Transportation Master Plan

Prepared for the Town of Stony Plain

Final Report | February 2021

TOWN OF STONY PLAIN

Prepared by McElhanney

McElhanney

BEST MANAGED COMPANIES CANADA

Authorization & Signatory Page

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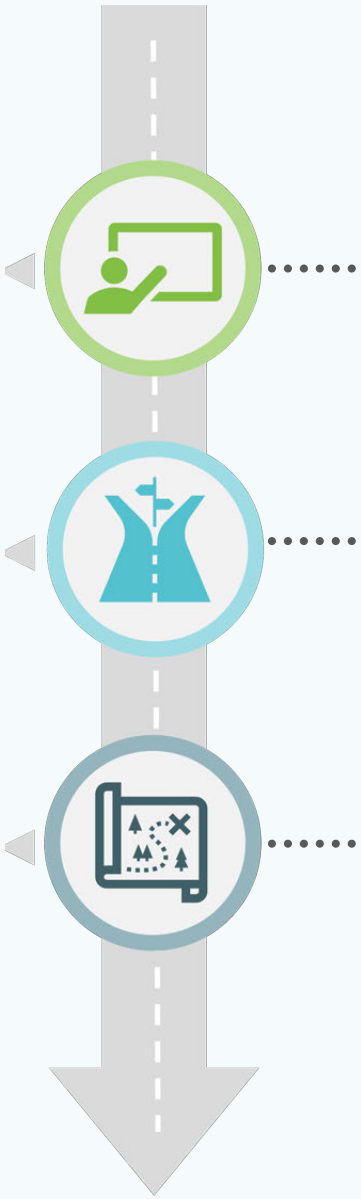
1.0 Introduction

The Town of Stony Plain (Town) is a vibrant and growing municipality located approximately 17 km west of Alberta's capital, the City of Edmonton. With a population of almost 18,000 people, this residential-based community is home to a diverse economic base and serves as a regional service and commercial hub to the Tri-Municipal Region. Its proximity to neighbouring communities, including Spruce Grove, Parkland County and Edmonton, provides residents and visitors easy access to a range of amenities and recreation.

In 2011, the Town's Transportation Study was approved and it outlined the strategic direction for transportation investments over the next 20 years. Since 2011, Stony Plain has grown at a considerable pace, mobility trends are continuing to evolve, and a new Transportation Master Plan (TMP) is needed to confirm future transportation needs and aspirations. This TMP update will provide the Town an opportunity to build upon recently updated plans and policies and set the direction for transportation investments over the next 25 years, allowing Town Administration to proactively plan for investments and guide community growth and change.

1.1 Approach

The TMP update was developed through a three-phase process between late spring 2020 and winter 2020/21, which involved public and stakeholder consultation and technical assessments.



SPRING/ SUMMER 2020

PHASE 1 – WHERE ARE WE NOW?

Understanding current issues, needs and opportunities in Stony Plain

SUMMER/FALL 2020

PHASE 2 – WHERE DO WE WANT TO GO?

Establishing a common vision on how the Town will evolve with growth and where we want to be

WINTER 2020/2021

PHASE 3 – HOW DO WE GET THERE?

Aligning related programs to help growth initiatives, efforts and strategic investments with the TMP

1.2 Plan Framework

This TMP outlines the transportation needs based on community values and shared vision and identifies the strategies and initiatives to achieve those goals over the next 25 years. This TMP is divided into the following sections:

1. **Community Engagement** outlines the community engagement process undertaken to inform decision-makers, as well as to obtain feedback on the current and future issues, opportunities and aspirations for transportation in Stony Plain.
2. **Overall Direction** highlights the guiding principles and community values that frame the TMP.
3. **Current and Future Conditions** outlines the influencing factors that shape this TMP, including land use, travel patterns, existing and future approved infrastructure.
4. **Road Network Strategy** outlines the recommended strategies to address current and future road network constraints identifed through technical review and community feedback.
5. **Transportation Safety Strategy** provides strategic actions to ensure a safe and reliable transportation network for all users with various mobility needs.
6. **Infrastructure Management & Maintenance Strategy** highlights the strategies to preserve and manage the Town's road and sidewalk/trails infrastructure in support of maximizing current investments.
7. **Alternative Transportation Strategy** outlines the strategies to coordinate and encourage use of other transportation choices such as walking and transit.
8. **Implementation & Funding Strategy** provides a framework to prioritize and implement the recommended network improvements and strategies over the short-, medium-, and long-term horizons.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2.0 Community Engagement

The primary goal of the community engagement process was to facilitate the development of a new TMP that aligns with the community's vision and priorities for mobility and infrastructure investment. The engagement process was designed to allow transparent, accessible and inclusive engagement. This approach generated valuable input and fostered community buy-in while meeting the engagement needs of the various stakeholders involved. This section of the TMP provides a brief overview of the engagement process and the outcomes that guided the development of this TMP.

2.1 Engagement Process

Three rounds of engagement were completed with the general public and internal stakeholders, including Town Council, through various engagement activities. The first round focused on understanding Stony Plain's key issues and opportunities and developing a vision for the future while the second focused on the immediate to long-term strategies and priorities. Finally, the last round of engagement focused on presenting the Draft Transportation Master Plan for final input.

More information about the public and stakeholder engagement process and the results are documented in the *What We Heard Report*, provided in **Appendix A**.

2.2 What We Heard

2.2.1 Round One Engagement

During the first round of engagement, Vertisee, an interactive mapping software was used to garner feedback on today's transportation issues. A total of 429 responses were collected over a three-month period between May 2020 and September 2020, which highlighted the following key issues and priorities (ranked from highest to lowest):

1. Trails & Sidewalks
2. Safety Concerns
3. Traffic
4. Maintenance
5. Access
6. Rail Crossing

Further details on the specific comments pertaining to these issues and opportunities are summarized in the *What We Heard Report*, provided in **Appendix A**.

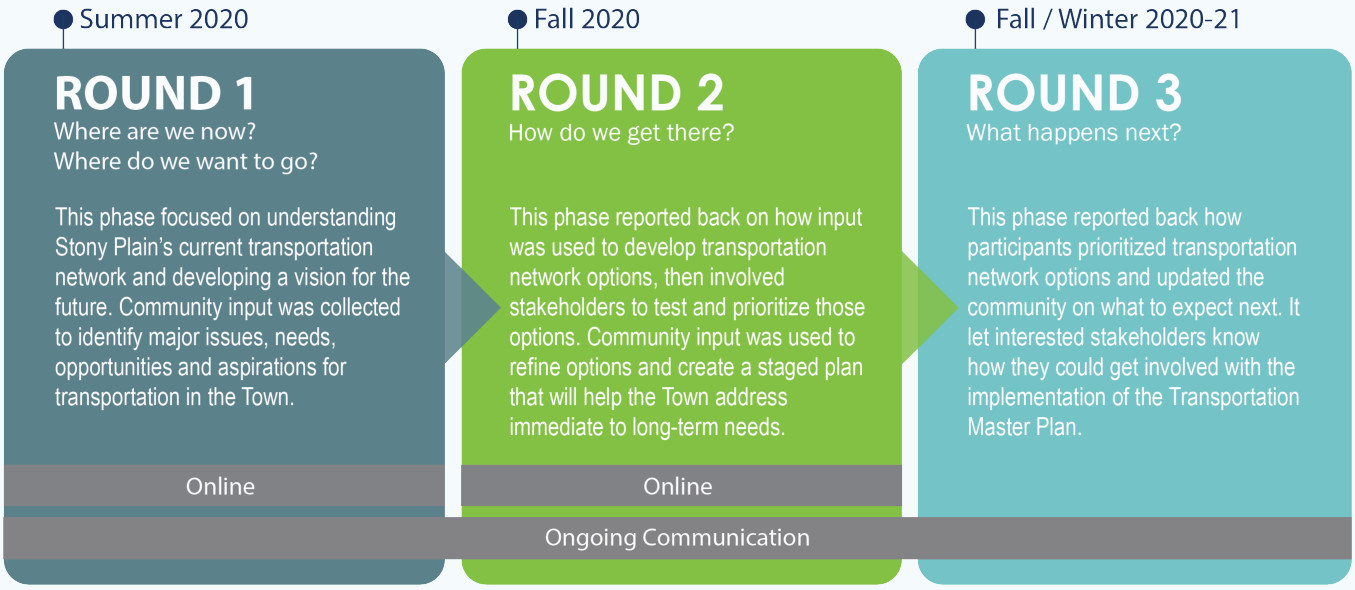
2.2.2. Round Two Engagement

The second phase of engagement included an online work booklet which was used in place of an in-person Council Workshop due to the COVID-19 pandemic. The work booklet included a survey and an interactive mapping exercise that tested the results found within the first round of public engagement. It also included Council and Administration's priorities with regards to funding for transportation improvements.

The funding priorities set out by Council and Administration included (ranked highest to lowest):

1. Improving road (or system) safety
2. Reducing road congestion & adding more road capacity for vehicles
3. Constructing more active transportation connections between communities and key destinations
4. Constructing more amenity features to support active transportation (e.g. nodes/hubs, wayfinding, landscaping, etc.)
5. Grade separation for rail crossings to improve network reliability

Following the survey, stakeholders were presented with two mapping exercises, one was corridor classification and missing gaps, the second was network performance. Respondents were asked to highlight any missing gaps and missing links within the current road classification. Then they were asked to highlight intersections that were a concern in terms of traffic congestion or safety. A detailed review of the round two engagement can be found in **Appendix A**.



3.0 Overall Direction

Setting a clear and defined direction for the town's transportation network is key in developing a successful TMP. In order to define the overall direction, it was imperative that this TMP aligned with other local and regional planning initiatives that relate to Stony Plain and the neighbouring communities. Through community engagement and background review, a set of objectives and guiding principles were defined to steer the direction of this TMP.

3.1 Integration with Other Plans

The TMP must align with and build upon existing overarching plans and policies that guide how people live, work and play in Stony Plain. The following guiding documents influenced the framework for the TMP.

Municipal Development Plan (2020)

The 2020 Municipal Development Plan (MDP) outlines the Town's vision for growth management and provides the framework to guide development and land use in Stony Plain over the next 30 years. The vision of the MDP is built on five themes, which support the foundation of the Town's planning, including: Governance & Partners, Economic Opportunity, Supportive Infrastructure, Community Development and Environmental Responsibility. The MDP outlines several key directions related to transportation that are pertinent to this TMP, including:

- Adopt a 'complete streets' philosophy for street design through integrating safe and accessible infrastructure for all users.
- Promote alternative transportation as a key part of the overall transportation strategy by expanding the range of alternative modes and creating a walkable and bicycle-friendly environment for all ages.
- Prepare for a transit system through collaboration with regional partners, future development of local service and continuation of service to seniors and residents with disabilities.
- Maintain existing services through a comprehensive infrastructure maintenance program.
- Provide new services and utilities in newly developing areas through mechanisms such as off-site levies, bylaws and development agreements.
- Working closely with neighbouring communities, stakeholders, EMRB and other regional partners.
- Fostering interaction and engaging the community through a variety of engagement processes and partnerships with stakeholders.

2020 – 2023 Strategic Plan

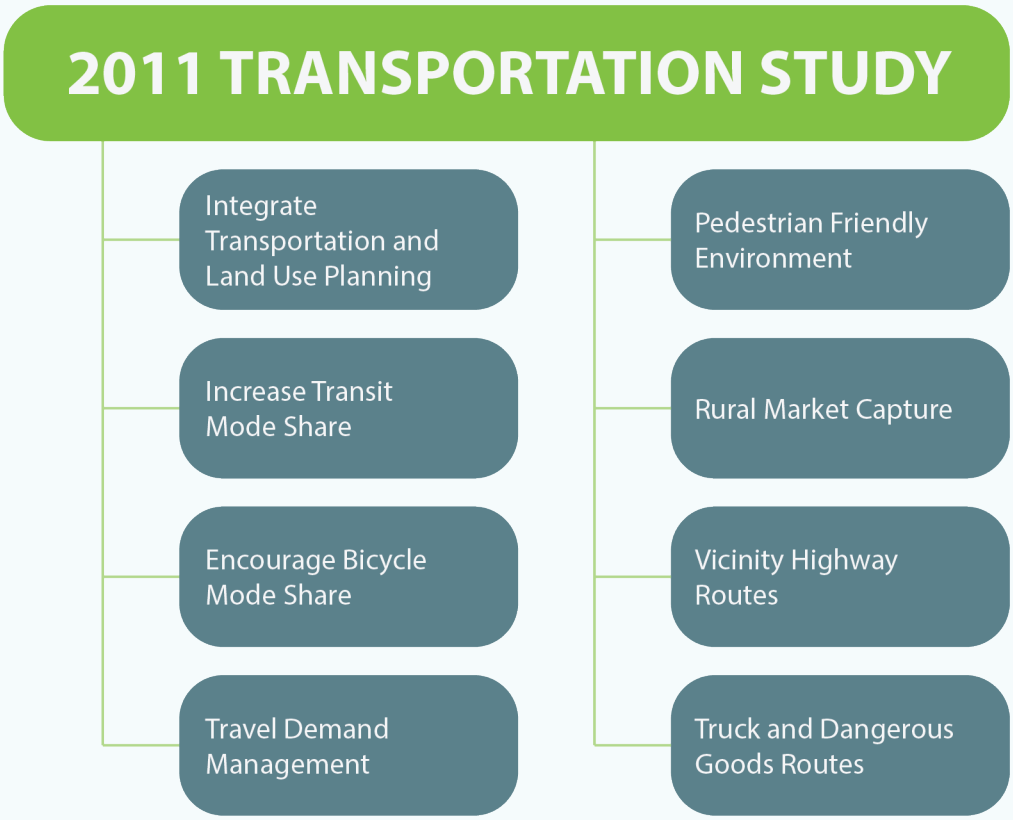
The 2020 – 2023 Strategic Plan provides a framework for the Town to guide major planning initiatives in Stony Plain and outlines the Town's commitment in achieving their vision for the future. The Strategic Plan outlines several key goals that are relevant to this TMP, including:

- Establish an agreement with the Government of Alberta to transfer development authority of Highway 779 and 628 to the Town.
- Ensure Stony Plain's interests are represented and visible on regional committees, boards and plans.
- Foster unique partnerships to advance the redevelopment of Old Town South. Engage local businesses, investors, developers and stakeholders to create opportunities for a more prosperous climate.
- Examine options for access to Westview Health Centre and surrounding neighbourhoods with the extension of South Park Drive.
- Complete a renewed TMP, including the role of Range Road 12 in the road network.
- Enhance infrastructure maintenance in a more sustainable and efficient manner with the development of an Asset Management Plan.
- Provide public transit service through the implementation of the Regional Transit Plan.
- Review and renew the Off-site Levy Bylaw, while considering new authorities granted within the Municipal Government Act.
- Work with CN Rail to ensure existing rail lines are safe for all residents, including advocacy for construction of a second pedestrian crossing and vehicle overpass.
- Renew partnership arrangements and infrastructure improvements to provide enhanced safe pedestrian corridors, particularly focused around schools.
- Complete the Downtown Redevelopment Plan.

2011 Transportation Study

The 2011 Transportation Study established the transportation planning framework to support projected growth over the short, medium and long-term horizon. The Study focused on integrating land use and transportation and explored a number of themes with recommendations to provide Stony Plain a safe, efficient and sustainable transportation system over a 20-year period. The Town has implemented several of the recommendations including intersection capacity improvements at Golf Course Road and 49 Avenue and 48 Street (Highway 779) and 79 Avenue, as well as working with regional partners to develop the Town's long-term transit plan, the *Tri-Municipal Regional Transit Plan*.

Recognizing the significant growth the town has experienced since 2011 and the evolving trends in mobility, there is a need to develop a renewed Transportation Plan that reflects updated community values and mobility needs.



Active Transportation Strategy (2020)

Adopted in 2020, the Active Transportation Strategy (ATS) builds from the 2005 Trails Master Plan and provides a framework for implementing active transportation strategies in Stony Plain. The ATS identified current gaps in the town's active transportation network and provided recommendations to improve active transportation connectivity, safety and accessibility. The ATS also outlined the Active Transportation Infrastructure Design Guidelines to guide future active transportation and road facility design. The recommendations and strategies of this TMP as it relates to active transportation builds from as well as integrates with the policies outlined in the ATS.

Tri-Municipal Regional Transit Plan

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

Area Structure Plans

Several Area Structure Plans (ASPs) have been developed for growth areas within the town. As the town continues to evolve, it is important that the direction set out in this TMP aligns with the various ASPs to ensure future planning is consistent and integrated.

Land Use Bylaw

The Town's Land Use Bylaw outlines the land use and zoning designation within Stony Plain and establishes the rules and regulations of development within the town.

Off-site Levy Bylaw

The Off-site Levy (OSL) Bylaw, most recently updated in 2018, imposes a levy to provide funds for the construction of off-site infrastructure. The focus of the funds is to be for developable land, whether it be from subdivision or new development, to maintain suitable and cost effective growth in the Stony Plain Region.

The Town is currently updating its OSL Bylaw (in 2020) and it is important that the growth and the recommended transportation improvements outlined in this TMP will be integrated into the updated OSL Bylaw.

Old Town Community Plan

The Old Town Community Plan (OTCP) was approved in 2019 to provide a vision and framework to guide future development and redevelopment in the Old Town neighbourhood, transforming the area into the town's primary cultural and commercial hub. The proposed Recreation and Cultural Campus identified in the OTCP will house a significant concentration of recreation and education facilities with access supported through a network of collector roadways and active transportation options. The transportation recommendations in this TMP support the transportation strategies outlined in the OTCP, including the extension of 55 Avenue to the west, extension of 51 Street to 57 Avenue in the south, implementation of a functional roadway hierarchy, as well as integrating active transportation into design of all roadways. **Figure 1** and **Figure 2** illustrate the future transportation network within Old Town and the site of the Recreation and Cultural Campus, respectively.

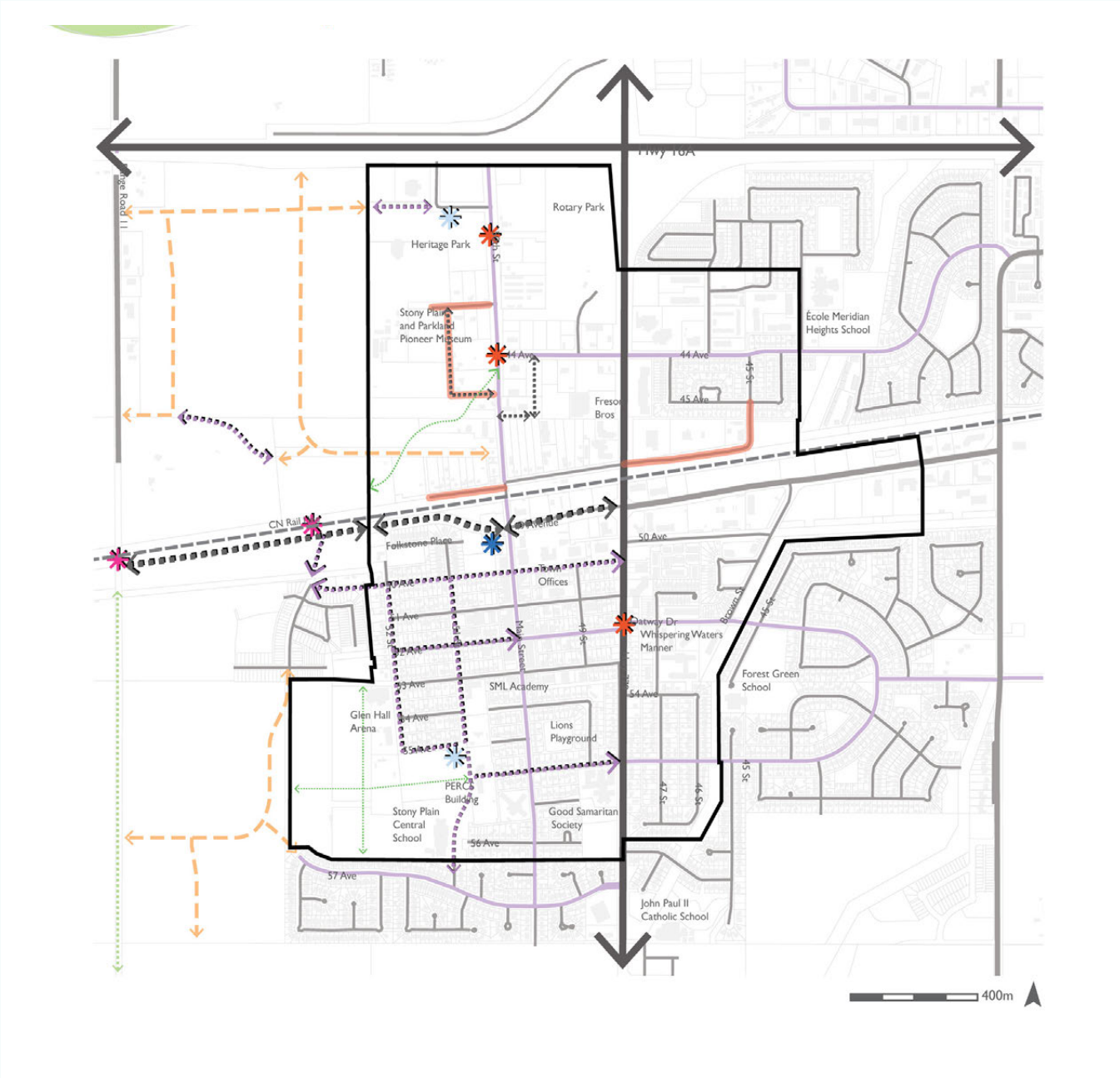


Figure 1 | Future Transportation Network Within the OTCP Area (Source: OTCP 2019, Map 16)

Figure 2 | Proposed Recreation and Cultural Campus Site (Source: OTCP 2019, Map 13)

Neighbouring Transportation Master Plans

There are several roadways within the town that either continue through or borders Parkland County and/or the City of Spruce Grove, including Boundary Road, Golf Course Road and Veterans Boulevard (Range Road 275). It is critical that any future improvements or strategies outlined in the transportation plans of Parkland County and Spruce Grove are also reflected in this TMP and aligned with the Town's vision and goals.

The Parkland County TMP is currently being developed with an anticipated completion date in spring of 2021. The City of Spruce Grove 2012 TMP was completed in 2012 and outlined a vision to support growth and provide system continuity through recommendations that include:

- Partner with provincial agencies and other jurisdictions to provide system continuity as it relates to the road network, pedestrian and bicycle network.
- Funding partnerships for regional projects should be formed with public agencies including Stony Plain.
- Develop a jointly owned transit authority between Stony Plain and Parkland County.
- Improve Boundary Road to an arterial standard from Grove Drive to Highway 628 and provide access to development to the east via Grove Drive and other east-west roads.

The strategies developed though this TMP will encourage Stony Plain to continue to work with Tri-Municipal partners to address transportation improvements and funding/implementation opportunities, while ensuring a shared vision for system continuity between Parkland County and Spruce Grove.

Edmonton Metropolitan Region Growth Plan

The Edmonton Metropolitan Region (EMR) Growth Plan provides a vision and direction for responsible growth while identifying and enhancing economic opportunities within the Region. The Growth Plan provides population and employment projections up until 2044 for all 24 of the member municipalities. The EMR Growth Plan projects Stony Plain's population to grow to between 32,200 (low projection) and 40,000 (high projection) people by 2044. It is also estimated that employment opportunities will grow from 6,755 (2014 employment) to 12,452 (2044) (Source: EMR Growth Plan, 2020). The transportation strategies established in this TMP support the priorities identified in the Growth Plan.

Alberta Transportation Plans

Alberta Transportation have several ongoing planning and design initiatives for the key highways within Stony Plain. These include:

- **Highway 16** – Planning has been completed for the eventual conversion of Highway 16 to a freeway standard roadway between Kapasiwin Road and Highway 779.
- **Highway 628** – Planning has been completed and design and land acquisition are underway, for the 16 km section of Highway 628 from east of Highway 779 to Highway 60.
- **Highway 779** – Design is underway for the widening of 6 km of Highway 779 from Highway 627 to south of Highway 628.

While the timing and/or staging of these improvements will need to be confirmed, these initiatives were reviewed and considered in developing this TMP.

3.2. Objectives & Visioning

This TMP update was built on the fundamental vision and directions established through the 2020 MDP and its supporting policies.

Stony Plain's vision is supported by the following five themes, which form the foundation of the Town's planning and guided the direction of this TMP and its priorities.

- **Governance & Partners –** The TMP provides the Town an opportunity to develop a framework for transportation priorities and investments over the next 25 years based on community values and transportation needs. This framework will inform Town Administration's decision-making on transportation investments and identify partnership opportunities with other municipalities and regional entities.
- **Environmental Responsibility –** A transportation system that supports active and accessible transportation minimizes environmental impacts and enhances community well-being. Provision of adequately maintained, secured and accessible active transportation facilities allow residents of all ages and abilities to be less dependent on vehicle use, reducing their carbon footprint while allowing them to lead a healthy lifestyle.
- **Economic Opportunity –** The transportation network plays an integral role in Stony Plain's economic development as reliable and efficient mobility for goods, services and people strengthens prosperous and attractive economic opportunities.
- **Community Development –** A safe transportation system with diverse transportation choices supports community livelihood and ensures a healthy and sustainable community.
- **Supportive Infrastructure –** A well-maintained transportation network supports economic vitality and vibrancy. To maximize investments, the system needs to be managed to enable residents and future generations to experience a high quality of mobility and accessibility. Investing in safe and accessible infrastructure for non-motorized modes fosters transportation choices, allowing the Town to defer major transportation projects.

3.3. Guiding Principles

The recommendations of this TMP are influenced by guiding principles established through stakeholder engagement and supporting technical assessments of issues and opportunities. The following guiding principles were used to shape the direction of this TMP.

1

Coordinate and encourage active transportation

This includes new or improved active transportation connections such as sidewalks and trails, and integrating active transportation with the road network.

2

Support safe and accessible facilities for pedestrians and non-motorized users

This includes enhancing active transportation facilities and amenities and establishing policies and programs that will make active transportation more accessible, safe and attractive for all ages and abilities.

3

Defer the need for major transportation investments through effective management of existing transportation assets

The demands for major investments can be deferred through maximizing the effectiveness of existing transportation assets, by managing growth through periodic maintenance and rehabilitation, investing in active transportation and systematic land use planning.

4

Support planned growth and increasing travel demands

The existing transportation network can be optimized through enhanced traffic control and signal coordination to address increased travel demands as the Town continues to grow. Only if necessary, should new roads should be constructed to support growth and development with investments supported through off-site levies from new development.

5

Support community livability and economic viability through a safe and reliable transportation system

This includes enhancing the road network to facilitate the movement of goods and people, including across railway crossings, and developing policies and programs that will make the transportation network safer and more reliable for all road users.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4.0 Current & Future Conditions

The Town's future transportation priorities are influenced by current and future trends relative to land use, growth areas, travel patterns and transportation choices. This section of the TMP details the influences that shape travel in Stony Plain today and over the next 25 years.

4.1. Community Profile

Stony Plain is comprised largely of residential-based developments, along with institutional, mixed-use commercial and industrial uses. Established residential and mixeduse commercial areas are generally located within the Old Town and Downtown Area, while more suburban development patterns are observed east and south of the Downtown Area with most of the residents concentrated to the west of 48 Street (Highway 779). The town's primary industrial area is located in the northeast quadrant of the Highway 16A and Highway 779 junction. As shown in **Figure 3**, the town also has an abundance of vacant land dedicated to future development.

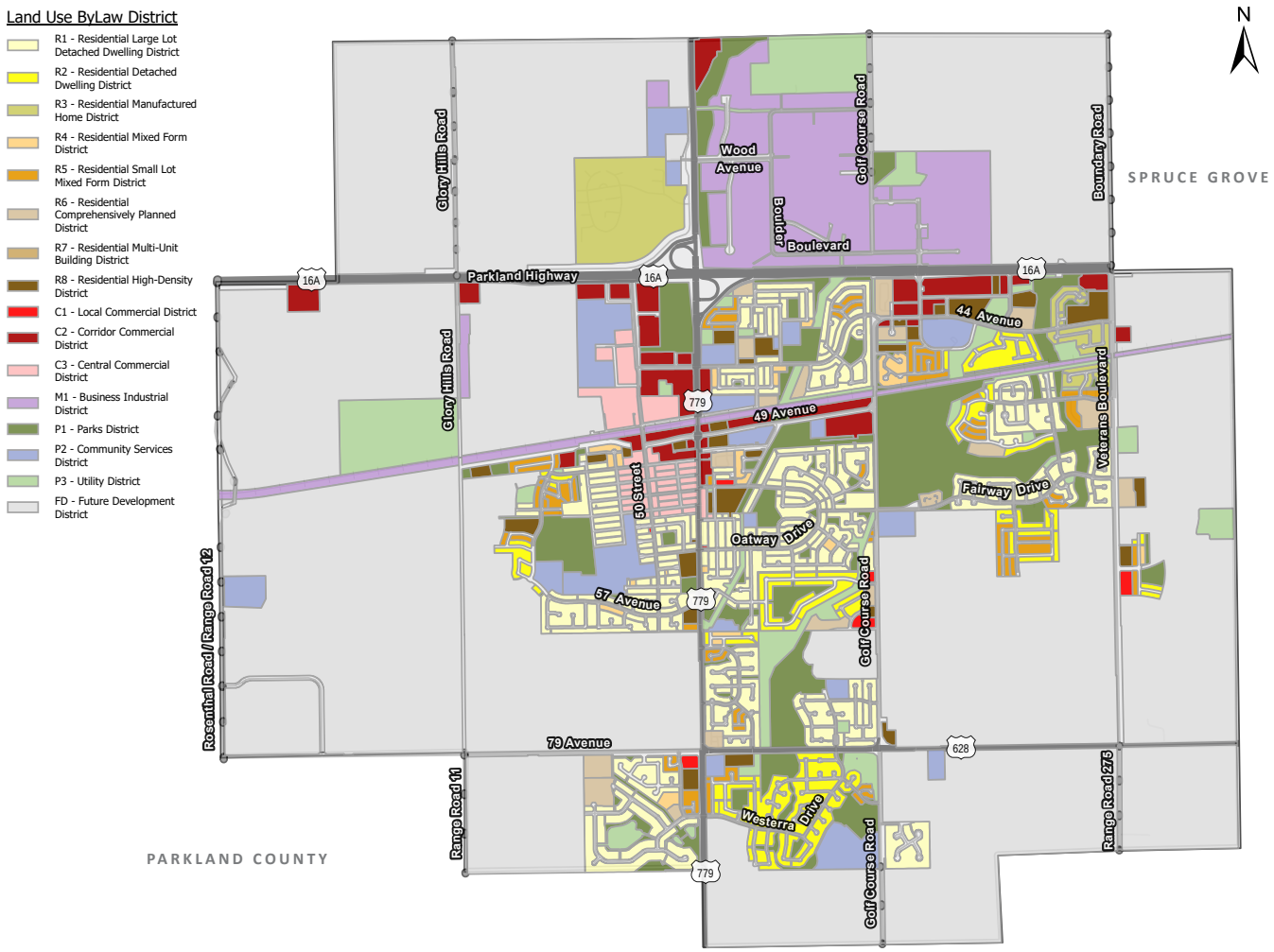

Figure 3 | Existing Land Use

Population

Stony Plain currently has a population 17,842 (based on the *2019 Municipal Census*), which has more than doubled over the past 20 years as shown in **Figure 4**. While the rate of new permanent residences has decreased over the last couple years, this is consistent with the boom and bust cycle of Alberta's resource sector. Overall, the population of Stony Plain has been growing at an average rate of approximately 2.3% between 2011 and 2019. The *2019 Municipal Census Report* indicated that residential population is increasing east towards Golf Course Road from the Old Town area. It is expected that community growth will continue from the established areas advancing outwards towards new and annexed areas.

Figure 5 highlights the age and gender demographic breakdown shown in the *2019 Municipal Census Report*. The data illustrates an upward movement in the population pyramid, indicating an aging population with fewer young children and fewer childbearing/workforce age groups. This population pyramid follows closely to more developed countries and is consistent across Canada.

Employment

The number of jobs located in Stony Plain was estimated to be 7,445 in 2017 (*Town of Stony Plain Population and Employment Forecast, December 2018*). According to the *2019 Municipal Census Demographic Report*, approximately 15% of the residents work in Stony Plain, while about 32% are employed in Edmonton, Spruce Grove, Parkland County and Leduc County, and almost 7% elsewhere in the Edmonton Region. Approximately 2% of people reported working outside of the Edmonton region as well as 2% reported working from home. There is also a sizeable population, approximately 36%, that are classified as a stay at-home parent, student, retired or not employed. To round out the total, 6% of residents declined to answer (*2019 Municipal Census Report*). These patterns indicate that Stony Plain supports a large regional workforce.

Based on the 2016 Federal Census (see **Figure 6**), the majority of commuters that leave for work (87%) tend to drive alone, with over 90% of all journey to work trips occurring by personal vehicles with single occupancy trips, or by carpooling. The remaining commuter to work trips occur by walking (4%), or by transit (1%).

45% of commuters starting their trips in the town require 30 minutes or more when traveling to their place of work, while 31% of all trips originating in the town are 15 minutes or less. A significant amount of those employment trips occur outside of the town which likely contributes to the preferred travel modes as recorded by the Federal Census and aligns with the place of employment identified in the 2019 Municipal Census.

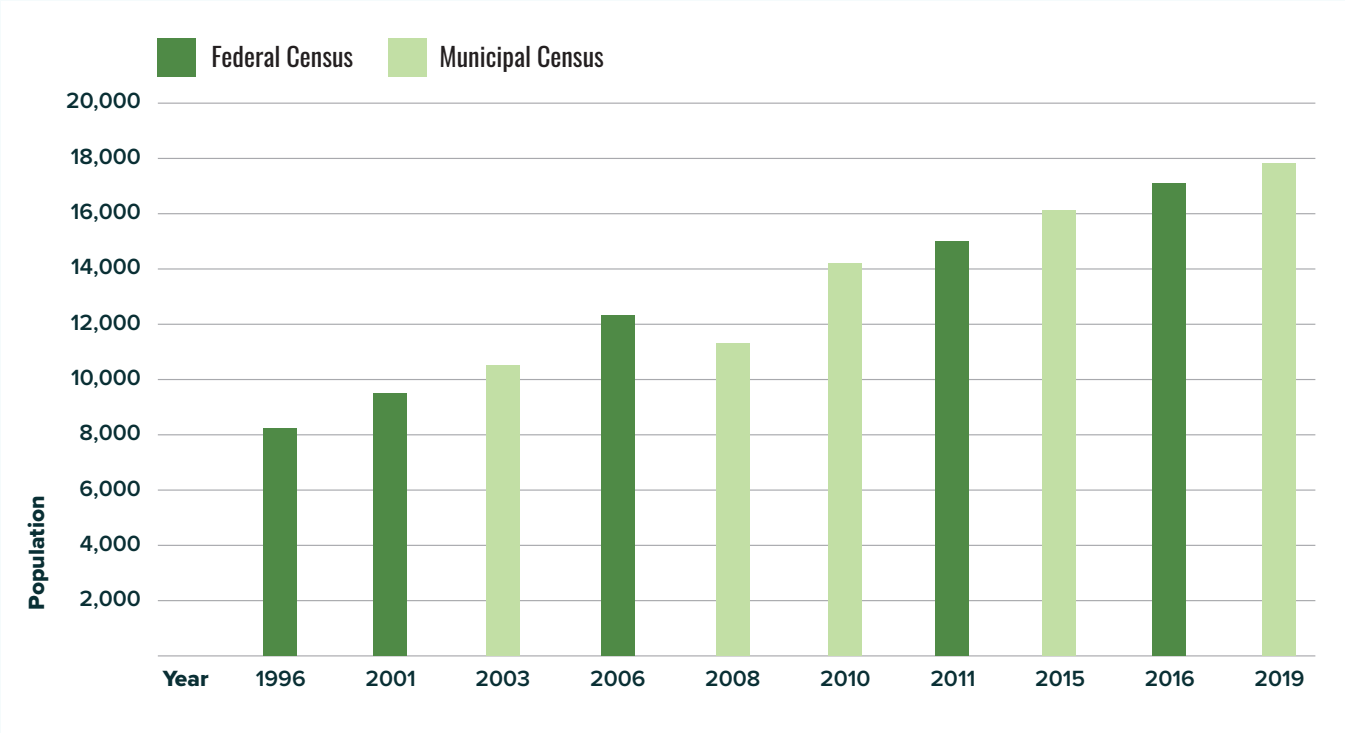

Figure 4 | Town of Stony Plain Historic Population

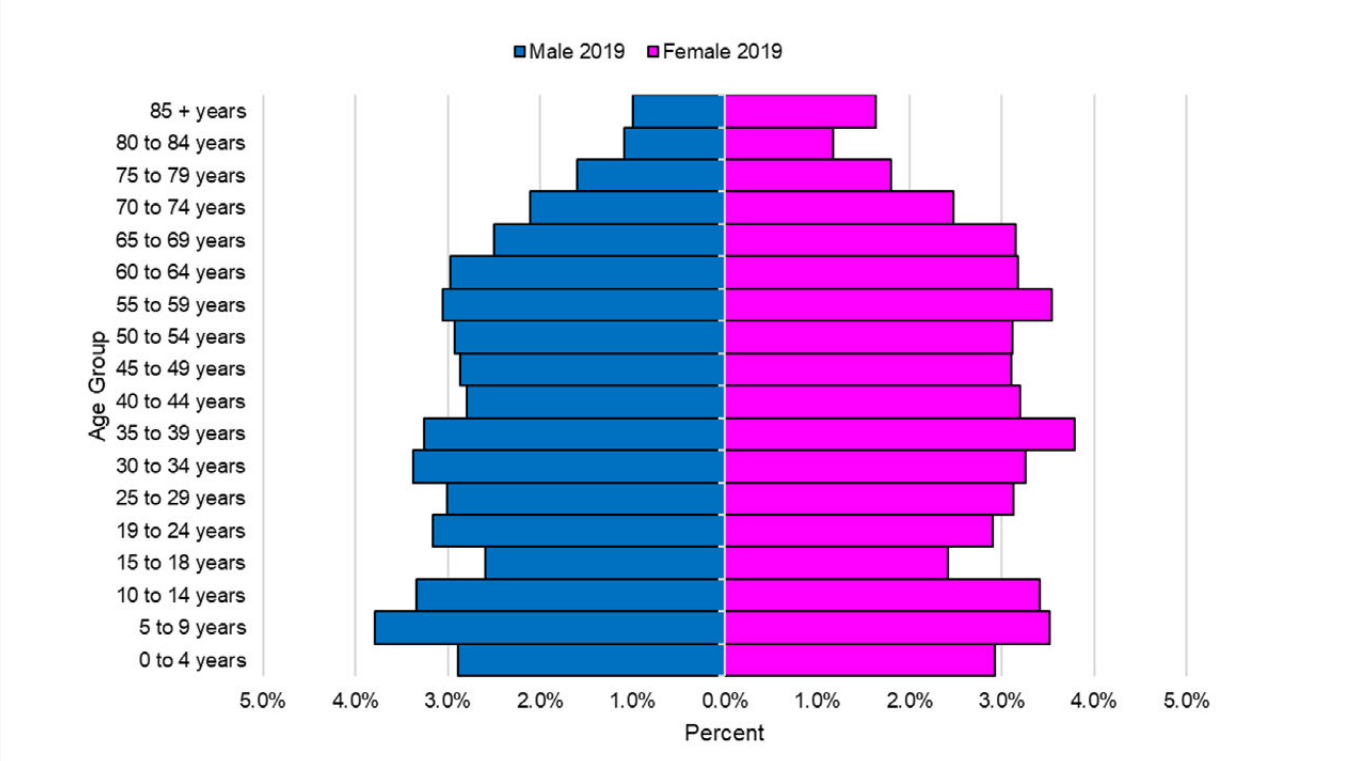

Figure 5 | 2019 Age and Gender Demographic (Source: 2019 Municipal Census Report)

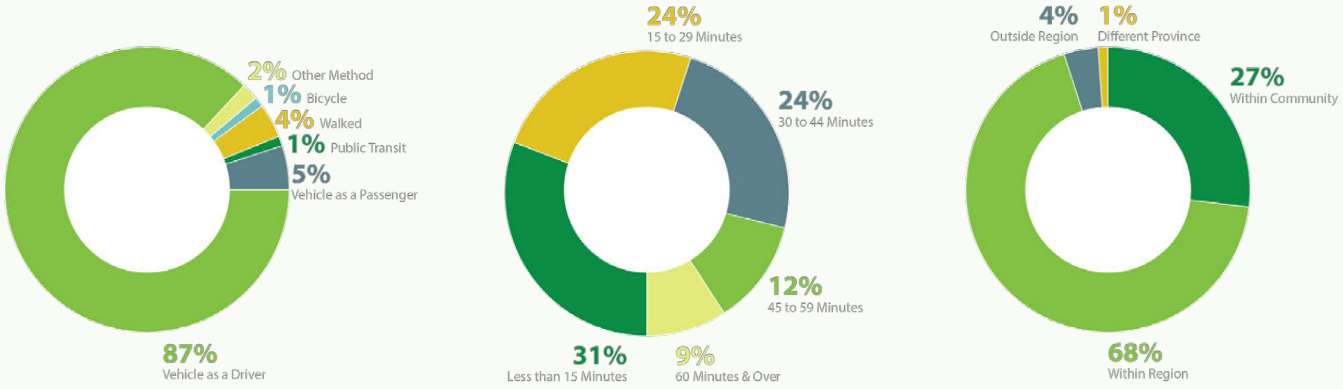

Figure 6 | Town of Stony Plain Journey to Work (Source: 2016 Census Data, Statistics Canada)

Growth Areas & Projections

The Edmonton Metropolitan Region Board's (EMRB) 2017 forecasts indicate that by 2044, Stony Plain's population is estimated to be 32,000, with approximately 12,000 local jobs. These projections generally reflect an average growth rate of approximately 2.0%. Development trends have resulted in a majority of the employment growth concentrated north of Highway 16A and east of Highway 779, with low integration with residential neighbourhoods. **Figure 7** illustrates the Town's growth management strategy and potential growth areas as outlined in the Town's MDP 2020, which includes densification in the Old Town/Downtown area, build out of the current commercial/industrial areas, and new residential developments.

The expectation for development is to build out from the existing residential fringes towards the municipal boundary as the community advances towards the expected long-term build out horizon. To maintain community connectivity, new development needs to be adjacent to existing development and linked to the existing network to foster community well-being by strengthening access to services.

