



Master Transportation Plan



August 2010



Paradigm
www.ptsl.com



GSP
group



Executive Summary





EXECUTIVE SUMMARY

CONTENT

In January 2009, the City of Stratford initiated this Master Transportation Plan study to update and replace the 1992 Transportation Plan and provide input to the Official Plan update. This study was undertaken in three phases to address the requirements outlined in the Terms of Reference. This report summarizes the main findings the study.

OBJECTIVES

The City of Stratford Transportation Master Plan has the following key objectives:

- Develop a 20 year transportation master plan;
- Identify all arterial and collector roads for inclusion in the Official Plan;
- Review existing routes used by trucks and the need for and feasibility of designated truck routes;
- Consider and review of the impact of the future Highway 7/8 bypass route;
- Identify and prepare a transportation improvement program to deal with projected population and employment growth for the next 5, 10 and 20 year horizon;
- Identify the cost of proposed infrastructure improvements for the 5 year planning horizon;
- Review and identify streets that may incorporate options for alternative travel modes, such as cycling lanes and widened sidewalks or trails, through either widening or narrowing; and
- Research, review and develop opportunities and options for pedestrian and cycling strategies, travel demand management, and traffic calming measures.

SUMMARY AND CONCLUSIONS

The main conclusions the study is as follows:

- **Existing Traffic Volumes:** The highest traffic volumes occur on Huron Street and Ontario Street which experience between 15,000 to 17,000 vehicles per day (vpd). Other key roadways experiencing traffic over 10,000 vpd include Erie Street, Lorne Avenue and Romeo Street south of Delamere. All other streets where counts were conducted experience less than 10,000 vehicles per day.
- **Peak Hour Traffic:** The capacity of a single arterial lane is generally considered to be about 800-900 vehicles per hour whereas the capacity of a collector lane is generally taken to be 500-700 vehicles per hour in each direction. The recorded volumes indicate that all roadways in Stratford are operating within the capacity of a single lane of traffic with the exception of Ontario Street in the east part of the City.
- **Truck Traffic:** The truck route system of C.H. Meier, Douro Street, Romeo Street South and Lorne Avenue appears to have effectively diverted a significant number of trucks from Ontario Street and





Huron Street although some trucks clearly continue to go through downtown. The O'Loane Avenue and Quinlan Road system also is effective in diverting truck traffic around the City.

- **Public Transit:** The transit service consists of two components; a conventional transit service (Stratford Transit) and a specialized transit service (Stratford Parallel Transit). The system primarily accommodates captive riders (those without alternative transportation choices).
- **Active Transportation:** Active transportation is supported by a map of suggested on-road bicycle routes which have been recommended for use by cyclists as an alternative to main arterial roads. The selected routes avoid major arterial roads such as Ontario Street, Huron Street, Romeo Street and most of Lorne Avenue. Currently, walking is supported mainly by the system of sidewalks and existing trails that are provided as part of the road network within the City. In addition, development of trail systems and linkages in plans of subdivision are initiatives that have been implemented to provide a more complete and attractive system to support these modes. Finally, urban design, maintenance standards, and bicycle parking facilities are used to support walking and cycling.
- **Transportation Forecasting Model:** A transportation forecasting model was developed by dividing the City into 193 internal traffic analysis zones (TAZs) and 5 external TAZs. The internal zones were grouped together into 16 super analysis zones (SAZ). The model represents the major road network. It uses travel demand data developed from the household travel survey conducted as part of this study, and travel data available from an external cordon origin-destination survey conducted by the Ministry of Transportation which captures travel into, out of, and through the City from external areas. The calibrated model concludes that most of the Stratford Road network is operating under its capacity.
- **Population and Employment Forecasts:** Land use data and forecasts were provided by the City of Stratford for the horizon year of 2028. The overall population of the city is expected to grow by about 4350 and the overall employment is expected to grow by 2685. The primary population growth zones are located in the West Secondary Plan and Northeast Secondary Plan areas. The areas expected to see employment growth are located in the south end of the city. Assuming a population of 30,500 people based on the 2006 census data, the population growth forecast represents a modest increase of 14%, or less than 1% per annum over the 22 year period between 2006 and the horizon year of 2028.
- **Future Transportation Needs:** The 2028 travel demand was used to forecast the trips on the same calibrated network as the 2010 model, with the addition of the future extension of McCarthy Road to O'Loane Avenue in the northwest part of the City which is expected to be in place by 2028. The results of the 2028 model forecasts indicate that portions of Ontario Street in the core area and Lorne Avenue in the south part of the City will experience some capacity deficiencies at the horizon year of the study. In addition, some increased traffic congestion is expected to occur on Romeo Street north of Ontario Street. The increase in through traffic on the Highway 7 and 8 corridor causes congestion to occur in the core area on Ontario Street and on Lorne Avenue in the future indicating the need for road network improvements. Improvements should be considered to encourage the use of alternative transportation modes including public transit, walking and cycling within the City.
- **Public Consultation:** Two public information meetings were held during the study to provide input to the Transportation Plan. The public input from both meetings indicated that the focus of this plan should be





on improvements to walking and cycling in the City. Public input from the meetings indicated support for this transportation plan.

■ **Transportation Master Plan:** A recommended 20 year transportation plan, implementation program objectives and policies for the City of Stratford have been developed in this study. The plan is made up of several elements including:

- Transportation Demand Management;
- Pedestrian Plan and Policies;
- Cycling Plan and Policies;
- Transit Plan and Policies;
- Roadway Network Plan and Policies;
- Implementation Program; and
- Cost Estimates.

The primary goal of the plan is to provide increased focus on accommodating active transportation to encourage walking and cycling. Several of the goals and objectives of the plan are already included in existing Official Plan.

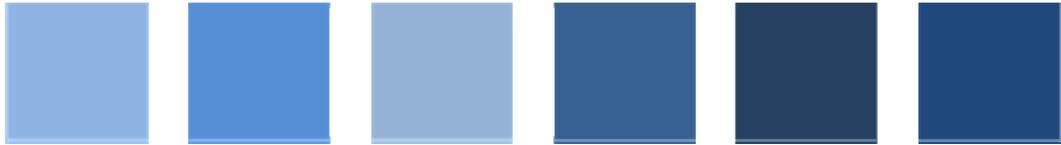




CONTENTS

- 1.0 INTRODUCTION 1**
- 1.1 BACKGROUND 1
- 1.2 STUDY OBJECTIVES 1
- 1.3 THE TRANSPORTATION PLANNING PROCESS 2
- 1.3.1 BASIC PLANNING PROCESS 2
- 1.3.2 DATA SOURCES 2
- 1.3.3 THE STRATFORD STUDY PROCESS 5
- 1.3.4 THE PUBLIC CONSULTATION PROCESS 5
- 1.3.5 SCOPE OF A MASTER TRANSPORTATION PLAN 6
- 2.0 EXISTING CONDITIONS 7**
- 2.1 EXISTING TRAFFIC VOLUMES 7
- 2.1.1 MAJOR ROAD NETWORK 7
- 2.1.2 DAILY TRAFFIC 7
- 2.1.3 PEAK HOUR TRAFFIC 11
- 2.1.4 DAILY TRUCK TRAFFIC 11
- 2.2 EXISTING TRANSIT SERVICE 11
- 2.2.1 CONVENTIONAL SERVICE 11
- 2.2.2 STRATFORD PARALLEL TRANSIT 14
- 2.3 ACTIVE TRANSPORTATION 14
- 2.3.1 CYCLING 14
- 2.3.2 TRAILS AND SIDEWALKS 16
- 3.0 TRAVEL DEMAND FORECASTS 20**
- 3.1 MODEL DEVELOPMENT 20
- 3.1.1 ZONES AND LINK STRUCTURE 20
- 3.1.2 TRIP GENERATION EQUATIONS 20
- 3.1.3 LINK-SPECIFIC ASSIGNMENT CALIBRATION 23
- 3.2 EXISTING TRAFFIC LEVEL OF SERVICE 23
- 3.3 POPULATION AND EMPLOYMENT FORECASTS 23
- 3.3.1 LAND USE CHANGES 23
- 3.3.2 TRIP GENERATION 26
- 3.4 FUTURE TRANSPORTATION NEEDS 26
- 3.5 PUBLIC CONSULTATION MEETING 1 28
- 4.0 IDENTIFICATION AND EVALUATION OF TRANSPORTATION IMPROVEMENTS 29**
- 4.1 ALTERNATIVES TO ROAD IMPROVEMENTS 29
- 4.1.1 TRANSPORTATION DEMAND MANAGEMENT 29
- 4.1.2 MARKET SOLUTIONS 29
- 4.1.3 BEHAVIOURAL SOLUTIONS 30
- 4.1.4 LAND-USE SOLUTIONS 32
- 4.1.5 SCREENING OF TDM ALTERNATIVES 33
- 4.2 INCREASED TRANSIT RIDERSHIP 34
- 4.2.1 STRATFORD TRANSIT 34
- 4.2.2 TRANSIT SUPPORTIVE STRATEGIES 36
- 4.2.3 INTER-CITY TRANSIT 37





4.3 INCREASING ACTIVE TRANSPORTATION.....	37
4.3.1 INCREASE WALKING.....	37
4.3.2 INCREASE CYCLING.....	42
4.3.3 CYCLING FACILITY STANDARDS	43
4.3.4 CYCLING NETWORK	43
4.5 ROAD NETWORK IMPROVEMENTS	46
4.5.1 ROAD NETWORK NEEDS	46
4.5.2 C.H. MEIER AND MCCARTHY ROAD EAST EXTENSIONS	46
4.5.3 MCCARTHY ROAD WEST EXTENSION	46
4.5.4 HIGHWAY 7/8 BYPASS.....	48
4.5.5 TRUCK ROUTES	51
4.6 PUBLIC CONSULTATION MEETING 2.....	51
5.0 TRANSPORTATION MASTER PLAN.....	54
5.1 OVERVIEW	54
5.2 TRANSPORTATION DEMAND MANAGEMENT PLAN	54
5.2.1 TDM OBJECTIVES	55
5.2.2 TDM POLICIES	55
5.3 PEDESTRIAN PLAN	56
5.3.1 PEDESTRIAN PLAN OBJECTIVES.....	58
5.3.2 PEDESTRIAN PLAN POLICIES.....	58
5.4 CYCLING MASTER PLAN.....	59
5.4.1 CYCLING PLAN OBJECTIVES	59
5.4.2 CYCLING PLAN POLICIES	61
5.5 TRANSIT PLAN.....	62
5.5.1 GOALS AND OBJECTIVES	62
5.5.2 TRANSIT POLICIES	65
5.6 ROADWAY NETWORK PLAN	66
5.6.1 ROADWAY PLAN OBJECTIVES.....	66
5.6.2 ROADWAY PLAN POLICIES	68
5.7 COMPLETE STREETS APPROACH.....	71
5.7.1 COMPLETE STREETS OBJECTIVES.....	74
5.7.2 COMPLETE STREETS POLICIES.....	74
6.0 IMPLEMENTATION PLAN	75
6.1 SCHEDULING OF IMPROVEMENTS	75
6.1.1 PEDESTRIAN PLAN IMPLEMENTATION	75
6.1.2 CYCLING PLAN IMPLEMENTATION.....	76
6.1.3 PUBLIC TRANSIT	76
6.1.4 ROADWAY NETWORK EXPANSION.....	77
6.2 5-YEAR PLANNING HORIZON COST ESTIMATES	77

APPENDICES

- APPENDIX A – TRAFFIC COUNT DATA
- APPENDIX B – HOUSEHOLD TRAVEL SURVEY
- APPENDIX C – MODEL DEVELOPMENT
- APPENDIX D – PUBLIC MEETING NOTICES





FIGURES

FIGURE 1.1: TRANSPORTATION PLAN RELATIONSHIPS	3
FIGURE 1.2: TRANSPORTATION STUDY PROCESS	4
FIGURE 2.1: ROAD CLASSIFICATIONS	8
FIGURE 2.2: ATR COUNT PROGRAM.....	9
FIGURE 2.3 DAILY TRAFFIC VOLUMES.....	10
FIGURE 2.4: PM PEAK HOUR DIRECTIONAL TRAFFIC VOLUMES	12
FIGURE 2.5: DAILY TRUCK TRAFFIC VOLUMES	13
FIGURE 2.6: EXISTING TRANSIT SERVICE	15
FIGURE 2.7: EXISTING BICYCLE ROUTE SYSTEM	17
FIGURE 2.8: EXISTING SIDEWALK NETWORK	19
FIGURE 3.1: SUPER ANALYSIS ZONE STRUCTURE	21
FIGURE 3.2: MODEL LINK CLASSIFICATION.....	22
FIGURE 3.3: COUNT DATA LOCATIONS.....	24
FIGURE 3.4: 2010 MODEL RESULTS.....	25
FIGURE 3.5: ZONES WITH FORECASTED GROWTH.....	27
FIGURE 4.1: TRANSPORTATION DEMAND MANAGEMENT OPTIONS (TDM)	31
FIGURE 4.2: COMPARISON OF TRANSIT CHARACTERISTICS	35
FIGURE 4.3: PM PEAK HOUR TRAVEL CHARACTERISTICS.....	38
FIGURE 4.4 COMPARISON OF WALK AND BICYCLE TRIP LENGTHS	40
FIGURE 4.5: SIDEWALK REQUIREMENTS ON ARTERIAL AND COLLECTOR ROADS	41
FIGURE 4.6: TYPICAL BICYCLE FACILITIES STANDARDS	44
FIGURE 4.7: POTENTIAL BICYCLE ROUTES AND LANES	45
FIGURE 4.8: C.H. MEIER AND MCCARTHY ROAD EAST EXTENSION – NORTH EAST SECONDARY PLAN.....	47
FIGURE 4.9: MCCARTHY ROAD WEST EXTENSION – NORTH WEST SECONDARY PLAN	49
FIGURE 4.10: PREFERRED HIGHWAY 7 & 8 BY-PASS ROUTE	50
FIGURE 4.11: 2028 MODEL FORECAST- PM PEAK HOUR.....	52
FIGURE 4.12: EXISTING AND FUTURE TRUCK ROUTE SYSTEM.....	53
FIGURE 5.1: RECOMMENDED SIDEWALK PLAN	57
FIGURE 5.2: CONCEPTUAL CYCLING PLAN	60
FIGURE 5.3: SHORT TERM TRANSIT ROUTE STRUCTURE	63
FIGURE 5.4: LONG TERM TRANSIT ROUTE STRUCTURE.....	64
FIGURE 5.5: LONG RANGE ROAD NETWORK PLAN.....	67
FIGURE 5.6: SHORT TERM TRUCK ROUTES	72
FIGURE 5.7: LONG TERM TRUCK ROUTES.....	73

TABLES

TABLE 2.1: TRANSIT FARE STRUCTURE.....	14
TABLE 6.1: ESTIMATED COST (0-5 YEAR PROGRAM)	77





Introduction

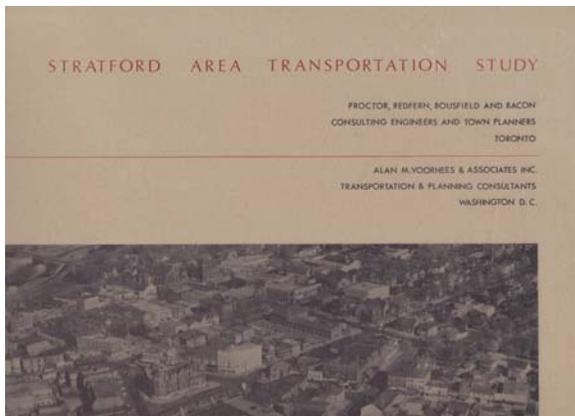




1.0 INTRODUCTION

1.1 Background

The last Transportation Planning Study and Master Plan undertaken for the City of Stratford was completed in August 1992¹ in conjunction with the preparation of the City's Official Plan. A number of area specific traffic studies have been completed since that time. Previous to that, a comprehensive transportation study was completed in 1964.



The 1992 report prepared population and employment projections, travel demand forecasts and analysis of roadway and intersection employment needs. It provided a roadway classification system and Schedule B of the Official Plan. A truck study was also included as part of the project.

In January 2009, the City initiated a new Master Transportation Plan that will provide input to the Official Plan update in 2010. This study will replace the 1992 transportation study.

¹ City of Stratford Transportation Planning Study, Read, Voorhees & Associates, August 1992.

1.2 Study Objectives

The City of Stratford Transportation Master Plan was initiated by the City with the following key objectives:

- Development of a 20 year transportation plan.
- Identification of all arterial and collector roads for inclusion in the Official Plan.
- Review of existing routes used by trucks and the need for and feasibility of designated truck routes.
- Consideration and review of the impact of the future Highway 7/8 bypass route.
- Identification and preparation of a transportation improvement program to deal with projected population and employment growth for the next 5, 10 and 20 year horizon.
- Identification of the cost of the proposed infrastructure improvements for the 5 year planning horizon.
- Review and identification of streets that can incorporate options for alternative travel modes such, as cycling lanes and widened sidewalks or trails, through either widening or narrowing.
- Research, review and develop opportunities and options for pedestrian and cycling strategies, travel demand management, and traffic calming measures.

The planning process used for the Transportation Master Plan incorporated the Master Planning process of the Municipal Class Environmental Assessment, October 2000, as amended in 2007, resulting in a final Study that satisfies the requirement of Phase 1 (Need and Justification) and Phase 2 (Alternative Solutions) of the Class EA Process.





The Transportation Master Plan supports the “Vision” and framework of the Stratford Official Plan. It is recognized that the road right-of-way is not only necessary to accommodate vehicular traffic but also alternative modes of travel such as transit, walking and cycling. Future transportation improvements need to be evaluated on the basis of safety, multi-modal mobility, community impacts and efficient goods movement.

Stakeholder consultation is important to obtain an indication of community values, issues and concerns in order to influence the study recommendations. (Figure 1.1)

1.3 The Transportation Planning Process

1.3.1 Basic Planning Process

The typical transportation planning process is composed of four essential stages;

- Forecasting the location and amount of future population and employment growth within and external to the study area.
- Based on the above growth forecast, estimating the amount of travel within, external and through the study area and determine the need for transportation improvements based on the impact of increased travel demands on the area transportation system.
- Identifying and evaluating alternative transportation improvements and initiatives to meet future transportation needs leading to selection of a preferred solution.
- From the foregoing, preparing an overall plan, policy framework and prioritized implementation strategy to establish an overall transportation master plan for the area.

Figure 1.2 illustrates the generic four-step transportation planning process.

1.3.2 Data Sources

Transportation planning relies on an assortment of traffic, demographic and socio-economic data to determine existing and future travel demands and patterns. The primary data sources used in the study include the following:

- **Household Telephone Survey:** A household telephone survey of study area residents identifying their travel rate, origin and destination locations and the travel mode used on a typical weekday was conducted in May/June 2009. Various associated socio-economic data were also gathered for each household surveyed. While this survey attempted to tabulate all travel during an afternoon peak period (3:00pm to 6:00pm), trip data for the afternoon peak hour (the highest hour of traffic during the day) was the focus of this study.





Transportation Plan Completes Phases 1 and 2 of the Municipal Class EA Process

Municipal Class EA	Transportation Master Plan	Roadway Class EA
Phase 1: Problem Identification	•√	•
Phase 2: Alternative Solutions	•√	•
Phase 3: Alternative design Concepts		•√
Phase 4: Environmental Study Report		•√
Phase 5: Implementation		•√

Figure 1.1
Transportation Plan Relationships



Generic Four-Step
Transportation
Planning Process



Master Transportation Plan Process for Stratford



Figure 1.2
Transportation Study Process



- **External Cordon Origin Destination Data:** To identify the amount of travel into and out of the study area, 2004 survey data from the Ministry of Transportation's Hwy. 7&8 Corridor Planning Study was used to identify external and through traffic demands. The MTO undertook a roadside license plate mail back survey at several stations along Hwy. 7 and 8 for weekday and weekend periods. While the survey data included a longer duration, the data for the afternoon peak hours was the focus of the study.
- **Traffic Count Data:** An extensive traffic counting program was conducted in 2009 in the summer, to capture the festival activity, and in the fall outside the festival area. The data consisted of one typical weekday count at 48 locations. The data includes vehicle classification and hourly volume data by time of day on several roadway links. This data was used to determine the existing travel demands on the roadway system and to calibrate the transportation model.
- **Statistics Canada Census Data:** The Statistics Canada information provided 2001 and 2006 historical population and employment information and historical growth rates for the study area and beyond. This data was used to assist with population and employment forecasts for the study area and to identify place of work and place of resident information.
- **Background Studies:** Background studies such as the Bicycle Friendly Master Plan Committee Report and the 2009 Stratford Business Plan Update provided input to the plan as well as the Ministry of Transportation Hwy. 7&8 Transportation Corridor Planning and Class EA Study. The City of Stratford West Secondary and Northeast Secondary Plans also provided input for traffic and growth forecasts.

1.3.3 The Stratford Study Process

The transportation study was undertaken in a three phase process to address the requirements outlined in the Terms of Reference. As the various phases were completed, the findings were reported to the Project Team and then to the public and ultimately to City Council. The three phase process is shown in **Figure 1.2**.

- **Phase 1 - Existing and Future Needs Assessment:** This phase focuses on the identification of existing and future transportation demands and conditions throughout the study area for all modes (walk, cycling, public transit, trucks, automobile) assuming no changes to the transportation network. The findings of this phase identify how the travel experience in Stratford is expected to change, if no improvements are made.
- **Phase 2 - Identify and Evaluate Alternatives:** This phase identifies the opportunities and constraints associated with achieving a more balanced transportation system while accommodating traffic into and through Stratford. The study identifies, screens and evaluates the alternatives with input from the Project Team and the public.
- **Phase 3 - Transportation Master Plan:** The results of the previous phases and additional consultation with the public were used to further refine the plan, and to develop an implementation strategy and Official Plan Policies.

1.3.4 The Public Consultation Process

Two formal public meetings were held at venues advertised and accommodated by the City. Each meeting was advertised in the Stratford Beacon sufficiently in advance of the meeting date (April 30th for the May 12th meeting and May 29th for the June 16th meeting).





In addition, targeted mail-outs of notices for each meeting were distributed to key stakeholder groups in the study area such as:

- Stratford Transit;
- Bicycle Friendly Master Plan Committee;
- Chamber of Commerce;
- Senior Citizens Group;
- Council Members;
- Ministry of Transportation;
- County of Perth;
- Townships of Perth East and Perth South;
- The City Centre Committee; and
- The Stratford Shakespeare Festival.

These stakeholders were asked to provide study input from their respective groups or from their individual perspective through mail, a project website or by email. The Public Information Centres were facilitated to provide input on existing conditions and future needs, the study process, issues, alternatives and the preferred plan.

Information on the study was posted on the City of Stratford web site throughout the project. A Council Workshop was conducted to identify issues and provide feedback on preliminary recommendations. Public information centres included presentations, handouts and questionnaires to assist in the transfer of information and obtaining input.

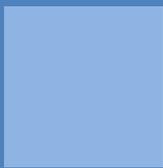
1.3.5 Scope of a Master Transportation Plan

A Master Transportation Plan is defined in the Municipal Class Environmental Assessment Process (2007) as a long range plan which integrates infrastructure requirements for existing and future land use with environmental principles. The scope of a Master Plan is broad and usually includes an analysis of the system in

order to outline a framework for future works and developments. Master Plans are not typically undertaken to address a site specific problem such as specific roads or intersections. It can be described as:

- Strategic or high level planning;
- A plan that provides direction for municipal transportation investment and priorities;
- Multi-modal considering all modes of transportation under municipal jurisdiction including roads, transit, cycling and walking;
- A plan that sets policy direction for the Official Plan;
- A package of actions with no single solution to meet existing and future needs;
- A dynamic document that is flexible to changing conditions over time;
- A plan that addresses Phase 1 and 2 of the Municipal Class Environmental Assessment dealing with the Need or Opportunity and Alternative Planning Solutions; and
- Being custom-made for the municipality while often referring to best practice experience from comparable municipalities.



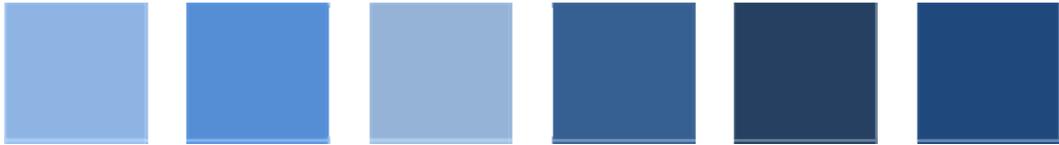


2



Existing Conditions





2.0 EXISTING CONDITIONS

The following section presents the transportation characteristics in Stratford.

2.1 Existing Traffic Volumes

2.1.1 Major Road Network

The roads classified as arterial roads in Stratford include Ontario Street (Highway 7/8), Huron Street (Highway 8), Erie Street (Highway 7), Lorne Avenue, Romeo Street, Mornington Street, Downie Street, C.H. Meier Boulevard, O'Loane Avenue, and McCarthy Road. The classification of roads is shown in **Figure 2.1**. All major streets in Stratford have two lanes, with the exception of Ontario Street, Huron Street, Erie Street, and portions of Romeo Street and C.H. Meier Boulevard, which are four-lane streets. Generally, the speed limits on the arterials within the city limits are 50km/h, with the exceptions of O'Loane Avenue, Lorne Avenue, and the south end of Erie and Romeo Streets, which are 60km/h.

2.1.2 Daily Traffic

Traffic data was collected using Automatic Traffic Recorders (ATRs) at various locations throughout the city. The locations that were deemed to be more affected by seasonal theatre traffic were counted in July 2009 while the remainder of the counts were conducted in November 2009.

Figure 2.2 shows the ATR count locations.

The observed Daily Traffic Volumes (AADT) illustrated in **Figure 2.3** is shown in more detail in **Appendix A**. The following is noted:

- Huron Street and Ontario Street experience the highest traffic volumes at between 15,000 to 17,000 vehicles per day (vpd).
- Erie Street experiences over 13,000 vpd.

- Lorne Avenue experiences 11,000 to 13,000 vehicles per day west of Romeo Street reducing to about 8,000 vehicles per day east of O'Loane.
- John Street south of Huron Street experiences close to 8,000 vpd.
- Downie Street experiences approximately 6,000 to 9,000 vehicles per day.
- Romeo Street south experiences about 8,000 to 9,000 vehicles per day north of Lorne Avenue and north of Delamere. South of Delamere, volumes on Romeo are close to 12,000 vehicles per day.
- Mornington Street experiences about 7500 vehicles per day north of Delamere.
- Waterloo Street experiences approximately 6,500 vehicles per day.
- C.H. Meier Blvd. experiences about 7,500 vpd south of Ontario Street and about 4,000 vpd south of Delamere.
- Douro Street experiences about 5200 vpd east of Waterloo Street.

All other streets where counts were conducted experienced less than 5,000 vehicles per day.



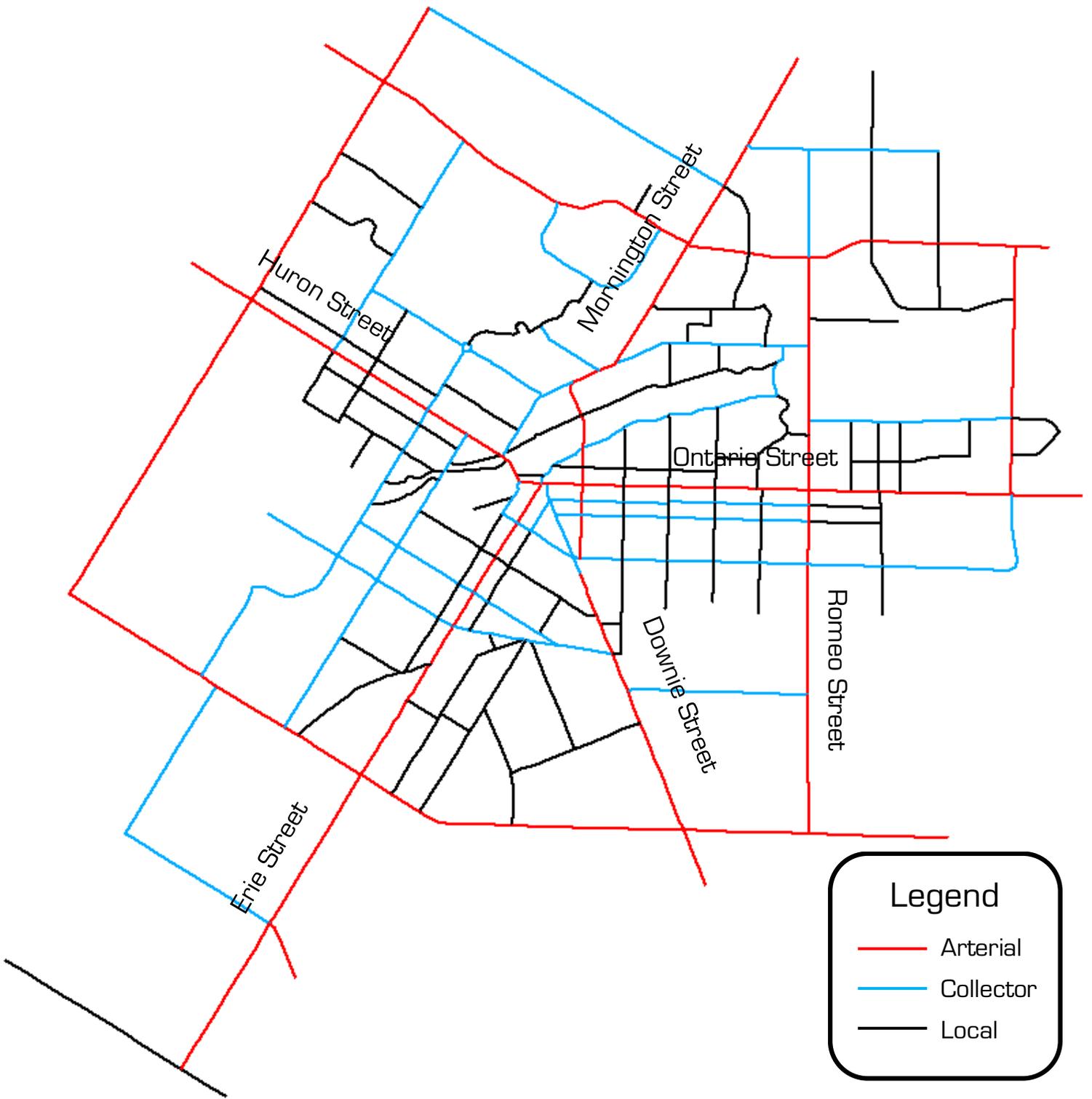


Figure 2.1
Road Classifications





Legend

- July 2009
- November 2009

Figure 2.2
ATR Count Program

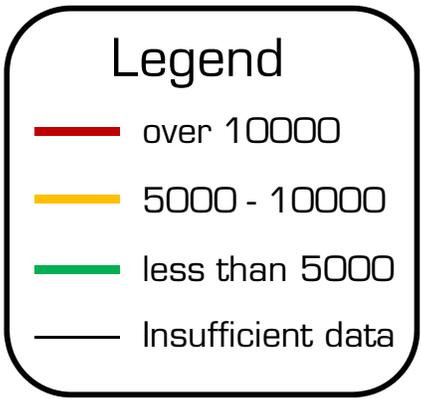
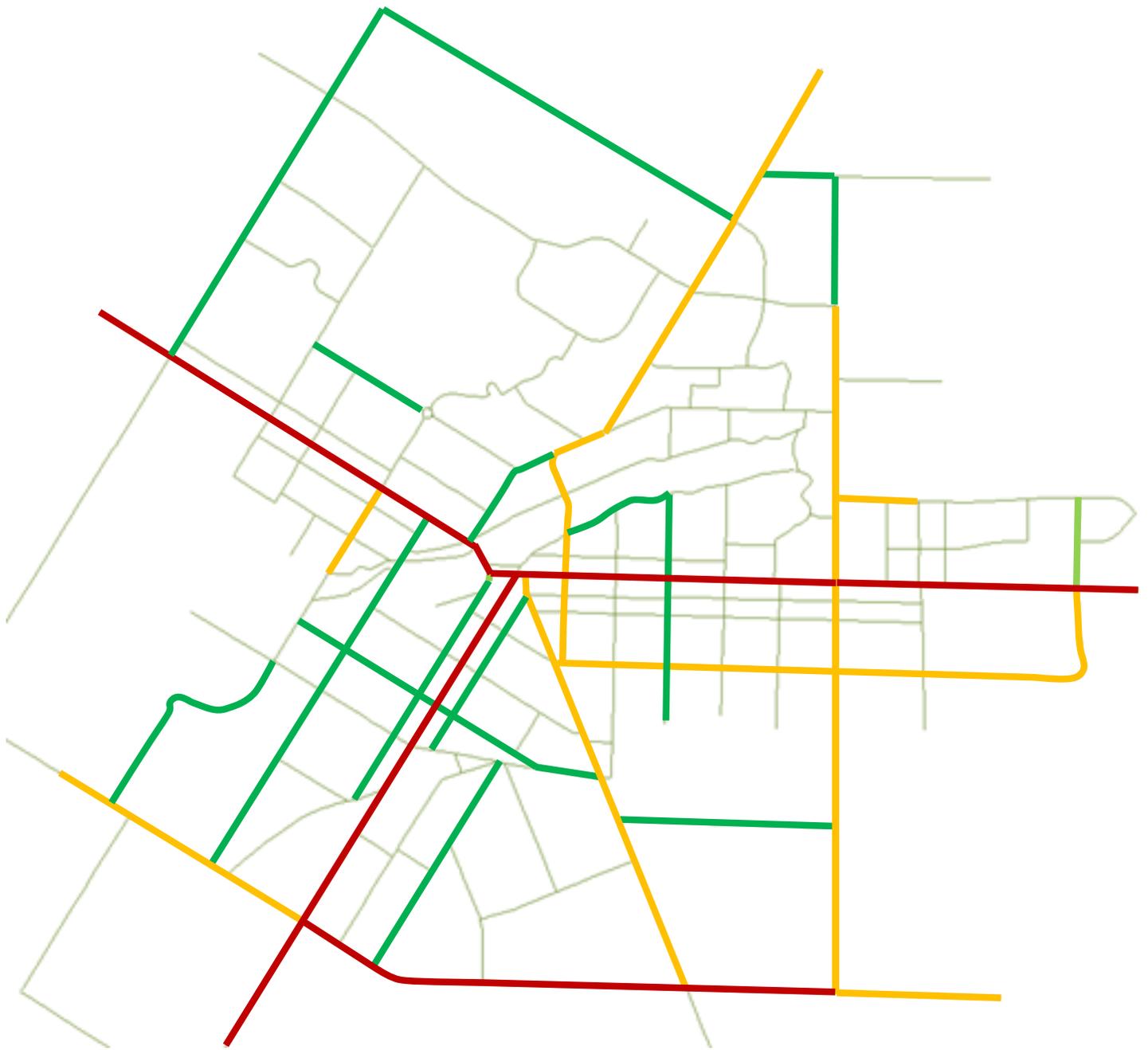


Figure 2.3
Daily Traffic Volumes





2.1.3 Peak Hour Traffic

The AM and PM Peak Hour traffic observed at each count location is shown in **Appendix A**. Generally, the AM Peak Hour of traffic occurs between 7:00 AM and 9:00 AM while the PM Peak Hour occurs between 4:00 PM and 6:00 PM. The PM peak hour generally represents the highest hourly volume during a typical weekday.

