) BREAK-EVEN ANALYSIS

To evaluate the impact of future Country Residential (CR) growth, a sub-model has been developed to evaluate the potential financial consequences of this type of growth under varying circumstances. The results of this analysis indicate that, generally, the more intense the CR development, the greater the costs to the County (see **Figure 18: Country Residential Impact Per Dwelling Unit by Scenario**). Further, these costs can be offset by density and higher assessment values.

Using the 'incremental' approach to the Financial Impact Analysis noted above, the impact of CR development on the County will depend on several factors, including how much development is planned, where it occurs, and the resulting demand for municipal services that will result.

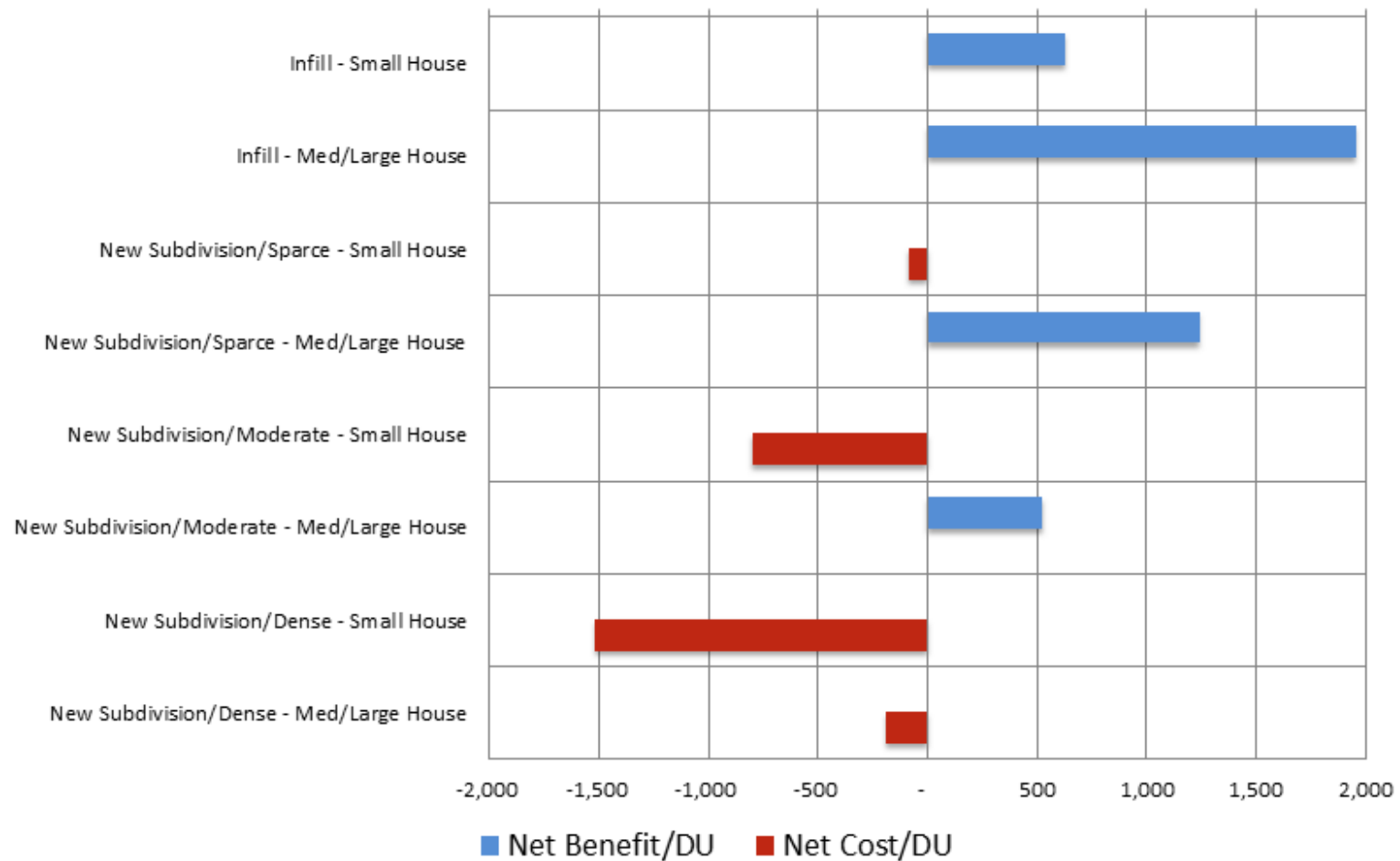
Using results from the Financial Impact Analysis, the incremental costs and revenues associated with each CR development scenario are summarized below:

- **INFILL CR:** Infill CR is expected to generate a net benefit to the County regardless of house size (and assessment). The larger the dwelling units and associated assessment, the greater the net benefit. It should be noted that if there is a significant amount of Infill CR in a cluster of existing developments that are in close proximity, this may alter the result to being negative if there is a sufficient increase in demand for municipal services and required arterial road upgrades.
- **NEW SUBDIVISION / SPARSE SUB-REGION CR DEVELOPMENT:** A new CR subdivision that is small and not within proximity to a cluster of other CR subdivisions can break even or result in a net benefit to the County. Where this new CR subdivision increases in size and is in proximity to other CR development, it is estimated that it is just as likely to result in a net cost as a benefit, depending on the size of dwelling unit and associated assessment.
- **NEW SUBDIVISION / DENSE SUB-REGION CR DEVELOPMENT:** Where a new CR development is located within a cluster of existing CR development, it is likely there will be a subsequent increase in demand for municipal services that will result in the municipal costs associated with the development exceeding revenues, even where the development is generally of large housing units with high assessment values.



KEY RECOMMENDATION

Promote the sensitive infill of existing CR areas.


FIGURE 18 | COUNTRY RESIDENTIAL IMPACT PER DWELLING UNIT BY SCENARIO




10.0 FINANCIAL IMPACTS OF GROWTH

10.5.3 ROAD LIFECYCLE COSTS

One key factor in the financial costs of growth in a rural setting is road costs. As provided by McElhanney Consulting Services Ltd., roads built to Parkland County standards (as defined in Country Residential Road Surfacing Policy EN001) are approximately \$186,000/lane/km to build a road to a rural gravel standard and \$285,000/lane/km to build a road to a rural paved standard. The lifecycle costs including road maintenance and rehabilitation mean that costs associated with roads have a Net Present Value of \$548,700/lane/km (\$654,000 when adjusted for inflation) for rural gravel roads and \$840,750/lane/km (\$1,002,556 when adjusted for inflation) for paved roads as identified in *Table 3: Lifecycle Costs for Rural Roads in Parkland County*. The costs of building and maintaining road infrastructure over time are important considerations when approving subdivision and development applications given the overall and long-term impact to County capital and operating budgets.

Estimates were created based on current information available at the time and were used to assist in completing the FIA. Information will be updated on future updates of the TGS. All road cost information is based on generic examples of road costs for Parkland County as estimated by McElhanney Consulting Services Ltd.



KEY RECOMMENDATION

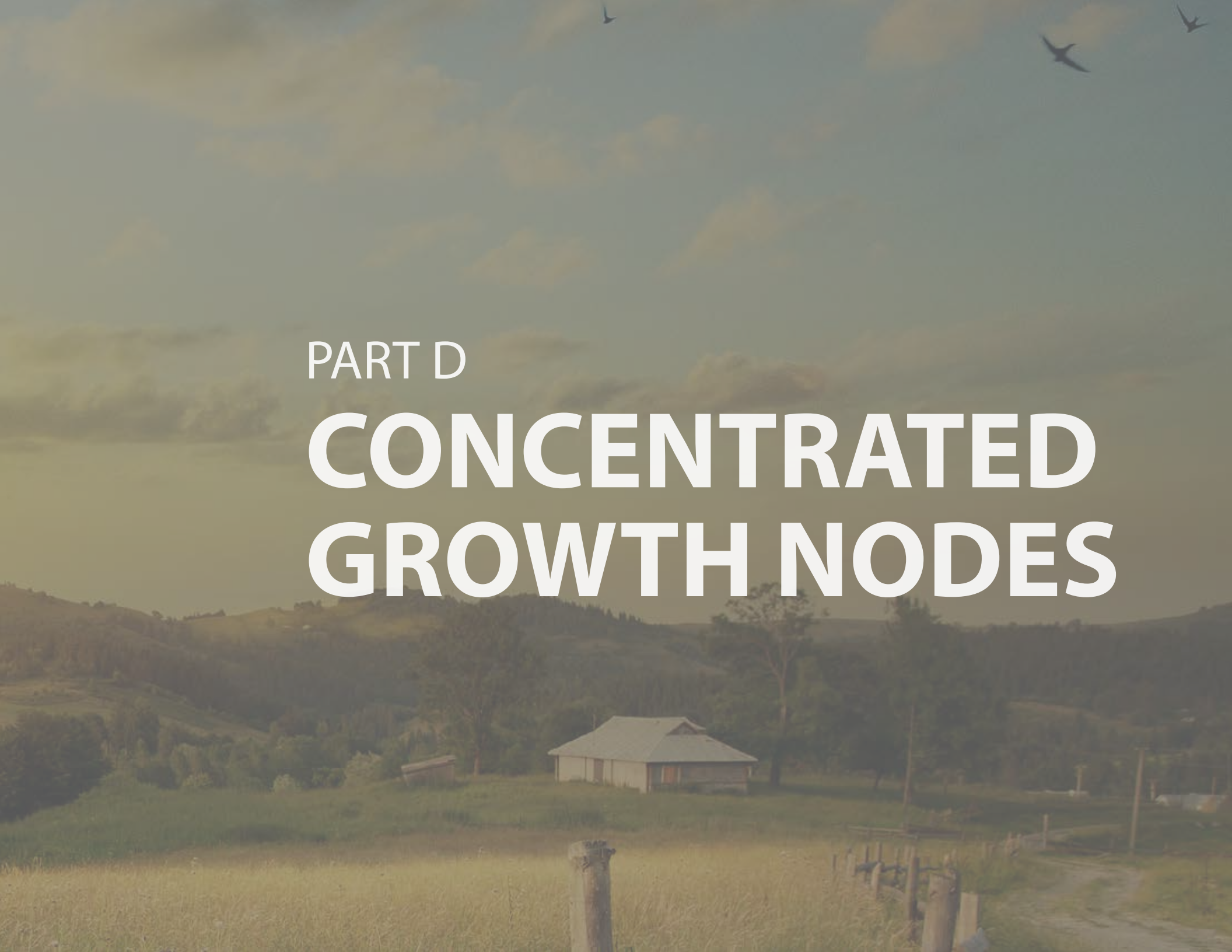
Consider lifecycle road costs when approving subdivision and development applications given the overall and long-term impact to County capital and operating budgets

**TABLE 3 | LIFECYCLE COSTS FOR RURAL ROADS IN PARKLAND COUNTY**

	Annual Budget (adjusted for inflation)	NPV Annual Budget	Budget (adjusted for inflation)	NPV Annual Budget
Year	GRAVEL		PAVED	
0	\$186,000	\$186,000	\$285,000	\$285,000
1	\$9,486	\$9,300	\$14,535	\$14,250
2	\$9,676	\$9,300	\$14,826	\$14,250
3	\$9,869	\$9,300	\$15,122	\$14,250
4	\$10,067	\$9,300	\$15,425	\$14,250
5	\$10,268	\$9,300	\$15,733	\$14,250
6	\$10,473	\$9,300	\$16,048	\$14,250
7	\$10,683	\$9,300	\$16,369	\$14,250
8	\$10,896	\$9,300	\$16,696	\$14,250
9	\$11,114	\$9,300	\$17,030	\$14,250
10	\$11,337	\$9,300	\$17,371	\$14,250
11	\$11,563	\$9,300	\$17,718	\$14,250
12	\$11,795	\$9,300	\$18,072	\$14,250
13	\$12,031	\$9,300	\$18,434	\$14,250
14	\$12,271	\$9,300	\$18,803	\$14,250
15	\$250,332	\$186,000	\$383,572	\$285,000 Complete Rehab
16	\$12,767	\$9,300	\$19,562	\$14,250
17	\$13,022	\$9,300	\$19,953	\$14,250
18	\$13,283	\$9,300	\$20,353	\$14,250
19	\$13,548	\$9,300	\$20,760	\$14,250
20	\$13,819	\$9,300	\$21,175	\$14,250
Total	\$654,300		\$1,002,556	/lane-km
NPV		\$548,700		\$840,750 /lane-km

D



A rural landscape featuring a small barn with a grey roof in the middle ground, surrounded by green fields and trees. In the background, there are rolling hills under a cloudy sky with a few birds flying. The overall tone is soft and slightly muted.

PART D

CONCENTRATED GROWTH NODES



11.0 IDENTIFYING CONCENTRATED GROWTH NODES

Encouraging future growth to locate within concentrated growth nodes minimizes the net cost to residential growth by making the most efficient use of transportation and utility infrastructure and community services and infrastructure. In addition to reducing capital and operating costs, growth nodes are locations where private investment is welcome and encouraged and public investment is prioritized.



Encouraging growth within concentrated growth areas has numerous benefits, including:

- reducing the fiscal impact of growth,
- decreasing fragmentation of agricultural lands,
- generating synergies between businesses and communities, and
- creating strong social networks.

Council identified 17 residential and non-residential areas where future growth might be concentrated and likely to occur, including all County hamlets. The identification of concentrated growth nodes looked at three (3) key topic areas: (i) land use, (ii) engineering, and (iii) economic growth to ensure the viability of each node and to identify opportunities and constraints. Although financial impacts of growth were included in the analysis, a range of other factors were also incorporated to account for the broad range of Council objectives and to reflect the goals and objectives of the TGS.

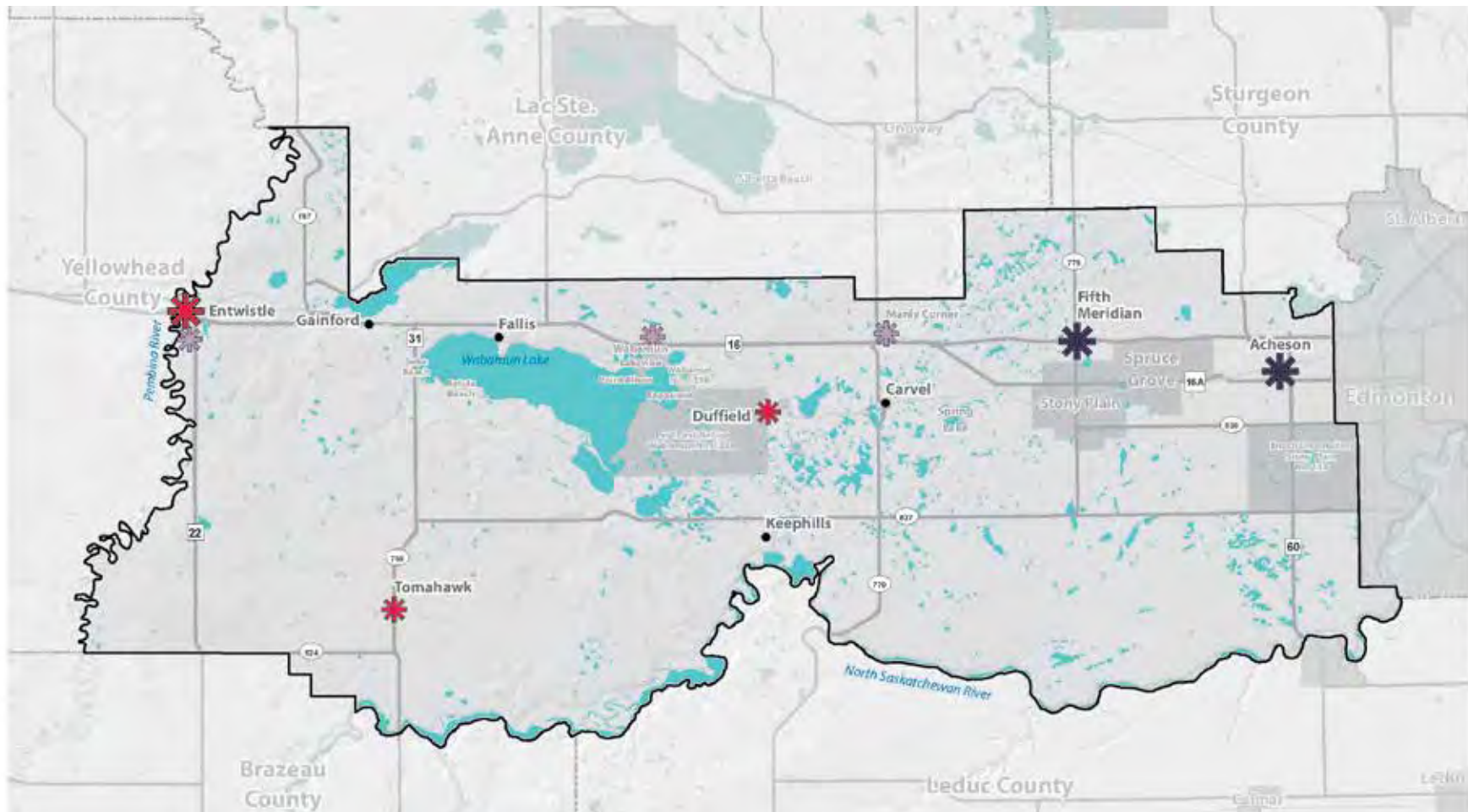
Given the goals and objectives of the TGS, growth nodes were then ranked and prioritized as being more or less suitable for investment by Parkland County. The ranking and prioritization of growth nodes considered proximity to strategic infrastructure, community services and economic development initiatives and other hallmarks of growing communities.



11.0 IDENTIFYING CONCENTRATED GROWTH NODES

Figure 19: Concentrated Growth Areas illustrates the growth areas that were identified through a ranking and prioritization process, and summarizes the key findings of this section (Part D) of the TGS. Analysis used to support these findings is summarized in Section 12 and Section 13 below.

Additional population and employment growth can also be expected to occur throughout the County in rural areas on first parcels out, the development of agriculture-related businesses, home-based businesses, tourism and agri-tourism development, and as dispersed country residential development. More generalized growth in these Rural Growth Areas is discussed in Part E: Rural Growth Areas of this Study.


FIGURE 19 | CONCENTRATED GROWTH AREAS


-  Priority Growth Hamlet
-  Growth Hamlet
-  Rural Hamlet
-  Major Employment Area
-  Local Employment Area



12.0 RANKING & PRIORITIZING - HAMLETS

The ranking and prioritization of hamlets growth identifies hamlets best suited for strategic public and private investment. As illustrated in Figure 17: Average Annual Surplus/Deficit by SDA and Growth Scenario, the negative financial impacts of traditional country residential development are significant, indicating that, in general, accommodating population growth within hamlets is financially prudent. In addition, there are many other social, cultural and sustainable goals fulfilled through growth in hamlets.

12.0



12.1 Hamlet Scoring and Ranking – Criteria & Methodology

When ranking and prioritizing hamlets, it is important to understand that investing in existing infrastructure is generally more cost-effective than building new infrastructure. For this reason, hamlets with existing infrastructure were given a higher ranking than those without existing infrastructure; however, financial considerations are just one consideration when planning for growth. In order to understand which hamlets are most likely to grow over time, a ranking scale was used based on key criteria found in growing communities.⁵ This ranking scale takes into consideration a range of social, economic and land use planning considerations. The ranking criteria are outlined in *Table 4: Hamlet Ranking Criteria*.

TABLE 4 | HAMLET RANKING CRITERIA

CRITERION	RATIONALE
1. Historic population growth	Shows node has an ability to attract population growth
2. Presence of municipal infrastructure	- Allows for a range of land uses types and densities (flexible growth pattern) - Is environmentally sustainable - Provide reliable and secure water and wastewater servicing - Encourages private investment in employment and residential growth
3. Presence of Community Services – School	Encourages growth in families (sustainable demographic make-up)
4. Presence of Community Services – Other (Includes recreation, library, gas stations, natural areas, water parks, etc)	- Encourages growth in families (sustainable demographic make-up) - Provides for a high-quality lifestyle - Encourages aging in place
5. Presence of transportation infrastructure (Highway and Rail)	Increases viability of non-residential and employment uses
6. Existing employment in area	Shows node has an ability to attract population growth and existing synergies
7. Future employment in area	Shows node has ability to enhance synergies and facilitate employment growth

Each hamlet was scored based on how well it met the criteria listed in Table 4: Hamlet Ranking Criteria. For each criteria a score of 0, 1 or 2 was given depending on if the hamlet, failed to meet (score = 0), partially met (score = 1), or fully met (score = 2) the criteria. The scores from the criterion were then summed to give a total score for each hamlet. A higher score indicated a greater potential for growth within the hamlet.

⁵ “Growing communities” criteria was based on best planning practices (employment near residential, nodal development, local/regional centres); goals identified by Council (e.g. development across County); proximity to major markets and transportation routes – which are all indicators of successful conditions for growth from a market perspective. In addition, there was acknowledgment of existing public and private investment, which signals a desire of people wanting to live in certain locations. All criteria are based on policy, economic or social conditions that suggest the strongest likelihood of successful growth.



12.0 RANKING AND PRIORITIZING – HAMLETS

12.2 Hamlet Scoring and Ranking - Results

A summary of the hamlet ranking results is shown in *Table 5: Hamlet Ranking and Prioritization Results Summary*. Based on the results of the scoring, all hamlets were assigned a classification to acknowledge the role they play within the County structure (e.g. priority growth hamlet, growth hamlet & rural hamlet). **Figure 19: Concentrated Growth Areas** shows all ranked and prioritized nodes, both hamlets and employment areas. Entwistle scored the highest with 13 points and was designated as the County's Priority Growth Hamlet. Tomahawk scored 11 points and was designated along with Duffield as the County's Growth Hamlets. Gainford, Keephills and Fallis all scored 7 points and were designated as the County's Rural Hamlets. Prioritizing hamlets generally aligns with the Edmonton Metropolitan Region Growth Plan regional structure which indicates that priority growth hamlets may be identified by individual municipalities.

TABLE 5 | HAMLET RANKING & PRIORITIZATION RESULTS SUMMARY

Hamlet	Score	Hamlet Characteristics	Hamlet Type Designation
Entwistle	13	• All growth is municipally serviced • Accommodates a range of housing types and densities • Has a range of residential and non-residential land uses • Is a priority area for County investment • Acts as a sub-regional centre • Infills and intensifies over time • Is planned through Area Structure Plans or Outline Plans	Priority Growth Hamlet
Tomahawk	11	• Characterized by some degree of municipal servicing • Growth is municipally serviced when possible	Growth Hamlet
Duffield	10	• Accommodates some diversity of housing types and densities	
Carvel	9	• Is a location for non-residential growth • Has potential to provide sub-regional level of services over time	Rural Hamlet
Gainford, Keephills & Fallis	7	• Development has private, on-site servicing • Development occurs on a site-by-site basis • May have non-residential development	



KEY RECOMMENDATION

Designate Entwistle as a Priority Growth Hamlet and Tomahawk and Duffield as Growth Hamlets.



12.3 Hamlet Growth Areas – Key Recommendations

The three growth hamlets Entwistle, Tomahawk and Duffield are projected to grow in both population and employment over the next 30 years. Appendix E: Hamlet Fact Sheets provides further detailed analysis of physical constraints, absorbed and available land, engineering and land use considerations for the three growth hamlets.

The continued success of these three growth hamlets will require dedicated planning and investment by the County, local citizens and the development and business community. To support and direct this growth and success, it is recommended that a Hamlet Area Redevelopment Plan (HARP), or similar, be completed for each hamlet. A HARP process, in addition to standard area redevelopment plan requirements, should:

- identify an appropriate residential to non-residential land supply ratio;
- engage and empower local residents and businesses to identify and build on economic development opportunities; and
- indicate opportunities for infill within the hamlet boundary, as infilling accommodates population and employment growth while maximizing the use of existing infrastructure.

The vision for a HARP process should go beyond traditional land planning and extend to economic development, hamlet marketing/branding, and creating excitement within the community that will build a framework for future hamlet success. The County may also wish to consider special development and tax levies in designated hamlets, where service levels and associated costs are different than the rest of the municipality to offset the costs of urban-type infrastructure and growth.



KEY RECOMMENDATION

Hamlet Area Redevelopment Plans, or similar, should be undertaken for priority growth and growth hamlets.



12.0 RANKING AND PRIORITIZING – HAMLETS

12.3.1 ENTWISTLE – RANKING RESULTS & GROWTH CONSIDERATIONS

The Hamlet of Entwistle scored 13 points and was identified as a priority growth hamlet. The high score for Entwistle is not surprising, as Entwistle has recently attracted the Pinnacle Pellet Plant, providing new jobs and opportunities within the hamlet. Furthermore, the highway commercial area of Entwistle has attracted a Subway restaurant and is a stop for travelers along Highway 16. According to the population and employment projections, in 2046 Entwistle is anticipated to have 1,804 people and 1,124 jobs. See Appendix E: Hamlet Fact Sheets for detailed hamlet fact sheets.

Entwistle's designation as a priority growth hamlet is supported by a sufficient land supply to accommodate the projected growth and development. The hamlet also has the following infrastructure considerations and recent investments:

- **Recent investment was made (\$3M) to expand and upgrade the sewage lagoon in 2011, which will provide some additional capacity for the hamlet as well as the region;**
- **Entwistle has a water treatment facility and distribution system with some growth capacity within the hamlet or for the region;**
- **The WILD (West Inter Lake District) Servicing Line may be extended to Entwistle, which will provide water security and sustainability;**
- **The existing major service interchange with Highway 16 functions at a high level of service and is not expected to be a constraint in population or traffic growth; and**
- **Internet is available through the existing broadband network tower**

To accommodate Entwistle's future growth, land use planning will need to consider how to best manage growth on both the north and south sides of the hamlet given it is divided by Highway 16 and the CN rail line. In addition, the location of the Pinnacle Pellet Plant immediately adjacent to the hamlet's residential core may constrain growth within the hamlet's historic downtown.



12.3.2 TOMAHAWK – RANKING RESULTS & GROWTH CONSIDERATIONS

The Hamlet of Tomahawk scored 11 points, ranked second and is identified as a Growth Hamlet. Tomahawk has developed a role as a small local and subregional centre. The Hamlet has been experiencing modest population growth and contains existing non-residential development, mostly in the form of commercial development. The projected population of Tomahawk is 200 people in 2046, up from its current population of 62. See Appendix E: Hamlet Fact Sheets for detailed hamlet fact sheets.

Future growth is supported by a sufficient land supply to accommodate the projected population and employment growth in Tomahawk to 2046.

Tomahawk has the following infrastructure considerations:

- **Tomahawk is municipally serviced for wastewater. The existing 1960's sewage lagoon is fed via the hamlet's gravity collection system. The one cell lagoon operates near capacity requiring regular sewage removal. An expansion and/or upgrade are anticipated to accommodate any growth and new wastewater treatment standards.**
- **Currently, there is no municipal water servicing in Tomahawk. Water supply is through privately owned wells or by delivery to private cisterns. Asides investment into a local water well supplied water treatment plant, reservoir, pumphouse, and distribution system, some options to consider to for regional water supply include extending the water supply mains from Wabamun as the village is recently serviced regionally by the WILD waterline, Entwistle or directly from the WILD water line if it is extended West. All regional water extensions would be a significant investment as Tomahawk is 20 - 40km from any of these locations; and**
- **Internet is available through the existing broadband network tower.**



12.0 RANKING AND PRIORITIZING – HAMLETS

12.3.3 DUFFIELD – RANKING RESULTS & GROWTH CONSIDERATIONS

The Hamlet of Duffield scored 10 points, ranked third and is identified as a Growth Hamlet. Duffield has developed a role as a small local and subregional service centre. It has been experiencing modest population growth and contains existing non-residential development, mostly in the form of commercial development. The projected population of Duffield is 200 people in 2046, up from its current population of 67. See Appendix E: Hamlet Fact Sheets for detailed hamlet fact sheets.

There is sufficient land supply to accommodate the project population and employment growth in Duffield to 2046. Duffield has the following infrastructure considerations:

- **Duffield is municipally serviced for wastewater through a low pressure collection system and sewage lagoon for treatment. There may be some capacity for growth in the existing system with reduction of infiltration and inflow (I/I) into the wastewater system; however, this will be determined as I/I reduction investigations and solutions are implemented.**
- **Duffield currently does not have municipal water servicing. Similar to Tomahawk, investment into a local water well supplied water treatment plant, reservoir, pumphouse and distribution system is an option. Due to its proximity (~10km) to the WILD line, Duffield is positioned such that a regional water supply could be feasible; and**
- **Transportation access to Duffield is from Range Road 32 (Duffield Road), which connects with Highway 16 (at grade intersection) to the north and Highway 627 to the south. Alberta Transportation plans to remove all at-grade intersections on Highway 16, which would require closure of this intersection and rerouting of traffic from Duffield through Wabamun or Carvel Corner interchanges. In the long-term, an interchange is planned for Range Road 30 that would provide more convenient access to Duffield from Highway 16.**



12.3.4 CARVEL – RANKING RESULTS & GROWTH CONSIDERATIONS

In the TGS ranking analysis Carvel has been identified as a growth hamlet. The County will review the feasibility and status of Carvel as a growth hamlet at a future update of the Growth Study.



13.0 RANKING & PRIORITIZING - EMPLOYMENT AREAS

Similar to residential growth, employment or non-residential development within concentrated areas creates synergies that are often very attractive to businesses. Thus, when considering where to focus County investment in infrastructure and services, identifying priority employment areas can be extremely beneficial.

13.0



The TGS identified priority employment areas through a ranking and prioritization methodology that takes into consideration a range of social, economic and land use planning considerations. The ranking criteria are outlined in Table 6: Non-Residential Areas Ranking Criteria.

13.1 Employment Areas Scoring and Ranking – Criteria & Methodology

The ranking criteria for non-residential areas considered the key factors for a successful employment area. This included availability of servicing, presence of transportation networks, past and future employment, and geography (e.g. proximity to Edmonton and urban areas).

TABLE 6 | HAMLET RANKING CRITERIA

CRITERION	RATIONALE
1. Presence of Municipal Servicing	- Allows for a range of land uses types and densities (flexible growth pattern) - Municipally-serviced employment areas generate significantly more assessed value than unserviced areas - Greater environmental sustainability - Provide reliable and secure water and wastewater servicing - Encourages private investment in employment and residential growth
2. Presence of Transportation (Highway and Rail)	Increases viability of non-residential and employment uses
3. Existing Employment	Shows node has an ability to attract population growth and existing synergies
4. Anticipated Future Employment	Shows node has ability to enhance synergies and facilitate employment growth
5. Proximity to Edmonton (regional markets)	Good access to strong regional markets
6. Proximity to Urban Area	Local employment (live-work) opportunities

Each employment area was scored based on how well it met the criteria listed in Table 6: Non-Residential Areas Ranking Criteria. For each criteria a score of 0, 1 or 2 was given depending on if the area, failed to meet (score = 0), partially met (score = 1), or fully met (score = 2) the criteria. The scores from the criterion were then summed to give a total score for each employment area. A higher score indicated a greater potential for growth within the hamlet.



13.0 RANKING AND PRIORITIZING – EMPLOYMENT AREAS

13.2 Employment Areas Scoring and Ranking - Results

A summary of the employment areas ranking results is shown in *Table 7: Non-residential Ranking and Prioritization Results Summary* and on **Figure 19: Concentrated Growth Areas**. Acheson scored the highest with 12 points and is designated as a Major Employment Area. Fifth Meridian scored 10 points and is also identified as a Major Employment Area. Entwistle scored 9 points and is designated as a Local Employment Area given current growth patterns, but is intended to transition to a Major Employment Area over time. Highvale North, Manly Corner and Wabamun North scored lower and were identified as future Local Employment Areas. These designations are consistent with the regional structure approved within the Edmonton Metropolitan Region Growth Plan (major employment area, local employment area, or individual business opportunity).

TABLE 7 | HAMLET RANKING & PRIORITIZATION RESULTS SUMMARY

Non-Residential Area	Score	Characteristics	Employment Area Type Designation
Acheson	12	• Growth is municipally serviced • Provides strong assessment value	Major Employment Area
Fifth Meridian	10	• Infills and intensifies over time • Accommodates higher intensity and density of growth	
Entwistle*	9	• Is planned through Area Structure Plans • Requires good proximity to transportation corridors and regional markets	
Highvale North	6	• Accommodates outdoor storage or low service development • Provides moderate assessment value	Local Employment Area
Manly Corner (Hwy 43 & 16)	6	• Has ability to provide sub-regional or regional level of service • Future growth may be municipally serviced when possible	
Wabamun North	5	• May infills and intensifies over time and transition to a Major Employment Area • Future planning would occur through Area Structure Plans	

* Entwistle is identified as a local employment area currently, but is expected to be a major employment area over time



13.3 Employment Areas – Key Recommendations

The TGS identifies Acheson and Fifth Meridian as major employment areas within the County. Ensuring the successful growth of serviced employment areas is an important factor in ensuring the financial health of the County. Without successful non-residential growth areas and the associated revenue related with those areas, the County will be limited in its ability to support other kinds of growth and associated services. Future planning for Major Employment Areas should also identify opportunities for accommodating growth through infill to maximizing the use of existing infrastructure.

In Appendix F: Non-residential Area Fact Sheets, a more detailed analysis of physical constraints, absorbed and available land, engineering and land use considerations is provided. These fact sheets provide information about each employment growth area to summarize planning considerations used during the development of the TGS.



KEY RECOMMENDATION

Acheson, Fifth Meridian and Entwistle should be designated as Major employment areas.



13.0 RANKING AND PRIORITIZING – EMPLOYMENT AREAS

13.3.1 ACHESON BUSINESS PARK – RANKING RESULTS & GROWTH CONSIDERATIONS

Acheson ranked the highest in the TGS scoring results for employment areas. Acheson is the major industrial/commercial area within Parkland County, acting as an important economic generator for the County as a whole. Acheson is well-serviced with regional water and wastewater with connections and has good proximity to transportation corridors. According to analysis completed for the TGS, consistent with the findings of the Community Scan and Analysis (ISL, 2015), there is sufficient land supply in the Acheson Area Structure Plan (ASP) to support growth for the next 30 years to 2046.

Although there is sufficient land supply to accommodate growth to 2046, it is important to note that opportunities for the growth of Acheson both within the Acheson Area Structure Plan area and beyond its current boundaries are limited.

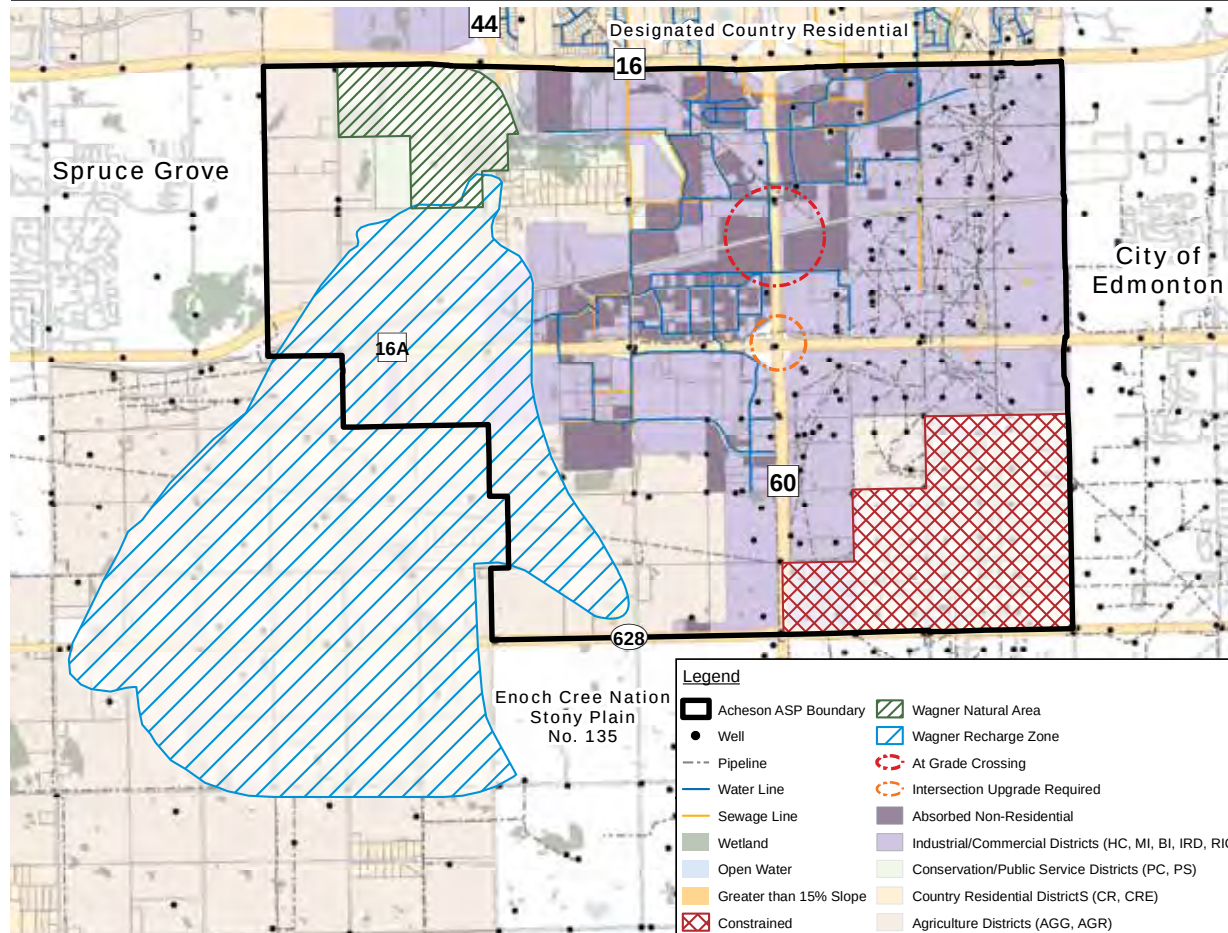
- **There is existing country residential development to the north, City of Edmonton boundaries to the east, Enoch Reserve boundaries to the south, and the Wagner Natural areas to the west constraining future growth in Acheson on more than three (3) sides.**
- **Within the Area Structure Plan boundary, growth in a significant portion of southeast Area Structure Plan area is limited due to the need for expensive stormwater upgrades that are required prior to future development.**
- **Another complicating factor to growth are the existing oil/gas facilities found within the eastern portion of the Area Structure Plan area.**

Figure 20: Opportunities and Constraints in Acheson Business Park summarizes the above-noted analysis.

Opportunities to expand Acheson beyond its current Area Structure Plan boundaries are limited to the area southwest of the current ASP plan area; however, the area southwest of the existing ASP area includes sensitive groundwater recharge areas that will likely limit the density and type of development possible.

Acheson has the following engineering considerations:

- **Parkland County continues to invest in roads and access, with planned extensions and upgrades to internal roads to improved access and circulation within Acheson, such as the Parkland Avenue connection to 231 Street in Edmonton;**
- **Future growth and intensification of land uses within Acheson will continue. Future investment into transportation infrastructure will include improvements to Highway 60, such as widening and intersection improvements. These improvements would improve access and reduce travel times between communities. Further, grade-separation of the CN Rail Crossing at Highway 60 would address the extensive traffic delays caused by trains crossing the highway. This grade-separation may also create opportunity to introduce a new rail crossing that would provide better connectivity within Acheson, such as Range Road 264; and**
- **Stormwater management is also a constraint to growth within Acheson. The area is generally flat with a single major outlet to Big Lake (to the north). Therefore, stormwater storage, such as ponds, is required to manage runoff for site and roadway development, which can sterilize developable land.**


FIGURE 20 | OPPORTUNITIES AND CONSTRAINTS IN ACHESON BUSINESS PARK

KEY RECOMMENDATION

Conduct a detailed review of the land supply and land absorption rate in Acheson Business Park to ensure sufficient available lands to support the County's longer-term growth requirements.



13.0 RANKING AND PRIORITIZING – EMPLOYMENT AREAS

13.3.2 FIFTH MERIDIAN BUSINESS PARK – RANKING RESULTS & GROWTH CONSIDERATIONS

In addition to Acheson, Fifth Meridian Business Park is the only other business park that offers municipal servicing and thus it ranked second in the scoring results for employment areas. Fifth Meridian Business Park is a developing area with limited existing development; however, given its servicing connections and good highway access, Fifth Meridian is an important investment in maintaining a strong non-residential land supply.

Fifth Meridian has the following engineering considerations:

- **Fifth Meridian is accessed from Highway 16 and Highway 779 by an interchange that provides a very good level of service. A future interchange upgrade will be required depending on the traffic generated during the development of Fifth Meridian;**
- **Fifth Meridian has water servicing available through the WILD line (to the east and north);**
- **Sanitary servicing is available through the regional wastewater line to the south;**
- **A significant ravine runs through the Area Structure Plan area that will divide development within the plan area given the costs to bridge the ravine.**
- **Like Acheson, the Fifth Meridian Area Structure Plan area is flat and, with the exception of the ravine south of Highway 16, there are no significant water courses to convey stormwater. Stormwater management facilities would need to be developed within future development areas, with controlled conveyance to minor conveyance systems, including highway ditches and/or constructed channels.**

Given the location of the ravine within the Area Structure Plan area, very long-term expansion of Fifth Meridian would be best accommodated within the area north of Highway 16, which has no major natural physical or land use constraints to development and provides desirable highway visibility and access.





A rural landscape featuring a small, light-colored barn with a dark roof in the middle ground. The barn is surrounded by green grass and trees. In the background, there are rolling hills under a cloudy sky. Several birds are flying in the upper right corner of the sky. The overall tone is warm and slightly hazy.

PART E

RURAL GROWTH AREAS



Parkland County has a broad geographic base, touching the edge of Edmonton to the east and the Pembina River to the west. Notwithstanding the importance of concentrated development areas cited earlier in this TGS, the County has vast areas of land that are key contributors to the past and future success of the County and its citizens. Growth in these large geographic areas has the potential to affect the financial outlook for the County. Properly strategizing investment, planning, and economic development for these areas will assist with achieving economic sustainability for the County. These vast areas also significantly contribute to the County's overall environmental and social health and should be planned for overall sustainability.