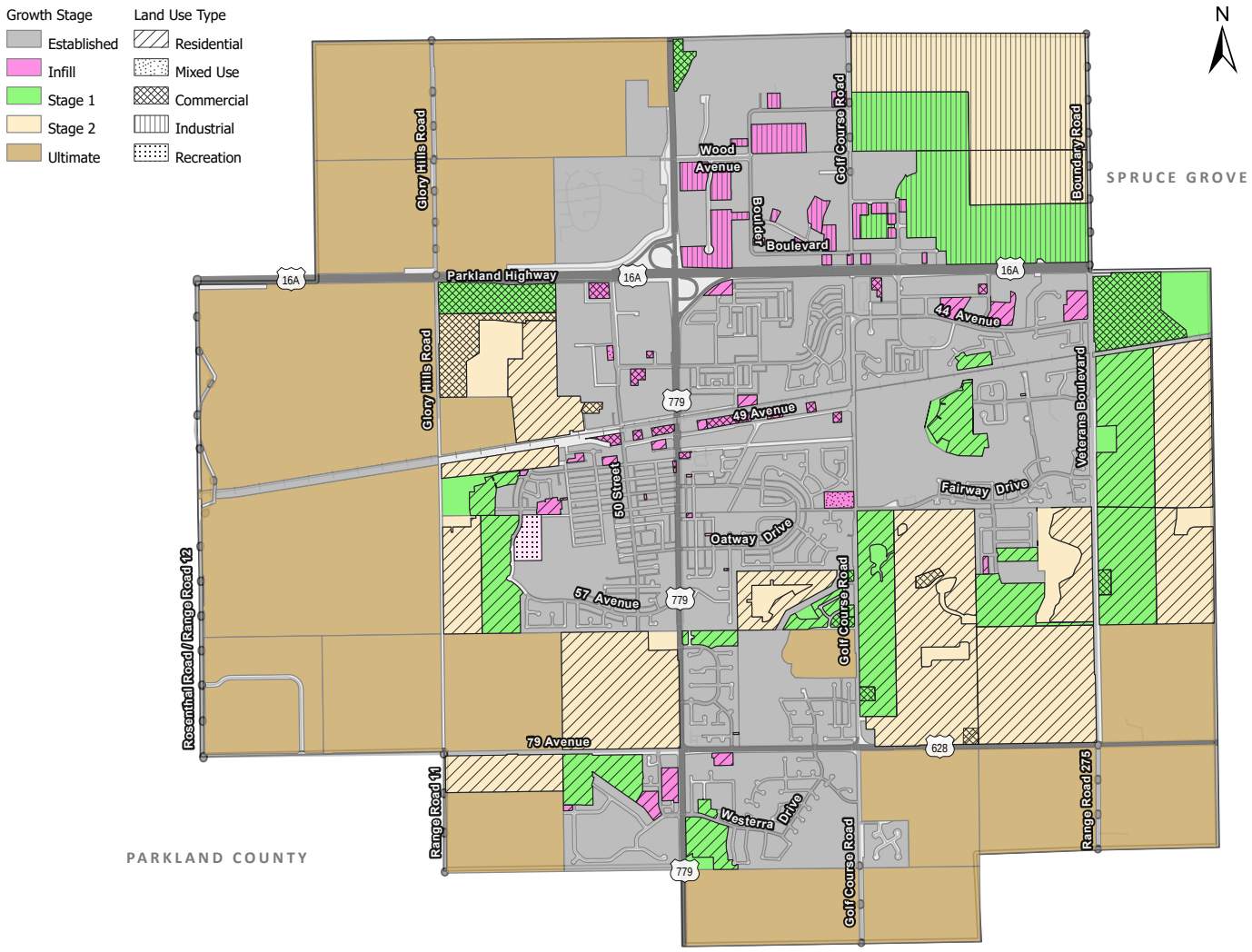

Figure 7 | Town of Stony Plain Growth Management Strategy

4.2.1. Road Classification

Stony Plain has a well-connected and accessible road system that is supported through the provincial highway and local road network. Its proximity to provincial highways, including Highway 779, Highway 628 and Highway 16A, facilitate both regional and local access to and from the town. The provincial highway network is maintained and operated by Alberta Transportation.

Within Stony Plain, a hierarchy system of arterials, collectors and local roads provide access and connections throughout the community and to the provincial highway network. As per Stony Plain's Municipal Design Standards, the town's road hierarchy is defined as follows and also illustrated in **Figure 8**.

- **Arterial Road** – generally serve as line-haul facilities carrying traffic between activity centres – connecting with collectors, other arterials, and freeways, but not local streets. Arterial streets can be subdivided into two categories: undivided, which would carry to 12,000 vehicles per day; and divided, which would carry more than 12,000 vehicles per day. On-street parking is not normally permitted on this type of facility.
- **Collector Road** – provide local access to frontage developments, facilitate bus routes and transit shelters, collect traffic from several local streets or from an industrial area, and channel it towards the arterial system. A collector street can connect with local streets, other collectors or with arterial roadways; however, their location should minimize the potential use as a short-cut between arterial roadways. Parallel parking may be allowed on these streets.
- **Local Road** – provide access to individual properties. The level of traffic on the street is not generally a problem; however, the volume can be controlled if the maximum length is set at 600 m and traffic calming considerations are a part of the design. This street should only be permitted to connect with similar type facilities or with collector streets. All sites should provide sufficient on-site parking to meet demands, and serve no municipal transit or industrial bus routes. School buses may be permitted.

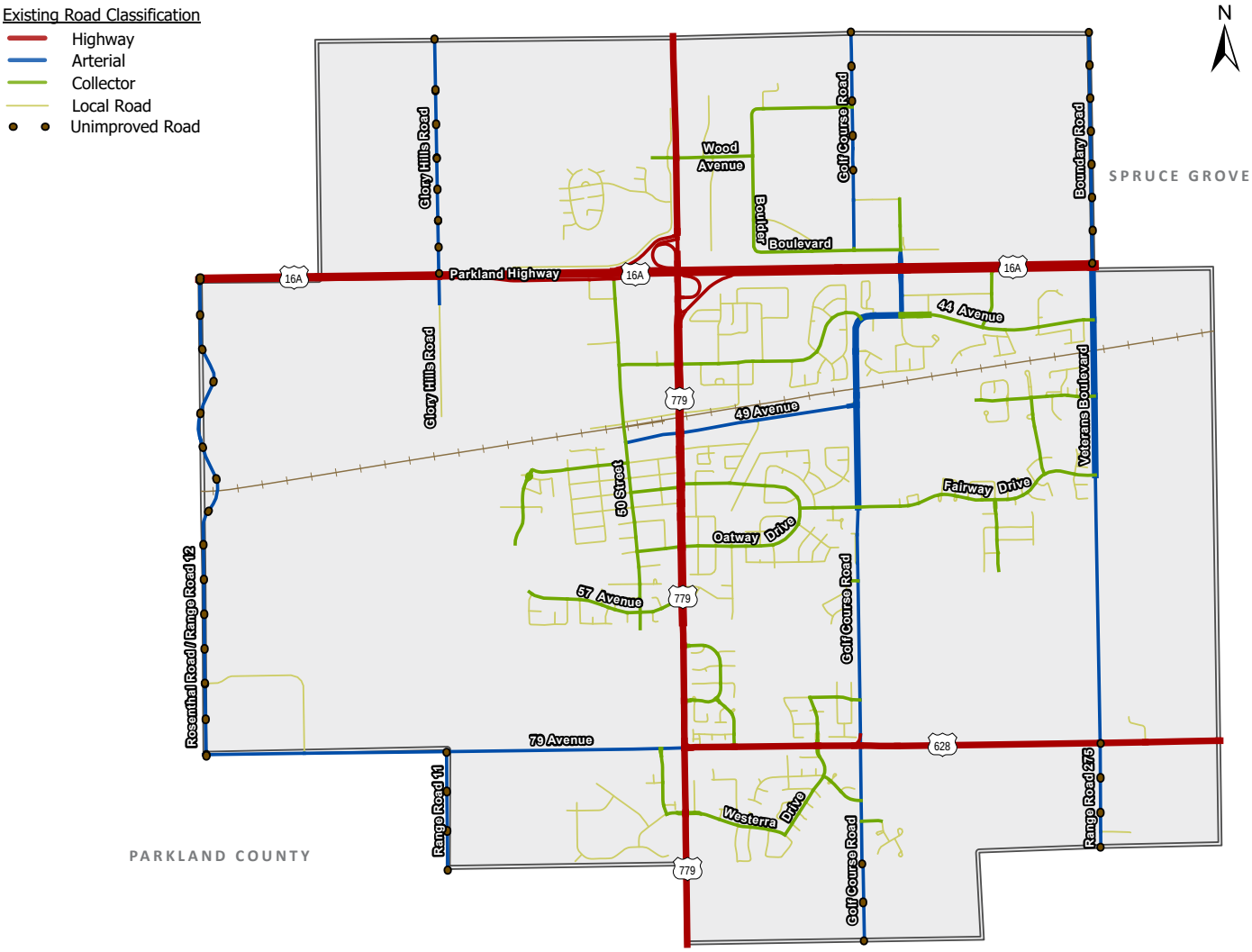

Figure 8 | Existing (2021) Road Classification System

4.2.2. Current and Forecast Travel Demands

Travel Demand Forecasting Model

In an effort to capture travel demands reflective of Stony Plain's current development plans and growth policies, the PM peak hour travel demand model (VISUM) developed as part of the 2011 Transportation Study was updated based on recent population and employment data. A 2019 base model was calibrated to represent current travel patterns and was then used to forecast future traffic conditions under two future scenarios. **Table 1** outlines the scenarios and the corresponding population and employment data used for model inputs.

Both the Stage 1 Growth and Stage 2 Growth scenarios were built upon the staged development outlined in the Town's growth strategy as illustrated in **Figure 7** and reflect a timeframe of approximately 10-years (short-term horizon) and 25-years (long-term horizon), respectively.

The Stage 2 Growth horizon assumes that most of the approved ASPs roadway network will be completed. The road network for the Stage 1 Growth horizon is similar to the existing network but with the extension of Brickyard Drive to 57 Avenue. Further details on the travel demand forecasting model update and network assumptions are provided in a separate document (see **Appendix B**).

Table 1 | Estimated Future Population And Employment

Scenario	Timeframe (approximately)	Estimated Population	Estimated Employment
Existing Base	2019	17,842	8,000
Stage 1 Growth	10 Years	23,000	10,000
Stage 2 Growth	25 Years	30,000	13,000

A review of the model results indicates that in the long-term (Stage 2 Growth):

- On average, PM peak hour traffic volumes across the screenlines are growing at approximately 2% per year, which aligns with the projected population and employment growth;
- Higher traffic growth can be observed on corridors that are expected to support areas with higher levels of population and/or employment growth:
    - Veterans Boulevard between Highway 16A and south of Fairway Drive
    - Highway 628 between Golf Course Road and Veterans Boulevard
- The majority of the network in Stony Plain is expected to have volume-to-capacity ratios of less than 0.80 under the Stage 2 Growth horizon. There is generally sufficient road capacity to accommodate additional growth, except:
    - The section of Highway 779, north of Highway 16A is nearing capacity. This section is assumed to have one lane per direction in the future.
    - Moderate capacity constraints are projected for the section of Highway 628 in the vicinity of Westerra. This section is assumed to have one lane per direction in the future.

Traffic Volumes

As part of the TMP update, 28 intersections were included in the evaluation to understand the existing level of service (LOS). Intersection turning movement counts were collected in July 2020 once traffic and behaviour had an opportunity to normalize due to the COVID-19 pandemic and adjusted based on historic patterns. The traffic data collected demonstrates acceptable intersection LOS (LOS D or better) during the AM and PM peak hour, today. While the overall intersection at the Highway 779 / Highway 16A westbound on-ramp currently performs at a LOS A during peak periods, the eastbound movement intersection is failing (LOS F).

In the context of Stony Plain, a minimum LOS of D is considered an acceptable level of service target. This corresponds to an average vehicle delay of up to 35 seconds for unsignalized intersection, and up to 55 seconds for a signalized intersection, as well as a volume-to-capacity ratio of less than 0.90. These targets align with best practices for communities similar to Stony Plain.

Future intersection volumes were projected using a 2% growth rate based on the results of the VISUM model, as well as the historic regional and local growth within the community. A higher growth rate, between 4% to 9% per year was used to forecast volumes for intersections along the higher growth sections of Highway 628 and Veterans Boulevard.

Most intersections will continue to operate at a LOS D or better in the 25-year horizon, except at Highway 779 / Highway 16A westbound on-ramp intersection, where a LOS F is expected. There are also other intersections that while the overall intersection is a LOS D or better, key movements are expected to experience significant delay increases and higher levels of congestion and operate under failing conditions (LOS F) during peak periods, including:

- Highway 779 / Highway 16A Eastbound On-ramp
- Highway 779 (48th Street) / 44 Avenue
- Highway 628 / Veterans Boulevard
- Highway 628 / Westerra Drive
- Highway 16A / South Park Drive
- Highway 16A / Rosenthal Road (Range Road 12)
- Highway 16A / Glory Hills

Figure 9 illustrates the existing (2019) and Stage 2 Growth (25-Years) intersection levels of service. The existing and future intersection volumes are provided in **Appendix C**.

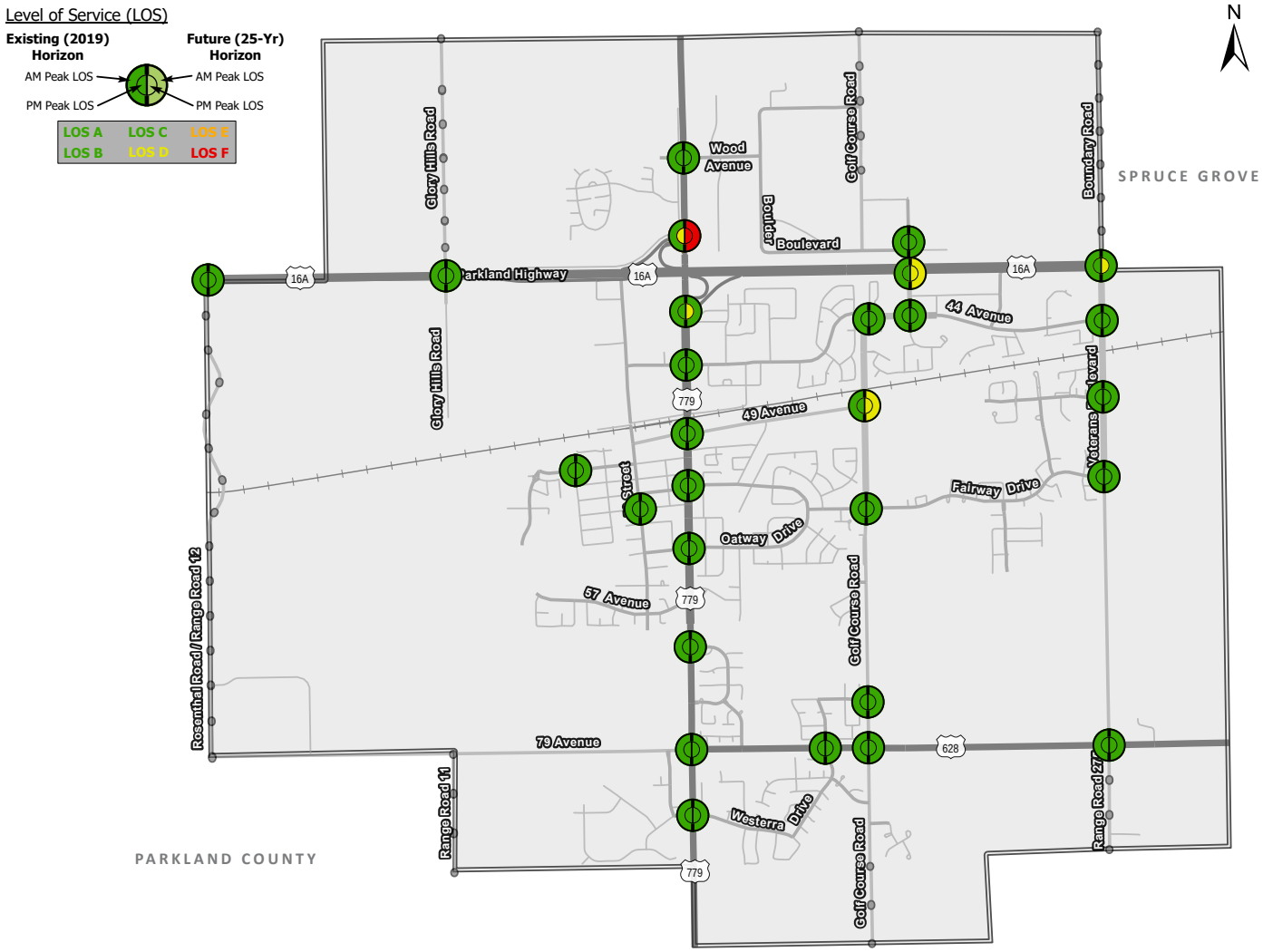

Figure 9 | Existing and Future (25-Yr) Intersection Level of Service

Presently, PM peak hour corridor volumes in Stony Plain are generally moderate; with higher volumes observed along Highway 779 (48 Street) and Highway 16A. Travel demands on key corridors are expected to increase by approximately 65% to 70% in the eastbound/southbound direction and and approximately 35% in the westbound/northbound direction, which aligns with the higher percentage of regional travel to and from Stony Plain. **Figure 10** illustrates the forecasted growth in the PM peak hour across screenlines. As noted previously, higher traffic growth is projected along Veterans Boulevard and Highway 628, from Golf Course Road to Veterans Boulevard, where PM peak hour traffic volumes are expected to more than double over the next 25 years.

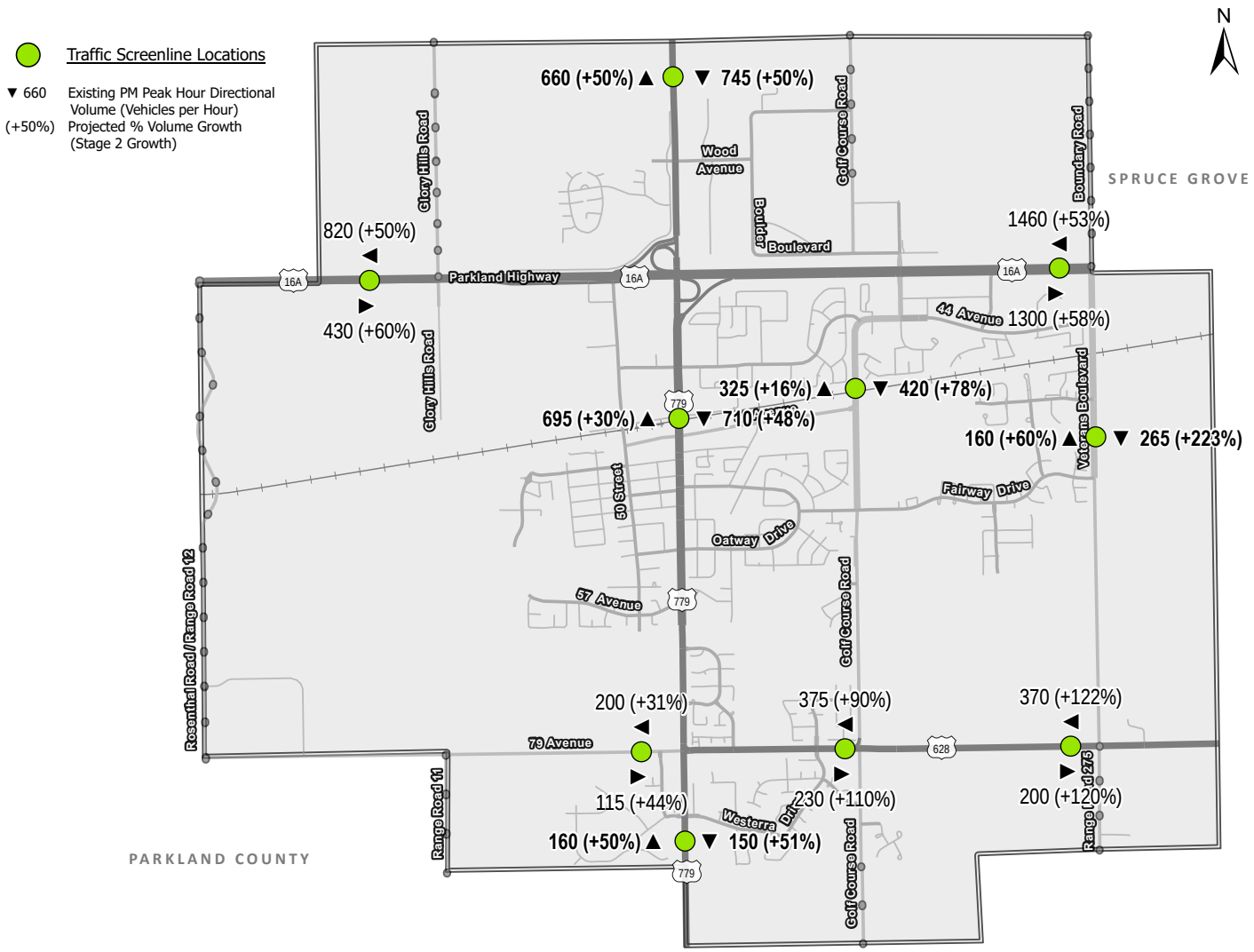

Figure 10 | Traffic Volume Growth Across Screenlines

4.3. Goods Movement

4.3.1. Railway Crossing

The Canadian National (CN) railway runs east-west through the centre of Stony Plain with five at-grade crossings and a pedestrian underpass as shown in **Figure 11**. The following at-grade crossings are generally equipped with bells and gates and sidewalks are provided on at least one side of the roadway.

1. Veterans Boulevard, south of 44 Avenue
2. Golf Course Road, north of 49 Avenue
3. 48 Street, north of 49 Avenue
4. 50 Street, south of 47 Avenue
5. Range Road 12 (No bells or gates provided, no sidewalks)

The existing pedestrian underpass is located just north of the Stony Plain Skate Park, providing a continuous trail connection under the CN rail tracks.

The at-grade crossings are considered a barrier for connectivity, particularly for pedestrians and can contribute to travel time delays during train events. It was noted through the engagement process, that the train crossings can result in traffic congestion along Golf Course Road, and grade separation for rail crossings to improve network reliability was ranked fifth in funding priorities by Administration and Council. The public also ranked rail crossings as the sixth area of concern.

Figure 11 | Existing Railway Crossings

4.3.2. Truck Routes

Goods movement in Stony Plain is served by several designated truck routes that are well-connected to the main arterials/highways in town, as well as key industrial areas. Currently, designated dangerous goods routes do not exist in Stony Plain. As illustrated in **Figure 12**, the current truck routes include:

North/South Truck Routes:

- Highway 779 from north town boundary to south town boundary including where the road become 48 Street
- Golf Course Road – south town boundary to 44 Avenue, 44 Avenue to South Park Drive, South Park Drive and 44 Avenue to Highway 16A
- Glory Hills Road – Highway 16A to end of Glory Hills Road (near railway tracks)
- Boundary Road (Veterans Boulevard) – Highway 16A to south town boundary

East/West Truck Routes:

- 79 Avenue – east town boundary to west town boundary
- Highway 16A – east town boundary to west town boundary

North Business Park Truck Routes:

- Wood Ave – Highway 779 to Boulder Boulevard
- Legend Trail – All
- Goertz Avenue – All
- Granite Drive/Lane – All
- Boulder Blvd – All
- 35 Street – Highway 16A to Boulder Boulevard
- North Park Drive – All
- Slate Avenue – All
- Golf Course Road – north town boundary to Boulder Boulevard

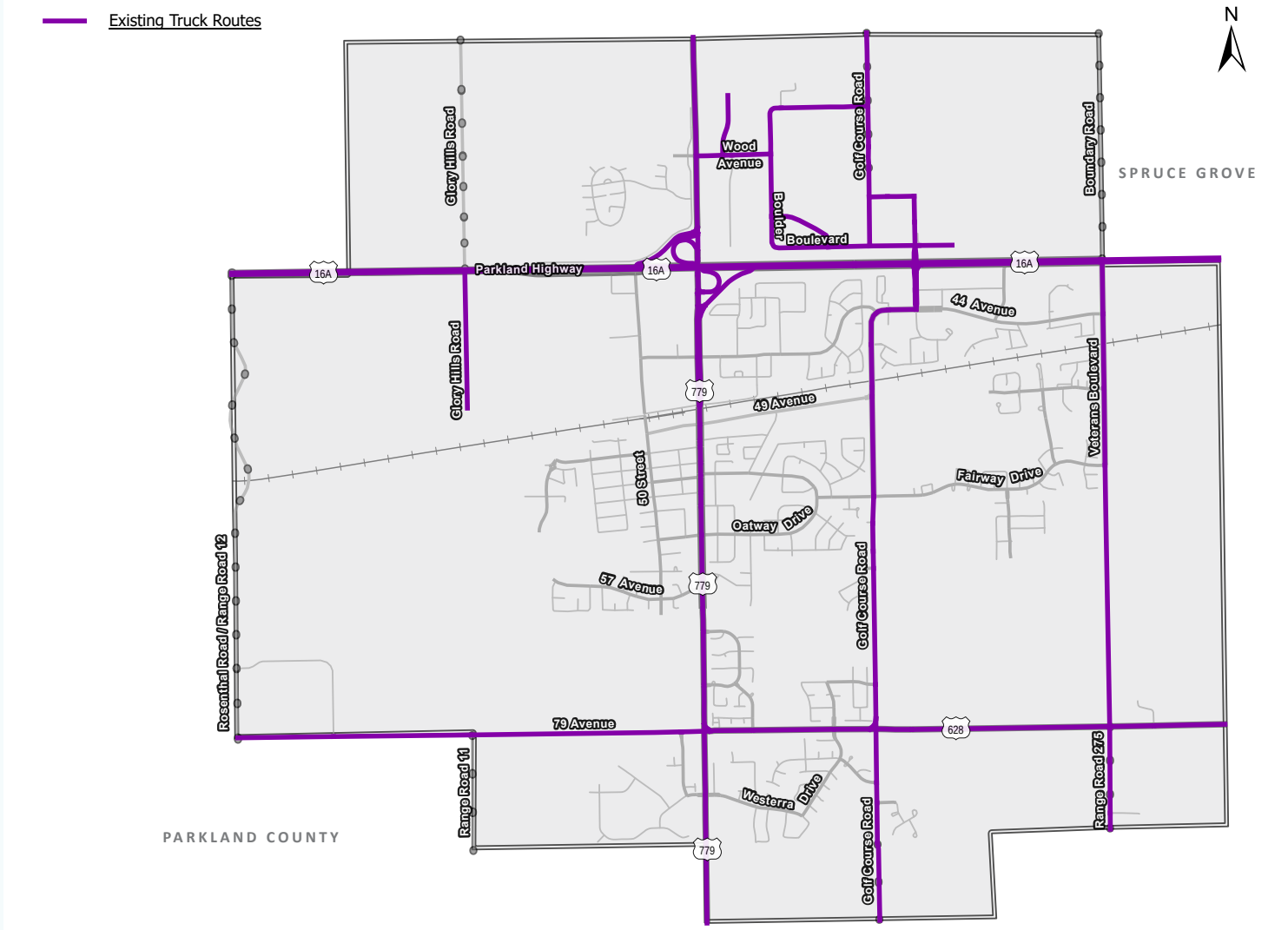

Figure 12 | Existing Truck Routes

4.4. Active Transportation

Stony Plain's transportation network includes an extensive system of sidewalks and trails that facilitate active transportation, such as walking, cycling, and other forms of recreation. **Figure 13** highlights the existing sidewalk, trails and crosswalks from the ATS. Several improvement strategies, including sidewalk/trail enhancements and new connections (as development occurs), were identified in the ATS to promote and support active transportation in the short, medium and long-term horizon. A second pedestrian crossing across the CN Rail was also recommended for the long-term horizon to support a trail connection from the Graybriar neighbourhood to Silverstone Drive.

Enhancements to the existing sidewalk and trail network such as surface improvements, link extensions/enhancements and safety were identified as the top priority among the public and Town Council and Administration.

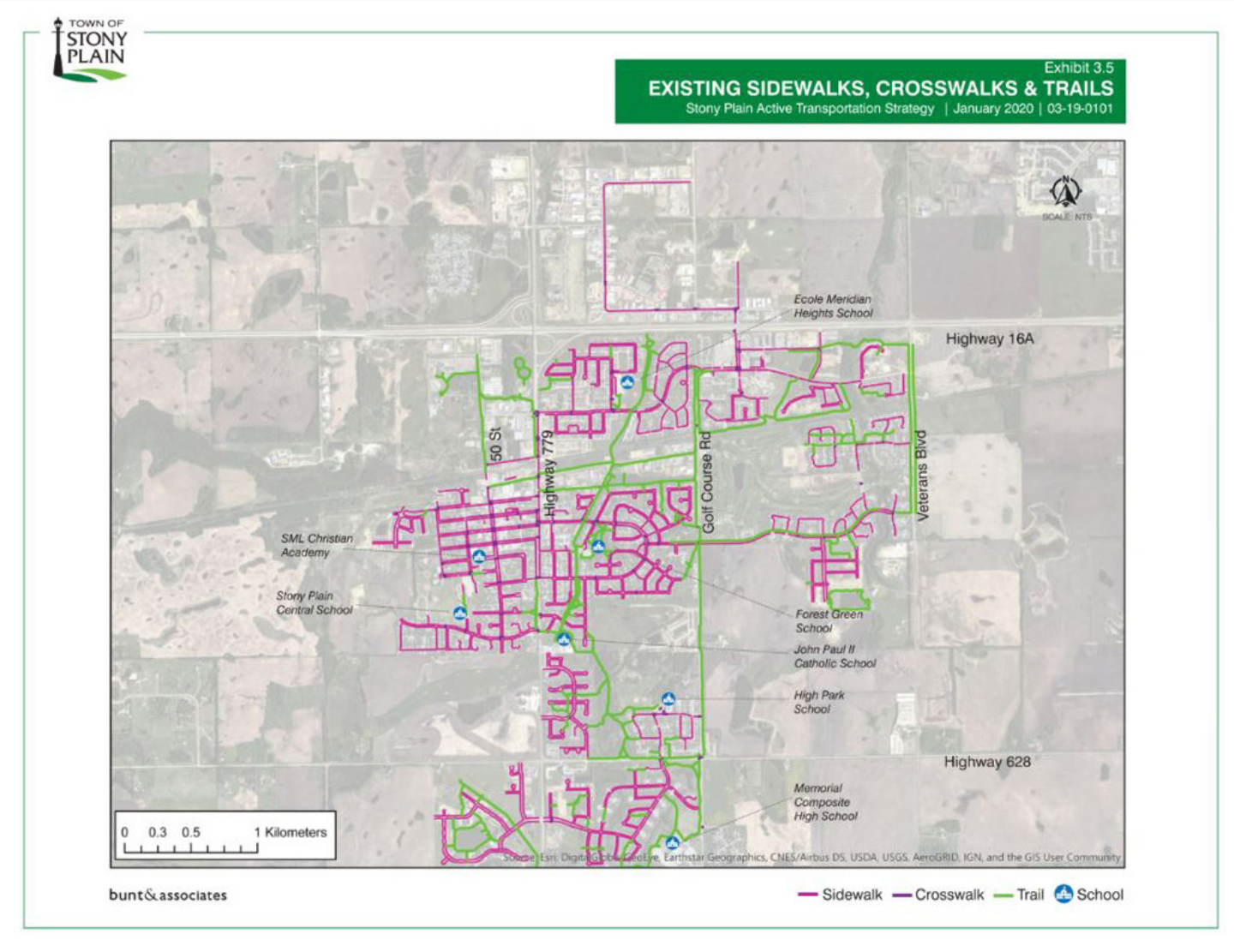

Figure 13 | Existing Active Transportation Network (Source: Active Transportation Strategy 2020)

4.5. Transit

Stony Plain does not currently operate its own public transit services; however, commuter transit services are expected to begin in 2021, connecting Stony Plain to Spruce Grove through the proposed local transit route. As shown in **Figure 14**, the new local service is also expected to connect to Edmonton Transit Service (ETS) via the Tri-Leisure Centre in Spruce Grove.

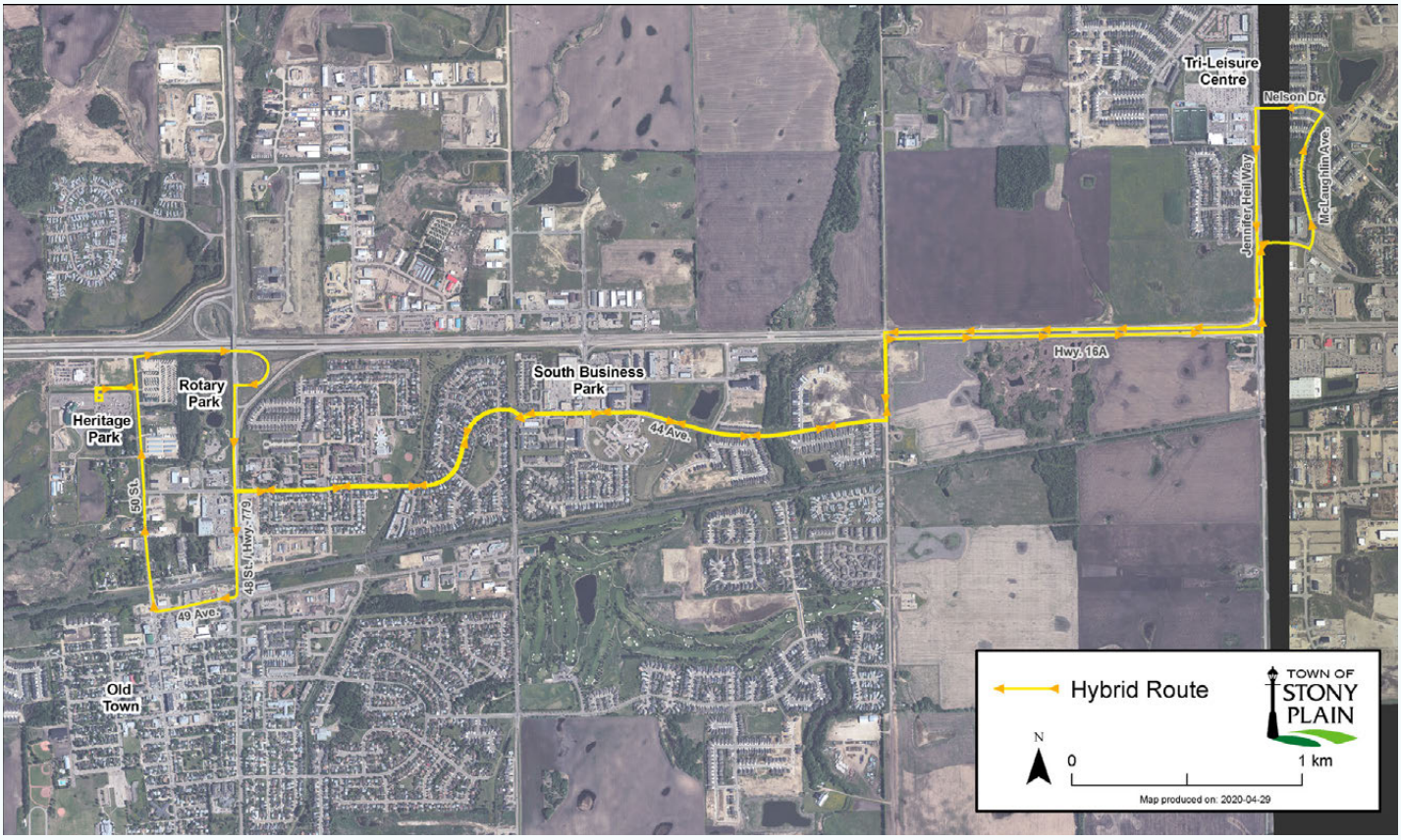

Figure 14 | Proposed Local Transit Route (Source: Town of Stony Plain)

Accessible Transportation Service is also available to those with reduced mobility in Stony Plain (formerly, HandiBus) and Spruce Grove (formerly, Specialized Transit Service). It provides door-to-door service for seniors (65+) and persons (16+) with mobility and cognitive disabilities and is in operation Monday to Friday, from 7am to 5pm. This service can be booked by phone or email.

The Town is also part of the Regional Transit Services Commission (RTSC), which aims to deliver integrated transit service in the Edmonton Region to support local and regional mobility and to provide customer-focused and coordinated transit service. In 2019, the Town entered a Memorandum of Agreement (MOA) with Spruce Grove and Parkland County to implement strategies outlined in the Transit Plan, with some of the strategies already implemented or in the process of being implemented, including:

- Consolidate Specialized Transit Service (e.g. HandiBus) – On February 3, 2020, the Town of Stony Plain's HandiBus program merged with Spruce Grove's Specialized Transit Services to establish the Accessible Transportation Service.
- Implement introductory-level scheduled service within Stony Plain that would also connect key destinations in Spruce Grove and Parkland Village – achieved through routes like the proposed local route.

4.6. Network Constraints and Opportunities

While Stony Plain has grown considerably over the past 20 years, growth in Stony Plain has been developed in an organized and efficient manner. The existing network is operating relatively well with minimal congestion, but the network will experience increasing congestion as the town continues to develop. Although the additional traffic demands will be supported by development-driven road improvements, there remains opportunities to improve the road network through intersection and corridor improvements.

The results of the travel demand forecasting indicate the potential need to widen Highway 779 from two to four lanes from north of Highway 16A to Wood Avenue, as well as the partial extension of 49 Avenue to the west. Intersection improvements through signal control upgrades and additional turn lanes have also been identified for several locations across town.

There are also opportunities to enhance the road network to support and integrate active transportation and transit based on the recommendations outlined in the ATS and the Transit Plan, in addition to integration with the neighbouring transportation network as outlined in the TMPs of Parkland County and Spruce Grove.

The next sections of the TMP explore strategies to address the potential network improvements identified above, as well as the key concerns identified through the public and stakeholder consultation process.

5.0 Road Network Strategy

The Road Network Strategy provides the foundation to manage and maintain an efficient road system to facilitate the movement of people and goods in Stony Plain over the next 25 years. This strategy outlines key recommendations to maximize the use of the existing road network through the development of programs to measure and monitor network performance, enhancements to intersection controls and new connections to support future development. The following subsections describe each of the key strategies identified for the Town's road network.

5.1. Traffic Management Program and Monitoring

As outlined in **Section 4.2**, key corridors and intersections in Stony Plain will experience moderate increases in delays as traffic demand increases, however, the Town's roadway network is expected to operate under relatively good conditions with moderate traffic congestion over the next 25 years. However, traffic concerns may arise as the town continues to grow or through redevelopment and it will be critical to understand where these concerns are to proactively plan and manage priorities. The following strategies have been identified to address potential traffic operations and network issues.

1. **Data Collection and Monitoring.** Develop a traffic data and monitoring program to understand changing network demands. The count program will include traffic counts to supplement highway counts collected by Alberta Transportation. This includes undertaking traffic counts of vehicles, trucks, pedestrians and other modes at key intersections and corridors. These counts can be conducted during the spring time and collected every two years, or as needed.

2. **Warrant Analysis.** Conduct operational analysis to confirm warrants and scope of improvements – including control upgrades, implementation of turn lanes, change in signal timing plans and pedestrian crossings. This is particularly important at high volume intersections such as the crossings on Highway 16A and Highway 779. It is recommended that the Town continues to monitor traffic and safety in coordination with Alberta Transportation on a regular basis, particularly in the higher growth areas to determine whether warrant analysis is required.

3. **Signal Timing Optimization & Coordination.** Optimizing and coordinating signal timing plans at key intersections and along key corridors can enhance overall traffic flow, reduce vehicle delays and improve traffic safety. The Town could undertake a review of signal timing plans along higher-volume corridors such as Golf Course Road and 44 Avenue to find opportunities to improve traffic performance.

4. **Implement Traffic Impact Assessment (TIA) Guidelines.** It is common practice that a development application submitted to a public agency is supported by a Traffic Impact Assessment (TIA), which considers the potential impacts that new development or redevelopment may have on the existing transportation network, including:

    - Anticipated traffic generated by the proposed land use
    - Operation and safety of site access
    - Integration with alternative modes (e.g. walking and cycling)

Recognizing that Stony Plain has considerable opportunities for additional development, the Town may want to implement TIA guidelines to ensure consistency in the planning and design of transportation infrastructure as a result of development. The TIA guidelines would provide a standard approach in identifying any transportation improvements or mitigation measures required to

ensure the road network will operate safely and efficiently once the development is completed. It would also provide an opportunity to incorporate updated direction from this TMP and other adopted plans (e.g. ATS and the Transit Plan). In the context of Stony Plain, the types of development that may warrant the completion of a TIA, include but are not limited to:

- ASP and ASP amendments
- Landuse changes (Rezoning)
- Higher densification being proposed
- New development outside of the ASPs
- High trip-generating sites, such as larger commercial developments

The required scope and content of a TIA should be confirmed by Town staff and can be in the form of:

- **Technical Memorandum –** Applies to development generating less than 100 peak-hour peak-directional vehicle trips or the following thresholds: *Low-Density Residential – less than 25 units, Medium- or High-Density Residential – less than 50 units, Non-Residential uses of less than 10,000 ft^2 of gross floor area (GFA).* The purpose of this assessment is to outline the site-generated traffic in comparison to current traffic volumes and to determine whether further study is required.
- **Comprehensive TIA –** Applies to development generating more than 100 peak-hour peak-directional vehicle trips or the following thresholds: L*ow-Density Residential – 25 units or more, Medium- or High-Density Residential – 50 units or more, Non-Residential uses of over 10,000 ft^2 of GFA.* This assessment typically includes traffic analysis impacts over the existing, post-development and long-term (e.g. 20-year) horizons, identifies road improvements to support development and addresses other factors such as access and circulation, parking, and integration with alternative modes.

Traffic Management Program & Monitoring Recommendations

1. **Establish a data collection and monitoring program every two years** to understand changing traffic demands and identify areas of congestion and concern.
2. **Establish and maintain an efficient transportation network** through warrant analysis as well as network signal timing optimization and coordination conducted on an as-needed basis and based on ongoing data collection and monitoring.
3. **Implement comprehensive Traffic Impact Assessment (TIA) Guidelines** to developments generating more than 100 peak-hour peak directional trips or the following thresholds: Low-Density Residential – 25 units or more, Medium- or High-Density Residential – 50 units or more, Non-Residential uses of over 10,000 ft^2 of GFA.

5.2. Operational Improvements

Operational Improvements can mitigate existing and anticipated future issues and extend the life of infrastructure, helping to delay larger, more expensive improvements. In addition to addressing mobility and safety, these investments improve efficiency and reliable performance for goods movement through high traffic corridors. This approach also minimizes congestion through optimization of the existing network and then through capacity expansion, where warranted. Specific operational improvements are outlined below and identified in **Figure 15.**

Operational Improvements Recommendations

1. **Signalize the following intersections:**
   - **Short-Term (1 to 5 years)**
     - Highway 779 / Highway 16A WB Ramp
   - **Medium-Term (6 to 15 years)**
     - Highway 628 / Veterans Boulevard
   - **Long-Term (15 to 25 years)**
     - Highway 779 / Highway 16A EB Ramp
     - Highway 16A / Glory Hills Road
     - Highway 16A / Rosenthal Road (Range Road 12)
2. **Highway 628 / Westerra Drive** – Add dedicated eastbound and westbound left-turn lanes within the next 5 years.
3. **Highway 16A / South Park Drive** – Provide additional northbound and southbound left-turns on South Park Drive in the next 6 to 15 years.
4. **Highway 779 (48 Street) / 44 Avenue** – Provide an additional eastbound left turn lane on 44 Avenue and a southbound right-turn lane on 48 Street within the 15 to 25 year timeframe (as development occurs).
5. **Collaborate with Alberta Transportation** – It is recommended that the Town seeks partnership with Alberta Transportation to address future intersection performances along Highway 779, Highway 628 and Highway 16A, as well as to confirm the long-term plan for Highway 16A.

