integrated

Transportation Master Plan

2024

The City of SPRUCE GROVE

The City of Spruce Grove is honoured to acknowledge the land we work, play, and make our homes on as Treaty 6 territory, and the Métis Nation of Alberta Region 4. This is sacred land that holds the hearts, footsteps, and spirits of many First Nation, Métis, and Inuit Peoples, and in particular, Paul First Nation, Enoch Cree Nation, Alexis Nakota Sioux Nation, Michel First Nation, Alexander First Nation, the Lac Ste. Anne Métis, and Métis Nation of Alberta District 8. We recognize and acknowledge Indigenous values, traditional teachings, ways of being, contributions, and historical inequities. The City is dedicated to Truth and Reconciliation to help in healing and learning to build reciprocal and trusted relationships. We commit towards strengthening relations and building bridges with the Indigenous Nations whose traditional territories the City is located within.

The City of Spruce Grove is a growing and dynamic community located west of Alberta's capital.

The integrated Transportation Master Plan will provide an opportunity to reassess and update transportation policies and direction that aligns with current and projected growth across the City.

Terms and Definitions

Below are the terms and definitions used throughout this integrated Transportation Master Plan.

ASP – Area Structure Plan

ATS – Accessible Transportation Service

CCARP – City Centre Area Redevelopment Plan

City – City of Spruce Grove

CN – Canadian National Rail

EMRB – Edmonton Metropolitan Region Board

EMRGP – Edmonton Metropolitan Region Growth Plan

iTMP – integrated Transportation Master Plan

IRTMP – Integrated Regional Transportation Master Plan

ITS – Intelligent Transportation Systems

LOS – Level of Service

MDP – Municipal Development Plan

POSMP – Parks & Open Space Master Plan

Province – Government of Alberta

Region – Edmonton Metropolitan Region

TEC – Alberta Transportation and Economic Corridors

TMP – Transportation Master Plan

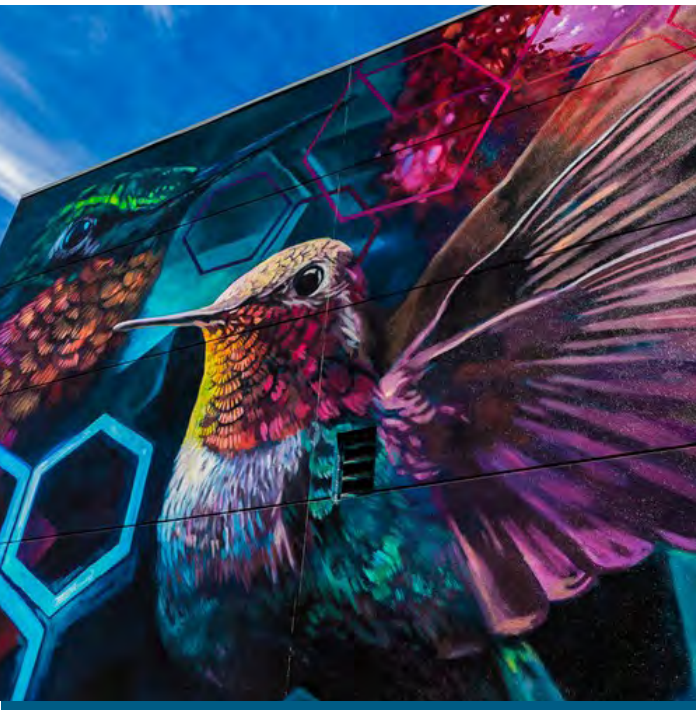
TMRTP – Tri-Municipal Regional Transit Plan

Tri-Municipal Partners – City of Spruce Grove, Town of Stony Plain and Parkland County

vph – vehicles per hour

v/c – volume-to-capacity

The iTMP provides a forward-thinking framework for the City to transform its transportation network into a connected, reliable, and resilient system that balances the mobility needs of the community.



The City of Spruce Grove's iTMP is a long-term plan that will guide the development, enhancement, and integration of various transportation modes within Spruce Grove over the next 20 years.

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Executive Summary

The City of Spruce Grove's iTMP establishes a long-term strategy for the development, enhancement, and integration of the City's transportation network over the next 20 years. As one of Alberta's fastest-growing communities, Spruce Grove has experienced rapid expansion, doubling its population in the past two decades and is projected to reach nearly 66,000 residents by 2044.

The iTMP is designed to address this growth by providing a comprehensive framework to guide future transportation decisions and investments in infrastructure.

THE PLAN'S FOUNDATION IS BUILT ON FOUR KEY PILLARS:

Transportation Safety: Ensuring the safety and accessibility of the transportation system for all users, including pedestrians, cyclists, and motorists.

Multimodal Connectivity: Promoting efficient connections between various modes of transportation, such as transit, walking, cycling, and vehicles to enhance mobility options for residents.

Economic Vitality and Resilience: Leveraging transportation investments to support local economic growth, enhance job opportunities, and improve regional competitiveness.

Regional Integration: Collaborating with regional partners to ensure the transportation network is well-connected to the surrounding municipalities and regional hubs.

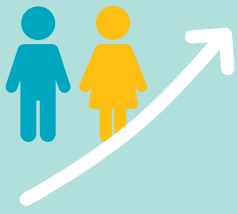
The iTMP also identifies key growth areas in the city, including the northeast, northwest, and southwest quadrants, with significant development expected in commercial, industrial, and residential sectors. The projected traffic demands necessitate critical road improvements, multimodal infrastructure, and safety enhancements across Spruce Grove.

Spruce Grove is projected to maintain a steady growth rate over the next 20 years.

AVERAGE ANNUAL GROWTH RATE

3.4%
2013 – 2023

2.6%
2024 – 2044



KEY iTMP RECOMMENDATIONS

- **Road Network Improvements:** Focused upgrades to key corridors such as Pioneer Road, Highway 16A, and Boundary Road to accommodate increased traffic volumes.
- **Active Modes:** Updating the City's active modes definition and database to facilitate future gap assessments and expanding multi-use pathways to improve pedestrian and cycling access.
- **Transit Enhancements:** Strengthening local and regional transit connectivity with neighbouring municipalities through continued investments in on-demand transit and regional partnerships.
- **Rail Crossing Enhancements:** Enhancing safety and traffic operations at the rail crossings for all users through a range of measures, from signal optimization to potential grade separation.
- **Regional Integration:** Continuous provincial and regional advocacy for improvements to Highway 16 and Highway 628.

The iTMP emphasizes ongoing community engagement, technical assessments, and integration with other city plans, ensuring it reflects the evolving needs of Spruce Grove residents. Ultimately, the plan aims to create a connected, resilient, and inclusive transportation system that supports the City's continued growth and enhances the quality of life for all residents.

iTMP NEXT STEPS

1. **Collaboration:** City departments and regional partners will work together to ensure effective implementation.
2. **Monitoring:** Regular assessments of roads and sidewalks will prioritize repairs, and traffic operations at key intersections will be reviewed.
3. **Near-term Projects:** Key projects to be implemented in the next five years include potential construction of Boundary Road and upgrades to Highway 16A and Jennfier Heil Way. Regular monitoring and evaluation of transportation operations, particularly at rail crossings and high-traffic intersections, is essential.
4. **Ongoing Initiatives:** Active modes improvements (e.g., sidewalks, trails, etc.) and transit ridership monitoring will guide future investments.
5. **Review:** The iTMP will be periodically updated to stay aligned with growth and changing needs.

By advancing these steps, the iTMP aims to guide Spruce Grove's transportation infrastructure towards sustainability, connectivity, and safety for the community's growing population.

1. Introduction

Creating a long-term plan that will guide the development, enhancement, and integration of various transportation modes within Spruce Grove over the next 20 years.

Introduction

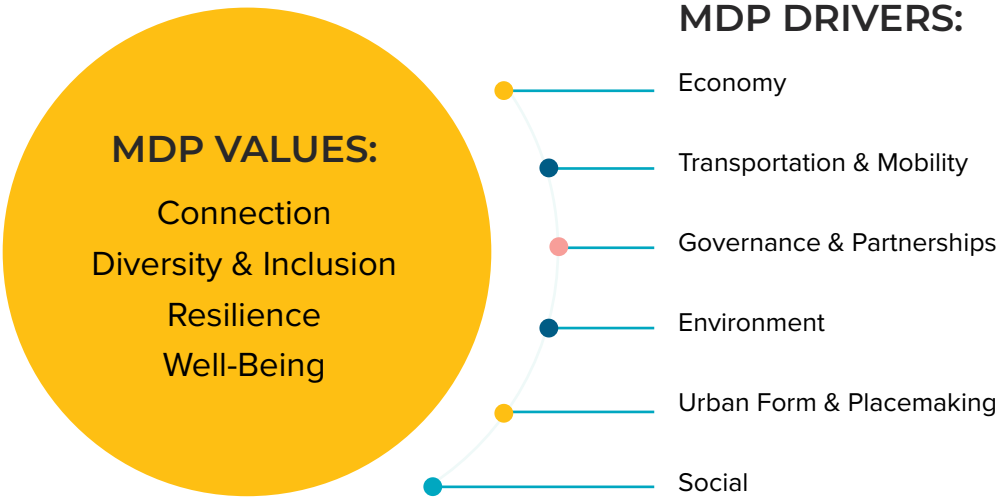
Spruce Grove's iTMP is a long-term plan that will guide the development, enhancement, and integration of various transportation modes within Spruce Grove over the next 20 years. The iTMP is an update to the City's 2012 TMP, addressing current transportation challenges and shaping the future mobility of Spruce Grove as it grows and adapts to changing needs. The iTMP also provides a forward-thinking framework for the City to transform its transportation network into a connected, reliable, and resilient system that balances the mobility needs of the community.

1.1. PLAN OVERVIEW

Spruce Grove has doubled its population over the past 20 years and is projected to maintain a steady growth rate to almost 66,000 people by 2044. As one of Alberta's fastest growing communities, the City has evolved from a small suburban community to a dynamic hub within the Region. Continued growth in employment opportunities, as well as the geographical location and surrounding highway infrastructure, makes the City an attractive and welcoming place for families of all ages to live, work, and play. In response to challenges resulting from these strong growth demands, the City requires an updated blueprint for shaping its future mobility needs.

At its core, the iTMP aims to improve safety, connectivity, and sustainability for all residents, employees, and visitors. By analyzing current transportation conditions, identifying future growth patterns, and incorporating input from participants, the plan provides a roadmap to guide municipal decisions and set priorities for investments in transportation infrastructure and services.

The direction of the iTMP builds upon the values and drivers outlined in the City's MDP, *The Shape of Our Community*, and is reflective of community aspirations and future needs.



Key recommendations of the iTMP are based on the following four guiding pillars, which were established through City feedback, community engagement, and technical assessments.

TRANSPORTATION SAFETY:

Enhancing infrastructure, policies, and programs to ensure safe and accessible transportation for pedestrians, cyclists, motorists, and transit users of all ages and abilities. This includes incorporating safety enhancements for active mode and alternative transportation users through road rehabilitation or new construction, establishing programs to address neighbourhood traffic calming and network-level safety, and integrating safe rail crossing measures.

MULTIMODAL CONNECTIVITY:

Emphasizing effective connections between different transportation modes to facilitate efficient and convenient travel options for all users. This includes continued investments in infrastructure and amenities for active modes, integrating multimodal facilities in new road designs or road re-construction, enhancing local transit service, and facilitating transit connectivity to neighbouring municipalities.

ECONOMIC VITALITY AND RESILIENCE:

Leveraging transportation investments to support economic growth, foster job creation, and enhance competitiveness for residents and businesses. This includes creating an efficient and reliable transportation system that effectively connects businesses to markets, workers to employment opportunities, and consumers to goods and services, thereby reducing costs, increasing accessibility, and stimulating economic activity. Prioritizing these investments in alternative transportation and asset management also promotes environmental stewardship and resilience to social, economic, and environmental changes.

REGIONAL INTEGRATION:

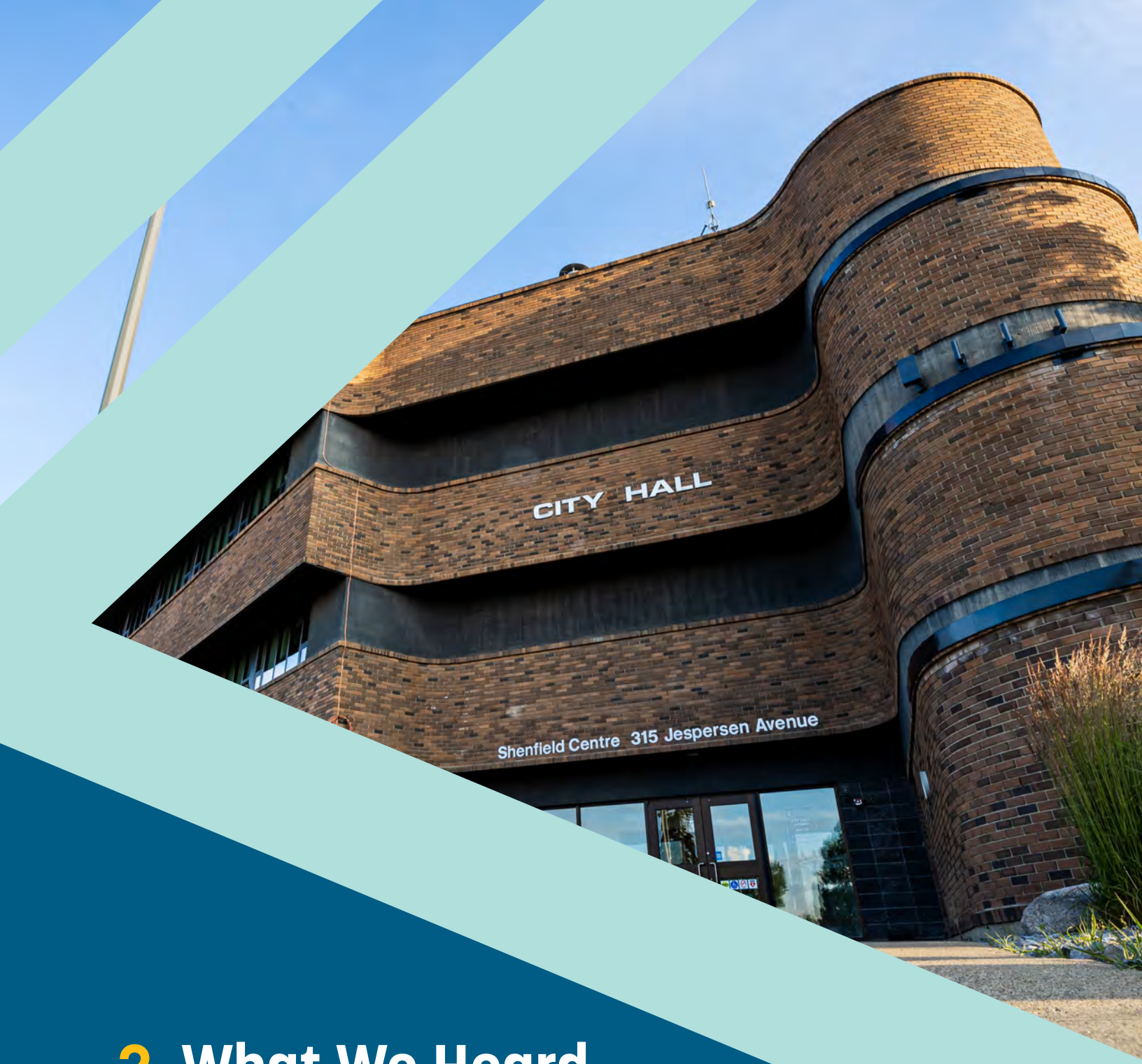
Fostering collaboration among various interest groups, including government agencies, businesses, advocacy groups, and the public, creating a transportation system that not only meets the needs of today, but also anticipates and adapts to the challenges and opportunities of tomorrow. This includes working with regional partners to improve transit connectivity to neighbouring municipalities, advocating to maintain safe highway operations, and integrating safe rail crossing measures. Through continuous evaluation, adaptation, and implementation, a more sustainable, resilient, and inclusive transportation network can be developed to enhance the quality of life and economic vitality for Spruce Grove.

1.2. PLAN PROCESS

The iTMP was updated over a three-phase process from June 2023 to May 2024 as illustrated in Figure 1.

Figure 1: iTMP Process

The iTMP integrated multiple streams of technical assessment and community feedback to establish the foundational themes. Community feedback was collected through three rounds of public engagement, which involved a range of activities as further described in **Section 2.1**.



2. What We Heard

Effective and transparent community engagement allows the iTMP to be more inclusive and responsive to meet the needs of the community.

What We Heard

Community engagement was a critical aspect of developing the iTMP, as it ensured the plan reflected the needs and priorities of Spruce Grove residents. Effective and transparent community engagement allowed the iTMP to be more inclusive and responsive to meet the needs of the community.

2.1. ENGAGEMENT PROCESS

The engagement process was designed to promote accessibility, transparency, and inclusivity, resulting in valuable community input and support. The diverse engagement needs of various participants were effectively addressed through three rounds of engagement with the general public, special collaborative groups, and City participants, including City Council.

Social media was utilized by the City to inform the public of opportunities to provide input for the iTMP. Other engagement activities were conducted through a mix of in-person meetings and online feedback through the use of Vertisee—an interactive web-based map that allowed participants to post comments geographically.

ROUNDS OF ENGAGEMENT

ROUND 1

INTRODUCE iTMP PROJECT AND IDENTIFY CURRENT CHALLENGES AND OPPORTUNITIES.

- Advertised on social media and the City's website
- Meeting with the Youth Advisory Group and online engagement (Vertisee)
- Presentation to City Council

ROUND 2

EXPLORE iTMP DIRECTION AND SET PRIORITIES

- Meetings with the City's Transit, Parks & Recreation, Operations, and Economic Development departments
- Presentation to City Council
- Circulate draft policies and strategies for City review

ROUND 3

PRESENT DRAFT iTMP

- Present iTMP recommendations to City Council and Administration for final input

The initial round of engagement focused on introducing the iTMP project to the community and seeking perspectives on the current transportation challenges and opportunities in Spruce Grove. Round 2 engagement presented the community's transportation priorities based on feedback received in Round 1, as well as a check-in with City Administration and City Council to ensure the iTMP direction was aligned with the community's vision and goals. The final round of engagement focused on presenting the Draft iTMP to City Council and Administration for final input.

2.2. COMMUNITY INSIGHT

The collaborative public engagement conducted through Vertisee resulted in **434 responses** with approximately 150 unique respondents. There were also a high number of agree/disagree responses to the posted comments.