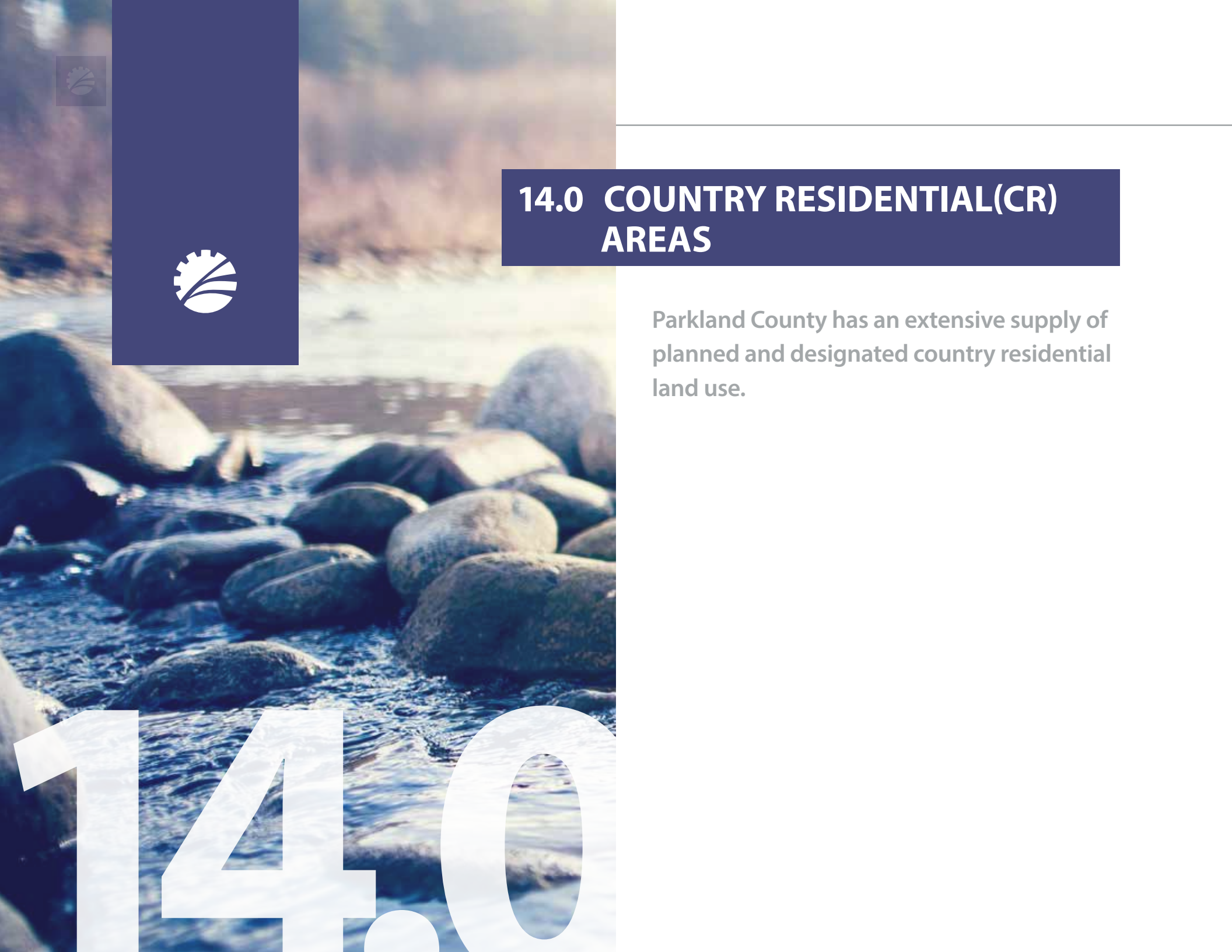


Not all businesses within Parkland County can locate in an identified hamlet or employment areas given their intrinsic relationship with unique land characteristics. Based on the results of the TGS the analysis also looked at broader 'general areas' for residential and non-residential growth that met the stated criteria for a successful area. The TGS examined the effects of rural growth areas, specifically considering:

1. Country Residential (CR) Areas;
2. Agricultural Areas; and
3. Tourism and Recreation areas.

Country Residential (CR) development was a focus of the Technical Growth Study given Parkland County's significant supply of traditional CR, to determine the overall effect of CR areas on the financial health of Parkland County and to identify ways to alter/improve the forecasts related to CR.

Value-added and diversified agriculture and tourism and recreation were identified as industries where the County has opportunities to expand and diversify its employment base. As noted in Section 9.2 of this Study, the energy sector will continue to be a driver for growth; however, there will be expectations of growth in other sectors such as value-added food and product manufacturing, organic farming, tourism and recreation, accommodation and food services.



14.0 COUNTRY RESIDENTIAL(CR) AREAS

Parkland County has an extensive supply of planned and designated country residential land use.

14.0



As described in the Community Scan and Analysis (ISL, 2015), given current land absorption rates and development patterns, Parkland County will not deplete its estate country residential supply until at least 2050 and its conventional country residential supply until at least 2080 (ISL, 2015, p. 129).

The existing supply of CR in Parkland County is acknowledged within the Edmonton Metropolitan Region Growth Plan and grandfathered under provision 5.1.1 of the Growth Plan; however, given the financial consequences of traditional CR development forms, it is prudent for the County to reconsider how these areas will develop in the future and the form they will take. The net impact on the County's average annual surplus and deficit is illustrated in **Figure 17: Average Annual Surplus/Deficit by SDA and Growth Scenario** of this Study.

14.1 Key Recommendations – CR Areas

The following are key recommendations on how to sustainably plan for future country residential development within the County.

14.1.1 COMMUNALLY SERVICED SUBDIVISIONS

Country residential development can add to the County's financial position when developed as stand-alone communities maintained by a homeowners association or condominium over time. These residential developments build and maintain their own communal utility servicing and transportation infrastructure or country residential developments and include higher density with higher value homes. The positive financial benefits of these types of communities are identified in the analysis for SDA 9 provided in Figure 17. These types of communities are developer-driven and context-specific. The costs and benefits of these types of communities must be reviewed on a case-by-case basis to determine their overall compatibility of the proposed development on the County's social, economic and environmental priorities. In addition, the County must consider the risks associated with communities that are not successful and where the municipality may be requested or required to assume the costs and liabilities for communal infrastructure.



KEY RECOMMENDATION

Review policies related to communally-serviced subdivisions to determine when the approval of such subdivisions might be appropriate given the risks and benefits associated with this development form.



14.0 COUNTRY RESIDENTIAL (CR) AREAS

14.1.2 COUNTRY RESIDENTIAL AREA STRUCTURE PLAN UPDATES

The TGS concludes that certain types of CR development can be a significant financial burden for the County. Given the County's abundance of designated CR land, it is recommended the County update its Area Structure Plans for CR areas to consider the financial impacts of CR growth and seek ways to minimize the costs of CR growth. Updated area structure plans should be supported by a Fiscal Impact Assessment and should consider ways to balance residential growth with non-residential assessment. In particular, the TGS recommends the County update the Glory Hills Area Structure Plan and the Woodbend Graminia Area Structure Plan. The TGS further proposes that relevant technical and financial analyses be completed to support the growth of these areas as complete communities.



KEY RECOMMENDATION

Complete updated Area Structure Plans for the north and southeast CR areas in the County. Updated ASPs should incorporate a fiscal impact assessment (FIA) for each area.



KEY RECOMMENDATION

Complete a Country Residential Inventory to identify and catalogue all types of Country Residential development in the County. The inventory should consider servicing availability, vacancies/undeveloped lots, lot size, housing type and proximity to community and natural amenities and features.



14.1.3 TRANSFER OF DEVELOPMENT CREDITS OR DENSITY

Transfer of Development Credits and Transfer of Development Density are two (2) tools to help reduce the ecological and financial impact of CR development and are supported under the Provincial Land Use Framework. Using these tools, the County may have the opportunity to encourage higher density growth in areas of the County where it is strategic while reducing the density of growth in other areas to preserve agricultural lands. Although there are few, in any, cases of the successful implementation of these types of programs of scale and complexity, there may be the opportunity to implement these programs in the future and policies should be established at the MDP level to encourage these types of programs.



KEY RECOMMENDATION

Incorporate policies at the MDP-level for transfer of development credits or density programs to encourage these types of programs.

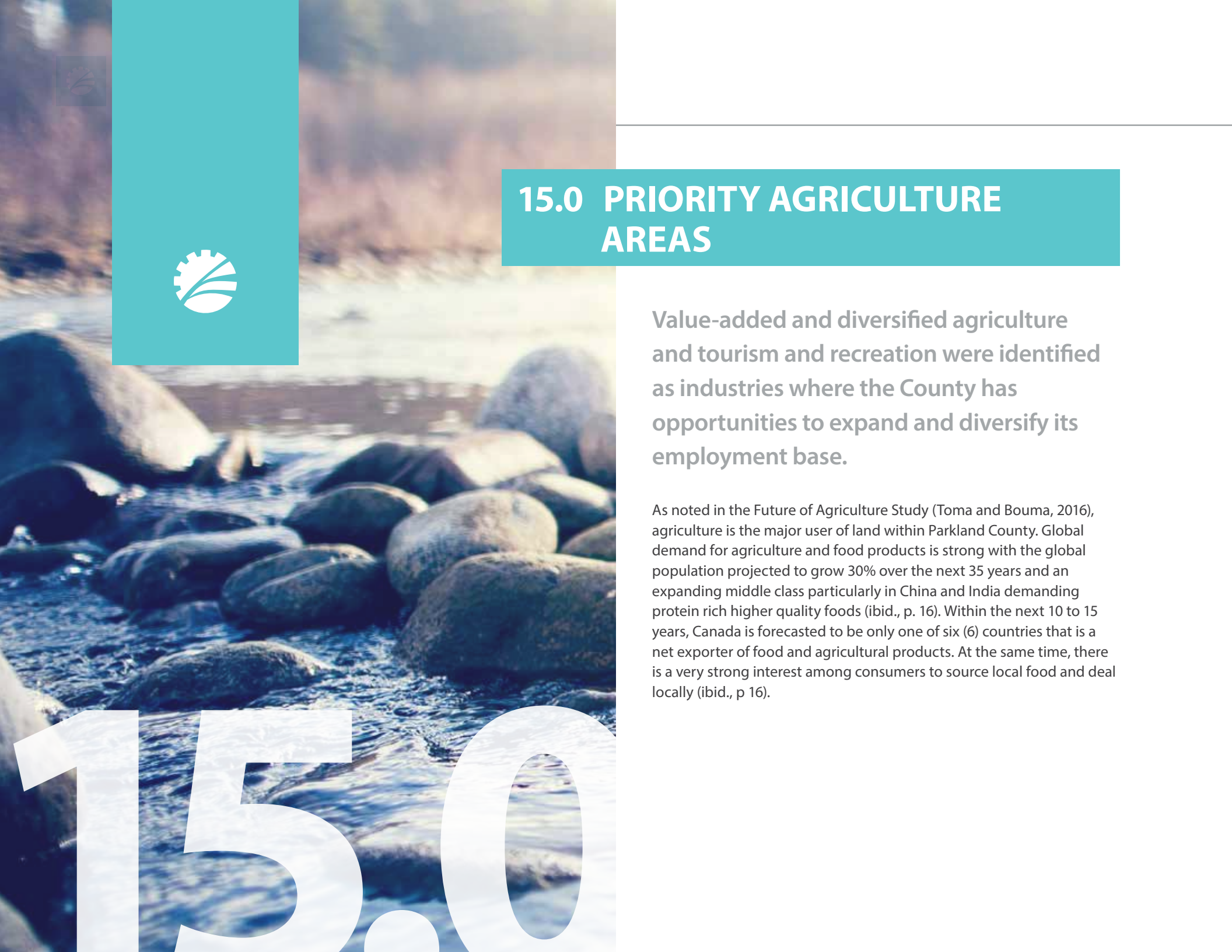
14.1.3 USING THE EXISTING ROAD NETWORK

As noted in Section 10.5.3 of this Study, expanding the road network to service development is costly both in the near-term and over the life of the road. New development for residential purposes should be prioritized where it is located in proximity to existing roads and makes efficient use of transportation infrastructure. Policies related to the use of existing road infrastructure and the minimization of growth in roads should be incorporated into the MDP to ensure the growth of road infrastructure is a consideration in planning and land use decisions. When an FIA is undertaken as part of a development approval, the FIA should consider the lifecycle costs of roads as part of its analysis.



KEY RECOMMENDATION

Consider the lifecycle costs of roads as part of planning and land use decisions, including incorporating lifecycle costs into any fiscal impact analysis undertaken as part of the development approval process.



15.0 PRIORITY AGRICULTURE AREAS



Value-added and diversified agriculture and tourism and recreation were identified as industries where the County has opportunities to expand and diversify its employment base.

As noted in the Future of Agriculture Study (Toma and Bouma, 2016), agriculture is the major user of land within Parkland County. Global demand for agriculture and food products is strong with the global population projected to grow 30% over the next 35 years and an expanding middle class particularly in China and India demanding protein rich higher quality foods (ibid., p. 16). Within the next 10 to 15 years, Canada is forecasted to be only one of six (6) countries that is a net exporter of food and agricultural products. At the same time, there is a very strong interest among consumers to source local food and deal locally (ibid., p 16).

15.0



The Future of Agriculture Study identifies several opportunities for sustainable agriculture initiatives within Parkland County, including:

1. The continuation of crop/large field agriculture (including dairy farms).
2. Increasing the beef cow-calf sector and other grazing livestock particularly in the western part of Parkland County where there is ideal grassland conditions/pasture for grazing.
3. Specialty operations—potatoes, vegetable production, fruit, market gardens, specialized livestock (sheep, goats, pasture poultry, bees, etc.) to respond to the growing demand for local food. Parkland County is considered to be ideally located.
4. Agri-tourism including equine enterprises and attractions—destinations for day visits, stables, events, and a dedicated park for equine activities. Again, location is ideal.
5. Value added enterprises---the opportunity to attract companies in primary processing, food processing, beverage, and bio-products industries; professional and/or technical service companies operating in the food and agriculture sector as well as growing local businesses (ibid., p.i).

Parkland County is well located to attract and support growth in agriculture and related employment opportunities. The Future of Agriculture Study identifies the planning principles that would enable Parkland County to develop this sector of the economy. *Table 8: Alignment of Planning Principles with Parkland County Opportunities and Requirements* (ibid., p.28) identifies how to best support agricultural opportunities through land use planning areas. Most notably, the Future of Agriculture Study indicates that large and contiguous areas of agricultural land and small holdings areas are important to encourage diversity in agriculture (ibid).



15.0 PRIORITY AGRICULTURE AREAS

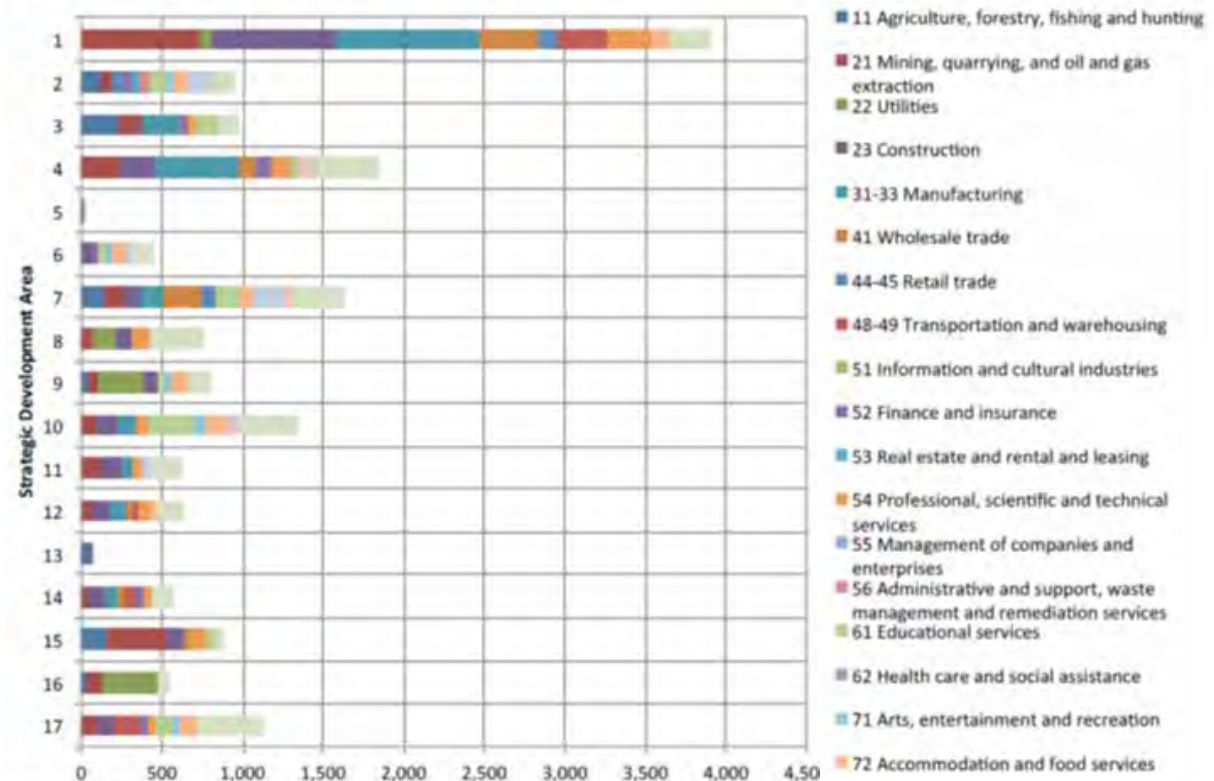
TABLE 8 | ALIGNMENT OF PLANNING PRINCIPLES WITH PARKLAND COUNTY OPPORTUNITIES AND REQUIREMENTS (TOMA & BOUMA, 2016)

Opportunity	Requirements	Principle 1: Integrated Approach	Principle 2: Supportive Land Use Policies	Principle 3: Entrepreneurial Culture	Principle 4: Fostering Local Leadership
Large Scale Field Agriculture including Dairy	• Large contiguous areas of agricultural land • Long term stable land policies; minimum nuisances	• Addresses land use	• Recommends changes to land use policies (agricultural priority areas)		
Grassland/ pasture for Grazing	• Large contiguous areas of agricultural land • Long term stable land policies; minimum nuisances	• Addresses land use	• Recommends changes to land use policies (agricultural priority areas)		
Specialty Operations	• Small holdings area • Economic, business and market development • Supporting infrastructure & promotions	• Addresses land use & economic development	• Recommends changes to land use policies (small holding areas)	• Establishes this as a priority with supporting development and promotion programs	• Identifies leaders and facilitates leadership training and development
Agri-tourism	• Economic, business and market development • Supporting infrastructure & promotions	• Addresses economic development & leadership		• Establishes this as a priority with supporting development and promotion programs	• Identifies leaders and facilitates leadership training and development
Value-Added Enterprises	• Economic, business and market development • Supporting infrastructure & promotions	• Addresses economic development & leadership		• Clear priority with supporting strategies and resources	• Establishes Parkland County as a leader in rural entrepreneurship



Figure 21: Economic Diversification (2046) Employment by Strategic Development Area identifies SDA 3 as the SDA which has the greatest potential to provide jobs related to agriculture, forestry, fishing and hunting, as defined by the NAICS 2-digit Classification (definitions for the 2-digit NAICS Classification found in Appendix A: NAICS Industry Classifications). As noted in the Futures of Agriculture Study, specialty operations are a part of economic, business and market development requiring their own small holdings area and require their own specialty area. Successful innovation is already occurring throughout the County, but is especially in the southeast area of County where there are areas of high quality soils and good access to regional markets and transportation infrastructure. SDA 3 represents a logical area for further growth and diversification of agricultural pursuits such as seed crushing, hemp, bioplastic, poultry Confined Feeding Operations and other types of diversified agricultural practices which may be supported through a small holdings area.

FIGURE 21 | ECONOMIC DIVERSIFICATION (2046) EMPLOYMENT BY STRATEGIC DEVELOPMENT AREA





15.0 PRIORITY AGRICULTURE AREAS

15.1 Key Recommendations

In support of the planning principles identified within the Future of Agriculture Study and the results of the TGS, three (3) priority agriculture areas are recommended to assist with protecting and enhancing the County's valuable agricultural land base. These three areas shown in **Figure 20: Priority Agriculture Areas** are Priority Area South East, Priority Area West and Priority Small Agricultural Holdings.

- **The Priority Area South East aims to preserve large tracts of land for larger farm operations (grains, vegetables, livestock, etc.) while promoting value-added diversification.**
- **The Priority Area West aims to preserve large tracts of land for larger grazing and specialty crop operations while minimizing fragmentation for non-agricultural purposes and promoting value-added diversification where possible. This area also partially overlaps with the Wabamun/Pembina Recreation and Tourism Area, providing further synergies such as agri-tourism.**
- **The Priority Small Holdings supports diversified agri-business including horticulture and specialty crops and production on smaller parcels of land. The Small Holdings area benefits from its close proximity to Acheson Business Park, Spruce Grove, Stony Plain and Edmonton where agricultural processing facilities are compatible with existing industrial development and there are significant local market opportunities. As noted above, these types are diversified agricultural pursuits are anticipated to generally occur within SDA 3, although growth in all types of agriculture is promoted throughout the County.**

These three areas should be promoted through economic development, marketing and branding as well as through County policy and strategic investment given the role diversified and value-added agriculture could play in offsetting the loss of other types of employment



KEY RECOMMENDATION

Include mapping and associated policies in the MDP to support and identify growth in priority agriculture areas to promote diversified employment in the rural area and offset the loss of other types of employment related to coal-fired electricity generation and oil and gas development.

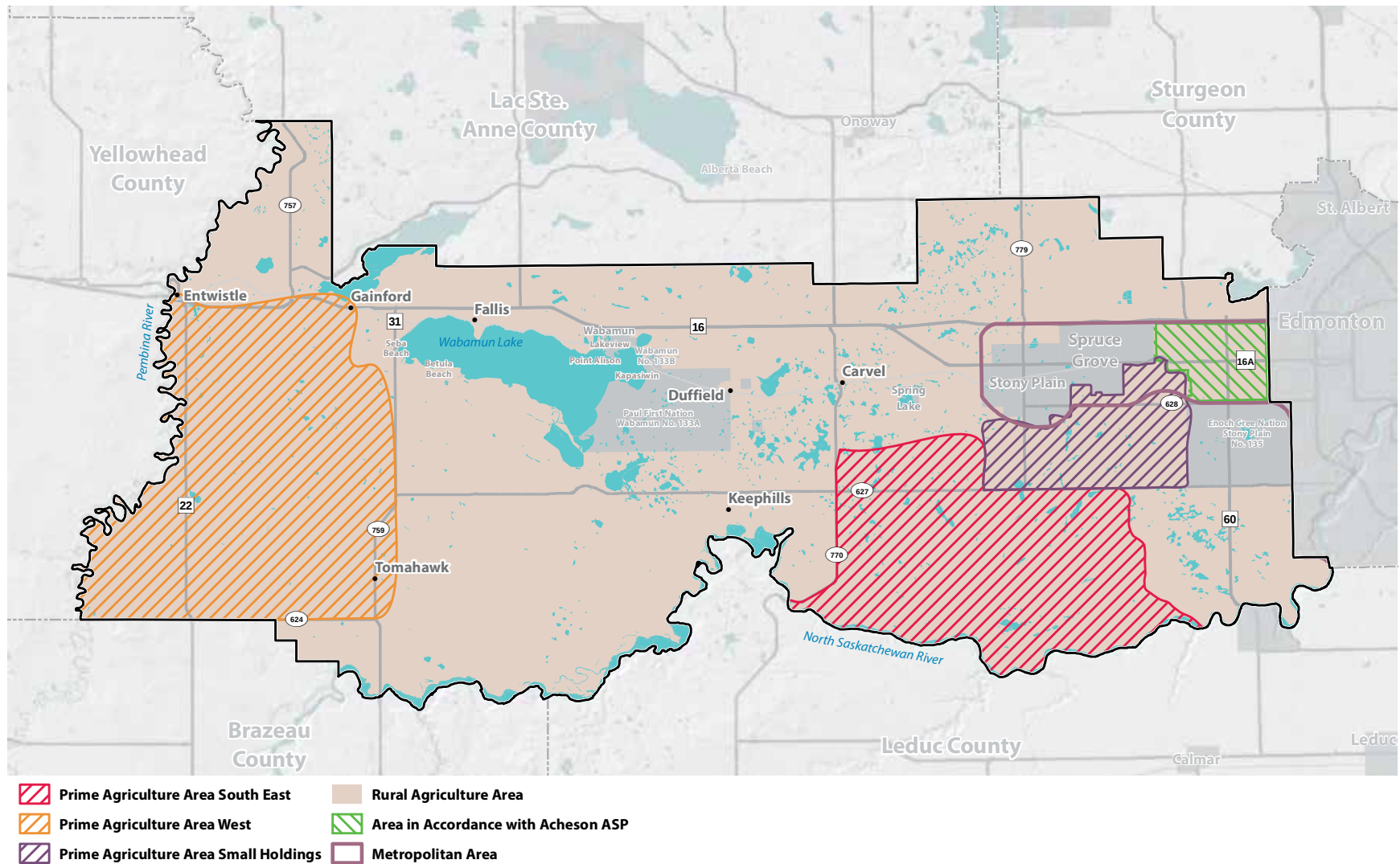


KEY RECOMMENDATION

An economic development strategy should be developed and implemented related to the growth and diversification of agriculture, with special focus on the opportunities provided by Prime Agriculture Area – Small Holdings.



FIGURE 22 | PRIORITY AGRICULTURE AREAS





16.0 PRIORITY RECREATION & TOURISM AREAS

Parkland County boasts some of the finest natural areas and recreational opportunities in Alberta. Recreation and tourism was identified as a niche market for the County given the relative lack of similarly scaled amenities in the Edmonton Region. Recreation and tourism is an important opportunity identified in the TGS. Business opportunities in this area can potentially capitalize on the County's bounty of existing natural amenities, adjacent provincially protected areas and other environmental areas that are attractive to both businesses and residents.



Establishing priority development areas is critical in geographically large municipalities to attract and retain non-residential opportunities across the municipality and to build on the unique assets of a municipality. The purpose of the recreation & tourism priority development areas are to encourage multiple businesses to locate in the same geographic area where the County can reasonably support these businesses with the provision of infrastructure, amenities and services as necessary. Furthermore, the County has the opportunity to promote the priority development areas through marketing and advertising programs.

16.1 Key Recommendations

Priority areas for recreation and tourism were developed by the Project Team in consultation with County Council and Administration to indicate where synergies are occurring. **Figure 20: Priority Recreation & Tourism Areas** shows three (3) priority areas identified within the County for recreation and tourism development.

- **The Wabamun/Pembina Priority Recreation & Tourism Area is located around Wabamun Lake and stretches to the west border of the County along the Pembina River. The Wabamun/Pembina area has significant economic opportunities around Wabamun Lake as well as potential growth related to recreation on the Pembina River.**
- **The Great Waters Priority Recreation and Tourism Area is centrally located within the County and stretches north-south from the Keephills area to the north County border around Highway 778. The southern portion of the Great Waters area accesses the North Saskatchewan River while the remainder is a series of lakes and natural areas. Opportunities for the Great Waters area relate to its geographic proximity to the urban municipalities of Stony Plain, Spruce Grove and Edmonton.**
- **The Devon Dunes Priority Recreation and Tourism Area is located in the far southeast corner of the County near the Town of Devon. The Devon Dunes area also has access to the North Saskatchewan River to the south and contains many local and provincial protected areas. The proximity of the Devon Dunes area to the City of Edmonton and the Town of Devon provides significant economic opportunities.**

These three areas should be promoted through economic development, marketing and branding as well as through County policy and strategic investment given the role recreation and tourism could play in offsetting the loss of other types of employment



16.0 PRIORITY RECREATION & TOURISM AREAS



KEY RECOMMENDATION

Support and identify priority recreation and tourism areas (including mapping and statutory plan updates) to promote diversified employment in the rural area and offset the loss of other types of employment.

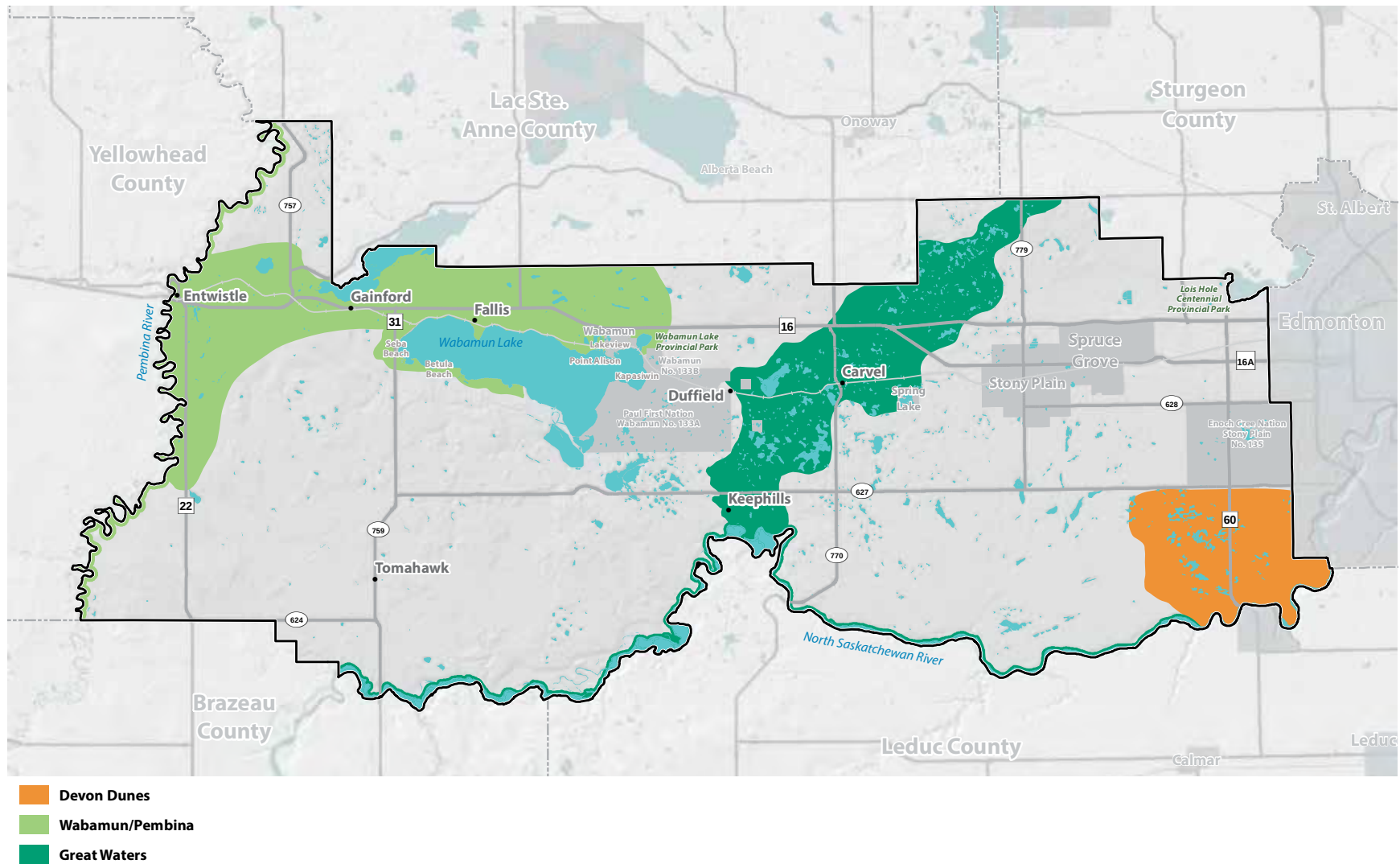


KEY RECOMMENDATION

Develop and implement an economic development strategy related to the growth and diversification of employment related to recreation and tourism, with a special focus on the opportunities provided within Priority Recreation and Tourism areas.



FIGURE 23 | PRIORITY RECREATION AND TOURISM AREAS

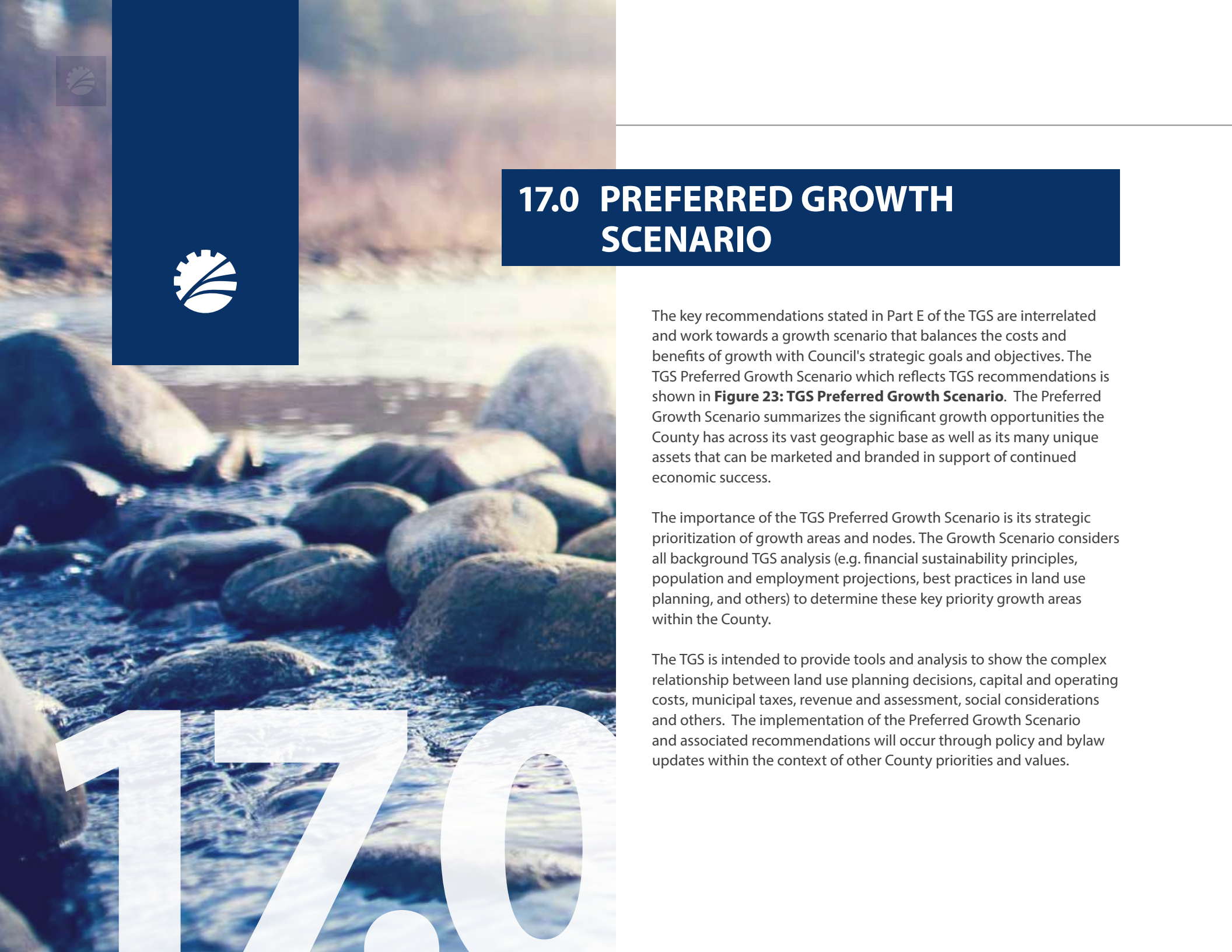




A rural landscape with a barn and hills. The scene is a wide-angle shot of a rural landscape. In the foreground, there is a field of tall, dry grass. A wooden fence runs across the middle ground. In the background, there is a large, light-colored barn with a dark roof. The barn is surrounded by trees and shrubs. The hills in the background are covered in green vegetation. The sky is a mix of blue and grey, with a few birds flying in the upper right corner. The overall tone is somewhat muted and atmospheric.

PART F

PREFERRED GROWTH SCENARIO & IMPLEMENTATION



17.0 PREFERRED GROWTH SCENARIO

The key recommendations stated in Part E of the TGS are interrelated and work towards a growth scenario that balances the costs and benefits of growth with Council's strategic goals and objectives. The TGS Preferred Growth Scenario which reflects TGS recommendations is shown in **Figure 23: TGS Preferred Growth Scenario**. The Preferred Growth Scenario summarizes the significant growth opportunities the County has across its vast geographic base as well as its many unique assets that can be marketed and branded in support of continued economic success.

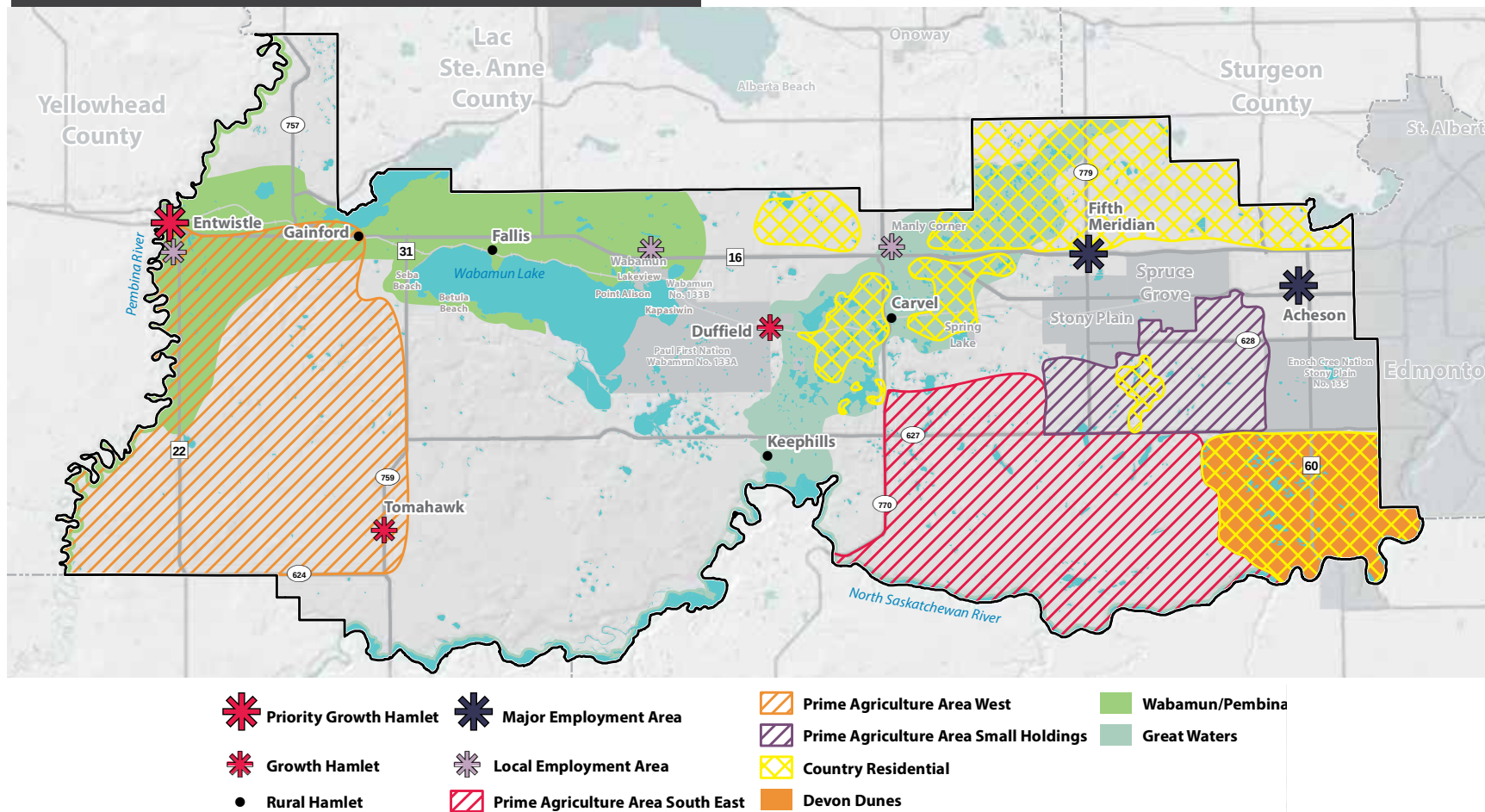
The importance of the TGS Preferred Growth Scenario is its strategic prioritization of growth areas and nodes. The Growth Scenario considers all background TGS analysis (e.g. financial sustainability principles, population and employment projections, best practices in land use planning, and others) to determine these key priority growth areas within the County.

The TGS is intended to provide tools and analysis to show the complex relationship between land use planning decisions, capital and operating costs, municipal taxes, revenue and assessment, social considerations and others. The implementation of the Preferred Growth Scenario and associated recommendations will occur through policy and bylaw updates within the context of other County priorities and values.

17.0



FIGURE 24 | TGS PREFERRED GROWTH SCENARIO



KEY RECOMMENDATION

Incorporate the Preferred Development Concept into the mapping and policies of the draft Municipal Development Plan and seek public feedback as required.



18.0 IMPLEMENTATION

The key recommendations of the TGS, including the Preferred Growth Scenario, must be implemented by Parkland County through policy, bylaws, investment decisions, and other mechanisms available to the County.

18.0



Part E of the TGS identified a number of new or updated policy directions that will assist the County in implementing the TGS recommendations. As the TGS looks ahead 30 years to the year 2046 these policy updates can be phased to ensure they can be managed within realistic expectations of public consultation and current administration and staff levels. In addition, the County will need to adapt to ever-changing economic conditions and adjust decision-making accordingly to achieve the County's desired goals and objectives. Nonetheless the TGS provides a strong framework for understanding both the nature and financial impacts of growth as well as how the County can take advantage of its strategic position and opportunities.