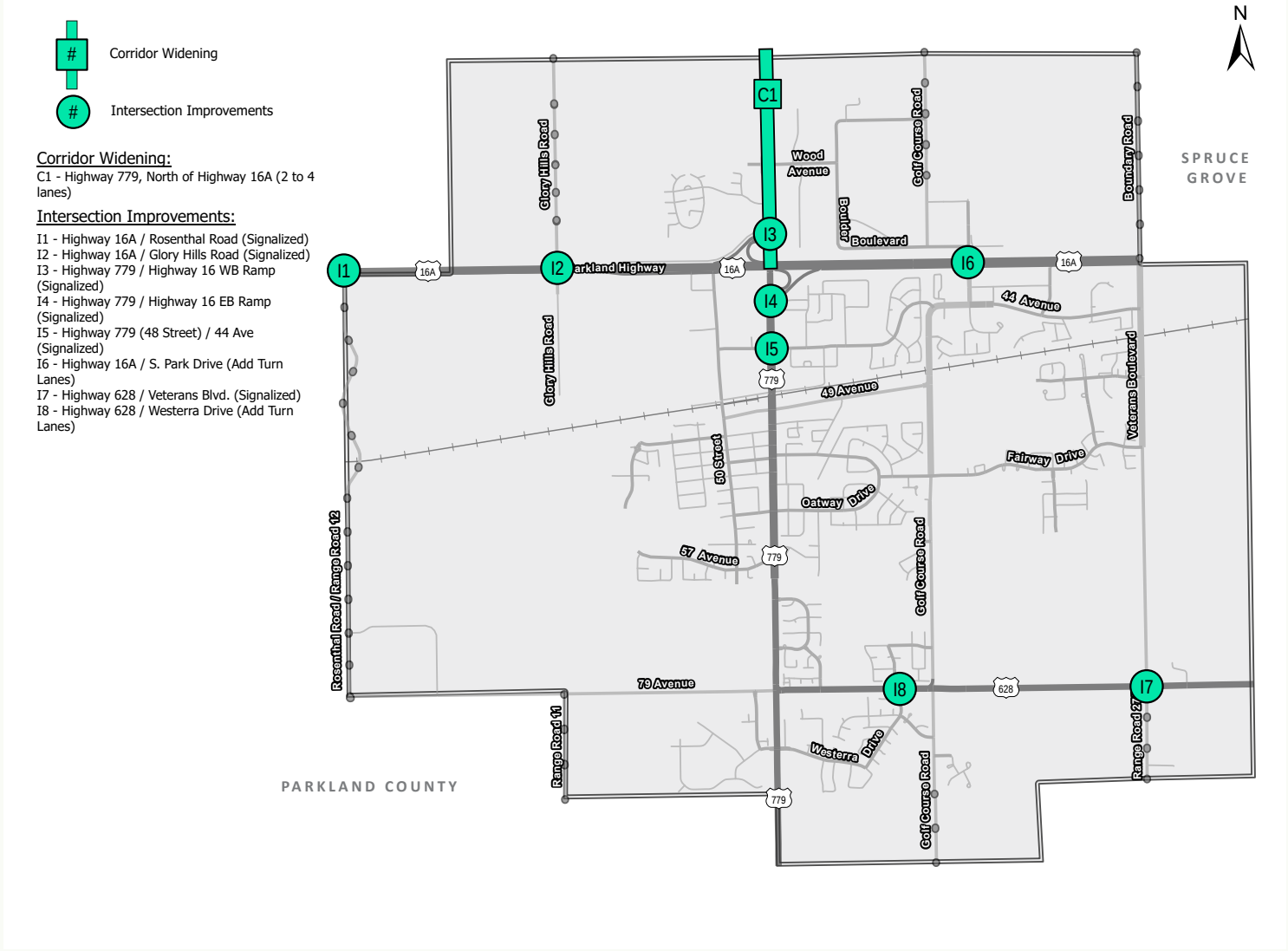

Figure 15 | Proposed Operational Improvements

5.3.1. Future Road Network Plan

In addition to the recommended intersection improvements, there are also other roadway improvements that the town should consider to address network capacity and connectivity over the next 25 years. These include:

1. **Highway 779 (North of Highway 16A).** Future traffic projections indicate a potential need to widen Highway 779 from two to four lanes from north of Highway 16A to Wood Avenue to support both regional travel demands and local growth within the North Business Park area over the next 6 to 15 years. Highway 779 is currently designated as a Rural Arterial Divided 4-Lane (RAD4) roadway and it is recommended that the Town continues to work with Alberta Transportation to define the function and role of Highway 779 within Stony Plain.

2. **49 Avenue.** 49 Avenue is currently a two-lane arterial that supports east-west travel between 48 Street and Golf Course Road. In addition to providing secondary access into the neighbourhoods south of 49 Avenue, it also supports direct access into businesses and town facilities located on either side of the corridor. While the forecasted growth for 49 Avenue does not support further capacity improvements such as road widening, the Town may want to consider other improvements to address access management along the corridor as redevelopment or new development occurs over the next 6 to 15 years, such as implementing two-way left-turn lanes to improve access. The Town may also want to protect for the integration of active transportation facilities as a new trail extension was recommended from Highway 779 to Brown Street in the ATS and is considered a medium-term (three to six-year) priority. The Town should also continue to monitor traffic demands on 49 Avenue as arterials have a typical capacity of 1,000 to 1,200 vehicles per hour per lane. An average annual daily traffic (AADT) greater than 12,000 vehicles per day will likely trigger the need to widen from two to four lanes.

3. **49 Avenue Extension (Phase 1).** The extension of 49 Avenue to the west from 50 Street to Range Road 12 was identified within several ASPs including the Brickyard and Old Town ASP. The intent of this connection is to support the full build out of the Brickyard area and to enhance east-west connectivity on the west side of town while providing additional capacity for subdivision and school access. The forecasted growth in the Brickyard and Old Town area indicate that the west extension can be completed in two phases. The first phase (Phase 1) would extend 49 Avenue west from Highway 779 to Brickyard Drive and Phase 2 connecting Brickyard Drive to Range Road 12. Based on the Stage 2 Growth projected demands in the area, it is recommended that

the Town works toward completing Phase 1 of the 49 west extension within the next 25 years (long-term) and consider the Phase 2 extension beyond 25 years and as development occurs.

4. **Golf Course Road (North of Highway 16A) Surface Improvements.** Within the North Business Park area, Golf Course Road is classified as an arterial roadway, however, it is currently unimproved north of Slate Avenue. To maximize the function of this roadway and to support future development and goods movement, it is recommended that the Town considers surface improvements on Golf Course Road north of Highway 16A to the town's limits to an arterial standard within the next 15 years.

Beyond these improvements and the new linkages identified in the Town's approved ASPs and the OTCP, no additional roadways or connections have been identified to support future traffic growth in Stony Plain within the timeframe of this TMP. At the same time, the Town will want to preserve roadways to accommodate future implementation of active transportation and transit facilities and amenities as set out in ATS and Transit Plan.

The existing road classifications have been revised to capture the planned future road network while maximizing the use of the existing network. **Table 2** highlights the proposed changes to the existing road classification based on projected growth and function of the road within the town. **Figure 16** illustrates the recommended future (25-year) road network plan with the corresponding road classification.

Table 2 | Recommended Road Classification Changes

Roadway	From	To	Existing Classification	Proposed Classification
Glory Hills Road	South of 41 Avenue	52 Street	Local	Collector
Boulder Boulevard	N Park Drive	Golf Course Road	Collector	Arterial
Slate Avenue	Golf Course Road	North Park Drive	Local	Collector
41 Avenue	51 Street	50 Street	Local	Collector
Westerra Avenue	Westerra Drive	Westerra Bend	Local	Collector
Rosenthal Drive	Oatway Drive	Garden Valley Drive	Local	Collector
57 Avenue	48 Street	45 Street	Local	Collector

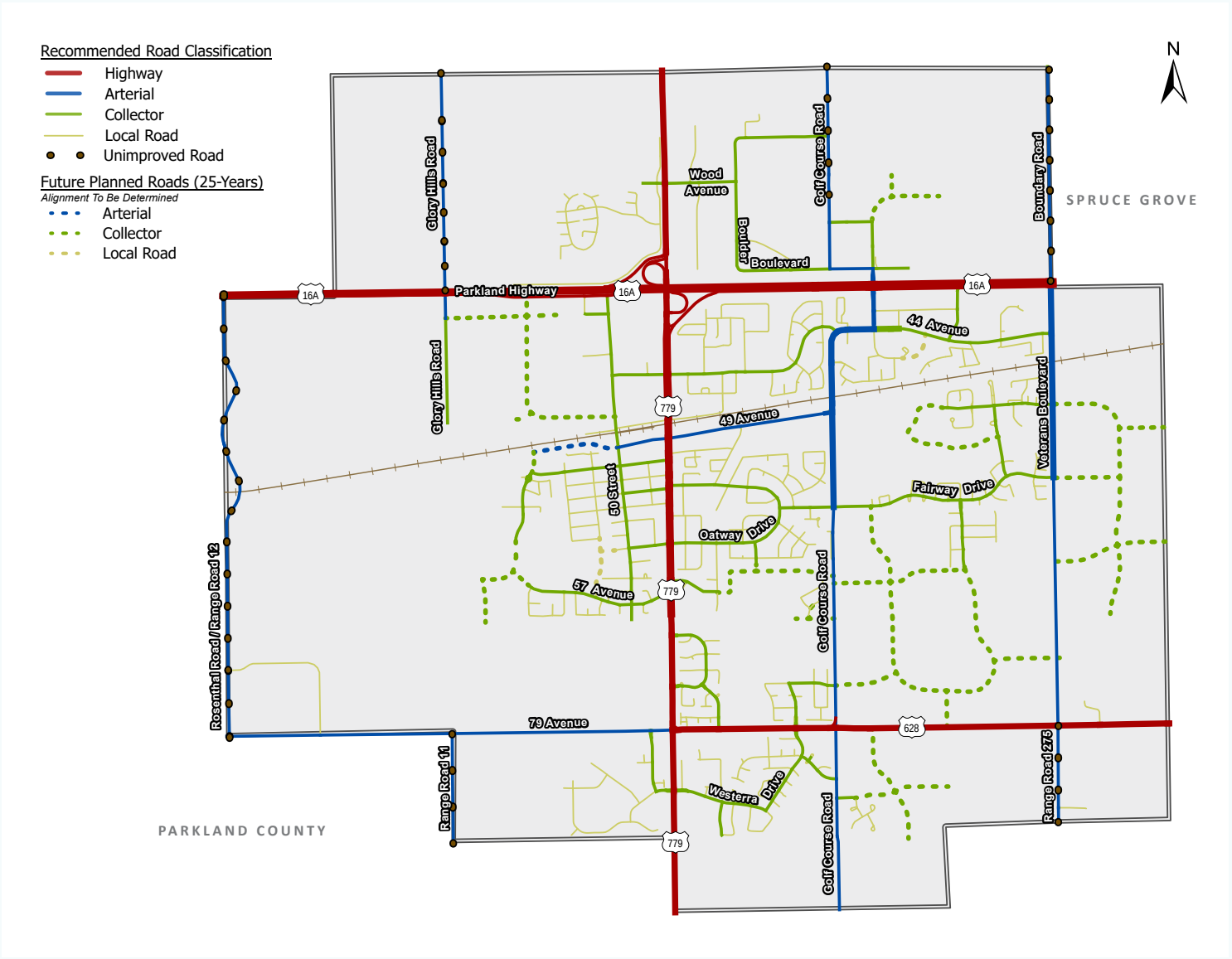

Figure 16 | Recommended (25-Year) Road Network

5.3.2. Beyond 25 Years & Other Connections

Stony Plain will continue to grow and expand beyond the next 25 years. In addition to those network improvements identified in the Recommended Road Network, the Town will want to protect rights-of-way for possible new connections or road widening. The Town has identified a number of potential connections based on previous planning and approved ASPs. While these connections are mostly collector roadways, several arterial roadways have been considered, including:

1. **Highway 628.** The section of Highway 628 that borders the growing communities of High Park and Westerra (between Highway 779 and Golf Course Road) is expected to experience moderate capacity constraints under the Stage 2 Growth horizon. As these neighbourhoods continue to build out and in addition to increased regional travel, this section of Highway 628 may require four lanes beyond 25 years, as well as additional signals at Westerra Drive (as warranted). This would also tie into the planned widening of Highway 628 west of Highway 779. The Town should continue to seek regional partnerships on future plans for Highway 628.

2. **49 Avenue West Extension (Phase 2).** As discussed previously, current travel patterns and projected traffic growth suggest that the 49 Avenue west extension should be implemented through a two-phase approach, with Phase 2 (from Brickyard Drive to Range Road 12) considered as a potential connection beyond the long-term horizon of this TMP. It is recommended that the Town reconsiders this connection should development and/or growth plans change in the area.

3. **Highway 779 (South of Willow Park Road).** Within Stony Plain, Highway 779 is currently a four-lane arterial except the section between Willow Park Road and the town's southern limit. There are plans to improve Highway 779 from south of Willow Park Road to Highway 628 to match the four-lane section in the north. The projected traffic growth along the southern section of Highway 779 indicates that the current two-lane roadway can support projected traffic growth within the next 25 years. However, as the town continues to develop in the south, this section of Highway 779 may require four lanes to support traffic demand increases. It is recommended that the Town continues to monitor traffic patterns in this area and plan for the possible widening of Highway 779 between Willow Park Road and Highway 628.

4. **Golf Course Road (South of Fairway Drive).** Between Fairway Drive and Highway 628, Golf Course Road is currently a two-lane arterial. There are long-term plans to widen this section of Golf Course Road to four lanes to support development in the area. While forecasted traffic volumes do not warrant the widening within the next 25 years, the Town will want to consider the widening as a longer-term improvement, and plan and protect rights-of-way for possible widening beyond 25 years.

5. **Range Road 12.** Current traffic volumes and forecasted growth on Range Road 12 do not suggest the need to improve or expand Range Road 12 within the timeframe of this TMP. The current facility adequately supports existing traffic volumes and function, including the planned Stony Plain Cemetery, which will be located north of the CN Rail corridor with access from Range Road 12.

   Forecast travel demands indicate a high desire for travel to/from north and east of Stony Plain, likely due to location of regional employment centres and concentration of development within the town. These demands can be sufficiently accommodated through higher classification of north-south arterials in Stony Plain. While forecasted traffic volumes do not warrant further improvements on Range Road 12, geometric and/or surfacing improvements may be required as traffic volume increases within the next 25 years as the Cemetery is utilized and new development is constructed.

6. **Boundary Road, Highway 16A to Grove Drive West.** Boundary Road north of Highway 16A is an unimproved road, currently providing access to a church assembly and a few residences/farm operators from Highway 16A. The intersection with Highway 16A is currently signalized, primarily for access to and from Veterans Boulevard to the south.

   To the east, Boundary Road is bounded by Spruce Grove and the west is bounded by a tree belt/ravine. Based on Spruce Grove's 2012 TMP, Grove Drive is expected to connect to Boundary Road, which will provide an access from Highway 16A into the west area of Spruce Grove (Copperhaven Neighbourhood). Stony Plain's north industrial area is also planned to connect to Boundary Road with two collector connections, however these connections may be reconsidered as both connections would be required to cross an environmentally sensitive area (watercourse) and may be cost prohibited and not feasible.

   In the long-term, the Town will develop the remaining quarter sections to the west of Boundary road. This is likely to occur in the distant future outside the review of this TMP. As such, any improvements to Boundary Road prior will likely be to the benefit of Spruce Grove and its residential developments. Due to the proximity of external municipal needs of the road likely being the driving factor for transportation facility growth, Boundary Road will not require future major capital investment directly related to Stony Plain's expected transportation growth. Should the Town want to consider future upgrades to Boundary Road; it should be undertaken in partnership with Spruce Grove.

7. **Proposed East-West Arterial.** A new east-west arterial, connecting Golf Course Road to Veterans Boulevard was proposed in previous development plans to support growth in the South Creek and Tussic area. This proposed arterial would divide residential neighbourhoods and provide neighbourhood access to north-south arterial roads (Golf Course Road and Boundary Road). Forecasted growth along this arterial indicates that this connection is not required but remains an important connection between the residential communities and the arterial roads. This proposed arterial will primarily function as a collector road, as it is not expected that the residential areas will generate enough traffic to require an arterial road. Additionally, arterial roads are designed at a network level to move traffic efficiently within and through a community and with continuous east-west highways running parallel to the proposed arterial, it would provide very limited network function. It is recommended that this previously proposed arterial:

    a. Be considered as a collector roadway;

    b. Is not required to be continuous on a straight alignment;

    c. Provide access to/from planned residential areas to Golf Course Road and Boundary Road;

    d. Have the planned right-of-way protected for utilities and trails if not utilized for roadway expansion.

Future ASPs should reflect these proposed changes and be updated accordingly as required.

It is recommended that the Town continues to monitor growth and development around these corridors and reassess the need for improvements as development plans and growth policies evolve. Furthermore, these improvements should be confirmed through a TIA when new development is considered. **Figure 17** illustrates the potential road connections and the roadway corridors that should be considered beyond the timeframe of this TMP and form part of the longer-term planning within Stony Plain.

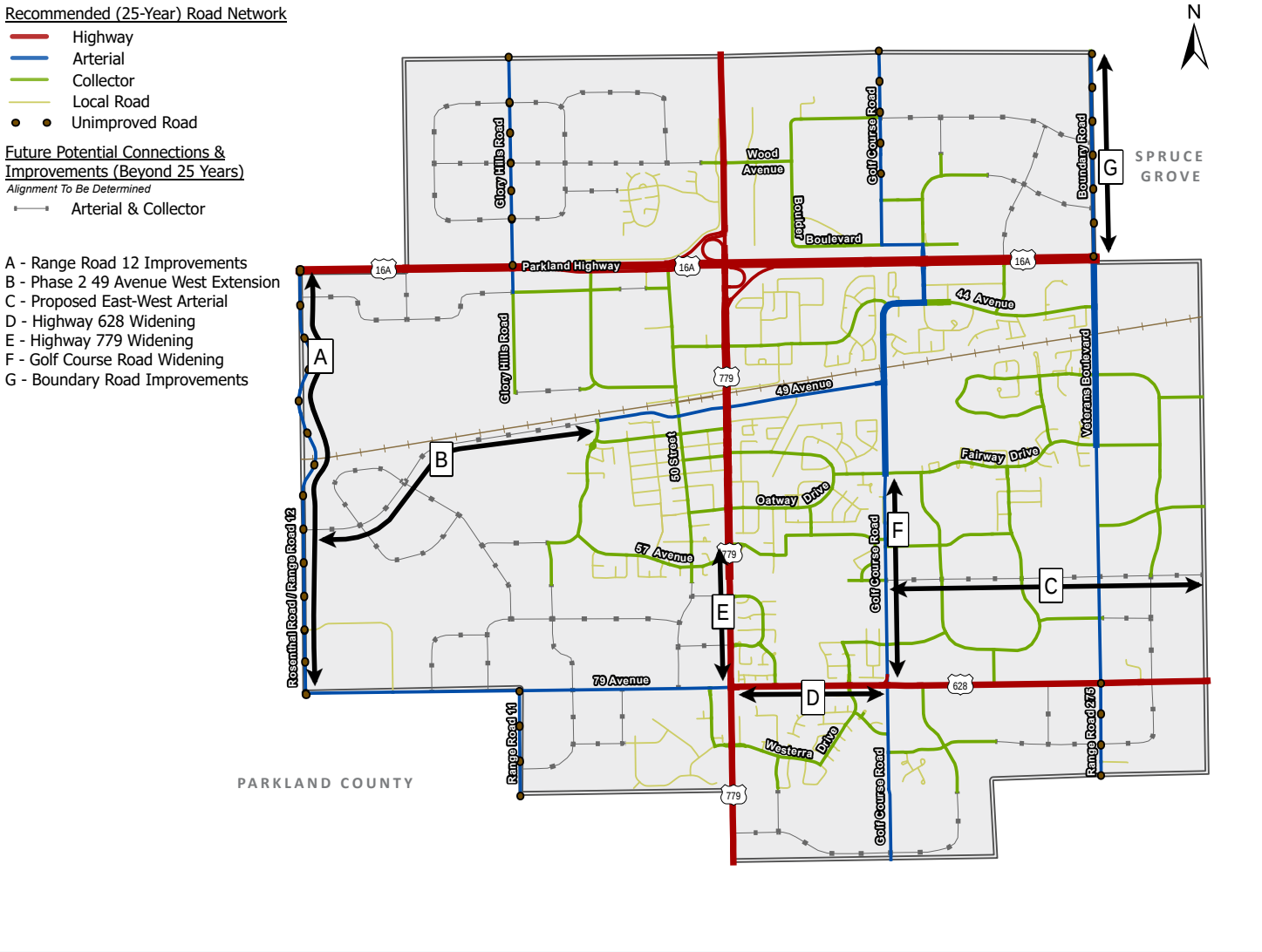

Figure 17 | Potential Connections and Improvements Beyond the TMP

5.3.3. Provincial Highways

One of the key actions identified in the Strategic Plan is to "*establish an agreement with the Government of Alberta to transfer development authority of Highway 779 and 628 to the Town of Stony Plain.*" Within town boundaries, Highway 779 (48 Street) and Highway 628 (79 Avenue) function closely to an urban/suburban arterial, supporting local access for residents, goods and services.

In working towards an agreement, the Town should establish a team of Senior Administration to work with Alberta Transportation to clearly define the future role and function of Highway 779 and Highway 628. This will guide the Town in building a business case to justify the transfer of development authority of both highways.

Network Improvements Recommendations

1. **Widen Highway 779 (North of Highway 16A) –** Seek partnership with Alberta Transportation to widen Highway 779 from two to four lanes from Highway 16A to Wood Avenue within the next 6 to 15 years.

2. **Access Management on 49 Avenue –** Consider access management measures within the next 6 to 15 years as redevelopment or new development occurs, such as implementing two-way left-turn lanes to improve access. The Town may also want to protect for the integration of the active transportation facilities as a new trail extension was recommended along the southside of 49 Avenue from Highway 779 to Brown Street in the ATS and is considered a medium-term (three to six-year) priority.

3. **49 Avenue West Extension, Phase 1 & Phase 2 –** Work towards implementing Phase 1 of the 49 Avenue West Extension, from Highway 779 to Brickyard Drive to support development in the Brickyard and Old Town area within the next 25 years. Phase 2 extension should be considered beyond 25-years or as development warrants.

4. **Pave Golf Course Road, North of Highway 16A to Town Limits –** Surface upgrades to an arterial standard within the next 6 to 15 years to support development and goods movement.

5. **Highway 628 Capacity Improvements –** The Town should continue to seek regional partnerships on future plans for Highway 628 and monitor traffic to identify mobility concerns as travel demand increases.

6. **Widen Highway 779 (South of Willow Park Road) –** Plan and protect for the widening of Highway 779 between Willow Park Road and Highway 628 from two to four lanes beyond 25-years or as traffic or development warrants.

7. **Widen Golf Course Road (South of Fairway Drive) –** Plan and protect for the widening of Golf Course Road between Fairway Drive and Highway 628 from two to four lanes beyond 25-years or as traffic or development warrants.

8. **Active Transportation & Transit Integration –** Ensure design of new roads or road reconstruction incorporates the recommended sidewalk and trails network outlined in the ATS. It is also recommended that the Town preserve roadways to accommodate future facilities and amenities to support active transportation and transit.

9. **Transfer Development Authority on Highway 779 and Highway 628 –** It is recommended that the Town work with Alberta Transportation to establish an agreement for the transfer of development authority for Highway 779 and Highway 628 within town boundaries.


SCHOOL BUS


Connections
FOR LEARNING

6.0 Transportation Safety Strategy

Transportation Safety was identified by the community as one of the top priorities to address in this TMP update. A safe, reliable, and accessible transportation network for all users strengthen community well-being, build social connections, and promote economic vitality. It also encourages people of all ages and abilities to use non-motorized transportation choices for commuting and recreation. While a comprehensive safety study is outside the defined scope of this TMP, strategies to enhance the safe movement of people and goods in Stony Plain have been identified and are further described in the following sections.

6.1. Strategic Safety Policies and Programs

The following strategic policies and programs have been identified to provide a safer and efficient network for all users, as well as to promote and educate safe travel within the Town.

1. **Collision Data Collection and Monitoring.** Compile and update a database of collision records from the RCMP for all town and provincial roads within the municipal limits. The database could be supplemented with insurance claims data, if these records are available. Claims data would provide a more comprehensive list of collisions, although the integrity of the data is limited by the accuracy of the claim records. The Town can also continue monitoring traffic safety concerns brought forward by the public and identify any problematic areas that require further observation.

2. **Conduct Safety Studies.** Based on available data, the Town may want to conduct safety studies (e.g. network screening study or site-specific) to identify and address existing safety issues on the transportation network, and recommend potential countermeasures to address these issues.

3. **Enforcement and Education.** The Town can work with local authorities to increase enforcement presence on the roads to increase compliance with speed limits and reduce unsafe driving practices. In addition, raise public awareness and knowledge of road safety through educational programs and initiatives, as well as through public communication initiatives such as ad campaigns and social media.

4. **Capital Program.** Incorporate road safety improvements into the Town's Capital Program as project scope and budget permits. The Town may also consider joining the Capital Region Intersection Safety Partnership (CRISP) for potential funding or project partnerships.

5. **Conduct Annual Crosswalk Review.** An annual review of crosswalks and trail crossings is important to ensure pedestrian safety. Crossings should be assessed for visibility, ensuring clear sightlines are maintained, taking into consideration additional structural development and landscape growth. Pedestrian signage is also an integral part of safe crosswalks and should be regularly reviewed to ensure that proper signs are in place and visible.

6. **School Zone Safety.** To address safety for vulnerable users (pedestrians, cyclists), specifically within school zones, strategies and programs through a holistic 4-E approach (Engineering-Education-Encouragement-Enforcement) can be considered to minimize the risk of collisions and injuries involving students, as well as improving general neighbourhood conditions that provide safe and accessible connections between neighbourhoods and other surrounding local and regional destinations. These strategies and programs can be implemented or established

as demand warrants based on public/school feedback and/or available collision data. Some strategies to minimize potentially dangerous situations within school zones include:

- On street and dedicated parking for vehicle traffic.
- Pick-up/Drop-off areas with proper design and enforced compliance.
- Speed limit reduction measures and enforcement.
- Intersections and crosswalk safety improvements (design, accessibility/ inclusivity, signing, markers/markings/ beacons, integrated routing and defined crossing locations, surface materials, lighting, automated pedestrian detection, speed detection signing, and other consistent standards).
- Routing and route design guidelines (promoting safe and accessible modes of active transportation).
- Integrative planning and development of land uses (vehicular and pedestrian access/egress, parking, building siting, sight lines, etc.).
- Education programs.
- Promoting busing and public transit.
- Operations and maintenance approach/ policy and design guidelines.

Strategic Safety Policies & Programs Recommendations

1. **Establish Collision Data Collection and Monitoring Program** – Work with the RCMP to compile and update collision data for all town and provincial roads within the municipal limits. The Town can also continue monitoring traffic safety concerns brought forward by the public and identify any problematic areas that require further observation.
2. **Conduct Safety Studies** – Based on availability of collision data and as-required basis, conduct safety studies to identify trends, evaluate causal factors, and recommend potential countermeasures to address the safety issues.
3. **Promote Road Safety Through Enforcement and Education** – Continue to work with the RCMP and other partners to develop programs to promote road safety.
4. **Incorporate Road Safety Improvements in Capital Program** – Consider road safety improvement opportunities when capital projects are being completed.
5. **Conduct Annual Crosswalk Review** – Review pedestrian crossings, infrastructure and amenities to enhance safety for all abilities and ages.
6. **Implement School Zone Safety Strategies and Programs** – Work with school authorities to develop and implement strategies and/ or programs to address school safety as warranted.

6.2. Speed Reduction Measures

In addition to the strategic policies and programs to address traffic safety concerns, a larger scale safety improvement measure that can be explored in the moderate to long-term horizon is speed limit reduction measures. Within residential areas, municipalities throughout western Canada are exploring the opportunity to reduce speed limits from 50 km/h to 40 km/h. Specifically, the City of Edmonton has moved from piloting the reduced speed limit to 40 km/h in test communities (noting years later, they remain in place), to approving a blanket speed limit of 40 km/h in most neighbourhoods and high pedestrian areas, effective summer of 2021. The City of Calgary is working towards the revision of collector and residential road standards to support reduced speed limits of 40 km/h and 30 km/h, respectively. The Town of Blackfalds also implemented 40 km/h on most residential streets, effective June 15, 2019.

The effectiveness of reduced speed limits is being researched with local case studies therefore the sampling of data is currently limited. However, it is intuitive that reduced speeds not only reduce the severity of collisions, but slower speeds also provide the ability for drivers to brake in shorter distances, ultimately improving survivability rates. This however does assume that drivers follow posted speed limits, with enforcement being an important tool with the implementation. When speed limit reduction measures are utilized as a safety tool along with other traffic calming measures, the effectiveness for both can be even greater.

Speed Reduction Measures Recommendations

1. **Speed Limit Best Practice Review** – Conduct a best practice review on reducing speed limits on residential corridors.
2. **Speed Reduction Pilot Program**– Implement a speed reduction pilot program in selected communities based on recommendations from the best practice review.

6.3. Goods Movement & Truck Network

Designated truck routes within Stony Plain are currently served by several key arterials that connect to the surrounding highway network. The effective movement of goods in Stony Plain helps to reduce truck travel time, increase safety and traffic operations at intersections and preserve infrastructure that can deteriorate more rapidly by heavy vehicles.

There are several key industrial and agricultural areas in Stony Plain including the North and South Business Parks that generates higher volumes of heavy vehicles. The Town should provide the necessary infrastructure to enhance access to these areas as development occurs to promote economic growth.

Based on existing and proposed land uses, no additional truck routes or dangerous goods routes are identified within this TMP, however, it is recommended that the Town continues to maintain its current truck network and to take a strategic approach on future development approvals adjacent to the current truck routes.

Goods Movement Strategy Recommendations

1. **Design Standard and Road Classification Review** – Periodic review and update current road design standards and classification system to reflect current best practices and supports an integrated network.
2. **Truck Signage Review** – Ensure truck restriction signage are appropriately placed along non-truck routes that connect to a truck route.

6.4. Railway Crossings

The CN Rail corridor through Stony Plain has been identified as a barrier to mobility to both vehicles and pedestrians due to the presence of at-grade crossings along key arterials. While there is currently a pedestrian underpass that crosses under the CN Rail tracks, the Town may want to consider mitigation measures to enhance crossing of the railway for all users, including:

1. **Improve Traffic Operations.** Review signal timing plans around rail crossings to identify and consider opportunities for Intelligent Transportation System (ITS) improvements, such as adaptive or coordinated signal timing plans to serve vehicles in queue to reduce congestion after a train crossing.
2. **Advanced Warning Signals.** Use advanced warning signals or vehicle information systems to alert drivers of the presence and direction on trains traversing through the Town to better plan trips.
3. **Mobile Technology.** Use of mobile applications to provide drivers advanced warning of trains traversing through Stony Plain.
4. **Rail Crossing Guidelines.** Include rail crossing guidelines/standards for active transportation routes.
5. **Grade Separation at Major Crossings.** As a solution beyond 25-years, the Town may want to consider grade-separated crossings at key intersections to minimize impacts of train crossings and allow improved mobility and accessibility for pedestrians, goods movement and emergency vehicles.

Rail Crossing Recommendations

1. **Review Signal Timing Plans Around Rail Crossings** – As warranted, conduct signal timing reviews to identify opportunities to reduce congestion around rail crossings including adaptive or coordinated signal timings.
2. **Consider Opportunities for ITS Improvements –** As warranted, consider the use of advanced warning signals, vehicle or mobile information systems to alert drivers of trains travelling through the town.
3. **Review Opportunity for Pedestrian Tunnel –** In alignment with the ATS, conduct a feasibility study for a second pedestrian crossing under the CN Rail corridor to support a trail connection from the Graybriar neighbourhood to Silverstone Drive.
4. **Rail Crossing Guidelines –** Include rail crossing guidelines/standards for active transportation routes as applicable.


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7.0 Infrastructure Management & Maintenance Strategy

Safe mobility and economic viability depend on a reliable transportation system for all users. As the town expands, there will be an increasing need to balance competing capital and operating priorities as funding for maintenance and rehabilitation may be reduced to support major capital projects. While this TMP has not identified new road connections beyond the ASP's network over the next 25 years, the Town should continue to maintain its transportation network to maximize the benefits of existing and future investments.

7.1. Rehabilitation and Maintenance

In order to maximize the life of transportation assets in Stony Plain, it is essential that the Town continues to plan for regular maintenance and rehabilitation of its transportation network. Funding should be allocated to regular annual maintenance and rehabilitation programs based on need, including funding for winter maintenance such as snow clearing and surface paving. The following strategies can be considered to manage and maintain the town's transportation infrastructure:

1. **Annual Assessment Reports.** As best practice, the Town should maintain transportation infrastructure through utilizing annual condition reports and prioritize rehabilitation using a quantitative tool to assign the appropriate funding. It is also a tool that should be updated on a regular five to ten-year cycle based on work completed and changes in the road network.

2. **Regular Maintenance & Rehabilitation.** The Town should aim to limit the length of roadways in need of repair to 20% of the total network or less (i.e. 20% backlog). To accomplish this goal, the Town will require continuous review of the condition of the road network with a complete network assessment every three years. Regular expected maintenance (such as snow clearing) is a function of the weather and should remain accounted for in operating budgets. Regular maintenance is crucial to extending the life of existing infrastructure, and as such should be the first option prior to considering reconstruction as funding efforts will be focused on addressing the growth in the neighbouring communities.

3. **Sidewalk/Trails Maintenance.** Sidewalk and trail maintenance should fall into the same operations approach as roadway maintenance, where operations respond to existing conditions (snow, heaves, etc.), and renewal is planned based on the overall condition of the infrastructure, ideally in coordination with road and utility works. The Town should aim to have only 20% of the sidewalk and trail network requiring imminent maintenance.

4. **Coordination with Capital Projects.** It is also a best practice within the industry to plan and coordinate capital construction amongst all infrastructure. For example if a roadway requires rehabilitation and the servicing under the right-of-way is also in need of rehabilitation, these should be combined into a single capital improvement project and identified for year of construction. This approach will allow for budget planning as well as more effective investment as there is less potential throw-away construction costs. This approach provides Town Administration the ability to better respond to condition inquiries and to be more proactive when managing citizen expectations.

Rehabilitation & Maintenance Strategy Recommendations

1. **Conduct Pavement Condition Assessment –** Maintain the Town's current Pavement Condition Assessment Program through regular updates on a three to five-year cycle based on work completed and changes in the road network.
2. **Conduct Regular Road and Sidewalk Maintenance & Rehabilitation –** Regular maintenance, including winter maintenance should remain accounted for in operating budgets to maximize the use of existing infrastructure. This also includes other roadway elements such as lighting and signage.
3. **Prioritize Roads and Sidewalk/Trails for Maintenance –** The Town should aim to limit the number of roadways and sidewalks / trails in need of repair to 20% of the total network or less (i.e. 20% backlog). When possible, the Town should prioritize the repair and maintenance of roads and sidewalks/trails and coordinate with capital improvements/construction projects when viable.

7.2. Road Markings, Lighting and Signage

Similar to pavement condition, road markings, guardrails and lighting require regular maintenance and renewal. It is recommended that these roadway elements be coordinated with paving and rehabilitation and that a regular annual program continues to address these elements that may not be serving their required function. Review of conditions can also be connected to roadway surveys and included in rehabilitation programs.

Traffic signage generally evolves over time through roadway corridors, and as a result can become inconsistent through a community. One area where signage can be very important is in school areas, especially elementary school areas; sign materials, locations and the signs themselves need to be consistent through every school area. It is also important that signage, such as directional signage, remains consistent in the immediate surrounding communities such as Parkland County and Spruce Grove as many residents will be constantly commuting between communities. It is recommended that a signing assessment be completed, and signage is updated around school areas for consistency and ultimately safety.

8.0 Alternative Transportation Strategy

The use of alternative modes in Stony Plain are vital in building community sustainability with respect to health, social exchange, the environment and the economy. While alternative modes, such as active transportation and transit, are improving to better serve a wider cross-section of the community and promote increased use, there continues to be areas in need of improvement. Investments in alternative transportation is a key element in managing congestion, reducing automobile-dependency, and supporting community well-being. This section of the TMP identifies strategies to plan and promote the use of alternative modes in Stony Plain.

8.1. Active Transportation Strategy Integration

The Town approved its ATS in January 2020, which provided the community and Council with a series of actions and implementable projects for the short-, medium- and long-term horizons. The final strategy also included facility selection and design guidance based on a best practice review in North America and the Netherlands. The recommendations from the ATS primarily focused on three key strategies:

1. **Infrastructure Design –** Developing a safe and comfortable active transportation network that is suitable for all ages and abilities through enhancements in trail transitions, bike route buffering, pedestrian and trail crossings.
2. **Connectivity –** Improving network connectivity and pedestrian safety through expanding the sidewalk and trail network with new or link extensions as well as regional connections. The recommendations served to fill in the sidewalk and trail network gaps and to reduce barriers and improve connections between existing infrastructures.
3. **Promote and Enable –** This includes vital components of a successful active transportation network such as trail maintenance, wayfinding, areas of respite, and end of trip facilities as well as innovative initiatives such as winterizing trails and identifying avenues for building partnerships.

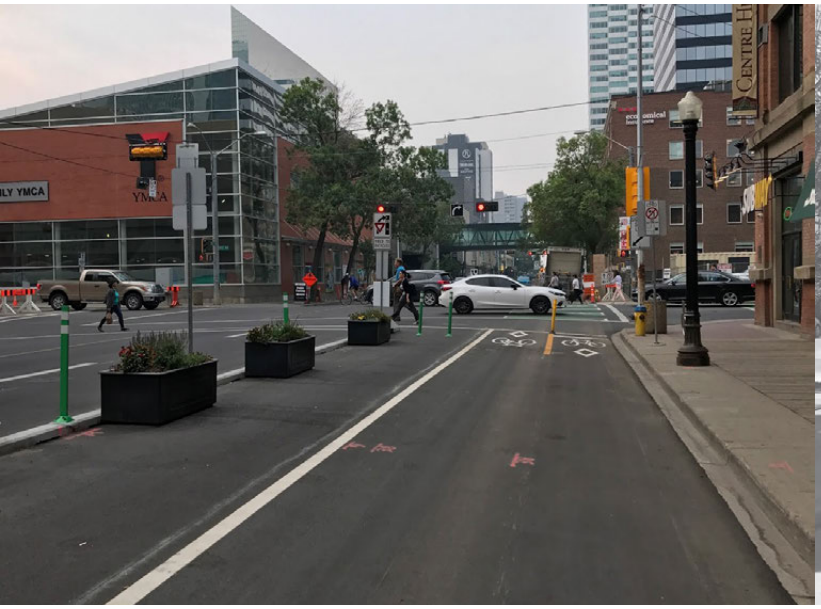
The ATS identified a number of facility improvements to enhance the active modes experience in the community, including a focus on building out an active transportation network from Old Town expanding across 48 Street into the more mature neighbourhoods. The ATS also demonstrated the need to prioritize connectivity and continuity between existing assets and new capital projects. New communities will have a significant opportunity to expand the active transportation network as they build out. Administration will need to continue to advise new developments on the transportation network priorities beyond the traditional automobile.

The need to provide continuous trails and sidewalk connections remain top priority based on the stakeholder input. It was also identified that for existing facilities, consider upgrading the surface treatments to asphalt and increase the seasonal maintenance. To continue to expand on the strategies set out in the ATS and address community priorities, the following opportunities should be considered:

Active Transportation Strategy Integration Recommendations

1. **Coordinate active modes network expansion and improvements during annual road maintenance, rehabilitation, and reconstruction programs.** By seeking opportunities to increase sidewalk connections, bike facilities, etc. during the annual construction program, potential cost savings may be captured while reducing impact to commuters.
2. **Ensure active modes are incorporated in the latest ASP and development applications providing continuity between plans and documents.** Implementing trails during the greenfield design and construction significantly reduces impacts to the community and provide cost efficiencies. This can be achieved through standardized cross sections for community specific guidance or providing the applicant with the community's transportation network vision at the start of the process.
3. **Consider temporary pilot projects to determine desire lines, and demand to reduce potential risk with capital investments in permanent facilities.** By piloting certain connections in preparing for construction, users and community members can become familiar with the treatments and provide feedback if adjustments are needed. This can be accomplished through temporary flex bollards, planter boxes, concrete curbs, etc.

Examples Of Temporary Configurations



8.2. Transit Integration

In May 2020, Council approved a new local transit route connecting Stony Plain to Spruce Grove. At launch, the route will operate over a 9-hour period during the peak morning, midday, and afternoon commutes. The service is expected to launch with one bus with a total round trip travel time of 40 minutes. The proposed transit route provides the top two transit priorities that were identified during the transit route planning consultation process, which include providing Stony Plain residents the ability to commute to/from Edmonton and travel within the community.

The new local transit route is expected to commence operations in 2021 and while it does not provide complete coverage of the community, it is likely through integration with the RTSC and the implementation of the Transit Plan, coverage and service is expected to increase. Building on the work from the Transit Plan, additional service coverage for neighbourhoods and schools beyond what has been defined in the 2018 strategy should be considered. **Figure 18** illustrates the proposed transit routes and possible transit coverage gaps.