The capacity of a single arterial lane in one direction is generally considered to be about 800-900 vehicles per hour whereas the capacity of a collector lane is generally taken to be 500-700 vehicles per hour in each direction. The recorded volumes indicate that all roadways in Stratford are operating within the capacity of a single lane of traffic with the exception of Ontario Street at the east end of the City as illustrated in **Figure 2.4**.

2.1.4 Daily Truck Traffic

The daily two-way truck traffic observed at each count location is illustrated in **Figure 2.5** and shown in more detail in **Appendix A**.



The figure indicates that the truck route system of C.H. Meier, Douro Street, Romeo Street South and Lorne Avenue has effectively diverted a significant number of trucks from Ontario Street and Huron Street although some trucks clearly continue to go through downtown. The O’Loane

Avenue and Quinlan Road system also is effective in diverting truck traffic around the City.

Other than these roads, truck traffic is generally less than 4% of the traffic stream.

2.2 Existing Transit Service

The City has recently completed an updated business plan² for transit service in Stratford. The following information summarizes the existing system based on information from this plan. The transit service consists of two components;

- conventional transit service (Stratford Transit); and
- specialized transit service (Stratford Parallel Transit).

2.2.1 Conventional Service

The conventional transit service is designed to meet the needs of all residents including people with minor disabilities through the use of low-floor “accessible” buses. Service is provided through a network of six fixed routes with bus stops located along each route where users can access the service. Stratford Transit operates six days per week from 6:00 AM to 9:30 PM Monday to Friday and 6:00 AM to 7:30 PM on Saturday. There is no Sunday service.

Service is offered in 30-minute frequencies through the operating period. Transit ridership levels have had small fluctuations above and below 600,000 annual trips between 2002 and 2008.

² City of Stratford, Transit Business Plan Update, IBI Group Final Report, July 2009



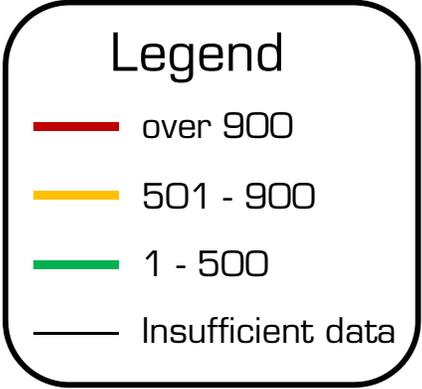
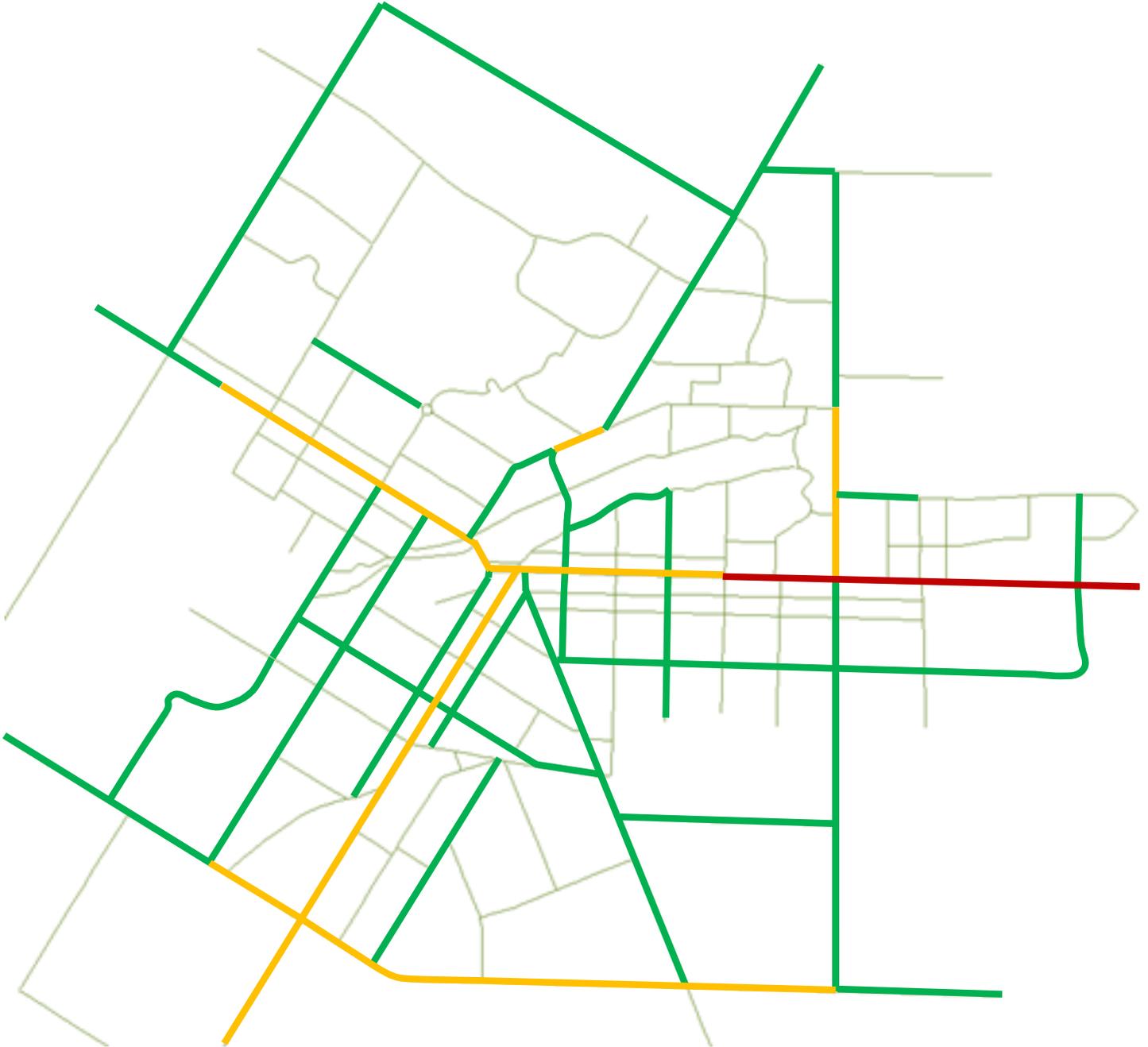


Figure 2.4
PM Peak Directional Volumes



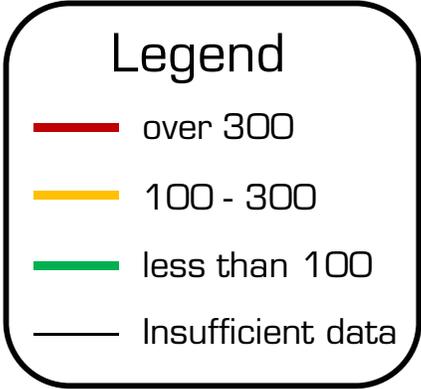


Figure 2.5
Daily Truck Volumes





Current transit fares are summarized in **Table 2.1**. The transit fleet consists of 15 vehicles. The service is part of the Community Services Department where there are 38 full and part time staff to undertake management, supervision, maintenance, clerical and driving services

Transit services operate out of a facility on Corcoran Street which includes offices, a maintenance area, vehicle storage, fuelling and washing facilities. In addition, there are 18 shelters and 252 bus stops.

TABLE 2.1: TRANSIT FARE STRUCTURE

Fare Category	Cash	Tickets*	Monthly Pass
Adult	\$2.25	\$2.00	\$50.00
Seniors (Age 65+)	\$2.00	\$1.75	\$40.00
Student	\$2.00	\$1.75	\$40.00**
Children (Age 5 and Under)	Free	Free	Free

* Based on 10 Tickets

** Elementary and Secondary Students Only

The existing transit routing is shown in **Figure 2.6**. The current six service routes provide good coverage of the City of Stratford. The Transit Business Plan Update has proposed route changes that are recommended within the near term.

2.2.2 Stratford Parallel Transit

This specialized transit service is intended to meet the needs of people with significant disabilities who are unable to use the conventional transit service. Service is provided on a “demand basis” with users contacting transit 48 hours in advance to book their trip. The vehicles utilized are equipped with lifts and users are picked up and dropped off “door to door”.

Currently, five vehicles are used to provide the service.

The service operates from 8:00 AM to 5:00 PM Monday to Friday and 9:00 AM to 4:00 PM Saturday and Sunday. Service is also extended to 11:00 PM on Friday. Fares are currently \$2.75 for all users.



2.3 Active Transportation

Active transportation is the use of any kind of human powered mode of transportation including cycling, walking, running, in-line skating and skateboarding, for practical and useful (utilitarian) purposes other than simple recreation. These alternatives to the private automobile are increasingly becoming a more important part of transportation master plans given their environmental, community and health benefits.

2.3.1 Cycling

The City of Stratford established a Bicycle Advisory Committee to prepare a report and recommendations regarding bicycle transportation in 2001. The Bicycle Friendly Master Plan Committee and a Terms of Reference was later established to continue the process of developing a bicycle friendly master plan for the City in April of 2005. Given that cycling can accommodate travel from one side of the City to the other in less than 30 minutes, this form of transportation is a realistic alternative for many people.



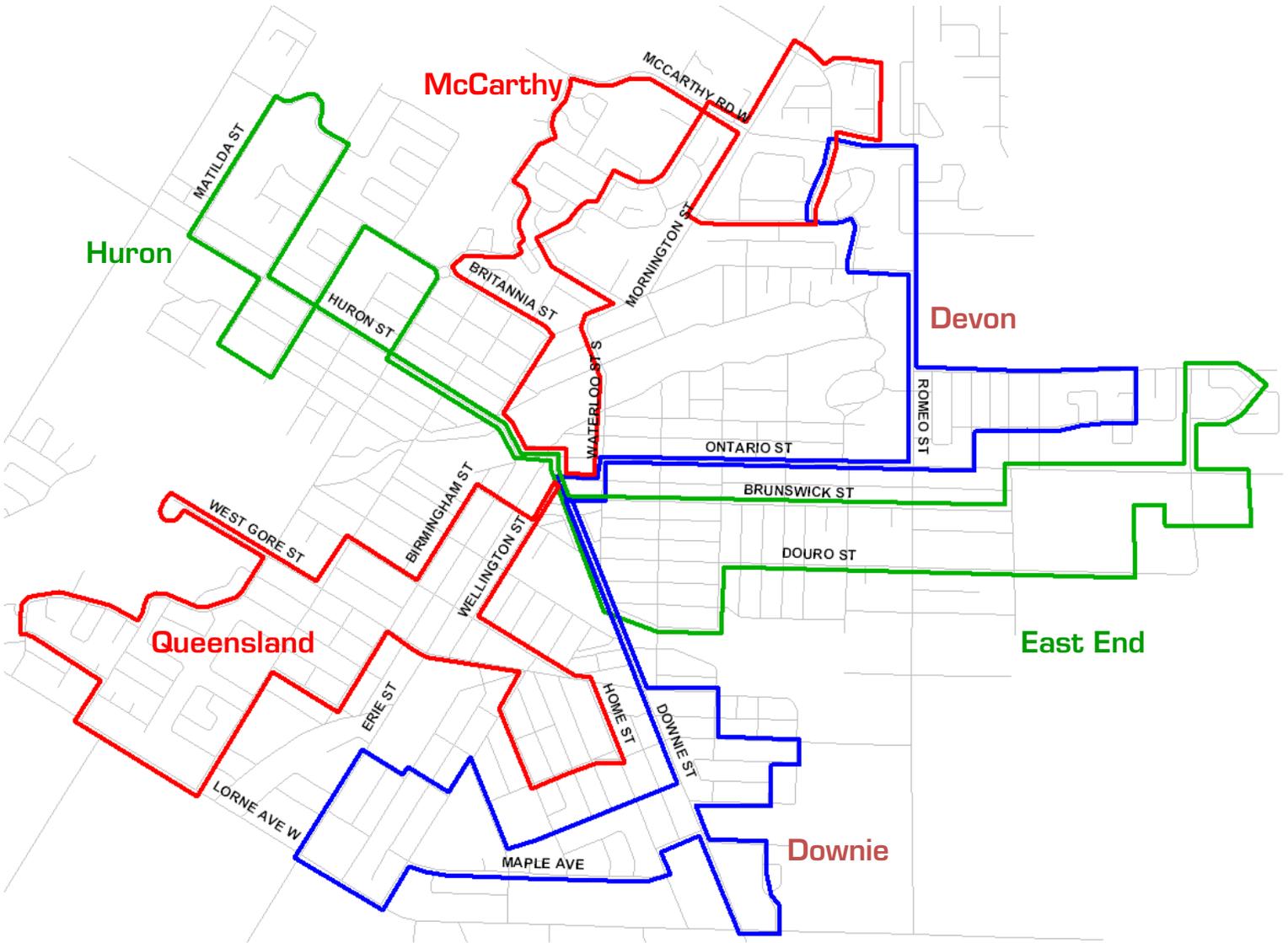


Figure 2.6
Existing Transit Service





The City of Stratford Official Plan includes goals and objectives for increasing cycling as a mode of transportation as well as providing for the safe and convenient movement of bicyclists throughout the City. The Official Plan makes several recommendations including the creation of a Bikeway Plan and general provisions for bicycle lanes and bicycle parking.



The City of Stratford Strategic Master Plan to Provide for Leisure Services and Facilities Report also outlines the importance of the current trails system and makes several recommendations for extension and development of the system.

The Ministry of Transportation recognizes cycling as an alternative means of transportation and enables municipalities to use a portion of their provincial allocation for road and transit facilities to establish bicycle facilities.

An unofficial map of suggested on-road bicycle routes has been developed which are

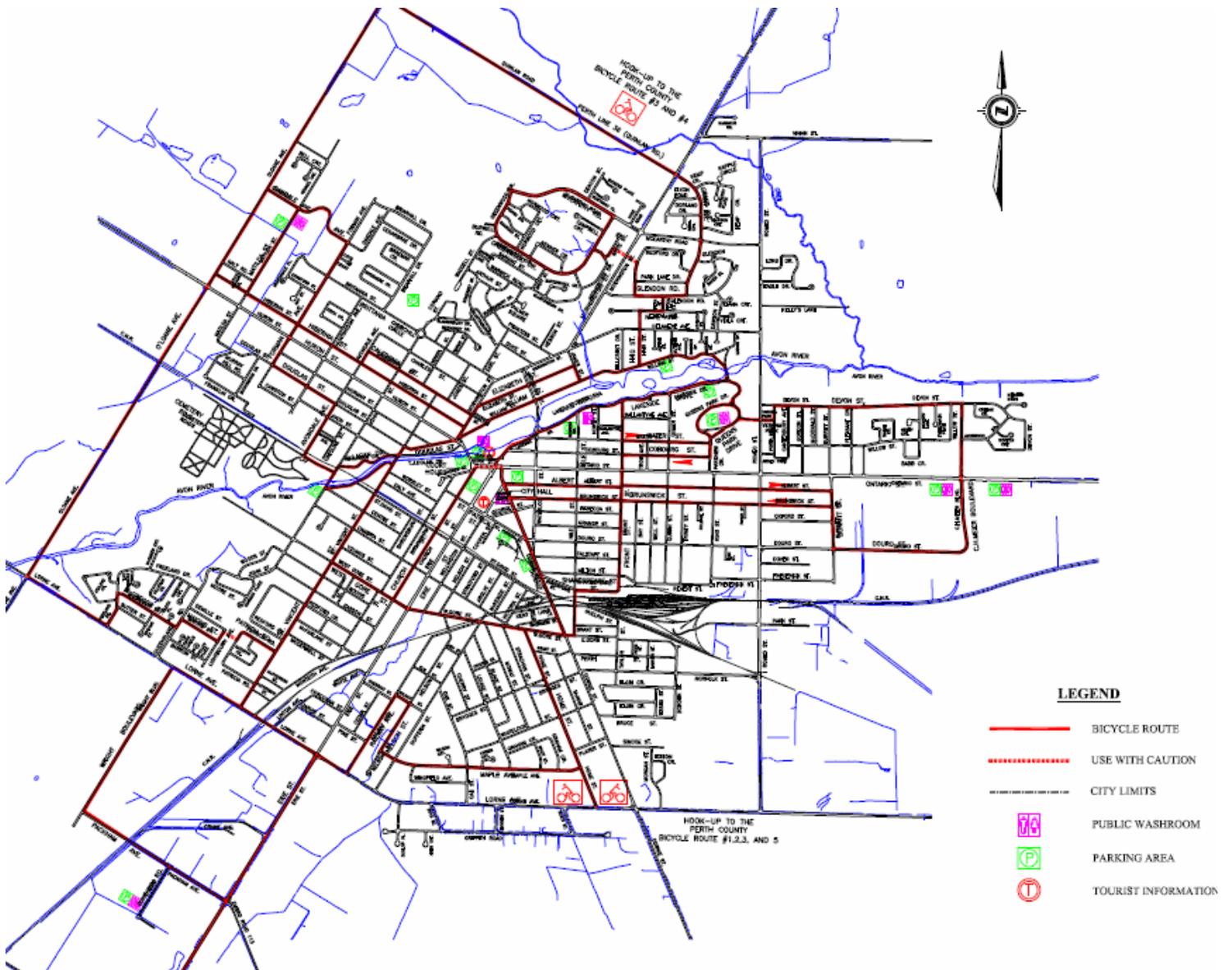
recommended for use by cyclists as an alternative to main arterial roads. **Figure 2.7** illustrates the suggested bicycle routes. The selected routes avoid major arterial roads such as Ontario Street, Huron Street, Romeo Street and most of Lorne Avenue.

In February, 2010 Stratford City Council supported the establishment of the MovingOn Committee. The purpose of the Committee is to collaborate with members of Council, municipal staff, community organizations, and interested citizens to help identify and develop attainable short and long term priorities, action plans and recommendations related to safe modes of active transportation in the Community.

2.3.2 Trails and Sidewalks

Other than bicycle transportation, the other forms of Active Transportation rely upon the provision of trails and sidewalks. Currently, walking is supported mainly by the system of sidewalks and existing trails that are provided as part of the road network within the City. The development of trail systems and linkages in plans of subdivision are initiatives that are continuing to be implemented to provide a more complete and attractive system to support these modes. In addition, urban design principles, maintenance standards, and the provision of bicycle parking facilities are used to support walking and cycling in the City.





Note this system has not been formally adopted by the City

Figure 2.7
Existing Bicycle Route System

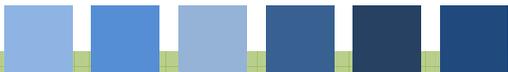




Figure 2.8 illustrates the existing sidewalk network in the City. The figure indicates that most City streets including arterial and collector roads have sidewalks. However, some local streets have no sidewalks and some sections of arterial, collector and local roads have sidewalks on only one side of the road.





Figure 2.8
Existing Sidewalk System



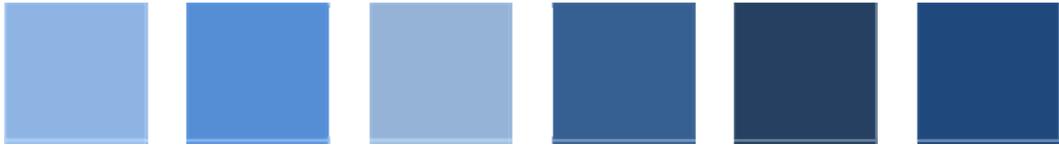


3



Travel Demand Forecasts





3.0 TRAVEL DEMAND FORECASTS

3.1 Model Development

3.1.1 Zones and Link Structure

The City was divided into 193 internal traffic analysis zones (TAZs) and 5 external TAZs. The internal zones were grouped together into 16 super analysis zones (SAZ). The superzone system is shown in **Figure 3.1**.

The roads that coincided with the boundaries of the zones were used to form the links of the model. Information regarding road classification, lanes and speed limits were provided by the City. There were three classifications of roads included in the link information: arterial, collector and local. The link network and classification system used is shown in **Figure 3.2**. It should be noted that some streets shown in the network do not exist and will be built with the new developments in the northwest and northeast areas of the city (McCarthy and C.H. Meier Extension) as established in previous Environmental Assessment studies. In addition, Wright Boulevard is currently being constructed between Packham Avenue and Gibb Road in the southwest part of the City.

3.1.2 Trip Generation Equations

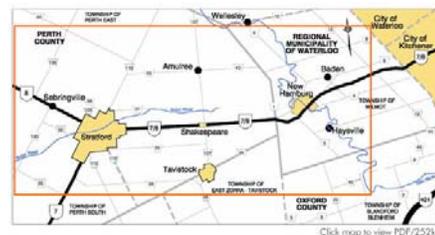
A household travel survey conducted in June 2009 was used as the basis for an internal-internal trip demand matrix. The survey was undertaken via telephone interviews with householders and gathered information on the origin, destination and purpose of each trip made by members of the household during the PM peak period of the day of the interview. The trips were associated with the superzone of the home location of the traveller and then factored by the ratio of actual population of the superzone to the number of people surveyed in the superzone. The

trips were then divided into the smaller TAZs by the relative amount of development of each TAZ compared to the other TAZs in the SAZ.

The productions and attractions of each SAZ, along with the population and employment figures provided by the City were used to develop equations by using regression analysis. It was found that the trip productions and attractions from/to a SAZ are represented by the formulae:

$$\begin{aligned} \text{Productions} &= 0.2434 * \text{Population} + 0.2068 * \text{Employment} \\ \text{Attractions} &= 0.2642 * \text{Population} + 0.1963 * \text{Employment} \end{aligned}$$

The industry-accepted measure of the “Goodness of Fit” of the observed versus the modelled volumes is the Coefficient of Determination (R^2). The FHWA’s Model Validation and Reasonableness Checking Manual³ identifies that region-wide Coefficient of Determination (R^2) should be greater than 0.88. The equation for productions was found to have a Coefficient of Determination (R^2) value of 0.90 and the equation for attractions was found to have an R^2 value of 0.94, which indicate a very strong correlation between the modelled volumes and the observed traffic volumes.



The trip demand matrix for internal-external, external-internal, and external-external trips was determined by using data from a travel survey conducted by the Ministry of Transportation, which surveyed travellers on Highway 7, 8 and 7/8 outside of the Stratford city limits.

³ Model Validation and Reasonableness Checking Manual, FHWA, Barton-Aschman Associates Inc. and Cambridge Systematics Inc., 1997.



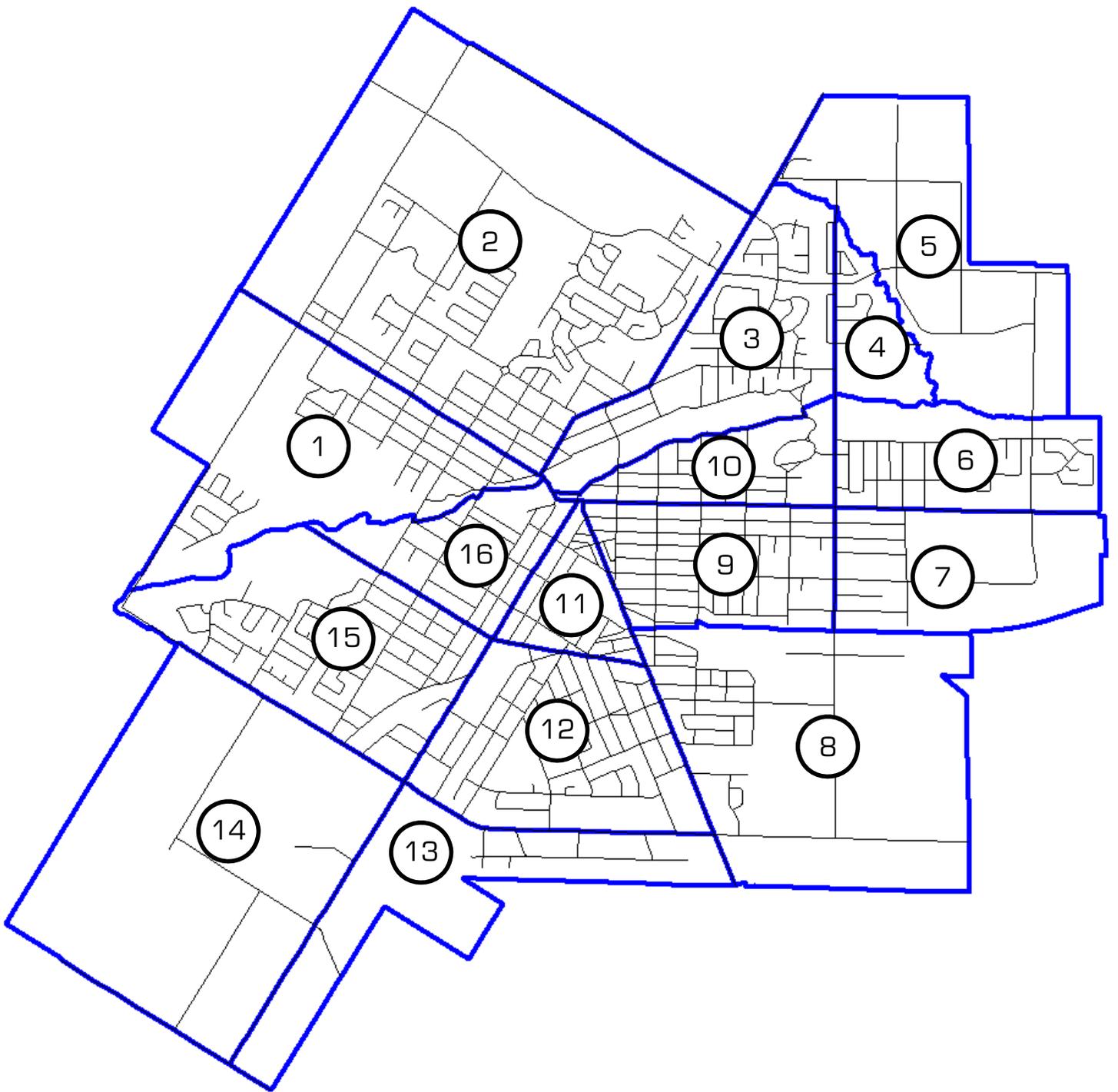


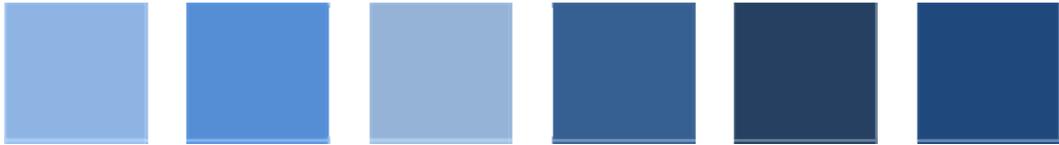
Figure 3.1
Super Analysis Zone Structure





Figure 3.2
Model Link Classification





3.1.3 Link-Specific Assignment Calibration

To evaluate the accuracy of the model assignment, we have relied on the comparison of the link specific volumes to the volumes projected by the model. The existing link specific volumes were determined by using existing turning movement counts at various intersections throughout the city and supplemented by a count program undertaken in 2009. **Figure 3.3** shows the locations of the traffic volume data available.

The free speed (and therefore, desired travel time) of each link was determined by its classification and speed limit. Initially, the free speed of arterials was set to be 10 km/h higher than the speed limit, the free speed of collectors were set to be the speed limit, and the free speeds of local streets were set to be 10 km/h lower than the speed limit.

The calibration target for specific link volumes was to determine which major links were over or under loaded by more than 200 vehicles per hour during the PM peak hour. To compensate for the difference between predicted volumes produced initially by the model and observed volumes, the characteristics (speed, capacity, etc) of certain links were altered to reflect more “real-world” characteristics. This was one of many alterations made to the network in order to produce a model that better reflected the actual behavior of existing traffic patterns within Stratford.

3.2 Existing Traffic Level of Service

The results of the calibrated model forecasts for the 2010 volumes were compared to the capacity of each link. The V/C ratios are shown in **Figure 3.4**.

The results show that the most heavily used sections of road in Stratford include portions of Ontario Street, Huron Street, and Erie Street. All roadways are operating well within their capacity

with volume to capacity ratios (V/C) of less than 0.85. Only the two-lane bridge linking Ontario Street and Huron Street exceeds a V/C ratio of over 0.85.

The model indicates that the City of Stratford major roadway network is currently accommodating existing traffic demands at very acceptable levels and that there are no capacity issues.



3.3 Population and Employment Forecasts

3.3.1 Land Use Changes

The land use data and forecasts were provided by the City of Stratford and specified which areas of the city would experience growth by 2028. The areas of growth were analyzed by the Super Analysis Zone (SAZ) system. The following is noted:

- The overall population of the city is expected to grow by 4352 and the overall employment is expected to grow by 2683.
- The areas expected to see population growth are SAZ 1 (432 increase), SAZ 2 (2437) and SAZ 5 (1483). These growth zones represent areas contained within the West Secondary Plan and the Northeast Secondary Plan.