As highlighted in Figure 2, the top three concerns among respondents were focused on **road safety, pedestrian safety, and speeding.**

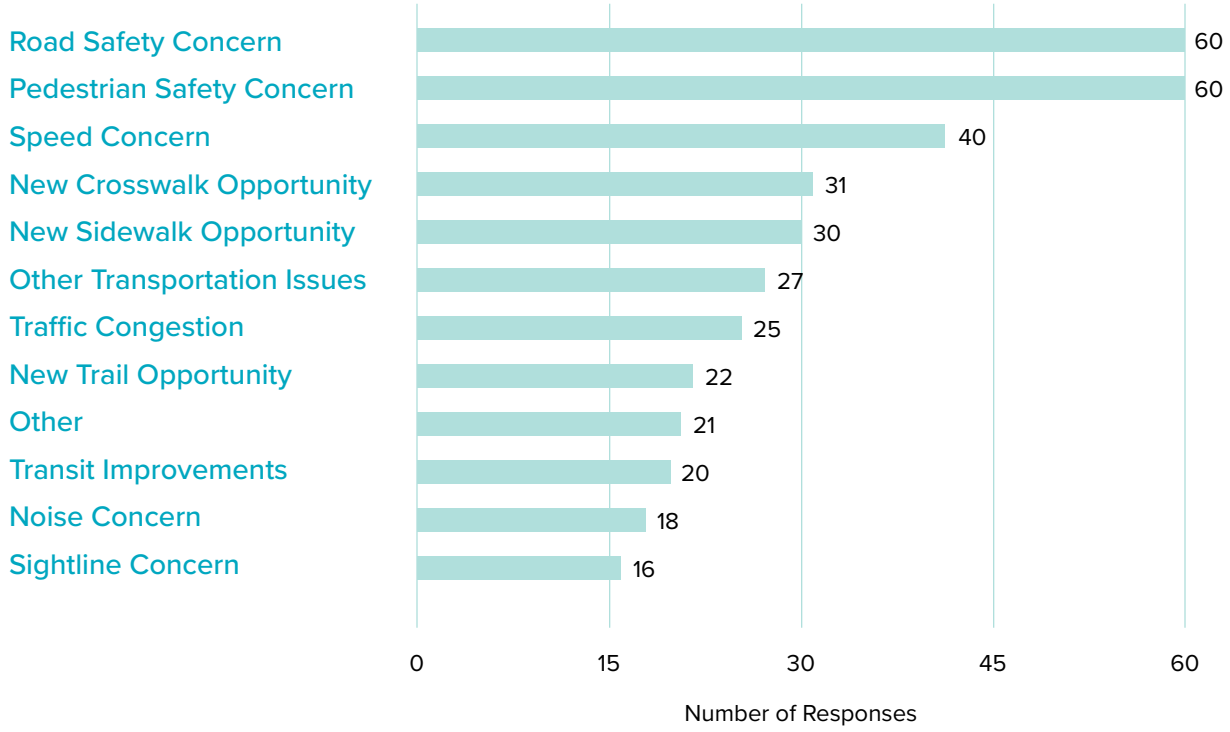


Figure 2: Summary of Responses by Transportation Concern

The following key themes were established through the community's top concerns and responses.

434
RESPONSES

APPROX.
150
UNIQUE
RESPONDENTS

ACTIVE TRANSPORTATION

- Better protection for pedestrians
- Improved trail **connectivity**

SPEED AND SAFETY

- Corridor **speeding** in neighbourhoods
- Intersection **safety** (various locations)

INTERSECTION OPERATIONS

- Signal timing and turn bays

3. Guiding Plans and Initiatives

The iTMP provides a holistic and integrated vision for the transportation system within Spruce Grove.

Guiding Plans and Initiatives

The iTMP provides a holistic and integrated vision for the transportation system within Spruce Grove. It must align with current and ongoing City and regional plans, initiatives, and policies to ensure that future transportation planning supports the broader goals and priorities of Spruce Grove. A consistent and coordinated approach will lead to better resource allocation, participant and community support, integration of land use and transportation, as well as long-term success in meeting the transportation needs of the community. The following sections highlights the key City, regional, and other relevant plans and initiatives that shaped the iTMP.

3.1. CITY PLANS AND INITIATIVES

MUNICIPAL DEVELOPMENT PLAN (2024)

The City's MDP, *The Shape of Our Community,* was approved by Council on September 9, 2024. The MDP update includes new development and associated land uses. It highlights new policies and direction for both the movement of people and other engineering-related policies. "Transportation & Mobility" is a key driver in the MDP that emphasizes the importance of maintaining a dependable and accessible transportation network for the overall welfare of the community. The related policy direction statements prioritize the integration of diverse transportation modes and the ongoing enhancement of transportation infrastructure. The City believes that by adopting this approach, it can foster the well-being and inclusivity of its residents. This holistic perspective is believed to actively promote the health and equitable involvement of all community members.

The effective integration of land use and transportation strategies, policies, and initiatives are essential for fostering well-balanced growth and development in Spruce Grove.

2012 TRANSPORTATION MASTER PLAN

The previous TMP was developed in 2012 to guide the adoption of safe, innovative, sustainable approaches to all modes of transportation. The TMP was intended to assist the City with preparing capital plans and developing work programs and budgets. It incorporated feedback from various public and participant engagement sessions, which included residents, business associations, health and accessibility advocates, transportation providers, regional transportation agencies, and adjacent municipalities.

Several objectives outlined in the TMP related to transportation demand management, road infrastructure development, transit development, active transportation infrastructure, and operations and maintenance that were considered in developing the iTMP (i.e., reduction in proportion of peak hour trips by single occupant vehicles, adoption of a long-range plan for road network, transit service, and pedestrian and bicycle networks). In addition to the road network, the plan also identified the need to develop a transportation hierarchy for public transit, bicycles, and pedestrians. The TMP included an implementation plan which was revisited in this iTMP to ensure the proposed capital projects are still relevant.

TRAFFIC SAFETY PLAN (2023-2025)

The Spruce Grove Traffic Safety Plan constitutes a comprehensive documentation and analysis of traffic safety data, aiming to foster participant engagement and propose initiatives geared towards enhancing road safety. A general trend noted in the data is a considerable decrease in collisions along the City's main corridors over the past five years. The plan attributes this pronounced improvement in road safety and reduction in substantial collisions to the implementation of protected left turns, as well as the increase in traffic enforcement, encompassing both automated and conventional approaches.

STRATEGIC PLAN 2022-2025

The Spruce Grove Strategic Plan was created by Council to identify the core pillars of the community and lay out a road map for the protection and development of those values. Considering the significant growth expected in the City, one area of focus presented in the plan is maintaining the quality and standard of municipal services over the next two decades. The plan also focuses on leveraging the increasing population to stimulate local business growth within the city, aiming to create a self-sustaining economy and reduce the number of commuters leaving the city for work.

› Strategic Plan (2022-2025)

SPRUCE GROVE GROWTH STUDY (2016)

The Spruce Grove Growth Study projects the City's future growth over the next 50 years until 2067, estimating the required land area to accommodate this growth within and beyond the city's existing boundaries. It considers short and long-term growth forecasts, analyzing various types of development (i.e. residential, commercial, industrial, and institutional). The study also provides an assessment of future needs and acknowledges regional density targets while outlining preliminary future land use assumptions. The proposed expansion areas include the West Expansion Area, which is generally bounded by the Atim Creek and Boundary Road, north of Highway 16A, as well as the South/ Southeast Expansion Area, which generally includes lands from the City's southern boundary to Highway 628.

PARKS & OPEN SPACE MASTER PLAN (2007)

The Spruce Grove Parks & Open Space Master Plan (POSMP) provides policies on open space use, based on principles of ecological integrity, livability, and positive image and character. The trail system outlined within the plan serves as the framework for the open space system within the city. The POSMP is intended to provide policy and long-range goals for the open spaces within the community. To build complete communities, it is critical that parks, open spaces, and trails are integrated in the planning process for transportation infrastructure and conversely. The recommendations and strategies identified in the POSMP were incorporated in the iTMP's strategic directions.

3.2. INTEGRATION WITH OTHER PLANS

AREA STRUCTURE PLANS (ASPs)

An ASP is a statutory plan that provides the general planning framework for the subdivision and development of land within Spruce Grove. ASPs are bylaws adopted by City Council and are required prior to developing undeveloped or unplanned areas of land in Spruce Grove. The City currently has 10 approved ASPs. The planned transportation network in these ASPs is considered in the iTMP to ensure future transportation planning is consistent.

CITY CENTRE AREA REDEVELOPMENT PLAN (CCARP)

The CCARP aims to identify and address key deficiencies within the City's oldest and most historic area. This area has experienced prolonged decline as the community has evolved into a more suburban city, diminishing the economic significance of the downtown core. Consequently, the area suffers from decreased interest and underutilization, resulting in much of its commercial land being vacant, deteriorated, or outdated. The CCARP seeks to reinvigorate the historic core by adding mixed-use developments with high-density residential, improving the overall streetscape and building quality, reviewing possible mobility upgrades to meet all user needs, and increasing the cultural and visual appeal along the area's corridors. Ultimately, the modernization and urbanization of the City Centre will provide a vibrant, mixed-use area for residents to shop, socialize, and explore while giving the area a much-needed opportunity for economic growth.

ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS (TEC)

TEC has several ongoing planning and improvement initiatives for the key highways in or near Spruce Grove. These include:

- Highway 16 – Functional planning is currently being completed for the widening of Highway 16 to six or more lanes from Anthony Henday Drive to Highway 779.
- Highway 628 – Planning and design are ongoing for the 16km section of Highway 628 from east of Highway 779 to Highway 60.
- Highway 16A – Widening of Highway 16A deceleration and acceleration lanes, speed reduction and installing signals at Spruce Valley Road and Pinchbeck Road/Bevington Road. This improvement will be completed by 2025.

While the timing and/or staging of the Highway 16 and Highway 628 will need to be confirmed, these initiatives were reviewed and considered in developing this iTMP.

EDMONTON METROPOLITAN REGION GROWTH PLAN (EMRGP)

The EMRGP sets an innovative path to plan growth across the Region in a responsible manner that sustains and advances regional prosperity and well-being. This plan anticipates that Spruce Grove's population will grow to between 64,000 (low projection) and 80,000 (high projection) by 2044. It is also estimated that employment opportunities will grow to between 19,000 (low projection) and 26,000 (high projection) by 2044. The anticipated increase in population and employment is a significant transformation that will require deliberate and committed collaboration and leadership between the EMRB and the City of Spruce Grove. To achieve this, the transportation strategies established in this iTMP will need to support the priorities identified in the EMRGP.

TRI-MUNICIPAL REGIONAL TRANSIT PLAN (TMRTP)

The TMRTP was developed in 2017 to deliver a common vision for future transit service and the supporting infrastructure and strategies for the Tri-Municipal Region. The TMRTP provided direction on establishing transit service in a coordinated and integrated way over the short, medium, and long-term horizon. In 2019, the City entered a Memorandum of Agreement (MOA) with Stony Plain and Parkland County to work towards implementing the policies outlined in the TMRTP.

The strategies developed though this iTMP supports the City's commitment in collaborating with Tri-Municipal partners to address transportation improvements and funding/implementation opportunities. This ensures a shared vision for system continuity is achieved between the Tri-Municipal Region.

NEIGHBOURING TRANSPORTATION MASTER PLANS

The City's transportation network connects directly with the network within the Town of Stony Plain and Parkland County. To facilitate cohesive and integrated transportation planning, any future improvements or strategies for these connections must align with those identified in the transportation plans of Parkland County and Stony Plain.

The TMPs for Parkland County and Stony Plain were completed in 2021, and both outlined a vision and strategy to support growth and provide system continuity through the following:

Parkland County TMP

- Partner with other organizations to build and maintain new and existing multi-use trails, including a connection between the Wagner Natural Area and Spruce Grove.
- Collaborate with regional partners to coordinate alternative transportation opportunities, including ride sharing and transit between major activity area and employment lands such as Spruce Grove, Stony Plain, and Acheson Industrial Park.
- Continue to align with the Tri-Municipal Regional Transit System and the Edmonton Regional Transit Services Commission to support regional transit to enhance growth and connectivity.

Stony Plain TMP

- As required, future upgrades to Boundary Road should be undertaken in partnership with Spruce Grove.
- Continue to work towards implementing the goals of the Long-Term Transit Strategy, including in partnership with Parkland County and City of Spruce Grove.

4. Spruce Grove Today

Spruce Grove is one of the fastest growing municipalities in Alberta.

Spruce Grove Today

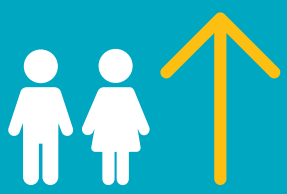
The direction and priorities for future transportation investments in Spruce Grove are shaped by many local and regional factors, such as demographics, travel patterns, land use planning, and the current condition of the transportation network. The following section outlines the various aspects shaping the future mobility of Spruce Grove.

4.1. COMMUNITY PROFILE

The City is a thriving and dynamic community located approximately 11 kilometres west of Alberta's capital. With a population of almost 40,000 people (2023 Municipal Census), Spruce Grove is one of the fastest growing municipalities in Alberta. Its central location within the Region provides residents an abundance of employment and recreational opportunities along with urban amenities and access to nearby municipalities due to its proximity to Highway 16, Highway 16A, and Highway 628.

Over the past 20 years, Spruce Grove has evolved from a small, bedroom community to a key regional hub for both residential and economic development. Having doubled the population between 2001 and 2021 (2021 Statistic Canada Census Data), Spruce Grove is expected to continue growing at this rate, reaching almost 66,000 people by 2044. Employment in Spruce Grove is also expected to grow at a steady rate, generating more than 6,000 new jobs by 2044. The population and employment growth to 2044 is anticipated to only occur within the approved ASP areas. Beyond 2044 or the horizon of this iTMP (20 years), additional growth is anticipated within the City's annexed areas. This means that greater pressures will be placed on the local transportation network and key regional connections as more people travel between the city and the Region to access employment, amenities and recreation.

With a population of almost 40,000 people Spruce Grove is one of the fastest growing municipalities in Alberta.



27,000

MORE PEOPLE BY 2044

Having doubled the population between 2001 and 2021, Spruce Grove is expected to continue growing at this rate, reaching almost **66,000** people by 2044.

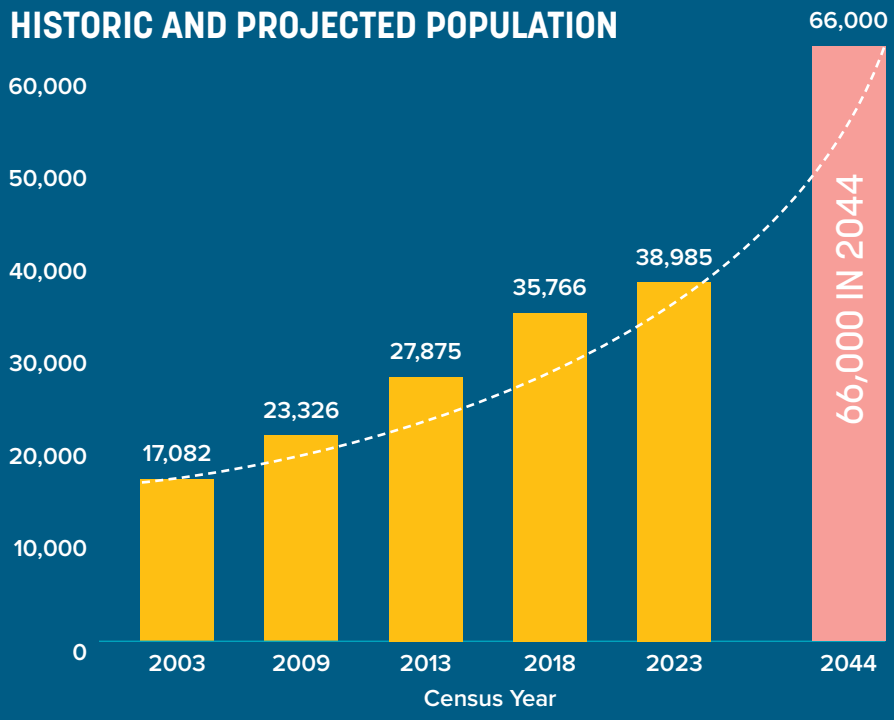
>6,000

NEW JOBS BY 2044

Employment in Spruce Grove is also expected to grow at a steady rate, generating more than **6,000** new jobs by 2044.

POPULATION

HISTORIC AND PROJECTED POPULATION



AVERAGE ANNUAL GROWTH RATE

3.4%
2013 – 2023

2.6%
2024 – 2044

CHILDREN AND YOUTH (0-24YRS)

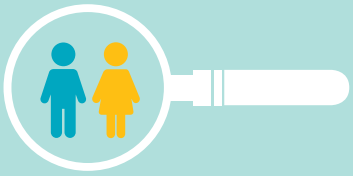
32.4%

WORKING AGE ADULTS (25-64 YRS)

52.5%

ELDERLY (65+ YRS)

14.0%

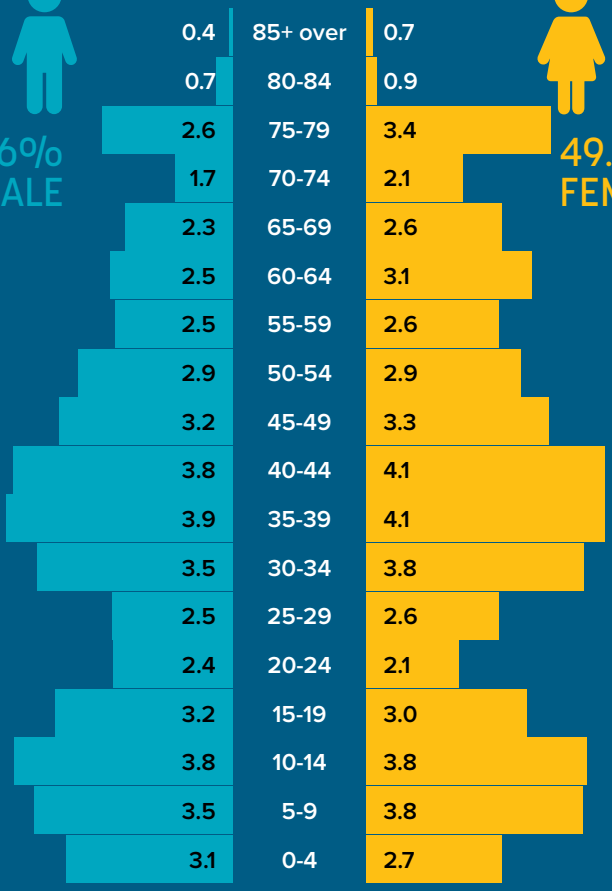


AVERAGE AGE
39.2

POPULATION BY AGE AND GENDER

46.6%
MALE

49.0%
FEMALE



Data Source: 2023 Municipal Census

Spruce Grove is a young community, with an average age of 39.2 years old. Over 30% of the population in the city is under the age of 25 years old (2023 Municipal Census). Working age adults (25 to 64 years old) make up over 50% of the population, while approximately 14% of residents are 65 years old and older. There is also a slightly higher percentage of residents identifying as female than male.

With a relatively younger population and strong labour force, the development of transportation infrastructure and services will require a balanced and innovative approach that addresses the unique preferences, lifestyles, and mobility patterns of all ages and gender.

4.2. TRAVEL PATTERNS

Understanding how Spruce Grove residents travel provides valuable insight on how to address current and potential transportation challenges. The following provides an overview of the current travel patterns in the city based on census data and origin-destination data obtained from StreetLight, a transportation data analytics platform.

MODE CHOICE

Like most communities in Alberta, Spruce Grove is considered an auto-oriented community with approximately 93% of residents commuting to work by motor vehicle as either a driver or a passenger. Approximately 3% of commuters walk, 1% use public transit and less than 1% cycle. About 3% of commuters use other modes of transportation.

EMPLOYMENT LOCATION

While some residents' place of work is within the city, most residents commute to other areas within the Region for work. The majority of commuters have relatively short travel times, with almost 65% of the trips under 30 minutes.

The location of employment for residents has also evolved over the past several years, with the percentage of people working from home increasing from approximately 5% in 2016 to 16% in 2021. This increasing trend has emerged from the impacts of the COVID-19 pandemic in 2020 and has become more common in industries with the flexibility to work remotely.

