ATTACHMENT 1



Transportation 2015 Master Plan

City of St. Albert
Cultivate Life

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Supporting Documents

Cultivating our Future – St. Albert's Community Vision, 2015
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EXECUTIVE SUMMARY

St. Albert is a vibrant community with a rich heritage and unique identity that is cherished by its residents, who hold true to past small town values, while also embracing growth into a prosperous and forward thinking city. For any community, including St. Albert, to flourish and thrive with long term sustainability and environmental consciousness; it requires resident input, leadership, visioning and planning.

A cornerstone of the community's vitality is its transportation network, which addresses such priorities as mobility (choices of how we are able to move and the ease which to do so) and accessibility (alignment to local and regional connectivity for access to home, work, recreation, goods, services and overall community needs). The Transportation Master Plan conveys current community priorities and needs while placing focus on being future-orientated to ensure there is the continued support of the city to grow and our residents to be on the go.

A Transportation Master Plan (TMP) is a strategic planning document that will help the community to best prepare for future growth and the challenges faced by that growth pressure over the next 27 years. The TMP is about connecting and moving people, goods and services throughout St. Albert in a safe, efficient and effective manner. This plan is transformative, and lays down the foundation and vision for the future transportation network. The direction of the TMP, with a focus on alternative modes of transportation for St. Albert, was supported by the community and aligns with the community's long term goals and strategies.

The TMP was developed with the St. Albert Community Vision and Five Pillars of Sustainability in mind. Input from the community was provided through the use of site visits, stakeholder meetings, public open houses, online engagement tools, a household travel survey and an intercept travel survey. Considering the public input and aligning with the policy framework from St. Albert's other

major plans, a vision and guiding principles were developed which capture the aspirations and direction for the transportation network.

2009 TMP

This Transportation Master Plan builds upon the recommendations identified in the 2009 TMP, with a greater focus on alternative modes of transportation and a policy driven focus to prioritize active transportation, transit development and changing the way we see our roadways.

2015 TMP Vision and Guiding Principles

"St. Albert's vision for transportation considers the diverse needs of our population with many ways to move around in a safe, efficient, affordable, and accessible manner which fosters economic prosperity, sustains the beauty of our environment and culture, and provides all residents with the sense that St. Albert is truly a livable community"

Guiding Principle 1:

St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation.

Guiding Principle 2:

St. Albert has a strategic approach to sustainable transportation to serve our diverse population.

Guiding Principle 3:

St. Albert protects environmental health by creating opportunities for alternative transportation to maintain the beauty of surrounding nature.

Guiding Principle 4:

St. Albert's transportation system supports economic prosperity

Existing and Future Conditions

St. Albert is a growing community; the population is expected to almost double within the next 27 years. The majority of future growth is expected to occur as greenfield development in the northwest and west areas of the City.

The existing road network is largely built out, with limited opportunities to add significant capacity to this network. St. Albert Trail is a busy regional road that carries significant regional traffic from Sturgeon County into and out of the remainder of the Capital Region. The only other major north-south connection in the community is Ray Gibbon Drive, a potential future provincial freeway that could support higher regional traffic volumes within the greater Edmonton area.

Active transportation facilities are primarily recreational; St. Albert prides itself in its vast park network, however there are current gaps in the connectivity and accessibility to key commercial corridor sites and regional connections.

There is a local bus route that serves all neighbourhoods, and a commuter network that provides more direct connections into key destinations in the City of Edmonton. The majority of transit ridership occurs on those commuter routes.

Recommended Road Network

The existing road network in St. Albert faces significant pressure from regional traffic (that is traffic that has both an origin and destination outside of St. Albert). Future conditions, including community and regional growth combined with existing limited road right-of-way area and minimum capability for construction new internal arterial road segments, will require that the existing road network is utilized as efficiently as possible.

They key strategies for the St. Albert Road network are to use intelligent transportation systems to maximize existing infrastructure, improve neighbourhood roads through traffic calming, implement a Complete Streets Policy to protect roads for differing purposes, envision a new future for St. Albert Trail, prioritize supporting new regional road connections, and maintain an up to date travel demand model for ongoing project evaluation. The development of regional roads, like the expansion of Ray Gibbon Drive and developing 127 Street will be important to allow St. Albert to mitigate regional traffic on St. Albert roads.

Adding capacity to strategic locations within the community will help ease congestion where possible; continued data collection and updates to the travel demand model will help support ongoing evaluation of where these upgrades should be prioritized.

Recommended Active Transportation Network

Developing a long-term active transportation network is an important goal of this TMP. Providing additional opportunities for St. Albert residents to choose to walk or cycle on their shorter trips will help achieve a desirable mode shift, support a healthier community and provide opportunities to help St. Albert achieve a reduction in greenhouse gas emissions.

The recommended active transportation network proposed to build upon the existing off-road network, therefore catering to the widest range of users with a wide range of abilities. The network was developed by considering the existing Red Willow Trail system, developing new off road links wherever possible and identifying potential on-road connections when necessary to complete the system.

Recommended Public Transportation Network

The TMP supports the comprehensive long-term transit planning document, the Transit Long Term Department Plan. In addition to supporting and building upon the goals in that plan, the TMP supports the development of the LRT, as well as land use planning (like transit oriented development) to improve future ridership on the LRT, both through densification near proposed stations and park and ride for regional traffic. As public transportation will start to take new forms in the future, through the shared economy and ridesharing, the City needs to prepare for that future paradigm shift. The ongoing Local Transit Route Restructure program also provides an opportunity to investigate how transit route planning can support the goals of increased ridership and mode shift.

Recommended Goods Movement Network

The primary goals of the recommended goods movement network are to provide connections between the existing industrial areas within the City of St. Albert, as well as to the region including Sturgeon County and the City of Edmonton. The TMP introduces a reduction in approved Truck Routes to reduce heavy vehicle traffic on certain arterial road segments and fall in alignment with a functional classification of the road network. The future development of Ray Gibbon Drive and Fowler Way will assist in reducing heavy vehicle traffic from St. Albert Trail and Villeneuve Road, allowing those roads to be reclaimed for the community as multi-modal facilities.

Intelligent Transportation Systems

Emerging technologies have the capability to improve the overall implementation of the TMP, and support many of the strategies identified for the specific modes already identified. Intelligent Transportation Systems (ITS) use technology to improve the efficiency, safety and security of the existing and proposed road network. Traveller

information, traffic signal coordination, transit signal priorities, electronic payment efficiencies, commercial vehicle operations, emergency management and data management are examples of ITS systems that are important for the future road, transit and goods and services network management in St. Albert. Specific implementation of ITS solutions identified through a future ITS policy will help support the goals and principles of the TMP.

The recommendations identified in the TMP should align with the forthcoming Smart City Centre of Excellence Master Plan objectives. ITS will also allow opportunities to collaborate with other industries and institutions, including knowledge sharing through the Smart City Alliance.

Implementation

Implementation and ongoing evaluation of the TMP will be measured through two key methods; ongoing review of the recommended initiatives outlined in the action plan developed with the public and stakeholders, and implementation of the recommended projects and initiatives in the identified 10 year plans.

ITS implementation and improved data collection will allow future iterations of the TMP to be measured and evaluated in more quantifiable manners. Adaptation of future mode split targets between auto trips and transit and active transportation trips will be a way to monitor the goals of the TMP, as well as benchmark greenhouse gas emissions and introduce a continual improvement process. Future land use plans will support the goals and principles of this plan as well.

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List of Commonly Used Acronyms

AADT – Average Annual Daily Traffic
ACP – Alberta Community Partnership
ATIS – Traveller Information System
CGGR – Canadian Guides for Greener Roads
CMHC – Canadian Mortgage and Housing Commission
CRB – Capital Region Board
DARP – Downtown Area Redevelopment Plan
EMP – Environmental Master Plan
EMS – Emergency Medical Services
GHG – Greenhouse Gas
HTS – Household Travel Survey
ICM – Integrated Corridor Management
IRTMP – Integrated Regional Transportation Master Plan
ITS – Intelligent Transportation Systems
LPR – Licence Plate Recognition
LRT – Light Rail Transit
MDP – Municipal Development Plan
MF – Metropolitan Funding
MGA – Municipal Government ACT
MSI – Municipal Sustainability Initiative
NAIT – Northern Alberta Institute of Technology
PIC – Partners in Compliance program
StAT – St. Albert Transit
TAC – Transportation Association of Canada
TLTDP – Transit Long Term Department Plan
TMC – Traffic Management Centre
TMP – Transportation Master Plan
TOD – Transit Oriented Development
TSP – Transit Signal Priority
V/C – Volume to Capacity Ratio
VMS – Variable Message Signs
VPH – Vehicles per Hour



1 | Introduction

The 2015 Transportation Master Plan (TMP) is a comprehensive planning document that will help the City of St. Albert prepare for growth and change over the next 27 years. This plan considers the city's strategic, environmental, transit and land use planning goals, as well as considers the important role that St. Albert plays in the greater Edmonton Capital Region.

This plan is an important part of a regulatory framework in St. Albert that guides land use planning, transit planning, environmental, utility and social goals. Transportation impacts many aspects of our lives, from our commute, to our recreation, to how we experience our community. The intent of the TMP is to recognize the importance of those experiences and develop a unified vision for the future.

The "Community Vision of St. Albert", as established through the St. Albert "Cultivating our Future" process is:

A vibrant, innovative and thriving city that we all call home, that sustains and cherishes its unique identity and small town values. We are the Botanical Arts City.

The Five Pillars of Sustainability, identified through the Community Vision, are always at the forefront of planning and this transportation plan considers the priorities of the community. The Five Pillars of Sustainability and how transportation can impact them are summarized as follows:

Social – An inclusive community ensures that transportation options exist for users of all ages and abilities, and are accessible and affordable for everyone.

Economic – Transportation is a crucial piece to an economically successful community through providing opportunities for commerce. Managing the infrastructure in an economically sustainable manner protects our investments.

Built Environment – The built transportation network will connect everyone in a "safe, effective and accessible" manner. The built environment will support multiple-modes and will utilize innovative technology through an intelligent transportation system.

Natural Environment – Our transportation choices, and options we have available to us to make those choices have an impact on our health and environment.

Culture – Our transportation network provides access to culture and supports active lives.

The status quo of building increased auto capacity in our communities to meet rising demands is generally accepted as no longer being sustainable. Furthermore, St. Albert exists in a unique state where, though the road network is largely completed, the community is forecasted to nearly double its population over the next 27 years. This TMP recognizes that future accommodation of that growth will mean a need to maintain and efficiently maximize the use of existing infrastructure, but also look to other modes of transportation to help accommodate changing populations and demands.

This is a transformative plan that recognizes the private automobile will continue to play an important role for St. Albertans for the foreseeable future. The intent of the TMP is to identify priorities and goals that will lay the foundation for developing a multi-modal transportation system that meets the needs of all users for years to come.

The planning horizon for the TMP is 2042, to match the planning horizon of other infrastructure and planning documents within the city and create a consistent vision for the future.

1.1 DOCUMENT OUTLINE

This document identifies the TMP development processes and outcomes. Detailed background for certain sections are included as comprehensive appendices.

Section 2: Policy Framework

The policy framework that directs the TMP was developed with input from the public and key stakeholders. The TMP is a piece of a larger municipal and corporate framework. Section 2 of the report will identify this framework and identify the TMP guidelines and policies. Additional plans that influenced the TMP are also identified.

Section 3: Existing and Future Conditions

The transportation network is heavily influenced by land use and demographic inputs. Understanding the existing land use and population data for St. Albert and the Region, and the expected future conditions will frame the decision making that went into key recommendations. Other future conditions that cannot fully be predicted (such as future technological innovation) will also be discussed.

Section 4: Transportation Master Plan

The Transportation Master Plan consists of five key elements: roads, active transportation, public transportation, goods movement and intelligent transportation systems. Each of these sections considers the existing and future conditions discussed, and all recommendations identified consider the established vision and policy framework that direct St. Albert's transportation future.

Section 5: Implementation

The success of this document can be measured. The final section of the TMP will outline the short term goals as well as introduce a framework for ongoing evaluation of the future transformation of St. Albert.

1.2 TMP DEVELOPMENT PROCESS

The TMP development consisted of seven phases:

Phase 1 - Project initiation: Working with the City of St. Albert administration, the project team established the goals, timelines and desired outcomes for the project. A steering committee of city staff representing various disciplines was established.

Phase 2 - Needs Assessment and Vision: Using site visits, stakeholder engagement and best practice information, the steering committee and project team developed an initial vision and project plan.

Phase 3 - Data Collection: Data collection through a variety of sources and methods was the most important part of plan development, to ensure that all recommendations are based on the existing and expected demands in the community.

Phase 4 - Model Development: As part of the TMP development, a transportation demand model for the City of St. Albert was developed. The model will provide an ongoing tool for the transportation department to make informed decisions about future transportation infrastructure as it relates to level of service and driver and transit rider behaviour. Results from the travel demand model inform recommendations identified in the TMP.

Phase 5 - Options and Evaluation: Using the various data sources, public and stakeholder consultation and information developed through the needs assessment and steering committee, a number of transportation options were considered and presented to the public for feedback and input. These options were evaluated through best practice, transportation modeling, and to fit in with the established policies and vision cast for the document.

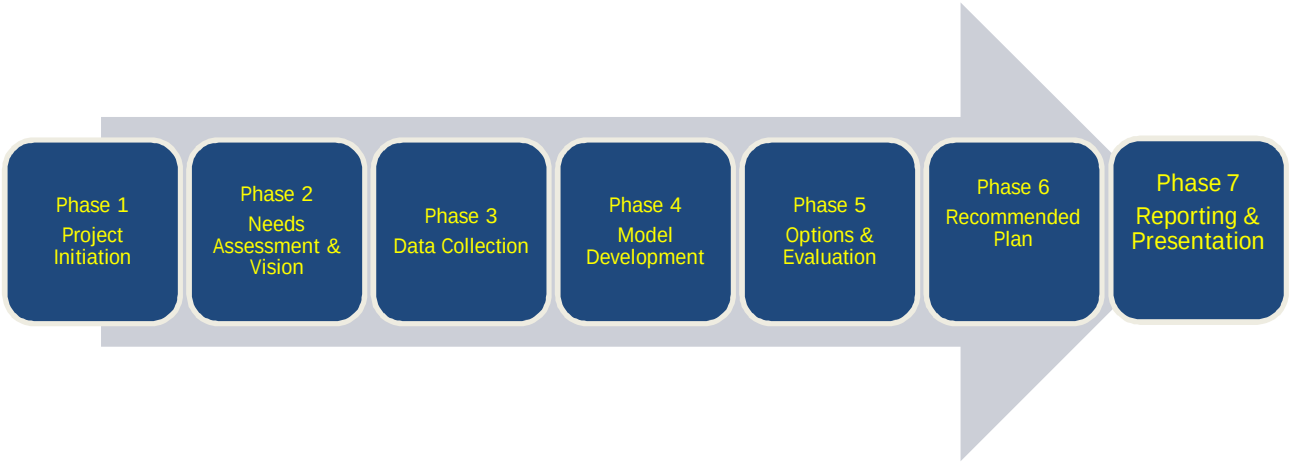
Phase 6 - Recommended Plan: The final TMP document summarizes the findings and recommendations and serves as a living tool for the city to prioritize transportation investment and decisions making over the next 27 years.

Phase 7 - Reporting and Presentation: The final report will be presented to City Council for approval in April, 2016, with the intent to then utilize the approved document within an updated Transportation Systems Bylaw.

1.2.1 Data Collection

Site Visits

To understand the existing conditions in St. Albert, the TMP team spent time observing traffic on major roadways within St. Albert. The team also evaluated neighbourhood streets, cycling, and walking facilities within the community.



Steering Committee Meetings

A steering committee was formed to guide the direction of the TMP from the outset of the project. The committee consisted of members of the consulting team and a cross section of City of St. Albert staff, including representatives from transportation, engineering, planning, transit, environment and sustainability. The steering committee supported the development of consultation material, project strategy and provided input on related ongoing and recently completed City of St. Albert initiatives that could impact the transportation master plan.

Household Travel Survey

The Household Travel Survey was conducted in the fall of 2014, and involved the collection of daily household travel data (all trips made over the course of a 24-hour working weekday) from a sample of residents of the City of St. Albert. Each trip captured in the survey consisted of travel for a particular purpose between origin and destination, and may have involved more than one mode of transportation. A total of 856 valid surveys were obtained, representing 3.7% of all households in St. Albert. The results of the household travel survey provide useful details on travel habits of St. Albert residents.

Intercept Travel Survey

The Highway 2 Intercept Survey was conducted on September 23, 2014, and involved surveying drivers intercepted at a location on Highway 2 north of Neil Ross Road about their travel origin and destinations. The focus was on capturing information about Highway 2 travellers. Southbound traffic was surveyed during the morning peak period, and northbound traffic was surveyed in the afternoon peak period. Survey data collect included information on trip origins, destinations, whether the trip involved stops in St. Albert, routes used and general frequency of trips. A total of 519 valid surveys were obtained, representing 9.5% of the average weekday traffic for the surveyed segment, hour and direction of traffic on Highway 2.

1.2.2 Travel Demand Model

Using data assembled in the data collection phase of the project, a travel demand model was built for use within the development of this TMP and for future use by the city. The City of St. Albert has purchased the modelling software, and will become the owner and operator of the travel demand model. The tool has been developed so it will be easily updated and customized by the city. As the city grows, and changes are made to land use,



population, employment and retail assumptions, the city will be able to update the model and identify the impacts of these changes on the road and transit network. The model also provides a tool to analyze the impacts of new transportation infrastructure on the overall St. Albert road network and for traffic impact assessments.

The travel demand model was developed using EMME software, a travel demand modeling software that has been well used in Canada and internationally for several decades. Importantly for the St. Albert context, EMME software is also used by the City of Edmonton and Alberta Transportation, allowing for future collaboration and data sharing between the agencies.

The model was developed using 2014 data, and includes two future planning horizons, 2024 for the ten year plan, and 2042 as the full planning horizon currently used by the City of St. Albert. Modelling projections are based on population, forecasted land development, and employment growth projections for the City of St. Albert, as well as the City of Edmonton and Sturgeon County.

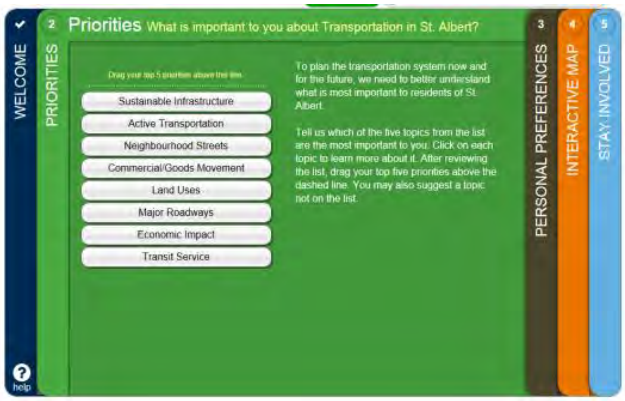
The model was developed to represent weekday travel during a typical one-hour PM peak period using an average hour in the three-hour afternoon peak. This timeframe was selected as it represents a diverse mixture of trip types, as well as the most heavily travelled time on the network. PM Peak periods are typically selected as a design period for transportation planning to reflect a “worse-case” scenario within the network.

Certain results are identified in the TMP, as they pertain to the impact on the transportation network for future road and transit recommendations.

1.2.3 Stakeholder and Public Consultation

MetroQuest Online Engagement Tool

MetroQuest is an online engagement tool that was used to engage a broader section of the residents of St. Albert at an early stage in the project. With support from the Steering Committee, a list of project priority areas and questions related to those areas were developed.



In addition to gauging public viewpoints on issues as diverse as neighbourhood traffic calming, truck routes and cycling infrastructure, the public also had the opportunity to identify specific locations in need of review related to cycling/pedestrian movements, transit, driving, parking, traffic control and traffic calming. The results from this survey assisted in providing direction for policies within the TMP and identify project priorities. The MetroQuest tool also provided a means of informing the public about the TMP development process. The survey was available online for three months, and the site had a total of 784 visitors, with 463 responses to the survey.

Public Open Houses

The TMP team used the traditional format of two public open houses to allow the residents of St. Albert to meet with key members of the team, see the plan under development, ask questions and provide feedback. The recommended network plans, guiding principles, vision and action plan were all developed with feedback from the public open houses. The public open houses were held in the spring and fall of 2015.





Stakeholder Workshops

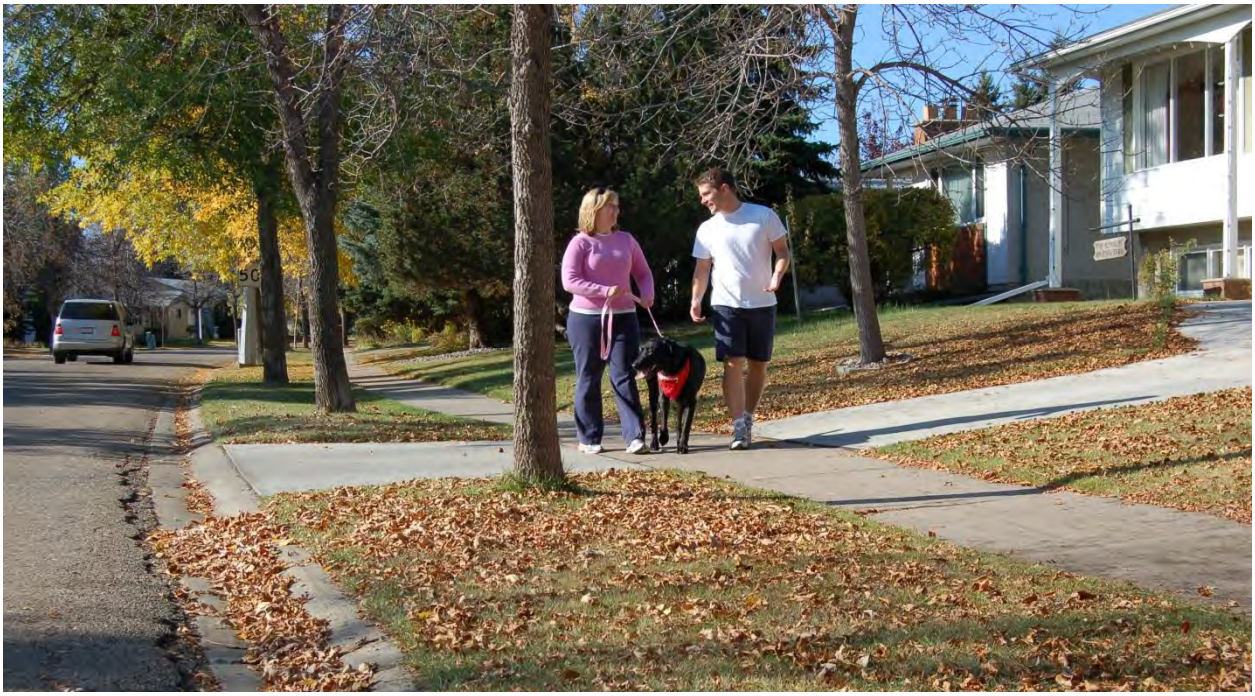
A total of three day-long stakeholder workshops were held at different phases in the project. The stakeholder group was identified with support from the project steering committee and consisted of steering committee representation along with additional department representation from Family and Community Support Services, Parks and Recreation, St. Albert RCMP, St. Albert Fire Services. Other stakeholders present were the St. Albert Environmental Advisory Committee, St. Albert and District Historical Society, and St. Albert Transitions (representing people with disabilities and developmental delays). The workshops covered project visioning, developing integrated land use and transportation planning scenarios, and selection of final TMP elements.

Council Presentation

The final TMP will be presented to City of St. Albert Council on February 1, 2016.

1.3 FUTURE STEPS

This TMP provides a number of tools to ensure it is a dynamic document that will strive to achieve the community vision through completion of identified recommendations. As with other municipal long term plans, the TMP shall be updated at five year intervals. Updates will provide the opportunity to update data, to identify new and emerging issues and shift priorities as required. In the short term, the TMP recommendations, the 10 year plan, and the travel demand model may all be used for evaluation purposes and to make important decisions for the City.



2 | Stategic Framework

The City of St. Albert Strategic Framework includes the following components:



The TMP is a Community Long Term Plan that aligns with other St. Albert plans, but also considers the recommendations and impacts on the strategic directions, community visions, and values. Beyond St. Albert's boundaries, major capital region plans are an important piece of the policy and plan framework. The highlights from major plans are outlined in this section. Corporate action plans, related neighbourhood plans and other municipal planning documents are also discussed.

2.1 ALIGNMENT WITH STRATEGIC FRAMEWORK

The 2015 St. Albert Community Vision and Pillars of Sustainability (Cultivating our Future) present a single, shared vision for the community of St. Albert, developed and approved through extensive consultation with the people it represents. The intentions of all major plans in the community should align with and support these pillars of sustainability.

The five pillars of sustainability are:

1. *Social*
2. *Economic*
3. *Built Environment*
4. *Natural Environment*
5. *Cultural*

Transportation impacts all elements of life, and supports all five of the pillars, through providing access to our social and cultural connections, making decisions that minimize impact and protect the natural environment and supporting economic growth and development through goods movement and access to employment, retail and education. Specifically, the transportation network is a key element of the built environment, and the TMP supports specific statements identified in the Community Sustainability Framework including:

- Providing a safe, effective and accessible transportation network that supports public and active modes of movement.
- Making a community where neighbourhoods make it easier to connect people to parks, trails, public transportation and community spaces.
- Planning growth to future generations inherit a strong, vibrant community.
- Building innovative, long lasting infrastructure that minimizes environmental impact

Capital Region Board Integrated Regional Transportation Master Plan

The Government of Alberta created the Capital Region Board (CRB) in April 2008 with the mandate to prepare and support the implementation of a Capital Region Growth Plan. The CRB has 24 member municipalities representing the Capital Region. Through development of the Capital Region Growth Plan, the CRB initiated the Integrated Regional Transportation System Study in 2009. The outcomes of that study are summarized in the Integrated Regional Transportation Master Plan (IRTMP).

The IRTMP designates St. Albert as a 'Priority Growth Area', with the intention of focussing new and more integrated and sustainable urban growth into these areas. The IRTMP identifies a number of new and upgraded major roadways and transit facilities in St. Albert within the plan horizon.

Currently, the CRB is updating the existing suite of regional plans into one comprehensive Integrated Growth Plan. The development of the Growth Plan Update is to occur in five phases, and the CRB intends to have the new plan in place by September 2016.

IRTMP Policy Framework

The policy framework for the IRTMP is based on the policy themes developed in the Capital Region's Growth Plan. The framework is summarized below:

Integrate with the Capital Region Growth Plan

- Preserve the integrity of the priority growth areas.
- Maximize use of existing infrastructure.
- Develop a transportation system that supports the Region's economy.

Increased Transportation Choices

- Develop and strengthen transit facilities and services to provide a viable alternative to the private automobile.
- Support Active Transportation.
- Support Multi-Modal Transportation Facilities.

Reduction of Environmental Degradation

- Minimize Impacts Associated with the Transportation Network.

Effective Coordination of Infrastructure Between all Jurisdictions

- All member municipalities and the provincial government must strive to cooperate and coordinate their activities to benefit the region.

Figure 2-1 shows main recommended infrastructure elements in the Integrated Regional Transportation Master Plan. The regional transportation connections were considerations within the TMP.

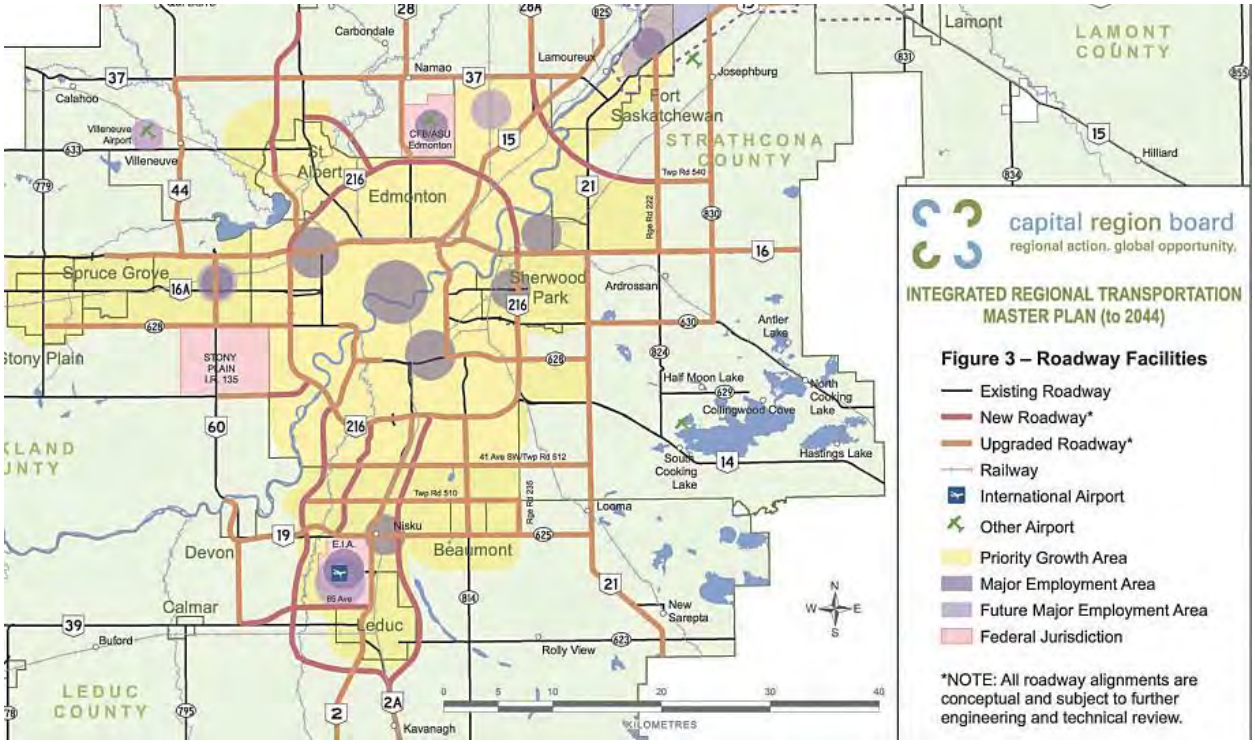
Important roadways for St. Albert include:

- Ray Gibbon Drive: identified as a future freeway from Anthony Henday Drive to Highway 2 south of Morinville. Ray Gibbon Drive may be designated as a Provincial Highway through St. Albert, which would replace St. Albert Trail as the provincial highway, with twinning to Villeneuve Road identified as a 10 year investment priority in the IRTMP.
- 127 Street as a future arterial from Anthony Henday Drive to Highway 2 north of St. Albert city limits at Township Road 544.
- Anthony Henday Drive north leg completed from Highway 16 east to Highway 16 west.

Highway 2 is designated as a long combination vehicle route north of St. Albert city limits. There are no regional High Load Corridors through St. Albert; the closest high load corridor is Highway 37.

St. Albert is identified as a part of the future LRT network for the Capital region. There is a proposed LRT extension identified in the IRTMP to north St. Albert city limits, supported with a regional bus corridor to Morinville. The IRTMP also identifies development of a Park and Ride lot at St. Albert Trail/Anthony Henday Drive as a 10 year investment priority.

FIGURE 2-1: IRTMP Road Facilities



The IRTMP identifies that regional active transportation facilitation and infrastructure development should focus on increasing access for active transportation as a mode choice on short trips, connecting complementary land uses. Priority growth areas (of which St. Albert is one) are encouraged to include active transportation facilities in their plans.

St. Albert Municipal Development Plan

The Municipal Government Act requires that each municipality prepare a long term land use plan called a Municipal Development Plan (MDP). The most recent update to the City of St. Albert's MDP was completed in 2007, with a number of bylaw updates being incorporated over the past eight years, the most recent in 2015. MDP's set out the goals and policies for all aspects of the municipalities development. The planning horizon for the recent MDP is 2029. The objectives for the transportation network, as established in the MDP are:

- Plan and implement roadway improvements to accommodate the growing population.
- Plan a transportation network that accommodates all modes, including transit and potential LRT, cyclists and pedestrians.
- Mitigate community, social, environmental and noise impacts of transportation facilities
- Facilitate maintenance and extension of infrastructure.
- Encourage use of public transit through improvements to the service in a low cost manner.
- Promote transit-supportive land use planning
- Provide appropriate transit and road links for the region.
- Coordinate truck and dangerous goods linkages to minimize impacts on residential areas.
- Use transportation demand management and transportation system management.
- Ensure additional road capacity across the Sturgeon River.

The goals for this TMP remain in line with the objectives of the 2007 MDP, and will continue to push for improvements to the transportation network for users of all modes, ages, abilities and socioeconomic statuses. This TMP is a significant update to both the previous TMP (2009), and will serve to provide input the future update of the MDP.

Environmental Master Plan

The Environmental Master Plan (EMP) was approved by St. Albert City Council in May 2014. The EMP identifies goals and targets for key environmental issues. The TMP is directed through this plan to support a number of environmental goals that are directly impacted by decisions made around transportation including:

- Managing air quality
- Reducing energy consumption and greenhouse gas emissions
- Promotion of sustainable neighbourhoods and transportation choices
- Fostering community environmental stewardship

The EMP reinforces the target set by Council in 2012 through the greenhouse gas (GHG) Local Action Plan of a six per cent reduction in total community greenhouse gas emissions from 2008 levels by 2020. This goal includes emissions from transportation.

The TMP aligns with this plan by identifying a number of lower emission transportation choices with the potential to promote a shift away from the private automobile to transit, cycling, and walking, and laying the founding for a long-term transportation plan that supports that shift. A review of the Transportation Association of Canada's 2015 document "Canadian Guide to Green Roads" will also support these goals.

St Albert LRT Planning Study (Phases 1 and 2)

In November 2015 Council approved the second phase of a long term Light Rail Transit (LRT) Study that investigated the technical feasibility of constructing an LRT in St Albert. If constructed, the LRT is expected to bring major changes to transportation and land use patterns in St Albert. The first phase of the LRT Study reviewed potential corridors. The second phase considered the potential alignment and station locations of the LRT. Following an extensive consultation process, Council has now endorsed the alignment as shown in Figures 4-11 along the east side of St. Albert Trail and the locations of the four stations at Hebert Road/Gervais Road, at the Sturgeon River, at Boudreau Road/Giroux Road, and north of Jensen Lakes Boulevard and west of St. Albert Trail.

With the LRT alignment approved by St. Albert Council, this TMP recommends that the alignment be subject to appropriate planning overlays, so that the future urban development plans take the LRT into consideration. The adoption of such an overlay serves as an instrument to support transportation and land use plan integration.

Downtown Area Redevelopment Plan

The Downtown Area Redevelopment Plan was approved by the City of St. Albert Council on August 16, 2010, and the implementation plan was initiated in May 2011. This plan included land use bylaw amendments, and a revised land use plan and transportation network for the downtown core of the community. The proposed road network in the TMP reflects these recommendations and uses the updated road types as a guide for the rest of the community.

Economic Development Master Plan

The 2004 Economic Development Master Plan has five objectives related to supporting and increasing business opportunities and economic growth in the community. Providing transportation access, through road expansions where necessary and improved transit access to key commercial, industrial and future employment areas is an important consideration of the TMP. The location and future access to the Employment Lands area west of Ray Gibbon Drive is a priority for this TMP, both for future transit and recognition of the importance of alternative modes, including active transportation access.

2.2 ALIGNMENT WITH OTHER PLANS

Safe Journeys to School

The TMP identifies the implementation of the Safe Journeys to School Final Consultant's Report as a top priority. The Safe Journeys to School was approved by City Council on March 2, 2015. The report identifies a number of strategies to enhance student travel safety throughout the city and administration has completed a specific six year action plan (2016 – 2021) with necessary funding requests for implementation of recommendations for all existing and two new school sites in St. Albert.



Transit Long Term Department Plan

The Transit Long Term Department Plan is a strategic policy and planning document, providing the framework for transit service development from 2013 to 2027. The intent of the TMP is to support the goals, objectives and recommendations identified within the Transit Long Term Department Plan while considering the impact of these goals on the transportation system as a whole.

Area Structure Plans

The TMP considers all approved area structure plans to identify where future infrastructure and connections will be required. Relevant Area Structure Plans include:

- Jensen Lakes
- Erin Ridge North
- South Riel
- Riverside
- Range Road 260

The Employment Land Concept Plan, though not yet an approved ASP, was also reviewed, and estimated population and employment impacts are included in the TMP recommendations.

2009 St. Albert Transportation Master Plan

The previous update to the TMP, in 2009, focused primarily on identifying necessary upgrades to the arterial and collector road network. Transit updates over the planning horizons within the TMP were also identified. This TMP update considers many of the recommendations identified in the 2009 TMP, and contains more robust policy and action plan recommendations to continue to push St. Albert towards sustainable, safe and efficient transportation choices.

Smart City Centre of Excellence Master Plan (forthcoming)

A forthcoming Smart City Master Plan has three overall objectives:

- Identify innovative technologies that could improve infrastructure/asset management and maintain the quality of local program and service delivery.
- Support economic development efforts to grow existing businesses and attract new investments.
- Provide opportunities for improvement organization efficiencies over time.

This TMP identifies a number of intelligent transportation initiatives that will support the objectives of the Smart City Master Plan, and the two documents will work in tandem to create a future friendly city.



Social Master Plan

The 2013 Social Master Plan contains goals related to access to housing, affordable and well-coordinated transportation systems, and access to resources and services. The TMP supports this master plan through prioritizing access to transit and active transportation and supporting safety and mobility.

2.3 VISION AND GUIDING PRINCIPLES

Considering the existing transportation, population and land use conditions and policy framework identified in the relevant major and minor plans, a vision for this TMP and supporting Guiding Principles was developed. This framework was developed with input from the steering committee, the key stakeholders and through public input via MetroQuest online engagement and the public open houses. The vision for St. Albert's TMP captures the aspirations and direction for St. Albert's transportation network over the next 27 years.

St. Albert's vision for transportation considers the diverse needs of our population with many ways to move around in a safe, efficient, affordable, and accessible manner which fosters economic prosperity, sustains the beauty of our environment and culture, and provides all residents with the sense that St. Albert is truly a livable community.

There are four Guiding Principles, and each guiding principle has three or four supporting strategies. The sum of these principles and strategies serve as the policy framework for all recommendations within the TMP. Under each guiding principle, the team has identified which Pillar of Sustainability from the Community Sustainability Framework is impacted and supported.

Principle 1:
St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation.

Related Pillars of Sustainability:
Social, Cultural and *Built Environment*

1. St. Albert's transportation system supports appropriate land uses with access to employment and amenities via cycling, walking and transit in addition to vehicle access.
2. St. Albert streets are identified for levels of service that protect the right road for the right purpose in the community.
3. St. Albert's transportation network supports accessible and affordable transit.

Principle 2:
St. Albert has a strategic approach to sustainable transportation to serve our diverse population.

Related Pillars of Sustainability:
Built Environment

1. St. Albert's transportation system infrastructure shall maximize use of existing infrastructure and focus new capital construction to support and prioritize transit services and facilities.
2. St. Albert supports multi-modal transportation facilities.
3. St. Albert will use appropriate level of service criteria to identify and prioritize upgrades to the road network.

Principle 3:
St. Albert protects environmental health by creating opportunities for alternative transportation to maintain the beauty of surrounding nature.

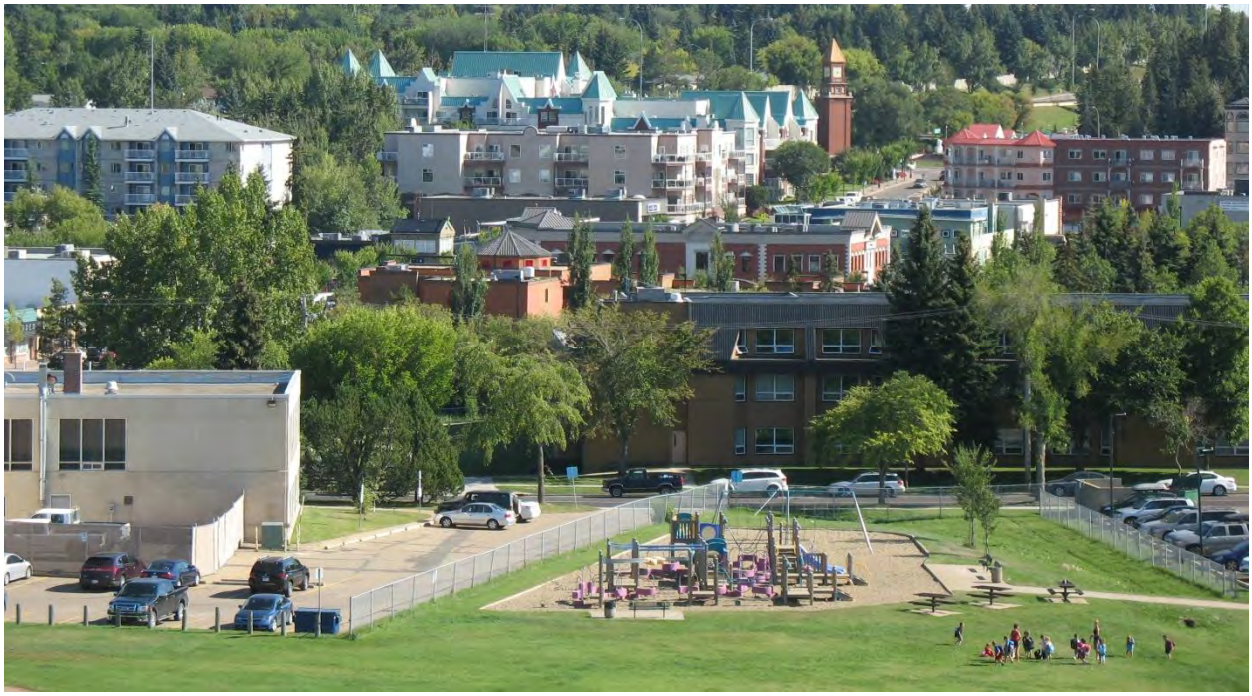
Related Pillars of Sustainability:
Social, Built Environment and *Natural Environment*

1. St Albert minimizes transportation and construction impacts to green spaces and environmental reserves, including the Sturgeon River watershed.
2. St. Albert achieves its targets to reduce harmful emissions including greenhouse gases and local air pollutants.
3. St Albert prioritizes actions that will enhance alternative forms of transportation to increase transit ridership and pedestrian and cycling travel over private vehicle mode choice.
4. St. Albert uses sustainable practices when upgrading, maintaining and constructing new transportation infrastructure.

Principle 4:
St. Albert's transportation system supports economic prosperity
Related Pillars of Sustainability:
Economic and *Built Environment*

1. St. Albert's transportation network is integrated with the regional transportation network for roads, transit and active transportation.
2. St. Albert clearly identifies truck routes to ensure accessibility to commercial and employment areas; while protecting the intended functionality of neighbourhoods and vulnerable road user priority network segments.
3. St. Albert develops new roads and intersections that prioritize safety for all users in balance with efficiency and accessibility and goods movement.





3 | Existing and Future Conditions

3.1 POPULATION

St. Albert is a growing community, and much like the rest of the Edmonton capital region, has been impacted by the relatively strong regional and provincial economy over the past decade. St. Albert is planning for growth, and has developed a forecasted growth scenario that accounts for a continued rise in population at an annual growth rate of 2.8% over the next 27 years. The annual growth rate between 2012 and 2014 was 1.85%, more than double the growth over the previous two years. The population in 2014 was 63,000 people. This population is estimated to nearly double by 2042, with a predicted population of 87,700 by 2024 and 113,000 by 2042. Figure 3-1 illustrates the recent population growth and projected future growth in the community.

Demographics

St. Albert is an older community with many long-term residents who initially moved to this suburb to raise families remaining in the community. The most populous age category is older adults ages 50-64. There is currently a relatively small proportion of the population age 20-29, though this cohort is expected to grow relative to the rest of the population by 2042. Over the next 27 years there is significant growth expected in the 70 and up age group. The growth for the 5 year cohorts are illustrated in Figure 3-2. St. Albert must plan for an aging community, but also for a family friendly community with more children and seniors in the coming decades.

FIGURE 3-1: Recent Population Growth and Projected Future Growth (Source: City of St. Albert)

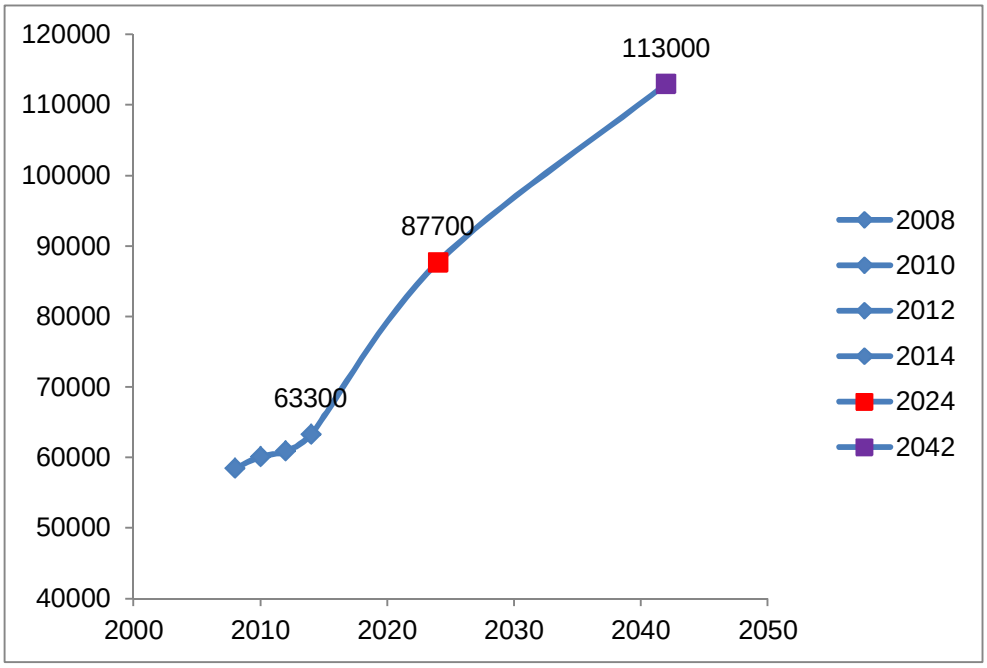
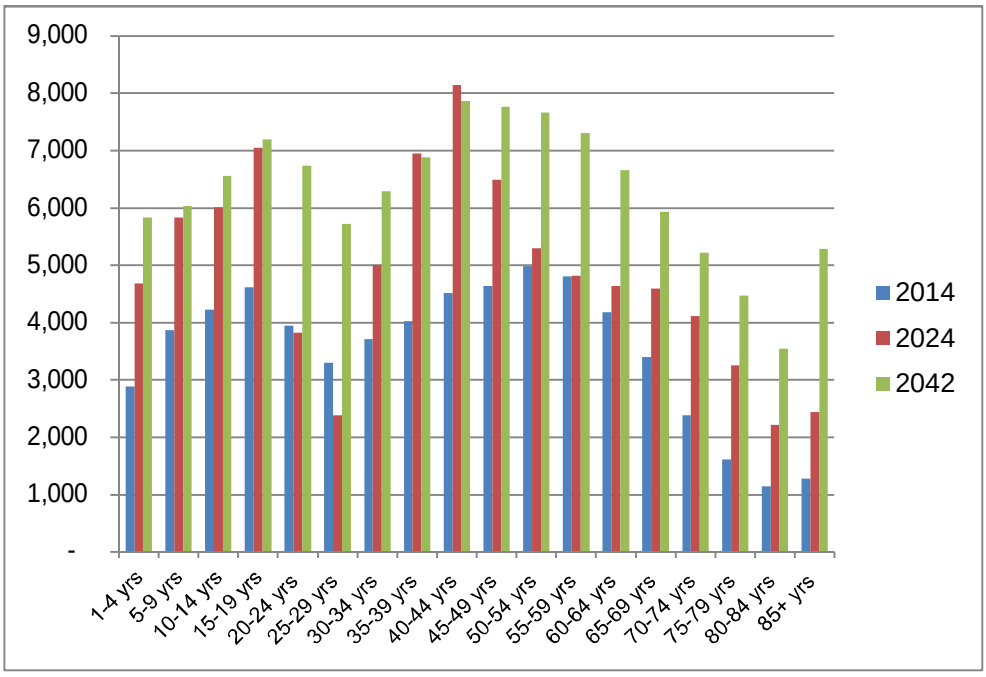


FIGURE 3-2: Population Cohorts Growth (Source: City of St. Albert)





3.2 LAND USE

The current and future land use in St. Albert is shown in Figure 3-4. St. Albert is primarily a residential community, with a significant amount of single detached housing.

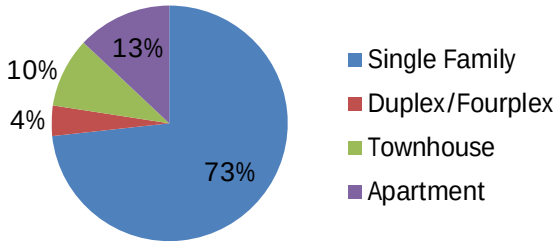
Housing

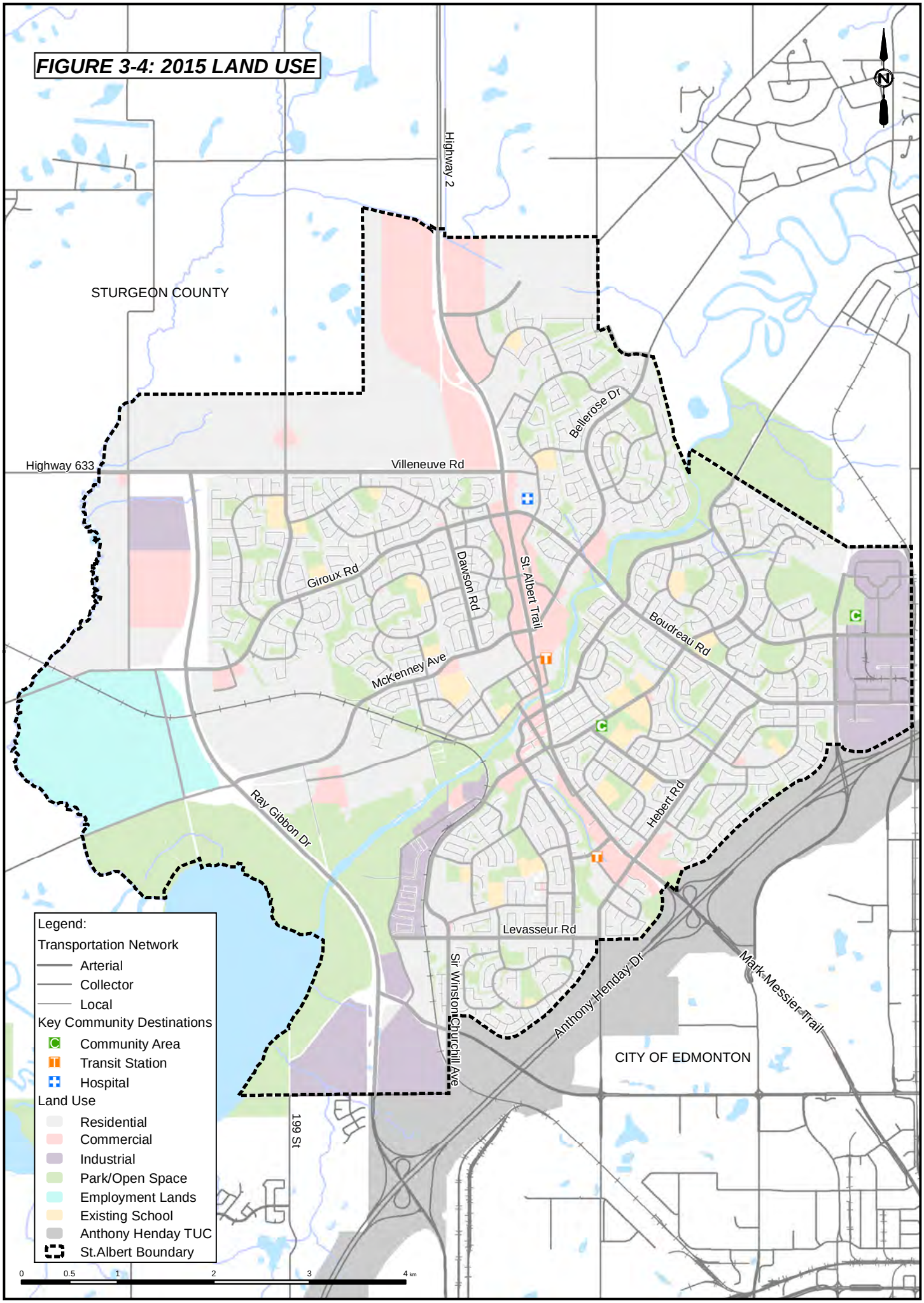
Eighty-one percent (81%) of total dwelling units are owned in St. Albert and 73% of all housing is single-detached family homes, making St. Albert a relatively low density community. As a comparison, in the City of Edmonton, 50% of all housing is Single Detached Housing, and only 55% of units are owned as opposed to rented.

Between 2012 and 2014, more than 50% of new units built in St. Albert were apartments, showing a possible trend towards higher density development.

Figure 3-3 shows the housing type breakdown in St. Albert in 2014.

Figure 3-3: 2014 Housing Types
(Source City of St. Albert)




FIGURE 3-4: 2015 LAND USE
N
STURGEON COUNTY
Highway 2
Highway 633
Villeneuve Rd
Bellerose Dr
Giroux Rd
Dawson Rd
St. Albert Trail
McKenney Ave
Boudreau Rd
Ray Gibbon Dr
Hebert Rd
Levasseur Rd
Sir Winston Churchill Ave
Anthony Henday Dr
Mark Messier Trail
CITY OF EDMONTON
199 St
Legend:
Transportation Network
Arterial
Collector
Local
Key Community Destinations
Community Area
Transit Station
Hospital
Land Use
Residential
Commercial
Industrial
Park/Open Space
Employment Lands
Existing School
Anthony Henday TUC
St.Albert Boundary
0
0.5
1
2
3
4 km
P:\2014\31139\00_Trans_MP\Working_Dwgs\010_GIS\SA_BASEMAPS\ArcMap\November2015\FutureLandUse_8.5x11.mxd

Commercial/Industrial

St. Albert is a regional shopping center that serves northwest Edmonton, Sturgeon County and local residents. There is a big box centre at the north end of the city with significant retail space. Retail is spread along St. Albert Trail and within the downtown core.

There are two industrial areas, Campbell Business Park in the south-east and Riel Business Park in the south-west. These business parks contain a mixture of office space, small manufacturing, warehousing, light industrial and automotive serving.

Of the 3,300 acres of land St. Albert has available to accommodate future growth, 700 acres are designated for commercial and industrial uses.

Park Space

There are currently 1,100 acres of green space in St. Albert, and some 80,000 trees. There is a long linear park along the Sturgeon River running through the city and neighbourhood parks disbursed through the residential neighbourhoods. The people of St. Albert value park space and prioritize the protection of the natural environment. Importantly, the park space includes both recreational trails and active transportation routes that have been incorporated into the long term active transportation network in Section 4.2.

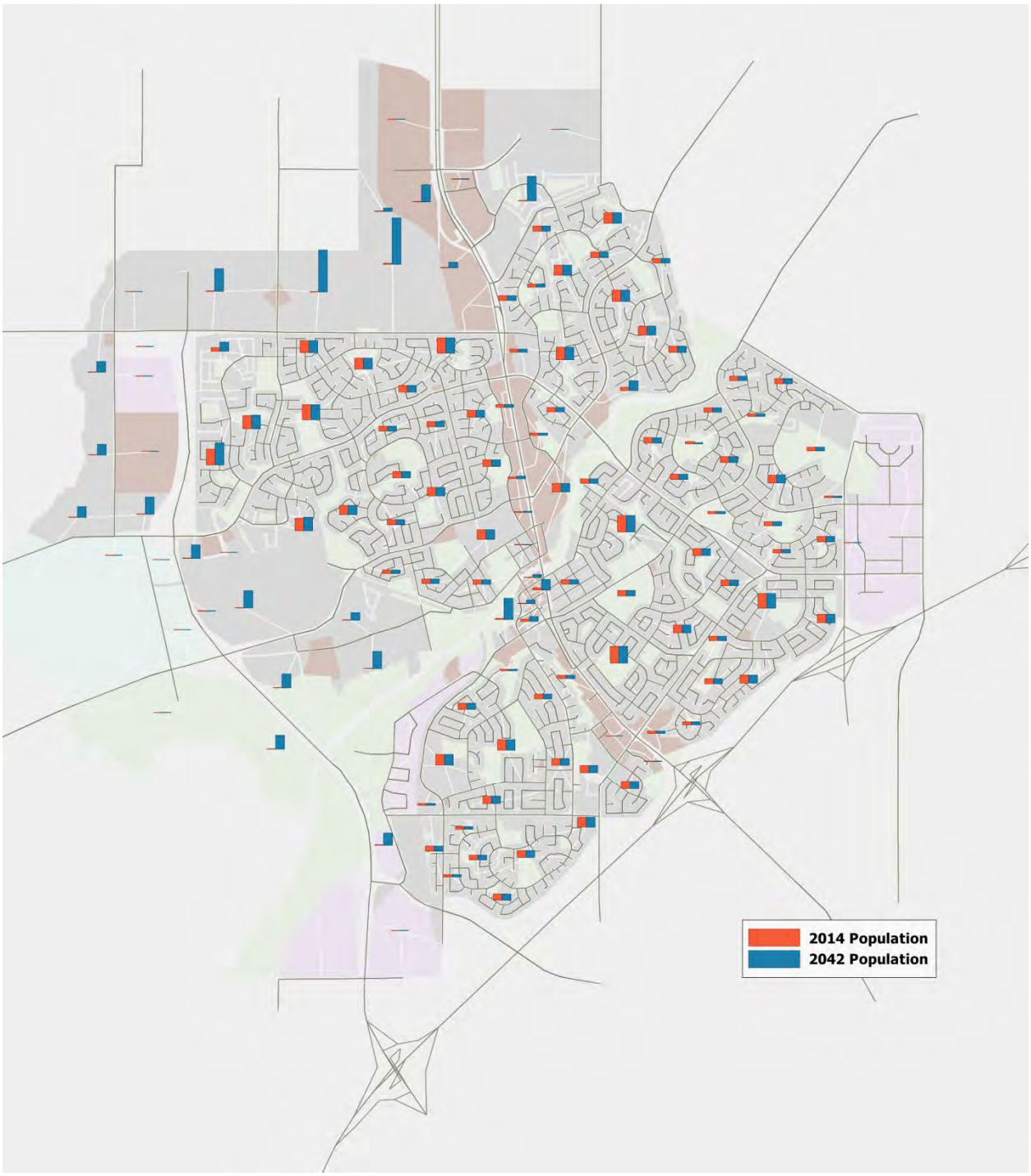
Future Land Use

The future land use plan for St. Albert, last updated for the 2007 Municipal Development Plan, shows development trends remain somewhat similar to current conditions in St. Albert. Figure 3-4 on page 3-4 includes the future land use for St. Albert.

Greenfield development is limited to the north-west and west side of St. Albert. The area west of Ray Gibbon Drive will include industrial and commercial space, as well as the employment lands, for which the design concept remains to be finalized. Access to these lands is key for economic development.

The majority of residential growth is anticipated to occur at the north end of the city. Figure 3-5 shows the population by area for 2014 and 2042. For much of the built environment, the population will remain unchanged over the horizon of this study. While the majority of population growth is in currently undeveloped areas, there is also growth anticipated via densification in the downtown core. With the potential implementation of future LRT, there will be demand for increased densification along St. Albert Trail near proposed LRT stations; however this is not evaluated within this document.

Figure 3-5: Residential Growth in St. Albert
(Source: City of St. Albert)





3.3 TRANSPORTATION

St. Albert residents have access to a local and regional road network, along with a local and regional transit network of bus connections. There is active transportation infrastructure that provides pedestrian and extensive recreational cycling access throughout the community. Recreational cycling facilities have been the priority for development historically, and parks areas within St. Albert are well serviced with recreational paths. Urban cycling facilities are less prevalent. Regional transit is currently focused into Edmonton, with a commuter bus system that connects St. Albert residents to downtown Edmonton, MacEwan University, NAIT, the Royal Alexandra Hospital, the University of Alberta and West Edmonton Mall.

3.3.1 Roads

The existing road network map for St. Albert is shown in Figure 3-6. St. Albert Trail is the main north-south connection through St. Albert. This roadway varies between four lanes and six lanes within the community, and the majority of intersections with it are signalized. St. Albert Trail is primarily fronted by commercial uses and is a key connection to the City of Edmonton and Sturgeon County.

Ray Gibbon Drive is a two lane roadway, and a potential future provincial highway that runs from the Anthony Henday Drive at its south end to Villeneuve Road at the north end. The long term plans for this roadway include six lanes for traffic and interchanges at all major intersections, ultimately continuing north to connect to Highway 2 south of Morinville.

There are several major arterials crossing St. Albert Trail. These arterials provide regularly spaced east-west access across St. Albert, and most of these roadways are four lane divided roads, providing good capacity for cross-wise city movement.

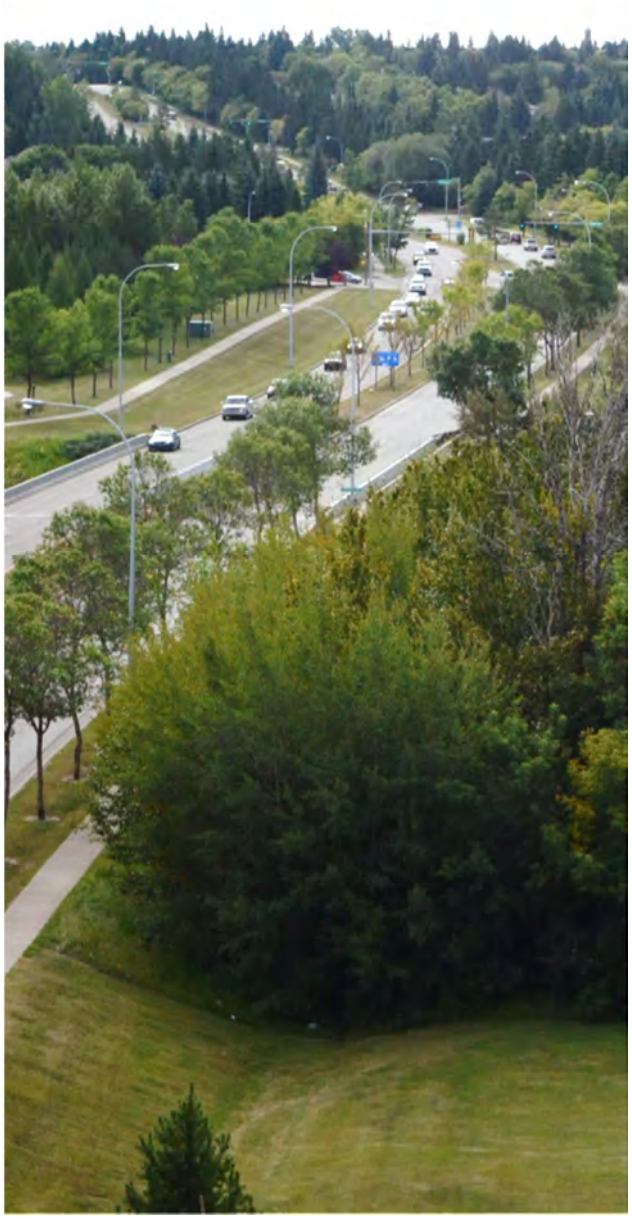
- Boudreau Road is a divided four lane road that runs north-south on the east side of St. Albert Trail, ultimately realigning east-west as Giroux Road west of St. Albert Trail. Boudreau Road connects to Campbell Road, which connects to Anthony Henday Drive via an interchange.

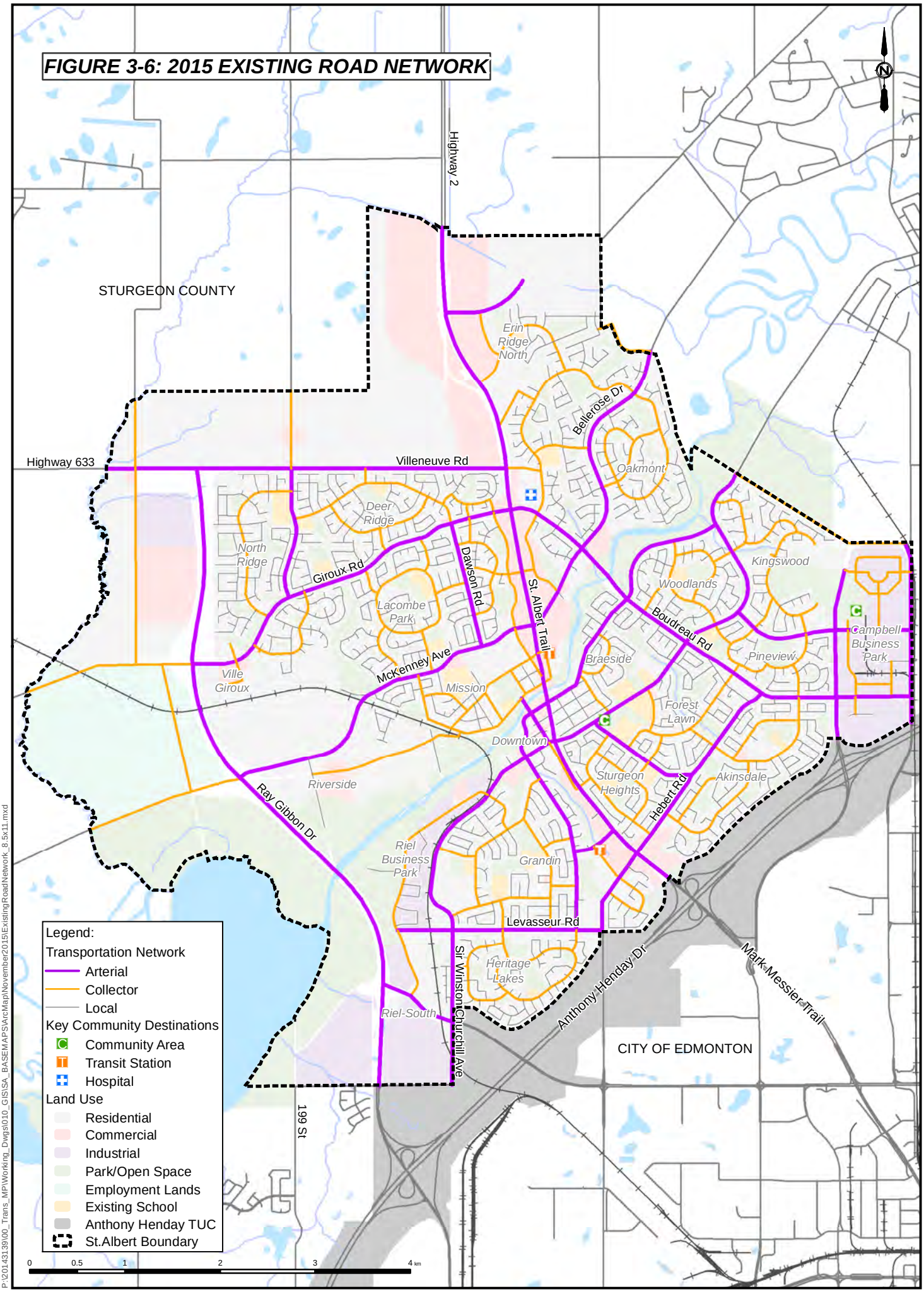
- McKenney Avenue is an east-west arterial that diverts northward as Bellerose Drive and connects to Sturgeon County east of St. Albert Trail. McKenney Ave and Bellerose Drive are mostly divided four lane arterials, with sections of two lanes at either terminus.

- Sir Winston Churchill Avenue is also a divided four lane arterial for the majority of its segments, with the exception of the north-east section which is an undivided two lane cross section, which does not directly connect to St. Albert Trail and instead runs as an underpass in the vicinity of the downtown area

- Gervais Road and Hebert Road are the southernmost east-west arterials in St. Albert, and are also four lane roads. Gervais Road shifts south towards Anthony Henday Drive, crossing over the Anthony Henday and becoming 170 Street into Edmonton.

The road designs of St. Albert are curvilinear in nature and neighbourhoods connect to these arterials through a network of local and collector roadways.




FIGURE 3-6: 2015 EXISTING ROAD NETWORK
STURGEON COUNTY
CITY OF EDMONTON
Highway 2
Highway 633
Villeneuve Rd
Erin Ridge North
Bellerose Dr
Oakmont
Deer Ridge
North Ridge
Giroux Rd
Dawson Rd
St. Albert Trail
Lacombe Park
Kingswood
Woodlands
Boudreau Rd
Campbell Business Park
Pineview
Braeside
McKenney Ave
Ville Giroux
Mission
Forest Lawn
Downtown
Riverside
Ray Gibbon Dr
Sturgeon Heights
Hebert Rd
Akinsdale
Riel Business Park
Grandin
Levasseur Rd
Heritage Lakes
Sir Winston Churchill Ave
Riel-South
Anthony Henday Dr
Mark Messier Trail
199 St
Legend:
Transportation Network
Arterial
Collector
Local
Key Community Destinations
Community Area
Transit Station
Hospital
Land Use
Residential
Commercial
Industrial
Park/Open Space
Employment Lands
Existing School
Anthony Henday TUC
St.Albert Boundary
0
0.5
1
2
3
4 km
P:\20143139\00_Trans_MP\Working_Dwgs\010_GIS\SA_BASEMAPS\ArcMap\November2015\ExistingRoadNetwork_8.5x11.mxd

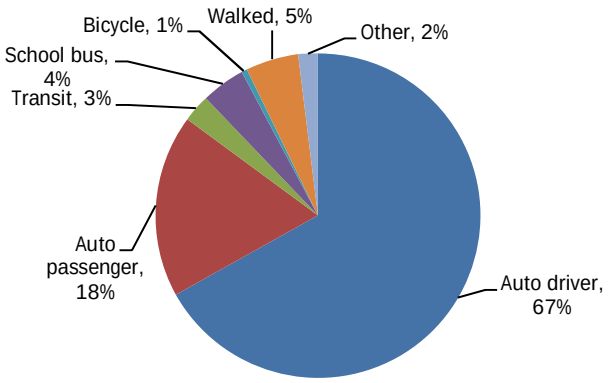
3.3.2 Travel Patterns

The household travel survey, as described in Section 1.2.1, provided a range of information about existing travel patterns in the City of St. Albert, including typical mode of travel, trip type and key origins and destinations. This information came from residents of St. Albert, and as such reflects the patterns of residents of the community.

Mode of Travel

The mode split for all trips in St. Albert reflects the expected split for this commuter community. Currently 85% of all trips are taken by residents of St. Albert are as either auto driver or passenger. Less than 1% of all trips by St. Albert residents are taken by bicycle and 3% are taken via transit.

Figure 3-7: Mode Split



While internal community transit ridership is low overall, 15% of trips taken into and out of the City of Edmonton using St. Albert Trail daily are taken via transit.

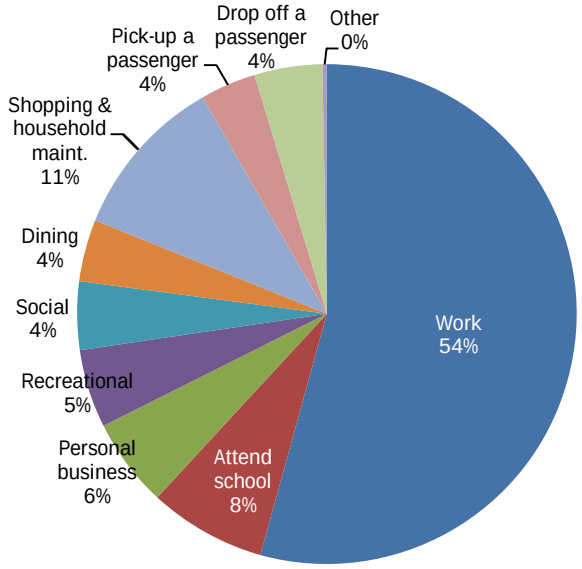
Very few trips identified within this study period were taken via bicycle. Cycling in St. Albert is popular primarily for recreational purposes.

Trips designated as mode “other” include primarily taxis and shuttles.

Purpose of Travel

The 2014 Household Survey provided information on where residents of St. Albert are going, in addition to how they get there. Mode split information showed that most trips are being taken in a private automobile. The household survey also looked at trip purpose. Residents in the survey were asked to identify the purpose of their trip. The travel data reveals that the most common trip type was to travel to and from work, then shopping trips, followed by attending school. These results are summarized in Figure 3-8.

Figure 3-8: Purpose of Travel

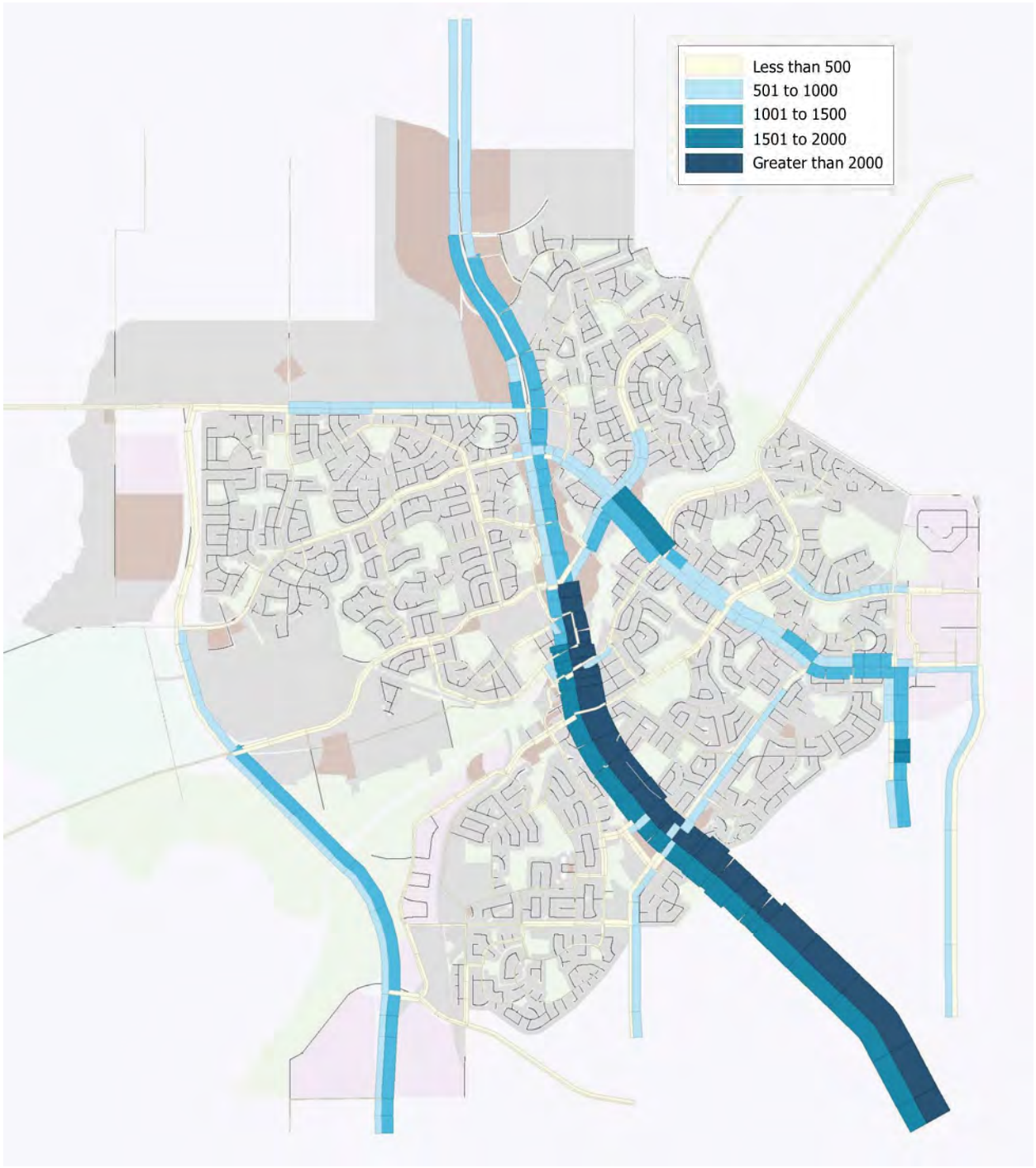


50% of St. Albert residents work in Edmonton, and another 13% work outside of St. Albert other than Edmonton.

Work, school and shopping are the most common trip purposes for St. Albert residents, and therefore it is expected that the roads serving these uses are generally busier. Because so many of St. Albert residents work in Edmonton, St. Albert Trail at the south end of the city is the busiest road in St. Albert.

Figure 3-9 shows the total traffic volumes in vehicle per hour (vph) on St. Albert roads during the afternoon peak hour period.

Figure 3-9: 2014 Auto Trips PM Peak Period



Regional Traffic

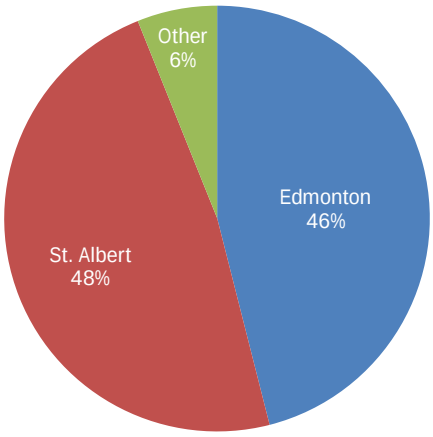
Regional traffic has a strong influence on the traffic within St. Albert.

What is Regional Traffic?

This TMP will refer frequently to the impacts of regional traffic on St. Albert's roads. This study identifies regional traffic as traffic that is passing through St. Albert without having St. Albert as its final origin and destination. This can include Sturgeon County traffic destined for Edmonton or Edmonton traffic destined for northern Alberta, as two examples. Regional traffic impacts residents of St. Albert as certain roads in the community experience periods of congestion that are caused by those who are just passing through the community, not making use of specific goods or services located in St. Albert.

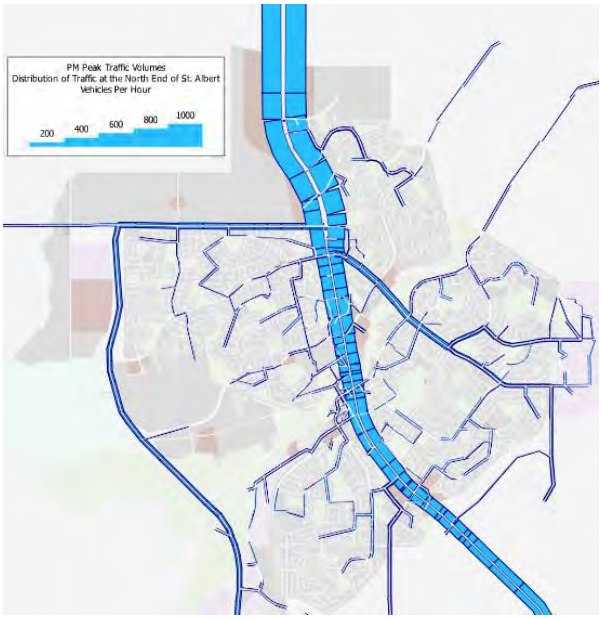
St. Albert Trail and Ray Gibbon Drive are important connections for residents of Sturgeon County and Morinville to travel to the city of Edmonton and into St. Albert , as well as other nearby municipalities. The intercept survey conducted at the north end of the city on St. Albert Trail revealed that 48% of vehicles are originating south of St. Albert and commuting through the city without making stops, as shown in Figure 3-10.

Figure 3-10 PM Peak Trip Origins for Northbound Traffic on St. Albert Trail



Travel distribution for traffic, as shown in Figure 3-11, identifies that the majority of vehicles entering the city on St. Albert Trail will remain on St. Albert Trail for the duration of the commute through the city. Analysis in Section 4 of the TMP will investigate the impact on the road network by improving the alternative regional connections for traffic bypassing St. Albert.

Figure 3-11: North Intercept Survey Travel Distribution (2014 PM Peak)



Some of St. Albert's regional connector and arterial roadways are now serving dual function as both internal and regional roads, which results in regional traffic passing near or even through local neighbourhoods. To illustrate the potential impact, the average annual daily traffic (AADT) on several key regional roads just outside St. Albert's limits is summarized in the table below.

Table 3-1: Regional Traffic

Road Name	2014 AADT
Hwy 2 north of St. Albert (St. Albert Trail)	16,900
Bellerose Drive	2,200
Sturgeon Road (Sir Winston Churchill Drive)	4,000
Villeneuve Road	3,600

Road Impacts

As expected from these identified travel patterns, the most congested roadways in St. Albert are generally the larger thoroughfares that support the movement of both local and regional traffic. Figure 3-12 is a map of the volume to capacity ratio on St. Albert's roads using 2014 PM Peak traffic volumes.

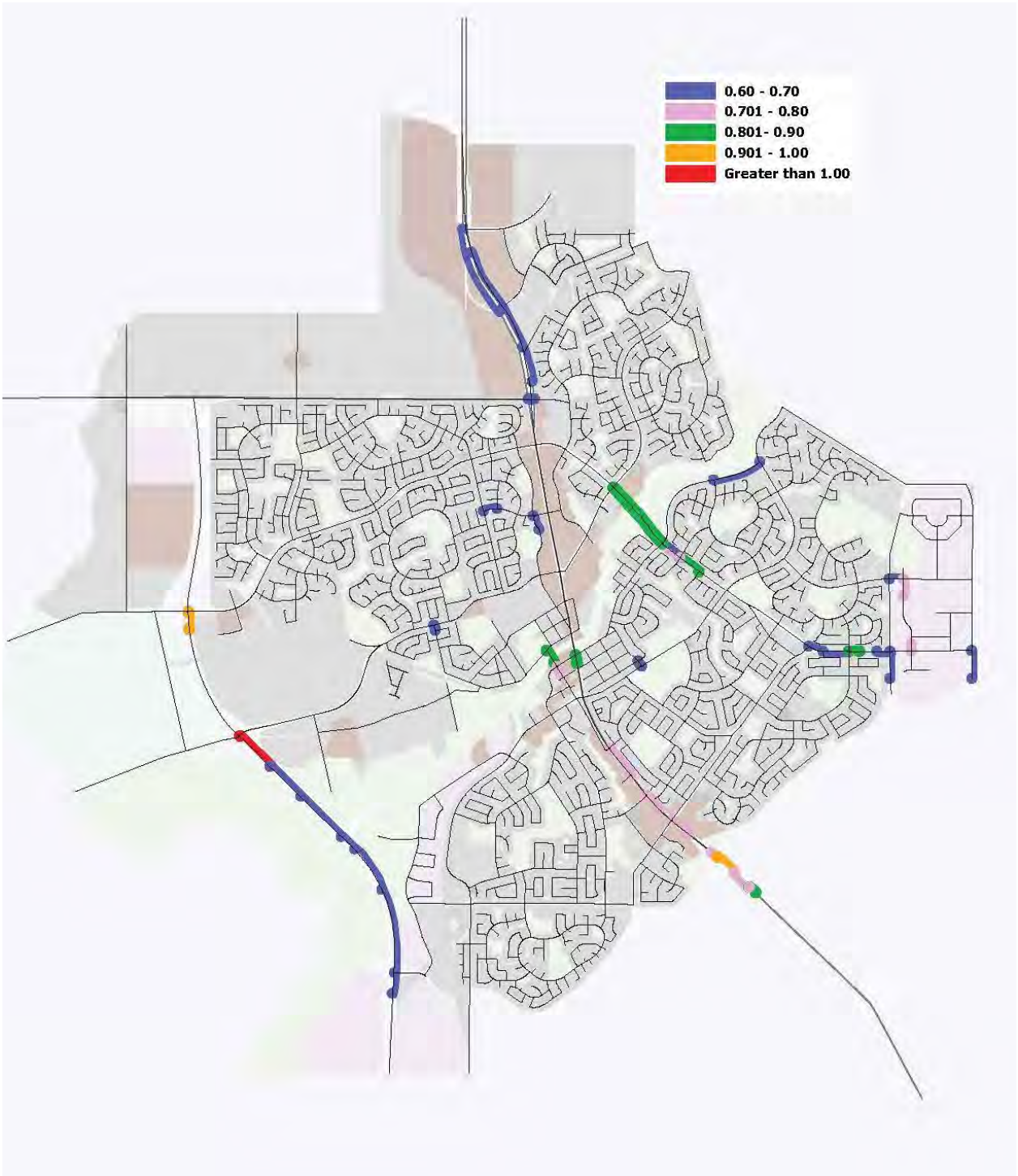
What is Volume to Capacity (v/c)?

Volume to capacity ratio (v/c) is a way of comparing the theoretical capacity of a roadway to the actual volumes on the road. In theory, a road with a volume to capacity ratio of 1.0 or greater is operating beyond its designed capacity and users would experience significant delays on this road. A v/c of greater than 0.9 is usually undesirable, though can be acceptable depending on the priority of the road. For example a downtown roadway that is an important shopping and pedestrian corridor may tolerate a v/c higher than 0.9 because the priority is not about moving traffic, but local user experience.

In the PM Peak period, the most congested location in St. Albert is Ray Gibbon Drive northbound. There is also congestion along Boudreau Road and at the southern and northern ends of St. Albert Trail. The most congestion location on St. Albert Trail within St. Albert is near downtown, where the v/c ratio is between 0.8 and 0.9.



Figure 3-12: Existing Conditions Volume to Capacity Ratio (2014 PM Peak)



3.3.3 Public Transportation

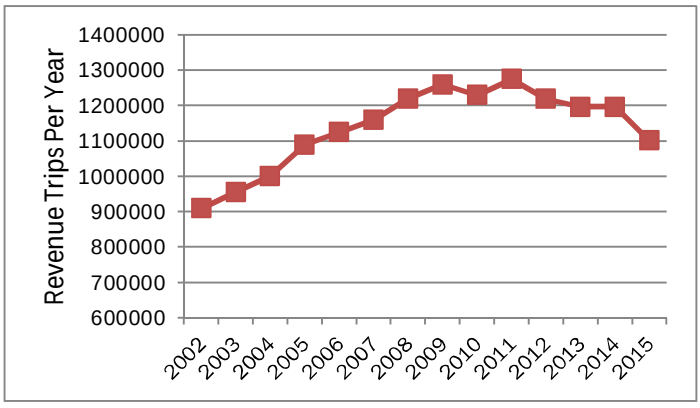
Scope of Current Services

Public transportation refers to transportation services that are publicly available to the St. Albert community and do not rely on private vehicle ownership. This includes conventional forms such as publicly-funded transit networks, generally servicing fixed or semi-flexible routes such as those provided by St. Albert Transit (StAT), as well as new services that are based on emerging technologies (also known as 'disruptive technologies').

These new services are generally provided through private organizations such as car and ride sharing (see section 3.4) for a profit. New technologies have significant scope to improve the breadth and range of public transportation services available to St. Albert residents, however it is recognized that new regulatory frameworks are required to protect consumer interests and road safety. The potential impact of these new technologies and services for St. Albert are discussed here.

Transit ridership has grown at an average of 3.7% per annum between 2002 and 2011, with growth declining in recent years.. Total annual transit ridership is illustrated in the Figure 3-13. Approximately 70% of all weekday trips are on commuter routes.

Figure 3-13: Transit Ridership Per Year
Source: p. 20 of Transit Long Term Department Plan



Current statutory basis for provision of services

The current policy basis for transit services is governed by the following statutory documents and plans:

1. Bylaw 34/87 'Bylaw to operate a Public Transportation System
2. City Council Policy C95-2006 'Transit Services'
3. Transit Long Term Department Plan 2013-2027.

The Bylaw is concerned with rules and responsibilities of StAT staff and passengers. The Council Policy is focussed on universal service standards, while the Department Plan contains strategic directions and investments for StAT for the next 15 years.

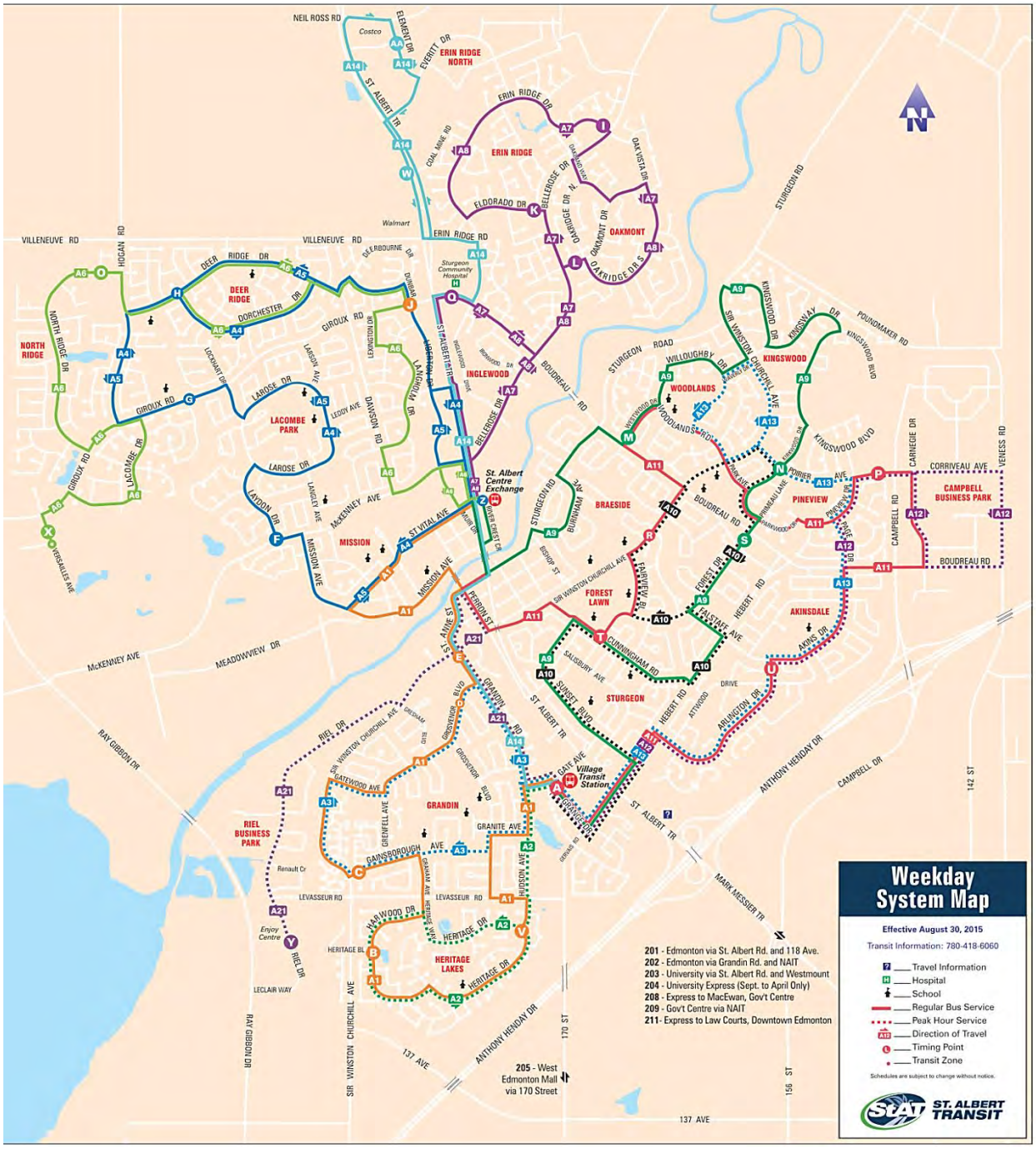
Existing Network

St. Albert operates a bus network with two types of service; 15 local routes that provide coverage for all neighbourhoods, and seven commuter routes that provide more direct connections to key destinations in Edmonton. The local transit network is illustrated in Figure 3-14. There are two transit centres within St. Albert; St. Albert Center Exchange located north of the Sturgeon River and Village Transit Centre, located off of Gate Avenue and St. Albert Trail. Both transit centres are hubs for the local bus routes, and provide park and ride spaces.

With limited available parking at the St. Albert Centre Exchange; the Village Transit Centre operates as the main park and ride location with a current allotment of approximately 350 parking stalls. 190 of those spaces have a daily fee of $4.00, the rest have no fee (prices provided by St. Albert Transit).

For local routes, a monthly bus pass for an adult is $71; a single fare is $3.25. Commuter route passes are $112. University students who attend NAIT, MacEwan University and the University of Alberta are part of a U-Pass system which provides a transit pass to all post-secondary students in the capital region at a cost of $162.50 for a four month semester as part of annual tuition.

Figure 3-14: Local Transit Route Map



Long Term Goals

In early 2013, StAT embarked on a Transit Long Term Department Plan for the next 15 years, with goals that aim to be consistent with the long term goals of Council. These long term goals were developed with reference to the 2012 Council budget priorities and existing local (Council) and regional (CRB) long term planning documents, including the 2009 St. Albert TMP.

The Plan includes patronage forecasts for the 15 years to 2027 based on population growth and 0.5% modal shift, as well as a select number of recommendations for service improvements.

Transit Patterns

Transit patterns are similar to the auto trip patterns; the majority of transit rides take place on the commuter routes which travel between the two transit centres in St. Albert and Downtown Edmonton/University of Albert. PM peak hour transit trips are illustrated in Figure 3-15.

Figure 3-15: 2014 PM Peak Transit Trips



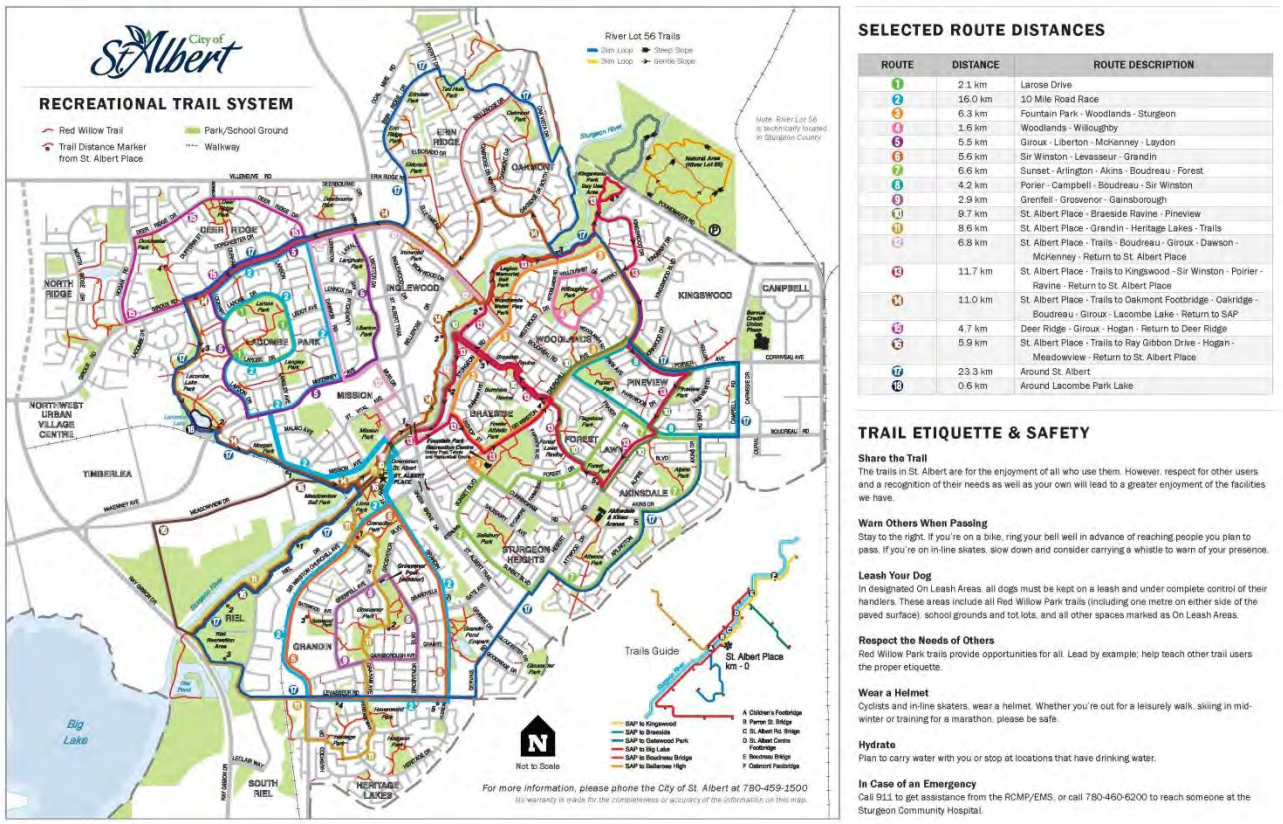
3.3.4 Active Transportation

Active transportation encompasses human powered modes of transportation, including walking and cycling. The existing active transportation network in St. Albert is currently aimed primarily at recreational users. Pedestrian and cycling connections to major destinations are currently limited.

The key recreational trail system is called the Red Willow Trail network, which provides a number of trails through local parks. Additional active transportation links exist on collector roads and arterial roads, which generally have sidewalks on at least one side of the street. Key pedestrian crossing locations are marked and in some cases signalized or utilize warning flashers. The existing recreational trail system is illustrated in Figure 3-16.
The Founders Walk is an example of an active transportation facility that provides a signed walking route that supports community heritage through identifying important historical landmarks within St. Albert.

The intent of the TMP is to identify key active transportation routes and provide recommendations for developing versatile infrastructure that will facilitate an increase in mode share towards cycling and walking, particularly for localized journeys within St. Albert that could be completed on foot or bicycle, but for which there are currently incomplete or substandard connections. There is also significant scope for the expansion of multi-modal travel in St. Albert (particularly cycling and transit). These improvements have the potential to make the transportation system safer, more environmentally friendly and more accessible for all users, within the community and regionally.

Figure 3-16: Recreation Trail System



3.4 FUTURE CONSIDERATIONS

Population growth and regional transportation infrastructure will have a significant impact on St. Albert's transportation network over the next 27 years. As the population in St. Albert and surrounding region grows, additional infrastructure will be necessary to help accommodate this growth. Section 4 of this document will discuss the impact of these conditions including:

- St. Albert LRT development,
- Ray Gibbon Drive widening and extension,
- 127 Street extension, and
- Mode shift.

3.4.1 Emerging Future Technologies

Transportation technology on a large scale like driverless cars, but also on a much smaller scale through the sharing economy (car sharing and Uber for example) is already impacting the way people get around, especially in major metropolitan areas. The impact of these technologies is in some cases still difficult to predict. While experts agree that automated vehicles are on their way, there is yet be consensus on when these technologies will become commonplace enough to have an impact on St. Albert.

Automated Vehicles

The Province of Ontario recently became the first Canadian province to allow companies to test driverless technologies on its roadways. While privately owned wide-spread automated technology may still be a few years in the future, this technology could have widespread impacts including:

- Efficiencies and cost savings in the shipping industry.
- Large reduction in traffic collisions and roadway injuries and fatalities.
- Potential increase in roadway capacity.
- Additional mobility options for seniors and youth.
- Increase total kilometers traveled on roads by making driving more accessible for the very young and very old.
- Increasing appeal of mass transit through integration with local automated car shares.
- Reduced parking demand in current high demand areas changing land use paradigm.
- Increased travel demand.

There is little doubt that this coming technology will have an impact within the lifespan of this TMP, though time will tell exactly what that impact will be. Future updates to the TMP will need to have clear visions for the progress and impact of these technologies, and it will be important for St. Albert to look for opportunity of industry involvement with regards to technology advancements and ensure its transportation infrastructure is up to date and compatible with forthcoming technologies.



Rideshare Companies

Though currently illegal under Canada's insurance laws, ride sharing companies such as Uber are beginning to make a presence in Canada, and are currently operating in the Capital Region. While rideshare companies have the potential to help reduce the need for a private automobile, safety and legislative concerns continue to make it controversial in many jurisdictions. The City of St. Albert should prepare for the introduction of rideshare companies through appropriate revisions to local bylaws and consider the impacts on the community and legal issues that may arise.

Transportation Bylaw Reform

The current traffic bylaw for St Albert was first enacted in 1987 and is confined to StAT. Conventional taxis are currently unregulated. The emergence and convergence of the new technologies outlined here means that St Albert should consider a new traffic bylaw that provides additional safeguards for users of these services so that they can be successful in the long term.





4 | Transportation Master Plan

This plan marks the beginning of a transformative period for St. Albert. The private automobile is now, and will continue to be, important to residents and their travelling needs; however, with limited options for road network expansion, the future of St. Albert will depend on transitioning to a higher usage of alternative transportation modes and developing regional infrastructure to lessen the impact of through traffic on the existing road network.

The recommended transportation master plan starts with the policy framework set out in Section 2. This policy framework was used to identify network improvements and an action plan for moving forward to achieve the principles and vision set out.

The TMP is a guiding document. Each of the following sections (Roads, Active Transportation, Public Transportation, Commercial/Goods Movement and ITS) identifies key projects and strategies to achieve the identified vision and align with guiding principles.

The key focus of this plan is to:

- Maximize the benefit of the existing infrastructure available.
- Prioritize improvements to regional infrastructure to alleviate pressure on St. Albert roads.
- Improve St. Albert Trail as a user friendly main street through St. Albert; address function and use of all roadways to support the network.
- Improve transportation choice through development of alternative infrastructure and coordination with land use planning to encourage a shift to alternative modes.

A detailed action plan for specific actions, policies and studies which will move the TMP forward is included at the end of this section. The success of the TMP will be measured by the implementation of these action items in a timely manner and ongoing evaluation of strategy indicators.

Table 4-1: TMP Guiding Principles and Objectives

Principle	Objectives			
1. Liveable Community	Supports land uses with access to employment and amenities via cycling, walking and transit in addition to vehicle access	Streets are identified for levels of service that protect the right road for the right purpose	Supports accessible and affordable transit	-
2. Sustainable Transportation	Supports transit facilities as viable alternatives to private vehicle	Supports multi-modal facilities	Use appropriate levels of service as criteria for infrastructure upgrades	-
3. Environmental Health	Minimize impacts to green spaces and environmental reserves	Achieves targets to reduce harmful emissions and greenhouse gases	Develop alternative forms of transportation (transit, pedestrian and cycling)	Use sustainable practices when upgrading, maintaining and constructing new infrastructure
4. Economic Prosperity	Integrates with regional network	Truck routes that access commercial/industrial areas while protecting neighbourhood streets	Develop new roads and intersections that prioritize safety for all users in balance with efficiency and accessibility.	-

4.1 ROADS

The existing road network in St. Albert is largely built out. The opportunities that exist for the future of St. Albert are a mixture of capital investment and policies to maximize the capacity and usability of the existing road network, as well as the development of standards and policies that will ensure new infrastructure is adequately designed to support growth and prioritize alternative modes.

St. Albert will rely on important regional connections, primarily expansion of Ray Gibbon Drive, but also the eventual development of 127 Street, to alleviate the pressure placed on St. Albert's roads by regional traffic. Building out other modes, including eventual LRT and active transportation links will also support the overall transportation network by providing increasing opportunities to shift modes towards transit, walking or cycling. LRT development will reduce vehicle capacity on St. Albert Trail, as such it will be critical to ensure opportunities for mode shift are realized and collaboratively integrated into the overall function of the network with urban development.

To facilitate the continued movement of automobiles, existing roads need to be managed in a manner that supports their intended use. While for local roads this might mean improving pedestrian facilities, on other major arterials; this may mean identifying improvements to intersections to update the level of service. A complete streets policy, recommended as an outcome in this plan, can help facilitate this shift. Properly identifying new intersections and roads that are designed safely for all users is also a priority.

What is a Complete Streets Policy?

A complete street policy recognizes that a community's road network consists of a wide variety of types of streets, and that on the whole, the network should be designed for users of all ages, abilities and modes. Complete streets policies recognize that some roads are primarily for cars, like freeways or busy rural roads, but other roads should be better designed for cyclists, pedestrians and transit riders. A complete streets policy allows transportation engineers and city planners to work together to transform a road network to ensure the safe, accessible and sustainable accommodation of all road users.

Strategies

1. ITS – Intelligent Transportation System integration will maximize the existing capacity and create improved efficiency on St. Albert roadways through such areas as signal timing progression and real time traffic information monitoring and data sharing. ITS is regarded as being important for the road network, but is also a comprehensive intermodal priority, and opportunities related to ITS are discussed in Section 4.5.
2. Traffic Calming – Neighbourhood streets are important for residents, but some collectors roads have become busy and important connections to major arterials, and neighbourhood shortcutting has become a concern. Traffic calming policies will allow St. Albert to properly identify problem areas and suggest solutions.
3. Complete Streets Policy – In conjunction with the traffic calming policy, a complete streets policy will allow St. Albert transportation to prioritize improvements for alternative modes in priority locations, while supporting vehicle movement in others.
4. St. Albert Trail – St. Albert Trail is the busiest road in St. Albert, as an important connection to

shopping, transit, schools and regional connections. The development of regional infrastructure like 127 Street, Ray Gibbon Drive and the LRT will provide opportunities to change the scale of St. Albert Trail from a wide car friendly arterial, to a community road that supports comfortable facilities for all transportation modes.

5. Regional Infrastructure – To facilitate the future of St. Albert Trail, regional infrastructure is needed to provide alternative access around St. Albert for the high percentage of Sturgeon County and City of Edmonton traffic impacting St. Albert's roads.
6. Traffic Modelling – Maintaining an up to date transportation demand model is beneficial for ongoing evaluation of network infrastructure, traffic impact assessments and capital investment prioritization.

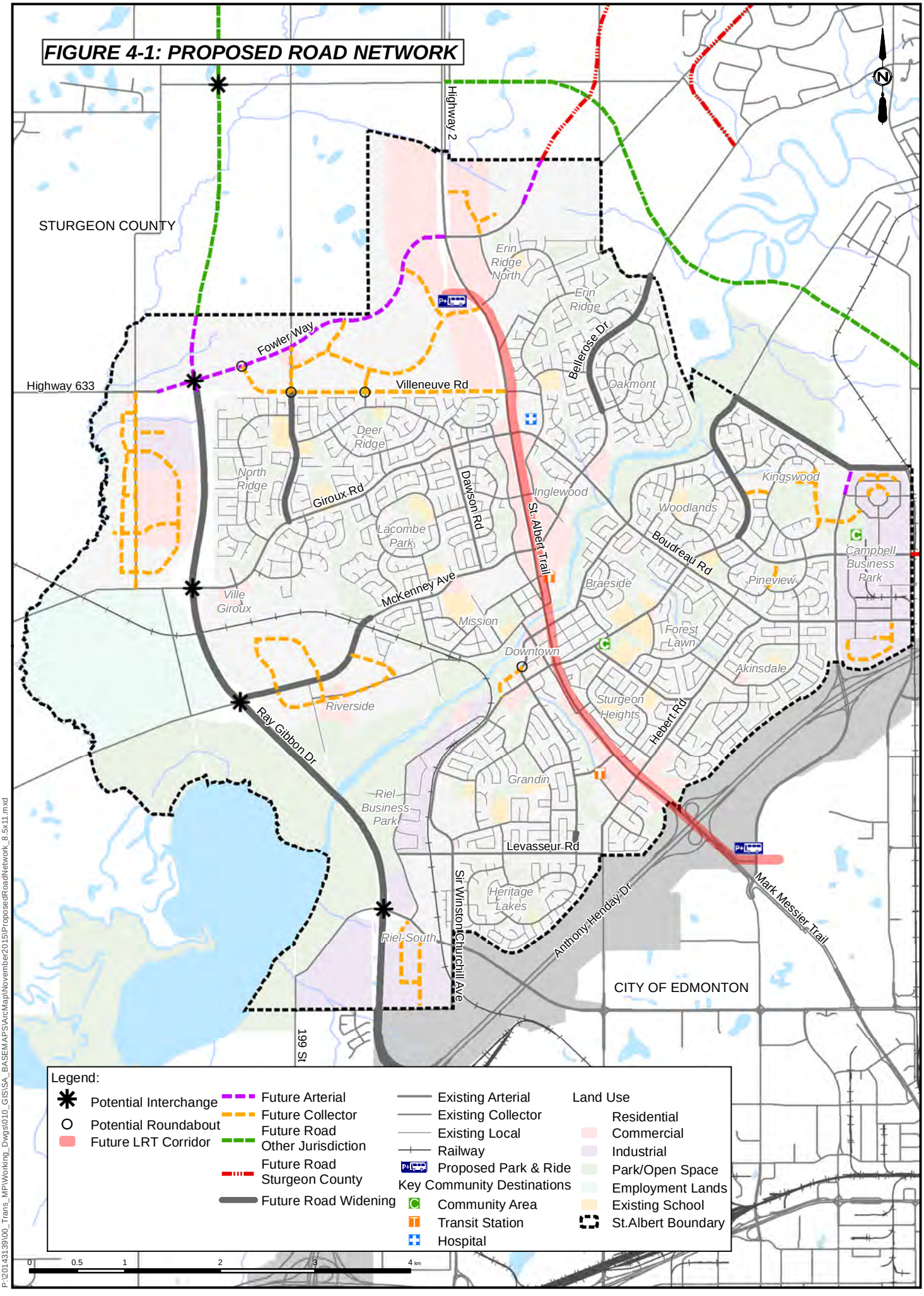
What did we hear about roads in public consultation?

- Neighbourhood streets are the highest priority to residents.
- Speed and noise on these streets are concerns to residents.
- St. Albert Trail is an important road, and there are concerns about the movement of vehicles on this road.
- Driver information technology and intelligent transportation systems are important for residents.
- Ray Gibbon Drive is congested and needs added capacity.

Future Road Network

The future recommended road network for St. Albert is shown in Figure 4-1.




FIGURE 4-1: PROPOSED ROAD NETWORK
STURGEON COUNTY
CITY OF EDMONTON
Highway 2
Highway 633
Fowler Way
Villeneuve Rd
Bellerose Dr
Giroux Rd
Dawson Rd
St. Albert Trail
McKenney Ave
Boudreau Rd
Ray Gibbon Dr
Levasseur Rd
Hebert Rd
Sir Winston Churchill Ave
Anthony Henday Dr
Mark Messier Trail
199 St
Erin Ridge North
Erin Ridge
Oakmont
Deer Ridge
North Ridge
Lacombe Park
Inglewood
Woodlands
Kingswood
Campbell Business Park
Pineview
Braeside
Ville Giroux
Mission
Downtown
Forest Lawn
Akinsdale
Riverside
Sturgeon Heights
Grandin
Riel Business Park
Heritage Lakes
Riel-South
Legend:
Potential Interchange
Potential Roundabout
Future LRT Corridor
Future Arterial
Future Collector
Future Road Other Jurisdiction
Future Road Sturgeon County
Future Road Widening
Existing Arterial
Existing Collector
Existing Local
Railway
Proposed Park & Ride
Key Community Destinations
Community Area
Transit Station
Hospital
Land Use
Residential
Commercial
Industrial
Park/Open Space
Employment Lands
Existing School
St.Albert Boundary
0
0.5
1
2
3
4 km
P:\20143139\00_Trans_MP\Working_Dwgs\010_GIS\SA_BASEMAPS\ArcMap\November2015\ProposedRoadNetwork_8.5x11.mxd

St. Albert Trail: St. Albert Trail divides its functions between acting as a regional thoroughfare and local arterial. A future for St. Albert Trail is dependent on developing supporting regional infrastructure around St. Albert to alleviate this dual function, and allow for a re-envisioned St. Albert Trail for the future. With the approved LRT alignment along St. Albert Trail (from Anthony Henday Drive at the south end of the city to a park and ride transit facility at the north end of the community), two lanes of vehicle traffic from St. Albert Trail will be eliminated.

Development of an LRT, with the support of the City of St. Albert Planning department, can spur a change in development patterns in St. Albert, with future transit oriented development (TOD) and higher density development along the Trail. There is tremendous potential to transform St. Albert Trail from an urban thoroughfare to a multi-modal transportation corridor. With approval of the LRT, St. Albert Trail should include better pedestrian and cycling accommodation and consider access to transit stops. Figure 4-2 shows St Albert Trail today, and a conceptual illustration of how it may look and service road users in 27 years.

Figure 4-2: St. Albert Trail Future Streetscape (Source: Streemix.net)



Major Arterials (Through Movement Streets)

Major arterials are prioritized for the movement of higher volumes of vehicles and transit. These roadways generally will have access limited to 400m between intersections, restrict private access directly to the roadway and facilitate speeds of between 50 km/h to 60 km/h. Many arterials in St. Albert are divided four lane roads, and intersections between arterials are signalized. While it should be prioritized to keep traffic moving at a higher level of service on an arterial roadway, it is recommended that arterial alignments be used to facilitate cycling and pedestrian movements. Due to generous right-of-ways, these movements can be facilitated through development of multi-use trails off of the roadway. Priorities for existing arterials is to ensure safe crossings for pedestrians and cyclists, examine the need for signal prioritization for transit and then to maximize the capacity of the existing arterial through ITS initiatives and intersection improvements.

Urbanized Arterials (Balanced Streets)

Certain roadways within St. Albert that are labeled arterials should not be designed to function as a high speed through-way. Though they are similar in limiting residential access and functioning as a connection point between areas, some arterials, particularly in the Downtown should be more versatile, with increased accommodation for pedestrians, cyclists and transit. Traffic should move at a slower speed on these roads and lower levels of service for automobile traffic is acceptable.

Collector Roads

Collector roads are primarily residential, with direct access to private driveways, and serve to feed local traffic onto the major arterials. Feedback on traffic calming, excess speeds and volumes as part of this study were generally in reference to collector roads. Residents often perceive a collector road as a local road, and can be resistant to the impact of traffic from outside their neighbourhood driving in front of their homes. Existing collector roads should be evaluated in the traffic calming policy to identify if and when traffic calming measures should be implemented, either to slow traffic or potentially reduce neighbourhood shortcutting.

The City of St. Albert Council moved in 2010 that future growth in the City should not include back alleys and have a curvilinear design with no grid system (Council Motion C191-2010). New neighbourhood designs should therefore align with this motion, but with consideration for multiple access points within neighbourhoods, particularly for pedestrians and cyclists. Ongoing consideration for best practices in neighbourhood design should be reviewed periodically.