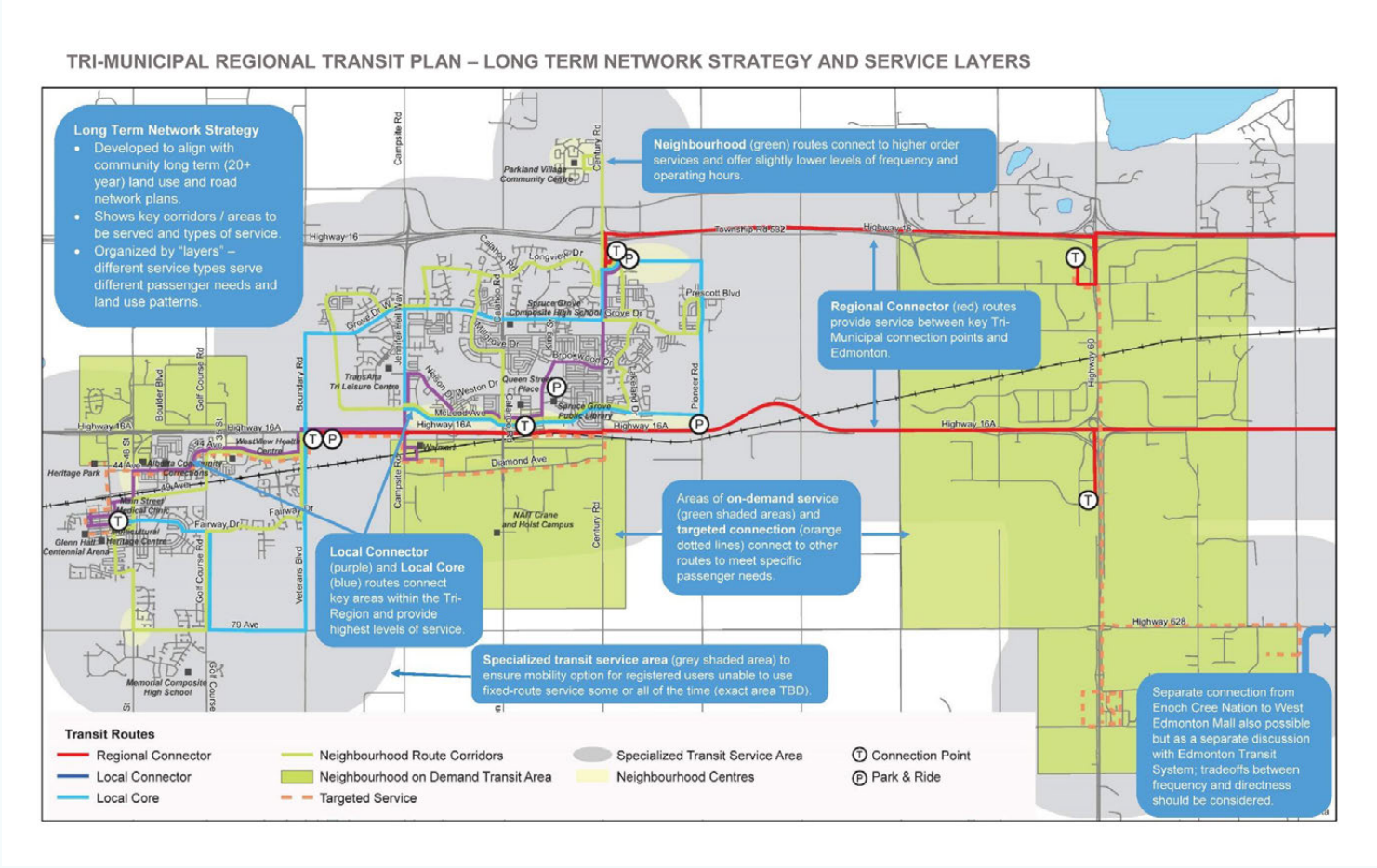


Figure 18 | Tri-Municipal Regional Transit Plan – Long-Term Strategy (Source: Tri-Municipal Regional Transit Plan)

In advance of expanding the transit network, key design and planning elements will need to be prioritized as the community grows, and regional integration increases. This includes:

1. **Scaling/Expanding Local Services.** As demand permits, neighbourhood transit coverage beyond the recommendations in the Tri-Municipal Regional Transit Plan can be considered to provide transportation choices.

2. **Providing Right-Of-Way for Transit Amenities.** Ensure adequate rights-of-way along future transit corridors are protected for to support future transit amenities, including bus shelters and landing pads. This can be done through appropriate cross section design and implementation, as well as coordinated with capital construction or rehabilitation projects.

3. **Multi-Modal Integration and Network Connectivity.** Ensure the active transportation network connects to transit stops and prioritize sidewalk and trail improvements for transit coverage areas. In addition, ensure transit vehicles are equipped with bike racks and other amenities to capture a broader customer base and to promote integrated use of transit and other modes.

4. **Pilot On-Demand Service.** As the need for transit increases, the Town may want to consider piloting on-demand transit service to underserved areas prior to investing in fixed route service, providing the opportunity for administration to learn and adjust dynamically. This however, has a high operating cost and does not effectively manage peak usage.

5. **Integrate Transit Strategies in New Development.** Ensure new or amended ASPs/ development include transit inclusive language and connectivity to network. This can be established as part of the TIA guidelines.

6. **Explore Rideshare Program.** The emergence of ride sharing has prompted questions regarding efficient and effective service delivery. Major advances in on-demand technology through mobile platform have facilitated the rapid growth of ride sharing Transportation Network Companies. These services match users based on their trip origins and destinations and create an on-demand and dynamically scheduled route that transports multiple users in one vehicle. This type of service provides flexible and convenient trips for users at a relatively low cost since the trip is shared with multiple users. Two areas that would be most beneficial to transit agencies and customers are:

    - Late night and weekend transportation options.
    - First and last mile problem – Connections between high-frequency transit hubs and new communities or distant suburban communities and major activity centres.

Transit Strategy Integration Recommendations

1. **Implementing the Tri-Municipal Regional Transit Strategy** – Continue to work towards implementing the goals of the Long-Term Transit Strategy, including in partnership with Parkland County and City of Spruce Grove.
2. **Expanding Local Services** – As warranted, consider expanding transit service beyond the recommendations in the Transit Strategy to serve local neighbourhoods.
3. **Incorporate Transit Design Guidelines** – For future transit corridors, ensure best practices transit design guidelines are incorporated as part of any road construction or reconstruction project.
4. **Integrate with Active Transportation** – As the transit network develops, ensure accessible connections to transit stops and amenities are provided to support pedestrians and cyclists.
5. **New Development Integration** – As applicable, ensure transit inclusive language and network connectivity are included in new or amended ASPs.
6. **Explore Rideshare Opportunities** – Conduct a feasibility study to explore the cost, benefits and implementation of a Ride-Share Program to enhance transit service.

9.0 Implementation & Funding Strategy

This TMP has identified strategic improvements, policies and programs that would address current and future growth, transportation safety and community access. In order to successfully implement the recommended strategies in a systematic and effective way, a quantitative model has been developed based on criteria to prioritize improvements objectively. A framework to guide the decision-making process is also identified to help Council and Town administration to balance competing capital and operating plan priorities. This section of the TMP outlines the strategies to facilitate the implementation of the recommended strategic actions.

9.1. Implementation, Phasing & Prioritization Strategy

The recommended strategic actions to be addressed in the short-term (1-5 years), medium-term (6-15 years) and long-term (15-25 years) were identified based on technical review, community input and the Town's overall vision for transportation and growth.

A prioritization matrix has been developed to rank and identify the priority level of each recommended strategic action. Each potential project is compared as to how they respond to each criterion on a scale of 1 to 3, with 3 being the most responsive (highest) score. The evaluated criteria are as follows:

- **Timelines –** how effective will the improvement be today, when will it be needed (immediately or long term). The higher the score the sooner the need for the improvement. A low score indicates that the project is more long-term in consideration.
- **Safety –** How will the project improve safety. As safety was identified as a one of the key objectives of the TMP, many of these improvements have been developed to consider and address identified safety concerns. The higher the score, the better the improvement from a safety perspective.
- **Operational –** This is a measure of how the proposed project will improve traffic operations, including delays and travel times. The higher the score, the better the operational improvement.
- **Costing –** The capital cost of the project; the higher the score, the lower the cost. This criterion helps raise the overall score of potential "quick win" improvements which can be completed for low cost, similar to a cost-benefit comparison.
- **Active Modes –** How the proposed improvement incorporates or includes active modes. The higher the score, the better the improvement from the perspective of a cyclist, pedestrian, runner, and other active mode user.
- **Community Values –** This criterion incorporates how the improvement fits into the context of Stony Plain, which includes a perceived value a citizen would place on the improvement and how the improvement would be publicly received.

Based on the prioritization established above, an implementation and phasing strategy was established and is summarized in **Table 3** and **Table 4** based on operational and network improvements, and policies and programs, respectively. The detailed evaluation is provided in **Appendix C**.

Table 3 | Implementation & Phasing – Operational & Network Improvements

Location	Recommended Action	Time Frame	Priority	Funding Source
Operational Improvements				
Highway 779				
Highway 779 / 44 Avenue	Add EB left-turn and SB right-turn lanes	Long-Term	Low	Town, Developers
Highway 779 / Highway 16A WB Ramp	Add Signal	Short-Term	High	Town, AT, Developers
Highway 779 / Highway 16A EB Ramp	Add Signal	Long-Term	Medium	Town, AT, Developers
Highway 628				
Highway 628 / Veterans Boulevard	Add Signal	Medium-Term	Medium	Town, AT, Developers
Highway 628 / Westerra Drive	Add EB and WB left-turn lane	Short-Term	High	Town, AT, Developers
Highway 16A				
Highway 16A / Glory Hills Road	Add Signal	Long-Term	Low	Town, AT, Developers
Highway 16A / Rosenthal Road (Range Road 12)	Add Signal	Long-Term	Low	Town, AT, Developers
Highway 16A / South Park Drive	Add second NB and SB left-turn lanes	Medium-Term	Medium	Town, AT, Developers
Network Improvements				
Highway 779				
North of Highway 16A	Widen from two to four lanes between Highway 16A and north limit	Medium-Term	Medium	Town, AT, Developers
South of Willow Park Road	Widen from two to four lanes between Willow Park Road and Highway 628	Beyond 25-Years	Low	Town, AT, Developers
49 Avenue				
49 Avenue East	Implement access management measures such as two-way left-turns	Medium-Term	Medium	Town, Developers
49 Avenue West Extension, Phase 1	Extend west from Highway 779 to Brickyard Drive	Long-Term	Low	Town, Developers
49 Avenue West Extension, Phase 2	Extend west from Brickyard Drive to Range Road 12	Beyond 25-Years	Low	Town, Developers
Golf Course Road				
North of Highway 16A	Surface upgrades from north of Highway 16A to north limit	Medium-Term	Low	Town, Developers
South of Fairway Drive	Widen from two to four lanes between Fairway Drive and Highway 628	Beyond 25-Years	Low	Town, Developers
Highway 628				
Highway 779 to Golf Course Road	Widen from two to four lanes	Beyond 25-Years	Low	Town, AT, Developers

Table 4 | Implementation & Phasing – Policies & Programs

> > = Continuation of action (Action initiated in specified time frame, but can be continued through the later horizons)

Strategy	Recommended Action	Time Frame	Priority	Potential Partners
Road Network Strategy				
Traffic Management Program and Monitoring	Establish a data collection and monitoring program	Short-Term >>	High	Town
	Warrant analysis	Short-Term >>	Medium	Town
	Signal timing optimization & coordination	Short-Term >>	Medium	Town
	Implement TIA guidelines	Short-Term	High	Town, Developers
Operational Improvements	Confirm long term plan for Highway 16A	Short-Term	Medium	Town, AT
Network Improvements	Transfer development authority on Highway 779 and Highway 628	Short-Term	Medium	Town, AT
	Active transportation & transit integration	Short-Term >>	Medium	Town
Transportation Safety Strategy				
Strategic Safety Policies & Program	Collision data collection & monitoring	Short-Term >>	High	Town, Other Agency
	Conduct safety studies	Medium-Term (Based on available data)	Medium	Town
	Establish enforcement and education programs	Short-Term >>	Medium	Town, Other Agency
	Incorporate road safety improvements in Capital Program	Short-Term >>	Medium	Town
	Conduct annual crosswalk review	Short-Term >>	High	Town
	Implement school zone safety strategies and programs	Short-Term >> (As warranted)	Medium	Town, Other Agency
Speed Reduction Measures	Conduct speed limit best practice review	Short-Term	Medium	Town
	Implement speed reduction pilot program	Medium-Term	Medium	Town
Goods Movement	Periodic design standard and road classification review	Medium-Term	Medium	Town
	Review truck restriction signage	Short- Term	Low	Town
Rail Crossing	Review signal timing plans around rail crossings	Short-Term >>	Medium	Town
	Consider opportunities for ITS improvements	Medium-Term	Medium	Town
	Review feasibility for pedestrian tunnel	Short-Term	Medium	Town, Other Agency
	Include rail crossing guidelines/standards for active transportation	Short-Term	Medium	Town

Strategy	Recommended Action	Time Frame	Priority	Potential Partners
Infrastructure Management And Maintenance Strategy				
Rehabilitation & Maintenance	Conduct pavement condition assessment	Short-Term >>	High	Town
	Conduct regular maintenance & rehabilitation on roadways, sidewalks and other roadway elements such as lighting and signage	Short-Term >>	High	Town
	Prioritize roads and sidewalks to be rehabilitated to achieve a 20% backlog	Short-Term >>	High	Town
Road Markings, Lighting and Signage	Conduct signage assessment and update around school areas	Short-Term >>	Low	Town
Alternative Transportation Strategy				
Active Transportation Strategy Integration	Coordinate active modes network expansion and improvements during annual road maintenance, rehabilitation, and reconstruction program	Short-Term >>	Medium	Town
	Ensure active modes are incorporated in the latest ASP and TIA	Short-Term >>	High	Town, Developers
	Implement temporary pilot projects	Medium-Term	Medium	Town
Transit Integration	Implementing the Tri-Municipal Regional Transit Strategy	Short-Term >>	Medium	Town, Other Agency
	Expanding local services	Long-Term	Low	Town
	Incorporate transit design guidelines	Short-Term >>	Medium	Town
	Integrate with active transportation	Medium-Term	Medium	Town
	New development integration	Short-Term >>	Medium	Town, Developers
	Conduct rideshare feasibility study	Medium-Term	Low	Town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9.2. Capital Funding Strategy

The successful implementation of this TMP will not only require acceptance from the community but also require funding and partnership opportunities. A capital funding strategy has been developed to guide transportation investment for the town over the next 25 years. This strategy includes all the specific improvement projects that will incur construction costs.

High-level cost estimates were developed based on the Town of Stony Plain standard cross-sections and municipal development standards as well as the 2020 bid averages from the greater Edmonton area. The estimates include a 20% contingency and land acquisition costs were included where the existing road right of way appears to encroach on the existing roadways. Third-party utility relocations were only identified where aerial maps showed clear conflict with the area of improvement. The cost estimates are intended for planning and budgetary purposes and should be refined and confirmed during the design stage. The detailed cost estimates are provided in **Appendix D**.

Figure 19 highlights the recommended short-term, medium-term and long-term investments and are further described in the following sub-sections.

9.2.1. Short Term Capital Funding Strategy (1 – 5 years)

The operations analysis and network review of the town identified two projects that are required over the next 5 years, including:

1. **Highway 779 / Highway 16A WB Ramp.** Signalize intersection to address existing capacity constraints.
2. **Highway 628 / Westerra Drive.** Add dedicated left-turn lanes in the westbound and eastbound directions on Highway 628 to improve network operations, capacity and safety at the intersection.

Table 5 outlines the implementation costs of each proposed capital improvement project and the total short-term capital investments.

Table 5 | Short-Term Capital Funding

Project	Cost (2020 Dollar)	Cost per meter (2020 Dollar)
1. Highway 779 / Highway 16A WB Ramp – Signalization	$288,000	N/A
2. Highway 628 / Westerra Drive – Add Westbound and Eastbound Left-Turn Lanes	$546,000	N/A
Short-Term Capital Costs		
Total Cost of Short-Term Construction Projects (Includes 20% Contingency and 15% Engineering Costs)		**$834,000**

9.2.2. Medium Term Capital Funding Strategy (6 – 15 years)

The following improvement projects were identified to be implemented over the next six to fifteen years to address operational and connectivity issues around the Town and the associated capital costs are outlined in **Table 6**.

1. **Highway 628 / Veterans Boulevard.** Signalize the intersection to address existing capacity constraints and improve level of service.
2. **Highway 16A / South Park Drive.** Add second left-turn lane in the northbound and southbound direction to provided additional turning movement storage at the intersection.
3. **Highway 779 (North of Highway 16A).** Widen Highway 779 from north of Highway 16A to town limits to provide additional road capacity.
4. **49 Avenue.** Implement a two-way left-turn lane to support development and improve access management along 49 Avenue.
5. **Golf Course Road (North of Highway 16A).** Pavement improvements on Golf Course Road between Boulder Boulevard to the town limits to support goods movement and the function of the roadway.

Table 6 | Medium-Term Capital Funding

Project	Cost (2020 Dollar)	Cost per meter (2020 Dollar)
1. Highway 628 / Veterans Boulevard – Signalization	$230,000	N/A
2. Highway 16A / South Park Drive – Additional Turn Lanes	$3,174,000	N/A
3. Highway 779 (North of Highway 16A) – Widening to 4-lane Cross Section	$1,032,000	$2,580/m
4. 49 Avenue – Two-way Turn Lane	$924,000	$1,155/m
5. Golf Course Road (North of Highway 16A) – Paving	$2,760,000	$1,840/m
Medium-Term Capital Costs		
Total Cost of Medium-Term Construction Projects (Includes 20% Contingency and 15% Engineering Costs)		**$8,120,000**

9.2.3. Long Term Capital Funding Strategy (16 - 25 years, 25+)

Several improvement projects are recommended for implementation within the 16 - 25 year range and beyond the scope of the TMP (25+ years) based on the long-term analysis as well as previous and future town planning. These improvements are further described below.

Long-Term (16 – 25 years) Improvement Projects:

1. **49 Avenue West Extension Phase 1 –** Extend 49 Avenue from Highway 779 to Brickyard Drive to support the development in the Brickyard and Old Town areas using 2-lane collector cross-section standards.
2. **Highway 779 / Highway 16A EB Ramp –** Signalize intersection to improve intersection level of service when future traffic volumes warrant improvement.
3. **Highway 16A / Glory Hills Road –** Signalize intersection to address capacity constraints when future traffic volumes warrant improvement.
4. **Highway 16A / Rosenthal Road –** Signalize intersection to address capacity constraints when future traffic volumes warrant improvement.
5. **Highway 779 (48 Street) / 44 Avenue –** Provide additional eastbound left turn lane on 44 Avenue as well as a southbound right-turn lane on Highway 779 (48 Street).

Beyond 25 Years Improvement Projects:

1. **Highway 628 Capacity Improvements (Highway 779 to Golf Course Road) –** Upgrade 2-lane cross section to 4-lane urban arterial standard or as per Alberta Transportation recommendations.
2. **Highway 779 Capacity Improvements (Willow Park Road to Highway 628) –** Extend 4-lane undivided arterial cross section from Willow Park Road to Highway 628.
3. **Golf Course Road Capacity Improvements (Fairway Drive to Highway 628) –** Extend 4-lane undivided arterial cross section from Fairway Drive to Highway 628.
4. **49th Avenue West Extension Phase 2 –** Extend 49 Avenue from Brickyard Drive to Range Road 12 carrying through the cross section from Phase 1 (2-lane collector).

The implementation costs of each proposed capital improvement project and the total capital investment in the long-term and beyond 25 years are outlined in **Table 7** and **Table 8**, respectively.

Table 7 | Long-Term Capital Funding

Project	Cost (2020 Dollar)	Cost per meter (2020 Dollar)
1. 49 Avenue – West Extension Phase 1	$2,432,000	$3,475/m
2. Highway 779 / Highway 16A EB Ramp – Signalization	$288,000	N/A
3. Highway 16A / Glory Hills Road – Signalization	$288,000	N/A
4. Highway 16A / Rosenthal Road – Signalization	$322,000	N/A
5. Highway 779 / 44 Avenue – Additional turn lanes	$1,173,000	N/A
Long-Term Capital Costs		
Total Cost of Long-Term Construction Projects (Includes 20% Contingency and 15% Engineering Costs)		**$4,503,000**

Table 8 | 25+ Year Capital Funding

Project	Cost (2020 Dollar)	Cost per meter (2020 Dollar)
1. Highway 628 – Capacity Improvements (4 lane cross-section)	$6,222,000	$6,220/m
2. Highway 779 (Willow Park Road to Highway 628) - Widen to 4-Lanes	$2,440,000	$3,250/m
3. Golf Course Road (Fairway Drive to Highway 628) – Widen to 4-Lanes	$4,646,000	$2,995/m
4. 49 Avenue – West Extension Phase 2	$7,988,000	$3,295/m
25+ Year Capital Costs		
Total Cost of Long-Term (25+ Years) Construction Projects (Includes 20% Contingency and 15% Engineering Costs)		**$21,296,000**

Short-Term Improvements

S1 - Highway 779 & Highway 16A WB Off-Ramp, Signalization
S2 - Highway 628 & Westerra Drive, Add Dedicated EB & WB Left-Turn Lane

Medium-Term Improvements

M1 - Highway 628 & Veterans Blvd, Signalization
M2 - Highway 16A & South Park Drive, Additional Turn Lanes
M3 - Highway 779 (North of Highway 16A), Widen to 4-lane Cross Section
M4 - 49 Avenue, Two-way Turn Lane
M5 - Golf Course Road (North of Highway 16A), Paving

Long-Term Improvements

L1 - 49 Avenue, West Extension Phase 1
L2 - Highway 779 & Highway 16A EB Ramp, Signalization
L3 - Highway 16A & Glory Hills Road, Signalization
L4 - Highway 16A & Rosenthal Road, Signalization
L5 - Highway 779 & 44 Avenue, Additional turn lanes

Beyond 25-Years Improvements

B1 - Highway 628 (Highway 779 to Golf Course Road), Widen to 4-lane Cross Section
B2 - 49 Avenue, West Extension Phase 2
B3 - Highway 779 (South of 57 Avenue to Highway 628), Widen to 4-lane Cross Section
B4 - Golf Course Road (Fairway Drive to Highway 628), Widen to 4-lane Cross Section

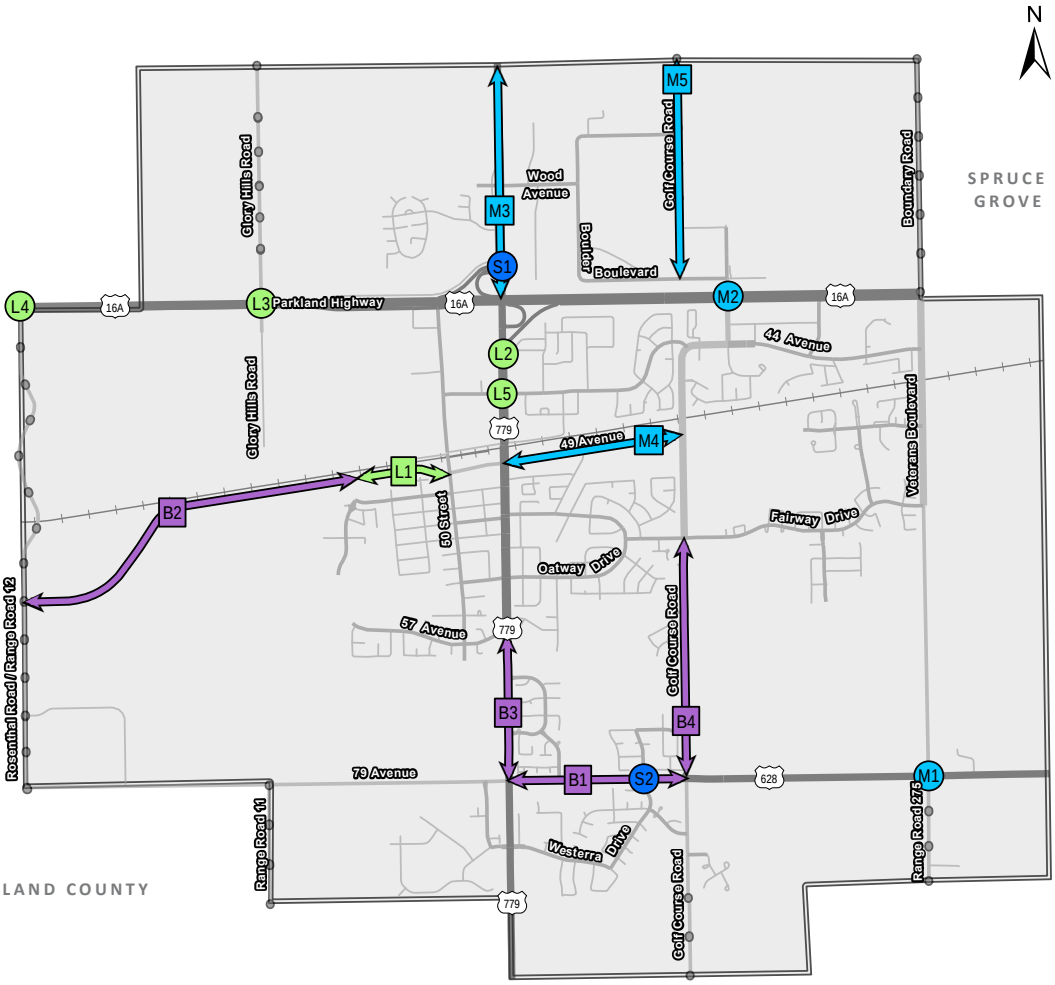

Figure 19 | Proposed Capital Projects by Phasing

9.3 Plan Updates

This TMP is a guide for the development and implementation of transportation infrastructure, programs and policies in Stony Plain over the next 25 years. It is intended to be a living document and the recommendations should be reviewed annually to ensure it continues to meet the transportation needs of the community. The TMP also requires regular updates to address shifting mobility trends, growth and development patterns, and community expectations. It is recommended that the TMP be updated every five to seven years to ensure it remains relevant and aligns with other guiding documents and statutory plans such as the Municipal Development Plan.

APPENDIX A

What We Heard Report

WHAT WE HEARD REPORT

Town of Stony Plain

Transportation Master Plan

September 2020

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CONTENTS

1.0 Engagement Context

The Town of Stony Plain is a vibrant and growing community located just west of the City of Edmonton. With a population of almost 18,000 people, this residential-based community also serves a mix of commercial and industrial areas. Stony Plain's proximity to neighbouring communities, including Spruce Grove, Parkland County and Edmonton, provide residents and visitors easy access to a range of amenities and recreation. As the Town continues to grow and evolve, it is important to establish an integrated approach to planning investments in transportation to support the movement of people and goods and development within Stony Plain and through the surrounding region, particularly through the Tri-Municipal Region.

Although a Transportation Master Plan (Transportation Study) was completed in 2011, the community has grown at a considerable pace and a new Transportation Master Plan (TMP) is needed to support further growth and development.

The successful delivery of a project is often just as reliant on community buy-in as it is on good technical recommendations. Without enough support from the community, even the most beneficial initiative may never receive approval or funding. As such, community involvement can be a critical element for project success. Effective community engagement is about enabling those impacted by a decision to be meaningfully involved in influencing the decision-making process. It is also about providing decision makers the information they need to be confident in their conclusions.

We recognize the TMP update will involve a wide range of stakeholders with different engagement needs and our approach is designed to support transparent, accessible and inclusive engagement throughout the project to generate valuable input and foster community buy-in. Our proposed approach includes an on-line interactive mapping workshops targeted to key representatives within the community (incl. Administration, Council and key stakeholder groups), and Council sessions, ensuring that all have opportunity to participate and be heard.

2.0 Engagement Goals & Objectives

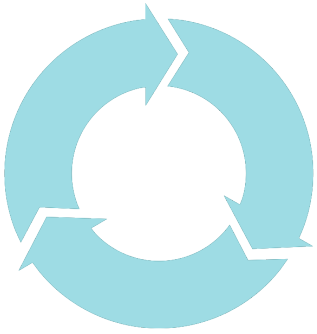
The main goal of engagement is to facilitate development of a new Transportation Master Plan that aligns with the community's vision and priorities for mobility and infrastructure investment. Engagement should foster meaningful discussion so input is valuable to technical analysis, and the resulting technical recommendations should be checked against how well they meet the community's input. Finally, the feedback loop should be clear, so stakeholders understand how their input will be used, if it was used and why or why not.

To achieve these goals, project information must be easily accessible to the population at large, using plain language in an engaging format and a variety of avenues to deliver the information. The project web page will be a key touch point for delivering information, providing links to content, surveys and contact information, alongside a clear explanation of what to expect next.

Engagement will be broad and diverse, reflecting a range of stakeholder groups. It will also ensure that highly impacted stakeholders are directly involved throughout each stage of plan development. Lines of flexible communication will be opened to key stakeholder groups, such as Alberta Transportation, outside communities, and others, so they are in the loop and have ample opportunity to participate. Whether stakeholders want to passively or actively engage, opportunities will be presented that meet a variety of desired participation levels.

Engagement will also be responsive to evolving stakeholder needs as the project unfolds, adapting approaches per ongoing feedback. To that extent, engagement success will be measured to gauge what works and what needs adjusting. Measurements will be qualitative and quantitative, building upon various forms of stakeholder and project team feedback to ensure engagement hears, acknowledges and responds to evolving needs.

In response to the COVID-19 pandemic, the public engagement plan will be tailored to meet current social distancing practices.



3.0 Stakeholder Assessment

This assessment identifies key stakeholder groups, how they may be affected by project decision, how they may affect project decisions and how they may participate. Stakeholders have been categorized as part of Town Administration (Internal) and separate from Town Administration (External).

3.1 INTERNAL STAKEHOLDERS

COUNCIL

Possible Impacts of Project Decisions on Stakeholder:

Project recommendations will impact their future decisions and the wards they represent. Council will need to decide whether they adopt the project recommendations, then will need to decide whether they approve resulting capital planning and regulatory changes (i.e. levy structure).

Ability of Stakeholder to Affect Project Decisions:

Ultimately responsible for approving and adopting project recommendations.

Likely Stakeholder Engagement Expectations:

Desire for involvement may vary depending on the Councillor.

Ability of the Project to Meet Stakeholder Engagement Expectations:

It may be difficult to meet expectations for a high level of involvement. Council will be informed, but not involved until they are asked to approve/adopt project recommendations. Councillors seeking more involvement will need to work with their wards during engagement.

OTHER DEPARTMENTS

Possible Impacts of Project Decisions on Stakeholder:

Project recommendations will set priorities and initiatives that may directly affect ongoing projects, planning and workloads. Existing policies and processes may also be impacted, such as prioritization of sidewalk rehabilitation projects, neighbourhood renewal, emergency response times, parks & recreation plan integration, snow clearing or crosswalk control warranting.

Ability of Stakeholder to Affect Project Decisions:

Provide input into and feedback on ideas and project recommendations.

Likely Stakeholder Engagement Expectations:

Desire for involvement may vary depending on how they are impacted by the project.

Ability of the Project to Meet Stakeholder Engagement Expectations:

Certain. A variety of engagement opportunities will be provided to this stakeholder group, ranging from informing (internal updates and webpage) to collaborate (workshop).

3.2 EXTERNAL STAKEHOLDERS

PUBLIC

Possible Impacts of Project Decisions on Stakeholder:

Project recommendations will impact how people move around Stony Plain, how they access Stony Plain, ands how their civic funds are allocated to shape their community.

Ability of Stakeholder to Affect Project Decisions:

Provide input into and feedback on ideas and recommendations.

Likely Stakeholder Engagement Expectations:

Desire for involvement may range from low to high.

Ability of the Project to Meet Stakeholder Engagement Expectations:

Certain for those expecting Inform to Involve level of engagement, but it will be difficult to meet expectations of those seeking a Collaborate or higher degree of involvement since the greatest opportunity for meaningful and impactful involvement will be during implementation of the recommended priorities from the TMP.

3.3 RECCOMMENDED LEVEL OF ENGAGEMENT

The following table recommends appropriate levels of engagement based on anticipated stakeholder needs and project ability to meet those needs. This table builds upon the International Association of Public Participation (IAP2) spectrum of participation and the Town of 's Public Participation Policy. Per the Public Participation Policy, the following commitments are made for each level of engagement:

- Inform: We will keep you informed.
- Consult: We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.
- Involve: We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.
- Collaborate: We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.
- Empower: We will implement what you decide.

4.0 Key Messages

The following key messages provide a basic overview of the project to communicate what is happening, why it is happening and how it will happen. These messages may need to evolve as the project unfolds and more clarity is developed regarding specific technical directions.

What is the project?

This project will develop a Transportation Master Plan to support Stony Plain's transportation needs today, tomorrow and into the future. This project is about more than just roads, it's about guiding transportation investments to provide safe, attractive and efficient options for moving people and goods around the town.

The Transportation Master Plan will:

- Assess what is currently happening with Stony Plain's transportation network;
- Address what needs to happen as the community continues to grow and evolve; then
- Advance an implementation plan with recommendations for projects, initiatives and investments to guide transportation network management and growth.

Why is this project happening?

Stony Plain is growing, and the transportation needs of the community are evolving alongside that growth. Town needs a direction to reflect how evolving economic activities, development planning and community dynamics are changing transportation needs.

Why is this project important?

Recommendations from the Transportation Master Plan will impact how Stony Plain invests in transportation infrastructure and manages growth. Some recommendations will impact how the Town does business by clarifying transportation links for future neighbourhoods or feeding into the policies and bylaws that guide how the transportation network is managed. Other recommendations will impact how transportation projects are prioritized for funding, including corridor improvements, pathway construction and transit facility investments.

There are many competing needs for how people and goods move around the Town, whether it's walking, rolling, busing, driving or trucking. The Transportation Master Plan will recommend a prioritized implementation plan that balances how the community invests in mobility as it grows.

Who will be involved?

Involvement from the entire community is needed so recommendations from the Transportation Master Plan incorporate and reflect the needs and priorities of residents, visitors, developers and businesses.

How will the community be involved?

The following three rounds of engagement will occur at critical points in the project. These rounds are explained further in Section 4.1 Engagement Process.

5.0 Engagement Activities, Resources & Timelines

5.1 ENGAGEMENT PROCESS

The following three rounds of engagement were developed to support development of the Transportation Master Plan:

ROUND 1

This round of engagement will seek for input regarding Where are we now and where do we want to go? Input from the round of engagement will inform the key issues that are addressed in the Transportation Master Plan and will develop the key principles that guide development of alternatives to address how the community will invest in mobility as it grows. Input will be captured in a What We Heard report that is made available on the project webpage.

ROUND 2

This round of engagement will seek input regarding How do we get there? Engagement will commence with an explanation of how input from Round 1 engagement was or wasn't used to develop options and why, so the community understands the value of their feedback and where it was incorporated. Feedback received during this round of engagement will be used to refine and prioritize recommendations for the Transportation Master Plan, and the final recommendations will be weighed against how well they align with the key guiding principles developed with community.

ROUND 3

The third round of engagement will not seek community input, but rather will present a Transportation Master Plan that is built upon the prioritized and refined options identified during the last round of engagement, outline how community input was (or wasn't) used and why, then let the community know what to expect as the Town moves towards implementation of the Transportation Master Plan.

Figure 1 - Rounds of Engagement

5.2 FEEDBACK LOOP

The proposed feedback loop, illustrated below, will need to be responsive to evolving community engagement needs as the project unfolds and may be modified throughout the project accordingly.

Figure 2 - Feedback Loop

1 Where are we now & where do we want to go?

What is the timeline?

April 30th - July 30th

What is the Goals & Objectives?

- Goal: Focus on developing the foundational understanding of current issues, needs and opportunities in Stony Plain.
- Objectives: Establish a governing vision to guide the direction of the TMP through feedback from the stakeholder engagement and technical findings.

The above timeline may shift if additional origin-destination data collection is pursued, as this will impact traffic model development timelines and move the internal workshop to a later date.

What will be asked?

- What principles should drive transportation investments as Stony Plain grows?
- How do people currently move around Stony Plain?
- What is working well and what could be improved?
- What would you like to see more or less of?
- What advantages currently exist?
    a. What is working well and what could be improved?

How will feedback be used?
Feedback from this round of engagement will directly impact technical work completed in Phases 1 and 2 of the project (refer to Project Management Plan for technical phasing). Input from the round of engagement will inform the key issues that are addressed in the Transportation Master Plan and will develop the key principles that guide development of alternatives to address how the community will invest in mobility as it grows. Input will be captured in a What We Heard report that is made available on the project web page and will be reviewed at the beginning of the next round of Engagement.

What methods will be used?

1. Public Engagement

    - Method: Vertisee - Public can leave comments on a map of Stony Plain. We will give them specific themes that they can choose to comment on (safety concern, traffic congestion, trail opportunity etc.).
    - Purpose: Introduce the community to the engagement, so people understand what happened with their feedback.
    - Transportation Master Plan and engage in discussions on the current issues, opportunities and aspirations surrounding the transportation network and growth.
    - Objectives: Get public answers to questions outlined in “what will be asked.”

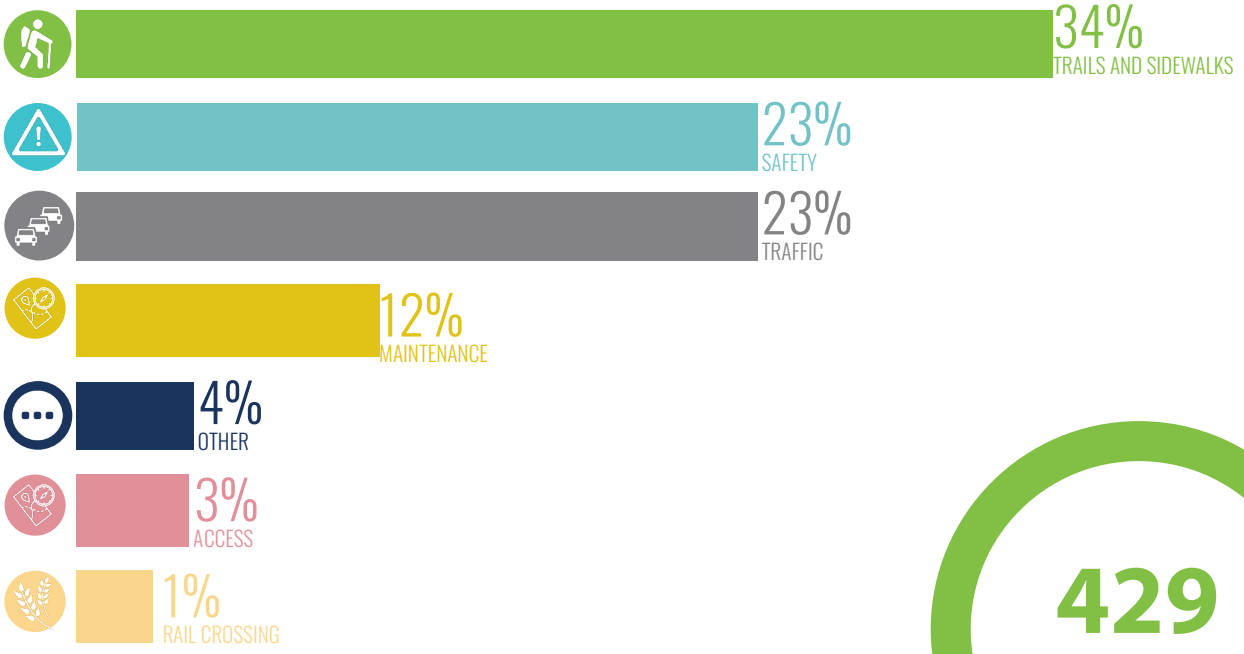
2. CoW / Council Engagement

    - Confirmation of the governing vision to guide the project.
    - What we heard from the first round of public engagement – issues, needs and aspirations.
    - What we know from review of existing statutory and non-statutory plans – issues, needs and aspirations.
    - Outline of the next phase of the project – where do we want to go.

Round 1 Task / Activity	Description & Responsibility	Timeline
Engagement Materials	• Project Team will develop / submit engagement content / public activity plan, workbook outline, ad / web page / survey content); • Stony Plain will review and provide feedback to Project Team; • Project Team will finalize materials and submit to Stony Plain.	June 2020
Engagement Planning	• Project Team will develop Vertisee Site for Stony Plain; • Stony Plain will distribute engagement ads through desired platforms; • Stony Plain will manage public engagement social media campaign; • Stony Plain will identify representatives for Council Presentation and extend invites (Online presentation may be established in response to COVID-19 precautions)	June 2020
Engagement Facilitation	• Stony Plain will update web page and deploy Vertisee; • Project Team will monitor and collect on-line survey feedback; • Project Team will present to Council.	June 2020
Engagement Feedback Loop	• Project Team will develop / draft What We Heard engagement summary; • Stony Plain will review and provide feedback at project meeting;	June 2020

What We Heard

The first phase of community engagement was comprised of public consultation in the spring of 2020. This round of engagement sought input on the key issues to be addressed in the Transportation Master Plan, as well as the key principles to guide the Plan development. Vertisee, an interactive map was launched on the Town's website on May 24th, 2020 to obtain community feedback and concluded on September 8th, 2020. A total of 429 responses have been collected.



Priorities Based on Results

Based on the feedback received to-date, the following top six (6) key areas of concern were identified. Comments provided from Vertisee can be found in Appendix A.

1. Trails & Sidewalks - 34%
2. Safety Concerns - 23%
3. Traffic - 23%
4. Maintenance - 12%
5. Access - 3%
6. Rail Crossing - 1%

Suggestions for Improving Trails/Sidewalks

- Surface improvements (eg. Gravel/dirt paths converted to asphalt)
- Continuation of existing trail networks (eg. Fill in missing gaps, complete the sidewalk network)
- Trail maintenance improvements

Suggestions for Improving Safety

- Speed reductions (eg. Traffic calming in high speed areas)
- Enforcement of Traffic Bylaws
- Maintenance of Landscape to improve sight lines
- Roadway Maintenance (eg. repaving, fixing potholes, regrading, etc)
- Traffic Control Improvements (adding lights to intersections)
- Adding crosswalks to high pedestrian locations

Suggestions for Traffic

- Intersection or roadway improvements (e.g. Additional turn lanes, widen roads, sight lines, lane configuration etc)
- Traffic control improvements (eg. Roundabout, traffic light reassessment, etc)
- Parking improvements and restrictions
- Operation and maintenance improvements (eg. Paint lines)
- Speed reductions (eg. Traffic calming in high speed areas)

2 How do we get there?

Discussions, timelines, tools and activities identified for this round of engagement are preliminary and will need to adjust to evolving needs as the project unfolds and community expectations become clear.

What is the timeline?
Phase Two – Where do we want to go? May 28th - September 3rd.

What is the Goals & Objectives:

- Goal: Focus on establishing a common vision for how Stony Plain's resources and assets will evolve alongside growth and what we want to accomplish.
- Objectives: Confirm aspirations for growth and identify opportunities for improvements.

What will be asked?

- These are the key guiding principles we heard at the beginning of the project. Is anything missing?
- Do these ideas and options meet the key guiding principles identified at the beginning of the project?
- Are there other ideas and options that meet the key guiding principles and should be explored?
- How would you prioritize these options and why?

How will feedback be used?
Feedback from this round of engagement will directly impact technical work completed in the final Phase 3 of the project (refer to Project Management Plan for technical phasing). Engagement will commence with an "What We Heard" report to explain how input from Round 1 engagement was or wasn't used to develop options and why, so the community understands the value of their feedback and where it was incorporated. The key guiding principles developed during Round 1 will be confirmed with internal stakeholders to ensure nothing was missed. Once guiding principles are confirmed, input will be sought regarding options and priorities that were developed using Round 1 input. Feedback received during this round of engagement will be used to refine and prioritize recommendations for the Transportation Master Plan, and the final recommendations will be weighed against how well they align with the key guiding principles developed with community.

What methods will be used?

1. Public Engagement
   - A media release will be used to present the "What We Heard" report from the first round of engagement.