As stated in the TGS (Part E), the following new or updated policies or plans are recommended:

1. Hamlet Area Redevelopment Plans (HARP) for Entwistle, Tomahawk and Duffield
2. Ensure a supply of readily developable non-residential/employment land within Acheson and Fifth Meridian through: prioritized investment in infrastructure and a land supply analysis for both employment areas.
3. Updates to the Glory Hills ASP and the Woodbend Graminia ASP to address future country residential development.
4. Investigate transfer of development credits to reduce the ecological and financial impact of country residential development.
5. Create three priority agriculture areas (south east, west, and small holdings) within County policy and market and brand these areas to attract investment.
6. Create three priority recreation and tourism areas (Wabamun/Pembina, Great Waters, and Devon Dunes) within County policy and market and brand these areas to increase economic investment.

Additionally, the County's highest level policy plans and documents (i.e. Municipal Development Plan, Land Use Bylaw, Area Structure Plans, Long-Term Strategic Plan, Off-Site Levy Bylaw, etc.) should be reviewed in light of the TGS recommendations to determine any necessary updates or new policies required.



18.1 Municipal Development Plan Update

As recommended above, the County has initiated an update to its Municipal Development Plan (MDP) in light of the preliminary findings of the TGS. As the TGS work progressed and early results and discussions identified a focus on concentrated and rural growth areas, the County began to look more closely at completing an update to its MDP, which had officially begun a few years previously. An MDP is the highest level statutory plan that covers the entire geographic area within a municipality. The Municipal Government Act (MGA) specifies the requirements for an MDP and in essence an MDP must create policy to address land use planning matters in consideration of social, environmental, governance and economic factors. In addition, unlike the TGS, the MDP includes mandatory public consultation and must strive to balance the complexity of citizen values across the County.

The County's MDP update process began with using the TGS Preferred Growth Scenario as a base for early discussions with Council and administration. Through discussions with Council and administration, that included a deeper understanding of the broader County values, the TGS Preferred Growth Scenario was adapted into the key development concept for the MDP, referred to as the MDP Draft Development Concept (see Figure 24). The MDP Draft Development Concept was an important figure during extensive community consultations on the County's Draft MDP in 2017 and helped shape the overall framework of the MDP. Community feedback was overall supportive of the Draft Development Concept and the Municipal Development Plan Bylaw 2017-14 is scheduled for Council approval in October 2017.



TABLE 9 | INCORPORATING TGS RECOMMENDATIONS IN THE DRAFT PARKLAND COUNTY MUNICIPAL DEVELOPMENT PLAN

TECHNICAL GROWTH STUDIES		DRAFT MDP POLICIES	
KEY RECOMMENDATIONS		POLICY #	DRAFT MDP POLICY EXCERPT OR DESCRIPTION
DEVELOPMENT CONCEPT			
1. Incorporate the Preferred Development Concept into the mapping and policies of the Municipal Development Plan.	3.0	Figure 7: Development Concept illustrates the generalized land use framework for Parkland County, including priority growth hamlet, growth hamlets, rural hamlets, major and local employment areas, and country residential areas.	
HAMLETS			
2. Entwistle be designated as a Priority Growth Hamlet and Tomahawk and Duffield be designated as Growth Hamlets.	3.0	Figure 7: Development Concept illustrates the generalized land use framework for Parkland County, including priority growth hamlet of Entwistle and growth hamlets of Tomahawk and Duffield	
3. Hamlet Area Redevelopment Plans (HARP), or similar, should be undertake for priority growth and growth hamlets (Entwistle, Tomahawk and Duffield).	13.0.6	The County will complete Hamlet Area Redevelopment Plans (HARPs) for the Hamlets of Entwistle, Duffield and Tomahawk.	
EMPLOYMENT AREAS			
4. Acheson, Fifth Meridian and Entwistle should be designated as Major Employment Areas.	5.0.2	a) Acheson and Fifth Meridian are identified as Major Employment Areas on Figure 7: Development Concept. c) major Employment Areas must be planned and coordinated through an Area Structure Plan or other statutory plan.	
5. Conduct a detailed review of the land supply and land absorption rate in Acheson Business Park to ensure sufficient available lands to support the County’s longer-term growth requirements.	13.0.4	d) The County will encourage the extension of municipal services to the Acheson Business Park and Fifth Meridian Business Park. e) The County will complete a Stormwater and Drainage Master Plan for the Acheson Special Study Area.	



18.0 IMPLEMENTATION

COUNTRY RESIDENTIAL AREAS

6. Review policies related to communally-serviced subdivisions to determine when the approval of such subdivisions might be appropriate given the risks and benefits associated with this development form.	9.6.8	When a communally serviced development is proposed, the County may require a study on communal servicing that identifies the benefits and risks of such systems and specifies project ownership, maintenance requirements and recommended construction standards.
7. Complete updated Area Structure Plans for the north (Glory Hills ASP) and southeast (Woodbend Graminia ASP) country residential areas in the County. Updated ASPs should incorporate a fiscal impact assessment (FIA) for each area.	7.2.2	The County may update Area Structure Plans for Country Residential Areas, including North (Glory Hills) and Southeast (Woodbend-Graminia/Devon Dunes).
8. Promote the sensitive infill of existing CR areas.		
9. Consider lifecycle road costs when approving subdivision and development applications given the overall and long-term impact to County capital and operating budgets.		
10. Incorporate policies at the MDP-level for the transfer of development credits or densities to encourage these types of programs.	13.0.7	a) The County may also undertake the following additional inventories and analysis to support future growth (iv) feasibility analysis for the location of future (potential) transfer of development credit programs.
	7.1.1	i) The County may explore the creation of a transfer of development credits (TDC) or transfer of subdivision density (TSD) program to preserve agricultural land, High Priority Landscapes and ESA areas within the County.



AGRICULTURAL AREAS		
11. Include mapping and associated policies in the MDP to support and identify growth in priority agriculture areas to promote diversified employment in the rural area and offset the loss of other types of employment related to coal-fired electricity generation and oil and gas development.	4.2	Figure 9: Prime Agricultural Areas identifies three areas – Prime Agriculture Area South East (PASE), Prime Agriculture Area West (PAW), and Prime Agriculture Area Small Holdings.
12. An economic development strategy should be developed and implemented related to the growth and diversification of agriculture, with special focus on the opportunities provided by Prime Agriculture Area – Small Holdings	4.1.2	The County supports and encourages agricultural production and diversification through implementation of the Future of Agriculture Study findings and associated amendments to the County’s Land Use Bylaw.
	4.2	Prime Agriculture Area Small Holdings Prime Area Small Holdings encourages a range of parcel sizes to support value-added and specialty operations on smaller tracts of land. Small holdings are intended to accommodate a range of agricultural operations, such as horticultural uses, specialty crops and specialty agricultural developments, that support agri-businesses and agriculturally supportive industries. Small holdings provide important employment opportunities and support the diversification of the County's employment base.



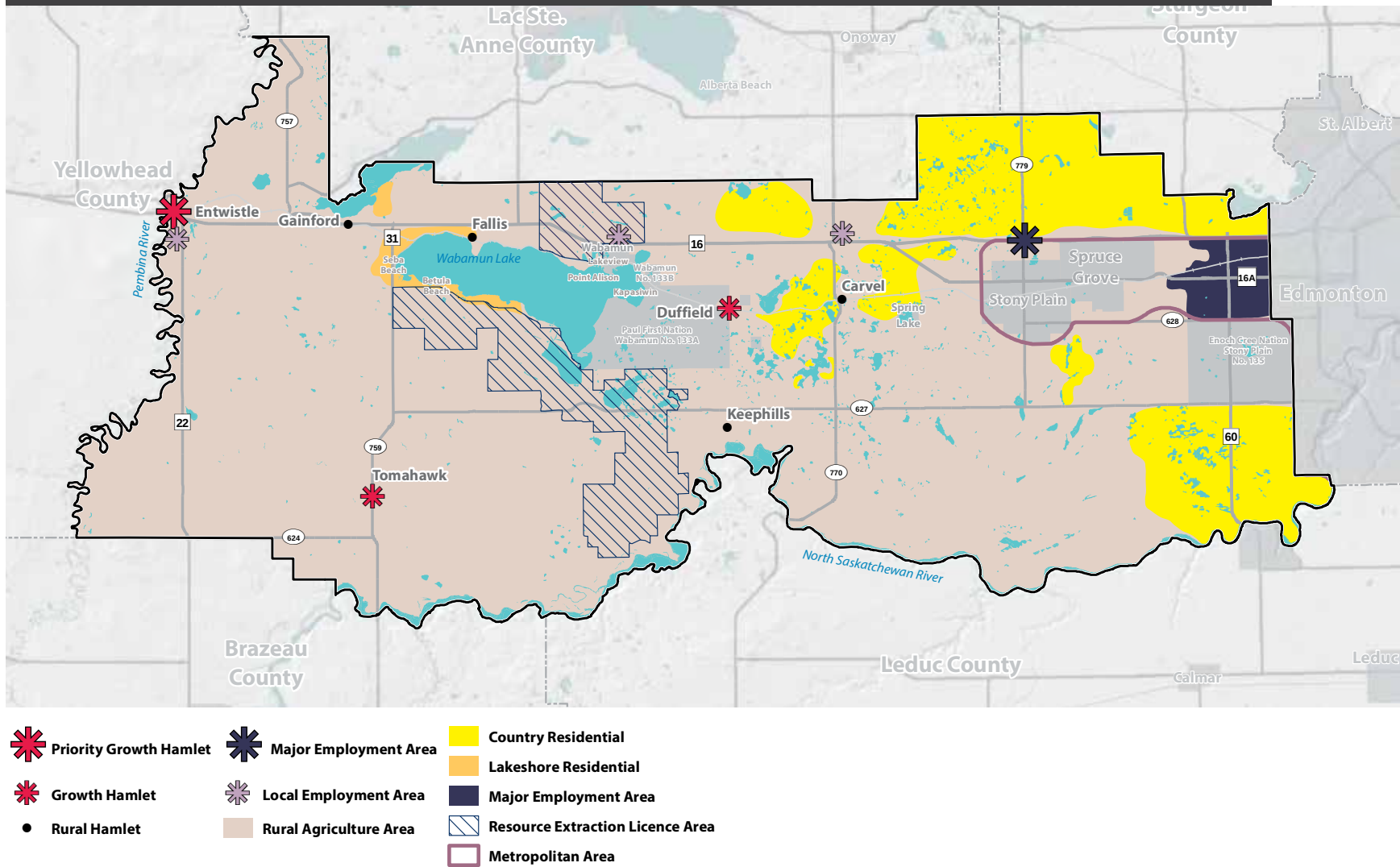
18.0 IMPLEMENTATION

RECREATION & TOURISM AREAS

13. Include mapping and associated policies in the MDP to support and identify growth in priority recreation and tourism areas to promote diversified employment in the rural area and offset the loss of other types of employment related to coal-based electricity generation and oil and gas development.	8.2.1	(a) Prime Recreation and Tourism Areas shall be located as shown on Figure 11: Prime Recreation and Tourism Areas and will include Prime Recreation & Tourism Area – Wabamun / Pembina, Prime Recreation & Tourism Area – Devon Dunes and Priority Recreation and Tourism Area – Great Waters.
14. An economic development strategy should be developed and implemented related to the growth and diversification of employment related to recreation and tourism, with a special focus on the opportunities provided by Recreation and Tourism areas.	8.0	8.1.4 (a) Agri-tourism and responsible eco-tourism is supported throughout the County as a way of supporting agricultural operations, promoting agricultural products, preserving natural areas, encouraging economic diversification and showcasing the rural lifestyle. 8.2.1 (b) Significant public and private investment in recreation and tourism development not located within the County's hamlets should generally be directed to Prime Recreation and Tourism Areas.



FIGURE 25 | PARKLAND COUNTY MUNICIPAL DEVELOPMENT PLAN DRAFT DEVELOPMENT CONCEPT





19.0 CONCLUSIONS

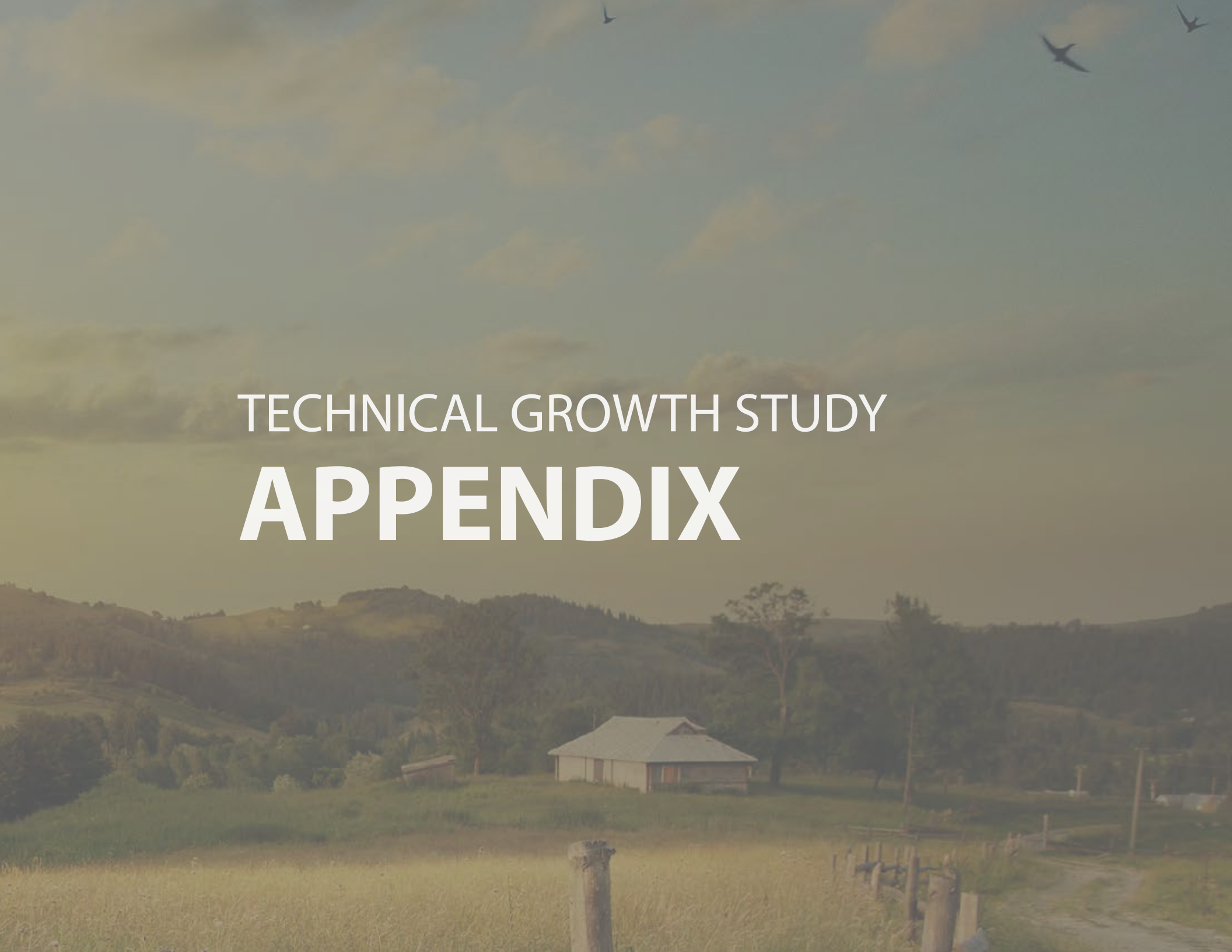
The TGS represents a new way of understanding growth and development for a rural municipality. The TGS expanded the scope of a traditional growth study by not simply projecting past growth into the future, but instead articulating how future growth might be directed through County policy and strategic investment in specific locations. In an ever-changing world, where economic conditions change frequently and are linked to not only local, but national and international trade patterns, Parkland County must continue to adapt its policy and decision-making to ensure long-term sustainability.



The TGS represents an attempt to inform County policy direction and investment decisions with strong background data of population and employment, best practices in municipal financial management and land use planning, and prioritization of key growth areas. Implementing the TGS through updates to the County's statutory plans and policies, including MDP and ASPs/ARPs, will solidify the County's long-term financial sustainability, which supports the continued provision of services and amenities to the County's citizens.

The TGS signifies that the County can be in control of their destiny. That despite the pending closure of significant energy industries and employment hubs within its borders the County has a plan to move forward that will create a thriving rural community. Future success of Parkland County will depend upon a deep understanding of the principles of growth outlined in this TGS combined with sensitive implementation that respects the spectrum of social, economic and environmental values within the County.



A rural landscape featuring a small barn with a grey roof in the middle ground, surrounded by green fields and trees. In the background, there are rolling hills under a sky with soft, golden clouds. Several birds are visible flying in the upper right portion of the sky. The overall lighting suggests a late afternoon or early morning setting.

TECHNICAL GROWTH STUDY **APPENDIX**



Appendix A: NAICS Industry Classification

2-DIGIT NAICS CODE	INDUSTRY NAME
11	Agriculture, Forestry, Fishing and Hunting
21	Mining and Oil and Gas Extraction
22	Utilities
23	Construction
31-33	Manufacturing
41	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information and Cultural Industries
52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support, Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)
91	Public Administration



The following section describes the methodology for describing the employment activities captured or excluded from the 2-digit North American Industry Classification System (NAICS) industry categories.

11 AGRICULTURE, FORESTRY, FISHING AND HUNTING

This sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, harvesting fish and other animals from their natural habitats and providing related support activities. The establishments that are primarily engaged in agricultural research or that supply veterinary services are not included in this sector.

21 MINING AND OIL AND GAS EXTRACTION

This sector comprises establishments primarily engaged in extracting naturally occurring minerals. These can be solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas. It also includes establishments engaged in exploration, support activities for mineral, oil and gas extraction as well as those operating on a contract or fee basis.

22 UTILITIES

This sector comprises establishments primarily engaged in operating electric, gas and water utilities. These establishments generate, transmit, control and distribute electric power; distribute natural gas; treat and distribute water; operate sewer systems and sewage treatment facilities; and provide related services, generally through a permanent infrastructure of lines, pipes and treatment and processing facilities.

23 CONSTRUCTION

This sector comprises establishments primarily engaged in constructing, repairing and renovating buildings and engineering works, and in subdividing and developing land. These establishments may operate on their own account or under contract to other establishments or property owners. These establishments may be involved from the project start till its completion or be involved in joint ventures.



APPENDIX

Activities include: construction of buildings; land subdivision and land development; engineering construction; construction management; site preparation work; building Interior finishing work; building equipment installation, other specialty contractors. Establishments that are excluded from this category are those which are primarily engaged in manufacturing and installing building equipment, such as power boilers; manufacturing per-fabricated buildings (31-33, Manufacturing); operating highways, streets and bridges (48-49, Transportation and Warehousing); projects management services, when it is a primary activity (54133, Engineering Services); maintenance of rights of way for power, communication and pipe lines; and cleaning building exteriors after construction (56, Administrative and Support, Waste Management and Remediation Services).

31-33 MANUFACTURING

This sector comprises establishments primarily engaged in the physical or chemical transformation of materials or substances into new products. These products may be finished, in the sense that they are ready to be used or consumed, or semi-finished, in the sense of becoming a raw material for an establishment to use in further manufacturing.

Related activities, such as the assembly of the component parts of manufactured goods; the blending of materials; and the finishing of manufactured products by dyeing, heat-treating, plating and similar operations are also treated as manufacturing activities. Certain activities involving the transformation of goods are classified in other sectors.

Some examples are post-harvest activities of agricultural establishments, such as crop drying; logging; the beneficiating of mineral ores; the production of structures by construction establishments; and various activities conducted by retailers, such as meat cutting and the assembly of products such as bicycles and computers.

41 WHOLESALE TRADE

This sector comprises establishments primarily engaged in wholesaling merchandise and providing related logistics, marketing and support services. The wholesaling process is generally an intermediate step in the distribution of merchandise; many wholesalers are therefore organized to sell merchandise in large quantities to retailers, and business and institutional clients. However, some wholesalers, in particular those that supply non-consumer capital goods, sell merchandise in single units to final users. This sector recognizes two main types of wholesalers, that is, wholesale merchants and wholesale agents and brokers.

Wholesale merchants buy and sell merchandise on their own account, that is, they take title to the goods they sell. They generally operate from warehouse or office locations and they may ship from their own inventory or arrange for the shipment of goods directly from the supplier to the client. Dealers of machinery and equipment, such as dealers of farm machinery and heavy-duty trucks, also fall within this category. Wholesale Agents and Brokers Wholesale agents and brokers buy and sell merchandise owned by others on a fee or commission basis. They do not take title to the goods they buy or sell, and they generally operate at or from an office location.



44-45 RETAIL TRADE

The retail trade sector comprises establishments primarily engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are therefore organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers, that is, store and non-store retailers.

Store retailers operate fixed point-of-sale locations, located and designed to attract a high volume of walk-in customers. In general, retail stores have extensive displays of merchandise and use mass-media advertising to attract customers. They typically sell merchandise to the general public for personal or household consumption, but some also serve business and institutional clients. Catalogue sales showrooms, gasoline service stations, and mobile home dealers are treated as store retailers.

Non-store retailers, like store retailers, are organized to serve the general public, but their retailing methods differ. The establishments of this subsector reach customers and market merchandise with methods such as the broadcasting of infomercials, the broadcasting and publishing of displaying of merchandise (stalls) and distribution by vending machines. The non-store retailers subsector also includes establishments engaged in the home delivery of products. This includes home heating oil dealers and newspaper delivery companies.

48-49 TRANSPORTATION AND WAREHOUSING

This sector comprises establishments primarily engaged in transporting passengers and goods, warehousing and storing goods, and providing services to these establishments. The modes of transportation are road (trucking, transit and ground passenger), rail, water, air and pipeline.

National post office and courier establishments, which also transport goods, are included in this sector. Many of the establishments in this sector are structured as networks, with activities, workers, and physical facilities distributed over an extensive geographic area.

The establishments excluded from this category are those which are primarily engaged in the renting and leasing of transportation equipment without operator (532, Rental and Leasing Services).



51 INFORMATION AND CULTURAL INDUSTRIES

This sector comprises establishments primarily engaged in producing and distributing (except by wholesale and retail methods) information and cultural products. Establishments providing the means to transmit or distribute these products or providing access to equipment and expertise for processing data are also included.

The unique characteristics of information and cultural products, and of the processes involved in their production and distribution, distinguish this sector from the goods-producing and services-producing sectors.

Most of these products are protected from unlawful reproduction by copyright laws. Only those possessing the rights to these works are authorized to reproduce, alter, improve and distribute them. Acquiring and using these rights often involves significant costs.

The main components of this sector are the publishing industries (except exclusively on Internet), including software publishing, the motion picture and sound recording industries, the broadcasting industries (except exclusively on Internet), the telecommunications and related services industries (i.e., telephony, including VoIP; cable and satellite television distribution services; Internet access; telecommunications reselling services), data processing industries, and the other information services industries, including Internet publishing and broadcasting and web search portals.

52 FINANCE AND INSURANCE

This sector comprises establishments primarily engaged in financial transactions or in facilitating financial transactions. Included are: Establishments that are primarily engaged in financial intermediation. Establishments that are primarily engaged in the pooling of risk by underwriting annuities and insurance. Establishments that are primarily engaged in providing specialized services that facilitate or support financial intermediation, insurance and employee benefit programs. In addition, establishments charged with monetary control - the monetary authorities - are included in this sector.



APPENDIX B: POPULATION & EMPLOYMENT GROWTH BY SDA





STATUS QUO SCENARIO: POPULATION & EMPLOYMENT FORECASTS

2015 Population & 2046 Status Quo Population Forecast



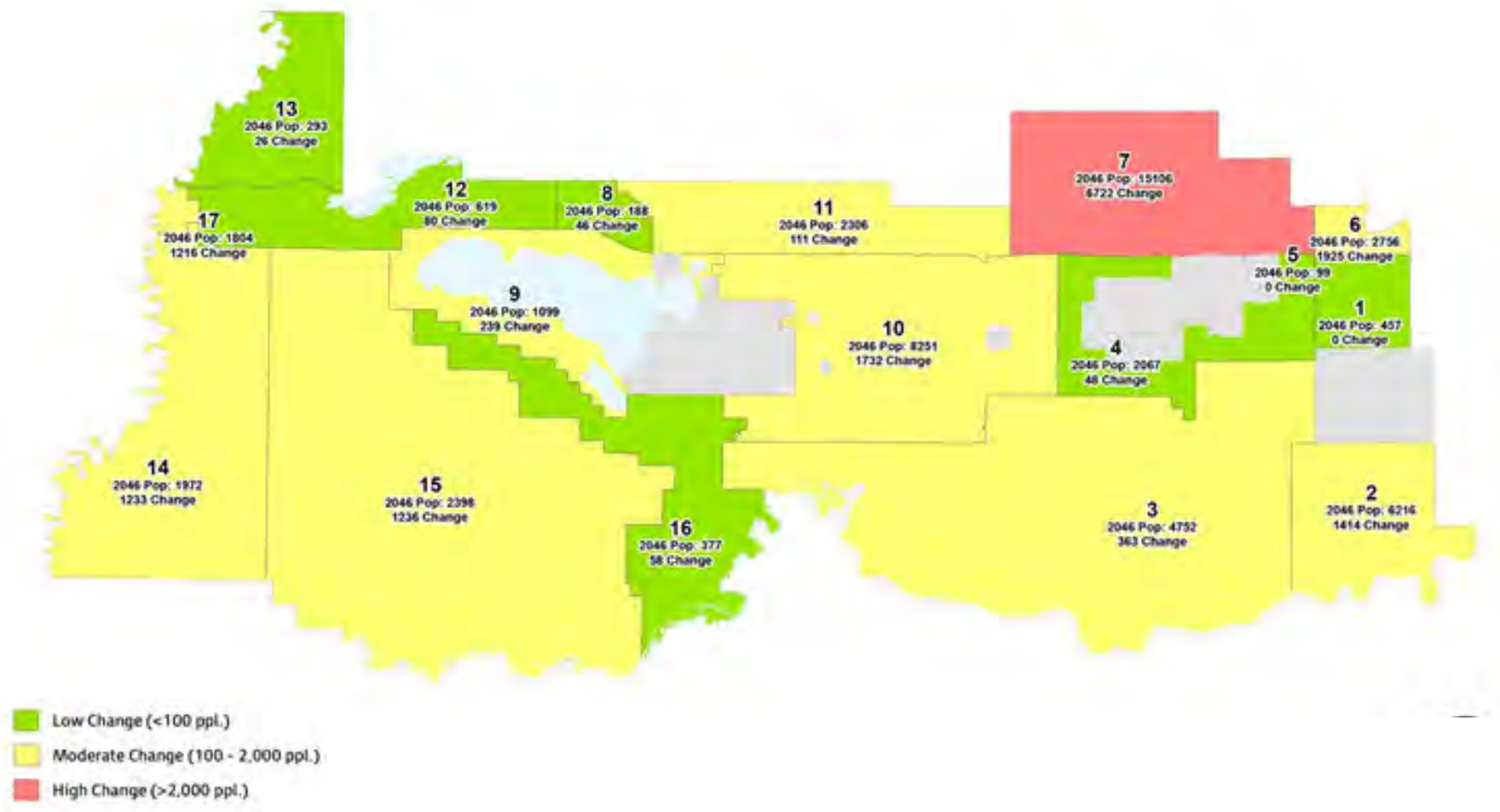
2046 Status Quo Employment Forecast





ECONOMIC DIVERSIFICATION – HIGH, ENTWISTLE SCENARIO

2015 Population & 2046 Economic Diversification - High (Entwistle Growth Scenario)



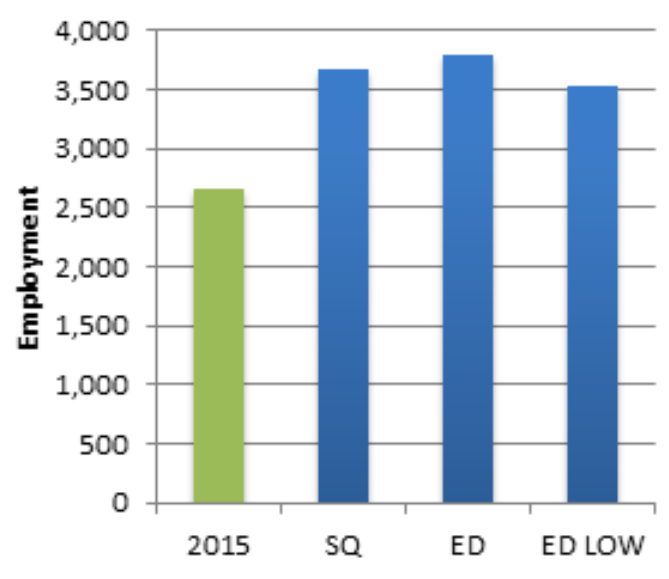
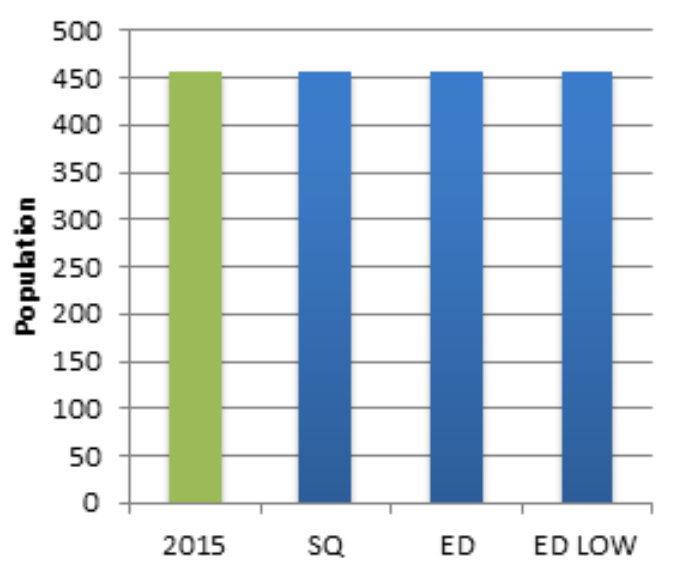


Population and Employment Forecasts by Strategic Development Area (SDA)

SDA 1:

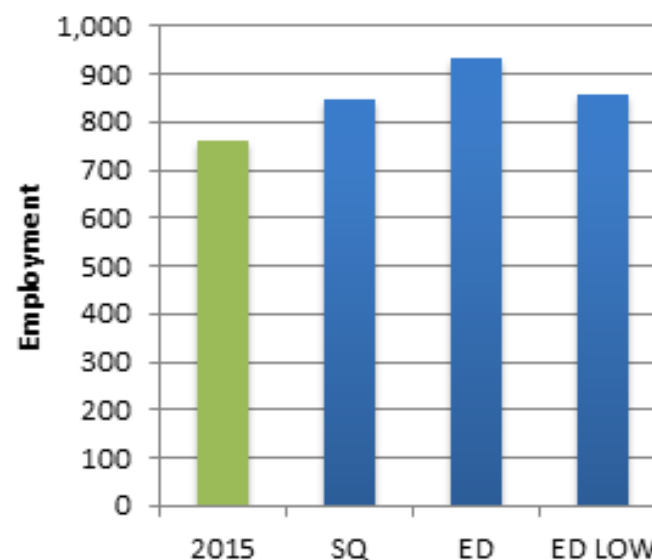
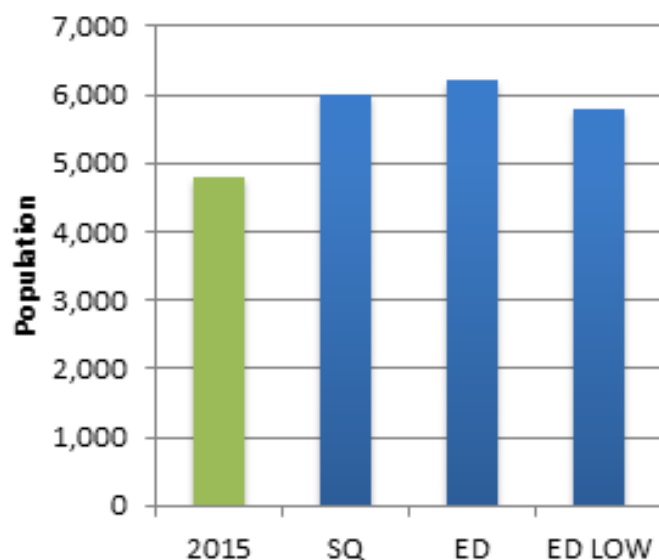
- The Acheson Industrial Area is located on the eastern edge of the County. The SDA is focused around business activity and employment creation, which was about 2,650 in 2015, with the majority of jobs in the oil and gas and construction industries.
- Population was estimated at about 450 in 2015, and no growth in population beyond this level is anticipated through 2046.
- In the Status Quo scenario, employment in Acheson is projected to gradually intensify, reaching about 3,700 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment in Acheson is again projected to intensify gradually, reaching about 3,800 by 2046. In this case, most employment growth is related to manufacturing, wholesale trade and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 1



**SDA 2:**

- This SDA is located in the southeast region of the County. In 2015, about 4,800 resided in the SDA; and employment of about 800 was largely based in oil and gas, construction, and other services.
- Population in the Status Quo scenario is expected to grow to about 6,000 by 2046, and slightly higher at 6,200 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 2 is projected to increase to about 850 by 2046. In this case, agriculture, educational services and other services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 950 by 2046. In this case, most employment growth is related to agriculture, manufacturing, and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 2

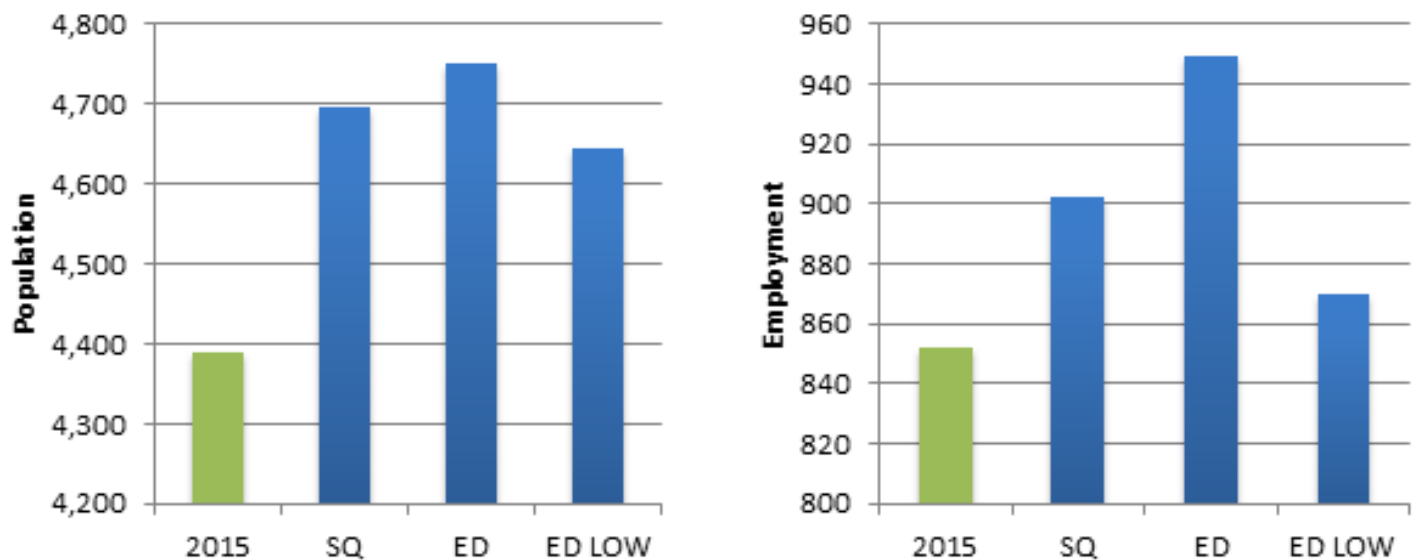


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SDA 3:

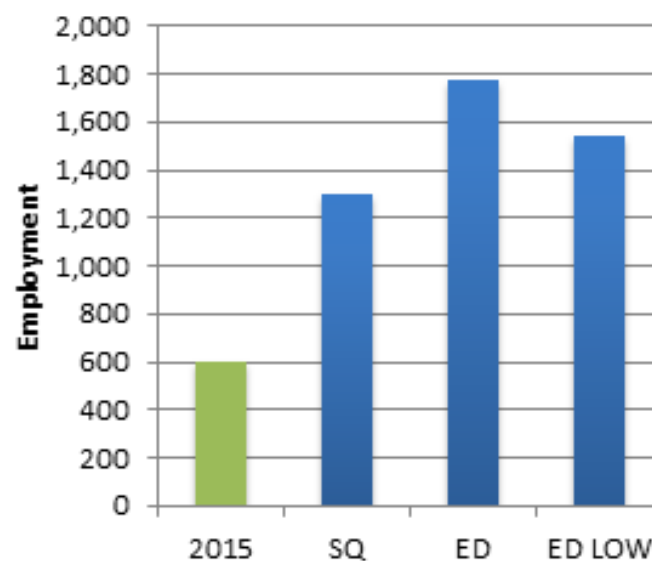
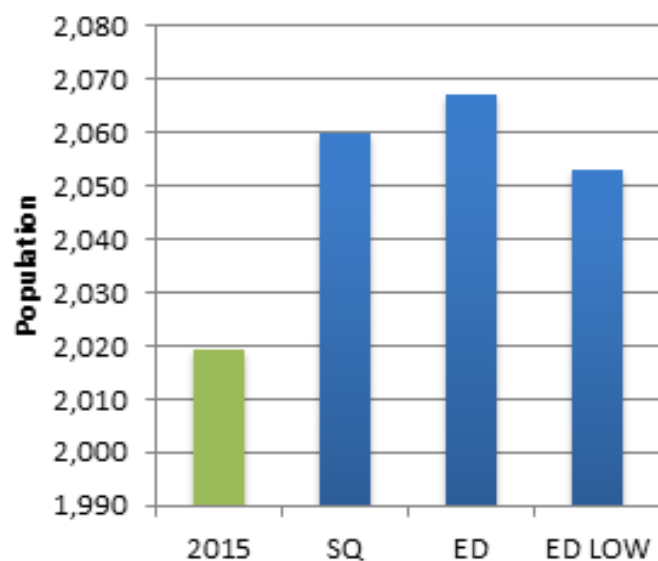
- This SDA is located in the southeast region of the County. In 2015, the population of the SDA was about 4,400; and a job count of 850. The majority of jobs in the SDA were related to mining, quarrying and oil and gas extraction, construction and agriculture.
- Population in the Status Quo scenario is expected to grow to about 4,700 by 2046, and slightly higher at 4,750 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 3 is projected to increase to about 900 by 2046. In this case, agriculture, educational services and manufacturing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 950 by 2046. In this case, most employment growth is related to manufacturing, agriculture and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 3



**SDA 4:**

- This SDA is located in the fringe region surrounding Spruce Grove and Stony Plain. As of 2015, this SDA had a population of 2,000 and 600 jobs (mostly related to mining, quarrying and oil and gas extraction and construction).
- Population in both the Status Quo and Economic Diversification scenarios is expected to grow marginally to about 2,050 by 2046.
- In the Status Quo scenario, employment in SDA 4 is projected to increase to about 1,300 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,800 by 2046. In this case, most employment growth is related to manufacturing and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 4

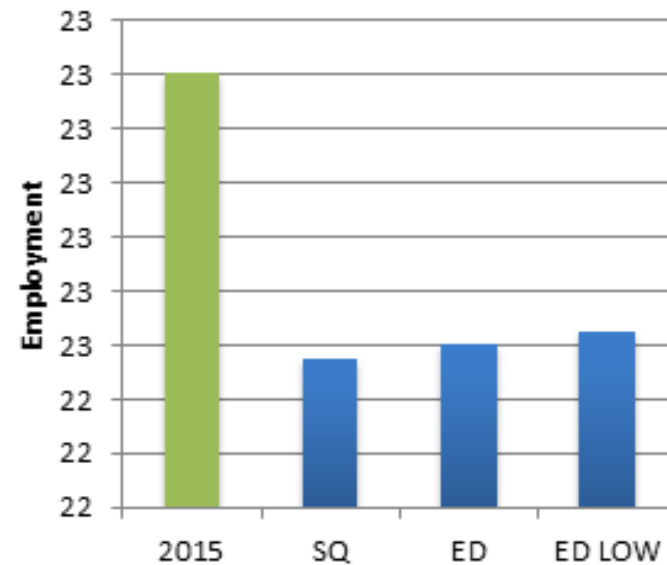
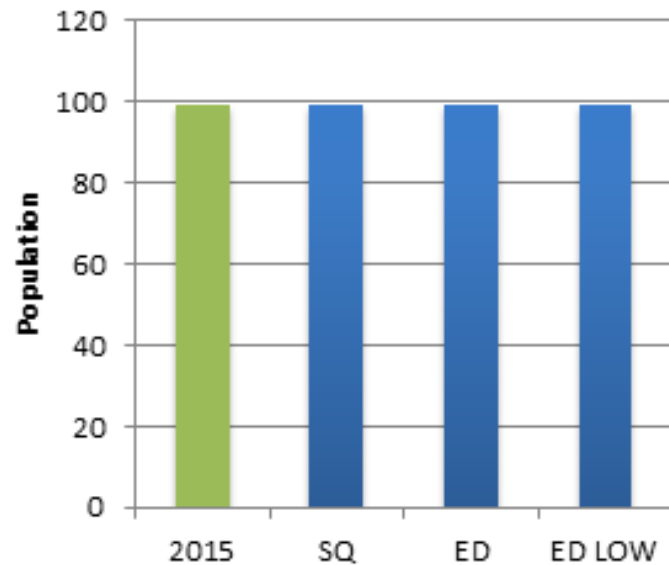


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SDA 5:

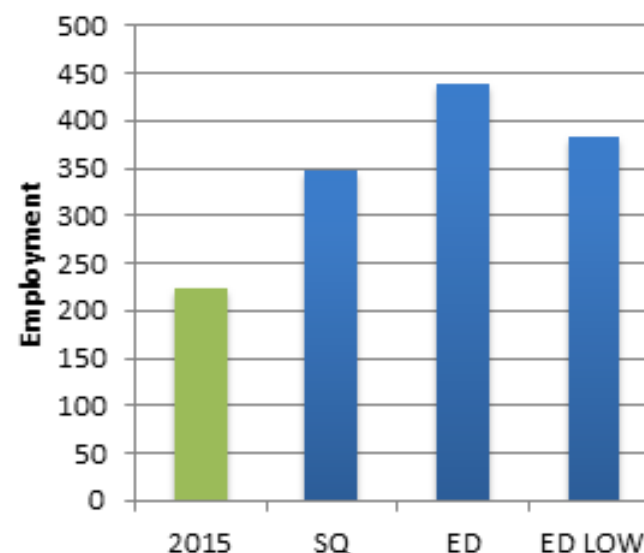
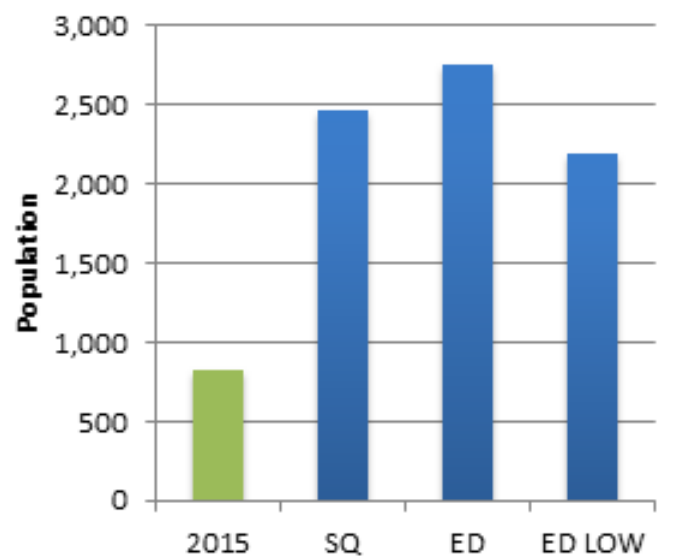
- This SDA is the Wagner Natural Area, which has been designated as being environmentally important. While the SDA was found to have a population of about 100 along with 20 jobs in 2015, the forecast assumes that no residential or non-residential development will occur.