Collector roads should be limited to two lanes of traffic, with on street parking availability and speed limits not exceeding 50 km/h. Collector roads can carry cycling traffic directly on the roadway, and should have sidewalk accommodation on both sides.



Local Roads

Local roads make up a significant part of the St. Albert Road network. Roads are typically designed with two driving lanes with resident parking available on both sides and speed limits no greater than 50 km/h. Local roads should accommodate pedestrians in the form of sidewalks on both sides. Cyclists should be comfortable riding directly on a local road.

Traffic Calming

Implementation of a traffic calming policy is recommended as part of the 10 year action plan in this report. This is an important issue raised by many residents over the course of the project period. Traffic calming on local neighbourhood streets can help to support active transportation as well, by making certain roads more appealing to cyclists and pedestrians through slowing traffic volumes and eliminating any shortcutting traffic. A traffic calming policy will be necessary to identify a unified set of standards to identifying project locations and implementation.





Complete Streets Policy

A complete streets policy is a system that can help municipalities bridge the gap between the desired outcomes of a TMP (meeting the needs of all users), and how the current engineering servicing standards are generally set up to prioritize the private vehicle. A complete street will have elements that support transit, pedestrians, cyclists and in many cases the private automobile, but will identify how to prioritize different streets for these different purposes. There is no unified design standard for a complete street, because a complete street policy is about the overall network, not the individual road. What this may look like in St. Albert is improving pedestrian facilities on local roads, while still having major urban arterials that are primarily designed for rapid auto and transit movement. The intent of the complete street policy is to identify the standards by which different roadways should be classified and what movements are most important for that road. Complete streets are liveable, sustainable, and safe. In St. Albert in particular, a complete street policy will support that re-invention of St. Albert Trail as mass transit is introduced, and provide opportunities in new neighbourhoods to explore alternative roadway cross sections that support alternative modes.

Intelligent Transportation Systems (ITS)

An important part of the overall transportation system, and not just to the automobile, the strategy behind ITS is discussed in detail in section 4.5.

Regional Roads

The build out of the regional road network provides a bypass network around St. Albert through the use of Ray Gibbon Drive and 127 Street. This bypass network will contribute to the reduction of pass through traffic currently seen on St. Albert Trail. As noted from results of the intercept survey, approximately 50% of traffic on St. Albert Trail was identified as pass through traffic.

The future of St. Albert Trail depends on the construction of this regional road infrastructure to carry this external traffic around St. Albert as opposed to through St. Albert. With the future implementation of an LRT system this will result in the reduction of one lane of travel in each direction on St. Albert Trail. Knowing that the timing of the LRT completion will be aligned with urban development,

and mode shift; the transition between modes of travel will provide an offset to the loss of vehicle capacity, however it will also identify a reliance and requirement for the completion of such regional network improvements as Ray Gibbon Drive and 127 Street.

With the regional road network in place, it forms an unofficial ring road around St. Albert and consists of:

- Anthony Henday Drive along the southern border of St. Albert,
- Ray Gibbon Drive along the western portion of St. Albert,
- A combination of Fowler Way and Hwy 37 forms the northern connection, and
- 127 Street forms the eastern leg of the loop.

This development is important, not only for St. Albert traffic, but also for the capital region as a whole.

Ray Gibbon Drive – Ray Gibbon Drive is a potential future provincial highway that runs from Anthony Henday Drive to Highway 2, north of Highway 37.

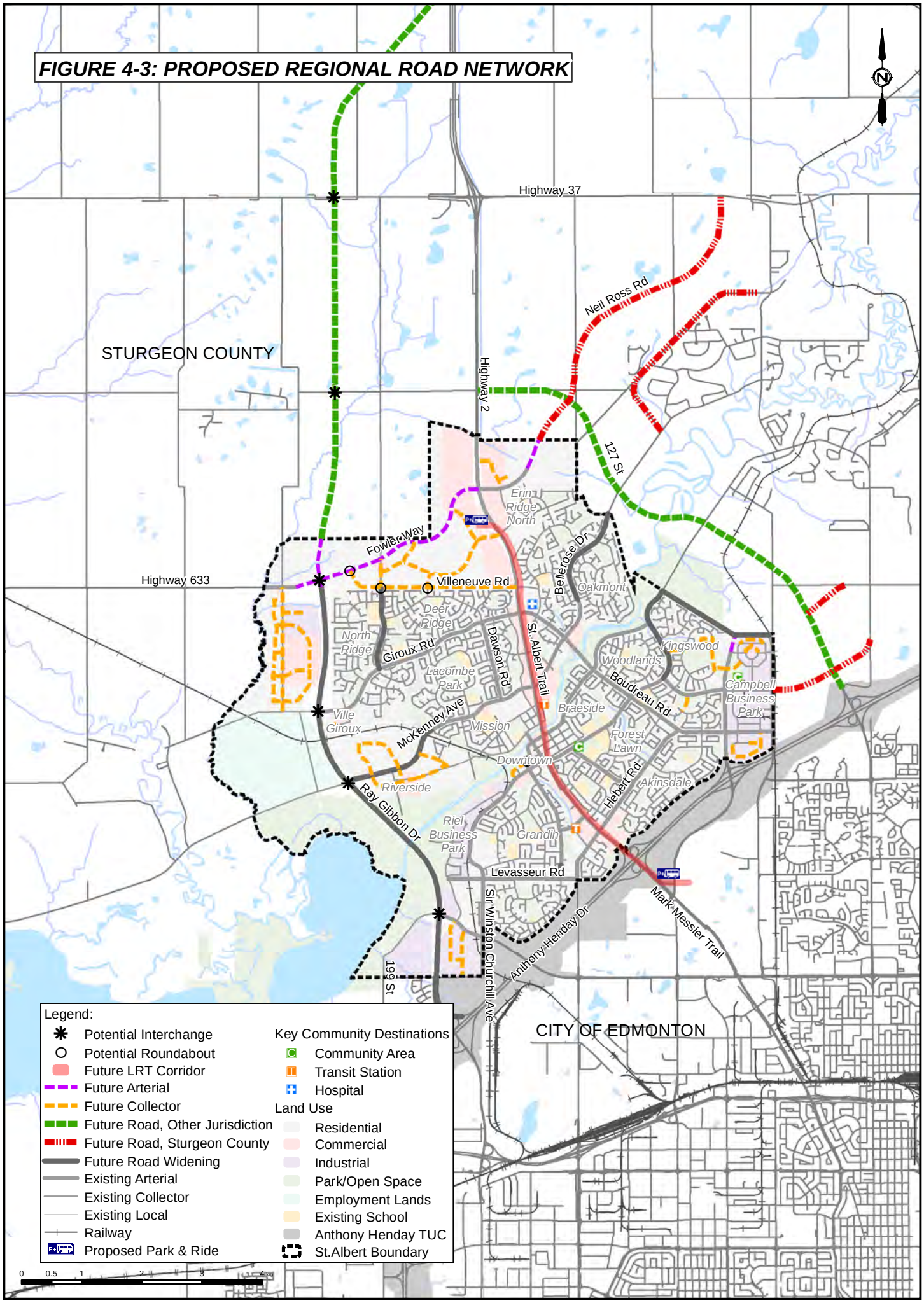
The future alignment of Ray Gibbon Drive will include 6 lanes of travel and interchanges, to make it a freeway. Within the horizon of this TMP, it is expected that Ray Gibbon Drive will be developed to a four lane cross section with at grade signalized intersections. This widening is beneficial to the overall road network by adding capacity, particularly for regional traffic as a bypass.

127 Street – 127 Street is identified in the Capital Region Board IRTMP as extending north past Anthony Henday Drive through Sturgeon County and connecting to Highway 2 north of St. Albert at Township Road 544. It is expected the 127 Street will ultimately be a four lane arterial and will divert regional traffic from St. Albert Trail.

Figure 4-3 shows the proposed future regional road network within the context of the St. Albert area.



FIGURE 4-3: PROPOSED REGIONAL ROAD NETWORK



The four figures on the following two pages show the impact on the overall road network of the development of this regional infrastructure by the projected future traffic volumes. Figure 4-4 is the volume distribution in the PM Peak assuming all future road network upgrades are completed. Figure 4-5 shows the impact of the future volumes on a road network with no upgrades from the current, 2014 road network.

Figure 4-4: 2042 PM Peak Volumes (full network built-out)



Figure 4-5: 2042 PM Peak Volumes (no upgrades)

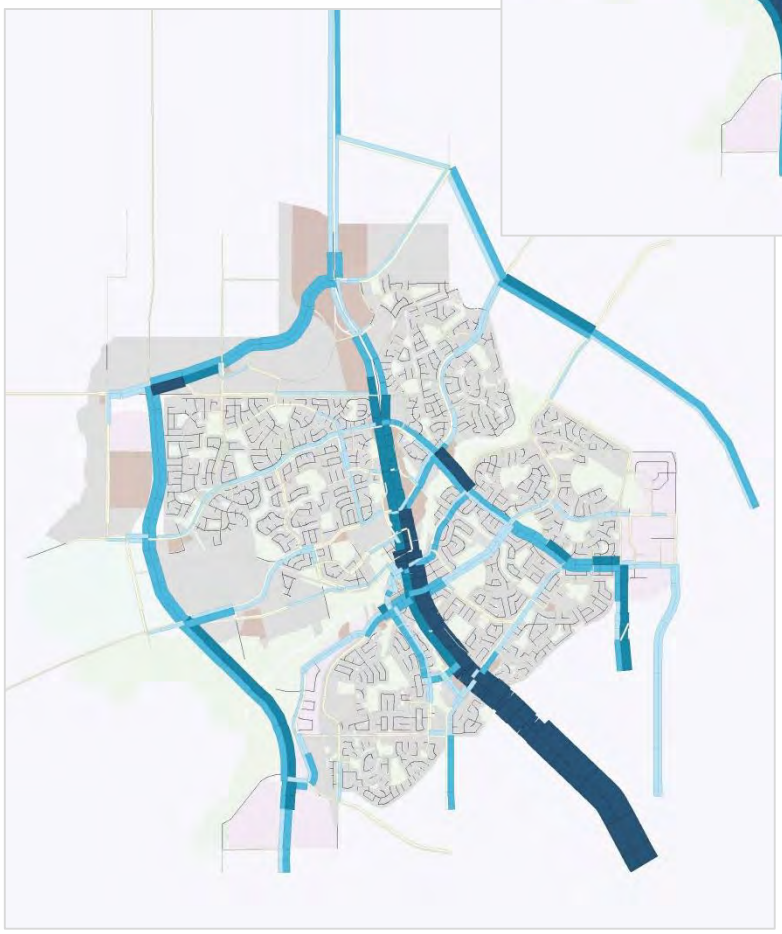


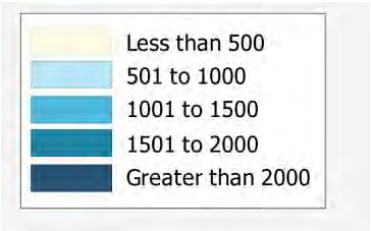
Figures 4-6 and 4-7 show the comparison between development of Ray Gibbon Drive vs 127 Street. Figure 4-6 is the build out of the road network with four lanes on Ray Gibbon Drive, but no 127 Street. Figure 4-7 is two lanes on Ray Gibbon Drive and development of four lanes for 127 Street. The development of both roads within the planning horizon is recommended.

Figure 4-6: 2042 PM Peak Volumes (no 127 Street)



Figure 4-7: 2042 PM Peak Volumes (Two lanes Ray Gibbon Drive)





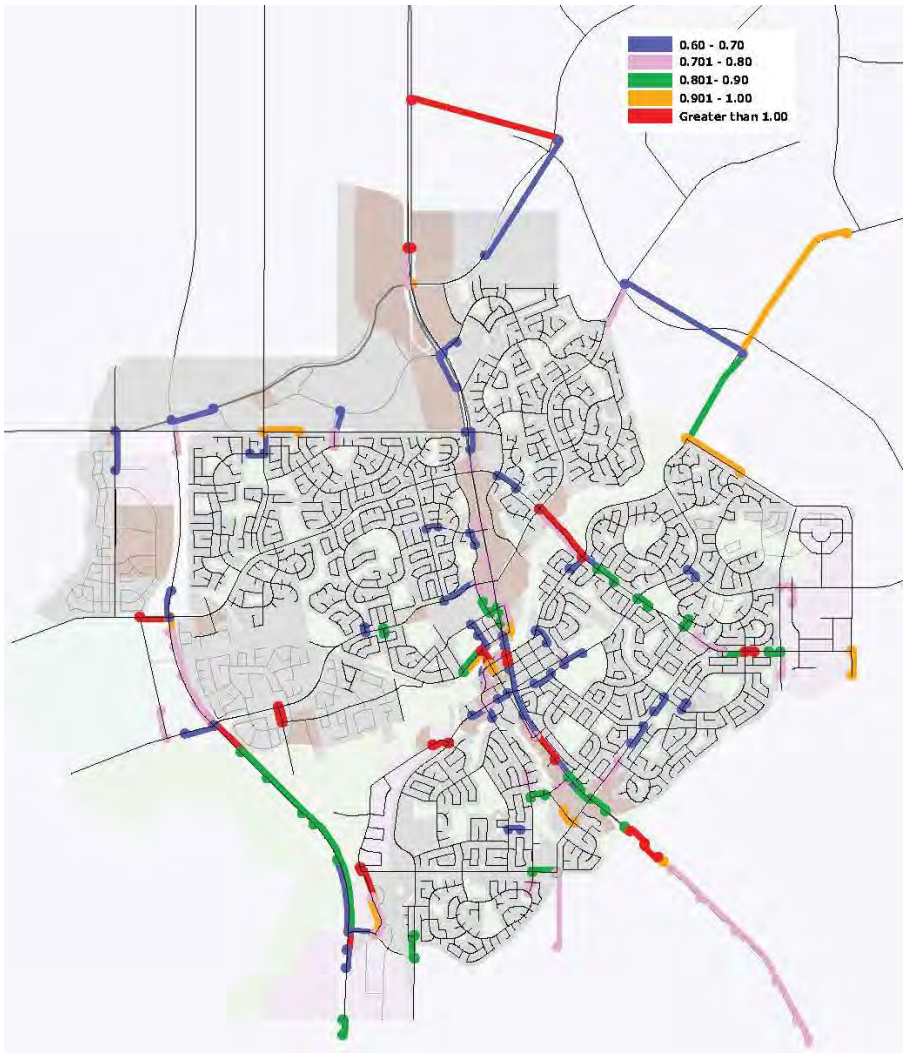
Anthony Henday Drive:

Anthony Henday Drive is an important regional connection for St. Albert residents, allowing fast access around the City of Edmonton and connections to important regional connections like the Edmonton International Airport in Nisku. With the completion of the northeast quadrant of the road scheduled for completion in November of 2016, there will be improved access between Strathcona County, northeast Edmonton and St. Albert.

LRT Impacts

The recommended LRT alignment, as identified by the LRT Alignment Study (2015), identifies necessary lane closures to accommodate a road cross section with LRT along St. Albert Trail. While the implementation of the TMP does increase transit ridership, and thereby eliminate some of the commuter congestion on St. Albert Trail, the ultimate impact of the lane closures will result in increased v/c ratios along St. Albert Trail which may cause further diversion of traffic away from the more congested St. Albert Trail to other route options such as 127 Street and Ray Gibbon Drive. The v/c map for the road network, as impacted by future LRT is shown in Figure 4-8. This map assumes four lanes on Ray Gibbon Drive and four lanes on 127 Street, as well as other internal upgrades (identified in the capital plan).

Figure 4-8: LRT Impacts Road Network



4.2 ACTIVE TRANSPORTATION

The development of a long-term active transportation network is commensurate with the horizon of this TMP and was based upon the identification of strategic improvements that will ultimately ensure residents and visitors have increased accessibility to alternative, non-motorized forms of transportation for both commuting and recreational needs. It is notable that the 2014 Household Travel Survey recorded that 27% of car trips originating in St Albert are less than five minutes in duration. This presents a real and tangible opportunity to replace a significant number of existing internal network vehicle journeys with active modes and also foster a sustained increase in multimodal journeys over time.

Strategies

1. Support Community Growth with a priority towards strategic higher density development and multimodal connectivity throughout the city.
2. Align with local demand through public consultation and data analysis.
3. Establish and implement design standards to accommodate all network users for the appropriate function of the roadway.
4. Establish a system of trail linkages and cycling routes.
5. Ensure ongoing promotion and encouragement of active transportation.

What did we hear about Active Transportation in public consultation?

- It is not safe to walk or cycle on roadways in St. Albert.
- There is not much demand for facilities for commuting by bicycle in St. Albert.
- Cycling is primarily recreational.
- Cycling and walking routes are important for residents.
- Residents would like to be able to walk or bike to work and commercial.

Strategy Development Process:

The development of the active transportation plan was developed through the integration of existing network plans, public consultation and stakeholder engagement. Key documents reviewed included the existing and planned on and off road routes, the City of St. Albert Recreational Trail System Map, and the City of Edmonton existing Bicycle Transportation Network Map. Field investigations documented and confirmed the existing conditions, and identified future opportunities and barriers. From this review, a draft network concept was identified, which was reviewed through engagement with stakeholders at the stakeholder sessions, and through the public open houses.

The recommended Active Transportation Network proposes to build upon the existing off-road network, therefore catering to the widest range of users abilities in St. Albert. This will be accomplished by developing off-road links wherever possible and utilizing on-road connections where necessary.

The Red Willow Trail System was a key input to the analysis of the existing network and future considerations sought to build upon and extend the connectivity that the Red Willow currently provides.

4.2.1 Future Active Transportation Network

Network Concept

The Active Transportation Network outlined here proposes a transition from a high recreational priority to a more commuting opportunity, through the development of off-road links wherever possible and utilizing on-road connections to build upon the off-road network, therefore catering to the broad range of new and existing users with a range of abilities in St. Albert.

Figure 4-9 illustrates the proposed Route Network Concept which consists of city-wide (Primary) Routes and Connector (Secondary) Routes. This terminology was intentionally selected to be consistent with the Edmonton Bicycle Transportation Plan, and reinforce the desire to create seamless connections between the two cities. Connections to Sturgeon County via the proposed Intermunicipal Trail Network have also been included.

Network Hierarchy

The network consists of three kinds of connections:

1. City-Wide (Primary) Routes
2. Connector (Secondary) Routes
3. Other connections

Primary Routes are designed to provide continuous spine connections throughout St. Albert and create links to the City of Edmonton. With the exception of a few locations, the proposed city-wide network is off-road, utilizing the existing off-road trail network through parks and public open space, and expanding on the in-boulevard multi-use trails along a number of arterial roads. The city-wide system will enable utilitarian and recreational users to travel efficiently throughout the city and to neighbouring Edmonton, while providing some separation between active transportation users and motor vehicles.

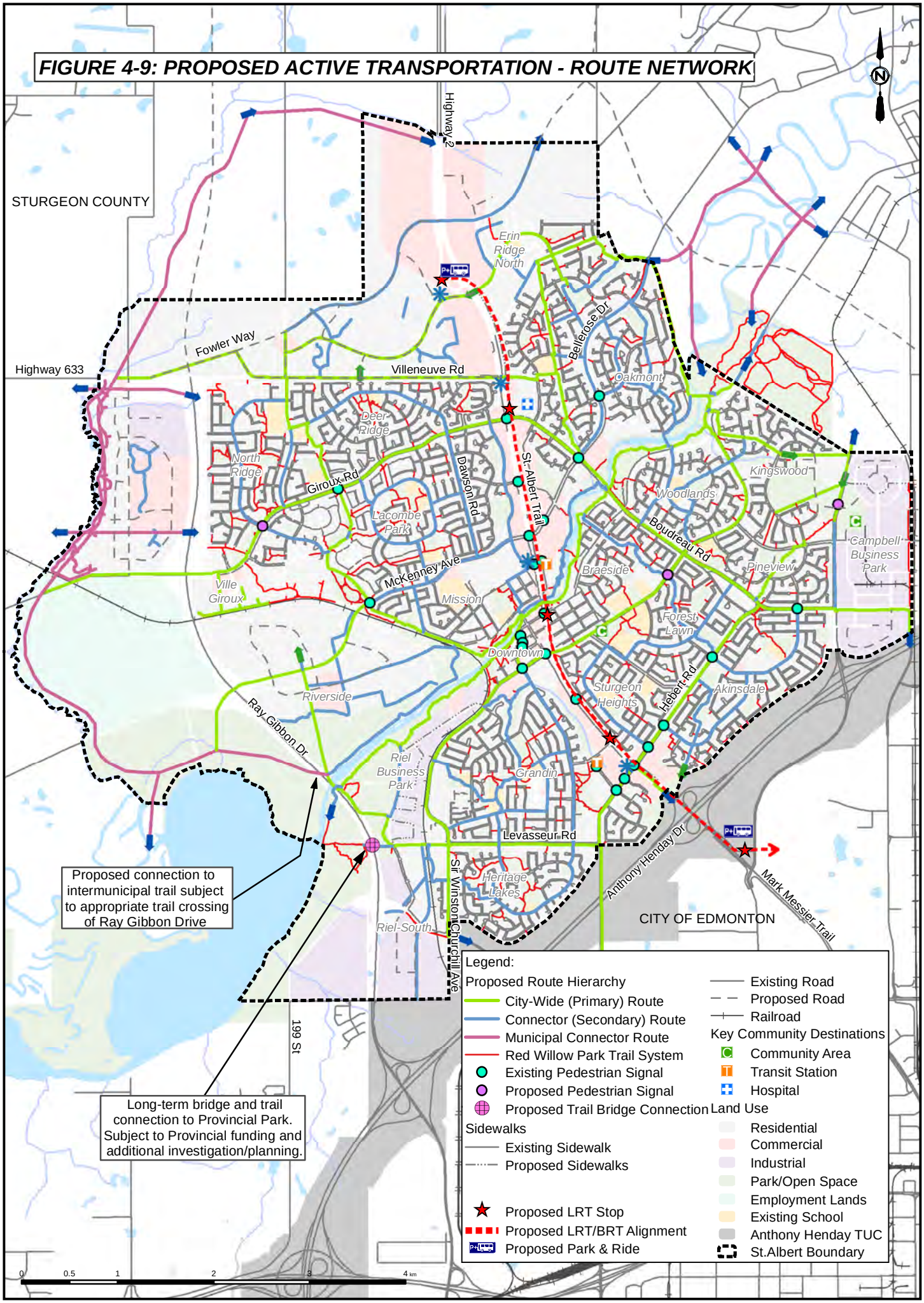
As new neighbourhoods are developed, the city-wide routes should be extended, with an opportunity to integrate new complete street design standards, and include crossings of major barriers such as the railway and Ray Gibbon Drive.

Secondary Routes are designed to connect directly to city-wide spine routes, and provide connections within neighbourhoods throughout St. Albert. Secondary routes utilize portions of the off-road trail system as well as the network of neighbourhood collector and residential streets where pedestrians can rely on sidewalks and cyclists can share the roadway network with motor vehicles on proposed facility types including signed bike routes.

Other Connections refers to the primarily recreational paths that run through parks and other green spaces in the city. These routes allow connections to and from recreational spaces as well as access to the primary and secondary elements of the wider active transportation network.



FIGURE 4-9: PROPOSED ACTIVE TRANSPORTATION - ROUTE NETWORK



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Facility Types

The proposed facility types for the future active transportation network are illustrated in Figure 4-10. The proposed facility types include:

In-Boulevard Multi-Use Trail - These paved 3-4 m wide trails, typically with a center line to delineate directions of travel on the trail, are best for off-road cycling with adequate width to allow for passing and shared mode use with pedestrians, wheelchairs, or other modes such as rollerblades / skate boards. In-Boulevard multi-use trails parallel existing roadways and are constructed within the road right-of-way. Appropriate accommodation and treatment must be considered and implemented for safe crossings at trail to trail and trail to roadway crossings.

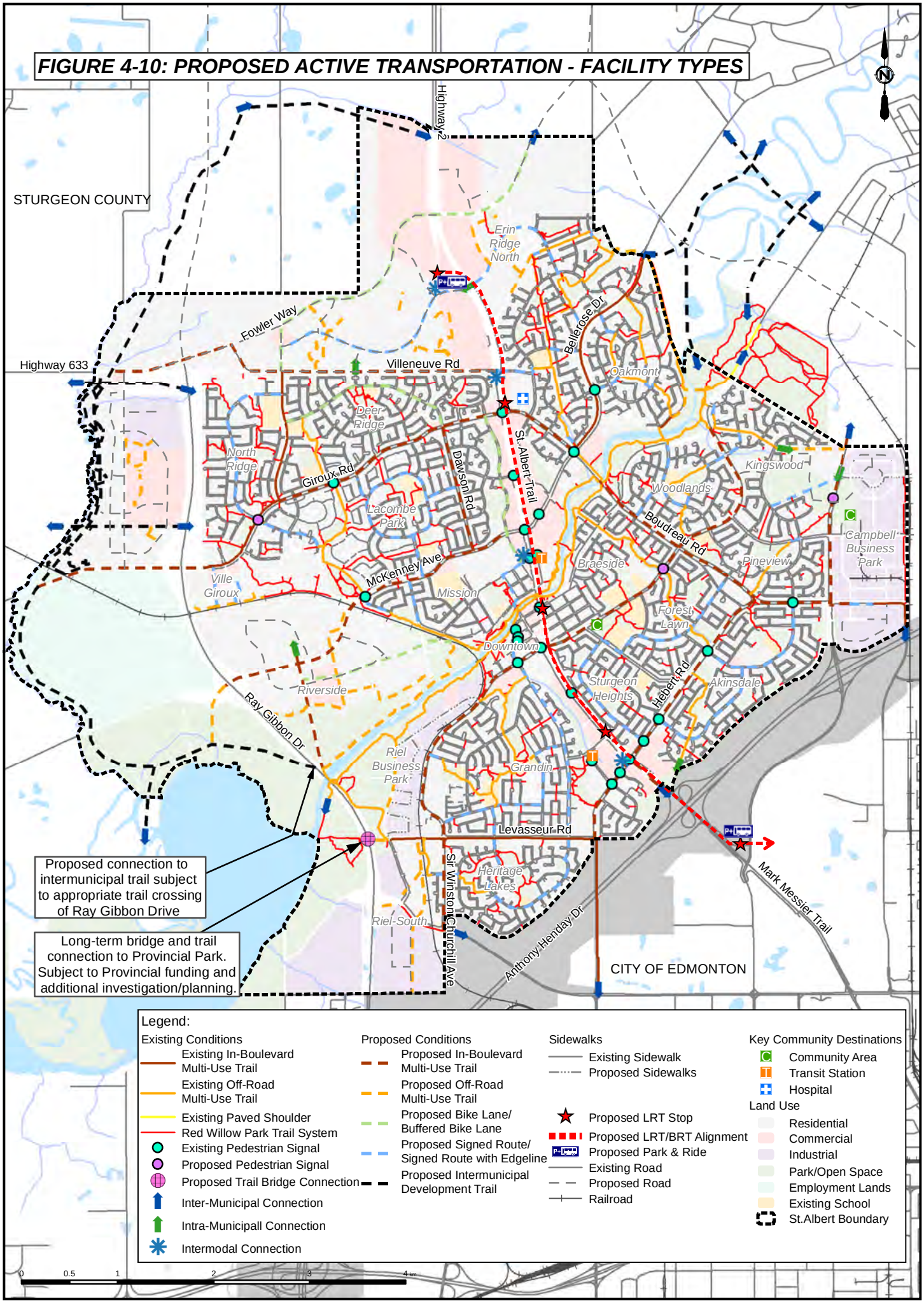
Off-Road Multi-use Trails - Built to the same criteria as in-boulevard trails, these facilities are also paved, shared multi-use trails but are typically located through parks.

Bike Lane/Buffered Bike Lane – A bike lane is a delineated on-road facility where parking and driving automobiles is prohibited. Bike lanes should be well marked and signed and are recommended to be a minimum of 1.5 m wide, with an engineered separation between bikes and vehicles. Buffered bike lanes include additional physical separation between cyclists and traffic through either a lane of parallel parking or other devices on the roadway. Bike lanes are appropriate on slightly busier roadways where cyclists may feel less comfortable sharing right-of-way with automobiles.

Signed Route/Signed Route with Edgeline – A signed route is where there is no specific space allocated to the bicycle within the roadway, but signage indicates that users should be prepared to share the road. If the shoulder is marked with an edgeline where the width is greater than 1.3 m, cyclists can be directed to use the shoulder as their cycling facility. Signage should be frequent and clear to ensure that users are prepared to share the space.



FIGURE 4-10: PROPOSED ACTIVE TRANSPORTATION - FACILITY TYPES



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4.3 PUBLIC TRANSPORTATION

St. Albert already has a comprehensive long term transit planning document in the form of the Transit Long Term Department Plan (TLTDP). The intent of the TMP is to support and align transportation strategies and associated action plan with the goals and objectives identified within the TLTDP.

Public transportation is also more than just the traditional model of publicly funded mass transit. New services such as car sharing, as well as potential future driverless technologies, will have a significant impact on public transportation choices in the foreseeable future.

Strategies

The key public transportation strategies for this TMP are to:

- Endorse the direction of the TLTDP
- Support implementation of the LRT Alignment Study (2015) and utilize its recommendations in future traffic modeling and evaluation of network scenarios.
- Support the development of intermodal connections.
- Investigate implementation of non-traditional transit modes and ensure aspects of any ITS strategy align with forthcoming technology.
- Land use integration to support density around future LRT stations through adoption of appropriate land use planning instruments.

What did we hear about Public Transportation from the public consultation?

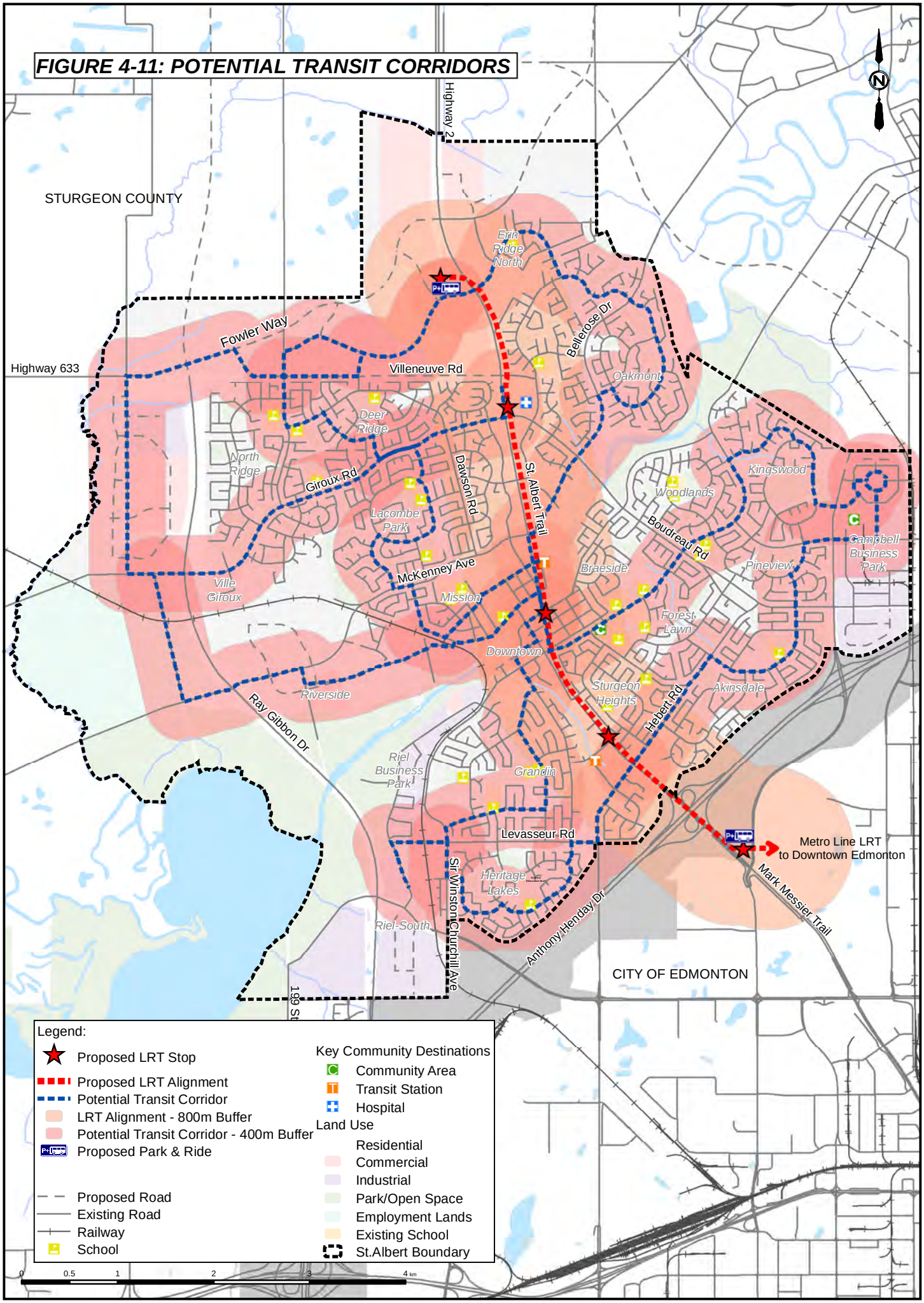
- Public transit is important to residents.
- The LRT is important for the future.
- Local routes are not always convenient.
- Integration of land use will be important for success.

4.3.1 Future Recommendations

Based on the existing plans in place, this TMP identifies potential local bus corridors that provide coverage to service the community, as well as the approved LRT corridor and park and ride facilities. Future transit corridors are shown in Figure 4-11.



FIGURE 4-11: POTENTIAL TRANSIT CORRIDORS



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LRT

This TMP supports the long term implementation of LRT as a strategy to increase transit ridership and mitigate the environmental and roadway level of service impacts due to regional and municipal growth and ensure a fully integrated multimodal network system for the Capital Region. As LRT planning moves forward, more detailed ridership estimates will be developed by looking at land use densification around stations and increased job opportunities in St. Albert to attract 'reverse direction commuters' (that is, residents from Edmonton who will take the LRT to work in St. Albert). Transit ridership growth is estimated in this study by comparing the expected future difference between travel times when driving or taking the bus, versus taking the LRT. While ultimately LRT ridership will be impacted by many factors, including travel costs, land use and residential densities, employment locations, travel times is an effective tool for estimating ridership with the information available.

Due to future lane closures on St. Albert Trail, and increasing congestion on both St. Albert's roads and the City of Edmonton roads, in the future, the LRT will prove to be a faster route into Downtown Edmonton, the University of Alberta and NAIT than driving. Transit ridership is expected to continue to grow in St. Albert, but the implementation of the LRT has the potential to increase the transit ridership by 30%, based on these expected travel time differences. This improvement would result in an ultimate mode split for traffic traveling into and out of Edmonton at the south end of St. Albert of 23% transit ridership, versus the existing mode split of 15% in the PM peak hour.

There is potential for additional ridership growth through increased regional traffic transferring onto the LRT. Park and ride spots, particularly in north St. Albert could support this growth. Guidelines for transit oriented development, to help support better connections and density at each of St. Albert's transit centres will help direct future development in such a way as to support LRT and increase ridership projections even higher.

An additional strategy to support the long-term implementation of the LRT is the development of high frequency local bus routes running along the future LRT alignment.

Buses

Local transit routes will continue to be important to serve the internal transit centres. The ongoing Local Transit Route Restructure process will review service standards and include a two-phase public engagement process before recommending an updated network for implementation from September 2016.

This review provides a timely opportunity to consider the current TLTDP goals and review them against the long term transportation planning horizon objectives outlined in this TMP. An integrated planning framework has the potential to increase mode share above and beyond the existing goals.

Future route planning should determine the balance between access and frequency, and continue to review best practices to determine the most appropriate method to boost ridership within St. Albert.

4.4 GOODS MOVEMENT

Though primarily a residential community, the City of St. Albert has two industrial areas and plays an important role in the movement of goods through the region. While the City of Edmonton's 2014 Good's Movement Strategy shows that the majority of current regional good's movement bypasses the City of St. Albert, industrial expansion in the City of Edmonton's northeast and northwest industrial areas is expected to have an impact on the City of St. Albert. Extensive development of South Riel and existing major commercial/industrial entities like the Albert Gaming and Liquor Commission distribution centre in Campbell Business Park result in a large volume of goods movements originating in the city.

Strategies:

- Provide connections between industrial areas and commercial sites within the City of St. Albert.
- Deter heavy vehicle traffic from residential areas and schools where possible.
- Provide regional connections to Sturgeon County and The City of Edmonton.

What did we hear about goods movement in public consultation?

- Commercial vehicles are sometimes traveling on residential streets.
- Regional connections are important to residents.

4.4.1 Future Truck Route Network

Within this TMP, the priority is identification of the key routes for future good's movement through the City of St. Albert. The existing traffic bylaw designates and permits large loads on the majority of arterial roadways in the city; the recommended TMP truck route map recommends reductions to these allowances and looks to align with appropriate designations based upon overall roadway functionality. While this TMP is primarily about the movement of people, the movement of good's is important for the economic growth of the region. Connections to the City of Edmonton and Sturgeon County, as well as through the region will be the focus. The types of routes identified within the TMP are consistent with those identified for the capital region.

24-Hour Dangerous Goods Routes

The two St. Albert corridors most important for good's movement currently are St. Albert Trail and Ray Gibbon Drive. The expansion of Ray Gibbon Drive and development of Fowler Way are the priority infrastructure improvements to positively impact goods movement through the city. This change will take heavy vehicle traffic off of Villeneuve Road in the short term, and St. Albert Trail in the long term. A key recommendation in the Villeneuve Road Study (2015) was to reclassify Villeneuve Road as a collector road and remove its designation as a truck route; while designing and constructing Fowler Way as the designated commercial good's movement corridor.

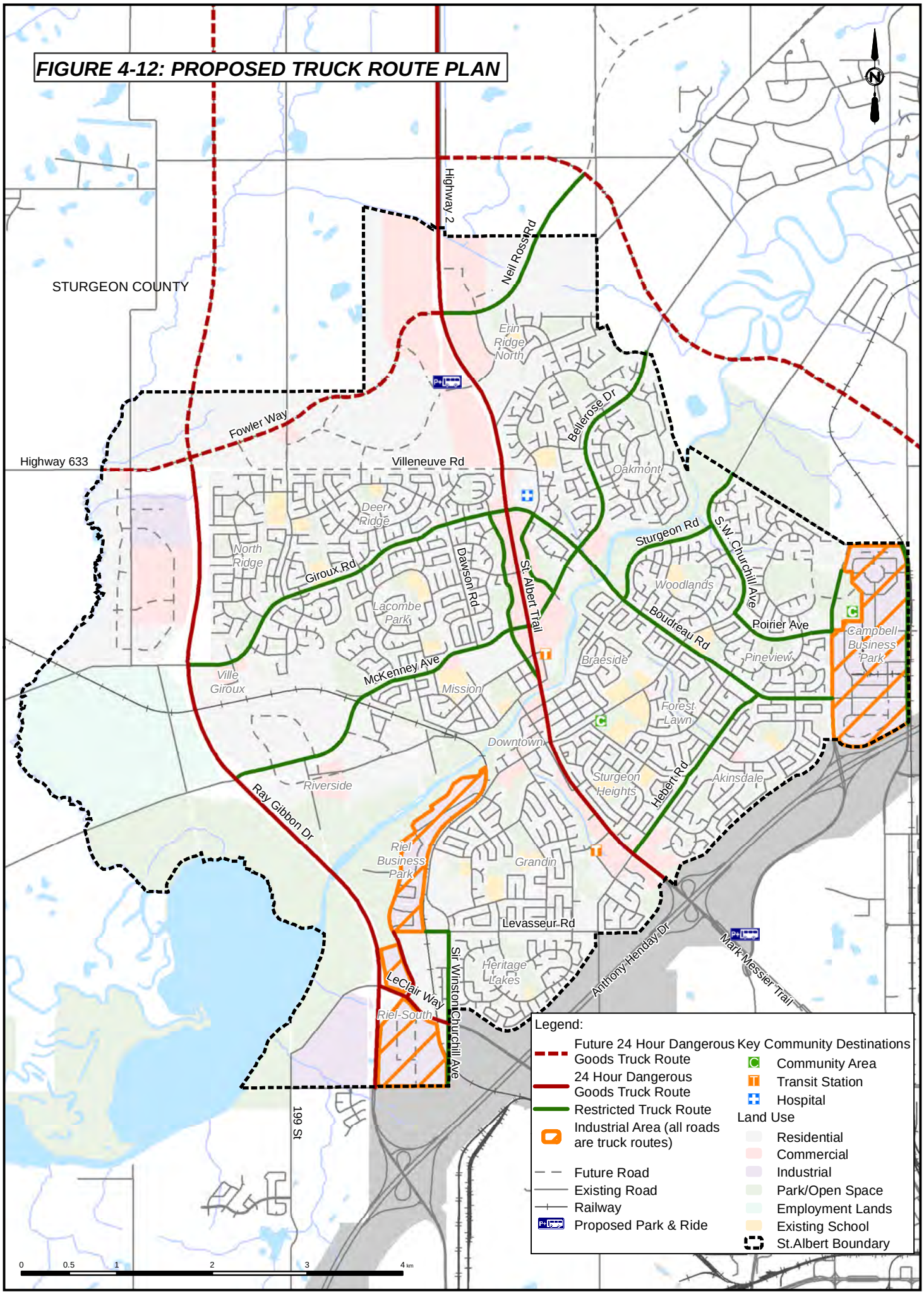
As described in the Roads Section (4.1), the long term intent for St. Albert Trail is a new vision as an urbanized arterial, prioritizing the movements of people through active transportation and transit. While this plan continues to include St. Albert Trail as a 24 Hour Dangerous Goods Route, it is expected that completion of 127 Street and Ray Gibbon Drive would allow for a re-evaluation of this designation, and dangerous goods vehicles could be eliminated from St. Albert Trail. Although St. Albert is not currently a regional oversize load corridor, collaboration with the City of Edmonton, Sturgeon County, Alberta Transportation and other key stakeholders should occur on an ongoing basis to protect the efficient and appropriate movement of goods through the region.

Restricted Truck Routes

The restricted truck routes are identified to provide the connections between the industrial areas and access to main commercial sites within the community. The revisions to the restricted truck routes as identified in this plan reduce the impact on residential areas, with a focus of avoiding school zones where possible.

As per the Provincial Traffic Safety Act, commercial vehicles must stay on the restricted routes until taking the shortest route to their final destination. All roads within identified Industrial Areas shall remain as both truck and dangerous goods routes. These routes, if approved, would have to be identified and incorporated into the Traffic Bylaw for field level changes. The proposed Truck Route Map is included in Figure 4-12.




FIGURE 4-12: PROPOSED TRUCK ROUTE PLAN
STURGEON COUNTY
Highway 2
Neil Ross Rd
Erin Ridge North
Fowler Way
Highway 633
Villeneuve Rd
Bellerose Dr
Oakmont
Deer Ridge
North Ridge
Giroux Rd
Dawson Rd
St. Albert Trail
Sturgeon Rd
S.W. Churchill Ave
Lacombe Park
Woodlands
Boudreau Rd
Poirier Ave
Campbell Business Park
Ville Giroux
McKenney Ave
Mission
Braeside
Pineview
Forest Lawn
Downtown
Riverside
Ray Gibbon Dr
Sturgeon Heights
Hebert Rd
Akinsdale
Riel Business Park
Grandin
Levasseur Rd
Heritage Lakes
Sir Winston Churchill Ave
LeClair Way
Riel-South
Anthony Henday Dr
Mark Messier Trail
199 St
Legend:
Future 24 Hour Dangerous Goods Truck Route
24 Hour Dangerous Goods Truck Route
Restricted Truck Route
Industrial Area (all roads are truck routes)
Future Road
Existing Road
Railway
Proposed Park & Ride
Key Community Destinations
Community Area
Transit Station
Hospital
Land Use
Residential
Commercial
Industrial
Park/Open Space
Employment Lands
Existing School
St.Albert Boundary
0
0.5
1
2
3
4 km
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4.5 INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Many of the strategies identified in the previous four sections identify recommendations related to supporting a specific mode. Worthy of a separate discussion, many emerging technologies have the capability to improve the overall implementation of the TMP and support strategies across multiple modes. ITS implementation is at the forefront of this discussion. ITS development can improve road capacity through signal timing progression, improve EMS / Transit travel times through priority signal phasing, enhance traffic data collection and management, and result in improved road condition and operations information sharing with the general public that can be aligned with multi-jurisdictional collaboration. This supports the TMP guiding principle of sustainable transportation by using technology to make the most of existing infrastructure as well as providing tools to residents to help make the shift away from the private vehicle more appealing in certain conditions.

Strategies:

- ITS Policy Development
- Social Media and Education integration
- Regional Integration
- Multi-modal facilities
- Future Technologies

4.5.1 ITS Plan

The Community Vision of St. Albert speaks to its values as a “vibrant, thriving city” with the five pillars of sustainability. As an innovative and progressive city that protects its identity and small town values, these characteristics are indicative of the success of the city, its communities and residents. ITS is an important component to supporting the ultimate implementation of the Smart City Centre of Excellence Master Plan. Growth and prosperity are realities in St. Albert which affects transportation needs that will be addressed in this TMP. The Transportation Master Plan and the ITS initiatives will support this vision by building better communities through transportation excellence.

What is ITS?

Intelligent Transportation Systems applies technologies to transportation problems to improve the efficiency, safety and security of the network. ITS supports a seamless, multi-modal journey that integrates transit, goods movement, autos, pedestrians and cyclists.

The congestion and safety problems that are evident on each commuting day in St. Albert, combined with the fiscal reality of restricted budgets, require the city to examine ITS as an “enabler” of innovation and efficiency to maximize the operation of the existing transportation network. ITS achieves this goal by using technologies that make trips smoother, safer and more sustainable. A direct result of this efficiency is that St. Albert will be better able to meet its sustainability and environmental community objectives.

ITS is organized into 8 user service “bundles” comprised of 35 user services which are directly applicable to the TMP. These bundles include:

- Traveller information – provides information to the public including pre-trip (web sites) and enroute (in-vehicle navigation, variable message signs) traveler information.
- Traffic management – traffic signals that are coordinated to real time demand and incident management to detect, verify and respond to motor vehicle incidents.
- Public transport – systems that support transit such as transit signal priority (TSP), tracking of buses using GPS, and real time “next bus” arrival systems.
- Electronic payment – smart cards, and parking payment systems that provide the customer with convenient means to pay a fare, fee or toll.

- Commercial vehicle operations – systems such as weigh-in-motion (WIM) that support the regulation and operation of commercial vehicles.
- Emergency management – integration of emergency services with traffic operations to provide information to first responders.
- Vehicle safety and control systems – connected and autonomous vehicles.
- Information warehousing – data management.

Because ITS is a relatively new concept in St. Albert, this section will go into additional detail as to the possibilities related to implementation ITS and how it supports the overall goals the of the TMP.

Why Do We Need a Plan?

As a first step, it is important that St. Albert prepare an ITS Strategic Plan for the city that will be an essential roadmap to guide development of the ITS infrastructure into the future. The ITS Plan will involve a series of tasks, strategies and projects that will "map" directly to and support the vision, goals and objectives of St. Albert's Transportation Master Plan. The ITS plan should include the following tasks:

- Stakeholder engagement, using internal and external agencies for input, will lead to a detailed "Needs Assessment and Gap Analysis" that will provide insight into the difference between current and required future ITS infrastructure.
- ITS Vision, Goals and Objectives will provide high level direction with measurable performance metrics.
- ITS Strategies supported by distinct ITS Projects.

The ITS Plan provides clear, overall direction, based on the needs of the stakeholders and users. The ITS Plan will achieve several objectives:

- Provide a phased and prioritized implementation plan over short, medium and long term horizons. This plan will allow St. Albert to program the capital projects based on needs, benefits (priority) and budget.
- Support coordination and regional integration between jurisdictions and functional boundaries. Key participants should include Alberta Transportation, the City of Edmonton, Sturgeon County and Strathcona County.

What are Key ITS Initiatives?

While the ITS strategic plan is still required to provide detailed ITS project recommendations, anecdotal information and data acquired during the TMP process supports several key areas of focus within the ITS suite of services for the City of St. Albert.

St. Albert focused services:

1. Integrated Corridor Management (ICM) on key corridors – Ray Gibbon Drive, St. Albert Trail, Anthony Henday Drive. The approach of ICM is to consider all modes as "assets" within a corridor and to maximize their operation and efficiency together. These tasks would include:

- Transit signal priority (TSP) and bus queue jumpers which direct operational advantages to bus operations at key intersections.
- Adaptive signal control which is a signalization strategy that dynamically optimizes the signal timing plans on a corridor based on real time, measured traffic flows.
- Next bus arrival systems which provide predicted arrival times at upcoming stops on LED signs. This task would involve equipping buses with GPS tracking and passenger counters.
- Traffic management including incident management using detectors, CCTV cameras and variable message signs (VMS).

2. Data Management seeks to integrate different systems and would involve:

- Integration between modes at facilities such as transit stations, LRT stops, and other modal facilities.
- Access to an online community using social media (Facebook, Twitter, Google) will allow users to have direct notification of transportation options and conditions.
- Real time travel between road segments measured through "Bluetooth" devices. The travel times would be displayed on overhead VMS and available online.
- Wireless network supporting data transmission.

3. Traffic Management Centre (TMC) acting as the central hub for data and traffic operations:

- Data from field devices, signals, and controller cabinets would send data to and from the TMC. Traffic operators would be able to monitor traffic conditions, verify incidents via CCTV and respond.
- Signal timing plans could be adjusted in real time.

4. Customer Services that provide direct benefits to the public include:

- Traveller information systems (ATIS) that provide real time information on traffic conditions, weather-related advisories, and trip recommendations. ATIS allows the public to manage their trips efficiently and minimize their delays.
- Parking management allows customers to pay via smart phone or other convenient device.

5. Safety Initiatives that support people and goods may include:

- Speed monitoring and enforcement systems.
- "Smart" work zones that emphasize road safety.
- Road-Weather Information Systems (RWIS) that provide critical advisories in advance of severe weather events. These systems can save lives through travel advisories and traffic closures.
- Advanced speed advisories that utilize LED signs and detectors to warn drivers of their excessive speeds.

Regional Services:

1. Integration with regional agencies is critical through the ITS infrastructure. The key component for this task would be "centre-to-centre" communication between the St. Albert TMC and Edmonton's TMC. Data sharing with Alberta Transportation and Strathcona County would be supported. The Smart City Alliance will play a key role in this integration.

2. Goods Movement is a key element of the economy and supports the prosperity of St. Albert. This task would involve working with Alberta Transportation and the Partners in Compliance (PIC) program to develop a network of commercial vehicle inspection stations that use ITS technologies such as:

- Weigh-in-motion scales and over-height detectors that allow trucks to be dynamically weighed and examined for compliance,
- CCTV cameras with licence plate recognition (LPR) systems to confirm the carrier, and
- Transponders and readers to detect and identify registered trucks.

As the region grows and prospers, the need for ITS and other means to maximize the efficiency of the existing transportation network will also increase. The St. Albert TMP and the subsequent ITS Strategic Plan will provide the framework and foundation to move forward - protect the livability and sustainability of the city while continuing to attract new residents and build better communities through transportation excellence.



5 | Implementation

The development of this TMP represents an accumulation of knowledge from a wide range of stakeholders, from St. Albert residents, city administration and regional partners. The discussion presented through the previous four sections has been filtered into an action plan that can be used to continually monitor the implementation of the TMP.

5.1 RECOMMENDED ACTION PLAN

A detailed recommended action plan identifying initiatives and implementation timelines was developed with support from the project team, the public and stakeholder engagement.

This plan is ambitious with an aggressive schedule for a large number of initiatives to be completed by St. Albert Administration in a short period. The action plan also serves as the evaluation matrix; and should be reviewed regularly to identify projects that have been completed and new projects to begin.

The action plan items have been correlated to the relevant TMP Guiding Principles:

1. Livable Communities
2. Sustainable Transportation
3. Environmental Health
4. Economic Prosperity

Recommended Action Item	Timeline			Land Use Planning Integration	Related TMP Guiding Principles			
	Short 1-3 years	Medium 3-5 years	Long 5-10 years		1	2	3	4
Integrated								
Complete a Strategic Plan for implementation of recommendations identified through TMP	X			X	X	X	X	X
Align planning, engineering, transit, operations and maintenance master plans, goals and policies		X		X		X		
Provide dedicated staff to implement the active transportation plan and develop travel demand management programming	X					X		
Develop achievable mode split targets and perform scheduled updates and evaluation of levels and targets	X					X		
Complete an updated travel demand survey every 10 years		X		X		X		
Develop a comprehensive asset management strategy including a database resource to assess life-cycle costs of transportation infrastructure	X					X		
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	X					X		
Update the ten (10) year capital plan to align with TMP principles.	X					X		
Create and implement a public and stakeholder communication plan in relation to the Transportation Master Plan and its resulting strategic plan	X					X		
Set and achieve Green House Gas (and related performance indicators) targets related to transportation (includes data collection to measure these)	X		X				X	
Incorporate the travel demand model as an on-going transportation planning and evaluation tool for new developments and network planning as they relate to environmental impacts through greenhouse gas emissions	X			X			X	
Shift funding priorities towards transit and active transportation		X					X	
Advocate for higher orders of government to invest in all modes	X						X	
Partner with community leaders to achieve the TMP vision	X						X	
Review the Transportation Association of Canada (TAC) Canadian Guide for Greener Roads (CGGR) and relate identifiable objectives of the CGGR with St. Albert policies and principles		X					X	
Develop Performance Measurement Framework to measure the success of the Transportation Master Plan	X						X	
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	X							X

Recommended Action Item	Timeline			Land Use Planning Integration	Related TMP Guiding Principles			
	Short 1-3 years	Medium 3-5 years	Long 5-10 years		1	2	3	4
Develop an Intelligent Transportation System Strategy as a travel demand management strategy	X						X	
Implement Safe Journeys to School strategies and maintain communication between stakeholders and public in relation to the program	X							X
Roads								
Create a Complete Streets Policy for design and implementation	X			X	X			
Update engineering standards to guide implementation of the Complete Streets Policy		X			X			
Update Pedestrian Crossing Control Guidelines in regards to pedestrian crossing warrant processes and criteria, control treatment, and operational standards for signalized pedestrian crossings.	X				X			
Update engineering standards for sidewalks, pathways and transit access in new developments and for retrofit		X		X	X			
Develop neighbourhood traffic management guidelines (includes traffic calming)	X			X	X			
Develop Traffic Impact Assessment Guidelines for Residential, Commercial and Industrial Neighbourhoods that incorporate cycling and pedestrian impacts and ensure projected traffic volumes are appropriate with the design and function of the proposed road network	X			X	X			
Develop a functional plan for St. Albert Trail to support Light Rail Transit/Bus Rapid Transit, pedestrian travel (or to transform it to a Complete Street) and incorporate Transportation Demand Management principles		X		X		X		
Create and implement a Traffic Data Management Strategy	X					X		
Complete Transportation Demand Management Study for Downtown		X		X		X		
Update the St. Albert Trail North-Arterial Corridor Management Plan	X			X		X		
Identify and consider potential locations for infill development to maximize use of existing roadways		X		X		X		
Allocate appropriate staff levels to respond to transportation inquiries from residents, maintain the traffic model, and to align with identified projects	x					X		
Create level of service guidelines reflective of St. Albert's sustainable transportation goal and apply to appropriate operations, traffic impact assessment guidelines and policy	X							X
Develop street classification definitions and define their intended functionality and level of service targets	X							X
Work with regional partners to develop an Emergency Measures Strategy (such as traffic signal pre-emption)	X							X

Recommended Action Item	Timeline			Land Use Planning Integration	Related TMP Guiding Principles			
	Short 1-3 years	Medium 3-5 years	Long 5-10 years		1	2	3	4
Work with Alberta Transportation, City of Edmonton and Sturgeon County to develop a regional traffic control centre			X					X
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	X							X
Advocate for construction of 127th Street between Anthony Henday and Highway 2	X							X
Create guidelines and increase use of roundabouts in new development and look for opportunity of retro-fit completion to enhance network safety and efficiency	X			X				
Establish a safety review process when traffic collisions involving a fatality on a public roadway occurs		X						X
Develop an annual network screening program to identify high collision locations	X							X
Establish an in-service safety review program for high collision locations	X							X
Adopt safety audit standards for new roadways (incorporate in with the TIA guidelines)	X							X
Develop a St. Albert Traffic Safety Plan	X							X
Develop Noise Management Policy	X							X
Develop data collection and management policy	X							X
Develop temporary traffic control/special event management policy	X							X
Develop parking management policy		X		X				X
Develop Wayfinding/Tourist Transportation Management Policy		X		X				X
Active Transportation								
Implement the active transportation plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.	X				X			
Complete active transportation connections to community destinations, with a priority on family orientated destinations		X			X			
Develop/enhance active transportation connections to trails along Sturgeon River		X			X			
Incorporate Crime Prevention Through Environmental Design principles into active transportation planning		X		X	X			
Maintain and update wayfinding to key recreational and commercial amenities on bike trails	X			X		X		
Create opportunities to incorporate active transportation and recreational uses in environmental reserve areas	X						X	

Recommended Action Item	Timeline			Land Use Planning Integration	Related TMP Guiding Principles			
	Short 1-3 years	Medium 3-5 years	Long 5-10 years		1	2	3	4
Work with regional partners to identify active transportation links (eg. Sturgeon County, Alberta Transportation, Alberta Environment and Parks, Alberta Health Services)	X							X
Develop accessibility guidelines to accommodate physical limitations	X			X				X
Public Transportation								
Identify bus routes to connect with future Light Rail Transit		X			x			
Adjust Land Use Policies to support Transit Orientated Development around proposed future Light Rail Transit stations		X		X	x			
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning and long term timeline for implementation)	X		X	X	x			
Develop and prioritize a construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision		X			x			
Review/update transit fare policy to support affordability for users		X			x			
Support the development of a park and ride facility at Campbell Road Transit Centre	X			X		X		
Prepare a strategy to develop the north LRT Station which may include a transition from Park and Ride to a Transit Oriented Development		X		X		X		
Conduct feasibility study for Bus Rapid Transit/priority bus lanes as a progression towards Light Rail Transit implementation		X				X		
Implement parking for bikes and provide drop / off zones (kiss and rides) at Transit facilities	X			X		X		
Develop winter road maintenance and accessibility standards for transit stops	X					X		
Protect the property needed for the Light Rail Transit	X		X	X		X		
Work with regional partners to improve regional transit services	X							X
Commercial/Goods Movement								
Develop a Movement of Goods and People Policy	X			X	X			
Establish a tiered truck route system for Large Commercial Vehicles and Pick and Delivery Vehicles (includes sign changes, education, bylaw changes, helping residents understand purpose of roadways)		X						X

5.2 10 YEAR ROADS AND TRAILS PLAN

5.2.1 Roads

The TMP has taken into consideration the comments received from the public, the existing recommended 10 year plan and the results from the St. Albert Travel Demand Model to identify the highest priority projects recommended for completion by 2025.

Without improvements to the road network, by 2025 there will be congestion on all north-south arterials; adding capacity on any of those roadways can help to alleviate that pressure across the network. The other area of congestion is north St. Albert Trail. Areas of spotty congestion can be potentially alleviated through improvements to intersections and signal timing. Public input has indicated the highest priority projects in the short term are:

- Address noise concerns,
- Signal timing on St. Albert Trail, and
- Twinning Ray Gibbon Drive.

The recommended 10 year plan is summarized in Table 5-1. The 10 year plan does not include certain projects identified through a number of current studies, plans and initiatives. These include:

- Neighbourhood traffic calming strategies,
- St. Albert Trail and Boudreau/Giroux Road Corridor Safety Review Implementation,
- Safe Journeys to School safety implementation,
- Downtown Area Redevelopment Plan (DARP),
- Transit Long Term Department Plan (2013-2027), and
- St Albert LRT Study.

The St. Albert LRT Study has no capital cost assigned from the study, but any improvements on and around St. Albert Trail should recognize the LRT alignment and plan for future LRT.



Table 5-1: Recommended 10-Year Roads Plan

PROJECT	TYPE	DESCRIPTION	PRE-EXISTING CAPITAL PROJECT OR NEW TO TMP	OFF SITE LEVIABLE? (Yes / No)
St. Albert Trail - Signalization	ITS	Adaptive traffic signal controls for 14 Intersections on St. Albert Trail. To reduce congestion by creating smoother flow by adjusting the signal timing.	YES	NO
Erin Ridge Neighbourhood Traffic Calming	Roadway Design Improvements	Implement a Neighbourhood Traffic Calming Process in the community of Erin Ridge and evaluate the procedure to utilize in other city neighbourhoods.	YES	NO
North St. Albert Trail Functional Planning Study	Study	To Review and provide solutions for the northern part of St. Albert Trail.	NO	NO
Transit Priority Signals	ITS	To add transit priority measures on transit routes to optimize passenger travel time.	YES	NO
Traffic Pre-Emption System for Fire	ITS	To improve emergency response time due to increased congestion on roadways.	YES	NO
Ray Gibbon Drive	Widening	Expand to 4 lanes of divided arterial roadway improve efficiency of Ray Gibbon Drive and also enhance capability to absorb additional traffic volumes from St. Albert Trail.	NO	NO
St. Albert Trail & Hebert Road Intersection	Intersection Improvement	East and westbound right turn bay construction and northbound lane extension from the superstore access to Hebert road.	YES	NO
Fowler Way: From Ray Gibbon Drive to St. Albert Trail	New Construction	Develop first 2 lanes of ultimate 4 divided arterial roadway. Reduce congestion and reduce traffic on St. Albert Trail by allowing traffic to Ray Gibbon Drive.	NO	YES
Meadowview Drive	Re-Build & Upgrade	Re-build 1.6km to urban design due to determination of roadway and safety concerns, projected traffic levels and services the Employment Lands area.	YES	YES
Boudreau Road & Campbell Road Intersection	Intersection Improvement	To increase throughput capacity due to congestion from traffic accessing Anthony Henday Drive.	YES	NO

PROJECT	TYPE	DESCRIPTION	PRE-EXISTING CAPITAL PROJECT OR NEW TO TMP	OFF SITE LEVIABLE? (Yes / No)
Giroux Road Twinning to Ray Gibbon	Twinning	Currently Giroux Road is twinned its entire length but falls short 300m from the intersection of Ray Gibbon Drive. With the 4 laning of Ray Gibbon Drive and added capacity, traffic patterns will change and utilize Giroux to access Ray Gibbon Drive.	YES	YES
McKenney Avenue Twinning to Ray Gibbon Drive	Twinning	Currently McKenney Avenue is twinned from St. Albert Trail to Morgan Crescent, this project includes the continuation of the twinning 1.5km through the Riverside Neighborhood to Ray Gibbon Drive. As the city has seen a change in traffic patterns as traffic is utilizing Ray Gibbon Drive.	YES	YES
LeClair Way & Riel Drive intersection	Intersection Improvement	To increase capacity due to congestion from traffic accessing Anthony Henday Drive.	NO	NO
St. Albert Trail and Boudreau Road	Intersection Improvement	To increase capacity	YES	NO
Bellerose Drive: From Oakmont to City Limit	Twinning	Twin approx. 1.7km of roadway. Provide additional capacity to access Erin Ride Drive and residential developments.	YES	YES
Villeneuve Road	Redesign	Redesign and reclassify Villeneuve Road and intersections as per the approved Villeneuve Road Study.	NO	NO
Sir Winston Churchill Ave: From Sturgeon Road to City Limit	Twinning	This project is twinning of approximately 620). Two additional lanes will be constructed along the adjacent path of the current road structure.	YES	NO
Campbell Rd Extension to Poundmaker Road	New Construction	This project is to extend approximately 300m of Campbell Road to Poundmaker Road	YES	YES
Boudreau Road	Intersection Improvements	Intersection improvements at the intersection of Sturgeon Road and Bellerose Drive to improve capacity (potential turning lane addition at intersection)	NO	NO

The following two figures show the volume to capacity results from the implementation of the recommended 10 year plan. The top Figure 5-1 is the v/c of the network without improvements, the Figure 5-2 with improvements. While the network will still experience locations of congestion, the key issues are addressed and should align with appropriate levels of service as per city policy. Furthermore, additional projects like dealing with traffic calming and noise mitigation will have an overall positive impact on the road network for residents, thoughthe results may not appear directly on the plan. On a larger scale, alignment between network improvements and further capital construction work will be evaluated on an ongoing basis.

Figure 5-1: 10 Year Volume v/c (No Network Improvements)

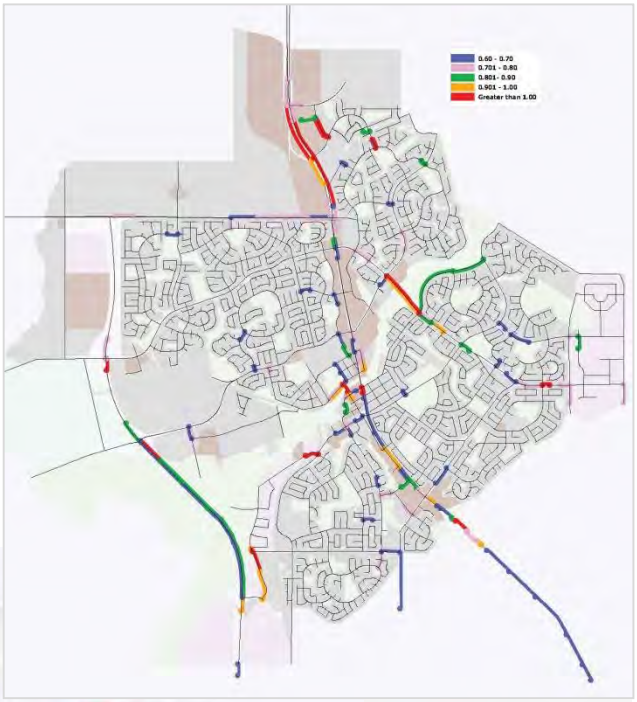
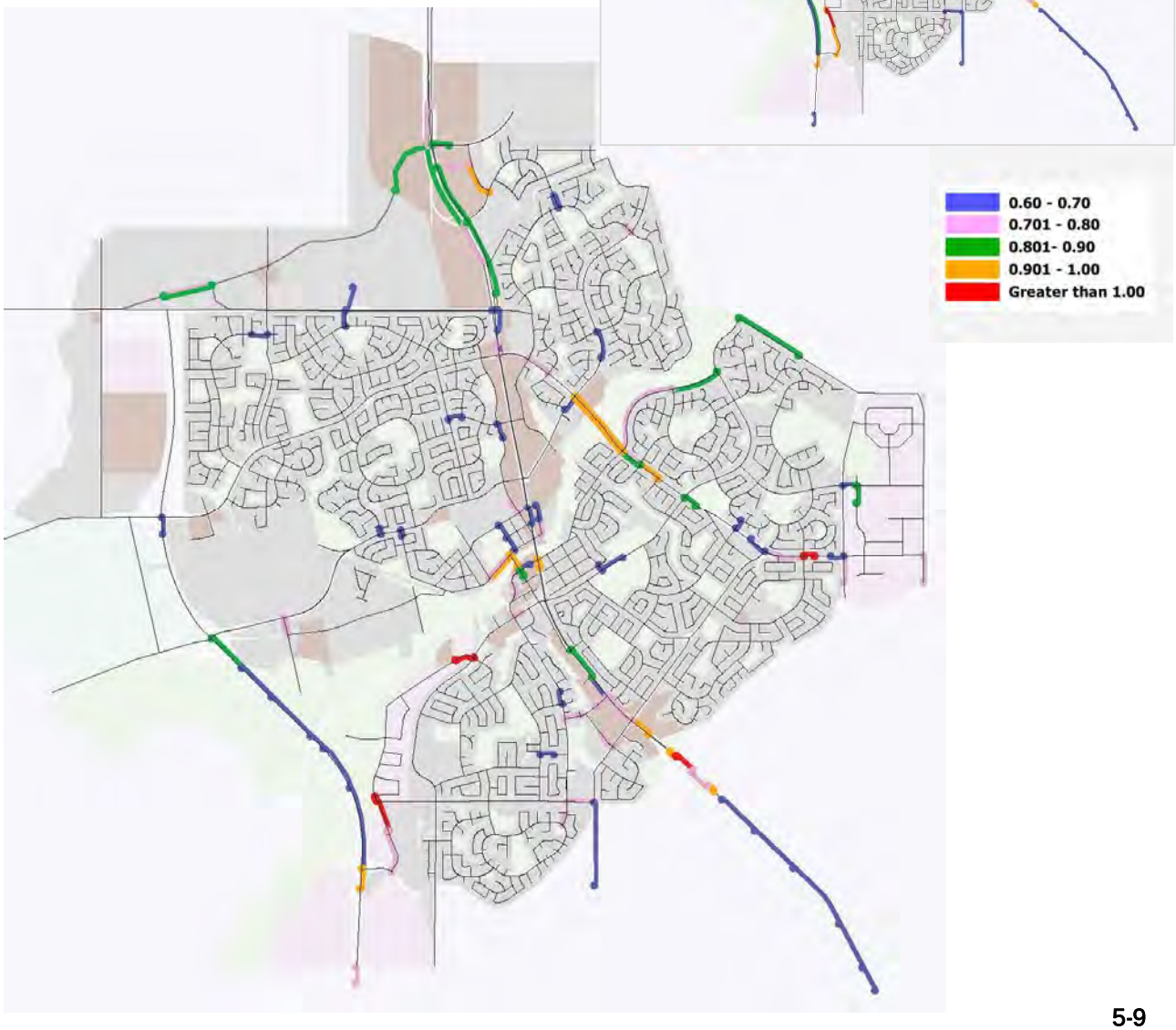


Figure 5-2: 10 Year Volume v/c (Apply 10 Year Improvement Plan)



5.2.2 Active Transportation

Network priorities have been identified so as to strategically stage infrastructure improvements in the coming 10 years.

Priorities were identified with the following criteria in mind:

1. Close gaps in the existing network, with a particular focus on short gaps that result in long sections of continuous route.
2. Develop connections to important destinations, especially those that are frequented by families (e.g. community centres such as the Servus Credit Union Place, Riel Recreation Area, etc.).
3. Develop / enhance connections to trails along the Sturgeon River.
4. Work with land developers to ensure that links to new neighbourhoods are created as part of the development rather than after the neighbourhoods become established.
5. Implement active transportation facilities as part of other capital infrastructure projects such as road widenings, new roads, utilities (e.g. hydro, gas, water and sanitary mains etc.), new bridges and bridge rehabilitations, realignment of watercourses, etc.
6. Focus on completing a limited number of spine routes even if they are not part of planned major capital infrastructure projects. Some potential candidates include:

- Boudreau Road south of the Sturgeon River and Erin Ridge Trail which would result in a continuous connection from the Edmonton boundary (at Veness Road at Anthony Henday Drive) to northeast St. Albert.
- Completing missing links and making necessary upgrades to the Sturgeon River trail corridor, which creates a continuous connection from west to east, linking two major recreational trail destinations (Riel Recreation Area and River Lot 56 Natural Area). This also provides a link to Edmonton via the existing multi-use trails on Levasseur Road and Gervais Road south of Levasseur Road.
- Completing the northwest trail route from the Sturgeon River corridor near Meadowview Ball Park through the Mission, Lacombe and Deer Ridge neighbourhoods and connecting to the Hogan Road multi-use trail in the northwest part of the city.



Table 5-2: Recommended 10-Year Active Transportation Plan

Project	Type	Length (m)
Buffered bike lane Liberton Drive	Buffered bike lane	1539
Dawson Road	In-Boulevard Multi Use Trail	1343
Mckenney Avenue	In-Boulevard Multi Use Trail	1646
Giroux Rd between Bellerose Drive and Bellerose Composite High School	In-Boulevard Multi Use Trail	2774
Giroux Rd between Bellerose Composite High School and Hogan Rd	In-Boulevard Multi Use Trail	600
Sir Winston Churchill Avenue between downtown and Boudreau Rd	In-Boulevard Multi Use Trail	2645
Hebert Rd	In-Boulevard Multi Use Trail	2080
Villeneuve Rd	In-Boulevard Multi Use Trail	2251
Boudreau Rd south of Sturgeon River to Hebert Rd	In-Boulevard Multi Use Trail	1992
Proposed Signed Bike Route whole Network	Proposed Signed Route	10000
Proposed Signed Bike Route with Sharrow whole network	Proposed Signed Route	20800

5.2.3 Public Transportation

The 10 year plan is identified within the Transit Long Term Department Plan, which has a planning horizon to 2027. Key short term recommendations will include ITS signal priority, the Transit Local Route Restructuring Project, and fleet expansion. St. Albert Transit should continue to investigation methods to more aggressively attract riders as a means to achieve the goals of this TMP.

5.2.4 Commercial Goods Movement

Within the short term 10 year implementation period, the traffic bylaw should be updated to reflect the revised truck plan. The City of St. Albert should continue to work with regional partners to support industrial and goods movement growth in the region. The Movement of Goods and People Policy should reflect the balance between the use of roads for goods movement and the movement of people via all modes.

5.3 INFRASTRUCTURE FUNDING

The City of St. Albert has access to two sources of funding for capital projects, which are:

5.3.1 City of St. Albert's Capital Budget

The department implements a Long-Term Divisional and Department Plan (LTDDP) to effectively manage the delivery of municipal services. The LTDDP sets out future goals and resources that are required to support future infrastructure. Surveys, Transportation and other department Master Plans, and other communication from public feedback is continually sought out to ensure that the levels of service, maintenance of city infrastructure, and new capital requirements are sufficient to meet the needs of current and future residents.

The department plan links to the city's 10 Year Municipal Capital Plan as it reflects the long term capital requirements that the city requires for the next 10 years. In addition, funding requirements for the capital projects are reviewed annually to ensure that adequate financing is made available for maintaining current infrastructure and investment for future needs

The Municipal Capital Budget expenditures will be funded through grants, reserves and a portion supported by tax funds. The city utilizes grants as the primary source of funding, as not all projects are eligible for grant funding and may not meet the minimum requirements. In such cases, other sources such as reserves and tax supported funds are therefore utilized for the remainder of funding capital projects. Often, a tax supported fund (Pay-As-You-GO or PAYG) is applied to projects that are smaller in nature, while the use of reserves are regularly planned and are applied for the use of lifecycle and replacement projects.

The city ensures resources are targeted toward the necessary critical investments in St. Albert's infrastructure and transportation to position the community for sustaining current services and meeting future growth The Capital Budget consists of revenue obtained through collection of taxes and from grants/funds provided by the Provincial and Federal Governments. The types and amounts of the grants/funds vary from year to year and from government to government. Past sources of the grants/funds include:

- Municipal Sustainability Initiative (MSI),
- Alberta Community Partnership (ACP), which also contains the Metropolitan Funding (MF) Component,
- Federal Gas Tax Fund, and
- Federal Small Communities Fund.

St. Albert updates its City Budget on a three year cycle. Within the budget the city allocates funds for capital projects as determined by Administration and Council.

5.3.2 City of St. Albert Off-Site Levies

Off-site levis are an approved mechanism under the Municipal Government Act (MGA) that allow a municipality to collect all or some of the capital dollars needed to construct new infrastructure required to support growth. Amongst other infrastructure types the MGA provides a mechanism to collect off-site levies for new or expanded roads required for or impacted by a subdivision development and the necessary land required to support the infrastructure.

In 2010 the city first established its' Off-Site Levy Bylaw and corresponding rates. The Bylaw was based on key guiding principles approved by Council to establish how the off-site levy rates are calculated, assigned, and collected, consistent with best practices across the province. The guiding principles delineated that arterial roads identified within the Off-Site Levy Bylaw as well as arterial to collector and arterial to arterial intersections would be included as projects within the bylaw.

The current practice within the city, is a yearly update to the Off-Site Levy Bylaw to ensure the most reflective delineation of projects and associated costs. As the city grows and infrastructure is required to support the growth, requirements are identified for the infrastructure to be designed and constructed to support the network. Front ending, off-setting and long term reimbursement of costs are identified in the Off-Site Levy Policy Framework. This Council policy, as amended, provides the necessary steps to facilitate the identified growth infrastructure from identified roads in master planning documents to constructed and functioning networks of infrastructure.

5.3.3 Development

In instances where upgrade work is required to support development that is not identified within the Off-Site Levy Bylaw, the MGA under section 650 and 651 identifies that development may be required to pay for road infrastructure needed to support access. Additional projects that may be within this funding categorization would be interim road upgrades needed to support development.

5.4 EVALUATION

The success of the plan will be measured primarily through the implementation of the Action Plan and completing the projects identified in the 10 year plan. Further evaluation of success will involve the completion of tasks identified which incorporate specific evaluation criteria such as level of service standards, greenhouse gas emissions goals, ITS (travel times), etc. As this plan represents a shift in transportation planning in St. Albert, it is anticipated that future plans will identify concrete goals that measure the success of transforming transportation in St. Albert. The most important step in supporting the future green, sustainable and multi-modal ambitions of a complete transportation network is short term improvements in data collection, (particularly around traffic count collections), transit ridership data and active transportation usage information. This data can support identifying achievable goals in mode split and greenhouse gas emissions, which are valuable tools in quantifying the implementation goals of the TMP.

Samples of evaluation criteria include:

- Mode Split: The current mode split for transit ridership and cycling were discussed in Section 3. The strategies and objectives identified in this TMP include many that aim to improve access to transit, walking and cycling as local modes of transportation. Future updates to the TMP, and future data from household surveys can be used to evaluate if the implementation of the TMP is achieving a change in mode choice for St. Albert residents. Future TMP updates can look at improvements and set specific targets for mode split and Greenhouse Gas Emissions reductions (see below).
- Greenhouse Gas Emissions: The Environmental Master Plan identifies the ambitious goal of reducing community greenhouse gas emissions by 6% from 2008 levels by 2020. Greenhouse gas emissions caused by transportation contribute a significant impact to these community emissions. Driving emissions in St. Albert are estimated at 226,779 tonnes per year. Data from the household travel demand survey indicated that approximately 27% of all trips taken by St. Albert residents that originate in St. Albert are 5 minutes in length or less. These short trips represent an average of 20 tonnes of CO2 emissions per day. If half of those trips of 5 minutes or less were taken on a bicycle or walked, this could translate into an annual reduction of 3,650 tonnes per year. This reduction represents almost 27% the overall community reduction target.

- **Action Plan Implementation:** The TMP Action Plan should be reviewed annually to identify new projects to complete and to also review alignment with further updates to other city Plans or documents, and also alignment with public input through any engagement actions taken on various projects.
- **Land Use Planning Integration:** The forthcoming update to the Municipal Development Plan should consider the recommendations of this TMP, with land use plans that support multi-modal integration and densification to support transit growth ambitions.

5.5 CLOSURE

The development horizon for this Transportation Master Plan is 2042. The transportation paradigm has the potential to change dramatically between today and 2042. This plan is the first step in preparing St. Albert for this future friendly transportation network. While the private vehicle continues to be important, the future for St. Albert will be bike and pedestrian friendly, with mass transit to serve commuters and transportation technologies like ITS making the roads more efficient for goods movements and drivers who must still use the private automobile (or their community shared car) to get around. Future updates to the TMP will continue to evaluate these changes and update the goals to reflect the changing world.



This report was prepared for the City of St. Albert to develop a Transportation Master Plan that will help achieve its vision of a safe, sustainable, multi-modal transportation system to serve the community.

The services provided by Associated Engineering Alberta Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
Associated Engineering Alberta Ltd.

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QUALITY MANAGEMENT SIGN-OFF
Signature:
Date: April 11, 2016
APEGA Permit to Practice P 3979

ATTACHMENT 2



Transportation 2015 Master Plan

Appendices

City of St. Albert
Cultivate Life

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APPENDIX A

2015 St. Albert TMP
Public Consultation Summary









February 2016

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APPENDIX A

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APPENDIX A

1 Consultation Overview

The consultation plan for the TMP was integral to the approach and designed to generate interest, support, and common understanding for strategic level planning for the TMP. We considered both broad public consultation and stakeholder engagement as critical to the sustainability and successful implementation of a TMP.

The City of St. Albert's Policy C228-2006 outlines the Public Consultation requirements for Planning and Development processes. We used this policy as a basis for our consultation plan. Gaining social license from the community and stakeholders required respectful communication, meaningful engagement, and on-going relationship building. Our consultation plan described both broad public consultation and effective stakeholder engagement which provided:

- clear and consistent information to specific groups and individuals and
- clear and consistent opportunities for feedback and comment.

The elements of the consultation plan including principles, outcomes, target audiences, and strategies are described below.

The specific input from the various forms of consultation is included throughout the TMP. This Appendix will summarize the events and includes materials presented to the public.

1.1 PRINCIPLES

Consultation principles must be consistent with the mandate of the organization. Table 1-1 summarizes the key principles for consultation practices followed as part of TMP development.

Table 1-1
Principles for Consultation Practices

Principle	Practice
Community	The communities and surrounding environment where we live and work is uppermost of mind and the decisions we make.
Accountable	Outcomes reflect stakeholder input and yet remain responsible to citizens.
Coherent	Consultation practices are consistent across the organization.
Inclusive	Consultation is accessible and considers all perspectives.
Transparent	Information is clear, timely and complete. Decisions are transparent and follow consultation policy.
Commitment	Resources for effective engagement will be allocated as appropriate.

1.2 OUTCOMES

High level outcomes describe the change in behaviour that could be expected to take place as a result of the consultation activities. A sample of desirable outcomes achieved by the TMP consultation process included:

- Private and public stakeholders saw connections between their input and project related decisions.
- Municipal staff and key stakeholders are recognized for their input and were provided ongoing opportunities to participate and provide feedback on the ongoing plan development.
- TMP development aligns with other plans developed in the region.

1.3 TARGET AUDIENCES

Target audiences include the steering committee (who provided project leadership and project-required decision-making), key stakeholders (identified in Section 4 of this Appendix), and the public who are critical to buy-in and sustainable support for the TMP. The steering committee, made up of City of St. Albert administration, was used to identify the list of stakeholders to include in the stakeholder committee. The public was invited to participate, both through the on-going online engagement tool and the two public open houses.

1.4 STRATEGIES AND TOOLS

The consultation tools that were used on this project included:

- Household and trip interrupt surveys to gather statistically accurate information for the travel demand model at the outset of the project (while these were used to inform general background information for the overall project, the data from the surveys were mostly used in the development of the travel demand model, and as such these surveys are discussed in more detail in Appendix B)
- An online community consultation platform for planning projects
- Steering committee meetings
- Stakeholder workshops
- Public open houses
- Presentation to City Council

1.5 APPENDIX OUTLINE

This Appendix supports the TMP document by highlighting the major consultation activities completed during the TMP development, and contains the consultation materials presented to the public over the course of the project.

2 Steering Committee Meetings

The Steering Committee consisted of the consultation team as well as a variety of City of St. Albert administration. Steering committee meetings covered a variety of topics and were used throughout the project to provide ongoing project updates and identify important next steps. A sample of project areas developed and discussed through Steering Committee Meetings includes:

- Scope of project,
- Staff coordination,
- Data Collection (traffic counts, transit data, information from other departments and master plans),
- TMP outline,
- Project schedule
- Communications and risk management,
- Specific project issues,
- Stakeholder identification,
- Finalization of consultation plan,
- Key messaging,
- Ongoing LRT project development,
- Cultivating Our Future corporate strategic framework,
- Policy Framework,
- Development MetroQuest online consultation tool content,
- Consultation updates,
- Workshop scheduling,
- TMP travel demand model development,
- Traffic analysis,
- TMP evaluation,
- Lessons learned.

Steering committee meetings were used to keep the overall City of St. Albert administration informed on the project and provided a valuable tool to identify importation information that informed the final product.

3 Online Consultation Tool

Associated Engineering partnered with MetroQuest to provide an online consultation software as part of the consultation program for the TMP. MetroQuest provided a complete suite of support and back-end administration tools, as well as significant experience in transportation planning consultations.

The content of the MetroQuest survey was developed with support from the Steering Committee meeting. The Steering Committee was used to identify the project priorities, and identify questions related to those priorities.

The MetroQuest survey was available online during the fall of 2014, and was available for three months. The public was invited to participate through the Transportation Master Plan Update page on the City of St. Albert webpage, as well through social media notifications. The site had a total of 784 visits, and 463 responses to the survey.

In addition to gauging public viewpoints on issues as diverse as neighbourhood traffic calming, truck routes and cycling infrastructure, the public also had the opportunity to identify specific locations in need of review related to cycling/pedestrian movements, transit, driving, parking, traffic control and traffic calming. The results from this survey assisted in providing direction for policies within the TMP and identify project priorities. The following pages show the content of the MetroQuest survey. A sample of survey responses is then identified. The results from the mapping questions in the survey are included in the open house material from Open House 1.

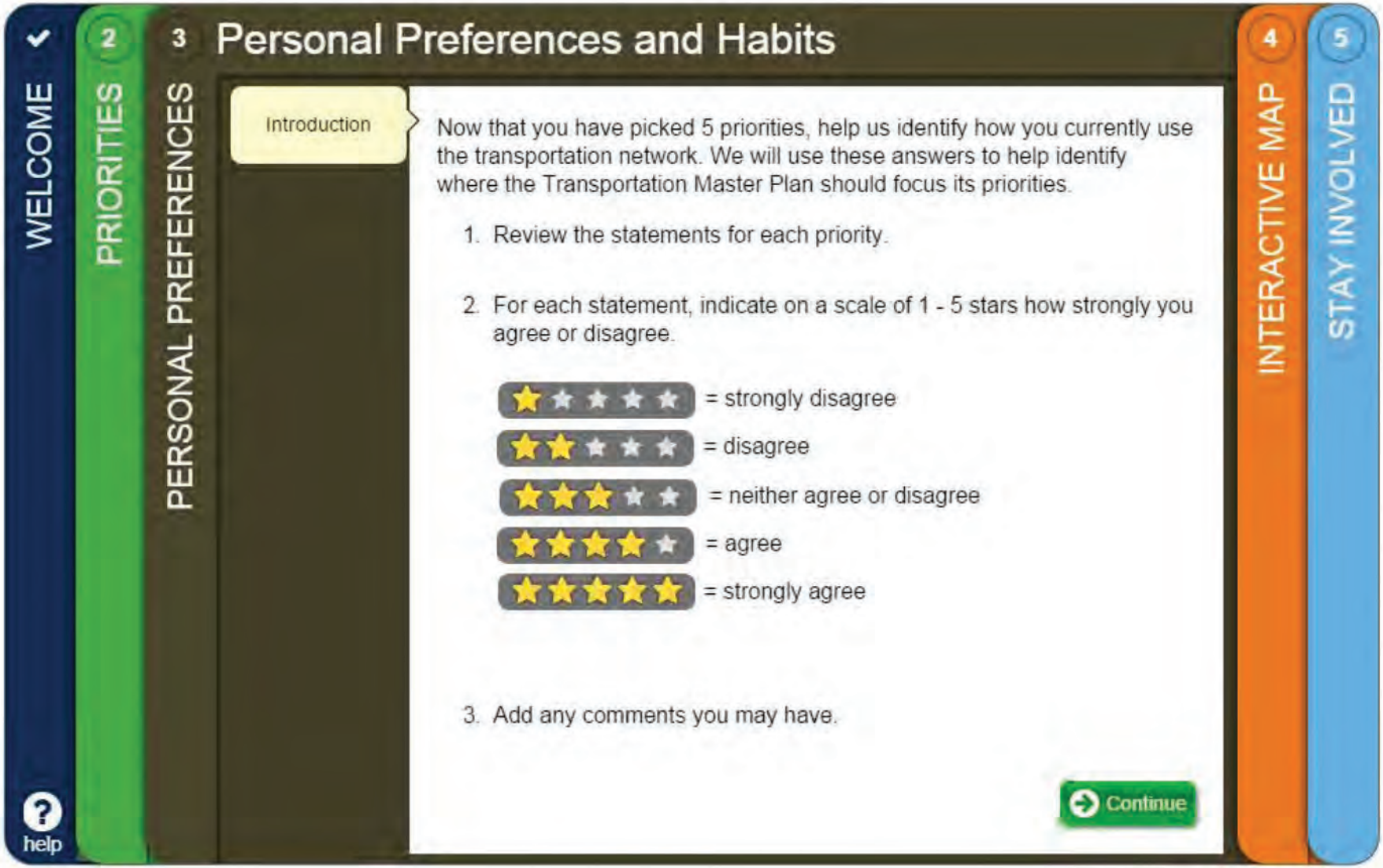
In addition to providing the background for the team to identify the Guiding Principles through the priorities identified from the public, the results from the mapping exercise were used at the open house to engage the public on specific issues that had been identified by their peers.

The results from the MetroQuest online engagement were provided to the City of St. Albert for their future reference.

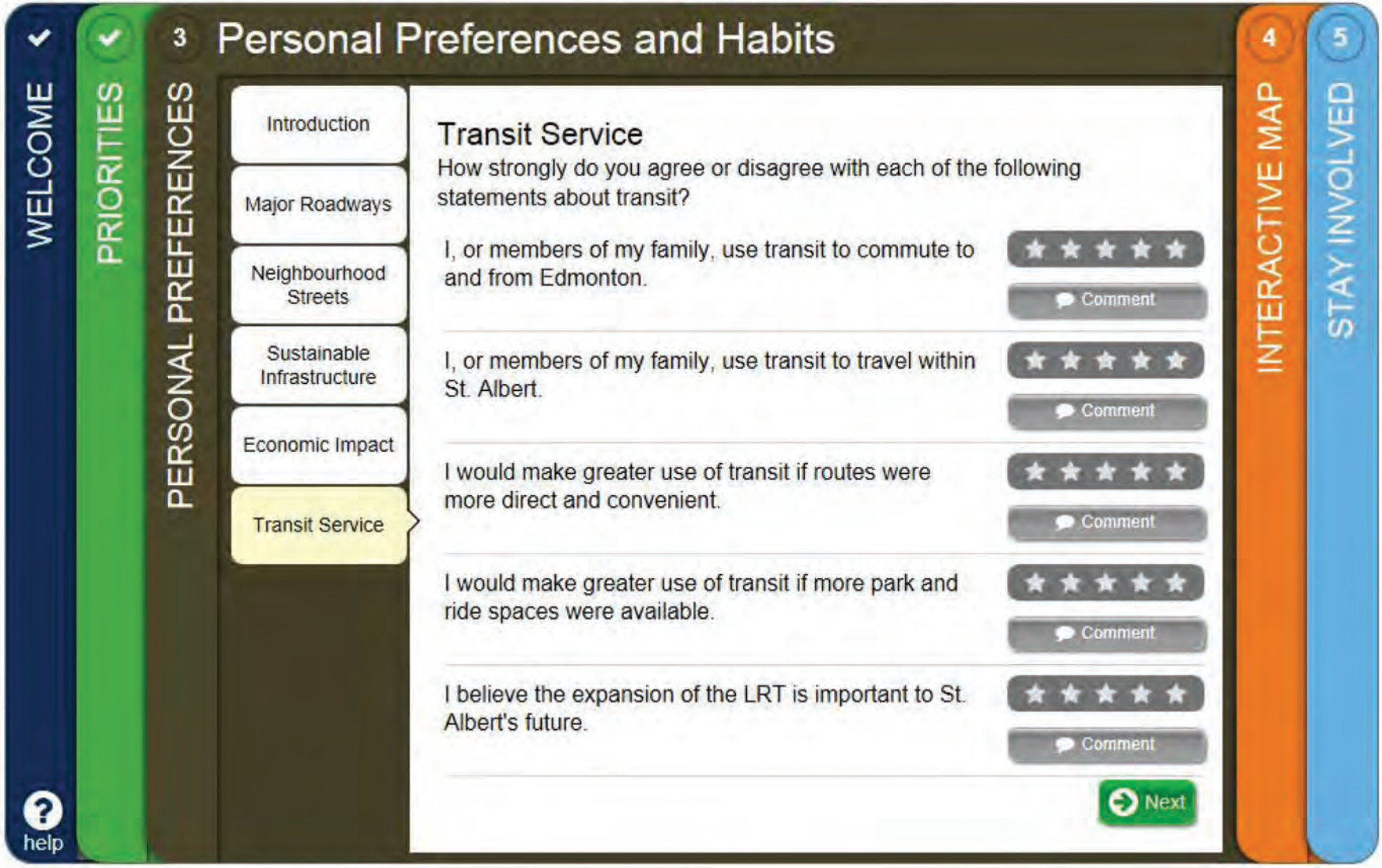
How should we plan for St. Albert's future transportation system?
WELCOME
help
The City of St. Albert invites you to help us prepare a Transportation Master Plan (TMP). The final TMP will integrate policies and plans for all users of the transportation network including pedestrians, motorists, cyclists and transit users over the next 20 to 30 years.
Click here to begin
We all use the transportation system differently!
Transportation influences how we move, how goods and services reach us, how we access our jobs, schools and activities, how the city looks and how we interact with other residents.
City of St. Albert
Cultivate Life
PRIORITIES 2
PERSONAL PREFERENCES 3
INTERACTIVE MAP 4
STAY INVOLVED 5

WELCOME
help
PRIORITIES
2 Priorities What is important to you about Transportation in St. Albert?
Drag your top 5 priorities above this line.
Sustainable Infrastructure
Active Transportation
Neighbourhood Streets
Commercial/Goods Movement
Land Uses
Major Roadways
Economic Impact
Transit Service
To plan the transportation system now and for the future, we need to better understand what is most important to residents of St. Albert.
Tell us which of the five topics from the list are the most important to you. Click on each topic to learn more about it. After reviewing the list, drag your top five priorities above the dashed line. You may also suggest a topic not on the list.
PERSONAL PREFERENCES
3
INTERACTIVE MAP
4
STAY INVOLVED
5

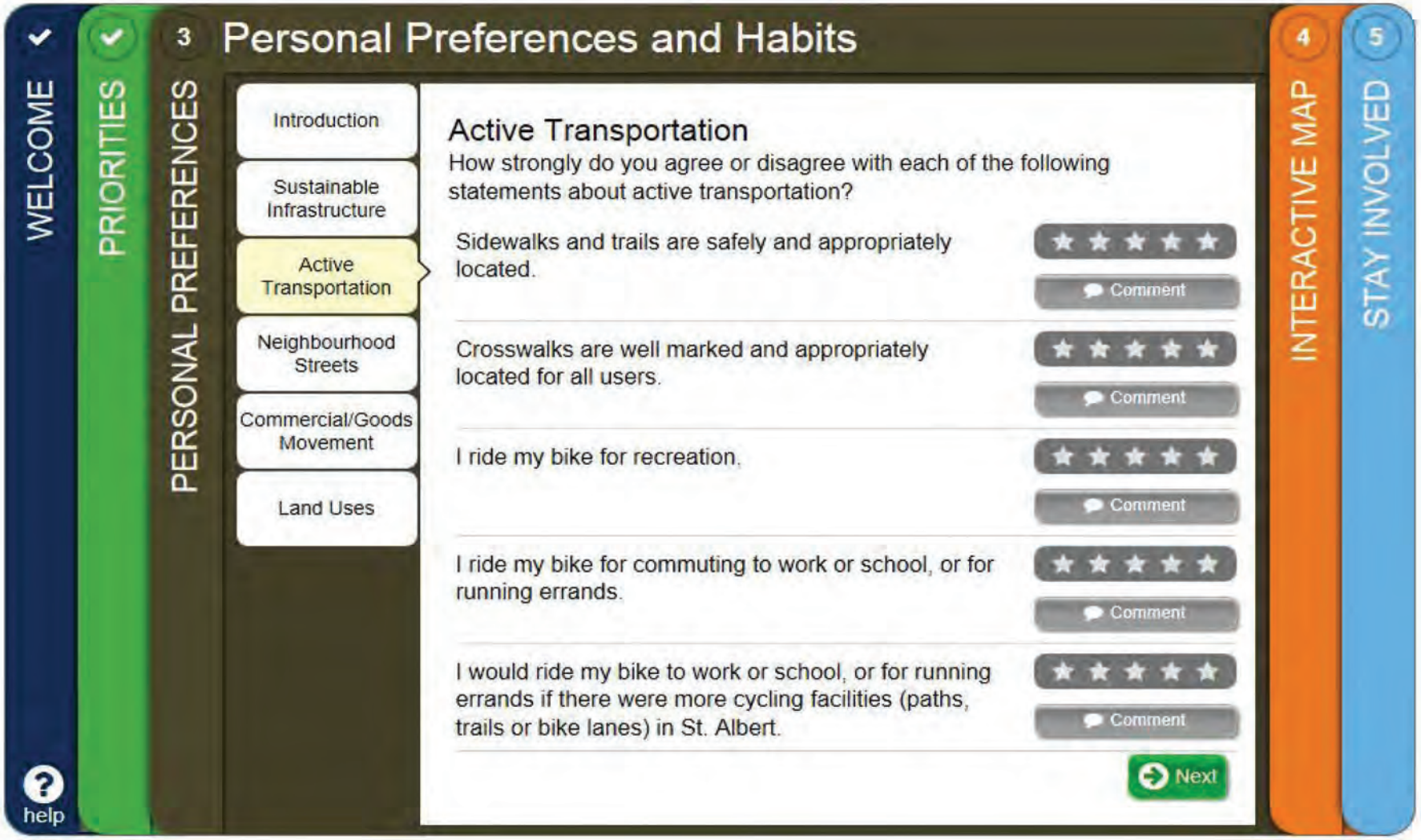
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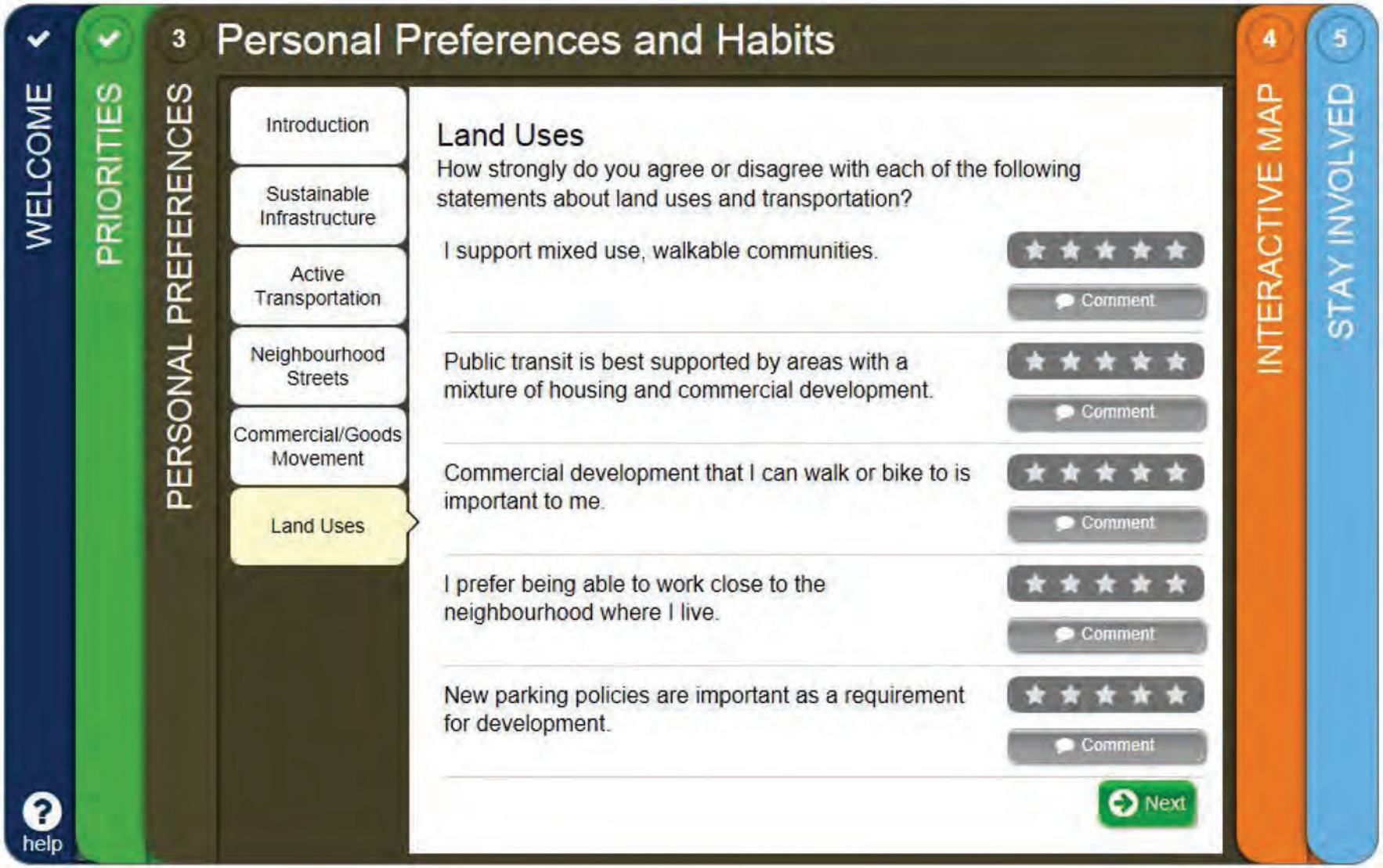
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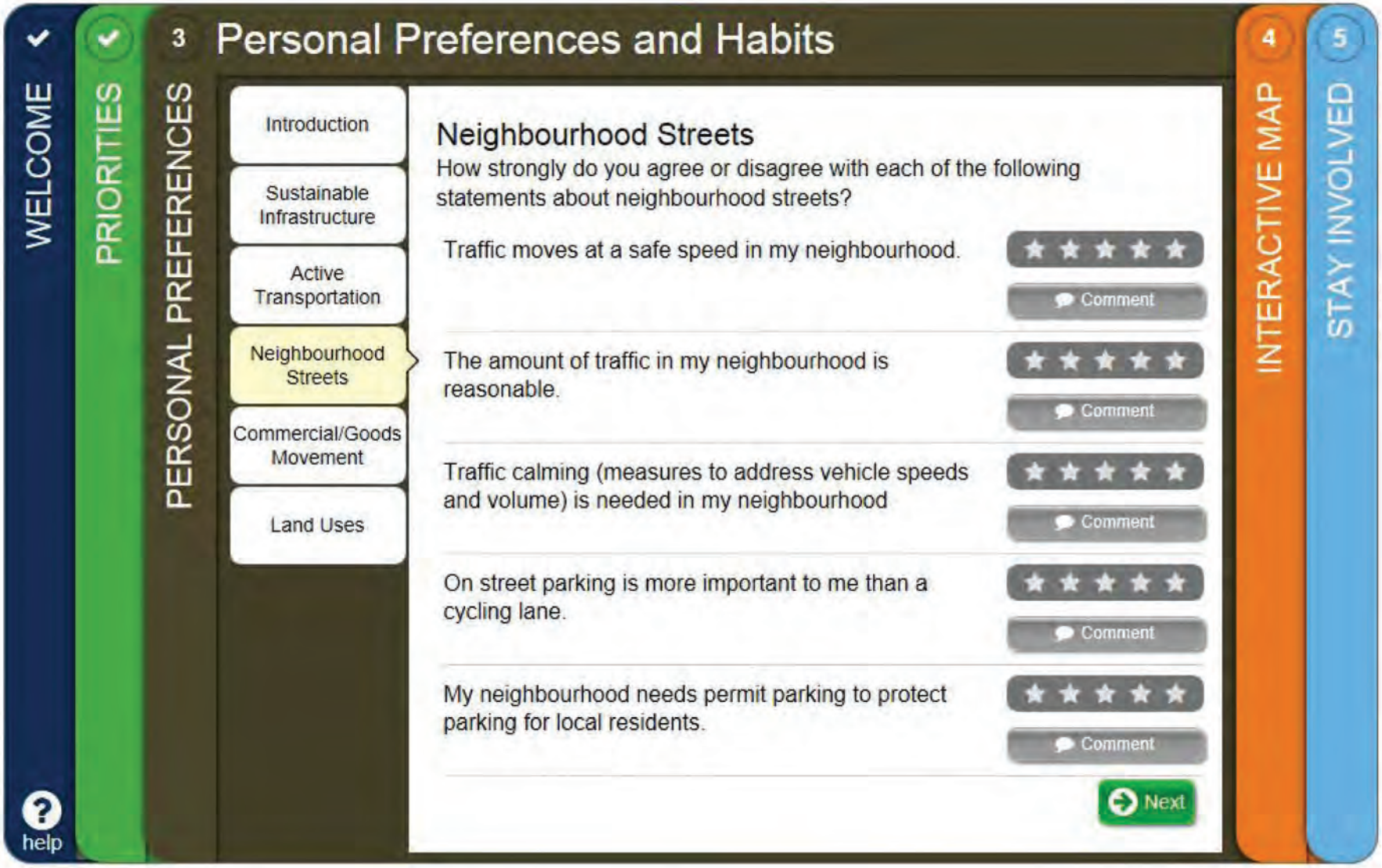
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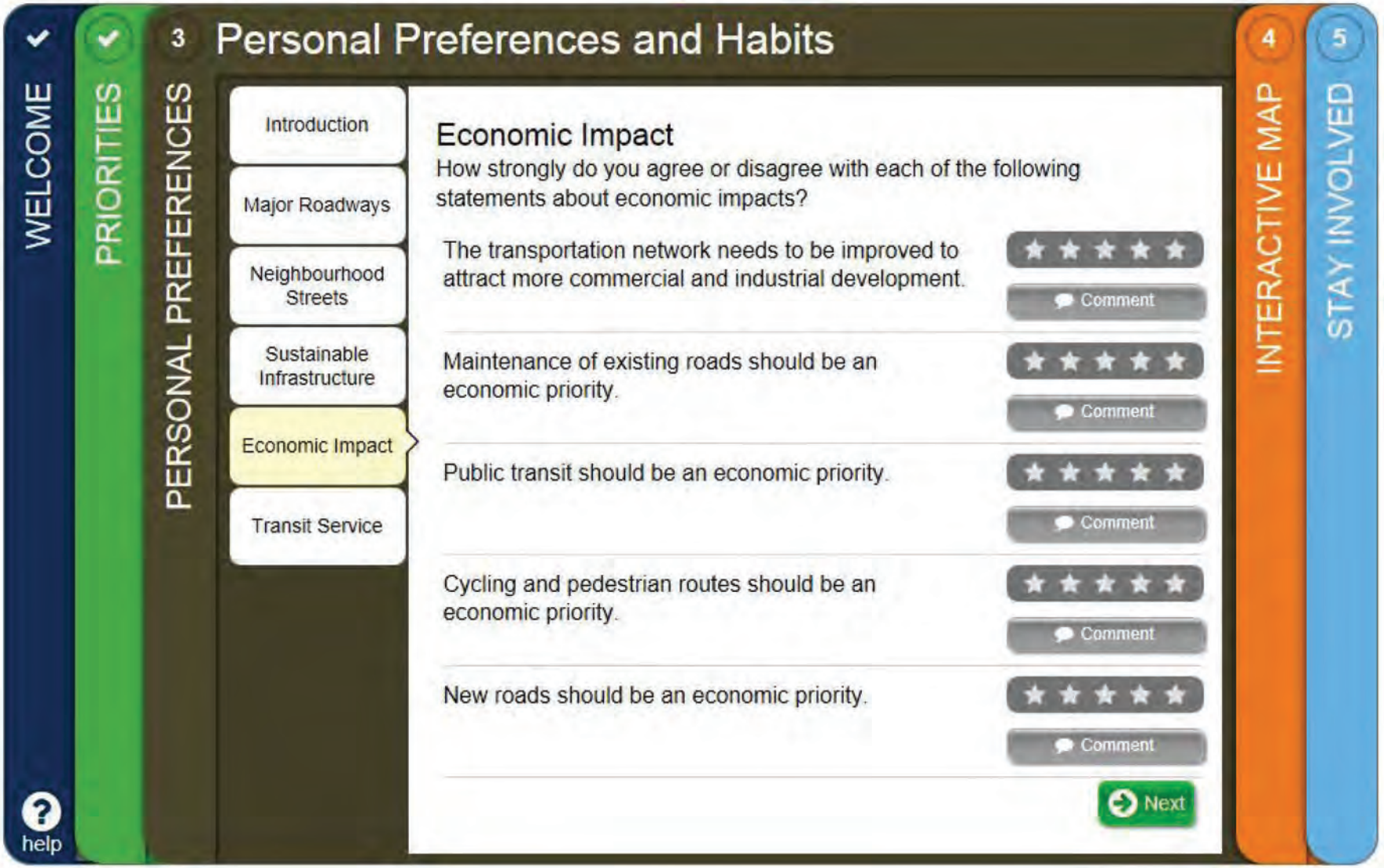
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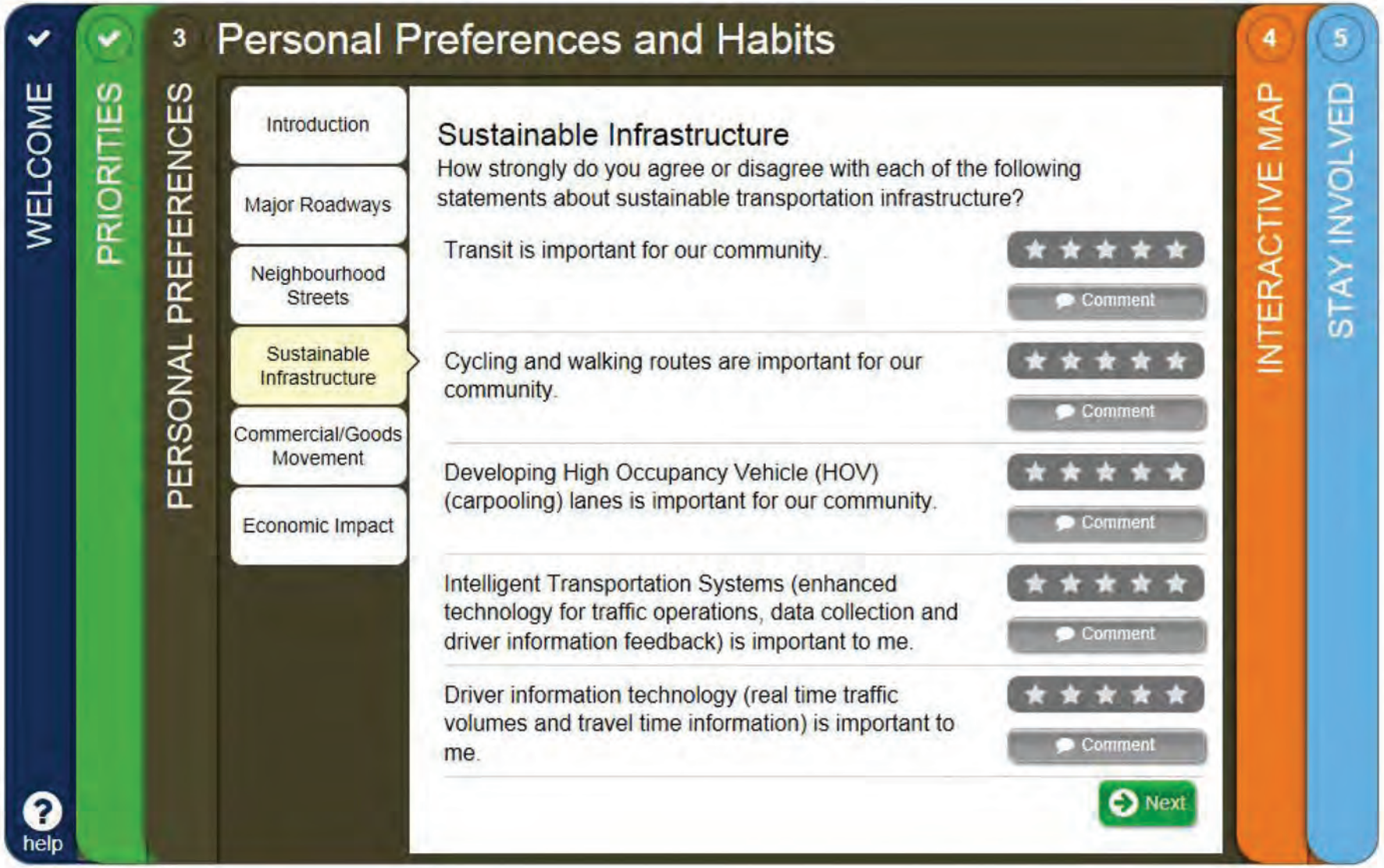
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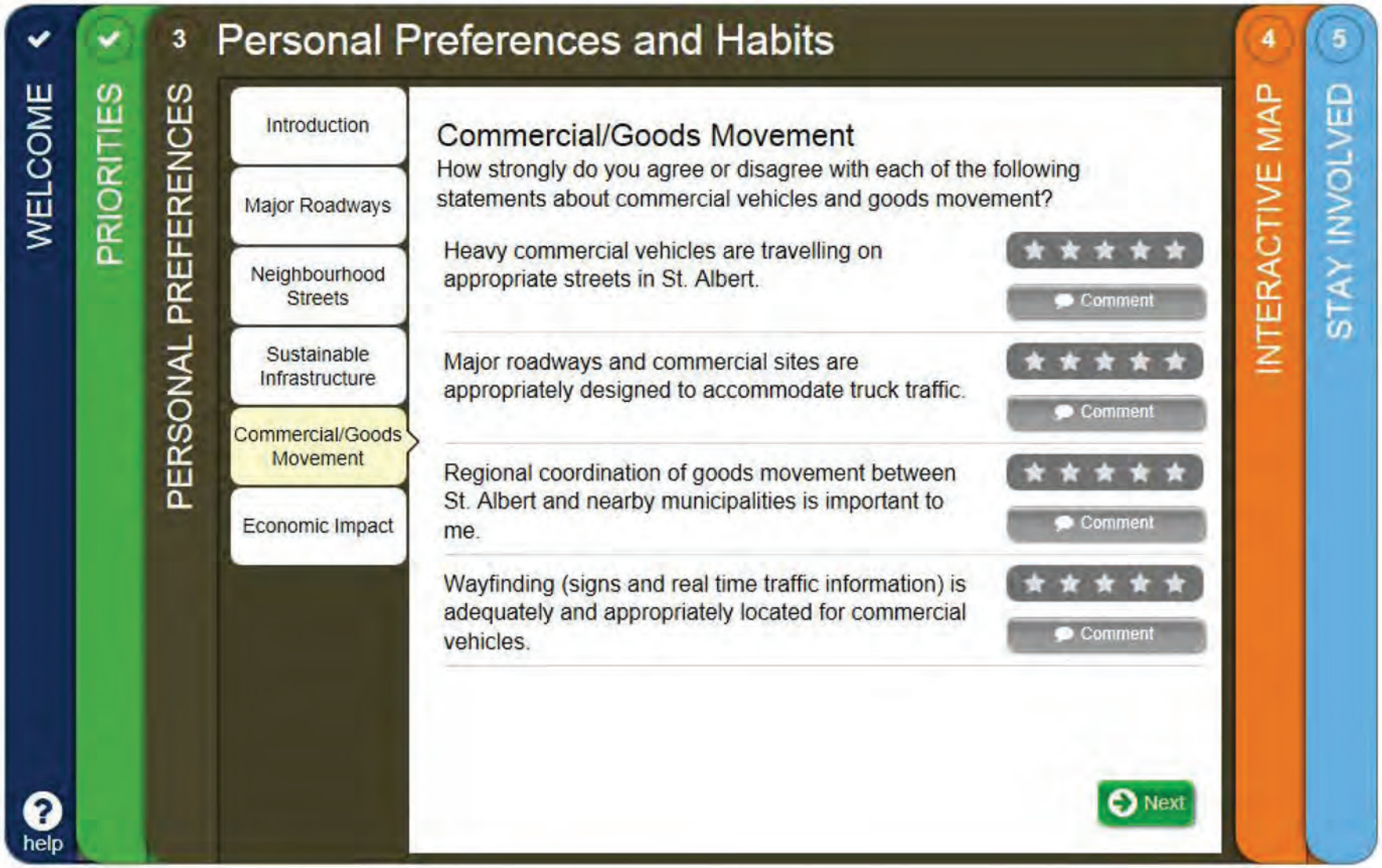
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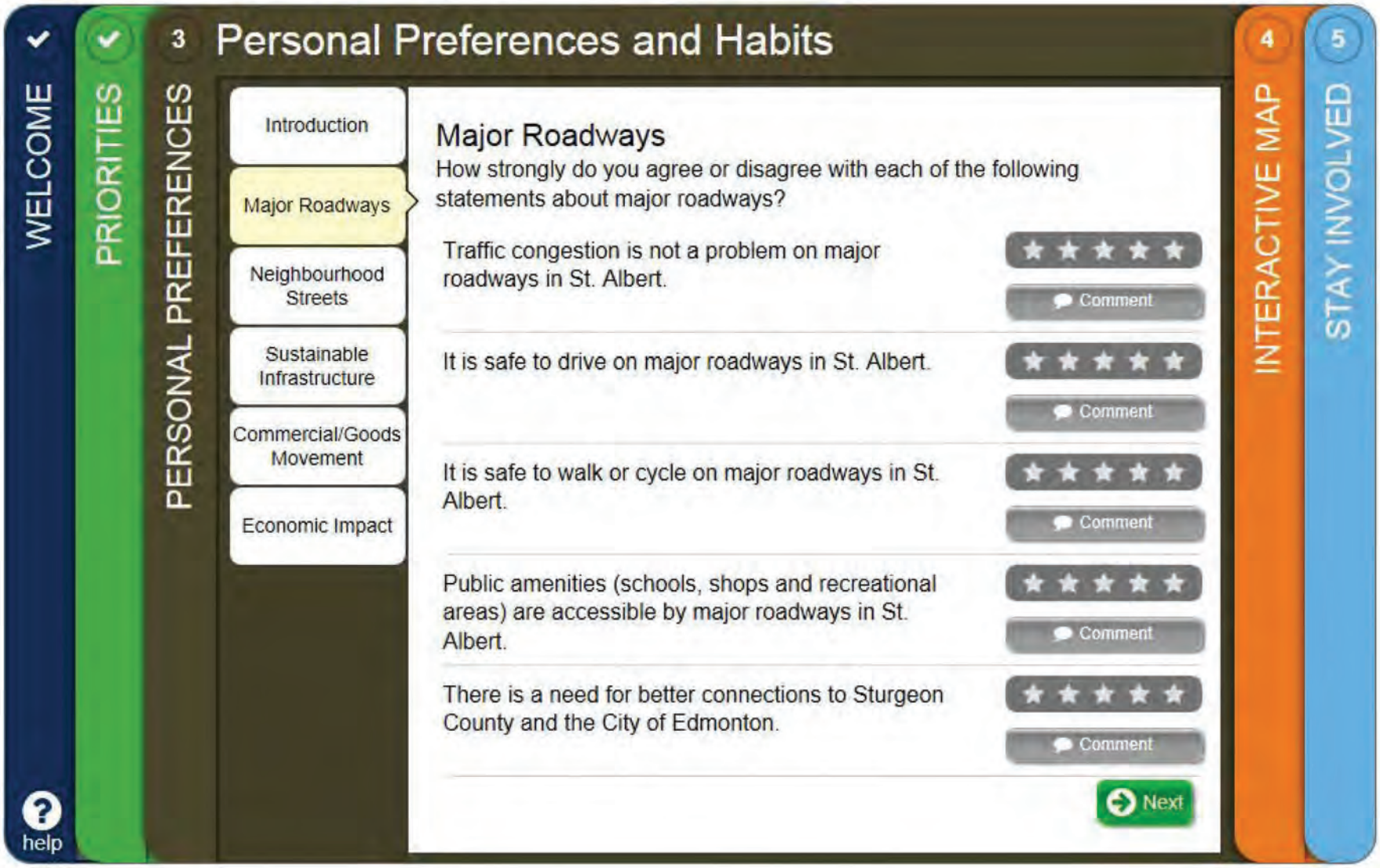
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MetroQuest Content