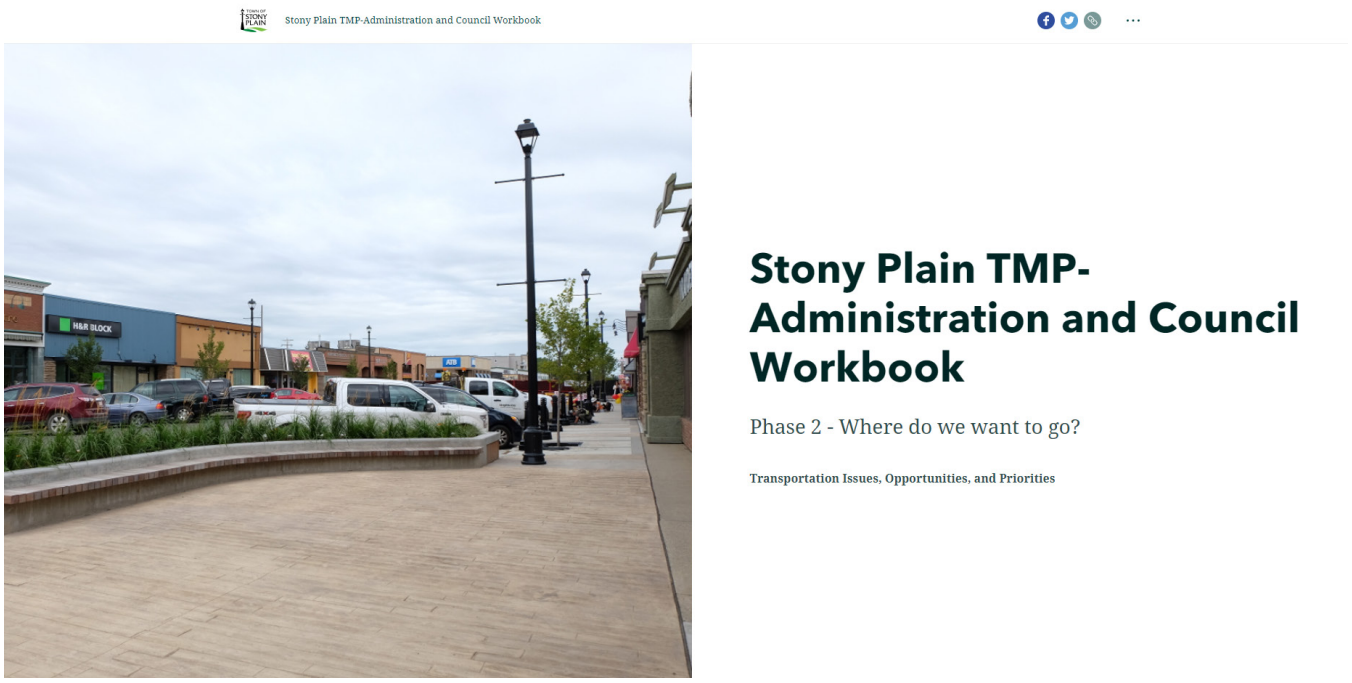
2. Internal Engagement
   - Method: Teams Workshop with key internal stakeholders. Council will also be invited as optional. The Team platform allows live result polling to get answers and create discussion during the presentation. The workshop will be structured according to the number participants.
   - Purpose: Give other internal departments a chance to provide input to ensure a collaborative approach.
   - Objectives: The workshop will begin with an overview of the Draft Transportation Network Assessment that leads into discussion to confirm the assessment and identify gaps, then will end with group brainstorming to explore opportunities to be assessed. Get answers to questions noted in "What will be asked?"

3. CoW/Council Engagement
   - The preliminary issues, challenges and opportunities that will be addressed in the TMP.

Round 2 Task / Activity	Description & Responsibility	Timeline
Engagement Materials	• Project Team will develop / submit engagement content (Internal Stakeholder Workshop Plan) • Stony Plain will review and provide feedback to Project Team; • Project Team will finalize materials and submit to Stony Plain.	June 2020
Engagement Planning	• Project team will organize online Internal Stakeholder Workshop and address logistics; • The Town will plan media release for the public; • Project team will organize online Council presentation;	July 2020
Engagement Facilitation	• The Town will update project web page; • Project Team will facilitate and document Online Stakeholder Workshop; • Project Team will monitor and collect on line survey feedback; • The Town and Project Team will deploy media release; • Project Team will present to Council.	August 2020
Engagement Feedback Loop	• Project Team will develop / draft What We Heard engagement summary following internal engagement workshops; • Project Team will review feedback and direction for project recommendations;	September 2020

What We Heard

The second phase of engagement was comprised of an Online Work booklet that included a survey and interactive mapping exercise for Internal Stakeholders and Council.



Within the Work Booklet, a survey was provided to gather feedback on what the key issues and opportunities were for the Transportation Master Plan. Each are ranked from most important to least.

KEY ISSUES

1. Sidewalk and Trail Connections
2. Accessibility for persons with restricted mobility
3. Traffic Control and Signal Coordination
4. Road Congestion and Capacity
5. Driving Safety

OPPORTUNITIES

1. Making it easier for pedestrians and non-motorized use to move around the Town through new or improved active transportation connections
2. Making the most out of our existing road space through periodic maintenance, rehabilitation, and/or integration with infrastructure for active transportation
3. Improve safety for people who walk by enhancing pedestrian facilities (e.g. more sidewalks, signage, etc.) and amenities (e.g. illumination, benches, etc.)
4. Constructing new roads to support growth and development, only if necessary
5. Maintaining and enhancing active transportation facilities such as sidewalks, multi-use trails, bike lanes, etc

RANKED FUNDING PRIORITIES

1.  Improving Road (or System) Safety

2.  Reducing Road Congestion & Adding More Road Capacity for Vehicles

3.  Constructing more Active Transportation Connections Between Communities and Key Destinations

4.  Constructing more amentiy features (e.g. nodes/hubs, wayfinding, landscape. etc) to support Active Transportation.

5.  Grade Separation for Rail Crossings to Improve Network Reliability

Based on the results we collected from the Round One engagement, we tested whether there were key points that may have been excluded.

SAFETY

- Cross walk safety improvements (Safe Journey's principles)

TRAIL OPPORTUNITIES

- Trail lighting
- Way finding
- Conversion of sidewalks to multi-use trails where applicable
- Pedestrian Bridge Saftey Improvements (missing railings on some pedestrian bridges)
- Reducing unneeded trails
- Maintenance improvements

TRAFFIC OPERATIONS

- Improve coordinated transportation planning and construction with future development, Alberta Transportation and regional partners
- Improved Efficiency of light patterns
- Improving traffic line painting to match intersection geometry and turning movements, speed reductions supported by evidence.

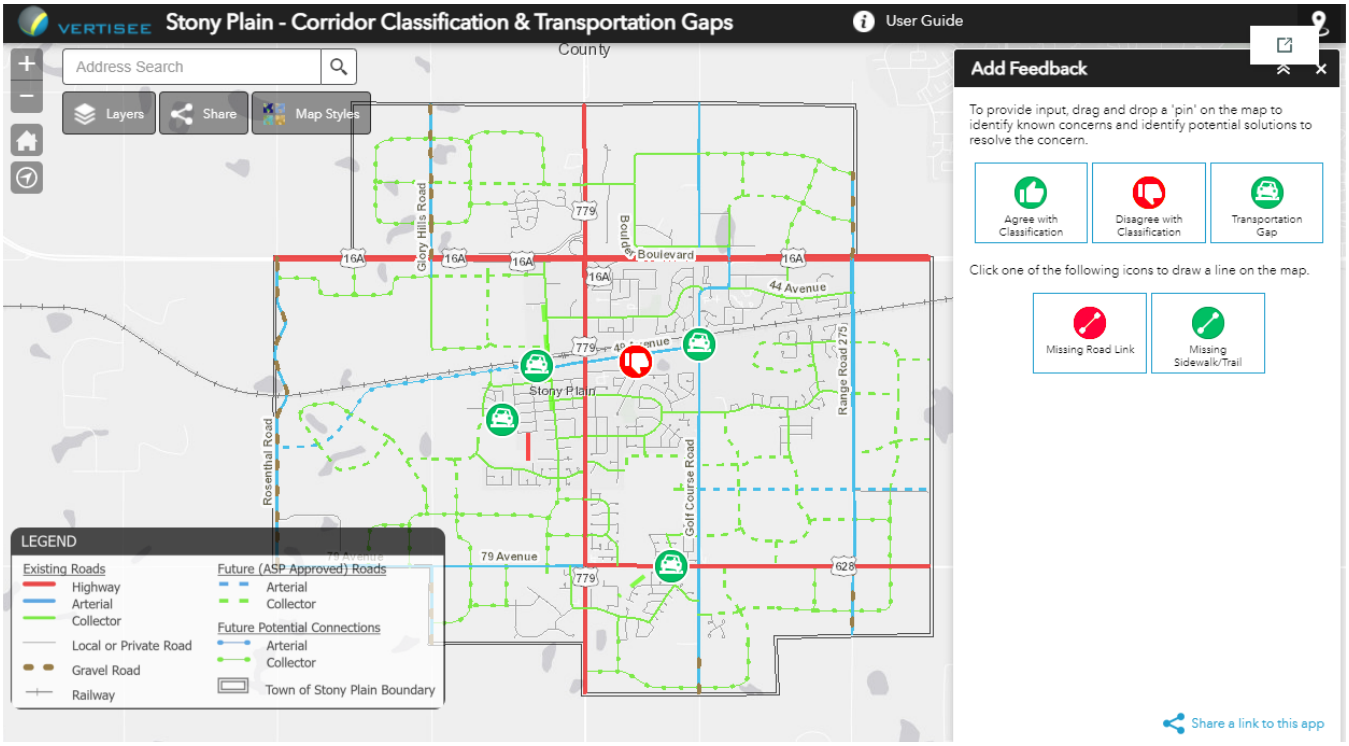
MAINTENANCE

- Improve maintenance on alleys and range roads
- Potholes
- Trail maintenance

The final portion of the Work Booklet involved a Vertisee mapping Exercise which garnered feedback on Stony Plain's Current Corrdior Classification and Transportation Gaps and the Network Performance of its intersections.

Classification & Transportation Gaps

Within this mapping exercise, respondents were asked whether they agreed with the existing and future road classifications, notify us where an existing transportation gaps exists, and where the road and sidewalk/trails have a missing link.



Transportation Gaps & Missing Links:

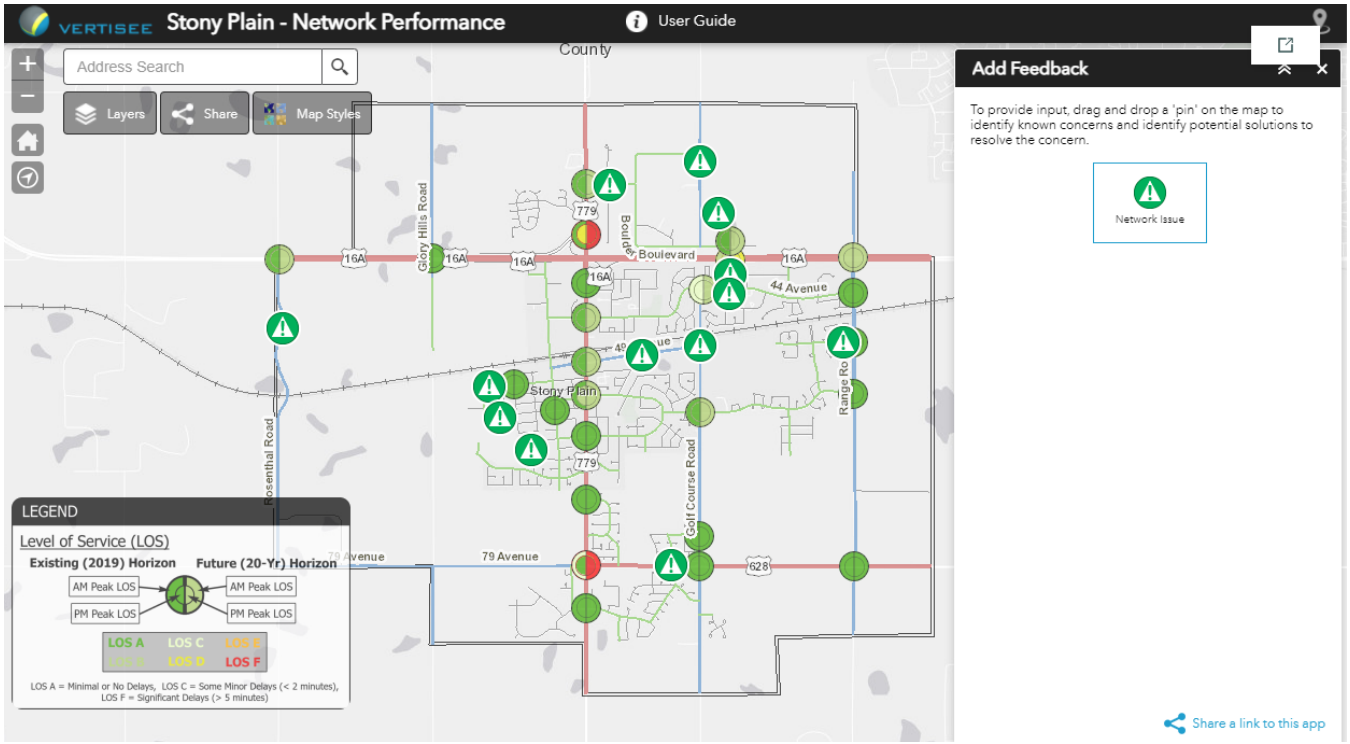
- 49 Avenue and Golf Course Road
- Missing Gap west of 50th street on 49 Avenue
- Missing Link from 52 Street to 57 Avenue

Sidewalk/Trail Missing Links:

- Missing Trail from Heritage Park to Downtown

Network Performance

Within this mapping exercise, key intersection's existing and future level of service were presented and respondents were asked to identify known concerns and identify potential solutions to resolve the concern.



Network Concerns:

- Legend Trail and Goertz Avenue along Wood Avenue is offset causing visibility issues
- Safety Concern at South Park Drive and 43 Avenue
- Safety Concern at South Park Drive and 46 Avenue
- 49 Avenue and Golf Course Road - Rail crossing causes traffic to back up both south of rail crossing along Golf Course Road
- 79th Avenue and High Park Road is highly congested at peak times

3 What happens next?

Discussions, timelines, tools and activities identified for this round of engagement are preliminary and will need to adjust to evolving needs as the project unfolds and community expectations become clear.

What is the timeline?
How do we get there? September 10th - February 25th

What is the Goals & Objectives:

- Goals: Focus on creating a prioritized and staged plan that aligns with related programs to help the Town guide growth-related initiatives, efforts and investments.
- Objectives: Test and prioritize options that addresses the long-term needs of Stony Plain.

What will be asked?
The third, and last, round of engagement will not be seeking community input, but rather will present the prioritized options identified during the last round of engagement, refined into a strategic Transportation Master Plan, outline how input was (or wasn't) used and let the community know what to expect next as the Town moves towards implementing the Plan.

What methods will be used?

1. Public Engagement
   - Method: Media Release on appropriate online websites, and mail outs with property tax assessments.
   - Purpose: Close the loop with the public.
   - Objective: Inform the community on how the input was used and inform the next steps of implementing the Transportation Master Plan.
2. Internal Engagement
   - Method: Workshop with key internal stakeholders. Council will not be invited to this workshop.
   - Purpose: Give other internal departments a chance to provide input to ensure a collaborative approach.
   - Objective: This workshop will focus on confirming the opportunities identified in Phase 2 as a final check-in to ensure the right options have been considered for the Transportation Master Plan. The workshop will end with an exercise to test and set priorities, incorporating needs and plans from several perspectives, then setting the considerations that will guide evaluation of options and development of staged priorities and recommendations.
3. CoW/Council Engagement
   - Establish integrated transportation and land use policies that support more sustainable 'complete' development within the Town.
   - Establish specific road design guidelines that integrate with guidelines established in the Active Transportation Strategy
   - Establish policies that enhance connectivity, promote safe mobility, support economic growth and/or maintain cultural and heritage aspects of the Town in defined key destination areas.
   - Establish design guidelines to enhance pedestrian/trail connections in key destination zones, natural areas and between communities and schools.
   - Establish specific LOS thresholds for specific zones within the Town that are based on expectations and land uses rather than delays and road classifications.

Round 3 Task / Activity	Description & Responsibility	Timeline
Engagement Materials	• Project Team will develop / submit engagement content (web page update content, Internal Stakeholder Workshop Outline, Final Council Presentation Outline); • Stony Plain will review and provide feedback to Project Team; • Project Team will finalize materials and submit to Stony Plain.	September 2020
Engagement Planning	• Project Team will organize Internal Stakeholder Online Workshop and address logistics; • Project Team will organize online Council presentation; • The Town will manage public engagement social media campaign.	November 2020
Engagement Facilitation	• The Town will update project web page; • Project Team will facilitate and document Stakeholder Workshop; • Project Team will present to Council.	February 2020

APPENDIX B

Travel Demand Model & Traffic Analysis

MEMORANDUM

To	From
Brett Newstead, P.Eng. Project Manager	Elaine Lau, P.Eng., PTOE Senior Transportation Engineer
Re	**Date**
Stony Plain TMP – VISUM Model Update & Traffic Analysis	February 12, 2021

1. INTRODUCTION

As part of the 2011 Transportation Study, a travel demand model for Stony Plain was developed using VISUM software. This model (2011 model) was used to forecast PM peak hour travel demands as a result of population and employment growth, and the model results were used to guide the development of road network improvements to be incorporated in the 2011 Transportation Study.

In 2020, the Town of Stony Plain initiated the update of the 2011 study to establish a Transportation Master Plan (TMP) to address current mobility trends and growth policies. In order to support the TMP development, as well as future transportation and land use planning in Stony Plain, there was an identified need to update the 2011 model to capture current travel patterns and land use assumptions. A 2019 base model (2019 model) was developed and calibrated to represent current traffic conditions and forecast future traffic conditions under two future growth scenarios.

This memorandum summarizes the background, calibration, analysis and findings of the 2019 model development.

1.1. Objectives

The objectives of the VISUM model update are to:

- Use 2016 Census data to update and calibrate the 2019 model to current conditions, and produce a validation dataset showing the model fit to observed conditions; and
- Analyze the future transportation network conditions to identify expected issues with system performance and evaluate the effectiveness of planned future road links to address those issues.
- Identify the required road improvements within the timeframe of the TMP.

2. MODEL FRAMEWORK

Building from the 2011 model, the 2019 model update was developed based on the following inputs and assumptions.

- **Network Inventory**. The base road network was updated based on a review of the latest mapping provided by the Town and confirmation with Town staff. Information on number of lanes, road classification, lane capacity and posted speeds were also updated in the model. Generally, the major road network (highways, arterials, and collectors) within the municipal limits of the Town of Stony Plain were included in the base

network. The future road network reflects the planned connections outlined the various approved Area Structure Plans.

The lane capacity assumptions in the 2011 model were also refined to better distinguish the function and road capacity of each road classification. **Table 1** outlines the capacity per lane per hour by road classification type.

Table -: Lane Capacity by Road Classification

Road Classification	Capacity per Lane per Hour	Speed (km/hr)
Highway	1,500	100 km/hr
	1,500	80 km/hr
Expressway	1,200	70 km/hr
	1,200	60 km/hr
Ramp – 2 Lane	1,200	60 km/hr
Ramp – 1 Lane	1,000	50 km/hr
Arterial	1,200	70 km/hr
	1,000	60 km/hr
	1,000	50 km/hr
	900	50 km/hr
Collector – Commercial / Industrial	800	50 km/hr
Collector – Residential	600	40 km/hr
Local	300	40 km/hr

- **Traffic Analysis Zones (TAZs)**. The TAZs established in the previous model were maintained in the 2019 model, with no additional zones. The model includes 39 internal zones (Zones 1 to 39) and six external zones (Zone 100 to 106). External zones do not have land use characteristics but account for trips entering and leaving the model area.

- **Municipal Data and Census 2016**. Estimates of total population and employment for 2019 were developed based on the 2016 Census Data, while future population and employment estimates were derived based on the Town's growth strategy as shown in **Figure 1** and the *Town of Stony Plain Population and Employment Forecasts Final Report (2018)*.

- **TAZ Level Demographic Information**. 2019 population estimates were derived from the 2016 population (Census Data) by Dissemination Areas (DAs). The DAs were broken out by the TAZs and population in each TAZ was determined by estimating the number of households and population per household. The resulting estimates were compared to the 2011 estimates to ensure the distributions were aligned with the 2011 model. The 2019 employment estimates were developed based on proportioning out the latest employment estimates (Population and Employment Forecasts) by employment area in each TAZ.

  In collaboration with Town staff, future population and employment estimates were derived based on the total area for development established in the Town's growth strategy with the assumption that population and employment would grow by approximately 2%.

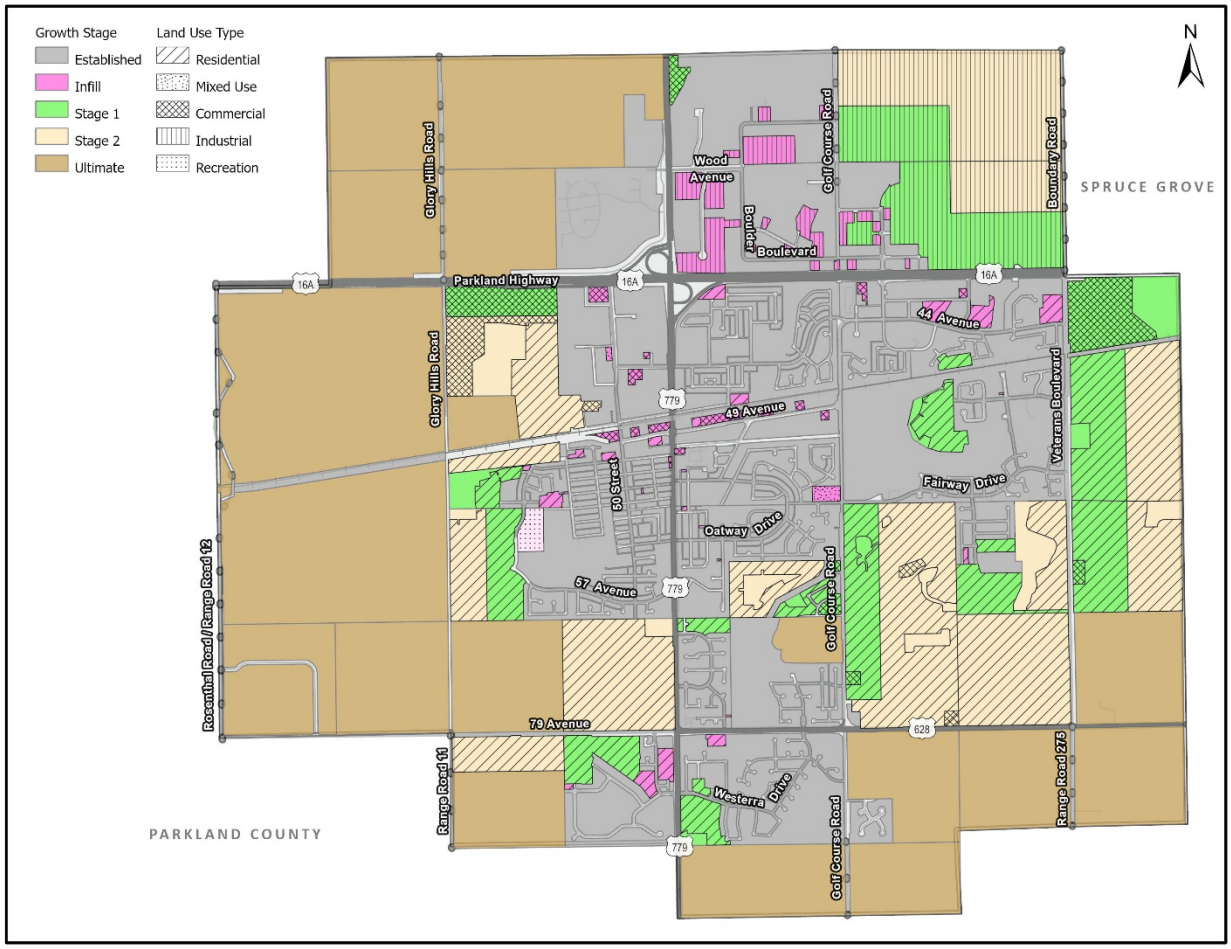


Figure 1 - Town of Stony Plain Growth Management Strategy

Table 2 outlines the scenarios and the corresponding population and employment data used for model inputs.

Table 1 – Summary of Travel Demand Model Scenarios

Scenario	Timeframe (Approximately)	Estimated Population	Estimated Employment
Existing Base	2019	17,842	7,746
Stage 1 Growth	10 Years	23,000	9,442
Stage 2 Growth	25 Years	30,000	12,708

Both the Stage 1 Growth and Stage 2 Growth scenarios built upon the staged development outlined in the Town's *Water and Sanitary Master Plan* and reflects a timeframe of approximately 10-years (short-term horizon) and 25-years (long-term horizon), respectively.

- **2019/2020 Traffic Counts**. As part of the TMP Update, intersection turning movement counts were collected in July 2020 at 28 locations. These counts, in conjunction with 2019 traffic counts obtained from Alberta Transportation were used to validate the model fit to actual traffic observed in the PM peak hour.

- **Trip Generation and Distribution Equations**. The trip generation and distribution equations and coefficients were reviewed and maintained from the 2011 model.

The road network, TAZs and demographic assumptions are provided in the **Attachment 1**.

Using the above framework, the 2019 model was developed for the Weekday PM Peak Hour time period. Once calibrated to the base year, the model was then used to forecast PM Peak Hour traffic to future horizons, as described in the following sections.

3. MODEL CALIBRATION & VALIDATION

The PM peak hour assignment was validated to PM peak hour traffic counts. The model calibration process involves adjusting model parameters to produce model volumes that match existing traffic volumes. The overall count validation for the 2019 model was found to be acceptable with an R-squared value of 0.96. In addition, the vast majority of the count location matched within a GEH value of 10, as shown in **Figure 2**. The full list of validation locations and counts are found in **Attachment 2**.

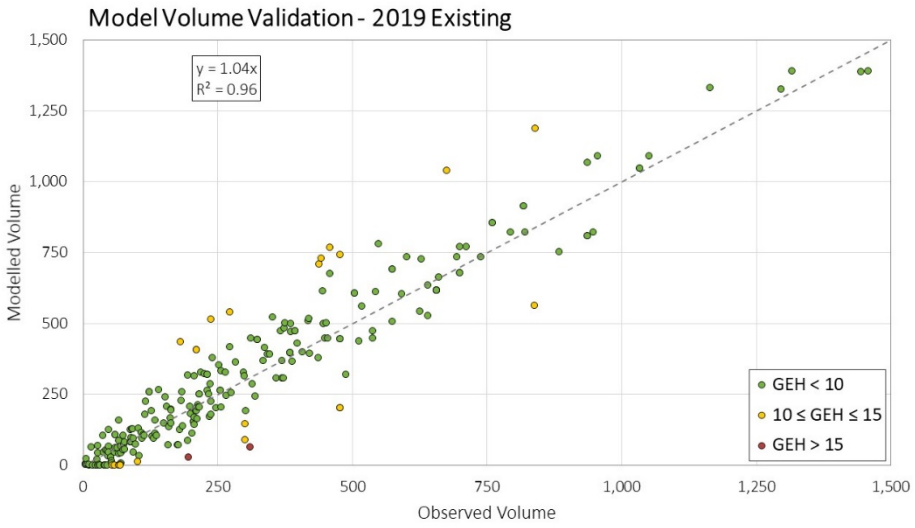


Figure 2 – PM Peak Hour Model Validation

4. NETWORK ANALYSIS

Building from the existing base network and the Town's growth strategy, the road network for the Stage 1 Growth horizon is similar to the existing network but with the extension of Brickyard Drive to 57 Avenue. The Stage 2 Growth horizon assumes that most of the approved Area Structure Plans (ASPs) roadway will be completed. The following sections describes the network analysis undertaken as part of the TMP update.

4.1. Network Performance

With the 2019 model calibrated to the base and projected future growth scenarios, the performance of the network in Stony Plain as a result of development and growth was analyzed system-wide using the following measures:

- **Vehicle-Kilometers Travelled (VKT)** - the total distance travelled by all vehicles in the system during the PM Peak Hour; and
- **Vehicle-Hours Travelled (VHT)** - the total travel time accumulated by all vehicles in the transportation system during the PM Peak Hour.

Table 2 outlines the system performance measures for the three scenarios. The model results indicate that, between the 2019 and Stage 2 Growth scenarios, the average trip distance decreases by approximately 12% while the average trip duration decreases by approximately 4%. The planned road connections as per the approved ASPs provide additional alternate route choices, resulting in shorter trip lengths and travel times.

Table 2 – System Level Performance Measure

Scenario	Total Trips	VHT	VKT	Average Trip	
				Distance (km)	Length (minutes)
Existing Base	121,457	537	32,866	3.8	3.7
Stage 1 Growth	153,700	722	42,284	3.5	3.6
Stage 2 Growth	192,561	967	54,116	3.3	3.6

Plots of the network v/c ratios are provided in **Figure 3** to **Figure 5** for each of the scenario. Links are highlighted in orange where the v/c ratios are greater than 0.9 (indicating significant traffic congestion) and in red where the v/c ratios are greater than 1.0 (indicating severe congestion).

As illustrated in **Figure 3**, the overall transportation network in Stony Plain is currently experiencing minimal congestion and despite projected growth under the Stage 1 Growth scenario, the network will only experience moderate increases in congestion (see **Figure 4**) with v/c ratios of less than 0.80. The planned connections under the Stage 2 Growth scenario serves to provide additional network capacity as the majority of the network is projected to have v/c ratios of less than 0.80. The road network under the Stage 2 Growth scenario will generally have sufficient capacity to support the projected traffic volumes. As shown in **Figure 5**, one area with capacity constraint is the section of Highway 779, north of Highway 16A, where the existing two-lane roadway is nearing capacity. Moderate capacity constraints are also projected for the section of Highway 628 in the vicinity of Westerra. This section is assumed to have one lane per direction in the future.

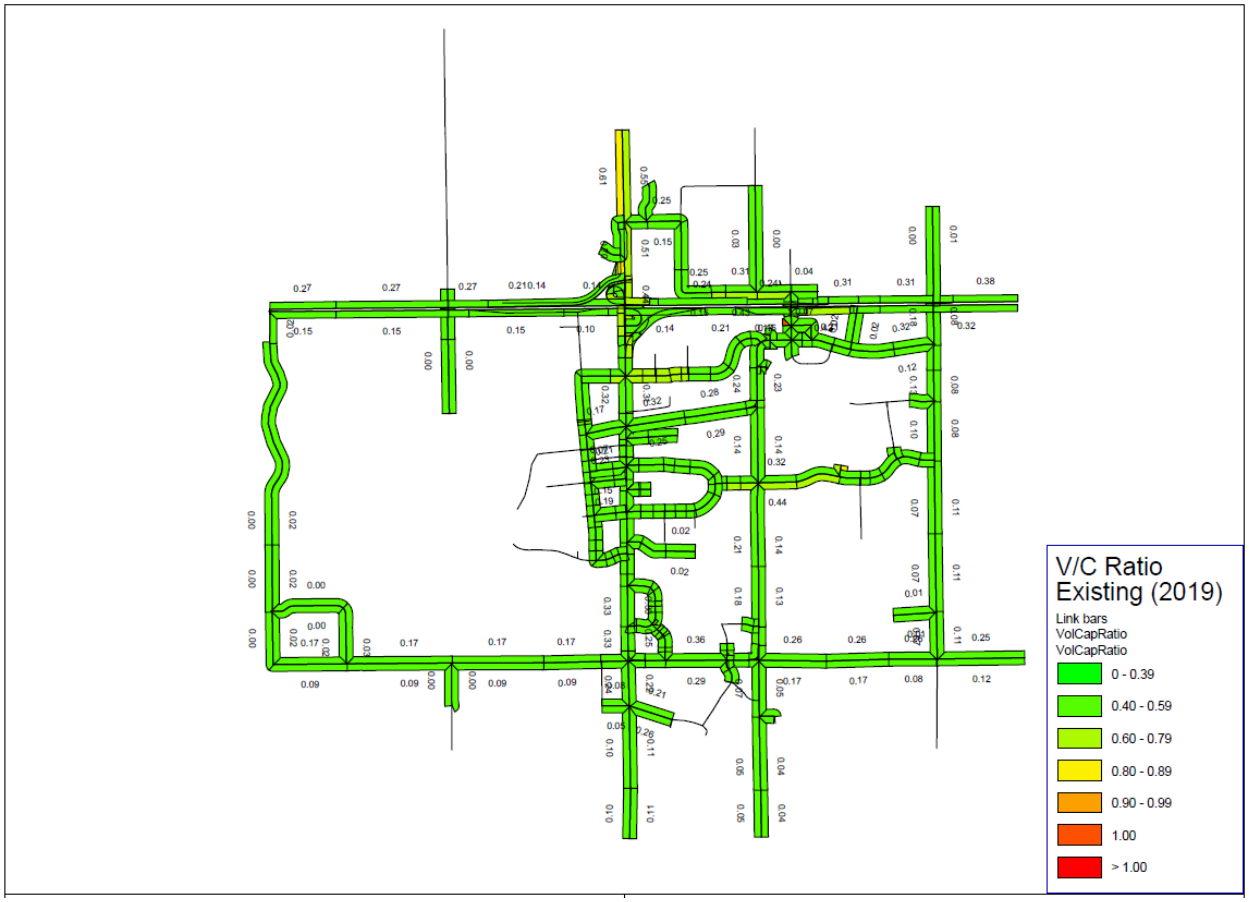


Figure 3 – Existing (2019) Volume-to-Capacity Ratios

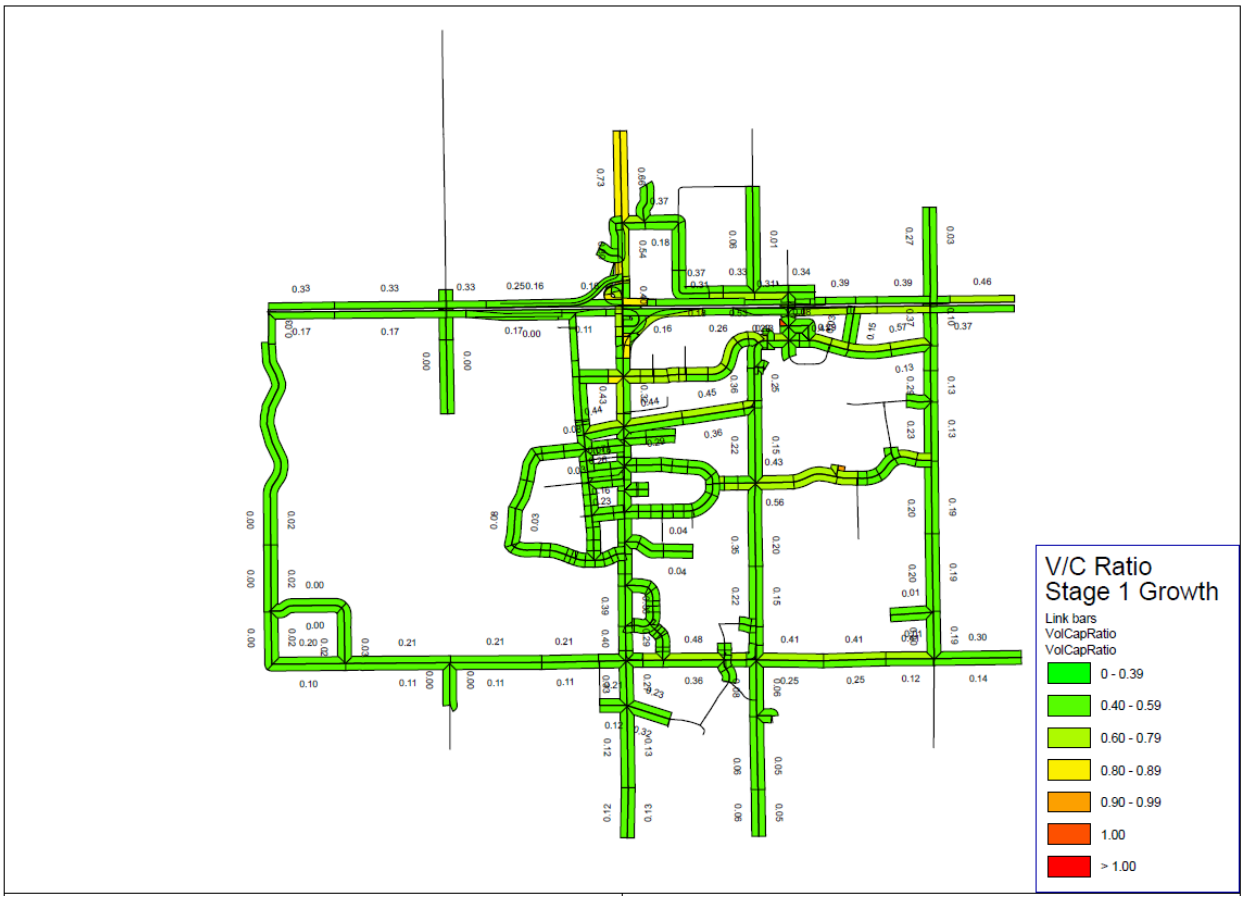


Figure 4 – Stage 1 Growth Volume-to-Capacity Ratios

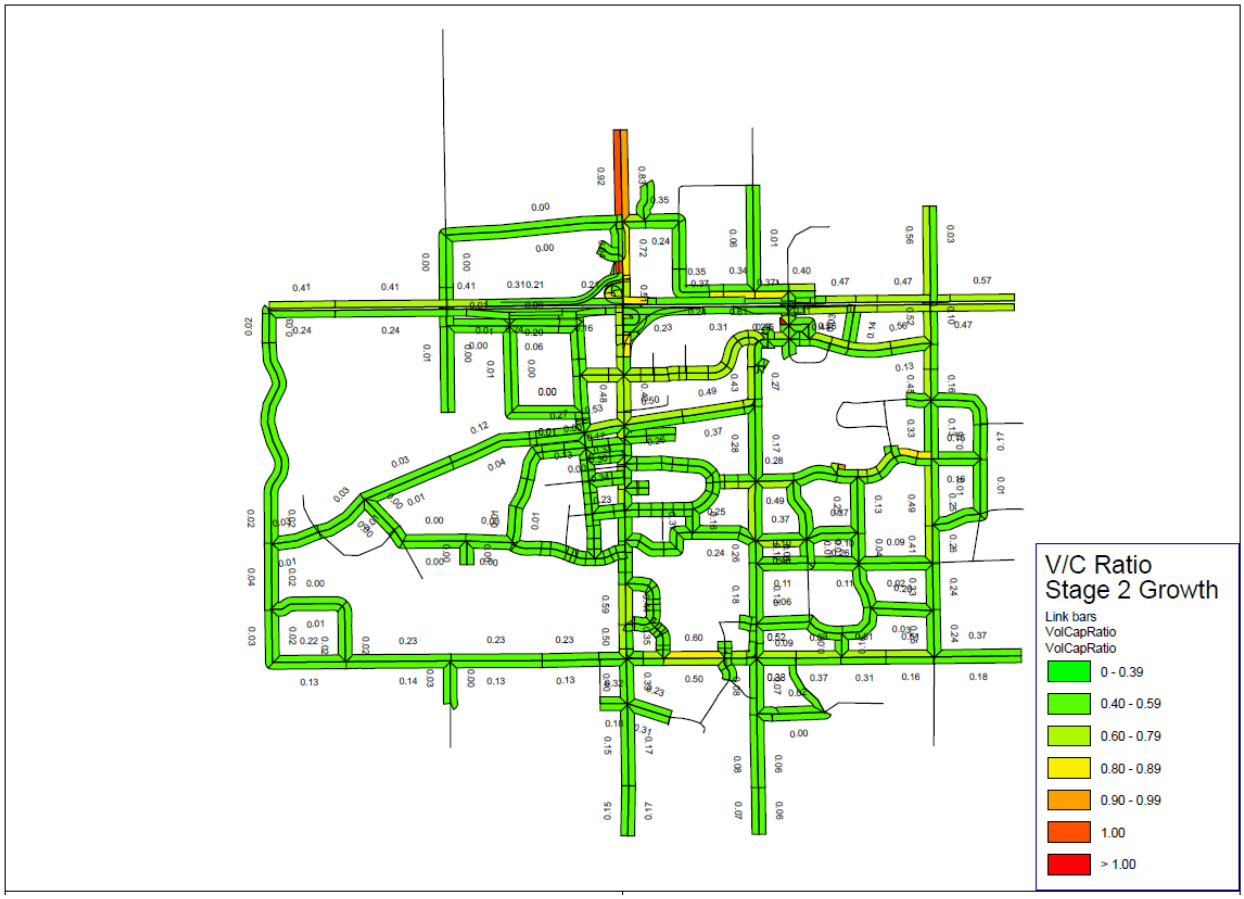


Figure 5 – Stage 2 Growth Volume-to-Capacity Ratios

4.2. Traffic Forecasts

For planning purposes, the modeling results from the Stage 2 Growth horizon were used to identify areas for improvements. A review of the model results indicates:

- On average, PM peak hour traffic volumes across the screenlines are growing on average 2% per year, which aligns with the projected population and employment growth; Travel demands on key corridors are expected to increase by approximately 65% to 70% in the eastbound/southbound direction and about 35% in the westbound/northbound direction. These patterns align with the higher percentage of regional travel to and from Stony Plain. **Table 3** compares the observed and modelled PM peak hour traffic volumes.