Figure 3.3
Count Data Locations



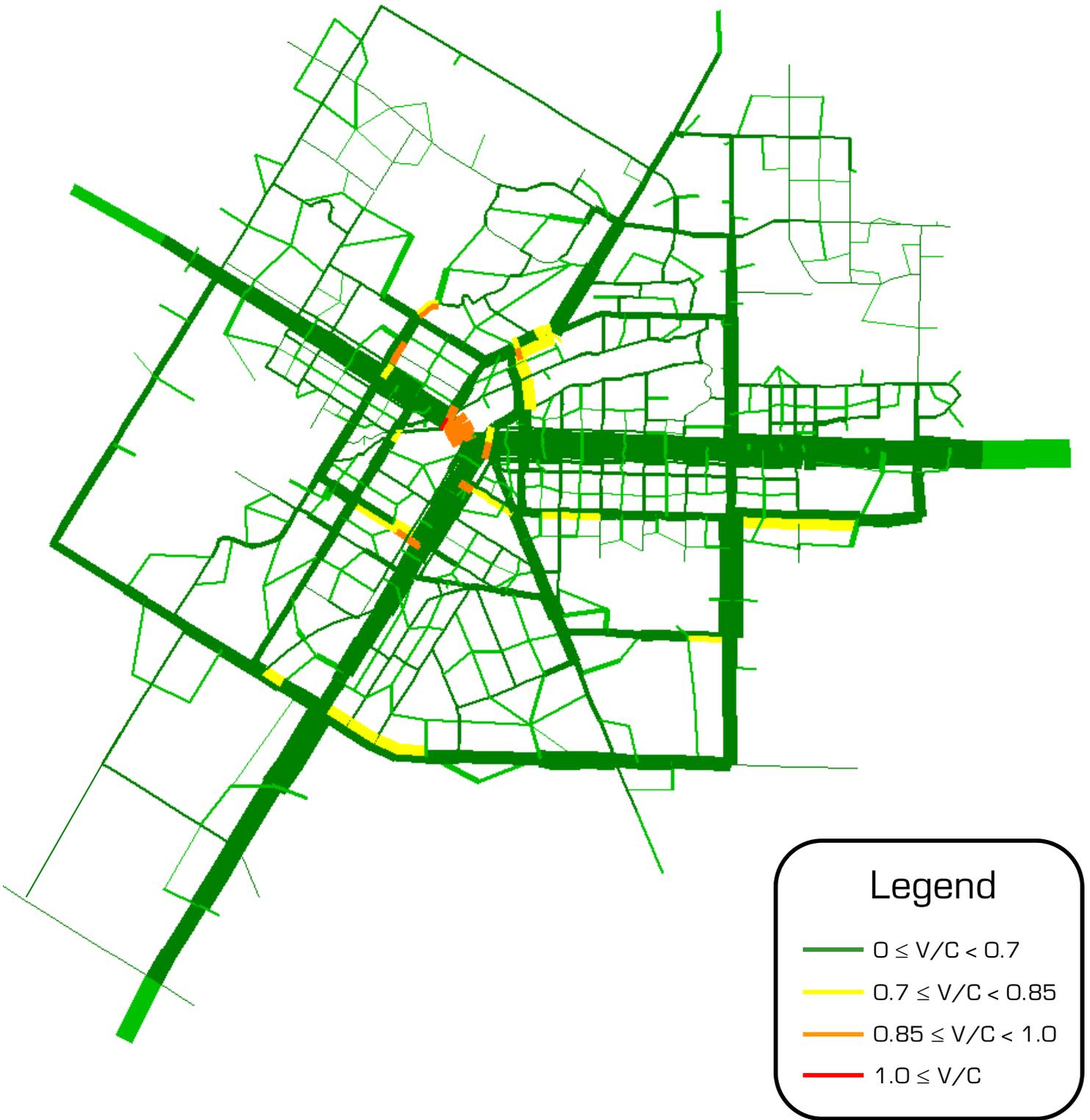
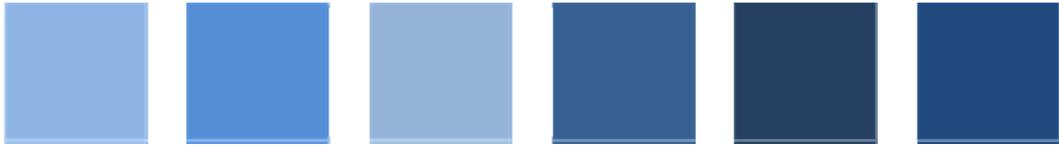


Figure 3.4
2010 Model Results





The areas expected to see employment growth are SAZ 8 (215 increase) and SAZ 14 (2468). Both of the growth areas are in the south end of the city.

- The population and employment figures for the remaining SAZs were kept at existing values.

Figure 3.5 shows the zones which are expected to experience growth by 2028.

3.3.2 Trip Generation

Future productions and attractions for internal-internal trips were determined using the equations calculated previously and the forecasted population and employment values. To determine the 2028 OD matrix for internal-internal trips, the Fratar balancing method was employed on the 2010 OD matrix and the forecast productions and attractions.

For internal-external, external-internal and external-external trips, the historical growth rate of Perth County, using the 2006 and 1996 census data, was used. It was found that between 1996 and 2006 the population of Perth County grew from 72106 to 74344, which is a growth rate of 0.3% per year.

The forecasted OD matrices were then combined to get a 2028 OD matrix at the SAZ level. The SAZ OD matrix was then divided into the TAZs, similarly to the 2010 matrix accounting for the changes in the growth areas within the city.

3.4 Future Transportation Needs

The 2028 travel demand was used to forecast the trips on the same calibrated network as the 2010 model, with the addition of the future extension of McCarthy Road to O'Loane Avenue in the northwest part of the City which is expected to be in place by 2028.

The results of the 2028 model forecasts indicate that portions of Ontario Street in the core area and Lorne Avenue in the south part of the City will experience capacity deficiencies at the horizon year of the study. In addition, some increased traffic congestion is expected to occur on Romeo Street north of Ontario Street. Future increases in through traffic in the Highway 7 and 8 corridor causes congestion in the core area on Ontario Street and also on Lorne Avenue indicating the need for road network improvements.



Improvements should also be considered to encourage the use of alternative transportation modes including public transit, walking and cycling within the City.



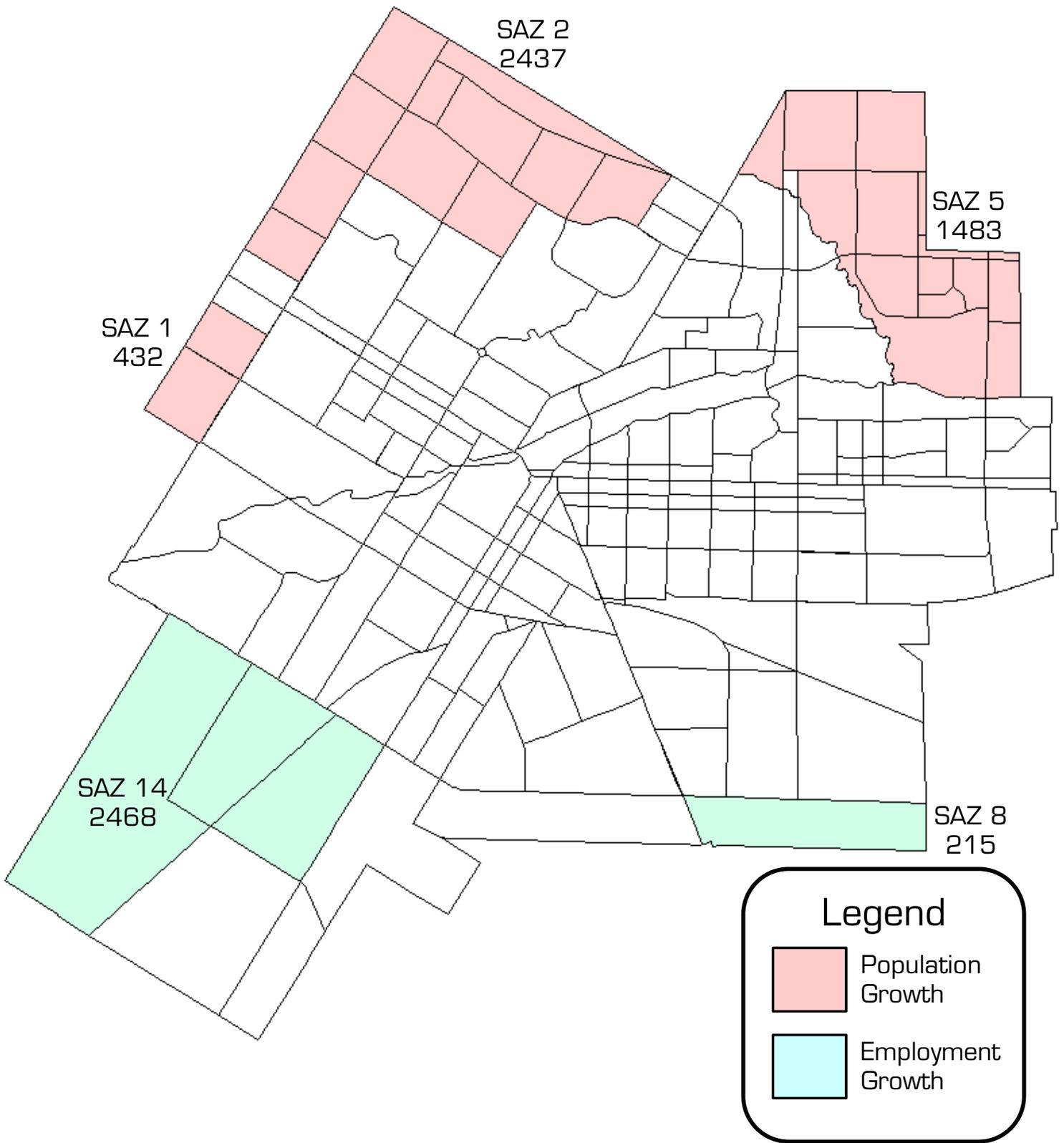
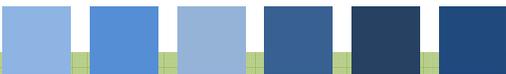


Figure 3.5
Zones with Forecasted Growth





3.5 Public Consultation Meeting 1

A public meeting was held on May 12, 2010 at the Kiwanis Community Centre in Stratford. Approximately, 30 people were in attendance. Display boards were provided and a presentation and question/answer period was conducted. Comment sheets were made available to provide written comments.

The key comments arising from discussions and the comments sheets were as follows:

- C.H. Meier and McCarthy Road extensions are needed to address the Devon St. traffic issue.
- It is easy to drive in Stratford but very difficult to walk or cycle
- Most issues raised related to sidewalks, pedestrian crossings and bike lanes/paths.
- The City needs alternatives to driving.
- There is too much focus on roads and traffic in the study.
- The study should integrate the 2008 cycling plan into the transportation plan.
- There needs to be a transportation hub in the core area to consolidate interconnections for alternative modes.
- Access to the 600 home Jennann and

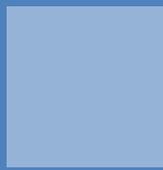
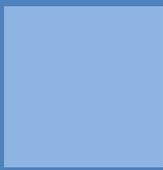
Bromberg subdivisions is provided by O'Loane Avenue only. This will create traffic issues on the roadway.

Generally, the focus of discussion was issues related to improvements to cycling and walking with less emphasis on roads.

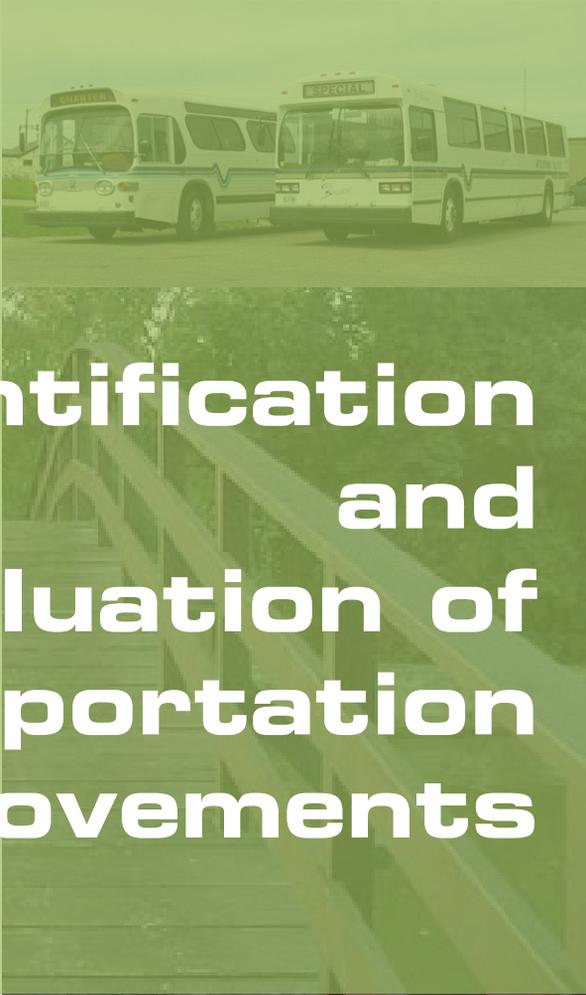
Presentation Format

- What is a TMP?
- What is the Process being Followed?
- Existing Conditions
- Future Conditions
- Master Transportation Plan



A large, stylized number '4' in a light green color, positioned on the left side of the page, partially overlapping the title text.

Identification and Evaluation of Transportation Improvements

A photograph showing two white buses parked in a lot. The bus on the right has 'SPECIAL' written on its destination sign. Below the buses, a wooden ramp with metal railings leads up a grassy area.



4.0 IDENTIFICATION AND EVALUATION OF TRANSPORTATION IMPROVEMENTS

4.1 Alternatives to Road Improvements

4.1.1 Transportation Demand Management

Transportation demand management (TDM) consists of the implementation of programs to influence a reduction in the demand for travel by automobile during peak hours, rather than increasing the supply of transportation. Meeting future travel needs through the construction of new and wider roadways is becoming increasingly difficult to afford, and is resulting in greater environmental impacts. For these reasons, other alternatives are frequently being considered, especially in larger cities and metropolitan areas. Their relevance and applicability in Stratford must therefore be considered in order to meet the requirements of the Environmental Assessment Process.



The following sub-sections describe the possible application of transportation alternatives in helping to meet future travel needs of Stratford residents. Managing the demand for increased vehicle travel through TDM measures involves the following three categories:

- Market-based measures
- Behaviour-based measures
- Land-use-based measures

4.1.2 Market-Based Solutions

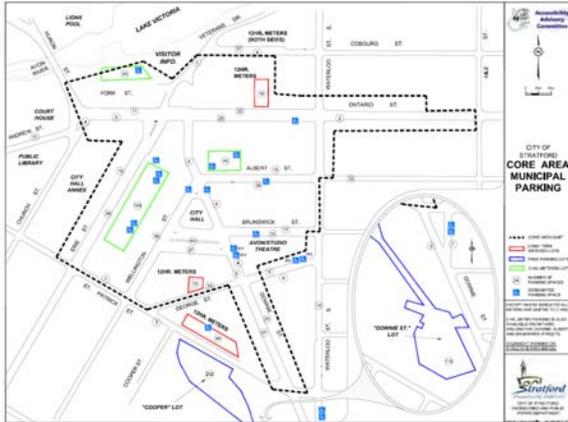
Market-based solutions are aimed at affecting an individual's choice for a given type of travel and mode of travel by affecting the relative cost of that trip, or mode of travel. There are several techniques that fall under this category:

- **Peak Hour Road Pricing** involves levying a charge for use of a given facility, group of facilities, or the entire system for use during certain time periods of the day. This requires significant supporting infrastructure to monitor traffic.
- **Toll Roads** require charging a levy for using a specific, new facility. These facilities are typically limited access in nature and generally are long-distance highway-type facilities. Aside from Highway 407 and the Confederation Bridge to Prince Edward Island, there are limited examples of use of Toll Roads in Canada. As with peak hour road pricing there are institutional and technology barriers to overcome before this can be considered in any city.
- **Increased Vehicle Costs** involves levying a charge in the form of taxation or surcharges for operating private automobiles, or facilities that encourage their use. These techniques can be increased insurance costs, increased fuel taxes, increased licensing fees, increased driver's license fees and so on. However, none of these techniques are within the control of the City of Stratford.
- **Increased Parking Costs** is a specific technique that alters the cost of using a private automobile for travel to work or for other trips. Increased parking costs may discourage auto use. This is dependent upon the local municipality being able to control the





cost and supply of long-term storage parking or the willingness of businesses to charge for parking. Parking costs are very inexpensive in Stratford so it would take a significant increase to discourage auto use.



All the above measures will be politically sensitive to implement and are not currently employed in most large cities as transportation demand management measures. These are also not appropriate for the City of Stratford.

4.1.3 Behaviour-Based Solutions

Behavioural solutions are focused on altering an individual's demand for travel. They are based on providing incentives and disincentives for shifting individual demand to off peak hours or different modes of travel. Some techniques used in this category include:

- **Shifting Peak Travel Hours** involves negotiating with major employers, in particular, to alter their hours of work so that demands on the transportation system can be reduced. This is important since employers having large numbers of employees arriving and leaving near the same time produces short-term periods of extreme congestion. If this same demand is spread over a longer period of time, the system can accommodate the demand, without the congestion or need for road improvements.

However, many businesses are already on staggered work hours and there are efficiency issues associated with implementing this in industrial areas.

- **Work at Home and Telecommuting** involves creating opportunities for individuals to work in the small-office-home-office (SOHO) industry. According to U.S. census data, since 1980 "work at home" is the largest growing sector of employment. These are naturally occurring to some degree. Telecommuting associated with some businesses have productivity and supervisory issues while other businesses are not well suited to these techniques.



- **Vehicle Use Restrictions** are based on limiting where, or when certain vehicles, or groups of vehicles can travel. Typically it involves restricting vehicles based on the characters in their license plate. This strategy would be controversial and is not applied in any Canadian municipality.
- **Intelligent Transportation Systems** relay real-time traffic condition information back to the road users either in their personal vehicles, or through changeable message signs. These systems require advanced technology be implemented not only in individual vehicles, but also along roadways. Accordingly, there are technology and infrastructure barriers associated with this technique.



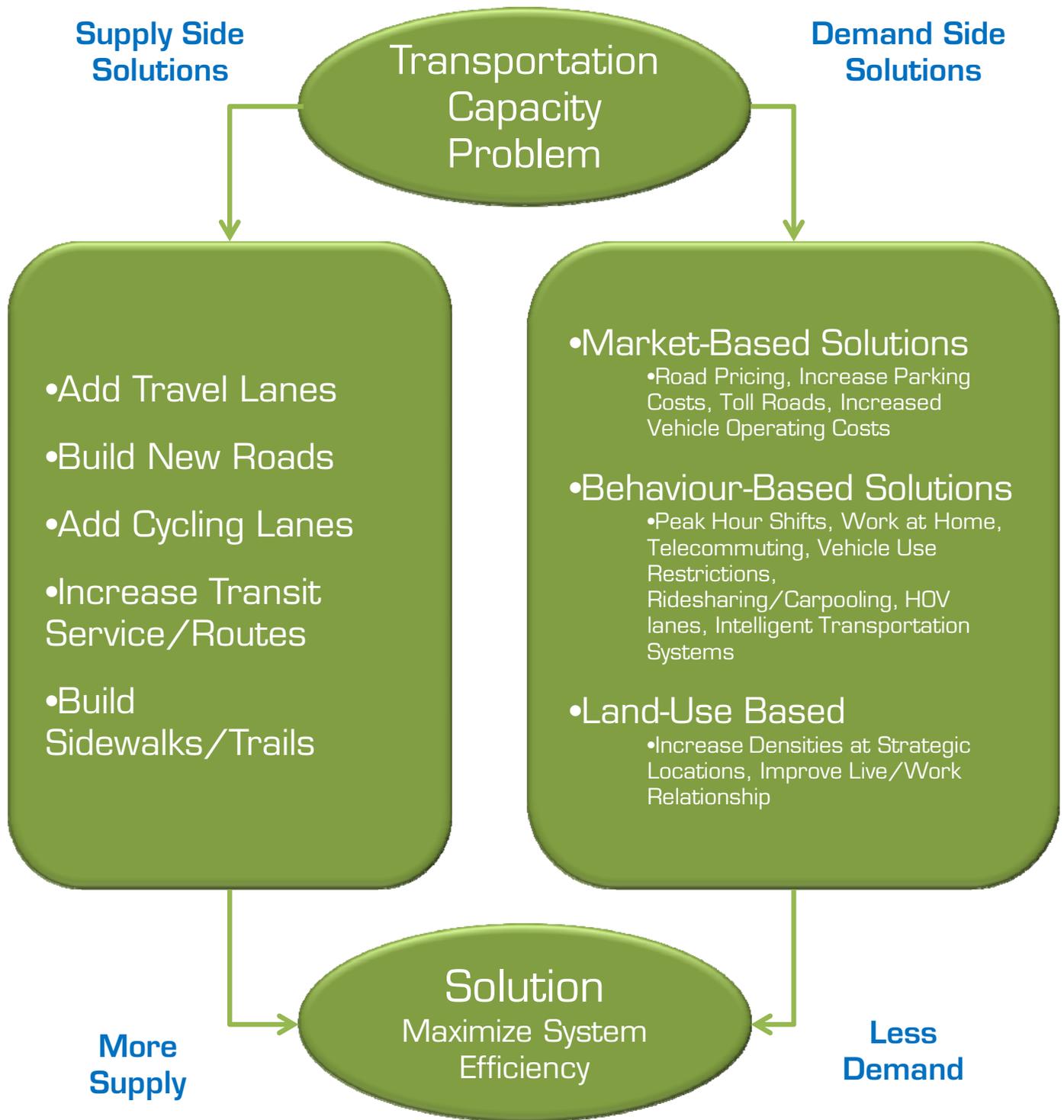
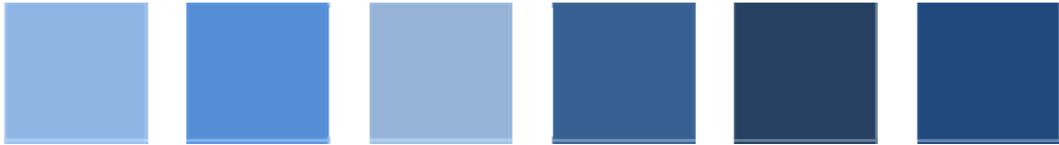


Figure 4.1
TDM Options





Use of High Occupancy Vehicle Lanes (HOV) offer preferential lanes for vehicles that have more than one, or two occupants. Typically these lanes are reserved for autos with two or more occupants, taxis, and buses. Only Ontario Street, Erie Street, Huron Street and parts of Romeo Street have more than a single lane. Devoting a single lane to HOV vehicles would be an inefficient use of road space in Stratford given the low number of buses and high occupancy vehicles.

- **Ridesharing or Carpooling** are methods of increasing the average number of persons per vehicle thereby reducing the number of vehicles using the roadway system. Typically this involves the co-operation of large employers or the provision of park 'n' ride facilities to accommodate ridesharing opportunities for out-of-town travel. Some degree of success has been achieved in Canada such as the ridesharing/car pooling to Toronto using park 'n' ride facilities along Highway 401. Carpooling or ride-sharing is suitable for long distance trips. Travel within Stratford involves trips that are very short distances and the time collecting passengers for the travel distances involved does not make this attractive.

The above measures are not used significantly; if at all, in most cities and some require the cooperation of employers. Ridesharing may be suitable for the many Stratford residents that commute to Kitchener Waterloo to/from their place of employment. Most of these measures are considered inappropriate or will have limited effect in reducing local travel within Stratford for the reasons noted above.

4.1.4 Land-Use-Based Solutions

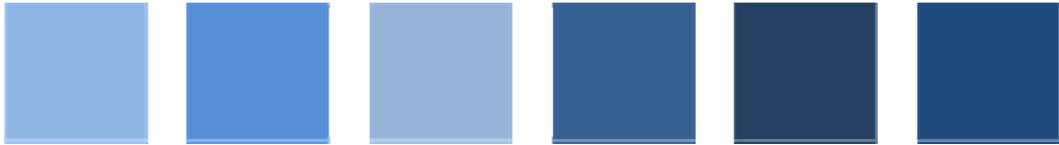
Land-use solutions are focused at altering the physical make-up of the urban fabric. The main strategies include:

- **Increasing Residential Densities at Strategic Locations** would have the benefit of forming a city that would better serve municipal transit systems. Focusing high-density developments on arterial systems also allows for more efficient movement of traffic. This technique has some limited application in Stratford.



- **Improving the Home-Work Relationship** attempts to break-up the conventional planning wisdom of the last 50 or so years that consists of large tracts of homogenous land use. Under this philosophy, more and differing type of land uses would be permitted so that people could relocate to areas closer to their work. This in turn lends support to non-auto modes like walking, cycling and public transit. While the urban form of Stratford is already established with residential growth in the north and employment growth in the south, increasing the number of mixed use developments that provide both retail and office employment mixed with residential use in the same building would allow live/work activities to occur without significant travel demand.





Generally, mixed use developments and increased densities near transit routes are considered appropriate for Stratford. However, there are often objections from local residents if these developments are located close to single family development.

4.1.5 Screening of TDM Alternatives

The EA process requires that only “reasonable” alternatives need be evaluated in detail. On the basis of the above rationale, most transportation demand management alternatives are not practical or will not influence sufficient travel demand in Stratford to reduce the need for other improvements.

Nonetheless, it is recommended that the city pursue some of these TDM concepts for several reasons:

- They promote healthier lifestyles and livable communities. This is very important for Stratford.
- Several can be implemented without significant capital expenditure by the City.
- Implementing these concepts in the current planning period will have financial and other benefits for the City into the next planning period.

Therefore it is recommended that the City pursue:

- Measures that will help increase public transit ridership such as higher densities near transit routes,
- Planning policies that would further support improving the home-to-work relationship so that trip lengths could be reduced and alternative modes such as walking and cycling can be more attractive.

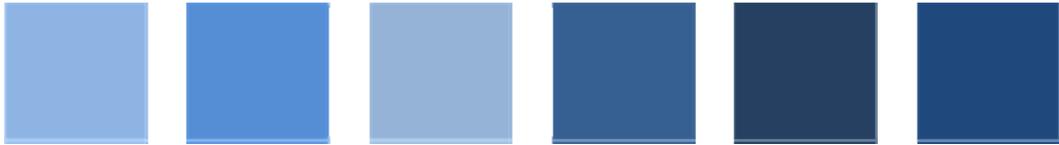
Transportation Demand Strategies that will help reduce the number of persons desiring to be on the road system at the same time include:

- **Variable Work Hours** encourage major employers in the industrial areas to help in reducing the traffic loading on the road system through altering their work schedules. This is especially important in Stratford with the number of large employers, coupled with the relatively short, severe peaks of traffic that already exist.



- **Increased Densities/Mixed Use Developments** encourage, through planning policies, the location of mixed use developments adjacent to major arterials and transit routes to support increased transit ridership. Also, encourage, through planning policies, the development of mixed use buildings that will provide live/work opportunities.
- **Work at Home/Telecommuting** encourages, through education and supporting planning policies, the benefits of work-at-home businesses and telecommuting.





- **Marketing and Promotion** provides information regarding alternative ways of commuting through various media such as the City web site. There should be a single point of contact for TDM initiatives in the City by designating an individual or group (i.e. MovingOn Committee) to take on the role of TDM education and promotion among other functions. The City should hold regular Spring and Fall special events to promote the sustainability of alternative modes and other TDM programs.

It is concluded that while traffic reduction strategies are desirable and can provide positive benefits, they will not replace the need to increase roadway capacity to accommodate the needs and desires of local residents, businesses, visitors and tourists to travel by passenger vehicles. This is supported by experience in other similar municipalities where travel by automobile and associated road improvements is the most attractive and practical transportation option to meet the future travel needs of the majority of residents.

4.2 Increased Transit Ridership

4.2.1 Stratford Transit

As outlined in Section 2, the City has recently completed an updated business plan⁴ for transit service in Stratford. The plan calls for an increase in transit ridership from 3% to 5% of all trips in Stratford over the next 10 year period. It is noted that a 2 percentage point increase in transit ridership will not have a noticeable reduction in vehicle trips on the road network if this goal is achieved. Nonetheless public transit has an important role to play as part of a future more sustainable transportation system.

⁴ City of Stratford, Transit Business Plan Update, IBI Group Final Report, July 2009

Figure 4.2 illustrates that the City of Stratford transit system in 2007 was tied for second in total rides per capita of the municipalities shown so it is doing well compared to most small municipalities. The goal of reaching the 5% ridership level will be challenging. To achieve this target, the Transit Business Plan calls for an aggressive program to market transit as well as to place emphasis on transit service quality and innovative fair strategies.

The following goals and objectives have been developed in the Business Plan as follows:

- **Goal 1: To Improve Service Levels and Ridership:** The objectives of the program are to maintain vehicle hours of service at current levels, increase ridership and increase market penetration. This is to be accomplished by straight lining the route structures, providing improved direct links to the key destination zones (malls), offering Sunday service and extending service into unserved areas.
- **Goal 2: To Improve Service Quality and Customer Satisfaction:** It is necessary for the transit system to become more competitive with the convenience of the automobile by providing a route network that will improve the quality of service it provides to customers. Improved schedule adherence, improved system appeal and accessibility and improved marketing and communications to improve the visibility and level of information within the community.
- **Goal 3: To Improve Productivity and Cost-Effectiveness:** Maximize the efficient use of resources including manpower, equipment and vehicles, facilities and systems. This will require improving cost recovery of 40% of capital costs, a fare structure that reflects the inflationary increase in operating costs, maintaining service utilization of 25 boarding passengers per service hour and review evening service levels and costs.



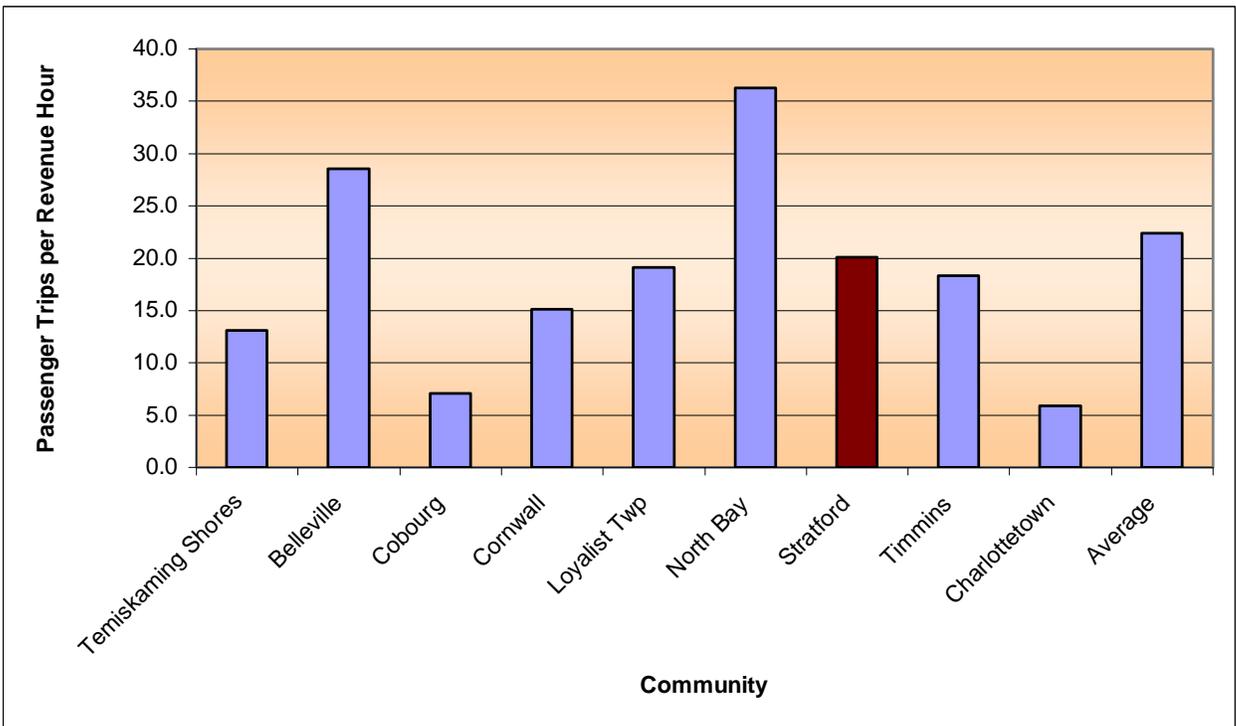
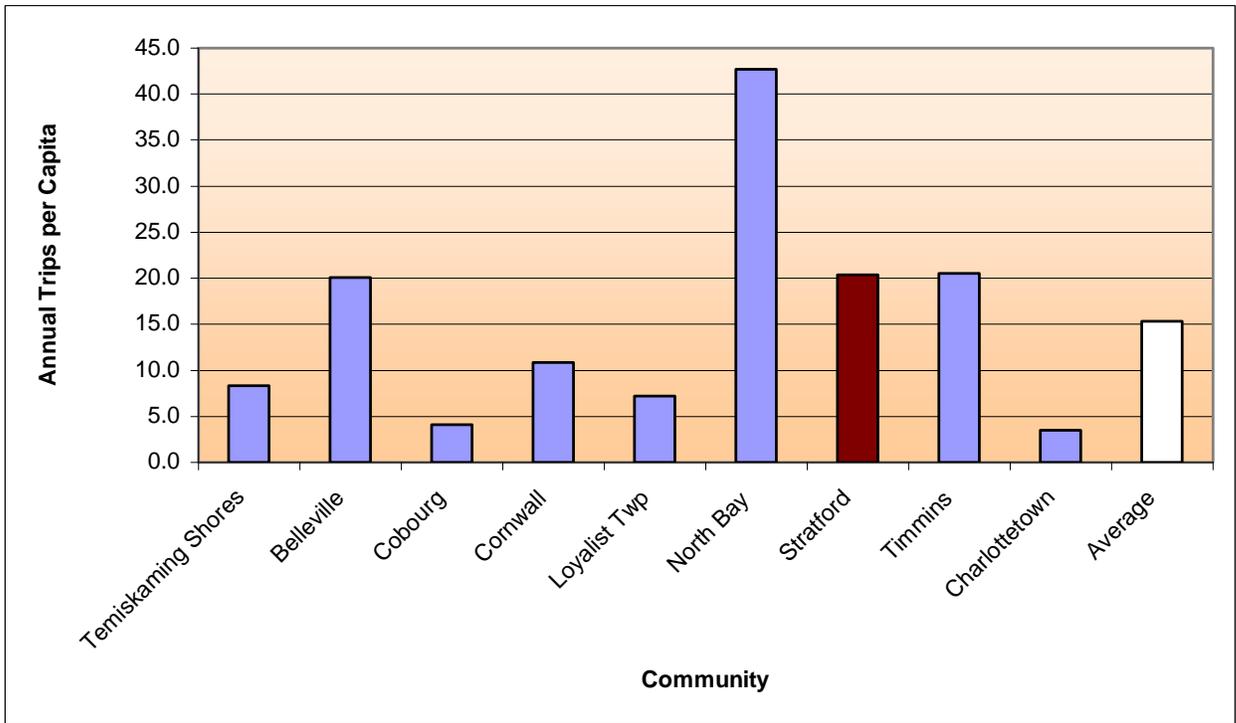


Figure 4.2
Comparison of Transit Characteristics





Service standard objectives for Stratford transit require transit bus stops to be located within 300 m walking distance of all residences, places of work, secondary and post secondary schools, shopping centres and public facilities, straight-line two way route structures focused on the downtown transit terminal, minimum service frequencies of 30 minute intervals and exceed a minimum of 20 passengers per hour during weekdays and 10 passengers per hour on evenings, Saturdays and Sundays.



