



# Village of Caroline Municipal Development Plan

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## Background Report



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## **1. INTRODUCTION**

The Village of Caroline has initiated the process of creating a Municipal Development Plan (MDP). This report provides background information and context for the review of planning in the Village of Caroline, as well as contemplating future growth outside of the existing village boundary. It includes a summary of key provincial planning legislation and existing Village plans and policies that will influence the policy direction and content of the MDP. Recent and anticipated growth and development trends are also summarized. The report also summarizes the potential opportunities for land uses and extensions of urban services. It concludes with a discussion of the various issues that the MDP should seek to address.

## **2. WHAT IS A MUNICIPAL DEVELOPMENT PLAN AND WHY IS IT IMPORTANT?**

The Municipal Government Act requires all municipalities to prepare and adopt a municipal development plan (MDP). The Act states that an MDP must address such issues as future land use and development in the municipality, the provision of municipal services and facilities, and inter-municipal issues such as future growth areas and the co-ordination of transportation systems and infrastructure.

The overall purpose of the Village of Caroline Municipal Development Plan (MDP) is to guide future growth and development to ensure that it is sustainable, orderly, appropriate, complementary, efficient, and that it enhances the quality of life for the citizens of Caroline. The MDP is primarily a policy document that can be utilized as a framework for the physical development of the community within which both public and private sector decision making can occur. As a policy document it is, for the most part, general in nature and long range in its outlook. The MDP provides the means whereby Council can evaluate immediate situations or proposals in the context of a long range plan.

This Municipal Development Plan embodies the community goals and aspirations contained in the vision statement. Goal statements have been provided to guide future planning and development. These goal statements appear at the beginning of each policy section and provide a framework for the objectives and policies within each section. The goals of the community are enabled through key objectives which in turn are supported through the MDP policies and guidelines.

Some of the benefits, or reasons, for having a municipal development plan include:

- To make the most efficient use of limited resources with the primary resource being our land base;
- To minimize conflict between differing types of land uses and associated users;
- To ensure that growth and development occurs in the most efficient and effective manner;
- To preserve those features in a community which may have important environmental, social, or cultural significance;
- To acknowledge not only physical and economic factors, but social needs within a community;
- To create certainty between neighbouring municipalities and community members about what will develop and where growth will occur; and
- To become more resilient and able to respond to changing circumstances and emerging challenges.
- To create and maintain aesthetically appealing, orderly and comfortable communities containing the amenities desired by the public;
- To consider ecological and environmental impacts of proposals in an effort to maintain a clean and healthy environment;
- To protect and promote the health, safety and welfare of the public at large through the provision of key facilities and services and avoiding hazardous situations and undue risk;
- To consider development impacts on culture and heritage resources valued by the community;
- To build an inclusive community able to accommodate and respond to the needs of individuals and a variety of household types; and
- To create confidence for private investors in knowing what the community is prepared to accept and where to confidently invest.

It is also important to bear in mind that the MDP works best as a comprehensive whole and should be interpreted in a holistic manner. While the Plan is constructed by topic area it is important to view all of the policy directions in context with one another rather than as individual parts.

### 3. PROVINCIAL LEGISLATION AND PROVINCIAL LAND USE POLICIES

*Bill 21, Modernized Municipal Government Act* states several amendments made to the Municipal Government Act, Revised Statutes of Alberta 2000, Chapter M-26. The amendments applicable to this report are in section 632 – Municipal Development Plans.

*632(1) Every council of a municipality must by bylaw adopt a municipal development plan.*

*(2.1) Within 3 years after the coming into force of this subsection, a council of a municipality that does not have a municipal development plan must by bylaw adopt a municipal development plan.*

*(3) A municipal development plan*

*(a) must address*

- (i) the future land use within the municipality,*
- (ii) the manner of and the proposals for future development in the municipality,*
- (iii) the co-ordination of land use, future growth patterns and other infrastructure with adjacent municipalities if there is no intermunicipal development plan with respect to those matters in those municipalities,*
- (iv) the provision of the required transportation systems either generally or specifically within the municipality and in relation to adjacent municipalities, and*
- (v) the provision of municipal services and facilities either generally or specifically,*

*(b) may address*

- (i) proposals for the financing and programming of municipal infrastructure,*
- (ii) the co-ordination of municipal programs relating to the physical, social and economic development of the municipality,*
- (iii) environmental matters within the municipality,*
- (iv) the financial resources of the municipality,*
- (v) the economic development of the municipality, and*
- (vi) any other matter relating to the physical, social or economic development of the municipality,*

*(c) may contain statements regarding the municipality's development constraints, including the results of any development studies and impact analysis, and goals, objectives, targets, planning policies and corporate strategies,*

*(d) must contain policies compatible with the subdivision and development regulations to provide guidance on the type and location of land uses adjacent to sour gas facilities,*

*(e) must contain policies respecting the provision of municipal, school or municipal and school reserves, including but not limited to the need for, amount of and allocation of those reserves and the identification of school requirements in consultation with affected school boards,*

*(f) must contain policies respecting the protection of agricultural operations, and*

*(g) may contain policies respecting the provision of conservation reserve in accordance with section 664.2(1)(a) to (d).*

*(4) A municipal development plan must be consistent with any intermunicipal development plan in respect of land that is identified in both the municipal development plan and the intermunicipal development plan.*

The Village is located within the North Saskatchewan Region within Alberta's Land-Use Framework. The North Saskatchewan Regional Plan is still being developed at this time but will influence future growth and development in the municipality. The plan will establish guidelines for making decisions that will help address growth pressures on our land, environment and communities, while respecting the private property rights of Albertans. The desired outcome of the plan will be a healthy economy supported by our land and natural resources, healthy ecosystems and environment; and people-friendly communities with ample recreational and cultural opportunities.

## **4. VILLAGE OF CAROLINE STATUTORY PLANS**

The Village of Caroline manages its long range land use planning through a series of statutory and non-statutory plans. This section summarizes the intent and direction of the statutory plans currently in place. Figure 1: Village of Caroline Municipal Development Plan Map B (page 8) shows the proposed future land use patterns approved through statutory plans within the Village’s boundaries.