Table 3 – Observed Versus Modelled Traffic Volumes Across Screenlines

Screenline	Location	PM Peak Hour Traffic Volumes			Observed vs. Modelled		
		Existing (2019) Observed	Existing (2019) Modelled	Stage 2 Growth Modelled	Absolute Difference	Percent Difference	Annual Growth Rate
East-West Screenlines							
Highway 16A EB	W of Veterans Blvd	1296	1345	2121	776	58%	2%
Highway 16A WB	W of Veterans Blvd	1458	1390	2130	740	53%	2%
49 Avenue EB	W of Golf Course Road	255	259	335	76	29%	1%
49 Avenue WB	W of Golf Course Road	236	257	431	174	68%	3%
Highway 628 EB	W of Golf Course Road	231	322	676	354	110%	4%
Highway 628 WB	W of Golf Course Road	374	484	922	438	90%	4%
Highway 16A EB	W of Glory Hills Blvd	432	447	717	270	60%	2%
Highway 16A WB	W of Glory Hills Blvd	821	822	1233	411	50%	2%
Hwy 628 EB	W of Hwy 779	114	108	156	48	44%	2%
Hwy 628 WB	W of Hwy 779	198	208	272	64	31%	1%
Hwy 628 EB	E of Veterans Blvd	250	215	472	257	120%	5%
Hwy 628 WB	E of Veterans Blvd	392	347	772	425	122%	5%
	Total EB	**2578**	**2696**	**4477**	**1781**	**66%**	**3%**
	Total WB	**3479**	**3508**	**4717**	**1209**	**34%**	**1%**
North-South Screenlines							
Golf Course Road NB	N of 49th Ave	324	457	530	73	16%	1%
Golf Course Road SB	N of 49th Ave	418	476	846	370	78%	3%
Highway 779 NB	N of 49th Ave	694	748	973	225	30%	1%
Highway 779 SB	N of 49th Ave	712	778	1148	370	48%	2%
Boundary Road NB	N of Fairway Drive	163	194	311	117	60%	2%
Boundary Road SB	N of Fairway Drive	266	247	799	552	223%	9%
Highway 779 NB	N of Wood Ave	661	662	994	332	50%	2%
Highway 779 SB	N of Wood Ave	744	734	1103	369	50%	2%
Highway 779 NB	S of Hwy 628	162	167	251	84	50%	2%
Highway 779 SB	S of Hwy 628	150	150	226	76	51%	2%
	Total NB	**2004**	**2228**	**3059**	**831**	**37%**	**1%**
	Total SB	**2290**	**2385**	**4122**	**1737**	**73%**	**3%**

- As shown in **Figure 6**, higher traffic growth can be observed on corridors that are expected to support areas with higher levels of population and/or employment growth, including:
  - Highway 16A between South Park Drive and Veterans Boulevard
  - Highway 628 between Golf Course Road and Veterans Boulevard
  - Veterans Boulevard between Highway 16A and Highway 628

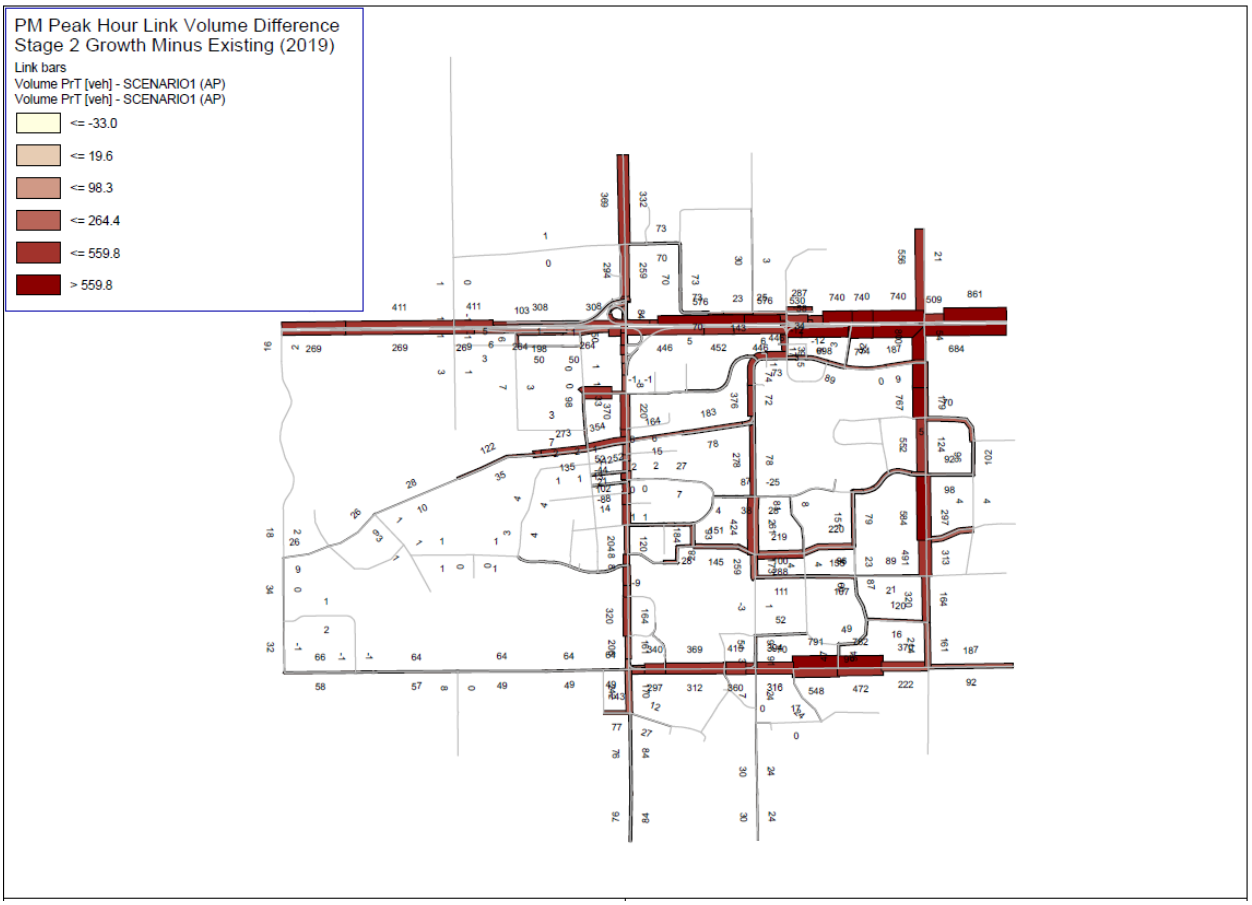


Figure 6 – PM Peak Hour Traffic Volume Difference – Stage 2 Growth Minus Existing Base

5. NETWORK OPERATIONAL ANALYSIS

As part of the TMP update, 28 intersections were included in the evaluation to understand the existing and future level of service. Intersection turning movement counts were collected in July 2020 once traffic and behaviour had an opportunity to normalize due to the COVID-19 pandemic.

Traffic analysis for the Town's network was completed utilizing Synchro/SimTraffic 10 for the existing (2019) and Stage 2 Growth (25-Year) AM and PM peak hour. The model inputs were based on existing lane configurations, existing and forecast traffic and pedestrian volumes and signal timings.

The Level of Service (LOS) is a performance metric used to assess operating conditions of intersections and their respective approaches. LOS reported in the analysis scenarios are based on the methodology outlined in the 2010 Highway Capacity Manual. For unsignalized intersections, the LOS is based on the computed delays on each of the critical movements. LOS 'A' represents minimal delays for minor street traffic movements, and LOS 'F' represents a scenario with an insufficient number of gaps on the major street for minor street motorists to complete their movements without significant delays.

For signalized intersections, the methodology considers the intersection geometry, traffic volumes, the traffic signal phasing/timing plan, as well as pedestrian and cyclist volumes. The average delay for each lane group is calculated, as well as the delay for the overall intersection. The operating conditions can also be expressed in terms of volume-

to-capacity (v/c) ratio. The signalized and unsignalized LOS criteria as summarized in HCM are also outlined in **Table 2**.

Table 4: 2010 Highway Capacity Manual Level of Service Criteria

Level of Service	Description	Unsignalized Intersection Delay (s)	Signalized Intersection Delay (s)
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	< 10	< 10
B	Stable flow, but the presence of others begins to be noticeable. Occasionally minor delay due to conflicting traffic.	> 10 to 15	> 10 to 20
C	Stable flow, but occasionally some delay due to conflicting traffic. Delay is noticeable, but not inconveniencing.	> 15 to 25	> 20 to 35
D	Represents high-density, but stable flow. Delay is noticeable and irritating.	> 25 to 35	> 35 to 55
E	Represents operating conditions at or near the capacity level. Delay approaching tolerance levels.	> 35 to 50	> 55 to 80
F	Traffic demand exceeds capacity of intersection, very long queues and delays. Represents forced or breakdown flow. Delay exceeds tolerance level.	> 50	> 80

The traffic analysis indicates that the traffic data collected demonstrates acceptable level of service today during the AM and PM peak hour. Future intersection volumes were projected using a 2% growth rate based on the results of the VISUM model, as well as the historic regional and local growth within the community. The existing and future intersection volumes are provided in **Attachment 3**. Two intersections where the highway intersections (Highway 779 / Highway 16A Westbound Ramp and 48 Street / Highway 628) are expected to be LOS ‘F’ in the 25-year horizon. **Figure 4** illustrates the existing (2019) and Stage 2 Growth (25-Years) intersection level of service.

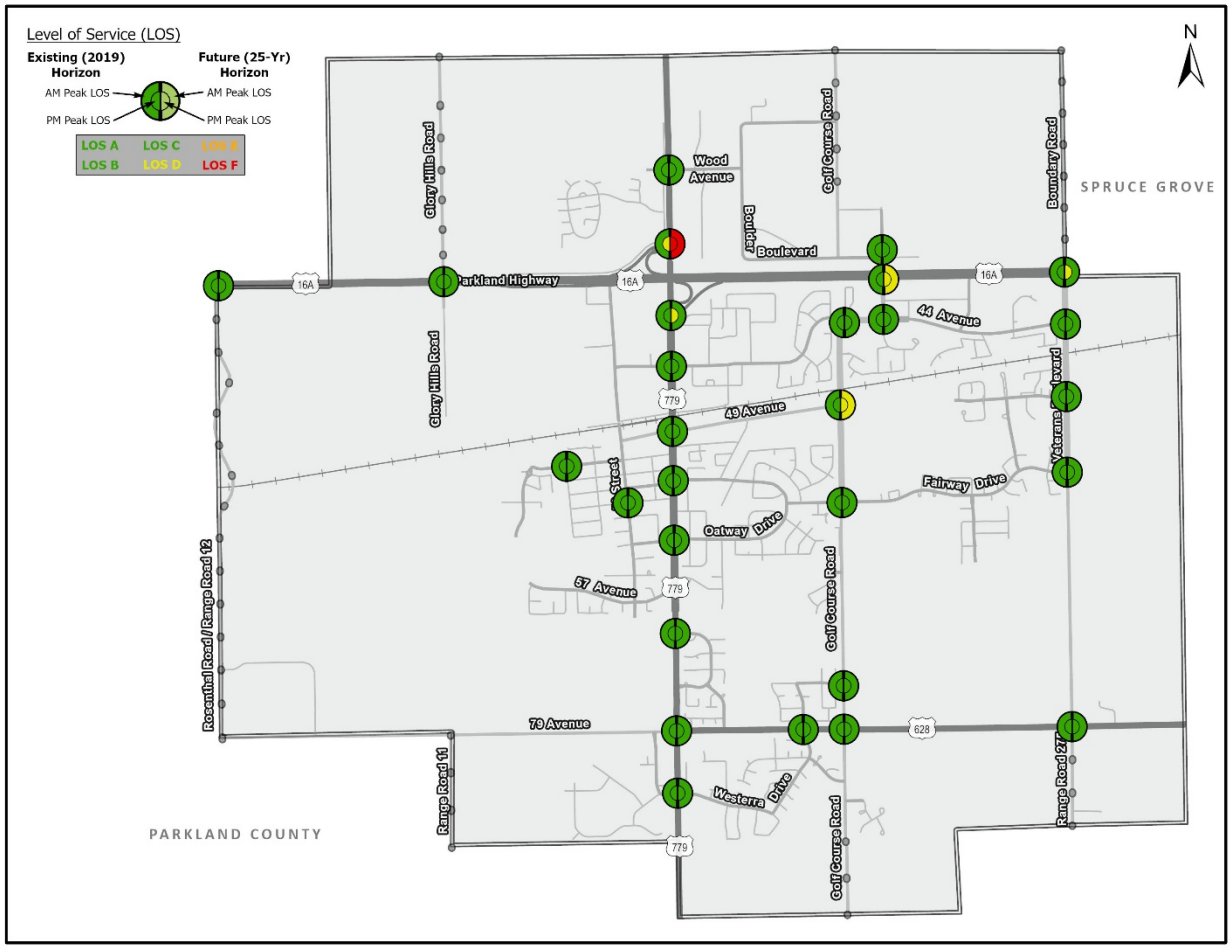


Figure 7 – Existing and 25-Year AM and PM Peak Hour Intersection Level of Service

6. PROPOSED ROADWAY IMPROVEMENTS

Several roadway improvements were identified based on the results of the 25-year technical analyses and are summarized below. The preliminary improvements have been grouped into three categories: Operational, Corridor and Highway Improvements

Operational Improvements

- The following intersections have been identified for signal control upgrades:
  - Highway 779 / 44 Avenue
  - Highway 628 / Veterans Boulevard
  - Highway 628 / Westerra Drive

- Intersection improvements to provide an additional northbound and southbound left-turn lane at S Park Dr/ Highway 16A have been identified to accommodate higher north and south turn volumes.

- Intersection improvements to provide an additional eastbound and westbound left-turn lane at Highway 628 / Westerra Drive have been identified to accommodate higher east and west turn volumes.

Highway Improvements

The following intersections on Highway 16A have been identified for signal control upgrades:

- Highway 779/Highway 16A WB Ramp
- Highway 779/Highway 16A EB Ramp
- Highway 16A and Glory Hills
- Highway 16A and Rosenthal

Corridor Improvements

The results of the travel demand forecasting indicate that the following corridors should be widened to accommodate the projected traffic demands over the next 25 years:

- Highway 779 – improve from 2 to 4 lanes north of Highway 16A to Wood Avenue

The model results were also used to confirm whether improvements were needed on other existing or planned arterials, including:

- 49 Avenue West Extension (Phase 1 & Phase 2)
- Range Road 12
- Proposed East-West Arterial
- Highway 628 Capacity Improvements
- Highway 779 Widening – Willow Park Road to Highway 628
- Golf Course Road Widening – Fairway Drive to Highway 628

The future traffic forecasts along the above-noted arterials generally do not warrant additional capacity or network improvements within the timeframe of the TMP, except Phase 1 of the 49 Avenue West Extension. However, these roadways may require upgrades beyond 25 years as development occurs and traffic volume warrants. As such, the Town may want to preserve or protect right-of-ways along these arterials.

Strategies to address the proposed improvements will be further discussed in the TMP.

7. SUMMARY & NEXT STEPS

This memorandum provides a summary of the travel demand model update and a brief overview of the technical analysis undertaken as part of the TMP update. Based on the analysis results, several improvements to address future intersection performance and corridor capacity under the Stage 2 Growth (25-year) horizon were identified.

Based on the findings of this review, the recommended improvements within the timeframe of the TMP (25-years) were reviewed and confirmed with Town staff, including the timing of these improvements. Other proposed improvements beyond 25 years were also explored with Town staff and addressed in the TMP.

With the completion of the 2019 model update, the Town may want to use the model to evaluate different growth scenarios or other network improvements beyond the future planned network. The Town may also consider updating the model with the 2021 Census Data, when available, to ensure the analysis and forecasts remain accurate and relevant.

8. CLOSURE

This technical memorandum has been prepared by McElhanney Ltd. (“McElhanney”) for the benefit of the Town of Stony Plain. The information and data contained herein represent McElhanney’s best professional judgment in light of the knowledge and information available to McElhanney at the time of preparation.

McElhanney Ltd. denies any liability whatsoever to other parties who may obtain access to this report for any injury, loss or damage suffered by such parties arising from their use of, or reliance upon, this document or any of its contents without the express written consent of McElhanney or the Town of Stony Plain.

McElhanney Ltd.

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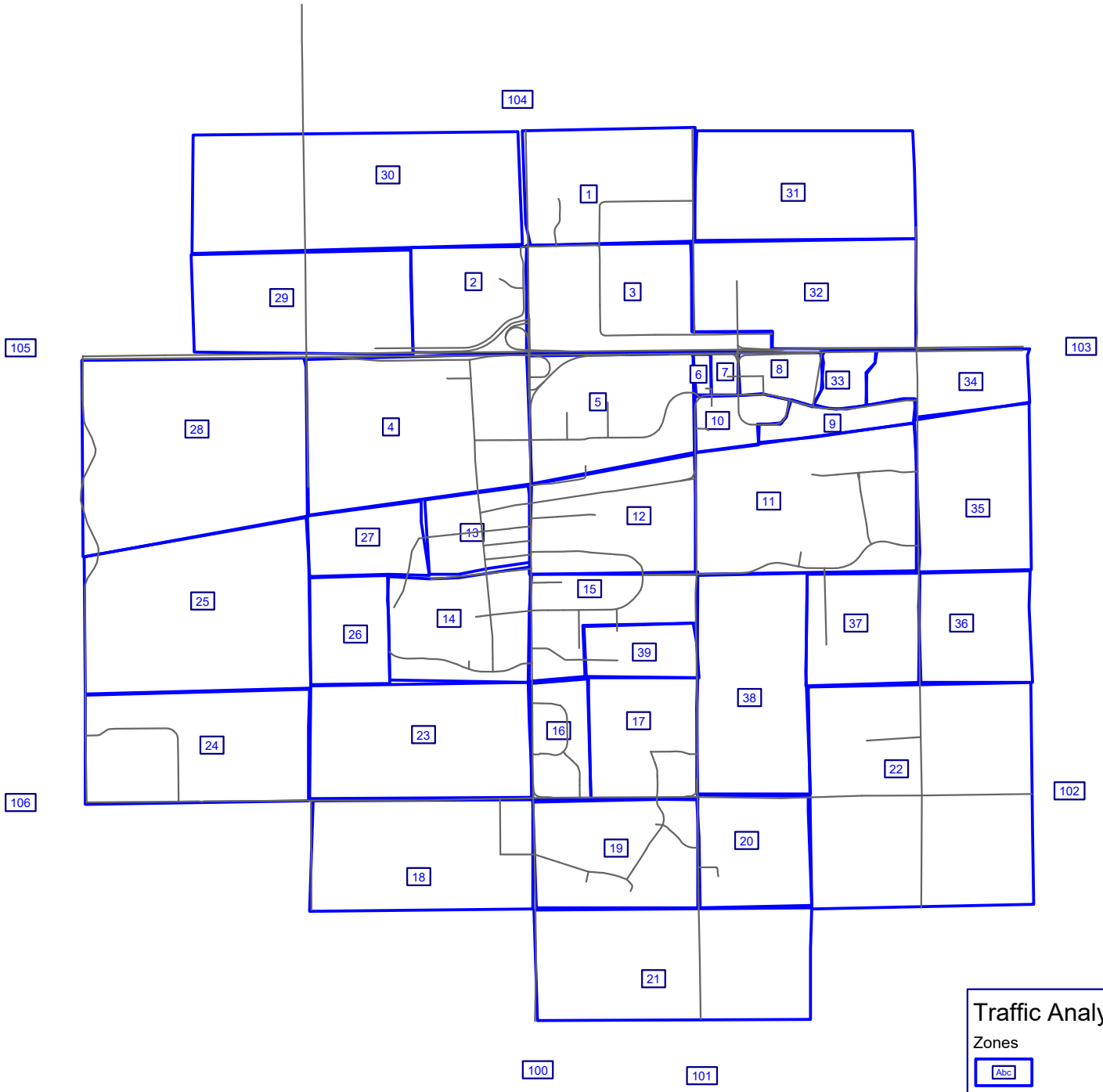
Elaine Lau, P.Eng., PTOE
Senior Transportation Engineer

Reviewed By:

Ryan Betker, P.Eng.
Project Manager

ATTACHMENT 1

VISUM MODEL INPUTS & OUTPUTS



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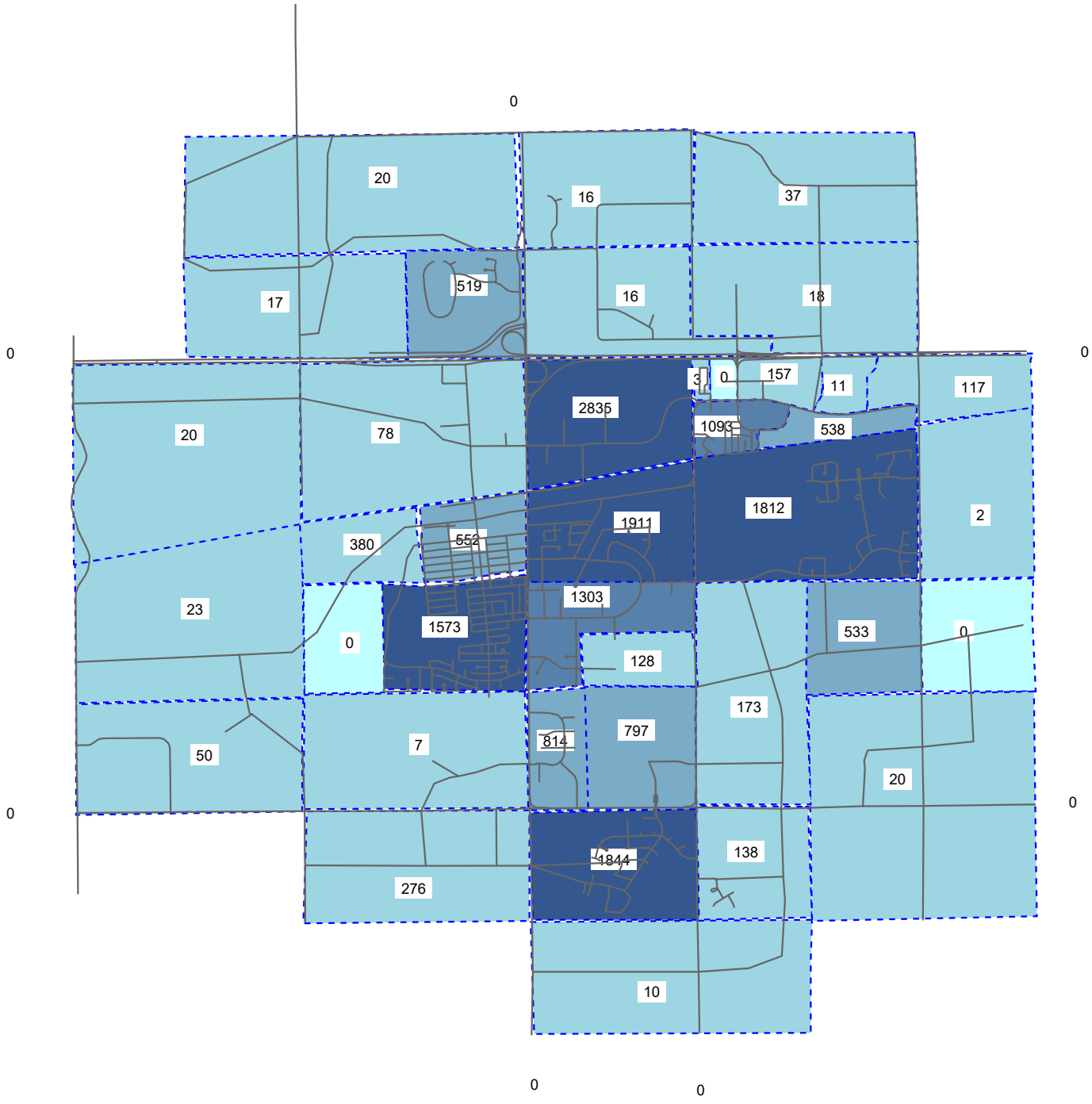

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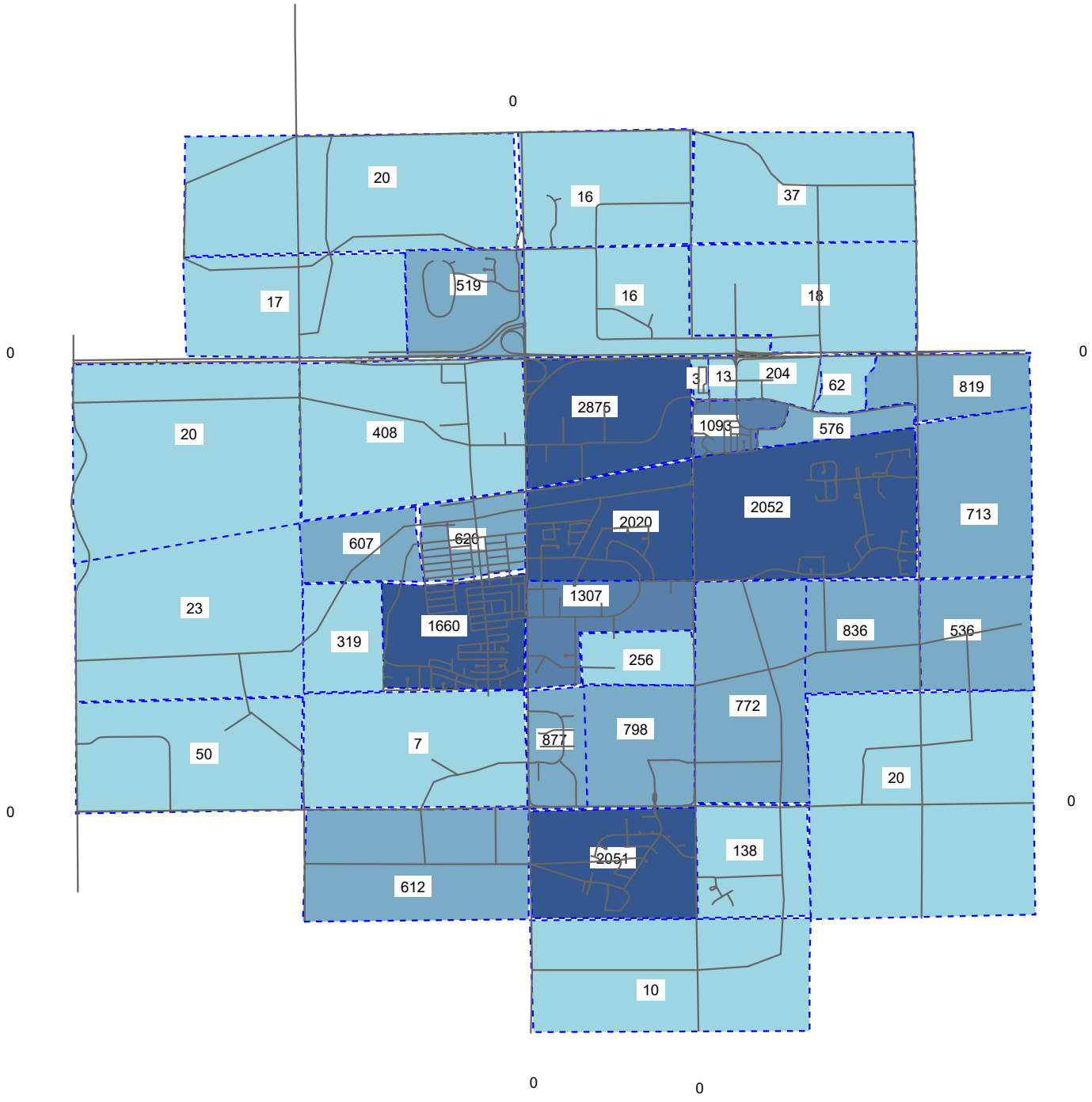

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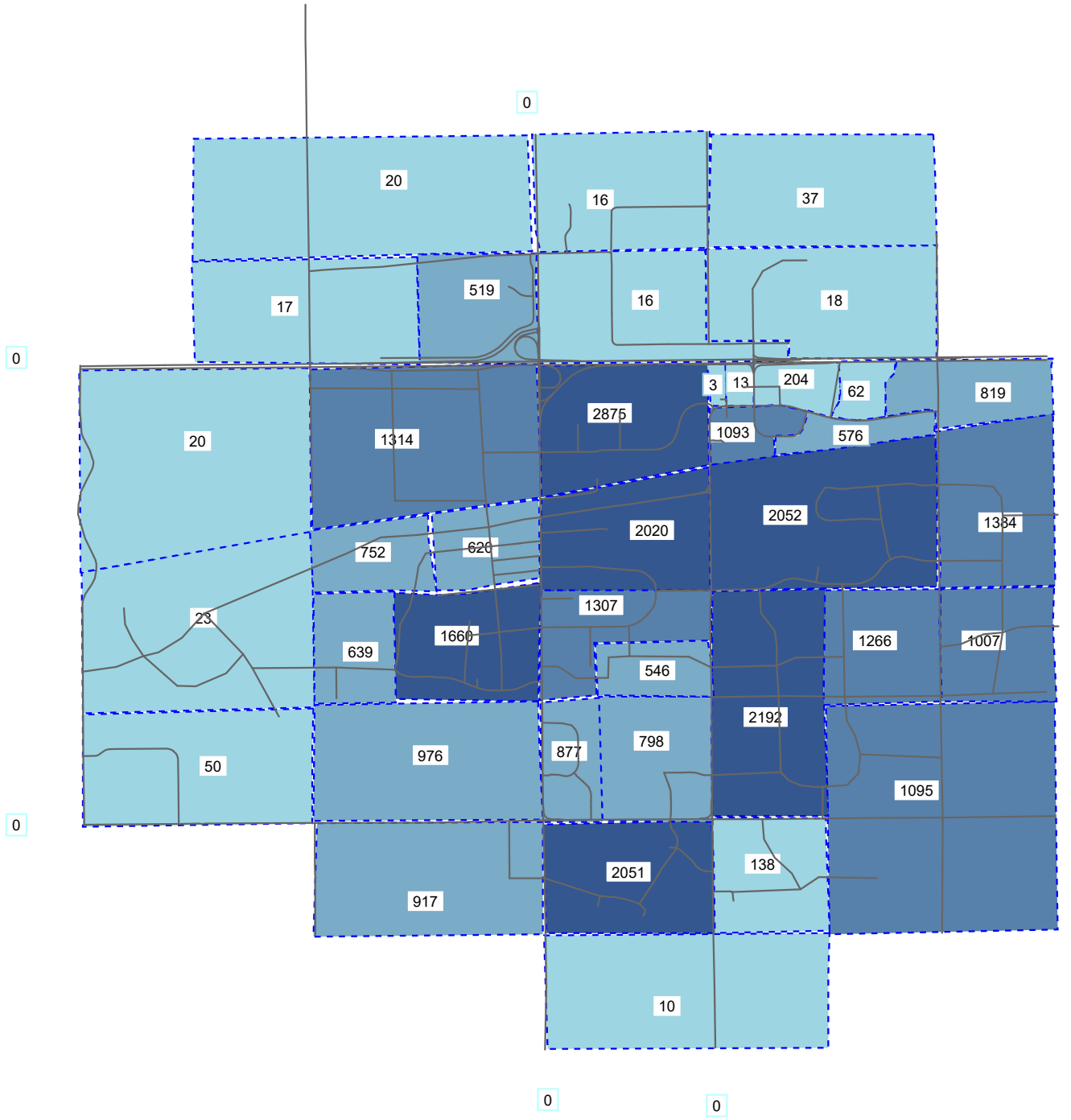

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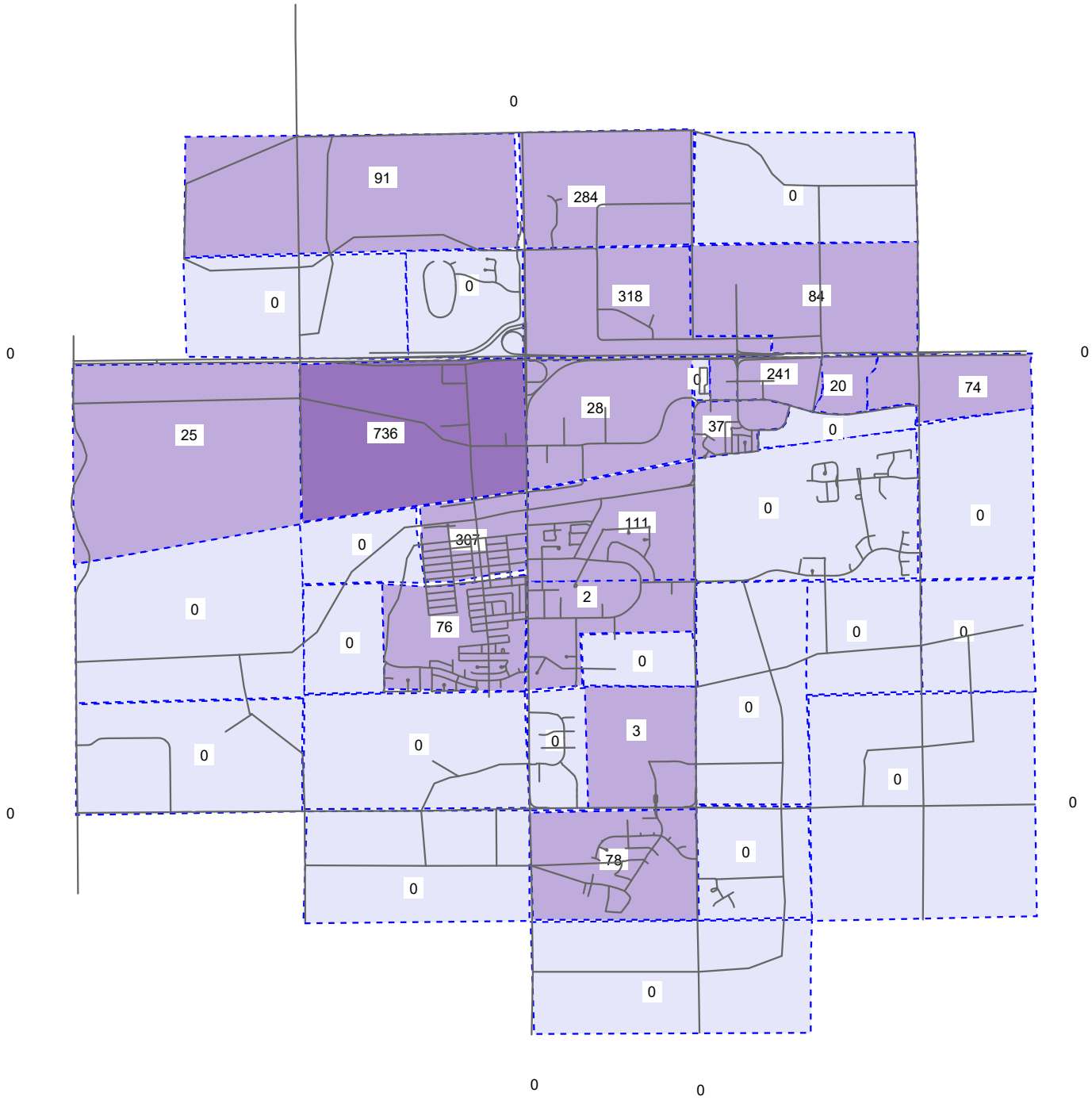

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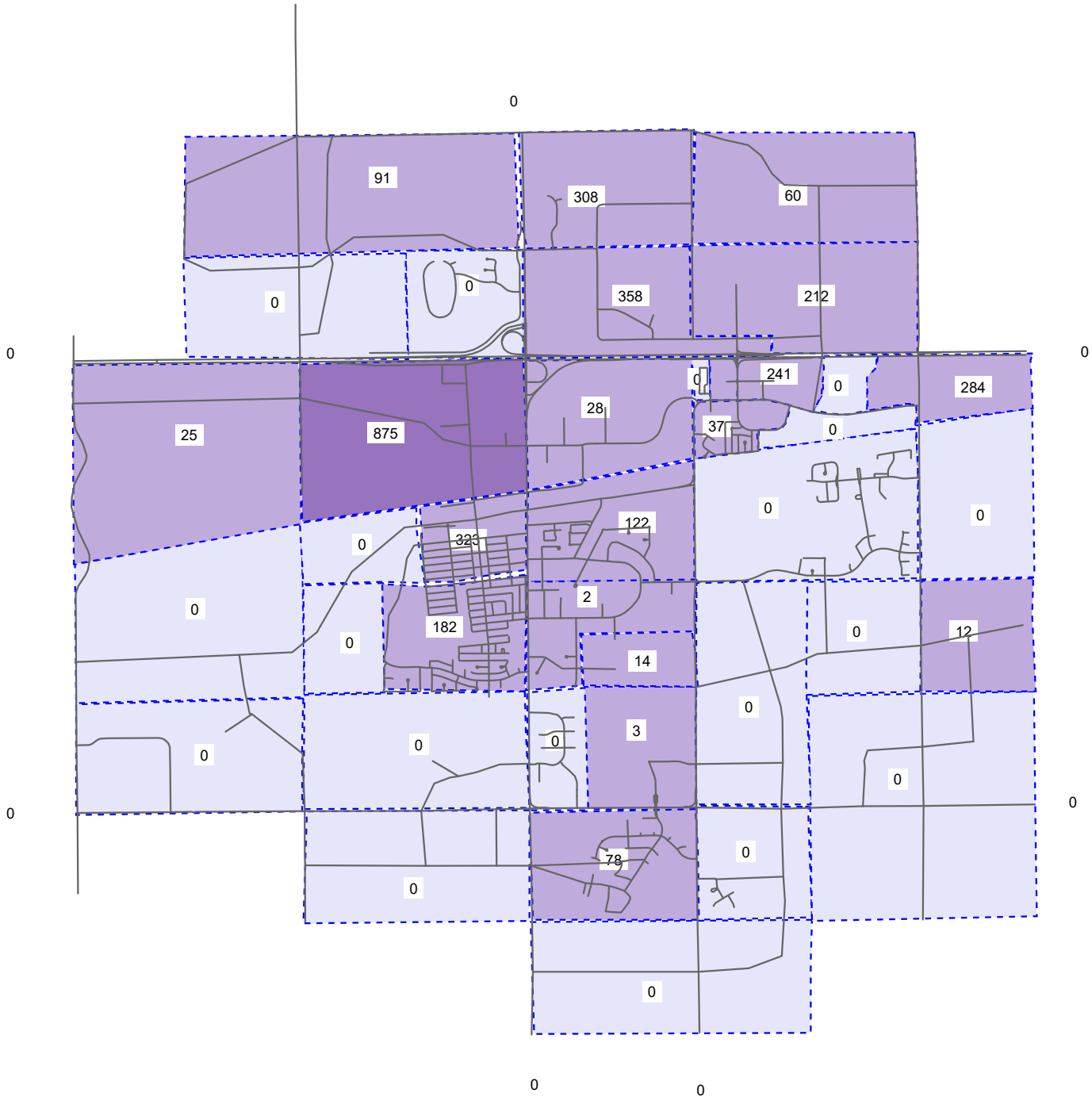

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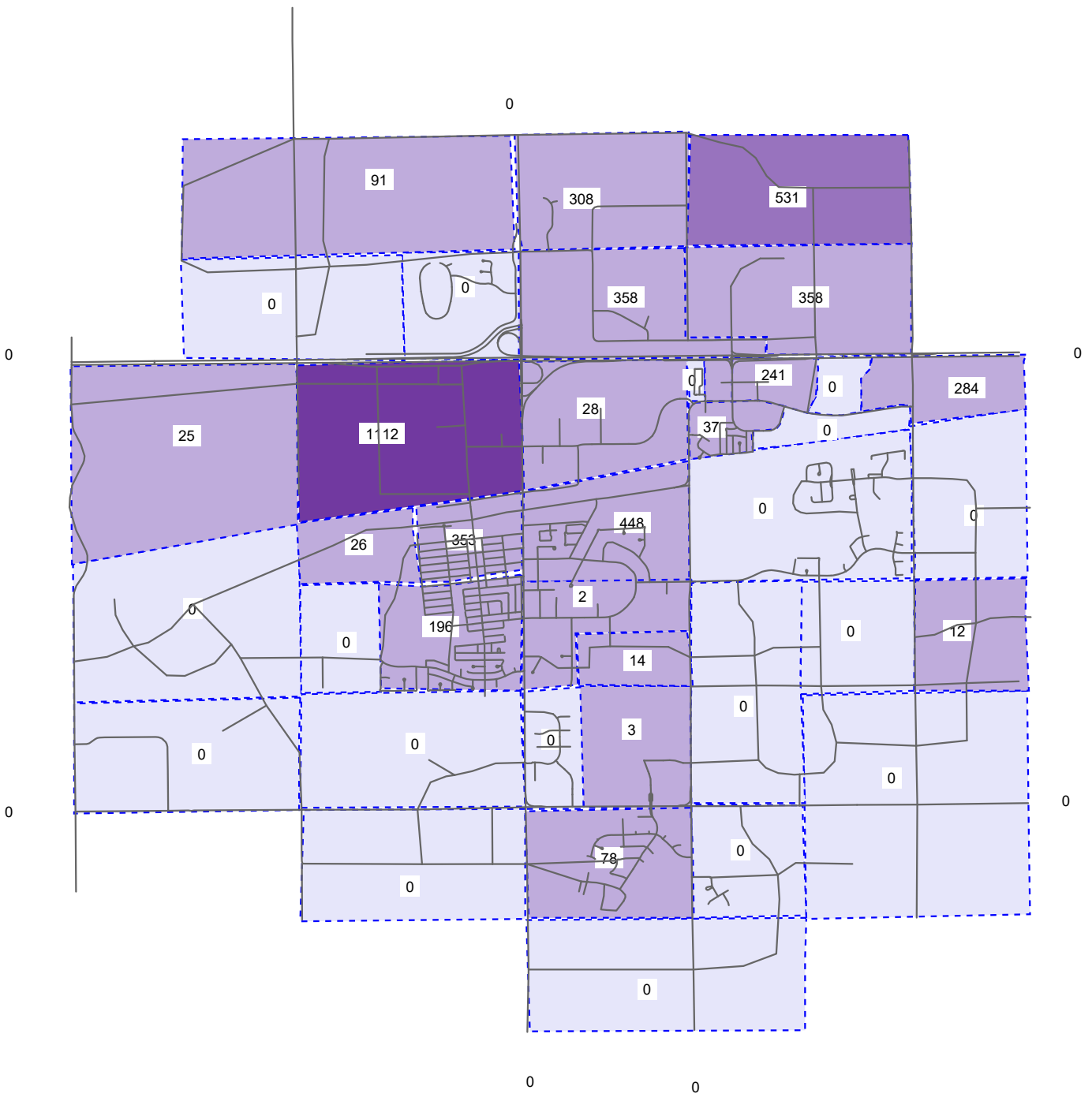

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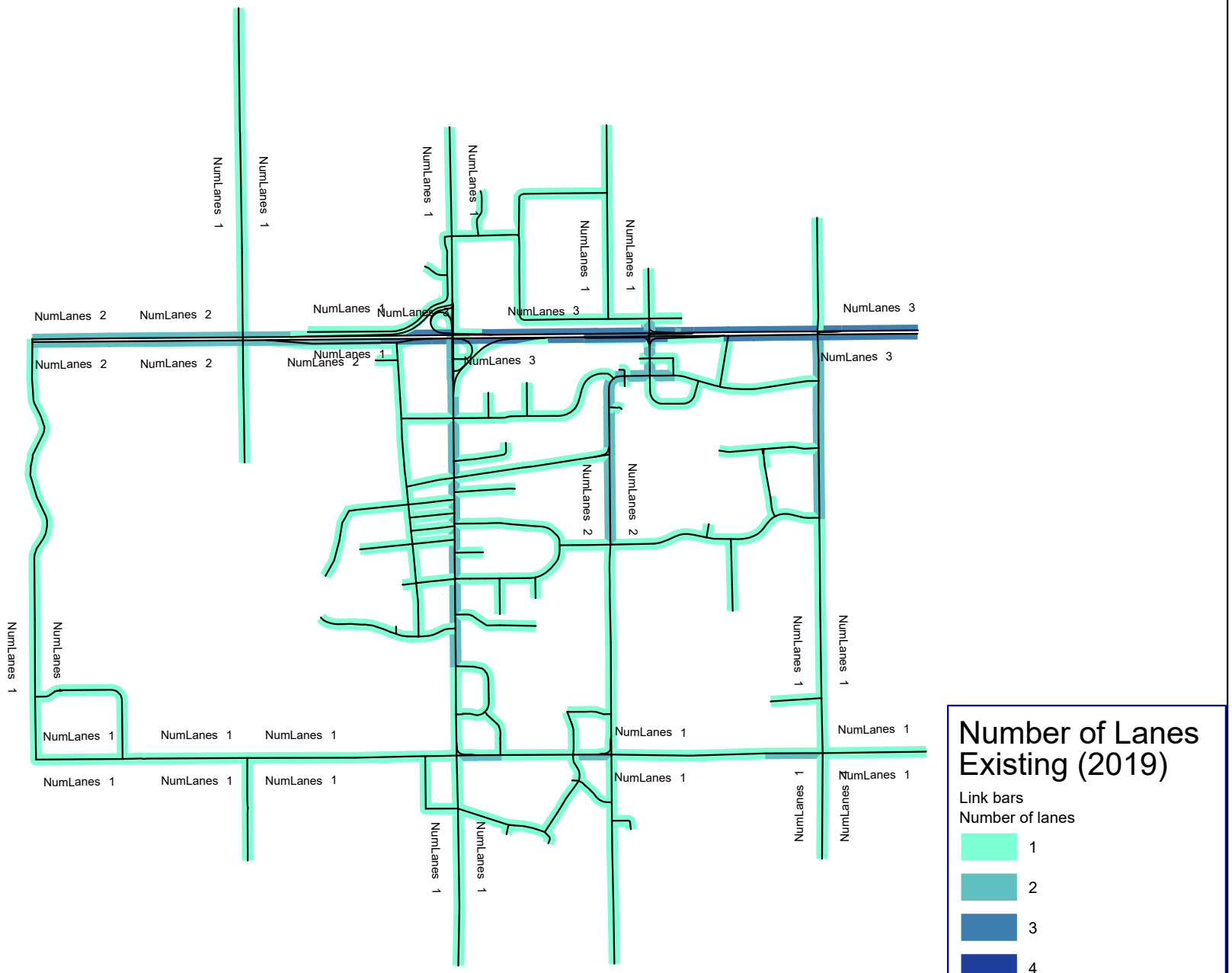