4.2.2 Transit Supportive Strategies

Transit supportive strategies identified in the TDM section of this report are required to support public transit and increase ridership. These include:

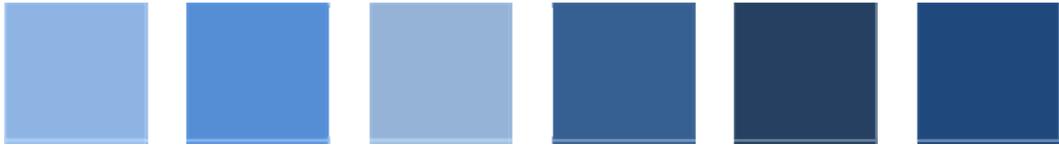
- **Land Use Planning Policies:** Infill and high density developments should be located along transit routes with frequent all day transit service. Isolated developments under 1000 people more than 1 km from a transit route should be discouraged.
- **Design of Subdivisions:** Collector roads within new subdivisions should be continuous and designed for the efficient routing of transit. Transit routes and bus stop locations should be included in subdivision plans as part of the approval process. Bus stops on collector roads should be located within 300 m of each

other in developed areas. High density development should be included on collector routes or adjacent arterial roads. Reverse frontage on arterial roads should be avoided to support a friendly transit environment.

- **Subdivision Approval and Staging:** Transit and Community Services staff should be involved in all stages of the subdivision approval process. Subdivision approval agreements should include the completion of essential roads to support early implementation of public transit.
- **Parking Supply and Pricing:** The oversupply of parking for new developments should be avoided. Reducing parking requirements for developments on transit routes should be encouraged. Long term parking charges for City-owned parking spaces in the downtown should be increased as a measure to encourage transit ridership. These charges should at least equate to the return fare for public transit.

This study supports the Stratford Transit Business Plan. However, it is recognized that the 2% percentage point ridership increase over the next 10 to 20 years will be challenging to achieve in a small city such as Stratford and will not significantly reduce traffic demands.





4.2.3 Inter-City Transit

A considerable amount of traffic generated within Stratford is to/from external areas. **Figure 4.3** illustrates that 33% of PM Peak Hour traffic is external to the community. Much of this travel occurs between Stratford and areas east of the City. Therefore, there may be some potential to support increased inter-city transit opportunities to reduce traffic demands.

The Highway 7/8 Transportation Corridor Planning and Class EA Study⁵ examined the potential feasibility for inter-city transit. This study indicated that the only inter-city bus service provider was Greyhound Bus Lines which offered 2 buses per day between downtown Stratford and Kitchener (departing at 9:20 AM and 4:20 PM and returning from Kitchener at 12:05 PM and 6:05 PM). From Kitchener connections were available to Guelph, Toronto, Hamilton and most other major destinations in Ontario. Since that time the service has been reduced to one bus per day to and from Kitchener departing Stratford at about 4:30 PM and departing Kitchener at about 6:30 PM each day of the week.

GO Transit offers no service to Stratford but has recently been investigating connections to Kitchener–Waterloo and areas west. Via Rail offers daily train service between Sarnia, London, St. Mary's, Stratford, Kitchener and the GTA. Train service between Stratford and Toronto is provided at 6:09, 8:52 and 21:00 with return trips leaving Toronto at 10:50, 17:40 and 22:00. Travel by train to/from Toronto is two hours each way. Via ridership to/from Stratford has been increased by 50% between 2004 and 2007 when 47,000 riders accessed VIA rail services at the Stratford Station. Many Stratford Festival patrons travel by VIA, as well as by

⁵ Source of information in this section from: Highway 7&8 Transportation Corridor Planning and Class EA Study, Report D: Area Transportation System Alternatives- Draft 2008.

organized bus tours, or the Festival bus shuttle service.

Inter-city transit offers limited potential to reduce travel demand within the City. It offers some improvement for longer distance trips external to the city.

4.3 Increasing Active Transportation

4.3.1 Increase Walking

Walking is the most basic form of transportation. Since the advent of the automobile, it has gradually been given less consideration in transportation and land use planning. Walking is important for many reasons. It is not only a means of transportation but also provides recreation, exercise and a way to socialize. It makes neighbourhoods more livable and adds life to city centres. It is a means of transportation that remains independent of technological change. As well, each trip by other modes such as bus, car, plane or train begins and ends on foot. Increased walking is healthy, environmentally friendly and economical.



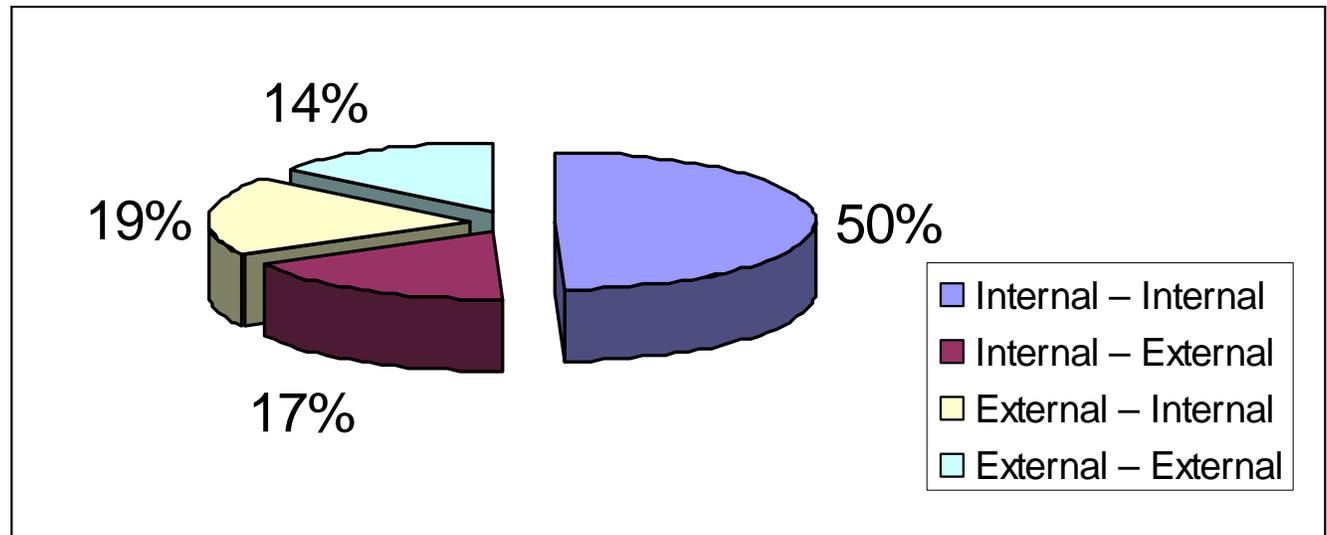
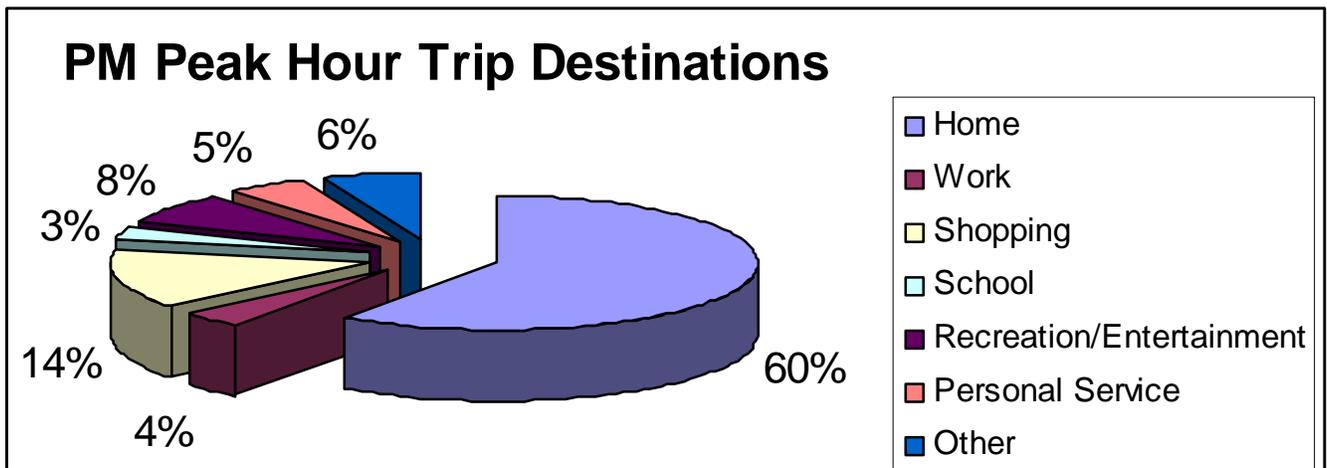
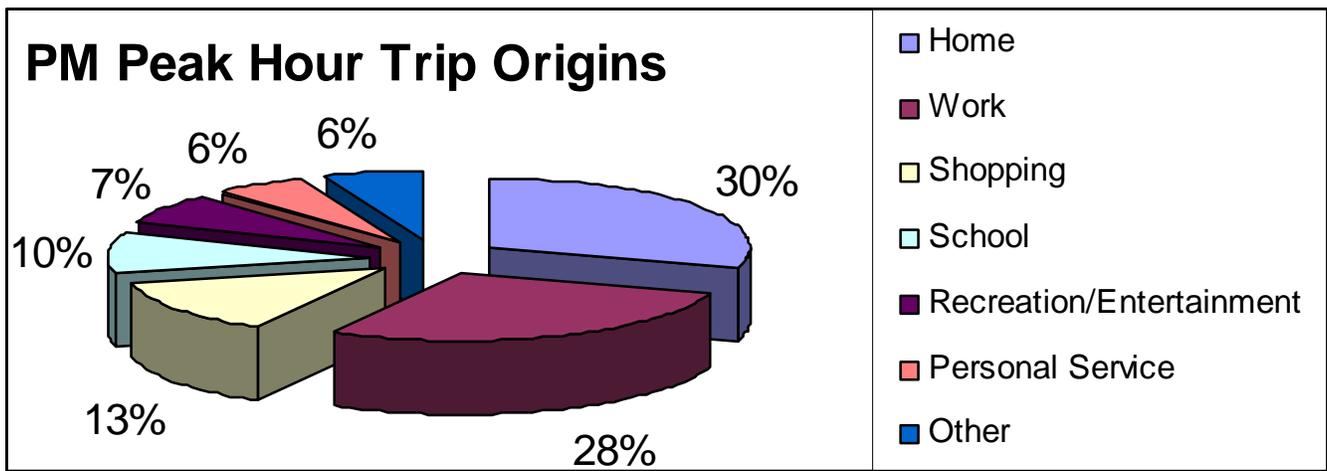
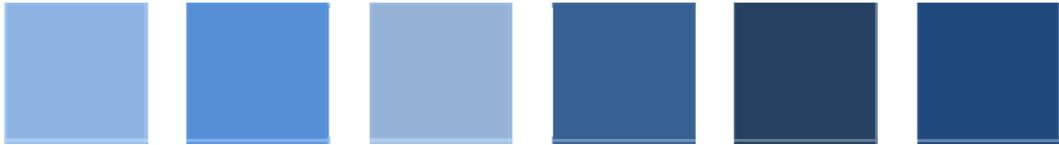


Figure 4.3
PM Peak Hour Travel Characteristics





Walking is a significant mode of transportation in Stratford. Based on time and physical constraints, walk trips are the shortest compared to other modes. As shown in **Figure 4.4**, very few walk trips exceed 5 km in length while 70% are one km or less. Therefore, for walking to be a viable alternative mode of transport, the origin and destination of walk trips must be in close proximity. A final important consideration is the presence of a network. In Stratford, the Official Plan policy to provide sidewalks on both sides of all collector and arterial streets provides strong support for walking.

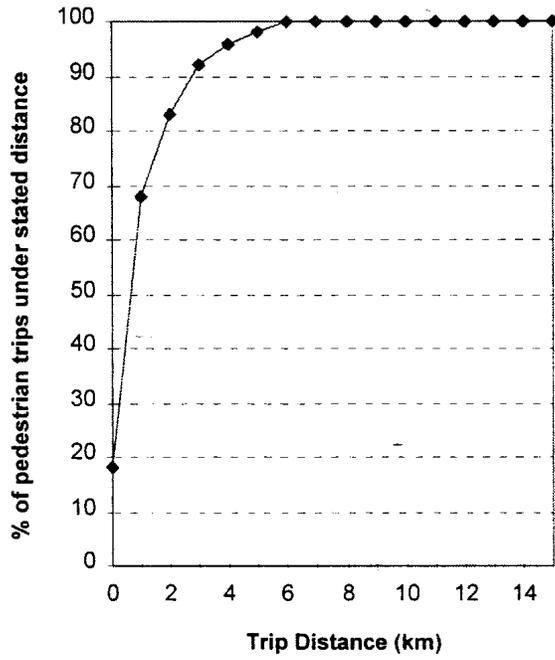
At public meetings regarding the transportation plan, concern was expressed regarding the lack of sidewalks on both sides of some arterial roadways requiring pedestrians to cross the road more than once to get to their destination. The City of Stratford has a significant network of sidewalks on the existing collector and arterial network. The Official Plan currently indicates that sidewalks will generally be provided on both sides of arterial and collector roads where pedestrian traffic warrants, but may be omitted on short cul-de sacs and provided on only one side of local streets in residential areas.

Figure 4.5 illustrates missing sections of sidewalks on the existing arterial and collector road system. In order to encourage walking, improved sidewalk infrastructure is required, especially on arterial roadways in the central area of the City. Currently, little or no sidewalks are provided on O’Loane Avenue, Lorne Avenue, the north part of Mornington Street, the south part of Downie Street, Quinlan Road and Vivian Line as shown.

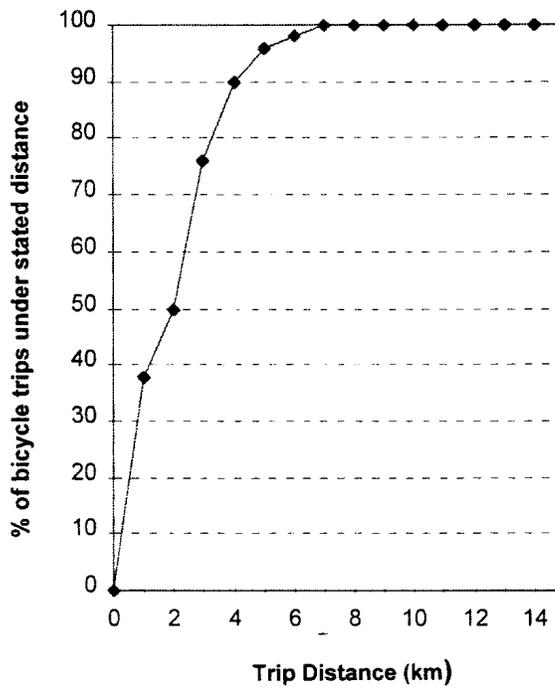
It is expected that walking will continue to play a key role in the transportation of Stratford residents. As the population grows, so too will the number of walk trips. However, based on the anticipated pattern of growth at the extreme edges of the built up area, and the fact that

walking is used for short distances, walking is not forecast to be able to reduce the need for any of the roadway transportation improvements identified.





Cumulative Observed Pedestrian Trip Lengths



Cumulative Observed Bicycle Trip Lengths

Figure 4.4
Comparison of Walk and Bicycle Trip Lengths



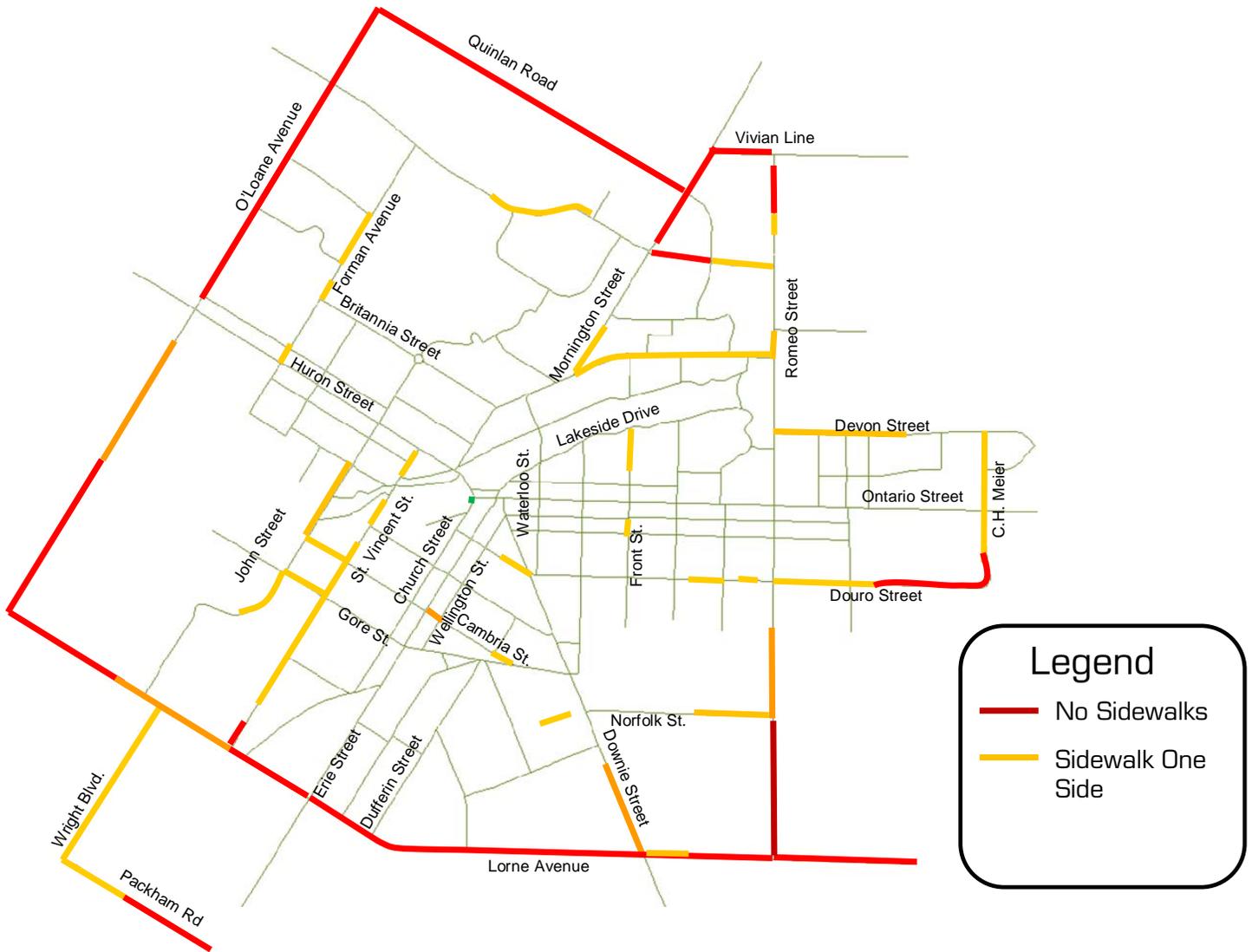


Figure 4.5
 Sidewalk Requirements on
 Arterial and Collector Roads





4.3.2 Increase Cycling

Cycling is a viable and well used form of transportation in many countries. The characteristics that favour cycling are:

- High density and mixed use developments;
- Strong urban centres with major pedestrian precincts;
- High fuel, insurance and general automobile operating costs;
- Lower rates of auto ownership;
- A positive public perception of cycling as a legitimate form of transportation;
- Provision of facilities conducive to cycling; and
- National and local policies supporting cycling.



In recent years a great upsurge in bicycle use in North America has resulted from increasing public interest in changing lifestyles in order to improve health and fitness.

The current PM peak hour mode share for cycling is about 3-4% for municipalities similar to Stratford. Most cyclists are 15 years old or younger, and 2-3% are of retirement ages. More than 50% of cyclists are not of working age or are not employed. The most common use for bicycles in Stratford is expected to be school-aged children cycling between home and school. For the adult market, cycling for recreation is common.

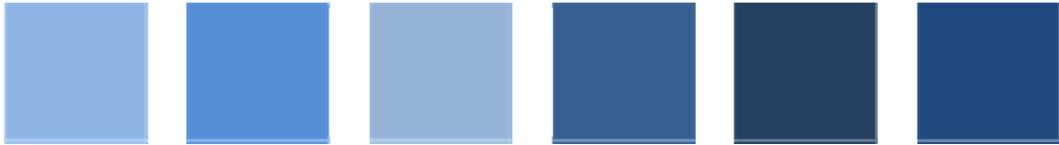
Any potential increase in cycling as a replacement for auto trips is directly related to the market it intends to replace. For example, cycling trips tend to be single-purpose (i.e. from work directly home), and relatively short compared to other modes. As shown in **Figure 4.4**, most cyclists travel under 7 km, while the average cycling trip is about 2 km. In Stratford one must consider that the new residential growth areas, and new employment growth areas are at opposite ends of the City. These locations are not conducive to cycling between them, especially if adequate facilities are not available. Another important consideration is the decreasing amount of school-aged children, who make up a large part of the cyclists.

Based on the above considerations, it is forecast that cycling with the provision of a dedicated cycling network could increase to 5% of the total person trips in the PM peak hour, if adult-age cycling doubled. This increase in cycling would result in a minor reduction in the number of vehicles during the PM peak hour, and will not be sufficient to reduce the need for any of the roadway improvements suggested. However, given the advantages associated with bicycle transportation, the Master Plan supports the implementation of measures to enhance cycling in Stratford for the following reasons:

The provision of adequate facilities may significantly increase the current modest use of cycling for transportation:

- Bicycles are powered by inexpensive non-polluting renewable bio-energy;
- Faster than walking and less strenuous than running;
- Potential for door to door service;
- Timing of use is flexible and unscheduled, unlike public transit;
- Can alleviate pressure on the municipal road system and parking supply;





- Can contribute to local tourism and economic development initiatives; and
- Supports local businesses such as bicycle retailers, supply and service shops, rental shops and recreational activities.

4.3.3 Cycling Facility Standards

The Transportation Master Plan is not intended to replace the need for a Bicycle Master Plan which will look in more detail at design options for bicycle facility implementation along the corridors recommended for consideration.



Some of the following typical design standards for bicycle facilities are illustrated in **Figure 4.6**:

- **Roadside Bike Path:** Located within the road boulevard with the road right-of-way separated from traffic. Could be a one-way or two-way facility.
- **Two-Way Bike Path:** A stand alone path or multi-use trail accommodating two way bicycle and pedestrian movement outside or within the road right of way.
- **Urban Road Shared Bike Lane:** One way marked bicycle lanes adjacent to the traffic stream on both sides of an arterial road.
- **Rural Shoulder Bike Lane:** In rural standard road cross-sections, bike lanes can be marked on a paved shoulder.

- **Shared Vehicular/Bicycle Lane:** An unmarked, minimum 4.3m wide lane that bicycles share with vehicles. A minimum of 8.6m of pavement is required for a two lane road.

4.3.4 Cycling Network

There are several roadways within Stratford that have road widths that would allow 4.3 m shared bicycle lanes or marked bike lanes to be implemented immediately by adjusting paint lines only. These include:

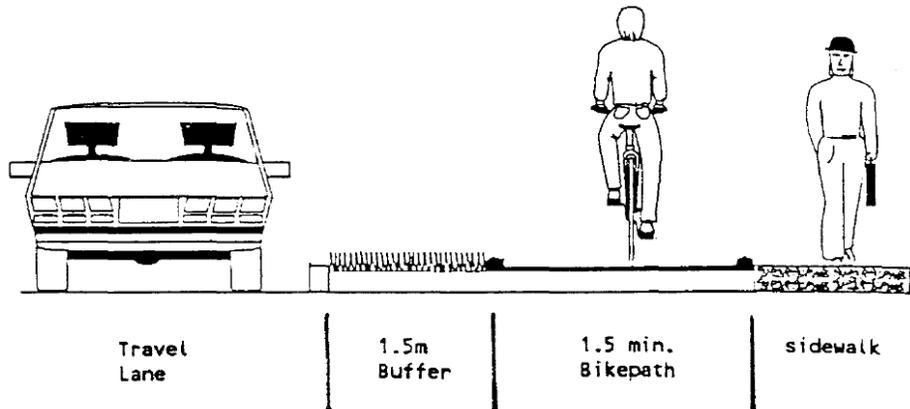
- The one-way streets of Albert Street, Brunswick Street, Water Street and Cobourg Street which can accommodate one parking lane, one travel lane and a 1.5m bicycle lane.
- Romeo Street north of Ontario Street which has a pavement width of over 9m.
- McCarthy Road west of Mornington Street and all of Maple Avenue.
- Parts of Downie Street, Queensland Road, Wright Blvd and Packham Avenue.
- Sections of Delamere Street and Waterloo Avenue.

Figure 4.7 represents a potential cycling network that would provide access to major community facilities and the downtown core. The network uses mainly the local and collector street system in the short term implemented at a low cost, with bicycle lanes on road or within the boulevard of the road right-of-way on many arterial roads being constructed in the long term. The plan is intended for both recreational and utilitarian cycling and must be subject to more detailed study and stakeholder input. A Cycling Master Plan will look at design options (i.e. on-road, off road, reduced or narrowed travel lanes, parking impacts, costs etc).

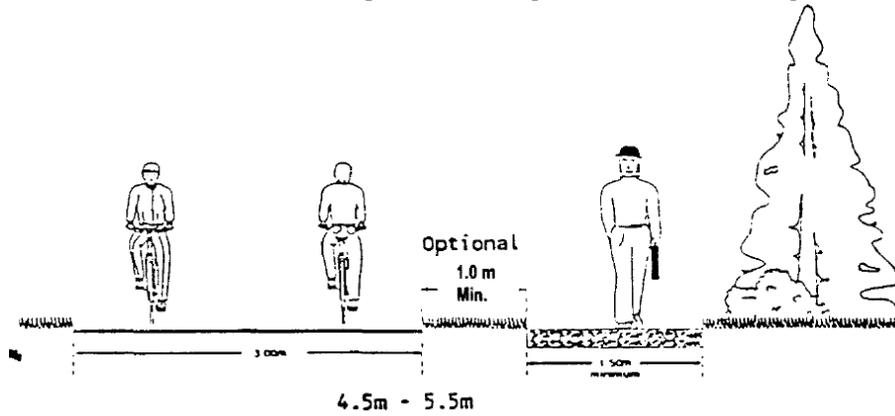
The Transportation Master Plan recommends that bicycle facilities should be provided as part of the City of Stratford transportation system. A conceptual plan is provided that will be adjusted as a result of further study.



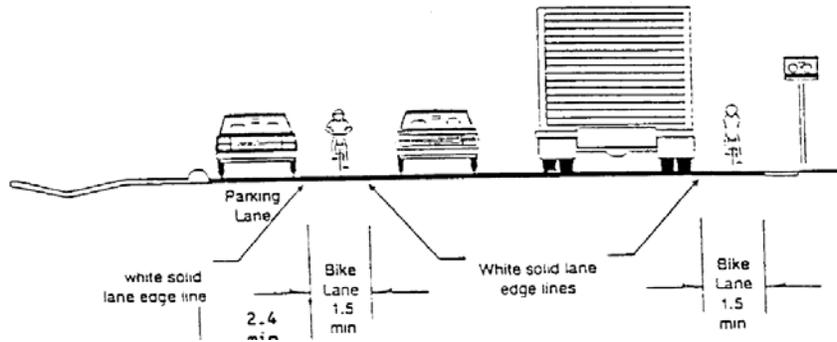
Roadside
Bike Path



Multi-Use
Bike Path



Urban Road
Bike Lane



Rural
Shoulder
Bike Lane

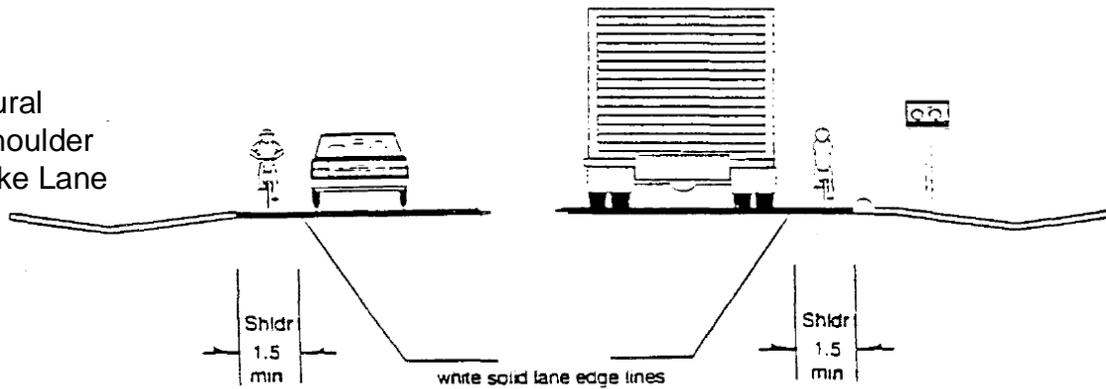
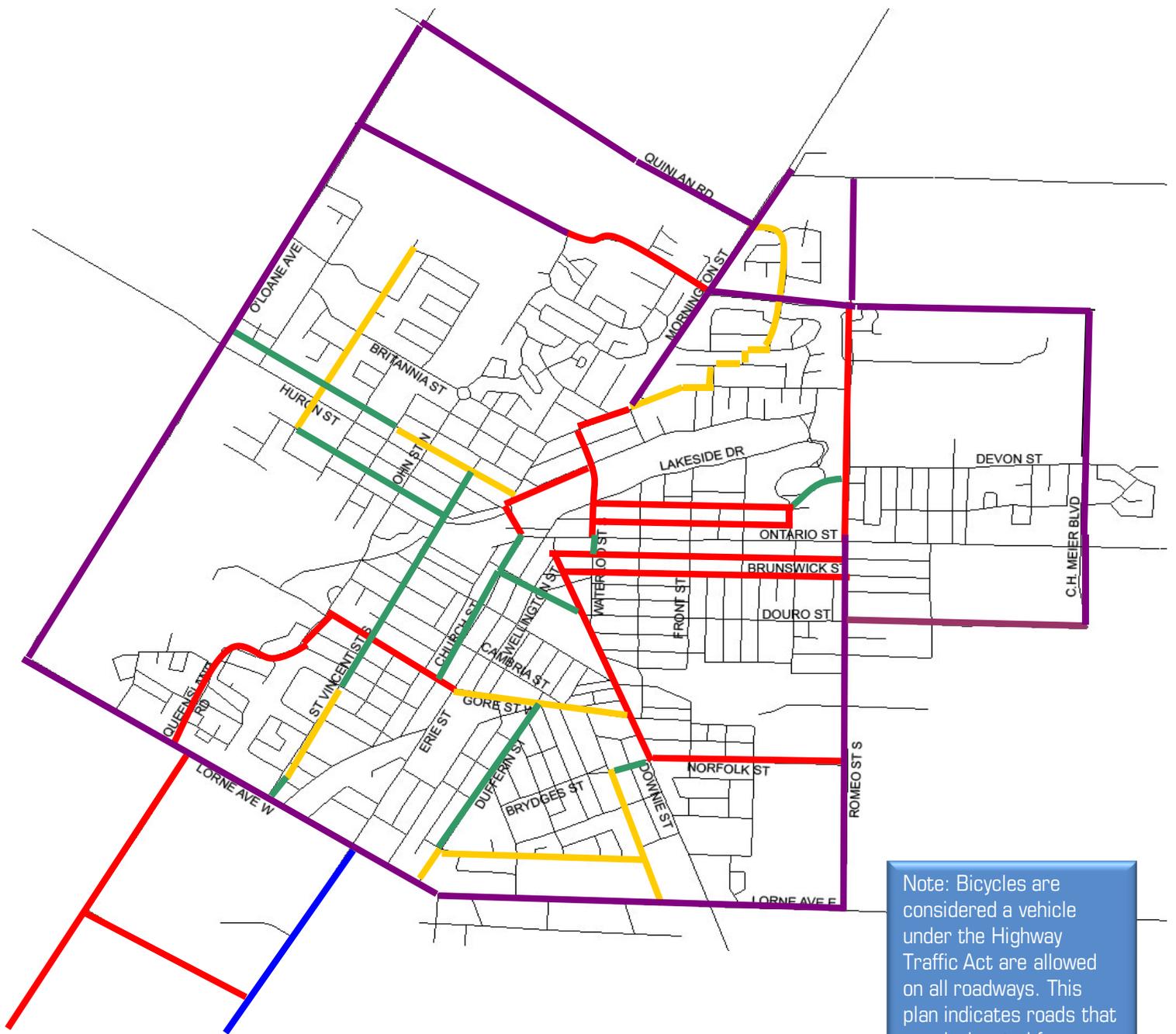


Figure 4.6
Typical Bicycle Facilities Standards





Note: Bicycles are considered a vehicle under the Highway Traffic Act are allowed on all roadways. This plan indicates roads that are designated for cycling and is subject to further study and public input.