### **4.1. Village of Caroline Municipal Development Plan (1998)**

The general land use pattern of the Village’s MDP identifies the commercial development mainly along the Highway 54 corridor through the Village. The plan contemplates future extension of highway commercial development beyond the Village’s current boundaries to the east and west.

Current areas for residential uses include the lands directly north and south of the highway commercial area along Highway 54. Further residential expansion in the north west, north-east and south-west are contemplated.

Industrial uses are generally directed to areas in the north-east and south-east of the existing Village boundaries. A large new industrial park has been developed in the north-east portion of the Village. Further industrial expansion in the south is contemplated.

This plan establishes the goals and priorities for Caroline’s future. This includes:

- Concern for people and values. Develop a caring community based on values of family and friendship while allowing for physical and economic development.
- The economic and social well-being of the community will be based on the tradition of trade, commerce and the family way of life.
- Desire to have amenities and infrastructure needed to facilitate the desired economic and social growth which will sustain and enhance the community.
- Provide a framework for private and public decision making.
- Basis of the Plan – 6 Goals
  1. Economic – a diverse, active and buoyant local economy.
  2. Social – provide for the social, cultural and recreational needs of the community.
  3. Transportation, Communication and Utility Networks – modern, safe and efficient transportation, communication and utility networks and public improvements. 5-year capital works plan regarding public improvements.
  4. Municipal Administration – effective and efficient municipal administration.

5. Village Growth and Development – manage Village growth including the protection of significant resources. Conservation of better agricultural land.
6. Regional Responsibilities – a cooperative and joint planning approach between the Village and County, for land located near or adjacent to the Village boundary.

Policies that relate to future expansion of the Village and joint planning within the fringe area are as follows:

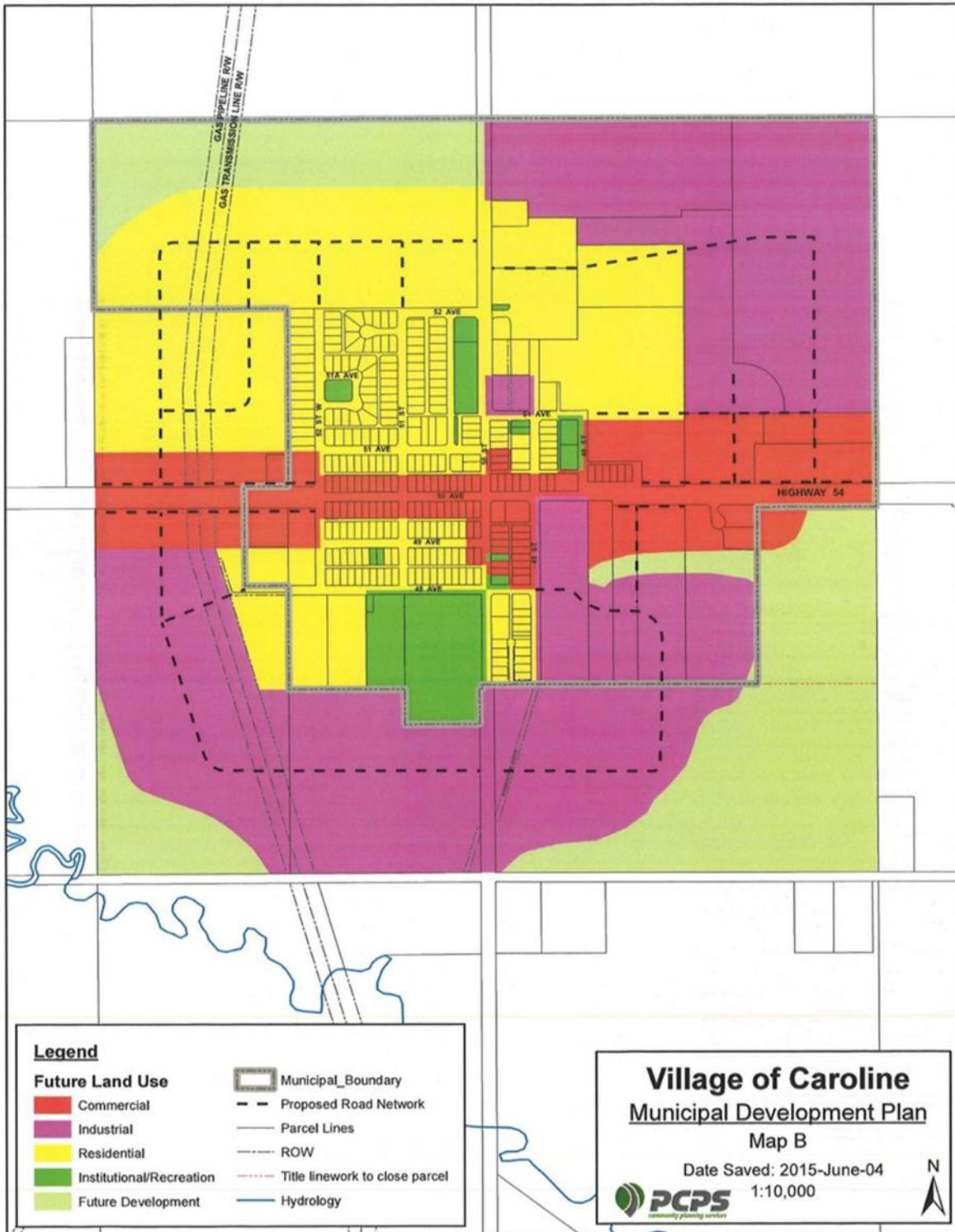
- Promote the development of commercial and industrial activities.
- Encourage tourism within Caroline and its surrounding area in order to attract more tourists, increase their length of stay, increase spending in the community. Reduce adverse effects to improve tourism.
- Find new means of involving the citizens in providing direction to the community.
- 75% of housing to be detached dwellings
- Manufactured homes allowed in districts with site built homes provided that the design of those homes complements the designs of the other dwellings in the area.
- Compatibility of land uses and location will be the main criteria in decision-making on development permit applications.
- Seek expansion of Village boundaries as necessary to meet needs.
- Land uses are to be directed to certain areas.
- Existing trees to be preserved where possible.
- Major growth areas to have an adopted area structure plan.
- Design, character and appearance of development on 50<sup>th</sup> Ave a consideration in development process.
- Non-commercial on 50<sup>th</sup> Ave may be considered for relocation to a more appropriate area.
- Design guidelines for areas visible from 50<sup>th</sup> Ave will be developed.
- Existing and future roads to be identified as per the MDP maps.
- Subdivision and development in the vicinity of energy facilities and the sewage treatment facility will be required to adhere to Provincial regulations regarding setback distances. The subdivision and development of land within the minimum sour gas facility setbacks will only be considered for approval, if the Alberta Energy Regulator approves a lesser setback.