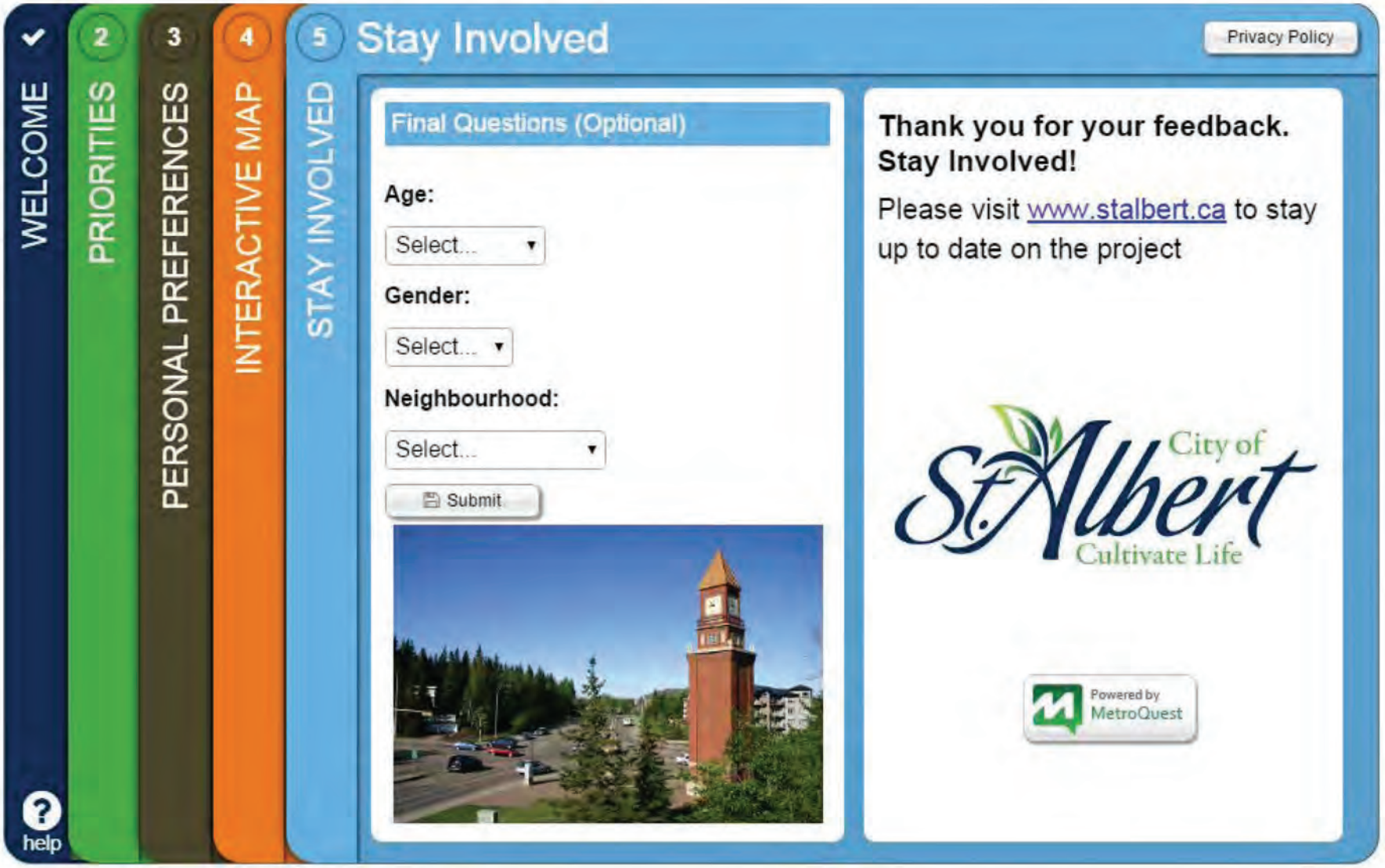


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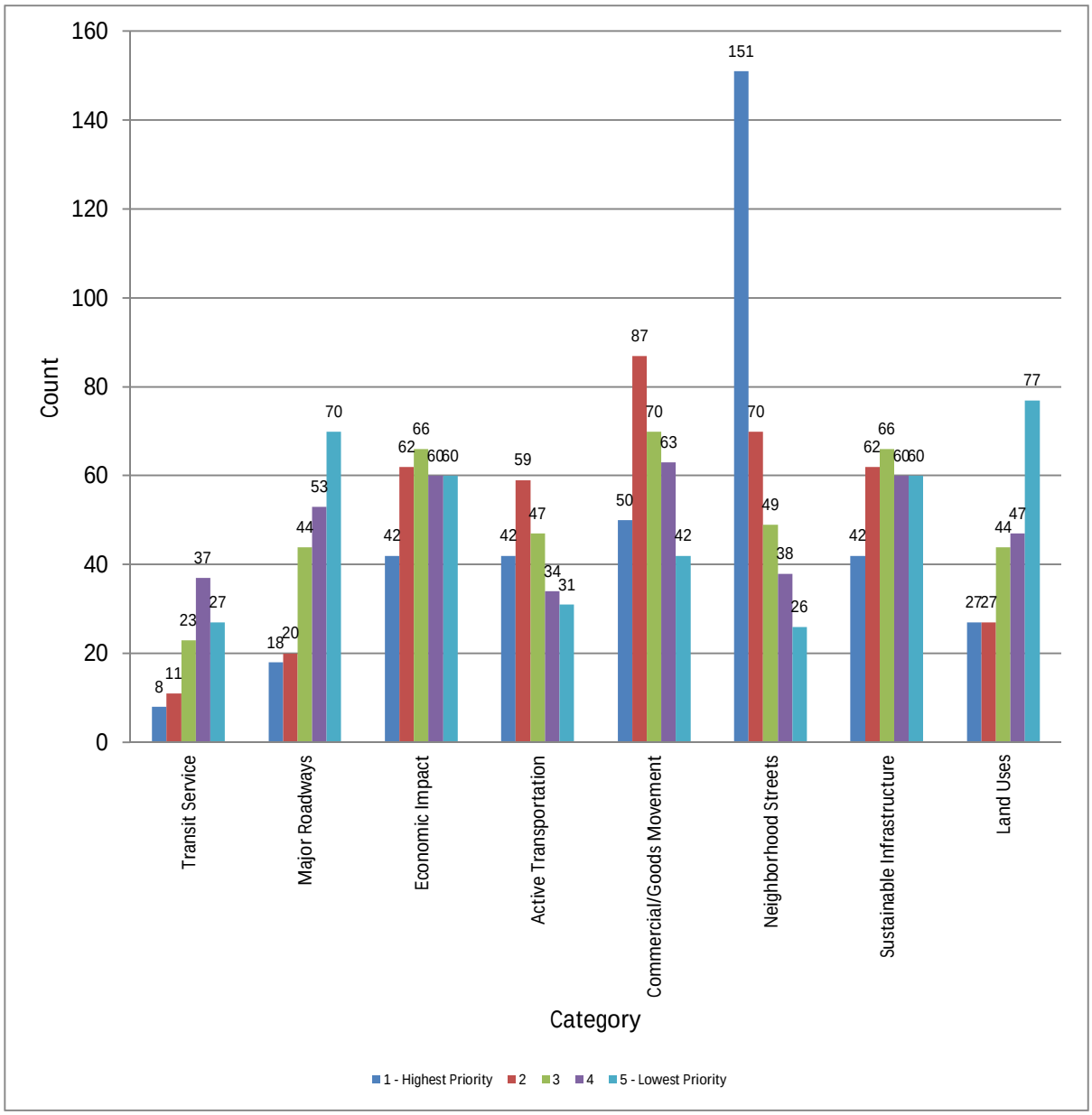
help
WELCOME
PRIORITIES
2
PERSONAL PREFERENCES
3
INTERACTIVE MAP
4
Opportunities Tell us what you think
Drag the markers below to the map to show where you would like to see changes or improvements. Use as many markers as you want and leave comments to help us understand the needs.
Cycling/ Pedestrian
Transit
Driving
Parking
Traffic Control
Traffic Calming
When you are done:
Continue
Google
St Albert
Jeneuve Rd
Meadowview Dr
Ray Gibbon Dr
Hogan Rd
McKenney Ave
Giroux Rd
Boudreau Rd
Sir Winston Churchill Ave
Bellerose Dr
Sturgeon Rd
Levasseur Rd
Campbell Rd NW
142 St NW
167 Ave NW
127 St NW
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2
216
Map data ©2016 Google
Terms of Use
Report a map error
STAY INVOLVED
5

MetroQuest Content



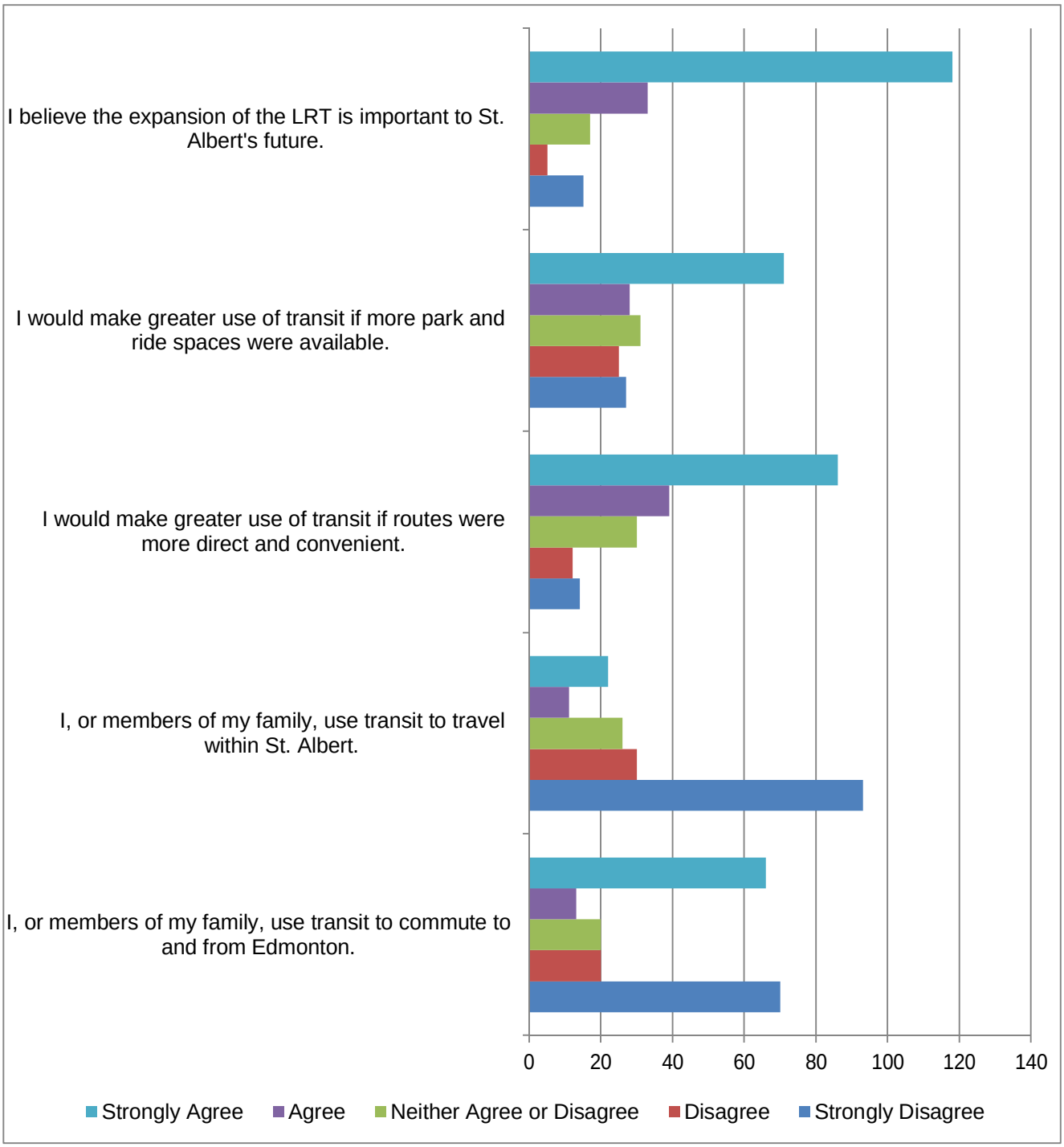
MetroQuest Results

Overall Response



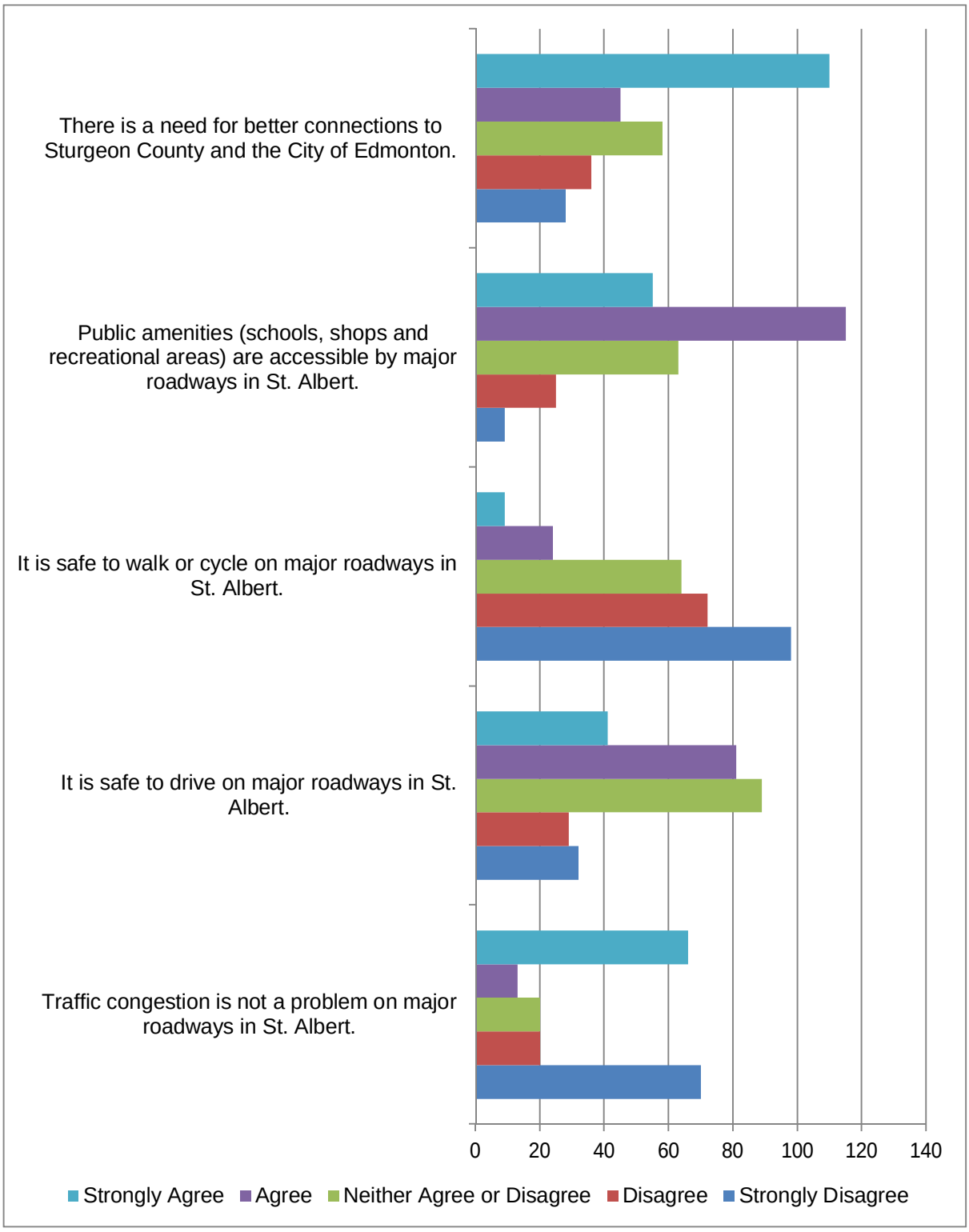
Transit Service

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I, or members of my family, use transit to commute to and from Edmonton.	70	20	20	13	66
I, or members of my family, use transit to travel within St. Albert.	93	30	26	11	22
I would make greater use of transit if routes were more direct and convenient.	14	12	30	39	86
I would make greater use of transit if more park and ride spaces were available.	27	25	31	28	71
I believe the expansion of the LRT is important to St. Albert's future.	15	5	17	33	118


I believe the expansion of the LRT is important to St. Albert's future.
I would make greater use of transit if more park and ride spaces were available.
I would make greater use of transit if routes were more direct and convenient.
I, or members of my family, use transit to travel within St. Albert.
I, or members of my family, use transit to commute to and from Edmonton.
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40
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80
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140
Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

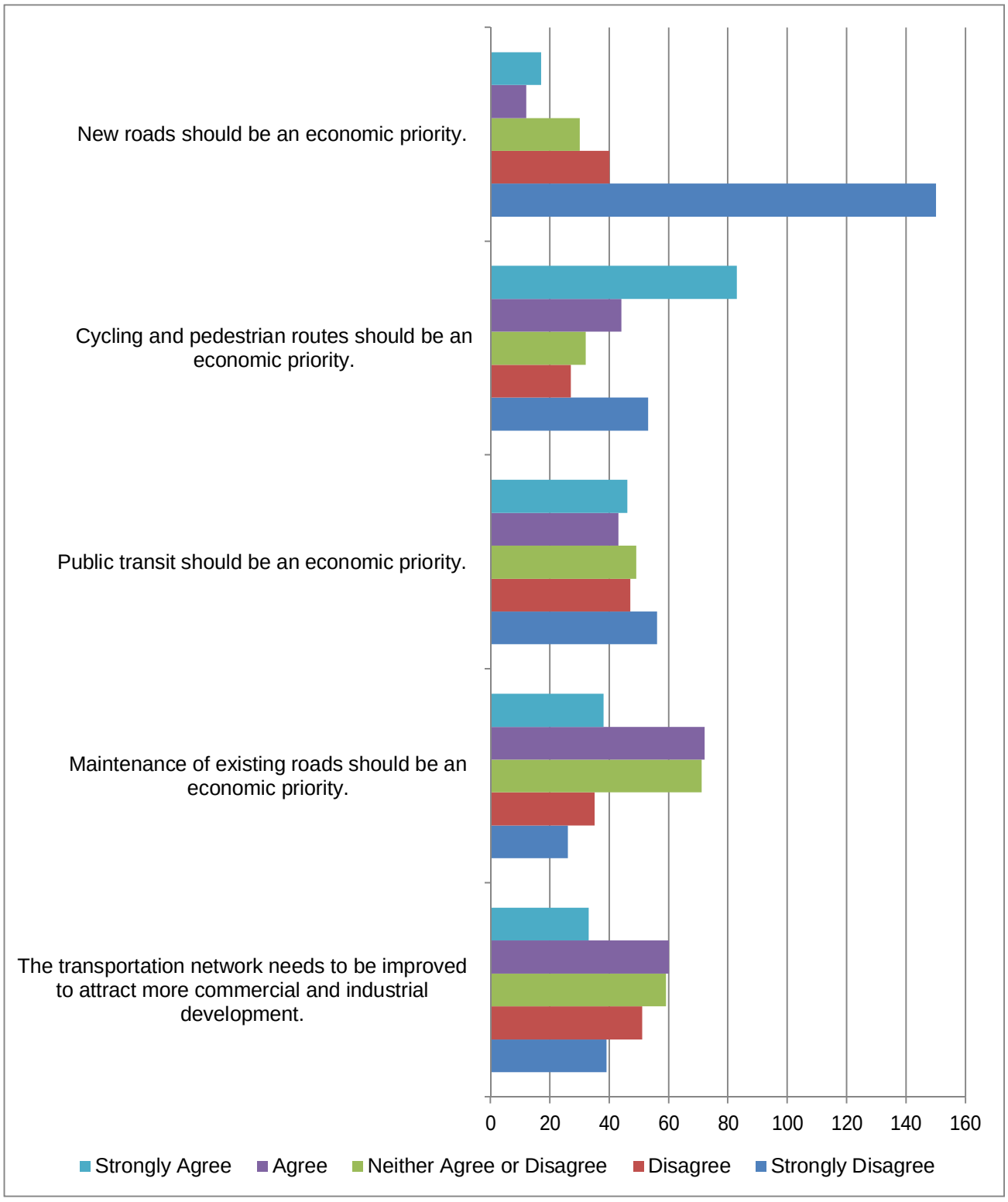
Major Roadways

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Traffic congestion is not a problem on major roadways in St. Albert.	178	51	17	10	20
It is safe to drive on major roadways in St. Albert.	32	29	89	81	41
It is safe to walk or cycle on major roadways in St. Albert.	98	72	64	24	9
Public amenities (schools, shops and recreational areas) are accessible by major roadways in St. Albert.	9	25	63	115	55
There is a need for better connections to Sturgeon County and the City of Edmonton.	28	36	58	45	110


There is a need for better connections to Sturgeon County and the City of Edmonton.
Public amenities (schools, shops and recreational areas) are accessible by major roadways in St. Albert.
It is safe to walk or cycle on major roadways in St. Albert.
It is safe to drive on major roadways in St. Albert.
Traffic congestion is not a problem on major roadways in St. Albert.
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Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

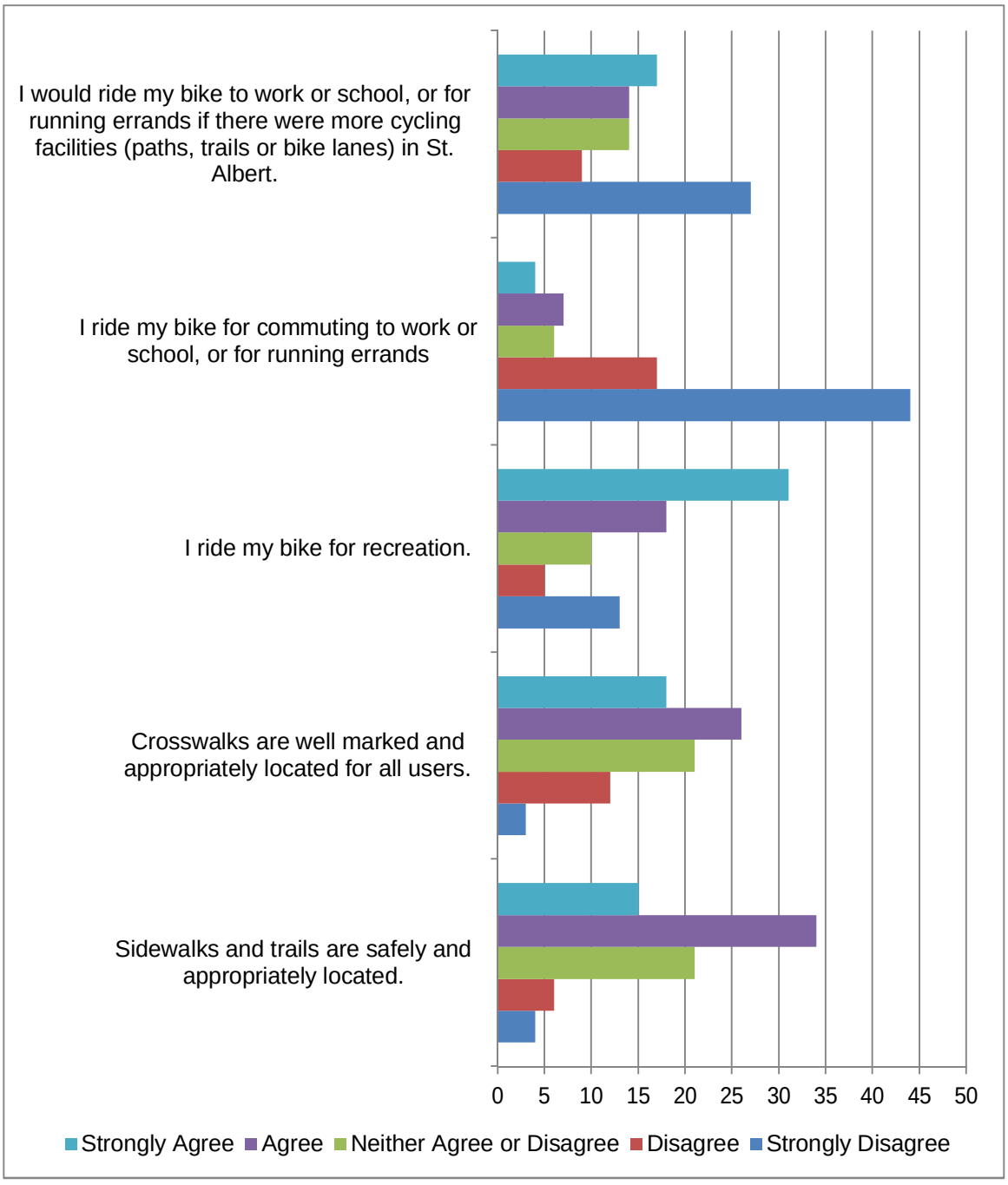
Economic Impact

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
The transportation network needs to be improved to attract more commercial and industrial development.	39	51	59	60	33
Maintenance of existing roads should be an economic priority.	26	35	71	72	38
Public transit should be an economic priority.	56	47	49	43	46
Cycling and pedestrian routes should be an economic priority.	53	27	32	44	83
New roads should be an economic priority.	150	40	30	12	17


New roads should be an economic priority.
Cycling and pedestrian routes should be an economic priority.
Public transit should be an economic priority.
Maintenance of existing roads should be an economic priority.
The transportation network needs to be improved to attract more commercial and industrial development.
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Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

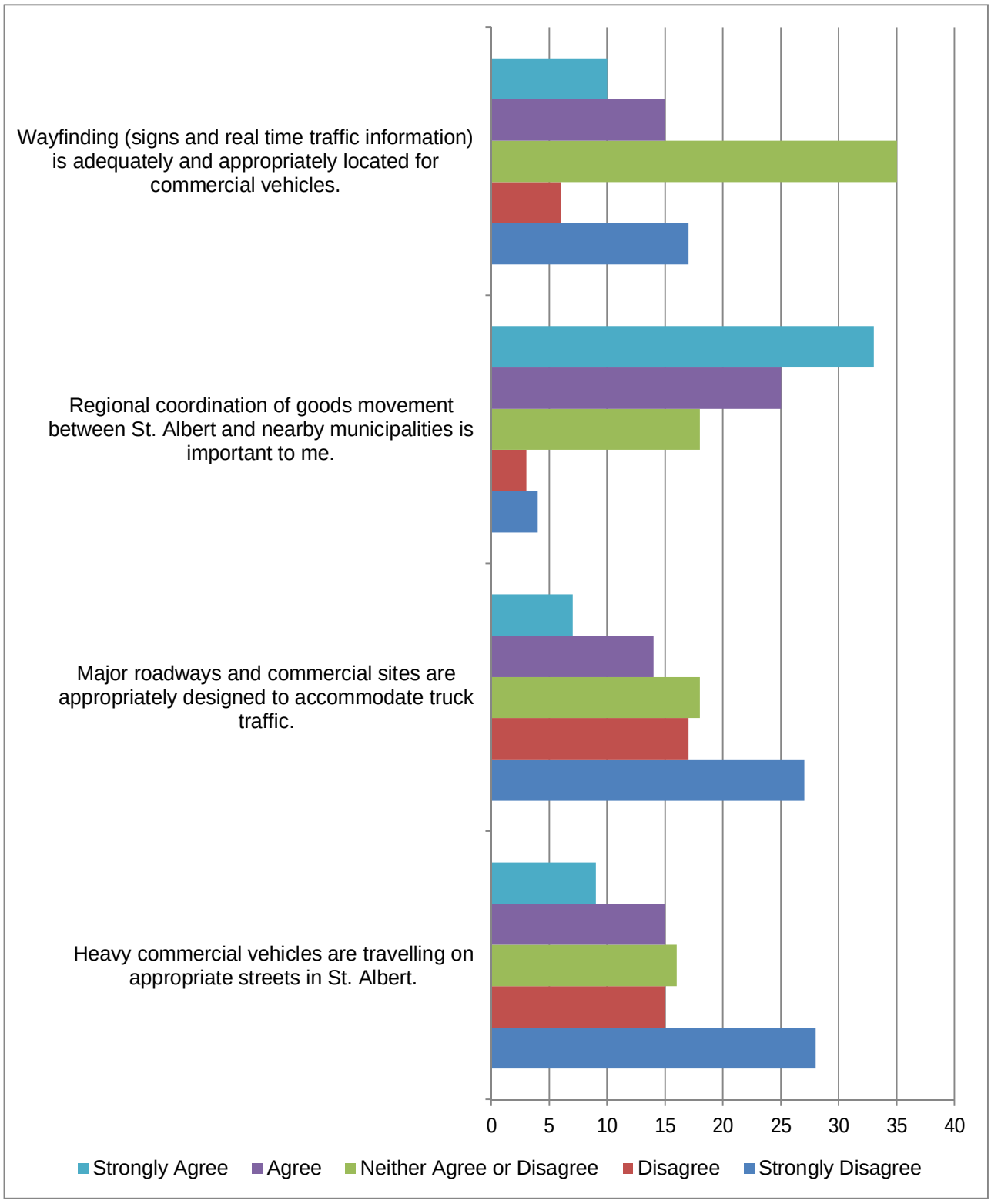
Active Transportation

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Sidewalks and trails are safely and appropriately located.	4	6	21	34	15
Crosswalks are well marked and appropriately located for all users.	3	12	21	26	18
I ride my bike for recreation.	13	5	10	18	31
I ride my bike for commuting to work or school, or for running errands	44	17	6	7	4
I would ride my bike to work or school, or for running errands if there were more cycling facilities (paths, trails or bike lanes) in St. Albert.	27	9	14	14	17


I would ride my bike to work or school, or for running errands if there were more cycling facilities (paths, trails or bike lanes) in St. Albert.
I ride my bike for commuting to work or school, or for running errands
I ride my bike for recreation.
Crosswalks are well marked and appropriately located for all users.
Sidewalks and trails are safely and appropriately located.
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Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

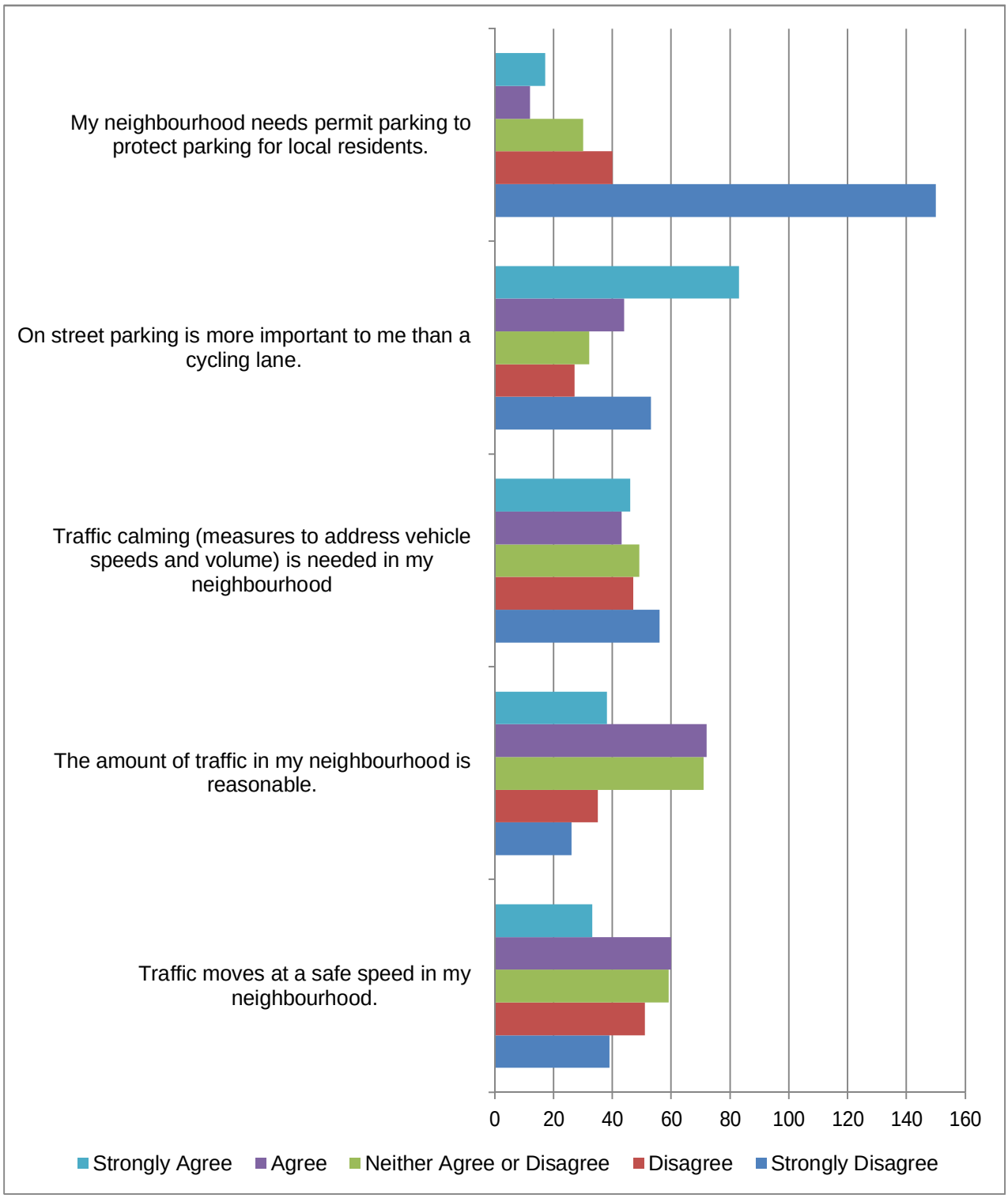
Commercial Goods Movement

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Heavy commercial vehicles are travelling on appropriate streets in St. Albert.	28	15	16	15	9
Major roadways and commercial sites are appropriately designed to accommodate truck traffic.	27	17	18	14	7
Regional coordination of goods movement between St. Albert and nearby municipalities is important to me.	4	3	18	25	33
Wayfinding (signs and real time traffic information) is adequately and appropriately located for commercial vehicles.	17	6	35	15	10


Wayfinding (signs and real time traffic information) is adequately and appropriately located for commercial vehicles.
Regional coordination of goods movement between St. Albert and nearby municipalities is important to me.
Major roadways and commercial sites are appropriately designed to accommodate truck traffic.
Heavy commercial vehicles are travelling on appropriate streets in St. Albert.
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Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

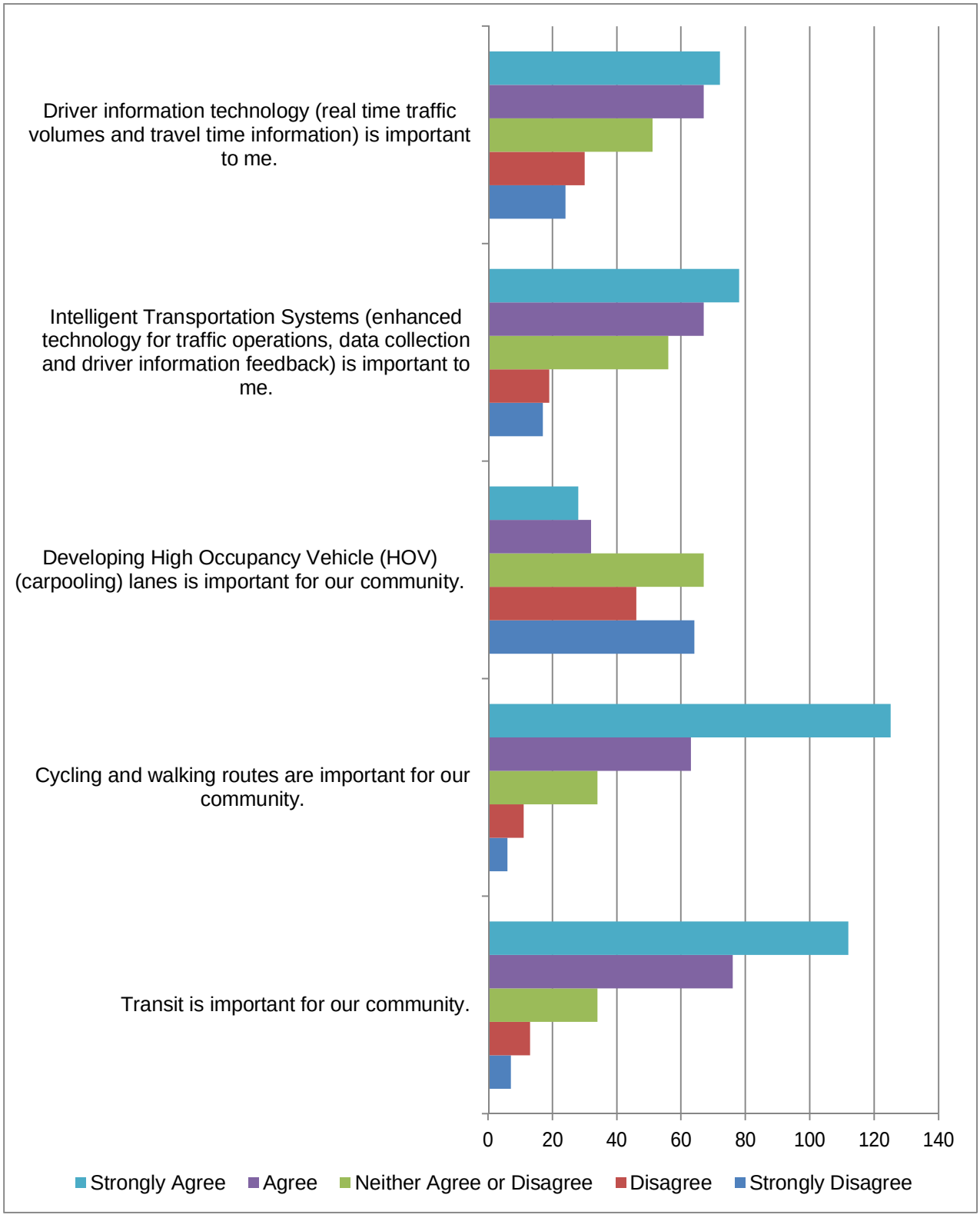
Neighbourhood Streets

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Traffic moves at a safe speed in my neighbourhood.	39	51	59	60	33
The amount of traffic in my neighbourhood is reasonable.	26	35	71	72	38
Traffic calming (measures to address vehicle speeds and volume) is needed in my neighbourhood	56	47	49	43	46
On street parking is more important to me than a cycling lane.	53	27	32	44	83
My neighbourhood needs permit parking to protect parking for local residents.	150	40	30	12	17


My neighbourhood needs permit parking to protect parking for local residents.
On street parking is more important to me than a cycling lane.
Traffic calming (measures to address vehicle speeds and volume) is needed in my neighbourhood
The amount of traffic in my neighbourhood is reasonable.
Traffic moves at a safe speed in my neighbourhood.
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Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

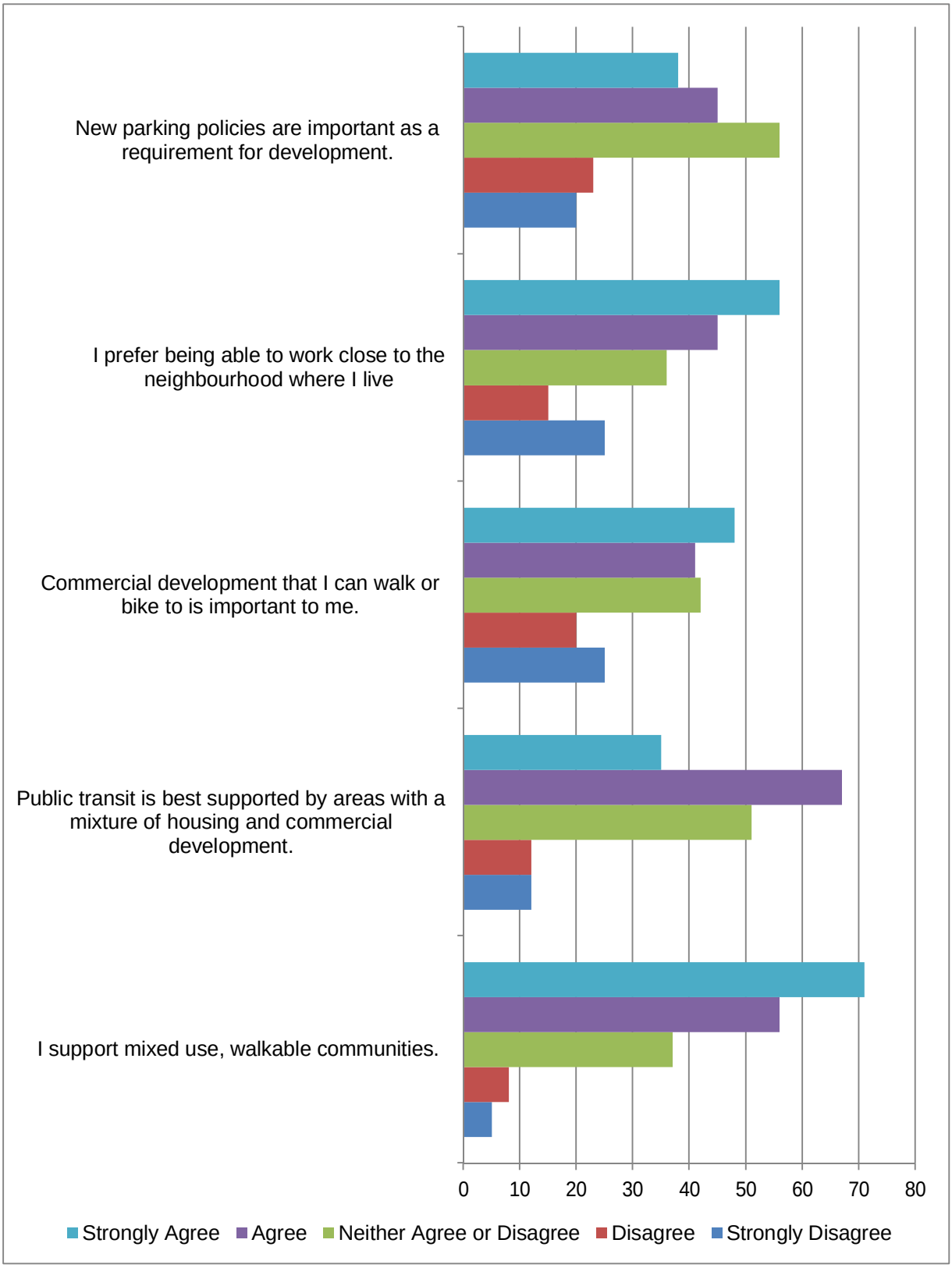
Sustainable Infrastructure

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Transit is important for our community.	7	13	34	76	112
Cycling and walking routes are important for our community.	6	11	34	63	125
Developing High Occupancy Vehicle (HOV) (carpooling) lanes is important for our community.	64	46	67	32	28
Intelligent Transportation Systems (enhanced technology for traffic operations, data collection and driver information feedback) is important to me.	17	19	56	67	78
Driver information technology (real time traffic volumes and travel time information) is important to me.	24	30	51	67	72


Driver information technology (real time traffic volumes and travel time information) is important to me.
Intelligent Transportation Systems (enhanced technology for traffic operations, data collection and driver information feedback) is important to me.
Developing High Occupancy Vehicle (HOV) (carpooling) lanes is important for our community.
Cycling and walking routes are important for our community.
Transit is important for our community.
0
20
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80
100
120
140
Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

Land Use

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I support mixed use, walkable communities.	5	8	37	56	71
Public transit is best supported by areas with a mixture of housing and commercial development.	12	12	51	67	35
Commercial development that I can walk or bike to is important to me.	25	20	42	41	48
I prefer being able to work close to the neighbourhood where I live	25	15	36	45	56
New parking policies are important as a requirement for development.	20	23	56	45	38


New parking policies are important as a requirement for development.
I prefer being able to work close to the neighbourhood where I live
Commercial development that I can walk or bike to is important to me.
Public transit is best supported by areas with a mixture of housing and commercial development.
I support mixed use, walkable communities.
0
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70
80
Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

4 Stakeholder Workshops

A total of three stakeholder workshops were held over the course of the project. Each workshop was a full day event, and brought together St. Albert administration (Engineering, Planning, Family and Community Support Services, Recreation and Parks), the consultant team, regional partners (including the City of Edmonton, Sturgeon County, Alberta Health Services, Alberta Parks, and the Town of Morinville), and representatives of a variety of organizations within St. Albert, including RCMP, St. Albert Fire, St. Albert Transitions (representing people with disabilities and developmental delays), St. Albert and District Historical Society, and the St. Albert Environmental Advisory Committee.

4.1 WORKSHOP 1 - VISIONING

Workshop 1 took place on February 26, 2015. The purpose of the first workshop was to develop principles and priorities for a transportation framework in a way that creates long term support for transportation planning and related services to meet or exceed community expectations. The objectives of the workshop were for the members of the workshop to:

- Gain a solid understanding of the purpose and intended outcomes for the Transportation Master Planning process.
- Identify the broad values that reflect the importance of Transportation Planning to the organization each member represents and create an overarching vision based on these values.
- Review Guiding Principles from other jurisdictions and draft a set of Guiding Principles for Transportation planning.
- Review the results of consultation completed to date with a view to identifying the emerging themes.
- Review and recommend priority strategies for each Guiding Principle.
- Based on the principles and strategies review sample policies and make recommendations for an intended outcome as a result of the TMP to the City.

The workshop identified sample transportation planning values and guiding principles from other similar agencies. A review of the priority strategies from the MetroQuest online tool was included, and a consensus building exercise was completed to identify the recommended priority strategies for the City of St. Albert TMP.

The discussion from this workshop were used by the TMP team to develop a vision, set of guiding principles and ultimately policies for the updated TMP. A draft version of this policy was available for review at the second workshop.

Attendees from the first workshop are summarized in Table 4-1.

Table 4-1
Workshop 1 Attendees

Name	Organization	Name	Organization
Dragan Sikanja	Alberta Health Services (Environmental Public Health)	Will Steblyk	City of St. Albert (Transit)
Carolyn Sherstone	Associated Engineering (TMP Consulting Team)	Dean Schick	City of St. Albert (Transportation)
Kent Eklund	Associated Engineering (TMP Consulting Team)	Bill Marsh	Environmental Advisory Committee
Monique Kealey	Associated Engineering (TMP Consulting Team)	Tanya Doran	Environmental Advisory Committee/ City of St. Albert
Howaida Hassan	City of Edmonton (Transportation Planning)	Jody Mathon	Heritage Lakes Community Association
Kelly McConnell	City of St. Albert (Community Recreation)	Shree Shinde	MMM (TMP Consulting Team)
Sean McRitchie	City of St. Albert (Economic Development)	Carolyn Cameron	RCMP
Meghan Myers	City of St. Albert (Environment)	Niki Borden	RCMP
Mike Mellross	City of St. Albert (Environment)	Lynda Moffat	St. Albert and District Chamber of Commerce
Bernd Gretzinger	City of St. Albert (Fire)	Conor Coney	Sturgeon County
Eduorado Sosa	City of St. Albert (Infrastructure)	Kathy Porter	Summit Environmental (TMP Consulting Team)
Jim Dinwoodie	City of St. Albert (Infrastructure, Roads and Sidewalks)	Debbie Oyarzun	Town of Morinville
Margo Brenneis	City of St. Albert (Parks Planning and Capital Projects)	Heather Richards	Transitions
Lenore Mitchell	City of St. Albert (Planning)	Paul Fujishige	Transitions

4.2 WORKSHOP 2 – INTEGRATED LAND USE/TRANSPORTATION PLANNING

The second workshop took place on May 28, 2015. The objectives of this workshop were to:

- Examine preliminary transportation system options (road network, transit and active,
- transportation) developed by technical team,
- Develop additional options for the road network, transit and active transportation (considering information from public consultation and surveys),
- Confirm the Sustainable Transportation guiding principles (as drafted in the previous session), and
- Develop management objectives for all aspects of the TMP.

The workshop included a presentation of existing plans which could impact the TMP. These plans included existing land use plans in St. Albert, the outcomes from the 2009 TMP, the Capital Region Integrated Transportation Master Plan, St. Albert LRT Plan, St. Albert Transit Long Term Department Plan, Recreation Master Plan, Safe Journeys to School and Villeneuve Road Study.

Outcomes from field assessments, the MetroQuest online engagement, Household Travel Survey and Intercept Survey were presented and discussed with attendees. The workshop attendees worked together in groups to review the plans (roads, active transportation, transit and goods movement) developed to this stage in the project, identify priorities, infrastructure requirements and discuss how the final plan could best incorporate the data collected. Attendees from Workshop 2 are included in Table 4-2.

Table 4-2
Workshop 2 Attendees

Name	Organization	Name	Organization
Dragan Sikanja	Alberta Health Services	Emilee Neilson	City of St. Albert (FCSS)
Carolyn Sherstone	Associated Engineering (TMP Consulting Team)	Adryan Slaght	City of St. Albert (Planning)
Kathy Porter	Associated Engineering (TMP Consulting Team)	Lenore Mitchell	City of St. Albert (Planning)
Kent Eklund	Associated Engineering (TMP Consulting Team)	Bob McDonald	City of St. Albert (Transit)
Monique Kealey	Associated Engineering (TMP Consulting Team)	Will Steblyk	City of St. Albert (Transit)
Howaida Hassan	City of Edmonton	Dean Schick	City of St. Albert (Transportation)
Sean McRitchie	City of St. Albert (Economic Development)	Bill Marsh	Environmental Advisory Committee
Kate Polkovsky	City of St. Albert (Engineering)	Patrick G. Deoux	MMM (TMP Consulting Team)
Meghan Myers	City of St. Albert (Engineering)	Robert Lema	St. Albert and District Historical Society
Mike Mellross	City of St. Albert (Environment)	Kristina Peters	Sturgeon County

4.3 WORKSHOP 3 – REFINE TMP ELEMENTS

The third workshop took place on August 28, 2015. The purpose of the final workshop was to use the accumulated knowledge from the stakeholders and consultation to finalize the physical plans developed for the TMP, finalize the policy framework, and develop the Action Plan.

The workshop began with a review of the material presented to the public at the first open house. Additional information from the surveys, particularly the household and intercept survey, was presented alongside the proposed plans and final revisions were completed with input from the stakeholders.

After review of the plans, the stakeholders broke out into groups, and using the guiding principles as a guideline, an action plan for the TMP was developed along with timelines for implementation.

A summary of the attendees from the third workshop is included in Table 4-3.

Table 4-3
Workshop 3 Attendees

Name	Organization	Name	Organization
Leah Arnason	Alberta Parks	Travis Peter	City of St. Albert (Smart City)
Carolyn Skoworodko	Associated Engineering (TMP Consulting Team)	Will Steblyk	City of St. Albert (Transit)
Monique Kealey	Associated Engineering (TMP Consulting Team)	Bob McDonald	City of St. Albert (Transit)
Kent Eklund	Associated Engineering (TMP Consulting Team)	Bill Marsh	Environmental Action Committee
Kathy Porter	Associated Engineering (TMP Consulting Team)	Tanya Doran	Environmental Action Committee
Sudip Barua	City of St. Albert (Engineering)	Karl Tracksdorf	MMM (TMP Consulting Team)
Emilee Neilson	City of St. Albert (FCSS)	Carolyn Cameron	RCMP
Bernd Gretzinger	City of St. Albert (Fire)	David Becker	Sturgeon County
Margo Brenneis	City of St. Albert (Parks Planning and Capital Projects)	Paul Fujishige	Transitions
Adryan Slaght	City of St. Albert (Planning)		

5 Open Houses

The project team hosted two open houses, the first on June 16, 2015 and the second on September 24, 2015. Each open house was hosted in a similar format, with materials presented on boards and staff available to discuss opportunities and concerns with the public who visited. The materials from the open houses, including copies of the presentation boards and comment forms are included on the following pages.

The open houses provide project staff the opportunity to interact directly with the public, confirm information obtained through other data collection methods and provide updates on the progress of the project to the public.

Welcome to the Transportation Master Plan Open House

Guiding Principles and System Options

Please sign in and pickup a comment form

Take your time to review the presentation boards.

Staff are available to answer any questions you may have and to explain the information in more detail.

We value your feedback and look forward to discussing the project with you

Open House 1 Materials

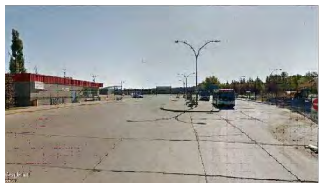
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Transportation Master Plan Update

The Transportation Master Plan (TMP) is about the many different ways we move around.





The goal of the TMP is to support St. Albert's Strategic Plan and give guidance to manage growth through effective and innovative approaches to support the safe movement of goods and people.

Draft Vision Statement

St. Albert's vision for transportation considers the diverse needs of our population with many ways to move around in a safe, efficient, affordable, and accessible manner, that fosters economic prosperity, sustains the beauty of our environment and culture and provides all residents with the sense that St. Albert is truly a livable community.

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Purpose of Open House

This Open House is intended to be used as a forum to share feedback received to date related to our citywide transportation network, the TMP draft vision and principles, and for attendees to provide further input on priorities.

We want to tell you what we have heard already, and see what else you can tell us.

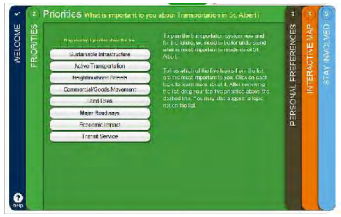
What else have we been doing?

- Villeneuve Road alignment study and public consultation
- Meeting with City Staff, community stakeholders and regional stakeholders
- Household travel survey
- Roadside intercept survey
- MetroQuest Online Feedback Assessment
- Aligning the TMP with existing City Master Plans and Strategies

What are we looking for today?

- Feedback on Draft Guiding Principles
- Feedback on future road network, truck routes, and paths/sidewalk network.









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Draft Guiding Principles 1 & 2

Principle 1: St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation.

Relates to St. Albert Strategic Plan Outcome: *Cultivate a Historic, Creative and Active Community*

Management Objectives

- St. Albert's transportation system will support appropriate land uses with access to employment and amenities via cycling, walking and transit in addition to automobile access
- St. Albert will identify levels of service that protect the right road for the right purpose in the community
- St. Albert's transportation network will support accessible and affordable transit.

What might this look like?

- Sidewalks and multiuse trails that provide access to schools, jobs and shops and transit links
- Heavy traffic will be directed to the "right" roads
- Some roads prioritize cars, others prioritize transit, pedestrians and cyclists.

Principle 2: St. Albert has a strategic approach to sustainable transportation to serve our diverse population

Relates to St. Albert Strategic Plan Outcome: *Cultivate Sustainable Infrastructure and Services*

Management Objectives

- St. Albert's transportation system shall develop infrastructure to support transit facilities and services to provide a viable alternative to the private automobile
- St. Albert will maximize use of existing infrastructure
- St. Albert will support multi-modal transportation facilities
- St. Albert will use appropriate level of service criteria to identify required upgrades to existing roadways

What might this look like?

- Park and ride facilities for transit
- Intelligent Transportation Systems to help manage and distribute traffic
- Development of sidewalks and pathways
- Future redevelopment of St. Albert Trail

Draft Guiding Principles 3 & 4

Principle 3: St. Albert protects environmental health by creating opportunities for alternative transportation and maintaining the beauty of surrounding nature

Relates to St. Albert Strategic Plan Outcome: *Cultivate a Historic, Creative and Active Community* and *Cultivate a Green Community*

Management Objectives

- St. Albert will minimize impacts to green spaces and environmental reserves, including the Sturgeon River watershed.
- St. Albert will strive to reduce harmful emissions including greenhouse gases and local air pollutants.
- St. Albert will support the development of alternative forms of transportation through increasing transit ridership and pedestrian and cycling options.
- St. Albert will use sustainable practices when upgrading, maintaining and constructing new transportation infrastructure.

What might this look like?

- Increase the percentage of residents using other alternative modes over vehicles to get around
- Capturing of vehicle emission data and targets of reduction
- Network capital construction prioritized for active modes or higher vehicle occupancy and transit use

Principle 4: St. Albert's transportation system will support economic prosperity

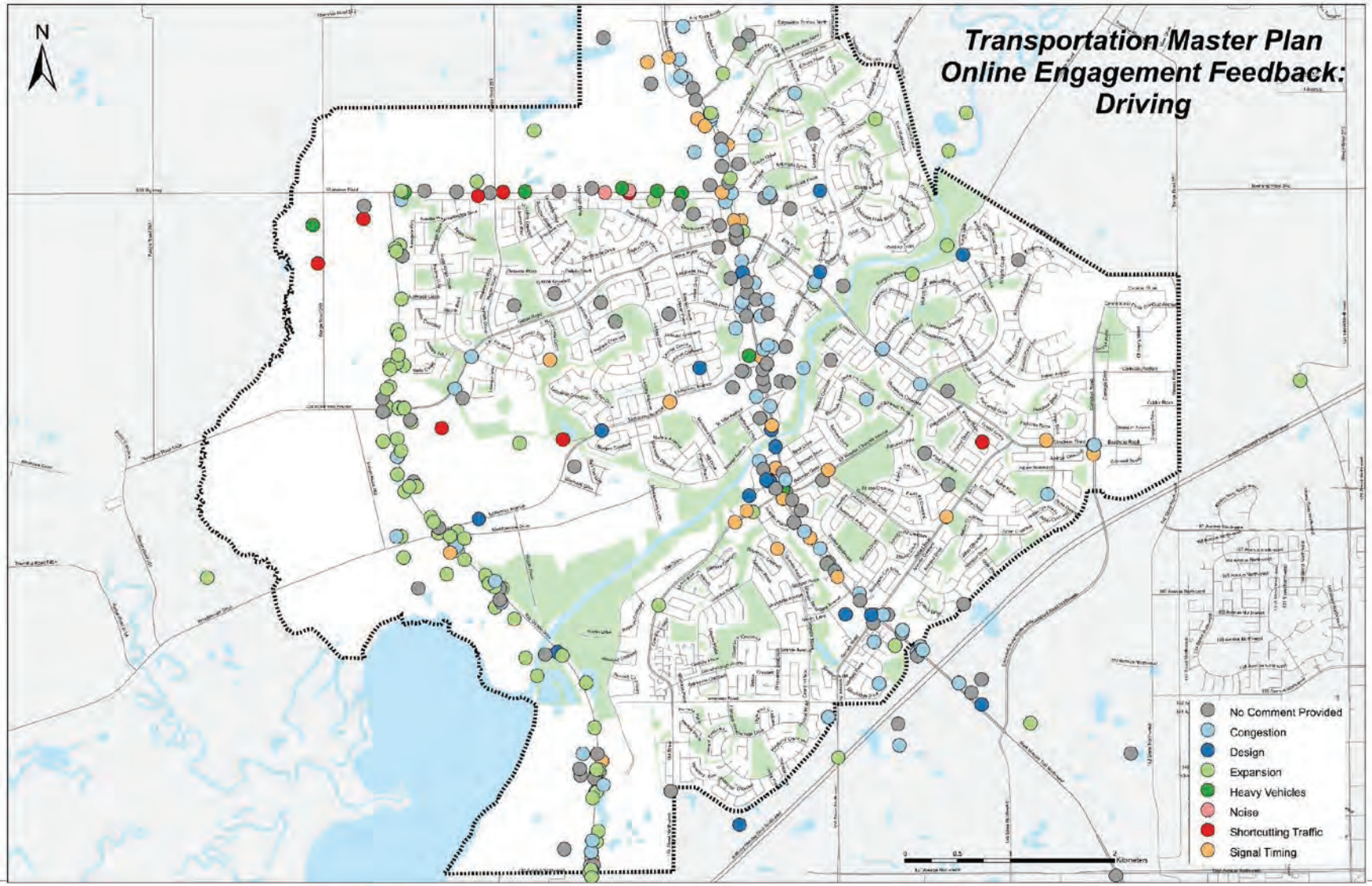
Relates to St. Albert Strategic Plan Outcome: *Cultivate Economic Prosperity*

Management Objectives

- St. Albert's transportation network will integrate with the regional transportation network for roads, transit and active transportation
- St. Albert's will provide truck routes that protect access to key employment areas, while protecting neighbourhood streets for neighbourhood use.
- St. Albert will strive to develop new roads and intersections that prioritize safety for all users and balance with efficiency and accessibility

What might this look like?

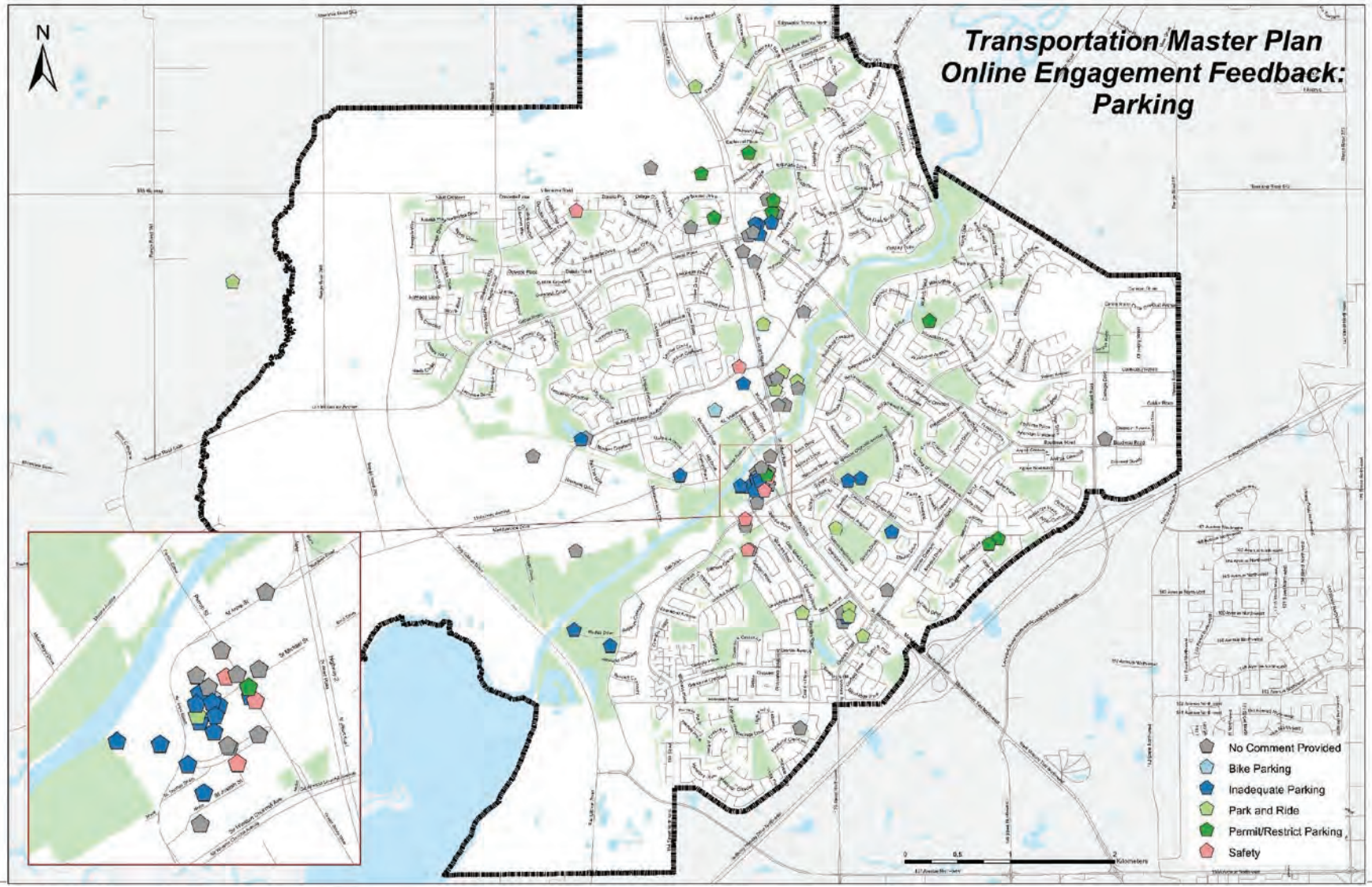
- Working with surrounding municipalities to connect to regional roads
- Change the truck route system to differentiate between pick up and delivery routes and large commercial vehicle routes
- Establish partnerships to help fund needed roadways and transit upgrades
- Collaborate with surrounding municipalities to connection regional roads and trails



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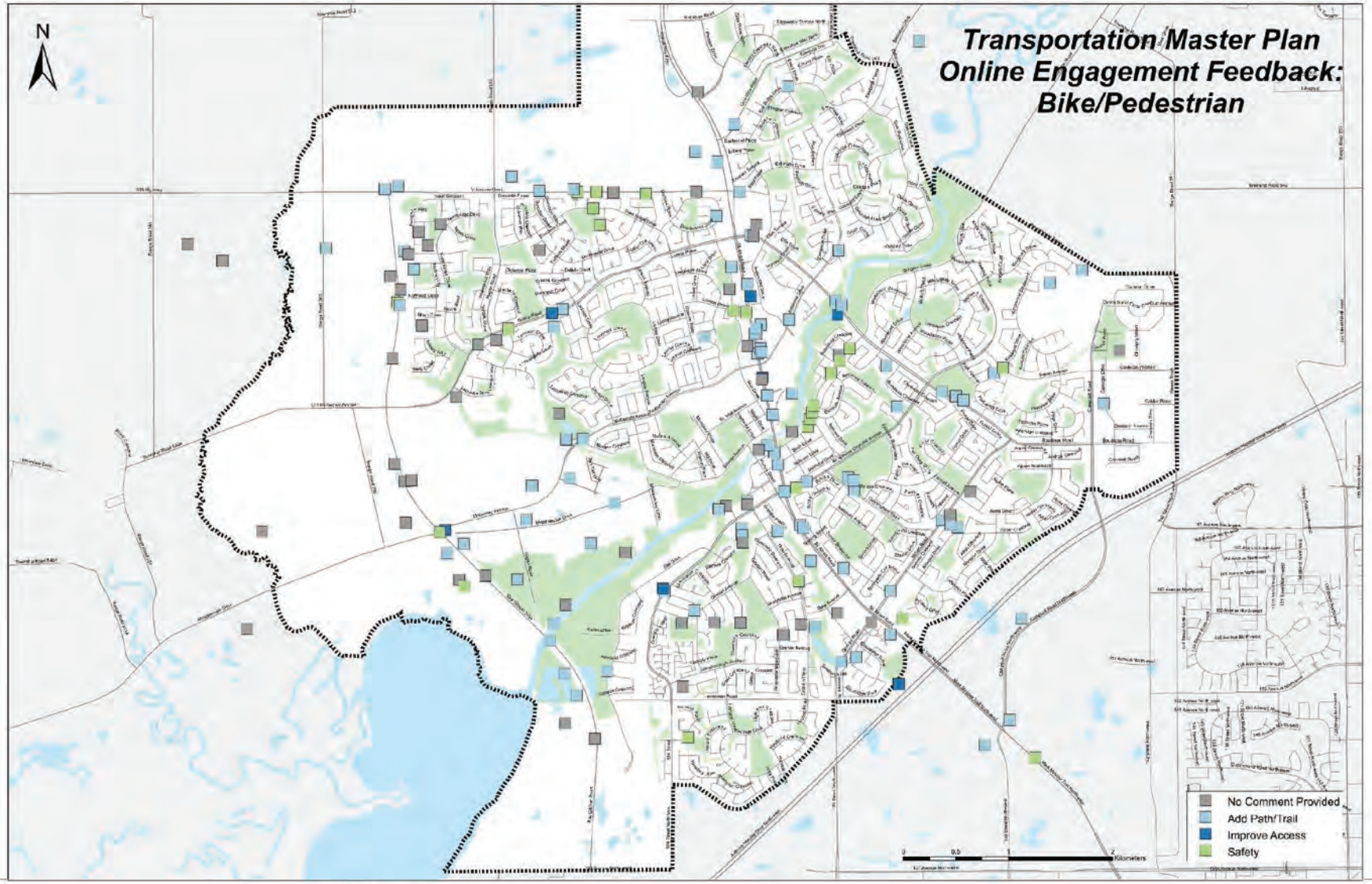
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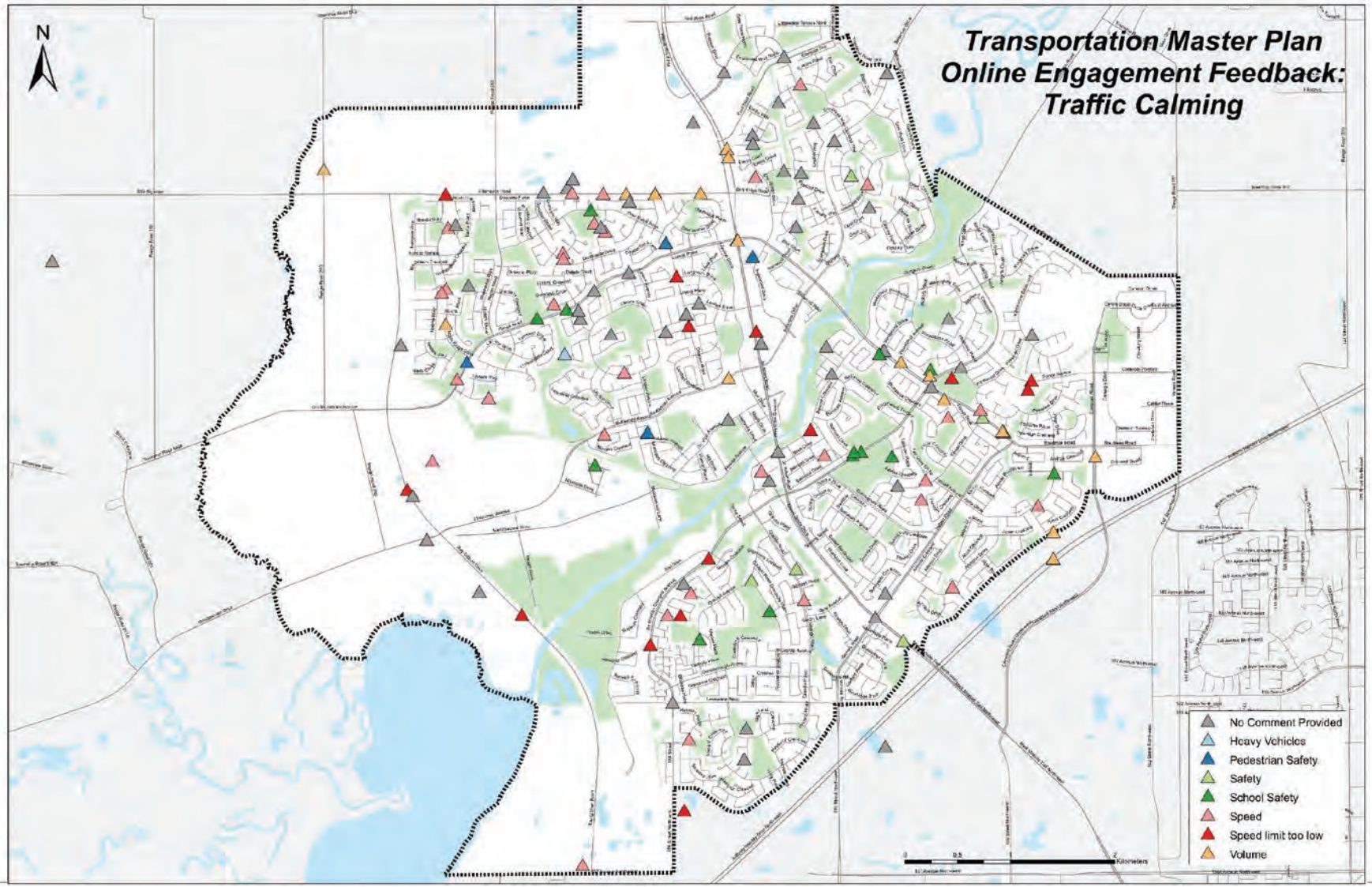
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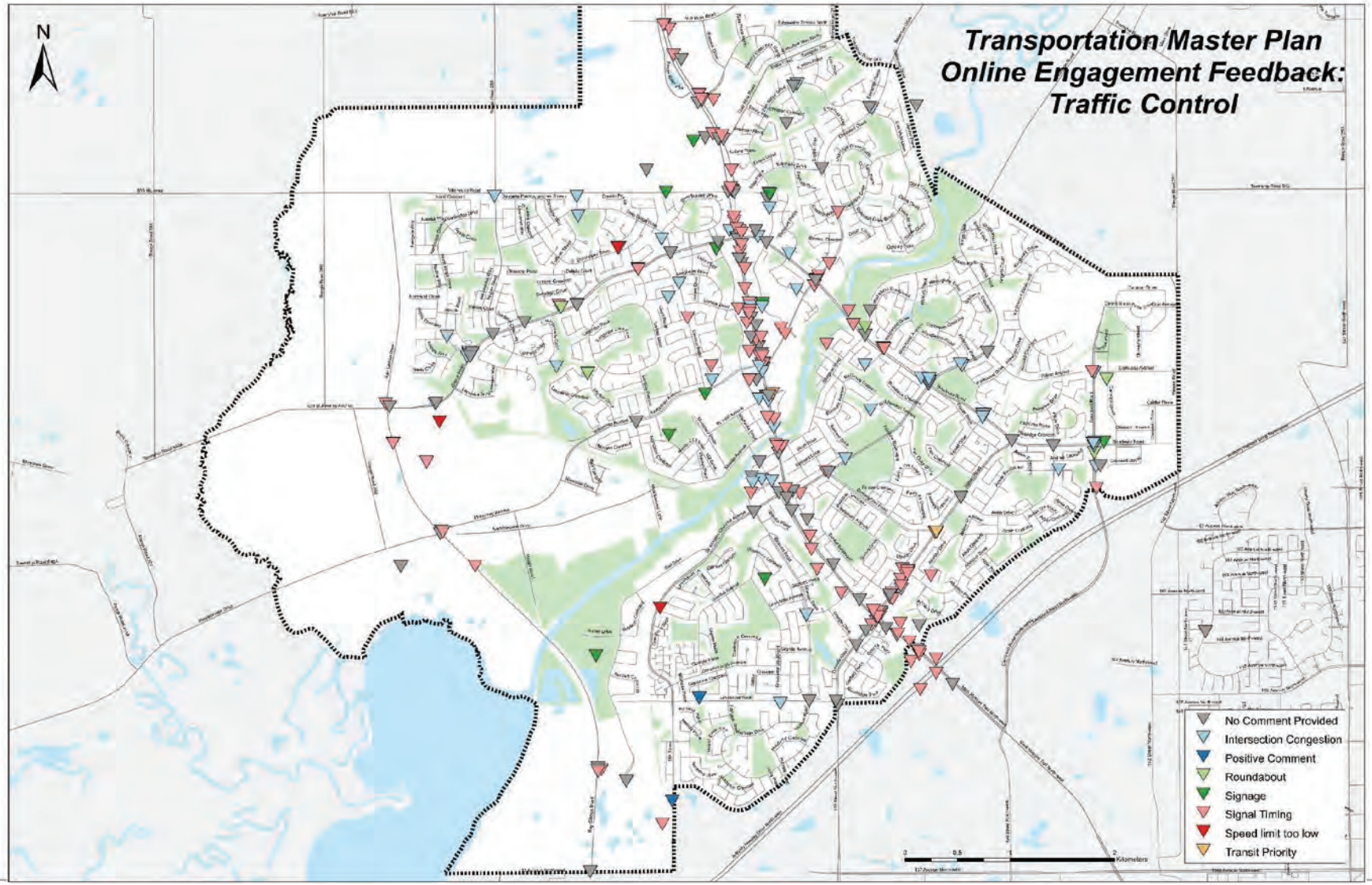
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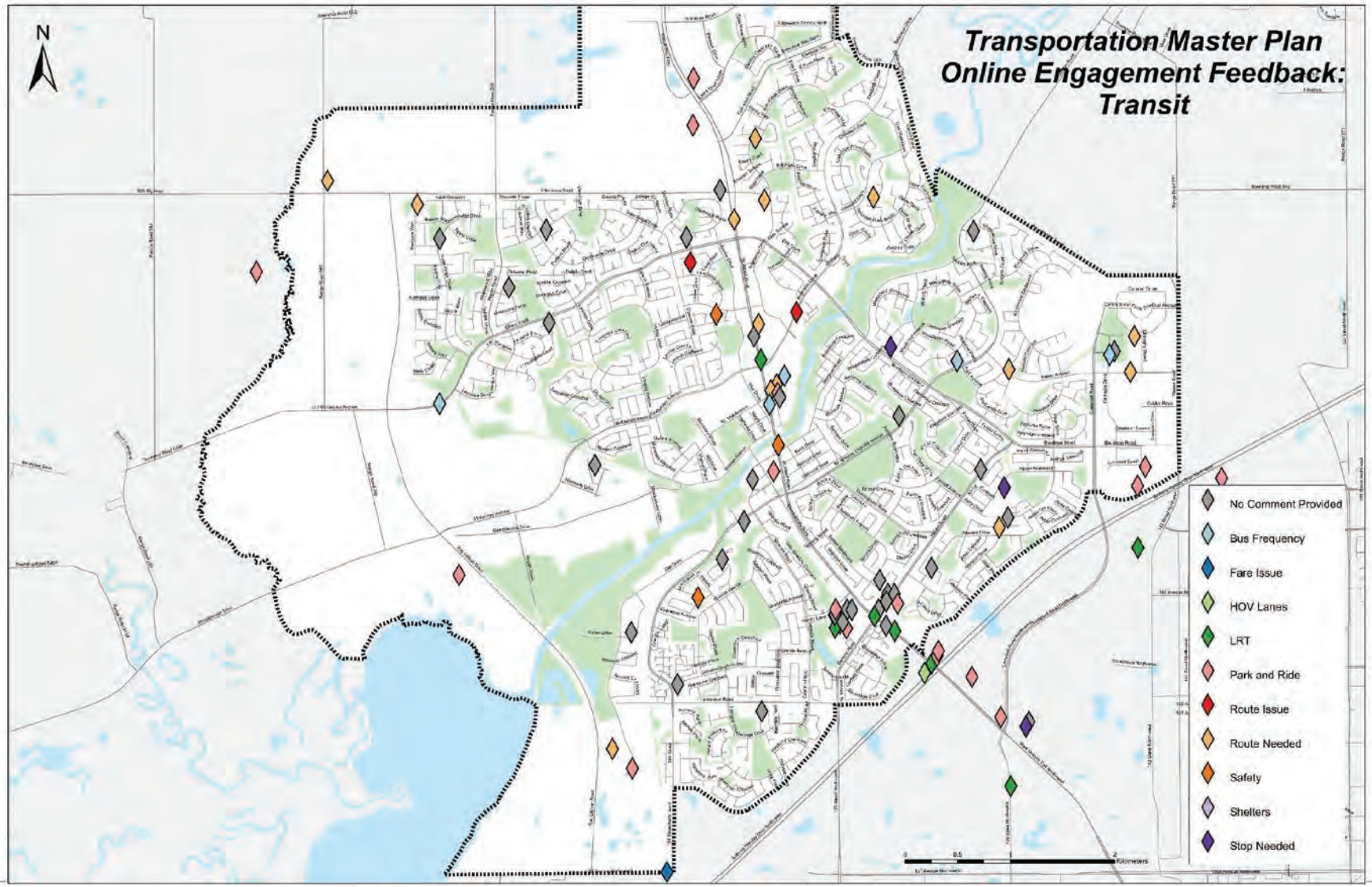
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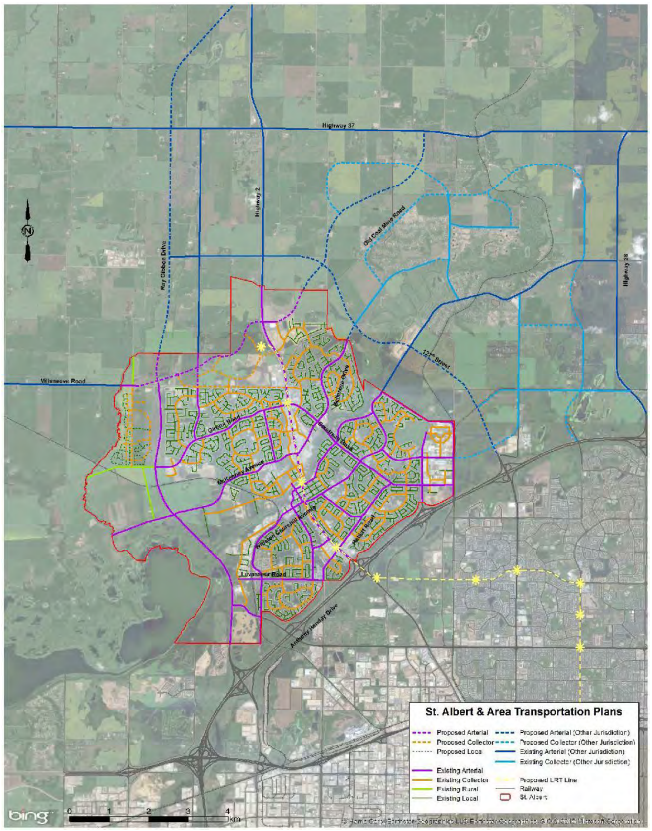


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Future Road Network



What have we heard?

Key Issues:

- Congestion on major roadways
- Connections to Sturgeon County and Edmonton
- St. Albert Trail carries high volumes of regional traffic but must service local traffic as well
- Short cutting and traffic volumes on neighbourhood streets
- Access to transit
- Safety is important for all users

Desired Outcomes:

- A new hierarchy of streets to properly evaluate how each road functions according to a set purpose and varying level of priority for multiple road user types
- Priority of completion of regional connections such as 127 Street and Ray Gibbon Drive
- Connections to important regional roads like 127 Street and Ray Gibbon Drive
- Future transformation of St. Albert Trail

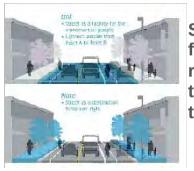
Best Practices

Application of Road diets



Former 4 lane road, converted to 2 lanes with centre left turn lane and bike lanes.

Complete Streets Guidelines



Some roads are links and get us from one place to another, some roads are places where we spend time. What is the right design for the right road?

What do you think?

1. What are your key issues for the future of St. Albert's roads?
2. What is the number one priority for St. Albert's roads?
3. What do you think St. Albert Trail should look like in 10 years? 25 years?

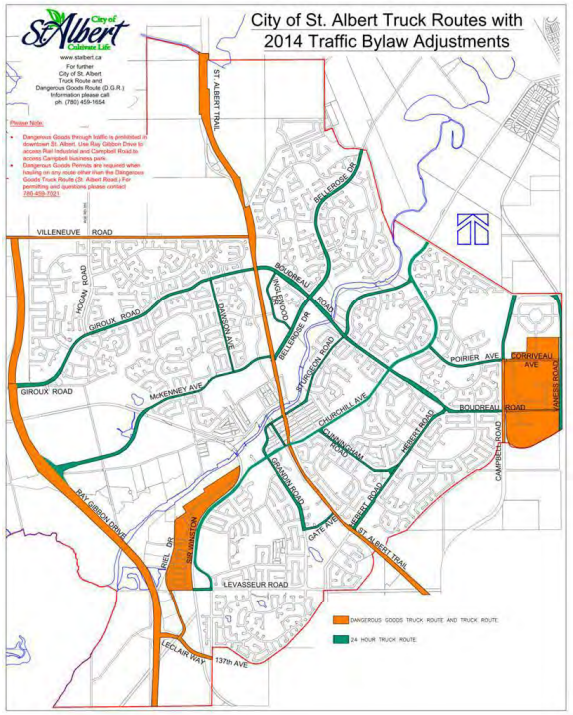
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Future Truck Routes

Current Truck Routes



What have we heard?

Key Issues:

- Trucks are not travelling on appropriate streets
- Regional coordination and connectivity is important
- Access to employment lands
- Truck network may be overdeveloped

Desired Outcomes:

- Road network hierarchy for heavy goods
- Coordination with land use planning
- Intelligent Transportation Systems
- Incident Management Plans
- Time restricted deliveries

Best Practices

Implementation of a Goods Movement Strategy

Objectives:

- *Improve roadway operations and maintain practices*
- *Mitigate community, environmental and safety impacts*
- *Increase transportation network efficiency*
- *Improve network planning and forecasting*
- *Improve regional and regulatory coordination, communication and advocacy*
- *Improve on-road communication and way-finding for truck drivers*
- *Explore funding mechanisms to implement network improvements*

Implementation of a Pickup and Delivery Route Bylaw

Pickup and Delivery Vehicle Routes

- Identifies Pickup and Delivery Routes (major roadways)
- Limits heavy vehicles to those routes unless the truck making a direct pickup or delivery, leaving its place of storage, or going for repairs.

What do you think?

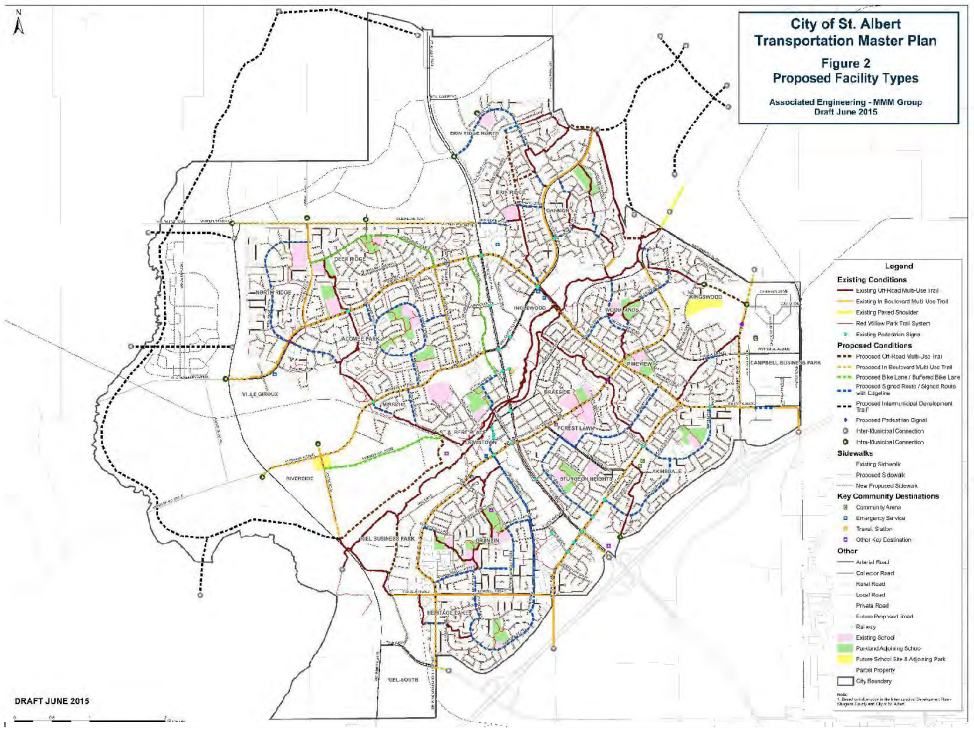
1.What are the key issues for good's movement and truck routes in St. Albert?
2. How would you like to see the truck routes change?

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Active Transportation



What have we heard?

Key Issues:

- Cycling is primarily recreational and infrastructure is not in place for commuter use
- More would cycle if better facilities were available
- Major roads are not safe for biking

Desired Outcomes:

- Walkable communities
- Connected network of sidewalks and multiuse trails off the road for cycling and walking
- Sidewalks on St. Albert Trail
- Regional trail connectivity

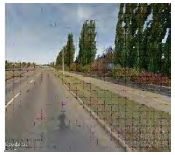
What do you think?

1. **What kind of active transportation development do you want in St. Albert? Do you want bike lanes? Trails along the road? Recreational trails?**
2. **What type of regional active transportation connections do you want?**

Best Practices



Divided Roadway Multiuse Trail



Divided Roadway Multiuse Trail



Recreational Trails

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What's Next?

Thank you for your feedback. This open house has presented a summary of the work completed to date on the Transportation Master Plan. We have developed the draft vision, guidelines and network plans through your feedback and the feedback of other stakeholders in and around the community. Let us know what you think!

You have been provided with a comment form that asks for specific and general feedback about what you have seen today. Please fill this form out and leave it here with us, or return it to the City by July 3, 2015.

All feedback received will be reviewed an integrated into the Transportation Master Plan final vision, guidelines and network plans. There will be a second open house in the fall to review the recommendations of the TMP.

Open House #2
September 10, 2015, 4:30 to 8:00pm, Royal Canadian Legion Branch No 271, 6 Tache Street, St. Albert

For more information, or to return your comment form, please contact:

Dean Schick, C.E.T
Transportation Manager | Engineering Services
P: 780.459.1649
F: 780.458.1974
E: dschick@stalbert.ca

For more information on the Transportation Master Plan, please visit:
http://www.stalbert.ca/getting-around/roads/transportation-master-plan

Transportation Master Plan
Open House #1
Comment Form

Thank you for taking the time to attend the open house. You are encouraged to provide feedback regarding this session by filling out this comment sheet.

This is the first open house related to the Transportation Master Plan (TMP). The Open House is intended to be used as a forum to share feedback received to date related to our citywide transportation network, the TMP draft vision and principles, and for attendees to provide further input on priorities.

There will be a second open house in September to review the recommendations on the TMP.

Open House #2—September 24, 2015, 4:00 to 8:00pm, Royal Canadian Legion Branch No 271, 6 Tache Street, St. Albert.

Please use this space to provide any general comments you have on the information presented in today's open house. There are more specific questions on the following pages.

Transportation Master Plan
Open House #1
Comment Form—Guiding Principles

For each of the guiding principles, please check the box that best describes how this management objective reflects your priorities and vision for St. Albert.

Principle 1: St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation.

Do the following management objectives reflect your priorities and vision for St. Albert?

	Agree	Neutral	Disagree
St. Albert's transportation system will support appropriate land uses with access to employment and amenities via cycling, walking and transit in addition to automobile access.	☐	☐	☐
St. Albert will identify levels of service that protect the right road for the right purpose in the community.	☐	☐	☐
St. Albert's transportation network will support accessible and affordable transit..	☐	☐	☐

Principle 2: St. Albert has a strategic approach to sustainable transportation to serve our diverse population.

Do the following management objectives reflect your priorities and vision for St. Albert?

	Agree	Neutral	Disagree
St. Albert's transportation system shall develop infrastructure to support transit facilities and services to provide a viable alternative to the private automobile	☐	☐	☐
St. Albert will maximize use of existing infrastructure.	☐	☐	☐
St. Albert will support multi-modal transportation	☐	☐	☐
St. Albert will use appropriate level of service criteria to identify required upgrades to existing roadways.	☐	☐	☐

Transportation Master Plan
Open House #1
Comment Form—Guiding Principles

For each of the guiding principles, please check the box that best describes how this management objective reflects your priorities and vision for St. Albert.

Principle 3: St. Albert protects environmental health by creating opportunities for alternative transportation and maintaining the beauty of surrounding nature.

Do the following management objectives reflect your priorities and vision for St. Albert?

	Agree	Neutral	Disagree
St. Albert will minimize impacts to green spaces and environmental resorts, including the Sturgeon River Watershed.	☐	☐	☐
St. Albert will strive to reduce harmful emissions including greenhouse gases and local air pollutants.	☐	☐	☐
St. Albert will support the development of alternative forms of transportation through increasing transit ridership and pedestrian and cycling options.	☐	☐	☐
St. Albert will use sustainable practices when upgrading, maintaining and constructing new transportation infrastructure.	☐	☐	☐

Principle 4: St. Albert's transportation system will support economic prosperity.

Do the following management objectives reflect your priorities and vision for St. Albert?

	Agree	Neutral	Disagree
St. Albert's transportation network will integrate with the regional transportation network for roads, transit and active transportation.	☐	☐	☐
St. Albert will provide truck routes that protect access to key employment areas, while protecting neighbourhood streets for neighbourhood use.	☐	☐	☐
St. Albert will strive to develop new roads and intersections that prioritize safety for all users and balance with efficiency and accessibility.	☐	☐	☐

Transportation Master Plan
Open House #1
Comment Form—Network Plans

Please check the box that best describes how each of the following statements reflect your priorities and vision for St. Albert

Road Network

	Agree	Neutral	Disagree
The key issues identified match those that I have experienced/identified in St. Albert.	☐	☐	☐
The desired outcomes match those I have for St. Albert.	☐	☐	☐

Comments:

Truck Routes

	Agree	Neutral	Disagree
The key issues identified match those that I have experienced/identified in St. Albert.	☐	☐	☐
The desired outcomes match those I have for St. Albert.	☐	☐	☐

Comments:

Active Transportation

	Agree	Neutral	Disagree
The key issues identified match those that I have experienced/identified in St. Albert.	☐	☐	☐
The desired outcomes match those I have for St. Albert.	☐	☐	☐

Comments:

Transportation Master Plan
Open House #1
Comment Form

Thank you for taking the time to provide us with your feedback. Please use this space to let us know of any other comments you have.

Optional: Please provide your name and phone number or email if you would like to be contacted directly about future open houses for this project.

For more information, or to return your comment form, please contact:

Dean Schick, C.E.T
Transportation Manager | Engineering Services
P: 780.459.1649
F: 780.458.1974
E: dschick@stalbert.ca

For more information on the Transportation Master Plan, please visit:
http://www.stalbert.ca/getting-around/roads/transportation-master-plan

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Purpose of Open House

This is the final open house related to the Transportation Master Plan (TMP).

The Open House is intended to be used as a forum to share the plans we have developed for the final TMP.

We are presenting the TMP Action Plan and the final route maps for roads, active transportation (for biking and walking), transit and truck routes.

- Please review the Action Plan and let us know if you have other suggestions.
  On your comment form you can indicate when you think these action items should happen.
- Please review proposed maps and provide any comments you may have, either to staff at the open house directly, or on your comment form.

All feedback received will be reviewed and may be incorporated into the Transportation Master Plan final report.

Please return your comment form to a staff member today, or send it to the City by October 8, 2015.

For more information, or to return your comment form, please contact:

Dean Schick, C.E.T
Transportation Manager | Engineering Services
P: 780.459.1649
F: 780.458.1974
E: dschick@stalbert.ca

For more information on the Transportation Master Plan, please visit:
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Open House #2 Materials

Action Plan

Principle 1:
St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation.

Management Objectives
- St. Albert's transportation system supports appropriate land uses with access to employment and amenities via cycling, walking and transit in addition to vehicle access.
- St. Albert streets are identified for levels of service that protect the right road for the right purpose in the community
- St. Albert's transportation network supports accessible and affordable transit.

Short Term (within 3 years)
- Identify bus routes to connect with future Light Rail Transit
- Create a Complete Streets Policy for design and implementation
- Implement the active transportation plan with focus on closing existing gaps within the network and prioritize completion of short gaps
- Complete active transportation connections to community destinations, with a priority on family oriented destinations
- Update Pedestrian Crossing Control Guidelines in regards to pedestrian crossing warrant processes and criteria, control treatment, and operational standards for signalized pedestrian crossings.
- Develop Traffic Impact Assessment Guidelines for residential, commercial and industrial neighbourhoods that incorporate cycling and pedestrian impacts and manage projected traffic volumes to be appropriate with the design and function of the proposed road network
- Prioritize land development with higher densities and mixed uses in vicinity of major transit stations
- Develop a Movement of Goods and People Policy
- Develop neighbourhood traffic management guidelines (includes traffic calming)

Medium Term (3 - 10 years)
- Adjust land use policies to support transit oriented development around proposed future light rail transit stations
- Update engineering standards to guide implementation of the Complete Streets Policy
- Develop/enhance active transportation connections to trails along Sturgeon River
- Update engineering standards for sidewalks, pathways and transit access in new developments and for retrofit
- Incorporate Crime Prevention Through Environmental Design principles into active transportation planning
- Develop and prioritize a capital construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision
- Review/update transit fare policy to support affordability for users

Long Term (greater than 10 years)
- Implement higher densities and mixed uses around major transit stations

Principle 2:
St. Albert has a strategic approach to sustainable transportation to serve our diverse population.

Management Objectives
- St. Albert's transportation system infrastructure shall maximize use of existing infrastructure and focus new capital construction to support and prioritize transit services and facilities.
- St. Albert supports multi-modal transportation facilities
- St. Albert will use appropriate level of service criteria to identify and prioritize upgrades to the road network.

Short Term (within 3 years)
- Support the development of a park and ride facility at Campbell Road Transit Centre
  - Transit centers will have parking for bikes and kiss and ride facilities
- Protect the property needed for the Light Rail Transit
- Develop achievable mode split targets and perform scheduled updates and evaluations of levels and targets
- Allocate appropriate staff levels to respond to transportation inquiries from residents, maintain the traffic model, and to align with Capital Projects
- Provide dedicated staff to implement the active transportation plan and develop travel demand management programming
- Maintain and update wayfinding to key recreational and commercial amenities on bike trails
- Develop a comprehensive asset management strategy including a database resource to assess life-cycle costs of transportation infrastructure
- Maintain and utilize the City's Traffic Model to establish strategic priorities for the City's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build -out population of 112,000
- Create a Traffic Data Management Strategy
- Update the St. Albert Trail North-Arterial Corridor Management Plan
- Create and implement a public and stakeholder communication plan in relation to the Transportation Master Plan and its resulting strategic plan

Medium Term (3 - 10 years)
- Prepare a strategy to develop the north LRT Station which may include a transition from Park and Ride to a Transit Oriented Development
- Conduct feasibility study for Bus Rapid Transit/ priority bus lanes as a progression towards Light Rail Transit implementation
- Develop a functional plan for St. Albert Trail to support Light Rail Transit/Bus Rapid Transit, pedestrian travel (or to transform it to a Complete Street) and incorporate Transportation Demand Management principles
  - Complete an updated travel demand survey every 10 years
- Complete Transportation Demand Management Study for Downtown
- Identify and consider potential locations for infill development to maximize use of existing roadways
- Align planning, engineering, transit, operations and maintenance master plans, goals and policies
- Update the ten (10) year capital plan to align with TMP principles.

Action Plan

Principle 3:
St. Albert protects environmental health by creating opportunities for alternative transportation to maintain the beauty of surrounding nature.

Management Objectives
- St. Albert minimizes transportation and construction impacts to green spaces and environmental reserves, including the Sturgeon River watershed
- St. Albert achieves its targets to reduce harmful emissions including greenhouse gases and local air pollutants
- St. Albert prioritizes actions that will enhance alternative forms of transportation to increase transit ridership and pedestrian and cycling travel over private vehicle mode choice
- St. Albert uses sustainable practices when upgrading, maintaining and constructing new transportation infrastructure

Short Term (within 3 years)
- Create opportunities to incorporate active transportation and recreational uses in environmental reserve areas
- Set Green House Gas (and related performance indicators) targets related to transportation (includes data collection to measure these)
- Develop an Intelligent Transportation System Strategy to help manage traffic
- Incorporate the travel demand model as an on-going transportation planning and evaluation tool for new developments and network planning as they relate to environmental impacts through greenhouse gas emissions
- Advocate for higher orders of government to invest in all modes
- Partner with community leaders to achieve the TMP vision
- Develop Performance Measurement Framework to measure the success of the Transportation Master Plan

Medium Term (3 - 10 years)
- Shift funding priorities towards transit and active transportation
- Review the Transportation Association of Canada (TAC) Canadian Guide for Greener Roads (CGGR) and relate identifiable objectives of the CGGR with St. Albert policies and principles

Long Term (greater than 10 years)
- Achieve Green House Gas (and related performance indicators) targets related to transportation (includes data collection to measure these)

Principle 4:
St. Albert's transportation system supports economic prosperity.

Management Objectives
- St. Albert's transportation network is integrated with the regional transportation network for roads, transit and active transportation
- St. Albert clearly identifies truck routes to ensure accessibility to commercial and employment areas; while protecting the intended functionality of neighbourhoods and vulnerable road user priority network segments
- St. Albert develops new roads and intersections that prioritize safety for all users in balance with efficiency and accessibility

Short Term (within 3 years)
- Develop street classification definitions and define their intended functionality and level of service targets
- Work with regional partners to identify active transportation links (eg. Sturgeon County, Alberta Transportation, Alberta Environment and Parks, Alberta Health Services)
- Work with regional partners to develop an Emergency Measures Strategy (such as traffic signal pre-emption)
- Work with Capital Region Board to implement the Integrated Regional Transportation Master Plan
- Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive
- Advocate for construction of 127th Street between Anthony Henday and Highway 2
- Establish a tiered truck route system for Large Commercial Vehicles and Pick and Delivery Vehicles (includes sign changes, education, bylaw changes, helping residents understand purpose of roadways)
- Create guidelines and increase use of roundabouts in new development and look for opportunities to retro-fit completion to enhance network safety and efficiency
- Work with regional partners to improve regional transit services
- Develop an annual network screening program to identify high collision locations

Short Term (less than 3 years)
- Implement Safe Journeys to School strategies and maintain communication between stakeholders and public in relation to the program
- Develop Parking Management Policy
- Develop a St. Albert Traffic Safety Plan
- Develop Temporary Traffic Control/Special Event Management Policy
- Establish an in-service safety review program for high collision locations

Medium Term (3 - 10 years)
- Develop accessibility guidelines to accommodate physical limitations
- Establish a safety review process when traffic collisions involving a fatality on a public roadway occurs.
- Develop Tourist Transportation Management Policy

Long Terms (greater than 10 years)
- Work with Alberta Transportation, City of Edmonton and Sturgeon County to develop a regional traffic control centre

Existing Network





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Future Road Network



Roundabout Approach



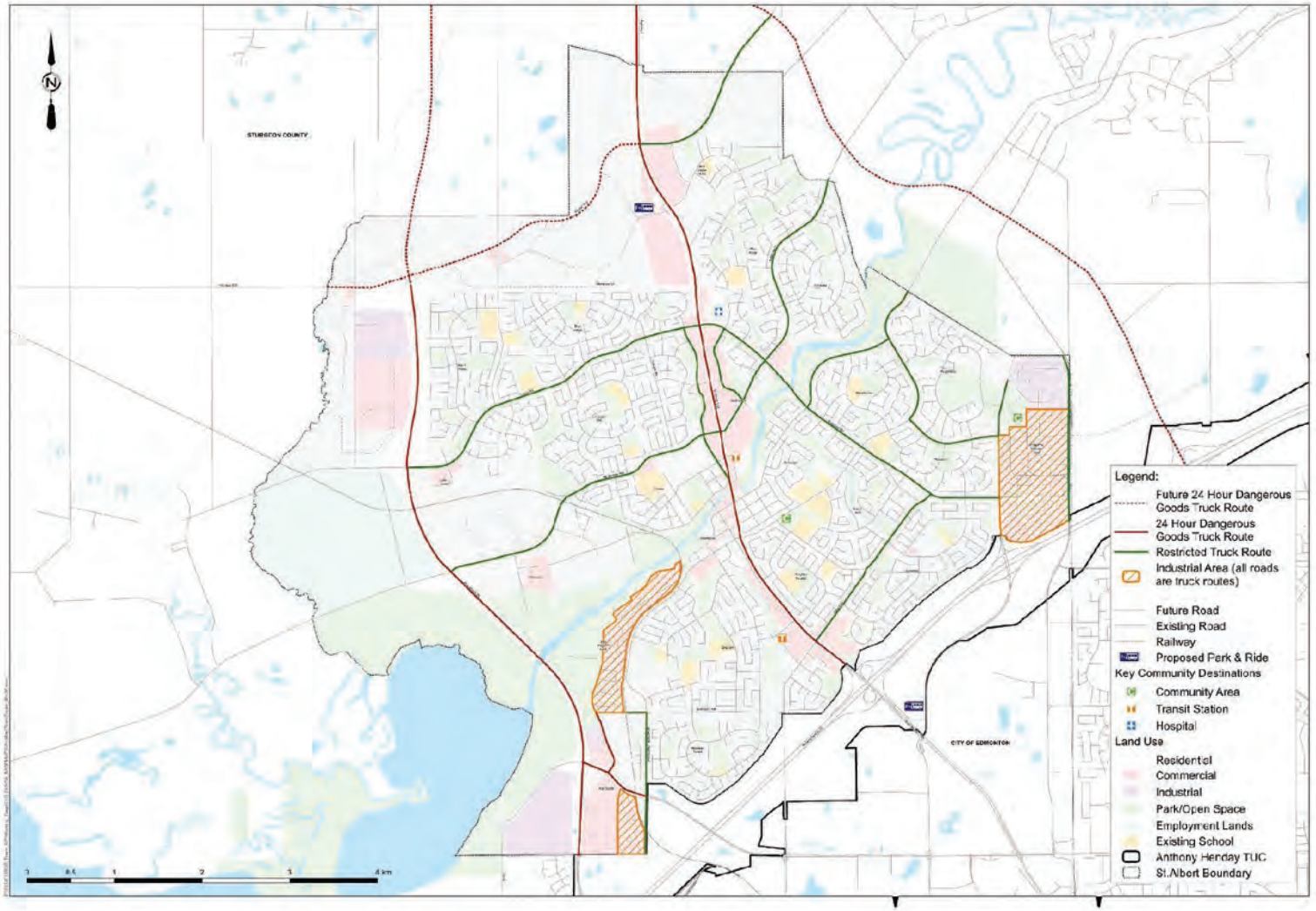
Future Arterials

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Future Truck Routes

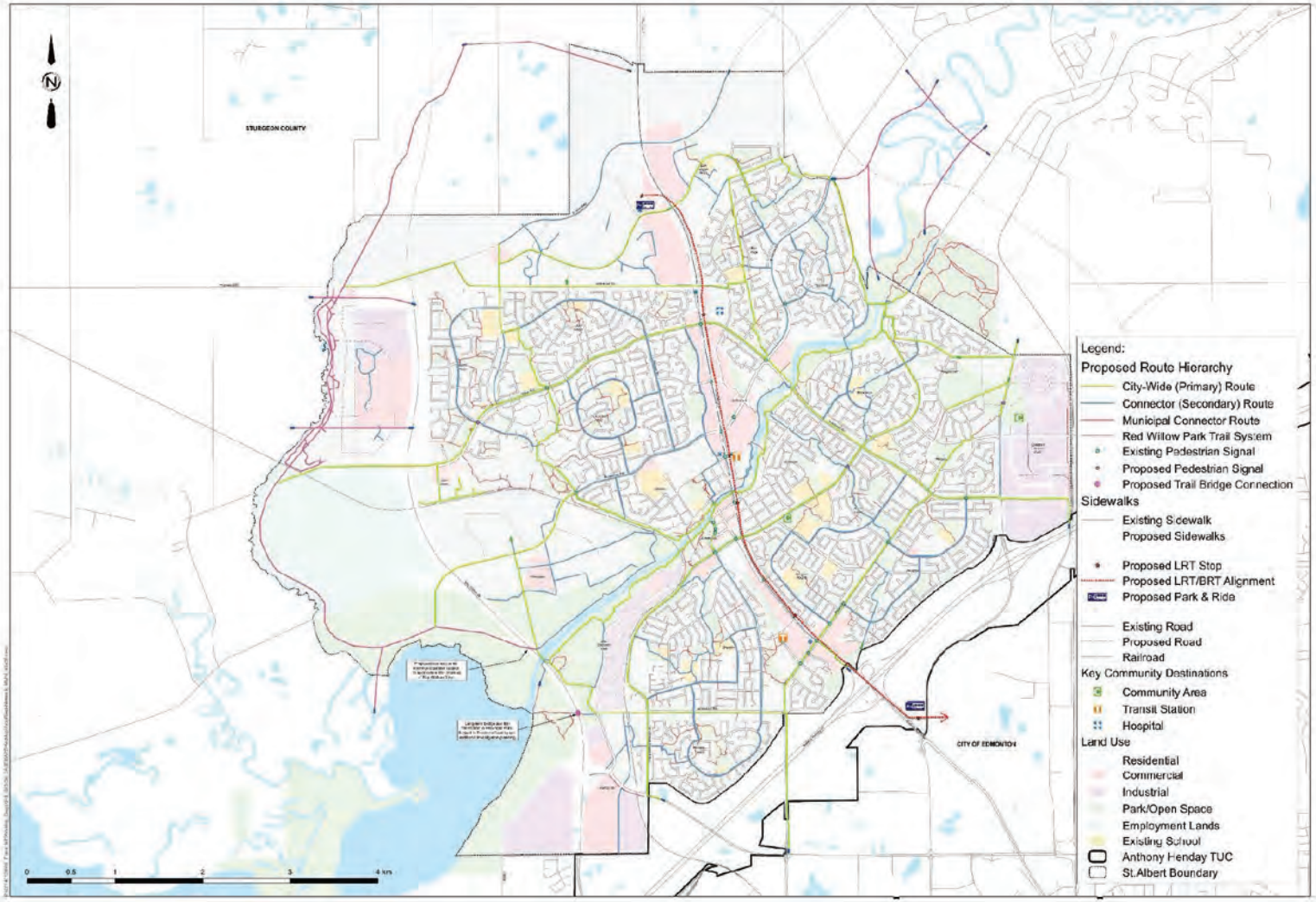


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Future Active Transportation - Routes

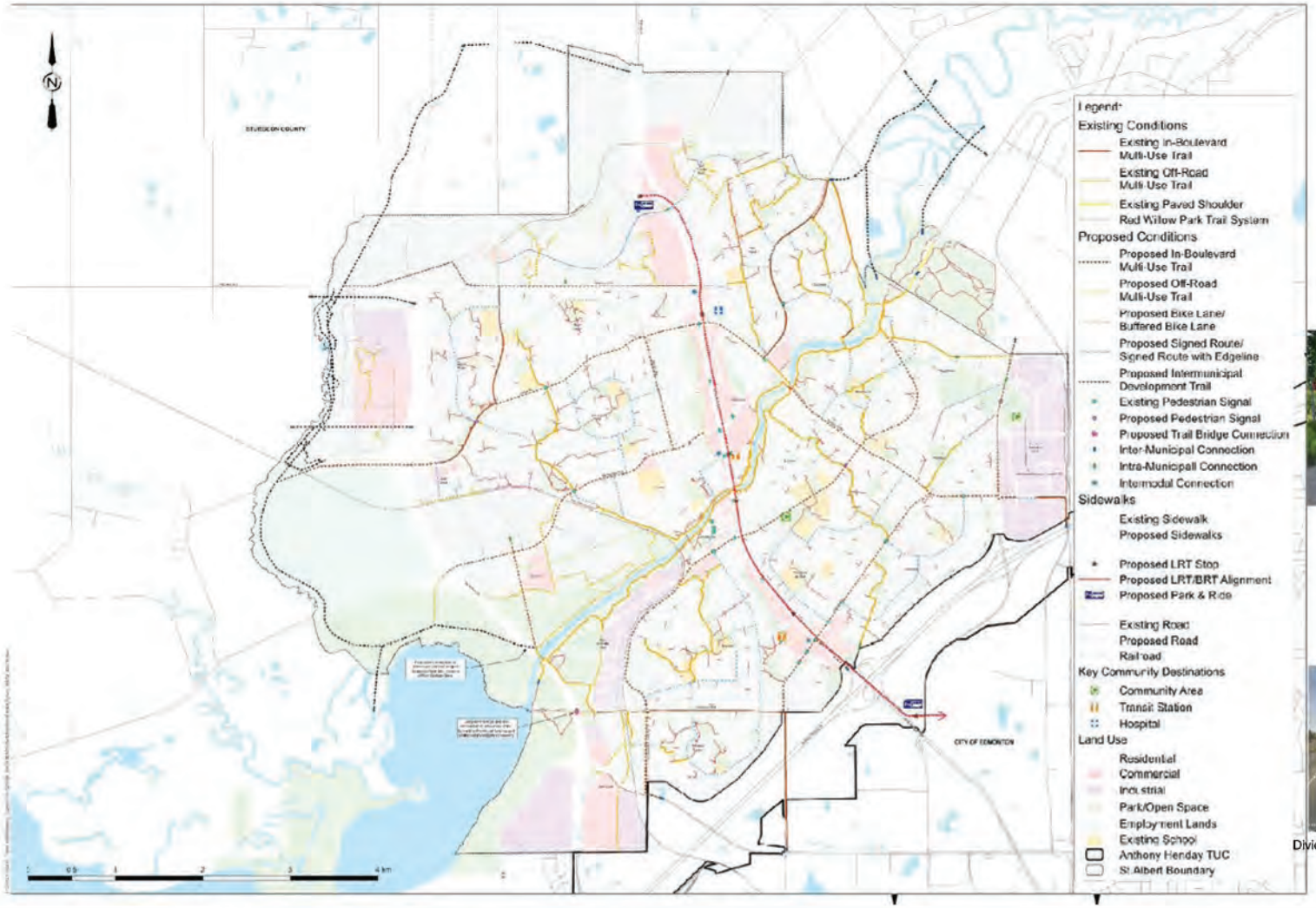


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Future Active Transportation -Trail Types





Recreational Trail



Divided Roadway Multiuse Trail

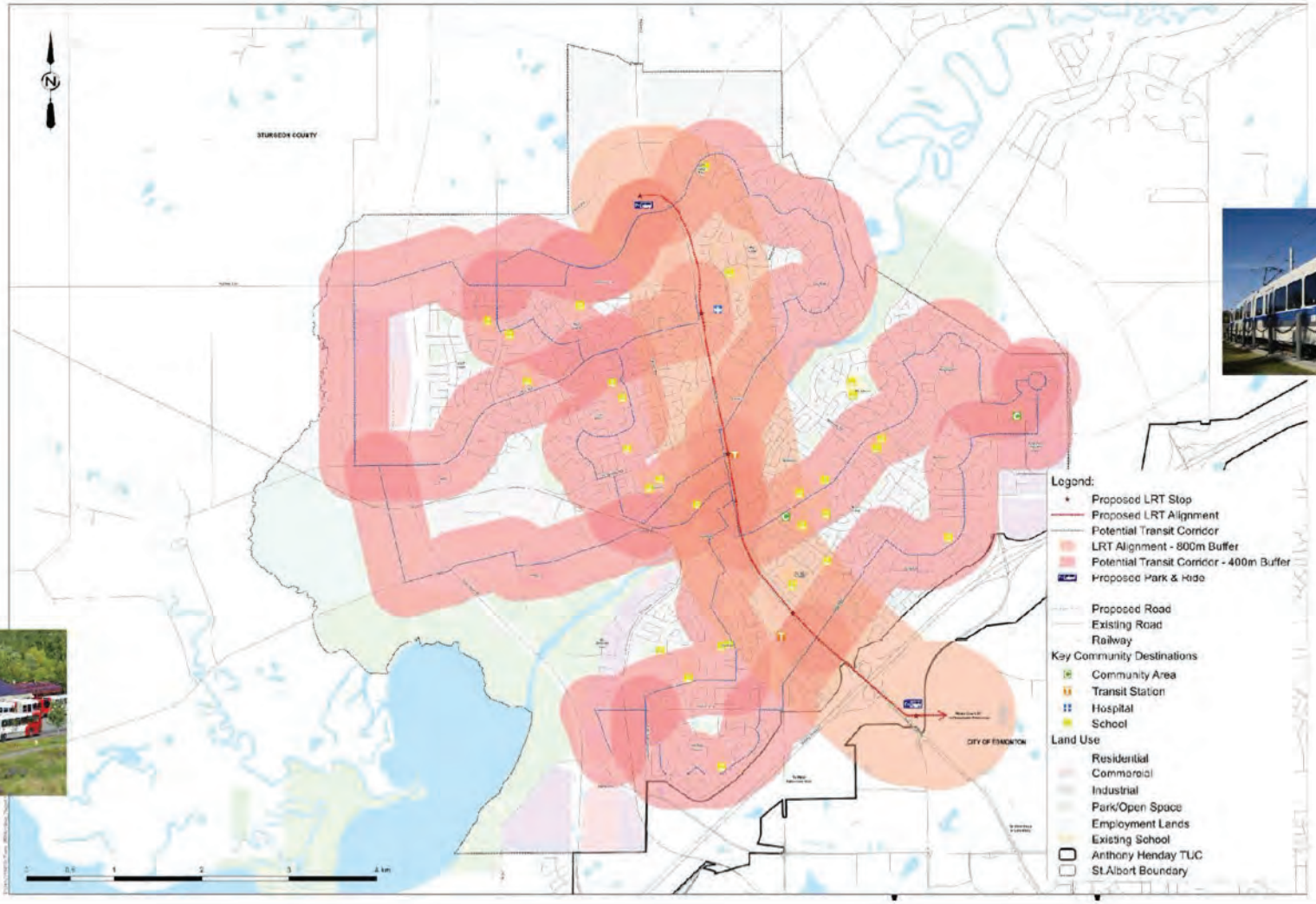
Multi-Use Trail

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Future Transit





Edmonton LRT



Bus Rapid Transit

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Transportation Master Plan
Open House #2
Comment Form

Thank you for taking time to attend the open house. We encourage you to provide your feedback by filling out the comment form, to help acknowledge support for the direction of the Transportation Master Plan (TMP) or provide details of information that may be incorporated into the final report, expected to be completed in December 2015.