Legend

- Paint lines required only
- Paint lines required only- potential parking impacts
- Signage only- no bike lanes
- Bike Facility Construction Required

Figure 4.7
Potential Bicycle Routes and Lanes



4.5 Road Network Improvements

4.5.1 Road Network Needs

Two approved Class Environment Assessment (Class EA) studies have shown the need for the C.H. Meier and McCarthy Road extensions to support the build-out of population areas in the northeast and northwest parts of the City. While the 2028 forecasts in Section 3 do not include build-out of these areas, they do show increased north-south traffic congestion on Romeo Street and Mornington which will not be resolved solely by practical TDM measures, increases in Active Transportation or improved public transit.

4.5.2 C.H. Meier and McCarthy Road East Extensions

As part of the Stratford North East Secondary plan, a Class EA was conducted for the extension of McCarthy Road east of Romeo Street and the extension of C.H. Meier north to the future McCarthy Road. Several alternative structural, non-structural and design options were considered and evaluated. The long term build-out of the northeast secondary plan was estimated to accommodate a population increase of approximately 5100 persons. This area is expected to generate approximately 1350 peak hour vehicle trips (two-way) during the afternoon peak hour and approximately 13,500 vehicle trips per day. As the majority of traffic generated from the secondary plan area will originate from or be destined for areas south, a significant increase in traffic is expected to occur on Romeo Street and Ontario Street causing some sections of these corridors to exceed their capacities if road improvements are not made.

Furthermore, existing traffic patterns indicate that Devon Street is currently experiencing a considerable amount of cut-through traffic via C. H. Meier/Ontario Street to/from Romeo Street and the north central part of the City. Motorists are avoiding additional delays on Ontario Street

and the Romeo/Ontario Street intersection by using Devon Street as a bypass. Growth in the Secondary Plan area is expected to further compound the through traffic issue along this corridor if alternative road network improvements are not implemented.

As a result, the EA developed a preferred plan and design for the C.H. Meier northerly extension and the McCarthy Road east extension as shown in **Figure 4.8**. These extensions will reduce expected traffic congestion on Romeo Street.

4.5.3 McCarthy Road West Extension

As part of the Stratford West Secondary Plan, a Class EA was conducted for the extension of McCarthy Road west to O'Loane Avenue. This secondary plan provides for new residential development with some commercial development primarily in the vicinity of Huron Street west of O'Loane Avenue. Full development of these lands is estimated to accommodate between 3850 and 6000 dwelling units. The lands could also accommodate 250,000 to 300,000 square feet of commercial space. Assuming a mid-range of 3700 units and 275,000 square feet of commercial space, trip generation estimates based on published data⁶ indicate that approximately 4500 vehicle trips during the PM peak hour will be generated in the secondary plan area upon build-out.

⁶ Trip Generation, 7th Edition, Institute of Transportation Engineers



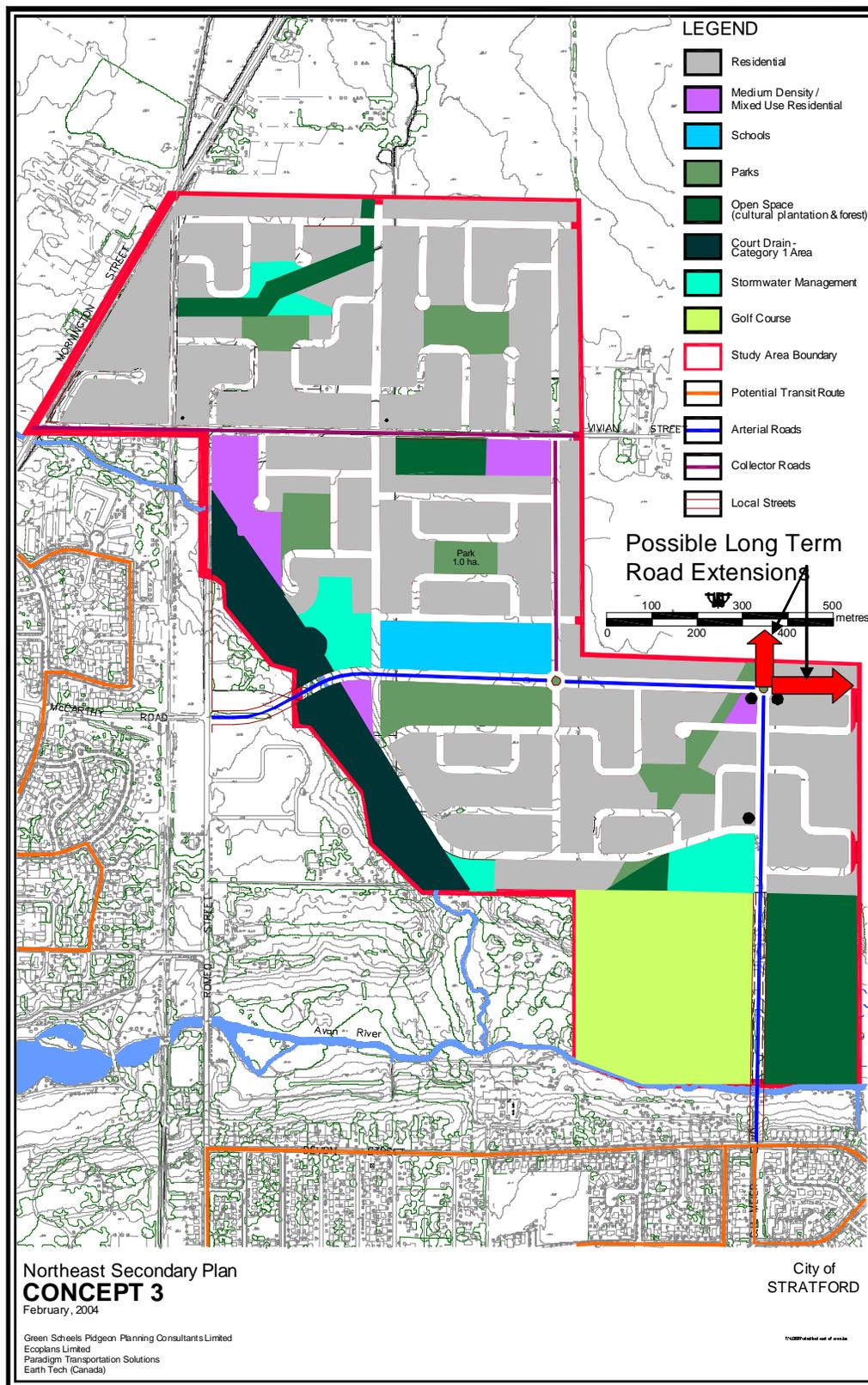
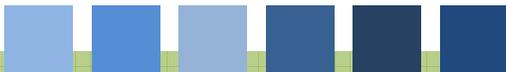


Figure 4.8
C.H. Meier and McCarthy Road East
Extension - North East Secondary Plan





The McCarthy Road extension to O'Loane is required for the following reasons:

- To provide access for development of the Stratford West Secondary Plan lands.
- To complete the development of a new east west arterial route (from C.H. Meier to O'Loane) that will offer an alternative to the use of Huron Street/Ontario Street and Romeo Street and reduce future congestion on these roads.
- To meet future city-wide and local area transportation needs as identified in the City's previous Transportation Master Plan.
- To discourage use of local or collector residential streets to travel between the secondary plan area to other areas in the City.

The completion of the McCarthy Road to C.H. Meier corridor will divert traffic from Romeo Street and reduce the amount of cut-through traffic on Devon Street. Growth in both Secondary Plan areas is expected to further compound the through traffic issue until the complete McCarthy Road to C.H. Meier corridor is constructed.

Figure 4.9 illustrates the McCarthy Road West extension.

4.5.4 Highway 7/8 Bypass

In 2007 the Ministry of Transportation initiated the Highway 7 & 8 Transportation Corridor Planning and Class Environmental Assessment Study (Class EA) which included the area between Stratford and New Hamburg. The purpose of the Study is to prepare a long term strategy to address identified transportation needs for the analysis area and to prepare a preliminary design for the provincial highway components of the recommended plan. The study is ongoing and scheduled to be completed in 2012.

As part of the study the Ministry of Transportation identified the Preferred Corridor for the Highway 7&8 provincial highway and presented it to stakeholders in 2009. This corridor, shown in **Figure 4.10**, was selected from a shortlist of alternatives through a detailed comparative evaluation. In Stratford, the preferred corridor consists of Lorne Avenue and sections of Erie Street within the City limits that provide a continuous highway linkage to areas beyond Stratford and meets the long term transportation capacity needs.



The corridor is proposed to be owned and managed by the Ministry of Transportation and will not be subject to a connecting link agreement as is currently in place for the Ontario, Erie and Huron Street corridors today. Subject to completion of the EA Study, the Ministry envisions that the Lorne Avenue corridor will consist of a 2-3 lane facility west of Erie Street and a 4/5 lane facility east of Erie Street with access to Lorne Avenue provided primarily by intersections. Similarly, Erie Street south of Lorne Avenue will consist of a 4/5 lane facility with access provided primarily at intersections.



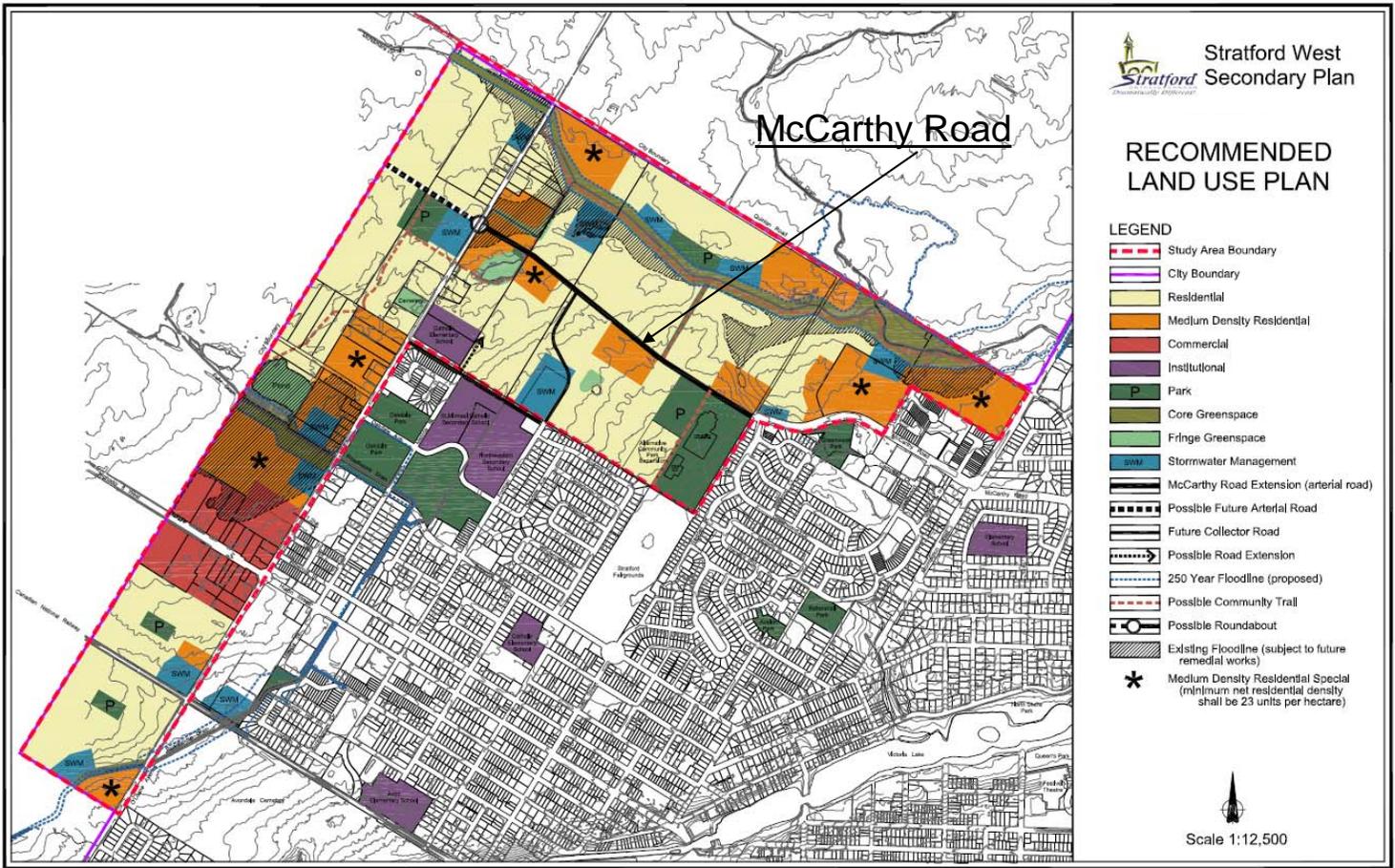
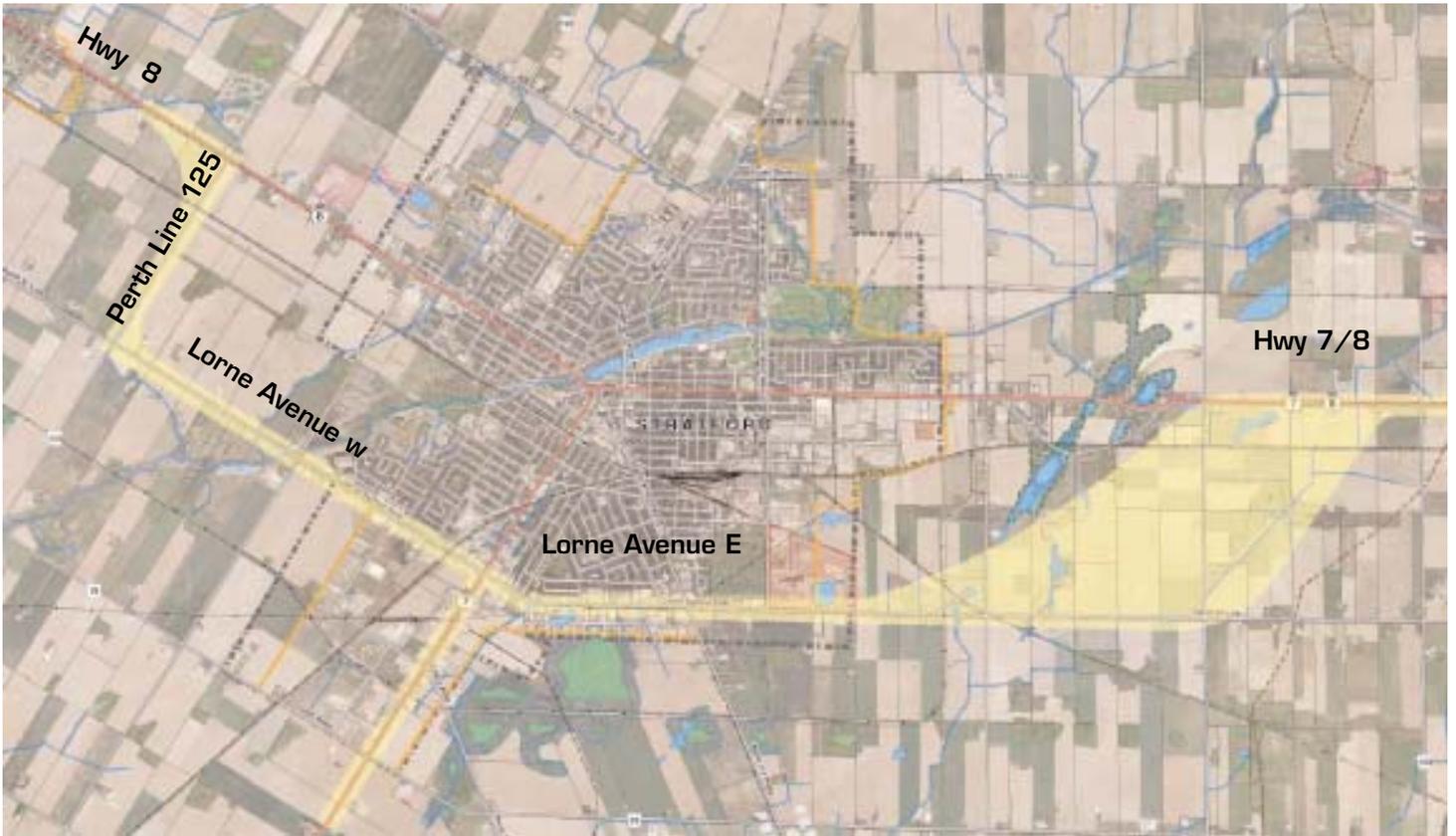


Figure 4.9
McCarthy Road West Extension
North West Secondary Plan

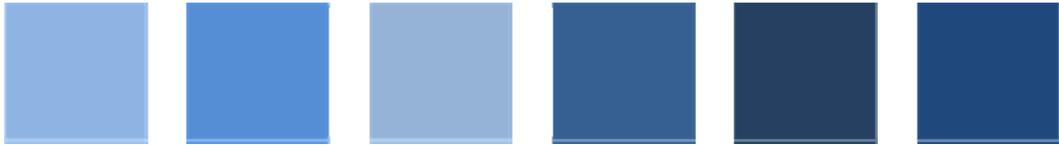




Note: Highway 7/8 By-pass alignment is shown conceptually. Actual alignment will be determined the Highway 7/8 Transportation Corridor Planning and Class EA Study

Figure 4.10
Preferred Highway 7 & 8
By-pass Route





The new highway corridor location means that Ontario Street will no longer be required to accommodate provincial through traffic. This new corridor is expected to effectively reduce the traffic congestion expected on Ontario Street and Lorne Avenue in 2028 and beyond. It will also divert through truck traffic from Ontario Street and the core area, which has been the subject of concern for many years.

With the new bypass in place, the future transportation system in Stratford will operate well in 2028 and beyond as shown in **Figure 4.11**. No significant road improvements will be required with the exception of the extensions of McCarthy Road and C.H.Meier as noted above.

4.5.5 Truck Routes

Truck traffic on Ontario Street through the core area was a concern in the 1990 Transportation Study. As Ontario Street is a provincial connecting link, restricting trucks from using Ontario Street through the core is not within the jurisdiction of the City of Stratford. The City has encouraged through truck traffic to by-pass the downtown through a permissive signing strategy to direct truck traffic to C.H. Meier, Douro Street, Romeo Street, Lorne Avenue, O'Loane Avenue and Quinlan Road as shown in **Figure 4.12**. As noted in Section 2, this signing strategy has been effective in attracting truck traffic to these routes and away from the core.



When the new Highway 7/8 By-pass is in place, truck traffic not destined for the City can be restricted from Ontario Street. Trucks with destinations within the community would be

required to use the truck route system to a point that represents the shortest path from the truck route system to their destination. Trucks destined to the core, would be required to leave the truck route at Erie Street as this represents the shortest route from the truck route to the core area. To some degree this will be self enforcing as the highway bypass will represent the shortest time path to the core area.

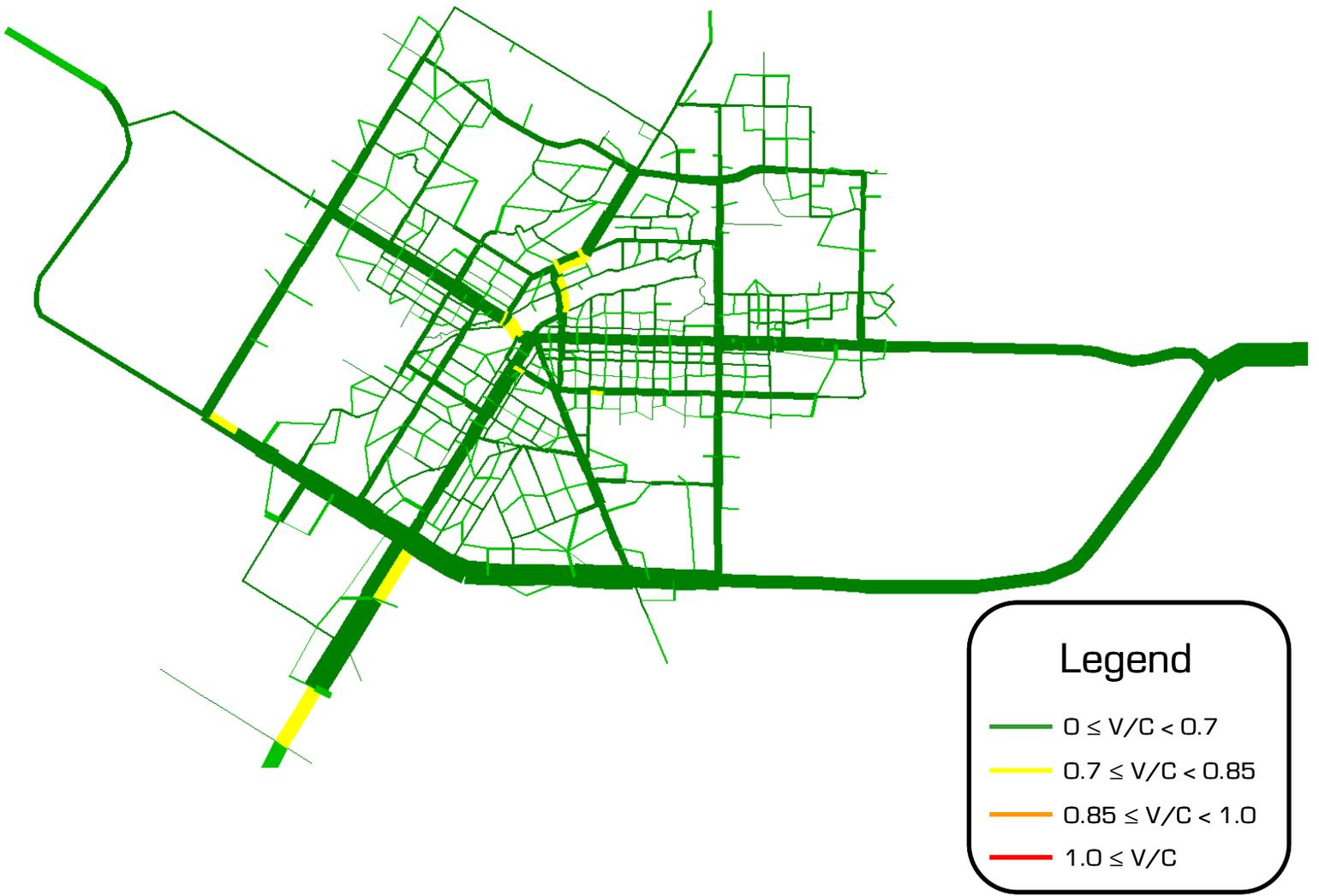
4.6 Public Consultation Meeting 2

A second public meeting was held on June 16, 2010 to present the preferred transportation plan noted above and some suggested transportation policies for inclusion in the new Official Plan of the City of Stratford. The meeting was held at the Kiwanis Community Centre in Stratford with a presentation followed by a question/answer period. Display boards were also provided.

Again most of the comments at the meeting were focused on improved bicycle transportation. Pedestrian movement and the multi-modal transportation hub were also discussed. Some suggested bicycle routes were provided in written comments as follows:

- Consider a designated route using Willow St. as well as Douro and McCarthy.
- Consider a route beside the Fairgrounds straight up to the Rotary Centre and the Market.
- Mercer to Hibernia or Caledonia to/from downtown core via Williams or Lakeside
- Provide connections to Northwestern and St. Mike's by construction of a dedicated path.
- Constructing a dedicated bike path connecting Brunswick to C.H. Meier.
- Connect to a Transportation Hub including buses, access to VIA Rail, sidewalks and bike paths.
- Connect our sports facilities with bike paths to encourage physical fitness and less pollution.

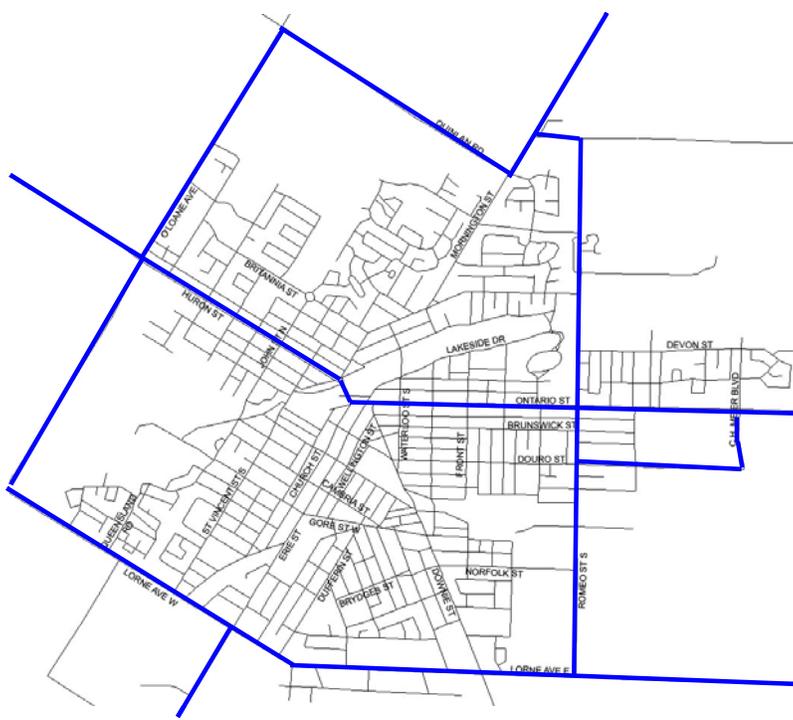




Note: Highway 7/8 By-pass alignment is shown conceptually. Actual alignment will be determined the Highway 7/8 Transportation Corridor Planning and Class EA Study

Figure 4.11
2028 Model Forecast PM Peak Hour





Existing Signed Route



Future Truck Route

Figure 4.12
Existing and Future Truck Routes



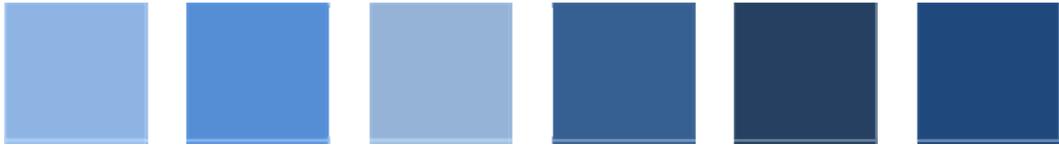


5



Master Plan





5.0 TRANSPORTATION MASTER PLAN

5.1 Overview

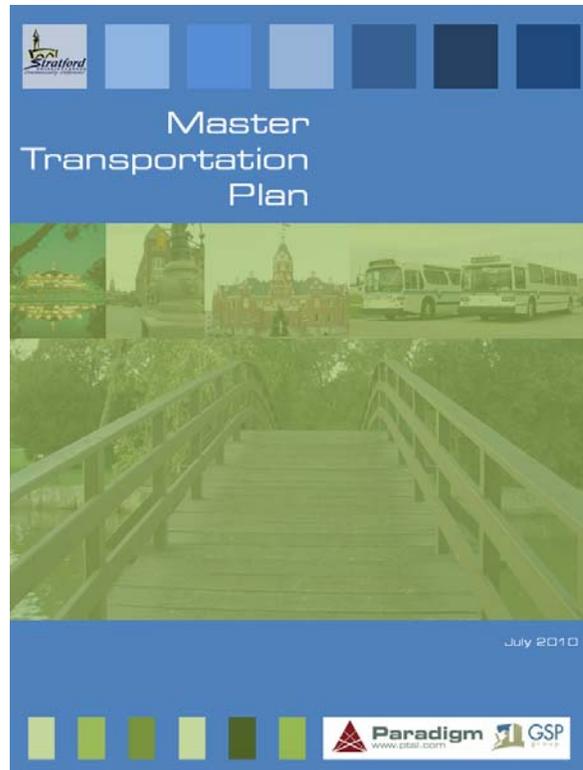
This chapter summarizes the recommended 20 year transportation plan, implementation program and policies for the City of Stratford. The plan is made up of several elements including:

- Transportation Demand Management;
- Pedestrian Plan and Policies;
- Cycling Plan and Policies;
- Transit Plan and Policies;
- Roadway Network Plan and Policies;
- Implementation Program; and
- Cost Estimates (included in Chapter 6).

The primary goal of the plan is to provide increased focus on accommodating active transportation to encourage walking and cycling. The goals and objectives of the plan are as follows and similar to those already in the existing Official Plan:

- To provide for the safe and efficient movement of goods within and through the City.
- To recognize that the road right-of-way is not only necessary to accommodate vehicular traffic but all modes of travel including transit, walking and cycling.
- To reduce the dependency on the automobile as the primary means of transportation through enhancing public transit, cycling, and other alternative modes.
- To recognize cycling and walking as viable alternatives to other modes of transportation and which promote environmental awareness and a healthy lifestyle.

- To create and maintain a logical, efficient and safe transportation network comprising a hierarchy of arterial roads, collector roads and local streets.
- To preserve arterial and collector roads for their primary function of carrying high to medium volumes of vehicular traffic throughout the City.
- To take certain measures in the short term to facilitate implementation of the desired transportation network in the long term.



5.2 Transportation Demand Management Plan

As identified in Section 4, most transportation demand management alternatives in Stratford are either impractical or will not influence sufficient travel demand to reduce the need for other improvements. Nonetheless, it is





recommended that the city pursue some TDM concepts for several reasons:

- They promote healthier lifestyles and livable communities, which is very important for Stratford.
- Several can be implemented without significant capital expenditure by the City.
- Implementing these concepts in the current planning period will have financial and other benefits for the City into the next planning period.

Therefore it is recommended that the City pursue some TDM measures, as outlined below.

5.2.1 TDM Objectives

The following objectives are proposed:

- To implement measures that will help increase public transit ridership such as higher densities near transit routes.
- To implement planning policies that will support improving the home-to-work relationship to reduce trip lengths and result in alternative modes such as walking and cycling being more attractive.
- To educate and encourage the community to use alternative transportation modes and to reduce automobile travel during peak hours.

5.2.2 TDM Policies

The following TDM Policies are proposed as part of the transportation master plan.

- **Variable Work Hours:** The City will encourage major employers in the industrial areas to help in reducing the traffic loading on the road system through altering their work schedules. This is especially important in Stratford with the number of large

employers, coupled with the relatively short, significant peaks of traffic that already exist.

- **Increased Densities/Mixed Use Developments:** The City will encourage, through planning policies, the locating of mixed use developments adjacent to major arterials and transit routes to support increased transit ridership and the development of mixed use buildings that will provide live/work opportunities.
- **Work at Home/Telecommuting:** The City will encourage, through education and supporting planning policies, the benefits of work-at-home businesses and telecommuting.
- **Ridesharing/Carpooling:** The City will work with the Ministry of Transportation to support these activities through carpool lots and ride-matching services.
- **Marketing and Promotion:** The City will promote alternative ways of commuting on the City web site as well as provide paper copies of information. The City will provide a single point of contact for TDM initiatives in the City by designating an individual or group (i.e. MovingOn Committee) to take on the role of TDM education and promotion among other functions. The City should hold regular Spring and Fall special events to promote the sustainability of alternative modes and other TDM programs.

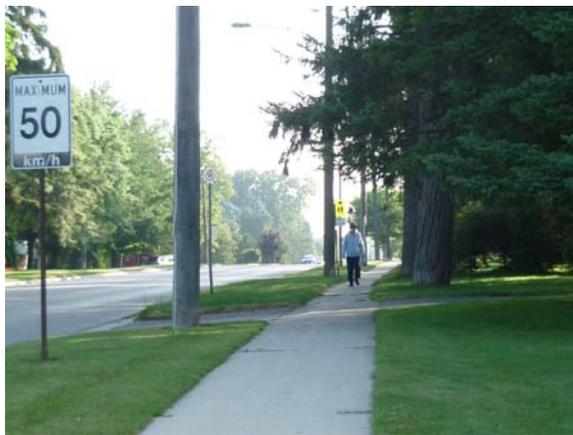
While traffic reduction strategies are desirable and can provide positive benefits, they will not replace the need to increase transportation facilities to accommodate the needs and desires of local residents, businesses, visitors and tourists to travel by passenger vehicles. This is supported by experience in other similarly sized municipalities where travel by automobile and associated road improvements is the most attractive and practical transportation option to meet future travel needs of the majority of residents.





5.3 Pedestrian Plan

Walking is the most basic form of transportation and is important for many reasons. It is not only a means of transportation but also provides recreation, exercise and a way to socialize. It makes neighbourhoods more livable and adds life to city centres. It is a means of transportation that remains independent of technological change. As well, each trip by other modes such as bus, car, plane or train begins and ends on foot. Increased walking is healthy, environmentally friendly and economical.



At public meetings regarding the transportation plan, concern was expressed regarding the lack of sidewalks on both sides of some arterial roadways requiring pedestrians to cross the road more than once to get to their destination. The Transportation Master Plan recommends a sidewalk improvement plan be undertaken to correct the deficiencies shown in **Figure 5.1**.

The current Official Plan has identified that sidewalks should be provided on both sides of arterial and collector roads where pedestrian traffic warrants. However, without sidewalks pedestrian warrants will not be achieved.