- Connection of residences and businesses to sewer and water systems as the Council deems necessary to adequately service the development.
- Provide for the development of land as necessary for urban growth within the Village. However, when Council deems that sufficient lands are no longer readily available for the development of respective land uses, the expansion of the urban boundaries as shown in Figure 1: Village of Caroline MDP - Map B of the MDP, may be initiated.
- May facilitate infill and renovation, provided the variance does not interfere with the amenities of the neighbourhood.
- The conservation of better agricultural land where appropriate, will be considered a high priority.

### **Task Priorities**

- Maintain the recreational vehicle park near the Village and maintain a Recreation Master Plan. Upon the subdivision of land, secure the maximum dedication of any reserves which may be required under the Municipal Government Act, as municipal reserves to serve the recreational and amenity needs of the Village.
- Co-operatively plan and manage land use and development in and around the Village by means of an Intermunicipal Agreement with Clearwater County.
- The Village will maintain the sewage lagoon to meet Provincial requirements.
- The Village will encourage the upgrading of Highway 54 to a modern standard by Alberta Transportation.
- The Village will encourage the upgrading of the Caroline road situated south of the community.

Figure 1: Village of Caroline MDP



## **4.2. Northeast Area Structure Plan (2015)**

The Northeast Area Structure Plan covers 54.3 hectares (134.0 acres) of land held in three parcels located in the NW 13-36-05 W5M. The purpose of the Area Structure Plan is to provide the Village of Caroline with the framework to subdivide and develop the three parcels of land for residential, highway commercial and industrial purposes. Open spaces will separate the residential from those other land uses.

The plan as required by the Municipal Government Act, describes the proposed sequence of development for the area, the proposed land uses, the density of population, and the general location of roads and public utilities.

The first parcel containing 0.83 acres is the vacant site of a former Imperial Oil retail facility at the intersection of 48<sup>th</sup> Street and Highway 54, in the southwest corner of the Plan area.

The second parcel of land has a 90 meters (295 feet) frontage to Highway 54 east of the former Imperial Oil site. The parcel extends 380 meters (1247 feet) north of Highway 54 and is bordered to the northwest by the O'Coin Mobile Home Park, on the west by 49 Street, 51 Avenue and 48 Street. A portion of the second parcel, is occupied by Speedway Gas (fuel, storage, and filling station).

The third parcel covers the remainder of the Plan area and is comprised of the east and north halves of the quarter section. It has a 405 meters (11,329 feet) frontage to Highway 54 and a total frontage of 260 meters (853 feet) to 50 Street. At the time of the Plan's preparation: the parcel is largely pasture land with low wet areas across much of the northern part of the quarter as well as along the east boundary of the quarter. The third parcel contains 9 lots created in 2005 and zoned to reflect the direction of the previous Area Structure Plan. The 2005 ASP proposed that these lots be rezoned and reconfigured as necessary to comply with any plan updates such as the Caroline IDP.

## **4.3. Village of Caroline Land Use Bylaw (2008)**

The Village's Land Use Bylaw (LUB) provides the detailed regulations for the use of various properties and development of various types of land uses. For each major land use category, the types of uses and development standards and the relevant LUB Districts are briefly described below.

### *Low Density Residential District (R1)*

The purpose of this district is to provide an area for low density residential development in the form of detached dwellings and compatible uses, herein listed, which are connected to the municipal sewer and water systems. Permitted uses include detached dwellings and accessory residential buildings. Discretionary uses include accessory uses, duplexes, manufactured homes, home occupations, parking facility, parks, public uses and public utility buildings. Minimum

parcel standards for new subdivisions under this district include a minimum parcel area of 550 m<sup>2</sup> (5,920.00 ft<sup>2</sup>). The maximum parcel coverage is 40% excluding patios and sun decks.

*General Residential District (R2)*

The purpose of this district is to provide an area for a variety of dwelling types and other compatible uses, herein listed, which are connected to the municipal sewer and water systems. Permitted uses include detached dwellings, duplexes and accessory residential buildings. Discretionary uses include apartments, basement suites, manufactured homes, home occupations, boarding and rooming houses, fourplexes, funeral home, group home, multiple housing developments, row houses, public uses and public utility buildings. Minimum parcel standards for interior parcels in new subdivisions include a minimum parcel area of 400 m<sup>2</sup> (4,305.70 ft<sup>2</sup>) for detached dwellings and group homes, 235 m<sup>2</sup> (2,529.60 ft<sup>2</sup>) for duplexes, 185 m<sup>2</sup> (1,991.39 ft<sup>2</sup>) for row houses, 180 m<sup>2</sup> (1,937.57 ft<sup>2</sup>) for fourplexes and 1.3 times the building's total floor area for apartments. Minimum parcel standards for corner parcels in new subdivisions include a minimum parcel area of 420 m<sup>2</sup> (4,521.00 ft<sup>2</sup>) for detached dwellings and group homes, 280 m<sup>2</sup> (3,014.00 ft<sup>2</sup>) for duplexes, 275 m<sup>2</sup> (2,960.17 ft<sup>2</sup>) for row houses, 185 m<sup>2</sup> (1,991.39 ft<sup>2</sup>) for fourplexes and 1.3 times the building's total floor area for apartments. The maximum parcel coverage is 50% for detached dwellings, duplexes, fourplexes, group homes and row houses. The maximum parcel coverage is 70% for apartments and multiple housing developments.