This is the final public engagement prior to the completion of the TMP report and the intent is to share plans that have been developed from earlier public and stakeholder engagement sessions. We are presenting the proposed TMP Action Plan along with route and infrastructure maps related to roadways, active transportation (walking and cycling), transit and truck routes.

Your input is valuable in completing the TMP which will ultimately guide St. Albert's current and future transportation needs. Feedback received from this open house will help to refine the proposed plans and strategies, and will be used to confirm task priority levels through developing a timeframe for completion.

Please use this space to provide any general comments you have on the information presented in today's open house. There are more specific questions on the following pages.

For each of the identified Action Items, please indicate whether you think it should be a short term (within 3 years), medium term (3—10 years), or long term (greater than 10 years).

Principle 1: St. Albert is a livable community with safe access to amenities and employment, where we prioritize accommodation for accessible and affordable transit and active transportation

Action Items	Timeframe		
	Short <3 yrs	Med 3-10 yrs	Long >10 yrs
Identify bus routes to connect with future Light Rail Transit			
Adjust Land Use Policies to support Transit Orientated Development around proposed future Light Rail Transit stations			
Create a Complete Streets Policy for design and implementation			
Update engineering standards to guide implementation of the Complete Streets Policy			
Implement the active transportation plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.			
Complete active transportation connections to community destinations, with a priority on family orientated destinations			
Develop/enhance active transportation connections to trails along Sturgeon River			
Update Pedestrian Crossing Control Guidelines in regards to pedestrian crossing warrant processes and criteria, control treatment, and operational standards for signalized pedestrian crossings.			
Update engineering standards for sidewalks, pathways and transit access in new developments and for retrofit			
Develop neighbourhood traffic management guidelines (includes traffic calming)			
Incorporate Crime Prevention Through Environmental Design principles into active transportation planning			
Develop Traffic Impact Assessment Guidelines for Residential, Commercial and Industrial Neighbourhoods that incorporate cycling and pedestrian impacts and ensure projected traffic volumes are appropriate with the design and function of the proposed road network			
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning and long term timeline for implementation)			
Develop and prioritize a capital construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision			
Review/update transit fare policy to support affordability for users			
Develop a Movement of Goods and People Policy			

Principle 2: St. Albert has a strategic approach to sustainable transportation to serve our diverse population.

For each Action Item, please indicate your preference for timeline of completion by checking one box.

Action Items	Timeframe		
	Short <3 yrs	Med 3-10 yrs	Long >10 yrs
Support the development of a park and ride facility at Campbell Road Transit Centre			
Prepare a strategy to develop the north LRT Station which may include a transition from Park and Ride to a Transit Oriented Development			
Conduct feasibility study for Bus Rapid Transit/priority bus lanes as a progression towards Light Rail Transit implementation			
Transit centers will have parking for bikes and kiss and ride facilities			
Develop winter road maintenance and accessibility standards for transit stops			
Protect the property needed for the Light Rail Transit			
Develop a functional plan for St. Albert Trail to support Light Rail Transit/Bus Rapid Transit, pedestrian travel (or to transform it to a Complete Street) and incorporate Transportation Demand Management principles			
Complete an updated travel demand survey every 10 years			
Develop achievable mode split targets and perform scheduled updates and evaluation of levels and targets			
Complete Transportation Demand Management Study for Downtown			
Identify and consider potential locations for infill development to maximize use of existing roadways			
Allocate appropriate staff levels to respond to transportation inquiries from residents, maintain the traffic model, and to align with Capital Projects			
Provide dedicated staff to implement the active transportation plan and develop travel demand management programming			
Update level of service guidelines to reflect St. Albert's sustainable transportation goal			
Maintain and update wayfinding to key recreational and commercial amenities on trails and paths			
Align planning, engineering, transit, operations and maintenance master plans, goals and policies			
Develop a comprehensive asset management strategy including a database resource to assess life-cycle costs of transportation infrastructure			
Maintain and utilize the City's Traffic Model to establish strategic priorities for the City's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 112000			
Update the ten (10) year capital plan to align with TMP principles.			
Create and implement a Traffic Data Management Strategy			
Update the St. Albert Trail North-Arterial Corridor Management Plan			
Create and implement a public and stakeholder communication plan in relation to the Transportation Master Plan and it's resulting strategic plan			

Principle 3: St. Albert protects environmental health by creating opportunities for alternative transportation to maintain the beauty of surrounding nature.

For each Action Item, please indicate your preference for timeline of completion by checking one box.

Action Items	Timeframe		
	Short <3 yrs	Med 3-10 yrs	Long >10 yrs
Create opportunities to incorporate active transportation and recreational uses in environmental reserve areas			
Set and achieve Green House Gas (and related performance indicators) targets related to transportation (includes data collection to measure these)			
Develop an Intelligent Transportation System Strategy to help manage traffic			
Incorporate the travel demand model as an on-going transportation planning and evaluation tool for new developments and network planning as they relate to environmental impacts through greenhouse gas emissions			
Shift funding priorities towards transit and active transportation			
Advocate for higher orders of government to invest in all modes			
Partner with community leaders to achieve the TMP vision			
Review the Transportation Association of Canada (TAC) Canadian Guide for Greener Roads (CGGR) and relate identifiable objectives of the CGGR with St. Albert policies and principles			
Develop Performance Measurement Framework to measure the success of the Transportation Master Plan			

Principle 4: St. Albert's transportation system supports economic prosperity.

For each Action Item, please indicate your preference for timeline of completion by checking one box.

Action Items	Timeframe		
	Short <3 yrs	Med 3-10 yrs	Long >10 yrs
Develop street classification definitions and define their intended functionality and level of service targets			
Work with regional partners to identify active transportation links (eg. Sturgeon County, Alberta Transportation, Alberta Environment and Parks, Alberta Health Services)			
Work with regional partners to develop an Emergency Measures Strategy (such as traffic signal pre-emption)			
Work with Alberta Transportation, City of Edmonton and Sturgeon County to develop a regional traffic control centre			
Work with Capital Region Board to implement the Integrated Regional Transportation Master Plan			
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive			
Advocate for construction of 127th Street between Anthony Henday and Highway 2			
Establish a tiered truck route system for Large Commercial Vehicles and Pick and Delivery Vehicles (includes sign changes, education, bylaw changes, helping residents understand purpose of roadways)			
Create guidelines and increase use of roundabouts in new development and look for opportunity of retro-fit completion to enhance network safety and efficiency			
Work with regional partners to improve regional transit services			
Establish a safety review process when traffic collisions involving a fatality on a public roadway occurs.			
Develop an annual network screening program to identify high collision locations			
Establish an in-service safety review program for high collision locations			
Adopt safety audit standards for new roadways (incorporate in with the TIA guidelines)			
Implement Safe Journeys to School strategies and maintain communication between stakeholders and public in relation to the program			
Develop a St. Albert Traffic Safety Plan			
Develop policies related to : Data collection and management Temporary Traffic Control/Special Event Management Parking Management Wayfinding/Tourist Transportation Management Policy			
Develop accessibility guidelines to accommodate physical limitations			

Comment Form—Network Plans

Please check the box that best describes how each of the following statements reflect your priorities and vision for St. Albert

Road Network

	Agree	Neutral	Disagree
The future road network meets my expectations for St. Albert	☐	☐	☐

Comments (please identify any elements of the plan you particularly like or think need revision):

Truck Routes

	Agree	Neutral	Disagree
The future truck routes meets my expectations for St. Albert	☐	☐	☐

Comments (please identify any elements of the plan you particularly like or think need revision):

Active Transportation

	Agree	Neutral	Disagree
The active transportation network meets my expectations for St. Albert	☐	☐	☐

Comments (please identify any elements of the plan you particularly like or think need revision):

Transit

	Agree	Neutral	Disagree
The active transportation network meets my expectations for St. Albert	☐	☐	☐

Comments (please identify any elements of the plan you particularly like or think need revision):

Transportation Master Plan
Open House #2
Comment Form

Thank you for taking the time to provide us with your feedback. Please use this space to let us know of any other comments you have.

For more information, or to return your comment form, please contact:

Dean Schick, C.E.T
Transportation Manager | Engineering Services
P: 780.459.1649
F: 780.458.1974
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For more information on the Transportation Master Plan, please visit:
http://www.stalbert.ca/getting-around/roads/transportation-master-plan

6 Council Presentation

The final consultation element was the presentation of the TMP to City of St. Albert Council on February 1, 2016.

Associated Engineering | GLOBAL PERSPECTIVE. LOCAL FOCUS.

APPENDIX B

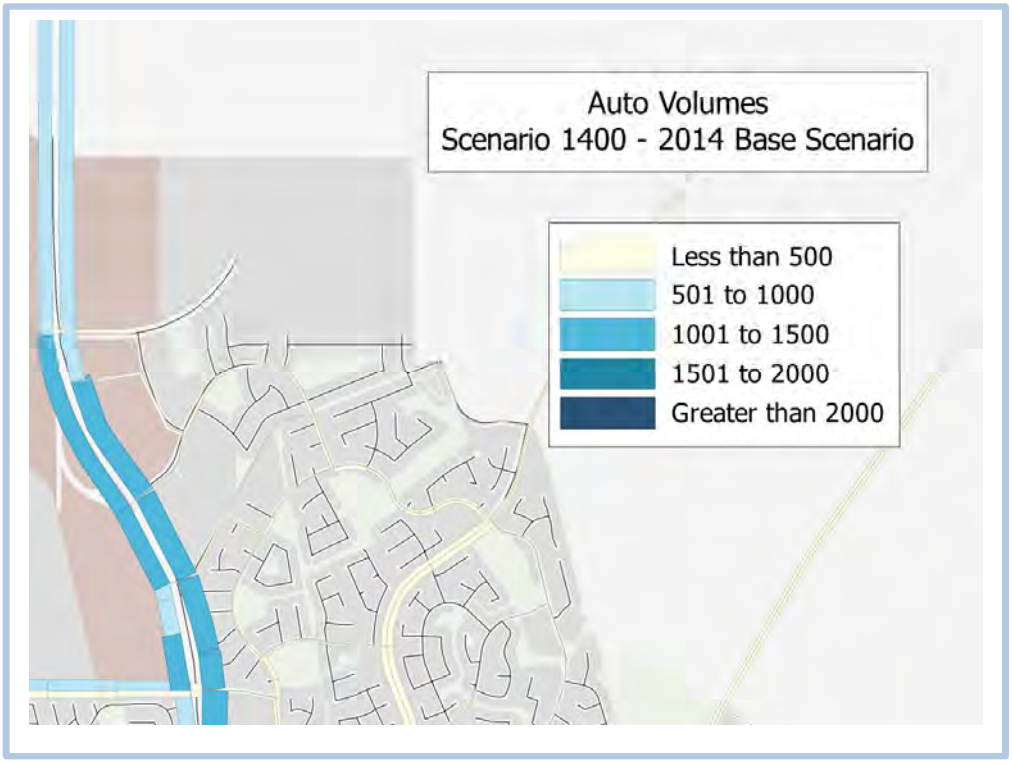
2015 St. Albert TMP

St. Albert Travel Demand Model
Calibration Report









February 2016

CANADA'S BEST MANAGED COMPANIES Platinum member

DAVID KRIGER
TRANSPORTATION POLICY AND RESEARCH

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APPENDIX B

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1 Introduction

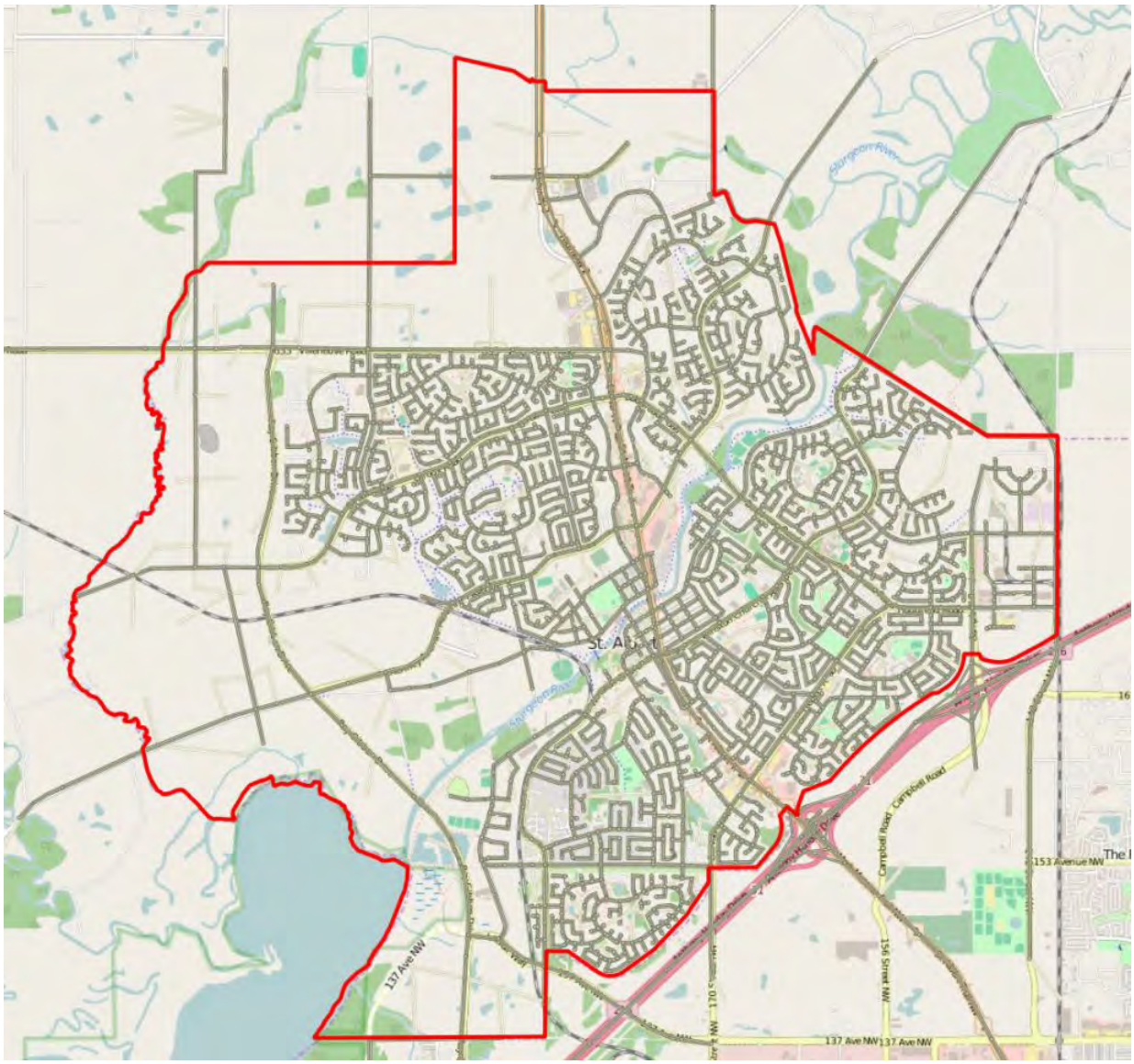
This report documents the calibration of a new travel demand forecasting model (TDM) for the City of St. Albert. The model was calibrated by Associated Engineering in association with David Kriger Consultants Inc.

As part of the 2015 update to the City of St. Albert Transportation Master Plan, the existing St. Albert Travel Demand Model was converted to EMME Software, and updated with 2014 travel data. The new model forecasts auto vehicle-trips and transit person-trips.

A travel demand model is a best practice tool that is used to estimate future demand on the transportation system in light of expected demographic and economic growth. The model can help the City of St. Albert make decisions about future infrastructure demands, identify priorities for development and evaluate the impacts of potential land use and infrastructure changes in the community of St. Albert.

EMME is a travel demand modeling software that has been well used in Canada and internationally for several decades. EMME supports several different types of multi-step demand modelling processes. EMME software is already used by the City of Edmonton and Alberta Transportation, both for the City of Edmonton travel demand model and the Capital Region Model. The switch of the City of St. Albert Model to EMME will allow future collaboration between the capital region communities to encourage data sharing and regional decision making. Data for this study are taken from various capital region sources and account for regional multi-modal travel within St. Albert. The City of St. Albert model, though influenced by regional traffic and the City of Edmonton traffic, is focused within the City of St. Albert boundaries, as illustrated in **Figure 1-1**. The model is connected to the surrounding City of Edmonton, Sturgeon County and Alberta Highway facilities, notably including the Anthony Henday Drive.

Figure 1-1
Travel Demand Model Study Area



2 Traffic Analysis Zones and Road Network Updates

The model is based on small geographies known as Traffic Analysis Zones (TAZs), and on a depiction of the road and transit networks. The traffic analysis zones were defined by the City of St. Albert, and are consistent with other master plan documents in the community. The 2009 TransCAD model provided a framework for the road network. The transit network was based on the current STAT route system. Scenarios for future road and transit conditions were developed from the relevant plans and studies.

2.1 TRAFFIC ANALYSIS ZONES

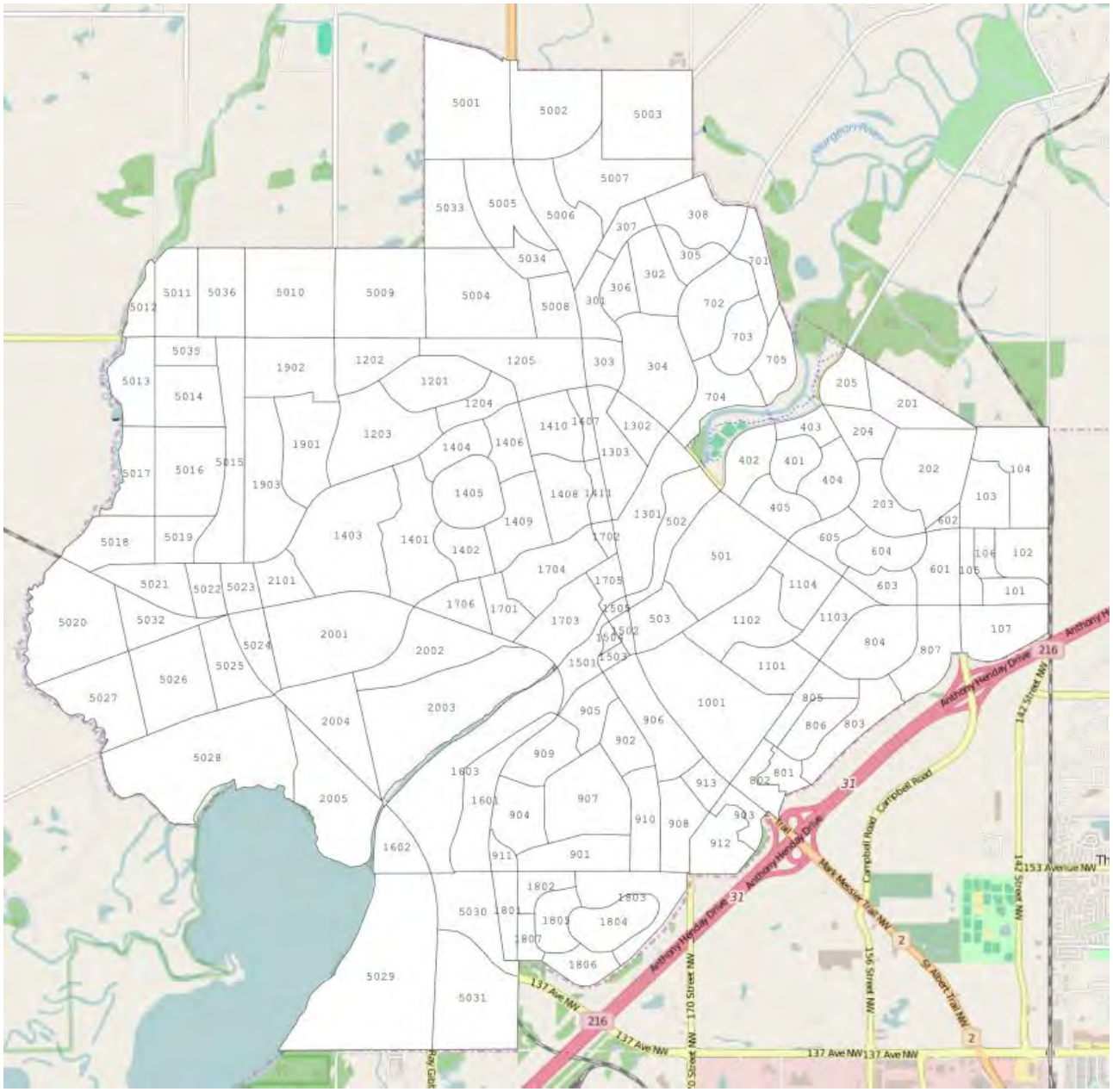
The traffic analysis zones were defined in the existing 2009 model, and match those used by all departments within the City of St. Albert. This allows for consistency within the different long range plans, and also simplifies the task of future data preparation by the City.

There are a total of 150 internal traffic zones within the model. Four internal zones were added over the development of the model. One was added to represent the future Campbell Park and Ride Station, south of Anthony Henday Drive (Zone 5200). Three placeholder zones were added for possible future development in the model (TAZs numbered 5201-5203), as identified in the City's land use plans. The external zones were renumbered from the original 2009 model for ease of use.

A TAZ is represented in the network as a single point (centroid) which is connected to the rest of the road and transit network via a centroid connector.

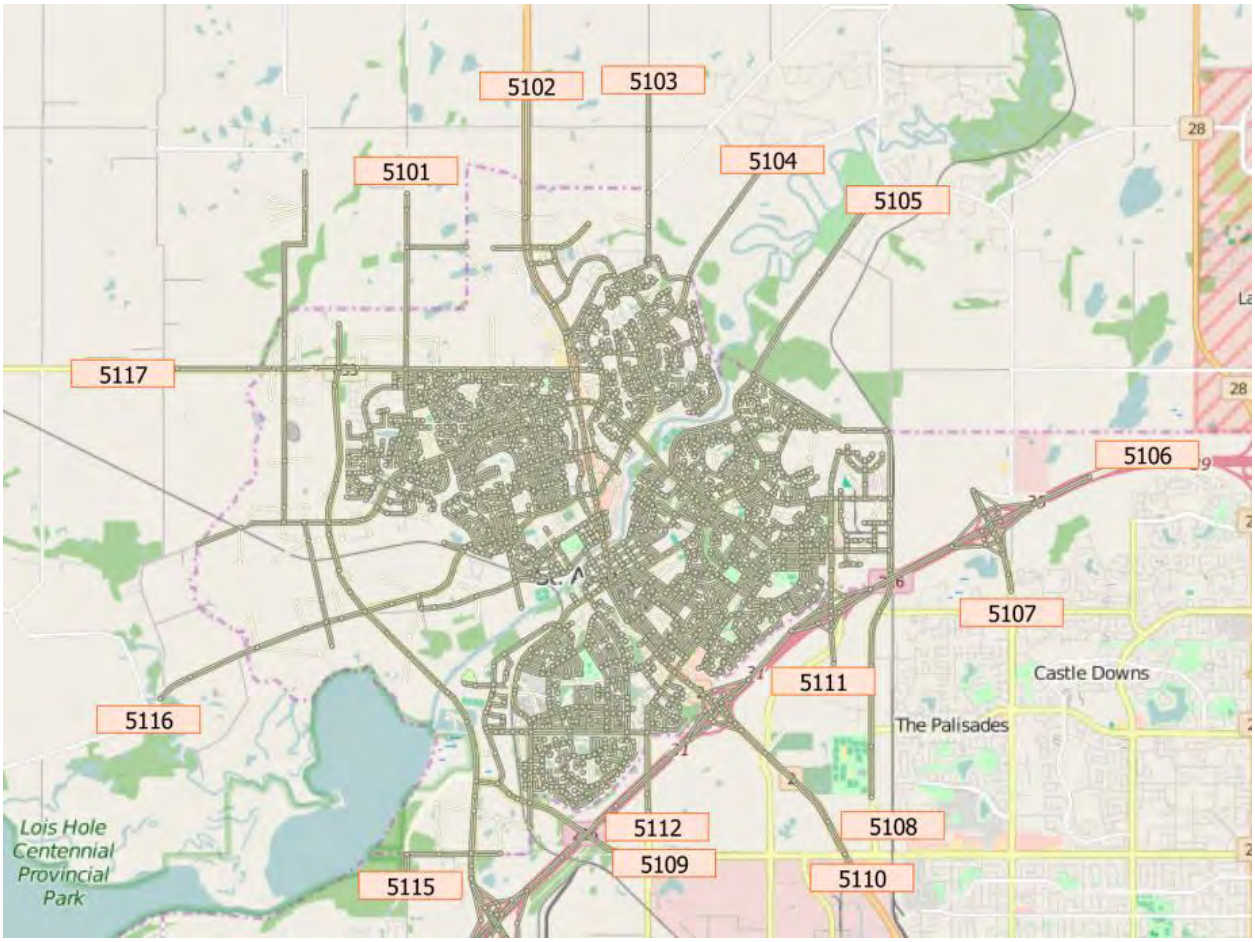
Internal zones are illustrated in **Figure 2-1.**

Figure 2-1
Traffic Analysis Zones



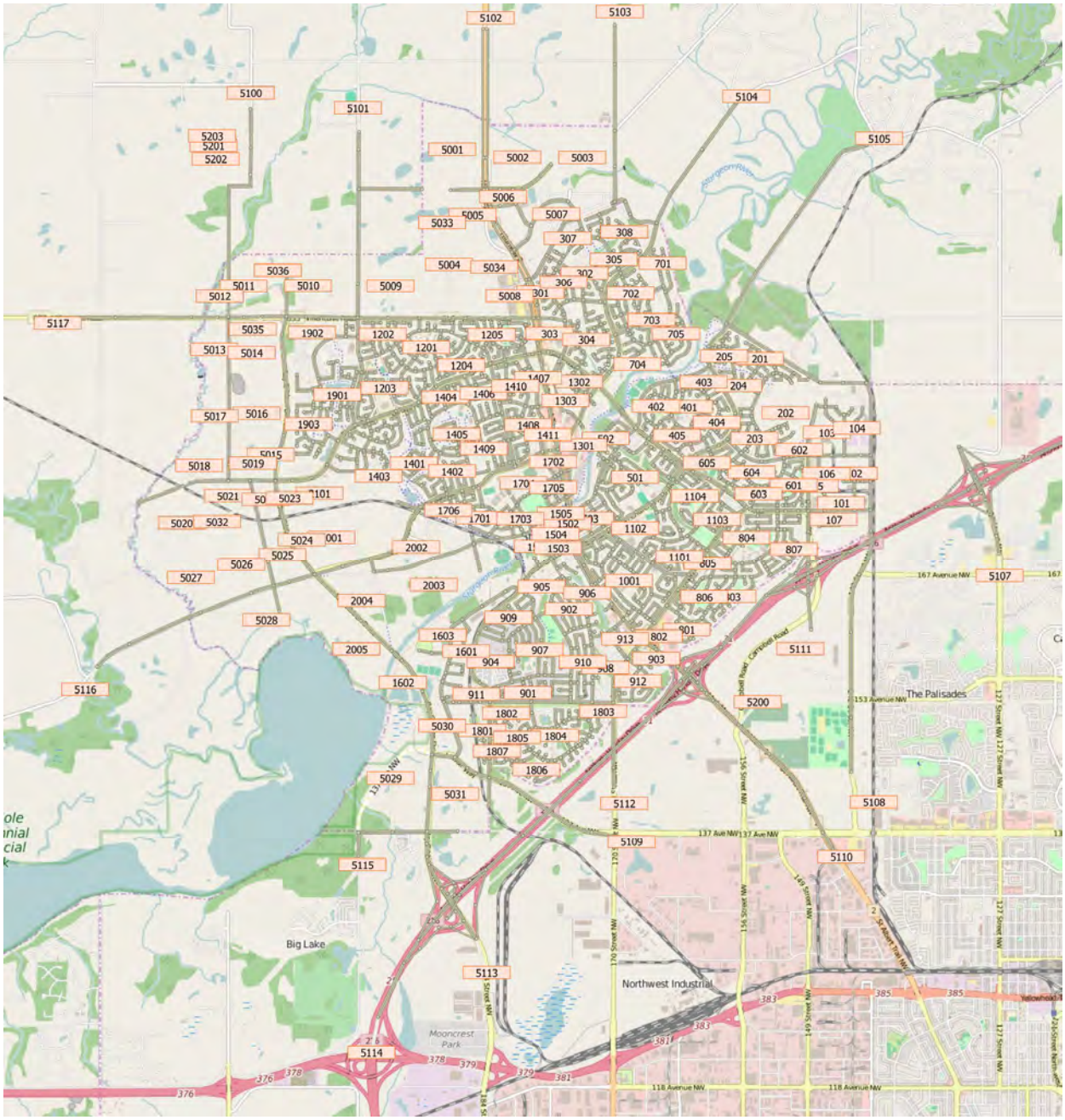
There are 17 external nodes that represent access points, or “gateways,” into St. Albert. Those are illustrated in **Figure 2-2**. Most of these correspond to the point at which a road crosses the City of St. Albert boundaries. However, at the City’s southern boundary, note that Anthony Henday Drive is included and several roads are extended into the City of Edmonton, and so these gateways actually are located outside the City’s boundary. These extensions allow travel between St. Albert and Edmonton, and beyond, to be distributed appropriately among the ‘true’ gateways to the City. They also account for the future Campbell Park and Ride Station, which will serve St. Albert residents even though it will be situated inside Edmonton.

Figure 2-2
External Traffic Analysis Zone Gateways



The internal road network, and associated centroids for each traffic analysis zone is shown in **Figure 2-3**.

Figure 2-3
Internal Road Network and Traffic Zones (2014 Road Network)



2.2 VOLUME DELAY FUNCTIONS

The model uses volume-delay functions (VDF) in order to allocate, or assign, traffic onto different road segments. It does so as a function of the segment's capacity (number of lanes and lane capacity), posted speed, length and turn penalties at intersections.

For the St. Albert model, the consultant applied volume-delay functions from its experience in other models. The network coding procedures and operating formulas are designed to provide a consistent, objective and user-friendly system for relating the system performance to its design. The three characteristics that determine a link's performance are:

1. The number of mid-link lanes;
2. The control and design of the exit intersection; and
3. The posted speed.

These are all objective and easily observed variables.

Small adjustments were necessary to this system for the St. Albert road network to reduce the available capacity on smaller local roads, as calibration identified that the model was over assigning traffic to these smaller local roads.

The coding of the links is defined by the following features:

1. The number of mid-link lanes, affects capacity and is directly entered for each link.

2. The control and design of the exit intersection determines the capacity per lane (vphpl), and is entered as a single digit code number in the first of a two digit volume delay function (VDF). Multiplying this digit by 200 gives the nominal capacity per lane of the link which, relative to the volume assigned, determines the link's congestion time delay. The rules for assigning these codes are as follows.

   All links ending at a stop sign are assigned a VDF first digit of 2, so they all have a nominal capacity of 400 vphpl. Links ending at a signal are assigned first digit VDF numbers ranging from 3 to 7, corresponding to capacities from 600 to 1400 vphpl. The lowest capacity of 600 applies to links with zero extra turn bays at the exit intersection. Such links have more capacity than stop signs, but volumes are still limited by turning vehicles which tend to hold up other traffic. Adding extra turn bays improves the situation, and increases the nominal capacities by 200 vphpl for each extra turn bay. Free flow links are no impacted by control. They are assigned a first digit code of 8 and have the highest level of nominal capacity at 1600 vphpl.

3. The posted speed is entered as a code number in the second of the two digit volume delay function (VDF). Multiplying this number by 10 gives the free flow speed on the link, which determines the base travel time before adding the volume delays described above. For example, when the posted speed limit is 100 km/hr, it is represented by a "0" and when the posted speed limit is 110 km/hr, it is represented by a "1".

Table 2-1 summarizes the coding system for the links speed and VDFs.

Table 2-1
Volume Delay Function Numbering System

Link Exit Design			Posted Speed KPH						Digit 2 of VDF			
Control Type	Extra Turn Bays?	Nominal Capacity vphpl (Digit 1)	20	30	40	50	60	70	80	90	100	110
Centroid			1									
Stop		400	22	23	24	25	26	27				
Signal	0	600	32	33	34	35	36	37	38	39	30	31
	1	800	42	43	44	45	46	47	48	49	40	41
	2	1000	52	53	54	55	56	57	58	59	50	51
	3	1200	62	63	64	65	66	67	68	69	60	61
	4	1400	72	73	74	75	76	77	78	79	70	71
Free Flow		1600	82	83	84	85	86	87	88	89	80	81

The lane and VDF coding as applied to the St. Albert Network is shown attached in Appendix B.1 – Network Coding. Maps in Appendix B.1 have the number of lanes, following by the assigned VDF, so coding on the road shows 'lanes'/'VDF'.

2.3 2014 BASE ROAD NETWORK

The 2014 base road network was developed from the base network from the 2009 TransCAD model, traffic signal location maps from the City of St. Albert, speed limit data from the City of St. Albert and a review of intersections for intersection coding. The coding of the network followed the VDF system as described with several exceptions:

- Local roads were coded with a speed limit of 30 km/h. The fine detail that was built into the 2009 TransCAD model resulted in a network that, when translated to EMME, over-assigned traffic to the local roads. Reducing the speed limit down to 30 km/h resulted in a traffic assignment that more accurately reflected the actual traffic counts. Note that the VDFs assign traffic to road segments *relative* to the capacities of different segments. Thus, reducing the speed limit of certain segments is merely 'telling' the model that these segments have a lower capacity relative to other segments, and so the speed limit used in the model does not necessarily have to depict the actual limit so long as it achieves the desired effect (which, in this case, is to force traffic to offload onto other links).

- Certain collector roads were coded with a reduced speed limit of 30 or 40 km/h, as they were also over-assigning traffic.
- As noted, Anthony Henday Drive is not in the model study area, but was included in the model to allow regional traffic to change its routing for future scenarios. Because background traffic was not included on the Anthony Henday Drive, the capacity of the road was reduced to one lane, with a VDF of 58 between interchanges that access St. Albert. This allowed for the road to be included in the model without drawing excess traffic from other links (that is, in TDMs, a high-capacity facility often attracts too much traffic from parallel lower-capacity facilities, so the dampening of the Anthony Henday Drive's capacity is designed to offset this).

2.4 2024 ROAD NETWORK

The 2024 road network updates included the following:

- Add one lane in each direction on Ray Gibbon Drive between Anthony Henday Drive and Villeneuve Road.
- Two lane new road (Fowler Way) realigning from Villeneuve Road between Ray Gibbon Drive to Neil Ross Road at St. Albert Trail.
- Add road network to support development of Jensen Lakes.
- Upgrade Meadowview Drive.
- Giroux Road Twinning remaining 300 m from the intersection of Ray Gibbon Drive.
- McKinney Ave twinning 1.5 km from Ray Gibbon Drive.
- LeClair Way and Riel Drive intersection improvements, which increase intersection capacity.
- Twin 1.7 km of roadway on Bellerose Drive from Oakmont to City Limit.
- Twin Sir Winston Churchill Ave from Sturgeon Road to City of St. Albert limits.
- Extend 300 m of Campbell Road to Poundmaker Road.
- Intersection improvements at intersection of Sturgeon Road and Bellerose Drive.

2.5 2042 ROAD NETWORK

The 2042 road network is based on the 2015 Transportation Master Plan Update ultimate road network. This includes the updates from the 2024 road network with the following additions:

- 127 Street developed with four lanes from the proposed interchange on Anthony Henday Drive to Highway 2 north of St. Albert, with stop controlled intersections at Sturgeon Road, Bellerose Drive, and Neil Ross Road.
- Ray Gibbon Drive extended north of St. Albert to connect to Highway 37 and Highway 2 north of St. Albert.
- Add one lane in each direction on Fowler Way.

2.6 2042 ROAD NETWORK WITH LRT

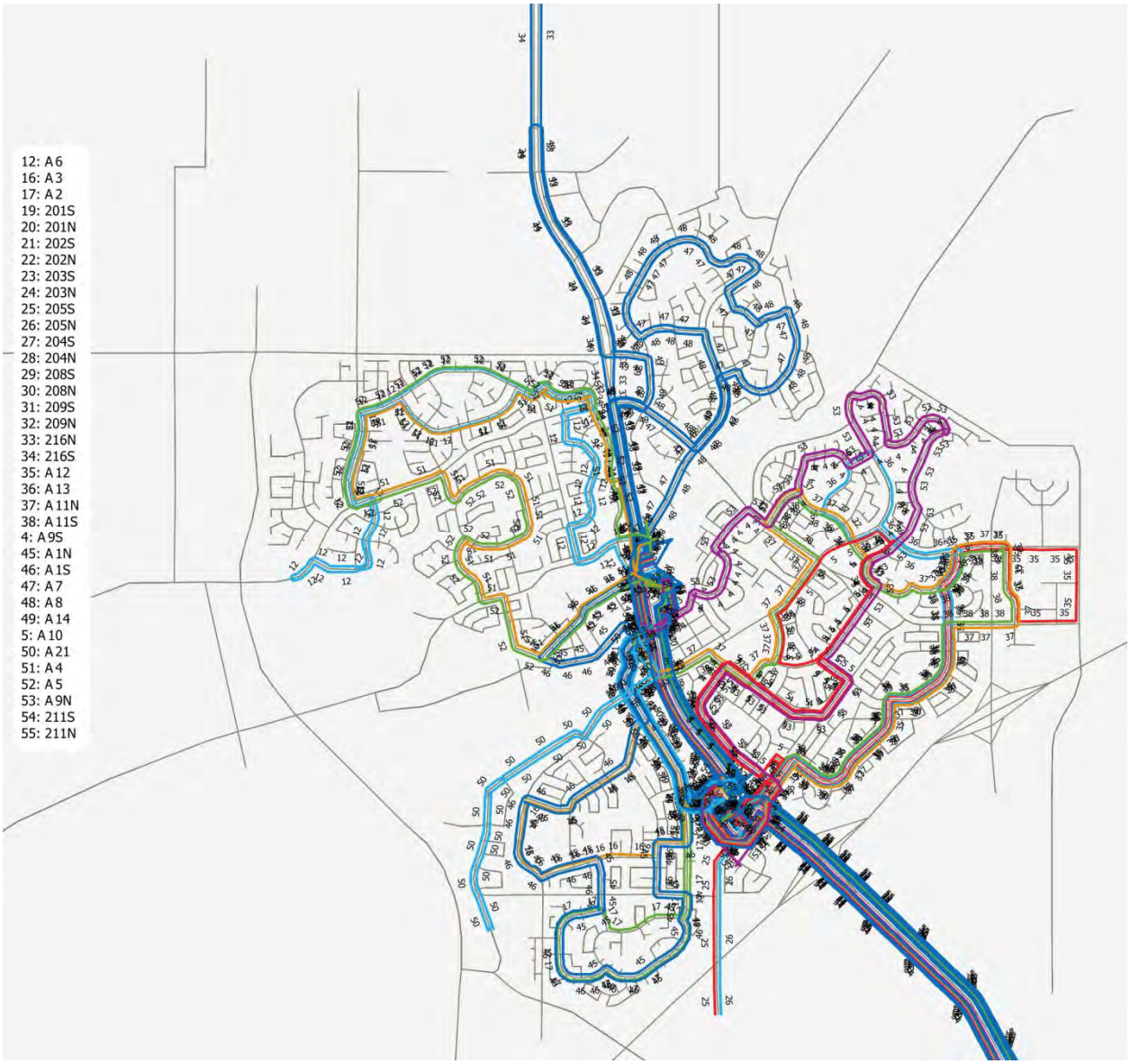
The future LRT through St. Albert impacts the road network through reduction of one lane in each direction on St. Albert Trail from the Anthony Henday Drive to the proposed north park and ride, located in Jensen Lakes to Everitt Drive. The LRT alignment is shown in Appendix B.2.

2.7 TRANSIT AND LRT NETWORK

2.7.1 2014 Transit Network

The coding of the 2014 transit network was based on the existing transit network in 2014. The lines were coded with headways of between 15 and 30 minutes, depending on the schedule, and a speed of 25 km/h. The 2014 Bus network as programmed into the travel model is shown in **Figure 2-4**.

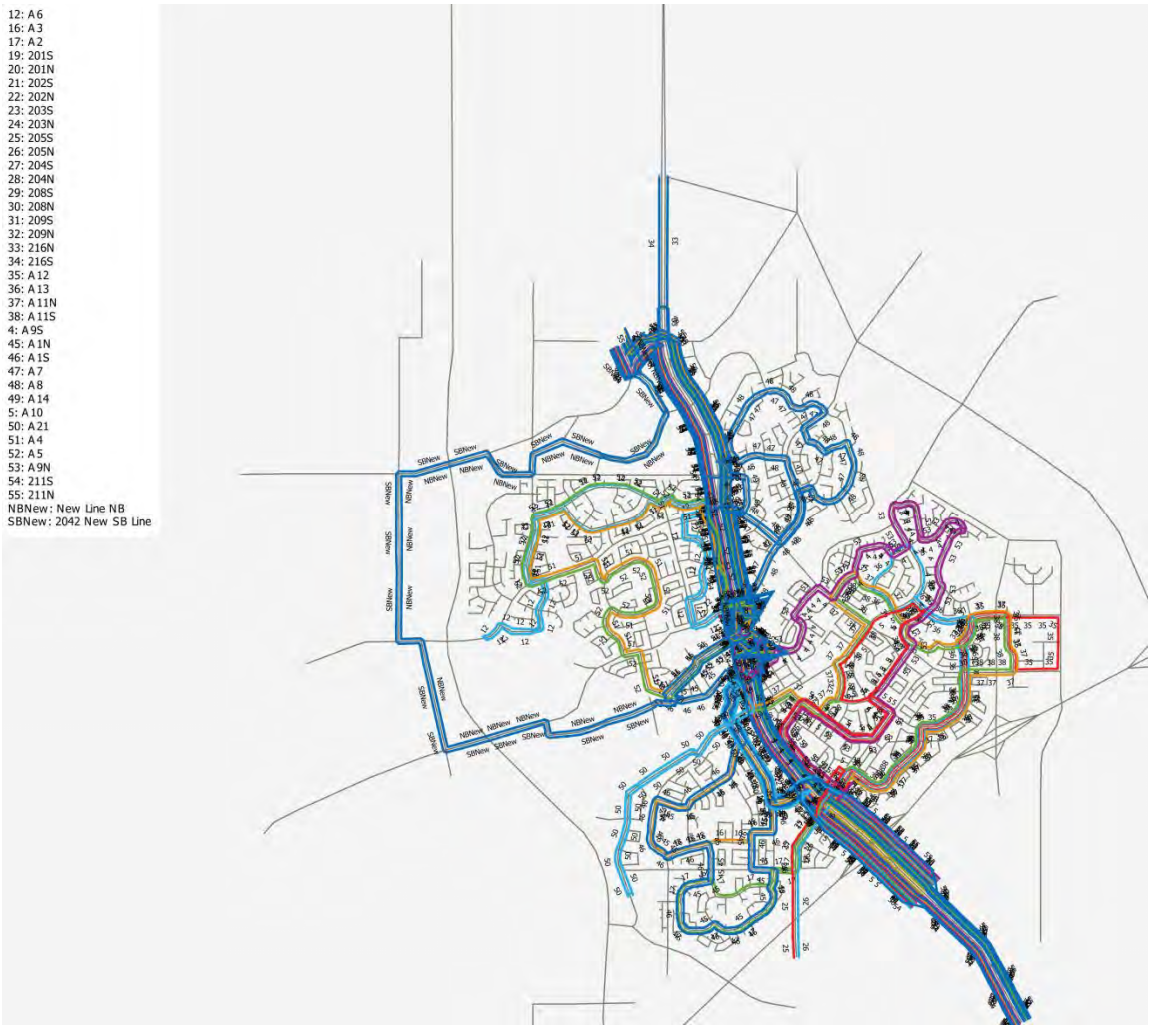
Figure 2-4
2014 Transit Network



2.7.2 2042 Transit (no LRT) Network

For the 2042 scenario two alternatives were developed. The first was an exclusively bus network, the second was a transit network that contained an LRT running from north St. Albert to the City of Edmonton. The methodology for the 2042 bus network (to support both scenarios) coding was to ensure that all new development areas were connected to a local bus route. This required the addition of new route to run through the development areas to the west of Ray Gibbon Drive. For consistency, these new routes used the attributes (headways, etc.) for existing local routes. For the 2042 network, the bus routes were also rerouted to have stops at either of the two proposed park and ride/transit centre locations – Campbell Road or North St. Albert – which would replace the two existing centres. This alternative transit route, the first with no LRT, is illustrated in **Figure 2-5**.

Figure 2-5
2042 Bus Network (no LRT)

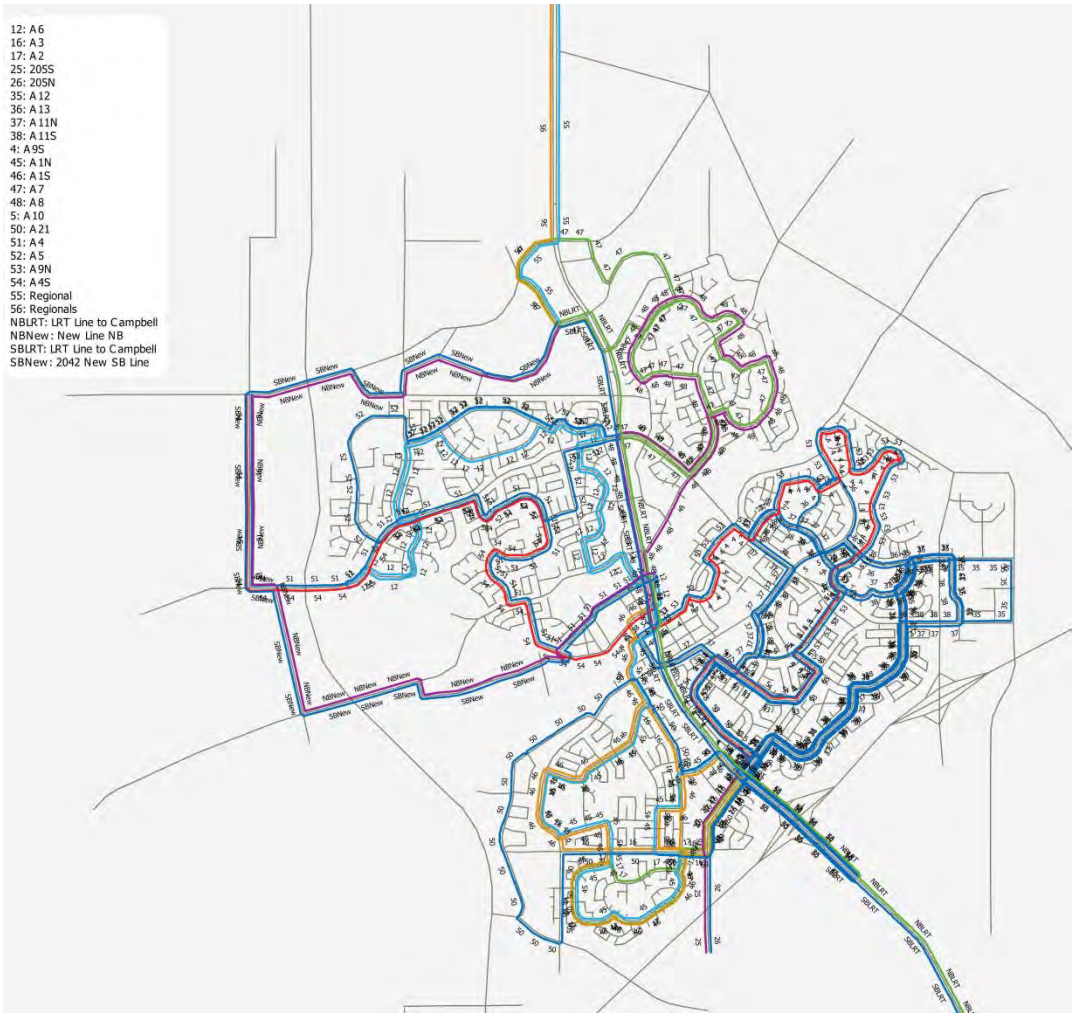


2.7.3 2042 LRT Network

For the 2042 LRT implementation in the model, all commuter bus routes running down St. Albert Trail were replaced by the LRT. The LRT was programmed with a five minute headway and a 40 km/h speed limit.

The LRT has stops at Campbell Park and Ride, Hebert Road Station, Downtown St. Albert, Boudreau Road and North St. Albert Park and Ride. Note that Campbell and North St. Albert will replace the existing Village Centre and downtown St. Albert transit centres. The LRT network and supporting bus routes is illustrated in **Figure 2-6.**

Figure 2-6
2042 LRT Network with Supporting Bus Network



3 Travel Data Collection/Calibration of Base Year Trip Tables

The 2014 model was developed by creating a base year (2014) total trip tables for auto and transit travel; that is, matrices that contain all auto-vehicle trips and all transit person-trips from all origins and destinations within the model area for a PM Peak hour.

There was no trip data available for reuse from the city's existing 2009 TransCAD model, the 2014 model was built from new data collected as part of the 2015 update to the St. Albert Transportation Master Plan. A variety of sources was necessary to properly account for local and regional travel and its impacts on the roadways and transit system in the City of St. Albert. These are described below. Note that the new data – especially the Household Travel Survey – provide a database of multi-modal travel, including cycling and walking, that the City can use for future analyses.

As with other municipalities in the Capital Region, the two commuter peak periods represent St. Albert's busiest times of day in terms of travel. The new St. Albert model uses a one-hour PM Peak model. The PM Peak hour is the busiest hour on St. Albert roads, according to historical traffic counts. Also, compared with the AM peak hour which is focused on the commute to work and school, the PM peak hour reflects a greater diversity in the types of traffic (i.e., trip purposes, including the reverse work and school commuting trips, shopping trips, and recreation trips, among others). Developing the model as a PM Peak model allows the data to be used for design designs, as it will reflect the worst-case design period. The transit model similarly used the PM peak hour.

The model was developed using data from a three hour PM peak (3:30 PM to 6:30 PM) to capture a diversity of trip types, and then scaled to a one hour 'slice' using the typical peak hour factor within that three hour peak. The PM Peak hour within the three hour peak from the household survey was 37.4% of the 3 hour peak. This was adjusted slightly to 35% after reviewing the typical traffic counts within St. Albert. (In other words, the two sources of data showed similar peaking characteristics.)

The transit model similarly uses the PM Peak hour.

3.1 BASE YEAR DATA COLLECTION/CALIBRATION OF AUTO VEHICLE TRIP TABLE

3.1.1 Introduction

Most of the travel activity that uses St. Albert's transportation system is generated by residents of the City. However, because St. Albert is part of a larger metropolitan area, it was important also to capture trip-making to and from points outside the City's boundaries. To do this, a series of travel behaviour surveys was conducted specifically for the new model. These are described below.

3.1.2 Travel by Residents (Household Travel Survey)

Like most urban travel demand models, the new St. Albert model focuses on modelling activity that is generated by *residents* of St. Albert. To understand this behaviour, the 2014 Household Travel Survey (HTS) was completed by R.A. Malatest & Associates Ltd. as part of the TMP. The HTS is the core source of data for the model. The full methodology report for the household survey is included in Appendix B.3. The Household Travel Survey was completed in the fall of 2014, and involved the collection of daily household travel data (all trips made over the course of a 24 hour working weekday), from a sample of households in the City of St. Albert. The sample of households was stratified in order to ensure a reasonable geographical representation across the City, including homes that had just been built and occupied. In this way, a range of dwelling unit types and ages and household sizes was captured, so that a full breadth of travel activity could be modelled.

Each individual trip captured in the survey consisted of travel for a particular purpose between one origin and one destination, but may have involved more than one mode of transportation. The HTS was administered primarily as a Computer Assisted Telephone Interview survey, with respondents also having the option to complete the survey online.

A total of 856 valid surveys were obtained, representing 3.7% of all households in St. Albert. This sample size provides a robust basis for model development.

The output of this survey is a 24 hour total of all travel – that is, travel by all modes for all purposes - conducted by residents in St. Albert over the course of a 'typical' weekday. Note that the survey captured trips made only by residents 5 years of age and older, in keeping with common modelling practice and given that very young children do not travel independently. As noted, this is the core element of travel within St. Albert. However, because a significant portion of St. Albert's traffic includes regional traffic (that is traffic with an origin, destination or both outside of the model boundaries), several additional data sources were needed to complete the information about traffic on St. Albert's roads.

Some of the results from the household survey are summarized in the following tables. **Table 3-1** shows the total trips from all modes, both for the whole day and then for the PM peak hour (4:30 pm to 5:30 pm).

Table 3-1
Total Person Trips from all Modes

Total Daily Trips (All Modes)	Total PM Peak Hour Trips
194,766	19,141

Table 3-2 shows a summary of the trips taken by the various modes of travel through the day, and in the PM peak period. The HTS showed that the majority of all trips taken in St. Albert are taken as either an auto driver or auto-passenger. **Table 3-3** shows the distribution of trips based on trip purpose.

Table 3-2
Mode Split for St. Albert Residents

Mode	Daily Trips		PM Peak Hour Trips	
	Trips	Percent of Total	Trips	Percent of Total
Auto Driver	130,299	67%	13,888	73%
Auto Passenger	35,461	18%	3,506	18%
Transit	5,409	3%	432	2%
School Bus	8,452	4%	0	0%
Bicycle	1,113	1%	326	2%
Walked	10,297	5%	796	4%
Other or Not Stated	3,736	2%	192	1%
Total	**194,766**	**100%**	**19,140**	**100%**

Table 3-3
Trip Purpose Split for St. Albert Residents

Travel Purpose	Daily Trips		PM Peak Hour Trips	
	Trips	Percent of Total	Trips	Percent of Total
Work Related (travel to work, home from work, or work related)	105,708	54%	12,237	67%
Attend School	14,842	8%	93	<1%
Personal Business	11,184	6%	540	3%
Recreation	9,836	5%	1,852	10%
Social	8,572	4%	622	3%
Dining	7,880	4%	753	4%
Shopping and Household Maintenance	20,586	11%	2,376	12%
Passenger pick up or drop off	15,584	8%	631	3%
Other	574	0%	36	0%
Total	**194,766**	**100%**	**19,140**	**100%**

3.1.3 External Travel (Intercept Survey)

Regional traffic (that is traffic originating outside the City of St. Albert) is an important component of travel, especially on Highway 2 through and into St. Albert. To capture this activity, the Highway 2 Intercept Survey (intercept survey) was conducted on September 23, 2014. The intercept survey involved stopping drivers at a location on Highway 2 north of Neil Ross Road, and compiling information about their travel to or through St. Albert. Southbound traffic was surveyed during the morning peak period (between 7:00 AM and 9:30 AM), and northbound traffic was surveyed in the afternoon peak period (between 3:30 PM to 6:30 PM). Survey data collected included information on trip origins, trip destinations, whether the trip involved stops in St. Albert, which route(s) were used in St. Albert, and the frequency with which the trip was made. A total of 519 valid surveys were obtained, representing about 9.5% of average weekday traffic for this segment of Highway 2, and direction of travel surveyed during the hours surveyed.

To estimate traffic in the reverse direction at this location (as the intercept survey was completed in only one direction at a time), two-direction Alberta Transportation counts from Highway 2 north were used to allocate the proportion of trips in the reverse direction. It was assumed that the overall proportion of reverse direction trips applied to all destinations and origins. Traffic counts for Highway 2 from Albert Transportation are included in Appendix B.4, and are continuous highway counts taken 4 KM south of Highway 37.

3.1.4 Other Activity (2011 Place of Residence/Place of Work)

The data from the household travel survey and the intercept survey were combined and compared to traffic counts. The traffic volumes at the external gateways into and out of the model area were available from City of Edmonton, City of St. Albert, Alberta Transportation and Sturgeon County. This comparison identified that not all traffic was accounted for in the survey data – notably, commuting by City of Edmonton and Sturgeon County residents to workplaces in St. Albert - as the survey data volumes at some gateway locations were found to be lower than traffic count data. The City of Edmonton 2005 HTS was too dated to be usable, and conducting an HTS in the metropolitan area outside St. Albert was well beyond the scope of the TMP. As a result, additional sources of data were used to account for the metropolitan Edmonton traffic travelling into, out of, and through the City of St. Albert.

To do this, the Place of Residence / Place of Work linkages from Statistics Canada's 2011 National Household Survey (NHS). The NHS was conducted as an adjunct to the Census of Population. Among other data elements, the NHS captured workers' place of residence, place of work, and the mode of transportation usually used. These linkages were used to estimate commuting by City of Edmonton workers to workplaces in St. Albert. (Note that the City of Edmonton Civic Census was also consulted as a possible source; however, the necessary breakdowns were not available.) As expected, virtually all external workers commute to St. Albert workplaces by auto: this contrasts with St. Albert residents who use both auto and St. Albert Transit to commute to Edmonton workplaces. (In other words, St. Albert Transit serves primarily St. Albert residents). The place of residence for individuals who work in St. Albert is summarized in **Table 3-4**.

Table 3-4
2011 NHS Results for those Working in St. Albert (Non-Residents)

Place of Residence	Individuals working in St. Albert
Parkland County	200
Stony Plain	85
Spruce Grove	125
Strathcona County	190
Fort Saskatchewan	90
Sturgeon County	1070
Edmonton	3965
Gibbons	35
Bon Accord	30
Morinville	560
Lac Ste. Anne County	70
Westlock County	20
Total individuals that Live Outside of St. Albert that Would Drive to St. Albert for Work	**6440**

The NHS linkages also are an approximate measure of jobs within St. Albert. (Note that the NHS also includes commuting patterns by St. Albert residents; however, their activity is captured more precisely by the HTS and so it is not shown in the table above.) The total number of jobs identified through the National Household Survey for those who live outside of St. Albert and work in St. Albert could then be translated into total trips based on the rate of trips per job as determined from the City of St. Albert Household Survey. (In other words, trip characteristics of external residents working in St. Albert were reasonably assumed to be similar to those of workers who live in St. Albert.) Those trips were then assigned to the network based on expected travel patterns to identify which gateway they would use to enter and exit St. Albert. Trips that would have been accounted for from the intercept survey were eliminated, to avoid double counting. The internal origins (ie the workplace in St. Albert) were based on work trips locations as identified in the household survey.

3.2 EXTERNAL AUTO VEHICLE TRIP CALIBRATION

The next step in developing the 2014 auto vehicle trip tables was combining the above three listed sources and comparing the trips to known traffic counts at the external gateways in St. Albert. For the purpose of this comparison, internal to internal trips were ignored; their calibration was completed later.

3.2.1 External Gateways

Both the household survey and the intercept survey identified trips origins and destinations by TAZ. To capture trips originating or terminating outside of St. Albert, the zones were identified using the Alberta Transportation Regional Model zone system. Travel zones from the Alberta Transportation regional model are identified in **Figure 3-1 and 3-2**.

Figure 3-1
External Superzones

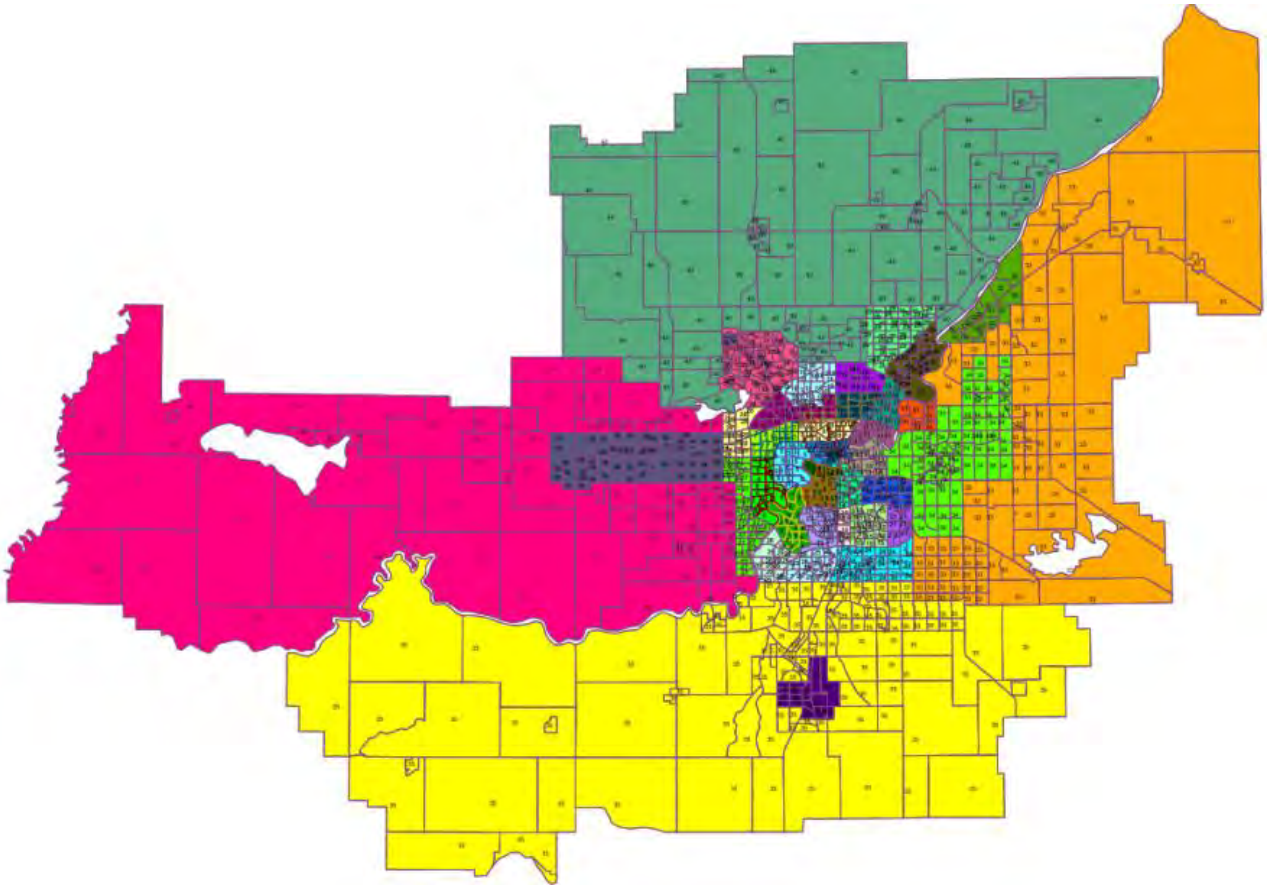
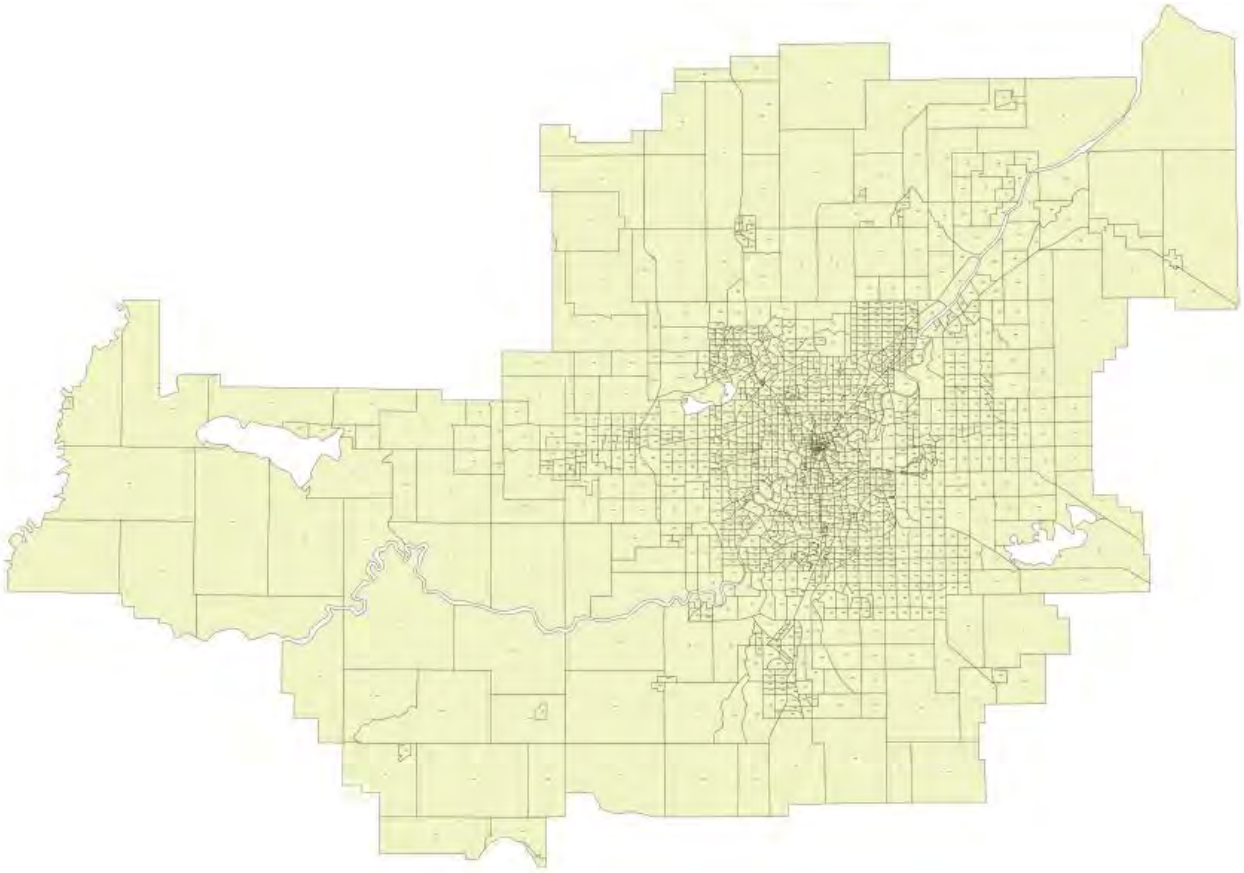


Figure 3-2
External Traffic Analysis Zones (TAZ)



Using the known typical travel patterns, the trips were then assigned a “gateway” into the St. Albert TDM. These gateways represent entry / exit points to and from St. Albert. The gateways are identified in **Table 3-5**. Although some gateways correspond to the municipal boundaries, note that some key external facilities have been included – notably, Anthony Henday Drive – in order to better model flows that impact the actual transportation system within St. Albert.

Table 3-5
External Gateway Locations

Gateway Road Name	Municipality	Centroid Number
Range Road 260	Sturgeon County	5100
Hogan Road	Sturgeon County	5101
Highway 2/St. Albert Trail	Sturgeon County	5102
Coal Mine Road	Sturgeon County	5103
Bellerose Drive	Sturgeon County	5104
Sturgeon Road	Sturgeon County	5105
Anthony Henday Drive East	Regional Traffic	5106
127 Street	City of Edmonton	5107
142 Street	City of Edmonton	5108
137 Street	City of Edmonton	5109
St. Albert Trail South	City of Edmonton	5110
Campbell Road/156 Street	City of Edmonton	5111
170 Street	City of Edmonton	5112
184 Street	City of Edmonton	5113
Anthony Henday Drive West	Regional Traffic	5114
Lois Hole Park Entrance	Sturgeon County/Provincial Park	5115
Meadowview Drive	Sturgeon County	5116
Villeneuve Road	Sturgeon County	5117

These locations of these gateways was illustrated in **Figure 2-2**.

The St. Albert TDM adheres to commonly used modelling practices, with one exception: That is, the model includes the Anthony Henday Drive which, even though it is located beyond the City’s boundaries, does influence the distribution of travel to and from St. Albert. For calibration purposes, trips assigned as entering the model through the Anthony Henday gateways were reassigned to the gateway through which they would enter St. Albert, in order to better compare volumes to the actual traffic count volumes from the City of St. Albert. In other words, it is not possible or desirable for the St. Albert TDM to model all the activity on Anthony Henday Drive: the model is focused only on the activity that is important to St. Albert. As a result, analyses of the broader Anthony Henday Drive or of any other facility outside the City of St. Albert should refer to the City of Edmonton or Alberta Transportation models.

3.2.2 Added External to External Trips

After summarizing the data from the Household Survey, the Intercept Survey and the National Household Survey, many of the external gateways (when compared to the traffic count data available) were still short of known auto volumes. From the Highway 2 Intercept Survey, it is known that 47.7% of trips at the boundary of St. Albert on Highway 2 are between Sturgeon County and the City of Edmonton (or from the City of Edmonton to Sturgeon County). Based on this, it was assumed that there would be a similar proportion of external-to-external trips (that is, through trips) at each gateway. The household survey was used to identify the distribution of trips between Edmonton and Sturgeon County. Again, trips through St. Albert Trail North were not added, as they were assumed to have been captured in the intercept survey.

3.2.3 Recreation and Shopping Trips

The final adjustment to the total trips was to add all the missing trips at the external zones based on the known traffic counts. These trips were assumed to be 50% recreation trips and 50% shopping trips, as it was known from the intercept surveys and local data that St. Albert is a popular regional destination for these uses, and those trips would not have been captured through other methods in the development. The distribution to the internal zones was based on the proportion of trips in the household survey identified as recreational or shopping trips.

3.2.4 Total External Trips

The summary of total external trips for the three hour PM Peak, and the traffic volume comparison is shown in **Table 3-6.**

Figure 3-6
External Trip Calibration Summary

				Road Name(s)																		
		Road Name(s)		RR260	Hogan	Hwy 2	Coal Mine	Bellerose	Sturgeon	Henday	127 St	142 St	137 St	StAT	Campbell	170 St	184 St	Henday	Lois Hole	Meadowvie	Villeneuve	Sum Trips In	Traffic Counts Out
				Sturgeon	Sturgeon	Sturgeon	Sturgeon	Sturgeon	Sturgeon	Henday	Edmonton	Edmonton	Edmonton	Edmonton	Edmonton	Edmonton	Edmonton	Henday	Golf Course	Sturgeon	Sturgeon		
Road Name(s)		Zone	Internal	5100	5101	5102	5103	5104	5105	5106	5107	5108	5109	5110	5111	5112	5113	5114	5115	5116	5117		
Internal Trips				0	0	1210	0	77	294	0	0	1657	226	3441	1851	711	1574	0	0	129	289		
RR260	Sturgeon	5100	0	0	0	0	0	0	0	0	0	0	1	11	1	0	2	0	0	0	0	14	30
Hogan	Sturgeon	5101	0	0	0	0	0	0	0	0	0	0	1	25	2	1	4	0	0	0	0	34	70
Hwy 2	Sturgeon	5102	1223	0	0	0	0	7	14	0	0	0	7	710	85	85	170	12	0	0	14	2328	2053
Coal Mine	Sturgeon	5103	0	0	0	0	0	0	0	0	0	0	1	13	1	1	2	0	0	0	0	18	37
Bellerose	Sturgeon	5104	63	0	0	9	0	0	0	0	0	0	7	140	11	6	21	0	0	0	0	256	388
Sturgeon	Sturgeon	5105	264	0	0	17	0	0	0	0	0	0	11	209	16	9	31	0	0	0	0	556	578
Henday	Henday	5106	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	20	0
127 St	Edmonton	5107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142 St	Edmonton	5108	1420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1420	1420
137 St	Edmonton	5109	835	1	2	9	1	8	10	0	0	0	0	0	0	0	0	0	0	5	11	880	880
StAT	Edmonton	5110	5468	11	31	848	14	154	182	0	0	0	0	0	0	0	0	0	0	89	209	7006	6832
Campbell	Edmonton	5111	3238	1	2	101	1	12	14	0	0	0	0	0	0	0	0	0	17	7	16	3407	3407
170 St	Edmonton	5112	2178	0	1	100	1	7	8	0	0	0	0	0	0	0	0	0	0	4	9	2308	2308
184 St	Edmonton	5113	2879	2	5	200	2	84	27	0	0	0	0	0	0	0	0	0	87	13	31	3329	3329
Henday	Henday	5114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Lois Hole	Park	5115	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	0
Meadowvie	Sturgeon	5116	120	0	0	0	0	0	0	0	0	0	4	83	6	4	12	0	0	0	0	230	230
Villeneuve	Sturgeon	5117	200	0	0	16	0	0	0	0	0	0	8	149	11	6	22	0	0	0	0	412	412
Sum Trips Out				15	40	2509	18	348	549	20	0	1657	267	4782	1984	824	1837	12	104	247	578		
Traffic Counts Out				31	85	2418	38	426	504	0	0	1657	395	4782	1984	824	1837	0	0	247	578		

3.2.5 Summary

The majority of the trips included in the auto matrix came from the household survey and the intercept survey (73%). The additional sources rounded out the data by accounting primarily for traffic for those who do not live in St. Albert, but work, go to school, shop or use other resources available in the community. The total trips, identified by source of data, are summarized in Table 3-7.

Table 3-7
2014 Trips by Data Source (3 Hour Peak Volumes)

Source	Internal To Internal Trips	Internal to External Trips	External to Internal Trips	External to External Trips	Total Trips	Percent of Total
Household Survey	19,313	1,906	13,126	474	34,819	**65%**
Intercept Survey	0	1,185	918	2,352	4,455	**8%**
National Household Survey	0	1,716	0	0	1,716	**3%**
Added External to External Trips	0	0	1,742	0	1,742	**3%**
Added Recreation and Shopping Trips	0	6,652	3,976	0	10,628	**20%**
TOTAL TRIPS	**19,313**	**11,459**	**19,762**	**2,826**	**53,360**	**100%**

3.3 TRANSIT TRIP CALIBRATION

The household travel survey was the only source used to develop the transit trips tables for the 2014 travel demand model. As noted, St. Albert Transit is used primarily by residents of the City of St. Albert, and when volumes from the household survey were compared to available transit ridership data, the model data matched ridership data in an acceptable way.

Based on the 2011 daily commuter ridership data (the most recent transit data available), the PM Peak represents 24% of total northbound STAT trips, and 4% of total southbound STAT trips. These data are available in Appendix B.5. To build the 2014 PM Peak transit trip table, the full day transit ridership data was multiplied by 0.24, with the exception of all trips with a destination in Edmonton, which were multiplied by 0.04.

The calibration for 2014 focused primarily on commuter ridership – that is, on transit trips between St. Albert and Edmonton. The 2014 model volumes were compared to the 2011 counts at the south end of St. Albert Trail, and at the Sturgeon River crossing on St. Albert Trail. These volumes provide a good comparison, as STAT ridership actually fell between 2011 and 2013. The full day volume comparison is summarized in **Tables 3-8.**

Table 3.8
24 Hour Transit Volumes Comparison

Locations	Household Survey/Model Volumes		2011 Transit Survey		% Difference	
	NB	SB	NB	SB	NB	SB
St. Albert Trail, north of Anthony Henday Drive	2625	2703	2406	2328	9%	16%
170 Street, City Boundary	36	52	83	108	-57%	-52%
St. Albert Trail, river crossing	1918	1783	1111	1277	73%	40%
Perron Street, river crossing	23	76	26	22	-12%	245%

The primary concern for calibration for transit was the commuter rides; that is ridership on St. Albert Trail, north of Anthony Henday Drive. The percent difference for those trips is acceptable for the amount of data available. The internal trips from the household survey are higher than those available in 2011 . A number of factors could account for this including ridership growth, trips that are actually park and ride trips which were recorded as transit trips, and statistical error caused by low overall ridership in the survey. To account for the impact of park and ride, for future scenarios, the park and ride trips were adjusted in increase trips originating and finishing at the park and ride locations.

For the PM Peak volume comparison, the volumes were compared for the commuter trips at St. Albert Trail south of the City of St. Albert. For calibration purposes, the primary concern was calibration of northbound trips in the PM Peak direction, which show a 4% difference between the model volumes, and the 2011 ridership counts. The percent difference is the southbound direction is significantly higher; however, overall

ridership volumes in the southbound direction in the PM are low, so a higher percent difference is not as significant to the overall calibration. These results are summarized in **Table 3-9.**

Table 3-9
PM Peak Transit Volume Comparison

Locations	Household Survey/Model Volumes		2011 Ridership Counts		% Different	
	NB	SB	NB	SB	NB	SB
St. Albert Trail, north of Anthony Henday Drive	630	180	657	98	4%	84%

3.4 SUMMARY

The 2014 base auto volumes were developed primarily from the 2014 household travel survey and 2014 intercept survey, with supporting data derived from a few other sources to account for traffic in St. Albert not generated by St. Albert residents.

Because transit ridership in St. Albert is generated mainly from St. Albert residents, transit ridership data was derived exclusively from the 2014 household travel survey.

These data provided the 2014 baseline trip tables for the St. Albert model and were used to generated estimates for future travel, as described in the following section.

4 Land Use Inputs and Forecasting

4.1 FORECASTING METHOD

The demand for travel is a 'derived' demand, meaning that people travel not for the sake of making a trip but to partake in some land-based activity, such as returning home from work or going shopping. For this reason, the land use characteristics of each TAZ – as expressed by population, jobs and retail space – are used as the basis for forecasting travel.

The St. Albert TDM uses the commonly-used 'growth factor' method to estimate future travel. This method 'grows' the base year trip matrices in proportion to growth in land use at origin and destination TAZs. This approach allows new residential TAZs to be taken into account, while maintaining existing travel in more stable (mature) TAZs. As is discussed below, trips are divided according to three purposes – work (mainly, return from work), retail (shopping) trips, and all other trip purposes. These categories allow different combinations of the three land use groupings to be used, in order to estimate growth in travel that is more sensitive to the actual land use in each TAZ.

4.2 LAND USE

The future (forecast) scenarios are based on 2014, 2024 and 2042 population, employment and retail space estimates from the City of St. Albert, Sturgeon County and the City of Edmonton. These data are included in Appendix D.

Sturgeon County population was divided out into two different areas, Sturgeon County overall and Area G, to identify the different growth expectations in these two areas. The population and employment data are summarized in **Table 4-1.** Retail space is summarized in **Table 4-3.**

Table 4-1
Population and Employment Forecast Data

Centroid	Municipality	Population			Employment		
		2014	2024	2042	2014	2024	2042
Internal	St. Albert	63,900	87,800	113,000	20,000	25,900	31,200
5100, 5101, 5103, 5104, 5105, 5115	Sturgeon County (Area G)	6,200	8,400	14,800	11,900	14,300	18,400
5102, 5117	Sturgeon County	20,600	23,500	28,700	11,900	14,300	18,400
5106, 5107, 5108, 5109, 5110, 5111, 5112, 5113, 5114, 5116	Edmonton	864,800	1,068,300	1,415,000	490,600	622,300	798,000
5115	Sturgeon County (Area G)	20,600	23,500	28,700	11,900	14,300	18,400

Table 4-2
Retail Space in St. Albert

St. Albert	2014	2024	2042
Additional Retail Space (1,000 ft^2)	2,700	3,200	5,000

The following sections describe the forecasting process, first for auto trips and then for transit trips.

4.3 AUTO TRIP FORECASTS

To forecast the future trip tables, the 2014 trip types were broken out into three different trip types: work trips, retail trips and other trips. Forecasting also separated out trip origins and trip destinations.

To anticipate the effects of future trip spreading, all future forecasted values were reduced by 6.7% to mimic the impact of trip spreading. Where the 2014 values were calibrated using an assumption that 35% off the three hour peak occurs within the peak hour, for 2024 and 2042 volumes, it was assumed that only 33% of three hour peak occurs within the peak hour. This occurs naturally in a system as users adjust their travel patterns to reduce the impact of peaking volumes on their own travel.

4.3.1 Work Trips

Trip table forecasts for work trips were calculated differently for internal trips (trips originating or ending in St. Albert), and external trips (trips with origins or destinations outside of St. Albert). Trip forecasting was also dependent on whether it was an origin trip, or a destination trip. After the origin trips and destination trips were forecasted, the higher total was lowered to match the lower total so that origin trips and destination trips matched to create a balanced matrix.

Future trips with an origin in St. Albert were calculated using employment estimates for the future scenario (2024 or 2042), multiplied by a trip rate from the 2014 work trips per employment, which in turn was derived from the HTS. Future trips with a destination in St. Albert were calculated using the future population estimate multiplied by trip rate derived from the 2014 destination work trips per St. Albert population.

Future trips with an origin outside St. Albert were derived by multiplying the 2014 employment trips times the employment growth rate. Future trips with a destination outside St. Albert were derived by multiplying the 2014 work trips times a population growth rate.

The trip forecasting is summarized in **Table 4-4 and 4-5.**

Table 4-4
Work Trip Forecasting Inputs

Forecast Horizon	Internal Trip Forecasting Inputs	External Trip Forecasting Inputs
2024 Origins	• 2024 St. Albert Employment • 2014 St. Albert Work Auto Trips/2014 St. Albert Employment (trip rate = 0.27 trips/job)	• 2014 Employment Auto Trips • 2014 to 2024 Employment Growth Rates
2024 Destination	• 2024 St. Albert Population • 2014 St. Albert Work Auto Trips/2014 St. Albert Population (trip rate = 0.11 trips/person)	• 2014 Employment Auto Trips • 2024 to 2014 Population Growth Rates
2042 Origins	• 2042 St. Albert Employment • 2014 St. Albert Work Auto Trips/2014 St. Albert Employment (trip rate = 0.27 trips/job)	• 2014 Employment Auto Trips • 2014 to 2042 Employment Growth Rates
2042 Destinations	• 2042 St. Albert Population • 2014 St. Albert Work Auto Trips/2014 St. Albert Population (trip rate = 0.11 trips/person)	• 2014 Employment Auto Trips • 2014 to 2042 Population Growth Rates

Table 4-5
Work Trip Forecasting Results

Year	Work Trips
2014	9,327
2024	12,612
2042	15,292

The growth rates of the work trips are compared to the growth rates of population and employment in the St. Albert and surrounding municipalities (External) in **Table 4-6**. These results indicate that this method provided a reasonable approximation for growth, with a slighted higher proportion of growth occurring by 2024. It also indicates that the influence of higher population growth is influential in driver the higher auto trip growth rate.

Table 4-6
Work Trip Forecasting Growth Rate Comparison (From 2014 Values)

Municipality	Annual Population Growth Rate (%)		Annual Employment Growth Rate (%)		2024 Auto Work Trip Growth Rate (%)	2042 Auto Work Trip Growth Rate (2042)
	2024	2042	2024	2042		
St. Albert (Internal)	3.7%	2.7%	3.0%	2.0%	3.5%	2.3%
External Average	2.3%	2.2%	2.7%	2.2%		

4.3.2 Other Trips

'Other trips' indicates all non-retail focused and non-work commuter trips. Future 'other' trips were derived using population growth. The forecasting inputs for other trips are summarized in **Table 4-7**. The results of the forecasting are summarized in **Table 4-8.**

Table 4-7
Other Trip Forecasting Inputs

Forecast Horizon	Internal and External Trip Forecasting Inputs
2024	• 2014 Other Auto Trips • 2014 to 2024 Population Growth Rates
2042	• 2014 Other Auto Trips • 2014 to 2042 Population Growth Rates

Table 4-8
Other Trip Forecasting Results

Year	Other Trips
2014	7,602
2024	12,164
2042	14,768

The annual growth rates (compared to 2014 values) for population and other trips is compared in **Table 4-9**. Other trips grow at a higher rate than the overall population for the first 10 year horizon in the model, but then reduce to slightly lower than the average growth rates by the 2042 horizon. The higher growth rate for these trips was impacted by the number of zones going from no development to large population numbers in the first 10 years of the model.

Table 4-9
Other Trip Forecasting Growth Rate Comparison (From 2014 Values)

Municipality	Annual Population Growth Rate (%)		2024 Auto Other Trip Growth Rate (%)	2042 Auto Other Trip Growth Rate (2042)
	2024	2042		
St. Albert (Internal)	3.7%	4.3%	6.0%	3.4%
External Average	2.3%	3.6%		

4.3.3 Retail Trips

The total retail space estimates for future 2024 and 2042 scenarios were provided by the City of St. Albert's Economic Development office. For zones with future retail, trips were generated using a trip rate derived from the 2014 retail trips/2014 retail space. For zones that currently had retail trips, but no future estimated major retail growth, trips were generated using population growth for those zones. The inputs for the forecasting are summarized in **Table 4-10**. The results are summarized in **Table 4-11**, and compared to retail growth rates in **Table 4-12**.

Table 4-10
Retail Trip Forecasting Inputs

Forecast Horizon	Internal and External Trip Forecasting Inputs
2024	• 2014 Retail Auto Trips • 2024 Population • 2014 to 2024 Population Growth Rates • 2024 Retail Space • 2014 retail trips/2014 retail space (1.252 trips/1,000 sq ft)
2042	• 2014 Retail Auto Trips • 2042 Population • 2014 to 2042 Population Growth Rates • 2042 Retail Space2014 retail trips/2014 retail space (1.252 trips/1,000 sqft)

Table 4-11
Retail Trip Forecasting Results

Year	Retail Trips
2014	3,424
2024	5,416
2042	7,337

When compared to the annual retail growth rate (**Table 4-12**), we see that the retail trips grow at a higher rate than the retail space, caused by the large population growth in certain zones, particularly through 2024. However, as with other results (**Table 4-9** on page 4-31) the auto growth rates closely match the retail growth rates by 2042.

Table 4-12
Retail Trip Forecasting Growth Rate Comparison (From 2014 Values)

Municipality	Annual Retail Growth Rate		2024 Auto Retail Trip Growth Rate (%)	2042 Auto Retail Trip Growth Rate (2042)
	2024	2042		
St. Albert	1.9%	3.0%	5.8%	4.1%

4.3.4 Total Trip Summary

Table 4-13 summarizes the total auto trips from 2014, 2024 and 2042.

Table 4-13
Total Auto Trip Forecast Summary

Year	Total Auto Trips	Annual Growth Rate from 2014
2014	20,355	-
2024	30,193	4.8%
2042	37,398	3.0%

4.4 TRANSIT TRIP FORECASTS

Transit ridership was estimated for two different future scenarios: 2042 bus only and 2042 LRT.

4.4.1 Bus Only Forecasting

The 2042 bus only growth was based on a combination of trip rates and population growth. For internal trips (trips with origins or destinations inside St. Albert), the future ridership was based on a transit trip generation rate calculated from the 2014 trip table (i.e., from the HTS) and the 2014 City of St. Albert population. However, given that the total current transit volumes are *relatively* small compared with the dominant auto trips, no differentiation was made by trip purpose. For trips with origins or destinations outside of St. Albert (commuter ridership), the growth was based on the 2014 trips, multiplied by the St. Albert population growth rate. The inputs for the 2042 transit (bus only) is summarized in **Table 4-14.**

Table 4-14
2042 Bus Only Transit Forecast Inputs

Forecast Horizon	Internal Trip Forecasting Inputs	External Trip Forecasting Inputs
2042 Origins	• 2014 Internal Transit Trips/2014 St. Albert Population (trip rate = 0.0039 trips/person) • 2042 St. Albert Population	• 2014 External Transit Trips • 2014 to 2042 St. Albert Population Growth Rate
2042 Destinations	• 2014 Internal Transit Trips/2014 St. Albert Population (trip rate = 0.0122 trips/person) • 2042 St. Albert Population	• 2014External Transit Trips • 2014 to 2042 St. Albert Population Growth Rate

Transit ridership growth compared to St. Albert population growth is summarized in **Table 4-15**. From this result we can see that transit growth is similar, though slightly lower than population growth.

Table 4-15
Transit Growth Comparison

Year	Transit Trips	Transit Trip Growth Rate	Population Growth Rate
2014	890		
2042	1677	3.2%	3.0%

4.4.2 LRT Forecasts

The future scenario with LRT was estimated by calculating the expected future travel time improvements developed by using the LRT, instead of travelling by car through St. Albert into the City of Edmonton. This analysis identified a possible improvement in travel time of 40% through taking the LRT, versus auto travel time in the future given expected future congestion. Long run travel elasticity's with respect to car travel time were used in order to estimate the potential shift from auto travellers to transit. Sources included TRACE 1999 (cited in Litman 2013) with an elasticity of 0.70 in transit demand for commuting trips, and between +0.7 to +1.1 for long run transit ridership with respect to transit service (Litman, 2015). An elasticity of +0.7 was selected for the LRT ridership estimate. This elasticity was only applied to auto trips that ended (or began) in the City of Edmonton and were accessible to LRT stations (Downtown Edmonton, MacEwan University, University of Alberta and NAIT) – in other words, trips that were legitimate candidates for LRT. This resulted in an additional 500 transit trips being added in 2042 in the PM Peak as a result of LRT. Note that it was assumed, reasonably, that all occupants of a vehicle would divert to transit, and so the auto vehicle (auto driver) trips were converted to auto person-trips using a vehicle occupancy rate of 1.06 that was derived from the household survey. The total LRT trips, compared the forecasted transit trips without the LRT are summarized in **Table 4-16**.

Table 4-16
Transit Trips Forecasting Results (LRT Impact)

Year	Transit Trips (no LRT)	Transit Trips (with LRT)
2014	890	-
2042	1677	2217

The impact this has on mode split is summarized in **Table 4-17**. Note that while the impact for overall mode split for the entire model is only an increase of around 1% towards transit. However, the mode split for trips on St. Albert Trail into and out of the City of Edmonton are compared, the LRT would increase transit mode split by around 7%.

Table 4-17
Mode Split LRT Impact

	2014	2042 No LRT	2042 With LRT
All Trips Transit Mode Percentage	4.2%	4.3%	5.6%
Trips on St. Albert Trail into and Out of Edmonton Transit Percentage	14.8%	16.3%	23.3%

5 Analysis of Forecasts

5.1 2014 BASE MODEL

Previous sections of this report described the work that was completed to develop the 2014 base year scenario. Once these updates were made, the model was tested by comparing 2014 traffic counts from the City of St. Albert to the model results for the 2014 PM Peak.

The first test was done by evaluating the volumes at each of the Sturgeon River crossings in St. Albert:

- Ray Gibbon Drive.
- Perron Street.
- St. Albert Trail.
- Boudreau Street.

This evaluation identified that both trips north across the river and south across the river were low. Because the external gateways corresponded well to the traffic counts, this gap indicated that internal cross-river trips were low. To adjust this, trips were added for all internal north-to-south, and south-to-north trips. These trips were added in proportion to the existing cross-river trips, so as to avoid any bias between origin-destination pairs.

After this adjustment, the model was found to be over-assigning trips to smaller local roads. The VDF for these roads was reduced to a speed limit of 30 km/h for all local roads, and 40 km/h for most collector roads to develop a model that accurately reflects actual traffic patterns in St. Albert. (See Section 2.2 for further details on the calibration of the VDF functions.) Appendix B.6 contains the internal calibration data, with the model values compared to traffic counts.

5.2 2024 AND 2042 SCENARIOS

The 2024 and 2042 scenarios were evaluated by comparing the trips tables to population growth, employment growth and retail growth. The initial review revealed that additional trip spreading was necessary to distribute the trips more evenly about the network, in light of expected congestion levels on the network. Because of this, it was assumed that for future scenarios, the hour peak within the three hour peak should be reduced down slightly to 33% of the three hour peak – that is, a three-hour peak hour, consistent with a fast-growing large metropolitan area. That reduction has already been accounted for in the volumes reported.

5.3 MODEL RESULTS

A sample of model result maps are included in Appendix B.7.

6 Summary

The 2015 update to the St. Albert TMP included the development of a new travel demand model. This model was built using traffic and travel information collected in 2014, thus the base year of the model is a 2014 travel demand model.

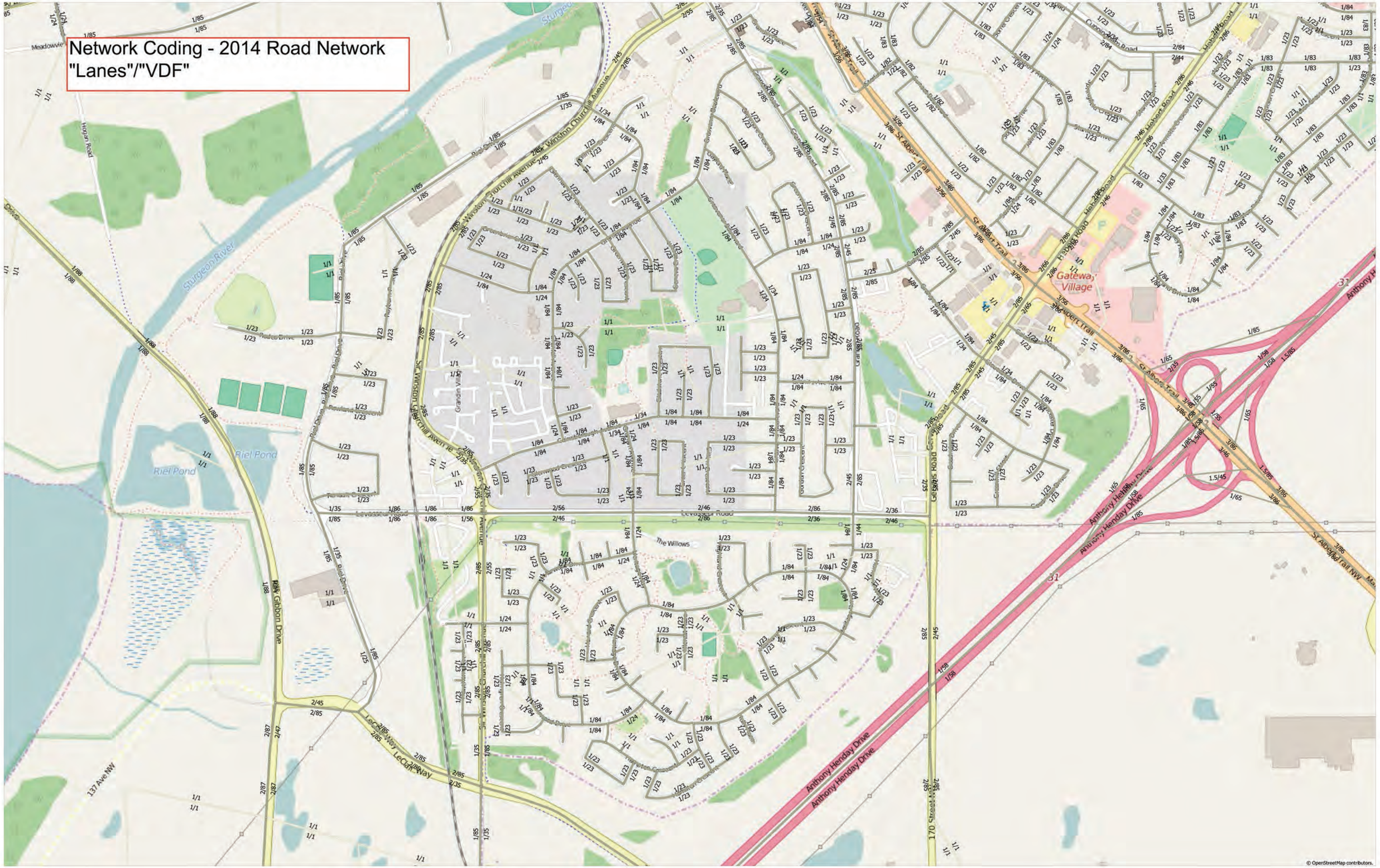
The model was built using EMME software, which was selected in consultation with the City of St. Albert, and matches the software platform used by Alberta Transportation and the City of Edmonton.

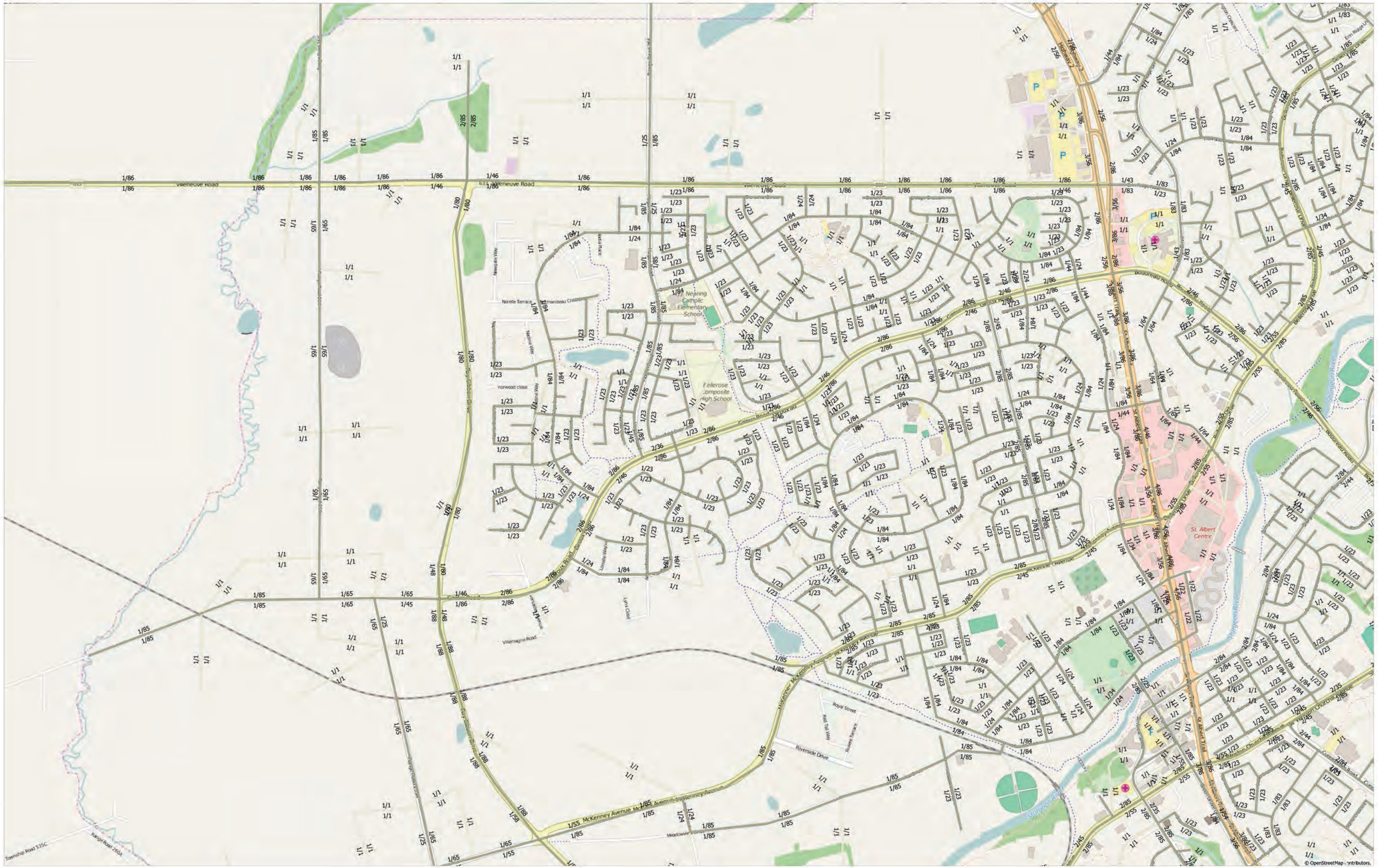
The auto trip matrix for the base year for the model (2014) was built using a variety of sources, primarily a household travel survey conducted in the City of St. Albert in the fall of 2014 and an intercept survey along Highway 2 north of the City of St. Albert, also in the fall of 2014. This data was supplemented with information from Statistics Canada and available traffic counts. The transit matrix for the base year of the model was developed exclusively from the household travel survey.

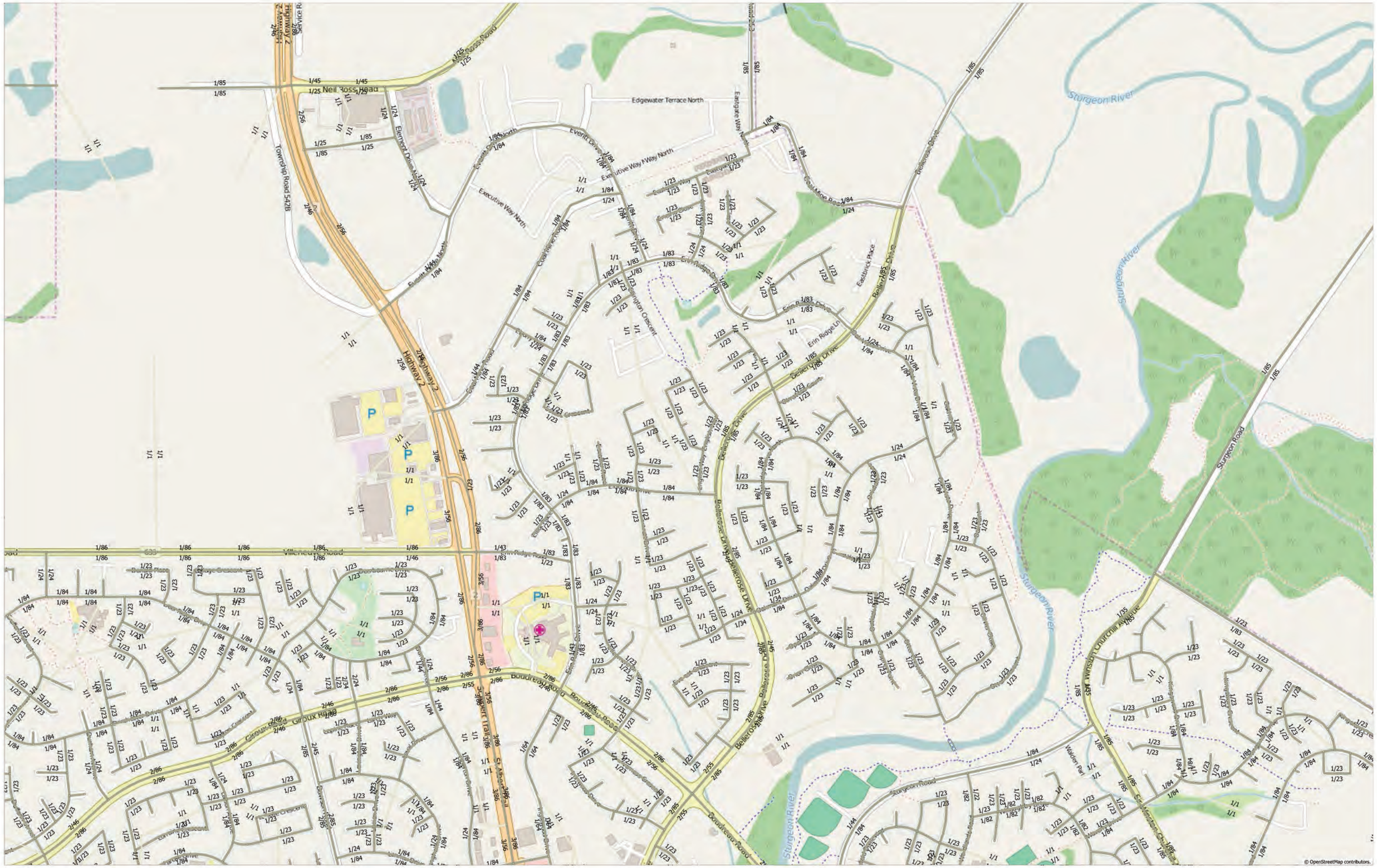
The future scenarios for auto trips were developed using a combination of population growth, employment growth and retail growth estimates. The transit ridership estimates for future scenarios were estimated first with population growth, and then using transit elasticity's to estimate possible future ridership spurned by the development of an LRT through St. Albert.
The development of the travel demand model provides a valuable future resource for the City of St. Albert, both through the model itself, but also through the data collected, especially through the household travel survey. The EMME model can be updated with future land use and road network information to evaluate future proposed infrastructure and land use developments. The household travel survey provides a valuable snapshot of current trip purpose and mode share, and is a tool kit that the city can use as a comparison to future surveys, as a means of identifying mode shift.