It is recommended that sidewalks or multi-use trails be provided:

- on at least one side of each arterial and collector roadway within the next 5 years (except for Quinlan Road where adjacent urban development is limited);
- on both sides of arterial roads within the 5-10 year period (except for Quinlan Road and the south side of Lorne Avenue where adjacent urban development is expect to be limited or nonexistent); and
- on both sides of all collector and arterial roadways in the 20 year period (except the north side of Quinlan Road where adjacent development will not occur).



Trails provide an alternative facility for walking. The Transportation Plan recommends that a Trails Master Plan be prepared in order to guide the development of a City-wide trail network by identifying missing links, establishing design standards and a plan and program for implementation.





Legend

- Recommended Sidewalks Where No Sidewalks Exist
- Recommended Sidewalks Where Located on One Side

Figure 5.1
Recommended Sidewalk Plan



5.3.1 Pedestrian Plan Objectives

The objectives of the pedestrian component of the transportation plan in Stratford are as follows:

- To encourage walking as an alternative to the single occupancy vehicle over a variety of distances within the community.
- To commit to the continued development of convenient and safe pedestrian movement systems and amenities.
- To ensure that pedestrian routes are accessible to all segments of the community at all times, including users of motorized wheelchairs and carts.

5.3.2 Pedestrian Plan Policies

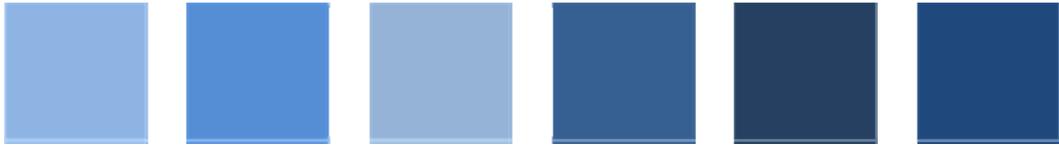
The following pedestrian policies are proposed as part of the transportation master plan:

- **Sidewalks:** That sidewalks be provided on both sides of arterial and collector roads where adjacent to developed areas, and on one side of all local streets in residential areas.
- **Trails Master Plan:** The City will commit to continuous improvement to the sidewalk and trails network by conducting and implementing a cycling and trails master plan. The City will provide multi-use trails adjacent to arterial roads or as standalone facilities where appropriate, to create a linked and complete network throughout the City.
- **Funding Priorities:** The City will increase priority for funding of sidewalk and trail improvements to connect recreational facilities, residential, institutional and commercial areas.
- **Access to Transit:** Ninety percent of the residential development should be within a

reasonable walking distance of 400 m to transit stops. This policy will be used in all transit, roadway, open space and development planning through the combined use of sidewalks, walkways and pathways.

- **Pedestrian Crossings:** The City will provide a pedestrian refuge area in high demand arterial road crossings to improve pedestrian safety in these areas.
- **Pedestrian Friendly Land Use Planning:** The City will encourage the development of complete communities; live/work, multi-use developments; and, mixing of land uses which encourage walking over driving. Pedestrian access to commercial establishments will be located away from vehicular access and parking areas where possible.
- **Review of Development Plans:** The preparation of new plans of subdivision and site plans within the City will include consideration of pedestrian movement, development of new pedestrian routes and extension of new routes to and from parks, recreation facilities, commercial areas, schools and other community institutions. The dedication of land for trails and walkways will be required as a condition of approval in accordance with Sections 41.7.a.4 and 51.25.6 of the Planning Act.
- **New Residential Areas:** In the phased construction of new residential areas, the City will consider the temporary or permanent development of walkways or pathways at an early stage of development to ensure continuous and early pedestrian linkages to schools and transit stops.
- **Highway 7/8 Bypass:** The City will encourage the Ministry of Transportation to implement the proposed Highway 7/8 bypass to improve the pedestrian environment in the core area through the reduction of through traffic.





5.4 Cycling Master Plan

The Master Plan supports the implementation of measures to enhance cycling in Stratford for the following reasons:

- The provision of adequate facilities may significantly increase the current modest use of cycling for transportation,
- Bicycles are powered by inexpensive non-polluting renewable bio-energy,
- Cycling is faster than walking and less strenuous than running,
- Cycling provides the potential for door to door service,
- Timing of use is flexible and unscheduled, unlike public transit,
- Cycling can alleviate pressure on the municipal road system and parking supply,
- Cycling can contribute to local tourism and economic development initiatives.
- Cycling supports local businesses such as bicycle retailers, supply and service shops, rental shops and recreational activities.

Figure 5.2 illustrates a conceptual cycling improvement plan to enable access to major community facilities and the downtown core. The proposed network uses mainly the local and collector street system along with arterial roadways with adequate width, in the short term, implemented at a low cost. Bicycle lanes on road or within the boulevard of the road right-of-ways on many arterial roads would be constructed in the longer term.

The plan is intended for both recreational and utilitarian cycling and must be subject to more detailed study and stakeholder input. A Bicycle Master Plan will look at design options (i.e. on-road, off road, reduced or narrowed travel lanes, parking impacts, costs etc).



At public meetings regarding the transportation plan, concern was expressed regarding the lack of bicycle facilities in the City. The Transportation Master Plan recommends that bicycle facilities should be provided as part of the City of Stratford transportation system.

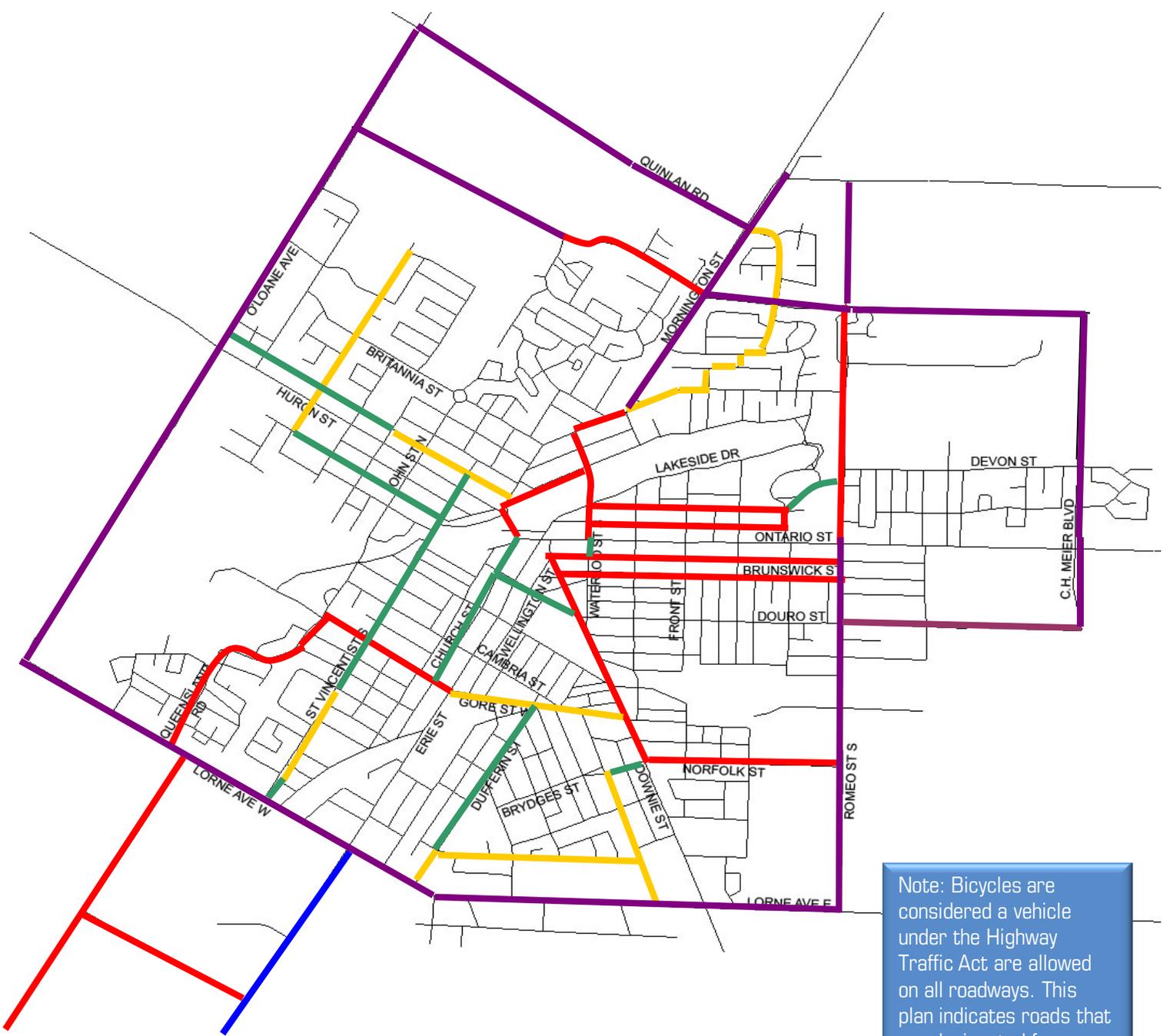
Trails provide other alternative facilities for cycling. The Transportation Plan recommends that a combined Trails and Cycling Master Plan be conducted to identify future trail linkages to bicycle routes and a plan and program for implementation.

5.4.1 Cycling Plan Objectives

The objectives of the bicycle component of the transportation plan in Stratford are as follows:

- To encourage and create demand for cycling as an alternative to the single occupancy vehicle over a variety of distances within the community.
- To commit to the ongoing development of convenient and safe cycling systems and amenities.
- To co-ordinate and integrate the planning of bicycle facilities as part of the City trails network.
- To expand the multi-modal transportation network through the appropriate incorporation of bicycles with transit.
- To provide complementary education, enforcement and encouragement programs for cycling.





Note: Bicycles are considered a vehicle under the Highway Traffic Act are allowed on all roadways. This plan indicates roads that are designated for cycling and is subject to further study and public input.

Legend

- Paint lines required only
- Paint lines required only- potential parking impacts
- Signage only- no bike lanes
- Bike Facility Construction Required

Figure 5.2
Conceptual Cycling Plan



5.4.2 Cycling Plan Policies

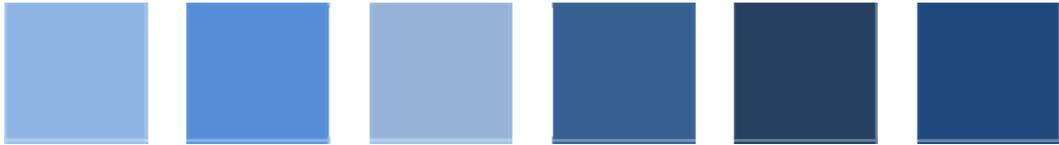
The following bicycle policies are proposed as part of the transportation master plan:

- **Role of the Bicycle:** The City will recognize that the bicycle is a viable and beneficial alternative mode of transportation to the automobile and the public transit system... Bicycle planning in the City will be based on the existence of a potentially large “latent” demand, meaning that people would use bicycles rather than cars if better facilities were provided.
- **Cycling Master Plan:** The City will prepare comprehensive trails and bikeway master plan for the purpose of ultimately establishing a bicycle route network (including standards for development) and the means to achieve it. Until such time, the City may establish dedicated bicycle lanes or bicycle routes where it is cost effective and desirable to do so.
- **Cycling Lanes:** Dedicated bicycle lanes will only be established on arterial and collector roads where on-street parking is not provided. On local streets, bicyclists and vehicles will share the same travelled surface. Wherever possible and feasible, bikeways will be connected to and integrated with the City’s parks, trails and recreation areas and public open space system.
- **Public/Stakeholder Input:** The City will continue to obtain stakeholder input on bicycle related transportation matters and in refining the conceptual bicycle plan developed in this transportation master plan.
- **Cycling Support Facilities:** The City may require, as a condition to the approval of development, the provision of bicycle support facilities such as bicycle parking devices and showers at major destinations, institutions

and work places as part of project development, expansion or redevelopment. Amendments to the Zoning Bylaw, Subdivision Agreement and development guidelines may be required to promote and incorporate these facilities in new developments. The City will establish accessible, sufficient and secure bicycle parking areas at municipally-owned and operated facilities.

- **Bicycle Facility Implementation:** Funding, planning and development of bicycle facilities will be coordinated with roadway construction and reconstruction, or the subdivision approval process.
- **Bicycle Lane Network Maintenance:** The engineering and design standards applied to bikeway facilities should provide for ease of maintenance and the ability to maintain the surface as part of normal street cleaning operations.
- **Cycling Awareness and Encouragement:** Through the involvement of the Police, schools, public groups and involved City departments, a variety of education programs and campaigns will be administered which stress bicycle safety, bicycle use, an awareness of bicycle opportunities within the City and improved motorist awareness.
- **Cycling Promotion:** The promotion of bicycling will emphasize the environmental and health benefits of this transportation mode including a reduction in air pollution, energy consumption, increased aesthetic appreciation of green spaces, reduced automobile dependence, and increased access to public transportation. The City will participate in programs such as “Share the Road” and an annual “Bike to Work Week” as is done in many municipalities.





- **Public Transit:** The City will promote bike/park and ride programs and consider and evaluate the need for implementation of bicycle racks on City buses to promote cycling.

5.5 Transit Plan

As outlined in Section 3, the City has recently completed an updated business plan⁷ for transit service in Stratford. The plan calls for an increase in transit ridership from 3% to 5% of all trips in Stratford over the next 10 year period. It is noted that a 2 percentage point increase in transit ridership will not have a noticeable reduction in vehicle trips on the road network if this goal is achieved. Nonetheless, public transit has an important role to play as part of a future, more sustainable, transportation system.

The goal of reaching the 5% ridership level will be challenging. To achieve this target, the Transit Business Plan calls for an aggressive program to market transit as well as to place emphasis on transit service quality and innovative fare strategies. As part of this business plan, Stratford Transit has developed short term and long term route structures as shown in **Figure 5.3** and **Figure 5.4**.



5.5.1 Goals and Objectives

The following goals and objectives have been developed in the Business Plan:

- **Goal 1: To Improve Service Levels and Ridership:** The City will strive to maintain vehicle hours of service at current levels, increase ridership and increase market penetration. This is to be accomplished by straight lining the route structures, providing improved direct links to the key destination zones (malls), offering Sunday service and extending service into unserved areas.
- **Goal 2: To Improve Service Quality and Customer Satisfaction:** The City will strive to make the transit system more competitive with the convenience of the automobile by providing a route network that will improve the quality of service it provides to customers. Improved schedule adherence, improved system appeal and accessibility and improved marketing and communications to improve the visibility and level of information within the community.
- **Goal 3: To Improve Productivity and Cost-Effectiveness:** The City will maximize the efficient use of resources including manpower, equipment and vehicle, facilities and systems. This will require improving cost recovery to 40% of capital costs, a fare structure that reflects the inflationary increase in operating costs, maintaining service utilization of 25 boarding passengers per service hour and review evening service levels and costs.

⁷ City of Stratford, Transit Business Plan Update, IBI Group Final Report, July 2009



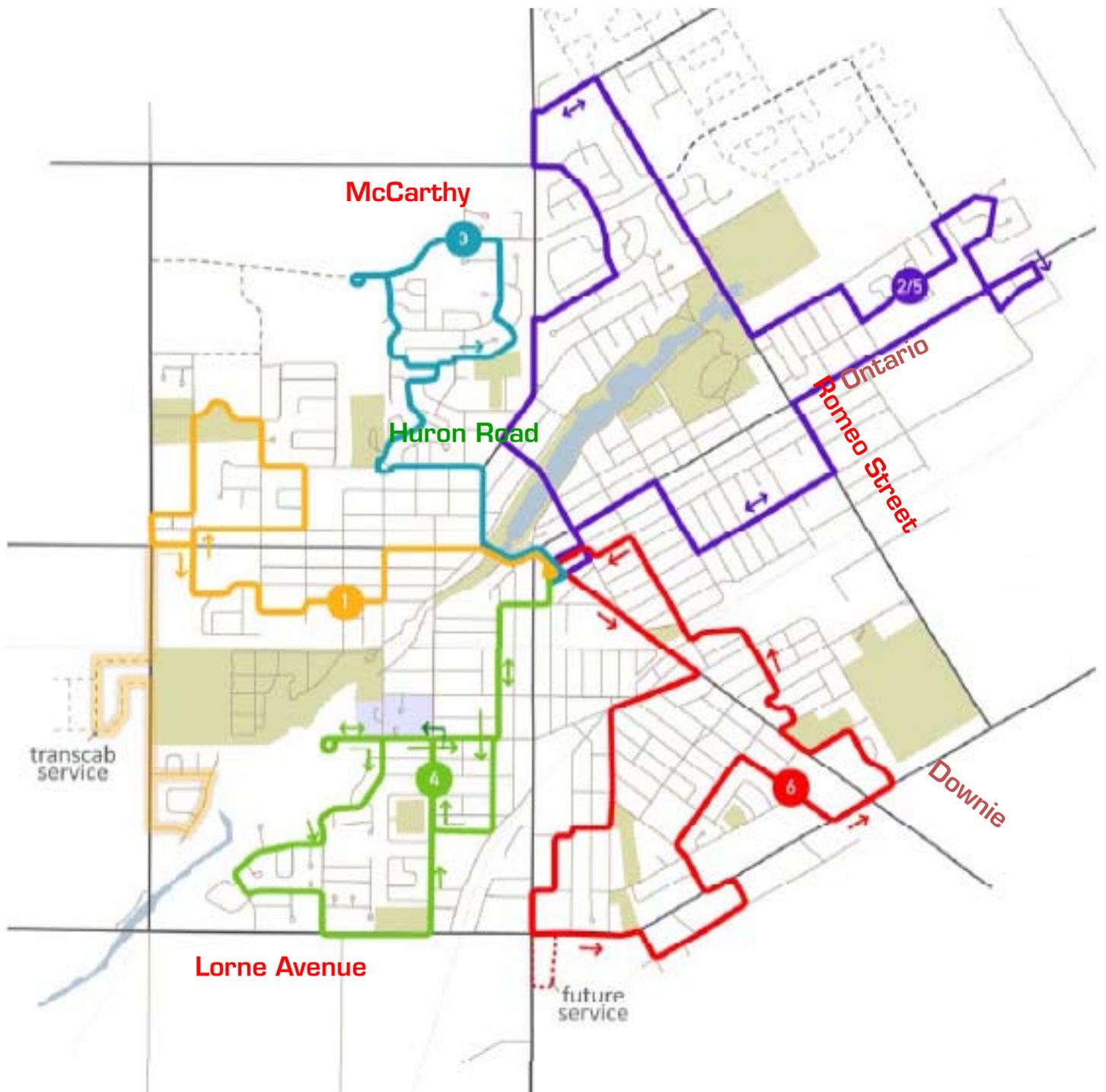


Figure 5.3
Short Term Transit Route Structure



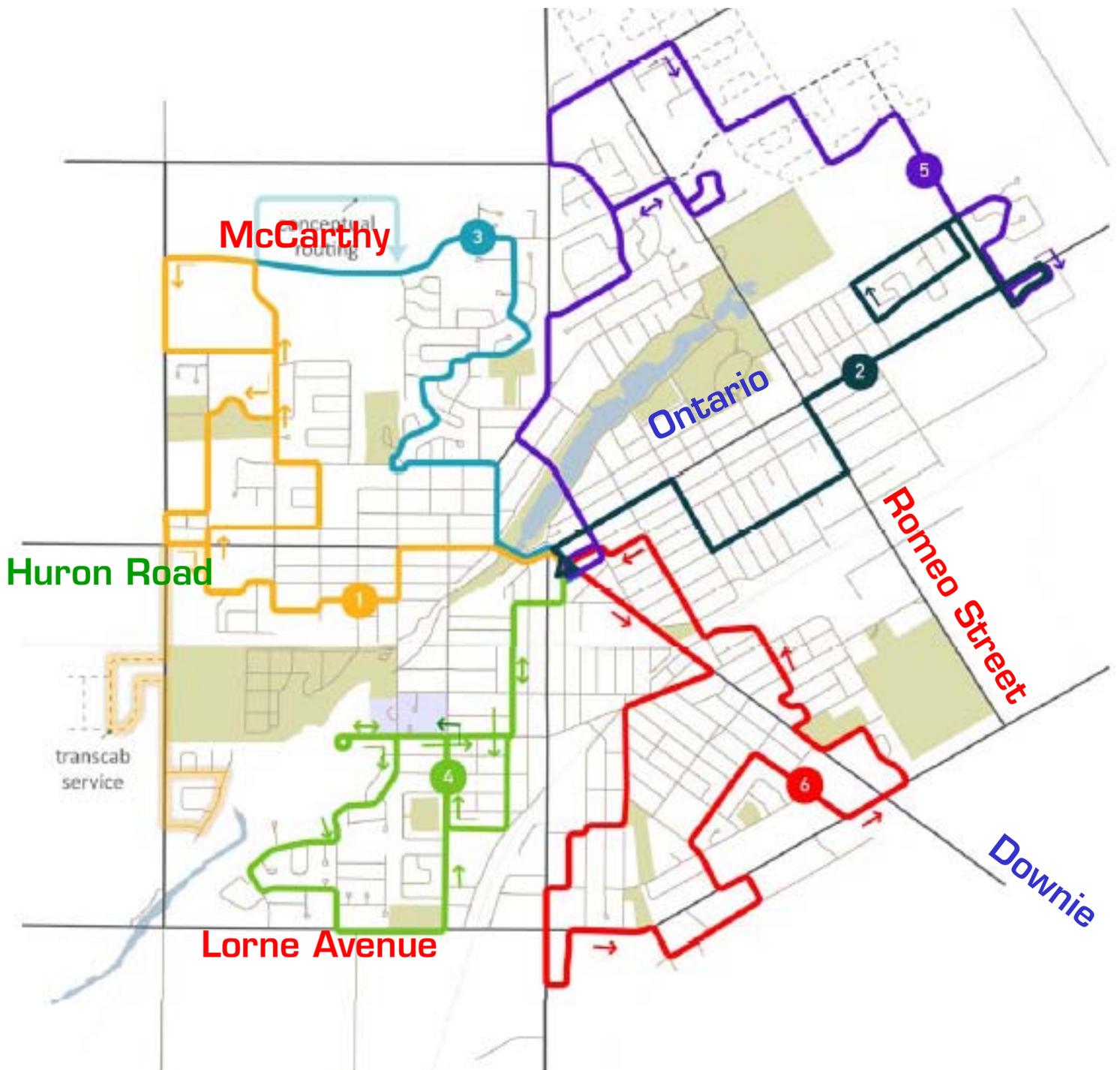
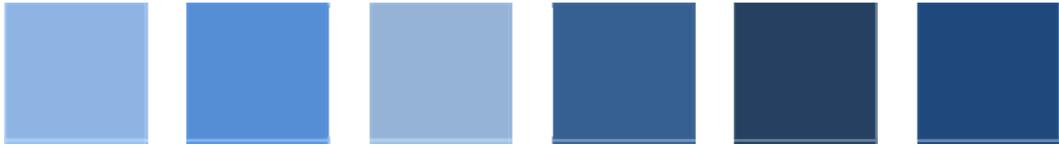


Figure 5.4
Long-Term Transit Route Structure



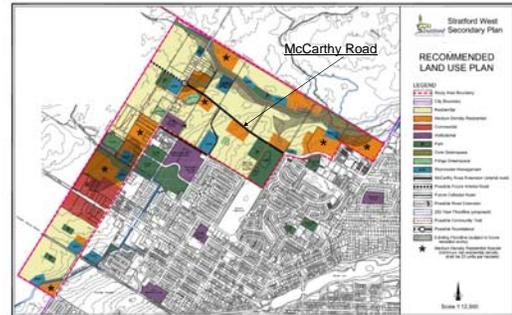


5.5.2 Transit Policies

Transit supportive strategies identified in the TDM section of this report are required to support public transit and increase ridership. The following policies are proposed as part of the Transportation Master Plan:

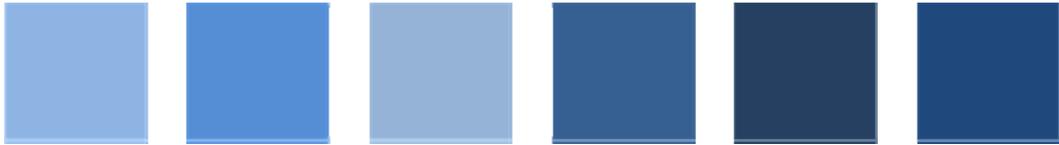
- **Service Standards:** The needs of the population dependent on public transit for access to shopping areas, social and welfare services and other community facilities will be met by striving to meet the following service standard objectives:
 - bus stops should be located within 400 m walking distance of all residences, places of work, secondary and post secondary schools, shopping centres and public facilities;
 - provide straight-line two way route structures focused on the downtown transit terminal;
 - provide minimum service frequencies at 30 minute intervals and exceed a minimum of 20 passengers per hour during weekdays and 10 passengers per hour on evenings, Saturdays and Sundays. The service frequency will accordingly have regard to the density of the area served and the type of demand.
- **Land Use Planning Policies:** Infill and high density developments will be located along transit routes with frequent all day transit service. Isolated developments under 1000 people more than 1 km from a transit route should be discouraged.
- **Design of Neighbourhoods:** Collector roads within new subdivisions will be continuous and designed for the efficient routing of transit. Transit routes and bus stop locations will be included in subdivision plans as part of the approval process. Proposed bus stops on collector roads will be spaced no further than 300 m apart. High density development will

be promoted on collector routes or adjacent arterial roads. Reverse frontage on arterial roads should be avoided to support a friendly transit environment.



- **Subdivision Approval and Staging:** Transit and Community Services staff should be involved in all stages of the subdivision approval process. Subdivision approval agreements should provide for early completion of essential roads to support early implementation of public transit.
- **Parking Supply and Pricing:** The over-supply of parking for new developments will be avoided where possible. Reducing parking requirements for developments on transit routes will be encouraged. Long term parking charges for City-owned parking spaces in the downtown will be reviewed with the objective to increase them as a measure to encourage transit ridership. These charges should at least equate to the return fare for public transit.
- **Evaluating Development Proposals:** In reviewing development proposals which would significantly increase the density of development in a particular area of the City, the City will ensure that the proposed development is planned and designed to facilitate the provision of public transit.
- **Bus Loading Area:** The City will review the current bus loading area in Market Square and, if warranted, establish a new bus loading area at a convenient, central location in the 'Downtown Core' keeping in mind the





safety and convenience of patrons and compatibility with surrounding uses and activities.

- **Transportation Hub:** The City will consider the establishment of a multi-modal transportation hub in the core area when considering options for an improved bus loading area.
- **Alternative Technologies:** The City will continue to evaluate alternative modes of public transit as new technologies are developed.
- **Increasing Use and Awareness:** Efforts will be made by the City to increase patronage and to keep the public well informed of transit service, in particular:
 - provision of adequate transit stops and shelters along with timetables, route maps and other public information; and
 - undertaking periodic surveys to establish demand levels and attitudes so that service may be upgraded where necessary.

5.6 Roadway Network Plan

Three key roadway improvements form part of the Transportation Master Plan. Traffic forecasts to 2028 confirm the need for the following roadway improvements:

- **McCarthy Road West Extension to O’Loane Avenue:** Previously approved in a Class EA for the West Secondary Plan, this roadway extension is required to provide access to developing lands, reduce traffic congestion on Mornington Street and Huron Street and reduce through traffic on the neighbourhood streets (i.e. Forman Avenue).
- **McCarthy Road East Extension and the Extension of C.H. Meier to McCarthy:** Previously approved in a Class EA for the North East Secondary Plan, this roadway

extension is required to provide access to developing lands, reduce traffic congestion on Romeo Street and Ontario Street and reduce through traffic on the neighbourhood streets (i.e. Devon Street).

- **Highway 7/8 By-pass:** Future travel forecasts indicate that future growth in through traffic would require widening of Ontario Street west of Waterloo Avenue as well as widening of the Huron/Ontario Bridge to avoid traffic congestion. As well, an increase in through traffic is expected to require widening of Lorne Avenue in the south part of the City. Implementation of the proposed Highway 7/8 By-pass will accommodate future traffic growth and eliminate the above noted impacts on Ontario Street.

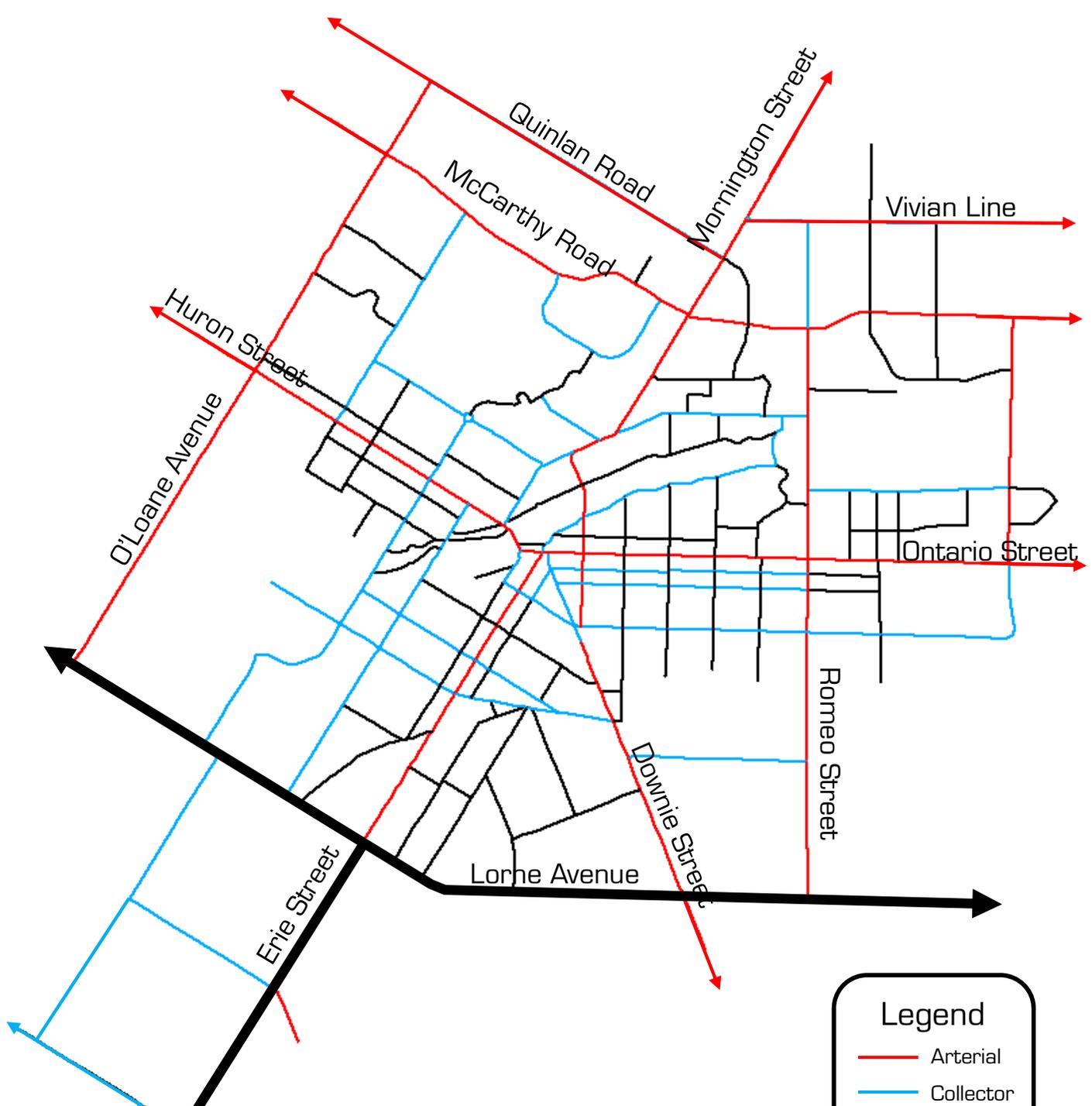
The proposed roadway network plan is shown in **Figure 5.5**.

5.6.1 Roadway Plan Objectives

The objectives of the roadway plan are as follows:

- To recognize that the road right-of-way is not only necessary to accommodate vehicular traffic but also alternative modes of travel such as transit, walking and cycling.
- To create and maintain a logical, efficient and safe transportation network comprising a hierarchy of arterial roads, collector roads and local streets.
- To preserve arterial and collector roads for their primary function of carrying high to medium volumes of vehicular traffic throughout the City.
- To take certain measures in the short term to facilitate implementation of the desired transportation network in the long term.
- To reduce the dependency on the automobile as the primary means of transportation through enhancing public transit, cycling, and other alternative modes.



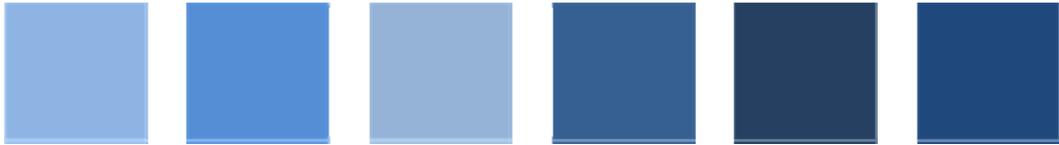


Legend

- Arterial
- Collector
- Local
- Provincial Highway

Note: Highway 7/8 By-pass alignment is shown conceptually. Actual alignment will be determined the Highway 7/8 Transportation Corridor Planning and Class EA Study

Figure 5.5
Long Range Road Network Plan



- To relocate provincial and truck traffic from Ontario Street through the core area to the periphery of the City.
- To provide accessibility for all modes of transportation and reduce the impact of the automobile where conflicts with other modes and urban functions occur.