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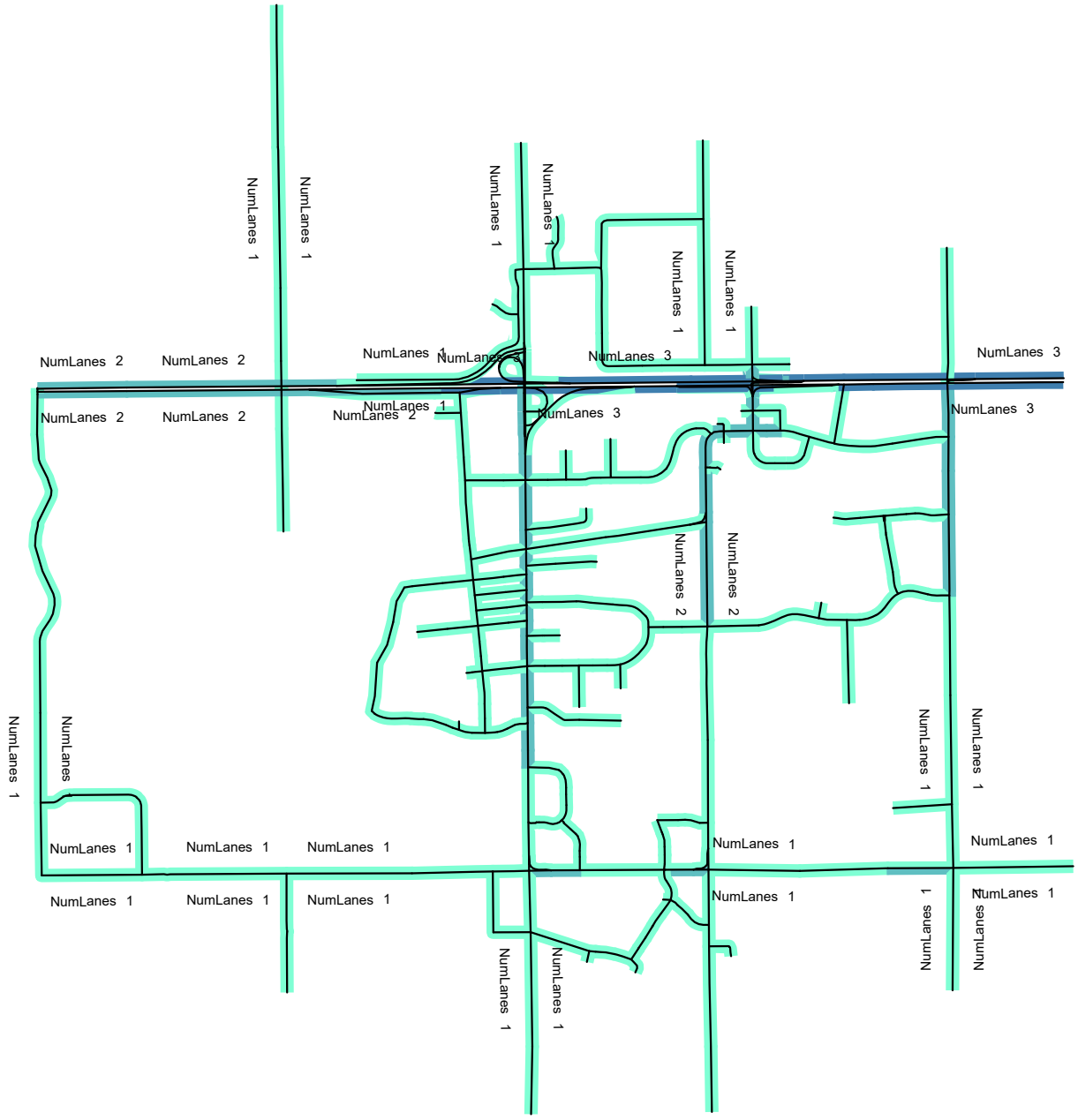

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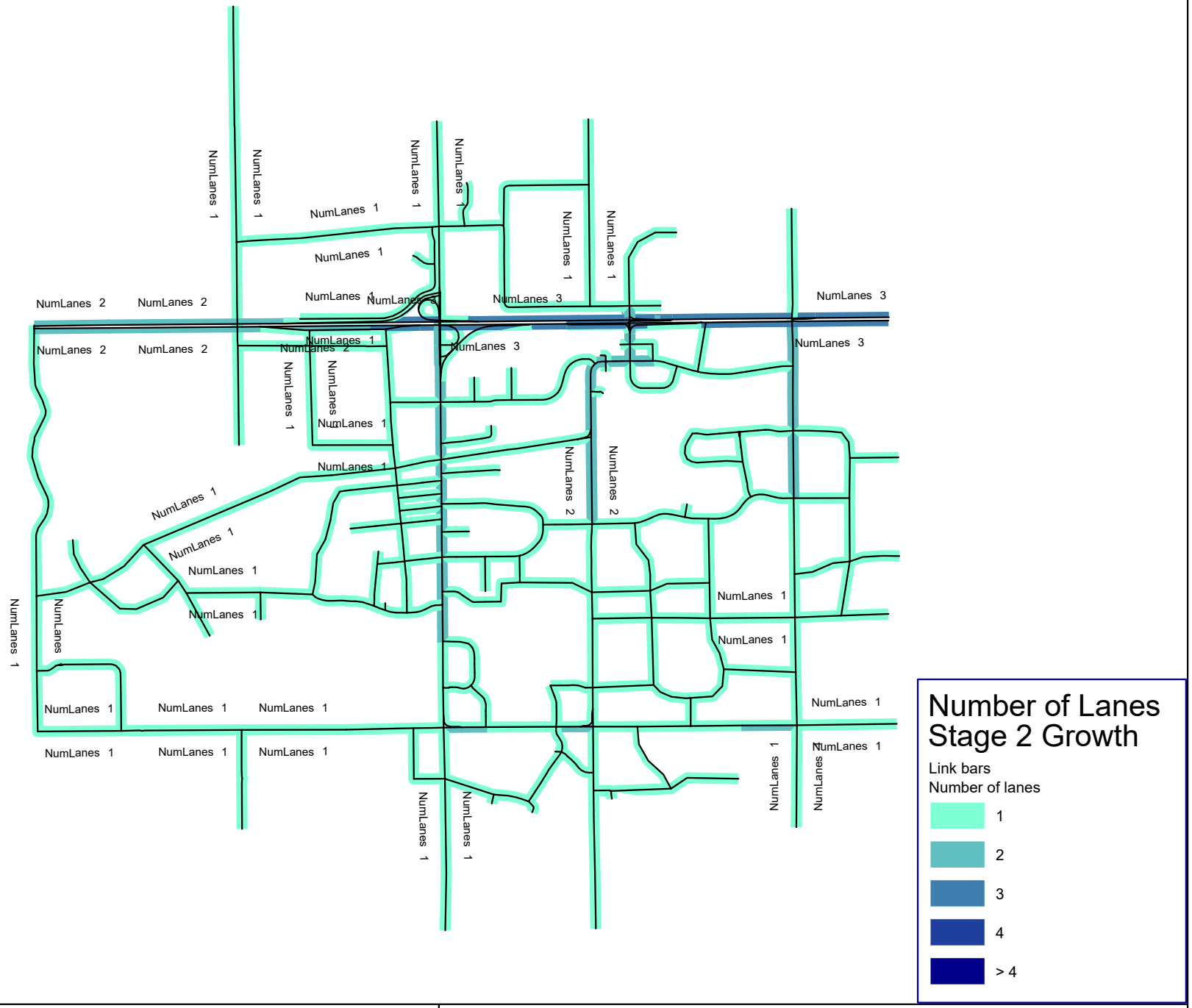

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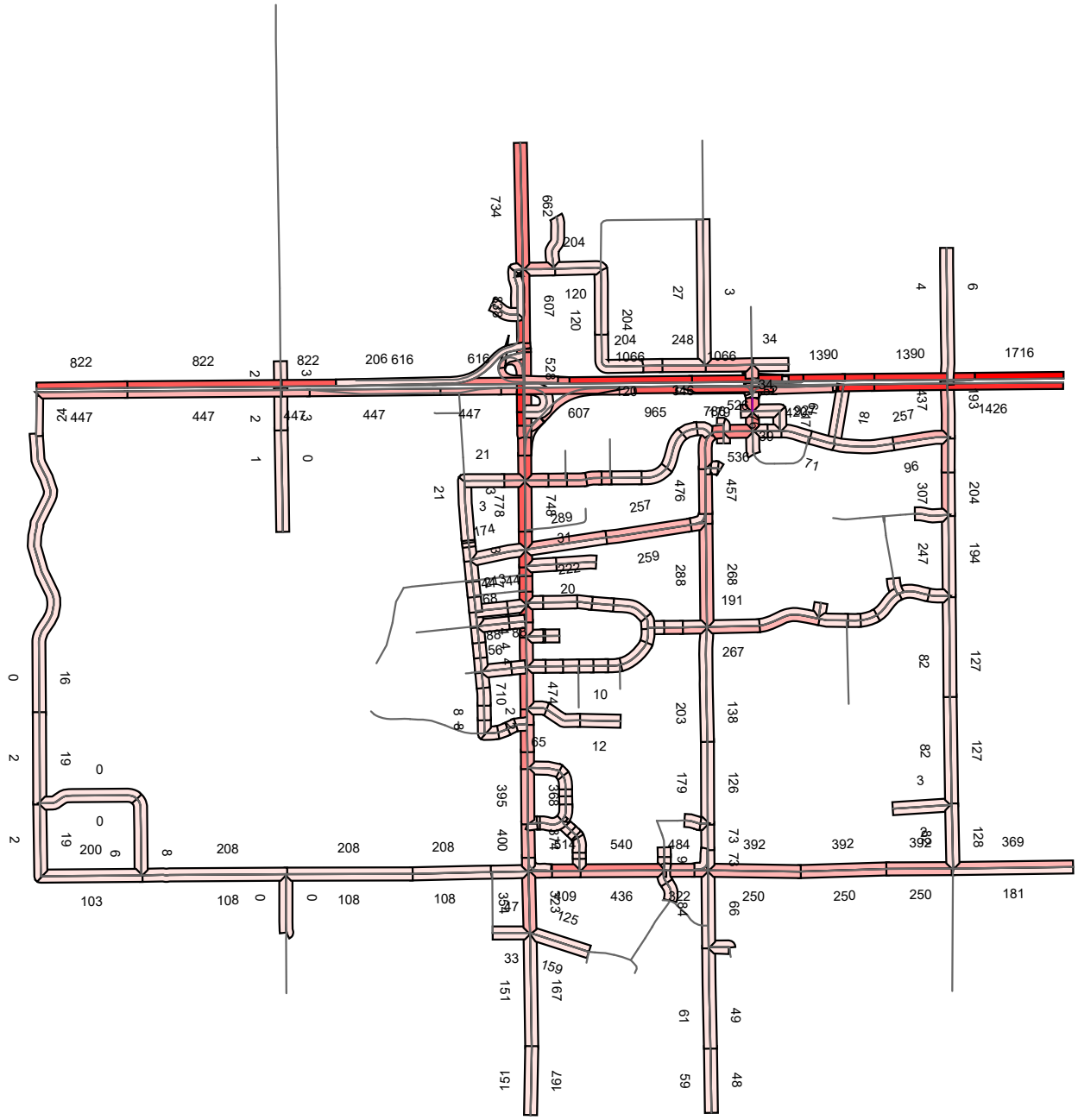

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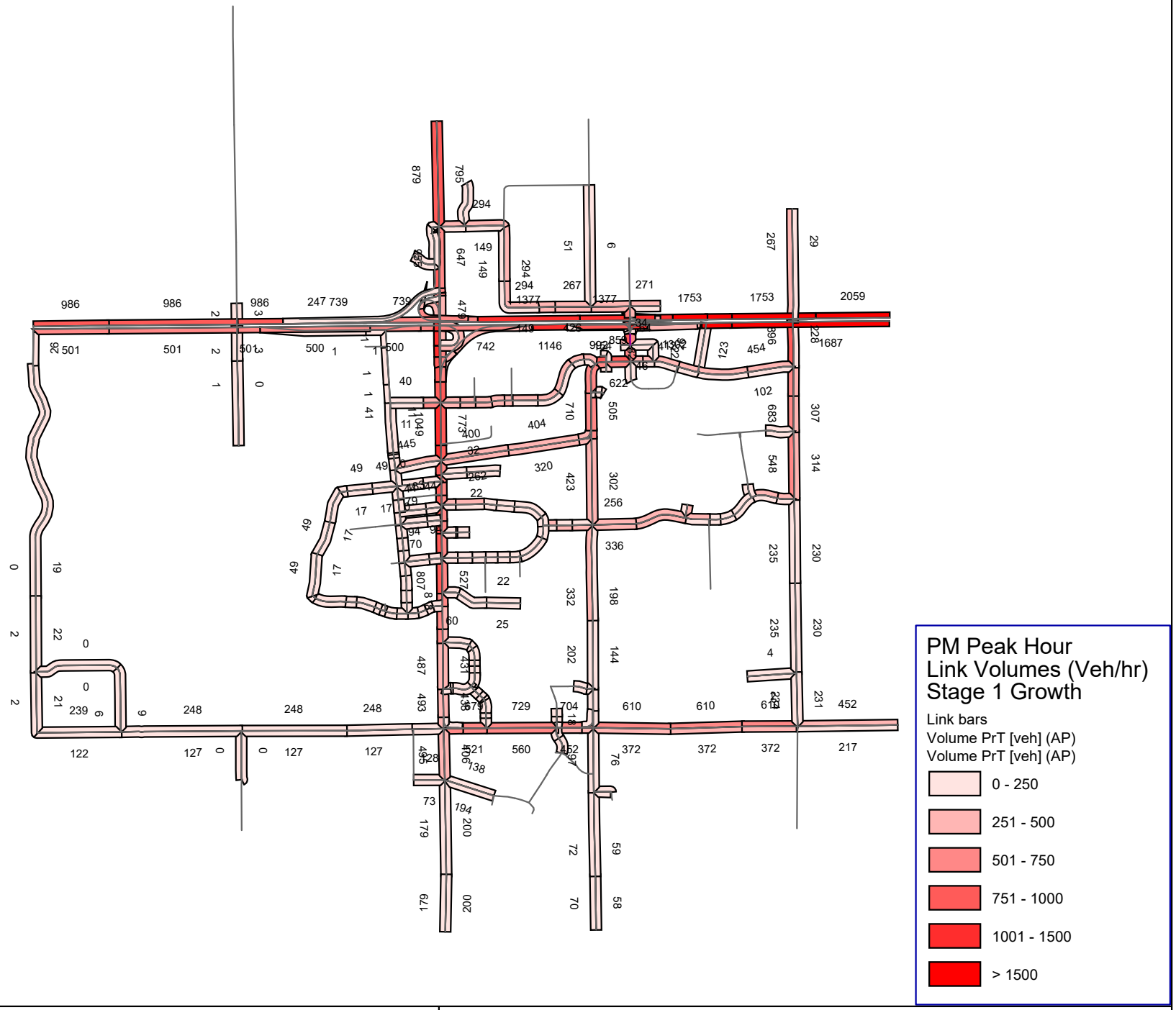

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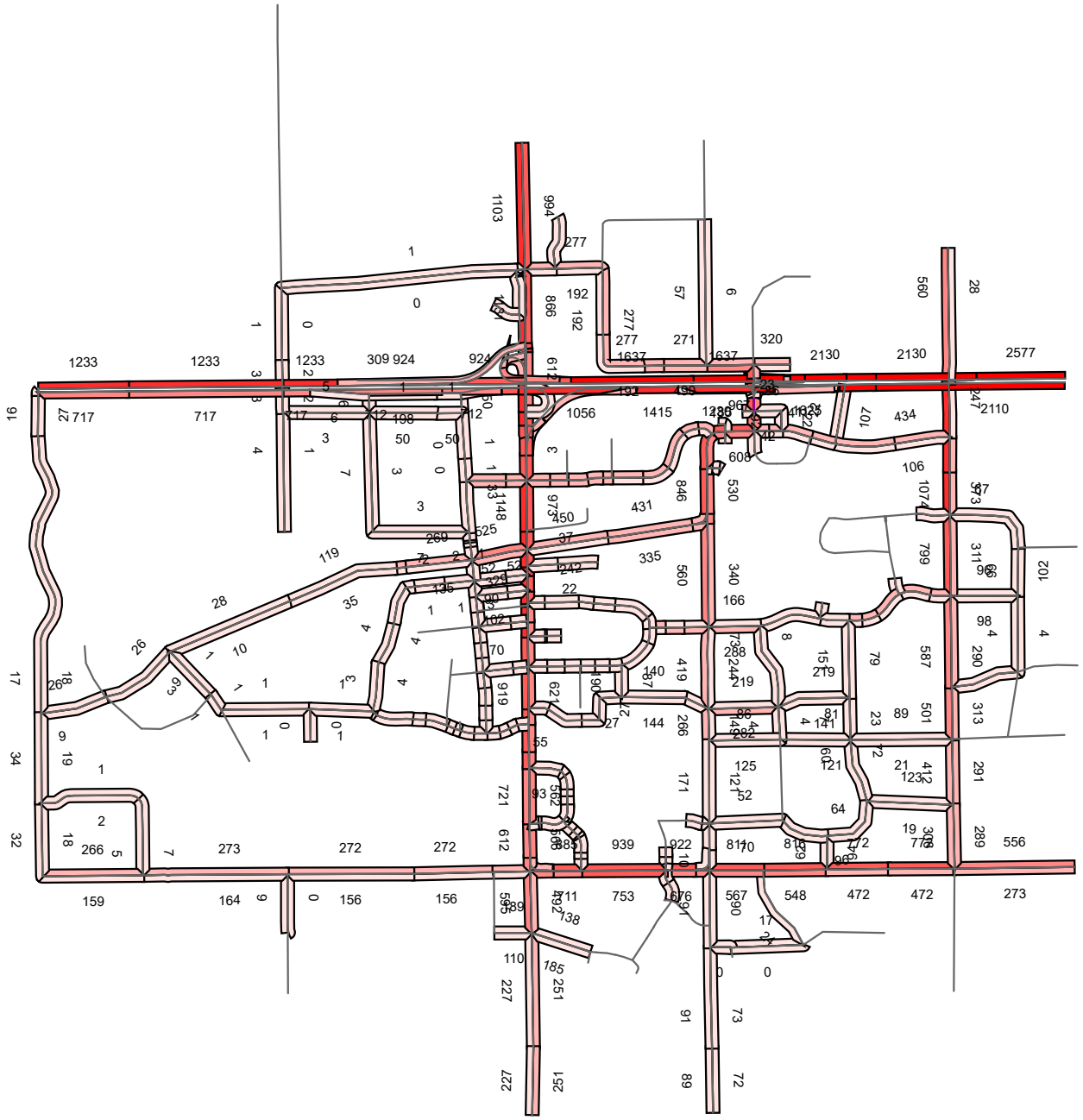

	PM Peak Hour Link Volumes
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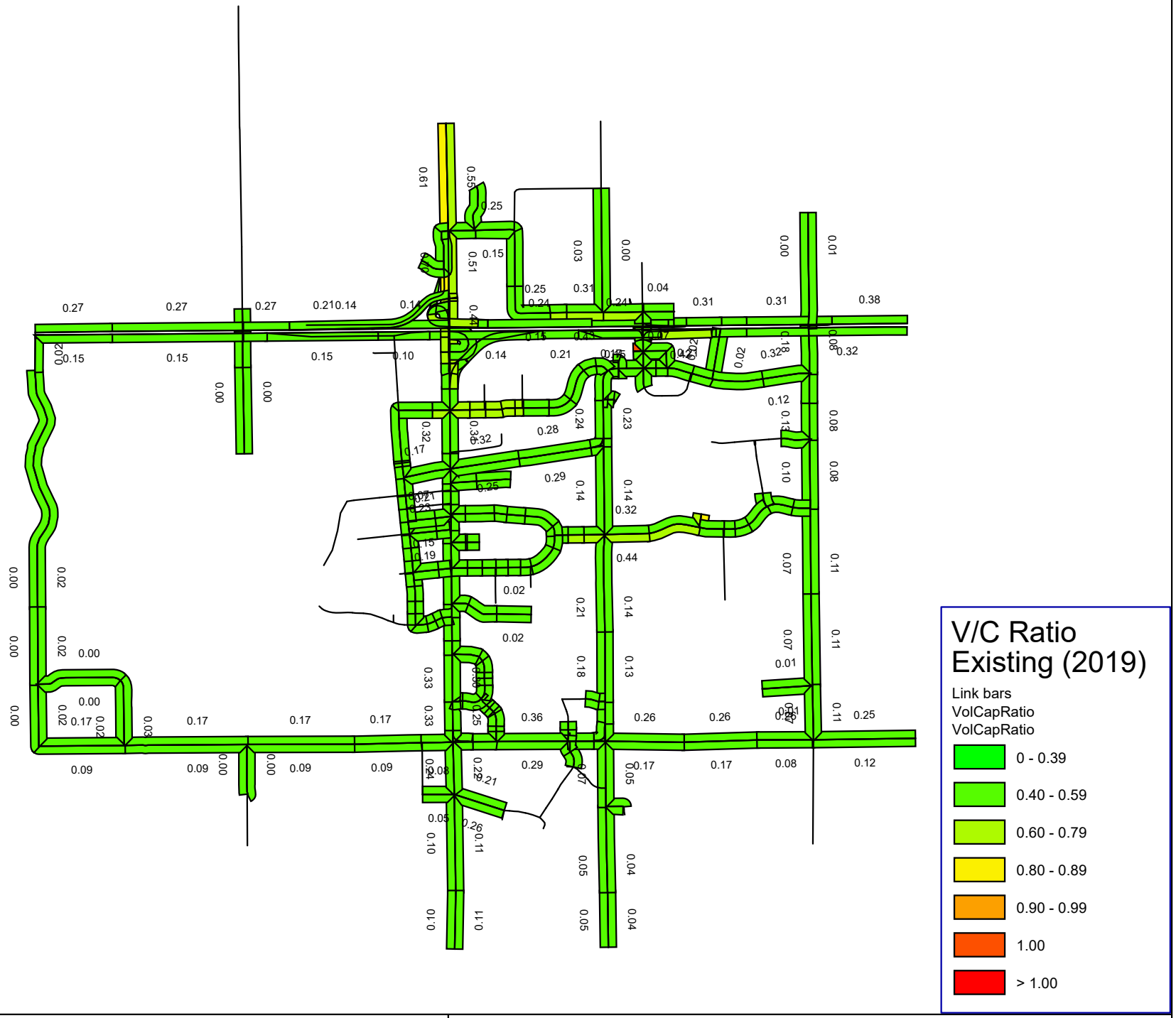
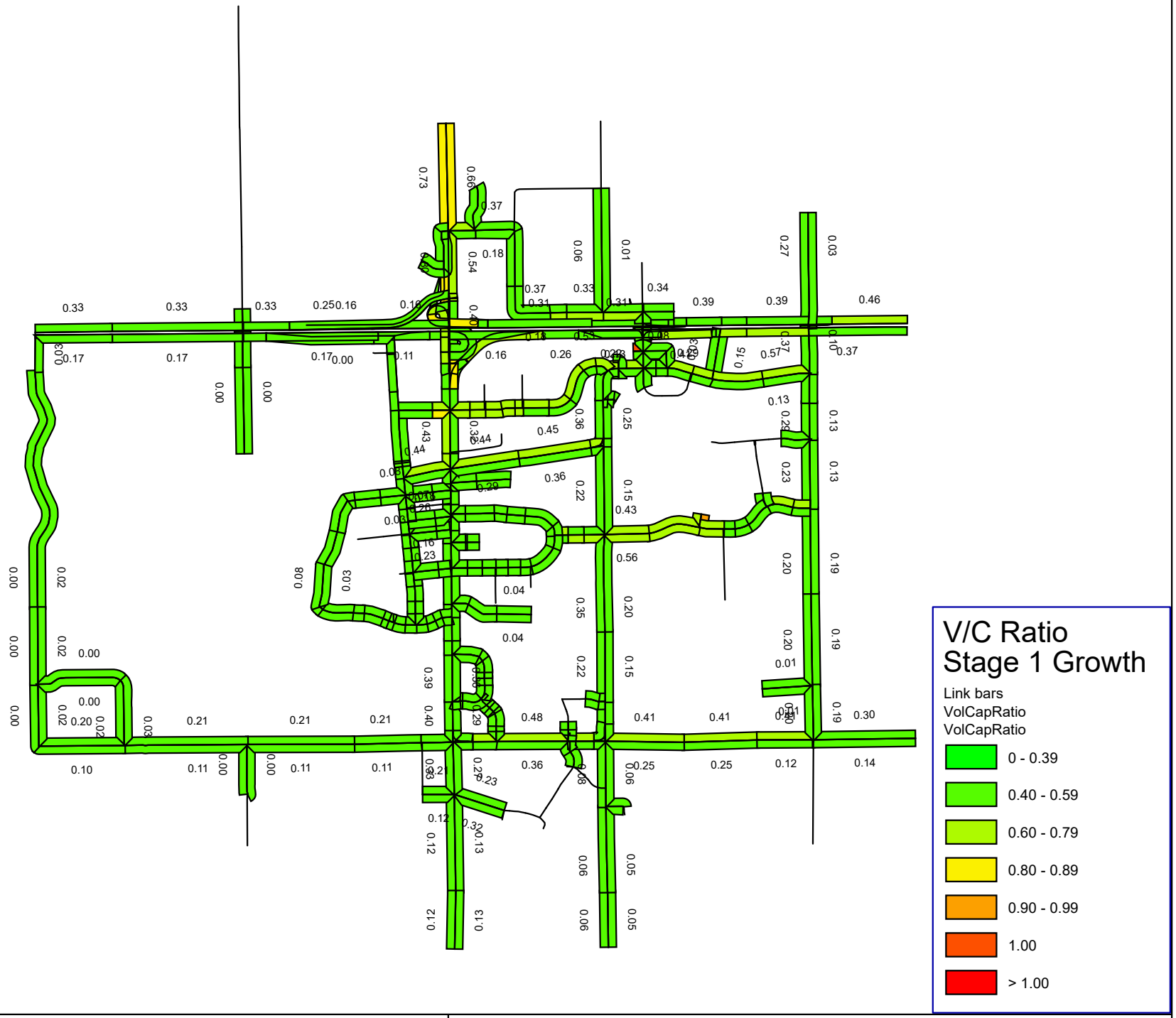
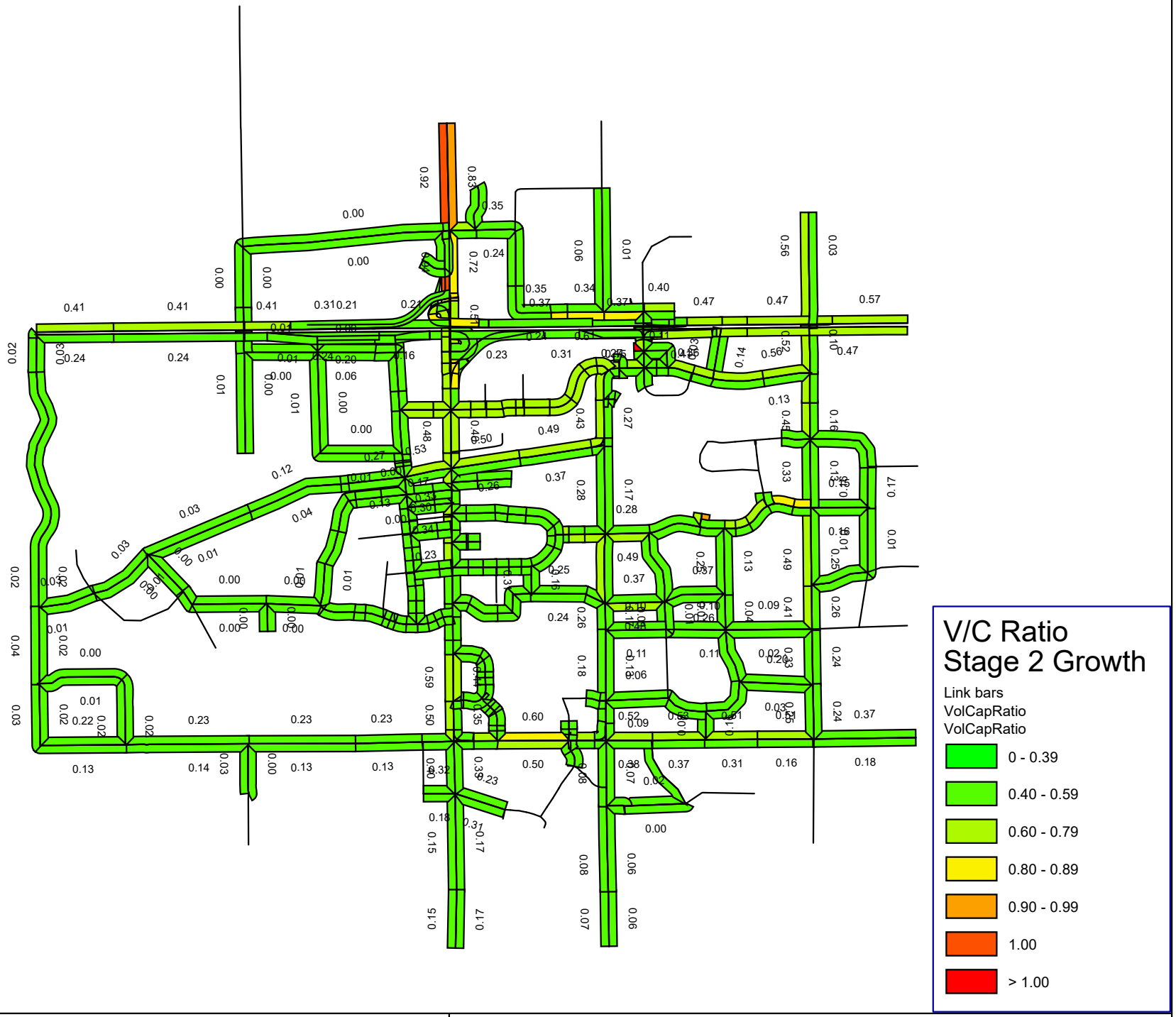


	Volume-to-Capacity Ratio
Created on: 11.02.2021	1:42428



	Volume-to-Capacity Ratio
Created on: 11.02.2021	1:42428

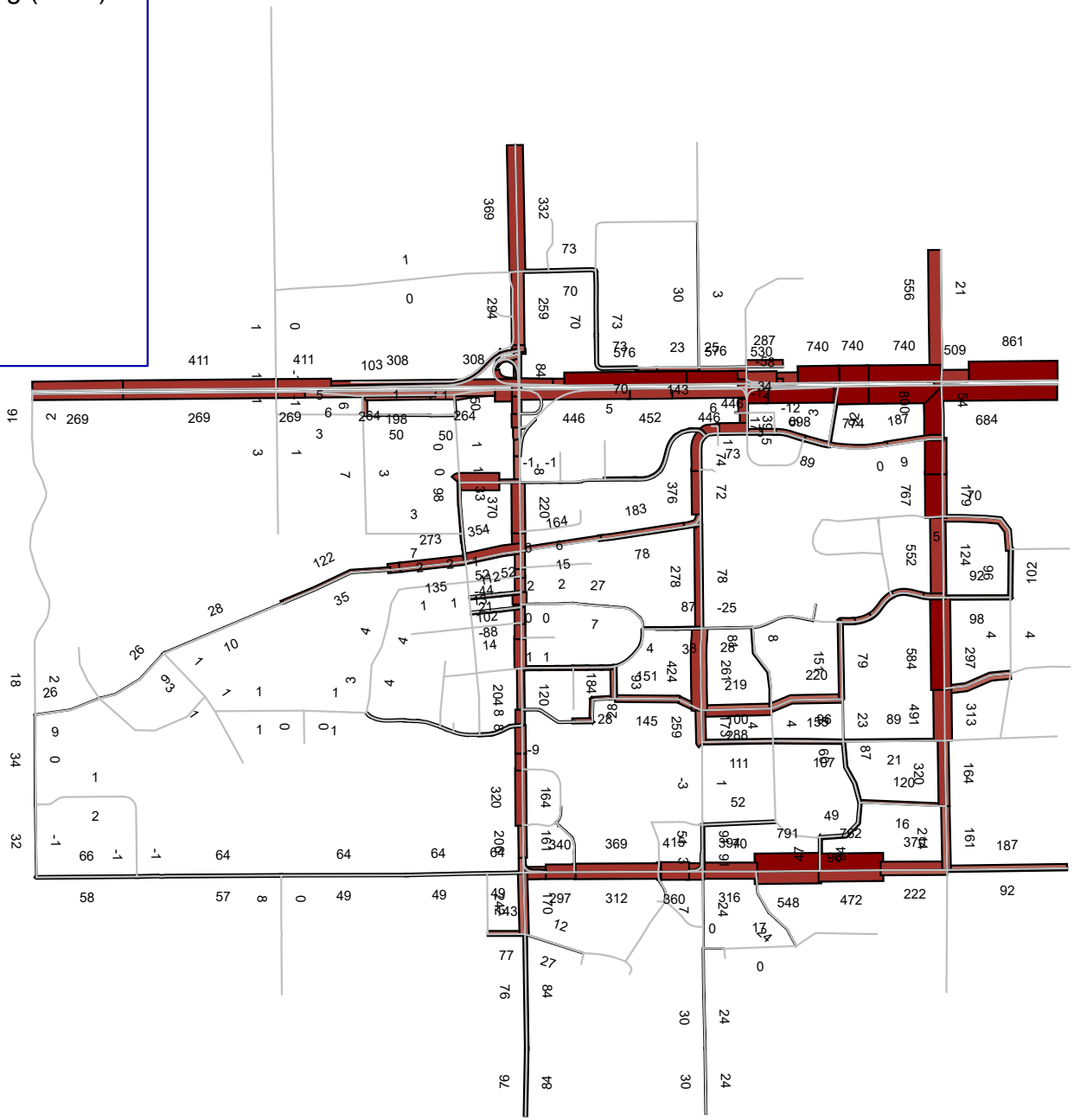


	Volume-to-Capacity Ratio
Created on: 11.02.2021	1:42428

PM Peak Hour Link Volume Difference Stage 2 Growth Minus Existing (2019)

Link bars
Volume PrT [veh] - SCENARIO1 (AP)
Volume PrT [veh] - SCENARIO1 (AP)

- <= -33.0
- <= 19.6
- <= 98.3
- <= 264.4
- <= 559.8
- > 559.8



	Volume Difference
Created on: 11.02.2021	1:43923

ATTACHMENT 2

VISUM MODEL VALIDATION

STONY PLAIN VISUM MODEL - PM PEAK HOUR VALIDATION

Date of Results	03-Feb-21	
GEH Calculation		PM
Total Points		244
GEH < 5	68%	165
GEH < 10	91%	222
GEH < 15	100%	243
GEH > 15	1%	2

Station Description	From Node	To Node	Traffic Count	Model Volume	Volume Comparison		
					Diff	Diff (%)	GEH
1072	855	854	4	6	2	50%	1
1,072	854	855	5	4	-1	-20%	0
11,808	880	15	6	2	-4	-67%	2
11,817	883	5	6	24	18	300%	5
11,808	15	880	8	3	-5	-63%	2
512	49	96	12	0	-12	-100%	5
11,814	16	882	12	2	-10	-83%	4
11,935	342	932	15	65	50	333%	8
512	96	49	18	0	-18	-100%	6
496	34	49	24	0	-24	-100%	7
1,878	264	257	26	21	-5	-19%	1
11,922	593	589	27	44	17	63%	3
11,939	729	935	27	0	-27	-100%	7
11,922	589	593	28	69	41	146%	6
11,814	882	16	30	3	-27	-90%	7
496	49	34	31	0	-31	-100%	8
11,935	932	342	37	106	69	186%	8
11,943	889	939	38	47	9	24%	1
66	587	589	39	0	-39	-100%	9
68	599	597	41	0	-41	-100%	9
11,939	935	729	41	0	-41	-100%	9
132	676	693	42	53	11	26%	2
1,040	729	766	45	52	7	16%	1
11,817	5	883	45	0	-45	-100%	9
11,943	939	889	47	33	-14	-30%	2
60	700	697	48	66	18	38%	2
282	236	271	48	47	-1	-2%	0
11,947	420	889	48	125	77	160%	8
11,918	685	925	52	28	-24	-46%	4
422	163	166	53	16	-37	-70%	6
422	166	163	53	7	-46	-87%	8
372	166	111	54	0	-54	-100%	10
284	271	287	58	47	-11	-19%	2
1,066	863	864	58	0	-58	-100%	11
284	287	271	60	62	2	3%	0
870	205	251	60	107	47	78%	5
874	251	261	60	107	47	78%	5
282	271	236	64	62	-2	-3%	0
300	287	317	66	41	-25	-38%	3
372	111	166	66	0	-66	-100%	11
11,947	889	420	66	159	93	141%	9
300	317	287	67	88	21	31%	2
374	169	166	69	4	-65	-94%	11
1,066	864	863	69	0	-69	-100%	12
78	696	697	70	9	-61	-87%	10
85	282	229	70	43	-27	-39%	4
132	693	676	71	67	-4	-6%	0
610	834	860	74	53	-21	-28%	3
11,921	926	737	74	106	32	43%	3
11,921	737	926	76	75	-1	-1%	0
60	697	700	78	83	5	6%	1
382	166	232	78	56	-22	-28%	3
54	600	589	88	125	37	42%	4
11,905	921	864	88	82	-6	-7%	1
1,044	237	247	90	98	8	9%	1
1,630	861	896	90	82	-8	-9%	1
11,905	864	921	91	129	38	42%	4
1,630	896	861	92	128	36	39%	3
810	256	264	93	46	-47	-51%	6

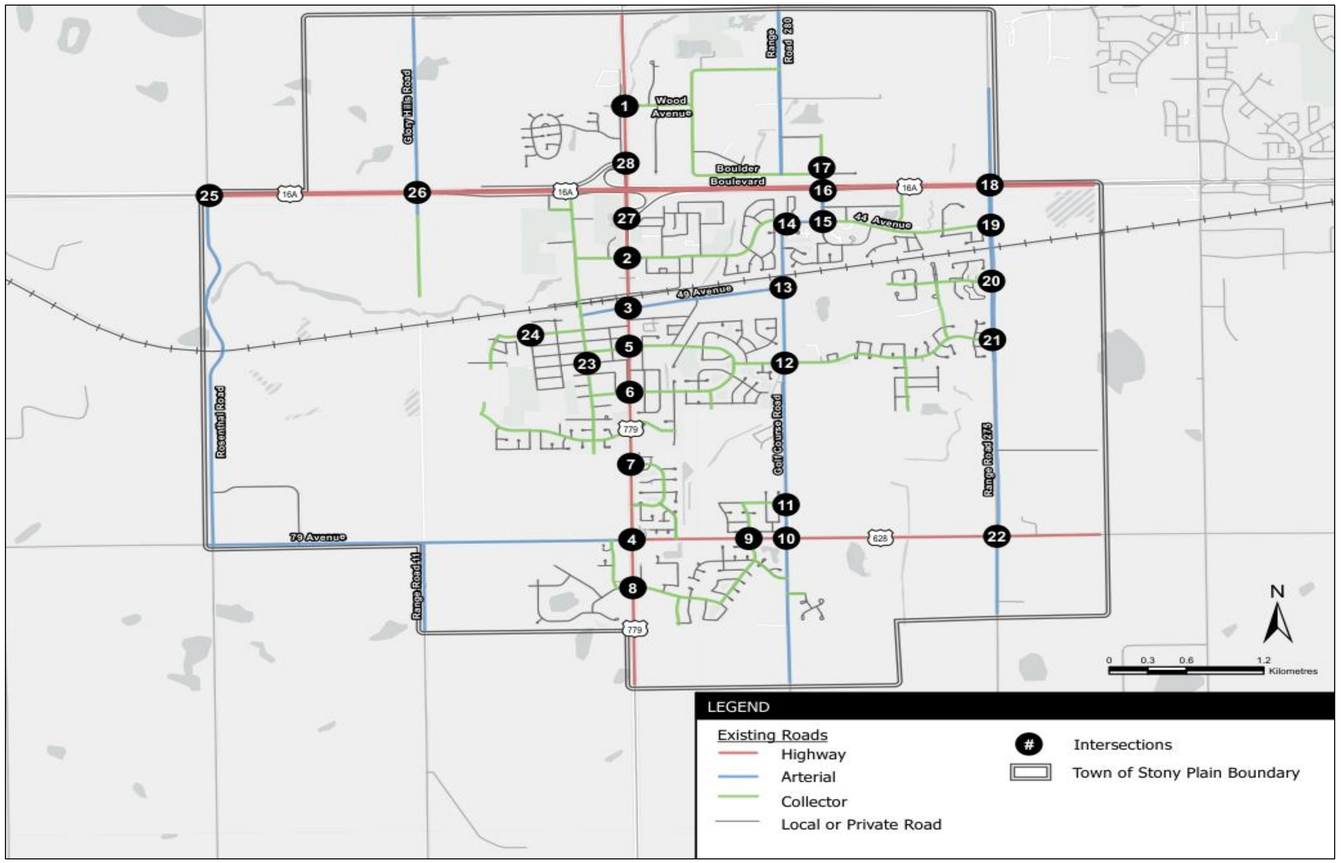
Station Description	From Node	To Node	Traffic Count	Model Volume	Volume Comparison		
					Diff	Diff (%)	GEH
1,044	247	237	93	95	2	2%	0
382	232	166	98	75	-23	-23%	2
374	166	169	101	12	-89	-88%	12
450	281	311	103	131	28	27%	3
1,040	766	729	104	34	-70	-67%	8
482	839	861	108	116	8	7%	1
11,908	732	911	110	95	-15	-14%	1
196	238	289	112	107	-5	-4%	0
11,941	938	293	114	105	-9	-8%	1
70	329	292	115	180	65	57%	5
450	311	281	116	226	110	95%	8
758	266	302	123	258	135	110%	10
1,584	258	266	123	258	135	110%	10
380	744	691	127	191	64	50%	5
610	860	834	129	103	-26	-20%	2
1,012	822	858	131	96	-35	-27%	3
54	589	600	134	159	25	19%	2
1,406	247	328	134	113	-21	-16%	2
76	696	659	136	104	-32	-24%	3
380	691	744	140	267	127	91%	9
11,838	889	890	150	150	0	0%	0
376	635	691	153	241	88	58%	6
830	733	735	156	208	52	33%	4
78	697	696	158	73	-85	-54%	8
196	289	238	159	137	-22	-14%	2
11,838	890	889	162	167	5	3%	0
738	663	698	163	198	35	21%	3
1,052	861	860	163	194	31	19%	2
11,886	762	911	164	148	-16	-10%	1
122	696	693	175	73	-102	-58%	9
1,628	737	751	177	71	-106	-60%	10
11,850	693	895	180	126	-54	-30%	4
11,930	931	589	181	435	254	140%	14
584	274	450	182	227	45	25%	3
11,919	684	925	184	259	75	41%	5
378	895	691	185	138	-47	-25%	4
85	229	282	195	87	-108	-55%	9
584	450	274	195	318	123	63%	8
1,460	260	250	196	28	-168	-86%	16
11,941	293	938	198	208	10	5%	1
11,900	864	869	200	181	-19	-10%	1
122	693	696	203	112	-91	-45%	7
1,400	618	728	205	155	-50	-24%	4
1,401	728	735	205	155	-50	-24%	4
376	691	635	206	144	-62	-30%	5
658	323	360	206	316	110	53%	7
574	274	152	207	170	-37	-18%	3
1,881	293	292	209	193	-16	-8%	1
50	293	329	211	408	197	93%	11
1,048	858	856	211	193	-18	-9%	1
11,929	329	931	211	408	197	93%	11
574	152	274	212	165	-47	-22%	3
482	861	839	213	214	1	0%	0
1,050	860	859	214	204	-10	-5%	1
1,876	859	858	216	204	-12	-6%	1
11,855	898	864	216	251	35	16%	2
11,896	697	920	216	251	35	16%	2
658	360	323	219	328	109	50%	7
11,834	889	293	225	323	98	44%	6
62	599	659	231	321	90	39%	5
64	659	697	231	321	90	39%	5
600	691	685	231	263	32	14%	2
608	684	685	234	251	17	7%	1
738	698	663	235	172	-63	-27%	4
11,917	925	450	236	287	51	22%	3
11,850	895	693	237	179	-58	-24%	4
1,628	751	737	238	225	-13	-5%	1
11,929	931	329	238	514	276	116%	14
64	697	659	240	380	140	58%	8