TRAVEL DESTINATIONS

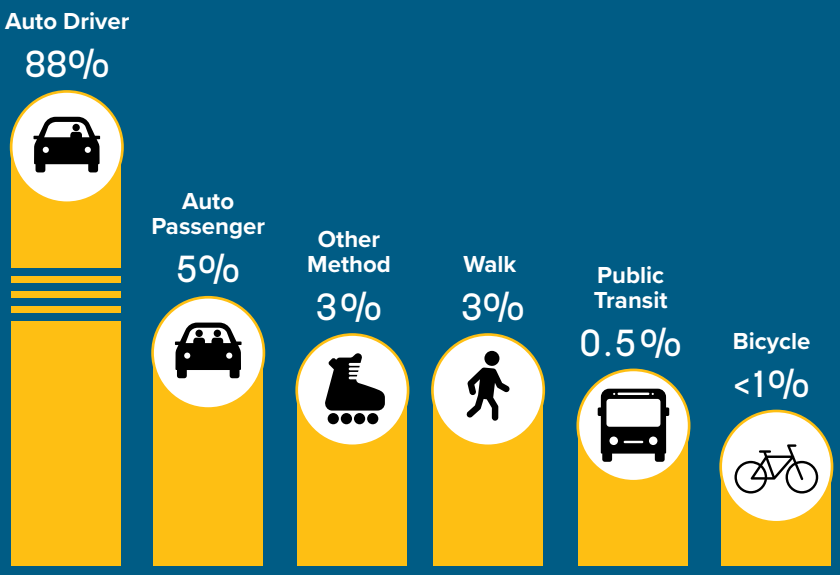
On a daily basis, 40% of all trips occur entirely within Spruce Grove (2022 StreetLight Origin-Destination Data) and the remaining 60% of travel is made to/from outside of Spruce Grove.

Within Spruce Grove, the morning and afternoon peak periods have higher concentrations of trips to the residential areas, while the commercial areas south of Highway 16A represent a higher proportion of commuter activity. As expected, midday travel patterns show higher activity in the retail and service areas such as the Westgrove and Century Crossing areas. Nearly 20% of daily travel within Spruce Grove occurs to or from the Westgrove commercial areas and 15% to the industrial areas south of Highway 16A, highlighting the importance of these key destination areas within the city.

Among external Spruce Grove travelers, trips to/from the east account for the majority of travel (45%) and utilize Highway 16 and Highway 16A. People travelling west to/from Stony Plain account for 25% of external trips, which utilize the Highway 16A corridor. Highway 16 serves 8% of external trips to/from the west. The remaining external travel is served by several connections to the north and south of Spruce Grove. These regional patterns highlight the City's integral role to the Region due to its central location along major transportation corridors.

TRAVEL PATTERNS

HOW DO WE TRAVEL?



DAILY TRAVEL

40%
WITHIN SPRUCE GROVE

60%
OUTSIDE SPRUCE GROVE

COMMUTE DURATION

32% < 15 MIN

32% 15-29 MIN

36% > 30MIN

PLACE OF WORK

34%
Within Spruce Grove

53%
Edmonton Region

13%
Outside Alberta and Other

Data Source: 2023 Municipal Census and 2021 Statistics Canada Census

4.3. LAND USE AND GROWTH AREAS

Spruce Grove's diverse land use is characterized by an integration of residential, recreational, institutional, commercial, and industrial land areas.

As shown in Figure 3, the land uses are strategically planned as follows:

RESIDENTIAL AREAS

Spruce Grove offers a range of residential neighbourhoods that accommodate various dwelling types, including single-family homes, medium and high-density residential development, and mobile homes. Most of the residential neighbourhoods are designed to promote a sense of community with amenities such as parks, playgrounds, and walking trails interspersed throughout. The residential areas in Spruce Grove are primarily located north of Highway 16A and south of Highway 16.

RECREATIONAL/INSTITUTIONAL AREAS

There are several parks, green spaces, trails, recreational facilities, and schools throughout the city, providing ample opportunity for the enjoyment of nature and community building that contribute to an enhanced quality of life. Examples of areas that provide opportunities for outdoor activities, leisure pursuits, education, and community gatherings, include:

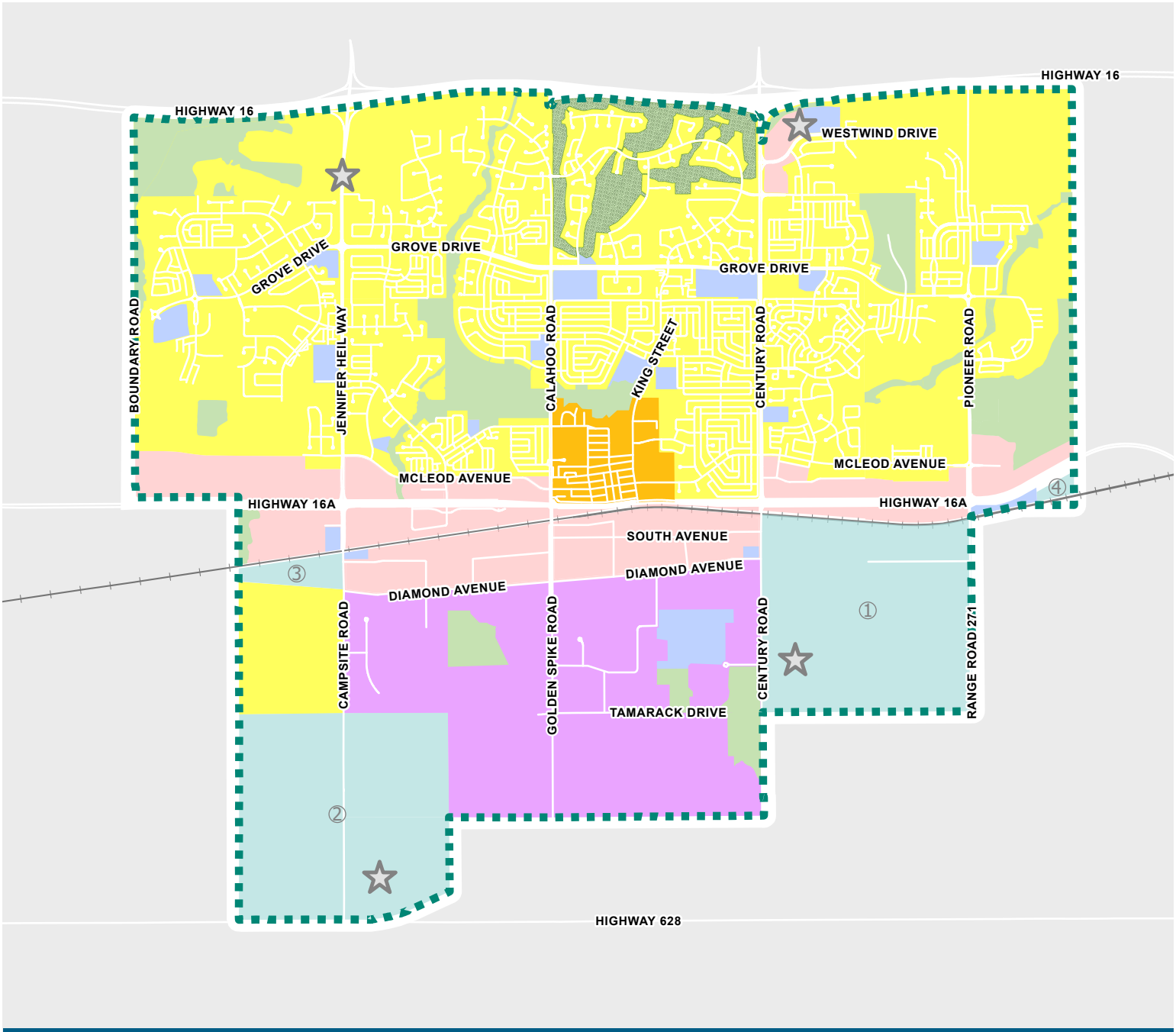
- Jubilee Park
- Central Park
- Heritage Grove Park
- Marlboro Off-Leash Park
- Skate Park
- Rotary Playscape

COMMERCIAL AREAS

There are several commercial areas dispersed throughout the city, with the City Centre Commercial zone largely concentrated along McLeod Avenue. It is also noted that the City's 2024 MDP expanded the commercial designation south of Highway 16A, extending further south beyond the railway tracks to Diamond Avenue. Other commercial sites and neighbourhood retail and service land uses are integrated within subdivisions, including a mix of retail establishments, office spaces, and restaurants.

INDUSTRIAL AREAS

Spruce Grove's primary industrial area is located in the southern part of the city, south of Highway 16A. These areas accommodate a wide range of industrial activities, including manufacturing, logistics, warehousing, and light industrial operations. The industrial area is designed to provide necessary infrastructure, transportation access, and support services to facilitate economic growth and job creation. The City's industrial area has convenient access to Acheson and other industrial areas on the west side of Edmonton through direct connections with the highway network.



FUTURE LAND USE CONCEPT

- Commercial
- Industrial
- Residential Neighbourhoods
- Special Study Areas (1 - 4)
- City Centre
- Open Space and Natural Areas
- Golf Course (Private)
- Public Service/School
- Mixed Use Node
- Municipal Boundary

*RESIDENTIAL NEIGHBOURHOOD CONTAIN OTHER USES, SUCH AS OPEN SPACE, PARKS, NEIGHBOURHOOD COMMERCIAL AND PUBLIC SERVICE/SCHOOL

N

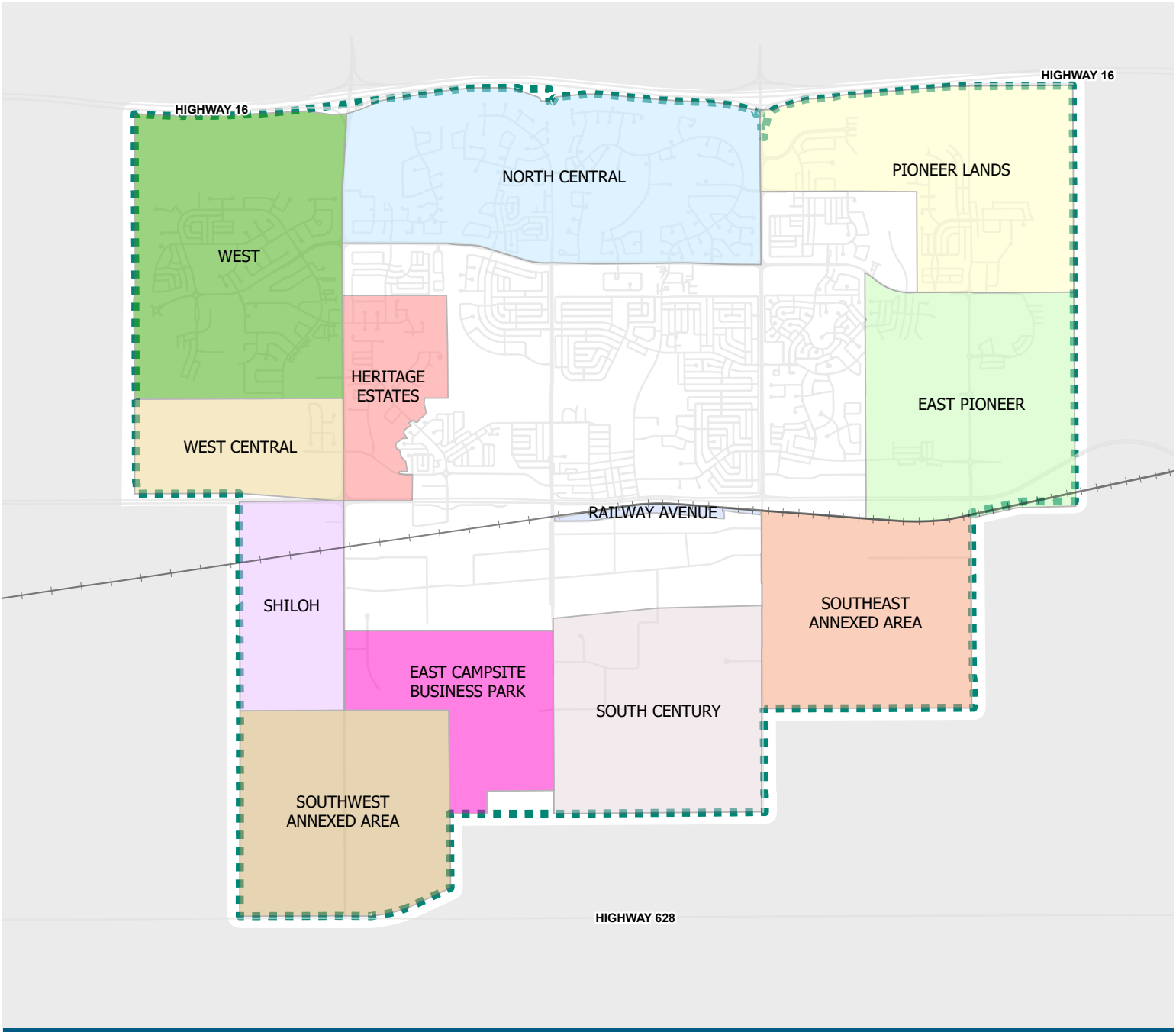
Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 3: Future Land Use Concept

As illustrated in Figure 4, there are several areas of the City where development is ongoing or planned for over the next 20 years. Significant population growth is expected to occur in the northeast, northwest and southwest quadrants of the City, which include the areas of West Central, Pioneer Lands, and Shiloh. Employment growth through new commercial and industrial developments are expected with considerable growth occurring in the West Central, East Campsite Business Park, and South Century areas.

Recently annexed lands in the southeast and southwest quadrants of the City also offer opportunities for additional residential and economic development. The planning and design of transportation infrastructure and services in these key growth areas will require a forward-thinking approach that ensure the transportation system is well-connected and accessible for all users.



APPROVED AREA STRUCTURE PLANS AND ANNEXED AREAS

- East Pioneer
- Heritage States
- Pioneer Lands
- Shiloh
- South Century
- Southeast Annexed Area
- Southwest Annexed Area
- West
- West Central
- North Central
- East Campsite Business Park
- Railway Avenue
- Municipal Boundary

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 4: Approved Area Structure Plans and Annexed Areas

4.4. ROAD NETWORK

4.4.1. ROADWAY CLASSIFICATION

Spruce Grove has a well-functioning road network that facilitates efficient movement within the city and connects to the larger regional network. Its direct connections to major highway corridors, such as Highway 16 and Highway 16A, provide convenient access for residents, visitors, and goods movement.

The city has a grid-like road system with multiple north-south and east-west arterial roads that serve as primary routes for commuting and neighbourhood access. These arterials are typically wider, designed to accommodate higher volumes of traffic and connect to the City's network of collector and local roadways.

Collector and local roadways provide access to local neighbourhoods and amenities. They are generally narrower, and have lower speed limits to ensure the safety of pedestrians and residents.

In recent years, the City has made investments to enhance its road infrastructure, such as regular maintenance, new road connections, and intersection upgrades. These investments are intended to meet the needs of a growing population while maintaining an efficient and connected road network.

As shown in Figure 5, Spruce Grove's current road network consists of the following hierarchy of roadway classifications:

HIGHWAYS

Spruce Grove is served by two major east-west transportation corridors – Highway 16 and Highway 16A. Highway 16 travels along the northern boundary of Spruce Grove and is used for high-speed regional and long-distance trips. Direct connections to the City's arterial road network are provided at two interchanges – Jennifer Heil Way and Century Road.

Highway 16A travels east-west through the middle of Spruce Grove, connecting regional travel directly through Spruce Grove. Within the City's eastern and western limits, Highway 16A is an urban highway, and is maintained and operated by the City.

Highway 628 is another east-west highway that is located south of the City, with part of the highway located immediately south of the City's southern boundary.

Highway 16, Highway 16A (outside of City boundaries), and Highway 628 are operated and maintained by TEC.

Most of the traffic on the highway facilities do not originate in Spruce Grove, highlighting the importance of regional travel through the city.

ARTERIAL ROADS

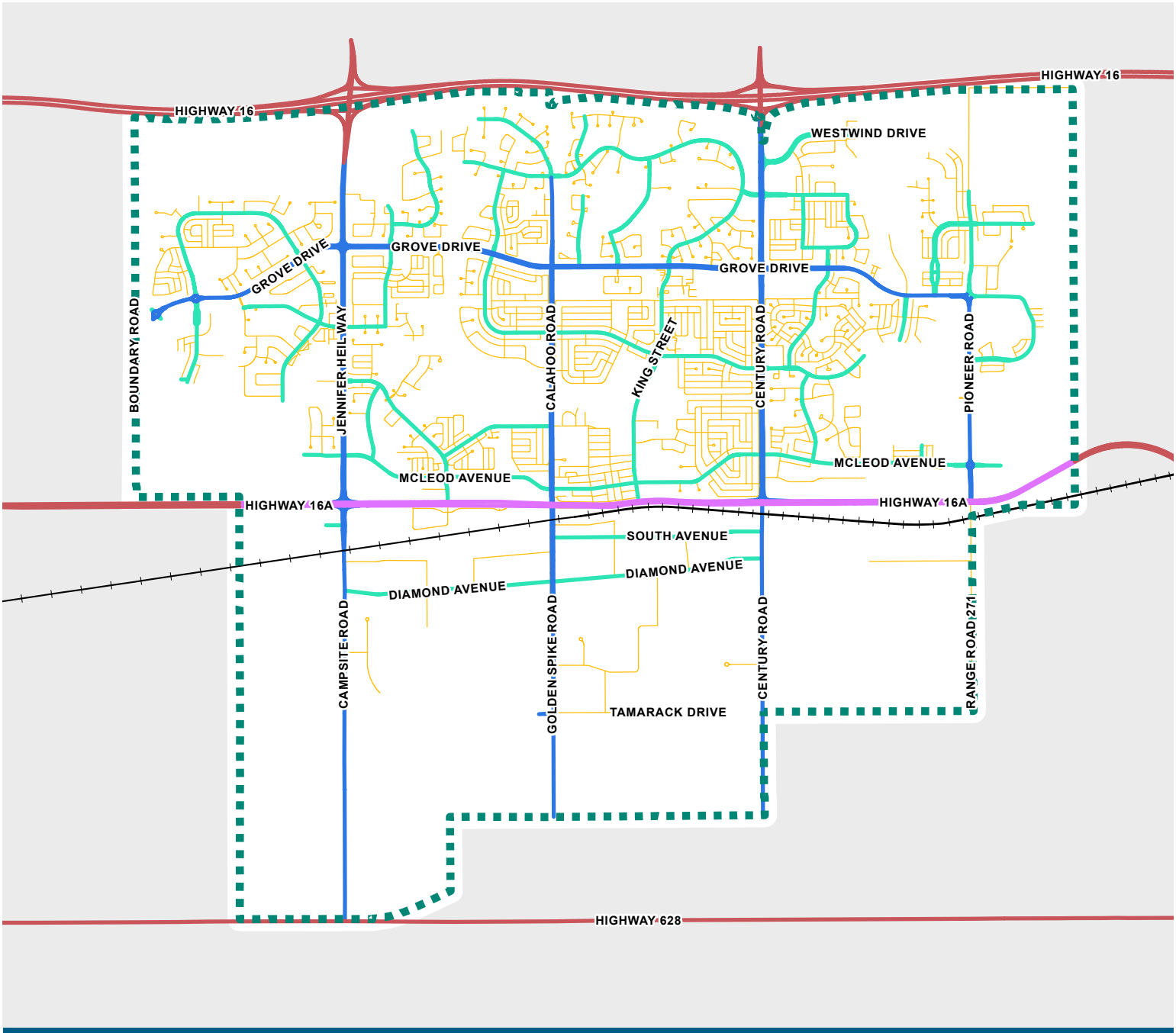
Arterial roads in the city generally accommodate medium to high traffic volumes. They are generally designed to connect neighbourhoods and connect the community to the regional highways. Arterial roads within Spruce Grove include Jennifer Heil Way, Calahoo Road, Century Road, Grove Drive, and Pioneer Road.