Population and Employment Forecasts (2015 and 2046) – SDA 5



**SDA 6:**

- This SDA is located in the northeast region of the County. Approximately 800 people lived here in 2015, and the 200 jobs were mostly classified as construction and manufacturing.
- Population in the Status Quo scenario is expected to grow to about 2,450 by 2046, and slightly higher at 2,750 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 6 is projected to increase to about 350 by 2046. In this case, accommodation and food services, other services, and educational services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 450 by 2046. In this case, most employment growth is related to accommodation and food services, arts, entertainment and recreation, and finance and insurance.

Population and Employment Forecasts (2015 and 2046) – SDA 6

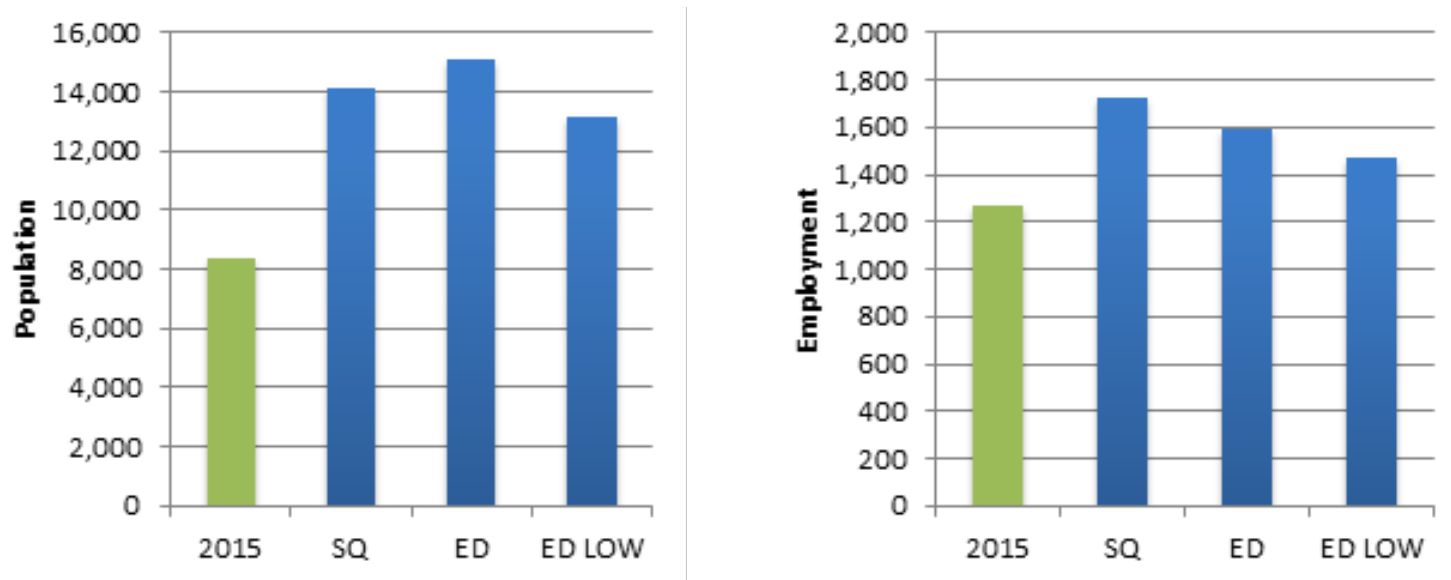


APPENDIX

SDA 7:

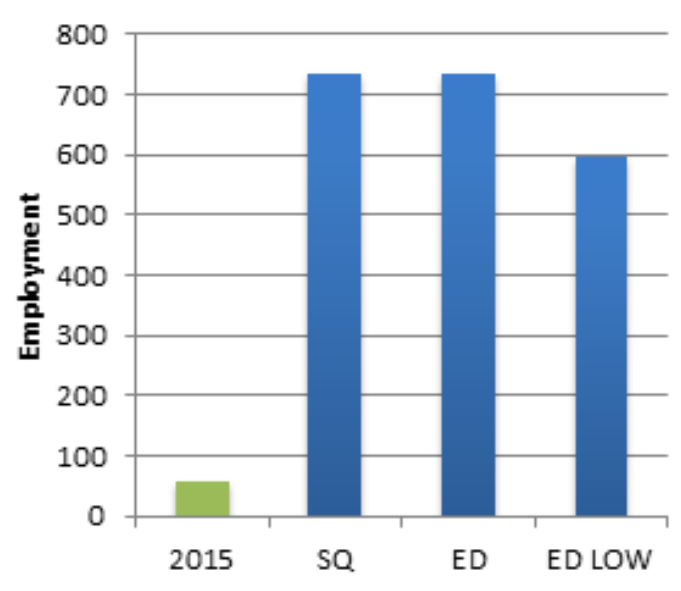
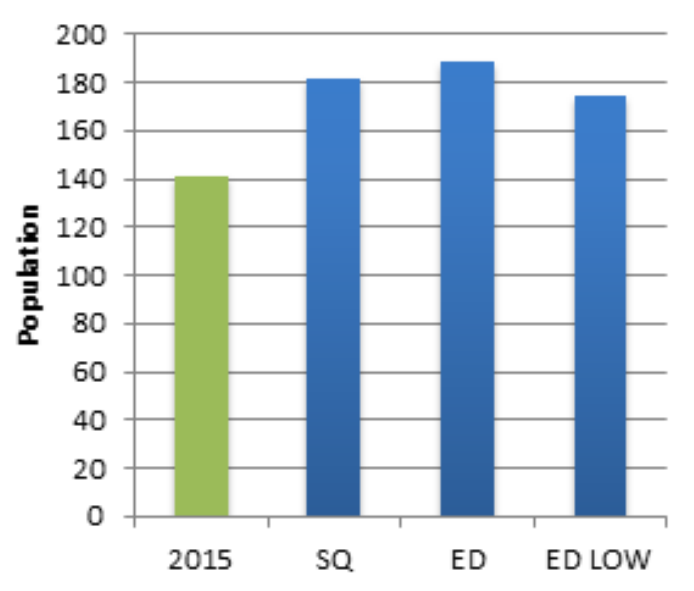
- This SDA is located in the north of Spruce Grove and Stony Plain. In 2015, it was estimated to be the most populated SDA (8,400) and contained a greater amount of employment than all other SDAs with the exception of the Acheson Industrial Area (SDA 1). Employment in this SDA was based in a variety of industries, including construction, other services, mining, quarrying and oil and gas extraction, professional, scientific and technical services, and agriculture.
- Population in the Status Quo scenario is expected to grow to about 14,100 by 2046, and slightly higher at 15,100 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 7 is projected to increase to about 1,700 by 2046. In this case, mining, quarrying and oil and gas extraction, agriculture, and educational services.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,600 by 2046. In this case, most employment growth is related to wholesale trade, agriculture, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 7



**SDA 8:**

- This SDA is located north of Wabamun Lake, across Highway 16. In 2015, the population was estimated at 150 and employment at 50.
- In both the Status Quo and Economic Diversification scenarios, population is projected to grow marginally to about 180 by 2046.
- The Status Quo and Economic Diversification scenarios for SDA 8 both project very similar results in 2046. In both scenarios, employment is expected to reach about 750, with the majority of job growth driven by utilities, professional, scientific and technical services, and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 8

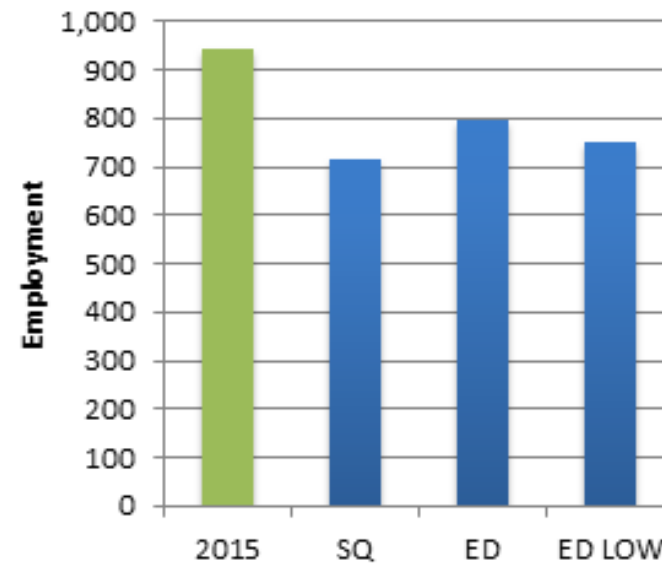
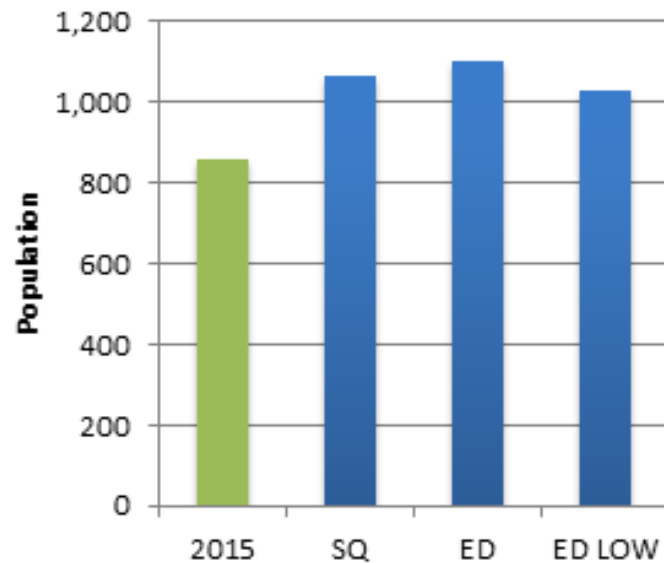


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SDA 9:

- This SDA is located in the region surrounding Wabamun Lake. As of 2015, the SDA had a population of 850 and 950 jobs, with employment concentrated in utilities, construction, and mining, quarrying and oil and gas extraction.
- Population is expected to grow to about 1,100 by 2046 across both the Status Quo and Economic Diversification scenarios.
- In the Status Quo scenario, employment in SDA 9 is projected to increase to about 700 by 2046. In this case, utilities, mining, quarrying and oil and gas extraction, and professional, scientific and technical services.
- In the Economic Diversification scenario, employment is expected to reach approximately 800 by 2046. In this case, most employment growth is related to utilities, mining, quarrying and oil and gas extraction, and agriculture.

Population and Employment Forecasts (2015 and 2046) – SDA 9

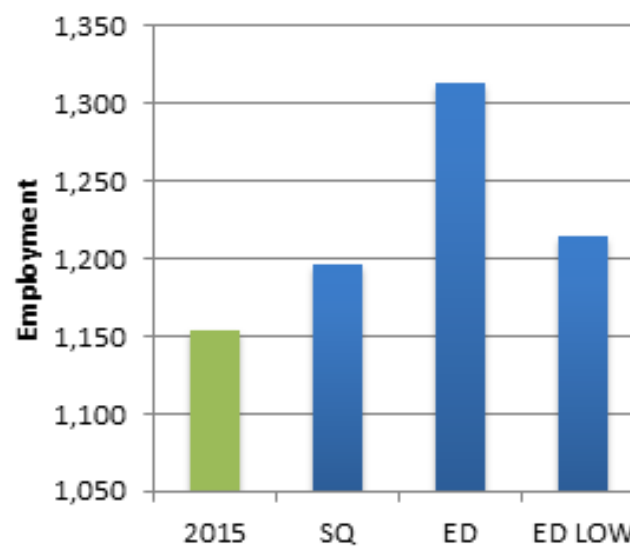
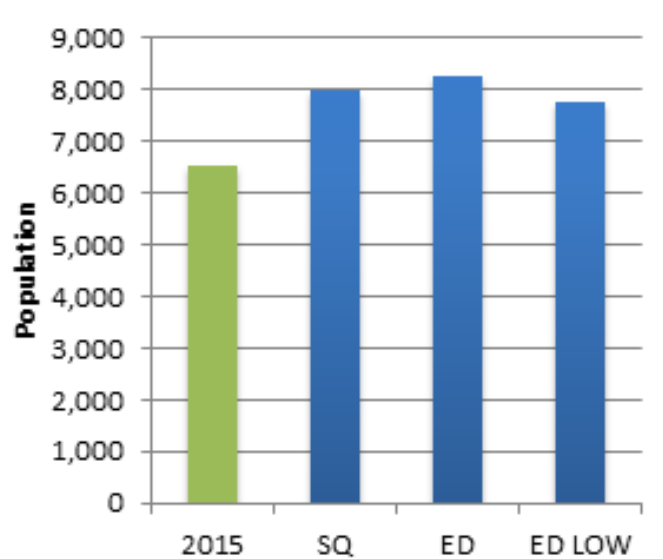




SDA 10:

- This SDA is located in the central region of the County, and covers most of the area between Wabamun Lake and Stony Plain. About 6,500 people resided here in 2015, and its 1,150 jobs were in the construction, educational services, and mining, quarrying and oil and gas extraction industries.
- Population in the Status Quo scenario is expected to grow to about 8,000 by 2046, and slightly higher at 8,250 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 10 is projected to increase to about 1,200 by 2046. In this case, educational services, accommodation and food services, and public administration will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,300 by 2046. In this case, most employment growth is related to accommodation and food services, educational services, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 10



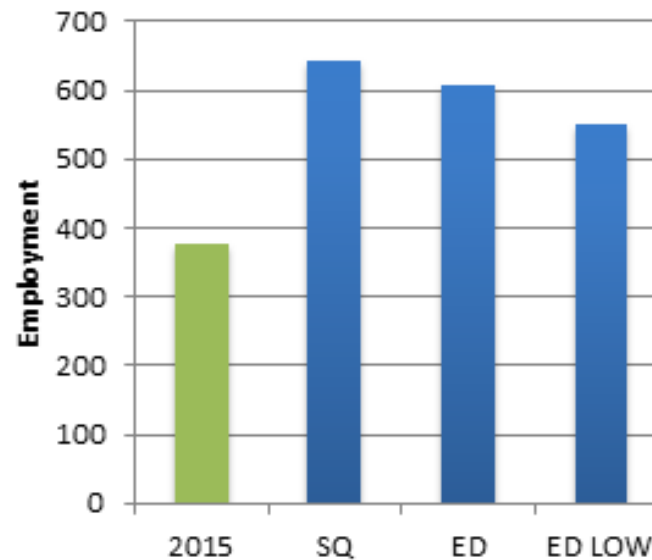
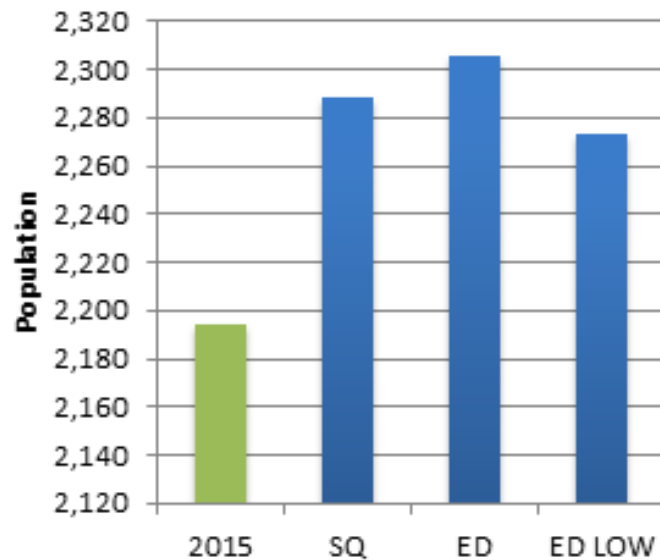


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SDA 11:

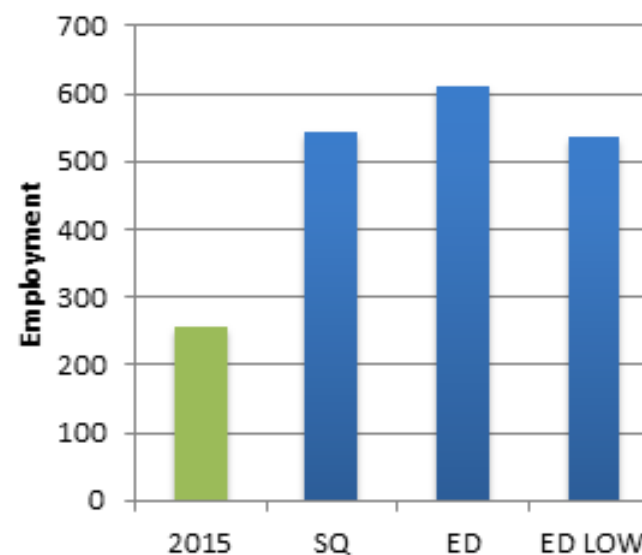
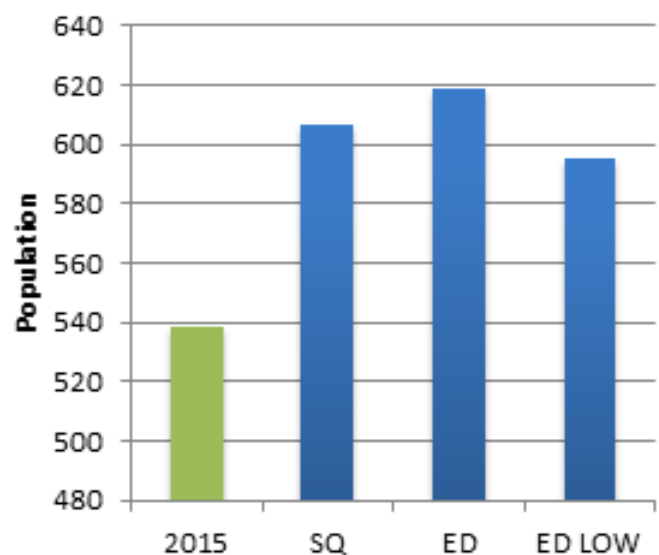
- This SDA is located in the region northeast of Wabamun Lake, on the north side of Highway 16. In 2015, this SDA was estimated to have a population of 2,200 and about 400 jobs. Employment was mostly in the industries of construction, other services, and professional, scientific and technical services.
- Population is expected to grow to approximately 2,300 by 2046 in both the Status Quo and Economic Diversification scenarios.
- In the Status Quo scenario, employment in SDA 11 is projected to increase to about 650 by 2046. In this case, mining, quarrying and oil and gas extraction, and construction will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to mining, quarrying and oil and gas extraction, manufacturing, wholesale trade and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 11



**SDA 12:**

- This SDA is located northwest of Wabamun Lake, on the north side of Highway 16. About 550 people and 250 jobs were located here in 2015. Employment was largely based in mining, quarrying and oil and gas and construction.
- Population in the Status Quo scenario is expected to grow to about 6,000 by 2046, and slightly higher at 6,200 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 12 is projected to increase to about 550 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and professional, scientific and technical services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to manufacturing, professional, scientific and technical services and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 12

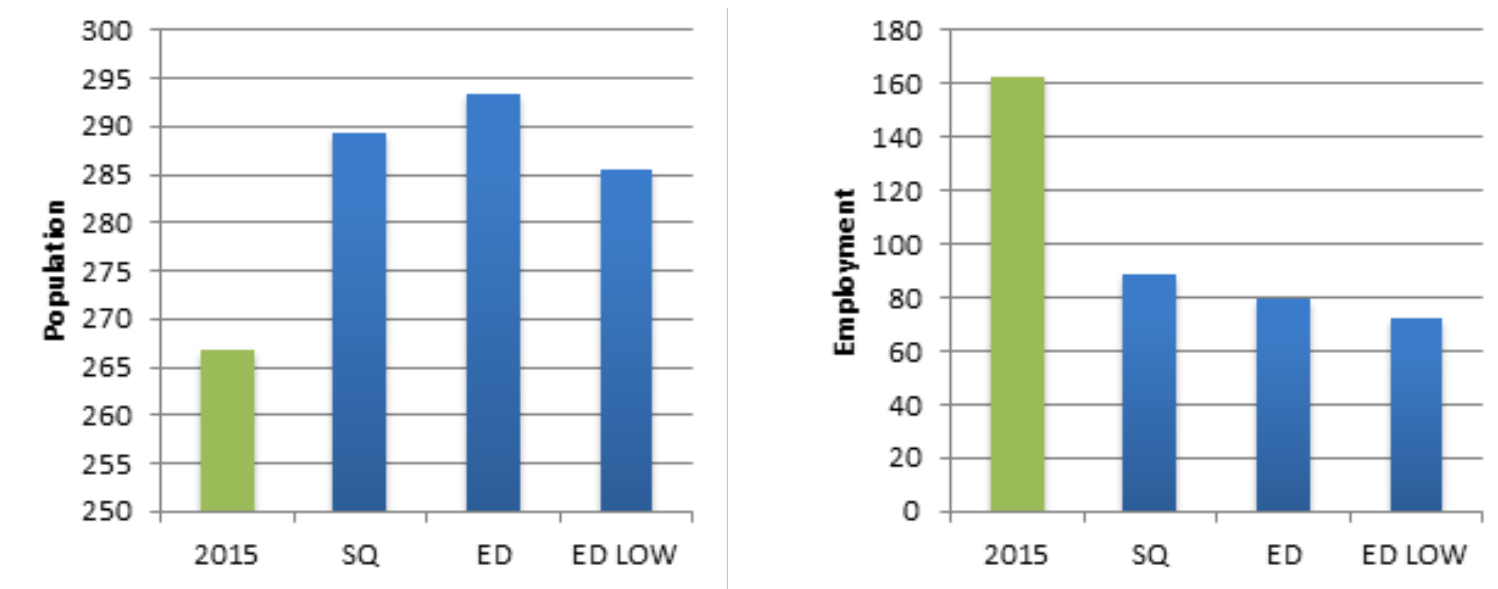


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SDA 13:

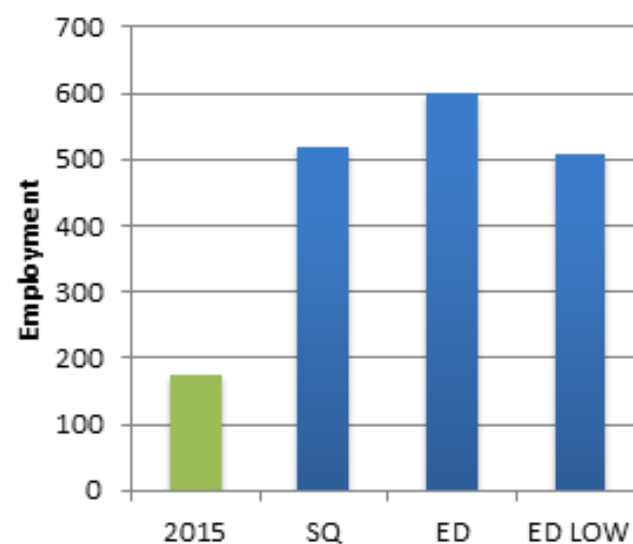
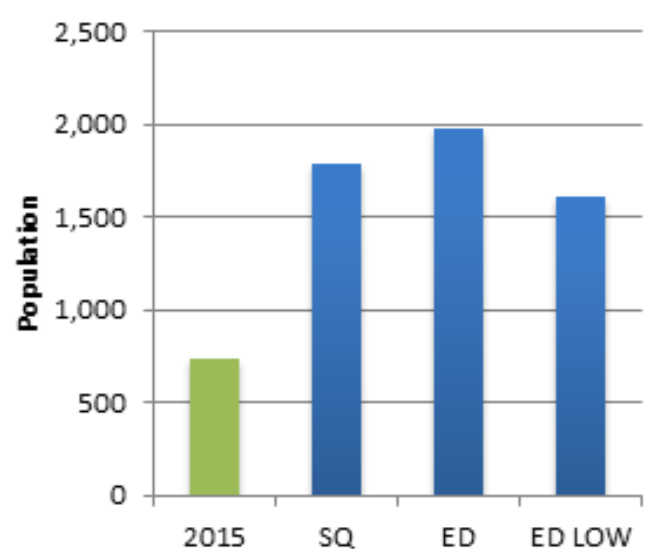
- This SDA is located in the northwest corner of the County. A population of 250 and employment of 150 was estimated here in 2015, with the majority of jobs in the mining, quarrying and oil and gas industry.
- Population is expected to grow to approximately 300 by 2046 in both the Status Quo and Economic Diversification scenarios.
- The Status Quo and Economic Diversification scenarios for SDA 13 both project very similar results in 2046. In both scenarios, employment is expected to reach nearly 100, with the majority of job growth driven by oil and gas, construction and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 13



**SDA 14:**

- This SDA covers the region in the west end of the County, south of Highway 16. In 2015, about 750 residents and 200 jobs were located here. The dominant industries were mining, quarrying and oil and gas extraction along with agriculture.
- Population in the Status Quo scenario is expected to grow to about 1,800 by 2046, and slightly higher at 2,000 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 14 is projected to increase to about 500 by 2046. In this case, construction, transportation and warehousing and professional, scientific and technical services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to construction, transportation and warehousing, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 14

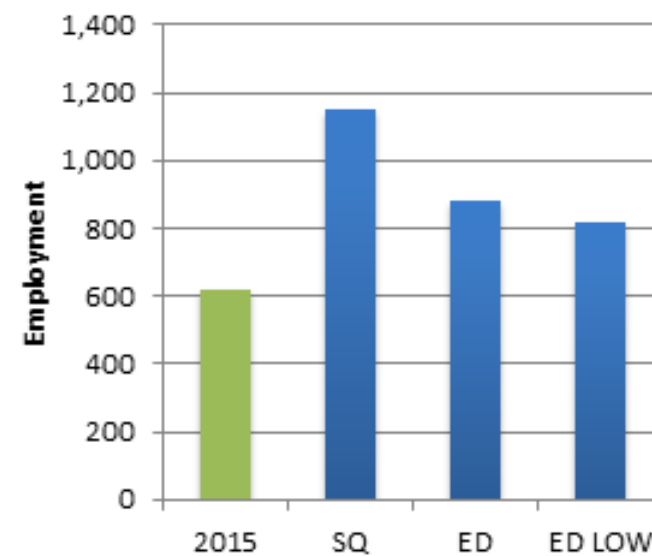
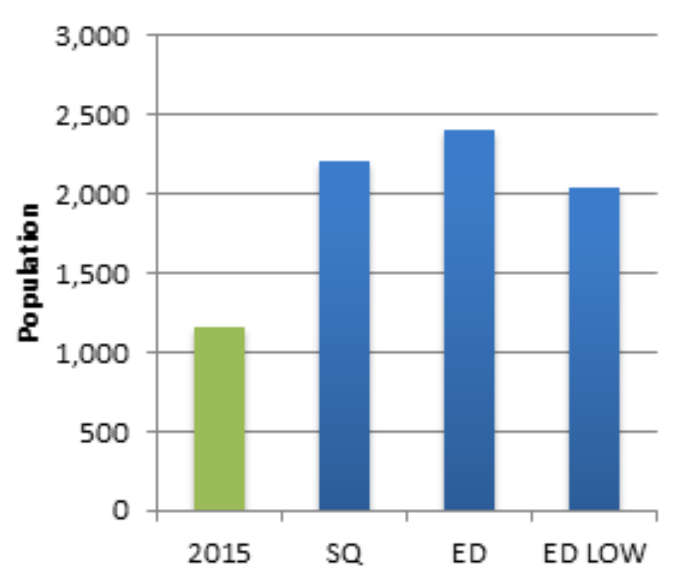


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SDA 15:

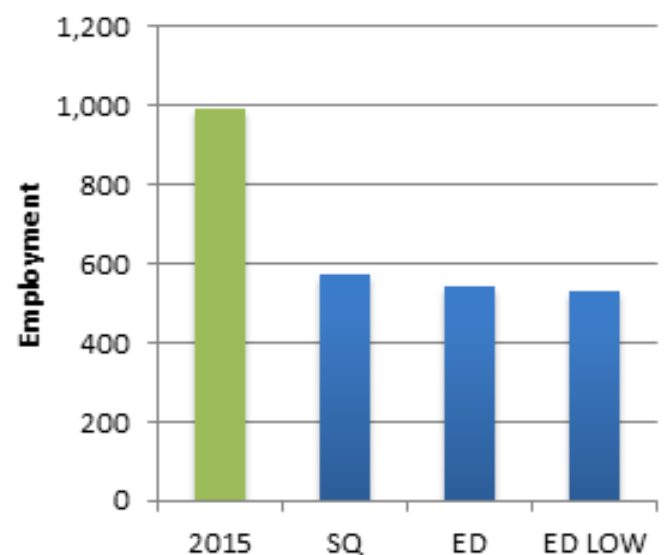
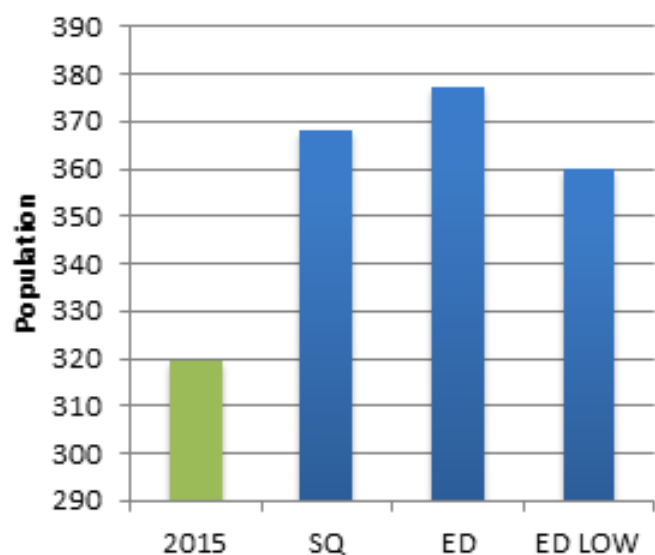
- This SDA is located in the southwest region of the County. In 2015, the SDA was estimated to have a population of about 1,200 and employment of 600. Most jobs were in the mining, quarrying and oil and gas and agriculture industries.
- Population in the Status Quo scenario is expected to grow to about 2,200 by 2046, and slightly higher at 2,400 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 15 is projected to increase to about 1,200 by 2046. In this case, mining, quarrying and oil and gas extraction, agriculture, and professional, scientific and technical services.
- In the Economic Diversification scenario, employment is expected to reach approximately 900 by 2046. In this case, most employment growth is related to mining, quarrying and oil and gas extraction, agriculture, and professional, scientific and technical services.

Population and Employment Forecasts (2015 and 2046) – SDA 15



**SDA 16:**

- This SDA is located south of Wabamun Lake in the central reclamation region of the County. In 2015, there were 300 people and 1,000 jobs located here. Most employment here was in the industries of mining, quarrying and oil and gas extraction and utilities.
- Population is expected to grow to slightly under 400 people by 2046 in both the Status Quo and Economic Diversification scenarios.
- The Status Quo and Economic Diversification scenarios for SDA 16 both project very similar results in 2046. In both scenarios, employment is expected to reach about 550, with the job growth dominated by mining, quarrying and oil and gas extraction.

Population and Employment Forecasts (2015 and 2046) – SDA 16

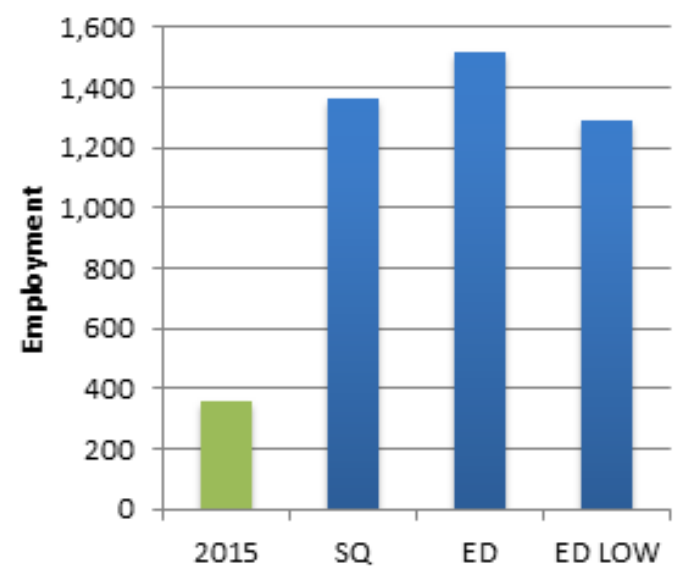
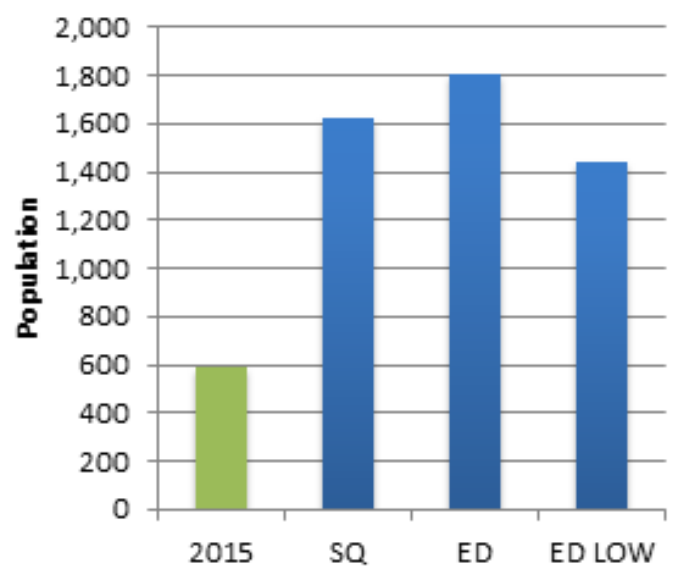


APPENDIX

SDA 17:

- Entwistle is located on the west side of the County. In 2015, its population was approximately 600. Of the 350 jobs located here, most were related to construction, educational services and mining, quarrying and oil and gas.
- Population in the Status Quo scenario is expected to grow to about 1,600 by 2046, and slightly higher at 1,800 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 17 is projected to increase to about 1,350 by 2046. In this case, manufacturing, mining, quarrying and oil and gas extraction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,500 by 2046. In this case, most employment growth is related to manufacturing, and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 17







APPENDIX C: FISCAL IMPACT ANALYSIS





Fiscal Impacts of Growth

Applications Management Consulting Inc. was retained to complete a **Fiscal Impact Analysis (FIA)** that identifies the specific costs and revenues that can be anticipated through development based on the preferred growth scenarios of the TGS.

The FIA acknowledges that development and growth have associated costs and revenues for a municipality. Municipalities strive for an appropriate balance between costs and revenues while also maintaining other important community values (e.g. social & environmental).

1.1. Growth Projections

The FIA looks at the financial impacts of both overall County growth as well as hamlet growth based on three economic scenarios: Status Quo, Economic Diversification, and Economic Diversification - Low. Forecasts were developed using base year (2015) on estimates for population and employment for each of the 17 SDAs in Parkland County. Forecasts were generally aligned to the Capital Region Board's Edmonton Metropolitan Region Growth Plan¹.

Status Quo Scenario

The Status Quo forecast assumes little to no changes in the direction of policy intervention or strategic investment by the County going forward. In this scenario the total population is estimated to reach 48,270 by 2046; with employment growing to 16,341 jobs. This forecast assumes that the Capital Region economy continues to remain centred on the energy sector and its related support industries. See

¹ The Edmonton Metropolitan Region Growth Plan was prepared in October 2016 and provides a population and employment projection for Parkland County from 2014-2044. In addition, the Capital Region Board Major Employment Analysis was used as a basis for the economic scenarios used in this analysis. <http://capitalregionboard.ab.ca/Website/files/96/9673a809-4d44-474f-a663-65c6eac75a63.pdf>

Appendix 1 for figures showing the estimated geographic distribution of growth.

Economic Diversification Scenario

The scenario of Economic Diversification projects the County's population to reach an estimated total of 50,760 with 17,185 total jobs. This forecast assumes that the energy sector plays a smaller role in shaping the future of the Capital Region economy. Instead, sub-sectors such as "value added" agriculture, tourism, and specialized manufacturing contribute more meaningfully to the County's growth. Geographically, job growth is concentrated within the County's priority employment areas (Acheson & Wabamun) and priority growth hamlet - Entwistle.

Economic Diversification – Low Scenario

The scenario of Economic Diversification – Low there is an estimated total population of 45,913 with 15,544 total jobs. This forecast maintains similar assumptions to those of the Economic Diversification – High forecast, but assumes that growth in key industries will be slower through the duration of the forecast. Once again, the geographical concentration of jobs within the County is focused within the priority employment areas (Acheson & Wabamun) and priority growth hamlet - Entwistle.



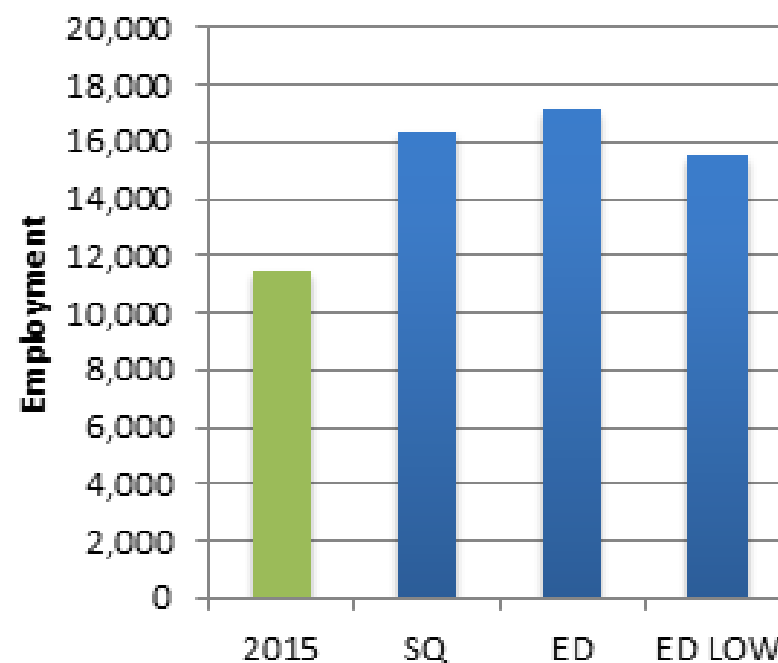
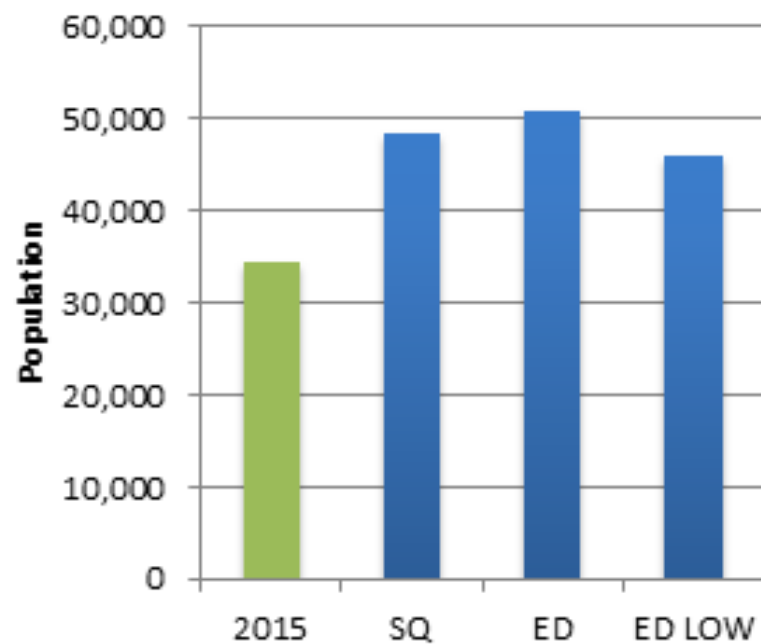
For each population and employment scenario (forecast to 2046), an alternate “Entwistle Growth” projection was also developed. This growth variation reflects a greater degree of success in the long-term promotion of Entwistle as a sub-regional hub, and shifts a slightly greater portion of population and employment growth to the western regions of the County (SDAs 13, 14 and 17). For the County in aggregate, population and employment growth forecasts are the same for both the “Entwistle Growth” and standard forecast scenarios.