5.6.2 Roadway Plan Policies

The roadway network policies are as follows:

- **Classification of Streets:** All streets within the City of Stratford shall be classified as arterials, collectors and local streets. Arterial and collector roads are shown on **Figure 5.5** in terms of their ultimate classification. Some of these roads are currently functioning as local streets or collector roads while others have yet to be constructed. In these instances, they may be up-graded or constructed to a lower classification before achieving their ultimate classification. Arterial roads are intended to be ultimately four lanes in width, while collector roads are generally to be two lanes.



- **Arterial Roads:** Arterial roads will be designed, constructed and maintained for the purpose of carrying large to medium volumes of all types of vehicular traffic at medium speeds, public transit, pedestrians and cyclists through and throughout the City. Additional entrances to arterial roads will be discouraged, and shall be permitted only

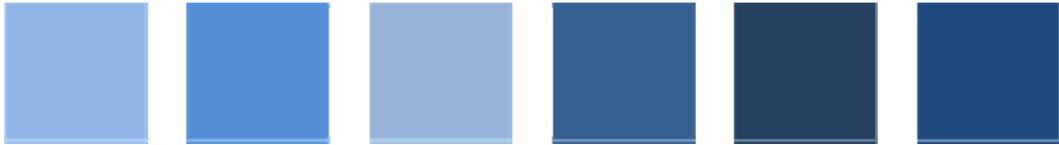
where minimum entrance spacing requirements are capable of being satisfied, where a safety hazard is not created, and where access to a lower order road or street is not practical or possible. In some cases, provision for arterial roads to ultimately extend beyond the City is proposed in order that these extensions are required in the long term beyond the horizon year of the Transportation Master Plan.

- **Collector Roads:** Collector roads will be designed, constructed and maintained for the purposes of acting as feeders to the arterial road system for all modes of transportation. Access to these roads will be permitted where minimum entrance spacing requirements are capable of being satisfied; where a safety hazard is not created; and where access to a local street is not practical or possible.



- **Local Streets:** Local streets will be designed, constructed and maintained for the purposes of providing the principal means of direct access to abutting properties and will continue to function as the main origin-destination routes for local traffic, public transit, cyclists and pedestrians. Access to local streets will generally be unrestricted. The location of new entrances will largely be governed by distances to street intersections and other safety considerations.
- **Boundary Roads:** Certain roads, as shown on **Figure 5.5** constitute boundary roads within the meaning of the Municipal Act. As





such, any proposed road maintenance or reconstruction, the installation of, or improvements to services (e.g. water mains, sanitary sewers, storm sewers), and the costs associated therewith, require co-operation and agreement between the City and the County or Township having jurisdiction. To safeguard their intended function, the designation of these boundary roads as 'Arterial Roads' will enable the City to control the number, width and spacing of entrances and to acquire land dedications for future road widening purposes with respect to lands lying in the City.



- **Lakeside Drive:** Although Lakeside Drive is designated a collector road and is performing as such, its location within the river park system and its use as a principle means of access to the Festival Theatre and as the main link between the 'Downtown Core' and the Festival Theatre make it unique and distinguish it from all other collector roads in the City. In the redesign or reconstruction of Lakeside Drive, and in the adoption of traffic control measures, particular attention will be required to ensure changes or improvements maintain and enhance the image and ambience of the river park system and the Festival Theatre.

- **Road Widening and Dedication:** Road dedications and widenings may be required in order to accommodate increased traffic volumes, minimize traffic related impacts resulting from new development or redevelopment, and to maintain the flexibility to establish a dedicated bicycle lanes along arterial and collector roads in accordance with the following:

Road Classification	ROW Width (m)	Surface Width (m)
Arterial	30 ¹	14
Two-Lane Collector	23 ¹	10.4 ²
Local ³	18-20	8.5 ²

- 1- allows for dedicated bicycle lane in the form of an extension or widening of the standard roadway width on both sides of the road
- 2- allows for parking on one side
- 3- where local roads will be constructed or reconstructed to rural standards (i.e. open ditches, a road allowance width of 26 m (30 m where provision is to be made for dedicated bicycle lane) is required

- **Land Dedications:** Land owners may be required, in accordance with the Planning Act, to dedicate as a condition of development or subdivision of land, to the satisfaction of and at no expense to the City, lands sufficient in depth to achieve the widening of road allowances to the ultimate width indicated. Proposals for road allowance widths less than 20 metres may be considered under special circumstances (e.g. heritage areas, short local streets). It is intended that the ultimate widths of road allowances indicated will be achieved by widenings taken equally from both sides, as measured from the centreline of the road.

- **Transportation Master Plan:** All road and street improvements and new construction will be undertaken in accordance with the City's Transportation Master Plan, except where superseded by other detailed studies or plans, undertaken or endorsed by the City.





In recognition of the potential impact on boundary roads and on other roads lying outside the City as a result of traffic originating in or destined to the City, the City will ensure that its neighbouring municipalities will be given an opportunity to participate in any future transportation studies commissioned or undertaken by the City which may potentially affect them.

- **Design and Construction Standards:** Arterial and collector roads and local streets will be provided with curbs and covered stormwater drains. Sidewalks will generally be provided on both sides of arterial and collector roads where pedestrian traffic warrants, but may be omitted on short cul-de sacs and from one side of local streets in residential areas. It is intended that all existing roads and streets will be eventually brought up to the desired standards. Where such improvements would have an adverse impact on lands lying within a 'Heritage Area' or along a 'Heritage Corridor' and provided public safety would not be compromised, the City may forgo reconstruction to desired standards.
- **Priorities:** Priority for upgrading will be given to those areas where benefitting residents will financially support improvements, where it is cost-efficient to carry out improvements in conjunction with other public works projects or where the improvements will improve accessibility for cycling, public transit or walking. .
- **Development Control and Entrances:** Special measures will be applied to new development adjacent to or along arterial and collector roads in order to afford adequate protection for residential and other sensitive uses, maintain circulation and traffic flow, and facilitate future road widenings. These measures may include:
 - extra setback requirements;
 - restricted access for low density residential development;

- restrictions on the number, width and spacing of entrances;
- adequate buffering to screen residential and other sensitive land uses from the street.

- **Truck By-pass:** The use of arterial roads leading to the 'Downtown Core' for through truck traffic will be discouraged by providing an improved arterial road network for this purpose. In the short term, trucks will be encouraged to use the existing truck route bypass of Ontario Street using C.H. Meier, Douro Street, Lorne Avenue, Erie Street, O'Loane Avenue, Romeo Street and Quinlan Road. In the long term truck traffic will be directed onto the Provincial Highway Bypass and restricted to local deliveries on Ontario Street as shown in **Figure 5.6** and **Figure 5.7**.
- **Traffic Calming:** The City shall endeavor to achieve a safe and quiet atmosphere in residential areas by:
 - Discouraging excessive speeds and use by "through" traffic in the design of street systems in new residential areas.
 - Locating higher density residential developments where access can be obtained from Arterial or collector streets.
 - Considering the development of policies and guidelines for the implementation of traffic calming measures in existing residential areas.
- **Encouragement of Alternative Modes:** The City will give increased priority to the streetscape image and the movement of pedestrians, bicycles and public transit in the design and reconstruction of arterial and collector roads.
- **Transportation Impact Studies:** The City will require the preparation of transportation impact studies for developments that may impact on adjacent neighbourhoods or may





create operational problems with the safe and efficient movement of traffic, pedestrians, cyclist and public transit. Operational improvements identified in these studies will be the responsibility of the developer as a condition of site plan, rezoning or subdivision approval.

- **Hwy 7/8 Bypass:** Should the proposed Highway 7/8 Bypass not proceed as expected, the City will update this Transportation Master Plan to consider the implications on needed improvements to the arterial road network on Ontario Street and Lorne Avenue.
- **Noise Impact Studies:** For noise sensitive development next to arterial roadways, the City should require the preparation of noise impact studies to identify mitigation measures to achieve the noise guidelines set out by the Ministry of Environment. Implementation of these mitigation measures will form a condition of approval for site plan, rezoning or subdivision applications.
- **Monitoring Travel Demand:** The City will maintain a regular program of monitoring traffic, pedestrian and cycling demands in order to continuously improve the transportation system by identifying changing priorities for identified or new improvements.

5.7 Complete Streets Approach

Achieving the goals and objectives of the MTP will require the development of “complete streets”. A complete streets approach promotes planning, engineering and transportation policies that provide a safer road network for all users, be they drivers, pedestrians, cyclists or transit riders, regardless of physical ability and age.

A complete street is therefore one which takes into account each mode of transport, producing a street that all users can safely move along and across. Considering streets holistically enables communities to reduce infrastructure costs by

designing a transportation network that meets the needs of all users at the outset, thereby avoiding costly retrofits.

Complete streets will vary in design depending on community needs. However, the following features are often part of a successful street:

- Improved pedestrian infrastructure such as well placed and designed crosswalks, pedestrian islands, raised crosswalks, bump outs to narrow street crossings;
- Street furniture for pedestrians, especially in downtown and transit stop areas;
- Cycling infrastructure such as bike lanes, racks and lockers;
- Street trees, planters and other greenery to create attractive and shaded environments;
- Bus lay bys or pullouts;
- Traffic calming measures.



A complete streets approach is fundamental to promoting active transportation, and will generate many benefits for the community. These include:

- Promoting healthy living and exercise as people walk more;
- Greater transit use – people are encouraged to walk with more attractive and better equipped streets;



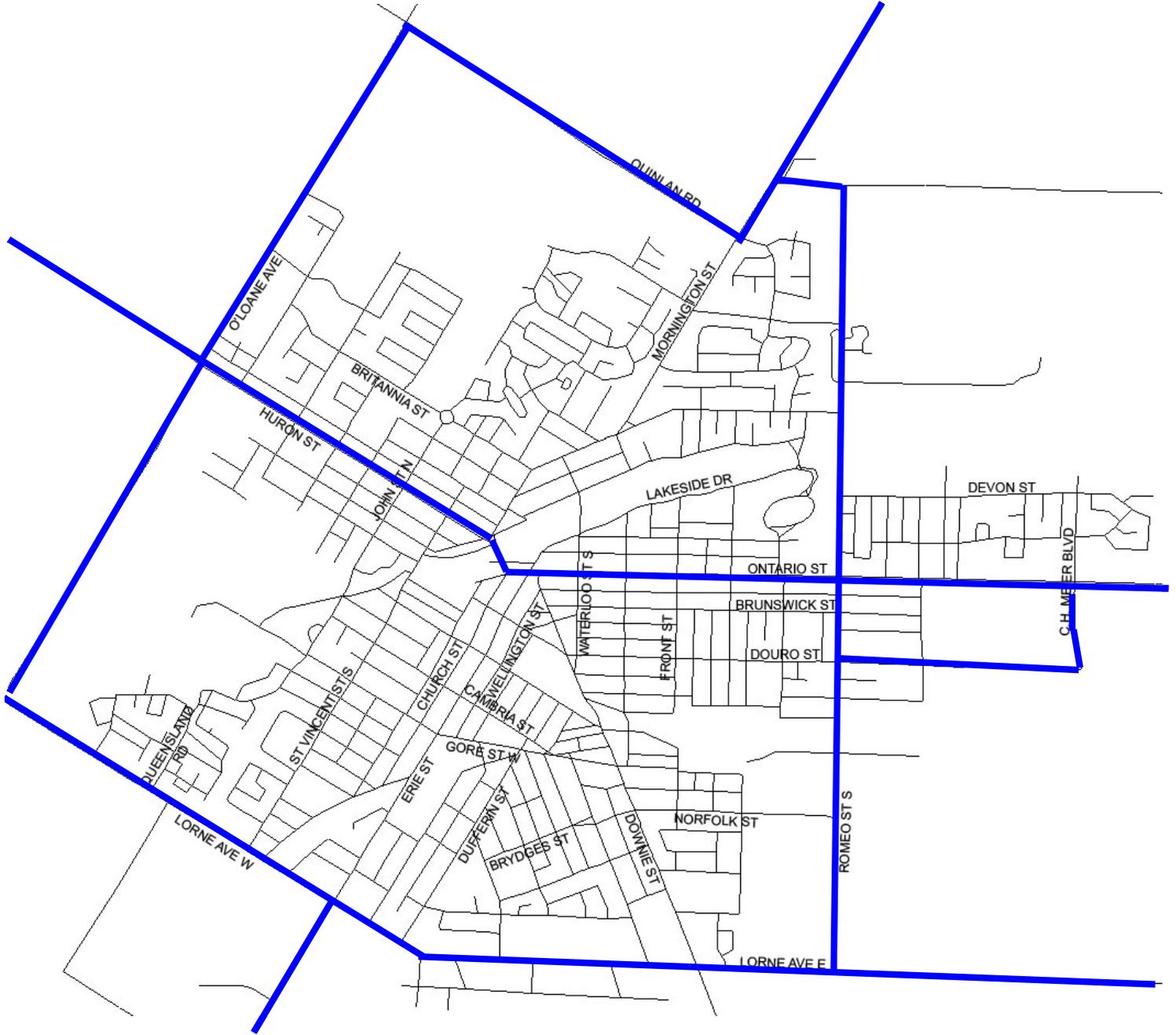


Figure 5.6
Short Term Truck Routes





Note: Highway 7/8 By-pass alignment is shown conceptually. Actual alignment will be determined the Highway 7/8 Transportation Corridor Planning and Class EA Study

Figure 5.7
Long Term Truck Routes





- Improved pedestrian safety as pedestrian/auto collisions decrease with the provision of sidewalks, especially for children, the elderly and persons with disabilities;
- More opportunities for socializing when enhanced walking environments are created.



5.7.1 Complete Streets Objectives

The objectives of the complete streets component of the transportation plan are as follows:

- To design and construct all streets as complete streets, appropriate for their context and role in the City's transportation network; and
- To develop the necessary policies, guidelines and tools to develop complete streets.

5.7.2 Complete Streets Policies

The following complete streets policies are proposed as part of the transportation master plan:

- **Principle of Complete Streets:** The City will incorporate the principle of complete streets into all transportation projects, except where it can be demonstrated to the satisfaction of Council that there is a lack of need.

- **Street Planning:** The planning and design of City-wide street networks, secondary plans and plans of subdivision shall implement a complete streets approach, as will road improvement projects across the City.
- **Guidelines and Standards:** The City shall revise its street design policies, guidelines and standards to incorporate complete streets design elements.





B

Implementation Plan





6.0 IMPLEMENTATION PLAN

6.1 Scheduling of Improvements

This section summarizes the recommendations for implementation of the various components of the Transportation Master Plan within the 5, 10 and 20 year horizons.

6.1.1 Pedestrian Plan Implementation

The following is the recommended staging of improvements for the pedestrian plan:

- **0-5 Years:** The highest priority for implementation is the preparation of a trails master plan so that a program can be developed for the extension and improvements to trails that would encourage increased walking. As trails can serve as cycling routes, the trails plan could be combined with a cycling master plan. An implementation program for trails and associated costs will be part of this plan.
- **0-5 Years:** Recommended in the next 5 years is the implementation of sidewalks on at least one side of arterial and collector roads where none currently exist. These include the following:
 - **West side of Romeo Street from Lorne Avenue to Norfolk Street.** This could be part of a multi-use trail accommodating cyclists as well.
 - **South side of Douro Street from existing sidewalk to C.H. Meier.** This will continue the existing sidewalk eastward. This could be part of a multi-use trail accommodating cyclists as well.
 - **East side of C.H. Meier Blvd. from Douro Street to Ontario Street.** This will connect to the Douro Street sidewalk and extend to Ontario Street.
- **Romeo Street South of Vivian Line West Side.**
- **Lorne Avenue from St. Vincent Street to Downie Street North Side.** This could be part of a multi-use trail accommodating cyclists as well.
- **Lorne Avenue from West of Queensland Rd to O’Loane North Side.** This could be part of a multi-use trail accommodating cyclists as well.
- **Lorne Avenue from East of Morgan Street to Romeo North Side.** This could be part of a multi-use trail accommodating cyclists as well.
- **O’Loane Avenue from Dannecker Road to Lorne Avenue East Side.** This could be part of a multi-use trail accommodating cyclists as well.
- **O’Loane Avenue from Hibernia Street to Quinlan Road East Side.** This could be part of a multi-use trail accommodating cyclists as well.
- **Mornington Street from McCarthy Road to Vivian Line East Side.**
- **Vivian Line from Mornington Street to Romeo Street.**
- **McCarthy Road from Mornington Street to Graff Avenue.**
- **St. Vincent Street from Patterson Street to Lorne Avenue.**
- **5-10 Years:** Recommended in the 5-10 year time frame is the implementation of sidewalks on both sides of arterial roads except for Quinlan Road and the south side of Lorne Avenue where adjacent urban development is expected to be limited or nonexistent).
- **10-20 Years:** Recommended in the 10-20 Year period is the implementation of





sidewalks on both sides of all collector and arterial roadways in the 20 year period (except the north side of Quinlan Road where adjacent development will not occur).

6.1.2 Cycling Plan Implementation

The following is the recommended staging of improvements for the cycling plan:

- **0-5 Years:** Completion of a cycling master plan to obtain input from residents of selected routes and the cycling community, determine parking impact, determine the preferred design option for implementation of the recommended cycling facilities, evaluate alternative parallel routes or other routes identified through public input and refinement of the cost and implementation plan of the Cycling Master Plan. As trails can serve as cycling routes, a trails plan could be combined with the cycling master plan.
- **0-5 Years:** Provide cycling lanes where existing roadway widths are adequate to accommodate them by implementing paint line changes only as per Figure 5.2. These roadways include:
 - The one-way streets of Albert Street, Brunswick Street, Water Street and Cobourg Street which can accommodate one parking lane, one travel lane and a 1.5m bicycle lane.
 - Romeo Street north of Ontario Street which has a pavement width of over 9m.
 - McCarthy Road west of Mornington Street.
 - Parts of Downie Street, Mornington Street, William Street, Queensland Road, West Gore Street, Wright Blvd and Packham Avenue.
 - Sections of Delamere Street and Waterloo Avenue.

- **5-10 Years:** Subject to the results of the cycling master plan, implement cycling lanes or signed bike routes on the existing collector network.
- **10-20 Years:** Subject to the results of a cycling master plan, implement cycling lanes or trails on the arterial road network including Lorne Avenue (in conjunction with MTO and the Highway 7 & 8 by-pass), O'Loane Avenue, McCarthy Road, remainder of Romeo Street, Douro Street and Mornington Street.

6.1.3 Public Transit

The Transit Business Plan Update 2009 provides a number of recommendations with no specific time frames. As the business plan has a horizon year of 5 years, most of the recommendations are in the 0-5 year period. These include:

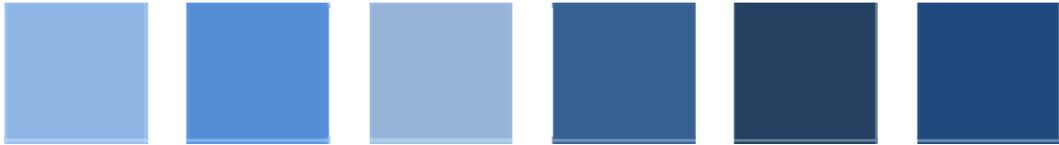
0-5 Years:

- Replacing bus stop signage;
- Upgrading transit stops to meet industry standards;
- Implementing marketing and communications program;
- Purchasing two buses to replace two existing buses; and
- Expanding service in the West and Northeast growth areas as development proceeds.

5-20 Years:

- Continuing expansion of bus service in the West and Northeast growth areas as development and the road network implementation proceeds; and
- Updating transit business plan in 5 year increments to determine transit facility and service improvement needs.





6.1.4 Roadway Network Expansion

The road network expansion program includes the following:

- **0-5 Years:** Extension of McCarthy Road west to O'Loane Avenue as adjacent development in the West Secondary Plan Area proceeds.
- **5-10 Years:** Extension of McCarthy Road east as development in the Northeast Secondary Plan area proceeds.
- **10-20 Years:** Extension of C.H. Meier north to the McCarthy Road extension

While the timing of the implementation for the proposed Highway 7/8 by-pass has yet to be determined, current estimates suggest that it will occur towards the end of the 20-Year Planning Period at the earliest.

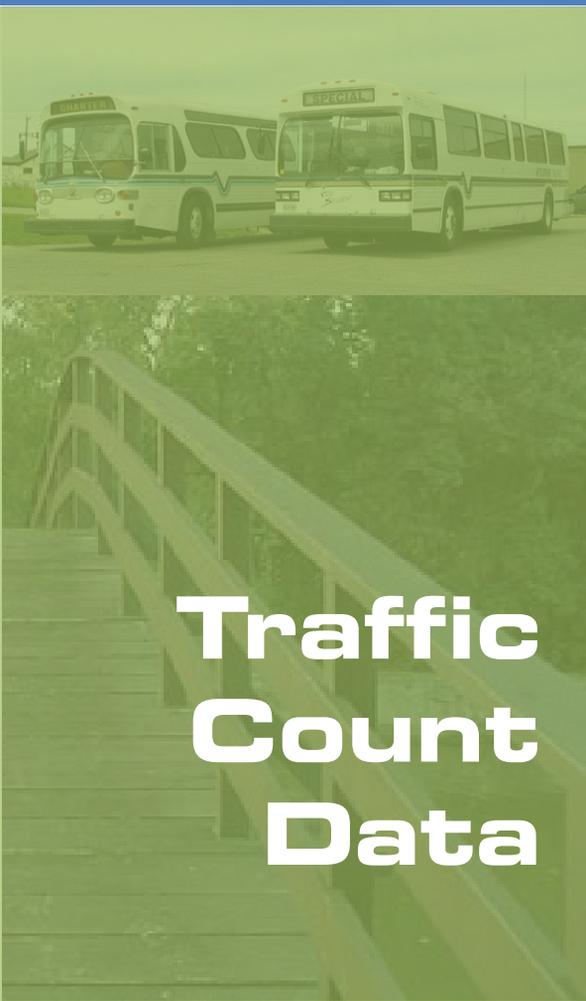
6.2 5-Year Planning Horizon Cost Estimates

The study terms of reference calls for cost estimates for implementing the study recommendations within the 5-year planning period. These are itemized in **Table 6.1**:

Table 6.1: Estimated Cost (0-5 Year Program)

TDM	Marketing and Promotion		\$10,000 over 5 Years	\$	50,000
Trails Master Plan(1)	Undertaken in conjunction with Cycling Plan		Lump Sum		\$25,000
		Length(m)	Unit Cost	Cost	
Sidewalks (3)	West side of Romeo Street from Lorne Avenue to Norfolk Street.	820	\$ 80	\$	65,600
	South side of Douro Street from existing sidewalk to C.H. Meier.	575	\$ 80	\$	46,000
	East side of C.H. Meier Blvd from Douro to Ontario Street.	435	\$ 80	\$	34,800
	Romeo Street South of Vivian Line West Side.	150	\$ 80	\$	12,000
	Lorne Avenue From St. Vincent Street to Downie Street North Side.	2550	\$ 80	\$	204,000
	Lorne Avenue From West of Queensland Rd to O'Loane North Side.	865	\$ 80	\$	69,200
	Lorne Avenue From East of Morgan Street to Romeo North Side.	535	\$ 80	\$	42,800
	O'Loane Avenue From Dannecker Road to Lorne Avenue East Side.	880	\$ 80	\$	70,400
	O'Loane Avenue From Hibernia Street to Quinlan Road East Side.	1925	\$ 80	\$	154,000
	Mornington Street From McCarthy Road to Vivian Line East Side.	560	\$ 80	\$	44,800
	Vivian Line From Mornington Street to Romeo Street.	355	\$ 80	\$	28,400
	McCarthy Road From Mornington Street to Graff Avenue.	345	\$ 80	\$	27,600
	St. Vincent Street From Lorne Avenue to Patterson Street	130	\$ 80	\$	10,400
	Sidewalks Sub-Total	10125		\$	810,000
Cycling Master Plan (1)	Undertaken in conjunction with Trails Plan		Lump Sum		\$ 20,000
Cycling	Paintline Markings	17650	\$ 3	\$	52,950
	Signs	20	\$ 100	\$	2,000
	Sub-total			\$	54,950
Roads Expansion(2)	McCarthy Road to O'Loane Avenue	1080	5,093	\$	5,500,000
	Total			\$	6,459,950
	Annual Cost			\$	1,291,990
Notes:	(1) Cycling/Trails Master Plan done separately - add \$15000 (2) Assume 2 Lane Initial Phase (3) Multi-use trails should be considered to provide cycling opportunities where possible and reduce overall cost of implementation				