COLLECTOR ROADS

The purpose of collector roads is to connect local and arterial roads and provide direct property access. The main collectors in Spruce Grove include King Street, McLeod Avenue, Brookwood Drive, Woodhaven Drive, Millgrove Drive, Westwind Drive, Longview Drive, Diamond Avenue, and Saskatchewan Avenue.

LOCAL ROADS

Local roads provide direct property access and connect to either collector or arterial roads. These roads are generally found in the City's residential subdivisions, as well as commercial and industrial areas.



EXISTING ROAD CLASSIFICATION

- Provincial Highway
- Urban Highway
- Arterial
- Collector
- Local
- Railways
- Municipal Boundary

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 5: Existing Road Classification

4.4.2. TRAFFIC DEMANDS AND NETWORK PERFORMANCE

CURRENT CONDITIONS

Spruce Grove experiences a significant demand of commuter flows during peak hours as people travel to and from Edmonton and other parts of the Region for work or other purposes. The outflux of commuter traffic is more prevalent east of Spruce Grove due to the concentration of employment opportunities and educational institutions in that direction. These aspects place additional pressure on the City's network as it connects to regional routes (e.g. Highway 16), leading to traffic congestion and longer commuting times.

The current peak hour traffic demands indicate the following trends:

Highway 16 serves as the primary east-west commuter route to Edmonton and other municipalities east of Spruce Grove. Heavy east-west traffic demands are observed on Highway 16 between Jennifer Heil Way and Century Road, with distinct peak directional travel in the morning (eastbound) and in the afternoon (westbound) peak hours. Peak directional volumes are in the range of 3,000 to 4,000 vph. Traffic demands are slightly higher at the Century Road interchange than at Jennifer Heil Way, likely due to the attraction of destinations east of the city.

Highway 16A is the City's busiest corridor, supporting local and regional traffic. At the City's eastern limits, Highway 16A experiences a significant eastbound demand during the morning peak hours and a westbound demand during the afternoon peak hours. Peak direction volumes on Highway 16A through Spruce Grove range between 1,400 and 2,000 vph.

Jennifer Heil Way, Century Road, and Grove Drive are key arterials in the city that facilitate both local and commuter travel.The southern sections of Jennifer Heil Way and Century Road generally accomodate 700 to 900 vph during the peak hours. As these corridors approach the interchanges at Highway 16, peak hour traffic demands increase to about 1,100 vph on Jennifer Heil Way and 1,400 vph on Century Road. Grove Drive serves as the primary east-west route north of Highway 16A, supporting 500 to 700 vph between Jennifer Heil Way and Century Road.

Current travel demands suggest that a majority of regional travel to/from Spruce Grove occurs on the city's east side. Heavier traffic demands are observed within the core or more established areas of the city (i.e. between Highway 16 and Highway 16A).

Overall, the City's network is generally operating well today, with a few locations experiencing higher levels of congestion and delays during the morning and afternoon peak hours.

The LOS is a measure used to evaluate the operational performance and efficiency of road intersections. It assesses how well an intersection is functioning in terms of traffic flow, capacity, and delays experienced by vehicles. LOS is typically graded on a scale from A to F, with 'A' representing free-flowing conditions and 'F' indicating severe congestion and significant delays.

In Spruce Grove, an intersection operating at a LOS C or better, with individual movements operating at a LOS E or better, and a volume-to-capacity ratio of less than 0.85 are considered acceptable levels of service.

Figure 6 illustrates the levels of service of key intersections during the afternoon peak hour, the more critical peak hour. Most major intersections in Spruce Grove are currently operating at acceptable levels of service—a LOS C or better during the peak hours. The intersection of Highway 16A/Jennifer Heil Way is operating at a LOS D during the afternoon peak hour with some movements experiencing longer delays and approaching capacity.

As traffic demands increase in the city over the next 20 years, there will be a greater need to maintain acceptable operating conditions at the key intersections to ensure the network is safe, efficient and reliable. This can be achieved through improvements such as signal timing optimization, additional travel lanes, and new signals.

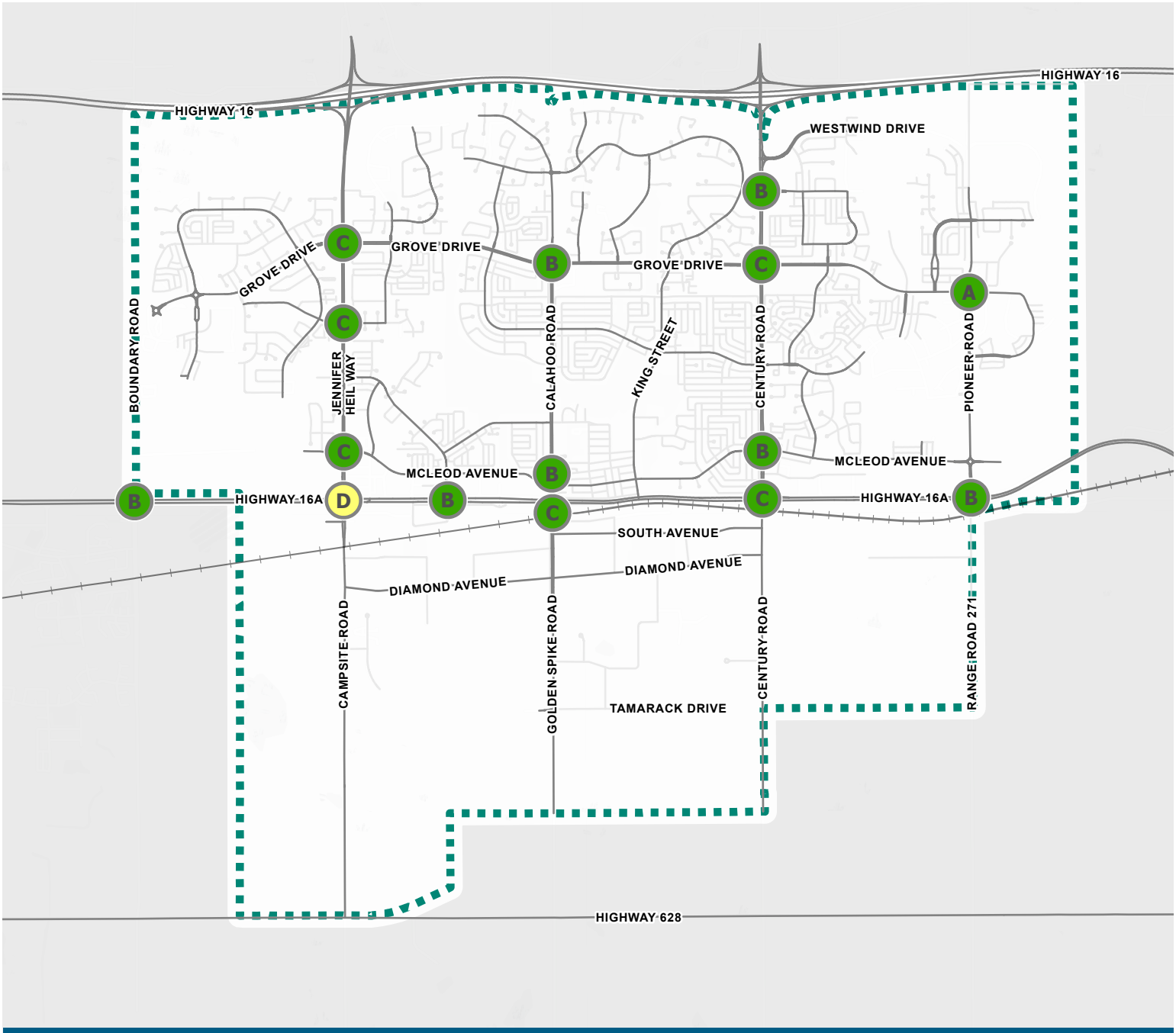


Figure 6: Existing PM Peak Hour Intersection Level of Service

FUTURE CONDITIONS

Future traffic conditions were estimated through the City's travel demand model, which was developed as part of the 2012 TMP and underwent a thorough update for this iTMP. The model update incorporated current and anticipated land uses and the resulting population and employment projections to reflect Spruce Grove's current travel demands, evolving development plan and growth strategies.

Reflecting a population of almost 66,000 residents and just over 16,100 employees, the updated model was used to understand potential shifts in travel patterns and traffic volumes, as well as to confirm the need for new connections or road improvements in response to growth. While these trends do not account for further growth in the annexed areas, additional pressures on the City's network south of Highway 16A is anticipated as those areas begin to build out.

The results of the model indicate the following future trends:

- On average, afternoon peak hour traffic demands on the network are expected to grow by 2.4% annually over the next 20 years.
- Future expansion of the West, West Central, East Pioneer, and Pioneer Lands will place increased pressure on the roadways along the periphery of the city. Key north-south corridors such as Jennifer Heil Way and Century Road will experience increased delays and congestion, particularly the sections north of Grove Drive.
- Future traffic demands on Pioneer Road will experience higher than average growth and increase more than any other north-south links north of Highway 16A.
- The anticipated future connection of Boundary Road from Highway 16A to Grove Drive will attract a considerable volume of traffic and inherently increase demands on Grove Drive, west of Jennifer Heil Way.
- The highest percentage of traffic growth is anticipated along the north-south corridors south of Highway 16A, including Campsite Road, Golden Spike Road, Century Road, and Range Road 271. This aligns with the anticipated increase in new residential and employment opportunities within the Shiloh, East Campsite, and South Century growth areas.

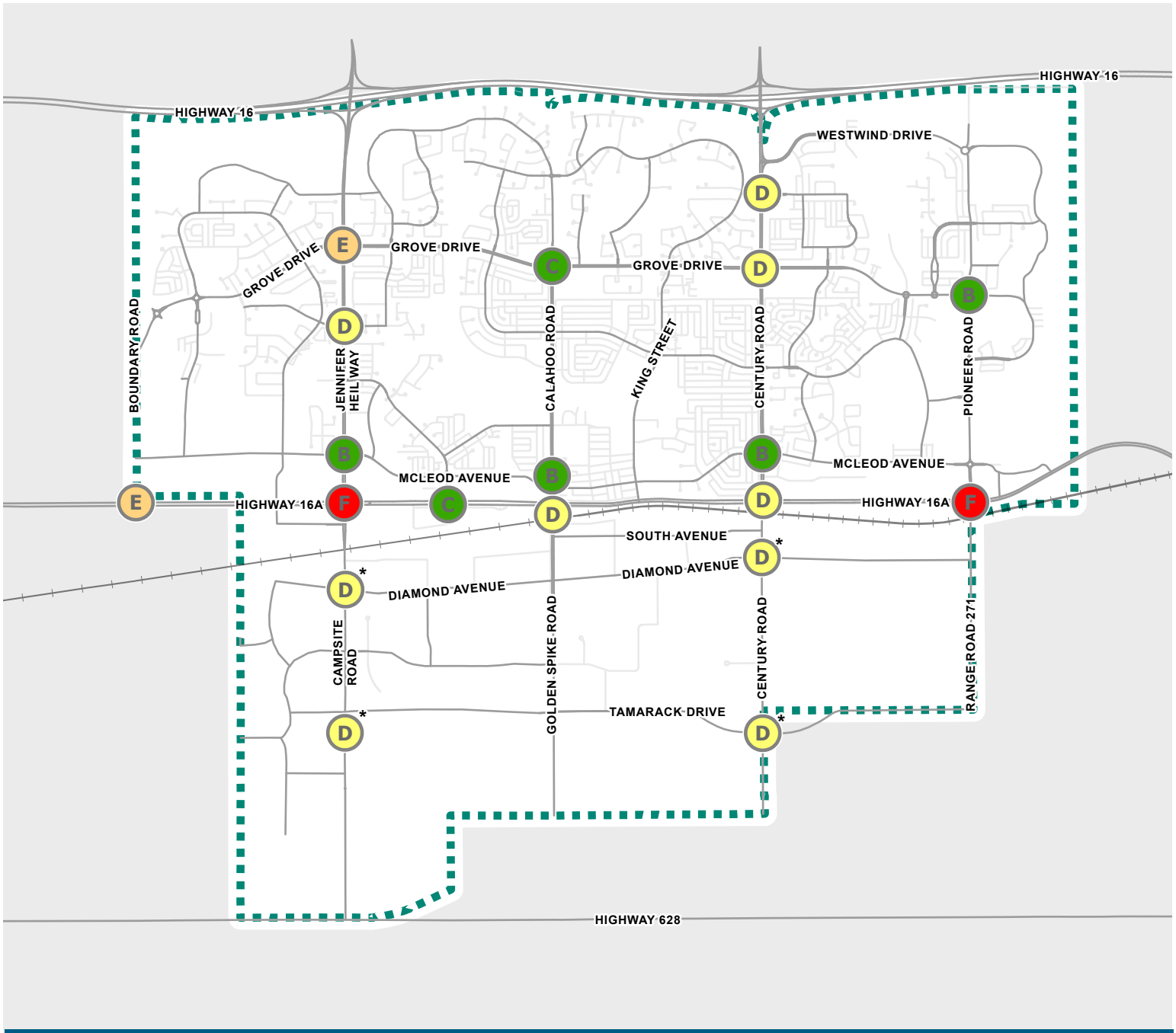
The forecasted travel demand highlights the importance of the road network to support employment growth south of Highway 16A and future growth areas located on the outer limits of the city. As these areas expand, there is also a need to provide efficient connections between the City's roads and the regional network, such as connections to Highway 16.

There are also several intersections across the network that are approaching lower levels of service. While the delays at these intersections are within the acceptable range today, increasing traffic demands will contribute to longer delays, higher congestion, and reduced safety.

As highlighted in Figure 7, the following intersections will experience a significant increase in delays and congestion:

- Highway 16A & Jennifer Heil Way/Campsite Road
- Highway 16A & Calahoo Road/Golden Spike Road
- Highway 16A & Century Road
- Highway 16A & Pioneer Road/Range Rd 271
- Jennifer Heil Way & Spruce Ridge Drive/ Hawthorne Gate
- Jennifer Heil Way & Grove Drive
- Century Road & Kings Link/Vanderbilt Common
- Century Road & Grove Drive

Increased intersection delays are also anticipated along the corridors south of Diamond Avenue due to future development. However, these delays will be addressed through future corridor studies.



FUTURE (20-YEAR) PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

- A, B, or C
- D
- E
- F
- Municipal Boundary

* LOS to be confirmed through further corridor planning based on development progress. LOS D or better should be achieved.

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 7: Future (20-Year) PM Peak Hour Intersection Level of Service

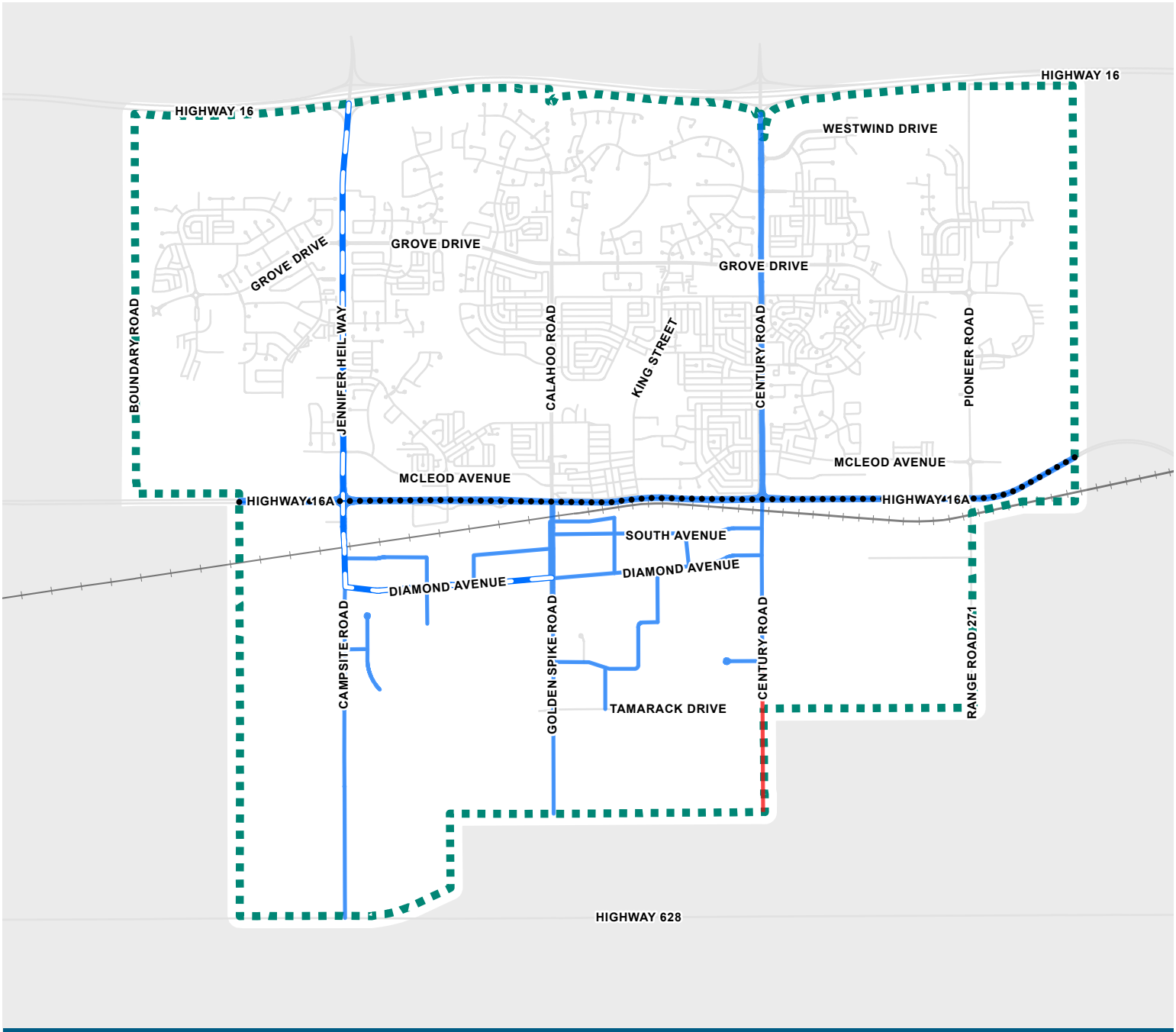
4.4.3. TRUCK ROUTES

The City's industrial and commercial areas generate significant volumes of truck traffic, which is typical for these types of land uses. As expected, the largest volumes of trucks are observed on the highways. However, there are still considerable volumes of trucks utilizing the City's arterial roadways, such as Campsite Road and Century Road. In addition, truck volumes on McLeod Avenue are consistent with commercial land use, recognizing the higher density of retail and similar types of businesses generating delivery and distribution of goods.

The City has designated several heavy vehicle routes (as per Bylaw C-1123-20) to facilitate the efficient movement of goods and services. As illustrated in Figure 8, these routes include the corridors of Jennifer Heil Way, Century Road, and Highway 16A, as well as most of the road network in the industrial areas south of Highway 16A. Highway 16A is also a designated Dangerous Good Routes (per Bylaw C-525-04).

The City also has a designated high-load truck route from the City's industrial area to Highway 16. The route includes a 1.6km segment of Diamond Avenue and 3.8km along Jennifer Heil Way.

As the City's industrial area builds out in the next 20 years, it is critical that designated truck routes are implemented to facilitate safe and efficient freight movement. Opportunities to expand the City's truck network include the future completion of Tamarack Drive through the East Campsite Business Park and South Century area. Other new roads in these areas can also be considered.