Station Description	From Node	To Node	Traffic Count	Model Volume	Volume Comparison		
					Diff	Diff (%)	GEH
378	691	895	247	203	-44	-18%	3
11,834	293	889	252	353	101	40%	6
11,917	450	925	255	264	9	4%	1
11,918	925	685	255	264	9	4%	1
50	329	293	256	334	78	30%	5
876	250	21	256	205	-51	-20%	3
656	323	269	265	328	63	24%	4
1,052	860	861	266	247	-19	-7%	1
1,626	735	741	273	417	144	53%	8
11,930	589	931	273	540	267	98%	13
1,012	858	822	276	257	-19	-7%	1
866	682	729	283	365	82	29%	5
1,580	865	856	298	329	31	10%	2
656	269	323	299	316	17	6%	1
830	735	733	301	91	-210	-70%	15
852	733	732	301	146	-155	-51%	10
866	729	682	302	193	-109	-36%	7
756	267	302	310	64	-246	-79%	18
722	683	698	312	449	137	44%	7
1,406	328	247	314	286	-28	-9%	2
11,884	911	729	320	243	-77	-24%	5
608	685	684	324	444	120	37%	6
694	684	683	324	444	120	37%	6
868	205	254	334	369	35	10%	2
650	269	216	337	414	77	23%	4
11,896	920	697	343	392	49	14%	3
11,855	864	898	347	392	45	13%	2
732	711	737	352	522	170	48%	8
600	685	691	359	307	-52	-14%	3
286	288	287	367	473	106	29%	5
1,876	858	859	369	307	-62	-17%	3
11,900	869	864	369	369	0	0%	0
1,050	859	860	372	307	-65	-17%	4
62	659	599	374	484	110	29%	5
448	282	281	375	503	128	34%	6
852	732	733	384	397	13	3%	1
11,884	729	911	384	397	13	3%	1
11,908	911	732	384	397	13	3%	1
350	287	286	386	470	84	22%	4
432	285	282	386	499	113	29%	5
11,933	291	932	389	366	-23	-6%	1
11,913	924	205	394	475	81	21%	4
11,914	370	924	394	475	81	21%	4
11,934	932	290	398	431	33	8%	2
1,881	292	293	408	400	-8	-2%	0
694	683	684	418	510	92	22%	4
728	698	711	419	517	98	23%	5
11,933	932	291	421	395	-26	-6%	1
650	216	269	437	380	-57	-13%	3
286	287	288	438	710	272	62%	11
448	281	282	442	730	288	65%	12
820	256	499	445	614	169	38%	7
722	698	683	447	500	53	12%	2
788	4	10	449	447	-2	0%	0
11,934	290	932	452	501	49	11%	2
796	10	14	455	447	-8	-2%	0
350	286	287	458	675	217	47%	9
432	282	285	458	769	311	68%	13
1,576	774	765	477	202	-275	-58%	15
1,879	765	735	477	202	-275	-58%	15
488	279	281	478	742	264	55%	11
814	20	92	478	446	-32	-7%	1
11,910	92	923	478	446	-32	-7%	1
770	302	499	488	321	-167	-34%	8
882	260	252	505	606	101	20%	4
11,901	252	247	505	606	101	20%	4
1,048	856	858	513	437	-76	-15%	3
732	737	711	518	560	42	8%	2
800	14	20	538	447	-91	-17%	4

Station Description	From Node	To Node	Traffic Count	Model Volume	Volume Comparison		
					Diff	Diff (%)	GEH
11,911	923	256	538	473	-65	-12%	3
488	281	279	544	611	67	12%	3
1,880	618	733	549	781	232	42%	9
716	267	263	574	690	116	20%	5
768	266	264	574	690	116	20%	5
778	736	735	574	508	-66	-11%	3
576	276	274	592	604	12	2%	0
652	272	269	601	735	134	22%	5
728	711	698	626	542	-84	-13%	3
576	274	276	628	726	98	16%	4
784	264	261	641	527	-114	-18%	5
11,784	261	260	641	634	-7	-1%	0
826	83	21	657	616	-41	-6%	2
832	253	83	657	616	-41	-6%	2
836	259	253	657	616	-41	-6%	2
842	309	259	657	616	-41	-6%	2
844	370	309	657	616	-41	-6%	2
956	247	244	661	662	1	0%	0
1,570	762	732	676	1,040	364	54%	12
1,454	274	272	694	735	41	6%	2
652	269	272	700	770	70	10%	3
872	251	254	700	678	-22	-3%	1
878	250	251	700	678	-22	-3%	1
1,454	272	274	712	770	58	8%	2
956	244	247	739	734	-5	-1%	0
880	252	250	760	855	95	13%	3
11,901	247	252	760	855	95	13%	3
806	9	3	794	821	27	3%	1
838	733	757	818	915	97	12%	3
11,888	757	913	818	915	97	12%	3
816	13	9	821	821	0	0%	0
778	735	736	838	564	-274	-33%	10
1,574	774	762	840	1,188	348	41%	11
706	269	267	884	753	-131	-15%	5
706	267	269	937	810	-127	-14%	4
716	263	267	937	810	-127	-14%	4
766	257	258	937	1,068	131	14%	4
11,883	21	13	947	821	-126	-13%	4
11,955	732	944	956	1,091	135	14%	4
790	255	257	1,034	1,047	13	1%	0
834	254	255	1,034	1,047	13	1%	0
11,956	944	370	1,051	1,091	40	4%	1
11,889	913	870	1,165	1,332	167	14%	5
848	806	856	1,296	1,326	30	2%	1
11,787	871	774	1,317	1,390	73	6%	2
1,582	865	855	1,445	1,387	-58	-4%	2
858	855	807	1,458	1,390	-68	-5%	2
1,070	856	867	1,463	1,406	-57	-4%	2
1,068	868	865	1,713	1,716	3	0%	0

ATTACHMENT 3

TRAFFIC VOLUMES



Intersection ID 1
Hwy 779/ 48 St & Wood Ave

	95 (192)	
21 (22)	13 (44)	189 (87)
455 (570)	20 (78)	
20 (30)		39 (39)
17 (8)	35 (27)	543 (421)
59 (52)		

Intersection ID 28
Hwy 779/ 48 St & WB Ramp Hwy 16A

	0 (0)	
46 (60)	0 (0)	0 (0)
435 (759)	0 (0)	
63 (60)		0 (0)
0 (0)	199 (230)	418 (507)
337 (393)		

Intersection ID 2
Hwy 779/ 48 St & 44 Ave

	95 (120)	
125 (195)	42 (74)	67 (118)
169 (402)	26 (43)	
124 (225)		26 (54)
40 (90)	78 (69)	256 (388)
54 (69)		

Intersection ID 3
Hwy 779/ 48 St & 49 Ave

	59 (79)	
69 (130)	37 (53)	28 (82)
209 (314)	18 (63)	
33 (82)		23 (35)
42 (65)	21 (24)	286 (406)
41 (65)		

Intersection ID 27
Hwy 779/ 48 St & EB Ramp Hwy 16A

	0 (0)	
0 (0)	0 (0)	70 (123)
702 (1029)	0 (0)	
73 (67)		453 (365)
0 (0)	0 (0)	544 (670)
46 (26)		

Intersection ID 26
Glory Hills Rd & Hwy 16A

	1 (8)	
1 (3)	346 (809)	9 (3)
0 (0)	7 (11)	
1 (0)		12 (21)
911 (431)	7 (9)	0 (0)
3 (1)		

Intersection ID 25
Rosenthal Rd & Hwy 16A

	5 (17)	
1 (3)	317 (772)	16 (9)
2 (37)	9 (5)	
4 (1)		4 (4)
889 (436)	1 (1)	0 (1)
4 (3)		

Intersection ID 5
Hwy 779/ 48 St & 52 Ave

	42 (71)	
35 (37)	16 (22)	16 (36)
118 (238)	5 (23)	
84 (120)		10 (22)
18 (45)	7 (11)	191 (238)
13 (30)		

Intersection ID 6
Hwy 779/ 48 St & 55 Ave

	21 (20)	
17 (20)	19 (33)	18 (26)
119 (280)	5 (14)	
23 (29)		6 (23)
14 (17)	17 (7)	167 (185)
7 (12)		

Intersection ID 7
Hwy 779/ 48 St & Willow Park N

	28 (12)	
0 (0)	0 (0)	11 (34)
105 (263)	2 (3)	
0 (0)		1 (3)
0 (0)	0 (0)	172 (214)
0 (0)		

Intersection ID 4
Hwy 779/ 48 St & 79 Ave / Hwy 628

	95 (115)	
54 (104)	50 (77)	107 (120)
143 (184)	30 (46)	
67 (45)		67 (44)
111 (47)	10 (17)	288 (164)
18 (22)		

Intersection ID 8
Hwy 779/ 48 St & Westerra Dr

	38 (28)	
3 (15)	7 (14)	7 (44)
75 (135)	6 (6)	
17 (23)		14 (14)
4 (8)	5 (9)	78 (115)
10 (16)		

Intersection ID 9
Highpark Rd/Westerra Dr & 79 Ave / Hwy 628

	3 (17)	
9 (15)	50 (242)	9 (9)
1 (3)	20 (111)	
1 (10)		87 (71)
146 (151)	11 (16)	0 (1)
3 (20)		

Intersection ID 10
Golf Course Rd & 79 Ave / Hwy 628

	17 (64)	
30 (134)	41 (235)	45 (41)
5 (62)	1 (44)	
64 (71)		24 (20)
175 (155)	1 (5)	12 (23)
0 (5)		

Intersection ID 11
Golf Course Rd & Highridge Way

	0 (0)	
8 (47)	0 (0)	0 (0)
49 (100)	0 (0)	
25 (29)		0 (0)
0 (0)	5 (24)	90 (151)
22 (13)		

Intersection ID 12
Golf Course Rd & Brightbank/Fairway Drive

	35 (44)	
30 (104)	29 (64)	55 (199)
8 (19)		25 (56)
46 (63)		6 (23)
22 (61)	11 (38)	89 (124)
13 (29)		

Intersection ID 13
Golf Course Rd & 49 Ave

	0 (0)	
111 (184)	0 (0)	81 (234)
0 (0)	0 (0)	
101 (154)		0 (0)
0 (0)	38 (62)	134 (170)
21 (101)		

Intersection ID 14
Golf Course Rd & 44 Ave

	81 (217)	
0 (0)	0 (0)	0 (0)
0 (0)	171 (409)	
84 (125)		253 (294)
0 (0)	12 (18)	0 (0)
24 (38)		

Intersection ID 15
South Park Drive & 44 Ave

	24 (23)	
140 (301)	84 (201)	16 (56)
34 (52)	10 (14)	
205 (230)		15 (9)
80 (112)	10 (16)	32 (49)
12 (10)		

Intersection ID 16
South Park Drive & Hwy 16A

	270 (219)	
105 (106)	535 (799)	213 (174)
164 (172)	445 (566)	
79 (59)		484 (347)
801 (644)	171 (234)	157 (134)
265 (239)		

Intersection ID 17
North Park Drive & Boulder Blvd

	2 (2)	
3 (5)	29 (21)	3 (0)
14 (36)	76 (81)	
2 (3)		32 (33)
37 (12)	19 (22)	149 (276)
120 (268)		

Intersection ID 18
Veterans Blvd/Boundary Rd & Hwy 16A

	7 (1)	
8 (1)	1187 (1444)	30 (1)
2 (3)	358 (482)	
6 (1)		158 (195)
1652 (1267)	3 (3)	9 (13)
17 (28)		

Intersection ID 19
Veterans Blvd/Boundary Rd & 44 Ave

	0 (0)	
92 (202)	0 (0)	103 (260)
0 (0)	0 (0)	
0 (0)		0 (0)
51 (52)	50 (74)	123 (142)
0 (0)		
39 (79)		

Intersection ID 20
Veterans Blvd/Boundary Rd & Graybriar Drive

	0 (0)	
38 (116)	0 (0)	106 (256)
0 (0)	0 (0)	
0 (0)		0 (0)
54 (64)	1 (13)	119 (150)
0 (0)		
1 (10)		

Intersection ID 21
Veterans Blvd/Boundary Rd & Fairway Drive

	0 (0)	
66 (188)	0 (0)	39 (78)
0 (0)	0 (0)	
84 (96)		0 (0)
0 (0)	10 (25)	34 (67)
11 (12)		

Intersection ID 22
Veterans Blvd/Boundary Rd & 79 Ave / Hwy 628

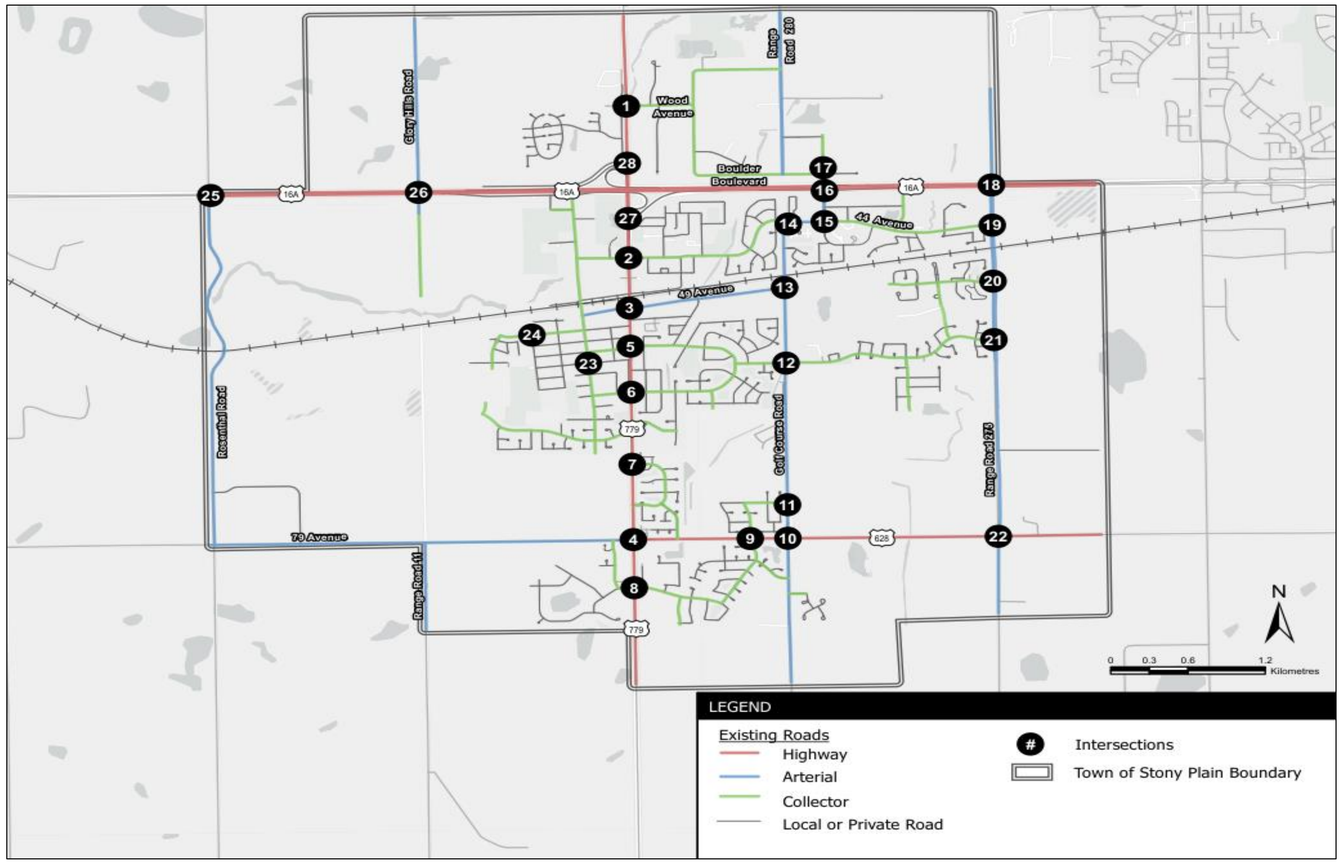
	16 (39)	
9 (26)	42 (308)	17 (34)
3 (22)		23 (28)
9 (14)		22 (7)
235 (165)	4 (13)	23 (38)
4 (13)		

Intersection ID 23
50 Street & 53 Ave

	13 (13)	
3 (2)	17 (36)	12 (37)
2 (14)	19 (49)	
3 (7)		22 (20)
28 (44)	8 (16)	17 (33)
5 (15)		

Intersection ID 24
52 Street & 50 Ave S

	1 (0)	
0 (0)	5 (0)	1 (0)
4 (4)	1 (18)	
0 (1)		1 (0)
3 (4)	10 (31)	0 (5)
21 (19)		



Intersection ID 1
Hwy 779/ 48 St & Wood Ave

32 (33)	682 (855)	284 (130)
30 (45)	26 (12)	88 (78)
32 (40)	814 (632)	58 (58)
142 (288)	20 (66)	30 (117)

Intersection ID 28
Hwy 779/ 48 St & WB Ramp Hwy 16A

4 (8)	21 (54)	4 (0)
3 (4)	56 (18)	180 (402)
224 (414)	28 (33)	48 (50)
3 (3)	44 (32)	114 (122)

Intersection ID 2
Hwy 779/ 48 St & 44 Ave

69 (90)	652 (1138)	0 (0)
94 (90)	0 (0)	506 (590)
298 (345)	827 (760)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 3
Hwy 779/ 48 St & 49 Ave

2 (4)	3 (56)	24 (14)
6 (2)	1334 (654)	6 (4)
2 (2)	0 (2)	10 (6)
8 (26)	476 (1158)	14 (8)

Intersection ID 27
Hwy 779/ 48 St & EB Ramp Hwy 16A

2 (4)	0 (0)	9 (4)
2 (0)	1366 (646)	4 (2)
10 (14)	0 (0)	18 (32)
2 (12)	519 (1214)	10 (16)

Intersection ID 26
Glory Hills Rd & Hwy 16A

158 (159)	246 (256)	320 (261)
118 (88)	1202 (966)	398 (358)
256 (351)	236 (201)	726 (620)
405 (328)	802 (1198)	668 (849)

Intersection ID 25
Rosenthal Rd & Hwy 16A

12 (2)	3 (4)	45 (2)
9 (2)	2478 (1900)	26 (42)
14 (20)	4 (4)	237 (292)
10 (2)	1780 (2166)	537 (723)

Intersection ID 5
Hwy 779/ 48 St & 52 Ave

0 (0)	1053 (1544)	150 (184)
110 (100)	0 (0)	69 (39)
0 (0)	816 (1005)	680 (548)
0 (0)	0 (0)	0 (0)

Intersection ID 6
Hwy 779/ 48 St & 55 Ave

389 (432)	525 (890)	208 (261)
390 (477)	60 (135)	81 (104)
117 (102)	806 (822)	39 (81)
299 (254)	63 (111)	39 (64)

Intersection ID 7
Hwy 779/ 48 St & Willow Park N

0 (0)	0 (0)	0 (0)
126 (188)	0 (0)	36 (57)
18 (27)	0 (0)	380 (441)
122 (326)	0 (0)	256 (614)

Intersection ID 4
Hwy 779/ 48 St & 79 Ave / Hwy 628

210 (452)	51 (78)	24 (84)
308 (345)	120 (168)	18 (15)
15 (24)	48 (74)	22 (14)
36 (34)	126 (302)	15 (21)

Intersection ID 8
Hwy 779/ 48 St & Westerra Dr

138 (303)	154 (435)	0 (0)
76 (78)	0 (0)	58 (118)
75 (111)	184 (213)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 9
Highpark Rd/Westerra Dr & 79 Ave / Hwy 628

202 (221)	611 (534)	82 (136)
76 (119)	63 (98)	62 (98)
32 (36)	611 (589)	34 (52)
135 (115)	56 (80)	27 (94)

Intersection ID 10
Golf Course Rd & 79 Ave / Hwy 628

166 (276)	122 (351)	0 (0)
152 (231)	0 (0)	32 (152)
57 (78)	201 (255)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 11
Golf Course Rd & Highridge Way

57 (174)	159 (384)	0 (0)
81 (96)	0 (0)	2 (15)
2 (20)	178 (225)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 12
Golf Course Rd & Brightbank/Fairway Drive

0 (0)	0 (6)	0 (2)
0 (2)	4 (6)	32 (28)
15 (46)	0 (8)	2 (12)
2 (0)	8 (0)	2 (27)

Intersection ID 13
Golf Course Rd & 49 Ave

4 (3)	19 (56)	3 (21)
4 (10)	42 (66)	8 (22)
12 (24)	26 (50)	33 (30)
20 (20)	26 (54)	28 (74)

Intersection ID 14
Golf Course Rd & 44 Ave

125 (72)	420 (460)	57 (70)
169 (170)	27 (68)	20 (45)
10 (16)	383 (365)	15 (33)
84 (101)	24 (33)	8 (34)

Intersection ID 15
South Park Drive & 44 Ave

45 (156)	82 (286)	38 (84)
69 (94)	33 (92)	20 (44)
16 (57)	134 (186)	9 (34)
52 (66)	44 (96)	12 (28)

Intersection ID 16
South Park Drive & Hwy 16A

99 (282)	58 (117)	0 (0)
126 (144)	0 (0)	16 (18)
15 (38)	51 (100)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 17
North Park Drive & Boulder Blvd

63 (35)	440 (490)	67 (45)
49 (56)	21 (26)	10 (18)
26 (10)	355 (355)	9 (34)
45 (38)	28 (50)	8 (21)

Intersection ID 18
Veterans Blvd/Boundary Rd & Hwy 16A

0 (0)	369 (361)	39 (47)
0 (0)	0 (0)	0 (0)
0 (0)	330 (364)	2 (4)
54 (20)	0 (0)	3 (4)

Intersection ID 19
Veterans Blvd/Boundary Rd & 44 Ave

12 (70)	74 (285)	0 (0)
38 (44)	0 (0)	33 (20)
8 (36)	135 (226)	0 (0)
0 (0)	0 (0)	0 (0)

Intersection ID 20
Veterans Blvd/Boundary Rd & Graybriar Drive

66 (100)	175 (177)	84 (154)
52 (51)	88 (60)	27 (33)
15 (26)	207 (186)	53 (57)
73 (131)	75 (116)	20 (69)

Intersection ID 21
Veterans Blvd/Boundary Rd & Fairway Drive

6 (22)	2 (4)	9 (14)
2 (15)	219 (226)	4 (30)
16 (24)	0 (2)	139 (106)
4 (26)	75 (363)	30 (166)

Intersection ID 22
Veterans Blvd/Boundary Rd & 79 Ave / Hwy 628

45 (201)	8 (44)	69 (62)
96 (106)	262 (232)	0 (8)
2 (8)	18 (34)	36 (30)
26 (96)	62 (352)	2 (66)

Intersection ID 23
50 Street & 53 Ave

14 (39)	25 (51)	34 (42)
14 (21)	352 (248)	6 (20)
6 (20)	34 (57)	33 (10)
24 (58)	63 (462)	4 (33)

Intersection ID 24
52 Street & 50 Ave S

4 (22)	112 (202)	10 (66)
26 (34)	6 (12)	15 (24)
8 (14)	117 (172)	6 (21)
57 (42)	10 (21)	9 (9)

APPENDIX C

Prioritization Matrix

Stony Plain Transportation Master Plan - Prioritization Ranking

12-Feb-21

Total Score =12, Low Priority
=13 to 15, Medium Priority
= Over 16, High Priority

Prioritization Ranking - Operational & Network Improvements

Location	Recommended Action	Timelines	Safety	Operational	Active Transportation Integration	Transit Integration	Community Values	Cost	Total Score
OPERATIONAL IMPROVEMENTS									
Highway 779									
Highway 779 / 44 Avenue	Add EB left-turn and SB right-turn lanes	2	2	3	1	1	2	1	12
Highway 779 / Highway 16A WB Ramp	Add Signal	3	3	3	1	1	3	2	16
Highway 779 / Highway 16A EB Ramp	Add Signal	1	3	3	1	1	3	2	14
Highway 628									
Highway 628 / Veterans Boulevard	Add Signal	2	2	3	1	1	2	2	13
Highway 628 / Westerra Drive	Add EB and WB left-turn lane	3	3	3	1	1	3	2	16
Highway 16A		2	2	3	1	1	2	2	13
Highway 16A / Glory Hills Road	Add Signal	1	2	3	1	1	2	2	12
Highway 16A / Rosenthal Road (Range Road 12)	Add Signal	1	2	3	1	1	2	2	12
Highway 16A / South Park Drive	Add second NB and SB left-turn lanes	2	2	3	1	1	3	1	13
NETWORK IMPROVEMENTS									
Highway 779									
North of Highway 16A	Widen from two to four lanes between Highway 16A and north limit	2	2	3	2	1	3	1	14
South of Willow Park Road	Widen from two to four lanes between Willow Park Road and Highway 628	1	2	3	2	1	2	1	12
49 Avenue									
49 Avenue East	Implement access management measures such as two-way left-turns	2	3	3	2	1	2	2	15
49 Avenue West Extension, Phase 1	Extend west from Highway 779 to Brickyard Drive	1	1	3	1	1	3	1	11
49 Avenue West Extension, Phase 2	Extend west from Brickyard Drive to Range Road 12	1	1	2	1	1	2	1	9
Golf Course Road									
North of Highway 16A	Surface upgrades from north of Highway 16A to north limit	2	1	3	1	1	2	2	12
South of Fairway Drive	Widen from two to four lanes between Fairway Drive and Highway 628	1	2	3	2	1	2	1	12
Highway 628									
Highway 779 to Golf Course Road	Widen from two to four lanes	1	2	3	1	1	2	1	11

Stony Plain Transportation Master Plan - Prioritization Ranking

12-Feb-21

Total Score =12, Low Priority
=13 to 15, Medium Priority
= Over 16, High Priority

Prioritization Ranking - Policies & Programs

Strategy	Recommended Action	Timelines	Safety	Operational	Active Transportation Integration	Transit Integration	Community Values	Cost	Total Score
ROAD NETWORK STRATEGY									
Traffic Management Program and Monitoring	Establish a data collection and monitoring program	3	1	3	3	1	2	3	16
	Warrant analysis	2	3	3	1	1	2	3	15
	Signal timing optimization & coordination	2	2	3	2	2	2	2	15
	Implement TIA guidelines	3	3	3	3	3	2	3	20
Operational Improvements	Confirm long term plan for Highway 16A	3	2	2	1	2	2	2	14
Network Improvements	Transfer development authority on Highway 779 and Highway 628	3	2	2	2	2	2	2	15
	Active transportation & transit integration	3	2	1	3	3	2	2	16
TRANSPORTATION SAFETY STRATEGY									
Strategic Safety Policies & Program	Collision data collection & monitoring	3	3	1	2	1	3	3	16
	Conduct safety studies	2	3	1	2	1	3	3	15
	Establish enforcement and education programs	2	3	1	2	1	3	3	15
	Incorporate road safety improvements in Capital Program	2	2	2	2	1	3	3	15
	Conduct annual crosswalk review	3	3	2	3	1	3	3	18
	Implement school zone safety strategies and programs	2	3	2	2	1	3	3	16
Speed Reduction Measures	Conduct speed limit best practice review	3	3	1	1	1	3	3	15
	Implement speed reduction pilot program	2	3	1	2	1	3	2	14
Goods Movement	Periodic design standard and road classification review	2	2	2	2	2	2	3	15
	Review truck restriction signage	2	2	2	1	1	1	3	12
Rail Crossing	Review signal timing plans around rail crossings	3	2	3	1	1	3	2	15
	Consider opportunities for ITS improvements	3	2	3	1	1	3	2	15
	Review feasibility for pedestrian tunnel	2	2	1	3	1	3	2	14
	Include rail crossing guidelines/standards for active transportation	3	3	1	3	1	2	2	15
INFRASTRUCTURE MANAGEMENT AND MAINTENANCE STRATEGY									
Rehabilitation & Maintenance	Conduct pavement condition assessment	3	3	2	3	1	3	1	16
	Conduct regular maintenance and rehabilitation on roadways, sidewalks and other roadway elements such as lighting and signage	3	3	2	2	1	3	1	15

Strategy	Recommended Action	Timelines	Safety	Operational	Active Transportation Integration	Transit Integration	Community Values	Cost	Total Score
	Prioritize roads and sidewalks to be rehabilitated to achieve a 20% backlog	3	3	2	3	1	3	1	16
Road Markings, Lighting and Signage	Conduct signage assessment and update around school areas	2	3	1	2	1	2	1	12
ALTERNATIVE TRANSPORTATION STRATEGY									
Active Transportation Strategy Integration	Coordinate active modes network expansion and improvements during annual road maintenance, rehabilitation, and reconstruction program	3	2	2	3	1	2	1	14
	Ensure active modes are incorporated in the latest ASP and TIA	3	3	3	3	1	2	3	18
	Implement temporary pilot projects	2	2	1	3	1	3	2	14
Transit Integration	Implementing the Tri-Municipal Regional Transit Strategy	3	1	2	1	3	2	2	14
	Expanding local services	1	1	2	1	3	2	2	12
	Incorporate transit design guidelines	3	3	1	3	1	2	2	15
	Integrate with active transportation	2	2	1	2	2	2	2	13
	New development integration	3	3	1	3	1	2	2	15
	Conduct rideshare feasibility study	2	1	1	1	3	2	2	12

APPENDIX D

Prioritization Funding Estimate

Construction Improvement Projects	Timeframe (Years)	Source of Funding	Cost	Cost with Engg (15%)	Cost ($/m)	Description:
Highway 779/Highway 16A WB Ramp	1-5	Town & AT	$250,000	$288,000	N/A	Signalization
Westerra Blvd & Highway 628 Improvements	1-5	Town	$474,000	$546,000	N/A	Intersection Upgrade - Additional Left Turn Lanes
Highway 628/Veterans Boulevard	6-15	Town, AT, Developers	$200,000	$230,000	N/A	Signalization
Add turns lanes at Highway 16A/South Park Drive	6-15	Town	$2,760,000	$3,174,000	N/A	Intersection Upgrade - Provide Additional Northbound & Southbound left turn Lanes on south park drive
Highway 779/Highway 16A EB Ramp	16-25	Town & AT	$250,000	$288,000	N/A	Signalization
Highway 16A and Glory Hills Road	16-25	Town & AT	$280,000	$322,000	N/A	Signalization
Highway 16A and Rosenthal Road (Range Road 12)	16-25	Town & AT	$280,000	$322,000	N/A	Signalization
Add turn lanes at Highway 779 / 44th Avenue	16-25	Town & Developers	$1,020,000	$1,173,000	N/A	Intersection Upgrade - Provide an additional eastbound left turn on 44 Ave and a southbound right turn lane on 48th street
Paving Golf Course Road to Town Limits	16-25	Town	$2,400,000	$2,760,000	$1,840	Upgrade gravel standard to Rural 2-Lane cross section including full depth base prep
Widen Highway 779	6-15	Town & AT	$897,000	$1,032,000	$2,580	Widen from two lanes to four lanes from Hwy16A to Wood Ave
Access Management on 49th Avenue	6-15	Town & Developers	$803,000	$924,000	$1,155	Additional Lane - Two-way left turn lane in center of roadway (Assumes minimal concrete works)
49th Avenue West Extension Phase 1	16-25	Town & Developers	$2,114,000	$2,432,000	$3,470	New 2-Lane Rural Collector
49th Avenue West Extension Phase 2	25+	Town & Developers	$6,946,000	$7,988,000	$3,470	New 2-Lane Rural Collector
Highway 628 Capacity Improvements	25+	Town & Developers	$5,410,000	$6,222,000	$6,220	2-Lane Urban Undivided to 4-Lane Urban Divided (Inlcudes Signalization)
Highway 779 Capacity Improvements (Hwy 628 - Willow Park Drive)	25+	Town	$2,121,000	$2,440,000	$3,250	2-Lane Urban Undivided to 4-Lane Urban Undivided (New Shared Use Path)
Golf Course Rd Capacity Improvements (Hwy 628 - Fairway Dr)	25+	Town	$4,040,000	$4,646,000	$3,000	2-Lane Urban Undivided to 4-Lane Urban Undivided (Some Sidewalk and SUP already in place)

Signalization

McElhanney

21-Feb-21

Description	Construction Cost	Engineering Cost	Total Cost
Costs			
Standard Intersection Signalization Average Construction Cost	$200,000	$30,000	$230,000
Interchange Off-Ramps Signalization Average Construction Cost	$250,000	$37,500	$288,000
Highway Intersection Signalization Average Construction Cost	$280,000	$42,000	$322,000

Access Management for 49th Ave Adding a two-way left lane	McElhanney 21-Feb-21		
Description			
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$ 35,000
Section 2.0 - Roadway Construction			$ 314,490
Section 3.0 - Underground Municipal Systems			$ -
Section 4.0 - Electrical (Streetlighting)			$ -
Section 5.0 - Electrical (Signalization)			$ 45,000
Section 6.0 - Third Party Utility Relocations			$ -
Section 7.0 - Land Acquisition			$ -
SECTION A - CONSTRUCTION SUBTOTAL		$	395,000
CONTINGENCIES	20%	$	79,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	474,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	71,100
TOTAL COST		$	546,000

Add NB & SB Left Turn lanes from South Park Drive onto Hwy 16A

McElhanney

21-Feb-21

Description			Cost
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$200,000
Section 2.0 - Roadway Construction			$800,000
Section 3.0 - Underground Municipal Systems			$0
Section 4.0 - Electrical (Streetlighting)			$250,000
Section 5.0 - Electrical (Signalization)			$350,000
Section 6.0 - Third Party Utility Relocations			$250,000
Section 7.0 - Land Acquistion			$450,000
SECTION A - CONSTRUCTION SUBTOTAL			$2,300,000
CONTINGENCIES	20%	$	460,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	2,760,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	414,000
TOTAL COST		$	3,174,000

Provide an additional eastbound left turn on 44 Ave and a southbound right turn lane on 48th street	McElhanney 21-Feb-21	
Description		**Estimated Costs**
SECTION A - CONSTRUCTION COSTS		
Section 1.0 - General Works		$74,000
Section 2.0 - Roadway Construction		$300,000
Section 3.0 - Underground Municipal Systems		$0
Section 4.0 - Electrical (Streetlighting)		$96,000
Section 5.0 - Electrical (Signalization)		$150,000
Section 6.0 - Third Party Utility Relocations		$50,000
Section 7.0 - Land Acquistion		$180,000
SECTION A - CONSTRUCTION SUBTOTAL		$850,000
CONTINGENCIES	20%	$ 170,000
SECTION A - CONSTRUCTION COSTS TOTAL		$ 1,020,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$ 153,000
TOTAL COST		$ 1,173,000

Paving Golf Course Road
Upgrade Gravel Road to 2-Lane Rural U/D

McElhanney

21-Feb-21

Description							
SECTION A - CONSTRUCTION COSTS							
Section 1.0 - General Works							$ 174,000
1.2	Traffic Accommodation (assumes 3%)	ls	$ 55,000.00		1	$ 55,000	
Section 2.0 - Roadway Construction							$ 1,826,000
Section 3.0 - Underground Municipal Systems							$ -
Section 4.0 - Electrical (Streetlighting)							$ -
Section 5.0 - Electrical (Signalization)							$ -
Section 6.0 - Third Party Utility Relocations							$ -
Section 7.0 - Land Acquisition							$ -
			SECTION A - CONSTRUCTION SUBTOTAL			$	2,000,000
			CONTINGENCIES	20%		$	400,000
			SECTION A - CONSTRUCTION COSTS TOTAL			$	2,400,000
			ENGINEERING COST (Assumes 15% of Construction Cost)			$	360,000
			TOTAL COST			$	2,760,000

Cross-Section Cost ($/m) = $ 1,840

Widen Highway 779 2-Lane Rural U/D to 4- Lane Urban U/D	McElhanney 21-Feb-21	
Description		
SECTION A - CONSTRUCTION COSTS		
Section 1.0 - General Works		$ 56,000
Section 2.0 - Roadway Construction		$ 571,000
Section 3.0 - Underground Municipal Systems		$ -
Section 4.0 - Electrical (Streetlighting)		$ 120,000
Section 5.0 - Electrical (Signalization)		$ -
Section 6.0 - Third Party Utility Relocations		$ -
Section 7.0 Land Acquisition		$ -
SECTION A - CONSTRUCTION SUBTOTAL		$ 747,000
CONTINGENCIES	20%	$ 150,000
SECTION A - CONSTRUCTION COSTS TOTAL		$ 897,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$ 134,550
TOTAL COST		$ 1,032,000
Cross-Section Cost ($/m) =		$ 2,580

Access Management for 49th Ave
Adding a two-way left lane

McElhanney

21-Feb-21

Description			
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$ 59,000
Section 2.0 - Roadway Construction			$ 599,820
Section 3.0 - Underground Municipal Systems			$ -
Section 4.0 - Electrical (Streetlighting)			$ -
Section 5.0 - Electrical (Signalization)			$ 10,000
Section 6.0 - Third Party Utility Relocations			$ -
Section 7.0 Land Acquisition			$ -
SECTION A - CONSTRUCTION SUBTOTAL		$	669,000
CONTINGENCIES	20%	$	134,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	803,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	120,450
TOTAL COST		$	924,000

49th Avenue West Extension New 2-Lane Rural Extension	McElhanney 21-Feb-21	
Description		**Estimated Costs per 1000m**
SECTION A - CONSTRUCTION COSTS		
Section 1.0 - General Works		$ 206,000
Section 2.0 - Roadway Construction		$ 2,160,800
Section 3.0 - Underground Municipal Systems		$ -
Section 4.0 - Electrical (Streetlighting)		$ 144,000
Section 5.0 - Electrical (Signalization)		$ -
Section 6.0 - Third Party Utility Relocations		$ -
Section 7.0 Land Acquisition		$ -
SECTION A - CONSTRUCTION SUBTOTAL (Per 1000m)		$ 2,511,000
CONTINGENCIES	20%	$ 503,000
SECTION A - CONSTRUCTION COSTS TOTAL		$ 3,014,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$ 452,100
TOTAL COST (1000m length)		$ 3,466,000
		Cross Section Cost ($/m) = $ 3,470

Highway 628 Improvements 2-Lane Urban U/D to 4- Lane Urban D	McElhanney 21-Feb-21		
Description			
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$ 392,000
Section 2.0 - Roadway Excavation			$ 3,345,230
Section 3.0 - Underground Municipal Systems			$ -
Section 4.0 - Electrical (Streetlighting)			$ 240,000
Section 5.0 - Electrical (Signalization)			$ 530,000
Section 6.0 - Third Party Utility Relocations			$ -
Section 7.0 - Land Acquisition			$ -
SECTION A - CONSTRUCTION SUBTOTAL		$	4,508,000
CONTINGENCIES	20%	$	902,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	5,410,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	811,500
TOTAL COST		$	6,222,000
		Cross Section Cost ($/m) =	$ 6,220

2-Lane Urban U/D to 4- Lane Urban U/D - Widen		McElhanney	
		21-Feb-21	
Description			
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$ 293,000
Section 2.0 - Roadway Excavation			$ 2,688,168
Section 3.0 - Underground Municipal Systems			$ -
Section 4.0 - Electrical (Streetlighting)			$ 384,000
Section 5.0 - Electrical (Signalization)			$ -
Section 6.0 - Third Party Utility Relocations			$ -
Section 7.0 - Land Acquisition			$ -
SECTION A - CONSTRUCTION SUBTOTAL		$	3,366,000
CONTINGENCIES	20%	$	674,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	4,040,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	606,000
TOTAL COST		$	4,646,000
		Cross Section Cost ($/m) =	$ 3,000

2-Lane Urban U/D to 4- Lane Urban U/D - Widen

McElhanney

21-Feb-21

Description			
SECTION A - CONSTRUCTION COSTS			
Section 1.0 - General Works			$ 154,000
Section 2.0 - Roadways & Excavation			$ 1,420,200
Section 3.0 - Underground Municipal Systems			$ -
Section 4.0 - Electrical (Streetlighting)			$ 192,000
Section 5.0 - Electrical (Signalization)			$ -
Section 6.0 - Third Party Utility Relocations			$ -
Section 7.0 - Land Acquisition			$ -
SECTION A - CONSTRUCTION SUBTOTAL		$	1,767,000
CONTINGENCIES	20%	$	354,000
SECTION A - CONSTRUCTION COSTS TOTAL		$	2,121,000
ENGINEERING COST (Assumes 15% of Construction Cost)		$	318,150
TOTAL COST		$	2,440,000

Cross Section Cost ($/m) = $ 3,250