*Manufactured Home District (R3)*

The purpose of this district is to provide an area for the development and use of land for manufactured homes, and other compatible uses, herein listed, which are compatible with a residential area, either on separately registered parcels or in comprehensively designed parks wherein sites are rented or owned as part of a condominium. The area is to be connected to municipal sewer and water systems. Permitted uses include manufactured homes, manufactured home park and accessory residential buildings/structures. Discretionary uses include apartments, basement suites, manufactured homes, home occupations, boarding and rooming houses, fourplexes, funeral home, group home, multiple housing developments, row houses, public uses and public utility buildings. Minimum parcel standards for manufactured home parks include a minimum of 400 m<sup>2</sup> (4,305.70 ft<sup>2</sup>) for interior lots and a minimum of 420 m<sup>2</sup> (4,520 ft<sup>2</sup>) for corner lots. Minimum parcel standards for manufactured home subdivisions under this district include a minimum of 480 m<sup>2</sup> (5,167.00 ft<sup>2</sup>) for interior lots and a minimum of 500m<sup>2</sup> (5,382.00 ft<sup>2</sup>) for corner lots. The maximum parcel coverage for manufactured home parks is 40% excluding patios and sun decks. The maximum parcel coverage for manufactured home subdivisions is 50% excluding patios and sun decks.

*Very Low Density Residential District (R4)*

The purpose of this district is to provide an area for very large lot residential development in the form of detached dwellings and compatible uses, herein listed, which will be required to be

connected to municipal water and sewer systems when these services become available. Permitted uses include detached dwellings. Discretionary uses include accessory uses, accessory residential buildings, home occupations, manufactured homes, parking facility, parks, public uses and public utility buildings. Minimum parcel standards for parcels intended to be serviced by a septic tank/field and private well shall have an area not less than 3,036.4 m<sup>2</sup> (0.75 acre). Minimum parcel standards for parcels intended to be serviced by communal systems or holding tank shall have an area not less than 2,023.5 m<sup>2</sup> (0.5 acre). Maximum parcel area of 0.6 hectares (1.5 acres). Minimum parcel width is 30 m (98.4 ft) for parcels greater than 4,047 m<sup>2</sup> (1 acre) in size and 15 m (49.2 ft) for parcels less than 4,047 m<sup>2</sup> (1 acre) in size.

*Central Commercial District (C1)*

The purpose of this district is to provide an area for intensive commercial use, offering a wide variety of goods and services, and other compatible uses, herein listed, an attractive environment for pedestrians, but which will be accessible to motor vehicles. Permitted uses include indoor merchandise sales, offices and personal services. Discretionary uses include accessory uses, bus depots, commercial recreation and entertainment facilities, dwelling units for the occupancy of the owner, operator, or caretaker, district shopping centres, hotels and motels, parking facilities, public uses, public utility buildings, repair services, service stations, and signs.

*Highway Commercial District (HC)*

The purpose of this district is to provide an area for commercial uses and other compatible uses, herein listed, adjacent to a major thoroughfare, which requires large open areas for parking by clientele, for display of merchandise, or both, which will create an attractive environment, primarily accessible to motor vehicles. Permitted uses include drive-in business, sales and service outlets for automobiles, trucks, recreation vehicles and mobile homes. Discretionary uses include accessory uses, commercial recreation and entertainment facilities, district shopping centres, dwelling unit for the occupancy of the owner, operator or caretaker, hotels and motels, parking facilities, public uses, public utility building, repair services, sales and service outlets for farm equipment and signs. The maximum parcel coverage is 80%.

*Industrial District (I)*

The purpose of this district is to provide an area for industrial uses, and other compatible uses, herein listed, which are intended to accommodate uses which do not cause objectionable nuisance or dangerous conditions beyond the parcel boundary. Permitted uses include light manufacturing, repair services, sales and service outlets for farm machinery, veterinary clinic and warehousing. Discretionary uses include abattoir, accessory uses, cartage and freight terminals, dwelling unit for the occupancy of the owner, operator or caretaker, heavy equipment assembly, sales and service, heavy manufacturing, livestock auction marts, municipal shops and storage yards, open storage yards, parking facilities, public utility buildings, signs and solid waste transfer station. The maximum parcel coverage is 80%.

*Public/Institutional District (PI)*

The purpose of this district is to provide an area for the development of public and institutional lands for multi-use facilities, and other compatible uses, herein listed. Permitted uses include parks and playgrounds. Discretionary uses include accessory uses, cemeteries, institutional uses, parking facilities, public uses, public utility buildings, recreation facilities, and signs. The maximum parcel coverage is 80%.

*Reserved for Future Development District (RD)*

The purpose of this district is to reserve land for future subdivision and development until an overall plan is prepared for an approved by Council. Permitted uses include farms and farming operations and existing uses. Discretionary uses include accessory uses, existing residence and other related improvements, mechanized excavation stripping and grading, parking facilities, public uses, public utility buildings and signs.

## **5. MASTER PLANS, STUDIES AND REPORTS**

In addition to the various land use plans described above, the Village and County rely on plans and studies to guide future development decisions. These plans, studies and reports often focus on a single service or function (eg. environment) and cover broad areas of the entire municipality.

### **5.1. Village of Caroline – Growth and Infrastructure Master Plan 2004**

The report is to provide the Village with information and necessary tools to manage long term infrastructure needs based on residential, commercial and industrial growth, and to assess existing infrastructure requirements. This plan was created in 2004 and is a snapshot in time based on the information available. This plan summarizes the potential needs based on that information. Key findings and proposals in the plan include:

- Whilst there are numerous possible locations for residential land development within the existing Village boundaries, residential development should be concentrated in the areas currently serviced with water and sanitary sewer mains, to minimize development costs. Therefore, residential growth beyond the extent of the Village’s existing services should only proceed after the supply of serviced residential land has been depleted.
- As warranted by infill development, existing Village gravel roads should be paved.
- There are detailed projections and upgrading requirements for the Village’s Municipal water, sanitary sewer and stormwater management within this plan. Details of these projections can be found in 10.0 Servicing Issues and Opportunities.