EXISTING HEAVY VEHICLE ROUTES

- 50% Weight Restriction
- No Weight Restriction
- Dangerous Goods Route
- High Load Corridor
- Municipal Boundary

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 8: Existing Heavy Vehicle Routes

4.4.4. RAIL

The Canadian National (CN) railway tracks travel east-west through Spruce Grove, with four crossings south of Highway 16A: Campsite Road, Golden Spike Road, Century Road, and Pioneer Road. All crossings are equipped with gates, lights, and bells.

Road users may experience increased traffic delays and safety concerns at rail crossings due to increased rail activity and anticipated development in the areas south of the rail tracks. Addressing these rail challenges require effective strategies to manage and mitigate increased traffic demands and barriers at the crossings.

Measures to improve traffic flow at rail crossings can include optimizing signal timings, constructing additional lanes to accommodate higher volumes, and grade separation. Additionally, promoting public awareness and education about the importance of rail crossing safety can help reduce the risk of accidents and improve overall road safety.

The City and CN are currently working together to synchronize the traffic signals and rail crossing lights.

4.5. ACTIVE MODES

In Spruce Grove, sidewalks and multi-use pathways are shared spaces that are used for a variety of non-vehicular users such as pedestrians, cyclists, and those using mobility aids. The City boasts a vast network of sidewalks, multi-use pathways, and gravel trails, connecting residents to schools, recreational opportunities and other key destinations such as the City Centre.

Over the past decade, the City has continuously invested in enhancing and expanding its active transportation network. This includes collaborating with the Town of Stony Plain in completing two trails that join the two municipalities together.

1. North-south trail along Boundary Road from Highway 16A to Grove Drive

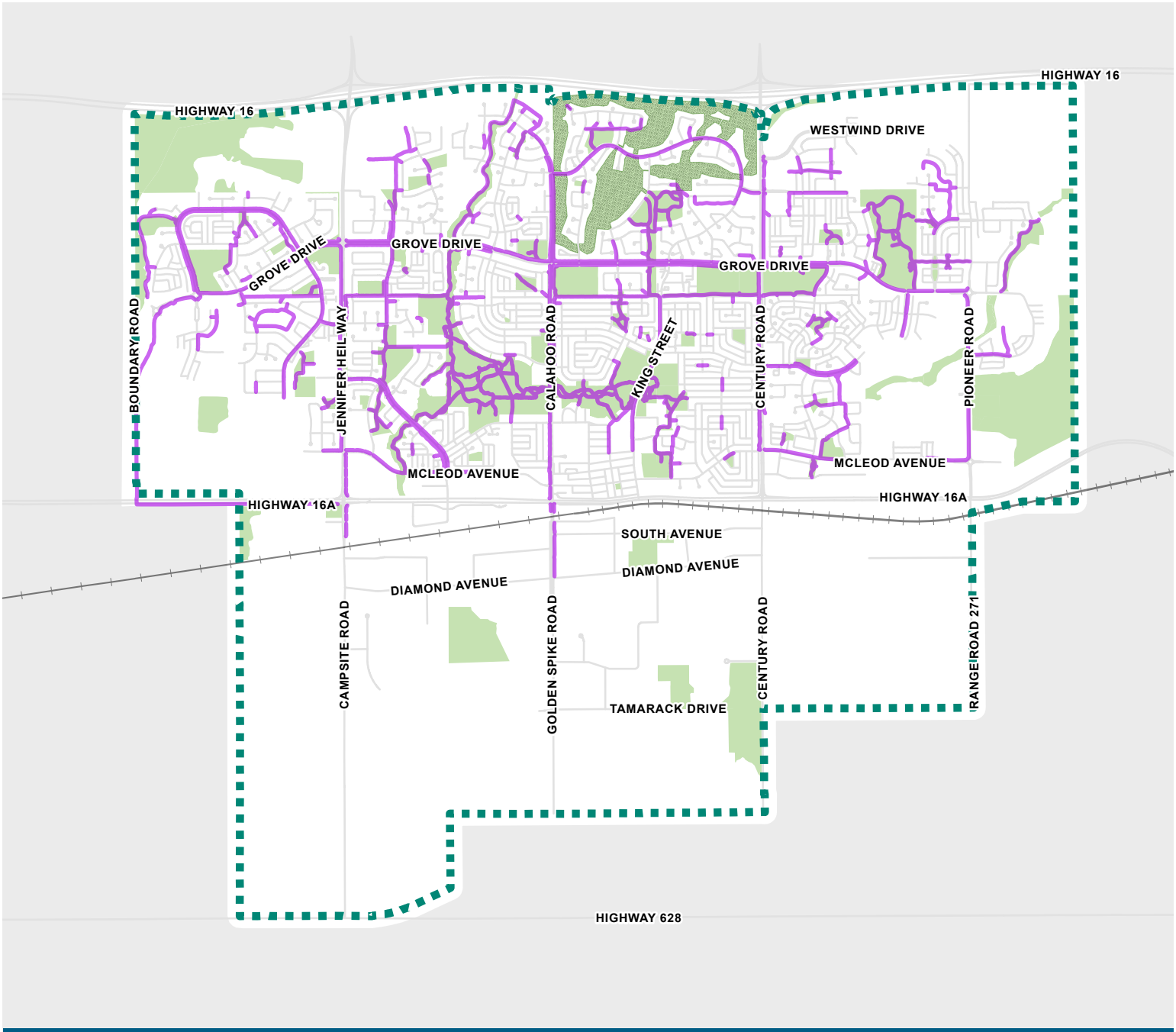
2. East-west trail along Highway 16A from Veterans Way to Jennifer Heil Way.

As illustrated in Figure 9, most of the pathway network can be found north of Highway 16A, while the areas south of Highway 16A have very limited connections.

While the City currently has a notable network of active mode routes that serve the community, there are several areas of constraint, including:

- Gaps in the City's multi-use system, including the absence of connectivity and routes within key City districts, such as the industrial area south of Highway 16A.
- Current municipal design standards and classification of multi-use pathways do not align with the recommended multi-use pathway standards.
- The need for improved trail connectivity and better protection for pedestrians as identified by survey respondents.

Addressing gaps in pedestrian and cycling infrastructure becomes increasingly important as Spruce Grove grows. The City's ongoing and planned investments reflect its commitment to creating a connected, inclusive, and healthy community.



EXISTING MULTI-USE PATHWAY NETWORK

- Multi-use Pathway
- Golf Course (Private)
- Parks & Open Space
- Municipal Boundary

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 9: Existing Multi-Use Pathway Network

4.6. TRANSIT

The City operates Spruce Grove Transit, which provides commuter transit service between Spruce Grove and Edmonton, as well as on-demand local transit service within and between Spruce Grove, Stony Plain, Parkland Village, and Acheson.

ON-DEMAND TRANSIT AND COMMUTER TRANSIT

On-demand local transit service operates on weekdays within Spruce Grove and Stony Plain with peak period service to Parkland Village and Acheson. It also operates within Spruce Grove city limits on Saturdays. Commuter transit service in Spruce Grove and Edmonton via Route 560 is also available during weekdays, connecting residents to destinations such as Downtown Edmonton, NAIT, and Grant MacEwan University.

Both commuter and local transit demand in Spruce Grove has grown considerably over the past several years. As highlighted below, commuter ridership grew by almost 60% between 2016 and 2019. There was a notable reduction during the COVID-19 pandemic years. However, commuter ridership has grown again since 2022.

Local transit ridership has also grown significantly since on-demand service was introduced in May 2021, and when it was launched as a regional service with Parkland County and the Town of Stony Plain. These trends highlight the attraction for on-demand transit within the Tri-Municipal Region.

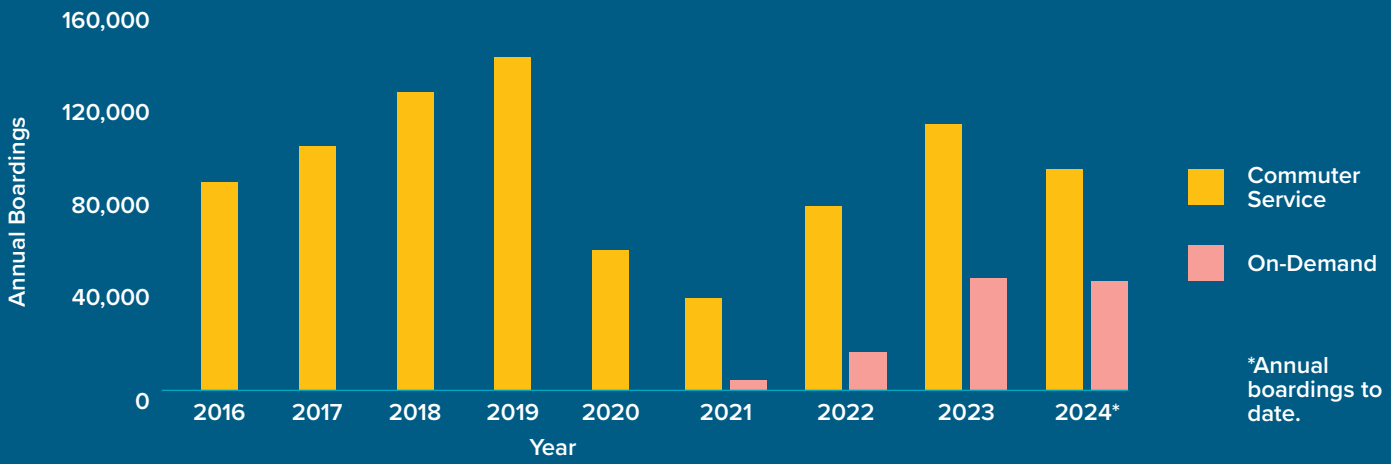
ACCESSIBLE TRANSPORTATION SERVICE (ATS)

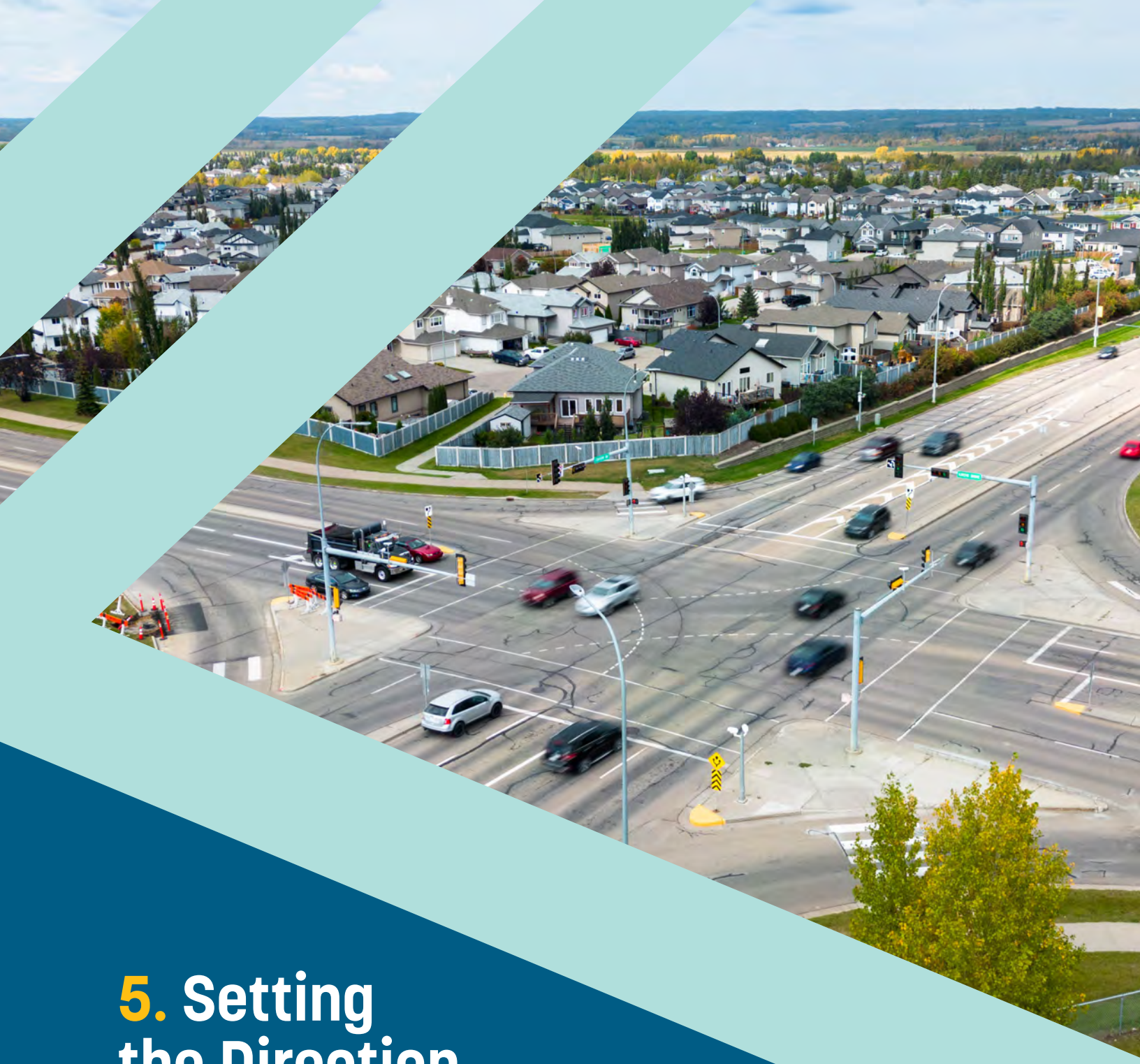
ATS offers door-to-door transportation for any resident, 16 years of age and over, who is unable to utilize the existing fully-accessible conventional public transit service due to a physical or cognitive disability.

Over the past five years, the City has invested in new transit infrastructure such as a new Transit Centre, bus stop upgrades, and new buses to enhance the quality of life for residents. The Spruce Grove Transit Centre is scheduled to open in 2024 and will have 600 parking stalls for Park & Ride users, serving as the focal point for all commuter transit service in and out of the city in addition to a regular stop for on-demand transit.

The City also has plans to expand its on-demand transit service as more users recognize its benefits in terms of flexibility, convenience, and efficiency. These investments offer accessible and reliable transportation options in Spruce Grove, contributing to the City's economic vitality, environmental stewardship, and social inclusivity.

ANNUAL BOARDINGS





5. Setting the Direction

A vision for a connected, reliable, and resilient multimodal network.

Setting the Direction

The future direction for transportation in Spruce Grove is based on technical assessments, broader policy directions, and input from the public, collaborators, and City Council. The iTMP will inform municipal decisions and investments by adhering to four guiding pillars that set strategic directions and guide implementation actions for future mobility. This section provides direction on how the City will achieve its goals and vision for a connected, reliable, and resilient multimodal network.

The directive terms and interpretation of the iTMP policies are aligned with those defined in the MDP:

Where **"shall"** is used in a policy, the policy is considered mandatory to achieve a desired result.

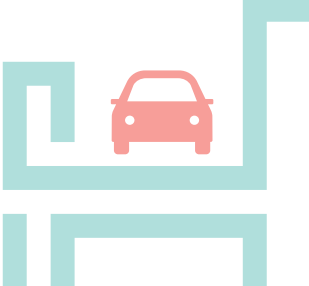
Where **"should"** is used in a policy, it is anticipated that the policy will be applied in all situations unless it can be clearly demonstrated that the policy is not reasonable, practical, or feasible in a given situation.

Where **"may"** is used in a policy, the policy is considered discretionary and may not be feasible or practical in all situations.

5.1. TRANSPORTATION SAFETY

A safe transportation network enhances the well-being and quality of life of a community and is essential to enabling safe travel for all users. Transportation safety was identified as a key priority by the Spruce Grove community and the iTMP works hand in hand with the City's strategic direction and MDP policies to provide residents a safe and reliable transportation network.

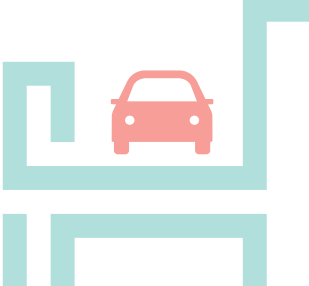
1. The City shall provide a safe and inclusive transportation experience for all users of the transportation system, regardless of their mode of transportation.
2. Through planned rehabilitation projects, the City shall identify and incorporate safety improvements, specifically as it relates to active transportation and alternative transportation users (including, but not limited to pedestrians, cyclists, scooters, skateboards, and wheelchairs).
3. Where warranted, the City should facilitate intersection improvements through the construction of additional turn lanes, channelization, mode separation, sight line improvements, and traffic control improvements to improve safety for all road users.
4. The City shall work with the Province, CN Rail, and Transport Canada to support safe rail interaction within the City. Infrastructure upgrades may be required, such as signage, lighting, and grade-separated crossings at strategic locations to ensure the safe operation of railways and railway crossings in the City.
5. The City shall develop a traffic calming strategy for existing and future neighbourhood local and collector roadways. Within this strategy, the City should consider enhancing road cross sections, intersection treatments, and active transportation crossings.
6. The City should conduct regular updates of its Traffic Safety Plan and implement the recommendations to address identified safety issues or high-risk areas. Where serious injury or fatalities occur, a formal In-Service Road Safety Audit should be completed. Outcomes from the safety audit should be implemented as soon as reasonably possible and shall take priority over any other planned activities.
7. The City should develop a process to manage requests for regulatory sign changes (e.g. speed limit signs, stop/yield signs, etc.).



5.2. MULTIMODAL CONNECTIVITY

The configuration of land uses in Spruce Grove in combination with the diverse needs of residents, requires a transportation network that integrates multiple forms of transportation. This provides residents transportation choices while enhancing a well-connected network that can be accessible for all ages and abilities. The City can achieve this goal through the following policies and initiatives.

1. The City shall continue to collaborate with key participants within the Region, including the EMRB, City of Edmonton, Town of Stony Plain, Parkland County, and TEC, to continue supporting both regional transportation connections with Spruce Grove and transit projects that enhance regional mobility between employment, education, and services.
2. The City shall continue to support and encourage community-led transit service programs, especially those for the elderly and people with mobility challenges.
3. Future transit service and connections to and from the City's active transportation network should be considered in all new land development plans.
4. The City shall formally identify and maintain a missing links project list for all modes of transportation, including roadways, sidewalks, and trails. These gaps should be addressed through an annually funded program.
5. The City shall continue to invest in active transportation infrastructure that is accessible to all transportation network users. This will include development of both exclusive active transportation facilities as well as integrated facilities with roadways and intersections.
6. Wayfinding is important for transportation connectivity, and, as such, wayfinding amenities shall be considered at all exiting trails and pathways. New transportation facilities and development of new lands shall consider wayfinding as part of their active transportation network.
7. The City shall protect right-of-way for existing and future transportation facilities for all modes to maintain a safe, coordinated, efficient, and cost-effective road network.



5.3. ECONOMIC VITALITY AND RESILIENCE

With its growing economy, strategic location, and diverse employment opportunities, the City provides a dynamic environment for both residents and businesses. Effective transportation investments support residential, commercial, and industrial growth through efficient and reliable connections for people, services, and goods. The following directives aim to promote and maintain the long-term economic sustainability of Spruce Grove.