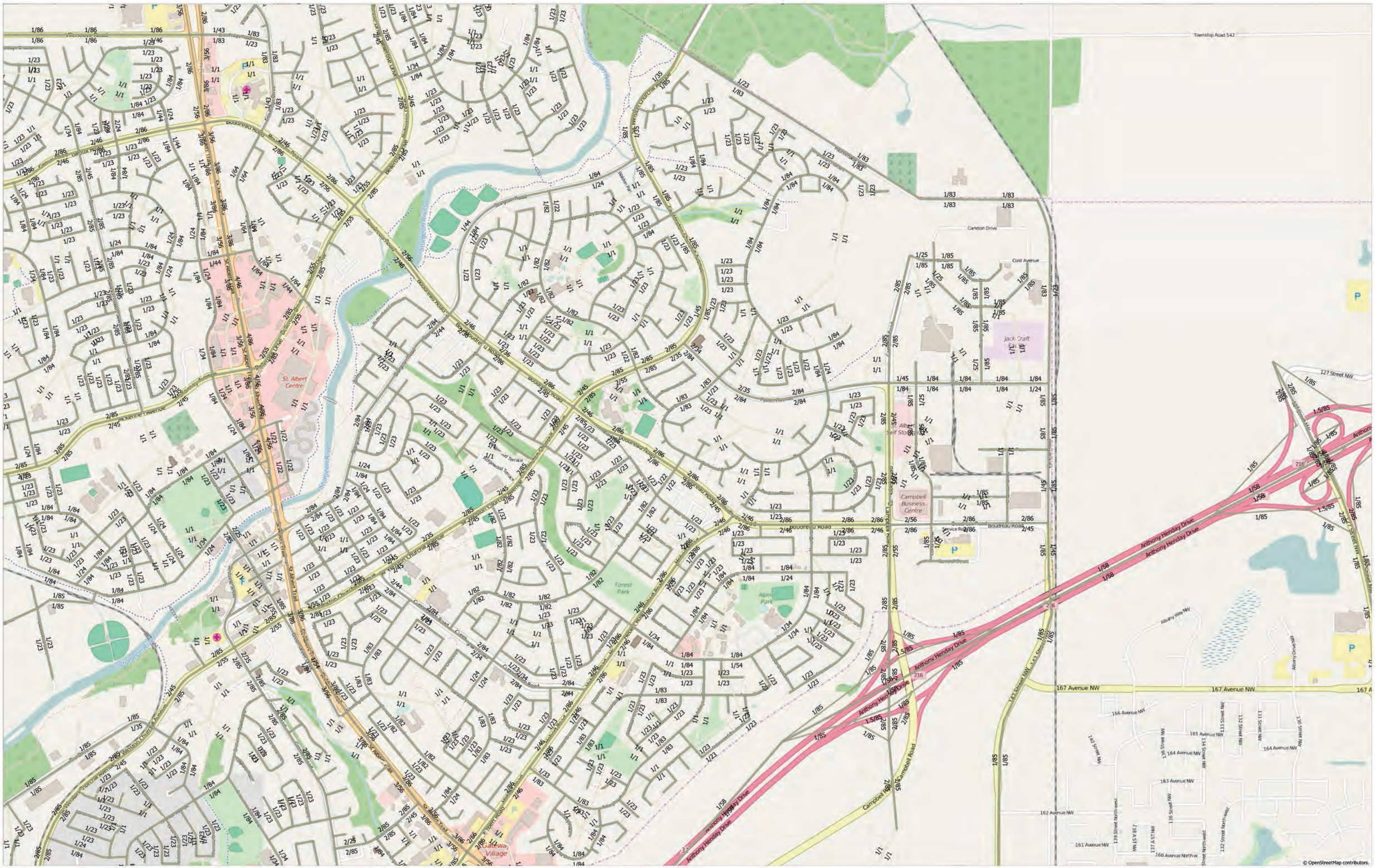
Appendix B.1 – Network Coding Maps

Network Coding - 2014 Road Network
"Lanes"/"VDF"

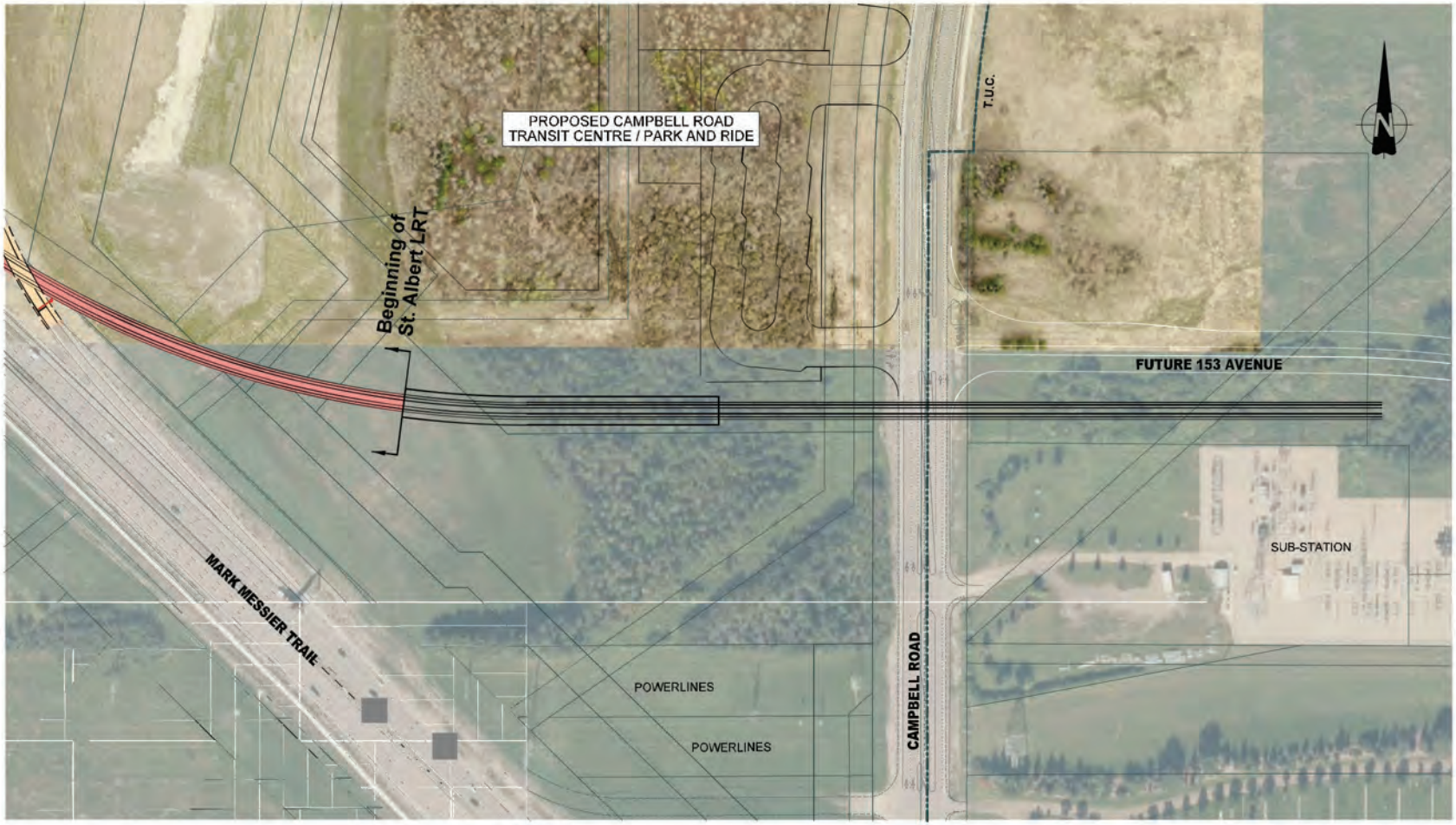

Sturgeon River
Riel Pond
Riel Pond
Gateway Village
Winston Churchill Avenue
St Albert Trail
Anthony Henday Drive
Anthony Henday Drive
Anthony Henday Drive
Lee Ridge Road
Lee Ridge Road
Lee Ridge Road
Hebert Road
Hebert Road
Hebert Road
Meadowvie
Higgin Road
Riel Drive
Riel Drive
Riel Drive


Villeneuve Road
Range Road 255
Township Road 535C
Range Road 260A
Norette Terrace
Norwood Close
Villemagne Road
Lynn Close
Lorraine Way
Royal Street
Red Tail Way
Rivers Terrace
Riverside Drive
Meadowview Common
Boudreau Road
Sturgeon River
St. Albert Centre
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Highway 2
Service Rd
Neil Ross Road
Edgewater Terrace North
Everett Drive North
Executive Way North
Township Road 542B
Eberhart Drive North
Eastgate Way
Eastgate Place
Eastgate Close
Eastgate Crescent
Eastgate Drive
Coal Mine Road
Belleterre Drive
Eastbrook Place
Erin Ridge Drive
Erin Ridge Crescent
Erin Ridge Close
Erin Ridge Court
Erin Ridge Landing
Erin Ridge Manor
Erin Ridge Point
Erin Ridge Terrace
Erin Ridge Way
Erin Ridge Wynd
Sturgeon River
Sturgeon Road
Boudreau Road
Groulx Road
Groulx Highway
St. Albert Trail
Wensch Churchill Avenue
Weldon Park
Millcreek Road
Sturgeon River
P
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Township Road 542
Carleton Drive
Cust Avenue
Jack Craft
127 Street NW
Anthony Henday Drive
Campbell Road
Campbell Business Centre
Boudreau Road
St. Albert Centre
Gateway Village
Forest Park
Alpine Park
Sturgeon River
Sturgeon Valley Park
167 Avenue NW
166 Avenue NW
165 Avenue NW
164 Avenue NW
163 Avenue NW
162 Avenue NW
161 Avenue NW
160 Avenue NW
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Appendix B.2 - LRT Alignment

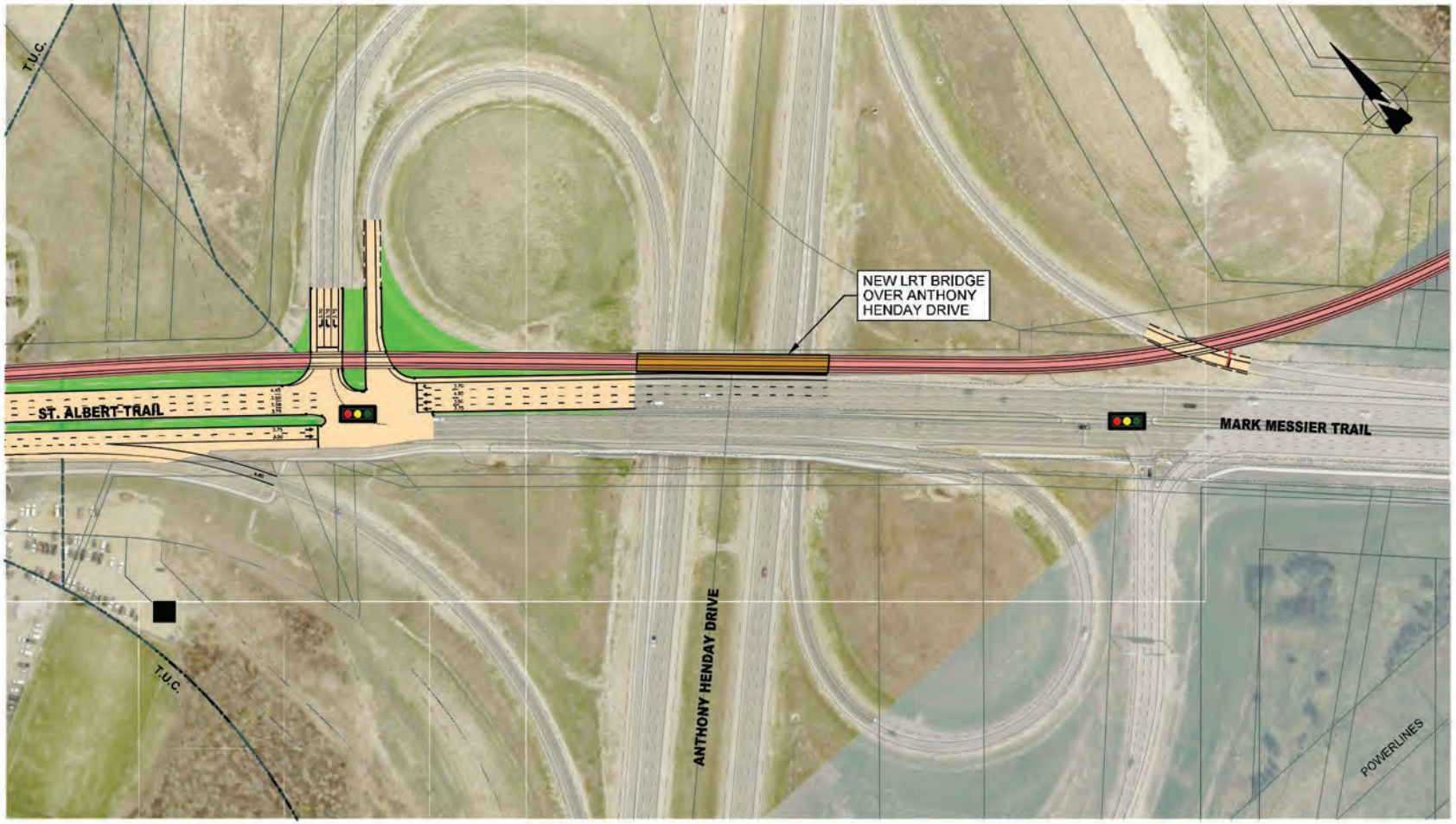


LEGEND

- LRT at Grade
- Elevated LRT/Bridge
- LRT Station
- Roadworks
- Sidewalk
- Landscaping
- Traction Power Substation
- Crossing Gate
- Signalized Intersection
- Direction Arrows
- Pavement Markings
- Fence
- Bus Stops

CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.1

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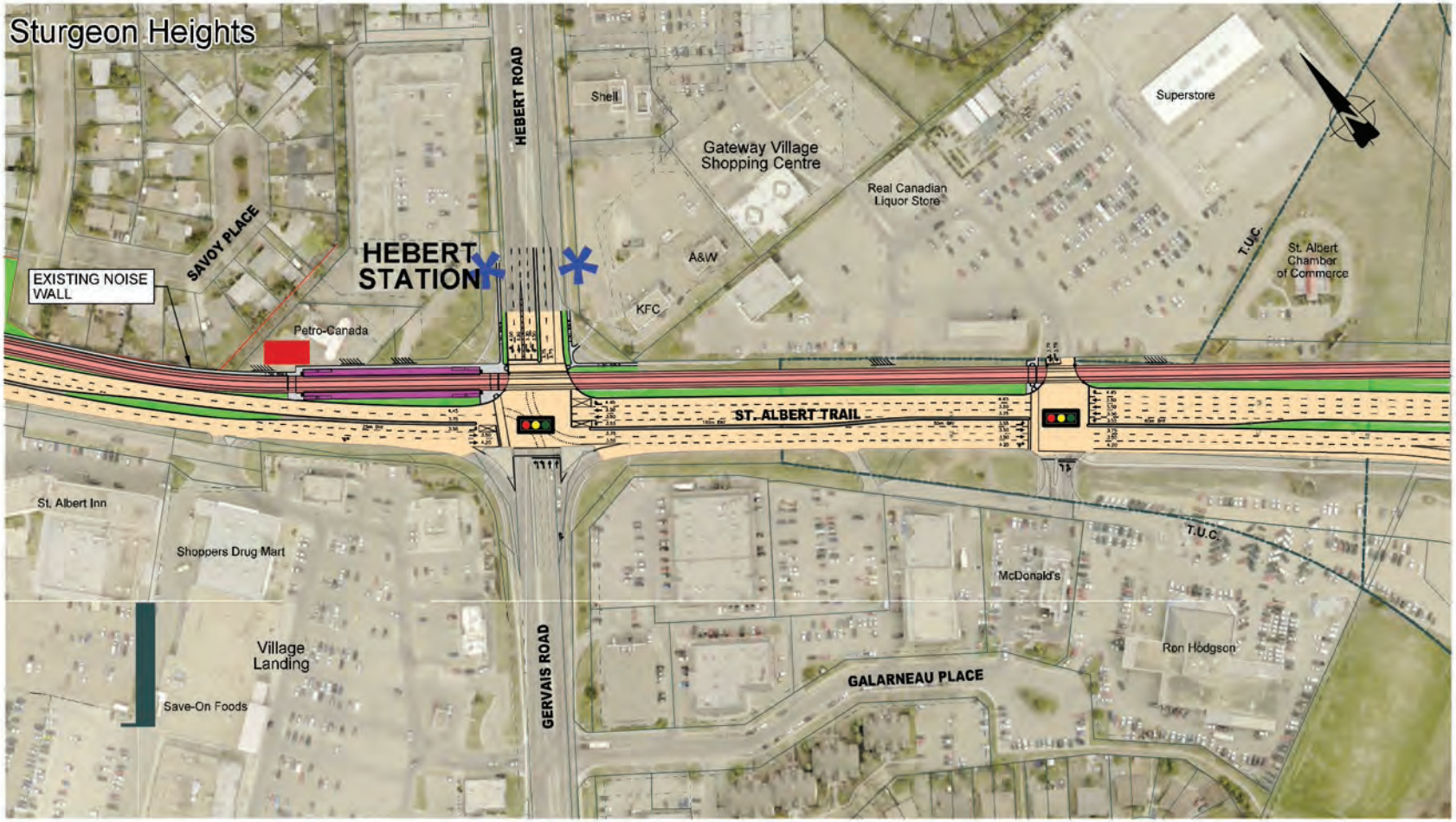


LEGEND

- LRT at Grade
- Elevated LRT/Bridge
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CITY OF ST. ALBERT
LRT PLANNING STUDY
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FIGURE 4.1.2

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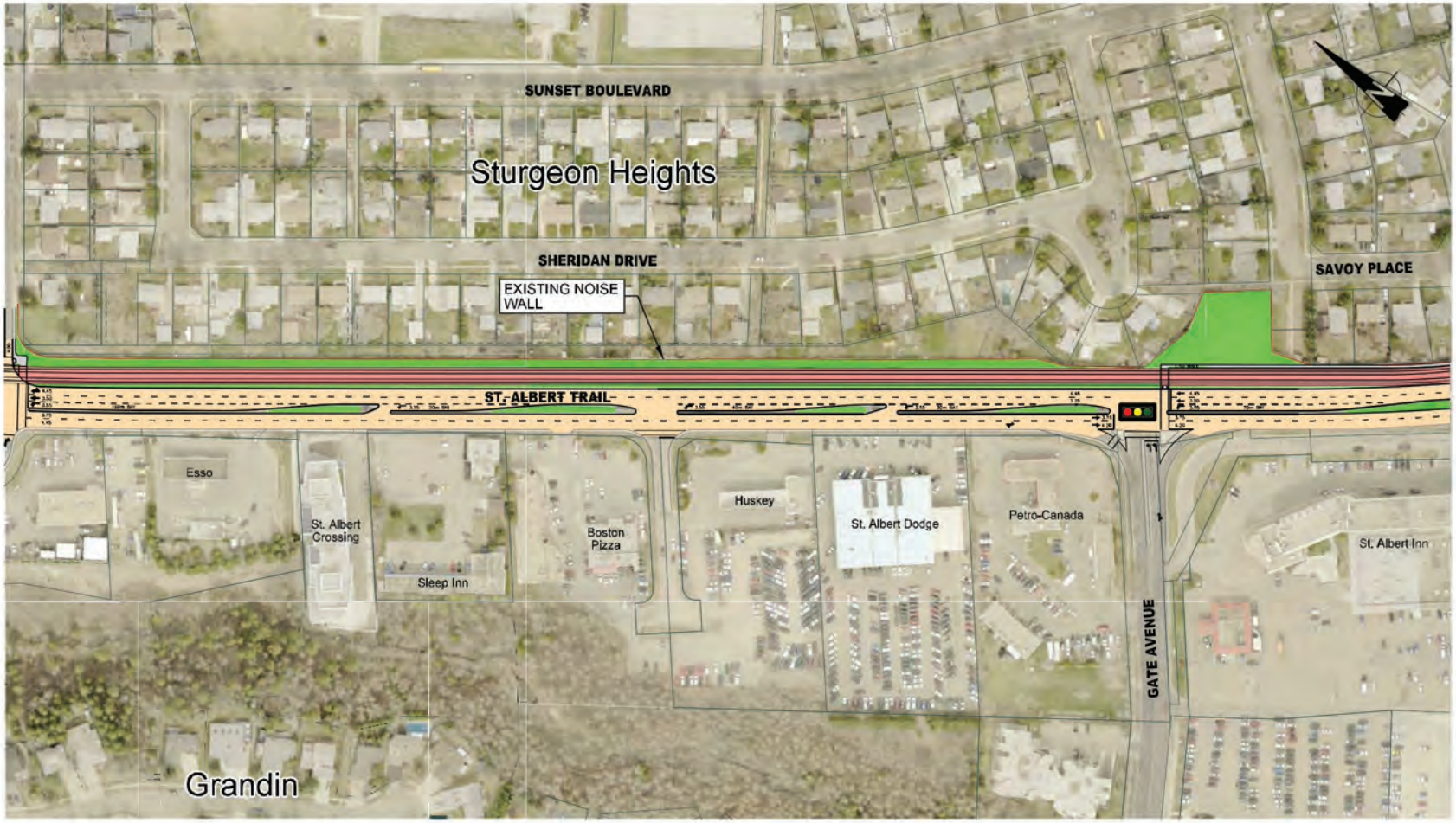


LEGEND

- LRT at Grade
- Elevated LRT/Bridge
- LRT Station
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CITY OF ST. ALBERT
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FIGURE 4.1.3

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LEGEND

- LRT at Grade
- Elevated LRT/Bridge
- LRT Station
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- Landscaping
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- Pavement Markings
- Fence
- Bus Stops

CITY OF ST. ALBERT
LRT PLANNING STUDY
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FIGURE 4.1.4

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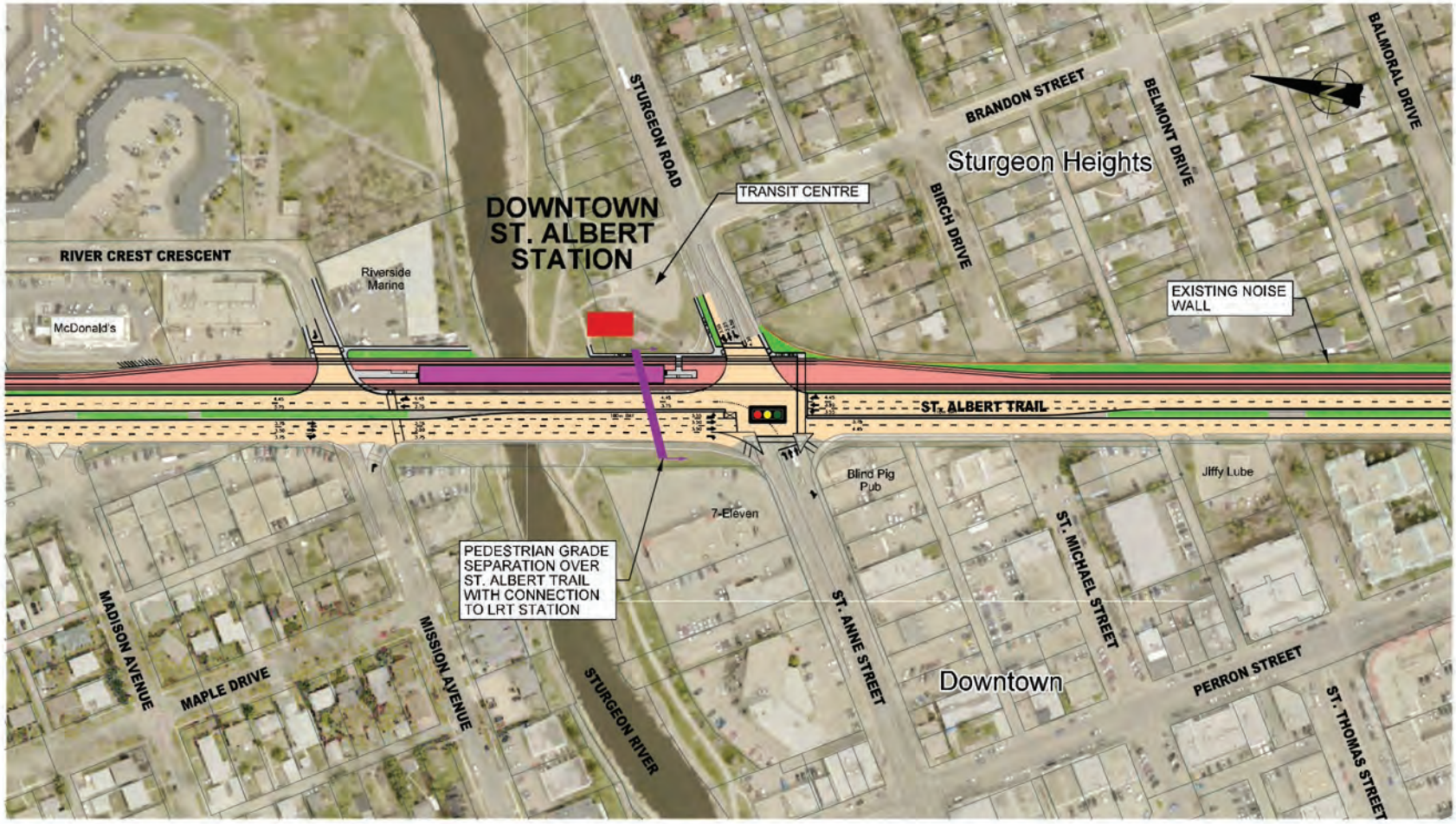
LEGEND

- LRT at Grade
- Elevated LRT/Bridge
- LRT Station
- Roadworks
- Sidewalk
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- Bus Stops

CITY OF ST. ALBERT
LRT PLANNING STUDY
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FIGURE 4.1.5

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LEGEND

- LRT at Grade
- Elevated LRT/Bridge
- LRT Station
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- Sidewalk
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- Bus Stops

CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.6

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CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.7

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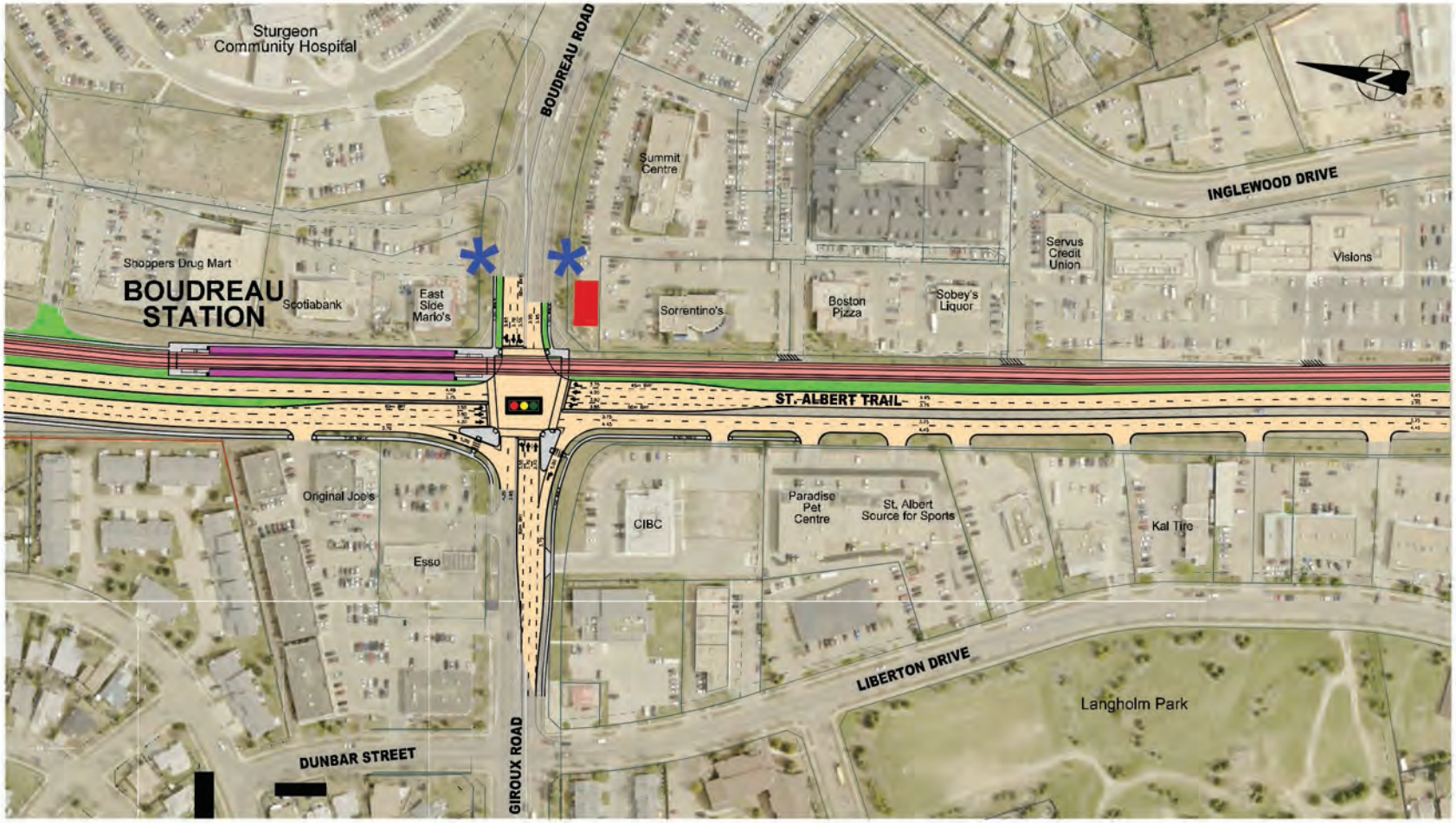


LEGEND

- LRT at Grade
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CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.8

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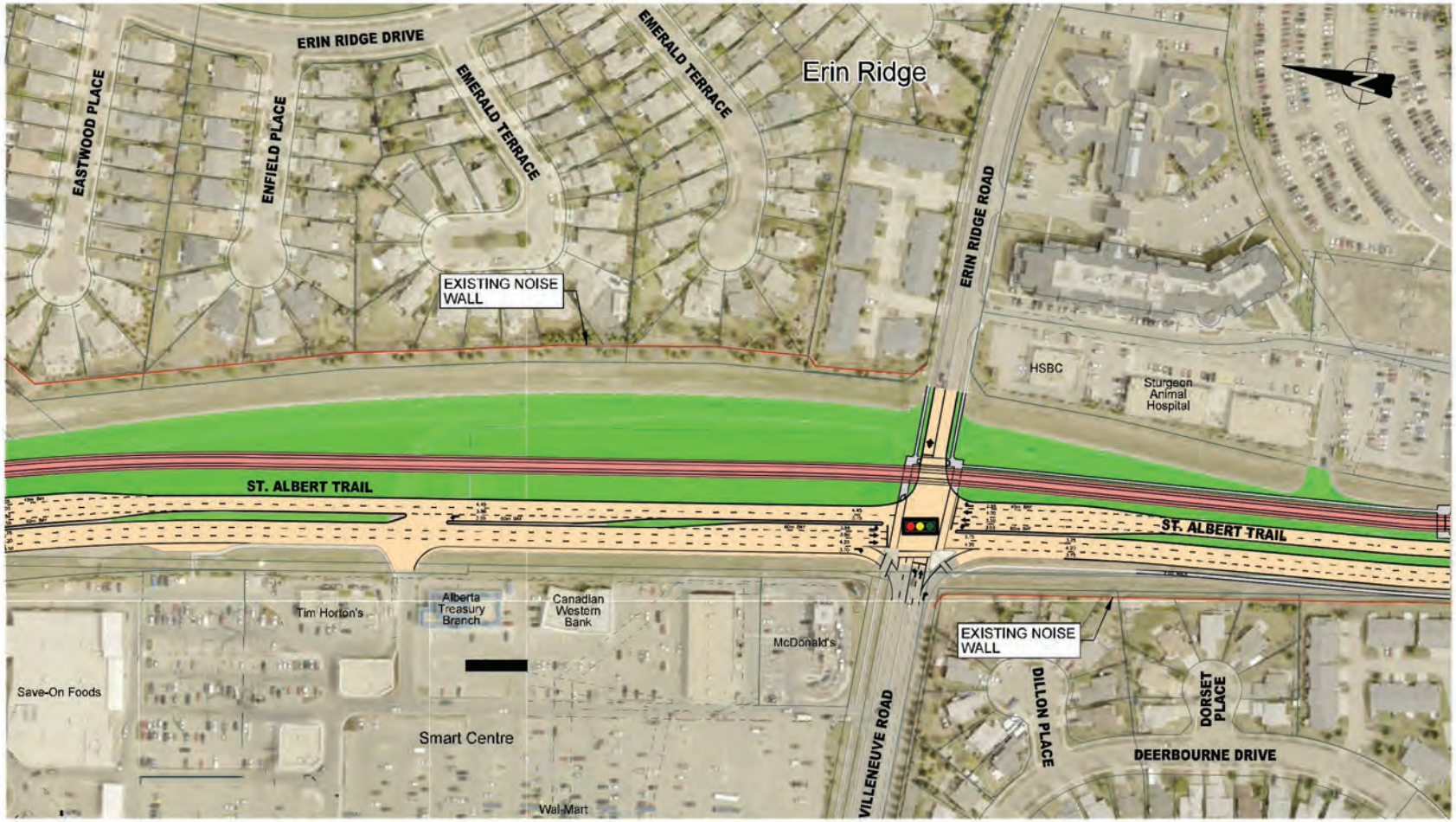


LEGEND

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CITY OF ST. ALBERT
LRT PLANNING STUDY
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FIGURE 4.1.9

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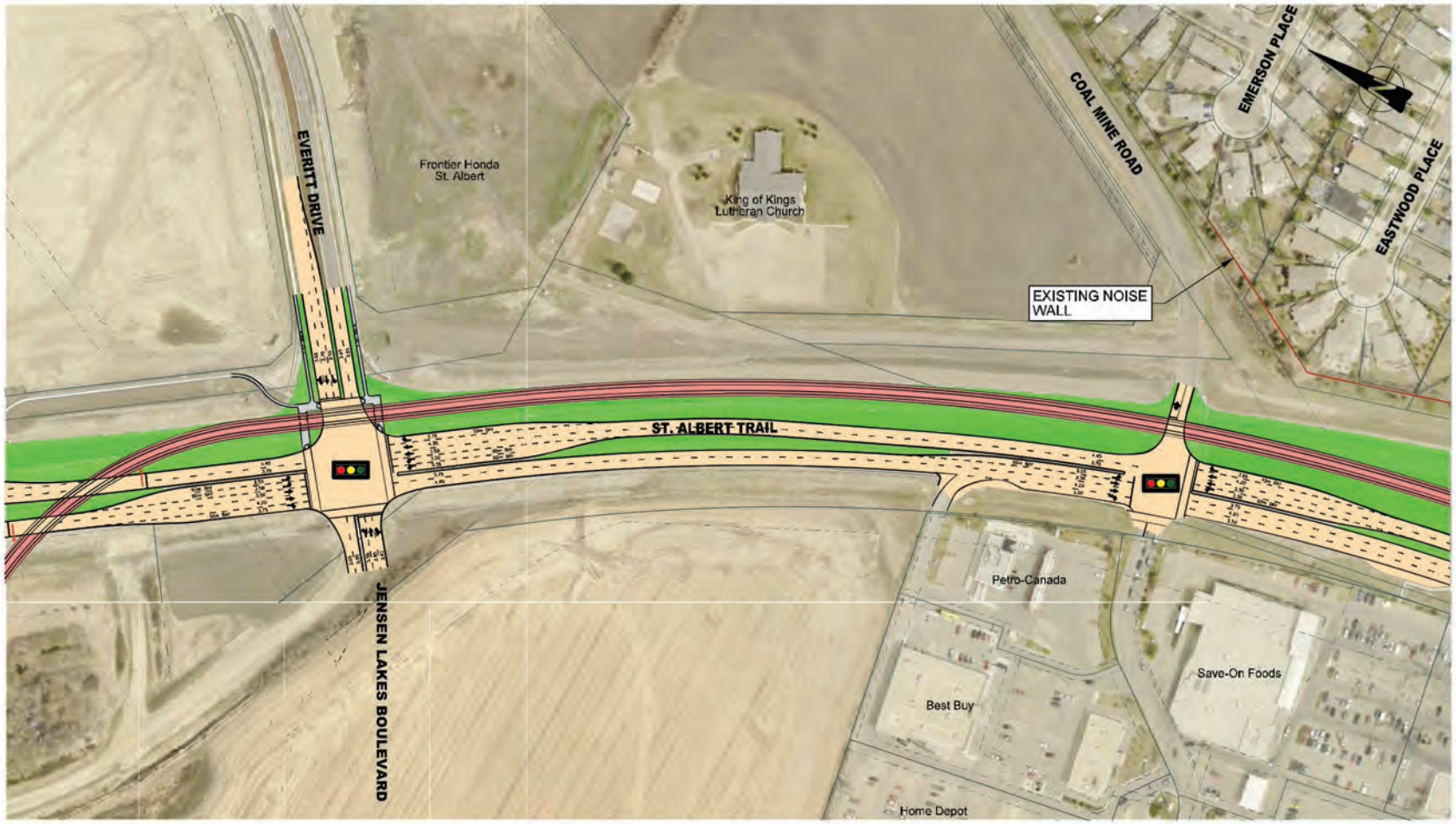
LEGEND

- LRT at Grade
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CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.10

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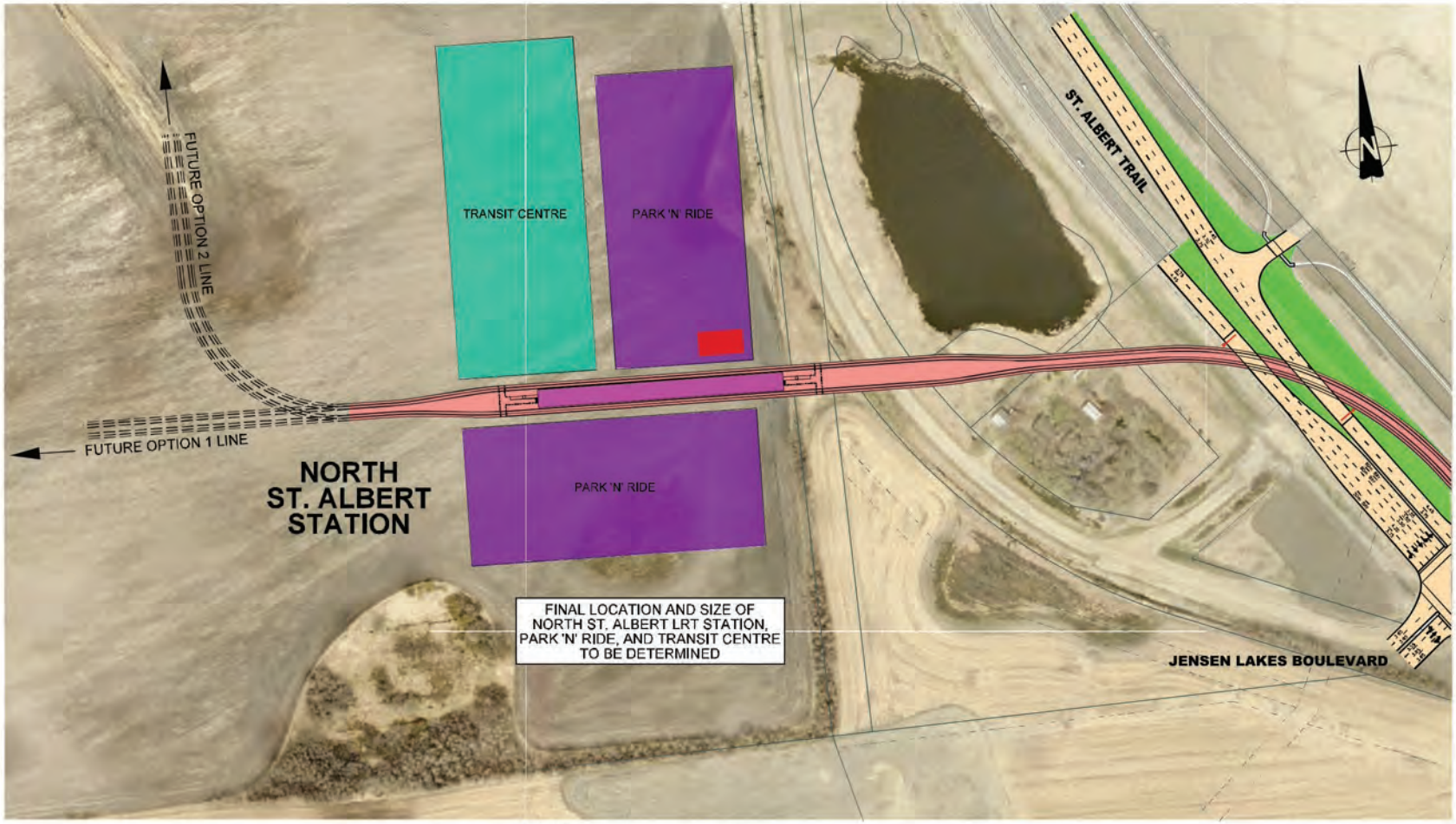
LEGEND

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CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.11

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LEGEND

- LRT at Grade
- Elevated LRT/Bridge
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- Signalized Intersection
- Direction Arrows
- Pavement Markings
- Fence
- Bus Stops

CITY OF ST. ALBERT
LRT PLANNING STUDY
RECOMMENDED CONCEPT PLAN
FIGURE 4.1.12

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Appendix B.3 – HTS Calibration Report

City of St. Albert Transportation Master Plan
2014 Travel Surveys
Methodology Report

Prepared for
Associated Engineering and City of St. Albert

Prepared by
R.A. Malatest & Associates Ltd.

May 2015

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Program Evaluation
& Market Research

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1 Project Overview

The City of St. Albert is in the process of developing a Transportation Master Plan (TMP). To support the development of this plan, the City has undertaken a number of projects including the collection of baseline transportation data and the development of a travel demand model.

The Household Travel Survey (HTS) was conducted in the fall of 2014 and involved the collection of daily household travel data (i.e., all trips made over the course of a 24-hour working weekday) from a sample of residents of the City. Each trip captured in the survey consisted of travel for a particular purpose between origin and destination, and may have involved more than one mode of transportation. The HTS was administered primarily as a Computer-Assisted Telephone Interview (CATI) survey, with respondents also having the option to complete the survey online. The overall valid survey response rate was 31.5%. A total of 856 valid surveys were obtained, or 3.7% of all households in St. Albert.

The Highway 2 Intercept Survey was conducted on September 23, 2014 and involved surveying drivers intercepted at a location on Highway 2 north of the Costco store about their travel to or through St. Albert. The focus was on capturing information on Highway 2 travel of people who do not reside in St. Albert. Southbound traffic was surveyed during the morning peak period and northbound traffic was surveyed in the afternoon peak period. Survey data collected including information on trip origins, trip destinations, whether the trip involved stops in St. Albert, which route(s) were used in St. Albert, and the frequency with which the trip was made. A total of 519 valid surveys were obtained, representing about 9.5% of average weekday traffic for this segment of Highway 2 and directions of travel surveyed during the hours surveyed.

Both surveys were conducted by R.A. Malatest & Associates Ltd. (the Consultant) in association with Associated Engineering Ltd. (the TMP project lead), David Kriger Consultants Incorporated, and ME2 Transportation Data Inc. (which provided field services for the Highway 2 Intercept Survey).

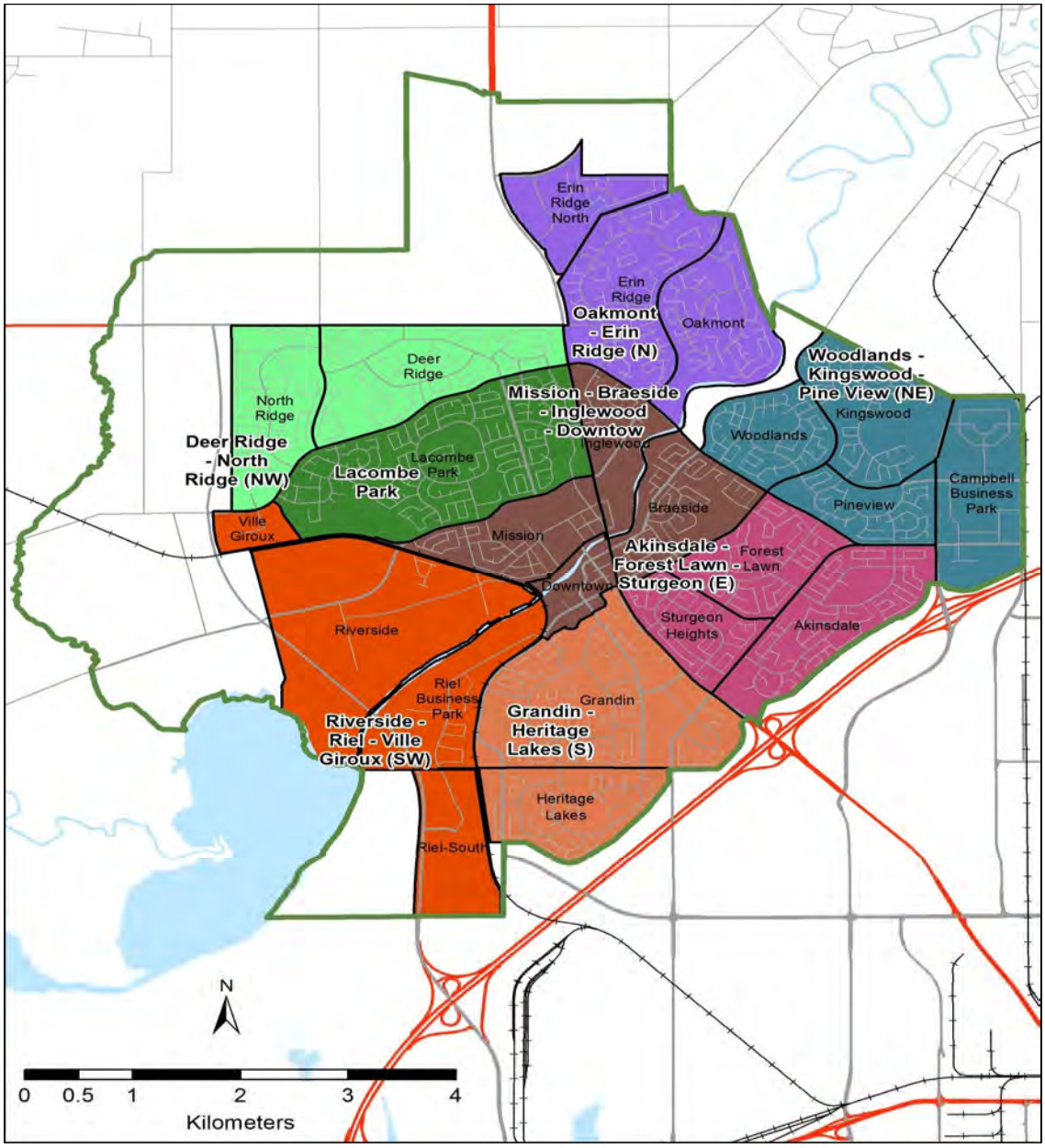
2 Household Travel Survey

2.1 Research Design

2.1.1 Population Sample Frame

The study area corresponds to inhabited neighbourhoods in the geography of St. Albert. Figure 1 illustrates the aggregations of neighbourhoods into sampling/weighting districts used in the administration of the survey.

Figure 1. St. Albert HTS Study Area



The population frame for the Household Travel Survey included all households within the study area. Areas of St. Albert that have minimal population such as the business parks, Riverside/Ville Giroux Area, and newly annexed areas at the fringes of the City and were excluded from the sampling frame.

All persons normally residing within each sampled household were included in the sample. In the case of people with more than one normal residence (e.g., children in shared custody), these individuals were included if they were present in the household on the day for which travel data was collected. It may be noted that the sampling frame does not include the small proportions of the population that are housed in institutional settings or other people without residential telephone numbers.

Detailed trip data were only collected for individuals 5 years of age or older, as it is assumed that younger children would generally be accompanied by an older individual for their travel. An additional reason for limiting data collection to older individuals is the reluctance of some respondents to provide potentially sensitive information about the activities of younger children.

2.1.2 Sample Design

The City is divided into 148 traffic zones or Transportation Analysis Zones (TAZ) in 26 neighbourhoods or business areas. For sampling purposes, some of these neighbourhoods were further aggregated into seven districts to be used for sampling and weighting purposes, as illustrated earlier in Figure 1.

The target of 830 survey completions, representing approximately 3.7% of households in the study area, was allocated to the various neighbourhoods to ensure balanced distribution of surveys by neighbourhood within each sampling district. A slightly higher sampling rate was set for higher-growth neighbourhoods (Erin Ridge, Erin Ridge North, and North Ridge) to ensure the collection of more robust data for these areas for future planning purposes the data may be used for. Targets were also adjusted so that the estimated margin of sampling error for any given district would be no more than approximately ±10% in any given sampling/weighting districts. The sampling plan is outlined in Table 1 on the following page.

All households in the sample that are located within the study area were eligible to participate in the Household Travel Survey. As the boundaries of the study area do not exactly match telephone exchange boundaries, a limited number of households in the sample were found to be located outside the study area. Similarly, the random digit dialled sample had no address information, so it was unknown at the time of the call where these households were located. Initial screening questions confirmed the respondent's address and that the household was located within the boundaries of the study area. Households outside the study area were considered to be non-qualifiers and were.

Table 1. Sampling Plan

Sampling/Weighting Districts and Neighbourhoods	2014 Population [1]	% Of Total	2014 Total Dwelling Units [1]	% of Total	Sample Target	% of Total	Sampling Rate [2]	Est. Margin of Error [3]
NORTHWEST	10,815	17%	3,552	15%	138	17%	3.9%	8.2%
Deer Ridge	6,252	9.9%	2,053	8.9%	71	8.5%	3.5%	
North Ridge	4,507	7.1%	1,483	6.4%	66	7.9%	4.5%	
Annexation Area	56	0.1%	16	0.1%	1	0.1%	6.3%	
NORTH	9,862	16%	3,411	15%	134	16%	3.9%	8.3%
Erin Ridge North	507	0.8%	195	0.8%	24	2.9%	12.3%	
Erin Ridge	6,000	9.5%	2,071	8.9%	71	8.5%	3.4%	
Oakmont	3,355	5.3%	1,145	4.9%	39	4.7%	3.4%	
NORTH EAST	7,052	11%	2,523	11%	88	11%	3.5%	10.3%
Kingswood	2,624	4.1%	866	3.7%	30	3.6%	3.5%	
Woodlands	2,594	4.1%	974	4.2%	34	4.1%	3.5%	
Pineview	1,835	2.9%	683	2.9%	24	2.9%	3.5%	
Campbell Business Park	0	0.0%	0	0.0%	0	0.0%	n/a	
EAST	9,363	15%	3,635	16%	125	15%	3.4%	8.6%
Forest Lawn	2,756	4.4%	1,065	4.6%	37	4.5%	3.5%	
Akinsdale	4,786	7.6%	1,878	8.1%	64	7.7%	3.4%	
Sturgeon	1,821	2.9%	692	3.0%	24	2.9%	3.5%	
SOUTH	11,312	18%	4,519	19%	155	19%	3.4%	7.7%
Grandin	7,410	11.7%	3,166	13.7%	109	13.1%	3.4%	
Heritage Lakes	3,902	6.2%	1,353	5.8%	46	5.5%	3.4%	
Riel South	0	0.0%	0	0.0%	0	0.0%	n/a	
Riel Business Park	0	0.0%	0	0.0%	0	0.0%	n/a	
SOUTHWEST[4]	suppressed	0%	suppressed	0%	0	0%	0.0%	n/a
Riverside	suppressed	0.0%	suppressed	0.0%	0	0.0%	0.0%	
Ville Giroux	0	0.0%	0	0.0%	0	0.0%	n/a	
Other Annexation	0	0.0%	0	0.0%	0	0.0%	n/a	
Non-Annexation Rural	suppressed	0.0%	suppressed	0.0%	0	0.0%	0.0%	
LACOMBE PARK	7,320	12%	2,601	11%	90	11%	3.5%	10.2%
Lacombe Park	7,320	11.6%	2,601	11.2%	90	10.8%	3.5%	
CENTRAL ST ALBERT	7,524	12%	2,949	13%	101	12%	3.4%	9.6%
Braeside	2,825	4.5%	1,073	4.6%	37	4.5%	3.4%	
Downtown	513	0.8%	276	1.2%	9	1.1%	3.3%	
Inglewood	1,599	2.5%	631	2.7%	22	2.6%	3.5%	
Mission	2,587	4.1%	969	4.2%	33	4.0%	3.4%	
GRAND TOTAL	63,255	100%	23,190	100%	831	100%	3.6%	3.3%

[1] Source: City of St. Albert, 2014 Municipal Census.

[2] Sampling rate: the percentage of 2014 Census households to be surveyed.

[3] Sampling error: in random sampling, the actual results for the population may be expected to lie within the range of the survey result plus or minus the sampling error, at a 95% confidence level (i.e., 19 times out of 20). The sampling errors estimated above have not been adjusted for possible design effects due to over-/under-sampling.

[4] Southwest district contains negligible population but is included as a placeholder as this geography is a jobs destination and in future survey cycles may also have residential development to be taken into account. Counts have been suppressed to ensure that household characteristics for individual residents cannot be identified.

2.1.3 Sample Selection

The sample of the HTS was based on a number of different sample sources, including the following:

- 1,945 (56%) directory-listed land-line phone numbers with listed addresses;
- 300 (9%) directory-listed land-line phone numbers with no address given in listing;
- 200 (6%) random digit-dialled (RDD) land-lines (i.e., phone numbers not listed in the directory);
- 253 (7%) verified cell phone sample (cell phone numbers verified by the cell phone provider as in service); and
- 591 (17%) address-based sample of addresses without a matching directory-listed phone number (address-only sample).

In total, 2,698 phone numbers were drawn plus 591 address-only listings.

Multiple phone number sample sources were used in order to ensure a broad representation of households was included in the sample and to mitigate the short-comings of various sources. Directory-listed land-line phone numbers with listed addresses were relied on for just over half of the sample as they offer a way to allow for geographic targetting with high response rates. The other types of phone sample were included because respondents with these various types of phone numbers can sometimes be characteristically different from directory-listed land-line households. The modest address-only sample was drawn in order to provide another channel for reaching possible unlisted land line or cell-phone-only samples. The RDD numbers were generated using the 'Random B' method, which randomly generates phone numbers from unused numbers from all eligible blocks of existing numbers in proportion to their density of listed telephone households. For the RDD and cell phone samples and the portion of the listed sample without valid addresses, final assignment of households to sampling district was undertaken post-survey based on the address information provided by respondents.

It may be noted that very few current address listings were available for Erin Ridge North neighbourhood (an area which only very recently was opened up to construction of residential dwellings). As a result, additional sample was drawn for the Erin Ridge neighbourhood to provide more survey completions for the general area.

2.1.4 Survey Questionnaire

The survey instrument for the HTS is a 24-hour recall survey. The objective of the survey was for respondents to provide detailed information about all trips taken by members of their household on the day prior to the day of the survey interview. Specifically, respondents were asked about trips in the 24-hour period between 4:00 a.m. on the day prior to the survey and 3:59 a.m. on the day of the survey. This recall methodology minimizes the biases associated with remembering one's activities in the past.

The HTS survey instrument consisted of three sections (refer to Appendix A for the full survey instrument):

<u>A Household Information</u>

- location of house
- type of dwelling
- number of persons in household
- number of vehicles

- number of bicycles
- household income

B Resident Information - for each person in the household

- age and gender
- main activity (i.e., employed, student, retired, etc.)
- type of workplace (if employed, e.g., office, retail, medical, etc.)
- location of school (if student)
- location of workplace (if employed)
- frequency of walking and cycling trips
- frequency of telecommuting

C Trip Information - for each trip made by each person in the household 5 years of age or older

- start time
- purpose of trip
- origin and destination (address, nearby landmark or intersection)
- mode(s) of transportation (car, transit, walking, etc.)
- bus route (if transit was used)
- mode transfer locations
- trip duration or destination arrival time
- number of vehicle occupants (if auto driver or passenger)
- availability of a vehicle to make the trip (if not auto driver or passenger)
- whether or not carpooled or vanpooled (if auto trip to/from work/school)

The survey instrument was essentially identical in terms of content for both the telephone and online versions of the survey, with variations to the scripts as appropriate for each survey mode.

The survey was programmed in the Consultant's CATI/CAWI (Computer Assisted Telephone/Web Interview) system, CallWeb.

2.2 Data Collection

2.2.1 Field Test

A rolling field test of the survey instrument was conducted on Tuesday, September 24, 2014 yielding 15 survey completions. As the project timelines did not permit advance notification of respondents through a mail-out and the media campaign was not yet underway, the field test consisted entirely of "cold calls." A debriefing session was conducted with surveyors following the field test to discuss issues that arose. No major technical issues were encountered and full survey administration proceeded the following day.

2.2.2 Full Survey Administration

Full survey administration of the Household Travel Survey continued on Wednesday, September 25 and continued until Saturday, November 1, by which time the overall survey completion target of 830 completed surveys was exceeded.

Survey notification letters were sent to all directory-listed households with listed addresses prior to survey contact, as well as to the address-only sample. The purpose of this letter was to raise awareness of the project and to alert potential respondents to expect a telephone call inviting them to participate in the survey. The letter included information about the project, along with instructions on how to complete the survey online. A copy of the letter is included in Appendix B. These letters were sent in waves during administration of the survey. Calls to directory-listed households with listed addresses were timed so that each household was contacted soon after receiving the survey brochure.

As the transportation model is to represent only weekday travel, surveying was limited to Tuesday through Saturday (to collect data on Monday through Friday travel). While the primary mode of survey administration was via telephone, respondents were also provided the option to do the survey online. Those who expressed a preference to do so when contacted by phone were e-mailed instructions with a link to the online survey.

Survey progress was monitored on an ongoing basis to ensure that the completion targets were met for each sampling district and neighbourhood, as well as ensuring a roughly equal number of survey completions for each weekday. Weekly progress reports were given to the client.

2.2.3 Survey Response

The final results of the HTS survey administration are shown in Table 2. In total, 890 survey telephone and web surveys were completed, resulting in a response rate to the HTS of 32%[1]. Of all surveys completed, close to one-quarter (23%) were completed online, while 77% were completed over the telephone.

The ratio of completions to refusals was strong at 2.3 completions for every one refusal; these results indicate that the survey was well-received by the residents of the study area and that many people were willing to take the time to provide important information about their daily travel.

As illustrated, response rates varied considerably for the different types of phone and address samples included in the survey, with the highest response (43.1%) being for households that received both the letter and phone calls. While response rates were lower for the other phone-based samples without addresses, these other kinds of samples are nevertheless important to ensure some representation of households that may have different kinds of characteristics than those that have a directory-listed phone number with address.

Of note, the address-only sample yielded a response of approximately 7.6% just from the survey invitation letter alone (for these cases, no outgoing phone recruitment was possible). The coverage of households by listed telephone directories can be expected to decline in the future, as more households shift to cell-phone-only households. Therefore sampling methods will likely need to shift to include more address-based samples or even exclusively address-based samples in order for the survey to reach a representative cross-section of the population and minimize sampling coverage error.

A small proportion of the 890 surveys completed were found during data cleaning and validation to have irresolvable data issues (too many responses of ‘decline’ or ‘don’t know’, too many vague or ambiguous

[1] The Marketing Research and Intelligence Association calculates the response rate as Responding Units / (Unresolved Units + In-Scope Non-Responding Units + Responding Units).

trip origins or destinations, failures in trip logic validation that could not be corrected, etc.). In total, 856 of the survey completions obtained were useable for data analysis.

Table 2. HTS Final Call Disposition

	Directory Listed Land-Line Phone Number with Address Listed	Directory Listed Land-Line Phone Number with No Address Given in Listing	Random Digit Dialled Land Line (not listed in directory)	Verified Cell Phone Sample	Sub-total Phone-Based Sample	Address Based Sample – No Phone Numbers	Total Phone Based + Address-Based
Contact method	Letter + phone	Phone only	Phone only	Phone only	Mixed	Letter only	Mixed
Total Listings/#s Drawn	1,945	300	200	253	2,698	591	3,489
Phone Listings Drawn	1,945	300	200	253	2,698	-	2,698
Cases with Addresses (rec'd survey invite letter)	1,945	-	-	-	1,945	591	2,536
Invalid numbers (not in service, business, fax, not live in survey area)	216	54	107	93	470	n/a	668
Gross invalid number rate	*11.1%*	*18.0%*	*53.5%*	*36.8%*	*17.4%*	*n/a*	*19.1%*
Valid listings	1,729	246	93	160	2,228	591	2,821
Unresolved cases	674	109	67	106	956	544	1,502
Refusals	299	37	14	32	382	2	384
Valid Refusal rate	17.3%	15.0%	15.1%	20.0%	17.1%	0.3%	13.6%
Online surveys	166	1	1	-	168	40	208
Online response rate	9.6%	0.4%	1.1%	-	7.5%	6.8%	7.4%
Telephone surveys	580	67	9	21	677	5	682
Telephone response rate	33.5%	27.2%	9.7%	13.1%	30.4%	0.8%	24.2%
Total surveys	746	68	10	21	845	45	890
Total Response Rate	43.1%	27.6%	10.8%	13.1%	37.9%	7.6%	31.5%
Distribution of samples							
% of gross sample	55.7%	8.6%	5.7%	7.3%	77.3%	16.9%	100%
% of valid sample	61.3%	8.7%	3.3%	5.7%	79.0%	21.0%	100%
% of completions	83.8%	7.6%	1.1%	2.4%	94.9%	5.1%	100%

2.2.4 Recruitment for Public Consultation Process

Concurrent with the HTS, the City also conducted a public consultation process, one component of which was the solicitation of opinions and comments through online engagement tool hosted by MetroQuest.

At the conclusion of the survey, participants were asked whether they would be interested in participating in the public consultation process. No mention of the public consultation process was made during the survey introduction or in the notification letter in order to avoid confusion with between the household travel survey and the online public engagement tool.

In total, 246 survey respondents expressed an interest in filling out the online public engagement, of which 219 gave e-mail addresses and were sent a link to the online tool. Another 69 respondents indicated that they were interested in receiving updates about the TMP, but were not interested in participating in the public consultation.

2.3 Data Processing

2.3.1 Initial Data Checks

Initial data checking began with the field test and continued through survey administration. Checks were performed to ensure that the CATI survey instrument was functioning properly, including following the appropriate skip patterns during the survey and saving the data to the appropriate locations.

On the close of survey administration, all survey data were extracted from the CallWeb CATI system and brought into an MS Access database. Initial data processing was conducted to construct the "trip chains" for each person. During the survey process, respondents sometimes reported their travel out of sequence (for example if they remembered a trip from earlier in the day). In these situations, it was necessary to cross-check the trip departure times with the trip sequence to ensure the trips were placed in the proper chronological order.

A number of checks were performed on the data to identify cases with incomplete or inconsistent data. When a check identified a case with a potential data quality issue, a flag was created and the case was reviewed to see if the issue could be resolved. The general procedure followed to resolve issues was to examine other data to determine if the missing data could be imputed. As an example, if the mode of a trip was missing, other trips taken by that person would be examined to see if a mode was provided and if it would be reasonable to assume the same mode was used for the trip in question.

Data checking often required referring to household or person data, including data from other household members. Refused/unknown data, data as a person's age, school or employment status, and details of the trips taken by other household members were all examined to determine if reasonable deductions could be made to fill in missing information. An example would include if a respondent did not provide the location of a school, but indicated that the trip to school was done by walking. In this situation the location of nearby schools would be examined to determine if there was a school matching the respondent's age within walking distance.

Data checks performed on the household travel survey data included, but were not limited to, the following kinds of tests:

- Missing data (unknown or respondent refused to provide)
- Confirmation that home address could be geocoded (surveys with refused/unknown home addresses were rejected)
- Total number of people declared as living in the household matches total number of person records captured
- Checks for completeness of household information essential for data weighting (sampling district, number of householders, dwelling type)
- Checks for completeness of demographic information essential for data weighting (age, gender)
- Review of occupational status in relation to age (person of school age but not identified as a student)
- Respondent reported travelling on the date surveyed, but no trips are recorded
- Person reported as possessing a driver's license but the age provided is below 16
- Respondent reported auto driver as a mode of transportation, but respondent reported not having a driver's license

- Trip origin appears to be the same as trip destination
- Trip destination appears inconsistent with trip purpose
- Confirm that respondent identified a mode of travel to and from a bus stop (if applicable)
- Review of trips where the last destination is not 'home' (verify that stayed overnight somewhere else; worked past the end of the survey day, etc.)
- Review of trips with purpose of travel to work, but destination is not usual place of work
- Verification of sequence of trips reported (no trips out of order or errors in times recorded)

Data checking also involved looking at the consistency of trip chains to ensure that the trips reported matched the definition of a "trip" as used in this survey. A trip is defined as one-way travel from an origin to a destination for a single purpose. Thus a trip could include multiple modes, but only a single purpose and destination; stops along the way would represent additional, separate trips. Examples of trip definition issues and their resolution included:

- In travelling to work, a respondent described a walk to the bus stop as one trip and the travel on the bus as another trip. These trips would be combined into a single trip to work with multiple modes of walking and transit.
- After describing a drive from home to work as a single trip, a respondent noted that he also stopped to pick up a passenger and again to get coffee along the way. This single trip would be split into three trips (home to passenger pick up; passenger pick up to coffee shop; coffee shop to work).
- The exception to the trip definition was for trips by air involving locations outside the study area. These trips were identified and split into an internal (e.g., home to airport) and an external (e.g., fly to destination) portion. As residents of the study area have access to multiple airports within reasonable travelling distance, it is their overland travel on routes within the study area which needs to be accurately understood.

Overall most respondents were willing to provide most of the information requested of them throughout the survey. Missing responses are largely due to the respondent being unable to provide the requested information (e.g. not knowing the exact location visited by another household member) rather than their being unwilling to provide the information. The exception, as is common in social research, was for the household income question. The refusal rate for this question was approximately 26%.

2.3.2 Geocoding

In order to be usable for transportation planning, all locations (home, school, work, trip origins and destinations) must be geocoded to geographic co-ordinates. When completing the survey, respondents were asked to be as specific as possible in describing their locations. In situations where respondents were unable or unwilling to provide an exact address, they were asked to identify a nearby intersection or a landmark such as a shopping centre, school, or other readily identifiable feature. Initial geocoding was often conducted during the survey interview through the use of auto-suggest-as-you-type features in CallWeb. Surveyors occasionally used online mapping tools such as Google Maps to locate and confirm the locations provided by respondents.

Full geocoding involved identifying the geographic co-ordinates (New Brunswick Double Stereographic Projection System) for each location. A number of data sources were used for reference during the geocoding process, including:

- Cadastral data for the City of St. Albert;
- List of landmarks, including government offices, shopping centres, schools, transit exchanges, parks, and recreation facilities;
- Road network for the City of St. Albert – including both address ranges and intersections;
- List of intersections for the City of St. Albert, City of Edmonton, and selected towns within the surrounding region;
- Internet searches (e.g., for business websites); and
- Online mapping tools, including Google Maps.

As the level of detail provided by respondents varied, geocoding was an iterative process, involving multiple passes through the data. The initial pass involved geocoding locations which could exactly be matched to one of the existing data sources. The majority of locations were geocoded during this first pass through the data.

Exact address match to cadastral data

In the first stage, locations with exact addresses were geocoded. Within the City of St. Albert, cadastral data were used to geocode all addresses for which matches were found in the cadastral data layer.

Address match to street segment

For addresses outside the City of St. Albert, and those for which an exact match could not be found, road network data may have been were used to match a location to a particular street segment (i.e., block) according to the range of addresses in that segment. The exact location of an address within a range was imputed based on the length of the street segment.

Intersection

For locations that were identified by an intersection of two or more streets, the location provided was matched to a list of all existing intersections within the study area. As intersections are often located exactly on the boundary between two or more traffic zones, intersection locations were then offset 20 metres in a random direction to ensure they fell within a single traffic zone.

Landmarks/Business Locations

The client provided information on major landmarks and business locations within the study area. Any locations which were identified by one of these landmarks or businesses were geocoded to the location of the landmark or business.

Subsequent passes through the data attempted to geocode locations which did not exactly match with existing data layers.

Address outside of known road network

For address which did not fall within any of the addresses ranges in the reference data, or in situations where respondents provided only a street name but no civic number, other data sources were used to attempt to pinpoint the location along the street. For example, other information provided by the respondent (landmark, postal code, other trip information) could help to identify the location in

question. While the exact method of geocoding depended in part on the information provided, typical situations included:

- Location on a street with only one or very few segments – a segment was randomly selected and the midpoint of the segment was used for geocoding;
- Location on a larger street (i.e. many segments) entirely within one traffic zone – the midpoint of the traffic zone was used for geocoding;
- Location on a large street passing through few (i.e. <5) traffic zones – a traffic zone was randomly selected and the midpoint of the traffic zone used for geocoding; and
- Location on a large street passing through many traffic zones – uncodable.

Non-Intersecting Streets

On occasion respondents identified a location at the intersection of two streets which do not actually intersect. In these situations, online mapping tools were used to determine whether the streets were near to one another, if one changed names prior to the intersection, etc. Other information provided by the respondent was also examined to aid in pinpointing the location. If geocoders were reasonably sure of a location, a nearby intersection or street segment was used for geocoding.

Landmarks not on the list of known landmarks

While the list of landmarks provided by the client was extremely helpful and contained most of the major city landmarks, respondents referred to many landmarks which were not on the list of existing landmarks. For landmarks which were not on the initial list, online searches and mapping tools were used to attempt to locate the landmark. In many cases, (e.g., a business name used as a landmark), online searches produced an address which was then used for geocoding. In other situations, the landmark could be identified using online mapping tools, which then allowed determination of the latitude and longitude of that location.

Locations outside the study area

Many locations identified by respondents were outside the study area and outside of the City of Edmonton. Where possible, these locations were geocoded to the central point of the municipality.

For locations outside of the City of St. Albert, some freedom was given to geocoding staff to assign less precise geocodes when the description of the location was vague (e.g., “downtown Edmonton”).

Once locations were geocoded, ArcGIS 10.1 was used to assign each location to the appropriate traffic zone. These traffic zones were then aggregated into the sampling districts within the study area. Locations outside of the study area were assigned to the Edmonton traffic zone system if they fell within the Edmonton and region traffic zone system. Census Subdivisions (CSDs) were also assigned to each geocoded location, to facilitate in the analysis of locations outside of the Edmonton traffic zone system.

2.3.3 Trip Validation

While much of the data validation took place prior to geocoding, a number of validation checks can only be performed once the locations have been geocoded. The geocoding of locations to their geographic co-ordinates permits the calculation of the straight-line distance between the origin and destination reported for each trip. This information was then used for further trip validation, including, but not limited to, checks for the following:

- Origin and destination are at the same location
- Trips with a very short distance
- Trips with a distance inappropriate for the mode of travel
- Persons with an unusually long distance reported from home to school / work

As with the initial trip validation, trips with possible issues were flagged for further examination. In many cases, this data validation identified geocoding issues or issues with trip chains (see discussion in Section 2.3.1). Issues identified were either resolved or the trips were flagged for exclusion from subsequent analysis.

2.3.4 Final Data Quality Assessment

The household, person, and trip records were screened against data acceptance criteria, and households with insufficient or poor information were rejected. Household surveys were rejected if household or demographic data critical to the analysis or data expansion were missing or could not be determined (e.g., household location, age and gender of persons within the household). Trips missing essential information such as departure time, purpose, mode, origin, or destination were flagged as 'poor trip records.' The household survey was rejected if the majority of persons five years of age or older (those for whom travel was captured) either had 50% or more poor trip records or had unknown mobility (i.e., the respondent refused to provide trip information for the given householder, or did not have knowledge of trips made). For accepted households, persons within the household with 51% or more poor trips had their full 24-hour trip chains suppressed (approximately 4% of all trip records), and were treated as if they had unknown mobility. Trip records suppressed from use in analysis are retained in the data set but given a data expansion weight of 0.

Amongst usable trip chains included in the final data set, all have known (or logically deduced) values of trip departure time, trip purpose, and primary mode of travel. A very small proportion of these trips have unknown or uncodable origins or destinations. However, for each of these data elements, less than 0.1% of all trip records have unknown information. In these instances, the value of the travellers' entire trip chains warranted inclusion of the occasional record missing information in only one or two fields.

The finalized dataset for this origin-destination survey includes person records for a small proportion of householders 5 years of age or older whose mobility is unknown (whether due to initial refusal to provide any information or later excluded due to too many poor trip records). The existence of persons with unknown mobility was compensated for using trip correction factors in the data expansion, as explained in the following section.

2.3.5 Data Expansion

Data weighting and expansion is the process of expanding the sample of trips collected during the Household Travel Survey to represent all trips taken by residents of the study area on a typical weekday. The general approach is to compare various characteristics (household size, dwelling type, age, gender) of the survey sample with the same characteristics for the populations as a whole. Data weighting based on these characteristics is used to expand the data in a way that compensates for both planned and unexpected disproportionate results.

The HTS sampling plan oversampled certain sampling districts with smaller populations in order to obtain better data for areas with smaller populations. In addition to this planned-for disproportion by sampling district, the unweighted survey data may also prove less than representative due to non-

response bias, which occurs when certain types of household and/or individual are less likely to respond to the survey.

The following household and population controls were adjusted for in the data expansion (based on 2014 Municipal Census data provided by the City of St. Albert):

- Household counts by sampling district;
- Dwelling types within each sampling district, grouped into ground-oriented dwellings (single-detached, semi-detached, row/townhouse) vs. apartments/condominiums;
- Household sizes within each sampling district (1-person, 2-person, 3-person, 4-person, 5 or more persons);
- Population counts by sampling district;
- Age and gender distributions of the population within each sampling district.

Tables with the household and 2014 population counts based on Census data for the various controls outlined above are included with the final database. It may be noted that amongst the weighting control data (from the 2014 Municipal Census), the breakdowns of counts by household characteristics or demographics did not always add to the total households or total population provided from the same source, necessitating recalibration of the data after each weighting step.

An iterative proportional fitting (IPF) method was employed to balance household weights and person weights for the multiple factors described above. In this method, incremental adjustments to the household weights are made in succession for each of the household controls, as well as a composite adjustment to each household weight to account for the disproportionate distribution by age/gender amongst the members of each household. Using this method, any number of controls can be introduced; the weighting controls employed were selected for having a significant influence on trip-making behaviour and for completeness of information in the survey data. Each successive adjustment to balance a given control may slightly or significantly unbalance the correction previously introduced for a different control (which would normally be a disadvantage for multiplicative weighting). However, iteratively cycling through each control results in convergence to a solution where all household and population controls have expected distributions (to within reasonable tolerance). In this manner, all persons within each household typically carry the same base weight as the household, although it may be noted that small calibrations were made separately to the records at the household level and at the person level to ensure that the weighted counts of total households and of total persons matched Census figures.

Following the data weighting and expansion, trip correction factors were introduced to correct for the following:

- A correction factor to account for disproportionate distribution (if any) of survey responses by weekday (Monday through Friday) in each sampling district; and
- A correction factor to account for persons in each age/gender group within each sampling district who have unknown mobility (e.g., respondent refused to provide trip data, or too many trips with poor or refused information) that scales up trip counts accordingly.

The aforementioned correction factors were applied to the trip expansion factors only.

The expanded survey responses for household, person, and trip characteristics were compared to Census and other benchmark data in order to validate the data expansion, with positive overall results. While the expanded survey data matches up very closely with the weighting controls (2014 counts) overall, the data weighting did not converge to a perfect solution for a few of the 7 sampling/weighting districts. This can be attributed to generally modest sample sizes and certain cells within the stratification having very low or missing representation, coupled with the restrictions applied to limit any potentially extreme sample weights. For example, in Districts 2 and 3, both males and females in the 25-34 age bracket are under-represented while older working-age categories in the same geographies are each somewhat over-represented. In addition, the trip data may be somewhat skewed towards somewhat more Friday travellers and somewhat fewer Thursday travellers being represented in the weighted survey data.

The survey data have not been validated against other external data sources such as screenline counts, employment figures, or transit ridership counts. If the data are tested against other external data sources and discrepancies between the weighted survey data and other sources are found, it may be possible to address this in the transportation modelling through recalibration using other sources of information.

2.4 Final Survey Dataset

2.4.1 Final Dataset

The final dataset for the Household Travel Survey consists of three main data tables along with associated lookup tables. During the process of data cleaning and validation, a number of trips, persons, and households with poor or incomplete were removed from the dataset. While there was some tolerance for missing data, certain variables were considered essential for survey analysis and subsequent transportation modelling. As described in the trip correction factors section above, trips which were missing the departure time, purpose, origin, destination, or mode were flagged as poor trips. If a person had 50% or more of their trips classified as poor trips, that person was considered to have unknown mobility and all his or her trips were suppressed from use in analysis through application of a data expansion weight of zero (although the trip records were retained in the dataset in case they are useful for other purposes).

The final dataset contains the following records:

Table 3. Final Dataset Summary

Table	Number of Valid Records
Households	856
Persons	2,180
Trips	6,746*

* Of the 6,746 trip records in the Household Travel Survey dataset, 6,472 have data expansion factors and can be used for analysis (see Section 2.3.4 for details on treatment of records for persons with trips chains with too much poor data).

2.4.2 Data Reliability

The St. Albert Household Travel Survey was conducted with a sample of about 3.7% of the households in the study area. As with any survey, the data collected may be subject to sources of error or bias that may affect the reliability of the survey results. Potential sources of error may include the following:

- *Undercoverage.* Coverage error is associated with the failure to include some populations in the same frame used for sample selection, which may occur with samples of convenience such as telephone directories. To address this, the phone number sample drawn included both listed and randomly generated numbers to ensure that households with unlisted numbers could be provided with the opportunity to participate. Nonetheless, it is likely that cell-phone-only households are somewhat under-represented in the survey results. As these tend to be younger households and single-person households, the data expansion addresses this, in part, by weighting for age and household size.
- *Non-response bias.* Non-response bias occurs when individuals who do not participate in a survey differ in relevant ways from individuals who do participate. For example, younger people are often less inclined to participate in surveys. Or, multiple-person households are more likely to participate as there is a greater chance of someone being home to answer survey calls. The survey had a robust response rate for a general population survey (with completions obtained for 38% of valid phone numbers drawn), which helps to control for non-response bias. This bias has also been addressed, in part, through the data expansion process, including the weighting by age and gender, and by dwelling type and household size.
- *Measurement error.* This type of error is associated with the failure of survey instruments to capture correct information (e.g., through misunderstanding of survey questions). To control for this, the questionnaire and associated materials were developed based on previously well-tested survey questions, were thoroughly reviewed for content and meaning, and field tested with a sample of respondents before full survey administration. Telephone interviewers were trained on the objectives of the survey, definitions of key terms, the intent of survey questions, and how to address different trip circumstances described by respondents. During survey administration, 10% of interviews were monitored by a supervisor to ensure consistent application of questions.
- *Processing error.* Processing errors include data entry, coding, editing, and imputation errors. This potential source of error was addressed through comprehensive training of survey staff and geocoders, continuous quality management practices, and thorough data validation.
- *Sampling error.* Sampling error refers to the variability that occurs by chance because a sample was surveyed rather than the complete population. As best as possible, sampling error was controlled for in the sample design by over-sampling from sampling districts with smaller populations (as a strictly proportional sample design would have resulted in very few completions for smaller sampling districts).

Sampling error may be estimated based on the size of the sample frame (number of households in the region) and the number of household survey completions. The final numbers of useable survey completions and estimated margins of error for the survey results are presented below in Table 4 for each sampling district.

The computation of sampling error takes into account the sampling design and data weighting (to address over-/under-sampling by geography and for disproportionate representation by person and household characteristics). The advantage of data weighting is that it corrects for bias introduced by over- and under-sampling survey strata that may correlate to variables of interest. The drawback is the increase in the sampling variance, particularly when the data weights vary greatly. This increase in

variance may be quantified by the "sampling design effect", computed as the ratio of the variance of the statistic of interest under the design of interest to the variance of the statistic under simple random sampling of the same size.[2] In simple terms, the design effect allows us to estimate the impact of weighting on the "effective sample size" and the effective margin of error associated with random sampling. The inverse of the design effect expressed as a percentage is sometimes referred to as "weighting efficiency". To estimate the sampling error, the variance of the household weights is used to determine the design effect, and the estimate of effective sampling error is calculated.

Overall, the effective margin of error for the household-level survey results is estimated at ±4.6% at a 95% confidence level (theoretically, for a given survey question, the true value for the population would be somewhere within the margin of error of the survey results 19 times out of 20).

It should be emphasized that while the overall sampling error provides a good measure of confidence in the overall survey results, the samples for individual sampling districts are quite modest (ranging from between 88 and 157 survey completions). The sampling errors associated with smaller household samples for sampling districts, while reduced in smaller districts due to selective over-sampling, are nevertheless high enough that results by individual sampling districts should be interpreted with caution. Aggregation of sampling districts may be useful for certain kinds of analysis where greater confidence in the results is required.

The sampling errors in Table 4 apply to the *survey results associated with households* in each sampling district. For analysis of all travel within each sampling district, which includes trips made by those both living within the sampling district, and those living outside the sampling district, the sampling errors will be better.

To estimate the sample errors associated with trip data *for all trips originating within each sampling district* (including those from households outside the zone), a similar process is employed at the person level. For this exercise, the sample universe is first roughly estimated based on the total expanded persons reporting trip origins within each district (each person is only counted for each district once regardless of the number of trips originating in the given district), with the variances of the person weights determining the design effect. The results are presented in Table 5. Using the number of persons travelling as the base, sampling errors associated with trip data can be estimated at ±3.1% at a 95% confidence level. Trip data for trips originating within the City of St. Albert are estimated to have an effective sampling error of ±3.1, , and range from ±5.5% to ±16.8% for individual sampling districts within the City, whereas trips with origins outside of St. Albert may be estimated to have a sampling error of ±3.9%.

Given that the estimates of trip sampling error in Table 5 are based on population universe estimates from the survey data itself, and that the person-level data are not independent random samples (given that the household is the primary sampling unit), it should be emphasized that these estimates of sampling error should be treated as approximate. Nevertheless, they may be useful in identifying subsets of the data with lesser or greater margins of sampling error. Aggregation of sampling districts may be useful for certain kinds of analysis where greater confidence in the results is required.

[2] Spencer, Bruce D. *An Approximate Design Effect for Unequal Weighting When Measurements May Correlate With Selection Probabilities*. Survey Methodology, December 2000, Vol. 26, No. 2, pp. 137138, Statistics Canada, Catalogue No. 12001.

Table 4. HST Survey Completions and Effective Sampling Error for Household-Level Data

SAMPLING DISTRICT / NEIGHBOURHOOD	2014 Population [1]	2014 Dwelling Units [1]	Sample Target	Valid Surveys	Sampling Rate [2]	Sample Design Effect due to Weighting	Effective Margin of Error for Household Data [3]
NORTHWEST	10,815	3,552	138	142	4.0%	1.889	±11.1%
Deer Ridge	6,252	2,053	71	77	3.8%		
North Ridge	4,507	1,483	66	65	4.4%		
Annexation Area	56	16	1	0	0.0%		
NORTH	9,862	3,411	134	144	4.2%	1.542	±9.9%
Erin Ridge North	507	195	24	1	0.5%		
Erin Ridge	6,000	2,071	71	106	5.1%		
Oakmont	3,355	1,145	39	37	3.2%		
NORTH EAST	7,052	2,523	88	88	3.5%	2.034	±14.6%
Kingswood	2,624	866	30	30	3.5%		
Woodlands	2,594	974	34	38	3.9%		
Pineview	1,835	683	24	20	2.9%		
Campbell Business Park	0	0	0	0	n/a		
EAST	9,363	3,635	125	119	3.3%	1.825	±11.9%
Forest Lawn	2,756	1,065	37	33	3.1%		
Akinsdale	4,786	1,878	64	63	3.4%		
Sturgeon	1,821	692	24	23	3.3%		
SOUTH	11,312	4,519	155	157	3.5%	2.245	±11.5%
Grandin	7,410	3,166	109	111	3.5%		
Heritage Lakes	3,902	1,353	46	46	3.4%		
Riel South	0	0	0	0	n/a		
Riel Business Park	0	0	0	0	n/a		
SOUTHWEST[4]	suppressed	suppressed	0	0	0.0%	n/a	n/a
Riverside	suppressed	suppressed	0	0	0.0%		
Ville Giroux	0	0	0	0	n/a		
Other Annexation	0	0	0	0	n/a		
Non-Annexation Rural	suppressed	suppressed	0	0	0.0%		
LACOMBE PARK	7,320	2,601	90	101	3.9%	1.496	±11.7%
Lacombe Park	7,320	2,601	90	101	3.9%		
CENTRAL ST ALBERT	7,524	2,949	101	105	3.6%	2.184	±13.9%
Braeside	2,825	1,073	37	34	3.2%		
Downtown	513	276	9	7	2.5%		
Inglewood	1,599	631	22	26	4.1%		
Mission	2,587	969	33	38	3.9%		
GRAND TOTAL	63,255	23,190	831	856	3.7%	1.929	±4.6%

[1] Source: City of St. Albert, 2014 Municipal Census.

[2] Sampling rate: the percentage of 2014 Census households to be surveyed.

[3] Margin of error associated with random sampling, at a 95% confidence level (19 times out of 20), for survey results for households located within the sampling district, accounting for sampling design effects associated with data weighting. Actual values for the population may be expected to lie within the range of the survey result plus or minus the error.

[4] Southwest district contains negligible population but is included as a placeholder as this geography is a jobs destination and in future survey cycles may also have residential development to be taken into account. Counts have been suppressed to ensure that household characteristics for individual residents cannot be identified.

Table 5. Person/Trip Sample Sizes and Approximate Estimate of Effective Sampling Error for Trip-Level Data by Trip Origin Sampling District

Sampling District or External Zone of Trip Origin	Trips Captured (originating in zone)	Sample Size (n) (persons with trips originating in zone)	Estimated Sample Universe (expanded persons with trips originating in zone)	Estimated Daily Trips Originating in Zone (expanded trips)	Sample Design Effect (due to over-under-sampling and weighting)	Effective Margin of Error for Trip Data* (95% conf.)
Trip Origin Within St. Albert	4,834	1,716	52,161	146,334	1.774	±3.1%
Central	918	576	17,903	28,640	1.849	±5.5%
South	687	402	12,245	21,740	2.023	±6.8%
East	700	450	14,655	23,718	1.740	±6.0%
Campbell Business Park	180	158	4,625	5,154	1.668	±9.9%
Northeast	402	255	8,951	14,052	1.627	±7.7%
North	558	371	9,621	15,175	1.576	±6.3%
Northwest	710	433	11,904	18,748	1.750	±6.1%
Lacombe	630	379	10,892	17,856	1.537	±6.1%
Southwest	49	44	1,093	1,251	1.349	±16.8%
Trip Origin Outside St. Albert	1,638	1,076	31,938	48,431	1.796	±3.9%
External Zone 5006	67	66	2,090	2,102	1.911	±16.4%
External Zone 5008	129	120	2,608	2,810	1.735	±11.5%
External Zone 5102	33	29	950	1,005	1.837	±24.3%
External Zone 5106	103	87	2,373	2,907	1.617	±13.1%
External Zone 5107	53	47	1,491	1,812	1.958	±19.7%
External Zone 5109	99	89	2,757	3,048	1.811	±13.8%
External Zone 5110	603	465	13,731	18,001	1.703	±5.8%
External Zone 5111	68	58	1,752	2,072	1.540	±15.7%
External Zone 5112	72	62	2,142	2,365	1.846	±16.7%
External Zone 5113	44	37	1,485	1,834	1.632	±20.3%
External Zone 5114	260	215	6,657	7,815	1.846	±8.9%
External Zones with n<29 persons with trips originating in individual zone (5004, 5007, 5015, 5030, 5034, 5036, 5104, 5105, 5108, 5115, 5116, 5117)	60	57	1,504	1,544	not computed	not computed
Outside External Zone System	47	41	890	1,117	1.459	±18.1%
GRAND TOTAL	6,472	1,731	52,552	194,766	1.772	±3.1%

Excludes persons who did not travel on their surveyed travel day. Totals/subtotals are less than the sum of the individual entries, as an individuals are counted in each zone they had trip origins in but only once for each total/subtotal.

* Estimated margin of error associated with random sampling, at a 95% confidence level (19 times out of 20), for survey results for persons with trips originating within the sampling district, accounting for sampling design effects associated with data weighting. As the estimated universe of people making trips within each zone is an approximation based on the expanded survey sample, and as person samples within each zone are not always independent random samples, the margin of error for trip data should be taken as an approximation.

2.4.3 Database Format

The final database is in Microsoft Access format and includes the expanded data for the Household Travel Survey. The main data tables include:

- Expanded Household Travel Survey Data
  - a02Households
  - a03Persons
  - a04Trips

Many of the fields in the database contain numeric values corresponding to a particular response category. These categories are described in a series of associated lookup tables.

The remaining tables in the database contain the Census data (age, gender, household size, dwelling type, etc.) used for data expansion. These tables are provided for reference purposes.

3 Highway 2 Intercept Survey

For the Highway 2 Intercept Survey, R.A. Malatest & Associates Ltd. took on the overall project management, research design and data processing, while ME2 Transportation Data Inc. provided field services.

3.1 Research Design

3.1.1 Objective

The objective of the Highway 2 Intercept Survey was to provide information on the peak travel patterns of travellers using Highway 2 north of the city to enter/exit the City, including non-residents who travel to/from or through St. Albert from external areas (e.g., commuters from Morinville or other locations).

The strategic importance of the Highway 2 Intercept Survey is that much of the high volume of traffic (approximately 10,800 vehicles in each direction on average on weekdays in September 2013) is likely generated by non-residents of St. Albert. The communities north of St. Albert have experienced significant growth in recent years: for example, the population of Morinville, only 20 minutes drive north of St. Albert, increased by 26.5% from 2006 to 2011. Therefore, existing data sources that might usually be used as inputs to describe travel to/from St. Albert by external residents (such the City of Edmonton's regional transportation model, for which the last household travel survey was in 2005), are not expected to reliably describe the travel patterns of travellers entering St. Albert from the north.

3.1.2 Survey Design

The survey was designed as a short (approximately five-minute) survey to be conducted on paper with drivers directed to pull over at the side of the Highway. The survey was designed to gather information on:

- vehicle type (including whether the vehicle was a commercial light or heavy truck);
- number of vehicle occupants;
- the driver's home town;
- trip origins and destinations;
- trip departure and arrival times;
- reason for being at the origin and/or destination (home, work, school, shopping, etc.);
- stops made in St. Albert (up to five stops other than stated trip origins or destinations), and reasons for making those stops;
- route used to travel within or through St. Albert;
- frequency of making the same trip; and
- whether the driver had made a trip in the opposite direction earlier the same day, or was planning to later the same day, and if so, details of the opposite trip (times; origin/destination if different from the destination/origin of the current trip).

The survey instrument is included in Appendix E of this report.

As the Household Travel Survey can be used to represent the 24-hour trips of St. Albert residents, including trips north of the City, the main focus in the Highway 2 intercept survey was to capture the trips of external residents, including the large number of residents of communities to the north of St.

Albert who use Highway 2 to commute to jobs in Edmonton or St. Albert or travel on Highway 2 for other purposes. Therefore, the survey was designed to be conducted in the southbound direction in the morning and the northbound direction in the afternoon.

3.1.3 Survey Plan

Prior to survey administration, a Traffic Accommodation Strategy was developed with a site plan for how traffic pullovers were to be managed safely. The City and the RCMP were liaised with to obtain approval for the safety and detour provisions and permission to conduct the survey on the planned date. A notice was also posted on

3.2 Data Collection

3.2.1 Survey Period

The survey was conducted on Tuesday, September 23. The survey periods were from 7:00 a.m. to 9:30 a.m. and 3:30 p.m. to 6:30 p.m. to cover both a.m. and p.m. peak periods. Due to safety concerns related to the available daylight in the morning for site set up, surveying for the a.m. period was not able to start earlier. (A 6:30 a.m. start would have been ideal to catch the beginning of the peak period but was not possible due to the daylight restrictions).

3.2.2 Site Preparation

Set up included setting up signage, pylons, support vehicles, and placement of traffic management personnel in advance of each survey period. Highway 2 travellers were provided with signage well in advance so that they will be alert to the potential pull-over, sufficient distance to slow down and pull over once flagged to pull over, and appropriate equipment and blocking cars to ensure the safety of all intercept survey workers. During survey administration, local RCMP stopped or drove by occasionally to verify that the site set up and operation was as agreed and posed no concerns.

3.2.3 Pull-Over and Survey Administration

Facilitated by flag staff, 'blocks' of four to seven vehicles were pulled over together, and once stopped, survey interviewers presented themselves to the vehicle drivers to conduct the brief 2-4 minute survey with all drivers concurrently. The intercept survey was voluntary, and a driver could refuse to participate, but for safety was only released back on to the road with all other vehicles in the block. While the intercept surveys are being conducted, other traffic in the same direction was allowed to drive past. Once the block of vehicles completed the surveys, and interviewers were safely out of the path, the block of vehicles was released, and the process could begin again with the next batch of vehicles.

3.2.4 C&O and Screenline Counts

During the survey administration periods on September 23, 2014, classification and occupancy (C&O) counts were conducted in both directions, for use in data weighting. Automatic Traffic Recorder (ATR) screenline counts were also collected during the same period.

During data processing, some irregularities were noticed in the original C&O data collected (including lower-than-average northbound counts in the p.m. peak period surveyed). C&O counts were repeated by ME2 Transportation Data Inc. on April 16, 2015 to obtain another set of measurements.

3.2.5 Results

The project targeted a 10% sampling rate (i.e., one in ten vehicles pulled over to participate). A total of 570 surveys were gathered, representing 12.7% of screenline vehicle counts for the period.

It may be noted that morning peak period southbound screenline counts were consistent with the September average (2,174, compared with the September 2014 weekday average of 2,265). However, afternoon peak period screenline counts obtained during the afternoon peak period were somewhat lower than usual (2,413, compared with the September 2014 weekday average of 3,186), even though southbound counts during the same period were in line with expected volumes. This suggests that some southbound drivers who used Highway 2 in the morning or who became aware of the intercept survey during the day may have used an alternate route in the afternoon to avoid the intercept site. Therefore, the data may be subject to bias due to the greater avoidance by certain types of travellers. Some of this potential bias may have been corrected for by the use of the April 16 2015 C&O recounts in the data weighting.

3.3 Data Processing

3.3.1 Data Entry, Cleaning, Geocoding, and Validation

After data collection, the survey data were entered into an MS Access database, and subject to random verification to ensure the quality of data entry.

Stated home towns, trip origins, trip destinations, and stops in St. Albert were geocoded. Home towns were only coded to the town. For trip origins, destinations, and stops in St. Albert and outside of St. Albert, the following approaches were taken:

- Locations within St. Albert: geocoded precisely wherever possible. A small number of locations within St. Albert may have been imputed (e.g., if a respondent indicated a Tim Horton's on St. Albert Trail, but did not indicate which one, the location may have been geocoded to the Tim Horton's that made the best sense for the route specified, or may have been randomly picked from the available possibilities).
- Locations within Edmonton outside St. Albert: geocoded precisely where possible, but could have been coded less precisely to the centre of a neighbourhood or area (e.g., 'downtown Edmonton') where information was vague or non-specific.
- Locations outside St. Albert and outside Edmonton: where a location in a town was given, the location was geocoded to the town only (e.g., locations within Morinville were typically coded to the town centre rather than the specific location within Morinville); where the location was outside a town, the location was coded as specifically as possible.

Tests of trip logic were performed (e.g., trip origin and destination made sense for the direction of travel at the Highway 2 intercept location; trip times made sense for the given trip distances, etc.). Cases failing tests were reviewed closely to determine whether any errors had been made in data entry or geocoding, and to determine whether any corrections could be made to salvage the trip).

A limited amount of imputation was undertaken for missing data points, and only if the survey included sufficient good information and/or clues as to vague/ambiguous destinations to warrant saving the survey record. A total of 51 surveys (or 8.9% of total surveys gathered) that could not be fully geocoded or which had too many missing or refused answers were removed from the dataset or which failed the trip validation.

3.3.2 Trip Route Geocoding

Survey respondents were asked to provide information on which route they used to travel through St. Albert. Responses were reviewed closely and in context of the origin and destination, using Google maps to verify whether each route stated was feasible and plausible for the geocoded origin and destination. In some instances where the respondent was unable to provide a trip route, or provided vague or illogical information, the trip route may have been imputed (with such trip route issues / imputations flagged in the dataset).

The set of trip route codes developed is as follows in the table below. Where travel via the route could occur in both directions, the corresponding 'opposite route' is listed on the same row.

Table 6. Highway 2 Intercept Survey - Trip Route Coding

Route Code	Southbound Routes	Route Code	Northbound Routes
	Southbound Exiting St Albert to the South		Northbound Entering St Albert from the South
101	Hwy 2 Straight Through	201	Hwy 2 Straight Through
-	-	211	Bellerose Dr from east - Erin Ridge Dr - Hwy 2 north
112	Hwy 2 - Boudreau - Sturgeon Rd east	212	Sturgeon Rd from east - Boudreau Rd - Hwy 2 north
-	-	213	Sturgeon Rd from east - Hwy 2 south - Hwy 2 north
121	Hwy 2 - Campbell - Boudreau - Vaness - 142 St	-	-
122	Hwy 2 - Boudreau - Campbell - AHD northeast	222	AHD from northeast - Campbell - Boudreau - Hwy 2 north
123	Hwy 2 - Boudreau - Campbell - AHD south	223	AHD from south - Campbell - Boudreau - Hwy 2 north
-	-	224	Hwy 2 from south - Campbell - Boudreau - Hwy 2 north
125	Hwy 2 - AHD northeast	225	AHD from northeast - Hwy 2 north
126	Hwy 2 - 137 Ave	226	137 Ave - Hwy 2 north
127	Hwy 2 - Boudreau - Campbell - 156 St	227	156 St - Campbell - Boudreau - Hwy 2
-	-	228	142 St - Vaness - Boudreau - Hwy 2 north
131	Hwy 2 - 156 St	231	156 St - Hwy 2 north
132	Hwy 2 - Gervais - 170 St	232	170 St - Gervais - Hwy 2 north
133	Hwy 2 - Villeneuve - Ray Gibbon - LeClair - 137 Ave	233	137 Ave - LeClair - Ray Gibbon - Villeneuve - Hwy 2 north
134	Hwy 2 - AHD - 184 St	234	184 St - AHD - Hwy 2 north
136	Hwy 2 - Villeneuve - Ray Gibbon - 184 St	236	184 St - Ray Gibbon - Villeneuve - Hwy 2 north
137	Hwy 2 - AHD south	237	AHD from south - Hwy 2 north
138	Hwy 2 - Giroux - Ray Gibbon - AHD south	238	AHD from south - Ray Gibbon - Giroux - Hwy 2 north
139	Hwy 2 - Villeneuve - Ray Gibbon - AHD south	239	AHD from south - Ray Gibbon - Villeneuve - Hwy 2 north
141	Hwy 2 - Villeneuve westwards	241	Villeneuve from west - Hwy 2 north
142	Hwy 2 - Villeneuve - Hwy 44	242	Hwy 44 - Villeneuve - Hwy 2
	Southbound to destination within St Albert		Northbound from origin within St Albert
129	Hwy 2 - AHD - Campbell	229	Campbell - AHD - Hwy 2 north
150	Hwy 2 - Boudreau	250	Boudreau - Hwy 2 north
151	Hwy 2 - Boudreau - Campbell	251	Campbell - Boudreau - Hwy 2 north
152	Hwy 2 - Boudreau - Sir Winston Churchill - Poirier - Campbell	252	Campbell - Poirier - Sir Winston Churchill - Boudreau - Hwy 2 north

Route Code	Southbound Routes	Route Code	Northbound Routes
-	-	253	Erin Ridge Dr - Boudreau - Hwy 2 north
154	Hwy 2 - Boudreau - Sir Winston Churchill - Poirier	254	Poirier - Sir Winston Churchill - Boudreau - Hwy 2 north
-	-	255	Sir Winston Churchill - Sturgeon - Boudreau - Hwy 2 north
156	Hwy 2 - Boudreau - Hebert	256	Hebert - Boudreau - Hwy 2 north
157	Hwy 2 - Hebert	257	Hebert - Hwy 2 north
159	Hwy 2 - Boudreau - Sir Winston Churchill	259	Sir Winston Churchill - Boudreau - Hwy 2 north
160	Hwy 2 - Boudreau - Inglewood	260	Inglewood - Boudreau - Hwy 2
161	Hwy 2 - Coal Mine Rd - Ebony Way - Erin Ridge Dr	261	Erin Ridge Dr - Ebony Way - Coal Mine Rd - Hwy 2 north
-	-	262	Erin Ridge Dr - Erin Ridge Rd - Hwy 2 north
-	-	263	Inglewood - Hwy 2 north
164	Hwy 2 - Sturgeon Rd	264	Sturgeon Rd - Hwy 2 north
165	Hwy 2 - Bellerose	265	Bellerose - Hwy 2 north
166	Hwy 2 - Boudreau - Bellerose	-	-
167	Hwy 2 - Sturgeon - Bishop - Sir Winston Churchill	267	Sir Winston Churchill - Bishop - Sturgeon - Hwy 2 north
170	Hwy 2 - Villeneuve	270	Villeneuve - Hwy 2 north
171	Hwy 2 - Villeneuve - Ray Gibbon	271	Ray Gibbon - Villeneuve - Hwy 2 north
172	Hwy 2 - Villeneuve - Hogan	272	Hogan - Villeneuve - Hwy 2
173	Hwy 2 - Giroux	273	Giroux - Hwy 2 north
174	Hwy 2 - McKenney	274	McKenney - Hwy 2 north
179	Hwy 2 - St Vital	279	St Vital - Hwy 2
180	Hwy 2 - St Anne	280	St Anne - Hwy 2 north
181	Hwy 2 - St Anne - Perron	281	Perron - St Anne - Hwy 2 north
182	Hwy 2 - Mission	282	Mission - Perron - St Anne - Hwy 2 north
183	Hwy 2 - St Anne - Grandin - Grosvenor	283	Grosvenor - Grandin - St Anne - Hwy 2 north
184	Hwy 2 - St Anne - Sir Winston Churchill	284	Sir Winston Churchill - St Anne - Hwy 2 north
185	Hwy 2 - St Anne - Sir Winston Churchill - Riel	285	Riel - Sir Winston Churchill - St Anne - Hwy 2 north
186	Hwy 2 - St Anne - Sir Winston Churchill - Cunningham	286	Cunningham - Sir Winston Churchill - St Anne - Hwy 2
187	Hwy 2 - St Anne - Grandin	287	Grandin - St Anne - Hwy 2
188	Hwy 2 - Gate - Grandin - Granite - Grosvenor - Gainsborough	288	Gainsborough - Grosvenor - Granite - Grandin - Gate - Hwy 2
189	Hwy 2 - Gate	289	Gate - Hwy 2
190	Hwy 2 - Gervais	290	Gervais - Hwy 2 north
191	Hwy 2 - AHD - Ray Gibbon - LeClair	291	LeClair - Ray Gibbon - AHD - Hwy 2 north
199	Hwy 2 to destination just off Hwy 2	299	Origin just off Hwy 2 to Hwy 2 north

3.3.3 Data Weighting

In order for the survey data to represent the volumes of actual travellers of different types for the survey period, data weighting was applied.

The C&O counts were used as the basis of weighting the volume of traffic by half-hour block for non-commercial vehicles (combining both passenger vehicles and light duty trucks such as SUVs, pickup trucks and vans), commercial light trucks, and commercial heavy trucks. In the weighting stratification, all Non-commercial vehicles were combined as both passenger vehicles and light duty trucks, as the survey data suggest that some survey interviewers were confused as to how to classify light duty trucks. The weighting stratification did not incorporate vehicle occupancy from the C&O counts, as the data appear to suggest that the C&O counts may not have been as accurate as the intercept surveys in terms of identifying actual numbers of vehicle occupants (e.g., in the C&O counts there may have been difficulty identifying number of occupants for vehicle moving at speed).

As noted earlier, original C&O counts showed fewer vehicles travelling northbound during the September 23 p.m. peak period than for any other typical September weekday, which suggests potential avoidance of the site by some travellers. Possible survey bias that may have resulted, in terms of the distributions of volume by half-hour period and/or in terms of volumes of commercial/non-commercial vehicles may have been corrected for by the use of the April 16, 2015 C&O recounts in the data weighting step described above.

After the adjustment of these weights, the data weights were calibrated to provide a final correction to the total volumes, so that total travel would reflect the total average daily weekday traffic during the a.m. and p.m. peak periods as estimated from 2014 ATR counts for weekday in September (excluding Labour Day).

Aggregated measurements used to calibrate the weights is included in the final database, while the raw C&O and ATR count data has been delivered separately.

3.4 Final Survey Dataset

After data cleaning and validation, a total of 516 surveys were included in the final dataset, providing information on the following trips:

Table 7. Highway 2 Intercept Survey - Trip Dataset

Direction	Trips in Given Direction Represented by Survey Data (N)*	Intercept Surveys Completed fro Travellers in Given Direction (n)	Trip in Opposite Direction	Trip taken in opposite direction reported by survey respondents
Southbound 7:00-9:30 a.m.	2,256	231 surveys	Northbound, various times	215 opposite trips
Northbound 3:30-6:30 p.m.	3,186	288 surveys	Southbound, various times	241 opposite trips
Total	5,451	519 surveys	Total	456 opposite trips

*Trip survey data has been weighted to average ATR counts for September 2014.

Appendix A: Household Travel Survey Questionnaire

City of St. Albert Transportation Master Plan
Household Travel Survey (HTS)
Telephone Interview / Online Survey Script

SUMMARY OF KEY DATA ELEMENTS

Household level *Note: City of St. Albert households only*

- Travel day surveyed (date and day of week) *Note: survey weekday travel only*
- Received survey notification letter?
- Confirm address (Geocode home XY coordinates, traffic zone, etc.)
- Dwelling type
- Number of householders
- Number of insured vehicles available to householders (including company vehicles)
- Household income
- Number of bicycles in household
- Would you like to participate in a online public consultation (for the St Albert Transportation Master Plan)? Referral to link to online public consultation.
- Would you like to be informed of the St Albert Transportation Master Plan as it progresses?

Person level

- Gender
- Age and/or Age Range
- Driver's license
- Student status (f/t, p/t)
- Type of school (daycare/preschool, K-12, public post-secondary, private post-secondary)
- School name / location (Geocode school XY coordinates, traffic zone, etc.)
- Employment status (f/t, p/t)
- Primary unemployed occupational status if not employed (unemployed, retired, volunteer only, student, other)
- Primary workplace location (note if home) (Geocode workplace XY coordinates, traffic zone, etc.)
- Primary job type of workplace (office, retail, medical, education, residential, eating establishment, industrial, etc.)
- Are you a commercial vehicle driver?
- How frequently telecommute? (ask of all workers with workplace not home)
- General frequency of use of active transportation modes # of days per week or per month for cycle, walk (walk includes walking/running/jogging/skateboarding/rollerblading))
- Made any trips between 4:00 a.m. yesterday and 3:59 a.m. today

Trip level *Note: survey trips for respondents 5+ years of age only*

- Depart time
- Purpose
- Origin (Geocode origin XY coordinates, traffic zone, etc.)
- Destination (Geocode destination XY coordinates, traffic zone, etc.)
  Note : may need to capture whether destination is within St Albert or outside of St. Albert in order to trigger appropriate location capture module
- Modes of transportation (up to 5 modes, if bus probe for mode to/from bus stops)
- Transit route(s) (if transit taken) (i.e., route name or number)
- Bus or LRT boarding location
- Mode transfer location (if modes include both public and private modes, e.g., car and transit)
- Trip duration or arrival time
- Was a vehicle available to you for this trip? (if non-auto trip, i.e., cycling, walking, transit)

- Number of vehicle occupants (if auto driver or passenger)
- Carpool or vanpool (if auto trip to or from work or school)

Questions associated with data validation *For quality control purposes.*

- If did not take any trips, why not?
- If first origin of the day was not home, why not?
- If last destination of the day was not home, why not? Confirm that were at last location until end of travel day (3:59 a.m.)
- If took transit and did not report another mode, how did they get to the bus stop?
- If auto driver for a trip, and not have vehicle in household, confirm mode / clarify
- If auto driver for a trip, and not have drivers license, flag error / correct information
- If a worker, and primary work location outside the home, and did not take any trips with work as a purpose or a destination, why not? (include telecommute as a reason)
- If a worker, employed as a commercial driver? (e.g., taxi, truck, bus driver, courier)
- If a student, and did not take any trips with school as a purpose or a destination, why not?

Level of geocoding precision required for origins and destinations

- For O-Ds within City of St. Albert, precise geocoding
- For O-Ds in the City of Edmonton in the 'halo' of zones at the City of St. Albert / City of Edmonton boundary, capture precise geocoding where possible, but there is some tolerance for imprecision (i.e., more aggregate than the existing zone systems, but still reasonably detailed)
- For O-Ds beyond the halo, whether within City of Edmonton or beyond, capture precise geocoding where possible, however, aggregate districts can be used (e.g., South East Edmonton, City of Leduc), as well as key major destinations (e.g., downtown Edmonton, U of A, hospitals, NAIT, West Edmonton Mall)

Key

Grey shading – alternate wording for web-based survey

Note: question numbering is not always sequential (some question numbers conform to templates or modules that are already programmed, so are best left unchanged)

INTRODUCTION – TELEPHONE INTERVIEW

Hello, my name is _____ , and I am calling on behalf of the City of St. Albert. As reported in the media [If part of mail-out sample: "and the letter sent to your house"], we are conducting a major study of household travel patterns for the City's Transportation Master Plan.

Information provided by this survey will help the City of St. Albert make informed choices on improvements to transportation infrastructure and services. You were selected in a random sample to represent your neighbourhood in this important study. I would like to ask you some questions about the trips made by members of your household yesterday.

(Interviewer: If sounds young, verify over the age of 16. If no, ask to talk to appropriate person and restart intro)

I would like to ask you some questions about the trips made by members of your household yesterday ([travel day]).

USE FOLLOWING SCRIPTS AS NECESSARY:

- The goal of the survey is to understand where people are going and how they get there, whether by car, bicycle, transit, or on foot. Information provided by this survey will help decision makers for the City of St. Albert make informed choices about on improvements to transportation infrastructure and services. The survey is being conducted as part of the city's Transportation Master Plan project.

- The survey is entirely confidential. Your answers are important, and will help build an accurate picture of the trip patterns and transportation choices of the people in your area.

- Your household has been randomly selected to participate in this study. The survey is voluntary, but to truly represent the travel behaviour of residents in your neighbourhood, it is important that you participate in the study.

- The survey takes about 10-25 minutes depending on the size of your household and your answers.

- The survey contains questions about your household and the people in your household. It also asks about the trips people in your household make.

- Even if you did not make any trips yesterday, it is important that we record that information as well.

- I work for R.A. Malatest & Associates Ltd, a Canadian-based professional research firm located in Edmonton, Victoria, Toronto, Ottawa, and Halifax. The City of St. Albert has contracted our firm to conduct this survey on their behalf.

- If you wish to validate the authenticity of this survey you may contact: **Dean Schick, Transportation Manager** at **780-459-1649** (or via e-mail at dschick@stalbert.ca)

- I can send you an e-mail with information about the study, and a link to the City of St. Albert web page about this study. (You can also visit the City of St. Albert website at stalbert.ca and search for "Transportation Master Plan".) (If you prefer I can mail you information about the purpose of the survey, and call you back after you have reviewed the information.)

A1. I need to talk to the person, 16 or older, who is most familiar with your household's trips made yesterday. Are you that person? May I complete the survey with you now?

INTERVIEWER, MUST READ: Please note that this call may be recorded for quality control purposes.

1. Yes (confirmed correct person)
2. No (ask to talk to that person and restart introduction)
4. E-mail or mail new information [GO TO A3 ETC]
5. Refuse to do the survey (close and code as refusal)

A2. [if belong to sample that was sent letter

Have you received a letter in the mail describing this study?

1. Yes
2. No [GO TO A3 ETC]
3. Decline to answer / don't know

A3. [If No to A1, or No to A2]

Would you like to receive some information about the purpose of this study?
Would you prefer to receive the information by e-mail or regular mail?
What is your email address? [instantly send e-mail]
May I please confirm your mailing address? [add to the list to be re-mailed letter]

INTRODUCTION – ONLINE HOUSEHOLD TRAVEL SURVEY

Household Travel Survey

Use City of St. Albert colours and Franklin Gothic font for branding as appropriate

Welcome to the City of St. Albert Household Travel Survey. This survey is about the transportation choices people make and will help municipal decision makers make informed decisions on improvements to transportation infrastructure and services as part of the City's upcoming Transportation Master Plan.

The online survey takes about 10-15 minutes depending on the size of your household and your answers.

- The first two sections of the survey contain questions about your household and the people in your household; these sections may be completed at any time.
- The final section asks questions about the trips taken by every member of your household on a particular weekday (your Travel Day).

Your preferred Travel Day is [TRAVEL DAY]. If at all possible, please complete the survey about travel on this day of the week. If this day is not convenient for you, you may choose another weekday as your Travel Day.

In order to ensure the most accurate recollection of your travel, please complete the Trips section on the day immediately following your Travel Day. Alternatively, you may download the daily trip record [hyperlink to .pdf of daily trip record] for each member of your household and use this to keep track of your trips on your Travel Day. You can then complete the Trips section online at your convenience.

- Even if you did not make any trips yesterday, it is important that we record that information as well.
- If you would prefer to complete the survey by telephone, please call 780-702-1525. If you choose to do the survey by telephone, you can complete it the day after your Travel Day.
- You may also call the number above for assistance with the on-line survey, or e-mail us at stalbert@malatest.net
- If you wish to validate the authenticity of this survey you may contact **Dean Schick , Transportation Manager** at **780-459-1649** (or via e-mail at dschick@stalbert.ca)
- For more information about this study, please visit stalbert.ca/getting-around/roads/transportation-master-plan.

To begin the survey, please enter the ID code in the e-mail sent to you, or found on the letter you received in the mail (above and to the right of your mailing address).

ID Code:_____ Begin Survey Download Daily Trip Record Form

A1. Are you 16 years of age or older?

1. Yes

2. No

A1X. [IF NO] This survey must be completed by someone years of age or older. Please ask another member of your household to complete the survey.

HOUSEHOLD INFORMATION

Before we begin, I'd like to let you know that this survey is entirely confidential.
WEB: This survey is entirely confidential (using secure internet protocols).

Your survey responses will only be analyzed after your name and other identifying information has been removed. Survey responses will be aggregated for analysis and will be used only for transportation and municipal planning purposes.

I am now going to ask you some general questions concerning your household
WEB: This section contains questions about your household.

B1. First off, may I verify that I have dialled [PHONE NUMBER]?

(If different phone number, confirm respondent lives within the City of St. Albert)

1. Yes

2. No -> Enter correct name and phone number

WEB:
We would like to be able to contact you in the event we need to verify any of your responses. The contact information we have on file for your household is:

Name: [NAME]

Phone Number: [PHONE NUMBER]

Is this the information correct?

1. Yes

2. No -> Enter correct name and phone number

9. Decline

(Note: this information will be kept confidential and will not be shared with anyone. We will contact you only in the event we need to verify your responses.)

B1A. [If web survey, or if a new phone number recorded in B1, or if sample is cell phone Random Digit Dialled]

What type of telephone service do you have in your household? (select all that apply)

1. A regular landline telephone service

2. A phone service from a cable television provider

3. A phone service over the Internet with a unique number (voice over internet protocol - VOIP)

4. A cell phone or cell phones

5. Other, please specify: _____

9. Decline / don't know

B2. [if address in sample file]

I also need to verify your address. Is it…?

WEB: The address we have on file is listed below. Please verify the address and correct it if necessary. This information is required to identify the location of your trips.

STREET ADDRESS
CITY / TOWN
POSTAL CODE

1. Yes Web: Confirm Address is Correct, or edit the fields displayed
2. No
9. Decline to answer / don't know

B2A. [if no, or if no address in the sample file]

What is the physical address of your household?

[if returning to this page from B2X: You may provide the nearest intersection if you are uncomfortable providing us your exact street address.]

LOCATION CAPTURE [HOME COORDINATES / TAZ]

B2X. [IF DECLINE TO ANSWER B2 OR B2A]

Unfortunately, the survey cannot proceed without an answer to this question. Your participation is very important, and all personal information you provide will be kept strictly confidential.

You may provide the nearest intersection if you are uncomfortable providing us your exact street address

Rather than terminating the survey, would you reconsider answering this question?

[if agree, go back to previous question]
[If still refuse:] Thank you for your time. Have a pleasant day / evening
[stop interview, record call status Refusal].

B3. What type of dwelling is that?