## 6. DEMOGRAPHICS, POPULATION AND DEVELOPMENT TRENDS

The age distribution for the Village of Caroline is provided below. Approximately 55% of the Village’s population is between the ages of 20 and 65 years, with 45% of the population being either under 20 years of age or over 65 years of age. This is either under the age of 19 or over 65 years of age, which is higher than the provincial average of approximately 37%. This population breakdown differs from the provincial population numbers, with approximately 62% of the population being between 20 and 65 years of age and 37% of the population under 20 years of age or over 65 years of age.

**Table 1: Age Demographics**

Age Group	Village of Caroline		Alberta	
	Population	Percentage	Population	Percentage
<b>0 to 19 Years</b>	125	24.0%	1,019,190	25.1%
<b>20 to 34 Years</b>	80	15.4%	905,945	22.3%
<b>35 to 49 Years</b>	100	19.2%	855,740	21%
<b>50 to 64 Years</b>	105	20.2%	786,080	18.9%
<b>Over 65 Years</b>	110	21.2%	500,215	12.3%

### 6.1. Household Size

The average household size in Caroline, as of the 2016 Census, was 2.1 people per household. The average household size in 2011 for the village was 2.4, and the 2006 census reported an average household size of 2.2. The average household size for the village has fluctuated over the last 10 years of census reporting.

### 6.2. Population Trends and Growth in the Village and Province

The Village of Caroline has seen significant population growth from the year 1991, adding 105 people in that time. However, looking at periods within that 25 year span we can see there have been fluctuations in the population, with a peak in 2001 that declined to 2011 and a small gain to 2016. Some of these fluctuations may be attributed to economic trends, as oil and gas activity may have grown or declined in those periods. The tables below outline the historic populations for the Village and the Province, as well as the population change that has occurred within the 25 year timeframe.

**Table 2: Historic Populations**

Year	1991	1996	2001	2006	2011	2016
<b>Village of Caroline</b>	407	472	556	515	501	512
<b>Province of Alberta</b>	2,545,553	2,696,826	2,974,807	3,290,350	3,645,257	4,067,175

**Table 3: Population Change**

Timeframe	1991 - 1996	1996 - 2001	2001 - 2006	2006 - 2011	2011 - 2016
<b>Village of Caroline</b>	16%	17.8%	-7.4%	-2.7%	2.2%
<b>Province of Alberta</b>	5.9%	10.3%	10.60%	10.80%	11.60%

### 6.3. Historic Population Trends:

Looking back at the historic population trends we can see that in 1991 the Village of Caroline had a population of 407. Since 1991 it would be fair to say that the Village has seen significant population growth. Between 1991 and 2001 the village saw its largest population growth rate.

After 2001 the growth within the village of Caroline seemed to reverse and the Village’s population decreased between 2001 and 2011. Between 2011 and 2016 the Village of Caroline saw an increase in its overall population growth.

Based on the historic trends when it comes to the overall population of the Village of Caroline it is hard to make an accurate prediction when it comes to future population projections as there are very few trends in the historical population data.

### 6.4. Population Growth – Village of Caroline

Detailed in the table below is a breakdown of what future growth could mean for the Village of Caroline. The breakdown of future growth has been generated by using some common statistics from previous census data.

- 2.2% growth between 2011 and 2016 in the Village of Caroline. This represents the smallest amount of growth for the Village between 1991 and 2016
- 5.18% represents the average growth of the Village of Caroline between 1991 and 2016
- 1.72% represents the average growth of the Province of Alberta between 1991 and 2016.

**Table 4: Population Projections**

Year	Projections		
	Low (1.72% per year)	Medium (2.2% per year)	High (5.18 % per year)
<b>2016</b>	512	512	512
<b>2021</b>	558	571	659
<b>2026</b>	607	636	848
<b>2031</b>	661	710	1,092
<b>2036</b>	720	791	1,406
<b>2041</b>	784	882	1,810

### 6.5. Development Stats – Village of Caroline

Over the past five years spanning from 2013 to 2017 the Village of Caroline averaged the development of approximately 2 dwelling units per year. The village also saw one permit taken out for commercial development, two permits for industrial development and one permit for institutional development between 2013 and 2017. The Table below provides the recent history of building permits in Clearwater County and the Village of Caroline.

**Table 5: Development Permits**

Permit Type	Permit Year				
	2013	2014	2015	2016	2017
<b>Commercial</b>	0	0	0	0	1
<b>Industrial</b>	0	0	0	1	1
<b>Institutional</b>	1	0	0	0	0
<b>Dwelling Units</b>	2	3	0	2	0
<b>Total Permits</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>2</b>

## 7. SOCIO-ECONOMIC PATTERNS AND CONSIDERATIONS

The Village of Caroline plays the role of a small local service center that is located between two major local service centers and sub-regional employment centers, those being the Town of Rocky Mountain House and the Town of Sundre. The population in the region surrounding the Village of Caroline is approximately 3,000 residents.

Residents in the area tend to shop, work and recreate in other municipalities, be it Clearwater County, The Town of Rocky Mountain House or the Town of Sundre. This makes for a sparse variety of commercial, government and recreation services in the Village and surrounding area. The Village does have a veterinary clinic, a few restaurants, a butcher shop, two grocery stores, two bars, a parts supply store and a convenience store and gas bar. The Caroline Hub is home to a gym, doctor’s office, community hall, daycare facility, hockey rink and curling rink.

The Village also has a Kindergarten to Grade 12 school operated by the Wild Rose School Division. As of 2017 the school had a student enrolment of 320 students. 240 students that attend the school make use of the bus transportation. Therefore, we can generally estimate that there are 80 students that reside in the Village. Enrollment numbers in the school are in line with the number of people under the age of 19 as shown in Table 1. The capacity of the Caroline School is 616 students. As of May 2018, the school had a utilization rate of 57%.