General assumptions used across each forecast scenario:

- The Acheson Industrial Area (SDA 1) will continue to be a hub of economic activity and employment within the County.
- Protection of agricultural lands is emphasized, with economic opportunities provided to ag-industry and value-added projects. Priority agricultural areas include the South East (SDAs 3 and 10), West (SDAs 14 and 15) and Small Holdings (SDAs 3 and 4).
- Creation of tourism/recreation and associated infrastructure investment by the County. Priority areas include Wabamun (SDAs 8, 9, 11, 12, and 14) and Devon Dunes (SDA 2).
- Over the forecast period coal is phased out, and the Highvale (SDA 15) and SunHills (SDA 16) mines are shut down and redeveloped. Energy production is transitioned to natural gas and renewables, but these projects require significantly fewer workers to maintain production.
- The Wagner Natural Area (SDA 5) remains undeveloped for both residential and non-residential purposes.
- Entwistle (SDA 17) is designated a priority growth hamlet, and acts as a sub-regional centre. It services all growth, possesses a range of land uses, and accommodates a range of housing types and densities.



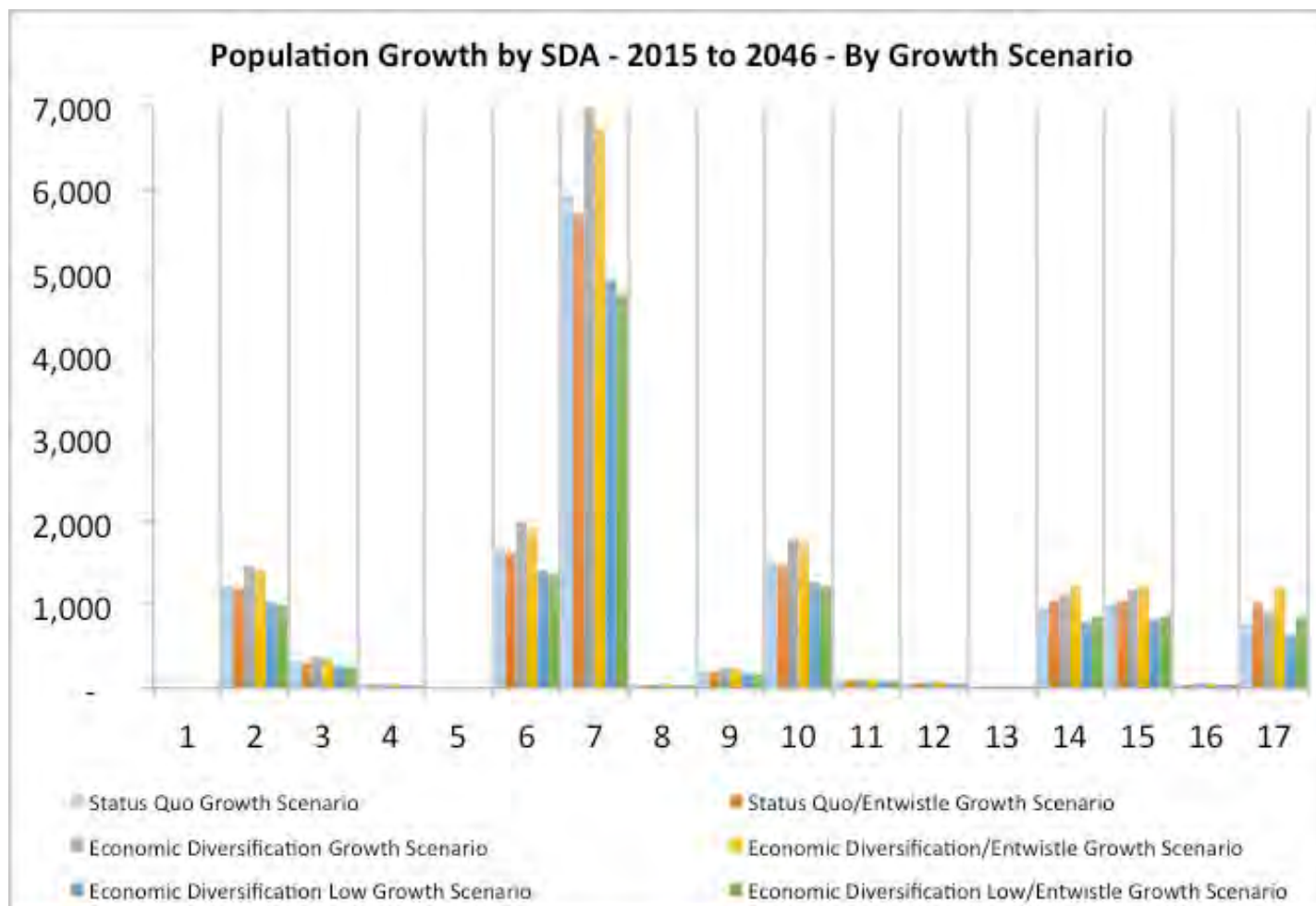
Population and Employment Forecasts (2015 and 2046) – Parkland County – Entwistle Growth Scenarios





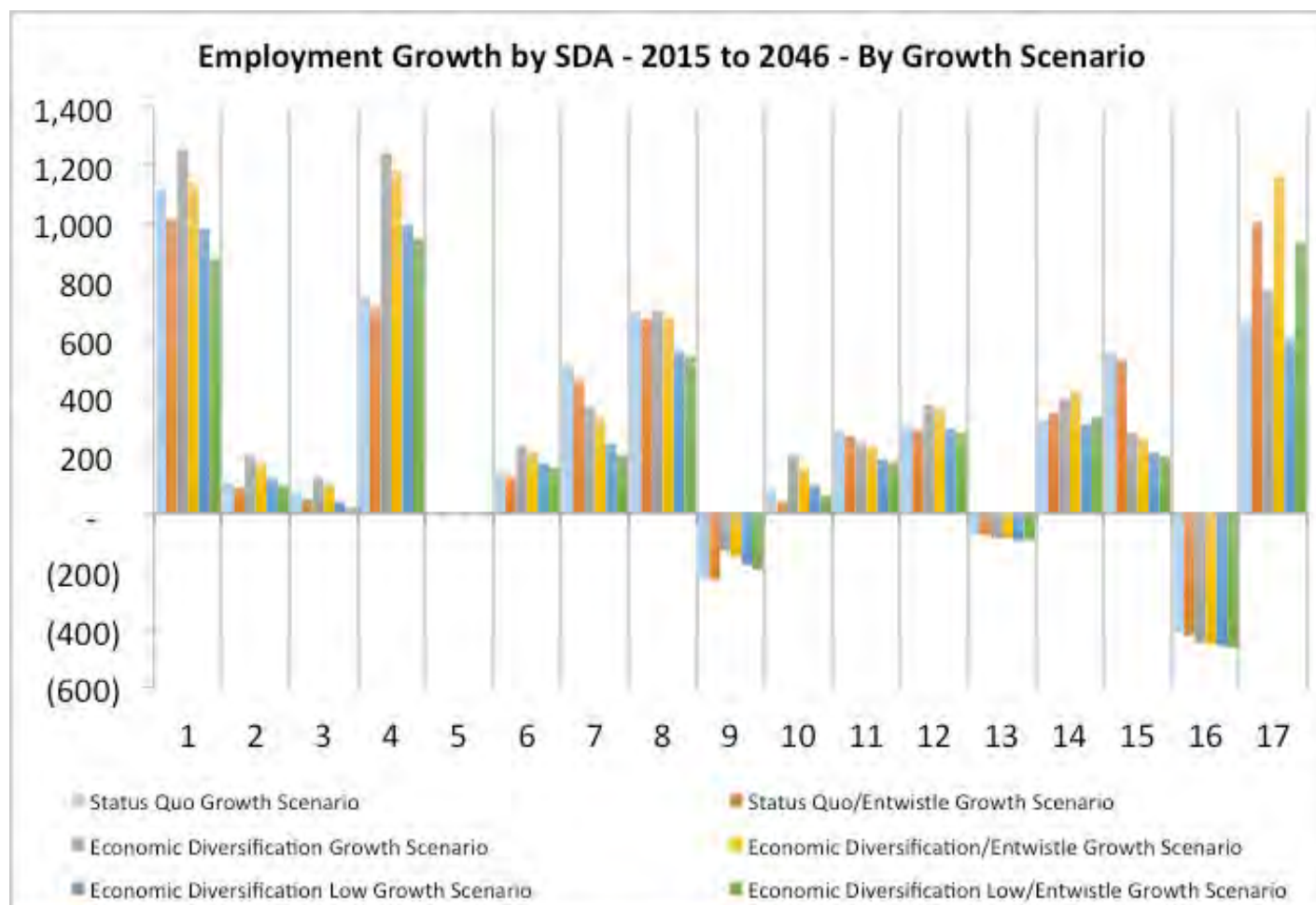
APPENDIX

The population growth for Parkland County ranges from 11,603 to 16,450 people. The chart below illustrates the distribution of population growth across the SDAs and scenarios.





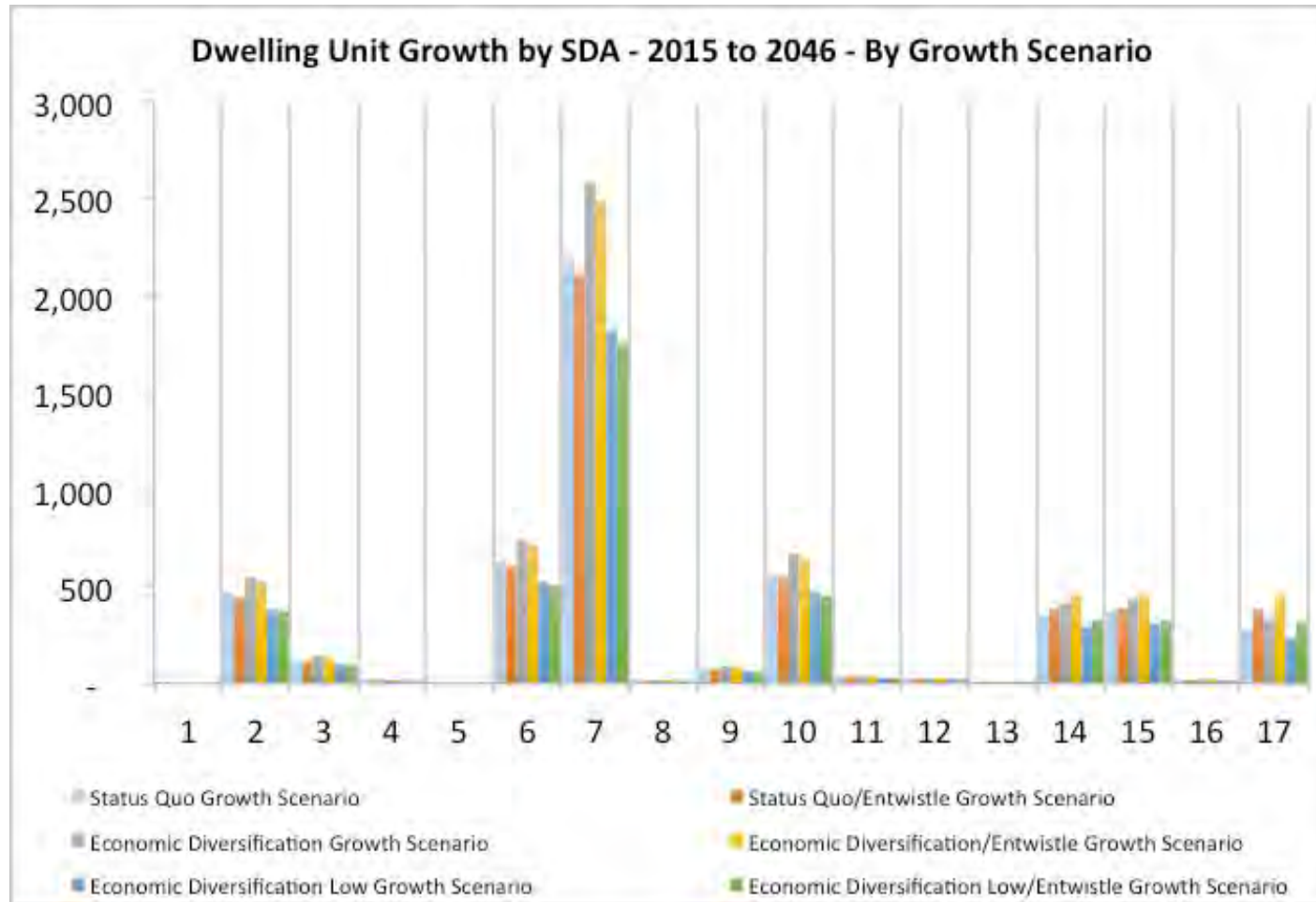
The employment growth for Parkland County ranges from 4,071 to 5,712 jobs. The chart below illustrates the distribution of employment growth across the SDAs and scenarios.





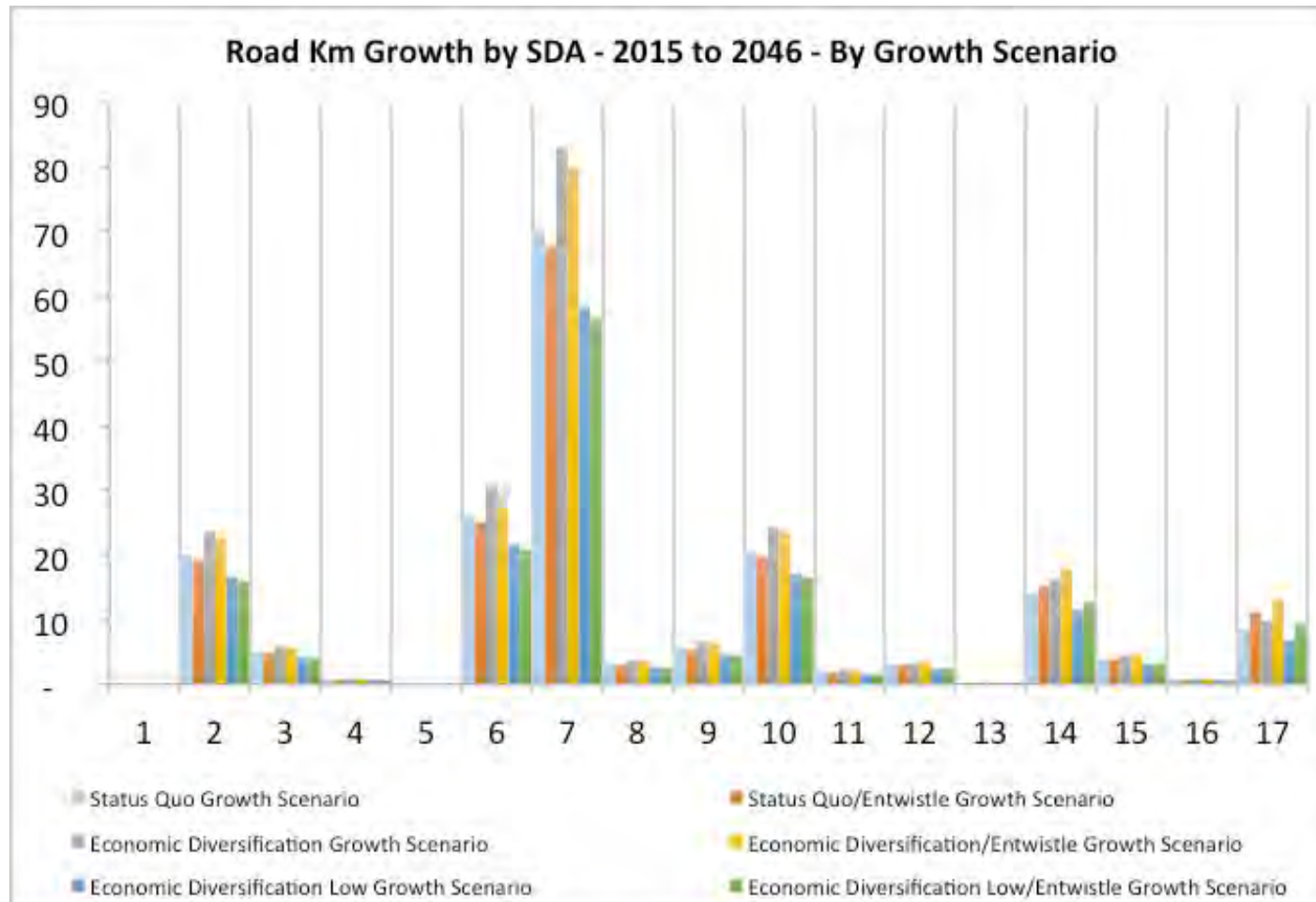
APPENDIX

The growth in dwelling units for Parkland County ranges from 4,298 to 6,093. The chart below illustrates the distribution of dwelling unit growth across the SDAs and scenarios.





The growth in road kilometers for Parkland County ranges from 151 to 216 km. The chart below illustrates the distribution of road kilometer growth across the SDAs and scenarios.



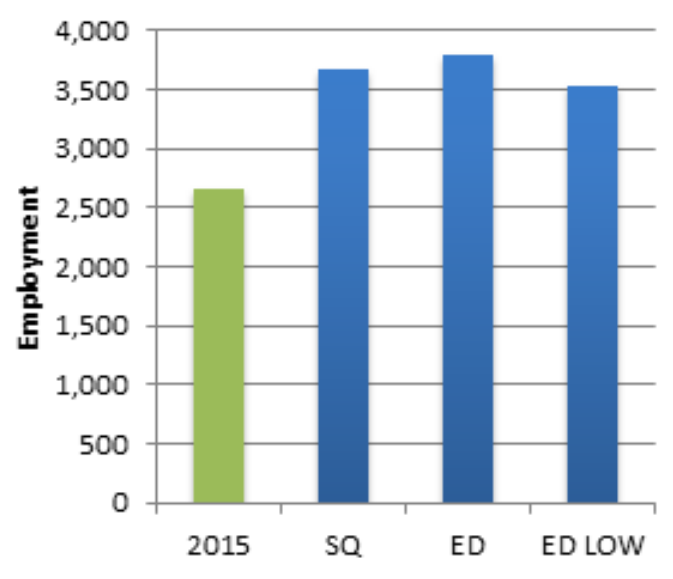
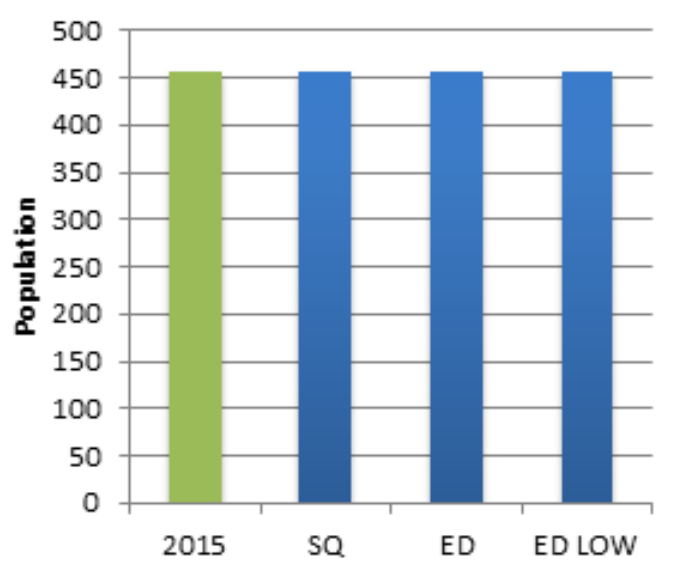


Population and Employment Forecasts by Strategic Development Area (SDA)

SDA 1:

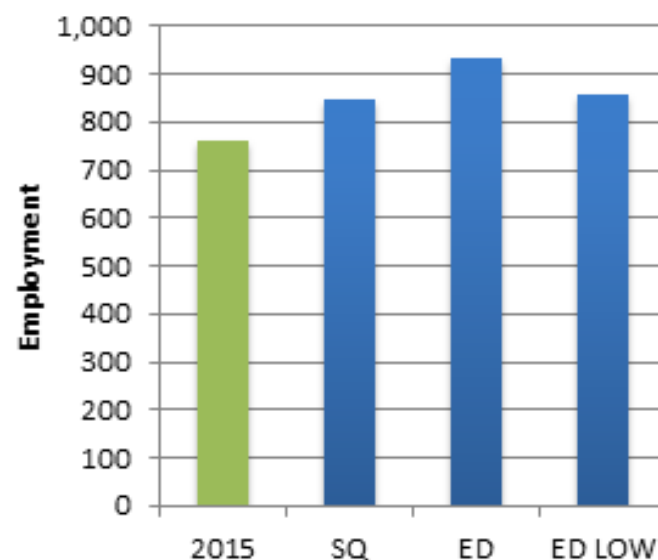
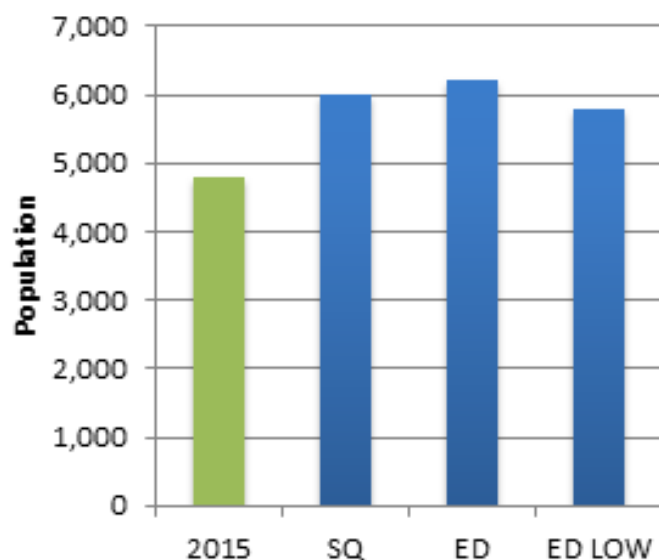
- The Acheson Industrial Area is located on the eastern edge of the County. The SDA is focused around business activity and employment creation, which was about 2,650 in 2015, with the majority of jobs in the oil and gas and construction industries.
- Population was estimated at about 450 in 2015, and no growth in population beyond this level is anticipated through 2046.
- In the Status Quo scenario, employment in Acheson is projected to gradually intensify, reaching about 3,700 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment in Acheson is again projected to intensify gradually, reaching about 3,800 by 2046. In this case, most employment growth is related to manufacturing, wholesale trade and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 1



**SDA 2:**

- This SDA is located in the southeast region of the County. In 2015, about 4,800 resided in the SDA; and employment of about 800 was largely based in oil and gas, construction, and other services.
- Population in the Status Quo scenario is expected to grow to about 6,000 by 2046, and slightly higher at 6,200 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 2 is projected to increase to about 850 by 2046. In this case, agriculture, educational services and other services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 950 by 2046. In this case, most employment growth is related to agriculture, manufacturing, and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 2

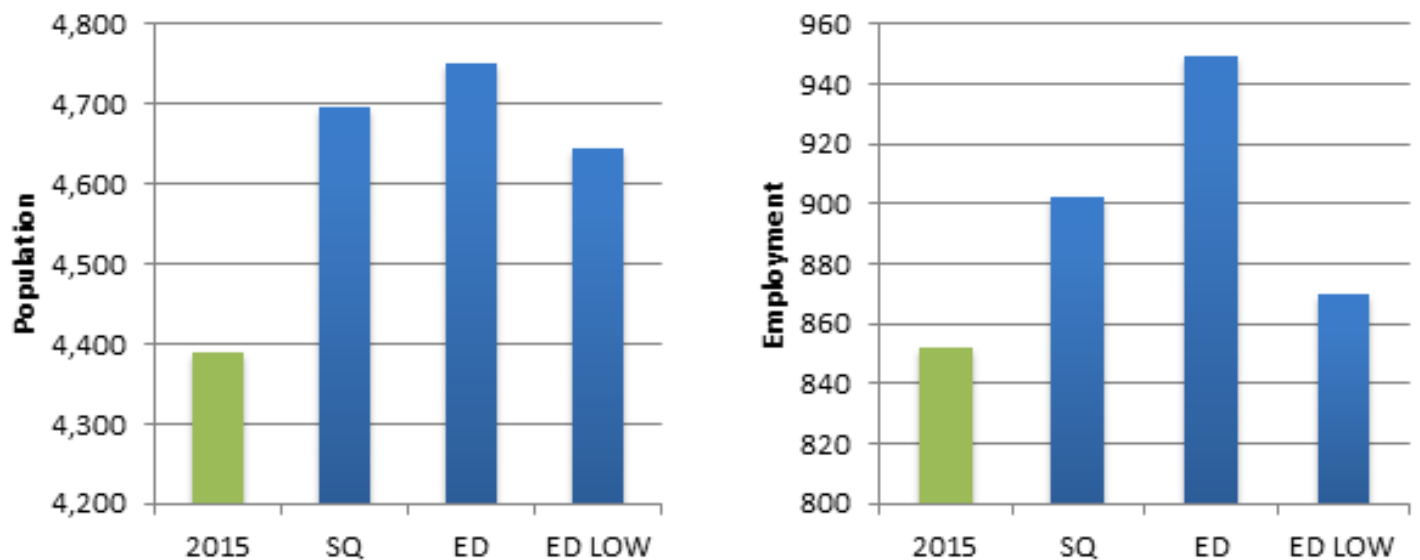


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SDA 3:

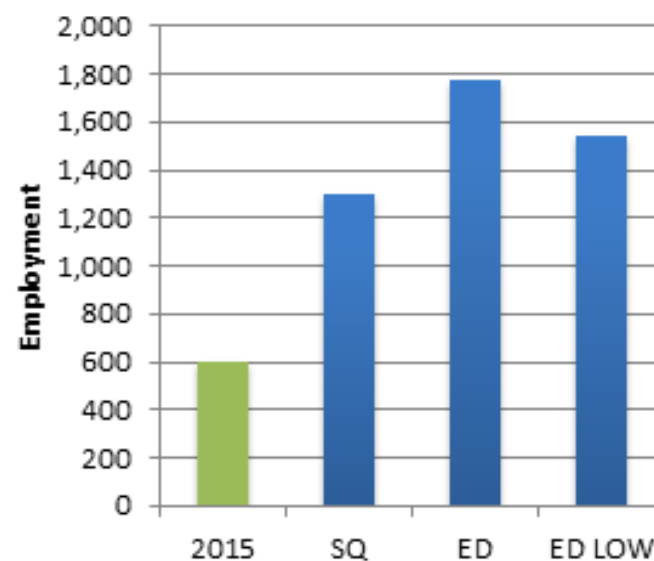
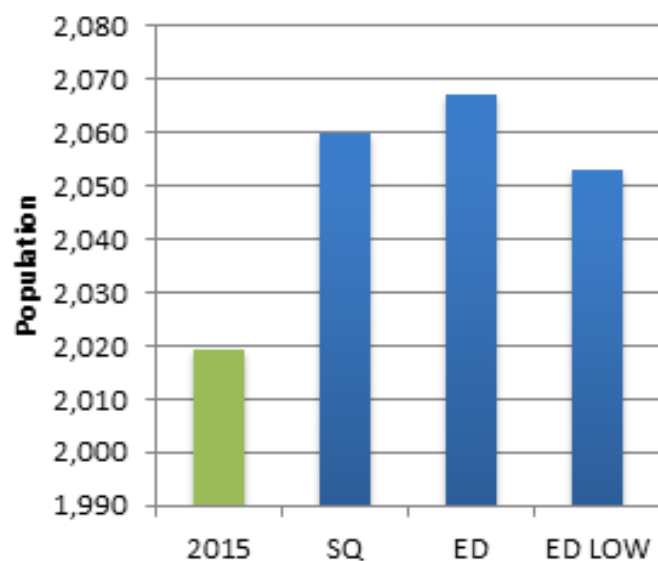
- This SDA is located in the southeast region of the County. In 2015, the population of the SDA was about 4,400; and a job count of 850. The majority of jobs in the SDA were related to mining, quarrying and oil and gas extraction, construction and agriculture.
- Population in the Status Quo scenario is expected to grow to about 4,700 by 2046, and slightly higher at 4,750 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 3 is projected to increase to about 900 by 2046. In this case, agriculture, educational services and manufacturing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 950 by 2046. In this case, most employment growth is related to manufacturing, agriculture and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 3



**SDA 4:**

- This SDA is located in the region surrounding Spruce Grove and Stony Plain. As of 2015, this SDA had a population of 2,000 and 600 jobs (mostly related to mining, quarrying and oil and gas extraction and construction).
- Population in both the Status Quo and Economic Diversification scenarios is expected to grow marginally to about 2,050 by 2046.
- In the Status Quo scenario, employment in SDA 4 is projected to increase to about 1,300 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,800 by 2046. In this case, most employment growth is related to manufacturing and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 4

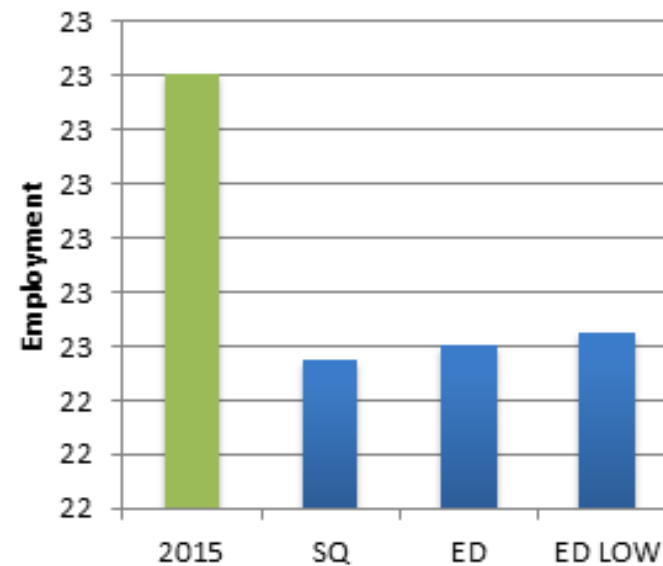
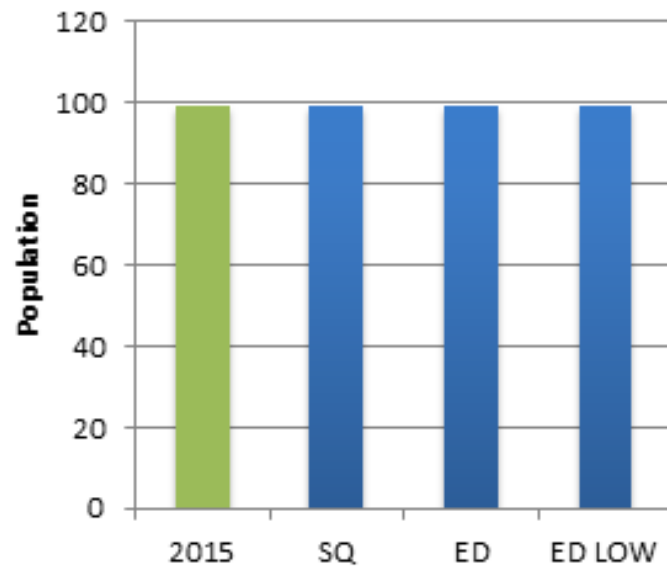


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SDA 5:

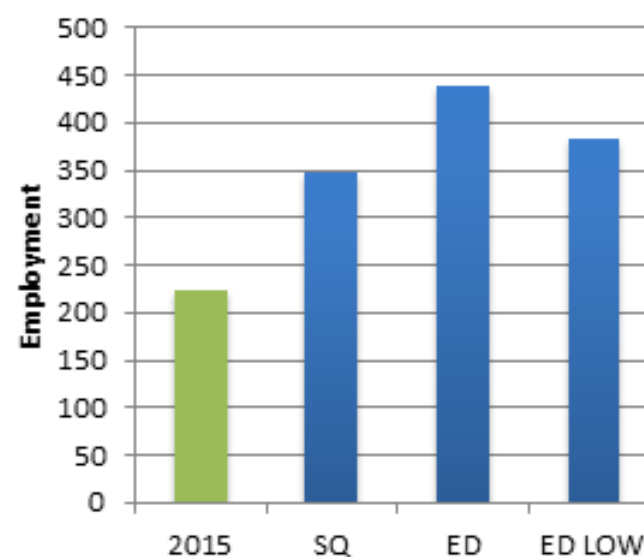
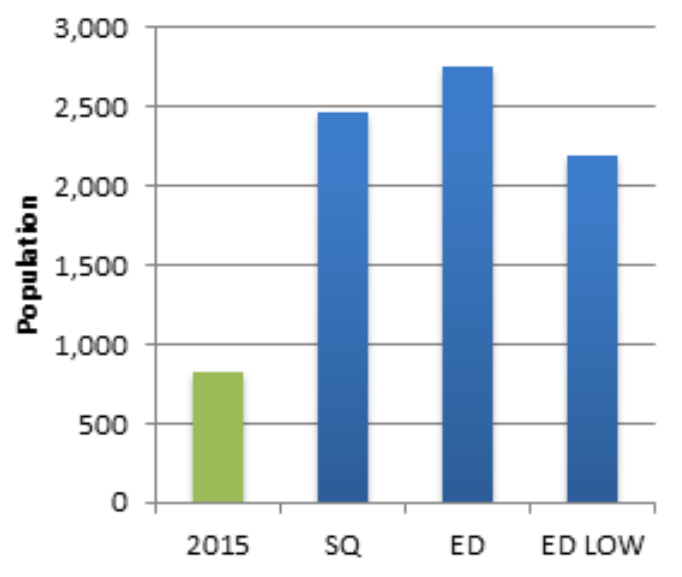
- This SDA is the Wagner Natural Area, which has been designated as being environmentally important. While the SDA was found to have a population of about 100 along with 20 jobs in 2015, the forecast assumes that no residential or non-residential development will occur.

Population and Employment Forecasts (2015 and 2046) – SDA 5



**SDA 6:**

- This SDA is located in the northeast region of the County. Approximately 800 people lived here in 2015, and the 200 jobs were mostly classified as construction and manufacturing.
- Population in the Status Quo scenario is expected to grow to about 2,450 by 2046, and slightly higher at 2,750 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 6 is projected to increase to about 350 by 2046. In this case, accommodation and food services, other services, and educational services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 450 by 2046. In this case, most employment growth is related to accommodation and food services, arts, entertainment and recreation, and finance and insurance.

Population and Employment Forecasts (2015 and 2046) – SDA 6

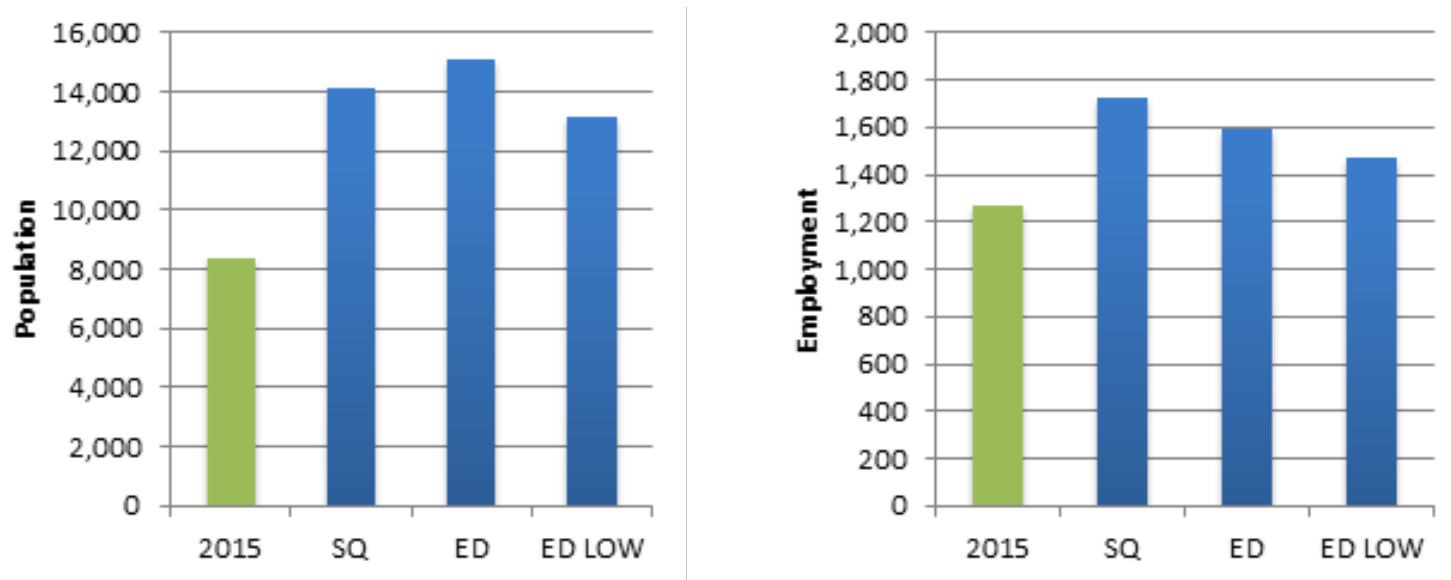


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SDA 7:

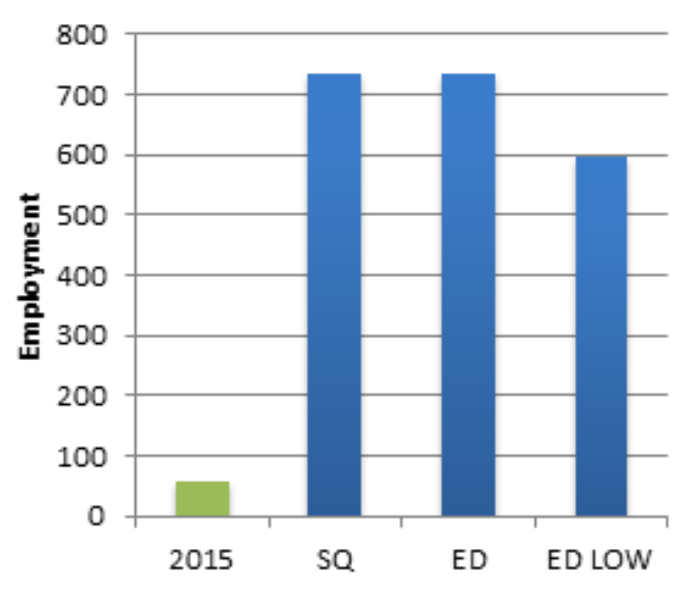
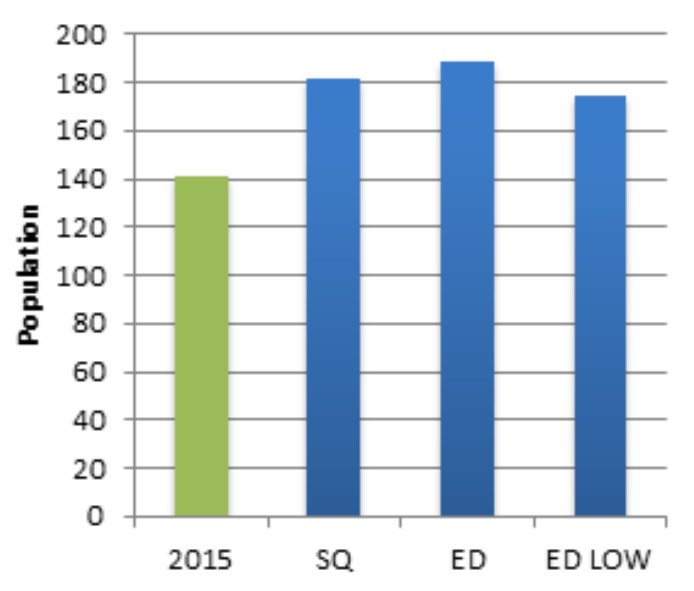
- This SDA is located in the north of Spruce Grove and Stony Plain. In 2015, it was estimated to be the most populated SDA (8,400) and contained a greater amount of employment than all other SDAs with the exception of the Acheson Industrial Area (SDA 1). Employment in this SDA was based in a variety of industries, including construction, other services, mining, quarrying and oil and gas extraction, professional, scientific and technical services, and agriculture.
- Population in the Status Quo scenario is expected to grow to about 14,100 by 2046, and slightly higher at 15,100 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 7 is projected to increase to about 1,700 by 2046. In this case, mining, quarrying and oil and gas extraction, agriculture, and educational services.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,600 by 2046. In this case, most employment growth is related to wholesale trade, agriculture, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 7



**SDA 8:**

- This SDA is located north of Wabamun Lake, across Highway 16. In 2015, the population was estimated at 150 and employment at 50.
- In both the Status Quo and Economic Diversification scenarios, population is projected to grow marginally to about 180 by 2046.
- The Status Quo and Economic Diversification scenarios for SDA 8 both project very similar results in 2046. In both scenarios, employment is expected to reach about 750, with the majority of job growth driven by utilities, professional, scientific and technical services, and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 8

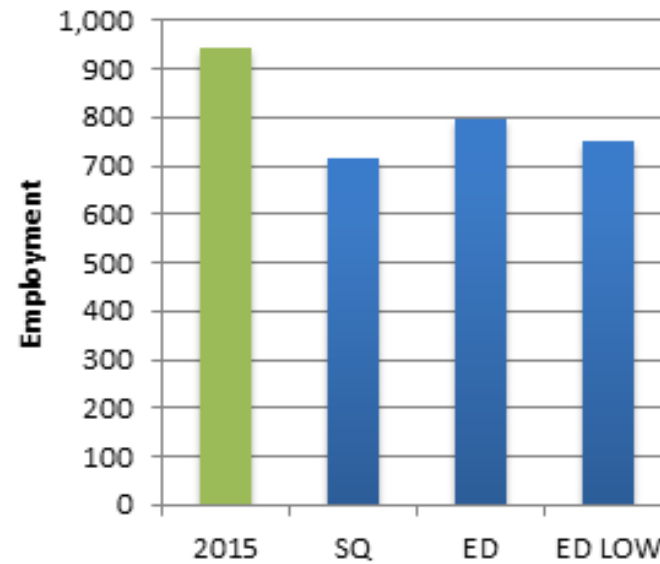
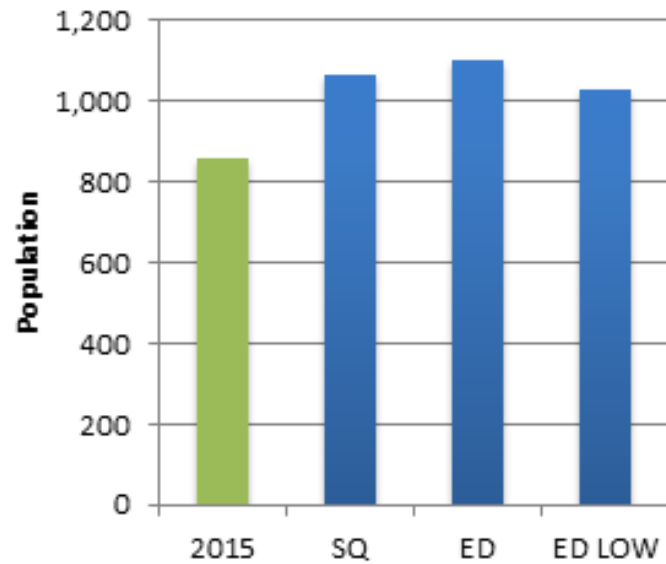


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SDA 9:

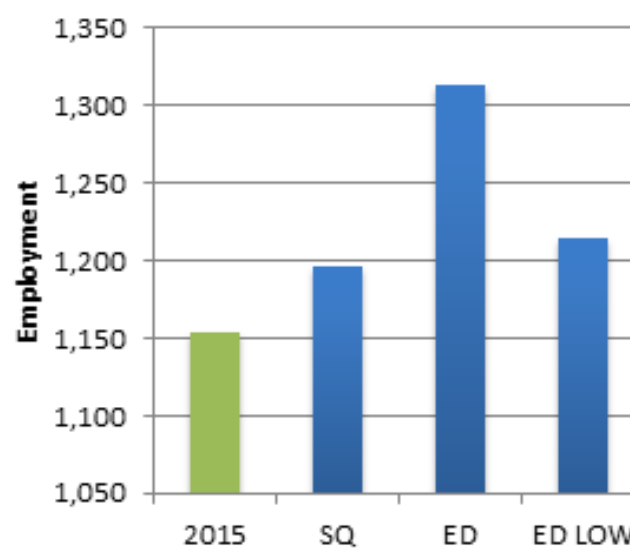
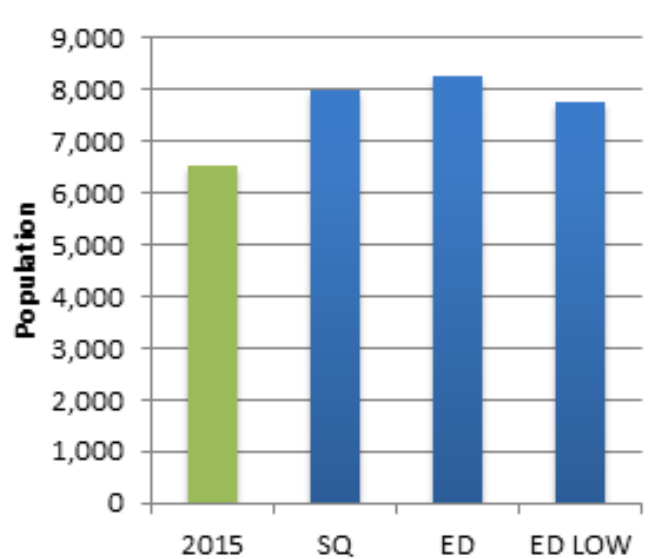
- This SDA is located in the region surrounding Wabamun Lake. As of 2015, the SDA had a population of 850 and 950 jobs, with employment concentrated in utilities, construction, and mining, quarrying and oil and gas extraction.
- Population is expected to grow to about 1,100 by 2046 across both the Status Quo and Economic Diversification scenarios.
- In the Status Quo scenario, employment in SDA 9 is projected to increase to about 700 by 2046. In this case, utilities, mining, quarrying and oil and gas extraction, and professional, scientific and technical services.
- In the Economic Diversification scenario, employment is expected to reach approximately 800 by 2046. In this case, most employment growth is related to utilities, mining, quarrying and oil and gas extraction, and agriculture.