1. Single-detached house
2. Semi-detached house (side-by-side, duplex)
3. Row / townhouse
4. Apartment or condominium
5. Mobile home / trailer
8. Other (e.g. cottage, etc.), please specify: _____
9. Decline to answer / don't know

B4. What is the total number of people living in your household, including yourself?

(Children in joint custody to be included if living in household on the day of the survey.

Web: Include children in joint custody if living in your household on your Travel Day.

Include roommates and housemates. Exclude anyone living in a separate apartment within the building.

Do not include visitors, even if they are staying for an extended period of time.)

___ Total # persons in household

(confirm with respondent)

99. decline / don't know [go to B5]

B5. [IF DECLINE TO ANSWER]

Unfortunately, the survey cannot proceed without an answer to this question. Your participation is very important, and all personal information you provide will be kept strictly confidential.

Rather than terminating the survey, would you reconsider providing this information?

Web: Click the Previous button to go back and provide a response, or click End Survey to quit]

[if agree, go back to previous question]
[If still refuse:] Thank you for your time. Have a pleasant day / evening
[stop interview, record call status Refusal].

B6. How many licensed (insured) motor vehicles (including cars, light trucks, vans and motorcycles) are available to the members of your household, including yourself? Please include personal and business vehicles.

INTERVIEWER, MUST READ: Please do not count Recreational Vehicles (RVs).

(Do not count any motor vehicles which are not registered. Do not count any that are registered to an owner in the household but not insured to be on the road.)

(Do include all vehicles provided by employers and which household members use to go to work or for personal use.)

__

77. none

99. decline / don't know

B7. How many adult-sized bicycles in working order does your household have?

__

77. none

99. decline / don't know

LOCATION CAPTURE MODULE

The general format of the location capture screen is as follows, modified for each survey question as required.

Anywhere the survey indicates LOCATION CAPTURE in the survey instrument this format will be used.

LOC1 1. Home (display confirmed address, from sample or as captured in the survey)

21. Your main work location (display address captured in survey)

22. [PERSON 2]'s main work location (display address captured in survey)

... Etc ...

31. Your school (display address captured in survey)

32. [PERSON 2]'s school (display address captured in survey)

... Etc ...

5. On the road / no fixed location [no fixed place of work, etc.]

6. Enter location:

Municipality (always asked): _____
(if well outside survey scope, no further detail may be required)

Postal Code: _____

Place name or nearby landmark:_____

Address: _____

Intersection: _____ at _____

7. not applicable

8. don't know

9. decline to answer

PROGAMMER: FOR LOCATIONS WITHIN THE CITY OF ST. ALBERT, TRIGGER AUTO-SUGGEST AS USER TYPES

DEMOGRAPHIC INTRO

[IF ONLY ONE PERSON IN HOUSEHOLD]

I will now ask you to provide some information about yourself.

In case we need to clarify your answers, may I record your first name or initials?

[IF MORE THAN ONE PERSON]

The next section is about the demographics of your household. You will be asked to provide some information about yourself and the other members of your household.

It might become confusing to refer to Person #2 over and over. To simplify things, could you please provide the first name or think of an initial or some other identifier for each person?

Web: To simplify things, please fill in the following table with an initial or identifier for each person.

(A simple code like M1, M2, or F1, F2 from oldest to youngest would be appropriate if you do not wish to provide names.)

Person #1 ID	
Person #2 ID	
Person #3 ID	
Etc.	

[TABLE LISTING ALL HOUSEHOLDERS]

Before proceeding, please ensure that all information provided is accurate. To edit the information for any household member, please click on the Edit links in the above table.

Upon selecting 'Continue,' the information provided thus far will be saved and processed.

DEMOGRAPHICS

C1. [Are you / Is PERSON] male or female? [do not ask unless necessary – record only]

1. Male
2. Female
9. Decline

C2. What is [your/PERSON's] age?

___

9. Decline / don't know

C2A. [if not provide specific age] Would you tell me which age range [you belong/PERSON belongs] to?

(Read the age ranges, starting at a relevant one)

Web: Would you identify which age range [you belong/PERSON belongs] to?

1. 0 - 4 years
2. 5 - 9 years
3. 10 - 14 years
4. 15 - 17 years
5. 18 - 24 years
6. 25 - 34 years
7. 35 - 44 years
8. 45 - 54 years
9. 55- 64 years
10. 65 - 74 years
11. 75+ years
99. Decline / don't know

NOTE: Age categories to coordinate with general stages of schooling and life, and with survey trip capture cut-off age of 5+.

C3. [if age >= 16, or age category 4 (15-17) or greater]

[Do you/does PERSON] have a valid driver's license?

1. Yes
2. No

99. Decline / don't know

C4. [do not ask if 0-4 years]

[Do you/does PERSON] currently attend school or another learning institution? (K-12 or post-secondary)

1. Yes, full-time student
2. Yes, part-time student
3. No
99. decline / don't know

C4A. What kind of school [do you/does PERSON] attend?

1. Elementary school
2. High school or junior high
3. College or university
5. Private post-secondary training
4. Alternate, adult basic education, or other

C4B. What is the name of [your/PERSON'S] school? (choose from lists or type in a different name)

ELEMENTARY SCHOOLS: [Drop down]

HIGH SCHOOL/JUNIOR HIGH: [Drop down]

POST-SECONDARY: [Drop down]

OTHER, ADULT BASIC ED, ETC: [Drop down]

7. Other school, not in lists (please specify school name): _____
8. Home schooled (does not attend a school outside the home)
9. Decline/don't know

C4D. [If not on list] What is the location of the school?

LOCATION CAPTURE [SCHOOL CO-ORDINATES / TAZ]

C5A. [do not ask if 0-14 years]

[Are you/Is PERSON] currently employed (i.e., a worker)? (Answer yes if self-employed)

(Interviewer: If mentions volunteering, treat as a No and capture in the next question)

1. Yes
2. No
99. Decline / don't know

C5B. [if no, and age group is 10-14 or greater] Which best describes [your/PERSON's] main activity…?

1. Student
3. Homemaker [DISPLAY ONLY IF PERSON > 16 YEARS OF AGE]
4. Retired [DISPLAY ONLY IF PERSON > 20 YEARS OF AGE]
51. Looking for work [DISPLAY ONLY IF PERSON > 16 YEARS OF AGE]
52. Volunteer
53. Other status, not employed
99. Decline / don't know

C5C. [if employed or C5B= volunteer]

Is that full-time or part-time?

1. Full-time (30 hours or more per week)
2. Part-time (less than 30 hours per week)
9. Decline / don't know

C6A. [if employed or volunteer]

What is the address of [your/PERSON's] normal place of work (main job)?

(This is the address of the worksite that [you/PERSON] normally commute[s] to every day)

LOCATION CAPTURE [WORK CO-ORDINATES / TAZ]

[PROGRAMMER NOTE: INCLUDE HOME AS A POSSIBLE WORK LOCATION]

C7. [if employed or volunteer]

[Are you / Is PERSON] a commercial driver such as a courier driver, taxi driver, truck driver, or bus driver?

77. Yes
88. No
99. Decline/don't know

C7A. [if employed or volunteer]

What type of workplace [do you/does PERSON] work in?

10. Office
20. Manufacturing
30. Industrial
35. Transportation or Warehousing

40. Medical or Institutional (hospital, care home, etc.)
50. Educational (school, college, university)
60. Retail Store
70. Personal Services (barber, beauty salon, etc.)
80. Eating Establishment
85. Hotel
90. Residential (someone's home)
95. Other, please specify: _____
97. No Fixed Workplace Location (plumber doing housecalls, travelling salesperson, etc.)
99. Decline/don't know

C7D. [if employed or volunteer, and workplace location is not equal to home]
Do [you/PERSON] ever telecommute for work (i.e., work remotely from home)? And how often?

1. No, never telecommute
2. Yes, 1-2 days per month or less often
3. Yes, 1-2 days per week
4. Yes, 3-4 days per week
5. Yes, 5+ days per week
99. Decline/don't know

C10. On average, how often do [you/PERSON] currently make trips using each of the following modes of transportation? You may answer in terms of days per week or days per month.

	Never	Less than a few days per month (very occasionally)	A few days per month (sometimes)	1-3 days per week (regularly)	4-5 days per week (daily)	6-7 days per week (every day)	Decline / don't know
Bicycle?	❍	❍	❍	❍	❍	❍	❍
Walking?	❍	❍	❍	❍	❍	❍	❍

'Walking' can include trips using roller blades, a skateboard, or a wheelchair.

[CYCLE THROUGH DEMOGRAPHIC QUESTION SET FOR AS MANY PEOPLE IN HOUSEHOLD AS WERE INDICATED.]

TRIPS INTRODUCTION - TELEPHONE

D1.
[Begin with primary respondent]
I am now going to ask you about the trips you made yesterday, that is any trip during the 24-hour period between 4:00 AM yesterday ([TRAVEL DAY]) and 4:00 AM this morning, whether for work, school, shopping or any other purpose.

It is important to report all trips, even for a short distance, on foot for instance, or stopovers on the way to somewhere else.

This section will have a series of questions for each separate trip. A trip is one continuous journey you make from a starting point (an origin) to an end point (a destination) for one main purpose, whether for work, school, shopping or any other purpose. There can be more than one travel mode in a particular trip. If you make a stopover on your way to somewhere else for another purpose (for example, stopping for coffee or to pick up a passenger on the way to work), then that journey would be two trips. The return portion of a journey is also considered a separate trip.

(Interviewer Note: If the person was out of town yesterday, we can capture their travel if it started, passed through, or ended up in the study area).

[CYCLE THROUGH TRIP SECTION FOR PRIMARY RESPONDENT]
[NEXT, CYCLE THROUGH INTRODUCTION AND TRIP FOR EACH HOUSEHOLD MEMBER]

[If other member of the household, PERSON's specific age declined in C2A.]
In this survey we only ask for trip details for children 5 years of age or older. Is [PERSON] 5 years of age or older?

1. Yes
2. No
9. Decline to answer / don't know

[If no or decline, jump to E1 and ask only that one question, if yes, proceed with the next paragraph]

[if other member of household, PERSON's age>=5]
I am now going to ask you about the trips [PERSON] made yesterday, during the 24-hour period between 4:00 AM yesterday and 4:00 AM this morning. Again, it is important to report all trips, even for a short distance, on foot for instance, or stopovers on the way to somewhere else.

If [PERSON] is at home, and over the age of 16, they could complete this section of the survey. Otherwise, you can provide their information on their behalf.

1. Prefer other householder to respond on their own behalf [trigger wording as direct address again]
2. Prefer to answer for other householder

(Interviewer Note: If the person was out of town yesterday, we can capture their travel if it passed through or ended up in the Study Area).

D1A. [if commercial driver (C7=77): We are interested in [your/PERSON's] *personal trips only*. So you can tell us about [your/PERSON's] trip to and from work, but you do not have to tell us about the trips taken as part of commercial deliveries or while driving a taxi or bus]

[CYCLE THROUGH TRIP SECTION FOR SECONDARY RESPONDENT with age >=5]

TRIPS INTRODUCTION - WEB

This section consists of questions about the trips taken by the members of your household during a single weekday (your Travel Day).

In order to ensure the most accurate recollection of your travel, please use yesterday ([TRAVELDAY] as your Travel Day. Alternatively, if you kept a record of trips on a previous day, you may use that day as your Travel Day.

Please enter the date of the day for which you are providing your daily travel information. [Calculate day of week for TRAVEL DAY]

[Select travel day]

[if Day of Week = Saturday or Sunday] We are only seeking information about travel from Monday through Friday. Please come back and complete this section at a later date. If you prefer, you may download a daily trip record for each member of your household here [link to PDF]. You can use this daily trip record to keep track of your trips and then come back to enter the information at a time which is convenient for you.

[CYCLE THROUGH TRIPS SECTION FOR ALL HOUSEHOLDERS > =5]

This section is about the trips you made on [TRAVEL DAY], that is any trip during the 24-hour period between 4:00 AM [TRAVEL DAY] and 4:00 AM [TRAVEL DAY +1], whether for work, school, shopping or any other purpose. This includes all trips, even for a short distance or on foot, except those trips made solely for the purpose of exercise.

ALTERNATE [if other member of the household]
[if PERSON's specific age was declined in C2A] In this survey we only ask for trip details for children 5 years of age or older. Is [PERSON] 5 years of age or older? 1. Yes 2. No 9.Decline to answer / don't know
[If no or decline, jump to E1 and ask only that one question, if yes proceed with the next paragraph]

[if PERSON's age>=5] This section is about the trips [PERSON] made during the 24-hour period between 4:00 AM [TRAVEL DAY] and 4:00 AM [TRAVEL DAY +1]. If [person X] is at home, and over the age of 16, he or she could complete this section of the survey. Otherwise, you can provide their information on their behalf.

1. Prefer other householder to respond on their own behalf [trigger wording as direct address again]
2. Prefer to answer for other householder

D1A. [if commercial driver (C7=77): We are interested in [your/PERSON's] *personal trips only*. So you can tell us about [your/PERSON's] trip to and from work, but you do not have to tell us about the trips taken as part of commercial deliveries or while driving a taxi or bus]

TRIP CAPTURE

[if PERSON's age<5 read following introduction]
As [PERSON] is under the age of 5, I do not have to ask you questions about the trips they took yesterday. However, I will ask whether he or she travelled at all yesterday.

(If asked why: It is assumed that most of the time we would capture their travel accompanied by an adult, in an adults' trips)

Web: As [PERSON] is under the age of 5, you do not need to provide details about the trips they took yesterday. However, we would like to know whether he or she travelled at all yesterday.

E1. Did [you/PERSON] make at least one trip – including walking or cycling – at any time yesterday)?

Web: Did [you/PERSON] make at least one trip – including walking or cycling – at any time on [TRAVELDAY]?

(Note: Trips include those made via any mode of travel including non-motorized modes of transportation such as walking, cycling, rollerblading, skateboarding, and so on)

1. Yes [If PERSON's age<5 end this section and proceed to next]

2. No [CYCLE TO NEXT PERSON]

99. Decline / don't know [PROMPT FOR MORE INFO IF POSSIBLE, OTHERWISE CYCLE TO NEXT PERSON]

E1A. Why did [you/PERSON] not make any trips at all yesterday?

1. Out of town for entire day

2. Sick/illness

3. Worked from home

4. No need to leave home

5. Other (specify): _____

7. Actually, [I/PERSON] did leave home to make at least one trip [GO BACK TO E1]

99. Decline / don't know [PROMPT FOR MORE INFO IF POSSIBLE, OTHERWISE CYCLE TO NEXT PERSON]

[IF E1A OTHER THAN 1 (did make trips) CYCLE TO NEXT PERSON]

E2. [if first trip]

At what time did [you/PERSON] leave to make [your/PERSON's] first trip?

[subsequent trip]

At what time did [you/PERSON] leave [your/their] previous destination…?
(0400 to 2759)

Enter time in 24-hour format HHMM, from 400 up to a maximum of 2759, to take into account trips made to return home after midnight.

Please provide your best guess if you cannot give the exact time.

Interviewer: Accept answers of (hour)99 if respondent cannot even guess at minutes. (e.g. 1699 for between 1600 and 1700).

Time: ____

Web: Please enter a time between 4am [TRAVELDAY] and 3:59am [TRAVELDAY+1]

Time: [Dropdown with hours and AM/PM] [Dropdown with minutes in 5-minute intervals]

Please provide your best guess if you cannot give the exact time.

E3. What was the main purpose of this trip?

10. Travel to Work (usual place of work)

11. Work-related

12. Working on the road / itinerant workplace / no fixed work address

20. Attend School

50. Recreational

51. Social (visiting friends, family, religious)

60. Dining/Restaurant (whether eat-in or take-out)

70. Shopping and household maintenance (grocery, shoe store, auto repair)

40. Personal business (e.g., bank, dentist, health appointments, personal care)

91. Pick-up a passenger (e.g., pick up child at school, pick up someone at work, etc)

92. Drop off a passenger (e.g., drop off child at school, drop off someone at work, etc)

80. RETURN HOME ([recall address])

888. Other, please specify: _____

999. Decline / don't know

(Interviewer: do not choose 'attend school' if picking someone up or dropping them off)

[NOTE: SOME PURPOSES MAY BE COMBINED FOR MODELLING]

E4. [if first trip ask E4, otherwise starting point is presumed to be the destination of the previous trip]

[also ask E4 if commercial driver, as commercial driver may have interruptions in personal trips. E.g., arrive somewhere in the morning, conduct a work day of driving which is not captured, then return home from a different location]

What was the starting point of the trip? LOCATION CAPTURE [ORIGIN CO-ORDINATES / TAZ]

E4A. [If E4 <> home] [This question useful for data validation / catching possible errors during the interview]

You mentioned that [your/person's] first trip of the day started at a location other than your home. Is it that [you were/PERSON was]…?

1. Working a night shift (past 4 am, the start of the travel day)
2. Staying overnight at another household? (friend's, relative's, parent's, etc.)
3. Away from home on business travel?
4. Away from home on vacation (or other personal travel)?
5. Another reason, please specify: _____
9. Decline to answer

E5. [always ask if first trip just to be sure this is clear,
OR ask if trip number>1 and purpose not Return Home (i.e., do not need to ask if subsequent trips and purpose of return home),
OR ask if trip number>1 and E5A=No]

What was the destination of this trip?

(Note: For trips requiring air travel: please treat the trip to the airport as a separate trip from the trip on the airplane.)

LOCATION CAPTURE [DESTINATION CO-ORDINATES / TAZ]

[WORK LOCATIONS AND SCHOOL LOCATIONS FOR ALL HOUSEHOLD MEMBERS ARE INCLUDED IN LIST
OF KNOWN LOCATIONS]

E5A. [If Trip purpose = Return Home and E5 not asked]

To confirm, the destination of [your/PERSON's] trip was your home ([recall address for reference])?

1. Yes [continue]
2. No, another location [go back to E5]

E7. How did you get there? Please select up to 5 modes, in order of use.

INTERVIEWER NOTE: If Transit bus in first mode, probe: how did you get to the bus stop?
If only one mode, prompt: did you use another mode of transportation?

What was your first mode of transportation?

Mode 1: [select from drop down]

Mode 2: [select from drop down]

Mode 3: [select from drop down]

Mode 4: [select from drop down]

Mode 5: [select from drop down]

1. Auto driver	[private mode]
2. Auto passenger	[private mode]
20. Truck driver	[private mode]
3. Transit bus	
30. LRT (light rail)	
4. HandiTransit (City of St. Albert disability transit services)	
5. School bus (e.g., yellow bus)	
6. Other bus (e.g., private operators such as Greyhound, Red Arrow)	
7. Bicycle	
8. Walked (incl. jogging, non-motorized wheelchair, skateboarding, roller blade)	
18. Electric (motorized) wheelchairs / mobility scooter	
9. Taxi or Airport Shuttle	[private mode]
13. Motorcycle or scooter (e.g., Vespa, Moped)	[private mode]
14. Train	
15. Airplane	
17. Other (please specify): _____	
99. Decline / don't know	

[NOTE: MODES 1, 2, 3, 4, 7, AND 8 BELOW WILL BE MODELLED, BUT OTHER MODES ARE COLLECTED FOR EASE OF FILLING OUT THE SURVEY AND FOR INFORMATIONAL PURPOSES. MOTORCYCLE WILL BE COMBINED WITH AUTO FOR THE MODEL.] .

E7X. [if any of the modes was 3. Transit bus]

Where did you board your first bus?

19. Bus stop was right in front of my origin (the starting point of the trip: [previous destination])

[OR LOCATION CAPTURE]

99. Decline / don't know

E7Y. [if any of the modes was 30. LRT]

At what station did you board the LRT?

1. Clareview (48 St. and 139 Ave., has Park & Ride)
2. Belvedere (62 St. and 129 Ave., has Park & Ride)
3. Coliseum (76 St. and 118 Ave.)
4. Stadium (84 St. and 111 Ave., has Park & Ride)
5. Churchill (99 St. and 102A Ave.)
6. Central (101 St. and Jasper Ave.)
7. Bay/Enterprise Square (104 St. and Jasper Ave.)
8. Corona (107 St. and Jasper Ave.)
9. Grandin/Government Centre (110 St. and 99 Ave.)
10. University (114 St. and 89 Ave.)
11. Health Sciences (114 St. and 83 Ave.)
12. McKernan/Belgravia (116 St. and 65 Ave.)
13. South Campus/Fort Edmonton Park (116 St. and 65 Ave.)
14. Southgate (111 St. and 48 Ave.)
15. Century Park (111 St. and 23 Ave., has Park & Ride)

99. Decline / don't know

E7A. [if first mode recorded was (3. Transit bus OR 30. LRT) AND (E7X<>right in front of my origin)]

How did [you/PERSON] get to the [bus stop / LRT station]?

19. [Do not ask if location provided in E7X] [Bus stop / LRT station] was right in front of my origin (the starting point of the trip: [previous destination])

[Same list of modes as above]

99. Decline / don't know

E7Z. [if any of the modes was (3. Transit bus or 30. LRT) AND next mode was a private mode (1, 2, 20, 9, 13)]

Where did you transfer between the [Transit Bus / LRT] and [recall next mode]?

[LOCATION CAPTURE, WITH DROPDOWNS LISTING MAJOR TRANSIT CENTRES AND PARK AND RIDE LOCATIONS]

Official Park & Ride Locations

St. Albert Centre Exchange (St. Albert Trail and St. Vital Ave)

St. Albert Village Transit Station (Grange Avenue and Gate Drive west of St. Albert Trail)

Clareview LRT Station (48 St. and 139 Ave.)

Belvedere LRT Station (62 St. and 129 Ave.)

Stadium LRT Station (84 St. and 111 Ave.)

Davies City Lot (86 St. and 61 Ave.)

Century Park LRT (111 St. and 23 Ave.)

Meadows Transit Centre (17 St. and 40 Ave.)

Lewis Farms Transit Centre (87 Ave. west of Anthony Henday Dr.)

Eaux Claires Transit Centre (97 St. & 157 Ave.)

Transit Centres & LRT Stations

Abbottsfield Transit Centre (34 St. and 119 Ave.; Abbottsfield Shoppers Mall)

Bay/Enterprise Square LRT (104 St. and Jasper Ave.)

Belvedere Transit Centre / Park & Ride (62 St. and 129 Ave.)

Capilano Transit Centre (57 St. and 98 Ave.; Capilano Shopping Centre)

Castle Downs Transit Centre (Castle Downs Rd. north of 153 Ave.)

Central LRT (101 St. and Jasper Ave.)

Century Park Transit Centre / LRT / Park & Ride (111 St. and 23 Ave.)

Corona LRT (107 St. and Jasper Ave.)

Churchill LRT (99 St. and 102A Ave.)

Clareview Transit Centre / LRT / Park & Ride (48 St. and 139 Ave.)

Coliseum Transit Centre / LRT (78 St. and 118 Ave.; Rexall Place)

Davies City Lot Park & Ride (86 St. and 61 Ave.)

Eaux Claires Transit Centre / Park & Ride (97 St. and 157 Ave.)

Government Centre Transit Centre (107A St. and 99 Ave.; north of Alberta Legislature)

Grandin/Government Centre LRT (110 St. and 99 Ave.)

Health Sciences/Jubilee LRT (114 St. and 83 Ave.; UofA Hospital; Jubilee Auditorium)

Jasper Place Transit Centre (156 St. and Stony Plain Road)

Kingsway/RAH Transit Centre (105 St. and 111 Ave.; Royal Alexandra Hospital)

Lakewood Transit Centre (Mills Wood Road or Lakewood Road and 28 Ave)

Leger Transit Centre (Leger Road and 23 Ave)

Lewis Farms Transit Centre / Park & Ride (87 Ave./Webber Greens Dr. west of Anthony Henday Dr.)

McKernan/Belgravia LRT (116 St. and 65 Ave.)

Meadowlark Transit Centre (Meadowlark Rd. north of 87 Ave.; Meadowlark Health and Shopping Centre)

Meadows Transit Centre / Park & Ride (17 St. and 40 Ave.)

Mill Woods Transit Centre (Hewes Way North of 23 Ave; Mill Woods Town Centre)

Millgate Transit Centre (86 St. and Whitemud Dr.)

Northgate Transit Centre (97 St. and 137 Ave.; Northgate Town Mall; Northgate Centre)

South Campus/Fort Edmonton Transit Centre / LRT (116 St. and 65 Ave.)

Southgate Transit Centre / LRT (111 St. and 48 Ave.; Southgate Centre)

St. Albert Centre Exchange (St. Albert Trail and St. Vital Ave)

Stadium Transit Centre / LRT / Park & Ride (84 St. and 111 Ave.; Commonwealth Stadium)

University Transit Centre / LRT (114 St. and 89 ave.; University of Alberta)

Village Transit Station, St. Albert (Gate Drive and Grange Avenue west of St. Albert Trail)

West Edmonton Mall Transit Centre (175 St. and 87 Ave.)

Westmount Transit Centre (135 St. and 111 Ave.; Westmount Centre; Telus World of Science)

99. Decline / don't know

E7B. [If last of the modes recorded was 3. transit bus or 30. LRT (last mode could be in any of mode 2 through mode 5)]

How did [you/PERSON] get from the [bus stop / LRT station] to your final destination ([destination of this trip])? Or did the [bus / LRT] drop you off right in front of your destination?

19. [Bus stop / LRT station] was right at my destination ([recall current destination])

[Same list of modes as above]

99. Decline / don't know

E9. [if transit bus]

What transit routes did [you/PERSON] take? (in the order that they were taken)
(provide either the bus number or bus route name)

(Phone interviewer: Was that a St. Albert Transit or an Edmonton Transit bus?)

(After capturing one bus route, prompt: Did you take another bus route?)

Web: Please list the transit routes that [you/PERSON] took? (in the order that they were taken)

First route: ___	❍ St. Albert Transit (StAT)	❍ Edmonton Transit (ETS)
Second route: ___	❍ St. Albert Transit (StAT)	❍ Edmonton Transit (ETS)
Third route: ___	❍ St. Albert Transit (StAT)	❍ Edmonton Transit (ETS)
Fourth route: ___	❍ St. Albert Transit (StAT)	❍ Edmonton Transit (ETS)
Fifth route: ___	❍ St. Albert Transit (StAT)	❍ Edmonton Transit (ETS)

999. Decline / don't know

E2X. You said [you/PERSON] left at [recall E2]. About how many minutes did this trip take to reach your destination? (If you don't know how long the trip was, do you know the time of arrival)

1. Minutes: _____ Hours: _____
[PROGRAMMER: FOR FLEXIBILITY, ACCEPT TEXT ANSWERS IN HOURS FIELD, ALLOW BOTH MINUTES AND HOURS FILLED OUT]

or

2. Arrival Time: _____

99. Decline / don't know

E10. [if by automobile (driver or passenger)]

How many people were in the car, including [yourself/PERSON]?

1. 1

2. 2

3. 3 or more

9. Decline / don't know

E18A. [Only ask once per person] [if (Auto Driver or Auto Passenger) AND (if purpose was Travel to Usual Place of Work or Travel to School or if destination selected from location list was their own usual workplace or their own usual school)]

Was this a carpool or vanpool trip?

1. Yes

2. No

9. Decline / don't know

E18D. [if E18A = yes]

Was the later return journey also a carpool or vanpool trip?

1. Yes

2. No

3. Not applicable – did not return later in the day

9. Decline / don't know

E19A. [if auto driver and not licensed to drive]

You reported that [you were/PERSON was] an automobile driver for this trip; however, you previously indicated that [you do/PERSON does] not have a driver's license. Which of the following best applies…?

1. [YOU have/Person has] actually has a driver's license
2. [YOU were/Person was] a passenger, not the driver
3. Other, please specify: _____
9. Decline / don't know

E19B. [if auto driver and no vehicles available to the household (B6=0)]

You reported that [YOU were/PERSON was] an automobile driver for this trip; however, you previously indicated that your household has no vehicles available for your use. Was the vehicle used a…

1. Work vehicle
2. Rental vehicle
3. Borrowed
5. Other, please specify: _____
6. [I/PERSON] was a passenger, not the driver
9. Decline / don't know

E11. [if not by automobile, truck, or motorcycle]

Was a vehicle available to [you/PERSON] to make this trip?

1. Yes
2. No
9. Decline / don't know

E11N. Interviewer Note: If there is anything unusual about a trip (e.g., round trip from home to home) or the individual trip chains, or if useful information for the location geo-coder, please make notes here, otherwise proceed to next question without delay. Use only when necessary.

Web: Is there any additional information you would like to provide about this trip (e.g. clarification of location, purpose, etc.)]

_____

_____

_____

E12. Prompt: Did [you/PERSON] make another trip after that?

1. Yes
2. No
9. Decline to answer / don't know (Interviewers: discourage use of this option)

[CYCLE THROUGH TRIPS FOR THIS PERSON AS REQUIRED]

E13. [if E12 = No AND (destination <> home OR trip purpose <> home)

Just to confirm, [were you/was PERSON'] at this final destination, [recall destination], until at least past 4 a.m. (the end of the travel day)? Did [you/PERSON] not return home?

1. Yes (did not return home)
2. No (returned home, more trips to record) [RETURN TO E12 AND CORRECT ANSWER]
9. Decline to answer / don't know (Interviewers: discourage use of this option)

E14. [if E13 = 1. yes]

[This question is useful for data validation, and for catching possible errors during the interview.]

May I ask why [you/PERSON] did not return home before the end of the day?

(Note: for this survey, the end of the Travel Day extends past midnight to 4 am the next day)

(We are only asking as a check to ensure that we captured [your/PERSON's] entire travel)

1. Worked a night shift past 4 am
2. Stayed overnight at another household (whether friend, relative, parent)?
3. Away from home on business travel
4. Away from home for vacation travel
5. Other, please specify: _____
9. Decline to answer

E16. [if a worker (C5A=yes) AND did not make a work-related trip (no responses of 10,11,12 to E3) AND no trip destination of 'usual workplace' (E5<>main work location) AND E12=No]

Did [you/PERSON] work yesterday (between 4 a.m. and 3:59 a.m. today)?

(From the trips described, it does not appear that [you/PERSON] made any work-related trips.)

1. Yes
2. No
9. Decline to answer

E17. [if worked E16=Yes and usual workplace location other than 'home']

Did [you/PERSON] telecommute (work) from home yesterday, instead of travelling to your usual workplace?

1. Yes, telecommuted
2. No, away on business / working on the road
3. No, did not work [interviewer: clarify answer to previous question]
4. No, worked and did take work-related trips [interviewer: clarify answers to trip questions]
9. Decline to answer

E16A. [if a student (C4=1 or C4=2) AND did not make a school-related trip (E3<>20) AND no trip destination of 'school' (E5<>person's own school) AND E12=No]

Did [you/PERSON] attend school yesterday (between 4 a.m. and 3:59 a.m. today)?

(From the trips described, it does not appear that [you/PERSON] made any school trips.)

1. Yes
2. No
9. Decline to answer

E17B. [if went to school E16=Yes and usual school location other than 'home']

What time did [you/PERSON] travel to school, and how?

1. Time: _____ Mode of Travel:_____
7. Attended via distance learning, so did not have to travel
9. Decline to answer

[CYCLE THROUGH TRIPS FOR OTHER PERSONS AS REQUIRED]

HOUSEHOLD INFORMATION – FINAL QUESTION

B9. May I ask which of the following ranges corresponds to your household's total income last year (from all sources, before income taxes)?

(Interviewer: read answers until confirmation)

Web: This information is useful for transportation planning, to better understand the trip patterns of different kinds of households. Your answers will remain entirely confidential.

1. $0 to $29,999
2. $30,000 to $59,999
3. $60,000 to $99,999

4. $100,000 to $149,999
5. $150,000 and above
9. Decline / don't know

FURTHER ENGAGEMENT

F1. Would you like to participate in the City's online public consultation phase, hosted through the company MetroQuest, I as it will provide you with an opportunity to give your input into the transportation planning process? And would you like to be provided with updates to the City of St. Albert's Transportation Master Plan (TMP)?

(The online public consultation would give you an opportunity for to have input into transportation issues and let the City know what you see as priorities for transportation planning. It is open to all residents of the City of St. Albert.)

1. Yes

2. Yes, send me an email invitation to the online public consultation (but do not update me on the plan)

3. Yes, keep me updated on the plan (but I am not interested in the online public consultation.

5. No

F2. [If F1=1,2,3] [If F1=1] The City's online public consultation will be running from October 6 to November 17. What is your e-mail address, so that the City can send you a link to the online public consultation and keep you updated about the Transportation Master Plan?

[If F1=2] The community engagement survey will be running from October 6 to November 17. What is your e-mail address, so that the City can send you a link to the online public consultation

[If F1= 3] What is your e-mail address, so that the City can send you occasional updates about the Transportation Master Plan?

1. Yes: _____ [Phone Interview: (capture e-mail and read back to confirm)]

2. Prefer not to provide e-mail

(Your e-mail will not be used for any other purpose than for this purpose.)

F3. [If F1A=No, will not provide e-mail]

[Phone:] If you would like to participate or find out more, you can always go to the City of St. Albert website (stalbert.ca) and search for "Transportation Master Plan".

[Web:] If you would like to find out more about the transportation master plan or participate in the City's online public consultation, you can go to stalbert.ca/getting-around/roads/transportation-master-plan. The public consultation process will begin in early October.

That concludes the survey. Thank you very much for your cooperation.
Have a pleasant evening.

Appendix B: Household Travel Survey Invitation Letters

5 St. Anne Street
St. Albert, AB T8N 3Z9
www.stalbert.ca

CITY MANAGER'S OFFICE
Phone: 780-459-1607
Fax: 780-459-1591

File: D200-2014

[September xx, 2014]

[Postal Address]
[City], [Province] [Postal Code]

Dear Resident:

Re: St. Albert Household Travel Survey

The City of St. Albert invites you to participate in an important survey that will help shape our city's transportation future.

The goal of the study is to understand where people are going and how they get there – by vehicle, bicycle, transit, or on foot. The information you provide will allow transportation planners to make informed choices on improvements to transportation infrastructure and services as part of the City's upcoming Transportation Master Plan.

The City has hired R.A. Malatest & Associates Ltd., an Edmonton-based professional research firm, to recruit households from St. Albert to complete the survey. Your household has been randomly selected to represent your neighbourhood.

All information your household provides will be kept strictly confidential and will only be used to represent travel patterns in your community and in accordance with the *Freedom of Information and Protection of Privacy Act*. Your identity will not be revealed to anyone.

To begin the survey online, please visit stalbert.malatest.net.

To complete the survey interview over the phone, please call the survey hotline at 780-702-1525.

Survey Login ID: [Unique Survey ID].

...2

Should you have any questions or concerns regarding access to the survey, please contact R.A. Malatest & Associates Ltd., toll-free, at 1-866-247-6465. Alternatively, you may email stalbert@malatest.net.

If you have any questions about the survey or the Transportation Master Plan, please contact Dean Schick, Transportation Manager, at 780-459-1649 or via email at dschick@stalbert.ca.

For further information on the survey and the City's Transportation Master Plan, please visit stalbert.ca/getting-around/roads/transportation-master-plan.

We thank you in advance for your participation.

Sincerely,



Patrick Draper
City Manager

5 St. Anne Street
St. Albert, AB T8N 3Z9
www.stalbert.ca

CITY MANAGER'S OFFICE
Phone: 780-459-1607
Fax: 780-459-1591

File: D200-2014

[September xx, 2014]

[Postal Address]
[City], [Province] [Postal Code]

Dear Resident:

Re: St. Albert Household Travel Survey

The City of St. Albert invites you to participate in an important survey that will help shape our city's transportation future.

The goal of the study is to understand where people are going and how they get there – by vehicle, bicycle, transit, or on foot. The information you provide will allow transportation planners to make informed choices on improvements to transportation infrastructure and services as part of the City's upcoming Transportation Master Plan.

The City has hired R.A. Malatest & Associates Ltd., an Edmonton-based professional research firm, to recruit households from St. Albert to complete the survey. Your household has been randomly selected to represent your neighbourhood.

Malatest will be calling your household to conduct the survey interview over the phone. If you prefer, you may complete the survey online. Please inform other adults in your household to expect the survey call. The survey asks about travel in the previous 24 hours, so surveying will take place Tuesday through Saturday to ask about your household's weekday travel on the previous day.

If you'd prefer to get started on the survey right away or want more information, please go to stalbert.malatest.net or call the survey hotline at 780-702-1525.

Survey Login ID: [Unique Survey ID].

...2

All information your household provides will be kept strictly confidential and will only be used to represent travel patterns in your community and in accordance with the *Freedom of Information and Protection of Privacy Act*. Your identity will not be revealed to anyone.

Should you have any questions or concerns regarding access to the survey, please contact R.A. Malatest & Associates Ltd., toll-free, at 1-866-247-6465. Alternatively, you may email stalbert@malatest.net.

If you have any questions about the survey or the Transportation Master Plan, please contact Dean Schick, Transportation Manager, at 780-459-1649 or via email at dschick@stalbert.ca.

For further information on the survey and the City's Transportation Master Plan, please visit stalbert.ca/getting-around/roads/transportation-master-plan.

We thank you in advance for your participation.

Sincerely,



Patrick Draper
City Manager

Appendix C: Household Travel Survey Data Dictionary

Destination2040 Household Travel Survey
Data Dictionary
October 2013

Key Data Tables

The database includes three primary data tables containing weighted household travel survey data.

a02Households	Data pertaining to the household.
a03Persons	Demographic and other data for each person living in the household, including geocoded school and work locations if applicable.
a04Trips	Data pertaining to each trip taken by each person, including time, purpose, geocoded origin and destination, and mode of travel.

Important: The HTS survey database contains confidential data. In the data dictionary below, the first column identifies fields which contain potentially sensitive information (i.e. could be used to identify individual respondents). If the database is to be shared with others, these fields should be removed from the database prior to distribution, or appropriate arrangements should be made to protect the confidentiality of survey respondents.

a02Households

Household Table: a02Households				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels
	HouseholdID	Text	Unique ID for Household	
	SurveyMode	Long Integer	Mode of survey completion	LookupSurveyMode 1 Telephone 2 Online
	SurveyModeDesc	Text	Category description from lookup table	
	TravelDate	Date / Time	Date for which household trips are reported	
	TravelDayOfWeek	Long Integer	Day of week for which household trips are reported	LookupTravelDayOfWeek 1 Monday 2 Tuesday 3 Wednesday 4 Thursday 5 Friday
	TravelDayOfWeekDesc	Text	Category description from lookup table	
	RecallLetter	Long Integer	Indicator for whether respondent recalled receiving the survey notification letter mailed out prior to the survey	LookupRecallBrochure 1 Yes 2 No 3 Yes, began survey online directly after receiving letter (not asked question) 8 No letter sent (not asked question) 99 Decline / Don't know
	WebRespGiveContactInfo	Long Integer	Online respondent provided contact information for follow up during data cleaning if required	1 = Yes, provided information 2 = No
	TelRespConfirmContactInfo	Long Integer	Phone respondent confirmed contact information	1 = Yes, provided information 2 = No
	PhoneService	Text	Type of phone service in household (multiple responses allowed, indicated by a µ separating numbers	LookupPhoneService 1 Regular landline 2 Cable television provider 3 Internet / VOIP 4 Cell phone(s) 5 Other 9 Decline / don't know
	HomeAddrChange	Long Integer	Method of determining / confirming household address	LookupHomeAddrChange 1 Confirmed address from telephone directory 2 Changed/corrected address 3 Address entered 9 Decline to answer
✓	NewAddress	Text	New household street address	
✓	NewCity	Text	New household municipality	
✓	NewInterStreet1	Text	New intersecting street 1	
✓	NewInterStreet2	Text	New intersecting street 2	
✓	NewPostalCode	Text	New household postal code	
✓	HomeAddress	Text	Household street address	
✓	HomeX	Double	Household UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
✓	HomeY	Double	Household UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
✓	HomeYLat	Double	Latitude of household (decimal	

Household Table: a02Households				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels
			degrees)	
✓	HomeXLong	Double	Longitude of household (decimal degrees)	
	HomeCSD	Long Integer	Census Subdivision of household	
	HomeCSDName	Text	Census Subdivision Name of household	
	HomeNeighbourhood	Long Integer	Neighborhood of household	Lookup Neighbourhoods Neigh_ID NeighDesc 0 Erin Ridge North 2 Kingswood 3 Erin Ridge 4 Woodlands 5 Braeside 6 Pineview 7 Oakmont 8 Akinsdale 9 Grandin 10 Sturgeon Heights 11 Forest Lawn 12 Deer Ridge 13 Inglewood 14 Lacombe Park 15 Downtown 17 Mission 18 Heritage Lakes 19 North Ridge
	HomeNeighbourhood Desc	Text	Neighborhood Name of household	
	HomeDistrict	Long Integer	District of household	Superzones (districts) used for sampling and weighting purposes LookupSuperzonesForSamplingAndWeighting SUPERZONE SUPERZONE_ABBREV 1001 Central: Mission-Braeside-Inglewood-Downtown 1002 South: Grandin - Heritage Lakes (S) 1003 East: Akinsdale - Forest Lawn - Sturgeon (E) 1004 Campbell Business Park 1005 Northeast: Woodlands-Kingswood-Pine View (NE) 1006 North: Oakmont - Erin Ridge (N) 1007 Northwest: Deer Ridge - North Ridge (NW) 1008 Lacombe: Lacombe Park 1009 Southwest : Riverside - Riel - Ville Giroux (SW) 1010 North Commercial: Commercial Area North
	HomeDistrictDesc	Text	District Name of household	
	HomeDistrctAbbrev	Text	District Name of household abbreviated	
	HomeEdmTAZ	Long Integer	Traffic Zone of household using Edmonton Traffic Zone System	
	HomeEdmDist	Long Integer	District of Household using Edmonton Traffic Zone System	
	HomeTAZ	Long Integer	Traffic Zone of Household	LookupTAZ TAZ ID Neighbourhood 101-107 Campbell Business Park

Household Table: a02Households				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels
				201-205 Kingswood 301-308 Erin Ridge 401-405 Woodlands 501-503 Braeside 601-605 Pineview 701-705 Oakmon 801-807 Akinsdale 901-913 Grandin 1001 Sturgeon Heights 1101-1104 Forest Lawn 1201-1205 Deer Ridge 1301-1303 Inglewood 1401-1411 Lacombe Park 1501-1505 Downtown 1601-1603 Riel Business Park 1701-1706 Mission 1801-1807 Heritage Lakes 1901-1903 North Ridge 2001-2005 Riverside 2101,5023 Ville Giroux 5001-5005 Annexation Areas 5006-5007 Erin Ridge North 5008-5022 Annexation Areas 5024-5029 Annexation Areas 5030-5031 Riel-South 5032-5036 Annexation Areas
	HomeAccuracy	Long Integer	Indication of the accuracy of the geocoding of the household location	LookupAccuracy 1 Parcel (property cadastral file) 2 Civic Number (street segment interpolation) 3 Landmark 4 Geographic Place Name (nb geoname) 5 Intersection 6 Postal Code 7 Geocode from sample file 8 Employer database 9 Street (randomly assigned to point on street) 10 Google Maps or other source 11 Traffic Analysis Zone 12 Municipality 20 Home (see Household record for accuracy) 21 School (see Person record for accuracy) 22 Work (see Person record for accuracy) 23 Previous Destination (see Previous Trip for accuracy)
	DwellingType	Long Integer	Type of Dwelling	LookupDwellingType 1 Single-detached 2 Semi-detached (side by side, duplex) 3 Row/townhouse/dormitory 4 Apartment/condominium 5 Mobile home/trailer 8 Other (trailer, cottage, etc. - please specify) 99 Refused
	DwellingTypeOther	Text	Open-ended field capturing other type	

Household Table: a02Households				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels
			of dwelling. May have been recoded to DwellingType	
	NumberHouseholders	Long Integer	Number of persons normally living in household (in cases of split custody, children were included only if they were present in the household for the Travel Day)	
	NumberVehicles	Long Integer	Number of vehicles available to the household (includes company vehicles; excludes unlicensed vehicles)	
	NumberBicycles	Long Integer	Number of adult-sized bicycles in working order in household	
	HouseholdIncome	Long Integer	Gross income of household	LookupHouseholdIncome 1 $0 to $29,999 2 $30,000 to $59,999 3 $60,000 to $99,999 4 $100,000 to $149,999 5 $150,000 and above 99 Decline / don't know
	EnterPublicConsultation	Long Integer	Indicates whether respondent would like to participate in online public consultation and/or be provided with updates to the TMP	LookupEnterPublicConsultation 1 Yes (to both) 2 Yes, send me an email invitation to the online public consultation (but do not update me on the plan) 3 Yes, keep me updated on the plan (but I am not interested in the online public consultation) 5 No
	PersonRecordCount	Long Integer	Number of persons in household	
	PersonsBelowAgeThreshold	Long Integer	Number of persons below 5 years of age	
	Persons5Plus	Long Integer	Number of persons 5 years of age or older	
	PersonsTravel	Long Integer	Number of persons 5 years of age or older in household who took trips on their travel day	
	PersonsNotTravel	Long Integer	Number of persons 5 years of age or older in household who did not take trips on their travel day	
	PersonsUnknownTravel	Long Integer	Number of persons 5 years of age or older in household for whom it is unknown whether or not they took trips	
	Persons50PcntPoorTrips	Long Integer	Number of persons 5 years of age or older in the household with more than 50% poor trips	
	TripRecordCount	Long Integer	Total number of trips taken by all persons 5 years of age or older in the household	
	PoorTripRecordCount	Long Integer	Number of household trips with poor trip information	
	HouseholdPcntPoorTrips	Long Integer	Percent of household trips with poor trip information	
	HouseholdPcntPerson	Text	Percent of persons 5 years of age or	Never exceeds 50% (households with more than half of

Household Table: a02Households				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels
	s5PlusRejected		older in household who are rejected due to >50% poor trips or unknown mobility	householders with poor trip chains / unknown mobility are rejected)
	HouseholdFactor	Double	Weighting factor for household	
	HHWeightRelativeToSamplingZoneBase	Double	Weight relative to the base weight for the sampling district. Used to ensure that no weights exceed the maximum limit set.	Maximum limit to data expansion weight is no more than 5 times the base weight for the sampling district. Occasionally may slightly exceed 5 due to recalibration applied to all cases in the sampling district to match totals in sampling district.
	AvgAgeGp	Long Integer	Average of the age groups of householders in the household. Crude measure used during the weighting process to check for possible types of household that may be implicated in extreme weights.	
	AvgGndr	Decimal	Average of the gender responses for householders in the household. Used during the weighting process to check for possible types of household that may be implicated in extreme weights.	

a03Persons

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
	HouseholdID	Long Integer	Unique ID for Household – used to link to a02Households	
	PersonID	Long Integer	Unique ID for Person	Composed of [5-digit HouseholdID][1-digit person number]
	PersonNumber	Long Integer	Number of person within household	
	Gender	Long Integer	Gender of person	LookupGender 1 Male 2 Female 99 Decline / Don't know
	GenderDesc	Text	Category description from lookup table	
	Age	Long Integer	Age of person	
	AgeGroup	Long Integer	Age category of person	LookupAgeGroup 1 0-4 years 2 5-9 years 3 10-14 years 4 15-17 years 5 18-24 years 6 25-34 years 7 35-44 years 8 45-54 years 9 55-64 years 10 65-74 years 11 75+ years 99 Decline / Don't know
	DriversLicense	Long Integer	Indicator for whether person has a drivers license	LookupDriversLicense 1 Yes 2 No 99 Decline / Don't know
	AttendSchool	Long Integer	Indicator for whether a person attends school	LookupAttendSchool 1 Yes, full-time student 2 Yes, part-time student 3 No 4 No, age 0-4 (question not asked) 9 Decline / Don't know
	StudentFlag	Long Integer	Flag to identify students	1 = Student
	SchoolType	Long Integer	Type of school attended	LookupSchoolType 1 Elementary school 2 High school or junior high 3 College or university 4 Alternate, adult ed or other 5 Private post-secondary training 99 Decline / don't know
✓	SchoolListed	Long Integer	Code used to select school from list of schools in the study area	LookupSchools 7 Other School (not listed)

	Person Table: a03Persons			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				8 Home Schooled 99 Don't Know 101 École La Mission 102 Elmer S. Gish Elementary / Junior High School 103 St. Gabriel Storefront High School 104 Outreach High School 105 Academy of Learning Career College South Campus 106 Academy of Learning Career College Downtown Campus 107 Academy of Learning Career College West Edmonton Mall Campus 108 Campbell College 109 Guru Digital Arts College 110 Newman Theological College 111 Norquest College 112 Pixel Blue College 113 Taylor College and Seminary 114 The King's University College 115 Albert Lacombe School 116 Bertha Kennedy Catholic Community School 117 École Father Jan 118 École Marie Poburan 119 J.J. Nearing Catholic Elementary School 120 Keenooshayo Elementary School 121 Leo Nickerson Elementary School 122 Lois E. Hole Elementary 123 Muriel Martin Elementary School 124 Neil M. Ross Catholic School 125 Robert Rundle Elementary School 126 Ronald Harvey Elementary School 127 Sir Alexander MacKenzie School 128 Vital Grandin Catholic School 129 Wild Rose Elementary School 130 École Alexandre-Taché 131 Bellerose Composite High School 132 École Secondaire Sainte Marguerite d'Youville 133 Lorne Akins Junior High School 134 Paul Kane High School 135 Richard S. Fowler Catholic Junior High School 136 Sir George Simpson Junior High School 137 St. Albert Catholic High School 138 Vincent J. Maloney Catholic Junior High School 139 William D. Cuts Junior High School 140 NAIT - The Northern Alberta Institute of Technology 141 NAIT - The Northern Alberta Institute of Technology Patricia Campus 142 NAIT - The Northern Alberta Institute of Technology South Campus 143 NAIT - The Northern Alberta Institute of Technology St Albert Campus 144 NAIT - The Northern Alberta Institute of

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				Technology Distribution Centre 145 University of Alberta Enterprise Square 146 University of Alberta 147 University of Alberta Campus Saint-Jean 148 The University of Alberta South Campus 149 MacEwan University City Centre Campus 150 MacEwan University Centre for the Arts and Communications 151 MacEwan University Alberta College Campus 152 Concordia University College of Alberta 153 University of Lethbridge - Edmonton Campus 154 Greater St. Albert Sports Academy
	SchoolName	Text	School name from lookup table	
✓	SchoolNameGiven	Text	Open-ended field capturing name of school for schools not on list of schools	
✓	SchoolMunicipality	Text	School municipality	
✓	SchoolPostalCode	Text	School postal code	
✓	SchoolLandmark	Text	Nearby landmark or placename used for geocoding school location	
✓	SchoolAddress	Text	School street address	
✓	SchoolIntStreet1	Text	First street of intersection used for geocoding school location	
✓	SchoolIntStreet2	Text	Second street of intersection used for geocoding school location	
✓	School	Text	Description of the school location (from geocoding)	
✓	SchoolX	Double	School UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
✓	SchoolY	Double	School UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
✓	SchoolYLat	Double	Latitude of school (decimal degrees)	
✓	SchoolXLong	Double	Longitude of school (decimal degrees)	
	SchoolTAZ	Long Integer	Traffic Zone of school	LookupTAZ TAZ ID Neighbourhood 101-107 Campbell Business Park 201-205 Kingswood 301-308 Erin Ridge 401-405 Woodlands 501-503 Braeside 601-605 Pineview 701-705 Oakmon 801-807 Akinsdale 901-913 Grandin 1001 Sturgeon Heights 1101-1104 Forest Lawn 1201-1205 Deer Ridge 1301-1303 Inglewood 1401-1411 Lacombe Park 1501-1505 Downtown 1601-1603 Riel Business Park 1701-1706 Mission 1801-1807 Heritage Lakes 1901-1903 North Ridge

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				2001-2005 Riverside 2101,5023 Ville Giroux 5001-5005 Annexation Areas 5006-5007 Erin Ridge North 5008-5022 Annexation Areas 5024-5029 Annexation Areas 5030-5031 Riel-South 5032-5036 Annexation Areas
	SchoolNeighbourhood	Long Integer	Neighborhood of school	
	SchoolEdmTAZ	Long Integer	Traffic Zone of school using Edmonton Traffic Zone System	LookupEdmTAZ TAZid District 101-131 1 201-212 2 301-323 3 401-418 4 501-523 5 601-623 6 701-723 7 801-826 8 901-909 9 1001-1015 10 1101-1113 11 1201-1217 12 1301-1317 13 1401-1417 14 1501-1526 15 1601-1612 16 1701-1718 17 1801-1826 18 1901-1916 19 2001-2024 20 2101-2111 21 2201-2229 22 2301-2320 23 2401-2440 24 2501-2523 25 2601-2615 26 2701-2736 27 2801-2817 28 2901-2940 29 3001-3037 30 3101-3109 31 3201-3217 32 3301-3399 33 3401-3498 34 3501-3693 35 3597-3617 36 3701-3785 37 3801-3861 38 3901-3978 39 4001-94002 40
	SchoolEdmDist	Long	Traffic Zone of school using Edmonton	

	Person Table: a03Persons			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
		Integer	Traffic Zone System	
	SchoolCSD	Long Integer	Census Subdivision of School	
	SchoolCSDName	Text	Census Subdivision Name of school	
	SchoolAccuracy	Long Integer	Indication of the accuracy of the geocoding of the school location	LookupAccuracy 1 Parcel (property cadastral file) 2 Civic Number (street segment interpolation) 3 Landmark 4 Geographic Place Name (nb geoname) 5 Intersection 6 Postal Code 7 Geocode from sample file 8 Employer database 9 Street (randomly assigned to point on street) 10 Google Maps or other source 11 Traffic Analysis Zone 12 Municipality 20 Home (see Household record for accuracy) 21 School (see Person record for accuracy) 22 Work (see Person record for accuracy) 23 Previous Destination (see Previous Trip for accuracy)
	WorkerFlag	Long Integer	Flag to identify workers	1 = Worker
	OccStatus	Long Integer	Code to indicate occupation status of person (derived from student and work questions)	LookupOccStatus 110 Student, full time 120 Student, part time 200 Pre-schooler 300 Homemaker 400 Retired 510 Looking for work 521 Volunteer full time 522 Volunteer part time 530 Other status, not employed 610 Full time worker 611 Full time worker / full time student 612 Full time worker / part time student 620 Part time worker 621 Part time worker / full time student 622 Part time worker / part time student 999 Decline / Don't know
	OccEmployed	Long Integer	Indicator of whether a person is employed	LookupOccEmployed 1 Employed 2 Not Employed 99 Unknown
	OccMainActivity	Long Integer	Response to question on person's main activity (only asked for respondents who were not employed, question was not presented for young children)	LookupOccMainActivity 1 Student 2 Preschooler (not asked) 3 Homemaker 4 Retired 51 Looking for work 52 Volunteer 53 Other status, not employed

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				99 Decline / Don't know
	OccFTPT	Long Integer	Response to question as to whether person's employment or volunteering was full time or part time	LookupOccFTPT 1 Full-time (30 hours or more per week) 2 Part-time (less than 30 hours per week) 99 Decline / don't know
	CommercialDriver	Long Integer	Indicator for whether person is employed as a commercial driver	LookupCommercialDriver 1 Yes 2 No 99 Decline / Don't know
	TypeOfWorkplace	Long Integer	Type of workplace	LookupWorkplace 10 Office 20 Manufacturing 30 Industrial 35 Transportation or Warehousing 40 Medical or Institutional (hospital, care home, etc.) 50 Educational (school, college, university) 60 Retail Store 70 Personal Services (barber, beauty salon, etc.) 80 Eating Establishment 85 Hotel 90 Residential (someone's home) 95 Other 97 No Fixed Workplace Location (plumber doing housecalls, travelling salesperson, etc.) 99 Decline / don't know
	TypeOfWorkplaceOther	Text	Open-ended field capturing other type of workplace. May have been recoded to TypeOfWorkplace	
✓	WorkLOCType	Long Integer	Description of the type of work location	LookupLocationType 1 Home 2 Work (usual) 3 School (usual) 5 On the road / no fixed location 6 Enter address, intersection, landmark, or postal 7 Not applicable 8 Don't know 9 Decline to answer 21 Person 1's work 22 Person 2's work 23 Person 3's work 24 Person 4's work 25 Person 5's work 26 Person 6's work 27 Person 7's work 28 Person 8's work 29 Person 9's work 31 Person 1's school 32 Person 2's school 33 Person 3's school 34 Person 4's school 35 Person 5's school 36 Person 6's school

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				37 Person 7's school 38 Person 8's school 39 Person 9's school 98 Household Work Locations 99 Household School Locations 999 Other Locations
✓	WorkMunicipality	Text	Work municipality	
✓	WorkPostalCode	Text	Work postal code	
✓	WorkLandmark	Text	Nearby landmark or placename used for geocoding work location	
✓	WorkAddress	Text	Work street address	
✓	WorkIntStreet1	Text	First street of intersection used for geocoding work location	
✓	WorkIntStreet2	Text	Second street of intersection used for geocoding work location	
✓	Work	Text	Description of the workplace location (from geocoding)	
✓	WorkX	Double	Work UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
✓	WorkY	Double	Work UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
✓	WorkYLat	Double	Latitude of work location (decimal degrees)	
✓	WorkXLong	Double	Longitude of work location(decimal degrees)	
	WorkTAZ	Long Integer	Traffic Zone of work location	LookupTAZ TAZ ID Neighbourhood 101-107 Campbell Business Park 201-205 Kingswood 301-308 Erin Ridge 401-405 Woodlands 501-503 Braeside 601-605 Pineview 701-705 Oakmon 801-807 Akinsdale 901-913 Grandin 1001 Sturgeon Heights 1101-1104 Forest Lawn 1201-1205 Deer Ridge 1301-1303 Inglewood 1401-1411 Lacombe Park 1501-1505 Downtown 1601-1603 Riel Business Park 1701-1706 Mission 1801-1807 Heritage Lakes 1901-1903 North Ridge 2001-2005 Riverside 2101,5023 Ville Giroux 5001-5005 Annexation Areas 5006-5007 Erin Ridge North 5008-5022 Annexation Areas 5024-5029 Annexation Areas 5030-5031 Riel-South 5032-5036 Annexation Areas

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
	WorkNeighbourhood	Long Integer	Neighborhood of work location	
	WorkEdmTAZ	Long Integer	Traffic Zone of work location using Edmonton Traffic Zone System	LookupEdmTAZ TAZid District 101-131 1 201-212 2 301-323 3 401-418 4 501-523 5 601-623 6 701-723 7 801-826 8 901-909 9 1001-1015 10 1101-1113 11 1201-1217 12 1301-1317 13 1401-1417 14 1501-1526 15 1601-1612 16 1701-1718 17 1801-1826 18 1901-1916 19 2001-2024 20 2101-2111 21 2201-2229 22 2301-2320 23 2401-2440 24 2501-2523 25 2601-2615 26 2701-2736 27 2801-2817 28 2901-2940 29 3001-3037 30 3101-3109 31 3201-3217 32 3301-3399 33 3401-3498 34 3501-3693 35 3597-3617 36 3701-3785 37 3801-3861 38 3901-3978 39 4001-94002 40
	WorkEdmDist	Long Integer	District of work location using Edmonton Traffic Zone System	
	WorkCSD	Long Integer	Census Subdivision of work location	
	WorkCSDName	Text	Census Subdivision Name of work location	
	WorkAccuracy	Long Integer	Indication of the accuracy of the geocoding of the work location	LookupAccuracy 1 Parcel (property cadastral file) 2 Civic Number (street segment interpolation) 3 Landmark

	Person Table: a03Persons			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				4 Geographic Place Name (nb geoname) 5 Intersection 6 Postal Code 7 Geocode from sample file 8 Employer database 9 Street (randomly assigned to point on street) 10 Google Maps or other source 11 Traffic Analysis Zone 12 Municipality 20 Home (see Household record for accuracy) 21 School (see Person record for accuracy) 22 Work (see Person record for accuracy) 23 Previous Destination (see Previous Trip for accuracy)
	TelecommWork		Indicates whether a respondent telecommutes for work and how often.	LookupTelecommuteFreq 1 No, never telecommute 2 Yes, Yes, 1-2 days per month or less often 3 Yes, 1-2 days per week 4 Yes, 3-4 days per week 5 Yes, 5+ days per week 99 Decline / don't know
	Frequency_Bicycle		Indicates how often a respondent uses a bicycle to make trips	LookupFrequency_Bicycle 1 Never 2 Less than a few days per month (very occasionally) 3 A few days per month (sometimes) 4 1-3 days per week (regularly) 5 4-5 days per week (daily) 6 6-7 days per week (every day) 99 Decline / Don't know
	Frequency_Walk		Indicates how often a respondent walks when making a trip	LookupFrequency_Walking 1 Never 2 Less than a few days per month (very occasionally) 3 A few days per month (sometimes) 4 1-3 days per week (regularly) 5 4-5 days per week (daily) 6 6-7 days per week (every day) 99 Decline / Don't know
	AnyTrip	Long Integer	Indicator for whether person took any trips on the travel day. In cases where only partial trip information was captured for a person, AnyTrip was set to 99	LookupAnyTrip 1 Yes 2 No Trips 11 Child less than 5 years old: Yes (trips not captured due to <5) 12 Child less than 5 years old: No Trips 13 Child less than 5 years old: Don't Know 99 Decline / Don't know
	TripRespondent	Long Integer	Indicates whether householders other than the main survey respondent provided their trip information directly (asked only if person travelled and was above age threshold)	LookupTripRespondent 1 Respondent 2 Respondent for family member 3 Family member over 16 for self
	WhyNoTrip	Long	Reason why the person did not take any	LookupWhyNoTrip

Person Table: a03Persons				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
		Integer	trips on their travel day	1 Out of town for entire day 2 Sick/illness 3 Worked from home 4 No need to leave home 5 Other, please specify 7 Actually, person did leave home to make at least one trip 99 Decline / don't know
	WhyNoTripOther		Open-ended field capturing reasons for not taking any trips. May have been recoded to WhyNoTrip	
	OriginNotHomeReason	Long Integer	Reason why person began their travel day away from home	LookupOriginNotHomeReason 1 Working a night shift past 4am 2 Staying overnight at another household (whether friend, relative, parent) 3 Away from home on business travel 4 Away from home on vacation (or other personal travel) 5 Another reason, please specify 9 Decline / don't know
	OriginNotHomeReasonOther		Open-ended field capturing reasons for beginning travel day away from home. May have been recoded to OriginNotHomeReason	
	NotReturnHome	Long Integer	Indicator of whether the person returned home at the end of their travel day. Question was asked if the respondent indicated that there were no further trips but had not indicated a final trip to return home.	LookupNotReturnHome 1 Yes (did not return home) 2 No (returned home, more trips to record) 9 Decline to answer / Don't know
	NotReturnHomeReason	Long Integer	Reason why person did not return home at the end of their travel day	LookupNotReturnHomeReason 1 Worked a night shift past 4am 2 Stayed overnight at another household (whether friend, relative, parent) 3 Away from home on business travel 4 Away from home on vacation (or other personal travel) 5 Another reason, please specify 9 Decline / don't know
	NotReturnHomeReasonOther	Text	Open-ended field capturing reasons for not returning home. May have been recoded to NotReturnHomeReason	
	WorkedYesterday		If a worker and did not make a work-related trip / did not have a destination of usual workplace, then ask did you work yesterday?	1 Yes 2 No 9 Decline to Answer
	Telecommute		If stated that worked in WorkYesterday and usual workplace is other than home, ask did you telecommute yesterday instead of travelling to your usual workplace?	1 Yes, telecommuted 2 No, away on business / working on the road 3 No, did not work (go back to previous question) 4 No, worked and did take work-related trips (go back to trip editing) 9 Decline to Answer
	SchoolYesterday		If a student and did not make school related	1 Yes

	Person Table: a03Persons			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			trip / did not have a destination of school, then ask did you attend school yesterday?	2 No 9 Decline to Answer
	DistHomeWorkEuclid	Double	Straight-line distance(metres) between person's home and work locations	
	DistHomeSchoolEuclid	Double	Straight-line distance (metres)between person's home and school locations	
	TripRecordCount	Long Integer	Total number of trips taken by person (only available if 5 years of age or older)	
	PoorTripRecordCount	Long Integer	Number of person's trips with poor trip information	
	PersonPcntPoorTrips	Long Integer	Percent of person's trips with poor trip information	
	PersonFactor	Double	Weighting factor for person	
	PersonKnownMobilityFactor	Double	Weighting adjustment to account for persons with unknown mobility / too many poor trips.	Value of blank or 0 indicates person's trip chain was rejected / person has unknown mobility
	PersonDayOfWeekFactor	Double	Weighting adjustment to account for day of week	Note: given the small sample sizes within each weighting cell, it was not possible to achieve a perfect balance by day of week without resulting in extreme weights. The survey results may slightly skewed towards the results for Friday travel and somewhat skewed away from the results for Thursday travel.
	PersonTripFactor	Double	Trip expansion factor for the person	Value of blank or 0 indicates person's trip chain was rejected / person has unknown mobility
	PersonFlag	Text	Flags potentially serious issues with trip chains or person record.	
	PersWeightRelativeToSamplingZoneBase	Double	Maximum limit to data expansion weight is no more than 5 times the base weight for the sampling district. Occasionally may slightly exceed 5 due to recalibration applied to all cases in the sampling district to match totals in sampling district	

a04Trips

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
	TripID	Long Integer	Unique ID for Trip	Composed of [5-digit HouseholdID][1-digit person number][2-digit trip number]
	TripNumber	Long Integer	Number of trip for person	
	HouseholdID	Long Integer	Unique ID for Household – used to link to a02Households	
	PersonID	Long Integer	Unique ID for Person – used to link to a03Persons	
	PersonNumber	Long Integer	Number of person within household	
	NextTripID	Long Integer	TripID of previous trip taken by person	
	PrevTripID	Long Integer	TripID of next trip taken by person	
	FirstTrip	Text	Indicator for person's first trip of the travel day	1 = First Trip
	LastTrip	Long Integer	Indicator for person's last trip of the travel day	1 = Last Trip
	Depart	Long Integer	Time at which trip started (departure from origin)	Uses a modified 24hour clock going from 4am on the travel day (400) to 3:59am the following day (2759).
	Arrive	Long Integer	Time at which trip ended (arrival at destination)	Uses a modified 24hour clock going from 4am on the travel day (400) to 3:59am the following day (2759). 9999 = unknown
	Purpose	Long Integer	Trip purpose	LookupPurpose 10 Travel to Work (usual place) 11 Work-related 12 Working on the Road / itinerant workplace / no fixed work address 20 Attend school 40 Personal business (e.g., bank, dentist, health appts, personal care) 50 Recreational 51 Social (visiting friends, family, religious) 61 Dining/Restaurant (whether eat-in or take-out) 71 Shopping & household maintenance (grocery, shoe store, auto repair) 80 RETURN HOME 91 Pick-up a passenger 92 Drop off a passenger 110 Travel to Work 888 Other, please specify

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				999 Decline / Don't know
	PurposeOther	Text	Open-ended field capturing other type of trip purpose. May have been recoded to Purpose	
✓	OriginLOCType	Long Integer	Description of the type of location for the trip origin	LookupLocationType 1 Home 2 Work (usual) 3 School (usual) 5 On the road / no fixed location 6 Enter address, intersection, landmark, or postal 7 Not applicable 8 Don't know 9 Decline to answer 21 Person 1's work 22 Person 2's work 23 Person 3's work 24 Person 4's work 25 Person 5's work 26 Person 6's work 27 Person 7's work 28 Person 8's work 29 Person 9's work 31 Person 1's school 32 Person 2's school 33 Person 3's school 34 Person 4's school 35 Person 5's school 36 Person 6's school 37 Person 7's school 38 Person 8's school 39 Person 9's school 98 Household Work Locations 99 Household School Locations 999 Other Locations
✓	OriginMunicipality	Text	Municipality of origin	
✓	OriginPostalCode	Text	Postal code of origin	
✓	OriginLandmark	Text	Nearby landmark or placename used for geocoding origin	
✓	OriginAddress	Text	Street address of origin	
✓	OriginIntStreet1	Text	First street of intersection used for geocoding origin	
✓	OriginIntStreet2	Text	Second street of intersection used for geocoding origin	
✓	OriginFinal	Text	Description of the origin location i(from geocoding)	
✓	OriginX	Double	Origin UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
✓	OriginY	Double	Origin UTM Y Co-ordinate (Northing) (UTM Zone 19N /	

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			20N)	
✓	OriginYLat	Double	Latitude of origin (decimal degrees)	
✓	OriginXLong	Double	Longitude of origin (decimal degrees)	
	OriginTAZ	Long Integer	Traffic Zone of origin	LookupTAZ TAZ ID — Neighbourhood 101-107 — Campbell Business Park 201-205 — Kingswood 301-308 — Erin Ridge 401-405 — Woodlands 501-503 — Braeside 601-605 — Pineview 701-705 — Oakmon 801-807 — Akinsdale 901-913 — Grandin 1001 — Sturgeon Heights 1101-1104 — Forest Lawn 1201-1205 — Deer Ridge 1301-1303 — Inglewood 1401-1411 — Lacombe Park 1501-1505 — Downtown 1601-1603 — Riel Business Park 1701-1706 — Mission 1801-1807 — Heritage Lakes 1901-1903 — North Ridge 2001-2005 — Riverside 2101,5023 — Ville Giroux 5001-5005 — Annexation Areas 5006-5007 — Erin Ridge North 5008-5022 — Annexation Areas 5024-5029 — Annexation Areas 5030-5031 — Riel-South 5032-5036 — Annexation Areas
	OriginNeighbourhood	Long Integer	Neighborhood of origin	
	OriginEdmTAZ	Long Integer	Traffic Zone of origin location using Edmonton Traffic Zone System	LookupEdmTAZ TAZid — District 101-131 — 1 201-212 — 2 301-323 — 3 401-418 — 4 501-523 — 5 601-623 — 6 701-723 — 7 801-826 — 8 901-909 — 9 1001-1015 — 10 1101-1113 — 11 1201-1217 — 12 1301-1317 — 13 1401-1417 — 14 1501-1526 — 15

	Trip Table: a04Trips			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				1601-1612 16 1701-1718 17 1801-1826 18 1901-1916 19 2001-2024 20 2101-2111 21 2201-2229 22 2301-2320 23 2401-2440 24 2501-2523 25 2601-2615 26 2701-2736 27 2801-2817 28 2901-2940 29 3001-3037 30 3101-3109 31 3201-3217 32 3301-3399 33 3401-3498 34 3501-3693 35 3597-3617 36 3701-3785 37 3801-3861 38 3901-3978 39 4001-94002 40
	OriginEdmDist	Long Integer	District of origin using Edmonton Traffic Zone System	
	OriginCSD	Long Integer	Census Subdivision of origin	
	OriginCSDName	Text	Census Subdivision name of origin	
	OriginAccuracy	Long Integer	Indication of the accuracy of the geocoding of the origin location	LookupAccuracy 1 Parcel (property cadastral file) 2 Civic Number (street segment interpolation) 3 Landmark 4 Geographic Place Name (nb geoname) 5 Intersection 6 Postal Code 7 Geocode from sample file 8 Employer database 9 Street (randomly assigned to point on street) 10 Google Maps or other source 11 Traffic Analysis Zone 12 Municipality 20 Home (see Household record for accuracy) 21 School (see Person record for accuracy) 22 Work (see Person record for

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				accuracy) 23 Previous Destination (see Previous Trip for accuracy)
✓	DestLOCType	Long Integer	Description of the type of location for the trip destination	LookupLocationType 1 Home 2 Work (usual) 3 School (usual) 5 On the road / no fixed location 6 Enter address, intersection, landmark, or postal 7 Not applicable 8 Don't know 9 Decline to answer 21 Person 1's work 22 Person 2's work 23 Person 3's work 24 Person 4's work 25 Person 5's work 26 Person 6's work 27 Person 7's work 28 Person 8's work 29 Person 9's work 31 Person 1's school 32 Person 2's school 33 Person 3's school 34 Person 4's school 35 Person 5's school 36 Person 6's school 37 Person 7's school 38 Person 8's school 39 Person 9's school 98 Household Work Locations 99 Household School Locations 999 Other Locations
	DestHomeConfirm	Long Integer	Variable used to confirm that destination is home when trip purpose is "Return Home"	LookupDestHomeConfirm 1 Yes, destination is home 2 Another location
✓	DestMunicipality	Text	Municipality of destination	
✓	DestPostalCode		Postal code of destination	
✓	DestLandmark	Text	Nearby landmark or place name used for geocoding destination	
✓	DestAddress	Text	Street address of destination	
✓	DestIntStreet1	Text	First street of intersection used for geocoding destination	
✓	DestIntStreet2	Text	Second street of intersection used for geocoding destination	
✓	DestinationFinal	Text	Description of the destination location (from geocoding)	
✓	DestX	Double	Destination UTM X Co-ordinate (Easting) (UTM Zone	

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			19N / 20N)	
✓	DestY	Double	Destination UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
✓	DestYLat	Double	Latitude of destination (decimal degrees)	
✓	DestXLong	Double	Longitude of destination (decimal degrees)	
	DestTAZ	Long Integer	Traffic Zone of destination	LookupTAZ TAZ ID — Neighbourhood 101-107 — Campbell Business Park 201-205 — Kingswood 301-308 — Erin Ridge 401-405 — Woodlands 501-503 — Braeside 601-605 — Pineview 701-705 — Oakmon 801-807 — Akinsdale 901-913 — Grandin 1001 — Sturgeon Heights 1101-1104 — Forest Lawn 1201-1205 — Deer Ridge 1301-1303 — Inglewood 1401-1411 — Lacombe Park 1501-1505 — Downtown 1601-1603 — Riel Business Park 1701-1706 — Mission 1801-1807 — Heritage Lakes 1901-1903 — North Ridge 2001-2005 — Riverside 2101,5023 — Ville Giroux 5001-5005 — Annexation Areas 5006-5007 — Erin Ridge North 5008-5022 — Annexation Areas 5024-5029 — Annexation Areas 5030-5031 — Riel-South 5032-5036 — Annexation Areas
	DestNeighbourhood	Long Integer	Neighborhood of destination	
	DestEdmTAZ	Long Integer	Traffic Zone of destination location using Edmonton Traffic Zone System	LookupEdmTAZ TAZid — District 101-131 — 1 201-212 — 2 301-323 — 3 401-418 — 4 501-523 — 5 601-623 — 6 701-723 — 7 801-826 — 8 901-909 — 9 1001-1015 — 10 1101-1113 — 11 1201-1217 — 12

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				1301-1317 13 1401-1417 14 1501-1526 15 1601-1612 16 1701-1718 17 1801-1826 18 1901-1916 19 2001-2024 20 2101-2111 21 2201-2229 22 2301-2320 23 2401-2440 24 2501-2523 25 2601-2615 26 2701-2736 27 2801-2817 28 2901-2940 29 3001-3037 30 3101-3109 31 3201-3217 32 3301-3399 33 3401-3498 34 3501-3693 35 3597-3617 36 3701-3785 37 3801-3861 38 3901-3978 39 4001-94002 40
	DestEdmDist	Long Integer	District of destination using Edmonton Traffic Zone System	
	DestCSD	Long Integer	Census Subdivision of destination	
	DestCSDName	Text	Census Subdivision of destination	
	DestAccuracy	Long Integer	Indication of the accuracy of the geocoding of the destination location	LookupAccuracy 1 Parcel (property cadastral file) 2 Civic Number (street segment interpolation) 3 Landmark 4 Geographic Place Name (nb geoname) 5 Intersection 6 Postal Code 7 Geocode from sample file 8 Employer database 9 Street (randomly assigned to point on street) 10 Google Maps or other source 11 Traffic Analysis Zone 12 Municipality 20 Home (see Household record for accuracy)

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				21 School (see Person record for accuracy) 22 Work (see Person record for accuracy) 23 Previous Destination (see Previous Trip for accuracy)
	TransitFirstModeCheck	Long Integer	If transit bus was selected as the first mode of travel, probe to confirm whether the person walked or took another mode to the bus stop, or whether the bus stop was at the trip origin Mode 1 through Mode 5 may have been adjusted on the basis of this response	LookupTransitFirstOrFinalModeCheck 1 Auto driver 2 Auto passenger 3 Transit bus 4 HandiTransit 5 School bus 6 Other bus 7 Bicycle 8 Walked 9 Taxi / airport shuttle 13 Motorcycle or scooter 14 Train 15 Airplane 17 Other 18 Electric (motorized) wheelchair / mobility scooter 20 Truck driver 30 LRT (light rail) 99 Decline / Don't know
	TransitFirstModeOther	Text	Open-ended field capturing other modes of getting to the bus stop. May have been recoded to TransitFirstModeCheck	
	TransitFinalModeCheck	Long Integer	If transit bus was selected as the first mode of travel, probe to confirm whether the person walked or took another mode from the bus stop, or whether the bus stop was at the trip destination. Mode 1 through Mode 5 may have been adjusted on the basis of this response	LookupTransitFirstOrFinalModeCheck 1 Auto driver 2 Auto passenger 3 Transit bus 4 HandiTransit 5 School bus 6 Other bus 7 Bicycle 8 Walked 9 Taxi / airport shuttle 13 Motorcycle or scooter 14 Train 15 Airplane 17 Other 18 Electric (motorized) wheelchair / mobility scooter 20 Truck driver 30 LRT (light rail) 99 Decline / Don't know
	TransitFinalModeOther	Text	Open-ended field capturing other modes of getting from the bus stop. May have been recoded to	

	Trip Table: a04Trips			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			TransitFinalModeCheck	
	FirstBusLoc	Long Integer	Location of boarding first bus	LookupFirstBusLoc 1 Location capture 19 Bus stop was right in front of my origin (the starting point of the trip) 99 Decline / Don't know
	FirstBusLocLandmark	Text	Nearby landmark or placename used for geocoding first bus location	
	FirstBusLocAddress	Text	Street address of first bus location	
	FirstBusLocInter1	Text	First street of intersection used for geocoding first bus location	
	FirstBusLocInter2	Text	Second street of intersection used for geocoding first bus location	
	BoardingFinal	Text	Description of the boarding location (from geocoding)	
	BoardingX	Double	Boarding UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
	BoardingY	Double	Destination UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
	BoardingYLat	Double	Latitude of boarding location (decimal degrees	
	BoardingXLong	Double	Longitude of boarding location (decimal degrees)	
	BoardingTAZ	Long Integer	Traffic Zone of boarding location	
	BoardingEdmTAZ	Long Integer	Traffic Zone of boarding location using Edmonton Traffic Zone System	
	BoardingEdmDist	Long Integer	District of boarding location using Edmonton Traffic Zone System	
	BoardingCSD	Long Integer	Census Subdivision of boarding location	
	BoardingCSDName	Text	Census Subdivision Name of boarding location	
	LRTStations	Long Integer	Station at which person boarded LRT	LookupLRTStations 1 Clareview (48 St. and 139 Ave., has Park & Ride) 2 Belvedere (62 St. and 129 Ave., has Park & Ride) 3 Coliseum (76 St. and 118 Ave.) 4 Stadium (84 St. and 111 Ave., has Park & Ride) 5 Churchill (99 St. and 102A Ave.)

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				6 Central (101 St. and Jasper Ave.) 7 Bay/Enterprise Square (104 St. and Jasper Ave.) 8 Corona (107 St. and Jasper Ave.) 9 Grandin/Government Centre (110 St. and 99 Ave.) 10 University (114 St. and 89 Ave.) 11 Health Sciences (114 St. and 83 Ave.) 12 McKernan/Belgravia (116 St. and 65 Ave.) 13 South Campus/Fort Edmonton Park (116 St. and 65 Ave.) 14 Southgate (111 St. and 48 Ave.) 15 Century Park (111 St. and 23 Ave., has Park & Ride) 99 Decline / don't know
	TransferLocations	Long Integer	Location of transfer from transit bus / LRT to private mode of transportation	LookupTransferLocations 1 Clareview LRT Station (48 St. and 139 Ave.) 2 Belvedere LRT Station (62 St. and 129 Ave.) 3 Stadium LRT Station (84 St. and 111 Ave.) 4 Davies City Lot (86 St. and 61 Ave.) 5 Century Park LRT (111 St. and 23 Ave.) 6 Meadows Transit Centre (17 St. and 40 Ave.) 7 Lewis Farms Transit Centre (87 Ave. west of Anthony Henday Dr.) 8 Eaux Claires Transit Centre (97 St. & 157 Ave.) 9 Abbottsfield Transit Centre (34 St. and 119 Ave.; Abbottsfield Shoppers Mall) 10 Bay/Enterprise Square LRT (104 St. and Jasper Ave.) 11 Belvedere Transit Centre / Park & Ride (62 St. and 129 Ave.) 12 Capilano Transit Centre (57 St. and 98 Ave.; Capilano Shopping Centre) 13 Castle Downs Transit Centre (Castle Downs Rd. north of 153 Ave.) 14 Central LRT (101 St. and Jasper Ave.) 15 Century Park Transit Centre / LRT / Park & Ride (111 St. and 23 Ave.) 16 Corona LRT (107 St. and Jasper Ave.)

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				17 Churchill LRT (99 St. and 102A Ave.) 18 Clareview Transit Centre / LRT / Park & Ride (48 St. and 139 Ave.) 19 Coliseum Transit Centre / LRT (78 St. and 118 Ave.; Rexall Place) 20 Davies City Lot Park & Ride (86 St. and 61 Ave.) 21 Eaux Claires Transit Centre / Park & Ride (97 St. and 157 Ave.) 22 Government Centre Transit Centre (107A St. and 99 Ave.; north of Alberta Legislature) 23 Grandin/Government Centre LRT (110 St. and 99 Ave.) 24 Health Sciences/Jubilee LRT (114 St. and 83 Ave.; UofA Hospital; Jubilee Auditorium) 25 Jasper Place Transit Centre (156 St. and Stony Plain Road) 26 Kingsway/RAH Transit Centre (105 St. and 111 Ave.; Royal Alexandra Hospital) 27 Lakewood Transit Centre (Mills Wood Road or Lakewood Road and 28 Ave) 28 Leger Transit Centre (Leger Road and 23 Ave) 29 Lewis Farms Transit Centre / Park & Ride (87 Ave./Webber Greens Dr. west of Anthony Henday Dr.) 30 McKernan/Belgravia LRT (116 St. and 65 Ave.) 31 Meadowlark Transit Centre (Meadowlark Rd. north of 87 Ave.; Meadowlark Health and Shopping Centre) 32 Meadows Transit Centre / Park & Ride (17 St. and 40 Ave.) 33 Mill Woods Transit Centre (Hewes Way North of 23 Ave; Mill Woods Town Centre) 34 Millgate Transit Centre (86 St. and Whitemud Dr.) 35 Northgate Transit Centre (97 St. and 137 Ave.; Northgate Town Mall; Northgate Centre) 36 South Campus/Fort Edmonton Transit Centre / LRT (116 St. and 65 Ave.) 37 Southgate Transit Centre / LRT (111 St. and 48 Ave.; Southgate Centre)

	Trip Table: a04Trips			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				38 Stadium Transit Centre / LRT / Park & Ride (84 St. and 111 Ave.; Commonwealth Stadium) 39 University Transit Centre / LRT (114 St. and 89 ave.; University of Alberta) 40 West Edmonton Mall Transit Centre (175 St. and 87 Ave.) 41 Westmount Transit Centre (135 St. and 111 Ave.; Westmount Centre; Telus World of Science) 42 St. Albert Center Exchange (St. Albert Trail St. Vital Ave) 43 Village Transit Station, St. Albert (Gate Drive and Grange Avenue esst of St. Albert Trail) 99 Decline / don't know
	TransferFinal	Text	Description of the transfer location i(from geocoding)	
	TransferX	Double	Transfer location UTM X Co-ordinate (Easting) (UTM Zone 19N / 20N)	
	TransferY	Double	Transfer location UTM Y Co-ordinate (Northing) (UTM Zone 19N / 20N)	
	TransferYLat	Double	Latitude of transfer location (decimal degrees)	
	TransferXLong	Double	Longitude of transfer location (decimal degrees)	
	TransferTAZ	Long Integer	Traffic Zone of transfer location	
	TransferEdmTAZ	Long Integer	Traffic Zone of transfer location using Edmonton Traffic Zone System	
	TransferEdmDist	Long Integer	District of transfer location using Edmonton Traffic Zone System	
	TransferCSD	Long Integer	Census Subdivision of transfer location	
	TransferCSDName	Text	Census Subdivision Name of transfer location	
	PrimaryMode	Long Integer	Primary travel mode of trip. For trips with multiple modes, primary mode was determined based on the following hierarchy: Transit bus – school bus – other bus –Ability Transit – auto driver – auto passenger – taxi / airport shuttle– motorcycle/scooter – bicycle	LookupMode 1 Auto driver 2 Auto passenger 3 Transit bus 4 HandiTransit 5 School bus 6 Other bus 7 Bicycle 8 Walked 9 Taxi / airport shuttle 13 Motorcycle or scooter

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			– walked entire way – Train – Airplane – Electric wheelchair / mobility scooter – Other	14 Train 15 Airplane 17 Other 18 Electric (motorized) wheelchair / mobility scooter 20 Truck driver 30 LRT (light rail) 99 Decline / Don't know
	ModeSummary	Text	Summary of all travel modes used in trip	Format of [Mode1]-[Mode2]-[Mode3]-[Mode4]-[Mode5]
	ModeSummaryText	Text	Summary of all travel modes used in trip using category descriptions	Format of [Mode1 Description]-[Mode2 Description]-[Mode3 Description]-[Mode4 Description]-[Mode5 Description]
	Mode1	Long Integer	First mode of travel	LookupMode 1 Auto driver 2 Auto passenger 3 Transit bus 4 HandiTransit 5 School bus 6 Other bus 7 Bicycle 8 Walked 9 Taxi / airport shuttle 13 Motorcycle or scooter 14 Train 15 Airplane 17 Other 18 Electric (motorized) wheelchair / mobility scooter 20 Truck driver 30 LRT (light rail) 99 Decline / Don't know
	Mode2	Long Integer	Second mode of travel	
	Mode3	Long Integer	Third mode of travel	
	Mode4	Long Integer	Fourth mode of travel	
	Mode5	Long Integer	Fifth mode of travel	
	Mode1Other	Text	Open-ended field capturing other modes of travel. May have been recoded to Mode1	
	Mode2Other	Text	Open-ended field capturing other modes of travel. May have been recoded to Mode2	
	Mode3Other	Text	Open-ended field capturing other modes of travel. May have been recoded to Mode3	
	Mode4Other	Text	Open-ended field capturing other modes of travel. May have been recoded to Mode4	
	Mode5Other	Text	Open-ended field capturing other modes of travel. May have been recoded to Mode5	
	BusRoute1	Long Integer	First bus route used on trip	LookupBusRoute 10001 St Albert Transit - Route A1 10002 St Albert Transit - Route A2 10003 St Albert Transit - Route A3 10004 St Albert Transit - Route A4
	BusRoute2	Long Integer	Second bus route used on trip	
	BusRoute3	Long	Third bus route used on trip	

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
		Integer		10005 St Albert Transit - Route A5 10006 St Albert Transit - Route A6 10007 St Albert Transit - Route A7 10008 St Albert Transit - Route A8 10009 St Albert Transit - Route A9 10010 St Albert Transit - Route A10 10011 St Albert Transit - Route A11 10012 St Albert Transit - Route A12 10013 St Albert Transit - Route A13 10014 St Albert Transit - Route A14 10015 St Albert Transit - Route A15 10016 St Albert Transit - Route A16 10021 St Albert Transit - Route A21 10201 St Albert Transit - Route 201 10202 St Albert Transit - Route 202 10203 St Albert Transit - Route 203 10205 St Albert Transit - Route 205 10208 St Albert Transit - Route 208 10209 St Albert Transit - Route 209 10211 St Albert Transit - Route 211 20000 Edmonton Transit - Capital Line (LRT) 20001 Edmonton Transit - Route 1 20002 Edmonton Transit - Route 2 20003 Edmonton Transit - Route 3 20004 Edmonton Transit - Route 4 20005 Edmonton Transit - Route 5 20006 Edmonton Transit - Route 6 20007 Edmonton Transit - Route 7 20008 Edmonton Transit - Route 8 20009 Edmonton Transit - Route 9 20010 Edmonton Transit - Route 10 20011 Edmonton Transit - Route 11 20012 Edmonton Transit - Route 12 20013 Edmonton Transit - Route 13 20014 Edmonton Transit - Route 14 20015 Edmonton Transit - Route 15 20016 Edmonton Transit - Route 16 20017 Edmonton Transit - Route 17 20023 Edmonton Transit - Route 23 20024 Edmonton Transit - Route 24 20030 Edmonton Transit - Route 30 20031 Edmonton Transit - Route 31 20032 Edmonton Transit - Route 32 20033 Edmonton Transit - Route 33 20034 Edmonton Transit - Route 34 20035 Edmonton Transit - Route 35 20036 Edmonton Transit - Route 36 20037 Edmonton Transit - Route 37 20038 Edmonton Transit - Route 38 20039 Edmonton Transit - Route 39 20040 Edmonton Transit - Route 40 20041 Edmonton Transit - Route 41
	BusRoute4	Long Integer	Fourth bus route used on trip	
	BusRoute5	Long Integer	Fifth bus route used on trip	

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				20042 Edmonton Transit - Route 42 20043 Edmonton Transit - Route 43 20044 Edmonton Transit - Route 44 20045 Edmonton Transit - Route 45 20046 Edmonton Transit - Route 46 20047 Edmonton Transit - Route 47 20048 Edmonton Transit - Route 48 20049 Edmonton Transit - Route 49 20050 Edmonton Transit - Route 50 20051 Edmonton Transit - Route 51 20052 Edmonton Transit - Route 52 20053 Edmonton Transit - Route 53 20054 Edmonton Transit - Route 54 20055 Edmonton Transit - Route 55 20057 Edmonton Transit - Route 57 20059 Edmonton Transit - Route 59 20060 Edmonton Transit - Route 60 20061 Edmonton Transit - Route 61 20062 Edmonton Transit - Route 62 20063 Edmonton Transit - Route 63 20064 Edmonton Transit - Route 64 20065 Edmonton Transit - Route 65 20066 Edmonton Transit - Route 66 20067 Edmonton Transit - Route 67 20068 Edmonton Transit - Route 68 20069 Edmonton Transit - Route 69 20070 Edmonton Transit - Route 70 20071 Edmonton Transit - Route 71 20072 Edmonton Transit - Route 72 20073 Edmonton Transit - Route 73 20074 Edmonton Transit - Route 74 20078 Edmonton Transit - Route 78 20079 Edmonton Transit - Route 79 20080 Edmonton Transit - Route 80 20081 Edmonton Transit - Route 81 20082 Edmonton Transit - Route 82 20083 Edmonton Transit - Route 83 20084 Edmonton Transit - Route 84 20085 Edmonton Transit - Route 85 20086 Edmonton Transit - Route 86 20087 Edmonton Transit - Route 87 20088 Edmonton Transit - Route 88 20089 Edmonton Transit - Route 89 20090 Edmonton Transit - Route 90 20092 Edmonton Transit - Route 92 20094 Edmonton Transit - Route 94 20095 Edmonton Transit - Route 95 20096 Edmonton Transit - Route 96 20097 Edmonton Transit - Route 97 20098 Edmonton Transit - Route 98 20099 Edmonton Transit - Route 99 20100 Edmonton Transit - Route 100 20101 Edmonton Transit - Route 101

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				20102 Edmonton Transit - Route 102 20103 Edmonton Transit - Route 103 20104 Edmonton Transit - Route 104 20105 Edmonton Transit - Route 105 20106 Edmonton Transit - Route 106 20107 Edmonton Transit - Route 107 20108 Edmonton Transit - Route 108 20109 Edmonton Transit - Route 109 20110 Edmonton Transit - Route 110 20111 Edmonton Transit - Route 111 20112 Edmonton Transit - Route 112 20113 Edmonton Transit - Route 113 20114 Edmonton Transit - Route 114 20115 Edmonton Transit - Route 115 20117 Edmonton Transit - Route 117 20118 Edmonton Transit - Route 118 20119 Edmonton Transit - Route 119 20120 Edmonton Transit - Route 120 20121 Edmonton Transit - Route 121 20122 Edmonton Transit - Route 122 20123 Edmonton Transit - Route 123 20124 Edmonton Transit - Route 124 20125 Edmonton Transit - Route 125 20126 Edmonton Transit - Route 126 20127 Edmonton Transit - Route 127 20128 Edmonton Transit - Route 128 20129 Edmonton Transit - Route 129 20130 Edmonton Transit - Route 130 20133 Edmonton Transit - Route 133 20134 Edmonton Transit - Route 134 20136 Edmonton Transit - Route 136 20137 Edmonton Transit - Route 137 20138 Edmonton Transit - Route 138 20139 Edmonton Transit - Route 139 20140 Edmonton Transit - Route 140 20141 Edmonton Transit - Route 141 20142 Edmonton Transit - Route 142 20143 Edmonton Transit - Route 143 20145 Edmonton Transit - Route 145 20149 Edmonton Transit - Route 149 20150 Edmonton Transit - Route 150 20151 Edmonton Transit - Route 151 20152 Edmonton Transit - Route 152 20153 Edmonton Transit - Route 153 20154 Edmonton Transit - Route 154 20155 Edmonton Transit - Route 155 20160 Edmonton Transit - Route 160 20161 Edmonton Transit - Route 161 20162 Edmonton Transit - Route 162 20163 Edmonton Transit - Route 163 20164 Edmonton Transit - Route 164 20165 Edmonton Transit - Route 165 20167 Edmonton Transit - Route 167

	Trip Table: a04Trips			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				20168 Edmonton Transit - Route 168 20169 Edmonton Transit - Route 169 20180 Edmonton Transit - Route 180 20181 Edmonton Transit - Route 181 20182 Edmonton Transit - Route 182 20183 Edmonton Transit - Route 183 20184 Edmonton Transit - Route 184 20185 Edmonton Transit - Route 185 20186 Edmonton Transit - Route 186 20187 Edmonton Transit - Route 187 20188 Edmonton Transit - Route 188 20190 Edmonton Transit - Route 190 20191 Edmonton Transit - Route 191 20192 Edmonton Transit - Route 192 20193 Edmonton Transit - Route 193 20194 Edmonton Transit - Route 194 20195 Edmonton Transit - Route 195 20197 Edmonton Transit - Route 197 20198 Edmonton Transit - Route 198 20199 Edmonton Transit - Route 199 20301 Edmonton Transit - Route 301 20302 Edmonton Transit - Route 302 20303 Edmonton Transit - Route 303 20304 Edmonton Transit - Route 304 20305 Edmonton Transit - Route 305 20306 Edmonton Transit - Route 306 20307 Edmonton Transit - Route 307 20308 Edmonton Transit - Route 308 20309 Edmonton Transit - Route 309 20310 Edmonton Transit - Route 310 20311 Edmonton Transit - Route 311 20312 Edmonton Transit - Route 312 20313 Edmonton Transit - Route 313 20315 Edmonton Transit - Route 315 20316 Edmonton Transit - Route 316 20317 Edmonton Transit - Route 317 20318 Edmonton Transit - Route 318 20321 Edmonton Transit - Route 321 20322 Edmonton Transit - Route 322 20323 Edmonton Transit - Route 323 20324 Edmonton Transit - Route 324 20325 Edmonton Transit - Route 325 20327 Edmonton Transit - Route 327 20330 Edmonton Transit - Route 330 20331 Edmonton Transit - Route 331 20333 Edmonton Transit - Route 333 20334 Edmonton Transit - Route 334 20336 Edmonton Transit - Route 336 20337 Edmonton Transit - Route 337 20338 Edmonton Transit - Route 338 20339 Edmonton Transit - Route 339 20340 Edmonton Transit - Route 340 20347 Edmonton Transit - Route 347

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				20360 Edmonton Transit - Route 360 20361 Edmonton Transit - Route 361 20362 Edmonton Transit - Route 362 20363 Edmonton Transit - Route 363 20370 Edmonton Transit - Route 370 20380 Edmonton Transit - Route 380 20381 Edmonton Transit - Route 381 20399 Edmonton Transit - Route 399 20595 Edmonton Transit - Route 595 20596 Edmonton Transit - Route 596 20599 Edmonton Transit - Route 599 20747 Edmonton Transit - Route 747 99997 Not Applicable 99998 No Data 99999 Don't know
	Bus1Verbatim	Text	Open-ended field capturing greater detail about bus route, used to determine BusRoute1	
	Bus2Verbatim	Text	Open-ended field capturing greater detail about bus route, used to determine BusRoute2	
	Bus3Verbatim	Text	Open-ended field capturing greater detail about bus route, used to determine BusRoute3	
	Bus4Verbatim	Text	Open-ended field capturing greater detail about bus route, used to determine BusRoute4	
	Bus5Verbatim	Text	Open-ended field capturing greater detail about bus route, used to determine BusRoute5	
	BusService1	Long Integer	Transit system of first bus used on trip	LookupBusService 1 St Albert Transit 2 Edmonton Transit 97 Not Applicable 99 Don't know
	BusService2	Long Integer	Transit system of second bus used on trip	
	BusService3	Long Integer	Transit system of third bus used on trip	
	BusService4	Long Integer	Transit system of forth bus used on trip	
	BusService5	Long Integer	Transit system of fifth bus used on trip	
	Departure	Short Time	Start time of trip	Time format
	Arrival	Short Time	End time of trip	Time format
	VehicleOccupants	Long Integer	Number of people in the vehicle (including person for whom trip is recorded)	LookupVehicleOccupants 1 One 2 Two 3 Three or more

Trip Table: a04Trips				
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
				9 Decline / Don't know
	VehicleAvailable	Long Integer	Indicator of whether a vehicle was available for this trip (only asked if mode does not include 'auto driver' or 'auto passenger')	LookupVehicleAvailable 1 Yes 2 No 9 Decline / Don't know
	Van/Carpool	Long Integer	Indicator if this was a carpool or vanpool trip	LookupVanCarPool 1 Yes 2 No 9 Decline / Don't know
	ReturnVan/Carpool	Long Integer	Indicator if the later return trip was also carpool or vanpool trip	LookupReturnVanCarPool 1 Yes 2 No 3 Not applicable – did not return later in the day 9 Decline / Don't know
	LicenseConf	Long Integer	Question to clarify responses if a person reported a trip as an auto driver but previously reported not having a license	LookupLicenseConf 1 Person actually has a drivers license 2 Person was a passenger, not the driver 3 Other 9 Decline / Don't know
	LicenseConfOther		Open-ended field capturing other response to LicenseConf. May have been recoded to LicenseConf	
	VehicleConf	Long Integer	Question to clarify responses if a person reported a trip as an auto driver but previously reported not having any vehicles available to the household	LookupVehicleConf 1 Work vehicle 2 Rental vehicle 3 Borrowed 5 Other 6 Person was a passenger, not driver 9 Decline / Don't know
	VehicleConfOther		Open-ended field capturing other response to VehicleConf. May have been recoded to VehicleConf.	
	OtherTrip	Long Integer	Indicator of whether person took any additional trips on the travel day	LookupOtherTrip 1 Yes 2 No 9 Decline / Don't know
	DistODEuclid	Double	Straight-line distance(metres) between trip origin and destination	
	TripSubFactor1PersonFactor	Double		Starting trip data weight based on the person expansion factor.
	TripSubFactor2RejectedPersonsAdjust	Double	Weighting adjustment to account for persons rejected due to poor trip information	Correction factor to account for the trip analysis' exclusion of persons within the same geographic district who have unknown mobility / poor trip chains.
	TripSubFactor3TripsDayOfWeekAdjust	Double	Weighting adjustment to	Correction factor to account for any

	Trip Table: a04Trips			
Confidential Data	Field	Field Type	Description	Lookup Table / Value Labels / Explanation
			account for day of week	imbalances in number of persons surveyed by day of week within the traveller's household district.
	TripFactor	Double	Weighting factor for trip	Final trip expansion factor to use for analysis of trips Trip records with expansion factors = 0 or null are those associated with persons whose trip chains had too many trips missing key information.
	WorkedYesterday	Long Integer	Question to clarify responses if a worker did not report any work-related trips "Did you work yesterday"	LookupWorkedYesterday 1 Yes 2 No 9 Decline to answer
	Telecommute	Long Integer	Question to clarify responses if a worker with no work-related trips reported working in the previous question	LookupTelecommute 1 Yes, telecommuted 2 No, away on business / working on the road 3 No, did not work 4 No, worked and did take work-related trips 9 Decline to answer
	SchoolYesterday	Long Integer	Question to clarify responses if a student did not report any trips to school "Did you attend school yesterday"	LookupSchoolYesterday 1 Yes 2 No 9 Decline to answer
	PoorTripFlag	Long Integer	Flags whether a trip was identified as a 'poor trip', i.e., a trip with missing / unknown / problematic essential information (origin, destination, depart time, mode, purpose)	0 No issue with trip 1 Indicates poor trip
	PoorTripFlagText		Describes specific issue(s) associated with poor trip	

Appendix D: Highway 2 Intercept Survey Questionnaires

City of St. Albert
Highway 2 Intercept O-D Survey Form – A.M. – Southbound ↓

Surveyor: Record ID:

Good morning. My name is …… We are conducting a short survey for the City of St. Albert Transportation Master Plan. The data will be used only for transportation planning purposes. I would like to ask you a few questions about your trip this morning.
(The survey is voluntary. All results are confidential.)

Time: _____ Vehicle Type: PV B MB LT HT Other: (Personal Vehicle, Bicycle, Motorbike, Light Truck, Heavy Truck) Commercial? C (circle if commercial vehicle) # Occupants: (include driver) _____

THIS TRIP

What town (or county) do you live in?

Where did your trip start this morning? †O
What Town/County:

And address / postal code / intersection / establishment:

Is that your home?

Yes

No

What reason were you there?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

What time did you leave?

Where will this trip end? ‡D
1) St. Albert 2) Other town/county:
Specify:

And address / postal code / intersection / establishment:

Is that your home?

Yes

No (or origin above was home)

What reason are you going there?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

What time do you expect to arrive?

How often do you make this trip travelling in this direction on weekdays? Is it…?
1) Once a day?
2) 2 or more times/day?
3) Once per week? or
4) 2 or more times per week?

Other, specify: _____

IF DESTINATION (‡D) NOT IN ST. ALBERT

Ask of people travelling to destinations outside St. Albert. Finish the first column of questions before beginning this one.

Will you make any stops in St. Albert?

No

Yes

Where?
address /postal code /intersection /establishment:

And for what reason?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

Will you make any other stops in St. Albert? address /postal /intersect /establishment:

And for what reason?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

Did you stop anywhere else in St. Albert? Yes→ USE BACK OF FORM

What route are you using to drive through St. Albert?
1) Stay on Highway 2 / St Albert Trail all the way through City of St. Albert
2) Other route, please specify:

_____

Interviewer: please capture detail of the various streets taken.

(Routes used to travel through St. Albert might include: Hwy 2, Sir Winston Churchill Ave, Villeneuve Road (Hwy 633), Ray Gibbon Dr, Venesse Rd, Boudreau Rd, Campbell Rd, or others)

RETURN TRIP (ALWAYS ASK)

Will you make a return trip in the opposite direction today? Or in the opposite direction earlier today?

No

Yes

What time will you start your trip?

Where will your trip start?
1) Same as destination for this trip ‡D
2) Other, specify:
What Town/County:

And address / postal code / intersection / establishment name:

Where will your trip end?
1) Same as starting point for this trip †O
2) Other, specify:
What Town/County:

And address / postal code / intersection / establishment name:

What time do you expect to arrive?

Will you use the same route?
1) Yes
2) No → What route will you use on your return trip?

Thank you. To find out more you can visit www.stalbert.ca and search for "Transportation Master Plan".
Have a great day!

City of St. Albert
Highway 2 Intercept O-D Survey Form – P.M. – Northbound ↑

Surveyor: Record ID:

Good morning. My name is …… We are conducting a short survey for the City of St. Albert Transportation Master Plan. The data will be used only for transportation planning purposes. I would like to ask you a few questions about your trip this afternoon.
(The survey is voluntary. All results are confidential.)

Time: _____ Vehicle Type: PV B MB LT HT Other: (Personal Vehicle, Bicycle, Motorbike, Light Truck, Heavy Truck) Commercial? C (circle if commercial vehicle) # Occupants: (include driver) _____

THIS TRIP

What town (or county) do you live in?

Where did your trip start this afternoon? †O
What Town/County:

And address / postal code / intersection / establishment:

Is that your home?

Yes

No

What reason were you there?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

What time did you leave?

Where will this trip end? ‡D
1) St. Albert 2) Other town/county:
Specify:

And address / postal code / intersection / establishment:

Is that your home?

Yes

No (or origin above was home)

What reason are you going there?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

What time do you expect to arrive?

How often do you make this trip travelling in this direction on weekdays? Is it…?
1) Once a day?
2) 2 or more times/day?
3) Once per week? or
4) 2 or more times per week?

Other, specify: _____

IF ORIGIN (O†) NOT IN ST. ALBERT

Ask of people travelling from starting points outside St. Albert. Finish the first column of questions before beginning this one.

Did you make any stops in St. Albert?

No

Yes

Where?
address /postal code /intersection /establishment:

And for what reason?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

Did you make any other stops in St. Albert? address /postal /intersect /establishment:

And for what reason?

1) Work place
2) Work-related business
3) Personal business
4) Shopping
5) Restaurant/Cafe
6) Attend School
7) Pick someone up
8) Drop someone off
9) Social/Recreation
10) Other: _____

Did you stop anywhere else in St. Albert? Yes→ USE BACK OF FORM

What route did you use to drive through St. Albert?
1) Stay on Highway 2 / St Albert Trail all the way through City of St. Albert
2) Other route, please specify:

_____

Interviewer: please capture detail of the various streets taken.

(Routes to travel through St. Albert might include: Hwy 2, Sir Winston Churchill Ave, Villeneuve Road (Hwy 633), Ray Gibbon Dr, Venesse Rd, Boudreau Rd, Campbell Rd, or others)

TRIP IN OPPOSITE DIR. (ALWAYS ASK)

Did you travel in the opposite direction earlier today? Or will you make a return trip later today?

No

Yes (to either)

At what time?

Where did (will) your trip start?
1) Same as destination for this trip ‡D
2) Other, specify:
What Town:

And address / postal code / intersection / establishment name:

Where did (will) your trip end?
1) Same as starting point for this trip †O
2) Other, specify:
What Town:

And address / postal code / intersection / establishment name:

What time did you (do you expect to) arrive?

Did (will) you use the same route?
1) Yes
2) No → What route did (will) you use on your trip in the opposite direction?

Thank you. To find out more you can visit www.stalbert.ca and search for "Transportation Master Plan".
Have a great day!

Appendix E: Highway 2 Intercept Survey Data Dictionary

Original vs. Final Data Fields

The intercept survey data includes a set of fields used for data entry, and a set of derived variables and geocodes that combine or recode the original data entry fields where appropriate and constitute the useful data for use in analysis.

Two versions of the dataset have been provided: One with both the original data entered fields (for reference if required) and the derived/geocode fields, and one with only the final derived/geocode fields useful for analysis.

The data dictionary below presents the original data entered fields first, followed by the final fields for use in analysis.

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
	SurveyID	Long Integer	Unique ID for Survey Record	
Original Data Entry Fields				
	A1 - Direction	Long Integer	Direction of traffic	LookupDirection Direction DirectionDesc 1 Southbound 2 Northbound
	A2 - Time	Time/Date	Time survey was completed	
	A3a - Vehicle Type	Long Integer	Type of vehicle	LookupVehicleType VehicleType VehicleTypeDesc 1 Passenger Vehicle 2 Bicycle 3 Motorbike 4 Light Truck 5 Heavy Truck 77 Other
	A3b - Other	Text	Open-ended indication of type of vehicle, if it cannot be found in A3a – Vehicle Type options	
	A4 - Commerical?	Long Integer	Indicator if the vehicle was a commercial use vehicle	
	A5 - # of Occupants	Long Integer	The number of persons in the vehicle (including the driver)	
	B1 - Town or County	Text	Town of the primary respondents residence	
	B2a - Trip Start Town or County	Text	What town/county the trip began in the morning	
✓	B2b - Street Address	Text	Street address of the start location	
✓	B2c - Postal Code	Text	Postal code of the start location	
✓	B2d - Intersection	Text	A nearby intersection of the start location	
✓	B2e - Establishment	Text	A nearby establishment of the start location	
	B3a - Is that your home?	Long Integer	Indicator if the response listed in question B2 is their place of residence	LookupHome Home HomeDes 1 Yes 2 No
	B3b - Reason	Long Integer	If B3a was answered no, indicates what	LookupDestType

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
			type of activity / reason for being at the location	DestType DestTypeDes 1 Work Place 2 Work-related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	B3c - Other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in B3b – Reason options	
	B4 - Time left	Time/Date	What time the primary respondent left the start location	
	B5a - Where trip will end	Text	Indicator if the trip will end within St.Albert or if it will end in a different town/county	LookupTripEnd TripEnd TripEndDes 1 St.Albert 2 Other town/country
	B5b - Trip End Town or County	Text	Open-ended indication of where the trip ended if outside of St.Albert	
✓	B5c - Street Address	Text	Street address of the end location	
✓	B5d - Postal Code	Text	Postal code of the end location	
✓	B5e - Intersection	Text	A nearby intersection of the end location	
✓	B5f - Establishment	Text	A nearby establishment of the end location	
	B6a - Is that your home?	Long Integer	Indicator if the response listed in question B5 is their place of residence	LookupHome Home HomeDes 1 Yes 2 No
	B6b - Reason	Long Integer	If B6a was answered no, indicates what type of activity / reason for being at the location	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	B6c - Other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in B6b – Reason options	
	B7 - Time Expect to Arrive	Time/Date	The time the primary respondent expects to arrive at the end location	
	B8a - How often	Long Integer	How often the primary respondent	LookupTripFrequency

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
			makes this trip, travelling in the specified direction, on weekdays	TripFrequency TripFrequencyDes 1 Once a day 2 2 or more times a day 3 Once a week 4 2 or more times per week 5 Other, specify:
	B8b - other	Text	Open-ended indication of how many times they took the trip travelling in the posted direction	
	C1a - Make any stops	Long Integer	Indication if the primary respondent made any stops in St.Albert	LookupStops Stops StopsDes 1 Yes 2 No
✓	C1b - Where	Text	If C1a was answered yes, where the primary respondent stopped in St.Albert	
✓	C1c - Street Address	Text	Street address of the stop location	
✓	C1d - Postal Code	Text	Postal code of the stop location	
✓	C1e - Intersection	Text	A nearby intersection to where the primary respondent stopped	
✓	C1f - Establishment	Text	A nearby establishment to where the primary respondent stopped	
	C2a - What reason	Long Integer	If C1a was answered yes, indicates what the reason for the stop was	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	C2b - other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in C2b – what reason options	
	C3a - Make any other stops	Long Integer	Indication if the primary respondent will make any other stops in St.Albert	
✓	C3b - Where	Text	Where the primary respondent made the next stop	
✓	C3c - Street Address	Text	Street address of the stop location	
✓	C3d - Postal Code	Text	Postal code of the stop location	
✓	C3e - Intersection	Text	A nearby intersection to where the primary respondent stopped	
✓	C3f - Establishment	Text	A nearby establishment to where the primary respondent stopped	
	C4a - What reason	Long Integer	If C3a was answered yes, indicates what the reason for the stop was	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	C4b - other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in C4a – what reason options	
	C5a - Make any other stops	Long Integer	Indication if the primary respondent will make any other stops in St.Albert	
✓	C5b - Where	Text	Where the primary respondent made the next stop	
✓	C5c - Street Address	Text	Street address of the stop location	
✓	C5d - Postal Code	Text	Postal code of the stop location	
✓	C5e - Intersection	Text	A nearby intersection to where the primary respondent stopped	
✓	C5f - Establishment	Text	A nearby establishment to where the primary respondent stopped	
	C6a - What reason	Long Integer	If C5a was answered yes, indicates what the reason for the stop was	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	C6b - other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in C6a – What reason options	
	C7a - Make any other stops	Long Integer	Indication if the primary respondent will make any other stops in St.Albert	
✓	C7b - Where	Text	Where the primary respondent made the next stop	
✓	C7c - Street Address	Text	Street address of the stop location	
✓	C7d - Postal Code	Text	Postal code of the stop location	
✓	C7e - Intersection	Text	A nearby intersection to where the primary respondent stopped	
✓	C7f - Establishment	Text	A nearby establishment to where the primary respondent stopped	
	C8a - What reason	Long Integer	If C7a was answered yes, indicates what the reason for the stop was	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	C8b - other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in C8a – What reason options	
	C9a - Make any other stops	Long Integer	Indication if the primary respondent will make any other stops in St.Albert	
✓	C9b - Where	Text	Where the primary respondent made the next stop	
✓	C9c - Street Address	Text	Street address of the stop location	
✓	C9d - Postal Code	Text	Postal code of the stop location	
✓	C9e - Intersection	Text	A nearby intersection to where the primary respondent stopped	
✓	C9f - Establishment	Text	A nearby establishment to where the primary respondent stopped	
	C10a - What reason	Long Integer	If C9a was answered yes, indicates what the reason for the stop was	LookupDestType DestType DestTypeDes 1 Work Place 2 Work-related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social/Recreation 10 Other
	C10b - other	Text	Open-ended indication of the reason why the primary respondent was here, if it cannot be found in C10a – What reason options	
	C11a - What route	Long Integer	What route the primary respondent used to drive through St.Albert	LookupRoute Route RouteDes 1 Stay on Highway 2/St.Albert Trail all the way through City of St. Albert 2 Other route, please specify:
	C11b - other route	Text	Open-ended indication if the primary respondent did not use an option listed in C11a – what route, indicates what route the primary respondent may of used	
	D1 - opposite direction/return trip	Long Integer	Indicator if the respondent will make a return trip in the opposite direction on the day of travel, or in the opposite	LookupReverseTrip ReverseTrip ReverseTripDes 1 Yes

Hwy 2 Survey Data - Original Data Entry Fields				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
			direction earlier on the day the survey was administered.	2 No
	D2 - what time	Time/Date	What time the return trip would begin	
	D3a - Where start	Long Integer	Where the trip would begin	LookupReverseLoc ReverseLoc ReverseLocDes 1 Same as destination for this trip 2 Other, specify:
	D3b - other	Text	Open-ended indication of the start location	
	D3c - what town/city	Text	What town/city the primary respondent would begin the trip in the opposite direction	
✓	D3d - Street Address	Text	The street address of the start location	
✓	D3e - Postal Code	Text	The postal code of the start location	
✓	D3f - Intersection	Text	A nearby intersection of the start location	
✓	D3g - Establishment	Text	A nearby establishment of the start location	
	D4a - Where end	Long Integer		LookupEndLoc EndLoc EndLocDes 1 Same as starting point for this trip 2 Other, specify:
	D4b - other	Text	Open-ended indication of the end location	
	D4c - what town/city	Text	What town/city the primary respondent would end the trip in the opposite direction	
✓	D4d - Street Address	Text	The street address of the end location	
✓	D4e - Postal Code	Text	The postal code of the end location	
✓	D4f - Intersection	Text	A nearby intersection of the end location	
✓	D4g - Establishment	Text	A nearby establishment of the end location	
	D5 - what time arrive	Time/Date	The time the primary respondent expects to arrive at the end location	
	D6a - Same route	Long Integer	Indicator if the primary respondent will use the same route on the return trip	LookupSameRoute SameRoute SameRouteDes 1 Yes 2 No, other:
	D6b - what route	Text	Open-ended indication of the trip route if not the same as answered in C11a	

The list of final fields for use in analysis follows on the next page.