**Table 6: Employment Rates**

Employment Stats	Village Residents		Provincial Rate	
	Population	Percentage	Population	Percentage
<b>Total population aged 15 years and over</b>	465	100%	3,206,050	100%
<b>In the labour force</b>	295	63.4%	2,302,945	72%
<b>Employed</b>	260	88.1%	2,096,105	91%
<b>Unemployed</b>	40	13.6%	206,835	9%
<b>Not in the labour force</b>	170	36.6%	903,105	28%

### 7.1. Employment Statistics

Employment statistics in Caroline are similar to the employment statistics throughout the province when you factor in the age demographics of the Village. The chart above shows that the percentage of people in the work force that live in the Village of Caroline, is less than the provincial proportion.

The percentages of the residents from the Village of Caroline that are employed are just over 88%. The provincial average of those employed is higher than that of Caroline. The employment and unemployment numbers suggest that the 2014 recession hit the Caroline region harder than the rest of the province.

The percentage of those living in Caroline that are not in the workforce, is higher than the provincial proportion of the population. This is consistent with the statistics showing that the Village of Caroline has a higher demographic of residents over the age of 65 in comparison to the rest of the province as shown in table one.

## 7.2. Commuter Statistics

The statistics showing the average commuter duration for the Village and Province paints an interesting picture. The stats show that a high percentage, nearly 35% of residents living in the Village of Caroline are driving less than 15 minutes to work. The numbers show that only about 25% of the remainder of the province drive less than 15 minutes to work. The percentage of those driving 15 minutes or less is significantly higher in the Village of Caroline compared to the provincial average.

**Table 7: Commuter Statistics Village of Caroline**

<b>Commuter Stats</b>	<b>Population</b>	<b>Percentage</b>
<b>Commuting duration for the employed labour force aged 15 years and over</b>	240	100%
<b>Less than 15 minutes</b>	85	35.4%
<b>15 to 29 Minutes</b>	65	27.1%
<b>30 to 44 minutes</b>	55	22.8%
<b>45 to 59 minutes</b>	15	6.3%
<b>60 minutes and over</b>	20	8.3%

**Table 8: Commuter Statistics Province of Alberta**

<b>Commuter Stats</b>	<b>Population</b>	<b>Percentage</b>
<b>Commuting duration for the employed labour force aged 15 years and over</b>	1,927,375	100%
<b>Less than 15 minutes</b>	519,085	26.9%
<b>15 to 29 Minutes</b>	706,940	36.7%
<b>30 to 44 minutes</b>	422,070	21.9%
<b>45 to 59 minutes</b>	148,620	7.7%
<b>60 minutes and over</b>	130,665	6.8%

When it comes to people driving between 15 minutes and 29 minutes the provincial numbers were significantly higher than the numbers coming out of Caroline. Approximately 36% of Alberta residents drive 15 to 29 minutes to work every day. Only about 27% of Caroline residents drive 15 to 29 minutes to work every day.

The percentage of those traveling between 30 and 44 minutes to work every day is consistent between the Village and the rest of the province. The stats show that between 20% and 22.8% of the people in the Village and the rest of the province travel between 30 and 44 minutes to work every day.

The percentage of those traveling between 45 and 59 minutes to work every day is once again consistent between the Village and the rest of the province. The stats show that between 6.3% and 8.1% of the people in the Village and the rest of the Province travel between 45 and 59 minutes to work every day.

Numbers in the Village of Caroline and the rest of Alberta are on par with one another for those commuting more than 60 minutes. 8.3% of Village residents travel over 60 minutes to work every day, while that number is only 6.8% for the rest of the province.

### **7.3. Highway 54 Traffic Counts**

In 2017 Alberta Transportation completed traffic counts in the Village of Caroline at the intersection of Highway 54 and 50 Street. The counts revealed that average traffic volumes increased in the summer months, May to September, with passenger vehicles making up the vast majority of traffic at the intersection. Recreational Vehicles were the next highest category, accounting for 13% of the traffic travelling east and west on Highway 54. Tractor Trailer and Single Unit trucks account for approximately 6% of the volume on Highway 54 in both directions. The tables below summarize the traffic count results at the intersection.

The vast majority of the traffic that flows through the Village of Caroline is travelling on Highway 54. There is approximately the same volume of traffic travelling west on Highway 54 as travelling east on Highway 54, all time of the year.

**Table 9: Average Daily Traffic Highway 54 and 50 Street**

<b>Travel Direction</b>	<b>Annual Average Daily Traffic</b>	<b>Average Summer Daily Traffic</b>
<b>North</b>	750 vehicles	900 vehicles
<b>East</b>	3340 vehicles	4020 vehicles
<b>West</b>	3420 vehicles	4110 vehicles
<b>South</b>	950 vehicles	1140 vehicles

**Table 10: Traffic Volume by Vehicle Type**

<b>Vehicle Type</b>	<b>Number of Vehicles</b>			
	<b>North</b>	<b>East</b>	<b>West</b>	<b>South</b>
<b>Passenger Vehicle</b>	685 (91.3%)	2659 (79.6 %)	2738 (80.1%)	856 (90.1 %)
<b>Recreational Vehicle</b>	43 (5.7%)	458 (13.7 %)	476 (13.9 %)	69 (7.3 %)
<b>Bus</b>	0 (0%)	1 (0%)	1 (0%)	0 (0%)
<b>Single Unit Truck</b>	5 (0.7%)	61 (1.8 %)	54 (1.6 %)	10 (1.1 %)
<b>Tractor Trailer Unit</b>	17 (2.3 %)	161 (4.8 %)	151 (4.4 %)	15 (1.6 %)

## **8. PHYSICAL AND NATURAL FEATURES AND USES**

The Village of Caroline is the only centre located along the Highway 22 route between Sundre and Rocky Mountain House. It is the second largest service centre located in Clearwater County. It serves the regional population and is a gateway to recreation areas to the west.