Population and Employment Forecasts (2015 and 2046) – SDA 9



**SDA 10:**

- This SDA is located in the central region of the County, and covers most of the area between Wabamun Lake and Stony Plain. About 6,500 people resided here in 2015, and its 1,150 jobs were in the construction, educational services, and mining, quarrying and oil and gas extraction industries.
- Population in the Status Quo scenario is expected to grow to about 8,000 by 2046, and slightly higher at 8,250 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 10 is projected to increase to about 1,200 by 2046. In this case, educational services, accommodation and food services, and public administration will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,300 by 2046. In this case, most employment growth is related to accommodation and food services, educational services, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 10

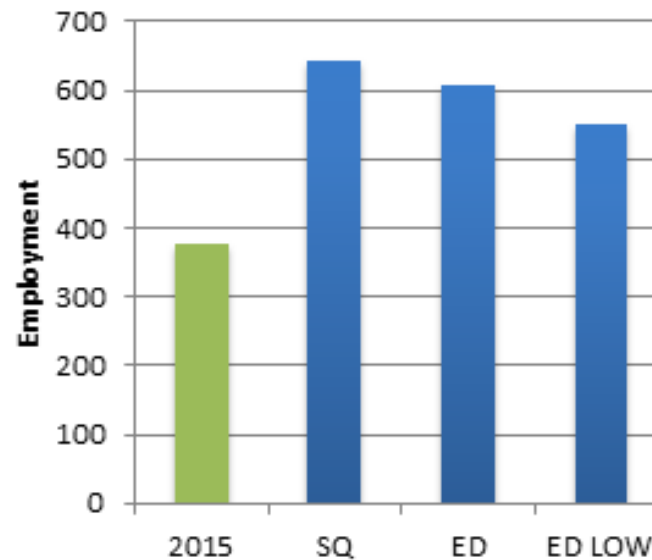
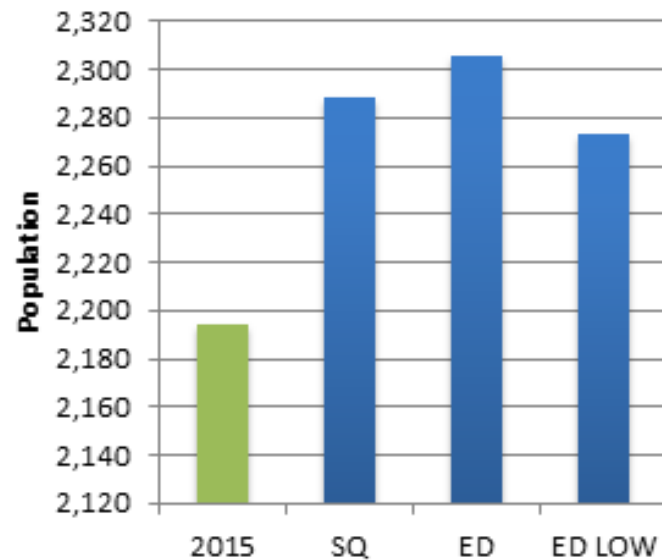


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SDA 11:

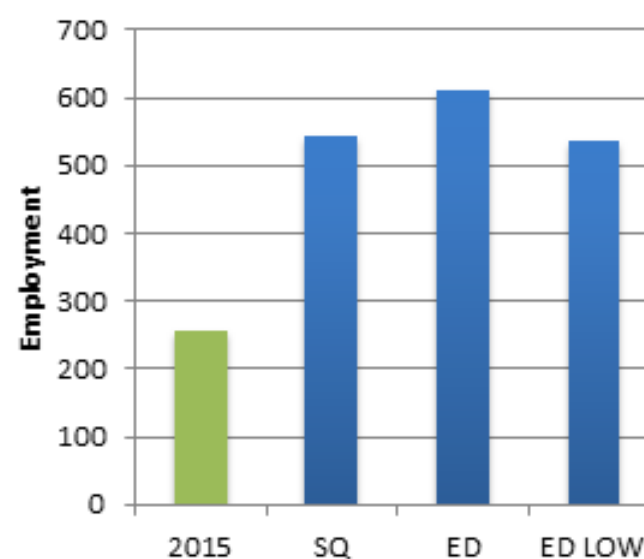
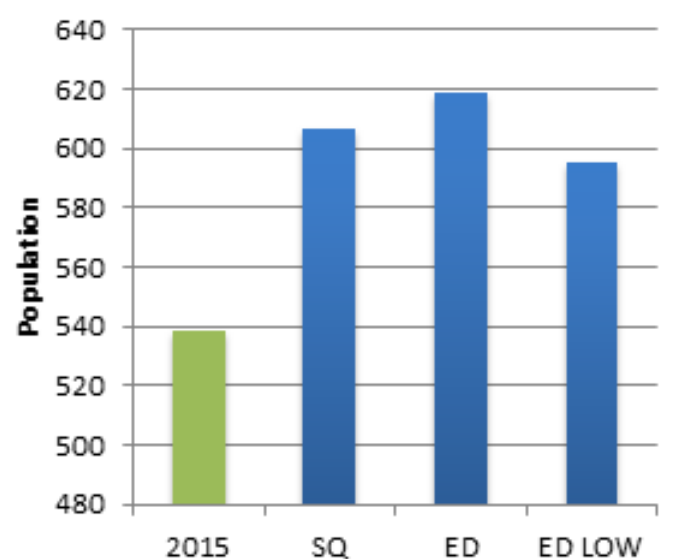
- This SDA is located in the region northeast of Wabamun Lake, on the north side of Highway 16. In 2015, this SDA was estimated to have a population of 2,200 and about 400 jobs. Employment was mostly in the industries of construction, other services, and professional, scientific and technical services.
- Population is expected to grow to approximately 2,300 by 2046 in both the Status Quo and Economic Diversification scenarios.
- In the Status Quo scenario, employment in SDA 11 is projected to increase to about 650 by 2046. In this case, mining, quarrying and oil and gas extraction, and construction will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to mining, quarrying and oil and gas extraction, manufacturing, wholesale trade and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 11



**SDA 12:**

- This SDA is located northwest of Wabamun Lake, on the north side of Highway 16. About 550 people and 250 jobs were located here in 2015. Employment was largely based in mining, quarrying and oil and gas and construction.
- Population in the Status Quo scenario is expected to grow to about 6,000 by 2046, and slightly higher at 6,200 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 12 is projected to increase to about 550 by 2046. In this case, mining, quarrying and oil and gas extraction, construction, and professional, scientific and technical services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to manufacturing, professional, scientific and technical services and construction.

Population and Employment Forecasts (2015 and 2046) – SDA 12

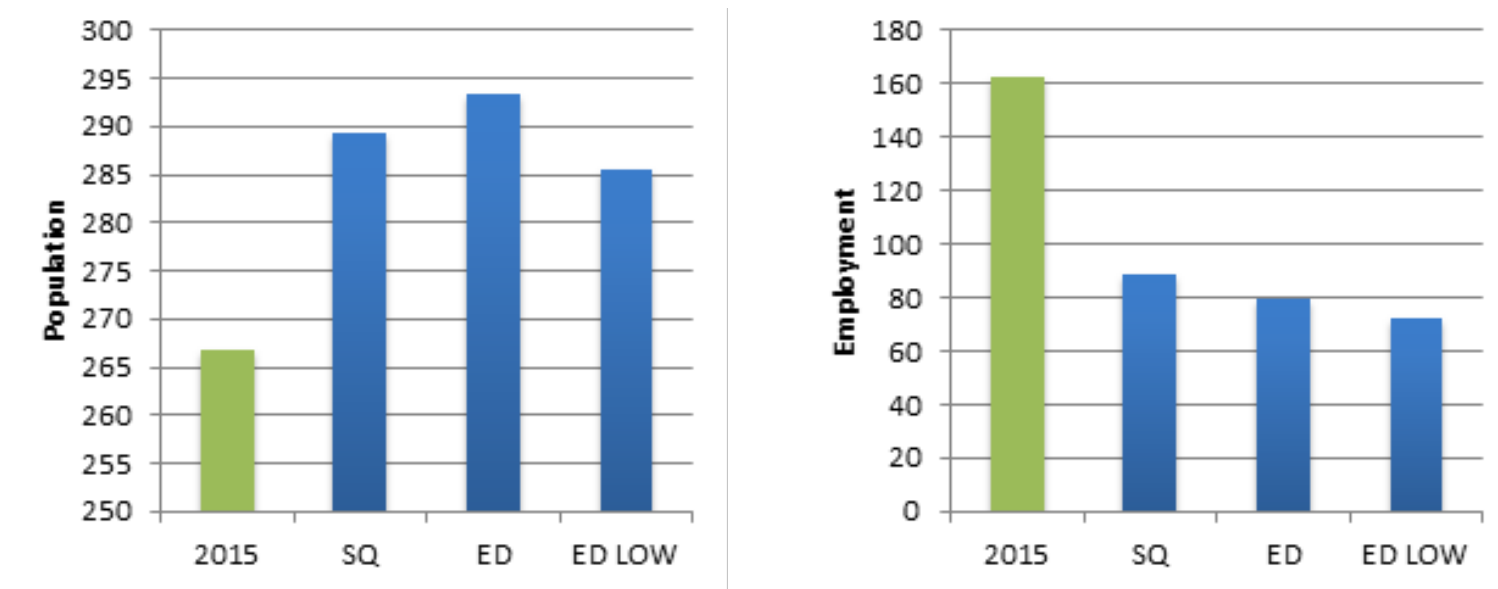


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SDA 13:

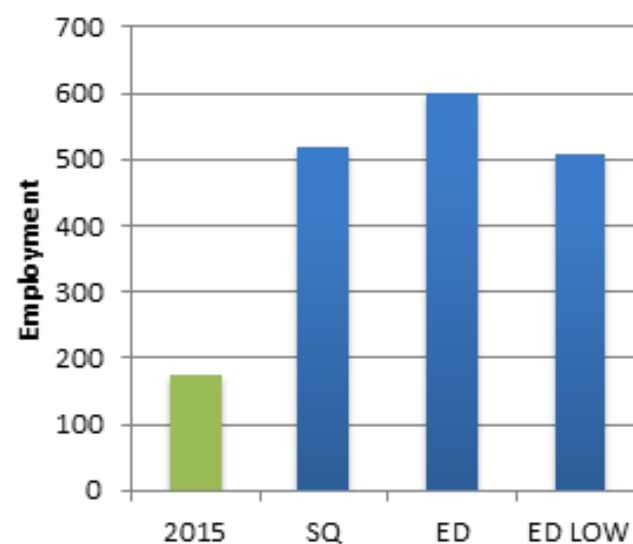
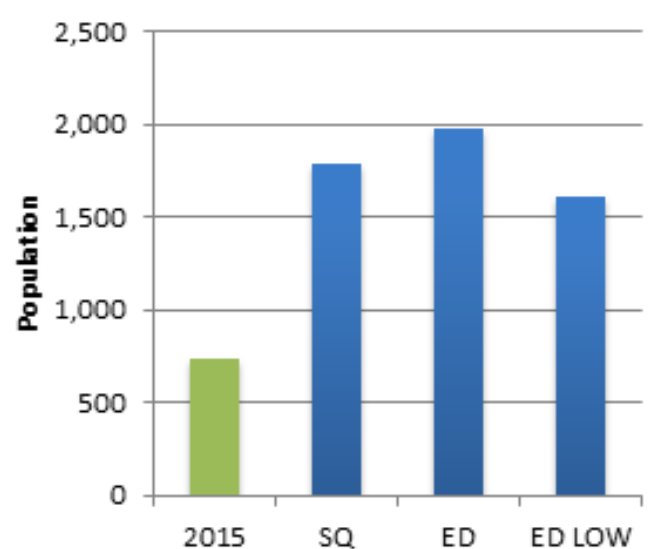
- This SDA is located in the northwest corner of the County. A population of 250 and employment of 150 was estimated here in 2015, with the majority of jobs in the mining, quarrying and oil and gas industry.
- Population is expected to grow to approximately 300 by 2046 in both the Status Quo and Economic Diversification scenarios.
- The Status Quo and Economic Diversification scenarios for SDA 13 both project very similar results in 2046. In both scenarios, employment is expected to reach nearly 100, with the majority of job growth driven by oil and gas, construction and educational services.

Population and Employment Forecasts (2015 and 2046) – SDA 13



**SDA 14:**

- This SDA covers the region in the west end of the County, south of Highway 16. In 2015, about 750 residents and 200 jobs were located here. The dominant industries were mining, quarrying and oil and gas extraction along with agriculture.
- Population in the Status Quo scenario is expected to grow to about 1,800 by 2046, and slightly higher at 2,000 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 14 is projected to increase to about 500 by 2046. In this case, construction, transportation and warehousing and professional, scientific and technical services will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 600 by 2046. In this case, most employment growth is related to construction, transportation and warehousing, and manufacturing.

Population and Employment Forecasts (2015 and 2046) – SDA 14

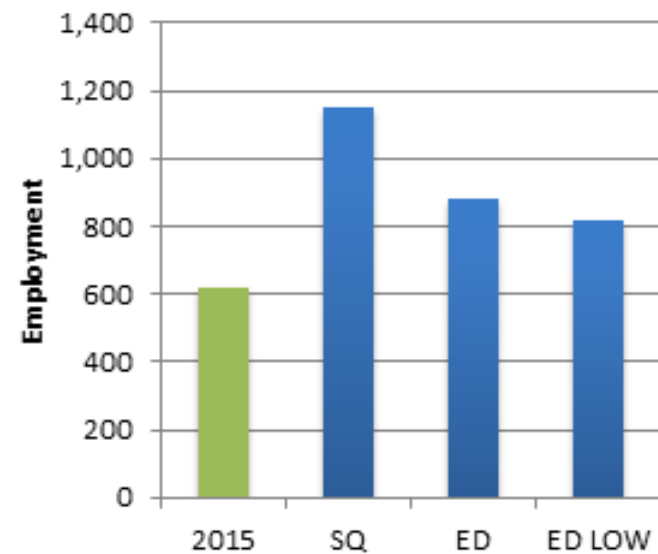
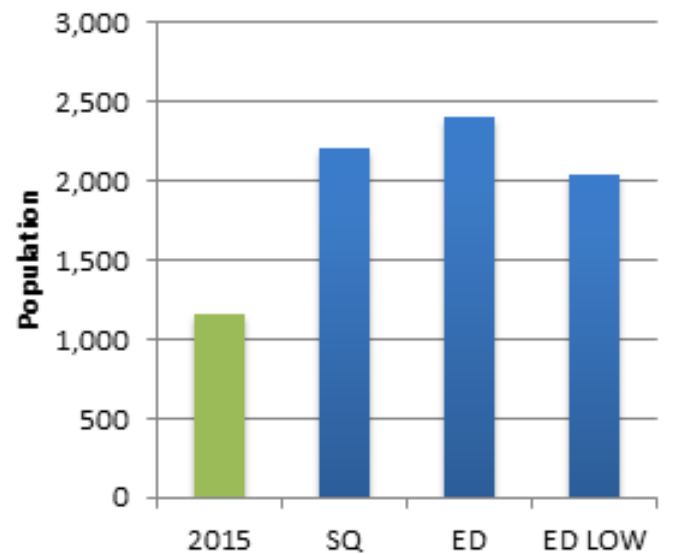


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SDA 15:

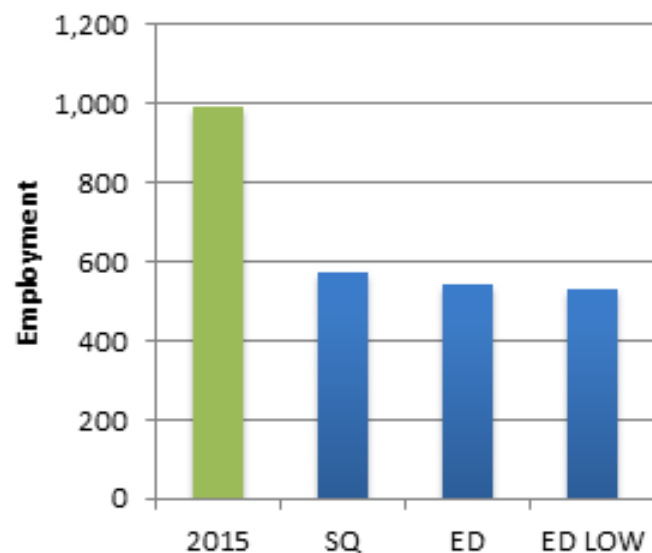
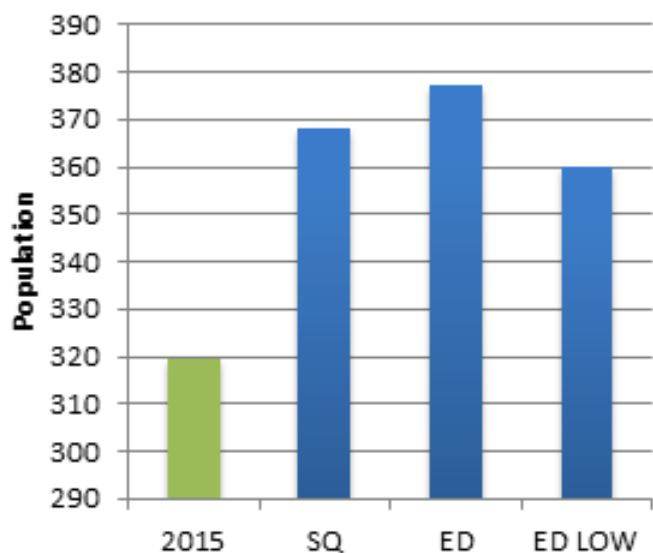
- This SDA is located in the southwest region of the County. In 2015, the SDA was estimated to have a population of about 1,200 and employment of 600. Most jobs were in the mining, quarrying and oil and gas and agriculture industries.
- Population in the Status Quo scenario is expected to grow to about 2,200 by 2046, and slightly higher at 2,400 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 15 is projected to increase to about 1,200 by 2046. In this case, mining, quarrying and oil and gas extraction, agriculture, and professional, scientific and technical services.
- In the Economic Diversification scenario, employment is expected to reach approximately 900 by 2046. In this case, most employment growth is related to mining, quarrying and oil and gas extraction, agriculture, and professional, scientific and technical services.

Population and Employment Forecasts (2015 and 2046) – SDA 15



**SDA 16:**

- This SDA is located south of Wabamun Lake in the central reclamation region of the County. In 2015, there were 300 people and 1,000 jobs located here. Most employment here was in the industries of mining, quarrying and oil and gas extraction and utilities.
- Population is expected to grow to slightly under 400 people by 2046 in both the Status Quo and Economic Diversification scenarios.
- The Status Quo and Economic Diversification scenarios for SDA 16 both project very similar results in 2046. In both scenarios, employment is expected to reach about 550, with the job growth dominated by mining, quarrying and oil and gas extraction.

Population and Employment Forecasts (2015 and 2046) – SDA 16

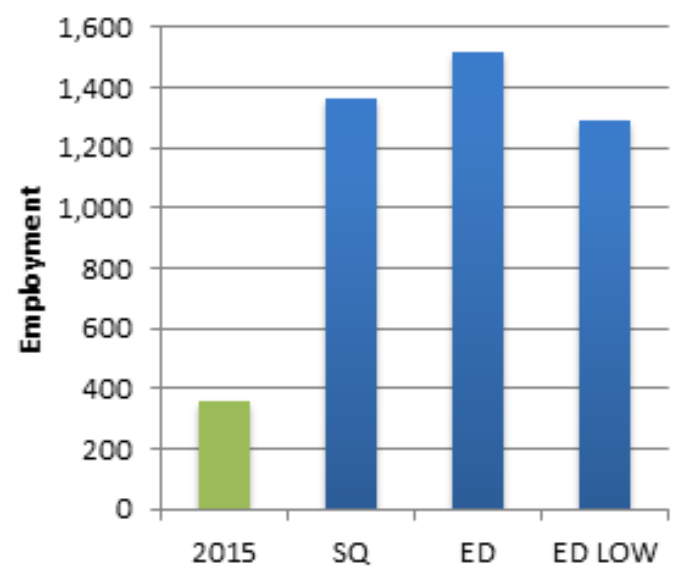
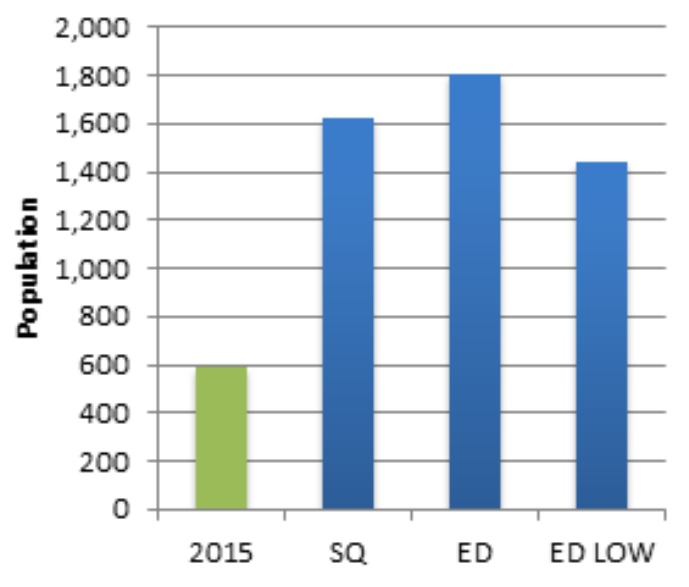


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SDA 17:

- Entwistle is located on the west side of the County. In 2015, its population was approximately 600. Of the 350 jobs located here, most were related to construction, educational services and mining, quarrying and oil and gas.
- Population in the Status Quo scenario is expected to grow to about 1,600 by 2046, and slightly higher at 1,800 in the Economic Diversification scenario.
- In the Status Quo scenario, employment in SDA 17 is projected to increase to about 1,350 by 2046. In this case, manufacturing, mining, quarrying and oil and gas extraction, and transportation and warehousing will largely drive job growth.
- In the Economic Diversification scenario, employment is expected to reach approximately 1,500 by 2046. In this case, most employment growth is related to manufacturing, and transportation and warehousing.

Population and Employment Forecasts (2015 and 2046) – SDA 17





1.1. Background to the Fiscal Impact Analysis

The fiscal impact analysis has been conducted using Applications' Municipal Fiscal Impact Model. This model incorporates assumptions about growth (as discussed above), as well as all significant factors important to determining the financial picture of the County under each of the growth scenarios.

The analysis includes a number of assumptions made by the consulting team. These assumptions have been based on a historical analysis of the County's financial position and practices. This analysis includes consideration of the following:

- The analysis is uses 2015 as a Base Year with selected information for 2016 and 2017 included in the analysis.
- All analysis results are presented in real 2015 dollars (\$) and as a result do not include inflation.
- The forecast period covers 30 years to 2046.
- The analysis utilizes an 'incremental' approach to evaluating the impacts of growth and development. In this analysis, the incremental cost and revenues associated with growth are estimated and included in the analysis. This approach considers what additional costs and revenues can be attributed to new growth, which differs from an 'average' cost approach which assumes that new growth will have the

same 'average' cost as existing development. Average cost analysis, for example, will overestimate costs by not reflecting overheads and fixed costs that do not change with incremental growth.

Expenditures:

- Operating Expenditures are projected based on the marginal (incremental) cost associated with growth (e.g. adding people, dwelling units and kms of roads). It is recognized that each cost function has overheads (or fixed costs) that do not change with growth. Only variable costs have been assumed to change and each cost function has been attached to a driver that best reflects how the demand for services in this area will be affected by growth.
- Capital Expenditures are projected to include both new infrastructure that will be required to accommodate growth as well as the refurbishment and replacement of existing (and new infrastructure as required) to maintain it at a minimum useful condition level.
- The financing of capital investments in infrastructure include consideration of various funding sources, including:
 - Grant funding
 - Dedicated reserve funding
 - Debt financing
 - Pay-as-you-go funding from operations
 - Other external sources of funding from developer contributions



- Developer contributed assets are included in the analysis as an on-going maintenance and life-cycle cost responsibility for the County.
- Non-Tax Revenues:
 - Operating revenues generated from user charges (by function area) have been estimated using a cost recover approach. Each function area has been assigned a cost recovery rate (based on historical practices).
 - Other non-tax operating revenues have been estimated for significant revenue categories, including: interest on investment income, rental income, licenses and permits, disposal of fixed assets, fines, franchise fees, and other non-tax revenues.
- Assessment growth has been projected on an SDA basis using the population, dwelling unit and employment projections for each growth scenario. The individual SDA assessment projections are aggregated to County wide totals for the purposes of calculating tax rates.
 - Linear assessment has been included in the analysis but not allocated to SDAs. It has been assumed that the County's linear assessment base will depreciate, on average, by 0.5% per year over the forecast period.
 - Assessment associated with existing coal fired power generation has been reduced in the Base Case to reflect the decommissioning and conversion of some of these units to natural gas.
- Tax Revenues: For each analysis, it has been assumed that the County's would balance it's operating budget from municipal tax revenues. These tax revenues have been determined by estimating the required municipal tax requisition and applying it to the aggregate tax base in each forecast year. It has been assumed that the municipal tax splits in for 2016 would remain over the forecast period.
- Debt has been used to fund a portion of the County's estimated

capital budget. The use of debt to finance future capital projects has been assumed to be consistent with historical levels of debt per capita and use of provincially regulated debt and debt service limits. The assumptions and analytical methods used in the Fiscal Impact Analysis will be documented in a report to be provided in conjunction with the Growth Study.

1.2. Financial Implications of Growth Scenarios

To determine the financial implications of growth, a Base Case financial forecast has been prepared for the County that assumes the County would not experience any new growth – a No Growth Scenario. This Base Case has been compared against each of the six Growth Scenario forecasts described above. In each of the forecasts, over the medium and long term, growth is expected to result in a net benefit to the County as expressed by a municipal tax rate benefit. That is, the County's rate of municipal tax increase is projected to be lower in each of the growth scenarios by 2046 relative to the rate of increase found in the No Growth Scenario. The County wide aggregate results of this analysis are presented in the figure below.

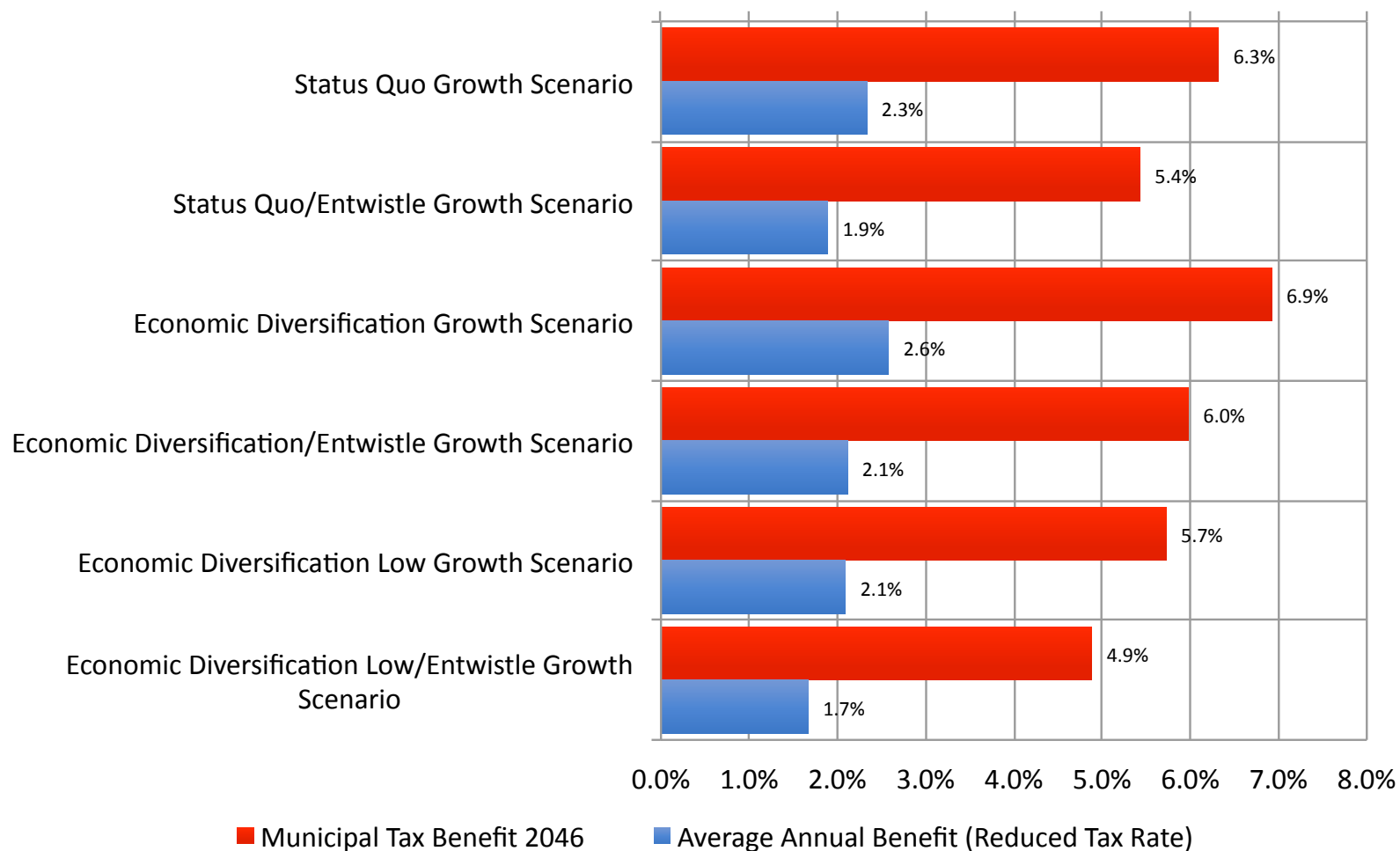
While the tax benefits of growth vary across scenarios and vary across the forecast timeframe, the analysis of each scenario indicates that growth can have a net positive impact on the financial position of the County. This is exemplified by an average annual benefit that ranges from 1.7% to 2.6% per year, depending on the scenario.

Further, the benefits of growth tend to increase over time, resulting in lower municipal tax rates in each of the growth scenarios as compared to the No Growth Scenario, at the end of the forecast. This tax benefit ranges from 4.9 % to 6.9%, depending on the scenario.

Note that these results are based on the analysis of real 2015 dollars,



Municipal Tax Benefit From Growth





APPENDIX

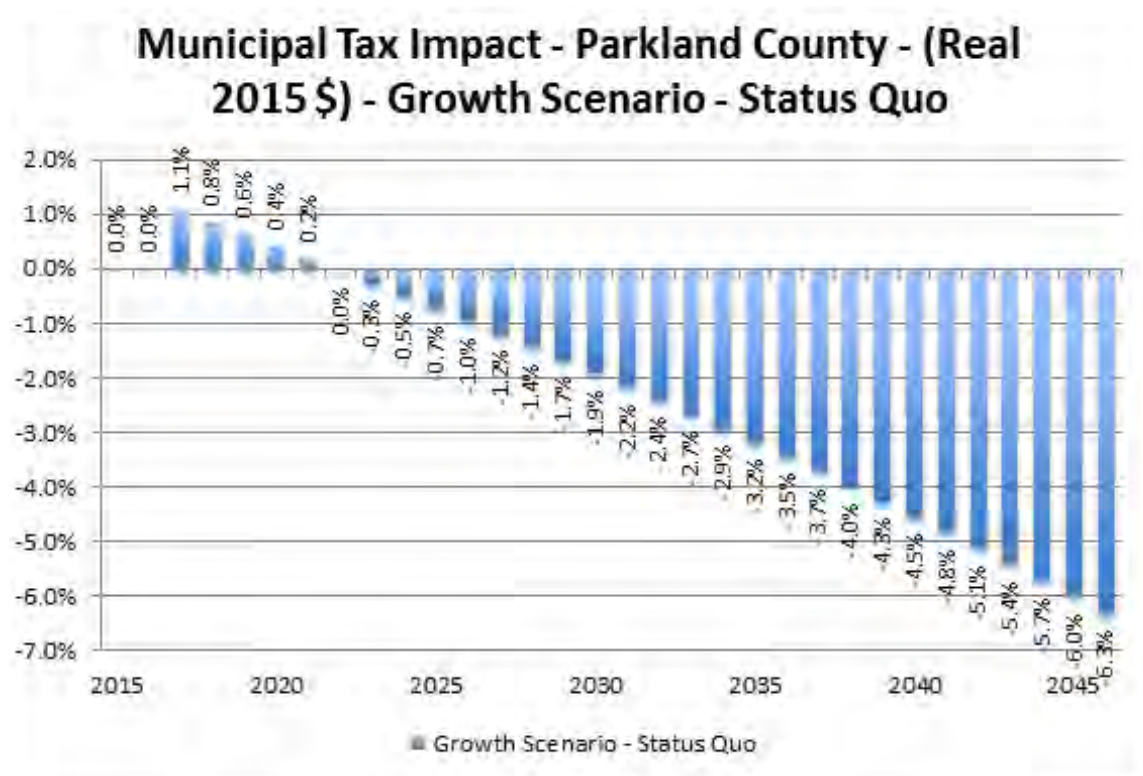
which excludes inflation.

For each scenario, the benefits of growth vary over time, with an initial dis-benefit as measured by an increase in tax rates for the first few years, then turning to a benefit of reduced municipal tax rates. The results for the Status Quo Growth Scenario illustrate this general pattern of impact.

In the Status Quo Scenario, municipal tax rates are initially 1.1%

above those projected for the No Growth Scenario. However, after 7 years, growth in the Status Quo Scenario will begin to have a net benefit to the County. In the Status Quo Growth Scenario, the tax rate benefit from growth results in lower municipal tax rates in 2046 than would be the case in the No Growth Scenario. This does not mean that taxes will go down over time, but rather the rate of tax increase will be lower with growth than if no growth were to occur.

The initial increase in municipal tax rates resulting from growth





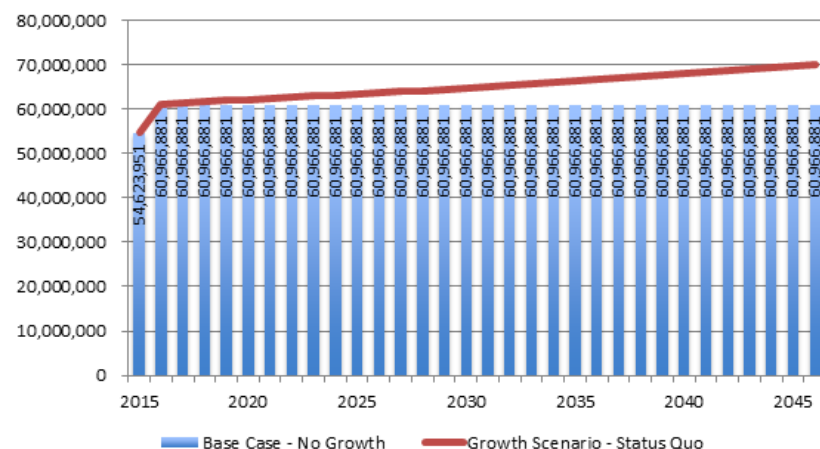
reflects the additional costs to support development and services. These costs are reduced as growth proceeds and reaches a critical mass, after which net savings occur.

Economies of scale in the delivery of municipal services plays an important role in growth resulting in a net benefit. As growth occurs, it is possible for the County to spread service overhead costs over a larger base, resulting in a reduction in unit costs.

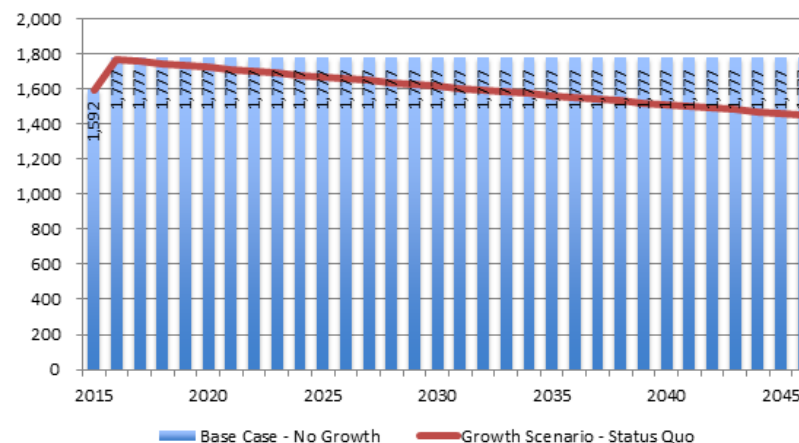
The following figure shows how municipal operating expenditures are projected to increase in the Status Quo Growth Scenario. While the Base Case has no growth, and no resulting increase in operating expenditures, there is a considerable increase in total operating expenditures in the Growth Scenario, increasing from approximately \$55 million in 2015 to over \$70 million by 2046.

Over the same period of time, growth results in these costs on a per

**Operating Expenditures - Parkland County -
(Real 2015 \$)**



**Operating Expenditures Per Capita - Parkland
County - (Real 2015 \$)**





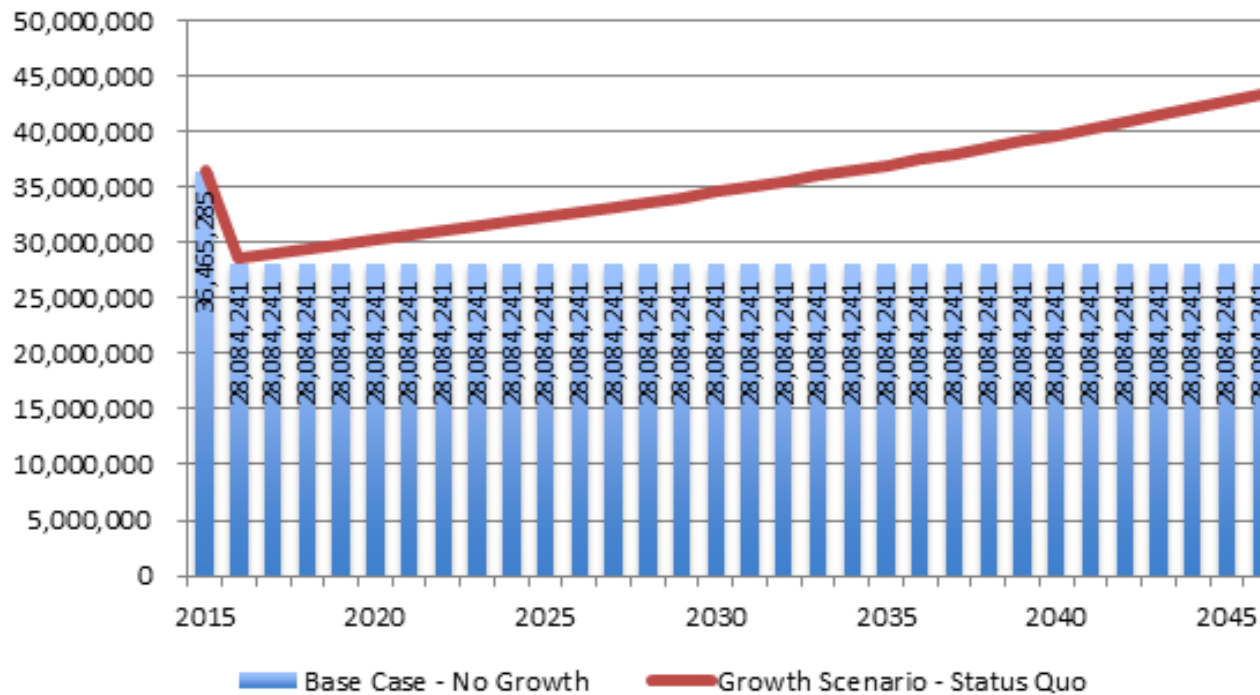
APPENDIX

capita basis to decrease. This is illustrated in the next figure, which shows that operating expenditures per capita will decrease to approximately \$1,450 from almost \$1,800 in the Base Case.

both to accommodate growth as well as maintain existing and future infrastructure at a minimum service level. The total investment in infrastructure for the County is projected to increase to over \$43 million by 2046 in the Status Quo Growth Scenario.