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
Final Fields for Use in Analysis				
	Direction	Long Integer	Direction of traffic	LookupDirection Direction DirectionDesc 1 Southbound 2 Northbound
	DirectionDesc	Text	Description of the direction of traffic	
	VehicleType	Long Integer		LookupVehicleType VehicleType VehicleTypeDesc 1 Passenger Vehicle 4 Light Truck 14 Commercial Light Truck 15 Commercial Heavy Truck
	Occupants	Long Integer	The number of persons in the vehicle (including the driver)	
	TripPurpose	Long Integer	Purpose of the trip taken (includes Return Home as a purpose)	LookupTripPurpose TripPurpose TripPurposeDesc 10 Travel to Work 20 Work related 30 Personal 40 Shopping 50 Restaurant/Café 60 Travel to School 75 Serve Passenger 90 Social/recreational 100 Other 200 Return Home
	TravelReason	Long Integer	The reason for travel (whether on trip to the location of the activity or trip returning home from the location of the activity)	LookupTravelReason TravelReason TravelReasonDesc 5 Travel to/from Work 10 Work related 15 Personal 20 Shopping 25 Restaurant/Café 30 Travel to/from School 35 Serve passenger 45 Social/recreational 50 Other
	TripRouteCode	Long Integer	Which route was used within or through St. Albert	LookupTripRouteCode TripRouteCode TripRouteCodeDesc 101 Hwy 2 Straight Through 112 Hwy 2 - Boudreau - Sturgeon Rd east 121 Hwy 2 - Campbell - Boudreau – Veness - 142 St 122 Hwy 2 - Boudreau - Campbell – AHD northeast 123 Hwy 2 - Boudreau - Campbell – AHD south 125 Hwy 2 - AHD northeast 126 Hwy 2 - 137 Ave 127 Hwy 2 - Boudreau - Campbell – 156 St 129 Hwy 2 - AHD - Campbell 131 Hwy 2 - 156 St 132 Hwy 2 - Gervais - 170 St 133 Hwy 2 - Villeneuve - Ray Gibbon – LeClair - 137 Ave 134 Hwy 2 - AHD - 184 St 136 Hwy 2 - Villeneuve - Ray Gibbon – 184 St

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				137 Hwy 2 - AHD south 138 Hwy 2 - Giroux - Ray Gibbon - AHD south 139 Hwy 2 - Villeneuve - Ray Gibbon – AHD south 141 Hwy 2 - Villeneuve westwards 142 Hwy 2 - Villeneuve - Hwy 44 150 Hwy 2 - Boudreau 151 Hwy 2 - Boudreau - Cambpell 152 Hwy 2 - Boudreau - Sir Winston Churchill - Poirier - Cambpell 154 Hwy 2 - Boudreau - Sir Winston Churchill - Poirier 156 Hwy 2 - Boudreau - Hebert 157 Hwy 2 - Hebert 159 Hwy 2 - Boudreau - Sir Winston Churchill 160 Hwy 2 - Boudreau - Inglewood 161 Hwy 2 - Coal Mine Rd - Ebony Way - Erin Ridge Dr 164 Hwy 2 - Sturgeon Rd 165 Hwy 2 - Bellerose 166 Hwy 2 - Boudreau - Bellerose 167 Hwy 2 - Sturgeon - Bishop – Sir Winston Churchill 170 Hwy 2 - Villeneuve 171 Hwy 2 - Villeneuve - Ray Gibbon 172 Hwy 2 - Villeneuve - Hogan 173 Hwy 2 - Giroux 174 Hwy 2 - McKenney 179 Hwy 2 - St Vital 180 Hwy 2 - St Anne 181 Hwy 2 - St Anne - Perron 182 Hwy 2 - Mission 183 Hwy 2 - St Anne - Grandin – Grosvenor 184 Hwy 2 - St Anne - Sir Winston Churchill 185 Hwy 2 - St Anne - Sir Winston Churchill - Riel 186 Hwy 2 - St Anne - Sir Winston Churchill - Cunningham 187 Hwy 2 - St Anne - Grandin 188 Hwy 2 - Gate - Grandin - Granite – Grosvenor - Gainsborough 189 Hwy 2 - Gate 190 Hwy 2 - Gervais 191 Hwy 2 - AHD - Ray Gibbon - Leclair 199 Hwy 2 to destination just off Hwy 2 201 Hwy 2 Straight Through 211 Bellerose Dr from east - Erin Ridge Dr - Hwy 2 north 212 Sturgeon Rd from east – Boudreau Rd - Hwy 2 north 213 Sturgeon Rd from east - Hwy 2 south - Hwy 2 north 222 AHD from northeast - Campbell – Boudreau - Hwy 2 north 223 AHD from south - Campbell – Boudreau - Hwy 2 north 224 Hwy 2 from south - Campbell – Boudreau - Hwy 2 north 225 AHD from northeast - Hwy 2 north 226 137 Ave - Hwy 2 north 227 156 St - Campbell - Boudreau – Hwy 2 228 142 St - Vaness - Boudreau - Hwy 2 north 229 Campbell - AHD - Hwy 2 north 231 156 St - Hwy 2 north 232 170 St - Gervais - Hwy 2 north 233 137 Ave - LeClair - Ray Gibbon – Villeneuve - Hwy 2

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				north 234 184 St - AHD - Hwy 2 north 236 184 St - Ray Gibbon - Villeneuve – Hwy 2 north 237 AHD from south - Hwy 2 north 238 AHD from south - Ray Gibbon – Giroux - Hwy 2 north 239 AHD from south - Ray Gibbon – Villeneuve - Hwy 2 north 241 Villeneuve from west - Hwy 2 north 242 Hwy 44 - Villeneuve - Hwy 2 250 Boudreau - Hwy 2 north 251 Campbell - Boudreau - Hwy 2 north 252 Campbell - Poirier - Sir Winston Churchill - Boudreau - Hwy 2 north 253 Erin Ridge Dr - Boudreau - Hwy 2 north 254 Poirier - Sir Winston Churchill - Boudreau - Hwy 2 north 255 Sir Winston Churchill - Sturgeon – Boudreau - Hwy 2 north 256 Hebert - Boudreau - Hwy 2 north 257 Hebert - Hwy 2 north 259 Sir Winston Churchill - Boudreau – Hwy 2 north 260 Inglewood - Boudreau - Hwy 2 261 Erin Ridge Dr - Ebony Way - Coal Mine Rd - Hwy 2 north 262 Erin Ridge Dr - Erin Ridge Rd – Hwy 2 north 263 Inglewood - Hwy 2 north 264 Sturgeon Rd - Hwy 2 north 265 Bellerose - Hwy 2 north 267 Sir Winston Churchill - Bishop – Sturgeon - Hwy 2 north 270 Villeneuve - Hwy 2 north 271 Ray Gibbon - Villeneuve - Hwy 2 north 272 Hogan - Villeneuve - Hwy 2 273 Giroux - Hwy 2 north 274 McKenney - Hwy 2 north 279 St Vital - Hwy 2 280 St Anne - Hwy 2 north 281 Perron - St Anne - Hwy 2 north 282 Mission - Perron - St Anne - Hwy 2 north 283 Grosvenor - Grandin - St Anne – Hwy 2 north 284 Sir Winston Churchill - St Anne – Hwy 2 north 285 Riel - Sir Winston Churchill - St Anne - Hwy 2 north 286 Cunningham - Sir Winston Churchill - St Anne - Hwy 2 287 Grandin - St Anne - Hwy 2 288 Gainsborough - Grosvenor – Granite - Grandin - Gate - Hwy 2 289 Gate - Hwy 2 290 Gervais - Hwy 2 north 291 LeClair - Ray Gibbon - AHD - Hwy 2 north 299 Origin just off Hwy 2 to Hwy 2 north
	TripRouteIssues	Text	Open-ended indication if there were issues with the trip route	
	TripFrequencyWorkingValue	Long Integer	Derived value of the specific trip frequency for the respondent (derived from either closed ended or open-ended answers)	Expressed in number of trips per week travelling in the direction surveyed

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
	TripFrequencyGroup	Long Integer	Trip frequency based upon a group (number of trips per week travelling in the direction surveyed)	LookupTripFrequencyGroup TripFrequencyGroup TripFrequencyGroupDesc 1 10+ x per week / 2+ x per day 2 05 x per week / once per day 3 02-04 x per week 4 01 x per week 5 00.25 to 00.75 x per week (1-3 per month) 6 00.125 x week or less (rarely, < once/month)
	NumStAlbertStops_ExclTripEnds	Long Integer	Number of stops made in St.Albert excluding trip ends (i.e., if either the trip origin or destination was in St. Albert, this count is the number of additional stops other than the origin or destination).	
	NumStAlbertStops_InclTripEnds	Long Integer	Number of stops made in St.Albert including trip ends (i.e., if either the trip origin or destination was in St. Albert, it is included in this count).	
	ReverseTripFlag	Long Integer	Indicates if the respondent did or will make a return trip in the opposite direction earlier the same day, or in the opposite direction later the same day	LookupReverseTripFlag ReverseTripFlag ReverseTripFlagDesc 1 No same-day trip in opposite direction 2 Same-day trip in oppositedirection
	RevTripRouteCode	Long Integer	Trip route taken if a reverse trip occurred	Refer to TripRouteCode lookup table
	RevTripPurpose	Long Integer	Purpose of the trip if a reverse trip occurred	LookupTripPurpose TripPurpose TripPurposeDesc 10 Travel to Work 20 Work related 30 Personal 40 Shopping 50 Restaurant/Café 60 Travel to School 75 Serve Passenger 90 Social/recreational 100 Other 200 Return Home
	RevTravelReason	Long Integer	Travel reason of the trip if a reverse trip occurred	LookupTravelReason TravelReason TravelReasonDesc 5 Travel to/from Work 10 Work related 15 Personal 20 Shopping 25 Restaurant/Café 30 Travel to/from School 35 Serve passenger 45 Social/recreational 50 Other
	Depart24h	Double	Time the primary respondent left in 24 hour format	
	Intercept24h	Double	Time the intercept survey occurred in 24 hour format	

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
	Arrive24h	Double	Time the primary respondent arrived at their destination in 24 hour format	
	RevDepart24h	Double	Time the primary respondent departed for their reverse trip in 24 hour format	
	RevArrive24h	Double	Time the primary respondent arrived from their reverse trip in 24 hours format	
	Depart24h_Decimal	Double	Time the primary respondent left in 24 hour format to the decimal place	
	Intercept24h_Decimal	Double	Time the intercept survey occurred in 24 hour format to the decimal place	
	Arrive24h_Decimal	Double	Time the primary respondent arrived at their destination in 24 hour format to the decimal place	
	RevDepart24h_Decimal	Double	Time the primary respondent departed for their reverse trip in 24 hour format to the decimal place	
	RevArrive24h_Decimal	Double	Time the primary respondent arrived from their reverse trip in 24 hours format to the decimal place	
	HomeTownDesc	Text	Description of primary respondents home town	Internal list of townships within Alberta
✓	HomeTownCode	Text	Indicator of primary respondents home town code	Internal list of township codes within Alberta
✓	HomeTown3TMX	Double	X Co-ordinate (Easting) of primary respondents home town in 3TM coordinate system	
✓	HomeTown3TMY	Double	Y Co-ordinate (Northing) of primary respondents home town in 3TM coordinate system	
✓	HomeTownYLat	Double	Latitude of primary respondents home town (Decimal Degrees)	
✓	HomeTownXLong	Double	Longitude of primary respondents home town (Decimal Degrees)	
	HomeTownTAZ	Long Integer	Home town traffic analysis zone if within St.Albert	LookupTAZ TAZ ID — Neighbourhood 101-107 — Campbell Business Park 201-205 — Kingswood 301-308 — Erin Ridge 401-405 — Woodlands 501-503 — Braeside 601-605 — Pineview 701-705 — Oakmon 801-807 — Akinsdale 901-913 — Grandin 1001 — Sturgeon Heights 1101-1104 — Forest Lawn 1201-1205 — Deer Ridge 1301-1303 — Inglewood 1401-1411 — Lacombe Park 1501-1505 — Downtown 1601-1603 — Riel Business Park

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				1701-1706 Mission 1801-1807 Heritage Lakes 1901-1903 North Ridge 2001-2005 Riverside 2101,5023 Ville Giroux 5001-5005 Annexation Areas 5006-5007 Erin Ridge North 5008-5022 Annexation Areas 5024-5029 Annexation Areas 5030-5031 Riel-South 5032-5036 Annexation Areas
	HomeTownSuperZone	Long Integer	Home town super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation modelling team for analysis.*	LookupSuperZoneGroup SuperZone SuperZoneDesc Within St Albert 1 Campbell Business Park 2 Kingswood 3 Erin Ridge 4 Woodlands 5 Braeside 6 Pineview 7 Oakmont 8 Akinsdale 9 Grandin 10 Forest Lawn/Sturgeon 11 Forest Lawn 12 Deer Ridge 13 Inglewood 14 Lacombe Park 15 Downtown 16 Riel Business Park 17 Mission 18 Heritage Lakes 19 North Ridge 951 Erin Ridge North 953 Riel South 959 Other Annexed Areas (not included in other neighb) Within Edmonton = Edmonton District 10001-10039 Edmonton District 01 to 39 Outside St Albert and Outside Edmonton = CSD 4806016 Calgary 4806034 Olds 4811059 Sturgeon County 4811064 Gibbons 4811065 Redwater 4811066 Bon Accord 4811068 Morinville 4811069 Legal 4811805 Alexander 134 4812009 Bonnyville 4812026 Waskatenau 4812029 Smoky Lake

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				4812037 Lac la Biche County 4813001 Lac Ste. Anne County 4813014 Onoway 4813016 Sandy Beach 4813018 Barrhead County No. 11 4813019 Barrhead 4813028 Westlock County 4813030 Whitecourt 4813031 Westlock 4813032 Clyde 4813036 Thorhild County No. 7 4813044 Athabasca County 4813046 Boyle 4813048 Athabasca 4815035 Banff 4816037 Wood Buffalo 4817027 Big Lakes 4817029 Slave Lake 4817031 Opportunity No. 17 4817855 Desmarais 4818002 Fox Creek 5909020 Chilliwack 5955034 Fort St. John
	HomeTownExternalTAZ	Long Integer	Home town traffic analysis zone if outside St.Albert	LookupEdmTAZ TAZid District 101-131 1 201-212 2 301-323 3 401-418 4 501-523 5 601-623 6 701-723 7 801-826 8 901-909 9 1001-1015 10 1101-1113 11 1201-1217 12 1301-1317 13 1401-1417 14 1501-1526 15 1601-1612 16 1701-1718 17 1801-1826 18 1901-1916 19 2001-2024 20 2101-2111 21 2201-2229 22 2301-2320 23 2401-2440 24 2501-2523 25 2601-2615 26 2701-2736 27

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
				2801-2817 28 2901-2940 29 3001-3037 30 3101-3109 31 3201-3217 32 3301-3399 33 3401-3498 34 3501-3693 35 3597-3617 36 3701-3785 37 3801-3861 38 3901-3978 39 4001-94002 40
	HomeTownCSD	Long Integer	Census Subdivision code of home town	
	HomeTownCSDname	Text	Census Subdivision name of home town	
	HomeTownGeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the home town location	LookupGeoAccuracy GeoAccuracy GeoAccuracyDesc 3 Intersection 2 Landmark 7 Lat/long_from_manual_search 6 Place_Name 5 Postal_Code 1 Property_Parcel 9 Randomly selected from available options 4 Street_Segment
	OriginType	Long Integer	Indicator of the type of activity at the location for the trip origin	LookupLocationActivityType Activity ActivityDesc 0 Home 1 Workplace 2 Work related business 3 Personal business 4 Shopping 5 Restaurant/Cafe 6 Attend School 7 Pick someone up 8 Drop someone off 9 Social / recreational 10 Other 11 Fuel up 99 Unknown
	OriginDesc	Text	Description of the trip origin	Internal list of townships within Alberta
	OriginCode	Text	Indicator for the origin town code	Internal list of township codes within Alberta
✓	Origin3TMX	Double	X Co-ordinate (Easting) of origin in 3TM coordinate system	
✓	Origin3TMY	Double	Y Co-ordinate (Northing) of origin in 3TM coordinate system	
✓	OriginYLat	Double	Latitude of origin (Decimal Degrees)	
✓	OriginXLong	Double	Longitude of origin (Decimal Degrees)	
	OriginTAZ	Long Integer	Origin traffic analysis zone if within St.Albert	Refer to hometownTAZ lookup table

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
	OriginSuperZone	Long Integer	Origin super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation modelling team for analysis.*	Refer to hometownSuperZone lookup table
	OriginExternalTAZ	Long Integer	Origin traffic analysis zone if outside St.Albert	Refer to hometownExternalTAZ lookup table
	OriginCSD	Long Integer	Census Subdivision code of origin	
	OriginCSDname	Text	Census Subdivision name of origin	
	OriginGeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the origin location	Refer to HomeTownGeoAccuracy lookup table
	DestType	Long Integer	Indicator of the type of activity at the location for the trip destination	Refer to OriginType lookup table
	DestDesc	Text	Description of the trip destination	Internal list of townships within Alberta
	DestCode	Text	Indicator for the destination town code	Internal list of township codes within Alberta
✓	Dest3TMX	Double	X Co-ordinate (Easting) of destination in 3TM coordinate system	
✓	Dest3TMY	Double	Y Co-ordinate (Northing) of destination in 3TM coordinate system	
✓	DestYLat	Double	Latitude of destination (Decimal Degrees)	
✓	DestXLong	Double	Longitude of destination (Decimal Degrees)	
	DestTAZ	Long Integer	Destination traffic analysis zone if within St.Albert	Refer to hometownTAZ lookup table
	DestSuperzone	Long Integer	Destination super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation modelling team for analysis.*	Refer to hometownSuperZone lookup table
	DestExternalTAZ	Long Integer	Destination traffic analysis zone if outside St.Albert	Refer to hometownExternalTAZ lookup table
	DestCSD	Long Integer	Census Subdivision code of Destination	
	DestCSDname	Text	Census Subdivision name of Destination	
	DestGeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the Destination location	Refer to HomeTownGeoAccuracy lookup table
	Stop1Desc	Text	Description of the trips first stop location	Internal list of townships within Alberta
	Stop1Type	Long Integer	Indicator of the type of activity at the location for the trips first stop	Refer to OriginType lookup table
	Stop1Code	Double	Indicator for the first stop town code	Internal list of township codes within Alberta
✓	Stop1TMX	Double	X Co-ordinate (Easting) of first stop in 3TM coordinate system	
✓	Stop1TMY	Double	Y Co-ordinate (Northing) of first stop in 3TM coordinate system	
✓	Stop1YLat	Double	Latitude of first stop (Decimal Degrees)	

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
✓	Stop1XLong	Double	Longitude of first stop (Decimal Degrees)	
	Stop1TAZ	Long Integer	First stop traffic analysis zone	Refer to hometownTAZ lookup table
	Stop1SuperZone	Long Integer	First stop super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation modelling team for analysis.*	Refer to hometownSuperZone lookup table
	Stop1GeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the first stop location	Refer to HomeTownGeoAccuracy lookup table
	Stop2Desc	Text	Description of the trips second stop location	Internal list of townships within Alberta
	Stop2Type	Long Integer	I Indicator of the type of activity at the location for the trips second stop	Refer to OriginType lookup table
	Stop2Code	Double	Indicator for the second stop town code	Internal list of township codes within Alberta
✓	Stop2TMX	Double	X Co-ordinate (Easting) of second stop in 3TM coordinate system	
✓	Stop2TMY	Double	Y Co-ordinate (Northing) of second stop in 3TM coordinate system	
✓	Stop2YLat	Double	Latitude of second stop (Decimal Degrees)	
✓	Stop2XLong	Double	Longitude of second stop (Decimal Degrees)	
	Stop2TAZ	Long Integer	Second stop traffic analysis zone	Refer to hometownTAZ lookup table
	Stop2SuperZone	Long Integer	Second stop super zone	Refer to hometownSuperZone lookup table
	Stop2GeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the second stop location	Refer to HomeTownGeoAccuracy lookup table
	Stop3Desc	Text	Description of the trips third stop location	Internal list of townships within Alberta
	Stop3Type	Long Integer	I Indicator of the type of activity at the location for the trips third stop	Refer to OriginType lookup table
	Stop3Code	Double	Indicator for the third stop town code	Internal list of township codes within Alberta
✓	Stop3TMX	Double	X Co-ordinate (Easting) of third stop in 3TM coordinate system	
✓	Stop3TMY	Double	Y Co-ordinate (Northing) of third stop in 3TM coordinate system	
✓	Stop3YLat	Double	Latitude of third stop (Decimal Degrees)	
✓	Stop3XLong	Double	Longitude of third stop (Decimal Degrees)	
	Stop3TAZ	Long Integer	Third stop traffic analysis zone	Refer to hometownTAZ lookup table
	Stop3SuperZone	Long Integer	Third stop super zone	Refer to hometownSuperZone lookup table
	Stop3GeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the third stop location	Refer to HomeTownGeoAccuracy lookup table
	Stop4Desc	Text	Description of the trips fourth stop location	Internal list of townships within Alberta
	Stop4Type	Long Integer	I Indicator of the type of activity at the location for the trips fourth stop	Refer to OriginType lookup table

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
	Stop4Code	Double	Indicator for the fourth stop town code	Internal list of township codes within Alberta
✓	Stop4TMX	Double	X Co-ordinate (Easting) of fourth stop in 3TM coordinate system	
✓	Stop4TMY	Double	Y Co-ordinate (Northing) of fourth stop in 3TM coordinate system	
✓	Stop4YLat	Double	Latitude of fourth stop (Decimal Degrees)	
✓	Stop4XLong	Double	Longitude of fourth stop (Decimal Degrees)	
	Stop4TAZ	Long Integer	Fourth stop traffic analysis zone	Refer to hometownTAZ lookup table
	Stop4SuperZone	Long Integer	Fourth stop super zone	Refer to hometownSuperZone lookup table
	Stop4GeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the fourth stop location	Refer to HomeTownGeoAccuracy lookup table
	Stop5Desc	Text	Description of the trips fifth stop location	Internal list of townships within Alberta
	Stop5Type	Long Integer	I Indicator of the type of activity at the location for the trips fifth stop	Refer to OriginType lookup table
	Stop5Code	Double	Indicator for the fifth stop town code	Internal list of township codes within Alberta
✓	Stop5TMX	Double	X Co-ordinate (Easting) of fifth stop in 3TM coordinate system	
✓	Stop5TMY	Double	Y Co-ordinate (Northing) of fifth stop in 3TM coordinate system	
✓	Stop5YLat	Double	Latitude of fifth stop (Decimal Degrees)	
✓	Stop5XLong	Double	Longitude of fifth stop (Decimal Degrees)	
	Stop5TAZ	Long Integer	Fifth stop traffic analysis zone	Refer to hometownTAZ lookup table
	Stop5SuperZone	Long Integer	Fifth stop super zone	Refer to hometownSuperZone lookup table
	Stop5GeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the fifth stop location	Refer to HomeTownGeoAccuracy lookup table
	RevOriginDesc	Text	Description of the reverse trip origin	Internal list of townships within Alberta
	RevOriginType	Long Integer	Indicator of the type of location for the origin of the reverse trip	Refer to OriginType lookup table
	RevOriginCode	Double	Indicator for the origin of the reverse trip town code	Internal list of township codes within Alberta
✓	RevOrigin3TMX	Double	X Co-ordinate (Easting) of origin for the reverse trip in 3TM coordinate system	
✓	RevOrigin3TMY	Double	Y Co-ordinate (Northing) of origin for the reverse trip in 3TM coordinate system	
✓	RevOriginYLat	Double	Latitude of origin for the reverse trip (Decimal Degrees)	
✓	RevOriginXLong	Double	Longitude of origin for the reverse trip (Decimal Degrees)	
	RevOriginTAZ	Long Integer	Origin for the reverse trip traffic analysis zone within St.Albert	Refer to hometownTAZ lookup table
	RevOriginSuperzone	Long Integer	Origin for the reverse trip super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation*	Refer to hometownSuperZone lookup table

Hwy 2 Survey Data - Final Fields for Analysis				
Confi-dential Data	Field	Field Type	Description	Lookup Table / Value Labels
			modelling team for analysis.	
	RevOriginExternalTAZ	Long Integer	Origin for the reverse trip traffic analysis zone outside of St.Albert	Refer to hometownExternalTAZ lookup table
	RevOriginCSD	Long Integer	Census Subdivision code of origin of the reverse trip	
	RevOriginCSDname	Text	Census Subdivision name of origin of the reverse trip	
	RevOriginGeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the origin of the reverse trip location	Refer to HomeTownGeoAccuracy lookup table
	RevDestDesc	Text	Description of the reverse trip destination	Internal list of townships within Alberta
	RevDestType	Long Integer	Indicator of the type of location for the destination of the reverse trip	Refer to OriginType lookup table
	RevDestCode	Double	Indicator for the destination of the reverse trip town code	Internal list of township codes within Alberta
✓	RevDest3TMX	Double	X Co-ordinate (Easting) of destination for the reverse trip in 3TM coordinate system	
✓	RevDest3TMY	Double	Y Co-ordinate (Northing) of destination for the reverse trip in 3TM coordinate system	
✓	RevDestYLat	Double	Latitude of destination for the reverse trip (Decimal Degrees)	
✓	RevDestXLong	Double	Longitude of destination for the reverse trip (Decimal Degrees)	
	RevDestTAZ	Long Integer	Destination for the reverse trip traffic analysis zone within St.Albert	Refer to hometownTAZ lookup table
	RevDestSuperZone	Long Integer	Destination for the reverse trip super zone *NOTE: These are working 'superzones' developed in an early draft of the database for early review of the data. A different zone aggregation system may be used by the transportation modelling team for analysis.*	Refer to hometownSuperZone lookup table
	RevDestExternalTAZ	Long Integer	Destination for the reverse trip traffic analysis zone outside of St.Albert	Refer to hometownExternalTAZ lookup table
	RevDestCSD	Long Integer	Census Subdivision code of destination of the reverse trip	
	RevDestCSDname	Text	Census Subdivision name of destination of the reverse trip	
	RevDestGeoAccuracy	Long Integer	Indication of the accuracy of the geocoding of the destination of the reverse trip location	Refer to HomeTownGeoAccuracy lookup table
	FlagInitialDataReviewIssues	Text	Open-ended indicator for issues that arose during data review	
	ExpansionFactor	Double	Expansion factor for each trip	

Appendix B.4 - Highway 2 Counts

Hig hway : 2
Con trol S ection : 34
ATR Numbe r : 60 23410
Loc ation Descri ption : 4 KM S O F 2 & 37 ST ALBERT
Mon th : Se ptembe r 2014
Mon thly A verage Daily Traffi c Sou thbound : 10 654
Mon thly A verage Daily Traffi c Nor thbound : 10 880
Mon thly A verage Daily Traffi c Two Way : 21 534

Pro duced : 09 #NAME? 014 By Corn erStone Solu tions Inc.

Hou r Endi ng 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Week Day
Dat e Dir																								
1 TW	193	88	55	36	68	115	192	301	383	638	1011	1322	1518	1662	1761	1588	1532	1325	1091	872	647	522	294	180 Monday
2 TW	146	42	32	45	106	431	1107	1541	1253	1248	1271	1338	1388	1445	1516	1676	1935	1989	1584	1077	831	591	336	179 Tuesday
3 TW	87	37	28	53	100	426	1126	1517	1274	1149	1173	1165	1314	1346	1398	1626	1938	2054	1451	1117	930	620	314	202 Wednesday
4 TW	93	49	30	43	98	408	1133	1516	1307	1135	1190	1275	1312	1341	1338	1571	1996	2074	1506	1096	896	676	335	176 Thursday
5 TW	100	64	56	46	90	382	1034	1458	1244	1167	1205	1425	1454	1536	1602	1848	2073	2107	1846	1302	860	742	514	270 Friday
6 TW	192	92	86	51	49	167	354	459	754	1078	1357	1602	1612	1626	1654	1728	1524	1392	1105	953	856	784	478	304 Saturday
7 TW	236	135	97	58	55	95	179	262	443	710	1087	1309	1600	1618	1636	1609	1446	1268	1104	827	630	467	275	135 Sunday
8 TW	66	38	32	50	113	429	1079	1532	1215	1058	1085	1122	1313	1210	1238	1530	1918	1942	1290	872	655	509	316	198 Monday
9 TW	100	44	42	40	99	427	1084	1523	1296	1098	1143	1250	1264	1263	1357	1541	1966	2041	1407	990	783	535	332	171 Tuesday
10 TW	86	40	31	55	90	415	1101	1554	1231	1145	1145	1193	1280	1337	1425	1567	1882	2085	1486	1105	876	597	329	173 Wednesday
11 TW	86	62	44	48	101	417	1129	1483	1325	1066	1180	1216	1292	1283	1401	1650	2119	2035	1544	1167	937	694	361	183 Thursday
12 TW	108	67	48	49	98	403	1074	1447	1240	1168	1290	1347	1422	1435	1730	1886	2249	2114	1704	1238	877	743	513	329 Friday
13 TW	195	91	76	59	57	146	353	457	743	1121	1397	1555	1668	1629	1659	1647	1700	1453	1238	990	822	671	521	380 Saturday
14 TW	192	133	94	56	54	103	194	265	450	708	1083	1276	1585	1630	1518	1556	1541	1329	1074	906	762	447	275	137 Sunday
15 TW	69	46	29	36	100	424	1173	1548	1289	1082	1214	1184	1335	1331	1411	1651	2005	1971	1394	1049	824	593	299	174 Monday
16 TW	98	45	38	51	99	446	1161	1643	1337	1170	1169	1158	1190	1287	1359	1538	1943	2129	1450	1154	834	597	323	182 Tuesday
17 TW	99	51	27	46	91	431	1153	1519	1285	1148	1126	1173	1280	1208	1363	1609	2004	2029	1555	1089	873	629	352	215 Wednesday
18 TW	103	53	45	33	112	441	1190	1546	1293	1155	1163	1247	1294	1331	1458	1743	2019	2063	1546	1140	953	635	415	227 Thursday
19 TW	116	66	42	40	88	413	1023	1430	1246	1154	1283	1378	1467	1477	1653	1930	2213	2143	1849	1332	981	800	560	320 Friday
20 TW	188	113	76	65	59	158	386	465	727	1100	1402	1581	1739	1526	1540	1688	1518	1450	1201	876	885	646	500	343 Saturday
21 TW	219	133	80	64	59	104	192	295	473	712	1074	1368	1502	1588	1533	1607	1592	1358	1155	947	840	551	275	181 Sunday
22 TW	93	44	31	45	92	453	1101	1511	1292	1169	1216	1114	1326	1278	1361	1530	1877	2038	1434	934	748	504	296	156 Monday
23 TW	102	50	37	49	98	434	1153	1384	1305	1080	1121	1185	1266	1169	1302	1381	1609	1590	1522	1024	726	576	332	154 Tuesday
24 TW	83	49	36	59	91	460	1132	1426	1239	1048	1112	1169	1308	1202	1300	1555	1912	1980	1420	1020	817	628	345	179 Wednesday
25 TW	97	48	31	49	107	451	1140	1535	1308	1096	1192	1172	1327	1277	1407	1698	1997	2028	1556	1108	865	672	389	208 Thursday
26 TW	132	66	48	57	85	403	1043	1472	1252	1112	1298	1459	1539	1560	1733	1967	2181	2211	1717	1301	993	701	497	410 Friday
27 TW	246	112	73	69	56	156	307	465	725	1120	1385	1621	1686	1705	1610	1603	1621	1529	1270	947	784	623	521	365 Saturday
28 TW	259	162	73	69	52	94	175	223	431	742	1059	1328	1556	1526	1578	1617	1541	1354	1046	889	696	461	302	179 Sunday
29 TW	79	42	38	41	116	430	1117	1542	1295	1173	1193	1289	1337	1320	1397	1648	1922	2107	1451	1046	735	467	312	147 Monday
30 TW	100	52	45	51	100	450	1150	1557	1383	1141	1215	1248	1357	1302	1491	1627	1925	2104	1545	1052	797	613	344	191 Tuesday

Hig hway : 2
Con trol S ection : 34
ATR Numbe r : 60 23410
Loc ation Descri ption : 4 KM S O F 2 & 37 ST ALBERT
Mon th : Se ptembe r 2014
Mon thly A verage Daily Traffi c Sou thbound : 10 654
Mon thly A verage Daily Traffi c Nor thbound : 10 880
Mon thly A verage Daily Traffi c Two Way : 21 534

Pro duced : 09 #NAME? 014 By Corn erStone Solu tions Inc.

Hou r Endi ng 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Week Day
Dat e Dir																								
1 SB	58	28	28	16	42	59	109	146	212	384	619	821	912	1000	991	840	758	697	513	418	283	225	120	56 Monday
2 SB	36	14	8	22	70	269	801	1023	819	795	771	736	730	667	683	726	782	755	580	363	285	181	113	69 Tuesday
3 SB	28	12	7	32	75	278	823	1044	843	709	712	678	678	615	609	684	728	814	635	419	296	202	106	70 Wednesday
4 SB	24	10	8	29	66	257	834	995	813	698	709	741	679	635	575	687	818	818	630	403	323	224	120	67 Thursday
5 SB	41	16	22	33	70	251	788	974	810	757	772	778	742	709	680	816	847	857	718	488	269	253	186	98 Friday
6 SB	58	27	26	33	26	91	217	264	428	683	813	861	838	807	786	764	616	587	466	407	381	343	205	115 Saturday
7 SB	100	49	47	23	32	56	101	139	250	440	689	778	934	917	888	774	607	517	489	347	277	184	118	49 Sunday
8 SB	24	14	9	21	73	274	806	1049	799	669	670	618	706	567	499	622	722	719	512	322	214	142	121	72 Monday
9 SB	30	13	12	21	74	260	808	1024	834	711	712	720	676	609	564	613	765	782	528	386	254	157	107	56 Tuesday
10 SB	23	17	7	29	72	252	816	1086	831	728	691	697	690	614	596	618	724	822	636	416	315	146	111	64 Wednesday
11 SB	39	25	13	34	78	253	846	1022	875	698	720	682	654	570	604	712	876	771	642	463	337	214	125	70 Thursday
12 SB	49	24	16	31	70	256	802	986	818	734	831	774	768	700	733	796	947	774	725	478	298	243	135	104 Friday
13 SB	53	40	27	26	34	68	214	256	431	710	886	899	910	816	736	645	740	576	499	488	351	276	215	151 Saturday
14 SB	69	56	38	21	36	48	109	139	263	397	651	721	821	803	717	684	676	626	530	446	342	201	120	45 Sunday
15 SB	29	14	12	28	68	271	872	1054	833	625	725	647	701	622	627	670	734	740	563	418	321	184	115	55 Monday
16 SB	33	16	15	30	72	268	843	1103	830	700	706	649	612	601	583	650	773	825	591	453	305	208	109	78 Tuesday
17 SB	37	16	9	26	62	258	852	1078	798	712	695	639	644	575	556	689	798	813	672	412	321	218	133	86 Wednesday
18 SB	39	23	16	17	73	280	895	1049	812	717	671	708	708	672	633	762	788	793	639	477	354	223	153	67 Thursday
19 SB	35	21	20	27	58	263	788	1012	774	713	780	784	747	706	669	816	926	880	760	543	358	261	187	110 Friday
20 SB	49	42	33	31	28	70	239	280	455	712	868	917	862	714	662	686	653	612	534	408	376	281	214	133 Saturday
21 SB	79	45	31	21	27	52	109	160	260	410	638	735	801	803	768	742	741	673	568	491	452	239	136	83 Sunday
22 SB	29	12	17	22	68	264	811	1036	799	703	697	581	694	608	555	639	726	731	587	380	282	146	112	59 Monday
23 SB	39	18	17	29	71	258	857	899	835	628	648	647	661	521	554	640	750	713	547	379	252	198	136	43 Tuesday
24 SB	24	20	12	40	62	270	841	930	803	659	651	646	696	559	586	659	789	810	631	388	289	177	118	71 Wednesday

25	SB	37	20	10	26	77	285	844	1029	842	695	692	671	713	600	633	683	807	822	731	417	300	203	137	78	Thursday
26	SB	53	26	18	36	58	256	794	1023	865	739	878	881	849	752	796	821	904	848	743	489	320	211	145	134	Friday
27	SB	70	37	23	29	31	80	203	276	472	737	928	989	930	865	724	646	683	606	507	370	298	223	196	126	Saturday
28	SB	84	60	35	31	26	40	98	110	240	465	672	800	865	794	783	718	639	552	435	372	312	210	123	76	Sunday
29	SB	25	12	12	24	74	263	804	1069	818	705	695	697	701	614	596	689	783	783	581	393	245	122	91	49	Monday
30	SB	34	15	14	35	70	275	827	1073	862	709	732	698	722	624	646	708	744	843	599	414	256	189	104	60	Tuesday

Hig hway : 2
Con trol S ection : 34
ATR Numbe r : 60 23410
Loc ation Descri ption : 4 KM S O F 2 & 37 ST ALBERT
Mon th : Se ptembe r 2014
Mon thly A verage Daily Traffi c Sou thbound : 10 654
Mon thly A verage Daily Traffi c Nor thbound : 10 880
Mon thly A verage Daily Traffi c Two Way : 21 534

Pro duced : 09 #NAME? 014 By Corn erStone Solu tions Inc.

Hou r Endi ng 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Week Day
Dat e Dir																								
1 NB	135	60	27	20	26	56	83	155	171	254	392	501	606	662	770	748	774	628	578	454	364	297	174	124	Monday
2 NB	110	28	24	23	36	162	306	518	434	453	500	602	658	778	833	950	1153	1234	1004	714	546	410	223	110	Tuesday
3 NB	59	25	21	21	25	148	303	473	431	440	461	487	636	731	789	942	1210	1240	816	698	634	418	208	132	Wednesday
4 NB	69	39	22	14	32	151	299	521	494	437	481	534	633	706	763	884	1178	1256	876	693	573	452	215	109	Thursday
5 NB	59	48	34	13	20	131	246	484	434	410	433	647	712	827	922	1032	1226	1250	1128	814	591	489	328	172	Friday
6 NB	134	65	60	18	23	76	137	195	326	395	544	741	774	819	868	964	908	805	639	546	475	441	273	189	Saturday
7 NB	136	86	50	35	23	39	78	123	193	270	398	531	666	701	748	835	839	751	615	480	353	283	157	86	Sunday
8 NB	42	24	23	29	40	155	273	483	416	389	415	504	607	643	739	908	1196	1223	778	550	441	367	195	126	Monday
9 NB	70	31	30	19	25	167	276	499	462	387	431	530	588	654	793	928	1201	1259	879	604	529	378	225	115	Tuesday
10 NB	63	23	24	26	18	163	285	468	400	417	454	496	590	723	829	949	1158	1263	850	689	561	451	218	109	Wednesday
11 NB	47	37	31	14	23	164	283	461	450	368	460	534	638	713	797	938	1243	1264	902	704	600	480	236	113	Thursday
12 NB	59	43	32	18	28	147	272	461	422	434	459	573	654	735	997	1090	1302	1340	979	760	579	500	378	225	Friday
13 NB	142	51	49	33	23	78	139	201	312	411	511	656	758	813	923	1002	960	877	739	502	471	395	306	229	Saturday
14 NB	123	77	56	35	18	55	85	126	187	311	432	555	764	827	801	872	865	703	544	460	420	246	155	92	Sunday
15 NB	40	32	17	8	32	153	301	494	456	457	489	537	634	709	784	981	1271	1231	831	631	503	409	184	119	Monday
16 NB	65	29	23	21	27	178	318	540	507	470	463	509	578	686	776	888	1170	1304	859	701	529	389	214	104	Tuesday
17 NB	62	35	18	20	29	173	301	441	487	436	431	534	636	633	807	920	1206	1216	883	677	552	411	219	129	Wednesday
18 NB	64	30	29	16	39	161	295	497	481	438	492	539	586	659	825	981	1231	1270	907	663	599	412	262	160	Thursday
19 NB	81	45	22	13	30	150	235	418	472	441	503	594	720	771	984	1114	1287	1263	1089	789	623	539	373	210	Friday
20 NB	139	71	43	34	31	88	147	185	272	388	534	664	877	812	878	1002	865	838	667	468	509	365	286	210	Saturday
21 NB	140	88	49	43	32	52	83	135	213	302	436	633	701	785	765	865	851	685	587	456	388	312	139	98	Sunday
22 NB	64	32	14	23	24	189	290	475	493	466	519	533	632	670	806	891	1151	1307	847	554	466	358	184	97	Monday
23 NB	63	32	20	20	27	176	296	485	470	452	473	538	605	648	748	741	859	877	975	645	474	378	196	111	Tuesday
24 NB	59	29	24	19	29	190	291	496	436	389	461	523	612	643	714	896	1123	1170	789	632	528	451	227	108	Wednesday
25 NB	60	28	21	23	30	166	296	506	466	401	500	501	614	677	774	1015	1190	1206	825	691	565	469	252	130	Thursday
26 NB	79	40	30	21	27	147	249	449	387	373	420	578	690	808	937	1146	1277	1363	974	812	673	490	352	276	Friday
27 NB	176	75	50	40	25	76	104	189	253	383	457	632	756	840	886	957	938	923	763	577	486	400	325	239	Saturday
28 NB	175	102	38	38	26	54	77	113	191	277	387	528	691	732	795	899	902	802	611	517	384	251	179	103	Sunday
29 NB	54	30	26	17	42	167	313	473	477	468	498	592	636	706	801	959	1139	1324	870	653	490	345	221	98	Monday
30 NB	66	37	31	16	30	175	323	484	521	432	483	550	635	678	845	919	1181	1261	946	638	541	424	240	131	Tuesday

Appendix B.5 - St. Albert Transit Ridership Survey

201 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0971	ST.ALBERT CENTRE / EXCHANGE	DEP	116	17	9	10	5	157	0	243	0.6	143.4
2	0169	ST. ALBERT ROAD / MADISON AVE.	SF	1	0	0	1	0	2	0	245	0.6	144.6
3	0173	ST. ANNE STREET / ST. ALBERT ROAD	SF	0	0	1	1	0	2	4	243	0.6	143.4
4	0175	ST. ALBERT ROAD / GREEN GROVE DRIVE	SF	0	0	0	0	0	0	0	243	0.6	143.4
5	0959	VILLAGE TRANSIT / STATION	ARR	105	14	5	11	6	141	56	328	0.0	0.0
6	0959	VILLAGE TRANSIT / STATION	DEP	112	29	16	17	7	181	0	511	0.6	311.7
7	0917	GERVAIS ROAD / GLOUCESTER DRIVE	EB	12	1	0	1	1	15	1	525	0.6	320.3
8	6463	ST. ALBERT TRAIL / SEMINARY	SX	0	0	0	0	0	0	0	525	0.6	320.3
9	6424	156 STREET / 156 STREET	SF	0	0	0	1	3	4	0	529	0.6	322.7
10	6297	ST. ALBERT TRAIL / HOLY CROSS	SX	0	0	0	0	0	0	0	529	0.6	322.7
11	6273	ST. ALBERT TRAIL / JOHNNY C'S	SX	0	0	0	0	0	0	0	529	0.6	322.7
12	6760	ST. ALBERT TRAIL / 136 AVENUE	SB	2	0	0	2	0	4	11	522	0.6	318.4
13	6488	ST. ALBERT TRAIL / 134 AVENUE	SF	2	0	0	0	1	3	6	519	0.6	316.6
14	6540	ST. ALBERT TRAIL / 131 AVENUE	SF	2	0	0	1	1	4	6	517	0.6	315.4
15	6388	ST. ALBERT TRAIL / 130 AVENUE	SF	1	0	0	1	0	2	0	519	0.6	316.6
16	6272	ST. ALBERT TRAIL / 128 AVENUE	SF	6	0	0	6	3	15	4	530	0.6	323.3
17	5173	ST. ALBERT TRAIL / YELLOWHEAD TRAIL	SF	0	0	0	0	0	0	0	530	0.6	323.3
18	5356	ST. ALBERT TRAIL / DOVERCOURT AVENUE	SF	1	1	0	0	0	2	6	526	0.6	320.9
19	1716	ST. ALBERT TRAIL / 118 AVENUE	EF	6	0	0	1	0	7	5	528	0.6	322.1
20	1847	118 AVENUE / 123 STREET	EF	14	2	0	1	3	20	10	538	1.5	823.1
21	1632	108 STREET / KINGSWAY AVENUE	SF	1	0	0	0	0	1	40	499	1.5	763.5
22	1675	102 STREET / KINGSWAY AVENUE	SF	9	0	1	0	4	14	56	457	1.5	699.2
23	1280	97 STREET / 103A AVENUE	SB	27	2	1	3	1	34	34	457	0.3	118.8
24	1756	102 AVE / 97 STREET	WB	73	0	1	21	3	98	104	451	0.3	117.3
25	1763	102 AVE / 100 STREET	WB	130	3	8	17	12	170	172	449	0.3	116.7
26	1655	102 AVE / 101 STREET	WB	39	1	4	9	2	55	47	457	0.3	118.8
27	1868	102 AVE / 102 STREET	WB	54	2	2	13	5	76	38	495	0.3	128.7
28	1837	102 AVE / 105 STREET	WB	15	1	0	1	1	18	8	505	0.3	131.3
29	1898	107 STREET / 102 AVENUE	NB	13	9	0	4	0	26	17	514	0.3	133.6
30	1989	107 STREET / 104 AVENUE	WB	22	215	3	7	3	250	34	730	2.1	1533.0
31	1797	KINGSWAY / 109 STREET	WB	9	8	1	4	4	26	4	745	2.1	1564.5
32	1669	124 STREET / 118 AVENUE	WF	7	0	0	3	1	11	10	746	0.6	447.6
33	1947	ST. ALBERT TRAIL / 118 AVENUE	NF	2	0	0	1	0	3	3	746	0.6	447.6
34	1759	ST. ALBERT TRAIL / SHERBROOKE AVENUE	NF	2	0	0	1	2	5	8	743	0.6	445.8
35	1604	ST. ALBERT TRAIL / YELLOWHEAD TRAIL	NN	1	0	0	0	0	1	1	743	0.6	445.8
36	6550	ST. ALBERT TRAIL / 128 AVENUE	NF	0	0	0	0	0	0	12	731	0.6	438.6
37	6533	ST. ALBERT TRAIL / 130 AVENUE	NF	0	0	0	0	0	0	4	727	0.6	436.2
38	6226	ST. ALBERT TRAIL / 132 AVENUE	NF	0	0	0	0	0	0	8	719	0.6	431.4
39	6152	ST. ALBERT TRAIL / 134 AVENUE	NF	2	0	0	0	0	2	6	715	0.6	429.0
40	6673	ST. ALBERT TRAIL / 137 AVENUE	NN	0	0	0	1	0	1	10	706	0.6	423.6

201 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	6161	ST. ALBERT TRAIL / JOHNNY C'S	NX	0	0	0	0	0	0	0	706	0.6	423.6
42	6377	ST. ALBERT TRAIL / HOLY CROSS	NX	0	0	0	0	0	0	0	706	0.6	423.6
43	6381	156 STREET / 156 STREET	NF	0	0	0	0	0	0	6	700	0.6	420.0
44	6482	ST. ALBERT TRAIL / SEMINARY	NX	0	0	0	0	0	0	0	700	0.6	420.0
45	0915	GERVAIS ROAD / ST.ALBERT ROAD	WB	0	0	0	0	0	0	38	662	0.6	397.2
46	0959	VILLAGE TRANSIT / STATION	ARR	7	0	4	0	0	11	330	347	0.0	0.0
47	0962	VILLAGE TRANSIT / STATION	DEP	18	46	3	0	0	67	55	348	1.2	410.6
48	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	9	339	1.2	400.0
49	0971	ST.ALBERT CENTRE / EXCHANGE	ARR	48	30	5	1	1	85	237	187	0.0	0.0
		Totals		**859**	**381**	**64**	**140**	**69**	**1513**	**1400**		**32.3**	**18140.7**

Fare Distribution	57%	25%	4%	9%	5%
Average Passenger Km	12.0				
Total Route Service Hours	36.8				
Passengers Per Hour	41.2				

202 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0971	ST.ALBERT CENTRE / EXCHANGE	DEP	3	34	4	0	3	44	0	90	0.4	36.0
2	0169	ST. ALBERT ROAD / MADISON AVE.	SF	0	3	0	0	0	3	0	93	0.4	37.2
3	0111	ST. ANNE STREET / PERRON STREET	WF	0	0	0	2	0	2	3	92	0.4	36.8
4	0113	ST. ANNE STREET / COURT HOUSE	SB	1	0	0	0	0	1	1	92	0.4	36.8
5	0115	GRANDIN ROAD / GRANDIN MALL	SB	1	0	2	0	1	4	2	94	0.4	37.6
6	0123	GRANDIN ROAD / GLEN MEADOW CRES.	SX	0	0	0	0	0	0	0	94	0.4	37.6
7	0125	GRANDIN ROAD / GRANDVILLE AVE.	SF	0	0	0	0	0	0	0	94	0.4	37.6
8	0960	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	7	87	0.0	0.0
9	0960	VILLAGE TRANSIT / STATION	DEP	6	46	0	4	0	56	6	137	1.1	154.8
10	0917	GERVAIS ROAD / GLOUCESTER DRIVE	EB	1	2	0	2	0	5	0	142	1.1	160.5
11	6463	ST. ALBERT TRAIL / SEMINARY	SB	0	0	0	0	0	0	0	142	1.1	160.5
12	6424	156 STREET / 156 STREET	SF	0	0	0	0	0	0	0	142	1.1	160.5
13	6297	ST. ALBERT TRAIL / HOLY CROSS	SB	0	0	0	0	0	0	0	142	1.1	160.5
14	6273	ST. ALBERT TRAIL / JOHNNY C'S	SB	0	0	0	0	0	0	0	142	1.1	160.5
15	6760	ST. ALBERT TRAIL / 136 AVENUE	SF	0	0	0	0	0	0	0	142	1.1	160.5
16	6488	ST. ALBERT TRAIL / 134 AVENUE	SF	2	0	0	0	0	2	0	144	1.1	162.7
17	6540	ST. ALBERT TRAIL / 131 AVENUE	SF	1	0	0	1	1	3	0	147	1.1	166.1
18	6388	ST. ALBERT TRAIL / 130 AVENUE	SF	1	0	0	0	0	1	0	148	1.1	167.2
19	6272	ST. ALBERT TRAIL / 128 AVENUE	SF	2	0	0	0	0	2	0	150	1.1	169.5
20	1223	106 STREET / 117 AVENUE	SF	2	1	0	0	0	3	55	98	1.7	161.7
21	1631	109 STREET / 113 AVENUE	SB	0	0	0	0	0	0	1	97	1.7	160.1
22	1824	108 STREET / 104 AVENUE	EB	5	6	0	0	0	11	68	47	0.3	12.2
23	1871	102 AVENUE / 107 STREET	EB	9	0	0	0	0	9	3	53	0.3	13.8
24	1783	102 AVENUE / 105 STREET	EB	9	0	0	0	0	9	3	59	0.3	15.3
25	1820	102 AVENUE / 103 STREET	EB	30	0	0	6	1	37	8	88	0.3	22.9
26	1966	102 AVENUE / 101 STREET	EB	43	1	1	4	0	49	15	122	0.3	31.7
27	1707	102 AVENUE / 100 STREET	EB	5	1	0	0	1	7	4	125	0.3	32.5
28	1253	97 STREET / 102 AVENUE	NB	15	0	0	2	0	17	2	140	0.3	36.4
29	1555	97 STREET / 103 AVENUE	NB	3	0	0	1	0	4	0	144	0.8	119.5
30	1479	97 STREET / 103A AVENUE	NB	9	0	0	0	0	9	0	153	0.8	127.0
31	1866	102 STREET / KINGSWAY AVENUE	NF	26	0	2	4	2	34	1	186	0.8	154.4
32	1103	KINGSWAY TRANSIT CENTRE	NB	8	3	2	1	1	15	6	153	0.8	127.0
33	1227	106 STREET / 117 AVENUE	NF	18	153	1	4	2	178	1	330	1.0	336.6
34	6227	ST. ALBERT TRAIL / YELLOWHEAD TRAIL	NF	0	0	0	0	0	0	0	372	1.0	379.4
35	6550	ST. ALBERT TRAIL / 128 AVENUE	NF	1	0	0	0	0	1	0	373	1.0	380.5
36	6533	ST. ALBERT TRAIL / 130 AVENUE	NF	0	0	0	0	0	0	0	373	1.0	380.5
37	6226	ST. ALBERT TRAIL / 132 AVENUE	NF	0	0	0	0	0	0	0	373	1.0	380.5
38	6152	ST. ALBERT TRAIL / 134 AVENUE	NF	0	0	0	0	0	0	0	373	1.0	380.5
39	6673	ST. ALBERT TRAIL / 137 AVENUE	NN	1	0	0	0	0	1	1	373	1.0	380.5
40	6161	ST. ALBERT TRAIL / JOHNNY C'S	NX	0	0	0	0	0	0	0	373	1.0	380.5
41	6377	ST. ALBERT TRAIL / HOLY CROSS	NX	0	0	0	0	0	0	0	373	1.0	380.5
42	6381	156 STREET / 156 STREET	NF	0	0	0	0	0	0	0	373	1.0	380.5
43	6482	ST. ALBERT TRAIL / SEMINARY	NX	0	0	0	0	0	0	0	373	1.0	380.5
44	0952	VILLAGE TRANSIT / STATION	ARR	3	0	1	0	1	5	222	156	0.0	0.0
45	0952	VILLAGE TRANSIT / STATION	DEP	2	9	2	1	0	14	0	170	0.5	79.9

202 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
46	0001	GRANDIN ROAD / GREEN LEE PL	NN	0	0	0	0	0	0	0	49	0.5	23.0
47	0003	GRANDIN ROAD / GREEN MEADOW CRES.	NM	0	0	0	0	0	0	0	49	0.5	23.0
48	0065	GRANDIN ROAD / PROVINCIAL BLDG.	NB	1	0	1	0	0	2	2	49	0.5	23.0
49	0067	ST. ANNE STREET / ST. ALBERT PLACE	NX	0	0	0	0	0	0	3	46	0.5	21.6
50	0069	ST. ANNE STREET / PERRON STREET	EM	0	0	0	0	0	0	1	45	0.5	21.2
50.5	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	1	120	1.2	141.6
51	0971	ST.ALBERT CENTRE / EXCHANGE	ARR	0	0	0	0	0	0	133	32	0.0	0.0
			Totals	**208**	**259**	**16**	**32**	**13**	**528**	**549**		**38.9**	**7530.8**
		Fare Distribution		39%	49%	3%	6%	2%					
		Average Passenger Km		14.3									
		Total Route Service Hours		16.7									
		Passengers Per Hour		31.7									

203 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0971	ST.ALBERT CENTRE / EXCHANGE	DEP	58	170	8	12	7	255	7	266	0.6	156.9
2	0169	ST. ALBERT ROAD / MADISON AVE.	SF	1	0	0	0	0	1	0	267	0.6	157.5
3	0173	ST. ANNE STREET / ST. ALBERT ROAD	SF	2	2	0	0	0	4	1	270	0.6	159.3
4	0175	ST. ALBERT ROAD / GREEN GROVE DRIVE	SF	1	0	0	0	0	1	0	271	0.6	159.9
5	0957	VILLAGE TRANSIT / STATION	ARR	9	76	2	2	2	91	8	354	0.0	0.0
6	0957	VILLAGE TRANSIT / STATION	DEP	25	258	7	2	2	294	19	685	0.6	431.6
7	0919	GERVAIS ROAD / GLOUCESTER DRIVE	EB	2	23	0	0	1	26	2	709	0.6	446.7
8	6463	ST. ALBERT TRAIL / SEMINARY	SB	0	0	0	0	0	0	0	709	0.6	446.7
9	6424	156 STREET / 156 STREET	SF	1	0	0	0	0	1	0	710	0.6	447.3
10	6297	ST. ALBERT TRAIL / HOLY CROSS	SB	0	0	0	0	0	0	0	710	0.6	447.3
11	6273	ST. ALBERT TRAIL / JOHNNY C'S	SB	0	0	0	0	0	0	0	710	0.6	447.3
12	6760	ST. ALBERT TRAIL / 136 AVENUE	SF	4	0	0	2	1	7	2	715	0.6	450.5
13	6488	ST. ALBERT TRAIL / 134 AVENUE	SF	7	0	0	0	0	7	0	722	0.6	454.9
14	6540	ST. ALBERT TRAIL / 131 AVENUE	SF	7	3	1	1	2	14	1	735	0.6	463.1
15	6388	ST. ALBERT TRAIL / 130 AVENUE	SF	0	0	0	0	0	0	0	735	0.6	463.1
16	6272	ST. ALBERT TRAIL / 128 AVENUE	SF	5	0	0	1	0	6	2	739	0.6	465.6
17	5173	ST. ALBERT TRAIL / YELLOWHEAD TRAIL	SF	0	0	0	0	0	0	1	738	0.6	464.9
18	5356	ST. ALBERT TRAIL / DOVERCOURT AVENUE	SF	0	0	0	0	0	0	5	733	0.6	461.8
19	5083	GROAT ROAD / 118 AVENUE	SF	0	5	0	0	0	5	3	735	0.6	463.1
20	5211	135 STREET / WESTMOUNT TC	SX	7	24	1	0	0	32	84	683	2.8	1912.4
21	2844	116 STREET / 87 AVENUE	EF	0	0	0	0	0	0	69	614	2.8	1719.2
22	2636	UNIVERSITY / TRANSIT CENTRE	ARR	4	6	1	0	0	11	571	54	0.0	0.0
23	2636	UNIVERSITY / TRANSIT CENTRE	DEP	29	380	0	5	3	417	40	430	1.7	709.5
24	2882	112 STREET / 87 AVENUE	WF	5	9	0	2	0	16	1	445	1.7	734.3
25	2749	114 STREET / 87 AVENUE	WF	19	37	0	2	1	59	0	504	1.7	831.6
26	2851	116 STREET / 87 AVENUE	WF	4	5	1	2	2	14	0	518	1.7	854.7
27	5206	135 STREET / WESTMOUNT TC	NX	45	6	7	4	5	67	56	529	0.6	333.3
28	1947	ST. ALBERT TRAIL / 118 AVENUE	NF	5	1	0	0	1	7	6	530	0.6	333.9
29	1759	ST. ALBERT TRAIL / SHERBROOKE AVENUE	NF	4	0	0	0	0	4	2	532	0.6	335.2
30	1604	ST. ALBERT TRAIL / YELLOWHEAD TRAIL	NB	1	0	0	0	0	1	0	533	0.6	335.8
31	6550	ST. ALBERT TRAIL / 128 AVENUE	NF	1	0	0	0	0	1	3	531	0.6	334.5
32	6533	ST. ALBERT TRAIL / 130 AVENUE	NF	0	0	0	0	0	0	3	528	0.6	332.6
33	6226	ST. ALBERT TRAIL / 132 AVENUE	NF	0	0	0	0	0	0	11	517	0.6	325.7
34	6152	ST. ALBERT TRAIL / 134 AVENUE	NF	1	0	0	0	0	1	8	510	0.6	321.3
35	6673	ST. ALBERT TRAIL / 137 AVENUE	NN	0	0	0	0	0	0	5	505	0.6	318.2
36	6161	ST. ALBERT TRAIL / JOHNNY C'S	NX	0	0	0	0	0	0	8	497	0.6	313.1
37	6377	ST. ALBERT TRAIL / HOLY CROSS	NX	0	0	0	0	0	0	0	497	0.6	313.1
38	6381	156 STREET / 156 STREET	NF	0	0	0	0	0	0	1	496	0.6	312.5
39	6482	ST. ALBERT TRAIL / SEMINARY	NX	0	0	0	0	0	0	0	496	0.6	312.5
40	0915	GERVAIS ROAD / ST.ALBERT ROAD	WB	0	0	0	0	0	0	23	473	0.6	298.0

203 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	0962	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	250	223	0.0	0.0
42	0962	VILLAGE TRANSIT / STATION	DEP	2	1	1	2	1	7	25	200	1.2	236.0
43	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	3	197	1.2	232.5
44	0971	ST.ALBERT CENTRE / EXCHANGE	ARR	3	2	1	0	0	6	197	6	0.0	0.0
			Totals	**252**	**1008**	**30**	**37**	**28**	**1355**	**1417**		**34.6**	**18736.9**

Fare Distribution	19%	74%	2%	3%	2%
Average Passenger Km	13.8				
Total Route Service Hours	38.1				
Passengers Per Hour	35.6				

204 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0971	ST.ALBERT CENTRE / EXCHANGE	DEP	13	142	4	1	1	161	0	167	0.6	98.5
2	0169	ST. ALBERT ROAD / MADISON AVE.	SF	0	0	0	0	0	0	0	167	0.6	98.5
3	0173	ST. ANNE STREET / ST. ALBERT ROAD	SF	0	1	0	0	0	1	0	168	0.6	99.1
4	0175	ST. ALBERT ROAD / GREEN GROVE DRIVE	SF	2	5	0	0	1	8	0	176	0.6	103.8
5	0957	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	4	30	0.0	0.0
6	0957	VILLAGE TRANSIT / STATION	DEP	1	17	0	0	0	18	0	48	4.7	225.6
7	0919	GERVAIS ROAD / GLOUCESTER DRIVE	EB	0	1	0	0	0	1	0	49	4.7	230.3
8	2844	116 STREET / 87 AVENUE	EF	0	0	0	0	0	0	19	172	4.7	808.4
9	2636	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	172	0	0.0	0.0
10	2636	UNIVERSITY / TRANSIT CENTRE	DEP	1	270	2	0	3	276	0	277	2.9	797.8
11	2882	112 STREET / 87 AVENUE	WF	0	3	0	0	0	3	0	280	2.9	806.4
12	2749	114 STREET / 87 AVENUE	WF	4	9	0	2	0	15	0	295	2.9	849.6
13	2851	116 STREET / 87 AVENUE	WF	0	2	0	0	1	3	2	296	2.9	852.5
14	0915	GERVAIS ROAD / ST.ALBERT ROAD	WB	0	0	0	0	0	0	16	280	2.9	806.4
15	0957	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	158	122	0.0	0.0
16	0962	VILLAGE TRANSIT / STATION	DEP	4	0	0	1	0	5	29	98	1.2	115.6
17	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	1	97	1.2	114.5
18	0971	ST.ALBERT CENTRE / EXCHANGE	ARR	0	0	0	0	0	0	95	2	0.0	0.0
			Totals	**25**	**450**	**6**	**4**	**6**	**491**	**496**		**33.2**	**6007.1**

Fare Distribution	5%	92%	1%	1%	1%	
Average Passenger Km	12.2					
Total Route Service Hours	10.1					
Passengers Per Hour	48.8					

205 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0958	VILLAGE TRANSIT / STATION	DEP	37	0	14	5	4	60	1	96	0.7	62.4
2	0921	GERVAIS ROAD / GRANGE DRIVE	WB	2	0	0	0	0	2	0	98	0.7	63.7
3	0659	GERVAIS ROAD / GOVERNORS HILL	SB	0	0	0	0	0	0	0	98	0.7	63.7
4	6188	170 STREET / 128A AVENUE	SB	7	0	0	1	3	11	1	108	0.7	70.2
5	8191	170 STREET / 118 AVENUE	SF	1	0	0	0	0	1	8	101	0.7	65.7
6	8122	170 STREET / 117 AVENUE	SB	2	0	0	1	0	3	2	102	0.7	66.3
7	8483	170 STREET / 114 AVENUE	SF	3	0	0	1	2	6	5	103	0.7	67.0
8	8497	170 STREET / 111 AVENUE	SF	0	0	0	0	2	2	1	104	0.7	67.6
9	8395	170 STREET / 109 AVENUE	SF	2	0	0	0	2	4	2	106	0.7	68.9
10	8861	107 AVENUE / 170 STREET	WF	4	0	0	1	0	5	2	109	0.7	70.9
11	8917	107 AVENUE / 176 STREET	WF	0	0	0	0	0	0	0	109	0.7	70.9
12	8952	178 STREET / 107 AVENUE	SF	1	0	0	1	0	2	0	111	0.7	72.2
13	8765	178 STREET / 105 AVENUE	SF	6	0	0	2	2	10	3	118	0.7	76.7
14	8838	178 STREET / 103 AVENUE	SF	0	0	0	0	0	0	2	116	0.7	75.4
15	8752	178 STREET / 102 AVENUE	SF	0	0	0	2	1	3	4	115	0.7	74.8
16	5794	178 STREET / STONY PLAIN ROAD	SB	13	0	0	0	1	14	8	121	2.9	350.9
17	5011	WEST EDMONTON MALL / TRANSIT CENTRE	ARR	6	0	2	0	2	10	112	19	0.0	0.0
18	5011	WEST EDMONTON MALL / TRANSIT CENTRE	DEP	57	2	5	7	11	82	0	101	1.3	131.3
19	8848	178 STREET / STONY PLAIN ROAD	NN	1	0	1	0	0	2	1	102	1.3	132.6
20	8506	178 STREET / STONY PLAIN ROAD	NF	1	0	0	0	1	2	1	103	0.6	62.8
21	8742	178 STREET / 102 AVENUE	NF	1	0	0	1	0	2	0	105	0.6	64.1
22	8662	178 STREET / 103 AVENUE	NF	1	0	0	0	0	1	1	105	0.6	64.1
23	8693	178 STREET / 105 AVENUE	NF	1	0	0	0	0	1	3	103	0.6	62.8
24	8882	107 AVENUE / 178 STREET	EF	0	0	0	0	0	0	3	100	0.6	61.0
25	8944	107 AVENUE / 176 STREET	EF	0	0	0	0	0	0	3	97	0.6	59.2
26	8731	107 AVENUE / 172 STREET	EF	0	0	0	0	0	0	2	95	0.6	58.0
27	8936	170 STREET / 107 AVENUE	NF	0	0	0	0	0	0	2	93	0.6	56.7
28	8851	170 STREET / 109 AVENUE	NF	0	0	0	0	0	0	2	91	0.6	55.5
29	8935	170 STREET / 111 AVENUE	NF	0	0	0	0	0	0	3	88	0.6	53.7
30	8686	170 STREET / 114 AVENUE	NF	0	0	0	0	0	0	7	81	0.6	49.4
31	8864	170 STREET / 117 AVENUE	NF	3	0	0	4	1	8	3	86	0.6	52.5
32	6196	170 STREET / 128A AVENUE	NB	0	0	0	0	0	0	1	85	0.6	51.9
33	6134	170 STREET / 129 AVENUE	NB	0	0	0	0	0	0	2	83	0.6	50.6
34	0597	GERVAIS ROAD / LAVASSEUR ROAD	NB	0	0	0	0	0	0	0	83	0.6	50.6
35	0923	GERVAIS ROAD / GOODRIDGE DRIVE	EB	0	0	0	0	0	0	1	82	0.6	50.0
36	0958	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	76	6	0.0	0.0
			Totals	**149**	**2**	**22**	**26**	**32**	**231**	**262**		**25.0**	**2553.7**

Fare Distribution	65%	1%	10%	11%	14%
Average Passenger Km	11.1				
Total Route Service Hours	12.1				
Passengers Per Hour	19.1				

208 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0972	ST.ALBERT CENTRE / EXCHANGE	DEP	39	41	1	0	0	81	0	99	14.5	1435.5
2	1824	108 STREET / 104 AVENUE	EB	0	0	0	0	0	0	46	53	0.3	15.9
3	1643	107 STREET / 102 AVENUE	SB	0	0	0	0	0	0	4	49	0.3	14.7
4	1964	107 STREET / JASPER AVENUE	SB	0	0	0	0	0	0	34	15	0.3	4.5
5	1941	107 STREET / 100 AVENUE	SB	0	0	0	0	0	0	13	2	0.3	0.6
6	1304	107 STREET / GOVERNMENT CENTRE	ARR	0	0	0	0	0	0	2	0	0.0	0.0
7	1302	107 STREET / GOVERNMENT CENTRE	DEP	12	0	0	1	0	13	0	13	0.2	3.1
8	1794	107 STREET / 99 AVENUE	NF	24	0	0	2	0	26	0	39	0.2	9.4
9	1711	107 STREET / 100 AVENUE	NB	25	0	0	4	0	29	0	68	0.2	16.3
10	1903	107 STREET / JASPER AVENUE	NB	19	1	0	3	2	25	0	93	0.2	22.3
11	1898	107 STREET / 102 AVENUE	NB	0	0	0	0	0	0	0	93	0.2	22.3
12	1989	104 AVENUE / 107 STREET	WB	6	16	0	1	1	24	0	117	12.0	1404.0
13	0962	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	40	77	0.0	0.0
13	0962	VILLAGE TRANSIT / STATION	DEP	1	0	0	0	0	1	27	51	1.2	60.2
14	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	0	51	1.2	60.2
15	0972	ST. ALBERT CENTRE / EXCHANGE	ARR	0	0	0	0	0	0	40	11	0.0	0.0
			Totals	**126**	**58**	**1**	**11**	**3**	**199**	**206**		**31.3**	**3069.0**

Fare Distribution	63%	29%	1%	6%	2%	
Average Passenger Km	15.4					
Total Route Service Hours	5.5					
Passengers Per Hour	36.5					

209 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0971	ST. ALBERT CENTRE / EXCHANGE	DEP	27	84	3	0	0	114	0	198	0.6	116.8
2	0169	ST. ALBERT ROAD / MADISON AVENUE	SF	1	0	0	0	0	1	0	199	0.6	117.4
3	0173	ST. ALBERT ROAD / ST. ANNE STREET	SF	0	0	0	0	0	0	0	199	0.6	117.4
4	0175	ST. ALBERT ROAD / GREEN GROVE DRIVE	SF	0	0	0	0	0	0	0	199	0.6	117.4
5	0960	VILLAGE TRANSIT / STATION	ARR	34	58	4	3	1	100	4	295	0.0	0.0
6	0960	VILLAGE TRANSIT / STATION	DEP	38	98	1	1	2	140	2	468	1.0	468.0
7	0917	GERVAIS ROAD / GLOUCESTER DRIVE	EB	3	3	0	0	0	6	0	474	10.3	4882.2
8	1223	106 STREET / 117 AVENUE	SF	0	1	0	0	0	1	164	311	1.4	419.9
9	1631	109 STREET / 113 AVENUE	SB	0	0	0	0	0	0	2	309	1.4	417.2
10	1824	108 STREET / 104 AVENUE	EB	1	0	0	0	0	1	174	136	0.3	40.8
11	1643	107 STREET / 102 AVENUE	SB	2	0	0	0	0	2	14	124	0.3	37.2
12	1964	107 STREET / JASPER AVENUE	SB	0	0	1	0	0	1	73	52	0.3	15.6
13	1941	107 STREET / 100 AVENUE	SB	1	0	0	0	0	1	45	8	0.3	2.4
14	1304	107 STREET / GOVERNMENT CENTRE	ARR	0	0	0	0	0	0	8	0	0.0	0.0
15	1302	107 STREET / GOVERNMENT CENTRE	DEP	8	0	0	1	1	10	0	10	0.2	2.4
16	1794	107 STREET / 99 AVENUE	NF	17	2	0	0	0	19	0	29	0.2	7.0
17	1711	107 STREET / 100 AVENUE	NB	18	0	0	4	0	22	0	51	0.2	12.2
18	1903	107 STREET / JASPER AVENUE	NB	7	0	0	0	0	7	1	57	0.2	13.7
19	1898	107 STREET / 102 AVENUE	NB	10	3	0	1	0	14	0	71	0.2	17.0
20	1989	107 STREET / 104 AVENUE	WB	2	62	0	2	2	68	0	139	1.4	187.7
21	1674	109 STREET / 113 AVENUE	NB	0	0	0	0	0	0	0	139	1.4	187.7
22	1227	106 STREET / 117 AVENUE	NF	2	27	0	4	0	33	0	172	11.4	1960.8
23	0962	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	67	105	0.0	0.0
24	0962	VILLAGE TRANSIT / STATION	DEP	1	0	1	0	1	3	34	74	1.2	87.3
25	0129	ST. ALBERT ROAD / STERLING STREET	NF	0	0	0	0	0	0	0	74	1.2	87.3
26	0971	ST. ALBERT CENTRE / EXCHANGE	ARR	1	1	1	0	0	3	55	22	0.0	0.0
			Totals	**173**	**339**	**11**	**16**	**7**	**546**	**643**		**35.2**	**9315.3**

Fare Distribution	32%	62%	2%	3%	1%
Average Passenger Km	17.1				
Total Route Service Hours	13.4				
Passengers Per Hour	40.8				

211 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0973	ST.ALBERT CENTRE / EXCHANGE	DEP	26	0	0	0	0	26	0	75	2.4	176.3
2	0961	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	0	75	0.0	0.0
3	0961	VILLAGE TRANSIT / STATION	DEP	81	2	0	7	1	91	0	169	13.2	2230.8
4	1280	97 STREET / 103A AVENUE	SB	0	0	0	0	0	0	15	154	0.3	40.0
5	1756	102 AVE / 97 STREET	WB	0	0	0	0	0	0	31	123	0.3	32.0
6	1763	102 AVE / 100 STREET	WB	0	0	0	0	0	0	64	59	0.3	15.3
7	1655	102 AVE / 101 STREET	WB	0	0	0	0	0	0	34	25	0.3	6.5
8	1868	VILLAGE TRANSIT / STATION	WB	0	0	0	0	0	0	15	10	0.3	2.6
9	1837	102 AVE / 105 STREET	WB	0	0	0	0	0	0	5	5	0.3	1.3
10	1898	107 STREET / 102 AVENUE	NB	0	0	0	0	0	0	4	1	0.3	0.3
11	1989	107 STREET / 104 AVENUE	ARR	0	0	0	0	0	0	1	0	0.0	0.0
			Totals	**107**	**2**	**0**	**7**	**1**	**117**	**169**		**17.4**	**2505.1**

Fare Distribution	91%	2%	0%	6%	1%
Average Passenger Km	21.4				
Total Route Service Hours	3.12				
Passengers Per Hour	37.54				

A1 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0956	VILLAGE TRANSIT / STATION	DEP	30	15	14	3	0	62	0	68	0.3	19.0
2	0033	GRANDIN ROAD / GRANDORA CRESCENT	SF	0	0	0	0	0	0	0	68	0.3	19.0
3	0035	GRANITE AVENUE / GRANDIN ROAD	WF	0	0	0	0	0	0	1	67	0.3	18.8
4	0037	GRANITE AVENUE / GROSVENOR BOULEVAR	WN	0	0	0	0	0	0	9	58	0.3	16.2
5	0729	GROSVENOR BOULEVARD / GAINSBOROUGH	SB	1	0	0	0	0	1	3	56	0.3	15.7
6	0733	LEVASSEUR ROAD / GROSVENOR BOULEVAR	EB	0	0	0	0	0	0	2	54	0.3	15.1
7	0643	HUDSON ROAD / HENRI CLOSE	SB	0	0	0	0	0	0	2	52	0.3	14.6
8	0737	HERITAGE DRIVE / HUDSON ROAD	SB	1	0	0	0	1	2	2	52	0.3	14.6
9	0741	HERITAGE DRIVE / HAVILAND CRESCENT	SB	0	0	0	3	0	3	2	53	0.3	14.8
10	0745	HERITAGE DRIVE / HAVILAND CRESCENT	WB	0	0	0	1	0	1	3	51	0.3	14.3
11	0749	HERITAGE DRIVE / HARDCASTLE PLACE	WB	0	0	0	0	1	1	3	49	0.3	13.7
12	0753	HARWOOD DRIVE / HERITAGE DRIVE	SB	0	0	0	0	0	0	5	44	0.3	12.3
13	0523	HARWOOD DRIVE / HAYES PLACE	WB	3	0	0	0	0	3	4	43	0.3	12.0
14	0513	HARWOOD DRIVE / HERITAGE BLVD	NB	0	1	0	1	0	2	2	43	0.3	12.0
15	0755	HARWOOD DRIVE / HART PLACE	EB	0	0	0	0	0	0	4	39	0.3	10.9
16	0761	HERITAGE WAY / HARWOOD DRIVE	NB	0	0	0	0	0	0	0	39	0.3	10.9
17	0045	GAINSBOROUGH AVENUE / ALBERT LACOME	WB	1	0	0	0	1	2	2	39	0.3	10.9
18	0047	GAINSBOROUGH AVENUE / GRENFELL AVEN	WF	0	0	0	1	0	1	3	37	0.3	10.4
19	0049	GAINSBOROUGH AVENUE / SIR WINSTON CH	WN	1	1	0	0	0	2	5	34	0.3	11.2
20	0051	SIR WINSTON CHURCHILL AVENUE / GAINSB	NM	1	0	0	0	0	1	0	35	0.3	11.6
21	0053	SIR WINSTON CHURCHILL AVENUE / GRANDI	NB	1	1	0	0	0	2	3	34	0.3	11.2
22	0055	SIR WINSTON CHURCHILL AVENUE / GATEW	NN	0	0	0	0	0	0	3	31	0.3	10.2
23	0057	GRENFELL AVENUE / GREYSTONE PLACE	NN	1	1	0	0	1	3	2	32	0.3	10.6
24	0059	GRENFELL AVENUE / GREENWICH CRESCENT	EF	1	0	0	0	1	2	0	34	0.3	11.2
25	0061	GRENFELL AVENUE / GENEVA CRESCENT	EF	1	1	0	0	0	2	0	36	0.3	11.9
26	0063	GROSVENOR BOULEVARD / GLENMORE CRES	NN	0	0	0	0	0	0	0	36	0.3	11.9
27	0065	GRANDIN ROAD / PROVINCIAL BUILDING	NB	1	0	0	0	0	1	3	34	0.3	10.9
28	0067	ST. ANNE STREET / ST. ALBERT PLACE	NX	0	0	0	0	0	0	7	26	0.3	8.3
29	0767	MISSION AVENUE / ECOLE FATHER JAN SCHO	WB	1	0	0	0	0	1	2	25	0.3	8.0
30	0769	MISSION AVENUE / MILL DRIVE	WB	0	0	0	0	0	0	0	25	0.3	8.0
31	0371	ST. VITAL AVENUE / MISSION AVENUE	EF	0	0	0	0	0	0	3	22	0.3	7.0
32	0493	ST. VITAL AVENUE / MISSION PLACE	EF	0	0	0	0	0	0	0	22	0.3	7.0
33	0373	ST. VITAL AVENUE / MOUNT ROYAL DRIVE	EF	0	0	1	2	0	3	0	25	0.3	8.0
34	0375	ST. VITAL AVENUE / YOUVILLE HOME	EX	0	0	0	1	0	1	1	25	0.3	8.0
35	0377	ST. VITAL AVENUE / ST. ALBERT ROAD	EN	0	0	0	0	0	0	1	24	0.3	7.7
36	0973	ST. ALBERT CENTRE / EXCHANGE	ARR	2	3	0	0	1	6	21	9	0.0	0.0
37	0973	ST. ALBERT CENTRE / EXCHANGE	DEP	10	0	8	1	2	21	0	24	0.3	7.2
38	0117	ST. VITAL AVENUE / MUIR DRIVE	WF	0	0	0	0	0	0	0	24	0.3	7.2
39	0119	ST. VITAL AVENUE / YOUVILLE HOME	WB	0	0	0	1	0	1	2	23	0.3	6.9
40	0121	ST. VITAL AVENUE / MONT CLARE PLACE	WM	0	0	0	0	1	1	0	24	0.3	7.2

A1 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	0495	ST. VITAL AVENUE / MALMO AVENUE	WF	2	0	0	0	0	2	1	25	0.3	7.5
42	0105	MISSION AVENUE / ST. VITAL AVENUE	SF	0	0	0	0	0	0	0	25	0.3	7.5
43	0107	MISSION AVENUE / MILL DRIVE	EX	0	0	0	0	0	0	1	24	0.3	7.2
44	0109	MISSION AVENUE / CHATEAU MISSION COUR	EB	0	0	0	0	0	0	1	23	0.3	6.9
45	0111	ST. ANNE STREET / PERRON STREET	WF	0	0	0	0	0	0	1	22	0.3	6.6
46	0113	ST. ANNE STREET / COURT HOUSE	SB	1	0	0	0	1	2	2	22	0.3	6.6
47	0115	GRANDIN ROAD / GRANDIN MALL	SB	1	0	0	0	0	1	1	22	0.4	8.1
48	0005	GROSVENOR BOULEVARD / GLENMORE CRES	SX	1	0	0	0	0	1	0	23	0.4	8.5
49	0007	GRENFELL AVENUE / GRESHAM BOULEVARD	WN	1	0	0	0	0	1	1	23	0.4	8.5
50	0009	GRENFELL AVENUE / GLENHAVEN CRESCENT	WF	1	0	0	0	0	1	0	24	0.4	8.9
51	0011	GATEWOOD AVENUE / GRENFELL AVENUE	WF	3	0	0	0	0	3	2	25	0.4	9.3
52	0013	SIR WINSTON CHURCHILL AVENUE / GATEWO	SF	1	0	0	0	0	1	0	26	0.4	9.6
53	0015	SIR WINSTON CHURCHILL AVENUE / GRANDI	SX	0	2	0	0	2	4	2	28	0.4	10.4
54	0017	GAINSBOROUGH AVENUE / GRANADA PLACE	EX	6	2	0	1	1	10	5	33	0.3	9.2
55	0019	GAINSBOROUGH AVENUE / GRENFELL AVEN	EN	0	0	0	0	0	0	1	32	0.3	9.0
56	0021	GAINSBOROUGH AVENUE / GRAHAM AVENU	EN	0	2	0	1	0	3	2	33	0.3	9.2
57	0759	HARWOOD DRIVE / HESSE PLACE	WB	1	2	0	0	0	3	0	36	0.3	10.1
58	0757	HARWOOD DRIVE / HAYES PLACE	WB	0	1	0	1	0	2	0	38	0.3	10.6
59	0515	HARWOOD DRIVE / HERITAGE BLVD	SB	1	3	0	0	0	4	3	39	0.3	10.9
60	0525	HARWOOD DRIVE / HAMOIS PLACE	EB	0	2	0	0	0	2	0	41	0.3	11.5
61	0557	HARWOOD DRIVE / HAMPTON CRESENT	EB	2	1	0	0	0	3	0	44	0.3	12.3
62	0751	HERITAGE DRIVE / HARWOOD DRIVE	EB	0	1	0	0	0	1	0	45	0.3	12.6
63	0747	HERITAGE DRIVE / HARDCASTLE PLACE	EB	0	3	0	0	0	3	0	48	0.3	13.4
64	0743	HERITAGE DRIVE / HAYDEN PLACE	NB	3	0	0	0	0	3	0	51	0.3	14.3
65	0739	HERITAGE DRIVE / HANOVER PLACE	NB	1	1	0	1	0	3	0	54	0.3	15.1
66	0735	HUDSON ROAD / HERITAGE DRIVE	NB	4	5	0	0	1	10	0	64	0.3	17.9
67	0731	GROSVENOR BOULEVARD / LEVASSEUR ROA	NB	0	0	0	1	0	1	0	65	0.3	18.2
68	0727	GROSVENOR BOULEVARD / GORDON CRESC	WB	2	1	0	0	0	3	2	66	0.3	18.5
69	0027	GROSVENOR BOULEVARD / GRANITE AVENU	EF	0	0	0	1	1	2	1	67	0.3	18.8
70	0029	GRANITE AVENUE / GRANDIN ROAD	EN	1	0	0	0	0	1	0	68	0.3	19.0
71	0031	GRANDIN ROAD / GRANDORA CRESCENT	NX	0	0	0	0	0	0	0	68	0.3	19.0
72	0956	VILLAGE TRANSIT / STATION	ARR	0	27	1	0	1	29	60	38	0.0	0.0
		Totals		**88**	**76**	**24**	**20**	**16**	**224**	**186**		**21.2**	**801.9**

Fare Distribution	39%	34%	11%	9%	7%
Average Passenger Km	3.6				
Total Route Service Hours	16.3				
Passengers Per Hour	13.8				

A2 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0956	VILLAGE TRANSIT / STATION	DEP	10	10	3	0	0	23	0	28	0.3	9.2
2	0033	GRANDIN ROAD / GRANDORA CRESCENT	SF	0	0	0	0	0	0	1	27	0.3	8.9
3	0911	GRANDIN ROAD / GORDON CRESENT	SB	0	0	0	0	0	0	1	26	0.3	8.6
4	0643	HUDSON ROAD / HENRI CLOSE	SB	0	0	0	0	0	0	2	24	0.3	7.9
5	0645	HERITAGE DRIVE / HUDSON ROAD	WB	0	1	0	0	0	1	4	21	0.3	6.3
6	0647	HERITAGE DRIVE / HIGHLAND CRESCENT	WB	0	4	0	0	0	4	2	23	0.3	6.9
7	0657	HERITAGE DRIVE / HILCREST PLACE	WB	2	0	0	0	0	2	6	19	0.3	5.7
8	0759	HARWOOD DRIVE / HESSE PLACE	WB	0	0	0	0	0	0	0	19	0.3	5.7
9	0757	HARWOOD DRIVE / HAYES PLACE	WB	2	0	0	0	0	2	1	20	0.3	6.0
10	0515	HARWOOD DRIVE / HERITAGE BLVD	SB	1	1	0	0	0	2	1	21	0.3	6.5
11	0525	HARWOOD DRIVE / HAMOIS PLACE	EB	1	8	0	0	0	9	2	28	0.3	8.7
12	0557	HARWOOD DRIVE / HAMPTON CRESENT	EB	1	1	0	0	0	2	3	27	0.3	8.4
13	0751	HERITAGE DRIVE / HARWOOD DRIVE	EB	1	1	0	0	0	2	2	27	0.3	8.4
14	0747	HERITAGE DRIVE / HARDCASTLE PLACE	EB	4	2	0	0	0	6	2	31	0.3	9.6
15	0743	HERITAGE DRIVE / HAYDEN PLACE	NB	1	0	0	1	0	2	0	33	0.3	10.2
16	0739	HERITAGE DRIVE / HANOVER PLACE	NB	1	2	0	0	0	3	0	36	0.3	11.2
17	0735	HUDSON ROAD / HERITAGE DRIVE	NB	2	1	0	3	0	6	0	42	0.3	13.0
18	0913	GRANDIN ROAD / GORDON CRESENT	NB	2	0	0	0	0	2	0	44	0.3	13.6
19	0031	GRANDIN ROAD / GRANDORA CRESCENT	NX	1	2	0	0	0	3	0	47	0.3	14.6
20	0956	VILLAGE TRANSIT / STATION	ARR	15	11	2	2	0	30	29	48	0.0	0.0
			Totals	**44**	**44**	**5**	**6**	**0**	**99**	**56**		**5.9**	**169.4**

Fare Distribution	44%	44%	5%	6%	0%
Average Passenger Km	1.7				
Total Route Service Hours	2.7				
Passengers Per Hour	36.7				

A3 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0956	VILLAGE TRANSIT / STATION	DEP	32	2	3	0	0	37	0	37	0.3	9.3
2	0033	GRANDIN ROAD / GRANDORA CRES.	SF	0	0	0	0	0	0	0	37	0.3	9.3
3	0035	GRANDIN ROAD / GRANITE AVE.	WF	0	0	0	0	0	0	1	36	0.3	9.0
4	0037	GROSVENOR BLVD / GRANITE AVE.	WN	2	0	0	1	0	3	0	39	0.3	9.8
5	0039	GAINSBOROUGH AVENUE / GROSVENOR BOU	WF	1	0	0	0	0	1	1	39	0.3	9.8
6	0041	GAINSBOROUGH AVENUE / GLADSTONE CRE	WF	0	0	0	0	0	0	1	38	0.3	9.5
7	0045	ALBERT LACOMBE SCHL / GAINSBOROUGH A	WB	3	0	0	0	0	3	1	40	0.3	10.0
8	0047	GRENFELL AVE. / GAINSBOROUGH AVE.	WF	2	1	0	0	0	3	4	39	0.3	9.8
9	0049	SIR WIN CHURCH AVE. / GAINSBOROUGH AV	WN	5	1	0	0	0	6	8	37	0.3	11.1
10	0051	GAINSBOROUGH AVE. / SIR WIN CHURCH AV	NM	1	1	0	0	1	3	1	39	0.3	11.7
11	0053	GRANDIN VILLAGE / SIR WIN CHURCH AVE.	NB	3	0	0	0	1	4	4	39	0.3	11.7
12	0055	GATEWOOD AVE. / SIR WIN CHURCH AVE.	NN	2	0	0	0	0	2	0	41	0.3	12.3
13	0057	GREYSTONE PLACE / GRENFELL AVE.	NN	3	1	0	0	0	4	6	39	0.3	11.7
14	0059	GREENWICH CRES. / GRENFELL AVE.	EF	2	2	0	2	0	6	3	42	0.3	12.6
15	0061	GENEVA CRES. / GRENFELL AVE.	EF	2	0	0	0	0	2	1	43	0.3	12.9
16	0063	GROSVENOR BLVD. / GLENMORE CRES.	NN	0	0	0	0	0	0	0	43	0.5	20.2
17	0123	GRANDIN ROAD / GLEN MEADOW CRES.	SX	0	1	0	0	0	1	0	44	0.5	20.7
18	0125	GRANDIN ROAD / GRANDVILLE AVE.	SF	0	0	0	0	0	0	0	44	0.5	20.7
19	0956	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	41	3	0.0	0.0
			Totals	**58**	**9**	**3**	**3**	**2**	**75**	**72**		**5.5**	**221.8**

Fare Distribution	77%	12%	4%	4%	3%
Average Passenger Km	3.0				
Total Route Service Hours	3.9				
Passengers Per Hour	19.5				

A4 Weekday

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0973	ST. ALBERT CENTRE / EXCHANGE	DEP	39	14	8	1	3	65	3	174	0.3	50.5
2	0117	ST. VITAL AVENUE / MUIR DRIVE	WF	0	0	0	0	0	0	0	174	0.3	50.5
3	0119	ST. VITAL AVENUE / YOUVILLE HOME	WB	0	0	0	1	0	1	1	174	0.3	50.5
4	0121	ST. VITAL AVENUE / MONT CLARE PLACE	WM	0	0	0	1	0	1	4	171	0.3	49.6
5	0495	ST. VITAL AVENUE / MALMO AVENUE	WF	1	0	0	0	1	2	7	166	0.3	48.1
6	0133	MISSION AVENUE / ST. VITAL AVENUE	NF	0	0	0	0	1	1	3	164	0.3	47.6
7	0135	MISSION AVENUE / MILBURN CRESCENT	NM	1	0	0	0	0	1	7	158	0.3	45.8
8	0569	MCKENNEY AVENUE / MISSION AVENUE	WB	0	0	0	0	0	0	1	157	0.3	45.5
9	0137	LAYDON DRIVE / MCKENNEY AVENUE	NF	0	0	0	0	0	0	5	152	0.3	44.1
10	0139	LAYDON DRIVE / LAFONDE CRESCENT	NX	0	0	0	0	0	0	12	140	0.3	40.6
11	0775	LAROSE DRIVE / LAYDON DRIVE	EB	0	0	0	1	0	1	12	129	0.3	37.4
12	0779	LAROSE DRIVE / LANGLEY AVENUE	EB	1	0	0	0	0	1	6	124	0.3	36.0
13	0781	LAROSE DRIVE / LAWRENCE CRESCENT	NB	0	0	0	0	0	0	5	119	0.3	34.5
14	0783	LAROSE DRIVE / LEDDY AVENUE	NB	0	0	0	0	0	0	5	114	0.3	33.1
15	0785	LAROSE DRIVE / LARSON AVENUE	WB	2	0	0	1	1	4	5	113	0.3	32.8
16	0907	LAROSE DRIVE / LORRAINE CRESCENT	WB	0	0	0	0	1	1	3	111	0.3	32.2
17	0789	LAROSE DRIVE / LOCKHART DRIVE	NB	0	0	0	0	0	0	7	104	0.3	30.2
18	0793	GIROUX ROAD / LOCKHART DRIVE	WB	0	1	0	0	0	1	7	98	0.3	28.4
19	0711	GIROUX ROAD / BELLEROSE HIGH SCHOOL	WB	13	0	2	4	0	19	10	107	0.3	32.1
20	0797	GIROUX ROAD / DUNFIELD CRESCENT	WB	1	1	0	1	2	5	10	102	0.3	30.6
21	0989	HOGAN ROAD / NELSON COURT	NB	0	0	0	0	1	1	10	93	0.3	27.9
22	0929	HOGAN ROAD / DUNFIELD CRESENT	NB	0	0	0	0	0	0	6	87	0.3	26.1
23	0801	HOGAN ROAD / DELWOOD PLACE	NB	1	2	0	3	0	6	3	90	0.3	27.0
24	0803	DEER RIDGE DRIVE / DUBONNET WAY	EB	0	0	0	0	0	0	12	78	0.3	23.4
25	0501	DORCHESTER DRIVE / DEER RIDGE DRIVE	SF	1	2	0	0	1	4	9	73	0.3	19.0
26	0425	DORCHESTER DRIVE / DUFFERIN STREET	EF	0	6	0	1	0	7	3	77	0.3	20.0
27	0427	DORCHESTER DRIVE / DALHOUSIE STREET	EF	3	4	0	0	1	8	14	71	0.3	18.5
28	0429	DORCHESTER DRIVE / DANFORTH CRESCENT	EF	2	2	0	0	0	4	4	71	0.3	18.5
29	0431	DEER RIDGE DRIVE / DORCHESTER DRIVE	SF	2	2	0	0	0	4	6	69	0.3	17.9
30	0809	DEERBOURNE DRIVE / DEER RIDGE DRIVE	EB	0	1	0	0	0	1	1	69	0.3	17.9
31	0811	DEERBOURNE DRIVE / DOOLAN PLACE	SB	1	2	0	0	0	3	0	72	0.3	18.7
32	0819	DUNBAR STREET / DEERBOURNE DRIVE	SB	0	0	0	0	0	0	2	70	0.3	18.2
33	0713	LIBERTON DRIVE / GIROUX ROAD	SB	1	0	0	1	0	2	4	68	0.6	40.8
34	0439	ST. ALBERT ROAD / LENNOX DRIVE	SF	0	0	0	0	0	0	2	66	0.6	39.6
35	0703	ST. ALBERT ROAD / LIBERTON CLINIC	SB	0	0	0	0	0	0	2	64	0.6	38.4
36	0973	ST. ALBERT CENTRE / EXCHANGE	ARR	8	0	1	5	1	15	60	19	0.0	0.0
			Totals	**77**	**37**	**11**	**20**	**13**	**158**	**251**		**10.9**	**1171.8**

Fare Distribution	49%	23%	7%	13%	8%
Average Passenger Km	7.4				
Total Route Service Hours	10.9				
Passengers Per Hour	14.6				

A5 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0973	ST. ALBERT CENTRE / EXCHANGE	DEP	12	13	5	0	3	33	0	73	0.4	27.7
2	0835	LIBERTON DRIVE / MCKENNEY AVENUE	NB	2	0	0	0	0	2	3	72	0.4	27.4
3	0833	LIBERTON DRIVE / LIBERTON CLINIC	NB	0	0	1	0	0	1	0	73	0.4	27.7
4	0831	LIBERTON DRIVE / LENNOX DRIVE	NB	0	0	0	1	1	2	1	74	0.4	28.1
5	0903	LIBERTON DRIVE / LAVAL DRIVE	NB	0	0	0	0	0	0	5	69	0.4	26.2
6	0715	DUNBAR STREET / GIROUX ROAD	NB	0	0	0	1	0	1	0	70	0.3	17.5
7	0419	DEERBOURNE DRIVE / DUNBAR STREET	WF	2	3	0	0	0	5	0	75	0.3	18.8
8	0421	DEERBOURNE DRIVE / DOOLAN PLACE	WN	2	1	0	0	0	3	2	76	0.3	19.0
9	0807	DEERBOURNE DRIVE / DEER RIDGE DRIVE	SB	0	0	0	0	0	0	1	75	0.3	18.8
10	0423	DEER RIDGE DRIVE / DEROME COURT	WB	2	1	0	3	0	6	2	79	0.3	19.8
11	0507	VILLAGE TRANSIT / STATION	WB	1	1	0	0	1	3	1	81	0.3	20.3
12	0497	DEER RIDGE DRIVE / DEVON CLOSE	WF	1	1	0	0	3	5	3	83	0.3	20.8
13	0499	DEER RIDGE DRIVE / DUFFERIN STREET	WF	4	3	0	3	1	11	4	90	0.3	22.5
14	0719	DEER RIDGE DRIVE / DORCHESTER DRIVE	WB	1	4	0	1	0	6	6	90	0.3	30.6
15	0805	DEER RIDGE DRIVE / DUBONNET WAY	WB	3	3	0	3	1	10	1	99	0.3	33.7
16	0799	HOGAN ROAD / NEWPORT CRESCENT	SB	1	2	0	2	0	5	6	98	0.3	33.3
17	0927	HOGAN ROAD / NELSON COURT	SB	1	6	0	0	0	7	3	102	0.3	34.7
18	0795	GIROUX ROAD / LACOMBE DRIVE	EB	2	7	3	1	2	15	6	111	0.3	37.7
19	0717	GIROUX ROAD / BELLEROSE HIGH SCHOOL	EB	7	6	0	2	4	19	19	111	0.3	32.2
20	0791	GIROUX ROAD / LOCKHART DRIVE	EB	1	5	0	0	0	6	3	114	0.3	33.1
21	0787	LOCKHART DRIVE / LODGEPOLE CRESCENT	SB	6	0	0	1	0	7	4	117	0.3	33.9
22	0905	LAROSE DRIVE / LORRAINE CRESCENT	EB	2	1	0	2	0	5	0	122	0.3	35.4
23	0149	LAROSE DRIVE / LARSON AVENUE	SX	4	2	0	1	1	8	2	128	0.3	37.1
24	0151	LAROSE DRIVE / BERTHA KENNEDY SCHOOL	SB	3	3	0	2	0	8	4	132	0.3	38.3
25	0153	LAROSE DRIVE / LAWRENCE CRESCENT	SM	2	3	0	0	1	6	2	136	0.3	39.4
26	0157	LAROSE DRIVE / LAWRENCE CRESCENT	WF	6	1	0	0	0	7	1	142	0.3	41.2
27	0777	LAYDON DRIVE / LAROSE DRIVE	SB	13	4	0	4	0	21	2	161	0.3	46.7
28	0773	LAYDON DRIVE / LANCASTER CRESCENT	SB	6	4	0	0	0	10	2	169	0.3	49.0
29	0721	LAYDON DRIVE / LAFONDE CRESCENT	SB	7	3	0	2	0	12	1	180	0.3	52.2
30	0771	MCKENNEY AVENUE / MISSION AVENUE	EB	6	3	0	0	0	9	0	189	0.3	54.8
31	0103	MISSION AVENUE / MORGAN CRESCENT	SF	4	4	0	0	0	8	1	196	0.3	56.8
32	0371	ST. VITAL AVENUE / MISSION AVENUE	EF	1	0	0	2	0	3	1	198	0.3	57.4
33	0493	ST. VITAL AVENUE / MISSION PLACE	EF	2	1	0	2	0	5	0	203	0.3	58.9
34	0373	ST. VITAL AVENUE / MOUNT ROYAL DRIVE	EF	3	1	0	0	0	4	1	206	0.3	59.7
35	0375	ST. VITAL AVENUE / YOUVILLE HOME	EX	1	0	0	0	0	1	0	207	0.3	60.0
36	0377	ST. VITAL AVENUE / ST. ALBERT ROAD	EN	0	0	0	0	0	0	0	207	0.3	60.0
37	0973	ST. ALBERT CENTRE / EXCHANGE	ARR	3	8	2	0	0	13	129	91	0.0	0.0
			Totals	**111**	**94**	**11**	**33**	**18**	**267**	**216**		**10.8**	**1310.7**

Fare Distribution	42%	35%	4%	12%	7%
Average Passenger Km	4.9				
Total Route Service Hours	8.7				
Passengers Per Hour	30.6				

A6 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0972	ST. ALBERT CENTRE / EXCHANGE	DEP	39	17	3	0	0	59	0	92	0.4	33.1
2	0837	MCKENNEY AVENUE / LIBERTON DRIVE	WB	0	0	0	0	0	0	3	89	0.4	32.0
3	0829	DAWSON ROAD / MCKENNEY AVENUE	NB	0	0	0	0	0	0	6	83	0.4	29.9
4	0827	LANGHOLM DRIVE / DAWSON ROAD	EB	0	0	0	0	0	0	4	79	0.4	28.4
5	0825	LANGHOLM DRIVE / LINCOLN CRESCENT	NB	0	0	0	0	0	0	0	79	0.4	28.4
6	0823	LANGHOLM DRIVE / LENNOX DRIVE	NB	0	0	0	0	0	0	4	75	0.4	27.0
7	0821	LANGHOLM DRIVE / LAVAL DRIVE	WB	0	0	0	0	0	0	4	71	0.4	25.6
8	0391	GIROUX ROAD / LEXINGTON DRIVE	EF	0	0	0	0	0	0	4	67	0.4	24.1
9	0715	DUNBAR STREET / GIROUX ROAD	NB	0	0	0	0	0	0	2	65	0.3	16.3
10	0419	DEERBOURNE DRIVE / DUNBAR STREET	WF	0	0	0	0	0	0	4	61	0.3	15.3
11	0421	DEERBOURNE DRIVE / DOOLAN PLACE	WN	0	0	0	0	0	0	6	55	0.3	13.8
12	0807	DEERBOURNE DRIVE / DEER RIDGE DRIVE	SB	0	0	0	0	0	0	3	52	0.3	13.0
13	0423	DEER RIDGE DRIVE / DEROME COURT	WB	0	0	0	0	0	0	6	46	0.3	11.5
14	0507	DONALD PLACE / DEER RIDGE DRIVE	WB	0	0	0	0	0	0	3	43	0.3	10.8
15	0497	DEER RIDGE DRIVE / DEVON CLOSE	WF	0	0	0	0	0	0	2	41	0.3	10.3
16	0499	DEER RIDGE DRIVE / DUFFERIN STREET	WF	0	0	0	0	0	0	6	35	0.3	8.8
17	0719	DEER RIDGE DRIVE / DORCHESTER DRIVE	WB	0	0	0	0	0	0	7	28	0.3	9.2
18	0805	DEER RIDGE DRIVE / DUBONNET WAY	WB	0	0	0	0	0	0	3	25	0.3	8.3
19	0799	HOGAN ROAD / NEWPORT CRESCENT	SB	0	0	0	0	0	0	0	25	0.3	8.3
20	0927	HOGAN ROAD / NELSON COURT	SB	0	0	0	0	0	0	1	24	0.4	8.9
21	0114	NORTHRIDGE DRIVE / GIROUX ROAD	NB	0	0	0	0	0	0	5	19	0.4	7.0
22	0106	NORTHRIDGE DRIVE / NAPLES WAY	NB	0	0	0	0	0	0	8	11	0.4	4.1
23	0108	NORTHRIDGE DRIVE / NICOLA ROAD	NB	0	0	0	0	0	0	7	4	0.4	1.5
24	0120	NORTHRIDGE DRIVE / NORWOOD CRESCENT	NB	0	0	0	0	0	0	4	0	0.4	0.0
25	0212	NORTHRIDGE DRIVE / NOBLE CLOSE	NB	0	0	0	0	0	0	0	0	0.4	0.0
26	0210	NORTHRIDGE DRIVE / NORTHSTAR CLOSE	EB	0	0	0	0	0	0	0	0	0.0	0.0
27	0198	NORTHRIDGE DRIVE / NORTHSTAR CLOSE	WB	0	0	0	0	0	0	0	0	0.4	0.0
28	0214	NORTHRIDGE DRIVE / NOBLE CLOSE	SB	0	0	0	0	0	0	0	0	0.4	0.0
29	0112	NORTHRIDGE DRIVE / NAPOLEON CRESCENT	DEP	1	4	0	0	0	5	0	5	0.4	1.9
30	0071	NORTHRIDGE DRIVE / NICOLA ROAD	SB	10	1	0	0	0	11	0	16	0.4	5.9
31	0110	NORTHRIDGE DRIVE / NAPLES WAY	SB	3	10	0	1	0	14	0	30	0.4	11.1
32	0116	VILLAGE TRANSIT / STATION	EB	0	0	0	0	0	0	0	30	0.4	11.1
33	0989	HOGAN ROAD / NELSON COURT	NB	2	0	0	0	0	2	0	32	0.3	8.0
34	0929	HOGAN ROAD / DUNFIELD CRESENT	NB	0	0	0	0	0	0	0	32	0.3	8.0
35	0801	HOGAN ROAD / DELWOOD PLACE	NB	1	1	0	1	0	3	0	35	0.3	8.8
36	0803	DEER RIDGE DRIVE / DUBONNET WAY	EB	3	0	0	0	0	3	0	38	0.3	9.5
37	0501	DORCHESTER DRIVE / DEER RIDGE DRIVE	SF	3	10	0	0	0	13	0	51	0.3	14.3
38	0425	DORCHESTER DRIVE / DUFFERIN STREET	EF	2	5	0	1	1	9	0	60	0.3	16.8
39	0427	DORCHESTER DRIVE / DALHOUSIE STREET	EF	3	6	0	3	0	12	0	72	0.3	20.2
40	0429	DORCHESTER DRIVE / DANFORTH CRESCENT	EF	1	3	0	1	0	5	0	77	0.3	21.6

A6 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	0431	DEER RIDGE DRIVE / DORCHESTER DRIVE	SF	2	4	0	0	0	6	0	83	0.3	23.2
42	0809	DEERBOURNE DRIVE / DEER RIDGE DRIVE	EB	1	1	0	0	0	2	0	85	0.3	23.8
43	0811	DEERBOURNE DRIVE / DOOLAN PLACE	SB	2	1	0	0	0	3	0	88	0.3	24.6
44	0819	DUNBAR STREET / DEERBOURNE DRIVE	SB	2	1	0	2	0	5	0	93	0.3	26.0
45	0673	GIROUX ROAD / DUNBAR STREET	WB	1	0	0	0	0	1	0	94	0.3	30.1
46	0675	LEXINGTON DRIVE / GIROUX ROAD	SB	0	1	0	0	0	1	0	95	0.3	30.4
47	0677	LANGHOLM DRIVE / LUCIEN DRIVE	EB	3	2	0	0	0	5	0	100	0.3	32.0
48	0679	LANGHOLM DRIVE / LENNOX DRIVE	SB	3	6	0	0	0	9	0	109	0.3	34.9
49	0681	LANGHOLM DRIVE / LAURISTON PLACE	WB	1	11	0	0	0	12	0	121	0.3	38.7
50	0683	DAWSON ROAD / LAMBERT CRESCENT	SB	2	2	0	1	0	5	0	126	0.3	40.3
51	0685	MCKENNEY AVENUE / DAWSON ROAD	EB	7	1	0	0	0	8	0	134	0.3	42.9
52	0839	MUIR DRIVE / MCKENNEY AVENUE	SB	1	0	0	0	0	1	0	135	0.3	43.2
53	0377	ST. VITAL AVENUE / ST. ALBERT ROAD	EN	0	0	0	0	0	0	0	135	0.3	43.2
54	0972	ST. ALBERT CENTRE / EXCHANGE	ARR	17	0	1	1	0	19	104	50	0.0	0.0
			Totals	**110**	**87**	**4**	**11**	**1**	**213**	**196**		**16.4**	**945.7**

Fare Distribution	52%	41%	2%	5%	0%
Average Passenger Km	4.4				
Total Route Service Hours	7.8				
Passengers Per Hour	27.4				

A7 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0973	ST. ALBERT CENTRE / EXCHANGE	DEP	9	1	3	0	0	13	0	21	0.4	8.2
2	0837	MCKENNEY AVENUE / LIBERTON DRIVE	WB	0	0	0	0	0	0	0	21	0.4	8.2
3	0829	DAWSON ROAD / MCKENNEY AVENUE	NB	0	0	0	0	1	1	3	19	0.4	7.4
4	0827	LANGHOLM DRIVE / DAWSON ROAD	EB	0	0	0	0	0	0	2	17	0.4	6.6
5	0825	LANGHOLM DRIVE / LINCOLN CRESCENT	NB	0	0	0	0	0	0	1	16	0.4	6.2
6	0823	LANGHOLM DRIVE / LENNOX DRIVE	NB	0	0	0	0	0	0	0	16	0.4	6.2
7	0821	LANGHOLM DRIVE / LAVAL DRIVE	WB	0	0	0	0	0	0	0	16	0.4	6.2
8	0391	GIROUX ROAD / LEXINGTON DRIVE	EF	0	0	0	0	0	0	0	16	0.4	6.2
9	0393	GIROUX ROAD / LIBERTON DRIVE	EF	0	0	0	0	0	0	1	15	0.4	5.9
10	0909	BOUDREAU ROAD / ST. ALBERT ROAD	EB	1	0	1	0	0	2	11	14	0.4	5.6
11	0999	BOUDREAU ROAD / IRONWOOD DRIVE	EB	0	0	0	0	0	0	1	13	0.4	5.2
12	0619	BELLEROSE DRIVE / HOLES	NB	0	0	0	0	1	1	1	13	0.4	5.2
13	0931	BELLEROSE DRIVE / OPAL COURT	NB	0	0	0	0	0	0	0	13	0.4	5.2
14	0070	BELLEROSE DRIVE / OAKMONT DRIVE	NB	0	0	0	0	0	0	0	13	0.4	5.2
15	0945	ELDORADO DRIVE / ENGLISH WAY	WB	0	2	0	2	0	4	1	16	0.3	4.5
16	0941	ELDORADO DRIVE / ERICKON CLOSE	WB	2	6	0	1	0	9	0	25	0.3	7.0
17	0981	ERIN RIDGE DRIVE / ELDORADO DRIVE	NB	4	3	0	0	0	7	0	32	0.3	9.0
18	0983	ERIN RIDGE DRIVE / ENFIELD PLACE	NB	1	1	0	2	0	4	1	35	0.3	9.8
19	0022	ERIN RIDGE DRIVE / EMPIRE COURT	NB	2	0	0	1	0	3	1	37	0.3	10.4
20	0024	ERIN RIDGE DRIVE / ELLINGTON CRESCENT	NB	1	1	0	0	0	2	1	38	0.3	10.6
21	0026	ERIN RIDGE DRIVE / EASTGATE WAY	EB	5	2	0	2	2	11	1	48	0.3	13.4
22	0028	ERIN RIDGE DRIVE / EMPRESS WAY	EB	1	1	0	0	0	2	2	48	0.3	13.4
23	0030	ERIN RIDGE DRIVE / EASTPARK DRIVE	EB	1	1	0	0	0	2	0	50	0.3	14.0
24	0993	ERIN RIDGE DRIVE / BELLEROSE DRIVE	EB	3	1	0	2	0	6	1	55	0.3	16.0
25	0965	OAKLAND WAY / BELLEROSE DRIVE	SB	6	3	0	1	0	10	0	65	0.3	18.9
26	0937	OAKRIDGE DRIVE NORTH / OAKLAND WAY	EB	5	4	0	0	0	9	0	74	0.3	21.5
27	0032	OAKMONT DRIVE / OAKDALE PLACE	EB	3	0	0	1	0	4	0	78	0.3	22.6
28	0040	OAK VISTA DRIVE / OAKMONT DRIVE	SB	0	2	0	0	0	2	1	79	0.3	22.9
29	0034	OAKRIDGE DRIVE SOUTH / OTTA CRESCENT	SB	1	3	0	0	0	4	0	83	0.3	24.1
30	0036	OAKRIDGE DRIVE SOUTH / OVERTON PLACE	SB	4	1	0	1	2	8	0	91	0.3	26.4
31	0038	OAKRIDGE DRIVE SOUTH / OUTLOOK PLACE	EB	6	3	0	0	0	9	0	100	0.3	29.0
32	0939	OAKMONT DRIVE / OAKRIDGE DRIVE NORTH	WB	10	7	0	0	0	17	0	117	0.4	43.3
33	0695	BELLEROSE DRIVE / OAKMONT DRIVE	SB	4	9	0	0	0	13	0	130	0.4	48.1
34	0633	BELLEROSE DRIVE / HOLES	SB	0	2	0	0	0	2	0	132	0.4	48.8
35	0397	BELLEROSE DRIVE / IRONWOOD DRIVE	SF	5	4	0	0	0	9	1	140	0.4	51.8
36	0399	BELLEROSE DRIVE / INGLEWOOD DRIVE	SF	0	0	0	0	0	0	1	139	0.4	51.4
37	0489	ST. ALBERT ROAD / BELLEROSE DRIVE	SN	0	0	0	0	0	0	0	139	0.4	51.4
38	0973	ST. ALBERT CENTRE / EXCHANGE	ARR	8	13	1	1	1	24	92	71	0.0	0.0
			Totals	**82**	**70**	**5**	**14**	**7**	**178**	**123**		**12.6**	**655.9**

Fare Distribution	46%	39%	3%	8%	4%
Average Passenger Km	3.7				
Total Route Service Hours	8.4				
Passengers Per Hour	21.1				