1. The City shall continue to annually review and update a long-term capital investment plan for transportation facilities and infrastructure.
2. Goods movement corridors shall be prioritized for investment and development needs. Additionally, a goods movement strategy will identify best practices in road maintenance and safety and improve overall network planning and efficiency along identified goods movement corridors, over-dimensional haul routes, and specifically in the industrial areas south of Highway 16A.
3. The City shall establish a transit plan that focuses on transit service targets and performance. As commercial and residential nodes continue to grow, transit service may be expanded to increase coverage, frequency, and hours of service to meet established service targets.
4. The City shall continue to monitor advances in emerging technologies as the transportation industry evolves, continually assessing the opportunities that these innovations may present on the transportation network.
5. The City shall continue to maintain and improve its roadway asset management program, which includes a prioritization and evaluation matrix for timely rehabilitations and ongoing maintenance. This matrix should then be updated on an annual basis.
6. The City shall maintain current bylaws for off-site levies to recover the appropriate capital cost of providing transportation infrastructure required for development. Developers shall pay all outstanding levy fees as a condition of subdivision and/or development permit.
7. The City shall develop Traffic Impact Assessment (TIA) guidelines and a checklist to assist with City initiatives and land development application requirements. The City should create Level of Service guidelines within the TIA guidelines that consider all modes of transportation that are based on the road classification.
8. The City should continue concept studies for all proposed roads identified on the network classification map (see Figure 11) to ensure a strategic approach to long-term network planning.
9. The City shall maintain a traffic count program and integrate traffic counts into a suitable database for sharing information.

5.4. REGIONAL INTEGRATION

Spruce Grove's proximity to Alberta's capital highlights the City's integral role to the economy and well-being of the Region. The following strategies highlights the City's commitment to regional collaboration and connections.

1. The City shall collaborate with key regional participants to ensure the City's transportation priorities align with regional transportation objectives that facilitate future growth and connectivity.
2. The City shall continue to work in collaboration with the Province to support provincial policies and objectives to facilitate network improvements and prioritize highway upgrades, recognizing the provincial highways as a key economic driver within the Region.
3. The City shall complete amendments to the iTMP as major developments or growth patterns occur and should complete a formal update at least every 10 years. The City may also consider an interim 5-year iTMP Implementation Status Report to document progress. This will ensure the City's transportation objectives and policies continue to align with the MDP, as well as other City statutory and non-statutory plans. Regional strategic plans set out by the EMRB or other jurisdictions should be considered in future iTMP updates.

6. Moving Forward

Investing in specific programs or initiatives related to the planning, design, construction, and/or operation and maintenance of the City's transportation system.

Moving Foward

To ensure the iTMP is effectively implemented and achieves its intended goals, the City must be proactive in promoting and applying the strategic directions outlined in Section 5. This includes investing in specific programs or initiatives related to the planning, design, construction, and/or operation and maintenance of the City's transportation system. The following subsections detail the action plan that will allow Spruce Grove to move towards its future transportation goals and vision.

6.1. KEY CORRIDOR IMPROVEMENTS

Major road corridors are foundational to the overall functionality and development of Spruce Grove as they enable the movement and connection of people and goods. Continued investments in these corridors are essential to keep pace with ongoing growth and development and contributes to a sustainable, liveable, and prosperous community.

As Spruce Grove expands over the next 20 years, there are several key corridors and connections that should be implemented to address network connectivity and integrate with new development.

The recommended future road network is provided in Figure 10.

The timelines and year horizons for improvements are referenced as:

Near-Term: 2025 to 2029
Medium-Term: 2030 to 2035
Long-Term: 2036 to 2045
Beyond Long-Term: 2046+

NORTH-SOUTH CORRIDORS

1. **Boundary Road.** The future upgrade and connection of Boundary Road to Grove Drive could provide opportunities for additional residential and commercial development on the west side of Spruce Grove. However, this is dependent on the annexation of the Boundary Road right-of-way. At the time this iTMP was being completed, annexation negotiations between the City and the Town of Stony Plain were ongoing. Should the annexation be approved, the connection from Highway 16A to McLeod Avenue should be upgraded to a four-lane arterial road, with the remaining section from McLeod Avenue to Grove Drive constructed as a two-lane arterial road. These upgrades are anticipated to be completed in the near-term horizon.

   To facilitate further growth in the City's western limits, Boundary Road will require further upgrades to complete the four-lane arterial in the long-term horizon. This upgrade will be dependent on development in the area as well as traffic operations along Jennifer Heil Way. Should congestion become significant along either of these corridors, this upgrade should be considered to alleviate the pressures on these links. Further, a road right-of-way of 54m should be protected to accommodate a four-lane arterial cross-section.

2. **Campsite Road.** Currently, Campsite Road is mostly a two-lane road except for a 250m section south of Highway 16A (south Walmart access), where it is a four-lane arterial road. Anticipated development in the Shiloh and East Campsite Business Park areas will require Campsite Road to be upgraded to a four-lane arterial road between the south Walmart access and the future Tamarack Drive located within the East Campsite Business Park development area. The timing of this upgrade will depend on the rate of development. However, it is expected that the upgrade will be required within the long-term horizon.

   Completion of the four-lane upgrade on the remaining section of Campsite Road between Tamarack Drive and Highway 628 is likely required beyond the long-term horizon. Similar to Boundary Road, a 54m right-of-way should be protected along this corridor to Highway 628.

It is anticipated that future improvements on Highway 628 will reduce the volume of truck traffic moving through the city. This may help to defer future corridor widening on Campsite Road, Golden Spike Road, and Century Road.

3. **Century Road.** Century Road is currently a two-lane road between Highway 16A and the City's southern limits. Traffic projections indicate the need to widen Century Road to four-lanes from Highway 16A to Diamond Avenue within the medium-term horizon to maintain acceptable operating conditions. This improvement will enhance connectivity and facilitate efficient travel to and from the City's industrial hub.

   Development within the special study area east of Century Road will influence the timelines for the four-lane upgrades on Century Road between Diamond Avenue and Highway 628. This is likely to occur beyond the long-term horizon.

   It is anticipated that the northern section of Century Road will experience more congestion first, therefore upgrades from a two-lane to a four-lane arterial road should progress from north to south. Intersection upgrades should be completed at South Avenue and Diamond Avenue during the initial four-lane upgrades. Signalization at Diamond Avenue along with turn bays in all directions are anticipated to be required.

   Depending on development staging, the east leg of Diamond Avenue should be constructed so that the collector continues through the special study area to Pioneer Road. Beyond the long-term horizon, an arterial road may be required 1.6km south of Highway 16A (Tamarack Drive Extension) and therefore, right-of-way should be protected to connect Century Road to Pioneer Road/Range Road 271. This future arterial road could help alleviate additional pressures along Century Road.

4. **Golden Spike Road.** Golden Spike Road is currently a four-lane arterial road between Highway 16A and south of Diamond Avenue, and serves as a critical north-south link for the City's industrial areas. Continued growth within the South Century industrial area and expansion of the East Campsite Business Park will require a four-lane widening on Golden Spike Road from south of Diamond Avenue to Tamarack Drive. As part of this widening, upgrades to the intersection of Tamarack Drive will be required, including signalization and single turn bays in all directions. The southbound left-turn and westbound left-turn lanes should be maintained at Saskatchewan Avenue.

   Similar to Campsite Road, the timing of the upgrades will depend on the rate of development; however, it is expected to occur within the long-term horizon. Completion of the four-lane upgrade on the remaining section of Golden Spike Road between Tamarack Drive and Highway 628 is likely required beyond the long-term horizon.

   Improvements along Golden Spike Road should also consider the connections to the existing service road (Oswald Drive). This can be reviewed through future concept planning for the corridor.

Corridor improvements on Campsite Road, Golden Spike Road and Century Road aligns with **Policy 4.1.19** as outlined in the MDP:

"City of Spruce Grove shall support responsible access management of Highway 628"

5. **Pioneer Road.** Pioneer Road currently varies between two-lanes and four-lanes from Highway 16A to the City's northern limits. The anticipated growth within the East Pioneer and Pioneer Lands area will place increased traffic demands on Pioneer Road, particularly when connected to Westwind Drive. This connection will provide residents an alternate north-south to east-west route, alleviating pressures along Grove Drive and Century Road. To achieve this, and to maintain acceptable operating conditions, the section of Pioneer Road between Garneau Link and Westwind Drive should be completed by the developer as a two-lane collector road. In addition, the section between Highway 16A and Grove Drive would need to be upgraded to a four-lane arterial road to facilitate growth along the south end of the corridor. As part of these upgrades, roundabouts along the corridor should be upgraded to two-lane roundabouts or other geometric improvements to increase capacity.

   Both improvements noted above should be completed within the medium-term horizon. However, the anticipated timelines for improvements is dependent on the rate of development and may be required sooner or later than projected.

6. **Spruce Ridge Road Extension.** The West Central ASP proposes a new north-south collector road that would extend Spruce Ridge Road through to McLeod Avenue and Highway 16A. The extension of Spruce Ridge Road should be completed as a collector road with a cross-section modified to support four-lanes between Highway 16A and McLeod Avenue. This improvement will be required within the medium-term horizon or as development occurs to support development traffic and alleviate pressures on Jennifer Heil Way. A two-lane collector road can be maintained north of McLeod Avenue to Springbrook Wynd and should also be completed within the medium-term horizon.

EAST-WEST CORRIDORS

1. **Grove Drive.** Grove Drive is currently a four-lane arterial roadway within the more established areas of Spruce Grove and transitions to a two-lane roadway east of Spruce Village Way/ Greystone Drive and west of Spruce Ridge Road/Harvest Ridge Drive. As the city continues to expand in the east and west, there is a need to upgrade the two-lane sections of Grove Drive to a four-lane arterial road. This includes the section between Spruce Village Way/Greystone Drive to Pioneer Road and the section of road between Harvest Ridge Drive/Spruce Ridge Road to Boundary Road. Both sections should be implemented within the medium-term horizon, with the eastern section completed first followed by the western section.

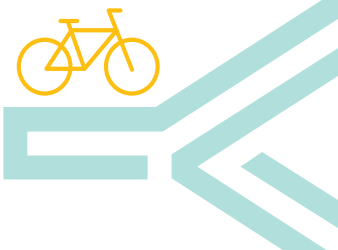
   Intersection upgrades such as additional turn bays, signalization, or roundabouts (as warranted) should also be considered along with the widening of Grove Drive. Specifically, dual left-turn lanes at Jennifer Heil Way and lane reconfiguration at Century Road.

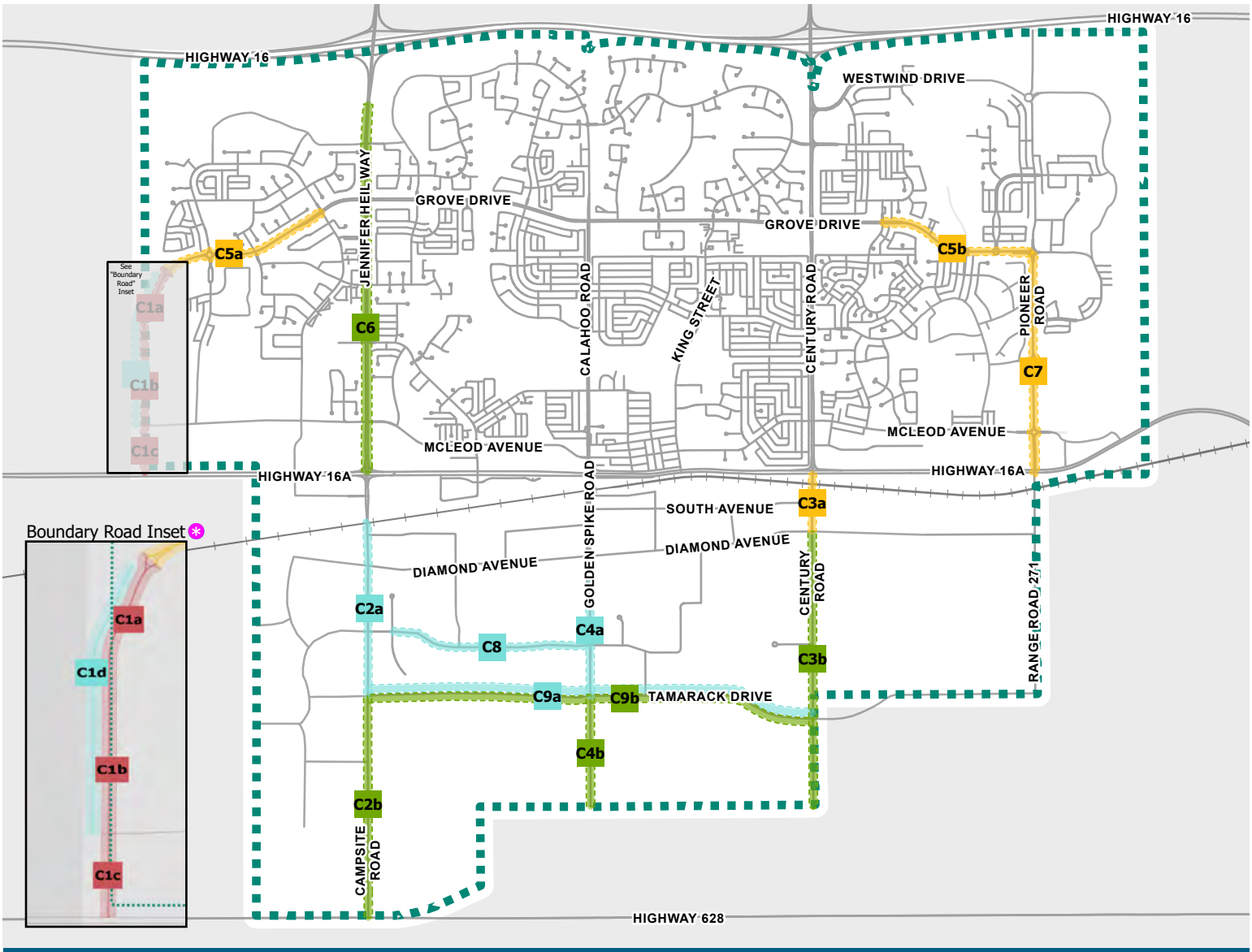
2. **Highway 16A.** Within Spruce Grove, Highway 16A functions as an urban highway that supports both local and regional travel. It is a six-lane divided roadway between Boundary Road and approximately 700m east of Century Road, transitioning to a four-lane divided road to the City's eastern limit. Anticipated development within the East Pioneer and Pioneer Lands growth areas will require additional lane capacity on Highway 16A to support the expected traffic demands. The traffic forecasts indicate the need to widen the current four-lane section of Highway 16A to six-lanes in the near-term to maintain efficient traffic flows.

3. **McLeod Avenue West Extension.** The West Central ASP proposes a new east-west collector that would extend McLeod Avenue west from Jennifer Heil Way to Boundary Road. While the traffic projections suggest that a two-lane collector road with turn lanes would be sufficient, this new connection should be completed as a four-lane collector road. This will serve to facilitate efficient and safe commercial accesses within the West Central area while maintaining traffic flow from the existing McLeod Avenue corridor. It is anticipated that this extension will be required within the medium-term horizon. A connection, approximately 150m, is currently being constructed as an interim two-lane road with turn bays.

4. **Westwind Drive.** Westwind Drive is a newer east-west collector road that facilitates connections for developments within the Pioneer Lands, including the new Civic Centre and the Spruce Grove Transit Centre. Westwind Drive is currently constructed as a four-lane road between Century Road and Gambel Loop/Knox Lane.

   Traffic projections indicate that the section of Westwind Drive from Gambel Loop/Knox Lane to Pioneer Road can function as a two-lane collector road as the area fully builds out. This new connection will facilitate development access and enhanced connections within the Pioneer Lands. It should be implemented within the medium-term horizon or as warranted by development.





RECOMMENDED CORRIDOR IMPROVEMENTS

Near-Term Improvements

C1a: Boundary Road, Holy Trinity Church to Grove Drive - Construct 2-Lanes
C1b: Boundary Road, McLeod Avenue to Holy Trinity Church - Construct 2-Lanes
C1c: Boundary Road, Highway 16A to McLeod Avenue - Construct 4-Lanes

Medium-Term Improvements

C3a: Century Road, Highway 16A to Diamond Avenue - 2 to 4 Lanes
C5a: Grove Drive, Harvest Ridge Drive/Spruce Ridge Road to Boundary Road - 2 to 4 Lanes
C5b: Grove Drive, Spruce Village Way/Greystone Drive to Pioneer Road - 2 to 4 Lanes
C7: Pioneer Road, Highway 16A to Grove Drive - 2 to 4 Lanes

* Potential Boundary Road upgrade and connection, pending Annexation approval.

Long-Term Improvements

C1d: Boundary Road, McLeod Avenue to Grove Drive - 2 to 4 Lanes
C2a: Campsite Road, South Walmart Access to Tamarack Drive - 2 to 4 Lanes
C4a: Golden Spike Road, South of Diamond Avenue to Tamarack Drive - 2 to 4 Lanes
C8: Saskatchewan Avenue, Manitoba Way to Golden Spike - Construct 2-Lanes
C9a: Tamarack Drive, Campsite Road to Century Road - Construct 2-Lanes

Beyond Long-Term Improvements

C2b: Campsite Road, Tamarack Drive to Highway 628 - 2 to 4 Lanes
C3b: Century Road, Diamond Avenue to City South Limits - 2 to 4 Lanes
C4b: Golden Spike Road, Tamarack Drive to City South Limits - 2 to 4 Lanes
C6: Jennifer Heil Way, Highway 16A to Highway 16 - 4 to 6 Lanes
C9b: Tamarack Drive, Campsite Road to Century Road - 2 to 4 Lanes

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 10: Recommended Corridor Improvements

OTHER CORRIDORS

Several of the growth areas in Spruce Grove will need additional connections to facilitate access, address increased demands, and foster economic growth. The following new connections should also be provided to support development:

1. **Harvest Ridge Connector.** The West ASP proposes a new east-west link (Harvest Ridge Connector) that connects from the west side of Jennifer Heil Way, north of Grove Drive, and loops down towards Harvest Ridge Drive. The new connector is anticipated to be a two-lane collector road, supporting future residential development in the area north of Harvest Ridge Drive. Completion of this connector is dependent on the rate of development. However, it is expected to occur within the long-term horizon.

2. **Saskatchewan Avenue.** The extension of Saskatchewan Avenue from Manitoba Way to Golden Spike Road will be needed as the East Campsite Business Park area builds out. This new link is anticipated to be a two-lane industrial collector and should be implemented within the long-term horizon, or as warranted by development. This extension is intended to provide future industrial access and enhance east-west connections south of Diamond Avenue, particularly between the East Campsite Business Park and South Century area.

3. **Tamarack Drive.** The completion of Tamarack Drive between Campsite Road and Century Road will serve to facilitate enhanced east-west connections through the southern part of Spruce Grove. As the special study area and industrial areas develop towards the City's east limits, Tamarack Drive will ultimately extend to Pioneer Road. This is not anticipated until beyond the long-term horizon.

   At the onset of development within the East Campsite Business Park and South Century area, Tamarack Drive can be constructed and function as a two-lane arterial road in the long-term horizon. The ultimate upgrade to a four-lane arterial road will be required beyond the long-term horizon or as development nears full build-out.