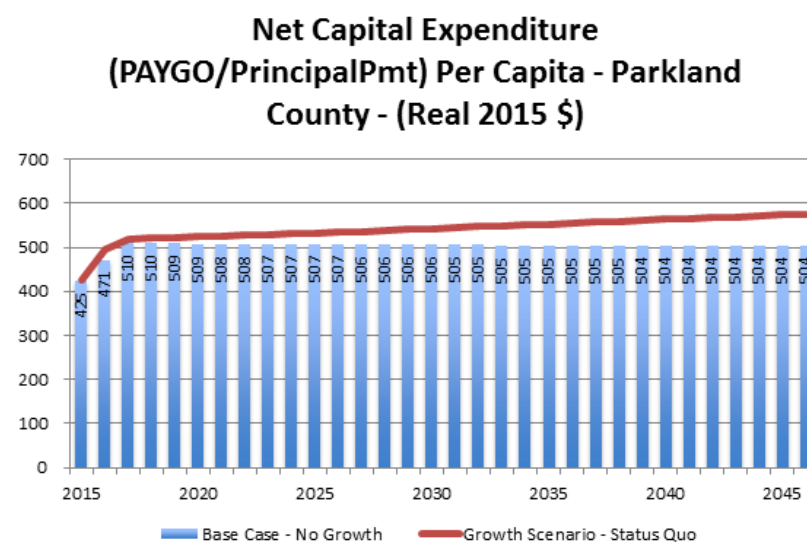
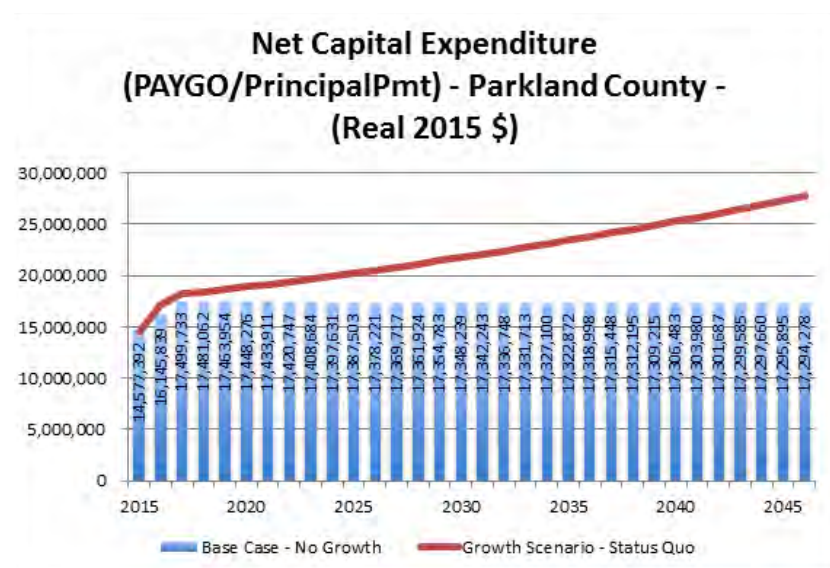
Important to the forecast is the expected investment in infrastructure,

Total Capital Expenditures - Parkland County - (Real 2015 \$)





Once funding considerations are incorporated, the net impact of the investment in infrastructure on County ratepayers as measured by contributions from operations and repayment of debt, the net capital cost increases to approximately \$28 million by 2046. Net capital expenditures are equal to total capital expenditures for new infrastructure and the life cycle costs of existing infrastructure minus those





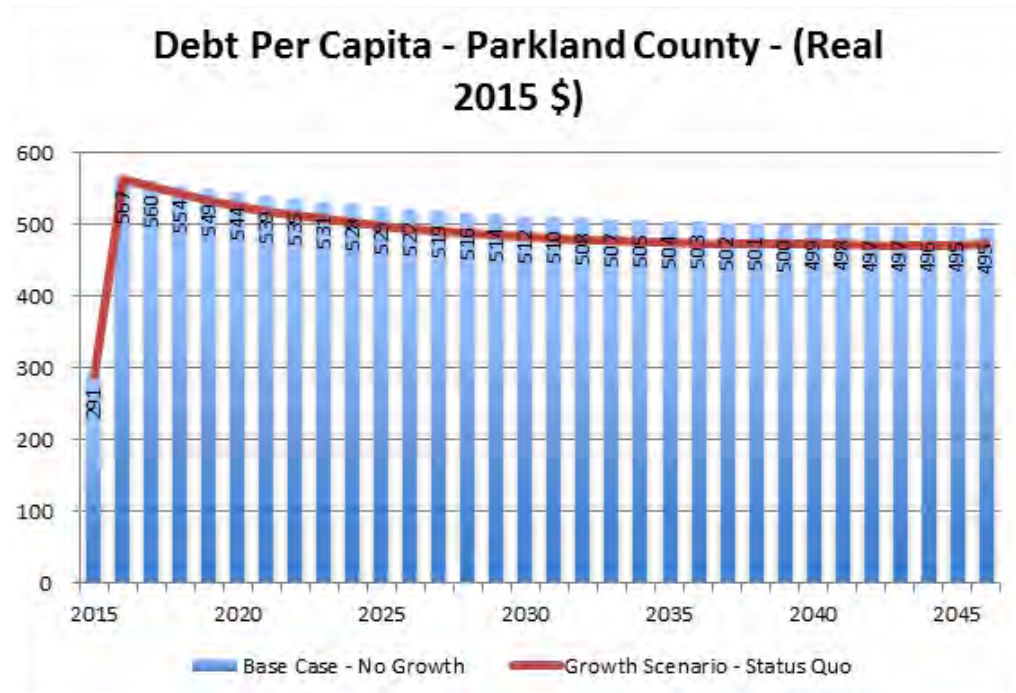
APPENDIX

capital expenditures that are financed from funds external to the County (e.g. grants, developer contributions, etc.). The Net capital expenditures are those that are tax or debt financed by the County.

On a per capita basis, this cost is approximately \$575 per capita in 2046. Unlike operating expenditures, net capital expenditures are projected to increase with growth over the forecast period. This reflects the full reinvestment in required to maintain the County's existing and acquired infrastructure, as well as fund new infrastructure

to accommodate growth.

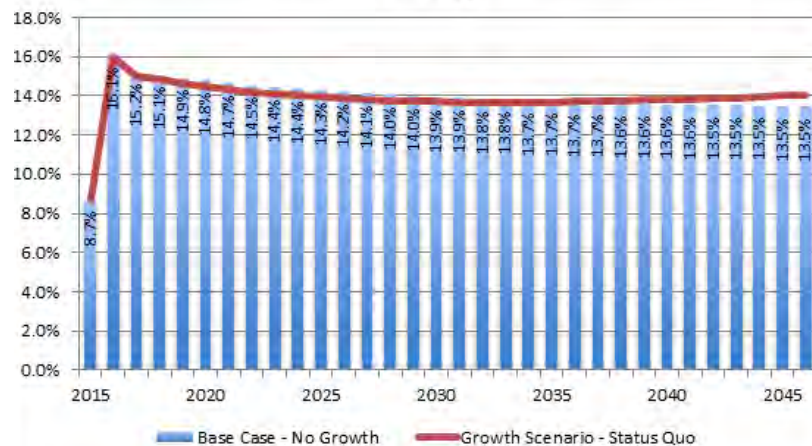
It is intended that the impact of growth be largely directed to changes in municipal tax rates. However, there are other parameters that are important to consider and can't be 'held constant' in any analysis. As a result, it is important to review other metrics to consider the full municipal finance impact of the analysis.



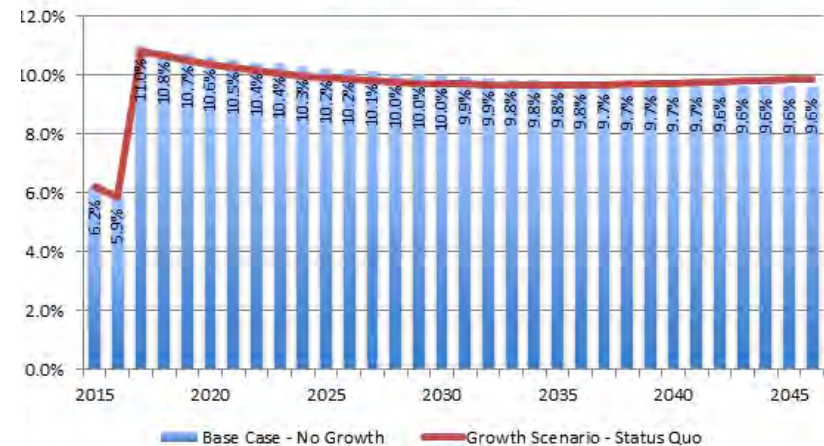


Debt has been used as one of the methods to finance capital projects. After incorporating assumptions about the availability of funding from

Debt Limit Used - Parkland County - (Real 2015 \$)



Debt Service Limit Used - Parkland County - (Real 2015 \$)





APPENDIX

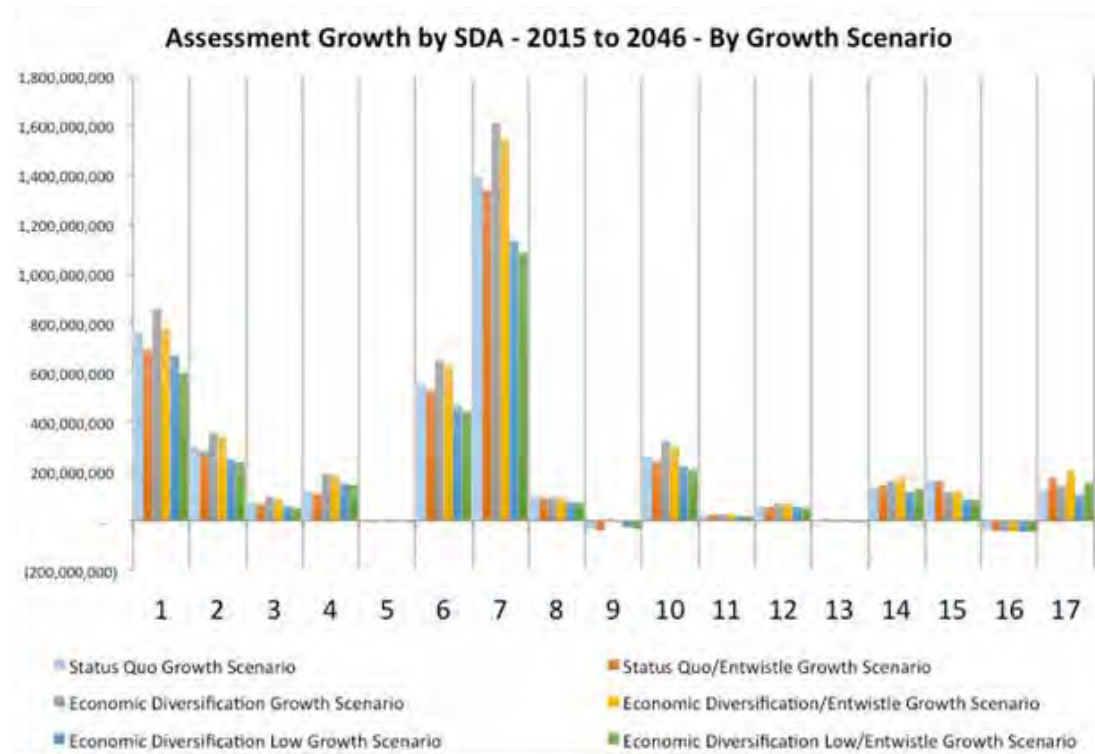
grants, developer contributions and other external sources, funding of infrastructure that is the municipal responsibility is split between operations and debt. Operating contributions to capital is reflected in the net municipal tax requisition which flows to the municipal tax result. Debt has been measured using net debt per capita and debt and debt servicing limit calculations.

Debt per capita in the Status Quo Growth Scenario remains relatively flat (after 2016) in both the Base Case and Development Scenario.

This level of debt allows Parkland County to remain well within its debt and debt servicing limits as depicted in the following figures.

Fiscal Impact Analysis Result Detail

The summary of selected fiscal impact results for the Status Quo Growth Scenario presented above are available for each of the Growth Scenarios.

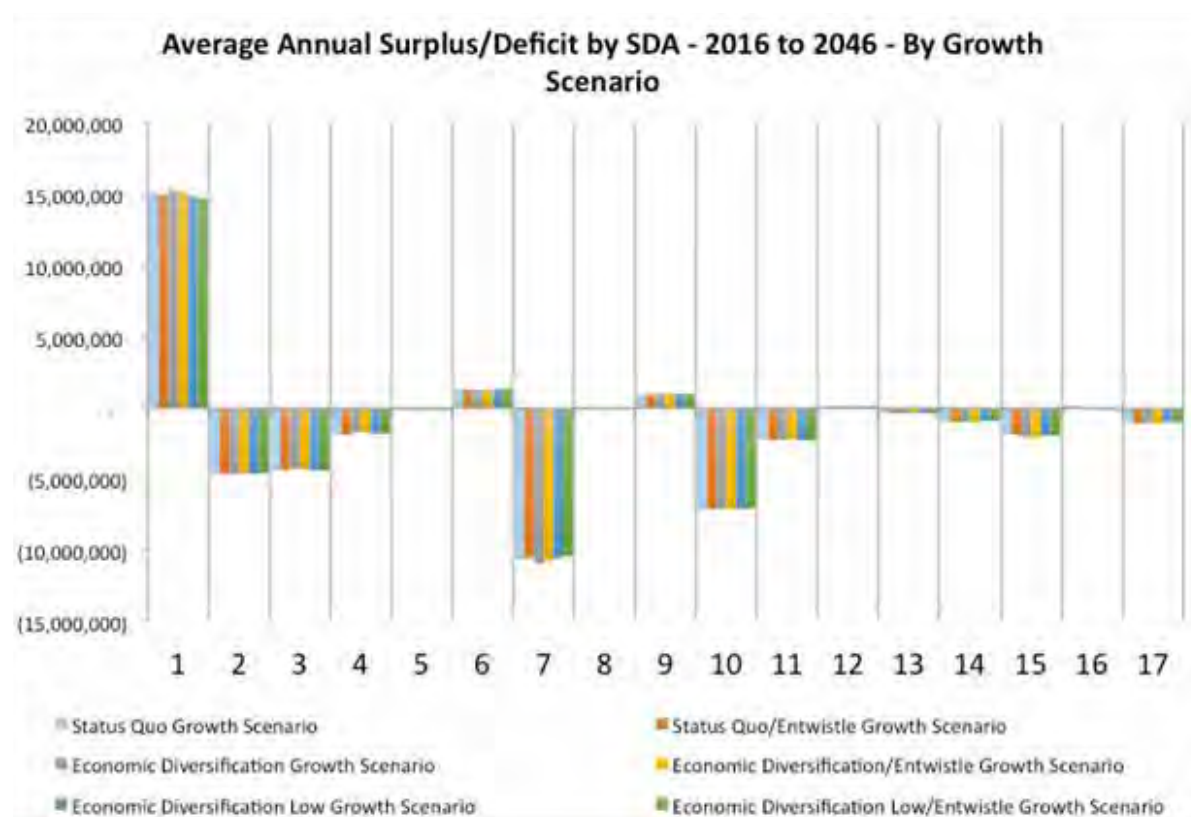




1.3. Sub-Regional Fiscal Impact Analysis Results

The fiscal impact analysis has been conducted for each of the SDAs identified for this project. County wide costs have been allocated to SDAs based on the share of population, employment and length of roads. Operating (non-tax) revenues have been allocated to SDAs based on population and employment. Municipal tax revenues

have been calculated for each SDA based on County Wide tax rates determined to balance the County's operating budget in each year of the forecast. These rates have been applied to the estimated assessment in each SDA. Growth in SDA assessment is based on the Growth Scenario Forecasts. The resulting projected change in total assessment by SDA is summarized in the figure below.



NOTE: This analysis excludes municipal revenues from linear assessment.



As noted in the figure above, SDA 1, 6 and 7 are projected to generate the most significant increases in assessment. The assessment growth in SDA 1 is exclusively non-residential growth. Most of the growth in SDA 6 & 7 is residential. SDA 9 and 16 show a net decline in assessment associated with the decommissioning of coal fired power generation. Some of this lost assessment is offset by increases in assessment associated with other commercial and industrial activity.

Fiscal Impact Analysis Result Detail

An analysis of the financial position of each SDA includes all the cost and revenue factors included in the County Wide analysis – except tax revenues from linear assessment. Based on this analysis, the net contribution (positive/negative) to the County Wide bottom line is summarized in the figure below.

The average annual net surplus or deficit that each SDA contributes to the County's total financial position is comprised of three SDAs that make a positive contribution – generate a positive total revenues with the others being in a net deficit position. The three positive contributing SDAs are as follows:

- SDA 1: This is the Acheson industrial area and has relatively low municipal costs that are applied against significant non-residential tax revenues generated from both existing and future development in this area.
- SDA 6: This is primarily a Country Residential area that has significant assessment per unit which results it in being a net contributor to the County totals.
- SDA 9: The decommissioning of existing coal fired power generating facilities in this SDA reduces its net contribution to the County's total

revenues. However, with conversion of some units to natural gas and alternative development projected for the area, SDA 9 will continue to be a positive contributor to the County's bottom line.

It is noteworthy that the County's two most densely CR developed SDAs (7 & 10) have the largest financial drain. This is a result of both the existing amount of CR development as well as the relatively significant population growth allocations to these areas in the Growth Scenarios.

The other SDAs which have been allocated some significant population growth have offsetting non-residential activity which improves their net deficit position. This includes SDAs 2, 3, and 17.

1.4. Hamlet Fiscal Impact Assessment

Established hamlets exist in SDA 10, 15 and 17. The results for SDA 10 and 15 include the assumptions related to growth of these hamlets as well as other activity in each SDA. To evaluate the fiscal impact of hamlet development, we have focused on SDA 17 and the implications of growth of Entwistle on the County's fiscal position.

Cost/Revenue Allocations

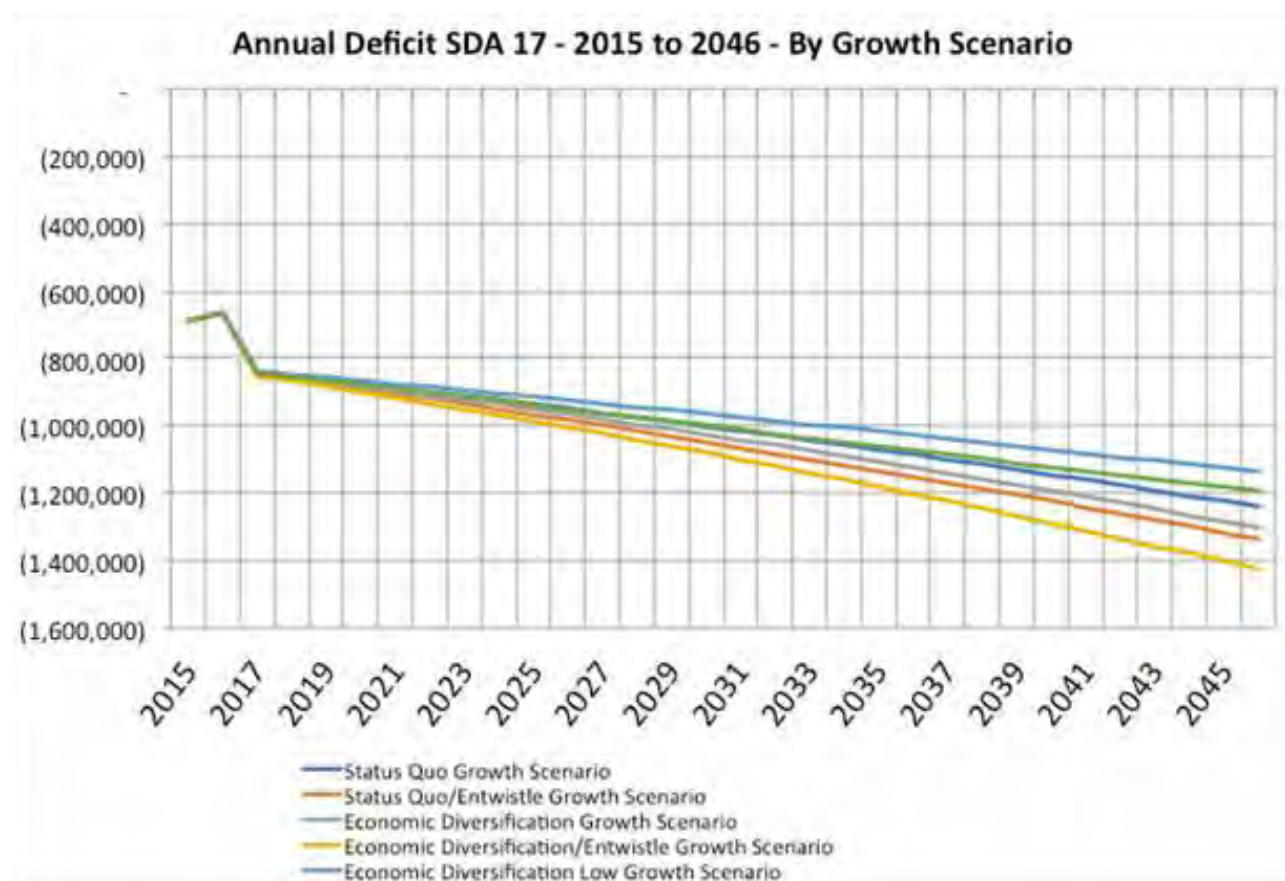
As noted above, an allocation of costs and revenues from the County Wide estimates to each SDA utilized a combination of factors including population, employment and length of roads. In the case of Entwistle, these estimates were compared to historical data for villages in Alberta that were approximately 400 people in size. It was found that the allocated costs of delivering municipal services to the community were similar to the province wide average. Operating revenues in the province wide analysis were higher than the allocated revenues for SDA 17. This is expected to be a result of Villages in Alberta having



higher user and other service costs to help support service delivery, as compared to those for Parkland County, which is more easily able to support a larger proportion of these costs on a larger and diversified tax base. It was found that the average annual municipally supported capital costs for villages in Alberta were significantly less than those estimated for SDA 17. It is expected that generally, Villages expenditures on infrastructure generally falls within available grant funding and that

these municipalities are likely in a larger infrastructure deficit than the County and SDA 17.

As a result of this comparative analysis, the lower non-tax revenues and full allocation of capital costs to SDA 17 result in this being a higher net cost urban area than comparable villages across Alberta. However, this is result likely more reflectively of the true cost of deliv-





ering municipal services than reported by similar sized municipalities without the financial resources of Parkland County.

SDA 17 (Entwistle) Fiscal Impact Results

Currently SDA 17 is a net drain on the County's fiscal position by approximately \$0.7 million per year. In each of the Growth Scenarios, this deficit is projected to increase. The amount of the increase in deficit depends on the Growth Scenario. Over the forecast period, the annual deficit is project to increase to approximately \$1.2 to \$1.4 million per year.

It is noted that the increase in deficit of SDA 17 occurs in spite of employment growth exceeding population growth in each of the Growth Scenarios. Thus, while population growth is significant, and contributes to an increasing net cost of SDA 17, the increase in jobs and associated non-residential assessment is not sufficient to offset this increase in these costs.

This result is typical of analysis of urban municipalities. Residential development in almost all instances is subsidized by non-residential development. Complicating this reality for Parkland County is the application of municipal tax rates to the SDA that balance the County Wide requirement for revenues and are not customized to the balance of growth and costs associated with delivering municipal services in the SDA.

A more favourable financial result could be achieved for SDA 17 if it were to be identified as a special benefiting area or if Parkland County

were to become a Specialized Municipality with the power to levy different municipal tax rates in designated urban areas where service levels and associated costs are different than for the rest of the municipality.

1.5. Country Residential (CR) Fiscal Impact Assessment

As noted above, SDAs which significant amounts of existing and allocated CR growth are projected to have a net drain on the County's fiscal position. A notable exception to this general result is SDA 6 which is primarily CR development, but provides a positive net contribution to the fiscal position of the County. As has been analyzed elsewhere, the fiscal impact of Country Residential development is difficult to assess and often location and circumstance specific.

Country Residential Impacts

It is difficult to determine the financial implications of County Residential development because these impacts depend on a number of factors and circumstances. For example, if a vacant approved CR lot has one housing unit developed on it which houses three people, the impact on the County's demand for services will be negligible. No new roads or additions to services will be required. The traffic impacts resulting from this additional dwelling unit and family will be negligible. In this example, the additional dwelling unit will generate municipal property tax revenues and no significant incremental costs to the County, resulting in a net benefit to the financial position of the County.

At the other end of the development spectrum, if there is a section of CR development that is located in a part of the County with a lot of existing CR development and population, there would be potentially an increase in the population of the County by, say, 1,500 people.



The County would inherit responsibility for new internal roads and there would be some considerable increase in demand for municipal services from the County and perhaps from the County's urban neighbours. There may also be, with this development and in conjunction with other CR development in proximity to this development, a need to upgrade roads to accommodate additional traffic volumes. In this instance, it is clear the County would face some significant additional costs to provide services to this development. The question is whether the tax and non-tax revenues that would be generated from this development would be sufficient to offset these costs.

Country Residential Break-Even Analysis

To evaluate the impact of future country residential growth, a sub-model has been developed to evaluate the potential financial consequences of this growth under varying circumstances. The results of this analysis indicate that, generally, the more intense the CR development, the greater the costs to the County. Further, these costs can be offset by density and higher assessment values.

Using the 'incremental' approach to the fiscal impact analysis noted above, the impact of CR development on the County will depend on several factors, including how much development is planned, where it occurs, and the resulting demand for municipal services that will result.

The inputs to the Break-Even Analysis include the following:

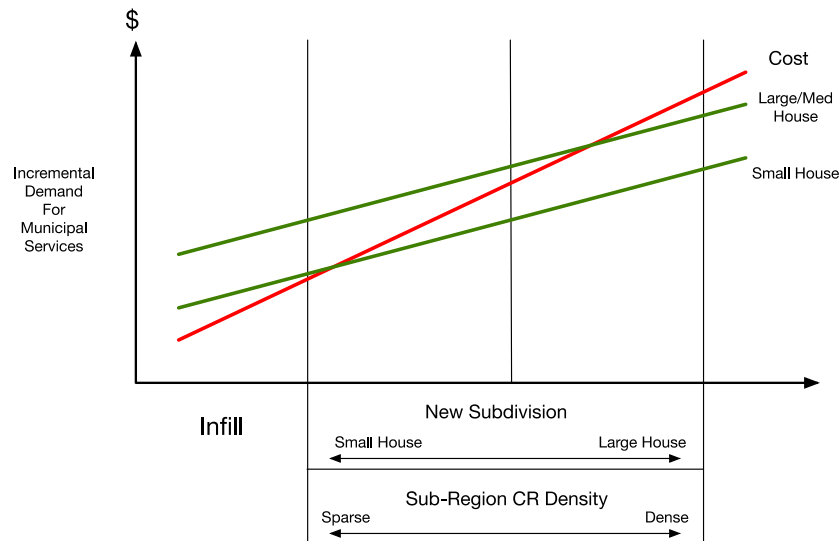
- Type of CR Development:
 - Infill – development of a dwelling unit on a vacant lot in an existing CR subdivision.
 - New Subdivision

- House Size
 - Small House: \$500,000 total assessment
 - Medium / Large House: \$850,000 total assessment
- Subdivision Size
 - Small: ¼ Section
 - Large: 1 Section +
- Sub-Region CR Density
 - Sparse: No other CR developments within 1-2 miles
 - Dense: 3-4 CR developments within 1-2 miles

The general relationship of these variables and resulting costs and revenues are depicted in the figure below. Where revenues (green line) exceed costs there is a resulting net benefit to the County.



Relationship of Costs / Revenues – Country Residential Development

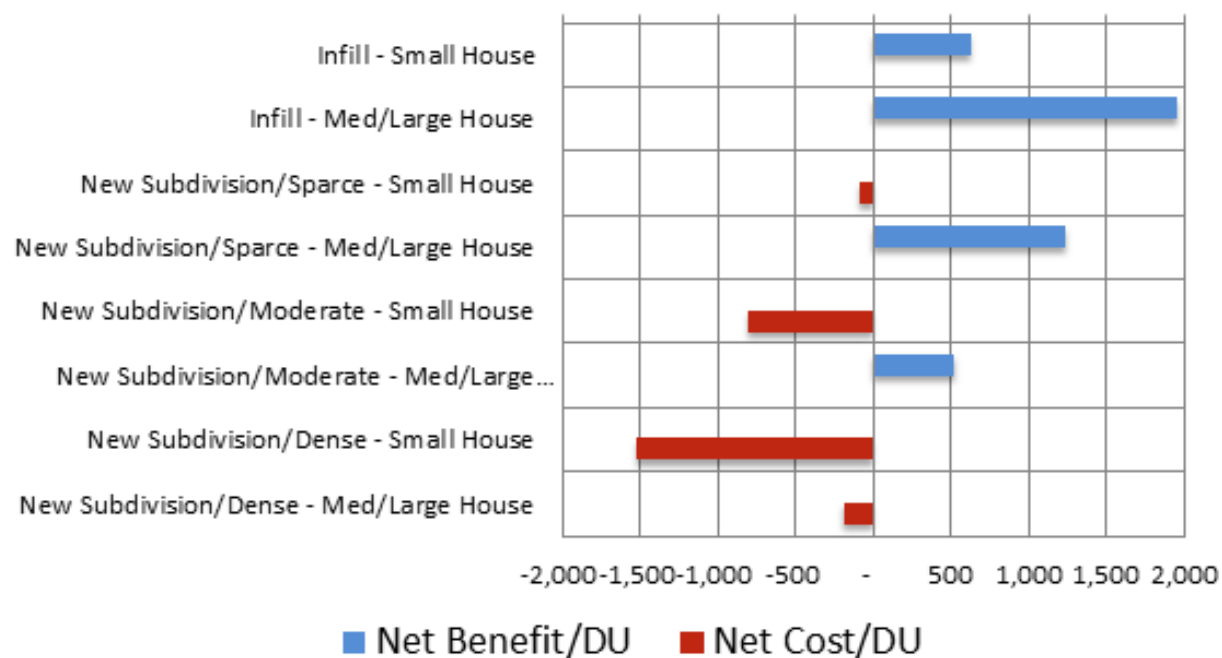


Using results from the Fiscal Impact Analysis above, the incremental costs and revenues associated with each CR development scenario have been estimated with the results depicted in the figure below.

- New Subdivision / Sparse Sub-Region CR Development: A new CR subdivision that is small and not within proximity to a cluster of other CR subdivisions can break even or result in a net benefit to the County. Where this new CR subdivision increases in size and is in proximity to other CR development, it is estimated that it is just as likely to result in a net cost as a benefit, depending on the size of dwelling unit and associated assessment.
- New Subdivision / Dense Sub-Region CR Development: Where a new CR development is located within a cluster of existing CR development, it is likely that there will be a subsequent increase in demand for municipal services that will result in the municipal costs associated with that development exceeding revenues, even where the development is generally of large housing units with high assessment values.
- Infill CR is expected to generate a net benefit to the County regardless of house size (and assessment). The larger the dwelling units and associated assessment, the greater the net benefit. It should be noted that if there is a significant amount of Infill CR in a cluster of existing developments that are in close proximity, this may alter the result to being negative if there is a sufficient increase in demand for municipal services and required arterial road upgrades.



Country Residential Impact Per Dwelling Unit by Scenario





2. Supporting Fiscal Success through Planning Practice

The fiscal outcomes of growth and development are inextricably linked to the planning decisions of a municipality or region. The pattern of land use growth, the balance of residential and non-residential land uses, the capital planning for infrastructure, the density of development and other considerations all add up to the fiscal health of a municipality.

There are certain best planning practices that reduce the overall cost of development and increase the likelihood of success within priority strategic development areas. Together, these planning practices form the tools that Council can use, as needed and appropriate, to support their goals for an improved assessment base through its planning and budgeting decisions.

As a general principle, higher intensity residential development is often a net drain on a municipality due to the services, roads and infrastructure demanded by residents. There is a “tipping point” at which the assessment generated by residential development does not pay for the costs of services for the residents, especially once paved roads, piped servicing and community facilities become necessary due to resident demand. However, despite a net draw on finances there are often good social and community reasons for providing residential development. To balance the cost of residential development, non-residential assessment is required to offset the costs of providing these services. Large industrial developments like Acheson are important to “subsidize” other development forms across the County.

Working towards balanced growth is a key strategy to improving the County’s assessment base. To improve the outlook on residential growth areas, the following provides a brief summary of strategies that may be employed to promote a better residential to non-residential assessment balance across the County:

1. Working towards a strong supply of (especially serviced) industrial land offers a significant non-residential assessment base to support the other goals of the County;
2. Promoting non-residential growth (agriculture, small holdings, commercial, mixed use, light industrial) in and around residential areas, including in and around country residential areas and hamlets, supports a better residential to non-residential assessment balance. In addition to fiscal benefits, when employment and local commercial services are provided in proximity to residential, it builds more complete communities;
3. Updating area structure plans for large country residential areas to incorporate economic considerations enables a better understanding of the fiscal consequences of the proposed plan. Supporting area structure plans with a detailed fiscal impact analysis helps to understand the trade-offs of the proposed land use pattern;
4. Supporting infill in existing hamlet and country residential areas in ways that do not create demand for new infrastructure maximizes the value of existing infrastructure investments. In general, investing in existing infrastructure is less costly than building new infrastructure;
5. Identifying the unique qualities of Parkland County in the region and promoting these niche markets in planning policy helps to support growth in these opportunities. This can be achieved through the use of land use policy overlays or other policy tools that identify the kinds of land uses and business synergies the municipality wishes to promote and where they should locate. For Parkland County, tourism, agri-tourism, agri-cultural diversification and value-added agriculture processing



were identified as key opportunities for economic diversification and overlay policy tools;

6. Prioritizing hamlets sends a signal to the development community which hamlets are open for employment growth, diversification and intensification. This is not an indication that all County investment will be directed to hamlets, but that the County wishes to see these hamlets become local service centres and become a source of employment and services. Investment in infrastructure would be planned through hamlet redevelopment plans and capital budgets according to Council goals; and
7. Exploring and supporting programs or policies that transfer density and/or development rights to reduce the impact of a large country residential land supply and to add value through the protection of key environmentally sensitive areas.

These strategies are supported through the policies of the MDP to ensure Council has a range of tools at its disposal to work towards a strong fiscal position as part of the land use planning process.

An aerial photograph of a suburban neighborhood. In the foreground, there are several houses with varying roof colors (brown, grey, white) and green lawns. A paved road runs horizontally across the lower third of the image. In the background, a dense forest of trees with green and yellow foliage covers a hillside. A large metal trestle bridge spans across the top of the image, with a freight train consisting of several red and blue railcars crossing it.

APPENDIX D

HAMLET & EMPLOYMENT AREAS FACT SHEETS



ENTWISTLE – PRIORITY GROWTH HAMLET

A. Community Profile

Entwistle is located on the western edge of Parkland County on the east bank of the Pembina River, along Provincial Highway 16 and the Canadian National Railway railroad. Some services are shared between Entwistle and Evansburg, which is located on the other side of the Pembina River in Yellowhead County.

B. Population

Year	1971	1976	1981	1986	1991	1996	2001	2005	2006	2009	2011	2016
Population	353	380	462	478	460	453	404	545	441	534	359	389

*Note: ISL Community Scan (2015) notes there may be an error in the 2005 and 2009 municipal censuses

- Current population: 389 people (2016 Federal Census)
- Projected Population to 2046 (Applications Management): 1,804 people
- Projected Dwelling Count: 524 units (uses Parkland County average of 2.7 people per household according to StatsCan)
- Preliminary Land Demand for Residential if future growth complies with the Edmonton Metropolitan Region Growth Plan Density Target for Growth Hamlets of 20 dwelling units per net residential hectare: 26ha for new residential development

C. Growth Rate:

The average annual rate of population growth from present through to 2046 is 3.7% under the Economic Diversification – Entwistle High Scenario as referenced in the Technical Growth Study.

D. Community Services:

Entwistle School (K-9), Grand Trunk High School (7-9) *In Evansburg, Entwistle Public Library, Gas Stations, Banks, Food Market, Canada Post, Professional Services, Tourism development related to Pembina River, Restaurants, Medical Centre (in Evansburg).

E. Land Use

Currently, the Entwistle ASP area has approximately 113ha of absorbed land and approximately 337ha of available land (excludes the Pinnacle pellet plant development lands). For the purposes of this fact sheet, “absorbed land” indicates land that is fully developed for its intended purpose or is not likely to intensify. Lands zoned to protect environmental features or developed for public service uses are assumed to be absorbed. “Available lands” are lands that are undeveloped or are underdeveloped and could be intensified over time.



APPENDIX

Total Area	+/-Area (ha)
Entwistle ASP Area	560
Entwistle Hamlet Boundary	190

Absorbed and Available Land	+/-Area (ha) within ASP	% of ASP
Absorbed Residential or Non-Residential Improvements	113	20.25
Available Land	337	60.15

	Total		Absorbed		Available	
Land Use	+/- Area (ha)	%	+/- Area (ha)	%	+/- Area (ha)	%
Agriculture Restricted District	272	48.48	13	4.88	258	95.12
Entwistle Urban Village District	89	15.81	20	22.07	69	77.89
Agriculture/Nature Conservation District	54	9.69	54	0.00	0	9.69
Agriculture General District	1	0.16	0	0.00	1	0.16
Conservation District	8	1.38	8	1.38	0	0.00
Public Service District	10	1.82	10	1.82	0	0.00
Business Industrial District	8	1.49	3	0.56	5	0.93
Highway Commercial District	6	1.01	2	0.38	4	0.63
Medium Industrial District	3	0.48	3	0.48	0	0.00
Recreation District	0	0.08	0	0.08	0	0.08
Road/Rail	110	19.59				

F. Economic Development

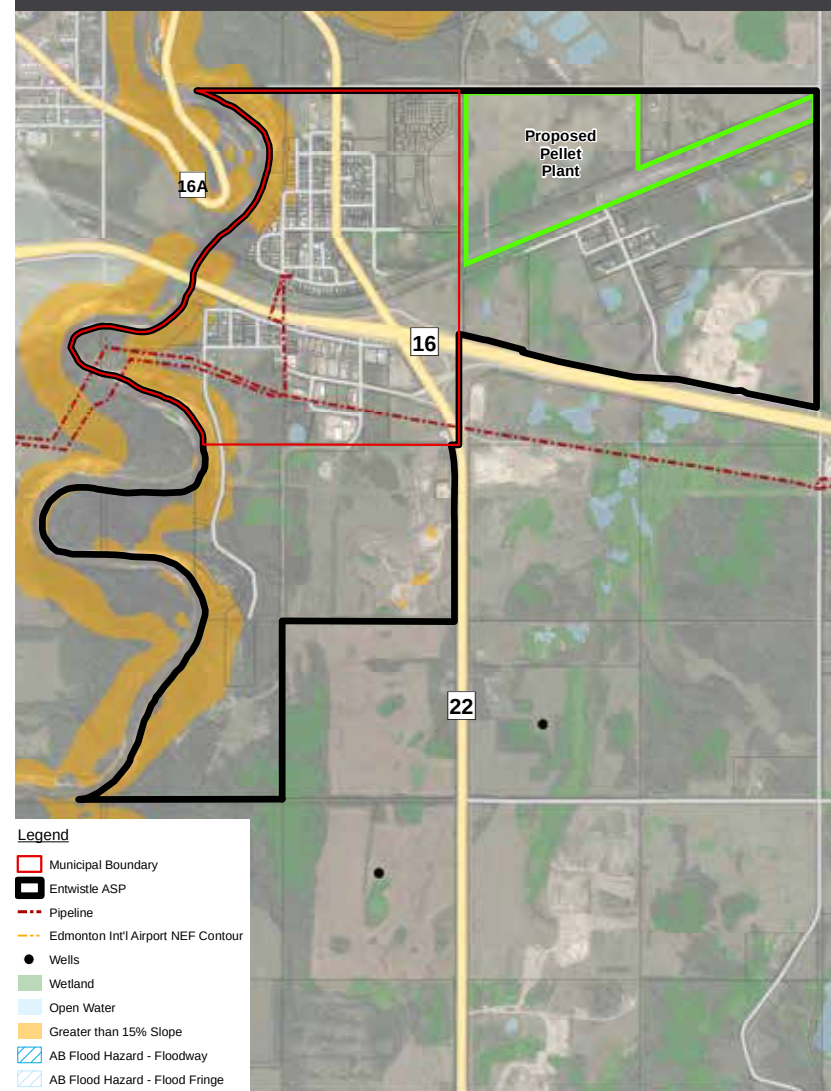
The Technical Growth Study projects 1,124 jobs for the Entwistle area for the Economic Diversification High Scenario (2046). Pinnacle Renewable Energy plant is proposing 30 new direct jobs and 30 full time trucking related jobs in the area.