A8 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0973	ST. ALBERT CENTRE / EXCHANGE	DEP	42	21	9	3	1	76	0	104	0.4	43.7
2	0689	BELLEROSE DRIVE / CANADIAN TIRE	EB	0	1	0	0	0	1	2	103	0.4	43.3
3	0691	BELLEROSE DRIVE / INGLEWOOD DRIVE	EB	0	0	0	0	0	0	0	103	0.4	43.3
4	0693	BELLEROSE DRIVE / IRONWOOD POINT	EB	0	0	0	0	0	0	9	94	0.4	39.5
5	0619	BELLEROSE DRIVE / HOLES	NB	0	0	0	0	0	0	3	91	0.4	38.2
6	0931	BELLEROSE DRIVE / OPAL COURT	NB	0	0	0	0	0	0	5	86	0.4	36.1
7	0687	OAKMONT DRIVE / BELLEROSE DRIVE	EB	0	0	0	0	0	0	12	74	0.3	19.2
8	0002	OAKRIDGE DRIVE SOUTH / OUELLETTE PLAC	SB	0	0	0	0	0	0	11	63	0.3	16.4
9	0004	OAKRIDGE DRIVE SOUTH / ORCHARD COURT	EB	0	0	0	0	0	0	3	60	0.3	15.6
10	0006	OAKRIDGE DRIVE SOUTH / OTTER CRESCENT	NB	0	0	0	0	0	0	6	54	0.3	14.0
11	0008	OAKRIDGE DRIVE SOUTH / OTTER CRESCENT	NB	0	0	0	0	0	0	2	52	0.3	13.5
12	0010	OAKMONT DRIVE / OAKRIDGE DRIVE SOUTH	WB	0	0	0	0	0	0	2	50	0.3	13.0
13	0012	OAKMONT DRIVE / OAKRIDGE DRIVE NORTH	EB	0	0	0	0	1	1	4	47	0.3	12.2
14	0849	OAKLAND WAY / OAKRIDGE DRIVE NORTH	NB	0	0	0	0	0	0	10	37	0.3	9.6
15	0014	OAKLAND WAY / BELLEROSE DRIVE	NB	0	0	0	0	0	0	5	32	0.3	8.3
16	0991	ERIN RIDGE DRIVE / BELLEROSE DRIVE	WB	0	1	0	0	0	1	3	30	0.3	8.4
17	0016	ERIN RIDGE DRIVE / EASTPARK DRIVE	WB	0	0	0	0	0	0	3	27	0.3	7.6
18	0118	ERIN RIDGE DRIVE / WEST OF No. 135	WB	0	0	0	0	0	0	2	25	0.3	7.0
19	0018	ERIN RIDGE DRIVE / EASTGATE WAY	WB	1	0	0	0	1	2	3	24	0.3	6.7
20	0020	ERIN RIDGE DRIVE / ELLINGTON CRESCENT	SB	0	0	0	0	0	0	2	22	0.3	6.2
21	0723	ERIN RIDGE DRIVE / EBONY WAY	SB	0	0	0	0	1	1	4	19	0.3	5.3
22	0843	ERIN RIDGE DRIVE / EASTWOOD PLACE	SB	0	0	0	0	0	0	3	16	0.3	4.5
23	0935	ELDORADO DRIVE / ERIN RIDGE DRIVE	EB	0	0	0	0	0	0	6	10	0.3	2.8
24	0943	ELDORADO DRIVE / EASTCOTT DRIVE	EB	0	0	0	0	0	0	0	10	0.3	2.8
25	0947	ELDORADO DRIVE / ENGLISH WAY	EB	1	0	0	0	0	1	1	10	0.4	4.0
26	0695	BELLEROSE DRIVE / OAKMONT DRIVE	SB	0	1	0	0	0	1	0	11	0.4	4.4
27	0633	BELLEROSE DRIVE / HOLES	SB	1	0	0	0	0	1	0	12	0.4	4.8
28	0663	BOUDREAU ROAD / BELLEROSE DRIVE	WB	0	0	0	0	0	0	0	12	0.4	4.8
29	0665	BOUDREAU ROAD / ELLESMERE DRIVE	WB	0	0	0	0	0	0	1	11	0.4	4.4
30	0505	ERIN RIDGE DRIVE / BOUDREAU ROAD	WB	3	0	0	1	0	4	1	14	0.3	4.1
31	0417	GIROUX ROAD / ST. ALBERT ROAD	WF	0	0	0	0	0	0	0	14	0.3	4.1
32	0673	GIROUX ROAD / DUNBAR STREET	WB	0	0	0	0	0	0	0	14	0.3	4.1
33	0675	LEXINGTON DRIVE / GIROUX ROAD	SB	0	1	0	0	0	1	0	15	0.3	4.4
34	0677	LANGHOLM DRIVE / LUCIEN DRIVE	EB	0	0	0	0	0	0	0	15	0.3	4.4
35	0679	LANGHOLM DRIVE / LENNOX DRIVE	SB	0	0	0	0	0	0	1	14	0.3	4.1
36	0681	LANGHOLM DRIVE / LAURISTON PLACE	WB	0	5	0	0	0	5	0	19	0.3	5.5
37	0683	DAWSON ROAD / LAMBERT CRESCENT	SB	2	1	0	0	0	3	0	22	0.3	6.4
38	0685	MCKENNEY AVENUE / DAWSON ROAD	EB	1	2	0	2	0	5	1	26	0.3	7.5
39	0839	MUIR DRIVE / MCKENNEY AVENUE	SB	0	0	0	0	0	0	0	26	0.3	7.5
40	0377	ST. VITAL AVENUE / ST. ALBERT ROAD	EN	0	0	0	0	0	0	0	26	0.3	7.5
41	0973	ST. ALBERT CENTRE / EXCHANGE	ARR	2	2	0	0	0	4	22	8	0.0	0.0
		Totals		**53**	**35**	**9**	**6**	**4**	**107**	**127**		**12.6**	**499.1**

Fare Distribution	50%	33%	8%	6%	4%
Average Passenger Km	4.7				
Total Route Service Hours	7.9				
Passengers Per Hour	13.5				

A9 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0955	VILLAGE TRANSIT / STATION	DEP	8	30	6	0	0	44	0	57	0.4	22.2
2	0599	SUNSET BOULEVARD / HEBERT ROAD	WB	0	0	0	1	1	2	0	59	0.4	23.0
3	0195	SUNSET BOULEVARD / SUNNYSIDE CRESCEN	NF	0	0	0	0	0	0	1	58	0.4	22.6
4	0197	SUNSET BOULEVARD / TENNIS COURT	NB	0	0	0	0	0	0	1	57	0.4	22.2
5	0199	SUNSET BOULEVARD / SHERIDAN DRIVE	NX	0	0	0	0	0	0	1	56	0.4	21.8
6	0201	SUNSET BOULEVARD / SALISBURY AVENUE	EF	0	0	0	0	0	0	3	53	0.4	20.7
7	0203	CUNNINGHAM ROAD / PAUL KANE HIGH SCH	SX	0	0	1	1	0	2	3	52	0.4	20.3
8	0205	CUNNINGHAM ROAD / FOREST DRIVE	SX	0	0	0	0	0	0	4	48	0.3	13.4
9	0207	CUNNINGHAM ROAD / LEO NICKERSON SCHO	SB	0	0	0	0	0	0	2	46	0.3	12.9
10	0209	CUNNINGHAM ROAD / STANLEY DRIVE	EF	0	0	0	0	0	0	5	41	0.3	11.5
11	0211	HEBERT ROAD / AKINSDALE ARENA	NB	0	0	0	0	0	0	0	41	0.3	11.5
12	0213	FALSTAFF AVENUE / HEBERT ROAD	WF	0	0	0	0	0	0	4	37	0.3	10.4
13	0891	FOREST DRIVE / FALSTAFF AVENUE	NB	0	0	0	0	0	0	4	33	0.3	9.2
14	0291	FOREST DRIVE / FINCH CRESCENT	NF	0	0	0	0	0	0	3	30	0.3	8.4
15	0585	FOREST DRIVE / FRASER DRIVE	NB	0	1	0	0	0	1	3	28	0.3	7.8
16	0581	PRIMEAU LANE / BOUDREAU ROAD	NB	0	0	0	0	0	0	0	28	0.3	7.8
17	0579	PARKWOOD DRIVE / PRIMROSE PLACE	NB	0	1	0	0	0	1	4	25	0.3	7.0
18	0995	KIRKWOOD DRIVE / POIRIER AVENUE	NB	1	3	0	0	0	4	3	26	0.3	7.8
19	0042	KINGSWOOD BOULEVARD / KIRWOOD DRIVE	NB	4	3	0	0	0	7	3	30	0.3	9.0
20	0046	KINGSWOOD BOULEVARD / KINGSDALE CRE	NB	0	2	0	0	0	2	0	32	0.3	9.6
21	0048	KINGSWOOD BOULEVARD / KINGSDALE CRE	NB	1	0	0	0	0	1	1	32	0.3	9.6
22	0050	KINGSWAY DRIVE / KINGSWOOD BOULEVAR	WB	0	0	0	0	0	0	0	32	0.3	9.6
23	0052	KINGSWAY DRIVE / KINGSBURY CRESCENT	WB	1	2	0	0	0	3	1	34	0.3	10.2
24	0054	KINGSWAY DRIVE / KNIGHT COURT	WB	2	3	0	0	0	5	1	38	0.3	11.4
25	0857	KINGSWOOD DRIVE / KINGSWAY DRIVE	NB	0	0	0	0	0	0	0	38	0.3	11.4
26	0859	KINGSWOOD DRIVE / KINGSVIEW POINTE	NB	0	7	0	0	0	7	2	43	0.3	12.9
27	0861	KINGSWOOD DRIVE / KINGS GATE	WB	2	3	0	0	0	5	3	45	0.3	13.5
28	0987	SIR WINSTON CHURCHILL AVENUE / STURGE	SB	1	0	0	0	0	1	0	46	0.3	13.8
29	0863	WAVERLY DRIVE / SIR WINSTON CHURCHILL	WB	1	0	0	0	0	1	1	46	0.3	13.8
30	0865	WILLOUGHBY DRIVE / WAVERLY DRIVE	NB	5	3	0	1	2	11	2	55	0.3	16.5
31	0867	WILLOUGHBY DRIVE / WAGNER PLACE	WB	1	1	0	1	0	3	0	58	0.3	17.4
32	0869	WILLOUGHBY DRIVE / WAKEFIELD BOULEVA	SB	3	7	0	0	0	10	2	66	0.3	19.8
33	0229	WESTWOOD DRIVE / WAKEFIELD BOULEVAR	WM	13	11	0	1	0	25	0	91	0.3	30.9
34	0617	BOUDREAU ROAD / WESTWOOD DRIVE	NB	1	0	0	0	0	1	0	92	0.3	31.3
35	0231	STURGEON ROAD / BUTTERFIELD CRESCENT	WN	3	5	0	0	0	8	2	98	0.3	33.3
36	0233	BURNHAM AVE. / BELLEVUE CRESCENT	SX	2	7	0	0	0	9	0	107	0.3	36.4
37	0235	BURNHAM AVE. / BERHARD DRIVE	WX	4	2	0	0	0	6	1	112	0.3	38.1
38	0237	STURGEON ROAD / BRANDON STREET	WN	3	0	0	3	1	7	1	118	0.3	40.1
39	0239	STURGEON ROAD / ST. ALBERT ROAD	WN	1	0	0	0	0	1	12	107	0.3	36.4
40	0972	ST. ALBERT CENTRE / EXCHANGE	ARR	5	3	0	1	0	9	87	29	0.0	0.0
41	0972	ST. ALBERT CENTRE / EXCHANGE	DEP	35	15	3	3	0	56	0	65	0.4	28.0
42	0241	STURGEON ROAD / BRANDON STREET	EN	0	0	0	0	0	0	1	64	0.4	27.5
43	0243	STURGEON ROAD / BURNS STREET	EN	0	0	0	0	0	0	4	60	0.4	25.8
44	0245	BURNHAM AVE. / BERNARD DRIVE	EF	0	0	0	0	0	0	7	53	0.4	22.8
45	0247	BURNHAM AVE. / BELLEVUE CRESCENT	EF	0	0	0	0	0	0	8	45	0.4	19.4

A9 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
46	0249	STURGEON ROAD / BEAVERBROOK CRESCEN	EN	0	1	0	0	0	1	4	42	0.4	18.1
47	0251	WESTWOOD DRIVE / WINDSOR CRESCENT	NN	1	0	0	1	0	2	9	35	0.3	9.8
48	0385	WESTWOOD DRIVE / WOODLANDS ROAD	NN	0	0	0	0	0	0	1	34	0.3	9.5
49	0387	WOODLANDS ROAD / KEENOOSHAYO SCHOO	WB	0	1	0	0	3	4	2	36	0.3	10.1
50	0363	WILLOUGHBY DRIVE / WOLCOTT PLACE	EF	0	0	0	0	0	0	3	33	0.3	9.2
51	0855	WAVERLY DRIVE / WILLOUGHBY DRIVE	EB	0	0	0	0	0	0	2	31	0.3	8.7
52	0459	SIR WINSTON CHURCHILL AVENUE / KINGSW	NF	0	0	0	0	0	0	0	31	0.3	8.7
53	0461	SIR WINSTON CHURCHILL AVENUE / STURGE	NN	0	0	0	0	0	0	1	30	0.3	8.4
54	0463	KINGSWOOD DRIVE / KINGS COURT	EF	0	0	0	0	0	0	1	29	0.3	8.1
55	0465	KINGSWOOD DRIVE / SINGSTON CLOSE	SN	0	1	0	0	0	1	3	27	0.3	7.6
56	0467	KINGSWOOD DRIVE / KINGSBRIDGE CLOSE	SN	0	0	0	0	0	0	1	26	0.3	7.3
57	0056	KINGSWAY DRIVE / KNGSWOOD DRIVE	EB	0	0	0	0	0	0	1	25	0.3	7.0
58	0058	KINGSWAY DRIVE / KELSO COURT	EB	1	1	0	0	0	2	4	23	0.3	6.4
59	0060	KINGSWOOD BOULEVARD / KINGSWAY DRIV	SB	0	0	0	0	0	0	0	23	0.3	6.4
60	0062	KINGSWOOD BOULEVARD / KINGSWAY DRIV	SB	0	0	0	0	0	0	0	23	0.3	6.4
61	0064	KINGSWOOD BOULEVARD / KINGSDALE CRE	SB	0	0	0	0	0	0	0	23	0.3	6.4
62	0066	KIRKWOOD DRIVE / KINGSWOOD BOULEVAR	SB	0	0	0	0	1	1	8	16	0.3	4.5
63	0997	PARKWOOD DRIVE / POIRIER AVENUE	SB	0	0	1	0	0	1	2	15	0.3	4.7
64	0473	PARKWOOD DRIVE / PAGE DRIVE	SF	0	0	0	0	0	0	0	15	0.3	4.7
65	0583	PRIMEAU LANE / PARKWOOD DRIVE	SB	1	0	0	0	0	1	0	16	0.3	5.0
66	0593	FOREST DRIVE / FRASER DRIVE	SB	0	0	0	0	1	1	1	16	0.3	5.0
67	0351	FOREST DRIVE / FERNWOOD CRESCENT	SF	2	2	0	0	0	4	2	18	0.3	5.6
68	0893	FALSTAFF AVENUE / FOREST DRIVE	EB	0	0	0	2	0	2	0	20	0.3	6.2
69	0267	FALSTAFF AVENUE / FENWICK CRESCENT	EN	0	3	0	0	0	3	0	23	0.3	7.1
70	0271	CUNNINGHAM ROAD / HEBERT ROAD	WF	1	1	0	0	1	3	0	26	0.3	8.1
71	0273	CUNNINGHAM ROAD / FARMSTEAD AVE	NN	0	1	0	0	0	1	0	27	0.3	8.4
72	0275	CUNNINGHAM ROAD / FOREST DRIVE	NF	2	3	0	0	1	6	2	31	0.4	11.2
73	0651	CUNNINGHAM ROAD / SUNSET BOULEVARD	SB	0	1	0	0	0	1	0	32	0.4	11.5
74	0277	SUNSET BOULEVARD / SALISBURY AVENUE	WX	1	1	0	0	0	2	0	34	0.4	12.2
75	0279	SUNSET BOULEVARD / SHERIDAN DRIVE	SN	0	1	0	0	0	1	0	35	0.4	12.6
76	0281	SUNSET BOULEVARD / TENNIS COURT	SX	0	3	0	0	0	3	0	38	0.4	13.7
77	0283	SUNSET BOULEVARD / SALISBURY AVENUE	SN	0	0	0	0	0	0	0	38	0.4	13.7
78	0285	HEBERT ROAD / SUNSET BOULEVARD	WF	0	0	0	0	0	0	2	36	0.4	13.0
79	0955	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	34	2	0.0	0.0
			Totals	**106**	**129**	**11**	**15**	**11**	**272**	**263**		**24.8**	**1094.1**
		Fare Distribution		39%	47%	4%	6%	4%					
		Average Passenger Km		4.0									
		Total Route Service Hours		19.4									
		Passengers Per Hour		14.1									

A10 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0955	VILLAGE TRANSIT / STATION	DEP	35	19	4	1	1	60	0	60	0.4	24.0
2	0599	SUNSET BOULEVARD / HEBERT ROAD	WB	2	0	0	0	0	2	1	61	0.4	24.4
3	0195	SUNSET BOULEVARD / SUNNYSIDE CRESCEN	NF	0	0	0	0	0	0	1	60	0.4	24.0
4	0197	SUNSET BOULEVARD / TENNIS COURT	NB	0	0	0	0	0	0	1	59	0.4	23.6
5	0199	SUNSET BOULEVARD / SHERIDAN DRIVE	NX	0	0	0	0	0	0	1	58	0.4	23.2
6	0201	VILLAGE TRANSIT / STATION	EF	0	0	0	0	0	0	5	53	0.4	21.2
7	0203	CUNNINGHAM ROAD / PAUL KANE HIGH SCH	SX	0	0	0	0	1	1	5	49	0.4	19.6
8	0205	CUNNINGHAM ROAD / FOREST DRIVE	SX	2	0	0	0	0	2	3	48	0.3	14.4
9	0207	CUNNINGHAM ROAD / LEO NICKERSON SCHO	SB	0	0	0	0	0	0	6	42	0.3	12.6
10	0209	CUNNINGHAM ROAD / STANLEY DRIVE	EF	0	0	0	0	0	0	4	38	0.3	11.4
11	0211	HEBERT ROAD / AKINSDALE ARENA	NB	0	0	0	0	0	0	0	38	0.3	11.4
12	0213	FALSTAFF AVENUE / HEBERT ROAD	WF	0	0	0	0	0	0	4	34	0.3	10.2
13	0215	FOREST DRIVE / FAIR OAKES DRIVE	WF	0	0	0	0	0	0	0	34	0.3	10.2
14	0895	FAIRVIEW BOULEVARD / FOREST DRIVE	NB	0	0	0	0	0	0	1	33	0.3	9.9
15	0219	FAIRVIEW BOULEVARD / FAIRCHILD DRIVE	NF	1	0	0	0	0	1	2	32	0.3	9.6
16	0221	SIR WINSTON CHURCHILL AVENUE / FRANKL	EF	7	0	0	1	2	10	7	35	0.3	10.2
17	0223	SIR WINSTON CHURCHILL AVENUE / FLAGST	NF	3	2	0	0	0	5	5	35	0.3	10.2
18	0901	SIR WINSTON CHURCHILL AVENUE / PARK A	NB	0	0	0	0	0	0	3	32	0.3	9.3
19	0571	POIRIER AVENUE / SIR WINSTON CHURCHILL	EB	1	1	0	0	0	2	0	34	0.3	9.9
20	0997	POIRIER AVENUE / PARKWOOD DRIVE	SB	0	1	0	0	0	1	4	31	0.3	9.0
21	0473	PARKWOOD DRIVE / PAGE DRIVE	SF	1	3	0	0	0	4	1	34	0.3	9.9
22	0583	PRIMEAU LANE / PARKWOOD DRIVE	SB	0	0	0	0	0	0	0	34	0.3	9.9
23	0593	FOREST DRIVE / FRASER DRIVE	SB	8	2	0	1	0	11	7	38	0.4	13.3
24	0351	FOREST DRIVE / FERNWOOD CRESCENT	SF	6	3	0	0	0	9	0	47	0.4	16.5
25	0893	FALSTAFF AVENUE / FOREST DRIVE	EB	4	3	0	1	0	8	0	55	0.4	19.3
26	0267	FALSTAFF AVENUE / FENWICK CRESCENT	EN	1	1	0	0	0	2	0	57	0.4	20.0
27	0271	CUNNINGHAM ROAD / HEBERT ROAD	WF	2	2	0	0	0	4	0	61	0.4	21.4
28	0273	CUNNINGHAM ROAD / FARMSTEAD AVE	NN	3	1	0	0	0	4	0	65	0.4	22.8
29	0275	CUNNINGHAM ROAD / FOREST DRIVE	NF	1	1	0	0	0	2	1	66	0.4	23.8
30	0651	CUNNINGHAM ROAD / SUNSET BOULEVARD	SB	0	0	0	1	0	1	0	67	0.4	24.1
31	0277	SUNSET BOULEVARD / SALISBURY AVENUE	WX	3	0	0	0	0	3	0	70	0.4	25.2
32	0279	SUNSET BOULEVARD / SHERIDAN DRIVE	SN	1	0	0	0	0	1	0	71	0.4	25.6
33	0281	SUNSET BOULEVARD / TENNIS COURT	SX	1	0	0	1	0	2	0	73	0.4	26.3
34	0283	SUNSET BOULEVARD / SALISBURY AVENUE	SN	3	2	0	0	0	5	0	78	0.4	28.1
35	0285	HEBERT ROAD / SUNSET BOULEVARD	WF	1	0	0	0	0	1	1	78	0.4	28.1
36	0955	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	75	3	0.0	0.0
			Totals	**86**	**41**	**4**	**6**	**4**	**141**	**138**		**11.9**	**612.0**

Fare Distribution	61%	29%	3%	4%	3%
Average Passenger Km	4.3				
Total Route Service Hours	8.8				
Passengers Per Hour	16.0				

A11 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0954	VILLAGE TRANSIT / STATION	DEP	27	28	6	2	0	63	0	68	0.4	29.2
2	0323	HEBERT ROAD / SUNSET BOULEVARD	EX	2	0	1	0	1	4	3	69	0.4	29.7
3	0325	ARLINGTON DRIVE / ATTWOOD DRIVE	SX	0	0	0	0	0	0	5	64	0.4	27.5
4	0407	ARLINGTON DRIVE / ARCAND DRIVE	EF	0	0	0	0	0	0	3	61	0.4	26.2
5	0327	ARLINGTON DRIVE / ASH CRESCENT	NF	0	0	0	0	0	0	5	56	0.4	24.1
6	0329	ARLINGTON DRIVE / ALDERWOOD BOULEVA	NF	1	0	0	0	0	1	2	55	0.4	23.7
7	0331	ARLINGTON DRIVE / AKINS DRIVE	NN	0	0	0	0	0	0	14	41	0.3	13.5
8	0333	AKINS DRIVE / ARBOR CRESCENT	EN	3	2	0	0	2	7	5	43	0.3	14.2
9	0335	AKINS DRIVE / AMHERST CRESCENT	NF	2	0	0	0	0	2	3	42	0.3	13.9
10	0887	BOUDREAU ROAD / AKINS DRIVE	EB	0	0	0	0	0	0	3	39	0.3	12.9
11	0299	BOUDREAU ROAD / CAMPBELL ROAD	EN	0	0	0	0	2	2	0	41	0.3	13.5
12	0301	CARNEGIE DRIVE / CHISHOLM AVENUE	NN	3	0	0	0	0	3	6	38	0.3	12.5
13	0303	CARNEGIE DRIVE / TRANSIT GARAGE	NX	0	0	0	0	0	0	0	38	0.3	12.5
14	0305	CORRIVEAU AVENUE / CARNEGIE DRIVE	WF	1	0	0	1	0	2	4	36	0.3	11.9
15	0603	POIRIER AVENUE / CAMPBELL ROAD	WB	0	0	0	0	0	0	1	35	0.3	10.2
16	0307	PINEVIEW DRIVE / POIRIER AVENUE	SF	1	1	0	0	2	4	4	35	0.3	10.2
17	0883	PINEVIEW DRIVE / PERRAULT PLACE	WB	0	0	0	1	0	1	1	35	0.3	10.2
18	0881	PINEVIEW DRIVE / PINEVIEW PARK	WB	0	0	0	0	0	0	0	35	0.3	10.2
19	0877	PARKWOOD DRIVE / PALLADIUM POINT	WB	0	0	0	0	0	0	1	34	0.3	9.9
20	0873	PARK AVENUE / PARKWOOD DRIVE	NB	0	0	0	0	0	0	0	34	0.3	9.9
21	0225	WOODLANDS ROAD / WIMBLETON CRESCENT	NN	0	0	0	1	1	2	4	32	0.3	9.3
22	0411	WOODLANDS ROAD / WILLOUGHBY DRIVE	NF	0	0	0	0	1	1	2	31	0.3	9.0
23	0227	WOODLANDS ROAD / NEIL ROSS SCHOOL	NB	1	0	0	0	0	1	0	32	0.3	9.3
24	0229	WESTWOOD DRIVE / WAKEFIELD BOULEVAR	WM	6	0	0	0	0	6	4	34	0.4	11.9
25	0635	BOUDREAU ROAD / BEAVERBROOK CRESCE	SB	0	0	0	0	0	0	1	33	0.4	11.6
26	0257	SIR WINSTON CHURCHILL AVENUE / BRUNSW	SN	1	0	0	0	0	1	2	32	0.4	11.2
27	0259	SIR WINSTON CHURCHILL AVENUE / FRANKL	SX	0	1	0	0	0	1	3	30	0.4	10.5
28	0261	FAIRVIEW BOULEVARD / LORNE AKINS SCHO	SB	1	0	0	1	0	2	1	31	0.4	10.9
29	0897	FAIRVIEW BOULEVARD / FOREST DRIVE	SB	0	0	0	0	1	1	0	32	0.4	11.2
30	0275	CUNNINGHAM ROAD / FOREST DRIVE	NF	1	0	0	1	6	8	1	39	0.4	15.6
31	0587	CUNNINGHHAM ROAD / SUNSET BOULEVARD	WB	0	0	0	4	0	4	3	40	0.4	16.0
32	0353	SIR WINSTON CHURCHILL AVENUE / CUNNIN	WX	0	0	0	0	0	0	0	40	0.4	16.0
33	0765	PERRON STREET / ST. THOMAS STREET	NB	0	0	0	0	0	0	2	38	0.4	15.2
34	0069	ST. ANNE STREET / PERRON STREET	EM	0	0	0	0	0	0	1	37	0.4	14.8
35	0972	ST. ALBERT CENTRE / EXCHANGE	ARR	0	0	0	0	0	0	32	5	0.0	0.0
36	0972	ST. ALBERT CENTRE / EXCHANGE	DEP	9	4	3	2	2	20	0	24	0.4	9.6
37	0169	ST. ALBERT ROAD / MADISON AVENUE	SF	0	0	0	0	0	0	0	24	0.4	9.6
38	0763	PERRON STREET / ST. THOMAS STREET	SB	0	0	0	0	0	0	0	24	0.4	9.6
39	0609	SIR WINSTON CHURCHILL AVENUE / PERRON	EF	0	0	0	0	0	0	0	24	0.4	9.6
40	0289	SIR WINSTON CHURCHILL AVENUE / CUNNIN	EN	0	0	0	0	0	0	0	24	0.4	9.6

A11 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	0203	CUNNINGHAM ROAD / PAUL KANE HIGH SCH	SX	1	0	0	0	2	3	2	25	0.5	12.5
42	0895	FAIRVIEW BOULEVARD / FOREST DRIVE	NB	0	0	0	1	1	2	1	26	0.5	13.0
43	0219	FAIRVIEW BOULEVARD / FAIRCHILD DRIVE	NF	1	0	0	0	0	1	0	27	0.5	13.5
44	0221	SIR WINSTON CHURCHILL AVENUE / FRANKL	EF	1	0	0	0	1	2	1	28	0.5	14.0
45	0223	SIR WINSTON CHURCHILL AVENUE / FLAGST	NF	1	1	0	0	0	2	2	28	0.5	14.0
46	0251	WESTWOOD DRIVE / WINDSOR CRESCENT	NN	1	0	0	2	0	3	0	31	0.3	9.3
47	0385	WESTWOOD DRIVE / WOODLANDS ROAD	NN	0	0	0	1	0	1	0	32	0.3	9.6
48	0255	WOODLANDS ROAD / WOODCREST AVENUE	EN	1	1	0	0	0	2	0	34	0.3	10.2
49	0871	PARK AVENUE / SIR WINSTON CHURCHILL A	SB	1	0	0	0	0	1	0	35	0.3	10.5
50	0473	PARKWOOD DRIVE / PAGE DRIVE	SF	2	1	0	0	0	3	0	38	0.3	11.4
51	0875	PARKWOOD DRIVE / PRIMEAU LANE	EB	0	0	0	0	0	0	0	38	0.3	11.4
52	0879	PINEVIEW DRIVE / PARKWOOD DRIVE	EB	0	0	0	0	0	0	0	38	0.3	11.4
53	0885	PINEVIEW DRIVE / PAGE DRIVE	EB	3	2	0	2	0	7	2	43	0.3	12.9
54	0339	PINEVIEW DRIVE / POIRIER AVENUE	NN	0	1	0	0	0	1	3	41	0.3	12.3
55	0613	POIRIER AVENUE / PHANTON RIDGE	EF	1	0	0	0	1	2	0	43	0.4	15.9
56	0341	CARNEGIE DRIVE / CORRIVEAU AVENUE	SF	2	0	0	0	1	3	3	43	0.4	15.9
57	0343	CARNEGIE DRIVE / TRANSIT GARAGE	SB	0	0	0	0	1	1	1	43	0.4	15.9
58	0345	CARNEGIE DRIVE / BOUDREAU ROAD	SN	3	0	0	1	5	9	4	48	0.4	17.8
59	0889	AKINS DRIVE / BOUDREAU ROAD	SB	3	0	0	1	0	4	0	52	0.4	19.2
60	0311	AKINS DRIVE / ALPINE BOULEVARD	SF	2	1	0	0	2	5	0	57	0.4	21.1
61	0313	AKINS DRIVE / ACORN CRESCENT	WX	6	1	0	3	1	11	10	58	0.4	21.5
62	0315	ARLINGTON DRIVE / ABBEY CRESCENT	SN	12	6	0	0	2	20	1	77	0.4	29.3
63	0317	ARLINGTON DRIVE / ALDERWOOD BOULEVA	SX	1	0	0	0	0	1	1	77	0.4	29.3
64	0319	ARLINGTON DRIVE / ADDISON CRESCENT	SF	1	2	0	0	1	4	1	80	0.4	30.4
65	0409	ARLINGTON DRIVE / ARCAND DRIVE	WF	3	1	0	0	0	4	0	84	0.4	31.9
66	0321	ARLINGTON DRIVE / ATTWOOD DRIVE	NN	4	4	0	0	0	8	0	92	0.4	35.0
67	0285	HEBERT ROAD / SUNSET BOULEVARD	WF	1	0	0	0	0	1	1	92	0.4	35.0
68	0954	VILLAGE TRANSIT / STATION	ARR	7	0	2	2	0	11	78	25	0.0	0.0
			Totals	**117**	**57**	**12**	**26**	**36**	**248**	**227**		**24.0**	**1030.0**

Fare Distribution	47%	23%	5%	10%	15%
Average Passenger Km	4.2				
Total Route Service Hours	14.1				
Passengers Per Hour	17.6				

A12 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0954	VILLAGE TRANSIT / STATION	DEP	25	13	10	1	0	49	0	55	0.4	23.7
2	0323	HEBERT ROAD / SUNSET BOULEVARD	EX	0	0	0	0	0	0	2	53	0.4	22.8
3	0325	ARLINGTON DRIVE / ATTWOOD DRIVE	SX	0	0	0	0	0	0	2	51	0.4	21.9
4	0407	ARLINGTON DRIVE / ARCAND DRIVE	EF	0	0	0	0	0	0	2	49	0.4	21.1
5	0327	ARLINGTON DRIVE / ASH CRESCENT	NF	0	0	0	0	0	0	1	48	0.4	20.6
6	0329	ARLINGTON DRIVE / ALDERWOOD BOULEVA	NF	0	0	0	0	0	0	3	45	0.4	19.4
7	0331	ARLINGTON DRIVE / AKINS DRIVE	NN	0	0	0	0	0	0	9	36	0.3	11.5
8	0333	AKINS DRIVE / ARBOR CRESCENT	EN	0	1	0	0	0	1	2	35	0.3	11.2
9	0335	AKINS DRIVE / AMHERST CRESCENT	NF	0	0	0	0	0	0	4	31	0.3	9.9
10	0337	PAGE DRIVE / PRINCETON DRIVE	NF	0	0	0	0	0	0	2	29	0.3	9.3
11	0885	PINEVIEW DRIVE / PAGE DRIVE	EB	0	1	0	0	0	1	4	26	0.3	8.3
12	0339	PINEVIEW DRIVE / POIRIER AVENUE	NN	0	0	0	0	0	0	10	16	0.3	5.1
13	0613	POIRIER AVENUE / PHANTON RIDGE	EF	1	0	0	0	0	1	2	15	0.4	5.9
14	0104	CORRIVEAU AVENUE / CARNEGIE DRIVE	EB	1	0	0	0	0	1	3	13	0.4	5.1
15	0208	CORRIVEAU AVENUE / CHEVIGNY STREET	EB	1	0	0	1	0	2	1	14	0.4	5.5
16	0705	CORRIVEAU AVENUE / A.G.L.B	EB	2	0	0	1	3	6	5	15	0.4	5.9
17	0933	BOUDREAU ROAD / CHATELAIN DRIVE	WB	0	0	0	0	0	0	0	15	0.4	5.9
18	0301	CARNEGIE DRIVE / CHISHOLM AVENUE	NN	2	2	0	0	1	5	3	17	0.4	6.6
19	0303	CARNEGIE DRIVE / TRANSIT GARAGE	NX	0	0	0	0	0	0	1	16	0.4	6.2
20	0305	CORRIVEAU AVENUE / CARNEGIE DRIVE	WF	0	0	0	0	0	0	0	16	0.4	6.2
21	0603	POIRIER AVENUE / CAMPBELL ROAD	WB	0	0	0	0	0	0	0	16	0.3	5.1
22	0307	PINEVIEW DRIVE / POIRIER AVENUE	SF	2	1	0	1	0	4	0	20	0.3	6.4
23	0309	PAGE DRIVE / PINERIDGE CRESCENT	SN	0	6	0	0	0	6	0	26	0.3	8.3
24	0889	AKINS DRIVE / BOUDREAU ROAD	SB	0	0	0	0	0	0	0	26	0.3	8.3
25	0311	AKINS DRIVE / ALPINE BOULEVARD	SF	0	1	0	1	0	2	0	28	0.3	9.0
26	0313	AKINS DRIVE / ACORN CRESCENT	WX	0	2	0	1	0	3	0	31	0.3	9.9
27	0315	ARLINGTON DRIVE / ABBEY CRESCENT	SN	4	3	0	0	1	8	0	39	0.4	16.4
28	0317	ARLINGTON DRIVE / ALDERWOOD BOULEVA	SX	0	0	0	0	0	0	0	39	0.4	16.4
29	0319	ARLINGTON DRIVE / ADDISON CRESCENT	SF	0	0	0	0	0	0	0	39	0.4	16.4
30	0409	ARLINGTON DRIVE / ARCAND DRIVE	WF	0	0	0	0	0	0	0	39	0.4	16.4
31	0321	ARLINGTON DRIVE / ATTWOOD DRIVE	NN	1	1	0	0	0	2	0	41	0.4	17.2
32	0285	HEBERT ROAD / SUNSET BOULEVARD	WF	0	0	0	0	1	1	2	40	0.4	16.8
33	0954	VILLAGE TRANSIT / STATION	ARR	7	0	2	0	0	9	34	15	0.0	0.0
			Totals	**46**	**31**	**12**	**6**	**6**	**101**	**92**		**12.1**	**378.6**

Fare Distribution	46%	31%	12%	6%	6%
Average Passenger Km	3.7				
Total Route Service Hours	4.3				
Passengers Per Hour	23.8				

A13 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0954	VILLAGE TRANSIT / STATION	DEP	20	6	6	0	0	32	0	32	0.4	12.8
2	0323	HEBERT ROAD / SUNSET BOULEVARD	EX	1	0	0	0	0	1	0	33	0.4	13.2
3	0325	ARLINGTON DRIVE / ATTWOOD DRIVE	SX	0	0	0	0	0	0	3	30	0.4	12.0
4	0407	ARLINGTON DRIVE / ARCAND DRIVE	EF	0	0	0	0	0	0	1	29	0.4	11.6
5	0327	ARLINGTON DRIVE / ASH CRESCENT	NF	0	0	0	0	0	0	0	29	0.4	11.6
6	0329	VILLAGE TRANSIT / STATION	NF	0	0	0	0	0	0	0	29	0.4	11.6
7	0331	ARLINGTON DRIVE / AKINS DRIVE	NN	0	0	0	0	0	0	7	22	0.4	9.5
8	0333	AKINS DRIVE / ARBOR CRESCENT	EN	0	0	0	0	0	0	8	14	0.4	6.0
9	0335	AKINS DRIVE / AMHERST CRESCENT	NF	0	0	0	0	0	0	4	10	0.4	4.3
10	0337	PAGE DRIVE / PRINCETON DRIVE	NF	0	0	0	0	0	0	3	7	0.4	3.0
11	0885	PINEVIEW DRIVE / PAGE DRIVE	EB	0	0	0	0	0	0	1	6	0.4	2.6
12	0339	PINEVIEW DRIVE / POIRIER AVENUE	NN	0	0	0	0	0	0	4	2	0.4	0.9
13	0575	POIRIER AVENUE / KIRKWOOD AVENUE	WB	0	0	0	0	0	0	1	1	0.2	0.2
14	0573	POIRIER AVENUE / SIR WINSTON CHURCHILL	WB	1	1	0	0	0	2	0	3	0.2	0.7
15	0863	WAVERLY DRIVE / SIR WINSTON CHURCHILL	WB	0	0	0	0	0	0	0	3	0.2	0.7
16	0365	WILLOUGHBY DRIVE / WAVERLY DRIVE	SX	0	1	0	0	0	1	0	4	0.2	0.9
17	0367	WILLOUGHBY DRIVE / WENTWORTH CRESCE	SX	0	0	0	0	0	0	0	4	0.2	0.9
18	0389	WILLOUGHBY DRIVE / WOODLANDS ROAD	SN	1	1	0	0	0	2	1	5	0.2	1.1
19	0255	WOODLANDS ROAD / WOODCREST AVENUE	EN	0	1	0	0	0	1	0	6	0.2	1.3
20	0901	SIR WINSTON CHURCHILL AVENUE / PARK A	NB	0	0	0	0	0	0	0	6	0.2	1.3
21	0571	POIRIER AVENUE / SIR WINSTON CHURCHILL	EB	0	0	0	0	0	0	0	6	0.2	1.3
22	0577	POIRIER AVENUE / PARKWOOD DRIVE	EB	0	0	0	0	0	0	0	6	0.4	2.6
23	0307	PINEVIEW DRIVE / POIRIER AVENUE	SF	2	1	0	0	0	3	0	9	0.4	3.9
24	0309	PAGE DRIVE / PINERIDGE CRESCENT	SN	3	3	0	0	1	7	0	16	0.4	6.9
25	0889	AKINS DRIVE / BOUDREAU ROAD	SB	2	1	0	0	1	4	0	20	0.4	8.6
26	0311	AKINS DRIVE / ALPINE BOULEVARD	SF	3	2	0	0	0	5	0	25	0.4	10.8
27	0313	AKINS DRIVE / ACORN CRESCENT	WX	4	2	0	0	1	7	0	32	0.4	13.8
28	0315	ARLINGTON DRIVE / ABBEY CRESCENT	SN	7	7	0	0	0	14	0	46	0.4	18.4
29	0317	ARLINGTON DRIVE / ALDERWOOD BOULEVA	SX	2	0	0	0	0	2	0	48	0.4	19.2
30	0319	ARLINGTON DRIVE / ADDISON CRESCENT	SF	0	5	0	0	0	5	0	53	0.4	21.2
31	0409	ARLINGTON DRIVE / ARCAND DRIVE	WF	1	2	0	0	0	3	0	56	0.4	22.4
32	0321	ARLINGTON DRIVE / ATTWOOD DRIVE	NN	2	1	0	0	0	3	0	59	0.4	23.6
33	0285	HEBERT ROAD / SUNSET BOULEVARD	WF	1	0	0	0	0	1	1	59	0.4	23.6
34	0954	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	33	26	0.0	0.0
			Totals	**50**	**34**	**6**	**0**	**3**	**93**	**67**		**11.9**	**282.2**

Fare Distribution	54%	37%	6%	0%	3%
Average Passenger Km	3.0				
Total Route Service Hours	2.9				
Passengers Per Hour	31.7				

A14 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0951	VILLAGE TRANSIT / STATION	DEP	58	5	12	8	2	85	0	94	0.5	45.1
2	0001	GRANDIN ROAD / GREEN LEE PL	NN	0	0	0	0	0	0	0	94	0.5	45.1
3	0003	GRANDIN ROAD / GREEN MEADOW CRESCEN	NM	0	0	0	0	0	0	0	94	0.5	45.1
4	0065	GRANDIN ROAD / PROVINCIAL BUILDING	NB	1	0	0	0	0	1	9	86	0.5	41.3
5	0067	ST. ANNE STREET / ST. ALBERT PLACE	NX	1	0	0	1	0	2	2	86	0.5	41.3
6	0069	ST. ANNE STREET / PERRON STREET	EM	0	0	0	0	0	0	8	78	0.5	37.4
7	0974	ST. ALBERT CENTRE / EXCHANGE	ARR	0	0	1	0	0	1	35	44	0.0	0.0
8	0974	ST. ALBERT CENTRE / EXCHANGE	DEP	4	0	0	1	0	5	2	47	0.8	37.6
9	0487	ST. ALBERT ROAD / BELLEROSE DRIVE	NF	0	0	0	0	0	0	2	45	0.8	36.0
10	0899	ST. ALBERT ROAD / INGLEWOOD DRIVE	NB	0	0	0	0	0	0	7	38	0.8	30.4
11	0102	ST. ALBERT ROAD / BOUDREAU ROAD	NB	1	0	0	0	0	1	10	21	0.8	16.8
12	0925	ST. ALBERT ROAD /NORTH SAVE-ON-FOODS	ARR	1	0	0	1	0	2	12	11	0.0	0.0
13	0925	ST. ALBERT ROAD /NORTH SAVE-ON-FOODS	DEP	1	0	6	1	1	9	0	20	0.3	6.0
14	0068	ERIN RIDGE ROAD / ST.ALBERT ROAD	EB	1	0	0	0	0	1	3	16	0.3	4.8
15	0435	ERIN RIDGE ROAD / ERIN RIDGE DRIVE	SB	0	0	0	0	0	0	0	16	0.3	4.8
16	0847	ERIN RIDGE DRIVE / STURGEON HOSPITAL	SB	0	0	0	0	0	0	0	16	0.3	4.8
17	0505	ERIN RIDGE DRIVE / BOUDREAU ROAD	WB	1	1	0	3	0	5	4	17	0.5	8.2
18	0611	ST. ALBERT ROAD / GIROUX ROAD	SF	0	0	0	0	1	1	0	18	0.5	8.6
19	0439	ST. ALBERT ROAD / LENNOX DRIVE	SF	0	0	0	0	0	0	1	17	0.5	8.2
20	0703	ST. ALBERT ROAD / LIBERTON CLINIC	SB	0	0	0	0	0	0	1	16	0.5	7.7
21	0974	ST. ALBERT CENTRE / EXCHANGE	ARR	0	0	0	0	0	0	16	2	0.0	0.0
22	0974	ST. ALBERT CENTRE / EXCHANGE	DEP	3	0	7	0	0	10	0	10	0.8	8.0
23	0487	ST. ALBERT ROAD / BELLEROSE DRIVE	NF	0	0	0	0	0	0	1	9	0.8	7.2
24	0899	ST. ALBERT ROAD / INGLEWOOD DRIVE	NB	0	0	0	0	0	0	0	9	0.8	7.2
25	0102	ST. ALBERT ROAD / BOUDREAU ROAD	NB	0	0	0	0	0	0	1	8	0.8	6.4
26	0925	ST. ALBERT ROAD /NORTH SAVE-ON-FOODS	ARR	5	0	0	2	0	7	7	8	0.0	0.0
27	0925	ST. ALBERT ROAD /NORTH SAVE-ON-FOODS	DEP	0	0	0	1	0	1	0	9	0.3	2.7
28	0068	ERIN RIDGE ROAD / ST.ALBERT ROAD	EB	0	0	0	0	0	0	0	9	0.3	2.7
29	0435	ERIN RIDGE ROAD / ERIN RIDGE DRIVE	SB	0	0	0	0	0	0	0	9	0.3	2.7
30	0847	ERIN RIDGE DRIVE / STURGEON HOSPITAL	SB	0	1	0	0	0	1	0	10	0.3	3.0
31	0505	ERIN RIDGE DRIVE / BOUDREAU ROAD	WB	4	1	0	1	1	7	0	17	0.5	8.2
32	0611	ST. ALBERT ROAD / GIROUX ROAD	SF	0	0	0	0	0	0	0	17	0.5	8.2
33	0439	ST. ALBERT ROAD / LENNOX DRIVE	SF	4	0	0	0	2	6	1	22	0.5	10.6
34	0703	ST. ALBERT ROAD / LIBERTON CLINIC	SB	0	0	0	0	0	0	1	21	0.5	10.1
35	0971	ST. ALBERT CENTRE / EXCHANGE	ARR	2	0	0	0	1	3	6	18	0.0	0.0
36	0971	ST. ALBERT CENTRE / EXCHANGE	DEP	3	0	0	2	0	5	0	27	0.4	11.6
37	0169	ST. ALBERT ROAD / MADISON AVENUE	SF	0	0	0	0	0	0	0	27	0.4	11.6
38	0111	ST. ANNE STREET / PERRON STREET	WF	1	0	1	0	1	3	1	29	0.4	12.5
39	0113	ST. ANNE STREET / COURT HOUSE	SB	2	1	0	0	0	3	0	32	0.4	13.8
40	0115	GRANDIN ROAD / GRANDIN MALL	SB	1	0	0	0	2	3	1	34	0.4	14.6

A14 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
41	0123	GRANDIN ROAD / GLEN MEADOW CRESCENT	SX	0	1	0	0	0	1	0	35	0.4	15.1
42	0125	GRANDIN ROAD / GRANDVILLE AVENUE	SF	0	0	0	0	0	0	0	35	0.4	15.1
43	0951	VILLAGE TRANSIT / STATION	ARR	0	12	0	0	0	12	34	13	0.0	0.0
			Totals	**94**	**22**	**27**	**21**	**11**	**175**	**165**		**18.5**	**600.2**

Fare Distribution	54%	13%	15%	12%	6%
Average Passenger Km	3.4				
Total Route Service Hours	12.8				
Passengers Per Hour	13.7				

A21 Weekdays

SEQ	STOP NO.	LOCATION	DIR	Pass	Total UPass	Transfer	Ticket	Cash	ON	Off	Total Passengers Departing from Stop	Distance (KM)	Passenger KM
1	0953	VILLAGE TRANSIT / STATION	DEP	0	1	0	0	0	1	0	11	0.4	4.4
2	0001	GRANDIN ROAD / GREEN LEE PL	NN	0	0	0	0	0	0	0	11	0.4	4.4
3	0003	GRANDIN ROAD / GREEN MEADOW CRES.	NM	0	0	0	0	0	0	0	11	0.4	4.4
4	0065	GRANDIN ROAD / PROVINCIAL BLDG.	NB	0	0	0	0	0	0	1	10	0.4	4.0
5	0765	PERRON STREET / ST. THOMAS STREET	NB	0	0	0	1	0	1	0	11	0.4	4.4
6	0111	ST. ANNE STREET / PERRON STREET	WF	0	0	0	0	0	0	0	11	0.4	4.4
7	0113	ST. ANNE STREET / COURT HOUSE	SB	0	0	0	0	0	0	0	11	0.4	4.4
8	0072	SIR WINSTON CHURCHILL AVENUE / TACHE S	SB	0	0	0	0	0	0	1	10	0.4	4.0
9	0074	NO. 11 RIEL DRIVE / LBH BUILDING SUPPLIES	SB	0	0	0	0	0	0	0	10	0.4	4.0
10	0076	NO. 19 RIEL DRIVE	SB	1	0	0	0	0	1	2	9	0.4	3.6
11	0078	NO. 29 RIEL DRIVE / BARKER'S PET MODEL	SB	0	0	0	0	0	0	1	8	0.4	3.2
12	0080	RIEL DRIVE / RODEO DRIVE	SB	0	0	0	0	0	0	3	5	0.4	2.0
13	0082	RIEL DRIVE / ROWLAND CRESCENT	SB	0	0	0	0	0	0	2	3	0.4	1.2
14	0084	RENAULT CRESCENT / RIEL DRIVE	ARR	1	0	0	0	0	1	1	3	0.0	0.0
15	0084	RENAULT CRESCENT / RIEL DRIVE	DEP	0	0	0	0	0	0	0	3	0.4	1.1
16	0086	RIEL DRIVE / RENAULT CRESCENT	NB	0	0	0	0	0	0	1	2	0.4	0.7
17	0088	RIEL DRIVE / ROWLAND CRESCENT	NB	0	0	0	0	0	0	0	2	0.4	0.7
18	0090	RIEL DRIVE / RAYBORN CRESCENT S.	NB	1	0	0	0	0	1	0	3	0.4	1.1
19	0092	RIEL DRIVE / RAYBORN CRESCENT N.	NB	0	0	0	0	0	0	0	3	0.4	1.1
20	0094	RIEL DRIVE / PRP WESTERN PLASTIC	NB	0	0	0	0	0	0	0	3	0.4	1.1
21	0096	NO. 2A RIEL DRIVE	NB	0	0	0	0	0	0	0	3	0.4	1.1
22	0098	SIR WINSTON CHURCHILL AVENUE / GRESHA	NB	1	0	0	0	0	1	0	4	0.4	1.5
23	0100	SIR WINSTON CHURCHILL AVENUE / TACHE S	NB	0	0	0	0	0	0	0	4	0.4	1.5
24	0067	ST. ANNE STREET / ST. ALBERT PLACE	NX	0	0	0	0	0	0	0	4	0.4	1.5
25	0763	PERRON STREET / ST. THOMAS STREET	SB	0	0	0	0	0	0	0	4	0.4	1.5
26	0115	GRANDIN ROAD / GRANDIN MALL	SB	0	0	0	0	0	0	0	4	0.4	1.5
27	0123	GRANDIN ROAD / GLEN MEADOW CRES.	SX	0	0	0	0	0	0	0	4	0.4	1.5
28	0125	GRANDIN ROAD / GRANDVILLE AVE.	SF	0	0	0	0	0	0	2	2	0.4	0.7
29	0953	VILLAGE TRANSIT / STATION	ARR	0	0	0	0	0	0	2	0	0.0	0.0
			Totals	**4**	**1**	**0**	**1**	**0**	**6**	**16**		**10.4**	**65.1**

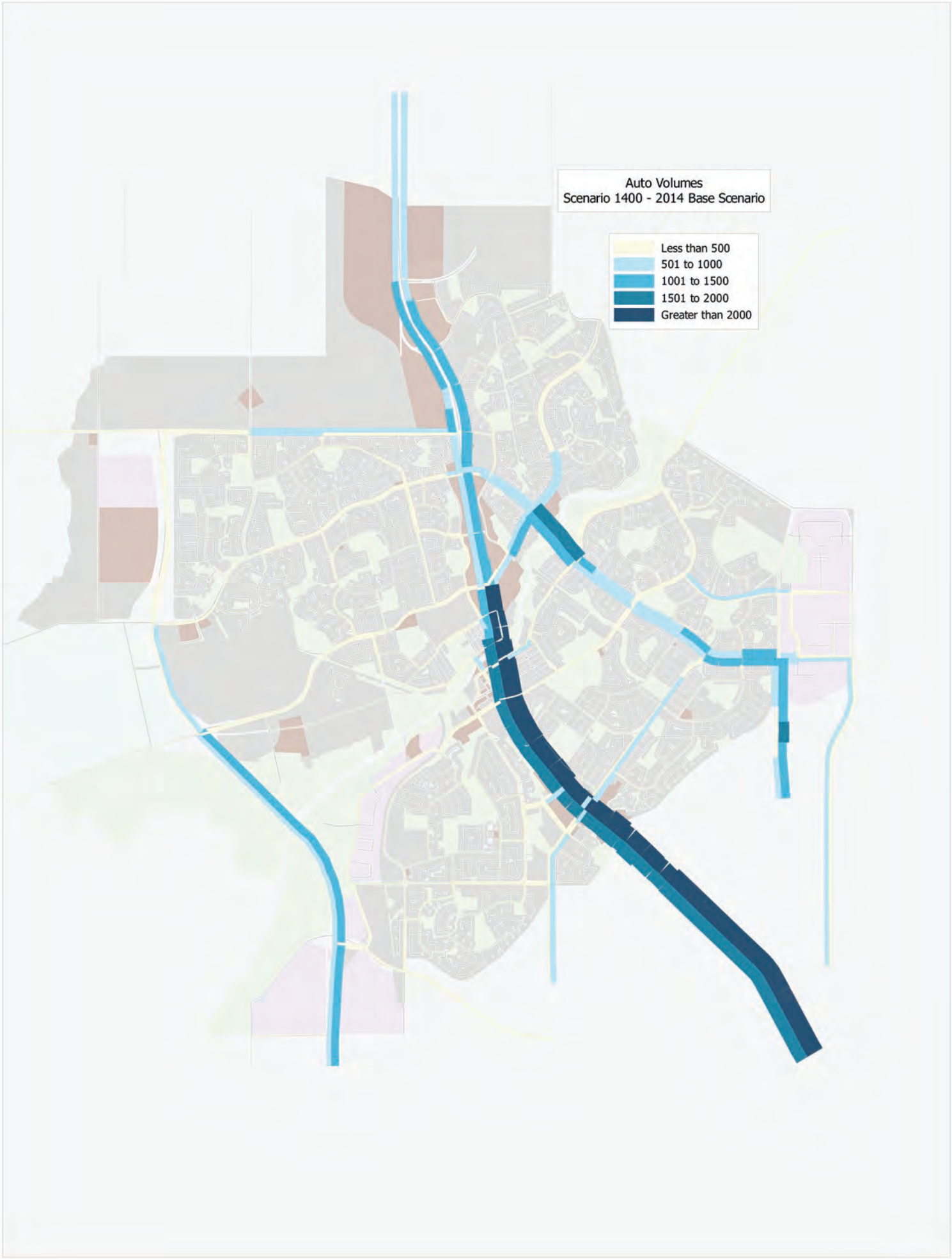
Fare Distribution	67%	17%	0%	17%	0%
Average Passenger Km	10.8				
Total Route Service Hours	4.3				
Passengers Per Hour	1.4				

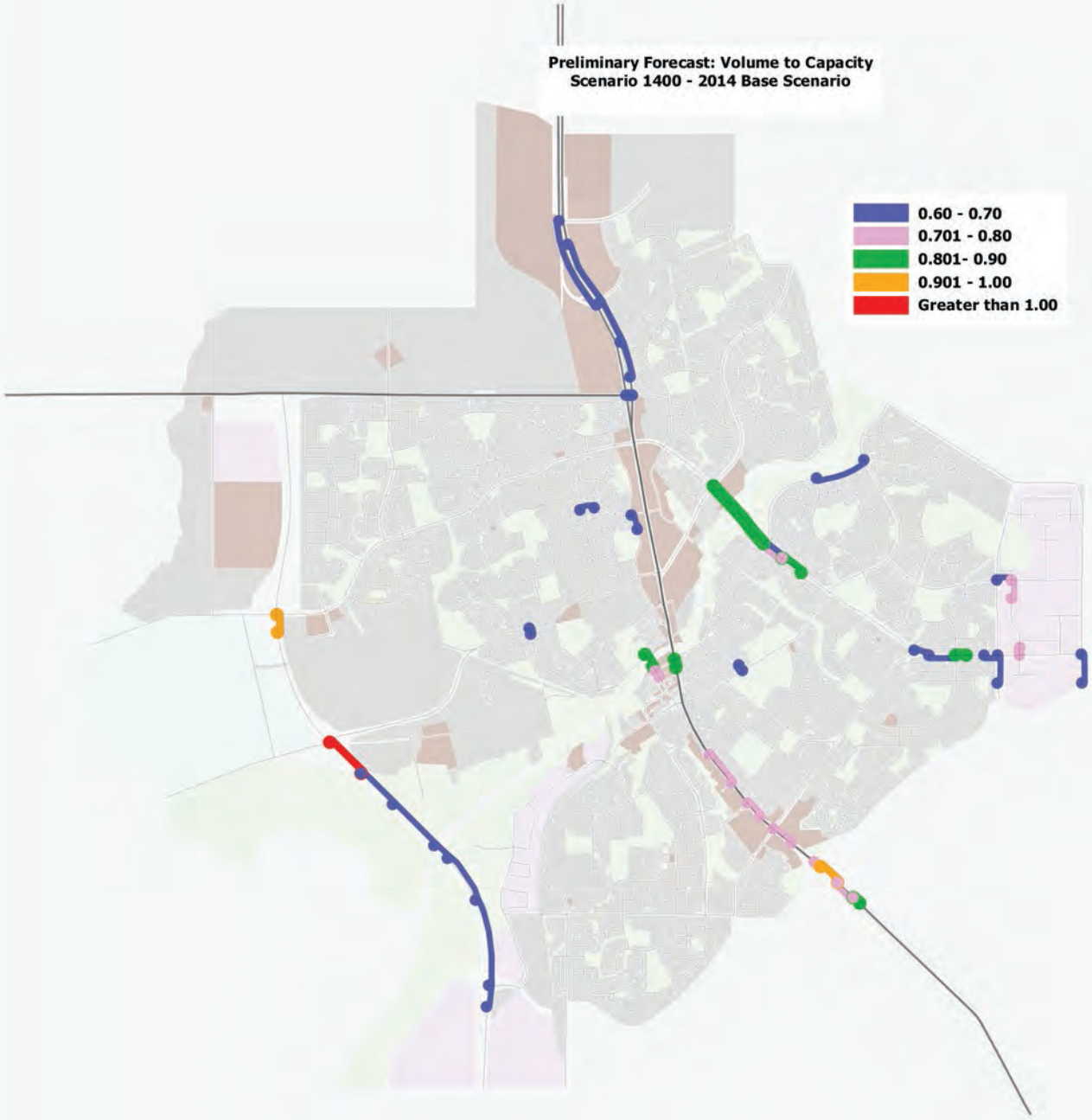
Appendix B.6 – Auto Volumes Internal Calibration Summary

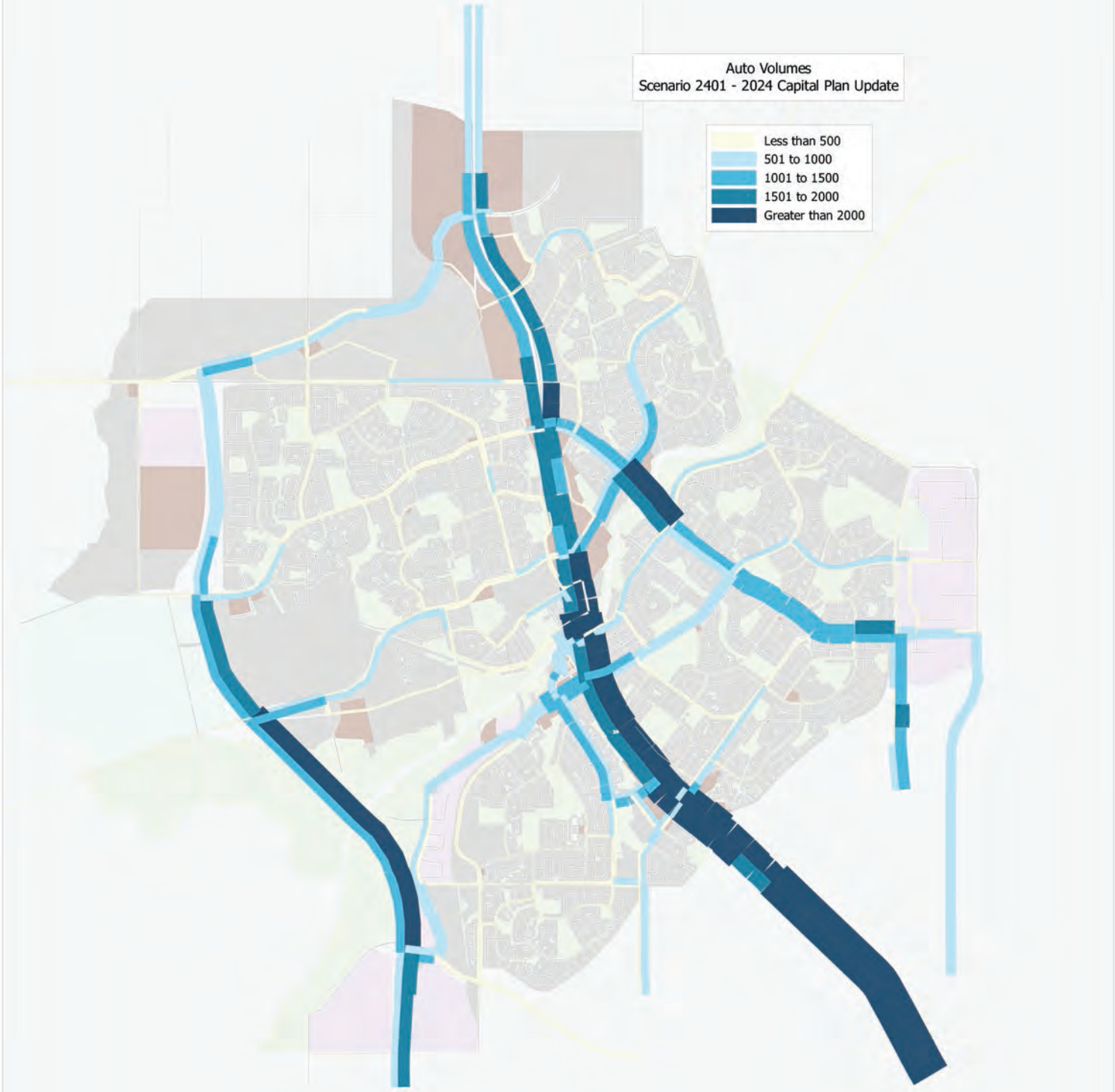
Internal Count Calibration

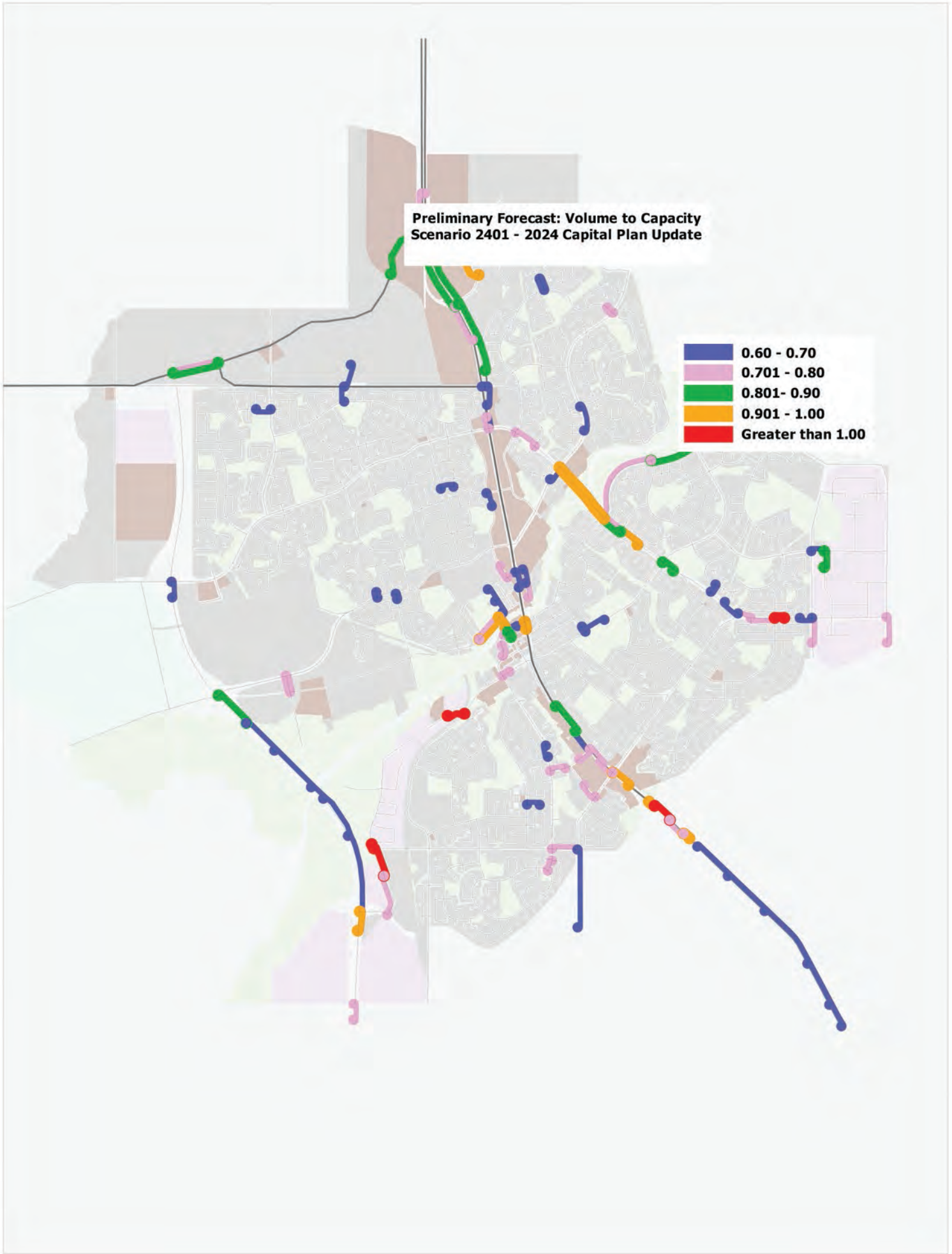
		2014 Model PM Peak		Counts 1 Hour (4:30 - 5:30)	
		NB/EB	SB/WB	NB/EB	SB/WB
Ray Gibbon Drive	between McKenny and Le Claire	1,092	600	1,311	529
Perron Street	Between St. Anne and Mission	649	243	627	328
St. Albert Trail	Between St. Anne and Mission	2,390	1,615	2,658	1,813
Beaudreau Road	Between Sturgeon and Bellerose	1,709	1,352	1,658	1,440
St. Albert Trail	North of Villeneuve	1,356	1,134	1,243	1,056
St. Albert Trail	North of Giroux	1,461	948	1,606	1,270
St. Albert Trail	north of Mckenny	1,474	982	2,093	1,379
St. Albert Trail	north of Gervais	2,207	1,704	2,504	1,804
St. Anne	west of SAT	400	1,743	631	568
Sturgeon	East of SAT	587	248	552	301
Sturgeon	south of boudreau	232	199	287	243
Le Clair	East of RGD	420	394	537	682
McKenny	East of RGD	362	284	552	301
Boudreau	North of SWC	994	843	1,148	934
Boudreau	West of Campbell	1,045	1,300	878	864
Boudreau	East of SWCH	936	946	894	878
SWC	North of Beaudreau	289	397	502	510
Villeneuve	East of Hogan	505	611	418	434
Villeneuve	East of Dennison	463	636	388	455
Giroux	East of RGD	315	76	627	294
Hebert	South of Boudreau	463	99	634	506

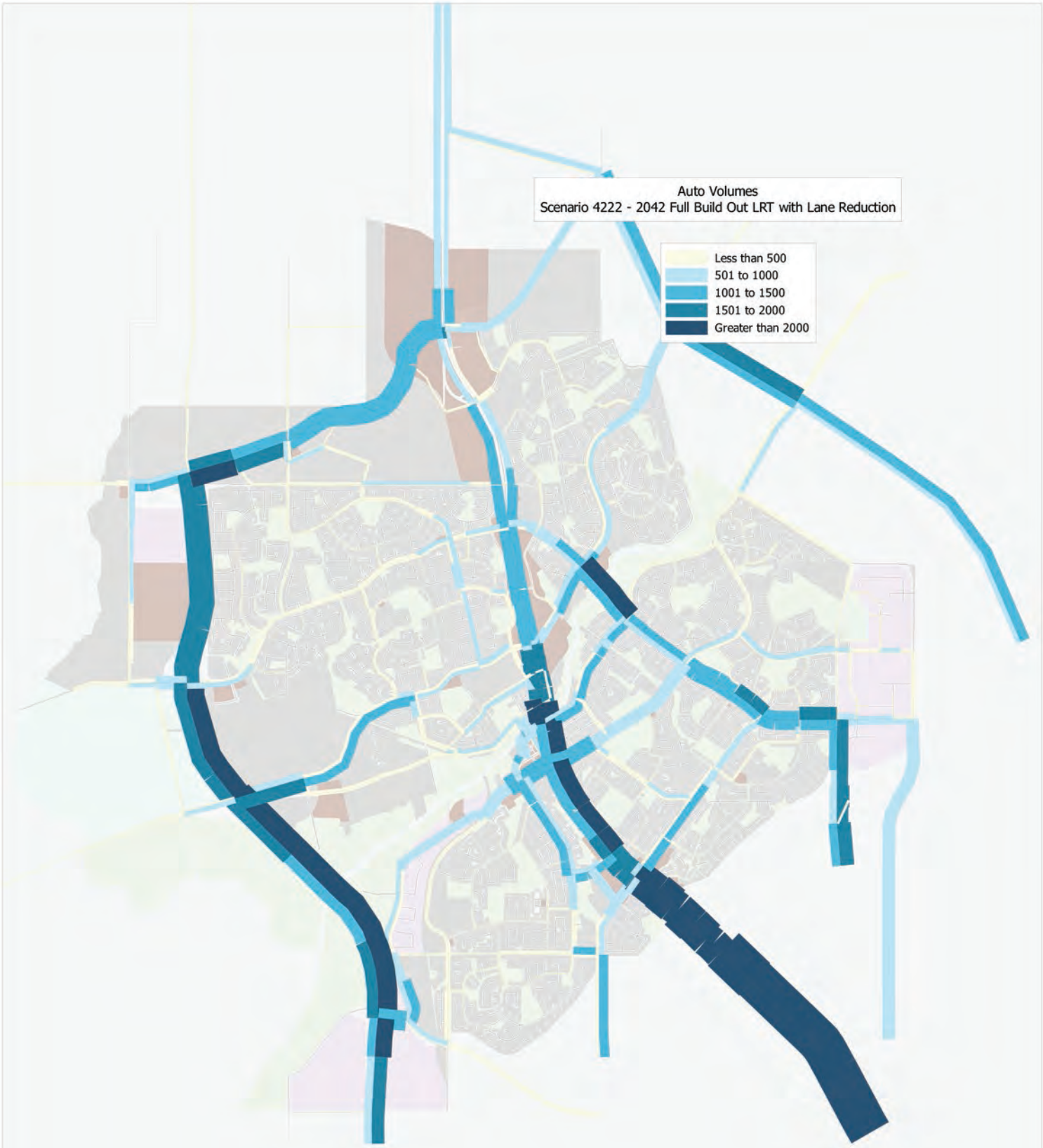
Appendix B.7 - Model Results Mapping


Auto Volumes
Scenario 1400 - 2014 Base Scenario
Less than 500
501 to 1000
1001 to 1500
1501 to 2000
Greater than 2000

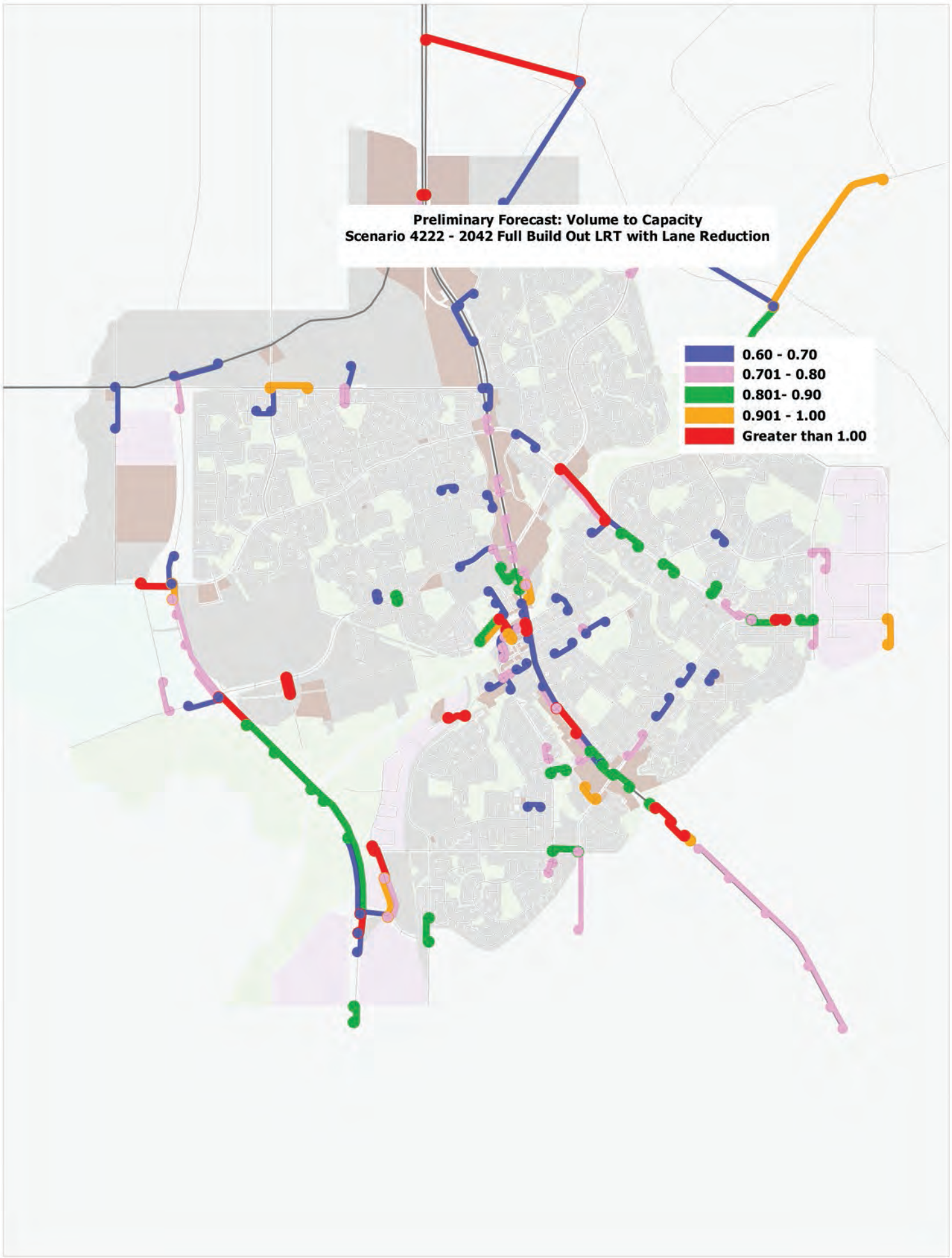

Preliminary Forecast: Volume to Capacity
Scenario 1400 - 2014 Base Scenario
0.60 - 0.70
0.701 - 0.80
0.801- 0.90
0.901 - 1.00
Greater than 1.00

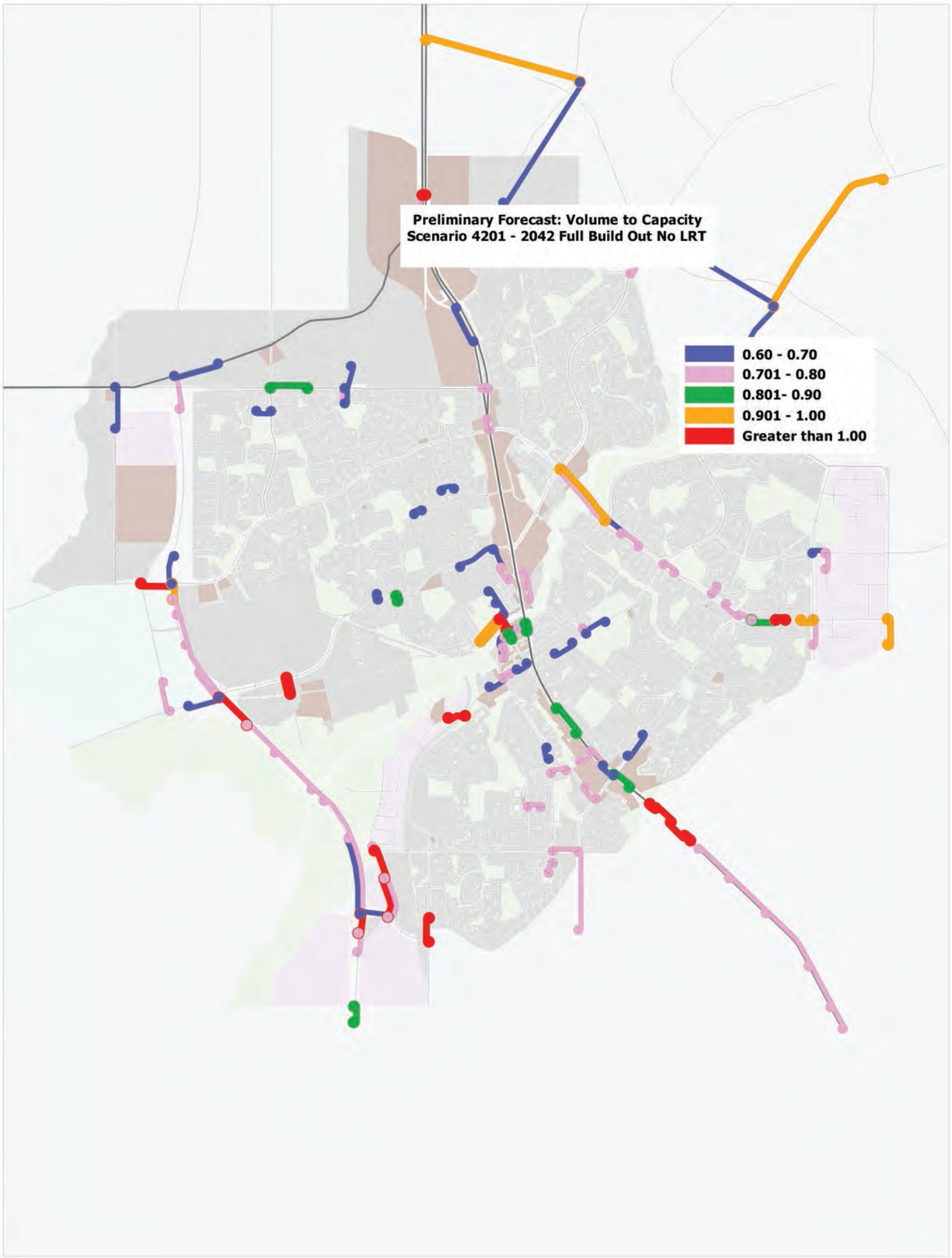

Auto Volumes
Scenario 2401 - 2024 Capital Plan Update
Less than 500
501 to 1000
1001 to 1500
1501 to 2000
Greater than 2000


Preliminary Forecast: Volume to Capacity
Scenario 2401 - 2024 Capital Plan Update
0.60 - 0.70
0.701 - 0.80
0.801- 0.90
0.901 - 1.00
Greater than 1.00


Auto Volumes
Scenario 4222 - 2042 Full Build Out LRT with Lane Reduction
Less than 500
501 to 1000
1001 to 1500
1501 to 2000
Greater than 2000


Auto Volumes
Scenario 4201 - 2042 Full Build Out No LRT
Less than 500
501 to 1000
1001 to 1500
1501 to 2000
Greater than 2000


Preliminary Forecast: Volume to Capacity
Scenario 4222 - 2042 Full Build Out LRT with Lane Reduction
0.60 - 0.70
0.701 - 0.80
0.801- 0.90
0.901 - 1.00
Greater than 1.00

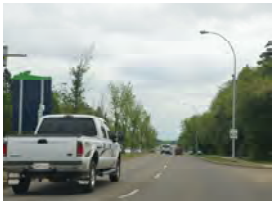

Preliminary Forecast: Volume to Capacity
Scenario 4201 - 2042 Full Build Out No LRT
0.60 - 0.70
0.701 - 0.80
0.801- 0.90
0.901 - 1.00
Greater than 1.00

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APPENDIX C

St. Albert TMP
Cost Estimate









February 2016

CANADA'S BEST MANAGED COMPANIES Platinum member

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PROJECT	TYPE	DESCRIPTION	YES	NO	Cost (2015) ($1,000 +/- 30%)
St. Albert Trail - Signalization	ITS	Adaptive traffic signal controls for 14 Intersections on St. Albert Trail. To reduce congestion by creating smoother flow by adjusting the signal timing.	YES	NO	$700
Erin Ridge Neighbourhood Traffic Calming	Roadway Design Improvements	Implement a Neighbourhood Traffic Calming Process in the community of Erin Ridge and evaluate the procedure to utilize in other city neighbourhoods.	NO	NO	$140
North St. Albert Trail Functional Planning Study	Study	To Review and provide solutions for the northern part of St. Albert Trail.	YES	NO	$140
Transit Priority Signals	ITS	To add transit priority measures on transit routes to optimize passenger travel time.	YES	NO	$300
Traffic Pre-Emption System for Fire	ITS	To improve emergency response time due to increased congestion on roadways.	NO	NO	$70
Ray Gibbon Drive	Widening	Expand to 4 lanes of divided arterial roadway improve efficiency of Ray Gibbon Drive and also enhance capability to absorb additional traffic volumes from St. Albert Trail.	YES	NO	$150,000
St. Albert Trail & Hebert Road Intersection	Intersection Improvement	East and westbound right turn bay construction and northbound lane extension from the superstore access to Hebert road.	NO	YES	$900
Fowler Way: From Ray Gibbon Drive to St. Albert Trail	New Construction	Develop first 2 lanes of ultimate 4 divided arterial roadway. Reduce congestion and reduce traffic on St. Albert Trail by allowing traffic to Ray Gibbon Drive.	YES	YES	$18,500
Meadowview Drive	Re-Build & Upgrade	Re-build 1.6km to urban design due to determination of roadway and safety concerns, projected traffic levels and services the Employment Lands area.	YES	NO	$4,000
Boudreau Road & Campbell Road Intersection	Intersection Improvement	To increase throughput capacity due to congestion from traffic accessing Anthony Henday Drive.	YES	YES	$850
Giroux Road Twinning to Ray Gibbon	Twinning	Currently Giroux Road is twinned its entire length but falls short 300m from the intersection of Ray Gibbon Drive. With the 4 laning of Ray Gibbon Drive and added capacity, traffic patterns will change and utilize Giroux to access Ray Gibbon Drive.	YES	YES	$1,000
McKenney Avenue Twinning to Ray Gibbon Drive	Twinning	Currently McKenney Avenue is twinned from St. Albert Trail to Morgan Crescent, this project includes the continuation of the twinning 1.5km through the Riverside Neighborhood to Ray Gibbon Drive. As the city has seen a change in traffic patterns as traffic is utilizing Ray Gibbon Drive.	NO	NO	$5,000

PROJECT	TYPE	DESCRIPTION	YES	NO	Cost (2015) ($1,000 +/- 30%)
LeClair Way & Riel Drive intersection	Intersection Improvement	To increase capacity due to congestion from traffic accessing Anthony Henday Drive.	YES	NO	$800
St. Albert Trail and Boudreau Road	Intersection Improvement	To increase capacity	YES	YES	$810
Bellerose Drive: From Oakmont to City Limit	Twinning	Twin approx. 1.7km of roadway. Provide additional capacity to access Erin Ride Drive and residential developments.	NO	NO	$5,000
Villeneuve Road	Redesign	Redesign and reclassify Villeneuve Road and intersections as per the approved Villeneuve Road Study.	YES	NO	$7,700
Sir Winston Churchill Ave: From Sturgeon Road to City Limit	Twinning	This project is twinning of approximately 620). Two additional lanes will be constructed along the adjacent path of the current road structure.	YES	YES	$2,000
Campbell Rd Extension to Poundmaker Road	New Construction	This project is to extend approximately 300m of Campbell Road to Poundmaker Road	NO	NO	$1,500
Boudreau Road	Intersection Improvements	Intersection improvements at the intersection of Sturgeon Road and Bellerose Drive to improve capacity (potential turning lane addition at intersection)	YES	NO	$800

ACTIVE TRANSPORTATION FACILITY	TOTAL DISTANCE (KM)	UNIT PRICE (PER KM)	EXISTING CAPITAL PROJECT?	Cost (2015) ($1,000 +/- 30%)
Two Way Active Transportation Multi-use path within road right-of-way	15.3	$250,000	NO	$3,800
Buffered Bicycle Lane with Hatched Pavement Markings - Assumes New Road or Road Reconstruction/Widening already Planned	1.5	$350,000	NO	$500
Proposed Signed Bike Route	10.0	$1,500	NO	$15
Proposed Signed Bike Route with Sharrow	20.8	$3,500	NO	$72
Red Willow Park West - Trail and Park Planning (2017)			YES	$225
Riel Park Phase 5 (2017)[2]			YES	$2,500
Oakmont Multi Use Trail Phase 2 Design (2018)			YES	$200
Oakmont Multi Use Trail Phase 2 Construction (2019)[3]			YES	$1,300
Red Willow Park West - Trail and Park Construction (2019)[4]			YES	$900
Grey Nuns White Spruce Park (2017)[5]			YES	$1,400

1. Crossing and intersection treatments not included in estimates
2. Estimate taken from existing Capital Projects Charter and includes non-trail estimates such as landscaping, signage, parking lot and bus turn around.
3. estimated cost in 2019 dollars estimate as nominated in Capital Projects Charter
4. Only includes those project costs nominated in Capital Projects Charter pertaining to trails
5. estimated cost in 2017 dollars estimate as nominated in Capital Projects Charter

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
2016				
Integrated Action Items				
Complete a Strategic Plan for implementation of recommendations identified through TMP	Engineering	This document shall act as the strategic plan to implement recommendations from the 2015 TMP.	Outlined Strategic Plan to address all recommended actions of the TMP	2016 Q2
Update the City of St. Albert Transportation System Bylaw to reflect the update to the TMP	Engineering	The Bylaw will be updated to reference the updated TMP document and identify the future road network.	Updated Transportation System Bylaw	2016 Q3
Create and implement a public and stakeholder communication plan in relation to the Transportation Master Plan and its resulting strategic plan	Engineering	There shall be annual updates on "The State of Transportation" to which a report will be provided on what tasks have been completed and upcoming focuses for completion. Core projects and programs shall also be aligned in public communications as to their place within the TMP.	Communication Plan for the Strategic Implementation Plan of the 2015 TMP	2016 Q4
Update the ten (10) year capital plan to align with TMP principles.	Engineering	Once approved, the 10 Year Capital Plan may be updated to align with recommendations and priorities of the 2015 TMP.	Updated 10 Year Capital Plan; Project Charters / Business Cases	2016 Q2 2016 Q3/Q4 for budget
Develop Performance Measurement Framework to measure the success of the Transportation Master Plan	Engineering	Once approved, measurements of effectiveness and evaluation time frames will be created to evaluate the success of the TMP plan and implementation.	Outlined Measurements of Effectiveness incorporated into annual "State of Transportation" reports	2016 Q3
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action is in progress, with representation from the City on multiple CRB committees and identification of city priorities within CRB reports / plans.	Alignment of identified priorities / objectives of the 2015 TMP with final CRB reports and recommendations.	Annually
Implement Safe Journeys to School strategies and maintain communication between stakeholders and public in relation to the program	Engineering	This multi-year strategic plan to implement recommendations from the Safe Journeys to School Report is currently in progress	Field level improvements to school zone safety and operations. Evaluation of effects of measures implemented.	2021
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	It is imperative that sustainability be priority for our roadway network and at a Capital Region level, this means accessible, affordable and accommodating mode choices that connect municipalities for residents to choose from for both internal and external trips.	Letters / communication, meeting representation to push for Provincial and Federal funding towards multiple transportation needs; from roadway improvements to use of new technologies, trail connection construction, and transit prioritization	Ongoing
Roads				
Develop neighbourhood traffic management guidelines (includes traffic calming)	Engineering	This task is in progress for completion of a Neighbourhood Traffic Calming Policy and Process. The process will be "piloted" in the community of Erin Ridge in 2016	Policy document and Process document for the implementation of traffic calming in neighbourhoods	2016 Q2

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Develop street classification definitions and define their intended functionality and level of service targets	Engineering	This falls within expected scope of work for the creation of a Movement of Goods and People Policy, to which roadways will be identified for intended function and accommodation of road user types, with level of service and priority levels	Clear identification of roadway functions and expected accommodation and prioritization of road users within a Council Policy on Movement of Goods and People	2016 Q4
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	The widening of Ray Gibbon Dr (from the south city limit to Villeneuve Road) is imperative to mitigating "through" regional traffic on St. Albert Trail.	Letters / communication, meetings to complete advocating for the widening of Ray Gibbon Dr	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	The construction of 127 Street to act as a further east side bypass of St. Albert will reduce the "through" regional traffic on St. Albert Trail and Boudreau Road	Letters / communication, meetings to complete advocating for the construction of 127 Street	Ongoing – until completion
Develop an annual network screening program to identify high collision locations	Engineering	This action is in progress with the completion of annual motor vehicle collision reporting. Report output, data analysis and public information sharing is being enhanced to provide more detailed information in a more timely manner	Annual collision reports with identification of priority locations, driver behaviours and key statistics that will feed into an annual Collision Mitigation Strategy Plan	Annual collision reports expected by Q3 of the following calendar year
Active Transportation				
No Actions Tentatively Scheduled				
Public Transportation				
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task is in progress, currently in the strategic / design phases.	Land purchase Design Construction	2017 Design TBD Constr.
Protect the property needed for the Light Rail Transit	Planning	With the approved corridor and alignment of the LRT, it is important to be prepared for moving forward with necessary construction when / if the time arises. Protecting appropriate right of way will eliminate future conflict and ensure the city is capable of moving forward at the appropriate time.	Protected land that may be owned by the City to move forward with next steps of LRT in the future. Appropriate development around key areas associated with future LRT locations.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	Regional transit operations must ensure affordable, accommodating and accessible services through multiple jurisdictions to be a viable mode choice	Regional Transit collaboration and planning for strategic action plan implementation as through the CRB.	Ongoing
Commercial / Goods Movement				
Develop a Movement of Goods and People Policy and Guidelines	Engineering	This Policy is intended to incorporate information that shall guide overall acknowledgment of functionality of our roadway network and resulting accommodation of multiple road user types, their priority and service levels on various roadway classes, which can then be applied to proposed development and existing	Draft Policy/ Guidelines for Council / public review; final approved Policy / Guidelines on the Movement of Goods and People	2016 Q4

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
		roadway operational evaluations.		
Create level of service guidelines reflective of St. Albert's sustainable transportation goal and apply to appropriate operations, traffic impact assessment guidelines and policy	Engineering	This scope of work is to be inclusive of the development of the Movement of Goods and People Policy	Draft Policy for Council / public review; final approved Policy on the Movement of Goods and People	2016 Q4
2017				
Integrated Action Items				
Align planning, engineering, transit, operations and maintenance master plans, goals and policies	Engineering	Through stakeholder engagement and long term plan review, the Master Plans shall be identified for key strategic alignments and prioritization for creation of necessary policies or processes.	Documented alignment of goals / objectives with identification of existing policies or new policy required for completion.	2017 Q3
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	The City will be taking on its' custom traffic model which may be utilized to evaluate road network operations, impacts of growth and development, impacts of capital construction to roadways, mode split targets and regional growth. Training will be required for staff to maintain the model and perform updates to data or analyze system changes for evaluation.	Up to date custom St. Albert traffic model, with existing data and forecasted growth expectations or various scenarios of system changes.	Ongoing
Partner with community leaders to achieve the TMP vision	Engineering	This will be a task that will need attention from multiple departments and Council members to advocate for the priorities and objectives of the TMP and to engage with community leaders in business, social areas, community support areas, and environmental groups to bring awareness of the TMP document and to highlight key principles, goals and tasks to which these groups or representatives may play part.	The TMP document is the key area of focus to highlight the vision, goal and objectives for the Transportation network. Identification of key community stakeholders that may represent special interests or needs of the City which may then result in an enhanced communication plan, and result in improved measures of success of the implantation of the TMP tasks.	Ongoing
Develop an Intelligent Transportation System Strategy as a travel demand management strategy	Engineering	St. Albert's roadway system is largely built out and a priority is to maximize on existing infrastructure operations through improved efficiency. An ITS strategy will identify types of technology and expectations for effects of implementation, identify an action plan and set targets / timelines to meet the growing demand on our road system.	A Strategic Plan document for ITS integration in the City of St. Albert, and alignment to the Capital Region	2017 Q4

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Develop data collection and management policy	Engineering	Data is the driving force behind evidence based actions and appropriate planning. This task shall identify and document how the City collects data (technology, locations, frequency) and how it disseminates information to public and stakeholders	Traffic Data Collection and Management Policy	2017 Q3
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Update Pedestrian Crossing Control Guidelines in regards to pedestrian crossing warrant processes and criteria, control treatment, and operational standards for signalized pedestrian crossings.	Engineering	This task is to update the process to which pedestrian crossings are installed – the criteria required to determine the appropriate treatment for pedestrian crossings and the actual treatments themselves, to exceed Provincial and Federal standards and acknowledge new improvements to enhance safety	An updated Pedestrian Crossing Control Guidelines document.	2017 Q3
Create a Complete Streets Policy for design and implementation	Engineering	Following completion of the Movement of Goods and People Policy, a document addressing roadway cross-section design specifications and standards will allow for the roadway's designs to align with the intended function of the network and will capture requirements for new development and also provide guidance to retro-fit existing roadways to accommodate all road users in a safe and efficient manner.	Complete Streets Policy and Guidelines Document.	2017 Q4
Update engineering standards to guide implementation of the Complete Streets Policy	Engineering	Following completion of the Complete Streets Policy and Guidelines, Municipal Engineering Standards will be updated to address required road design	Updated Municipal Engineering Standards	2018 Q1
Update engineering standards for sidewalks, pathways and transit access in new developments and for retrofit	Engineering	This task is inline with updating Municipal Engineering Standards with identified changes to design of active /alternative mode infrastructure from the Complete Streets design concepts.	Updated Municipal Engineering Standards	2018 Q1
Develop Traffic Impact Assessment Guidelines for Residential, Commercial and Industrial Neighbourhoods that incorporate cycling and pedestrian impacts and ensure projected traffic volumes are appropriate with the design and function of the proposed road network	Engineering	Traffic Assessment (TIA) Guidelines will provide guidance and specific requirements for new development or infill development with regards to how the transportation system needs must be met when this growth occurs. This document aligns with the Complete Streets Policy and Guidelines, however targets levels of service and minimum operational allowances for roadways.	Traffic Impact Assessment Guidelines document	2017 Q4

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Adopt safety audit standards for new roadways (incorporate in with the TIA guidelines)	Engineering	This task is to be identified and within scope of work for the creation of TIA Guidelines. This will ensure that traffic safety is clearly identified and reviewed at the Planning stages.	Traffic Impact Assessment Guidelines document – with specific section on Roadway Safety Audit performed	2017 Q4
Create and implement a Traffic Data Management Strategy	Engineering	This project shall align with the development of an ITS Strategy – in how the City collects, uses and shares transportation related data. This Strategy shall provide guidance in what type of data is being collected, what technology is used to collect data, and how the information is shared with the public and stakeholders.	Traffic Data Management Strategic Plan	2017 Q3
Allocate appropriate staff levels to respond to transportation inquiries from residents, maintain the traffic model, and to align with identified projects	Engineering	To meet the needs of the growing transportation network there are current plans to manage new programs, and ongoing requirements to collect and analyze data which then feed into performing field level capital improvements and operational adjustments. With this, there is also the need for strategic planning and public / stakeholder communication and further collaboration at the regional level with outside agencies. These demands will require additional resources.	Business Cases / requests for Transportation related Administration staff	To be determined upon deliveries of programs / services
Develop a St. Albert Traffic Safety Plan	Engineering	The intent of this Safety Plan is to create an overarching document that identifies St. Albert stakeholder priorities of traffic safety concerns, a vision for the community and principles / goals / objectives to reach the long term vision. It is tentative to be a 10 year plan, reviewed annually for targets /actions, and updated at the 5 year term.	St. Albert Strategic Traffic Safety Plan document	2017 Q4
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Create opportunities to incorporate active transportation and recreational uses in environmental reserve areas	Planning / Rec Services	Identify locations within ERA to which the TMP Active Transportation Plan could be expanded upon to connect to. These locations may be identified as internal network priority locations as destinations and shall be incorporated into the AT Plan for implementation.	Identification of opportunity to connect and create AT use to and within ERA areas; Align the TMP AT Plan to target these identified areas.	2017 Q3
Incorporate Crime Prevention Through Environmental Design principles into active transportation planning	Engineering /Enforce.	This task aligns with the creation of design standards for "Complete Streets" and has been identified for completion earlier within the plan to be performed collaboratively with the Complete Streets design	Complete Streets Policy and Guidelines Document.	2017 Q4

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
		policy and standards		
Public Transportation				
Review/update transit fare policy to support affordability for users	Transit	This action is completed on an annual basis, with a focus of ensuring Transit is affordable and accommodating to all users.	Updated user fees	Ongoing
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Commercial / Goods Movement				
No Actions Tentatively Scheduled				
2018				
Integrated Action Items				
Develop achievable mode split targets and perform scheduled updates and evaluation of levels and targets	Engineering / Transit	Perform a best practice review to identify similar municipality targets / action plans and evaluation methods. Identification of techniques used to monitor conditions, identify targets and set scheduled evaluations for measurements.	Identifiable mode split targets, aligned with Transit Long Term goals and the TMP long term goals. Reported evaluation of annual values.	2018 Q2
Set and achieve Green House Gas (and related performance indicators) targets related to transportation (includes data collection to measure these)	Engineering / Environment	Perform a best practice review to identify similar municipality targets / action plans and evaluation methods. Identification of techniques used to monitor conditions, identify targets and set scheduled evaluations for measurements.	Identifiable greenhouse gas targets aligned with Environmental Master Plan goals and the TMP long term goals.	2018 Q2
Incorporate the travel demand model as an on-going transportation planning and evaluation tool for new developments and network planning as they relate to environmental impacts through greenhouse gas emissions	Engineering	This task is aligned with the maintaining and managing the custom traffic model, to which through ongoing training will advance city staff's ability to utilize the model for various aspects of transportation evaluation and monitoring. This task centers on creating an identifiable way to evaluate environmental impacts to the roadway.	Identifiable reportable information related to projected growth and development and resulting impacts to the transportation network in an environmental measure.	2018 Q3
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Partner with community leaders to achieve the TMP vision	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Update the St. Albert Trail North-Arterial Corridor Management Plan	Engineering	This task shall expand upon the past completed north St Albert Tr arterial study, to take into account updated information such as the finalized concept for Villeneuve Rd, LRT and approved development along the corridor. The focus shall be to formalize the long term design of St Albert Tr north of Boudreau Rd, to align with the Complete Streets and necessary design concepts to move forward with more detailed construction designs.	Updated St Albert Trail North-Arterial Corridor Plan document	2018 Q4
Create guidelines and increase use of roundabouts in new development and look for opportunity of retro-fit completion to enhance network safety and efficiency	Engineering	This task shall be dependent upon the finalization of the Transportation Association of Canada (TAC) Standards and Guidelines for Use of Roundabouts. Recommendations and standards shall be incorporated into the Municipal Engineering Standards	Updated Municipal Engineering Standards	Within 6 months of the TAC Roundabout standards being completed.
Establish a safety review process when traffic collisions involving a fatality on a public roadway occurs	Engineering & Enforce.	This task shall identify a set process to which analysis and review is performed in the event of a fatality resulting motor vehicle collision. Inclusive of specific site investigation, location trending investigation and operational investigation.	Administrative process associated with a road safety review for locations at which a fatality resulting motor vehicle collision has occurred	2018 Q1
Establish an in-service safety review program for high collision locations	Engineering	This task may involve specific training necessary for staff. This task aligns itself with the "Vision 0" objective and will allow for improved acknowledgment of mitigation actions to eliminate severe motor vehicle collisions in the city.	Administrative process associated with "in-service" road safety reporting. Documented In-Service Road Safety Reports.	2018 Q4
Develop Noise Management Policy	Engineering	Following completion of the noise study (2016) to which data will be collected on existing roadway noise levels to be compared to optimal tolerances for noise levels, a best practice review may be performed and engineering mitigation measures investigated that may then be utilized to create a Noise Management Policy	Noise Management Policy document – in relation to traffic generated noise. Updated Municipal Engineering Standards Applicable Project Charters / Business Cases	2018 Q3
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Create an Implementation Plan for the Recommended Active Transportation Plan with the focus of closing existing gaps within the	Engineering /Planning	This task shall utilize the 2015 TMP document as a starting tool to engage with stakeholders and begin collaboration on	Strategic Plan for implementation of Active Transportation	2018 Q4

Attachment 4: 2015 Transportation Master Plan Implementation Plan

Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
network and prioritize completion of short gaps.		prioritization recognition, identification and project scheduling to implement the Active Transportation Plan.	recommendations from the TMP	
Develop/enhance active transportation connections to trails along Sturgeon River	Engineering	This task shall be identified and become part of the AT Plan	Plan for implementation of Active Transportation recommendations	2018 Q4
Complete active transportation connections to community destinations, with a priority on family orientated destinations	Engineering	This task shall be identified and become part of the AT Plan	Strategic Plan for implementation of Active Transportation recommendations	2018 Q4
Work with regional partners to identify active transportation links (eg. Sturgeon County, Alberta Transportation, Alberta Environment and Parks, Alberta Health Services)	Engineering /Planning	This task shall be identified and become part of the AT Plan	Strategic Plan for implementation of Active Transportation recommendations	2018 Q4
Develop accessibility guidelines to accommodate physical limitations	Engineering	This task will require a review of best practices, engagement with community stakeholders to identify areas of priority and owners of infrastructure or processes that may be part of the overarching Guidelines.	Complete Mobility and Accessibility Guidelines document	2019 Q1
Public Transportation				
Review/update transit fare policy to support affordability for users	Transit	This action is completed on an annual basis, with a focus of ensuring St. Albert Transit is affordable and accommodating to all users.	Updated user fees	Ongoing
Prepare a strategy to develop the north LRT Station which may include a transition from Park and Ride to a Transit Oriented Development	Transit / Engineering	This task shall be aligned with the completion and recognition of the feasibility study of the Bus Rapid Transit, and CRB prioritization / municipal prioritization for the implementation of a north station	Strategic plan for general timelines, triggers and high level costing for use and implementation of a north station – from Park n Ride to LRT	2018 Land acquisition 2020 – design 2021 / 2022 - Construction
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Commercial / Goods Movement				
No Actions Tentatively Scheduled				

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
2019				
Integrated Action Items				
Provide dedicated staff to implement the active transportation plan and develop travel demand management programming	Engineering / Planning	Following the completion of the Active Transportation Implementation Plan, acknowledgment will be made as to necessary staff for appropriate delivery – inclusive of Project Management / Construction Management / Public and Stakeholder Engagement	Staffing acknowledgment and scheduling to carry out the Active Transportation Plan. Applicable Business Cases	2019 Q2
Develop a comprehensive asset management strategy including a database resource to assess life-cycle costs of transportation infrastructure	Engineering	Perform best practice review; analysis of where we are at now vs. where we need to be; identification of all assets with current condition level ratings; identified life cycling, action plan for necessary repairs / replacement; data management form and reporting style	Asset Management Strategy for full range of Transportation Infrastructure (integration of existing actions / industry best practice / enhanced monitoring and reporting)	2019 Q4
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Partner with community leaders to achieve the TMP vision	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Identify and consider potential locations for infill development to maximize use of existing roadways	Planning	This task may be associated with appropriate planning for TOD	Updated Land Use	Ongoing
Work with regional partners to develop an Emergency Measures Strategy (such as traffic signal pre-emption)	Engineering	There are no costs associated with the "planning" stages of this task, however pending results of recommendations and priorities there may be costs associated to infrastructure placement and operational management. This task shall also be captured within ITS recommendations. This may also fall closer in line with a later scheduled task in creating a Regional Traffic Control Centre	Regional collaboration for Traffic Management Strategy related to Emergency Measures or Action Plan	TBD due to necessary collaborative efforts of multiple jurisdictions
Develop parking management policy	Engineering / Planning	This task may be pushed in priority to align with further actions such as the Erin Ridge Permit Parking review and must be in line with Downtown Parking Management Plans.	Parking Management Policy document	2019 Q3

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Maintain and update Wayfinding to key recreational and commercial amenities on bike trails	Engineering / Ec Dev	Work associated with this task will align with the Active Transportation Plan and prioritize internal connectivity to key destination areas that will require guidance signs; costs are unknown at this time and will require identification of locations and appropriate necessary notification	Signage implementation plan with the Active Transportation Plan; updated standards to capture new development sign installations	ongoing
Implement the active transportation plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.	Engineering /Planning	This action item originated in 2018 and is ongoing.	As noted in 2018 section.	2029
Public Transportation				
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning and long term timeline for implementation)	Planning	This task shall utilize projected identification of areas of development (new / infill) appropriate for higher densities to maximize alignment to roadway infrastructure and accessibility to multi-modal forms	Necessary Land Use Adjustments; Development occurring on sites	Ongoing
Implement parking for bikes and provide drop / off zones (kiss and rides) at Transit facilities	Transit	This task seeks to connect multiple modes and provide accessibility to services to encourage use	Infrastructure installation at sites	TBD pending priority of locations
Review/update transit fare policy to support affordability for users	Transit	This action is completed on an annual basis, with a focus of ensuring St. Albert Transit is affordable and accommodating to all users.	Updated user fees	Ongoing
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Commercial / Goods Movement				
No Actions Tentatively Scheduled				
2020				
Integrated Action Items				
Complete an updated travel demand survey every 10 years	Engineering	This task will be targeted for completion with the 5 year updates to the Transportation Master Plan	Updated Travel Demand Survey of St. Albert Residents; Updated TMP	2021 With TMP
Review the Transportation Association of Canada (TAC) Canadian Guide for Greener Roads (CGGR) and relate identifiable objectives of the CGGR with St. Albert policies and principles	Engineering	This task will involve review of the TAC document and identification of areas applicable to City Policy or Programs (new or existing). Links will be required to Environmental Master Plan	Updated applicable Policies, Municipal Design Standards, Environmental Targets / evaluation processes	2020 Q3

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Partner with community leaders to achieve the TMP vision	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Develop temporary traffic control/special event management policy / process	Engineering	This task may be pushed to align with 2016 work associated with Special Event Policy creation; this task is specific to the roadway management side of Special Events – to identify typical traffic control setups / templates, identify costs, required actions and contacts.	May be related to the created (2016) Special Event Policy; or new policy created. Guidelines / Process document for Special Event and Temporary Road Closures	2020 Q3
Develop Wayfinding/Tourist Transportation Management Policy	Engineering	This task is specific to identify requirements / criteria and approved applications to Way Finding Signage	Wayfinding / Tourist Information Administrative Policy	2020 Q4
Identify and consider potential locations for infill development to maximize use of existing roadways	Planning	This action item originated in 2019 and is ongoing.	As noted in 2019 section.	Ongoing
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Implement the plan for the Recommended Active Transportation Plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.	Engineering	This task shall follow the created implementation plan for Active Transportation – following identified priorities and infrastructure	Applicable Project Charters for annual completion of work. Infrastructure placement in the field.	2029
Public Transportation				
Develop and prioritize a construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision	Transit / Engineering	This plan shall align with work completed for the Accessibility and Mobility Guidelines; where further work will be completed to identify locations where improvements must be made – inclusive to those targets involving Transit infrastructure	Implementation Plan for addressing necessary infrastructure upgrades for improved mobility and accessibility throughout the City Applicable Project Charters	2020 Q2 for Plan
Adjust Land Use Policies to support Transit Orientated Development around proposed future Light Rail Transit stations	Planning	This task links the alignment of long term land use planning to transportation needs, and focuses on the correlation of higher density development to larger scale Transit development	Updated Land Use Policies	2020 Q4

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning and long term timeline for implementation)	Planning	This task shall utilize projected identification of areas of development (new / infill) appropriate for higher densities to maximize alignment to roadway infrastructure and accessibility to multi-modal forms	Necessary Land Use Adjustments; Development occurring on sites	Ongoing
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Commercial / Goods Movement				
No Actions Tentatively Scheduled				
2021				
Integrated Action Items				
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Partner with community leaders to achieve the TMP vision	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Complete Transportation Demand Management Study for Downtown	Engineering / Planning	This work aligns with Downtown Area Redevelopment and overall needs to accommodate vehicle and pedestrian movement	Transportation Demand Management Study for Downtown St. Albert document	2021 Q3
Work with Alberta Transportation, City of Edmonton and Sturgeon County to develop a regional traffic control centre	Engineering	This work may be started through the CRB, or via direct stakeholder engagement and St. Albert's involvement in projects such as the Smart City Alliance	Collaborative efforts to identify regional needs (ITS) and resulting potential of a regional traffic control centre	2022 – identify intent and potential interest / understanding from agencies to move forward
Identify and consider potential locations for infill development to maximize use of existing roadways	Planning	This action item originated in 2019 and is ongoing.	As noted in 2019 section.	Ongoing

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Implement the plan for the Recommended Active Transportation Plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.	Engineering	This task shall follow the created implementation plan for Active Transportation – following identified priorities and infrastructure	Applicable Project Charters for annual completion of work. Infrastructure placement in the field.	2029
Public Transportation				
Conduct feasibility study for Bus Rapid Transit/priority bus lanes as a progression towards Light Rail Transit implementation	Transit / Engineering	This study will focus on identification of existing conditions to triggers potentially for an effective and efficient use of Bus Rapid Transit targeting St. Albert Trail. Key areas being addressed would relate to mode split / ridership / effectiveness / required infrastructure with cost estimates to operate effectively.	Feasibility report document	2021 Q3
Implement the construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision	Transit / Engineering	This work is associated with carrying out the completed plan from 2020	Applicable Project Charters	TBD by scope of work from plan
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning and long term timeline for implementation)	Planning	This task originated in 2020 and is ongoing until completion.	Necessary Land Use Adjustments; Development occurring on sites	Ongoing
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Commercial / Goods Movement				
Establish a tiered truck route system for Large Commercial Vehicles and Pick and Delivery Vehicles (includes sign changes, education, bylaw changes, helping residents understand purpose of roadways)	Engineering	This task will involve stakeholder engagement with industry and local businesses to identify viable solutions to "timed" route use, and any adjustments to the designated route network	Applicable amendments to the Traffic Bylaw to identify designated route changes	2021 Q4
2022 - 2027				
Integrated Action Items				
Maintain and utilize the city's Traffic Model to establish strategic priorities for the city's investment in transportation infrastructure to serve as a guide for capital investment plans to service the full build-out population of 113,000	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing
Partner with community leaders to achieve the	Engineering	This task originated in 2017 and is ongoing until completion.	As identified within 2017 section.	Ongoing

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
TMP vision				
Work with Capital Region Board to align and implement the city's TMP and the Integrated Regional Transportation Master Plan	Engineering	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Advocate for higher orders of government to invest in all modes	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing
Roads				
Develop a functional plan for St. Albert Trail to support Light Rail Transit/Bus Rapid Transit, pedestrian travel (or to transform it to a Complete Street) and incorporate Transportation Demand Management principles	Engineering	This task to create the conceptual design of St. Albert Trail aligns with the Complete Streets Policy and also the ITS Strategic Plan. St. Albert Trail will require specific attention to ensure its immediate demands for traffic management are addressed, while also preparing for strategic transformation of the roadway while maximizing efficiency at all times.	Within the 2 documents – Complete Streets Policy and Guidelines and the ITS Strategy; St. Albert Trail will be identified as specific needs / actions / priorities	2017 Q3 / Q4 with respect to the documents
Work with Alberta Transportation, City of Edmonton and Sturgeon County to develop a regional traffic control centre	Engineering	This action item originated in 2021 and is ongoing.	As noted in 2021 section.	2022 – identify intent and potential interest / understanding from agencies to move forward
Identify and consider potential locations for infill development to maximize use of existing roadways	Planning	This action item originated in 2019 and is ongoing.	As noted in 2019 section.	Ongoing
Advocate for twinning of Ray Gibbon Drive and extension of Ray Gibbon Drive	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Advocate for construction of 127th Street between Anthony Henday and Highway 2	Council / Public / Admin	This action item originated in 2016 and is ongoing.	As noted in 2016 section.	Ongoing – until completion
Active Transportation				
Implement the plan for the Recommended Active Transportation Plan with the focus of closing existing gaps within the network and prioritize completion of short gaps.	Engineering	This task shall follow the created implementation plan for Active Transportation – following identified priorities and infrastructure	Applicable Project Charters for annual completion of work. Infrastructure placement in the field.	2029
Public Transportation				
Identify bus routes to connect with future Light Rail Transit	Transit	This task focuses on a planned routing system (internal) to connect to proposed future LRT centres. This may identify level of service adjustments, infrastructure needs, expectations of travel times and operational impacts.	Applicable updates to Transit Routing and mapping	2023
Implement the construction program to implement field level upgrades for improved accessibility at transit stop locations for those with limited mobility or vision	Transit / Engineering	This work is associated with carrying out the completed plan from 2020	Applicable Project Charters	TBD by scope of work from plan
Prioritize land development with higher densities and mixed uses in vicinity of major transit stations (short term timeline for planning	Planning	This task originated in 2020 and is ongoing until completion.	Necessary Land Use Adjustments; Development occurring on sites	Ongoing

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Action Item	Lead Department	Notes	Deliverable	Deliverable Timeframe
and long term timeline for implementation)				
Support the development of a park and ride facility at Campbell Road Transit Centre	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing until completion
Protect the property needed for the Light Rail Transit	Planning	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing
Work with regional partners to improve regional transit services	Transit / Engineering	This task originated in 2016 and is ongoing until completion.	As identified within 2016 section.	Ongoing