The existing land use patterns, shown in part on Map 3: Existing Uses and Facilities in Village, reflect the way the Village has responded to residential, commercial and industrial growth pressures. Most of the growth in the Village has focused on the northwest area for new residential development and on the northeast area for commercial and industrial development.

Maps 2: Significant Features, illustrates the features and activities that will influence the land use patterns and policies of the municipal development plan. This encompasses natural and man-made elements.

### **8.1. Nature**

The most notable natural feature in the study area is the Raven River, which is a class A fishery. The Raven River runs diagonally through the south half of the study area, just to the south of the Village of Caroline. Recreation activities and amenities are present along the river and are used for a variety of recreation purposes, mainly fishing. The river and the lands adjacent also represent an important corridor for wildlife and habitat for a variety of species.

The majority of the land surrounding the Village is currently being used for agricultural production. There are approximately two and a half quarters in the north east corner of the study area that are in a natural state. These quarters contain forest and low lying areas, with the NE-13 and SE-24 being Crown lands.

### **8.2. Infrastructure**

Maps 2: Significant Features, shows the impact of oil and gas infrastructure on the study area. Substantial areas are crossed by numerous pipelines in different directions. There are also a number of active and abandoned wells within the study area that are marked for reference on the map but will most likely change over time. There is a significant sour gas pipeline that runs east-west, north of the Village. This line (these lines) and the required setbacks from residential development pose significant restrictions on the possibility of any development north of Caroline, or even within the current Village boundary..

Transportation infrastructure in the study area includes a highway, and major municipal roadways. Highway 54, which runs east and west out of the Village, is the main route for vehicle traffic through the study area and also acts as a major highway commercial corridor through the Village. Caroline contains a number of paved side streets as well as some gravel streets. Clearwater County has major municipal roadways that radiate north and south out of

Caroline. To the north is the Caroline North Road and to the south is the Caroline South Road. Both roads are paved and high traffic.

The Village's sewage lagoons are identified on Maps 2 & 3 and are located in the County just south of the Village boundary. The sewage lagoon setback of 300m extends to the south Village boundary. Map 3: Existing Uses and Facilities in Village indicates the location of the Lift Station and Pump House, which are located in the north portion of town along 50th Street.

### **8.3. Active Recreation**

Existing recreation facilities within the Village include Caroline HUB that contains curling rinks and an arena in the southwest corner of the Village. There are 2 ball diamonds and a bathroom/concession facility located within the County directly south of the arena and the Village. The Caroline campground as well as the museum are located within the County directly east of the Village. These facilities can be found and identified within Map 3: Existing Uses and Facilities in Village.

### **8.4. Passive Recreation**

There is a large green space and park located within the Village on the north end directly adjacent to the Caroline North Road. There is potential for trails along the Raven River, as well as along Highway 54.

### **8.5. Village Uses**

Map 3: Existing Uses and Facilities in Village identifies how the current lands within the Village of Caroline are zoned and used. Most of the commercial uses are located along 50 Avenue (Highway 54) and 50 Street. These uses include hotel, motel, grocery store, liquor stores, general store, bank, gas station, restaurants, vet clinic, hair salon, vehicle sale and repair, etc. There are also a variety of public and institutional uses located close to the center of the Village including a library, fire hall, youth centre, post office, ambulance bay, church and the Village office. There are very few industrial lots currently in use in the Village and they include the recycling depot and Alberta Highways yard. There are a variety of residential uses located north and south of 50<sup>th</sup> Avenue. These include detached dwellings, manufactured homes and multi-family housing.

## **9. SERVICING ISSUES AND OPPORTUNITIES**

### **9.1. Municipal Water and Sanitary Sewer**

Stantec and Parkland Community Planning Services completed a Growth and Infrastructure Master Plan (“Plan”) for the Village of Caroline in 2004. This report was created and written based on the Village’s status in 2004. Changes have occurred, and population projections have slowed making many of the dates and numbers projected at the time inaccurate. However, the data is helpful regarding the required upgrades in the future for growth within the Village, and relevant to the MDP planning process.

According to the Plan the Village’s raw water supply will be met until 2019 with a speculated population of 911 people. The plan identified that two of the raw water pumps would need to be replaced (approximately 2014) after the population reached 792 people. An additional water filter would not be required until the population of the Village reached 911 people (approximately 2019). It was also identified in 2004 that some of the water instrumentation equipment had exceeded its lifespan and was in need of replacement.

When it comes to the Village’s water storage and pumping systems no additional water distribution pumps will be required to meet the Village’s treated water demand until the population reaches 1122 persons (approximately 2026). The capacity of the existing storage reservoir would be exceeded prior to the year 2016 for a population of 847 persons. Therefore, it was advised that the Village should schedule to upgrade the existing storage reservoir from the existing 820 m<sup>3</sup> to 945 m<sup>3</sup> prior to a population of 847 persons (approximately 2016). It was also observed that the existing switches in the reservoir were defective and therefore should be replaced.

The study identified that the existing distribution pumps can provide enough flow and service pressure to supply water under the existing and future development conditions. However, the motor should be upgraded from the existing 10 hp to 15 hp when the population reaches 736 persons (approximately 2012). The distribution pumps will exceed their life expectancy prior to 2026. Therefore, it is recommended that they be tested, serviced and replaced, if necessary.

The existing Fire Pump needs to be upgraded to 235 l/s capacity to fulfill the commercial and industrial fire flow requirement when the population reaches 640 persons (approximately 2010).

The existing water distribution system will require network looping to improve servicing and fire protection and to meet minimum Alberta Environment water distribution system design guidelines. Water main upgrades and extensions are recommended for both northeast and northwest areas of the Village. This would provide adequate servicing to meet the demands of infill development to provide looping of existing Village servicing areas.