PROVINCIAL CORRIDORS

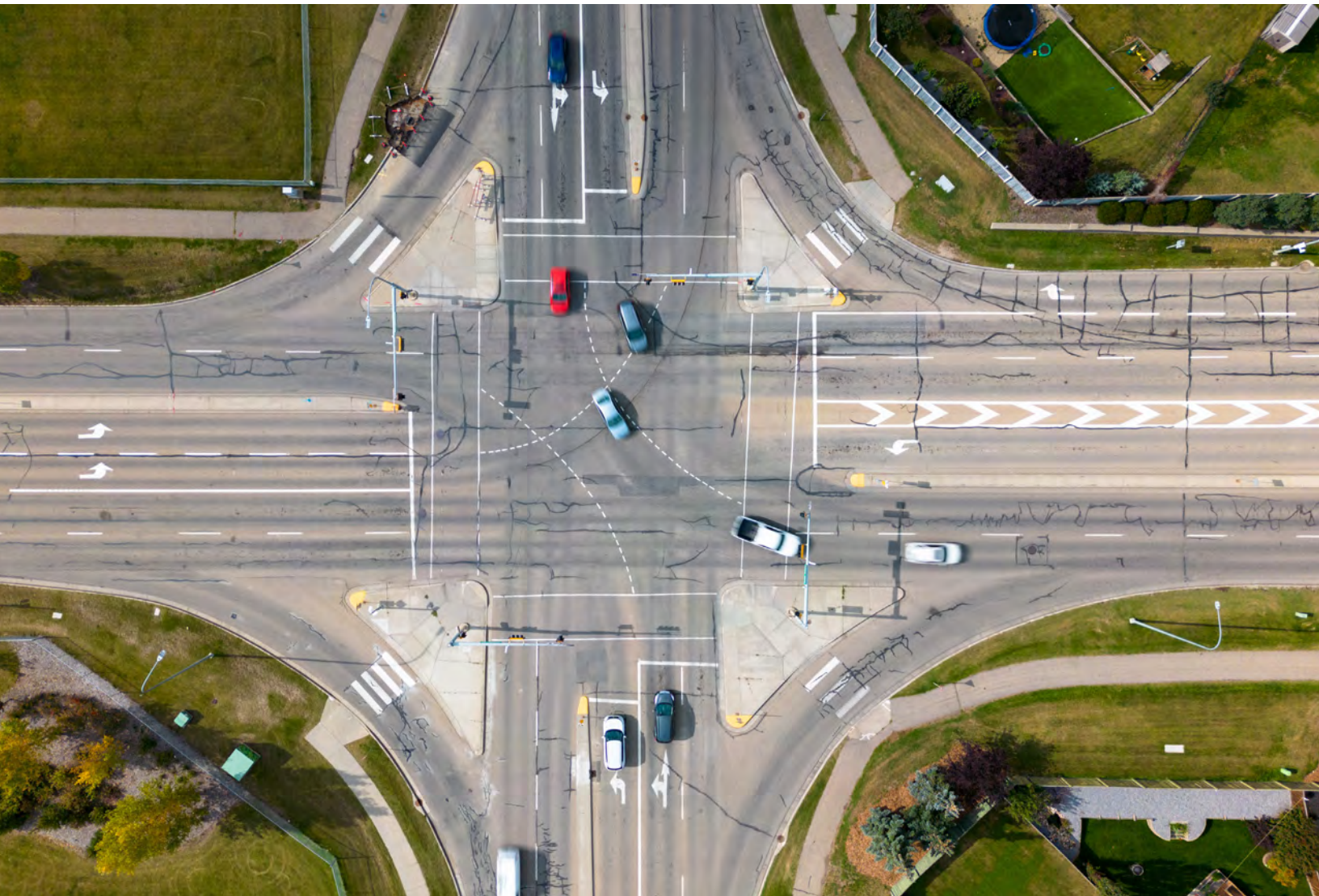
Highway 16, Highway 16A, and Highway 628, are all provincial highways that serve as an important commuter and goods movement link for Spruce Grove and neighbouring municipalities. The City should continue to work with TEC and Regional partners to advocate for road capacity and safety improvements on these highways. The new operational changes on Highway 16A east of Spruce Grove (i.e. speed reduction and traffic signals) is expected to have minimal impacts to local travel in the city. Some traffic may shift to Highway 16 or Highway 628. However, these corridors are also reaching capacity today. Future planned upgrades along Highway 16 and Highway 628 will serve to address future congestion as a result of regional growth and manage more efficient flow within Spruce Grove.

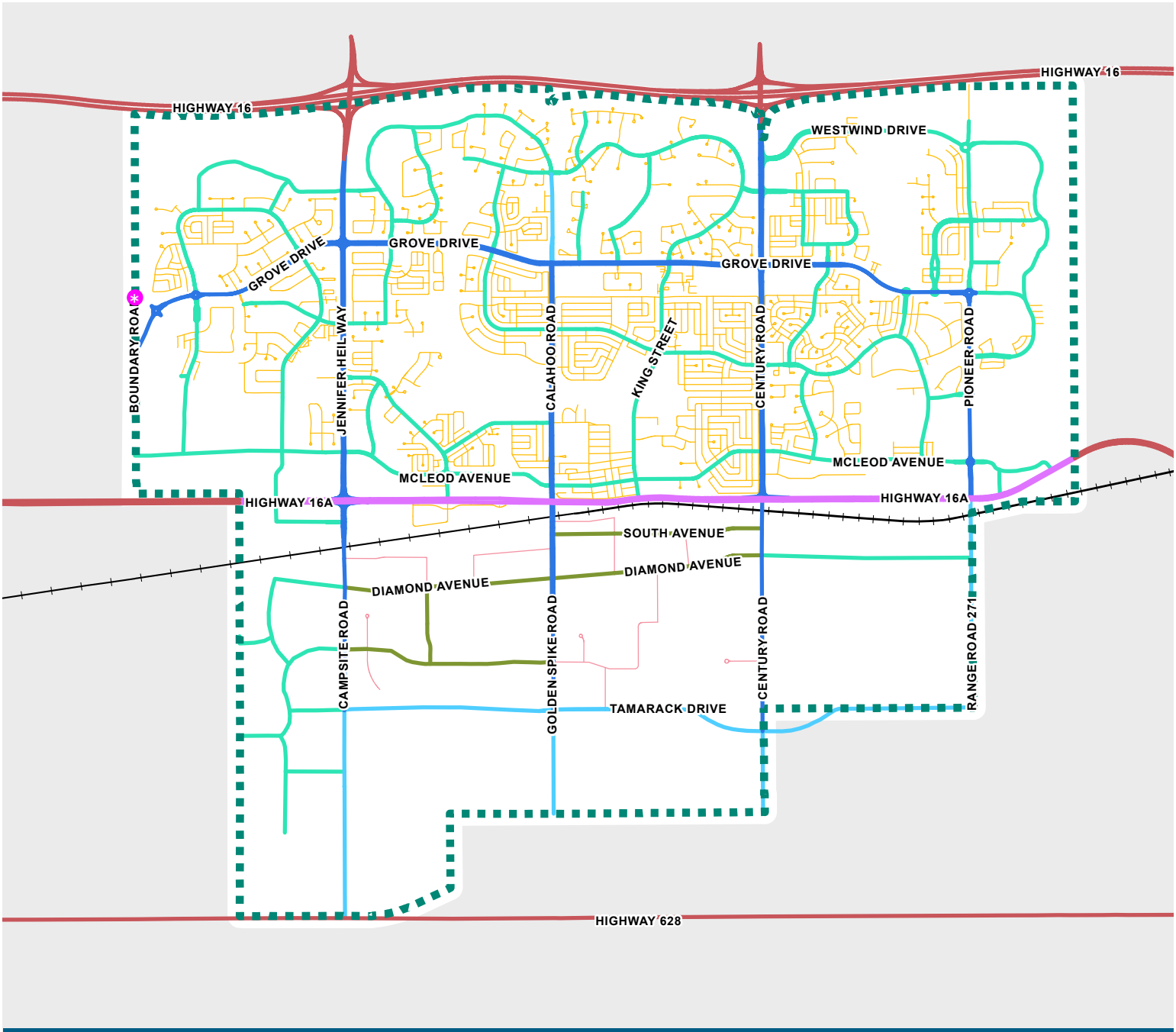
6.1.1. FUTURE ROAD NETWORK AND CLASSIFICATION

The road classification system in Spruce Grove is a vital component of its transportation infrastructure. It informs decisions related to infrastructure investments and prioritization, traffic management strategies, and the allocation of resources for road maintenance and upgrades.

A new road classification framework has been established to reflect current and future needs, and to align with current road design standards and best practices. As illustrated in Figure 11, the expanded classification distinguishes the different types of arterial, collector, and local roads within Spruce Grove, including divided and undivided arterial roads, residential/commercial/industrial collector roads and local roads.

By implementing a well-defined road classification network, the City aims to ensure efficient traffic flow, promote safety for all road users, and support the livability and accessibility of the community.





FUTURE ROAD NETWORK AND CLASSIFICATION

- Provincial Highway
- Urban Highway
- Divided Arterial
- Undivided Arterial
- Residential/Commercial Collector
- Industrial Collector
- Residential/Commercial Local
- Industrial Local
- Railways
- Municipal Boundary
- Potential Boundary Road upgrade and connection, pending Annexation approval.

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 11: Future Road Network and Classification

6.2. OPERATIONAL AND SAFETY IMPROVEMENTS

Investing and prioritizing intersection upgrades is valuable to creating a safe, efficient, and connected transportation network. With the anticipated traffic growth over the next 20 years, there are several intersections on the network that will experience significant delays and congestion.

Specific intersection improvements to address these constraints are outlined below and highlighted in Figure 12. These improvements strive to enhance safety, reduce congestion, accommodate active modes, and support urban development.

1. **Jennifer Heil Way** – The addition of turn bays and signal optimization along Jennifer Heil Way will serve to maintain efficient traffic flows over the next 20 years. Improvements along the corridor include providing dual turn bays in all directions at the intersection with Highway 16A, optimizing signal timings at Spruce Ridge Drive, and providing dual left/right turn bays at Grove Drive. These improvements should be implemented between the near-term and medium-term horizons to defer major corridor upgrades. Where right-of-way permits, it may be possible to upgrade Jennifer Heil Way to a six-lane cross section, although this improvement is anticipated beyond the long-term horizon.

2. **Century Road** – The section of Century Road from Grove Drive to Highway 16A will experience increased congestion over the next 20 years. Rather than widening, the addition of turn bays and signal optimization will serve to maintain efficient traffic flows and should be completed in the medium-term horizon. For example, reconfiguring the lanes to provide dual eastbound left turn bays will provide additional capacity for the Grove Drive and Century Road intersection.

3. **Highway 16A/Century Road** – An additional southbound thru lane in combination with signal optimization will help alleviate delays and provide acceptable levels of service at this intersection. This improvement should be implemented within the medium-term horizon.

   Continuous monitoring of the intersection should also be conducted to determine if further improvements are warranted in the long-term. However, right-of-way and geometric constraints may limit potential improvements on the north leg.

4. **Grove Drive, west of Jennifer Heil Way** – The addition of turn bays, roundabouts, or signalized intersections will provide continuous flow to/from Boundary Road and will extend the design life of Grove Drive and its intersections. These improvements should be in the medium-term horizon or as warranted.

5. **Network South of Diamond Avenue** – Intersection improvements are anticipated with new or upgraded network connections south of Diamond Avenue. The timing for completing these improvements are driven by development, which will likely occur within the long-term horizon and beyond. It is recommended that these intersections are monitored for improvements.

6. **Oswald Drive** – This is a service road that runs parallel to Golden Spike Road between Railway Avenue and Diamond Avenue. To maintain access to the local businesses, this road is likely to be preserved with any future upgrades on Golden Spike Road. Future review of Oswald Drive should be completed with a focus on safety to determine if geometric improvements at the intersections could improve the operations and safety of this corridor. These improvements could consider signalization, additional concrete medians, and signage, as well as access consolidation to minimize accesses near the Alberta Avenue and Diamond Avenue intersections.

RECOMMENDED INTERSECTION IMPROVEMENTS

Near-Term Improvements

I1: Jennifer Heil Way & Spruce Ridge Drive - Optimize Signal Timing
I4: Pioneer Road & Highway 16A - Intersection Upgrades with Corridor Improvements

Long-Term Improvements

I3: Jennifer Heil Way/Campsite Road & Highway 16A – Dual Westbound Left Turns

Medium-Term Improvements

I2: Jennifer Heil Way & Grove Drive - Additional Turn Bays, Dual Left Turns
I5: Highway 16A Corridor - Corridor Signal Coordination
I6: Century Road & Highway 16A - Additional Southbound Thru Lane with Corridor Improvements
I7: Golden Spike Road & Highway 16A - Dual Northbound Left Turns
I8: Century Road & Grove Drive - Optimize Signal Timing and Lane Reconfiguration
I9: Grove Drive, west of Jennifer Heil Way - Additional Turn Bays, Signalized Intersections, or Roundabouts as Warranted

Beyond Long-Term Improvements

I10: Diamond Avenue - Provide Dedicated Turn Bays as Needed

N

Scale: 1:45,000

0 0.4 0.8 1.6 2.4 km

Figure 12: Recommended Intersection Improvements

6.3. RAIL CROSSINGS

The location of at-grade rail crossings through Spruce Grove are a barrier to the mobility of people, goods, and services, particularly for travel to and from the City's industrial area.

The City can implement a range of mitigation measures to enhance railway crossings for all users, including:

1. **Improve Traffic Operations and Pre-emptive Signal Timings** – Signalized intersections in proximity of the rail crossings can be optimized through improved signal operations to mitigate rail crossing delays. Traffic signals can be upgraded so that both traffic and train signals are integrated to efficiently manage traffic flow and prevent vehicles and/or pedestrians from being trapped on the crossings.
2. **Install Advance Warning Signals** – Implement ITS solutions that provide users advance warnings about approaching trains via dynamic message signs or in-vehicle alerts. This allows users to manage expectations or plan alternate routes.
3. **Implement Updated Rail Crossing Guidelines** – To maintain rail crossing safety, ensure that the rail crossings adhere to the most up-to-date rail regulations, standards, and guidelines set out by Transport Canada. The application of consistent safety standards helps to enhance safety, reduce congestion, and provide better accessibility to all users, including pedestrians and cyclists.
4. **Advocate for Highway 628 Improvements** – Highway 628 serves as an alternate route into the City's industrial area south of Highway 16A. Upgrades on this corridor will likely draw commuter traffic from the southern boundary northbound, reducing traffic demands crossing the rail corridors. This will serve to alleviate congestion and reduce travel time delays at the rail crossings.
5. **Provide Additional Approach Lanes** – Traffic congestion during rail crossing events can be reduced by providing additional lanes approaching the crossing (e.g. two approach lanes). This would reduce upstream impacts, as additional queuing space is provided, minimizing queue lengths along the corridors.
6. **Grade Separation at Major Crossings** – Current and future traffic and train demands at the rail crossings do not warrant grade separation within the next 20 years (per Transport Canada Grade Separation Assessment Guidelines). However, grade separation can be considered a solution beyond the long-term horizon, as it would reduce the impacts of train crossings (e.g. travel delays and safety risks) and improve mobility and accessibility for all users.

6.4. MAINTENANCE AND REHABILITATION

Maintaining road infrastructure is an ongoing challenge that requires a balanced approach combining adequate funding, effective planning, and proactive management. Roads naturally deteriorate over time due to weather conditions, heavy usage, and other environmental factors. Ensuring regular maintenance, including road resurfacing, pothole repairs, and proper signage is crucial to preserve road network quality and safety.

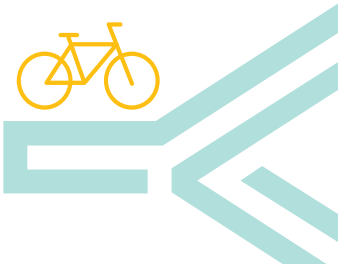
The following actions can be undertaken to manage and maintain the City's transportation infrastructure:

1. **Conduct Regular Assessment Reports** – This involves collecting data on a regular basis (e.g. annual, bi-annual) on the City's road and/or sidewalk/trail conditions and developing a standardized rating system to assess the condition of various infrastructure components. The assessment report should prioritize upgrades based on urgency and impact to facilitate decision-making.

2. **Regular Maintenance and Rehabilitation Program** – This requires long-term commitment and ongoing improvements and investments. The program should include considerations for proper equipment for unique needs, as well as regular maintenance, such as pothole repairs, crack sealing, and street sweeping. Resources for larger scale projects, such as repaving and repairing major infrastructure, should also be included to ensure the network remains safe, reliable, and efficient for all users.

3. **Sidewalk and Trail Maintenance** – Regular maintenance of the City's sidewalks and trail networks are essential for ensuring safety and accessibility, and should be part of the City's regular maintenance and rehabilitation program. This can include implementing timely snow and ice removal, vegetation control, signage, and lighting maintenance. Where and when possible, sidewalks and pedestrian crossings should also be upgraded to meet accessibility standards such as curb ramps.

4. **Coordination with Capital Plans** – Maintenance and rehabilitation efforts should align with broader City planning and development initiatives, ensuring efficient use of resources and cohesive infrastructure development. This requires integrated planning and budget alignment among City departments, effective project coordination, and participant engagement.



6.5. ACTIVE MODES

The City's ongoing commitment to developing a comprehensive and well-connected sidewalk and trail network encourages a culture of ecofriendly and healthy transportation choices. The City can continue to develop its robust active transportation network through new infrastructure development and improved connections, as well as through safety and accessibility enhancements.

These improvements can be achieved through the following initiatives:

1. **Update Active Mode Database** – The City should update its current active mode definition and mapping database (e.g. sidewalks, gravel trails, multi-use pathways) to establish a consistent and streamlined approach for planning and designing the active modes network. This will also better facilitate the detailed assessment of active mode connectivity and gaps.

2. **Establish Active Mode Design Guidelines** – The City should establish an active mode classification system and active mode specific design guidelines. These would be used to inform required modifications to City standards and developer requirements, as well as to define and prioritize future network gap development.

   The City should also conduct periodic review and update of its design standards to incorporate universal design elements so that all infrastructure is designed to be accessible to all people of all ages and abilities, including those using mobility aids. Including specific active mode design applications in the City's design standards promotes active modes safety and accessibility.

3. **Address Active Mode Network Gaps** – Filling in the gaps in the multi-use network and completing active mode connections ensures residents are well-linked to key destinations such as schools, recreational areas, shopping centres, and transit hubs. Opportunities to complete the active modes network include:

   - Connections/routes along key arterial, collector, and local corridors such as Boundary Road, McLeod Avenue, Pioneer Road, and Woodhaven Drive.
   - Connections/routes through parks, open and green spaces, such as Springwood Wynd to Fuhr Sports Park, Danfield Place to Deer Park Boulevard, and Vanderbilt Common to Jubliee Park.
   - New and enhanced connections within the City Centre as outlined in the CCARP's Mobility Concept.
   - New connections/routes within the industrial area south of Highway 16A.
   - Connections to future regional trail initiatives, such as a new connecting trail between Spruce Grove and Stony Plain, as well as the Parkland County regional trail development plans.

4. **Implement Active Mode Support Infrastructure** – Infrastructure enhancements should also be incorporated with active mode links such as improved lighting and visibility, enhanced crossing measures and pavement markings. A safe and accessible network for active modes can also be maintained through programs that provide regular reviews of pedestrian crossings with higher activity of vulnerable users. Amenities such as benches, wayfinding signage, and bicycle racks can also be provided to enhance the overall user experience.

A proactive approach in establishing and maintaining the active modes network allows the City to ensure its transportation infrastructure continues to be safe, effective and responsive to the needs of all users.