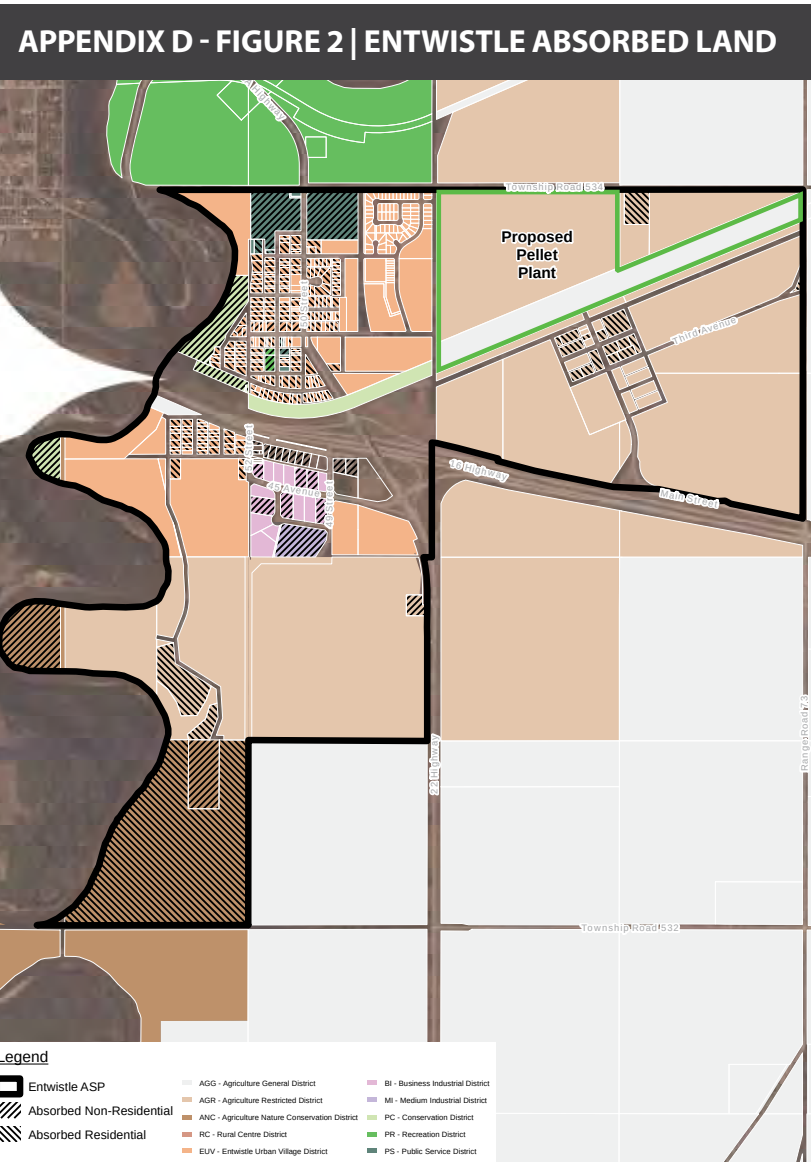


G. Engineering Considerations

- Recent investment was made (\$3M) to expand and upgrade the sewage lagoon in 2011, which will provide some additional capacity for the hamlet as well as the region;
- Entwistle has a water treatment facility and distribution system with some growth capacity within the hamlet or for the region;
- The WILD (West Inter Lake District) Servicing Line may be extended to Entwistle, which will provide water security and sustainability;
- The existing major service interchange with Highway 16 functions at a high level of service and is not expected to be a constraint in population or traffic growth; and
- Internet is available through the existing broadband network tower

APPENDIX D - FIGURE 1 | ENTWISTLE CONSTRAINTS







TOMAHAWK – GROWTH HAMLET

A. Community Profile

Tomahawk is a hamlet located on Highway 759, in the southwest corner of Parkland County.

B. Population

Year	1971	1976	1981	1986	1991	1996	2001	2005	2006	2009	2011	2016
Population	66	79	95	103	97	92	61	127	65	82	65	62

- Current population: 62 people (2016 Federal Census)
- Tomahawk Area Projected Population (2046): 2,398
- Tomahawk Hamlet Projected Population (2046): 200
- Projected Dwelling Count: 51 units (uses Parkland County average of 2.7 people per household according to StatsCan)
- Preliminary Land Demand for Residential if future growth continues at a rate of 7 dwelling units per net residential hectare: 7ha for new residential development

C. Growth Rate:

The average annual rate of population growth from present through to 2046 is approximately 3.3% for the Economic Diversification High Scenario according to the Technical Growth Study. However it should be noted that because this area has a lower population, adding additional residents can significantly modify the growth rate on a yearly basis.

D. Community Services:

Tomahawk School (K-9), Public Library, Gas Station, Churches, Restaurants, General Store.

E. Land Use

Currently, the Hamlet boundary area has ~8ha of absorbed land and ~122ha of available land.



APPENDIX

Total Area	+/-Area (ha)
Tomahawk Hamlet Boundary	140

Absorbed and Available Land	+/-Area (ha) within ASP	% of ASP
Absorbed Residential or Non-Residential Improvements	8	6.05
Available Land	122	86.96

	Total		Absorbed		Available	
Land Use	+/- Area (ha)	%	+/- Area (ha)	%	+/- Area (ha)	%
Rural Centre District	130	93.02	8	6.05	122	86.96
Road/Rail	10	7.51				

F. Economic Development

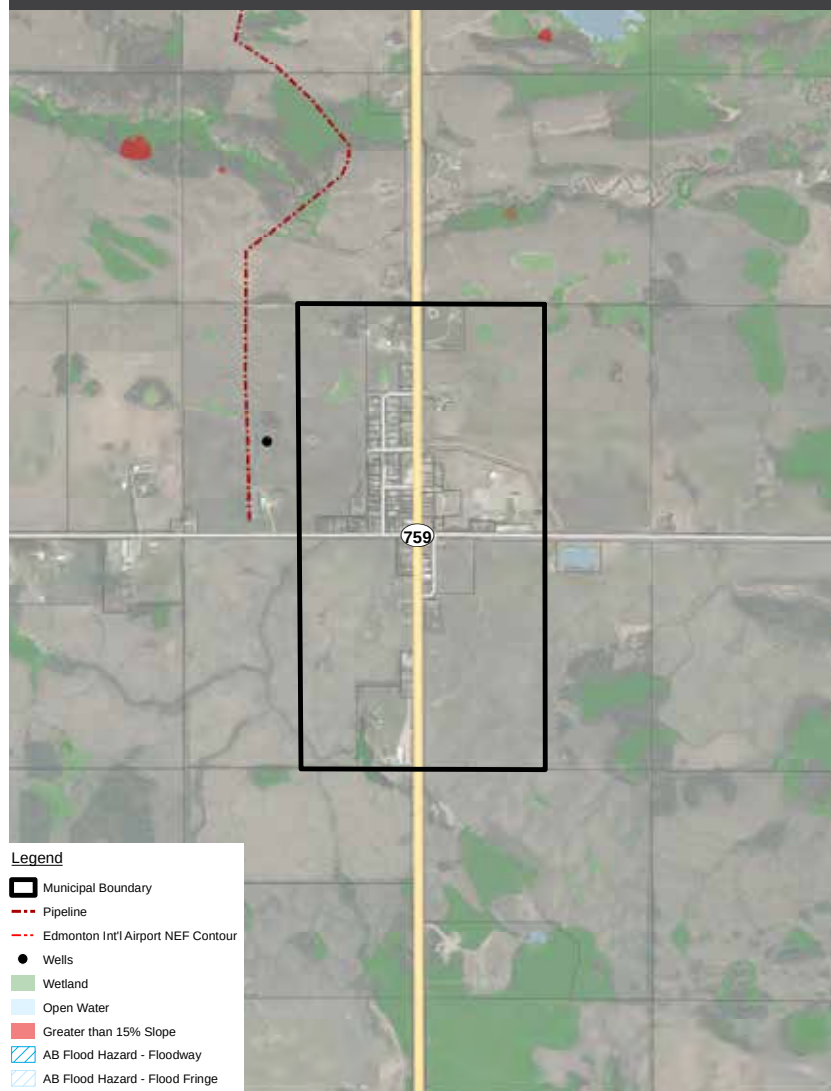
The Technical Growth Study projects 897 jobs for the Tomahawk area for the Economic Diversification High Scenario (2046).

G. Engineering Considerations

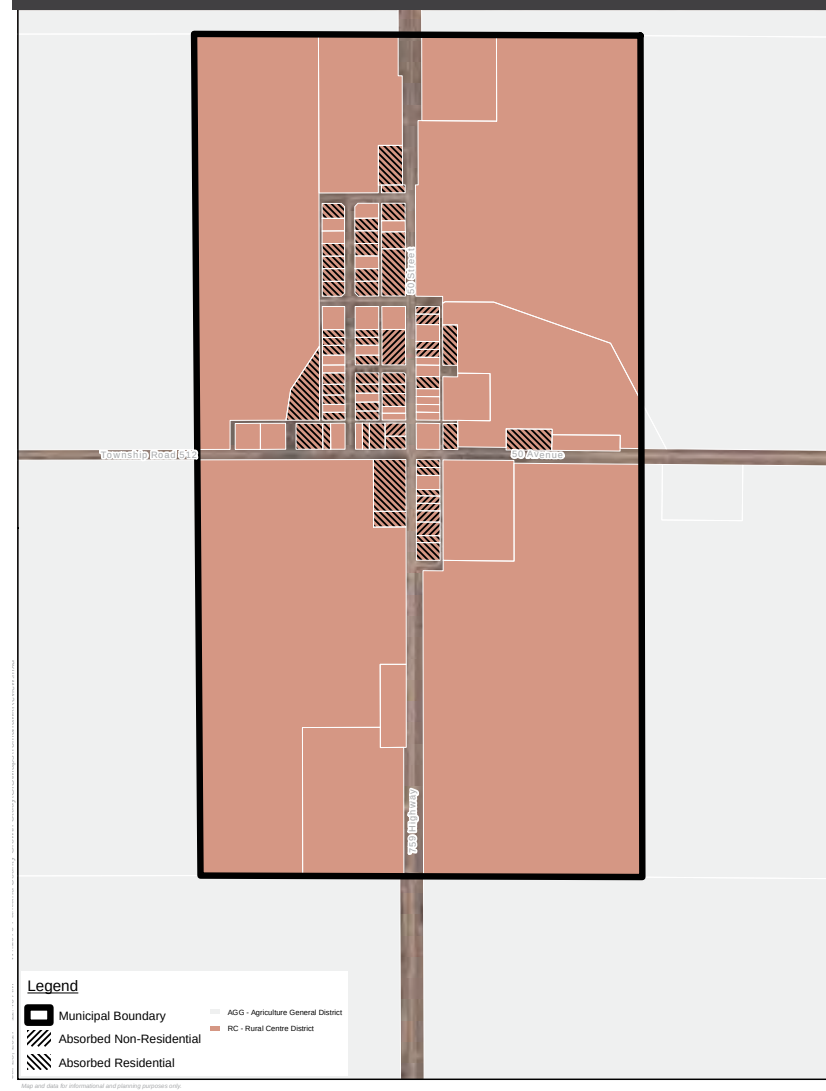
- Tomahawk is municipally serviced for wastewater. The existing 1960's sewage lagoon is fed via the hamlet's gravity collection system. The one cell lagoon operates near capacity requiring regular sewage removal. An expansion and/or upgrade are anticipated to accommodate any growth and new wastewater treatment standards.
- Currently, there is no municipal water servicing in Tomahawk. Water supply is through privately owned wells or by delivery to private cisterns. Besides investment into a local water well supplied water treatment plant, reservoir, pumphouse, and distribution system, some options to consider to for regional water supply include extending the water supply mains from Wabamun as the village is recently serviced regionally by the WILD waterline, Entwistle or directly from the WILD water line if it is extended West. All regional water extensions would be a significant investment as the Tomahawk is 20 - 40km from any of these locations.
- Main access to the hamlet is provided from Highway 759 (maintained by Alberta Transportation). Traffic volumes are relatively low, as the highway provides a connection between Highway 16 to the north and Highway 39 to the south; and
- Internet is available through the existing broadband network tower.



APPENDIX D - FIGURE 3 | TOMAHAWK CONSTRAINTS



APPENDIX D - FIGURE 4 | TOMAHAWK ABSORBED LAND





DUFFIELD – GROWTH HAMLET

A. Community Profile

Duffield is a hamlet located in central Parkland County, just east of the Paul First Nation and approximately 5 km south of Highway 16.

B. Population

Year	1971	1976	1981	1986	1991	1996	2001	2005	2006	2009	2011	2016
Population	63	83	76	72	57	-	-	70	-	69	75	67

- Current population: 67 people (2016 Federal Census)
- Duffield Area Projected Population (2046): 8,251
- Duffield Hamlet Projected Population (2046): 200
- Projected Dwelling Count: 49 units (uses Parkland County average of 2.7 people per household according to StatsCan)
- Preliminary Land Demand for Residential if future growth continues at a rate of 5 dwelling units per net residential hectare: 10ha for new residential development.

C. Growth Rate:

The average annual rate of population growth from present through to 2046 is approximately 3.3% for the Economic Diversification High Scenario according to the Technical Growth Study. However it should be noted that because this area has a lower population, adding additional residents can significantly modify the growth rate on a yearly basis.

D. Community Services:

Duffield School (K-9), Food/Gas Station, Internet Tower, Community Hall

E. Land Use

Currently, the Hamlet boundary area has ~9ha of absorbed land and ~60ha of available land.



Total Area	+/-Area (ha)
Duffield Hamlet Boundary	81

Absorbed and Available Land	+/-Area (ha) within ASP	% of ASP
Absorbed Residential or Non-Residential Improvements	9	11.60
Available Land	60	74.30

	Total		Absorbed		Available	
Land Use	+/- Area (ha)	%	+/- Area (ha)	%	+/- Area (ha)	%
Rural Centre District	69	85.57	9	11.60	60	73.97
Agriculture General District	0	0.33	0	0.00	0	0.33
Road/Rail	11	14.10				

F. Economic Development

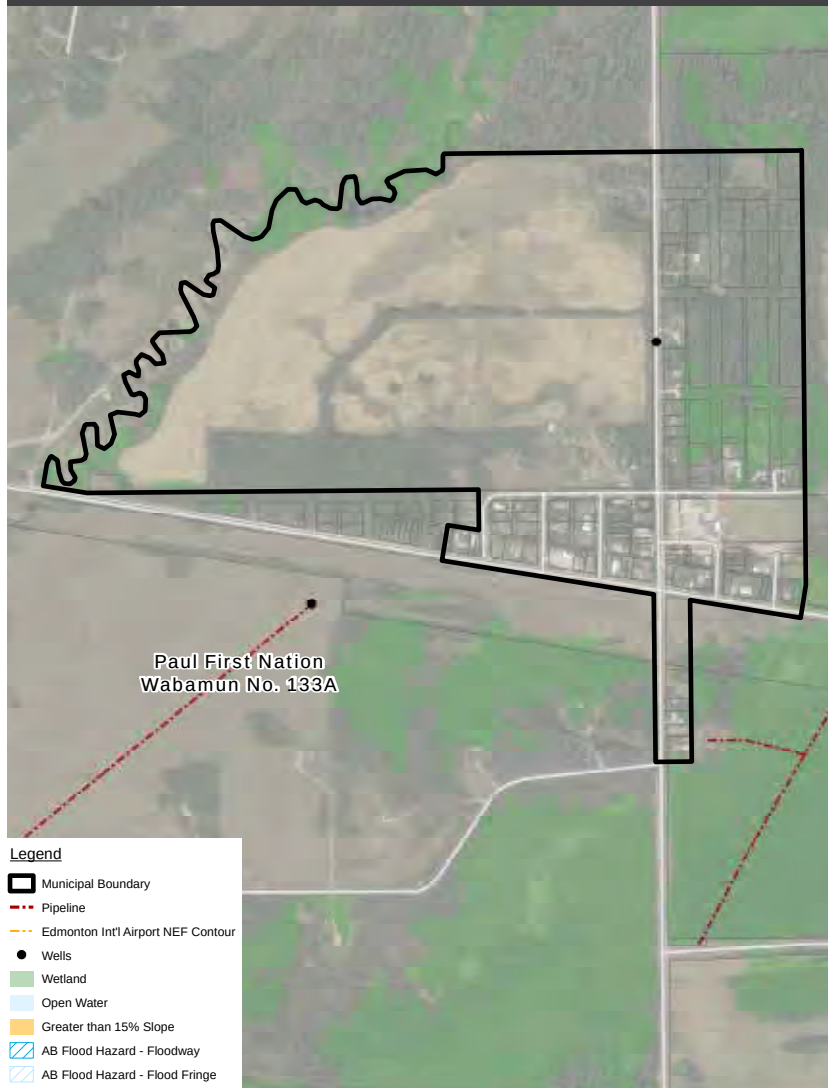
The Technical Growth Study projects 1,355 jobs for the Duffield area for the Economic Diversification High Scenario (2046).

G. Engineering Considerations

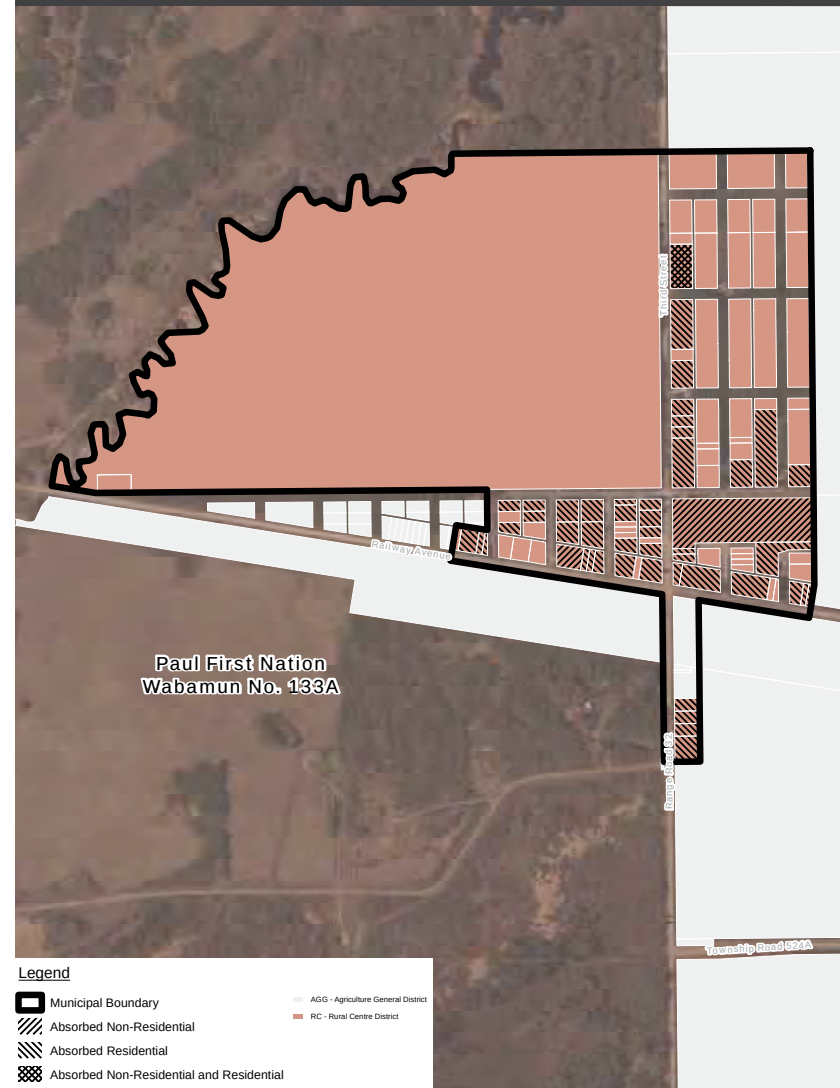
- Duffield is municipally serviced for wastewater through a low pressure collection system and sewage lagoon for treatment. There may be some capacity for growth in the existing system with reduction of infiltration and inflow (I/I) into the wastewater system; however, this will be determined as I/I reduction investigations and solutions are implemented.
- Duffield currently does not have municipal water servicing. Similar to Tomahawk, investment into a local water well supplied water treatment plant, reservoir, pumphouse and distribution system is an option. Due to its proximity (~10km) to the WILD line, Duffield is positioned such that a regional water supply could be feasible; and
- Transportation access to Duffield is from Range Road 32 (Duffield Road), which connects with Highway 16 (at grade intersection) to the north and Highway 627 to the south. Alberta Transportation plans to remove all at-grade intersections on Highway 16, which would require closure of this intersection and rerouting of traffic from Duffield through Wabamun or Carvel Corner interchanges. In the long-term, an interchange is planned for Range Road 30 that would provide more convenient access to Duffield from Highway 1.



APPENDIX D - FIGURE 5 | DUFFIELD CONSTRAINTS



APPENDIX D - FIGURE 6 | DUFFIELD ABSORBED LAND





ACHESON BUSINESS PARK – LAND ABSORPTION

DESCRIPTION

Acheson is the major industrial/commercial area within Parkland County, acting as an important economic generator for the County as a whole. Acheson is well-serviced with regional water and wastewater with connections and has good proximity to transportation corridors. According to analysis completed for the TGS, consistent with the findings of the Community Scan and Analysis (ISL 2016), there is sufficient land supply in the Acheson Area Structure Plan (ASP) to support growth for the next 30 years to 2046.

Although there is sufficient land supply to accommodate growth to 2046, it is important to note that opportunities for the growth of Acheson both within the Acheson Area Structure Plan area and beyond its current boundaries are limited. There is existing country residential development to the north, City of Edmonton boundaries to the east, Enoch Reserve boundaries to the south, and the Wagner Natural areas to the west constraining future growth in Acheson on more than three (3) sides. Opportunities to expand Acheson beyond its current Area Structure Plan boundaries are limited to the area southwest of the current ASP plan area; however, the area southwest of the existing ASP area includes sensitive groundwater recharge areas that will likely limit the density and type of development possible to the west of Acheson.

Within the Area Structure Plan boundary, growth in a significant portion of southeast Area Structure Plan area is limited due to the need for expensive stormwater upgrades that are required prior to future development. Another complicating factor is the existing oil/gas facilities found within the western portion of the Area Structure Plan area.

Acheson has the following engineering considerations:

- Parkland County continues to invest in roads and access, with planned extensions and upgrades to internal roads to improved access and circulation within Acheson, such as the Parkland Avenue connection to 231 Street in Edmonton;
- Future growth and intensification of land uses within Acheson will continue. Future investment into transportation infrastructure will include improvements to Highway 60, such as widening and intersection improvements. These improvements would improve access and reduce travel times between communities. Further, grade-separation of the CN Rail Crossing at Highway 60 would address the extensive traffic delays caused by trains crossing the highway. This grade-separation may also create opportunity to introduce a new rail crossing that would provide better connectivity within Acheson, such as Range Road 264; and
- Stormwater management is also a constraint to growth within Acheson. The area is generally flat with a single major outlet to Big Lake (to the north). Therefore, stormwater storage, such as ponds, is required to manage runoff for site and roadway development, which can sterilize developable land.



ANALYSIS

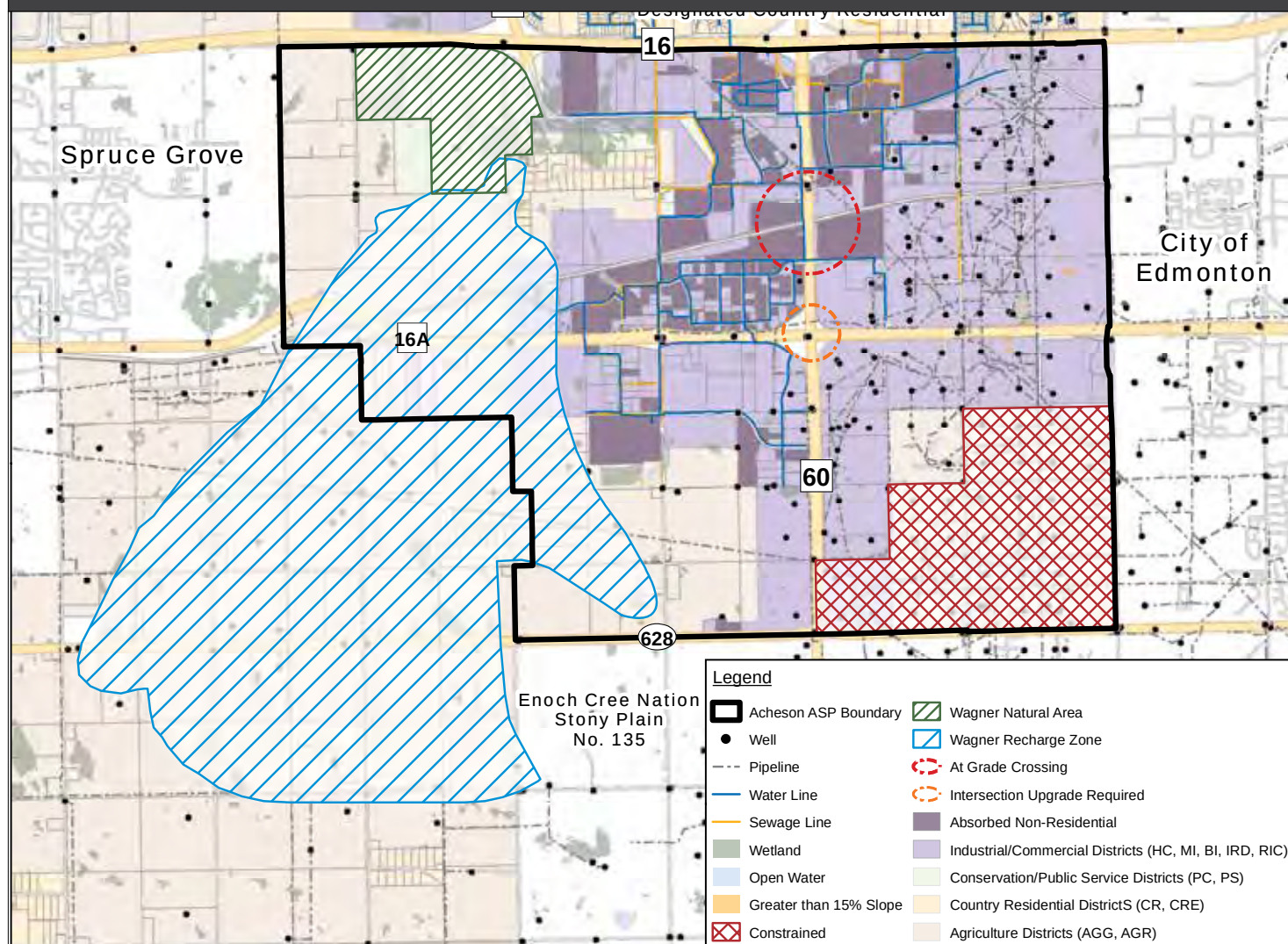
Acheson Land Area Calculations	+/-Area (ha)	%
Acheson ASP Area - Constrained Lands	2,653	52%
Acheson ASP Area - Unconstrained/Readily Developable Lands	2,366	48%
Acheson ASP Area - Total	5,019	100%

The above table indicates that approximately just over half of the land within the Acheson ASP is readily developed; however, this analysis does factor in any known constraints to future development. Known constraints that may affect growth in Acheson are identified on Figure 30: Acheson – Absorbed and Available Land, with Constraints. These constraints include: stormwater recharge zones, natural areas, areas with stormwater servicing constraints and land with extensive well and pipeline development. These constraints affect over half of the land in Acheson.

Constrained lands are a significant factor in the amount of land available for development within Acheson. Understanding the actual amount of land supply available for growth in Acheson requires further analysis about how each of the identified constraints could be built out, at what cost and at what density. This analysis will be important to better understanding the timing and phasing of growth in Acheson and the timing of the build-out of Acheson.



APPENDIX D - FIGURE 7 | ACHESON ABSORBED & AVAILABLE LAND WITH CONSTRAINTS





FIFTH MERIDIAN BUSINESS PARK – LAND ABSORPTION

DESCRIPTION

In addition to Acheson, Fifth Meridian Business Park is the only other business park that offers municipal servicing. Fifth Meridian Business Park is a developing area with little existing development; however, given its servicing connection and good highway access, Fifth Meridian is an important investment in maintaining a strong non-residential land supply.

Fifth Meridian has the following engineering considerations:

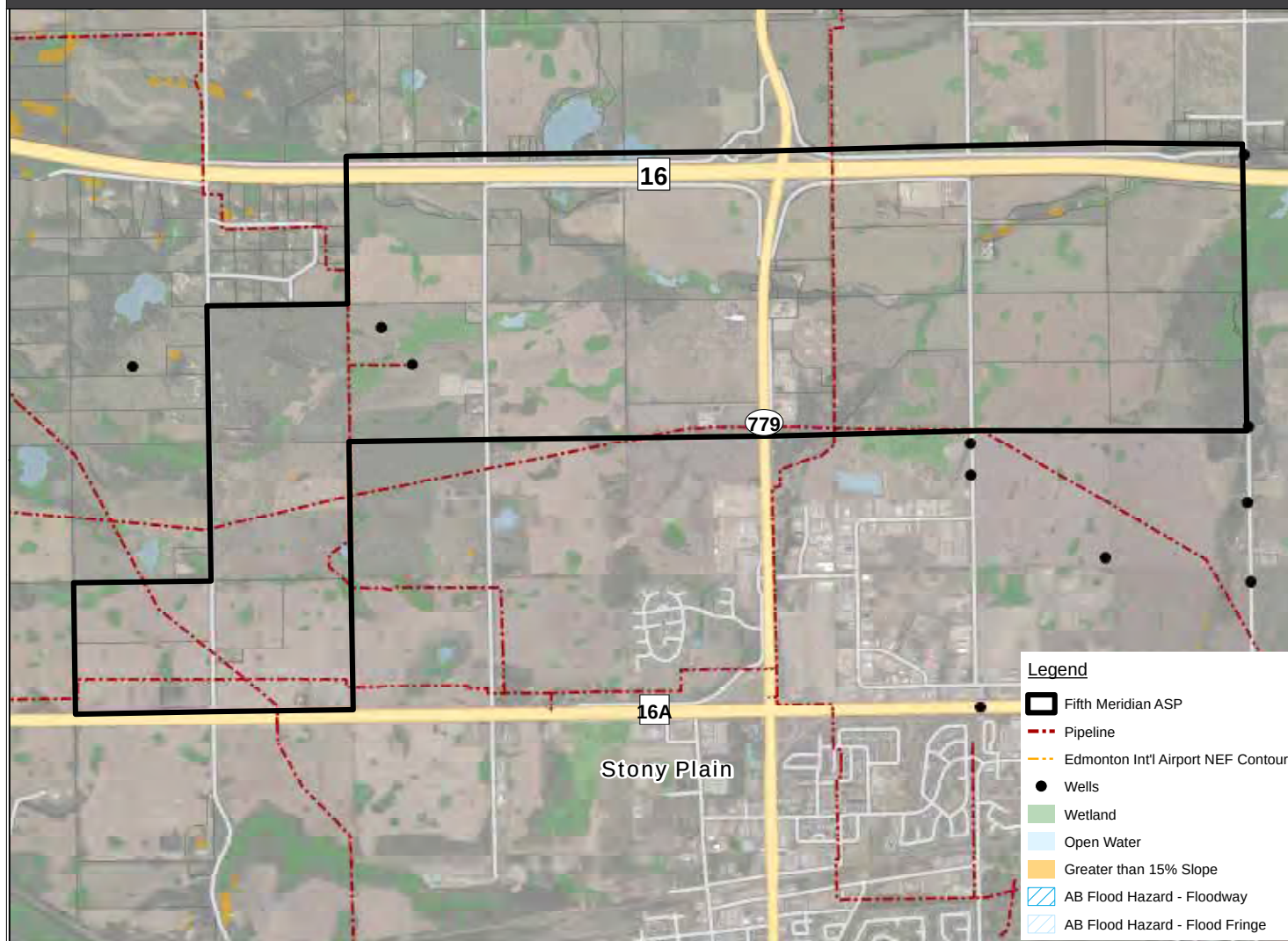
- Fifth Meridian is accessed from Highway 16 and Highway 779 by an interchange that provides a very good level of service. A future interchange upgrade will be required depending on the traffic generating during the development of Fifth Meridian;
- Fifth Meridian has water servicing available through the WILD line (to the east and north);
- Sanitary servicing is available through the regional wastewater line to the south;
- A significant ravine runs through the Area Structure Plan area that will divide development within the plan area given the costs to bridge the ravine.
- Like Acheson, the Fifth Meridian Area Structure Plan area is flat and, with the exception of the ravine south of Highway 16, there are no significant water courses to convey stormwater. Stormwater management facilities would need to be developed within future development areas, with controlled conveyance to minor conveyance systems, including highway ditches and/or constructed channels.

Given the location of the ravine within the Area Structure Plan area, very long-term expansion of Fifth Meridian would be best accommodated within the area north of Highway 16, which has no major natural physical or land use constraints to development and provides desirable highway visibility and access.

Because Fifth Meridian has only recently become municipally serviced, there is currently very little development at Fifth Meridian. For this reason, a detailed analysis of the absorbed and unabsorbed land supply of Fifth Meridian was not undertaken due to the many unknown factors about the density of future growth, the types of businesses the area might attract, and how fast land within the Area Structure Plan area will be absorbed.

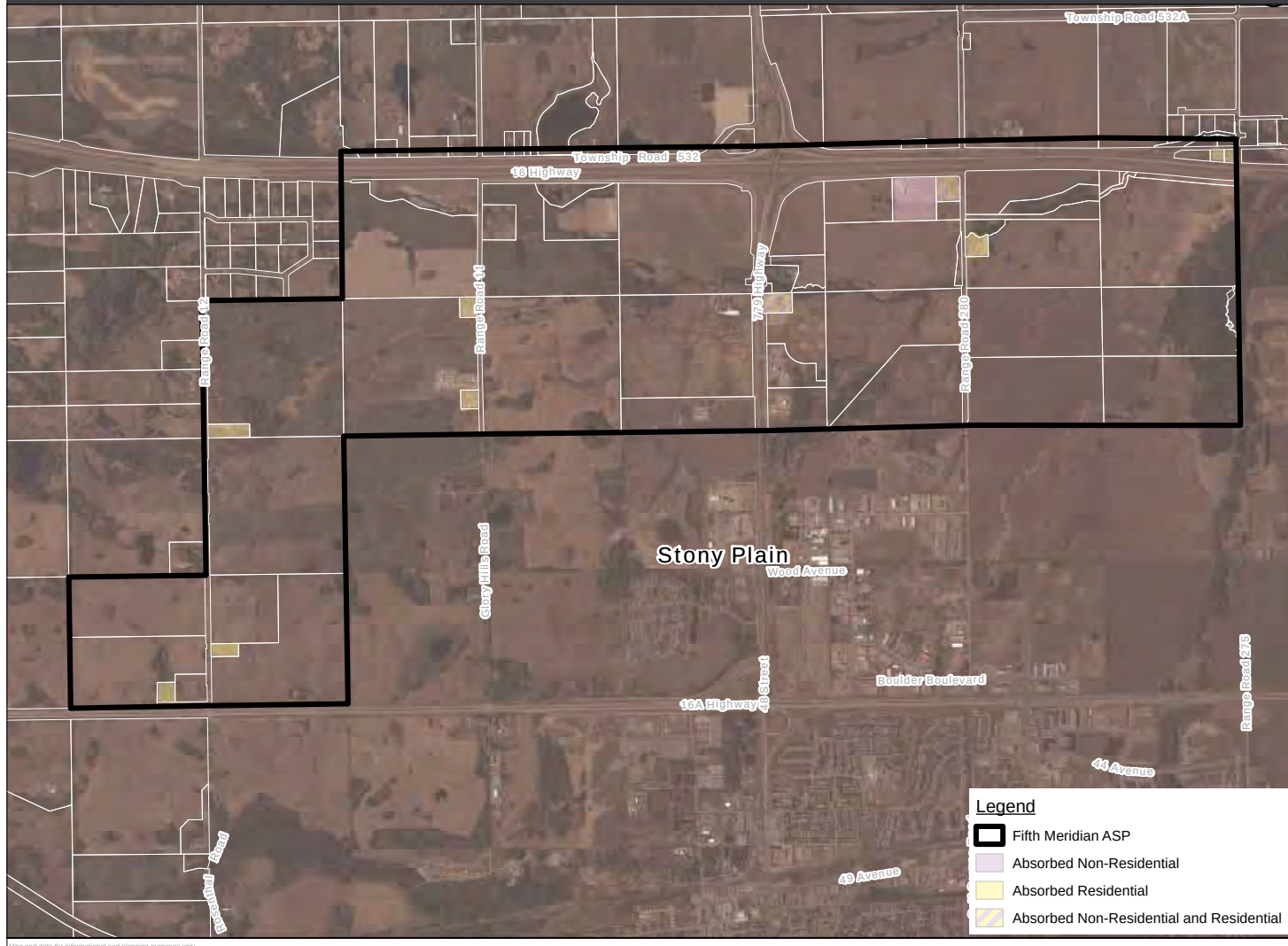


APPENDIX D - FIGURE 8 | FIFTH MERIDIAN CONSTRAINTS



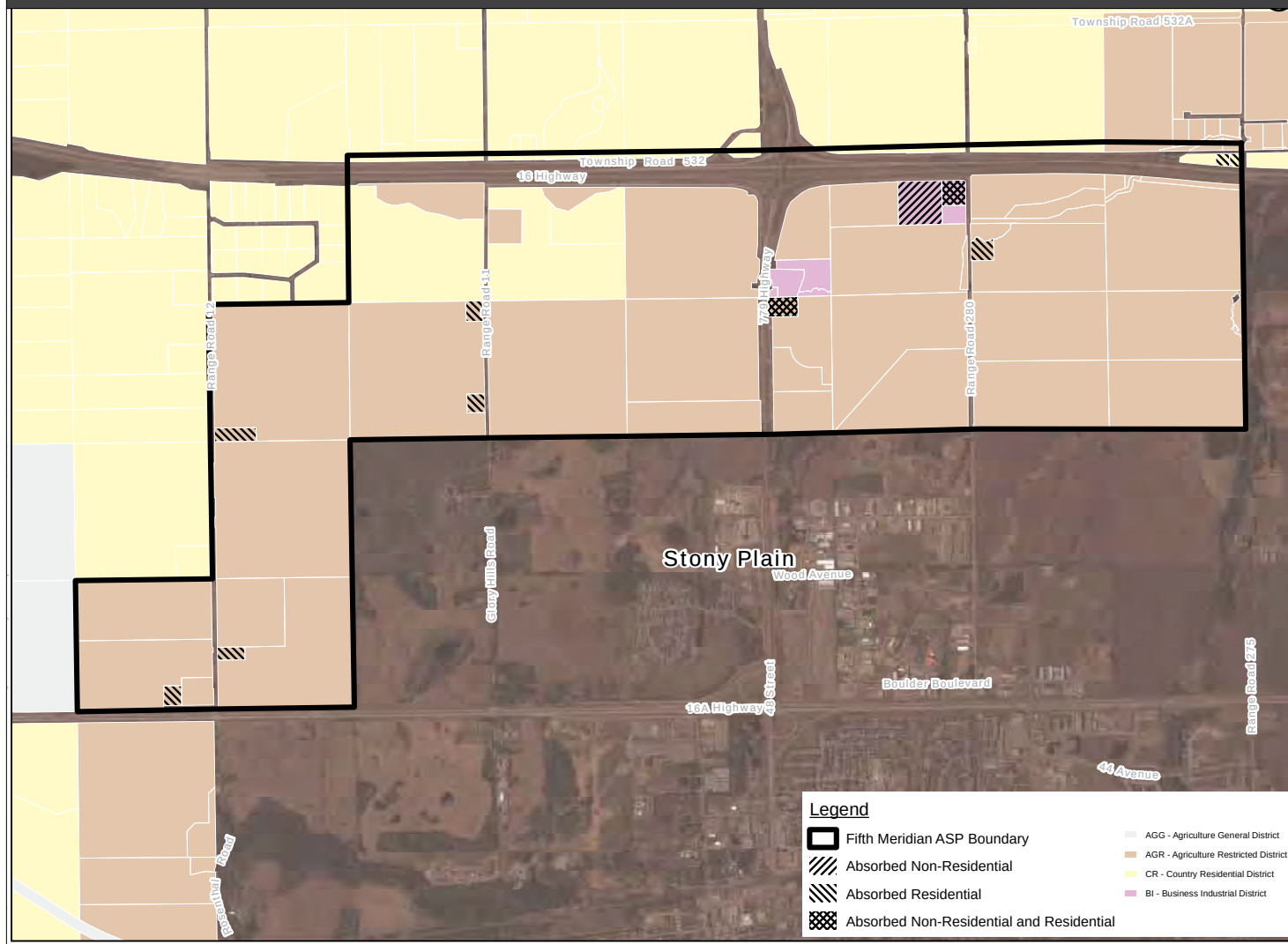


APPENDIX D - FIGURE 9 | FIFTH MERIDIAN ABSORBED LAND





APPENDIX D - FIGURE 10 | FIFTH MERIDIAN ABSORBED LAND BY LAND USE





APPENDIX E

CITATIONS



CITATIONS

1. **Parkland County (2017). Parkland County Long-Term Strategic Plan: 2040 and Beyond.**
2. **ISL Engineering and Land Services (2015, April). Parkland County Community Scan and Analysis: Final Report.**
3. **Capital Region Board (2016, October 13). Edmonton Metropolitan Region Growth Plan. Edmonton, Alberta. Source: <http://capitalregionboard.ab.ca/Website/files/96/9673a809-4d44-474f-a663-65c6eac75a63.pdf>**
4. **Toma and Bouma (2016, June). Parkland County: Future of Agriculture Study.**