The Wastewater Treatment Plant is well within the original design scope of 400 m<sup>3</sup>/day for a population of 1,000 persons (approximately 2019). However, the existing aeration system

initially installed in 1991 will reach its design life prior to 2013 and testing, maintenance or upgrading may now be required. A 5-year maintenance program should be implemented, commencing in 2004, which includes roller flexing the liner diffusers to restore the oxygen transfer and mixing capabilities of the aeration system. It was recommended that the entire lagoon system be mechanically de-sludged when the population reaches 622 persons (approximately 2005) and prior to the proposed aeration system replacement. When the population reaches 779 persons (approximately 2013), an additional blower would be required for Cell # 1.

The existing Sewage Lift Station has sufficient capacity to handle the existing wastewater flow. However, the pumping rate should be controlled so that it does not surcharge the existing sanitary outfall line discharging to the lagoon. The existing gravity mains have sufficient capacity to handle the existing wastewater flow and no upgrading is required under the present conditions.

In general, gravity mains on the north, south and east sides of the existing Village cannot be extended to service future development, without requiring large scale earthmoving. In the short term, the Village may consider low-pressure force main systems to provide sanitary servicing for areas that cannot directly discharge into gravity collection mains.

The existing 200 mm outfall line has enough capacity until the population reaches 911 persons (approximately 2019). When the population reaches 911 persons, new 200 mm gravity main should be constructed which would twin the existing outfall gravity main to divert the wastewater from the south of the Village. However, new development areas will require a new outfall line to the lagoon. It is likely that future development of the northeast and southeast areas of the Village will require a sanitary lift station and force main for servicing.

When evaluating a proposal for industrial or commercial development in areas that cannot be serviced by the extension of existing gravity collection mains, the Village should evaluate whether it is more cost-effective to require new development to operate their own sanitary servicing systems, such as septic holding tanks.

As we can see from the 2004 Growth and Infrastructure Master Plan, some of the population projections were perhaps over estimated. The majority of the Villages infrastructure can handle its current existing demand and likely will be able to for some time. As previously identified the current population of the Village of Caroline is approximately 512 people as of 2016. The 2004 Growth and Infrastructure Master Plan identifies that infrastructure will need to be upgraded at a population of about 640. At the current rate of growth, it's likely that infrastructure will need to be replaced or upgraded due to age rather than overcapacity. Changes in regulations for water and sewer could also result in a loss of space due to more space requirements needed to process for these systems.

In April 2018, the Village had a feasibility study undertaken for options to upgrade the sewage lagoon treatment capacity in response to changing regulatory expectations. The most cost

effective means of increasing treatment capacity to meet the requirements of Federal and Provincial legislation involves the construction of a new storage cell at a location downstream from the existing sewage treatment plant and lagoon cells. This option would provide capacity up to the equivalent of a population of 933 or the next 30 years assuming wastewater flow increases by 2% per year.

## **9.2. Storm Water Management and Drainage**

Storm water management facilities are generally required to be constructed as developments, that would increase the amount of surface water run-off, are approved and built out. These facilities take many forms such as a formal storm water retention pond, on-site storage (e.g. in depressions in parking areas or landscaped areas) and use of existing water bodies. The Village system generally relies on overland routes and road side ditches leading to creeks and rivers to the south. The Village of Caroline Growth and Infrastructure Master Plan identifies some storm water infrastructure that may be required for future growth. Subject to development in the northeast, southeast and southwest areas of the Village, storm water retention ponds should be constructed to restrict storm water runoff from these areas to pre-development rates. Most of the storm water run-off from the developed portions of the Village flow south into the North Raven River.

## **10. FUTURE LAND USE OPPORTUNITIES**

There are a range of potential future land use scenarios that can be considered for the study area. In creating one for the MDP the following should be considered.

- Protection of key natural features that provide wildlife areas, perform vital environmental functions and contribute to the beauty of the study area such as the Raven River and its banks as well as the muskeg/ low lands located within the crown land to the east of the Village;
- There needs to be an opportunity for a new lagoon location due to the space restrictions in its current location;
- When the industrial lands fill within the east end of the Village, it is likely that more residential lots will be needed to accommodate an increase in population to the area;
- Future urban expansion needs as the Village continues to grow and expand its residential, commercial and industrial base;
- Recreation opportunities and linkages between various recreation areas and facilities;
- Locations for industry that meets their site requirements and in locations offering good access but not conflicting with other uses; and
- Locations for commercial development that meet site requirements and are in good locations for visibility and proximity to the highway.

## **11. PLAN ISSUES**

A preliminary list of issues has been identified. It is expected this list may be expanded upon through Steering Committee discussion, issues identified through a stakeholders/public meeting and through further research.

1. Future of the existing sewage lagoon. It will likely require repairs in the future and will require expansion with the growth of the Village. There are restrictions to this growth because of its current location adjacent to the Raven River, Caroline South Road and the Village boundaries and development. The topography of the land and gravity also plays a factor in a practical location for a new facility. A possible location for a new system could be to the southeast of the Village, in order to make use of gravity mains.
2. Oil and Gas facilities currently pose significant restrictions on the possibilities for future residential development in the Village. Sour gas lines located to the north already present restrictions to development. If possible, it should be discouraged to allow any further extensive oil and gas development west of the Village, which would severely impact the developable area of the Village. Coordination between the County and Village needs to improve in order to prevent these developments where growth is desired.
3. Explore opportunities for green space development over the existing north/south pipeline located directly west of the Village.
4. Major transportation routes and coordination of right-of-way requirements, access management and maintenance and highway expansion/realignment must be addressed. Consultation will be required with Alberta Transportation in order to develop appropriate policies applicable to area Highways. Major transportation routes within the Plan area should be identified and policies relative to future access, widening, construction standards and maintenance.
5. Residential growth should be kept away from Highway 54 with access points to reduce impact.
6. Land use patterns must be developed in a manner so as to preserve significant natural areas and environmental features. An inventory of these areas and features will be required.
7. The MDP must explore opportunities for urban expansion and future annexation for residential, commercial and industrial purposes.
8. Aesthetic guidelines for development along Highways should be developed to ensure a seamless boundary between the two jurisdictions.