6.6. TRANSIT

The rise in transit usage in Spruce Grove is driven by the City's ongoing investments in transit service and infrastructure improvements as well as the evolution of On-Demand service. Investing in and promoting public transit is essential for meeting the transportation needs of a growing urban population while addressing environmental and social challenges. The City can implement the following to encourage and increase transit usage in Spruce Grove:

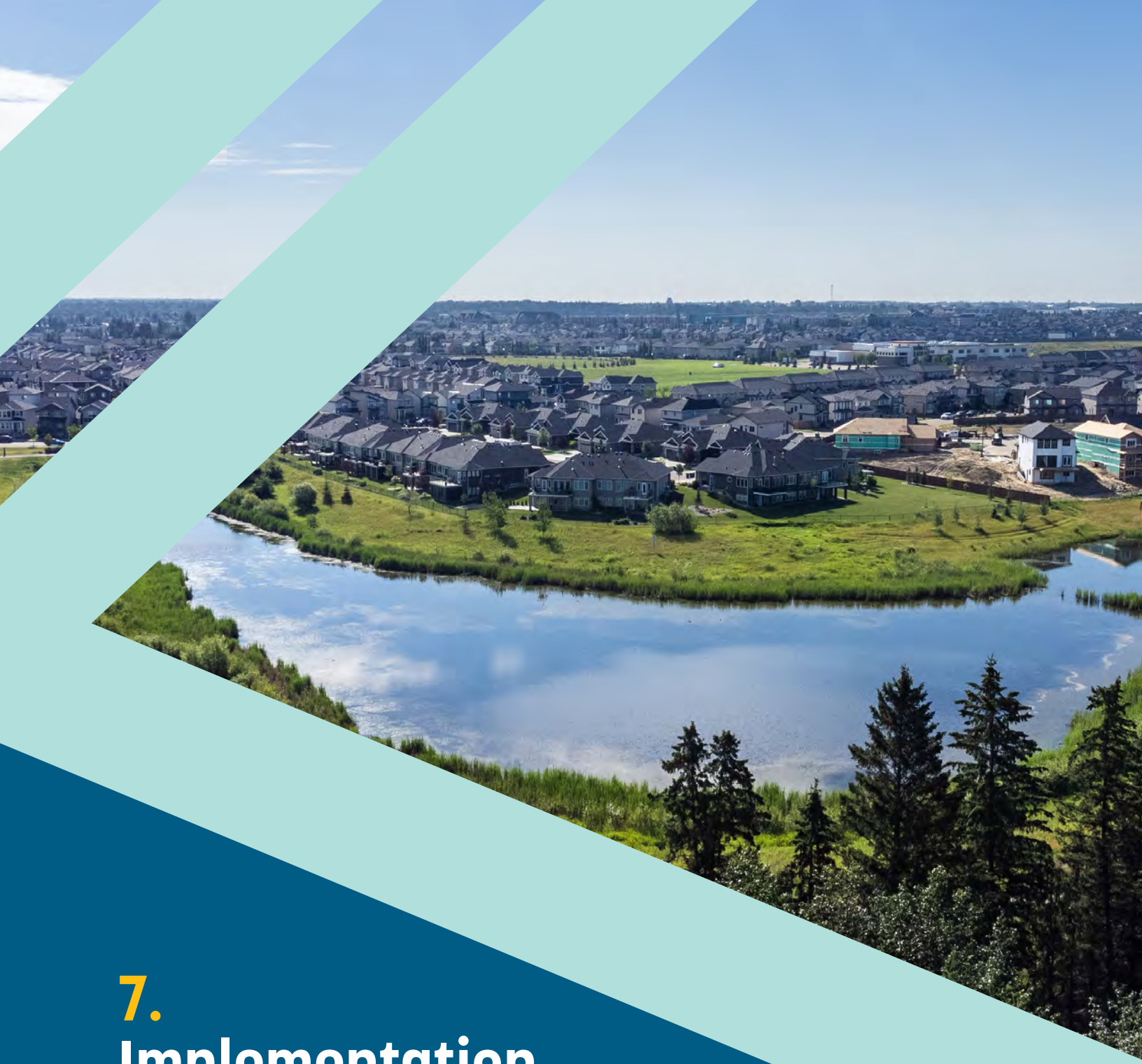
1. **Transit Monitoring and Reporting Program** – Establish a periodic program of monitoring and reporting for transit usage to inform decision-making and planning for future infrastructure and service needs as ridership continues to grow. This program intends to use robust data through the collection of ridership data and transit user surveys to assess the need for more transit service or a change in service type (e.g. commuter route vs On-Demand).

2. **Transit Infrastructure Program** – Develop a long-term Transit Capital Investment Plan to support the growth of transit usage in the city. The plan should outline the resources required to develop, maintain, and/or expand the City's transit infrastructure. This may include projects and initiatives to purchase new transit vehicles, upgrade garage facilities, and invest in technology.

3. **On-Demand Transit Program** – Continue to invest in the City's existing On-Demand Transit program to maintain a safe and reliable system for future mobility needs. On-Demand transit offers residents a flexible and adaptable form of transportation while providing the City a cost-effective solution to increase transit accessibility and coverage.

4. **Transit Stop Accessibility and Amenities** – Continue to improve transit stop accessibility and amenities (e.g. bus shelters, benches, lighting, waiting areas, etc.) to enhance user safety and experience. These amenities should be integrated with the overall planning and design of the transportation network, which involves incorporating various components and facilities that support and complement the core transit operations.

5. **Regional Transit Initiatives** – Continue to work with neighbouring communities to assess partnership opportunities for enhanced regional transit connections and services. This allows Spruce Grove to be better connected to a wider geographic area, which can better meet the needs of commuters, support economic growth, and promote transit usage.



7. Implementation Plan

Defines the framework for advancing the strategic actions set forth in this iTMP and guides the City in achieving its transportation goals over the next 20 years.

Implementation Plan

The implementation plan defines the framework for advancing the strategic actions set forth in this iTMP and guides the City in achieving its transportation goals over the next 20 years. Separate implementation plans for the recommended capital projects and other transportation initiatives and programs were developed to allow the City to better allocate resources and implement transportation improvements effectively.

7.1. CAPITAL PROJECTS

The iTMP has identified several transportation projects that will play a vital role in shaping Spruce Grove's future transportation network. Strategic planning and implementation of these projects ensure that the network meets current demands and is resilient to future transportation challenges. The following implementation plan (Table 1 and Table 2) outlines the recommended actions for capital project improvements and the corresponding timelines required to achieve it.

The timelines for implementation are allocated by near-term (2025 to 2029), medium-term (2030 to 2035), long-term (2036 to 2045), and beyond long-term (2046+) horizons. Improvements that are particularly impacted by the rate of new adjacent development or responsible by developers are also noted.

Table 1: Recommended Implementation Plan – Capital Corridor Improvement Projects

Time Horizons: Near-Term - 2025 to 2029; Medium-Term - 2030 to 2035; Long-Term - 2036 to 2045; Beyond Long-Term - 2046+
*Project timelines may change due to rate of adjacent development; **Modified Collector Road Cross-Section

Capital Projects				
Corridor Improvements				
No.	**Corridor**	**Segment**	**Recommended Action**	**Time Horizon**
C1a	Boundary Road	Holy Trinity Church to Grove Drive	Construct 2-Lane Divided Arterial Road	Near-Term
C1b	Boundary Road	McLeod Avenue to Holy Trinity Church	Construct 2-Lane Divided Arterial Road	Near-Term
C1c	Boundary Road	Highway 16A to McLeod Avenue	Construct 4 Lanes Divided Arterial Road	Near-Term
C1d	Boundary Road	McLeod Avenue to Grove Drive	Upgrade from 2 to 4 Lanes Divided Arterial Road	Long-Term*
C2a	Campsite Road	South Walmart Access to Tamarack Drive	Upgrade from 2 to 4 Lanes Divided Arterial Road	Long-Term*
C2b	Campsite Road	Tamarack Drive to Highway 628	Upgrade from 2 to 4 Lane Divided Arterial Road	Beyond ITMP Horizon
C3a	Century Road	Highway 16A to Diamond Avenue	Upgrade from 2 to 4 Lanes Divided Arterial Road	Medium-Term
C3b	Century Road	Diamond Avenue to City South Limits	Upgrade from 2 to 4 Lane Divided Arterial Road	Beyond ITMP Horizon
C4a	Golden Spike Road	South of Diamond Avenue to Tamarack Drive	Upgrade from 2 to 4 Lanes Divided Arterial Road	Long-Term
C4b	Golden Spike Road	Tamarack Drive to City South Limits	Upgrade from 2 to 4 Lane Divided Arterial Road	Beyond ITMP Horizon
C5a	Grove Drive	Harvest Ridge Drive/Spruce Ridge Road to Boundary Road	Upgrade from 2 to 4 Lanes Divided Arterial Road	Medium-Term
C5b	Grove Drive	Spruce Village Way/Greystone Drive to Pioneer Road	Upgrade from 2 to 4 Lanes Divided Arterial Road	Medium-Term
C6	Jennifer Heil Way	Highway 16A to Highway 16	Upgrade from 4 to 6 Lanes Divided Arterial Road, North to South	Beyond ITMP Horizon
C7	Pioneer Road	Highway 16A to Grove Drive	Upgrade from 2 to 4 Lanes Divided Arterial Road	Medium-Term*
C8	Saskatchewan Avenue	Manitoba Way to Golden Spike	Construct 2-Lane Industrial Collector Road	Long-Term*
C9a	Tamarack Drive	Campsite Road to Century Road	Construct 2-Lane Undivided Arterial Road	Long-Term*
C9b	Tamarack Drive	Campsite Road to Century Road	Upgrade from 2 to 4 Lane Undivided Arterial Road	Beyond ITMP Horizon

Table 2: Recommended Implementation Plan - Capital Intersection Improvement Projects

Time Horizons: Near-Term - 2025 to 2029; Medium-Term - 2030 to 2035; Long-Term - 2036 to 2045; Beyond Long-Term - 2046+
*Project timelines may change due to rate of adjacent development; **Modified Collector Road Cross-Section

Capital Projects			
Major Intersection Operational and Safety Improvements			
No.	**Intersection**	**Recommended Action**	**Time Horizon**
I1	Jennifer Heil Way & Spruce Ridge Drive	Optimize Signal Timing	Near-Term
I2	Jennifer Heil Way & Grove Drive	Additional Turn Bays - Dual Left Turns	Medium-Term
I3	Jennifer Heil Way/Campsite Road & Highway 16A	Additional Turn Bays - Dual Westbound Left Turns	Long-Term
I4	Pioneer Road & Highway 16A	Intersection Upgrades with Corridor Improvements (C7 and C10b)	Near-Term
I5	Highway 16A Corridor	Corridor Signal Coordination	Medium-Term
I6	Century Road & Highway 16A	Additional Southbound Thru Lane with Corridor Improvements (C3a)	Medium-Term
I7	Golden Spike Road & Highway 16A	Additional Turn Bays - Northbound Dual Left Turns	Medium-Term
I8	Century Road & Grove Drive	Optimize Signal Timing and Lane Reconfiguration	Medium-Term
I9	Grove Drive, west of Jennifer Heil Way	Additional Turn Bays, Signalized Intersections or Roundabouts as Warranted	Medium-Term
I10	Diamond Avenue	Provide Dedicated Turn Bays as Needed	Beyond ITMP Horizon

7.2. TRANSPORTATION INITIATIVES AND PROGRAMS

Municipal initiatives and programs are often foundational to the planning, design, implementation, and maintenance of capital projects. The City will also need to invest in other transportation initiatives and programs to assess and justify transportation infrastructure upgrades.

Table 3 outlines the recommended actions for transportation initiatives and programs identified in this iTMP and the corresponding timelines required to advance it.

Table 3: Recommended Implementation Plan – Transportation Initiatives and Programs

Transportation Initiatives and Programs	Recommended Action	Time Horizon
Rail Crossings Enhancement		
1. Improve Traffic Operations and Pre-emption Signal Timings	Establish a periodic program to assess existing traffic operations and signal timings at rail crossing and identify where signal pre-emption would be most beneficial.	Near-Term
2. Install Advance Warning Signals	Establish a periodic program to assess existing traffic operations at rail crossings and identify where advance warning signals would be the most beneficial.	Medium-Term
3. Implement Updated Rail Crossing Guidelines	Establish a periodic program to review current rail crossing guidelines and identify areas for improvements based on the latest rail standards and regulations.	Medium-Term
4. Advocate for Highway 628 Improvements	Continue to advocate for improvements to Highway 628 to provide an alternate route to the southern portion of Spruce Grove.	Ongoing
5. Provide Additional Approach Lanes	Coordinate with Capital Projects to provide additional approach lanes at the rail crossings to reduce congestion.	Medium-Term
Maintenance & Rehabilitation		
1. Conduct Regular Assessment Reports	Establish monitoring and evaluation processes to ensure that the condition of transportation assets can be assessed regularly.	Near-Term
2. Regular Maintenance and Rehabilitation Program	Develop a formal maintenance and rehabilitation strategy that provides a comprehensive outline of how the City will manage, maintain, and rehabilitate its infrastructure.	Near-Term
3. Active Modes Maintenance	Include sidewalk and trail maintenance as part of the City's regular maintenance and rehabilitation program.	Near-Term
4. Coordination with Capital Plans	Maintain an integrated planning process that includes collaboration between municipal departments so that capital projects are aligned with other City initiatives, such as rehabilitation.	Ongoing
Active Modes		
1. Update the Active Modes Definition and Database	Develop a process to review and update the City's current active modes definition and mapping database to improve data accuracy and application.	Near-Term
2. Establish Active Modes Classifications and Design Guidelines	Establish an active modes classification system and specific design guidelines to ensure all new and rehabilitated infrastructure is designed to be accessible to people of all ages and abilities.	Near-Term
3. Address Active Modes Network Gaps	Establish a program to identify missing links and connectivity gaps in the City's active modes network and prioritize areas for improvements.	Ongoing
4. Implement Active Modes Support Infrastructure	Establish a periodic program to identify areas for potential active modes infrastructure enhancements such as lighting, enhanced pedestrian crossings, benches and wayfinding.	Ongoing

Cont. >

Transportation Initiatives and Programs	Recommended Action	Time Horizon
Transit		
1. Transit Monitoring and Reporting Program	Establish a periodic program of monitoring and reporting for transit usage through ridership data collection to inform decision-making and planning for future infrastructure and service needs.	Near-Term
2. Transit Infrastructure Program	Develop a Transit Capital Investment Plan to develop, maintain and/or expand the City's transit infrastructure and assets.	Medium-Term
3. On-Demand Transit Program	Continue to invest in the City's existing On-Demand Transit Program to maintain a safe and reliable system for future mobility needs.	Ongoing
4. Transit Stop Accessibility and Amenities	Continue to invest in transit stop amenities, such as bus shelters, benches, and lighting to enhance user safety and experience.	Ongoing
5. Regional Transit Initiatives	Continue to work with neighbouring communities to assess partnership opportunities for enhanced regional transit connections and services.	Ongoing
Regional Initiatives		
1. Highway 16 Corridor Improvements	Continue to advocate for improvements to Highway 16 including improvements to the interchanges servicing Spruce Grove.	Ongoing
2. Highway 628 Corridor Improvements	Continue to advocate for improvements to Highway 628 to provide more effective connections to the southern portion of Spruce Grove.	Ongoing

7.3. DEVELOPER PROJECTS

Table 4 outlines the transportation projects that are anticipated to be constructed by developers. The noted timelines for implementation may change as these projects are primarily driven by the rate of development.

Completion of these projects ensure infrastructure growth is aligned with ongoing development in the area.

Table 4: Recommended Projects by Developers

Time Horizons: Near-Term - 2025 to 2029; Medium-Term - 2030 to 2035; Long-Term - 2036 to 2045; Beyond Long-Term - 2046+
**Modified Collector Road Cross-Section

Corridor	Segment	Recommended Action	Anticipated Time Horizon
Harvest Ridge Connector	New connection to Jennifer Heil Way	Construct 2-Lane Residential/Commercial Collector Road	Long-Term
Highway 16A	700m east of Century Road to City East Limits	Upgrade from 4 to 6 Lanes Divided Arterial Road	Near-Term
McLeod Avenue West Extension	West of Jennifer Heil Way to Boundary Road	Construct 4-Lane Residential/Commercial Collector Road**	Medium-Term
Pioneer Road/ Westwind Drive	Garneau Link to Gambel Loop/Knox Lane	Construct 2-Lane Residential/Commercial Collector Road	Medium-Term
Spruce Ridge Road	Highway 16A to McLeod Avenue	Construct 4-Lane Residential/Commercial Collector Road**	Medium-Term
Spruce Ridge Road	McLeod Avenue to Springbrook Wynd	Construct 2-Lane Residential/Commercial Collector Road	Medium-Term

7.4. NEXT STEPS

The iTMP has identified several actions for implementation over the next 20 years. Some represent specific deliverables while others signify a change in approach to transportation planning.

The successful implementation of the iTMP requires a coordinated effort between various city departments, community collaborators, and regional partners.

Regular network monitoring and capital planning will ensure the plan remains relevant and effective in addressing the City's transportation needs. Periodic review of the iTMP should also be conducted to gauge how the plan is progressing and to determine whether a more comprehensive update of the iTMP is needed.

Several projects and initiatives to move forward in the next five years are outlined below.

NEAR-TERM PROJECTS:

- Potential Boundary Road 2-Lane connection from McLeod Avenue to Grove Drive.
- Potential Boundary Road 4-Lane upgrade from Highway 16A to McLeod Avenue.
- Highway 16A upgrades to east city limits.
- Operational monitoring and improvements along Highway 16A and Jennifer Heil Way.

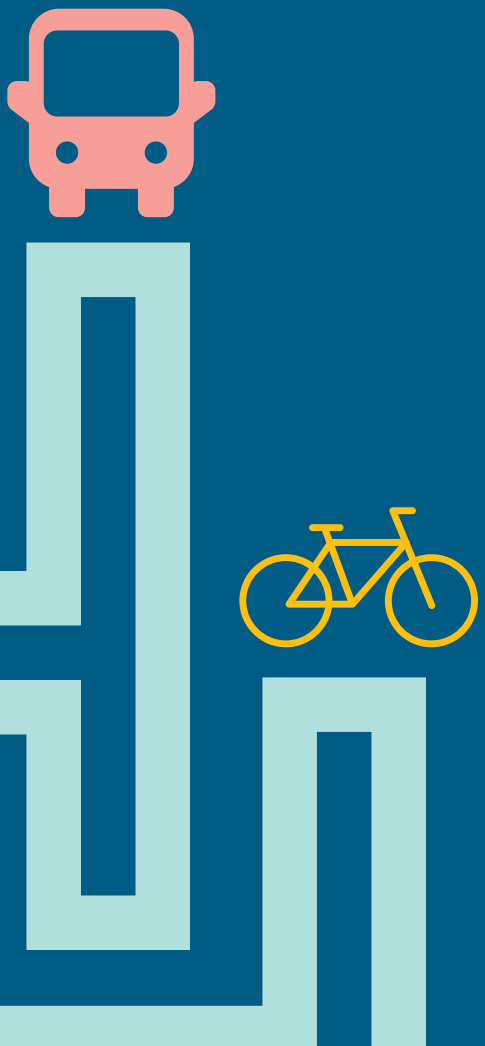
NEAR-TERM DEVELOPMENT MONITORING:

Development throughout the City should be continuously monitored to ensure required improvements on the surrounding network are appropriately planned and funded. Key areas in the near term to monitor include:

- Industrial lands south of Diamond Avenue
- Mixed use lands east of Pioneer Road
- Residential and commercial lands west of Jennifer Heil Way.

NEAR-TERM INITIATIVES & PROGRAMS:

- Develop a formal program for regular monitoring and evaluation of intersection operations at rail crossings.
- Establish regular monitoring of transportation assets, including condition assessments and updates to the City's maintenance and rehabilitation programs for the transportation network.
- Review and update the City's active modes definition so that a consistent active modes classification system and design standards can be established to address network gaps.
- Regular monitoring of transit ridership data to support continuous investment in transit accessibility and amenities.
- Continuous provincial and regional advocacy for improvements to Highway 16 and Highway 628.



The City of
SPRUCE GROVE