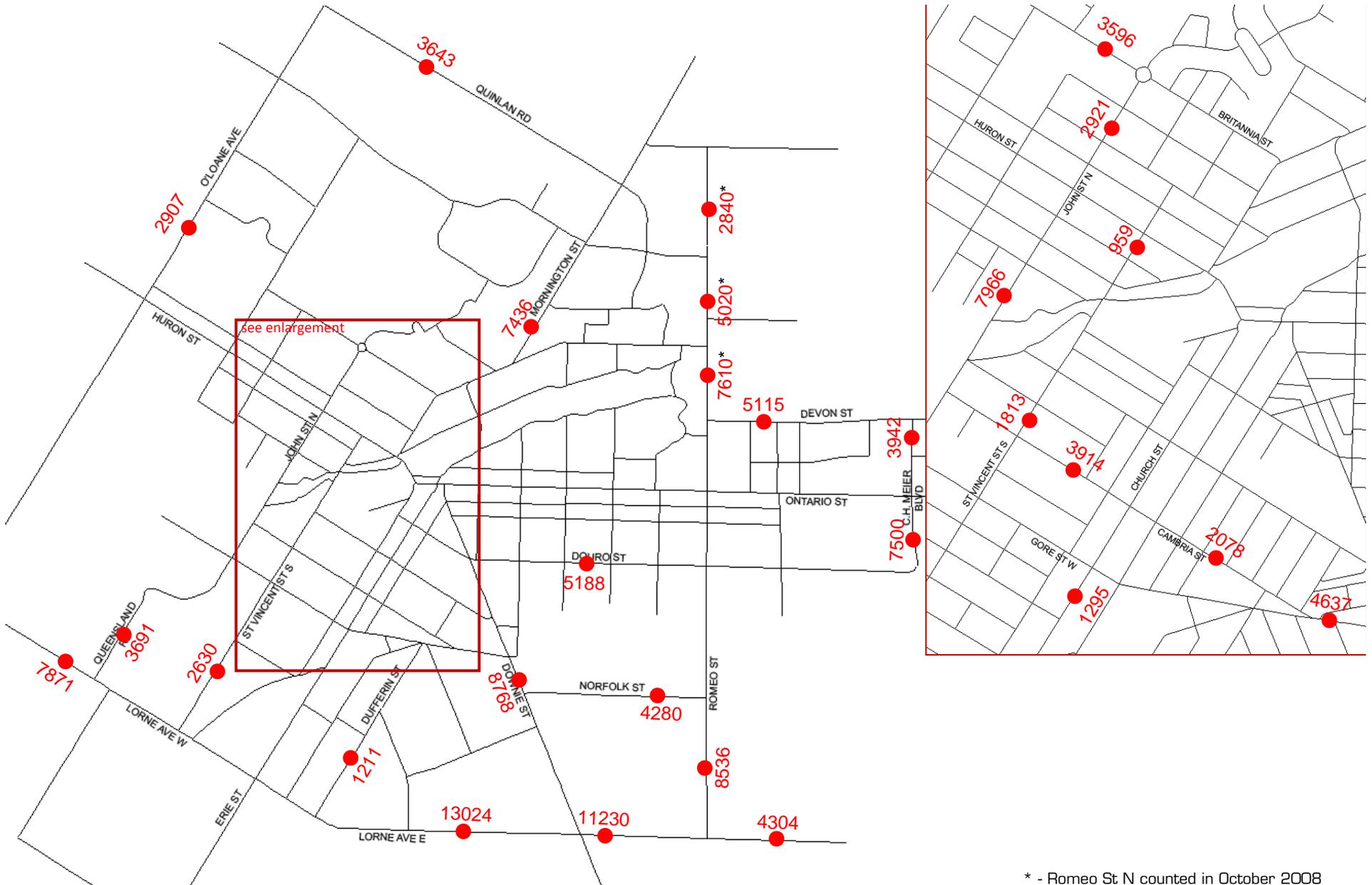
Traffic Count Data





Legend

- July 2009
- November 2009



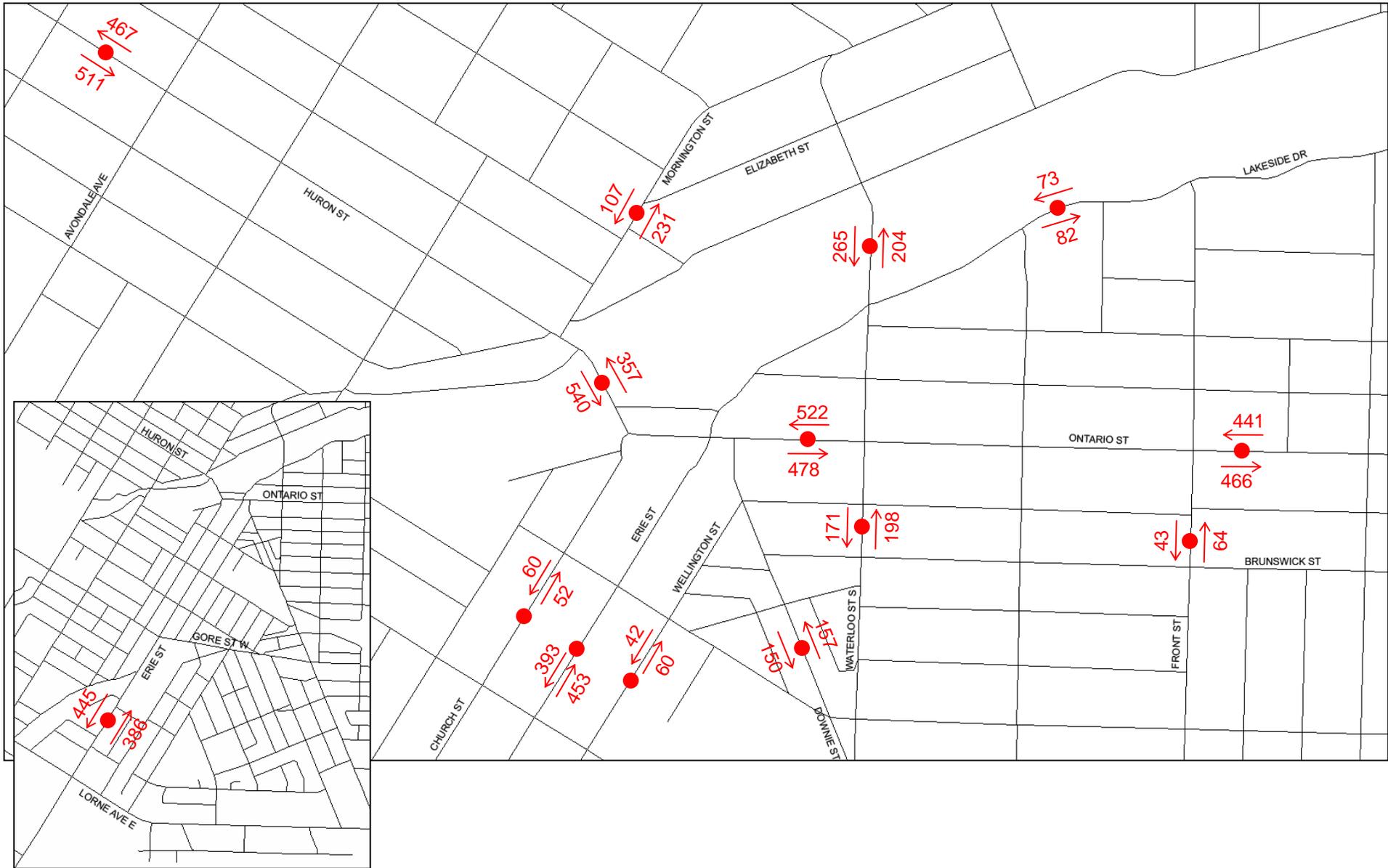
* - Romeo St N counted in October 2008

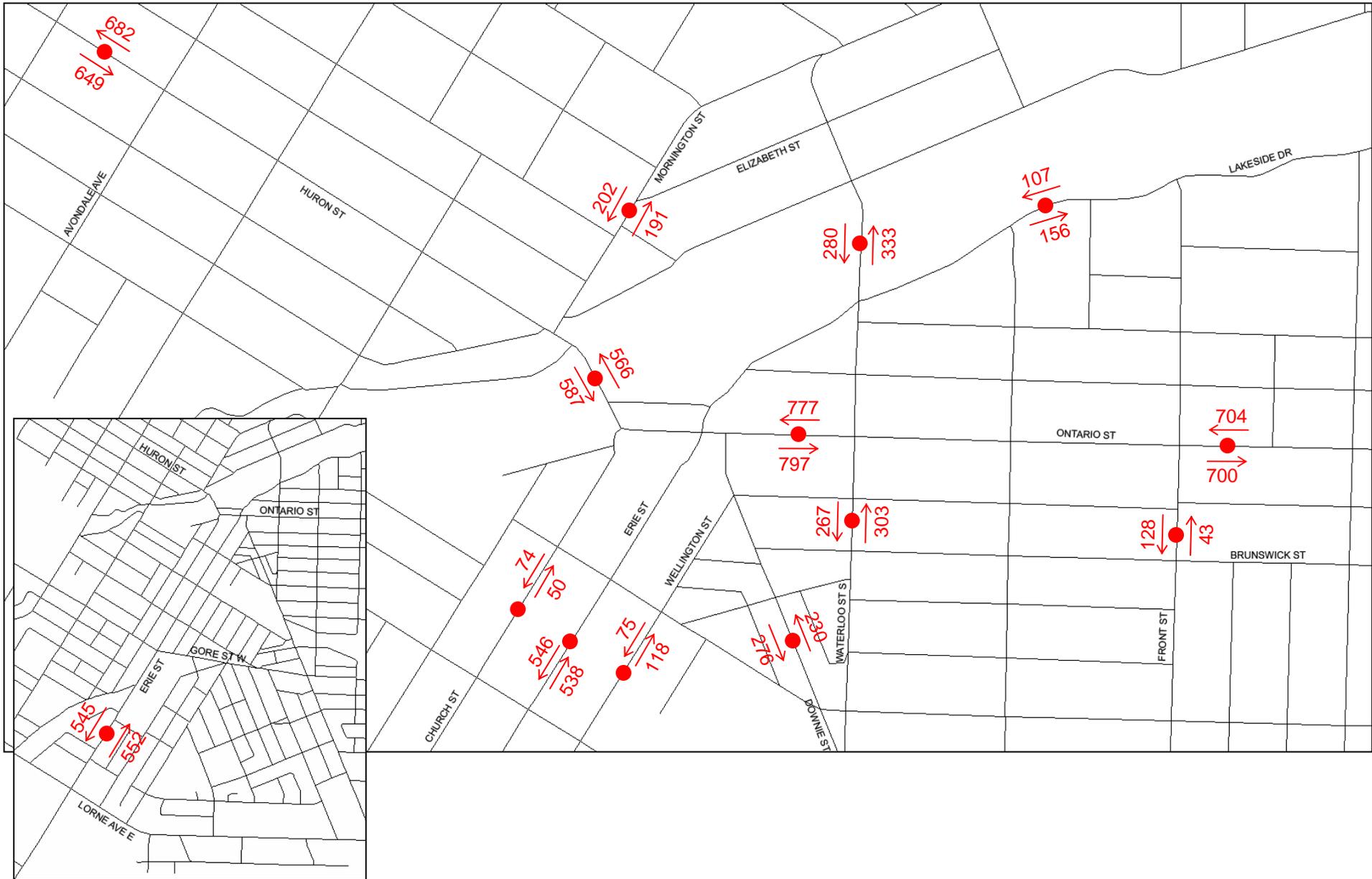
Stratford Transportation Master Plan

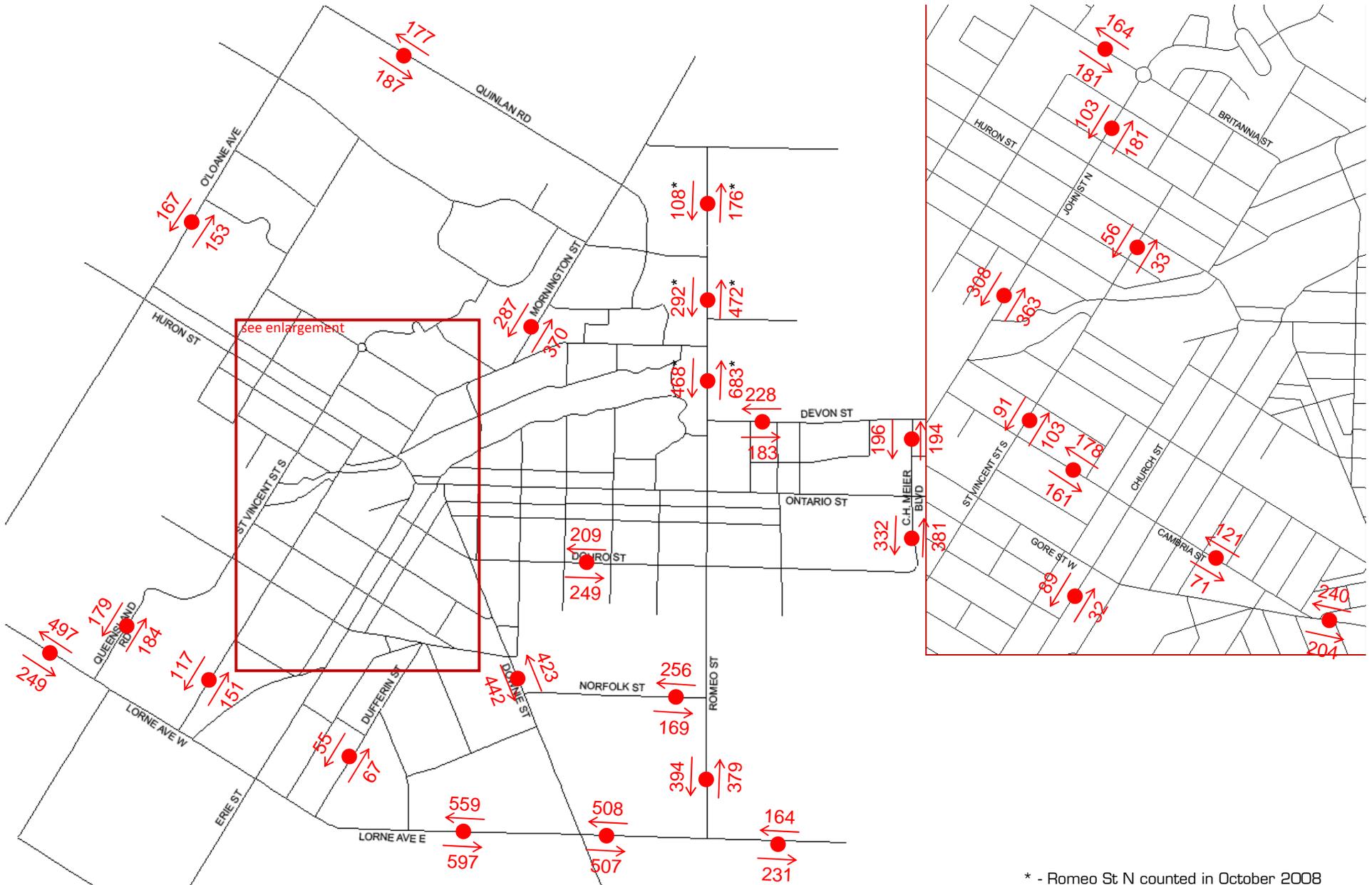


Figure A.3

Observed Daily Volumes (November 2009)







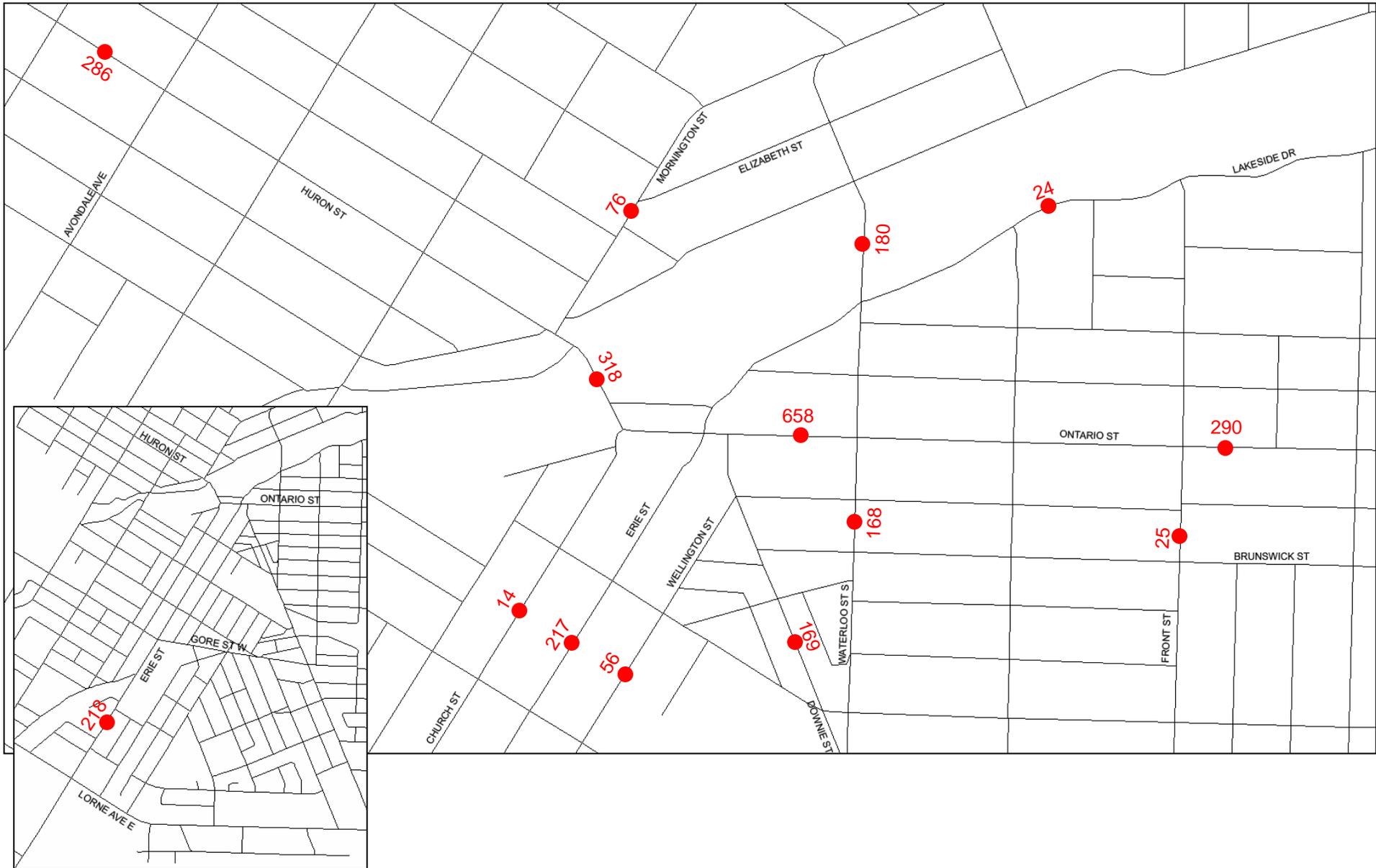
* - Romeo St N counted in October 2008

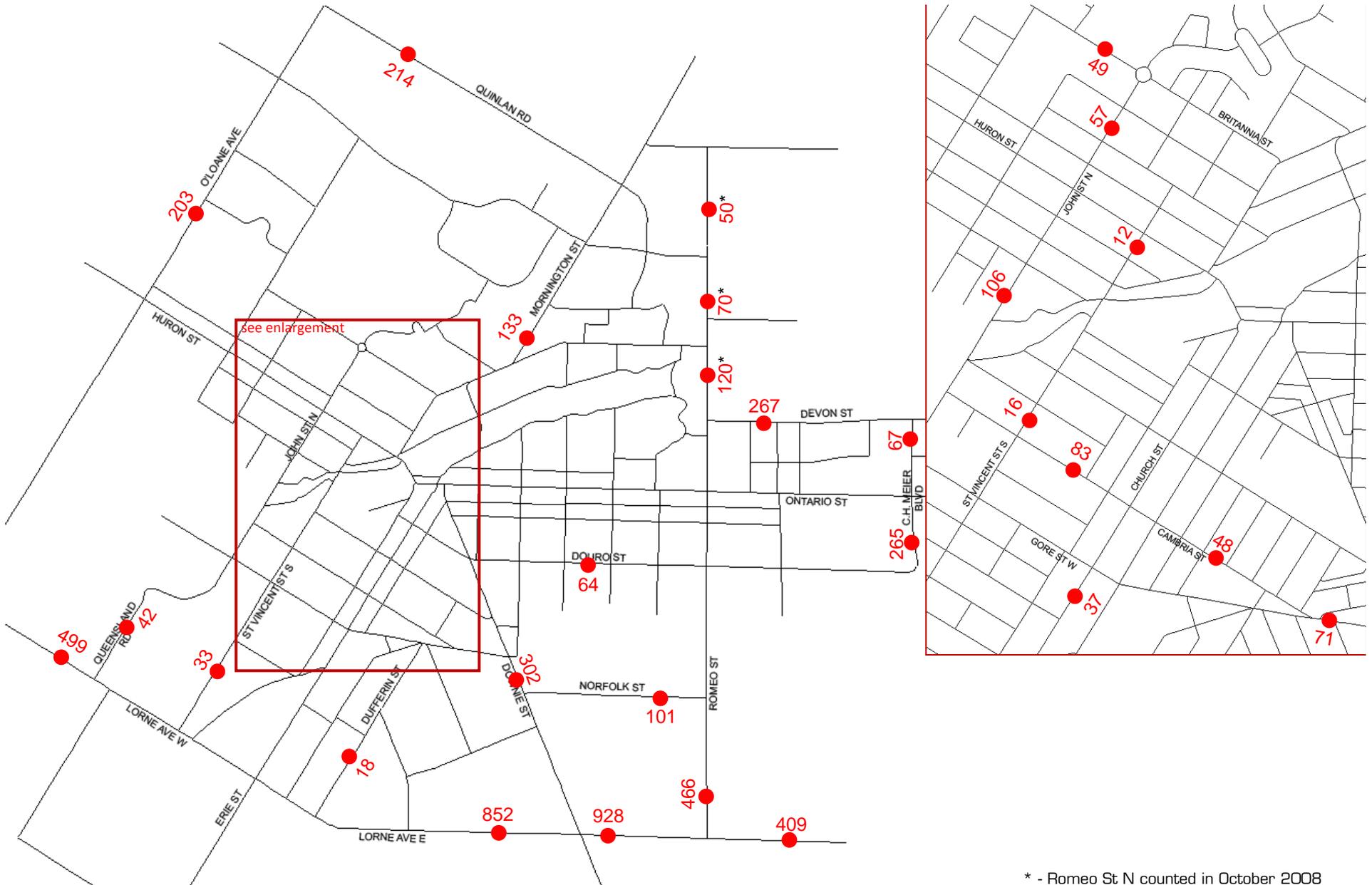
Stratford Transportation Master Plan



Figure A.7

PM Peak Hour Traffic (November 2009)





* - Romeo St N counted in October 2008

Stratford Transportation Master Plan



Figure A.9

Observed Daily Truck Volumes (November 2009)

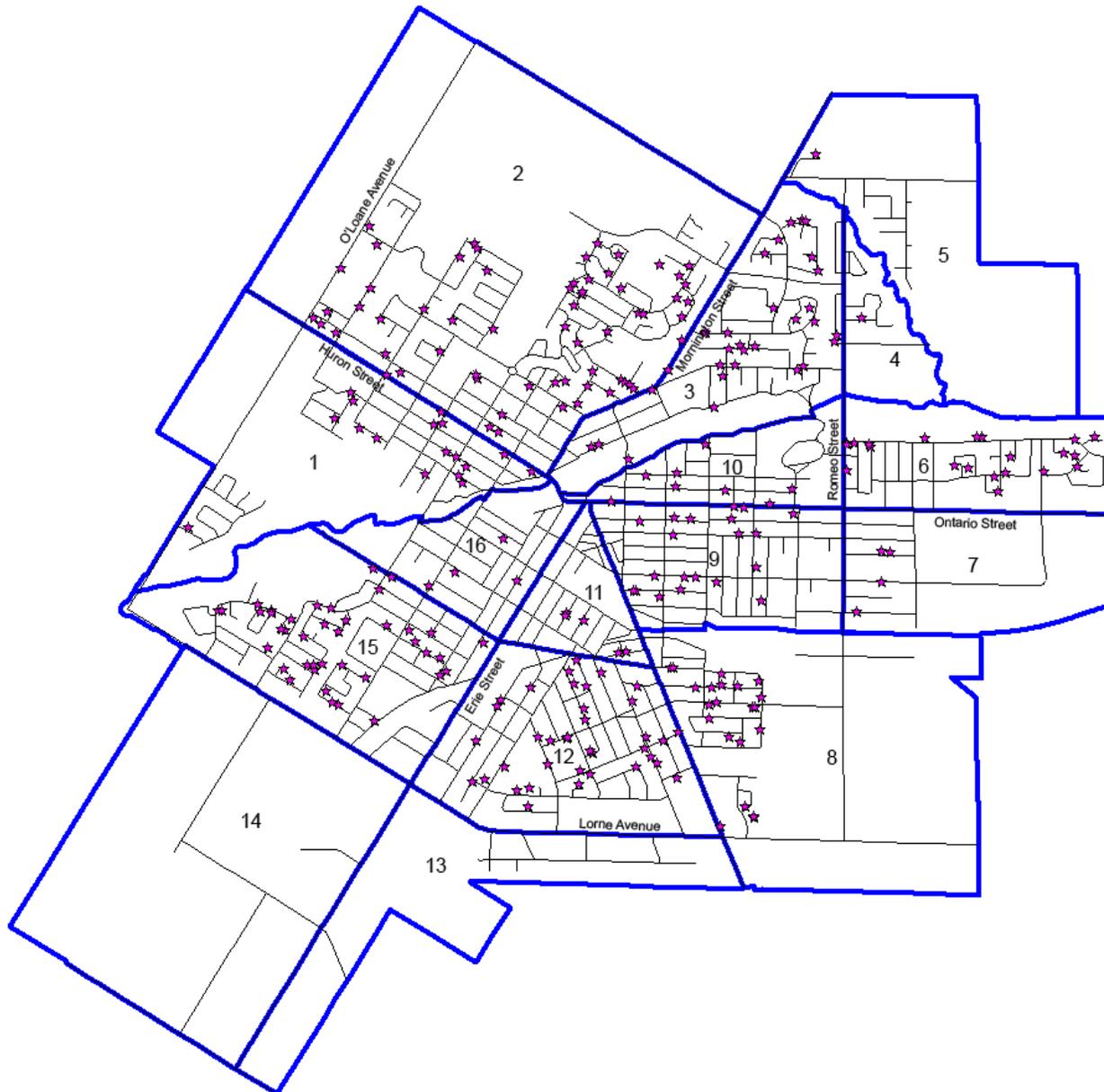


B



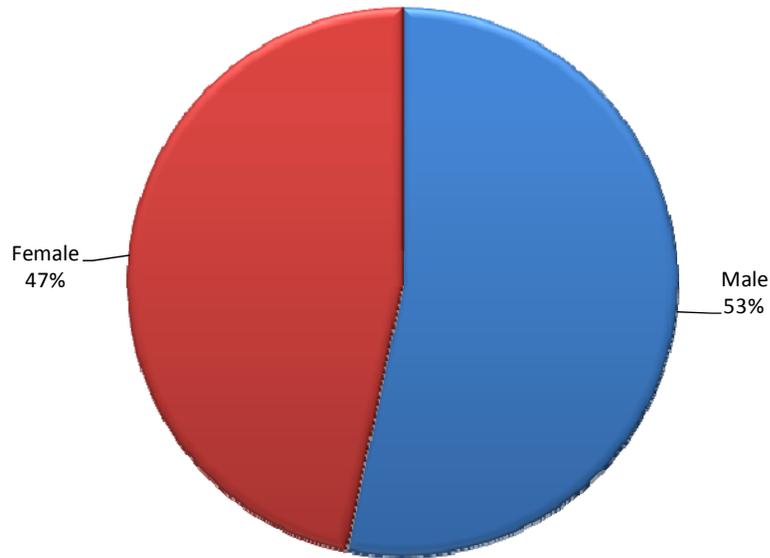
Household Travel Survey



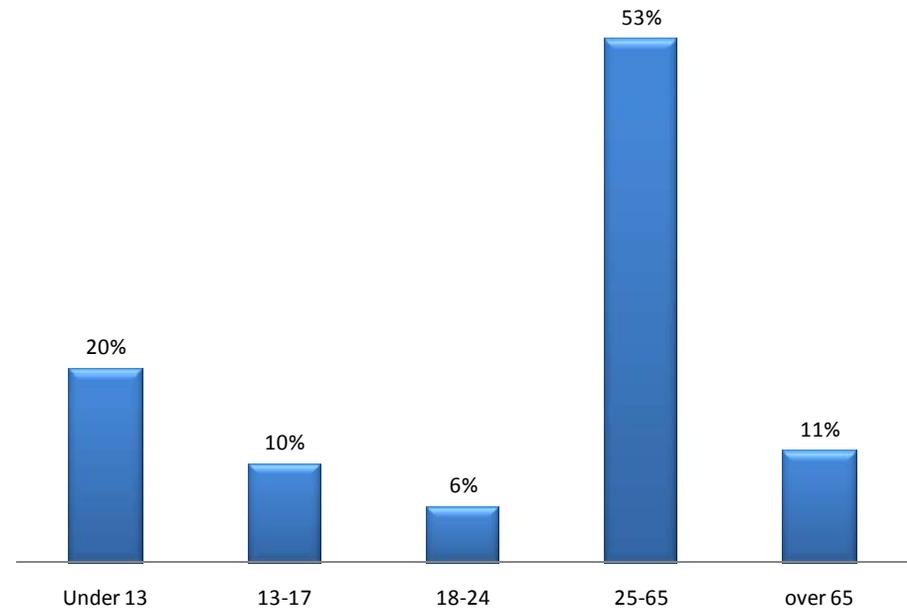


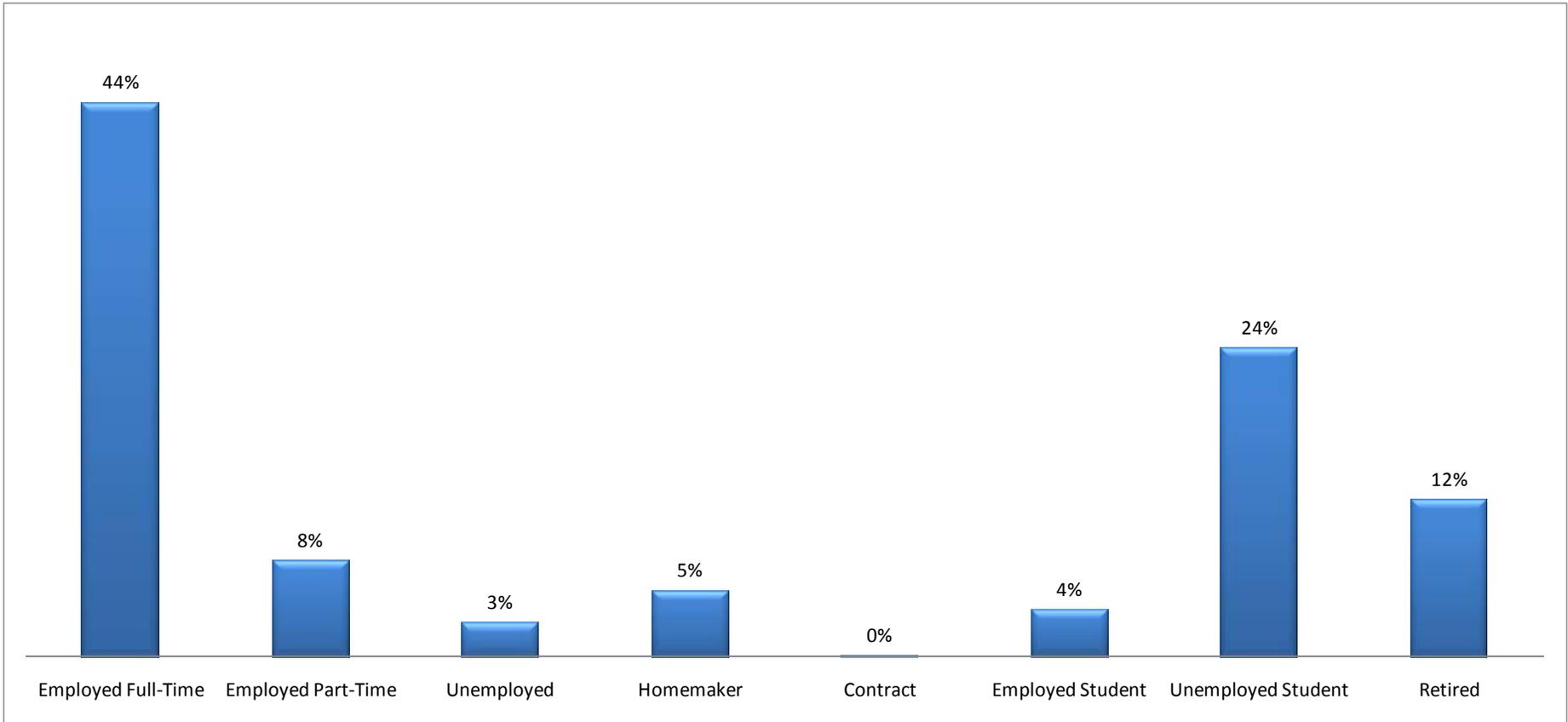
Superzone	Population	Survey	Sample
1	1869	92	4.9%
2	5495	254	4.6%
3	2599	107	4.1%
4	332	6	1.8%
5	309	2	0.6%
6	2035	99	4.9%
7	1000	9	0.9%
8	1698	76	4.5%
9	3362	92	2.7%
10	734	35	4.8%
11	960	21	2.2%
12	3676	151	4.1%
13	195	0	0.0%
14	311	0	0.0%
15	3255	154	4.7%
16	1341	39	2.9%
Total	29171	1137	3.9%

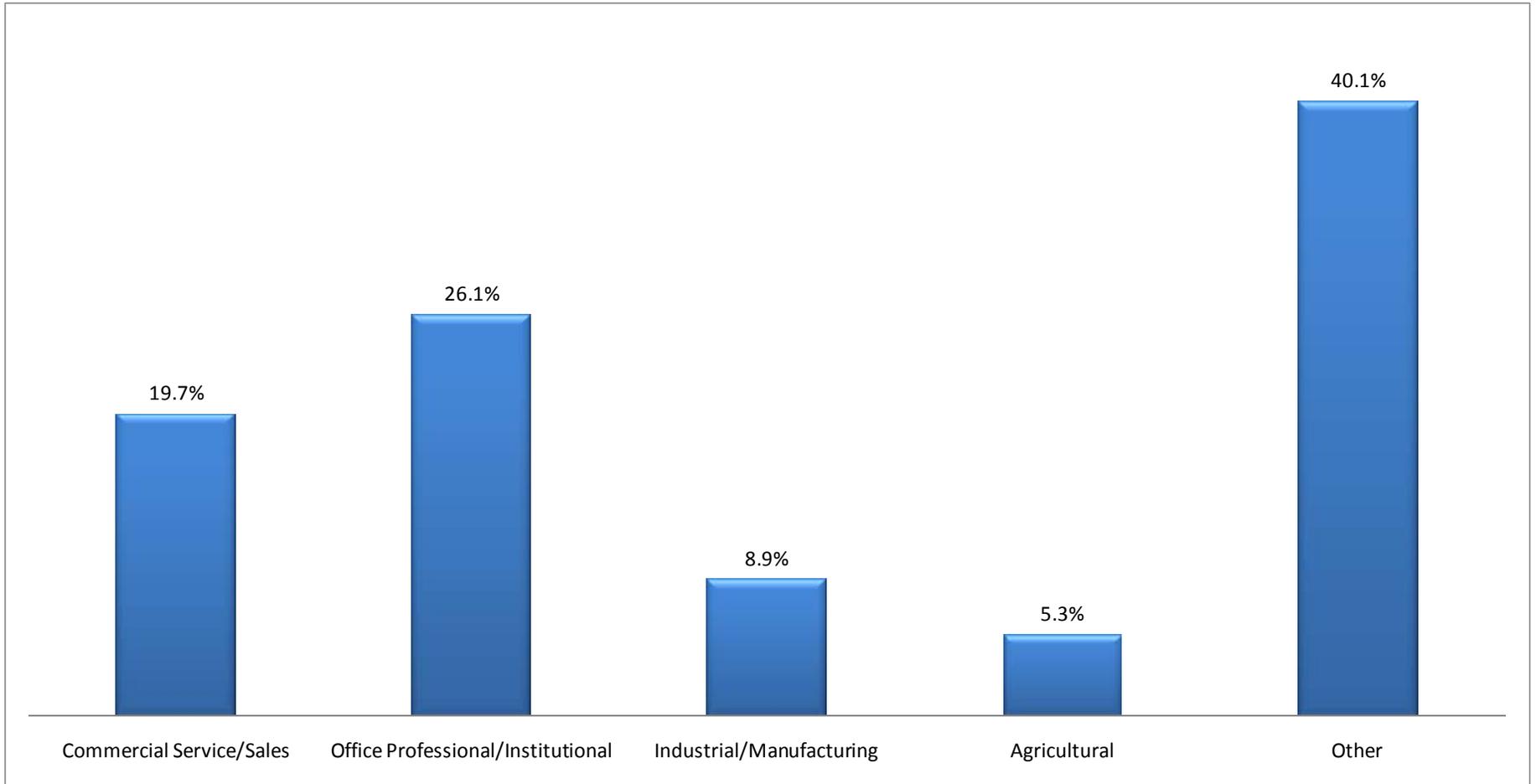
Sex



Age







Household Type	Household Occupants								
	1	2	3	4	5	6	7	8	Total
Single Family Detached	58%	81%	85%	84%	84%	100%	50%	100%	78%
Semi-Detached	7%	6%	8%	3%	8%	0%	50%	0%	6%
Townhouse	5%	1%	2%	3%	8%	0%	0%	0%	3%
Apartment	22%	10%	4%	5%	0%	0%	0%	0%	10%
Other	2%	1%	0%	2%	0%	0%	0%	0%	1%
Refused	7%	1%	0%	2%	0%	0%	0%	0%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Household Type	Household Occupants								
	1	2	3	4	5	6	7	8	Total
Single Family Detached	15%	36%	18%	21%	9%	0%	0%	0%	100%
Semi-Detached	22%	33%	22%	11%	11%	0%	6%	0%	100%
Townhouse	33%	11%	11%	22%	22%	0%	0%	0%	100%
Apartment	46%	36%	7%	11%	0%	0%	0%	0%	100%
Other	33%	33%	0%	33%	0%	0%	0%	0%	100%
Refused	67%	17%	0%	17%	0%	0%	0%	0%	100%
Total	20%	35%	16%	20%	9%	0%	1%	0%	100%

Household Type	Number of Vehicles					
	0	1	2	3	4	Total
Single Family Detached	58%	68%	89%	77%	100%	77%
Semi-Detached	0%	9%	5%	15%	0%	7%
Townhouse	0%	6%	1%	8%	0%	3%
Apartment	31%	15%	2%	0%	0%	10%
Other	0%	1%	2%	0%	0%	1%
Refused	12%	1%	2%	0%	0%	2%
Total	100%	100%	100%	100%	100%	100%

Household Type	Number of Vehicles					
	0	1	2	3	4	Total
Single Family Detached	7%	36%	53%	5%	4%	100%
Semi-Detached	0%	58%	32%	11%	0%	100%
Townhouse	0%	78%	11%	11%	0%	100%
Apartment	29%	61%	11%	0%	0%	100%
Other	0%	33%	67%	0%	0%	100%
Refused	50%	17%	33%	0%	0%	100%
Total	9%	40%	46%	5%	3%	100%

Household Type	Number of Bicycles									
	0	1	2	3	4	5	6	7	8	Total
Single Family Detached	76%	0%	78%	94%	84%	79%	100%	0%	100%	78%
Semi-Detached	5%	0%	10%	0%	5%	14%	0%	0%	0%	6%
Townhouse	3%	0%	0%	0%	11%	7%	0%	0%	0%	3%
Apartment	11%	0%	10%	6%	0%	0%	0%	0%	0%	9%
Other	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Refused	3%	0%	2%	0%	0%	0%	0%	0%	0%	2%
Total	100%	0%	100%	100%	100%	100%	100%	0%	100%	100%

Household Type	Number of Bicycles									
	0	1	2	3	4	5	6	7	8	Total
Single Family Detached	49%	8%	17%	13%	7%	5%	1%	0%	0%	100%
Semi-Detached	42%	16%	26%	0%	5%	11%	0%	0%	0%	100%
Townhouse	56%	11%	0%	0%	22%	11%	0%	0%	0%	100%
Apartment	61%	14%	18%	7%	0%	0%	0%	0%	0%	100%
Other	33%	67%	0%	0%	0%	0%	0%	0%	0%	100%
Refused	67%	17%	17%	0%	0%	0%	0%	0%	0%	100%
Total	50%	0%	17%	11%	6%	5%	1%	0%	0%	100%

Household Type	Number of FT Employees				
	0	1	2	3+	Total
Single Family Detached	70%	0%	86%	71%	78%
Semi-Detached	6%	0%	6%	29%	6%
Townhouse	3%	0%	2%	0%	3%
Apartment	15%	0%	5%	0%	9%
Other	1%	0%	0%	0%	1%
Refused	6%	0%	0%	0%	2%
Total	100%	100%	100%	100%	100%

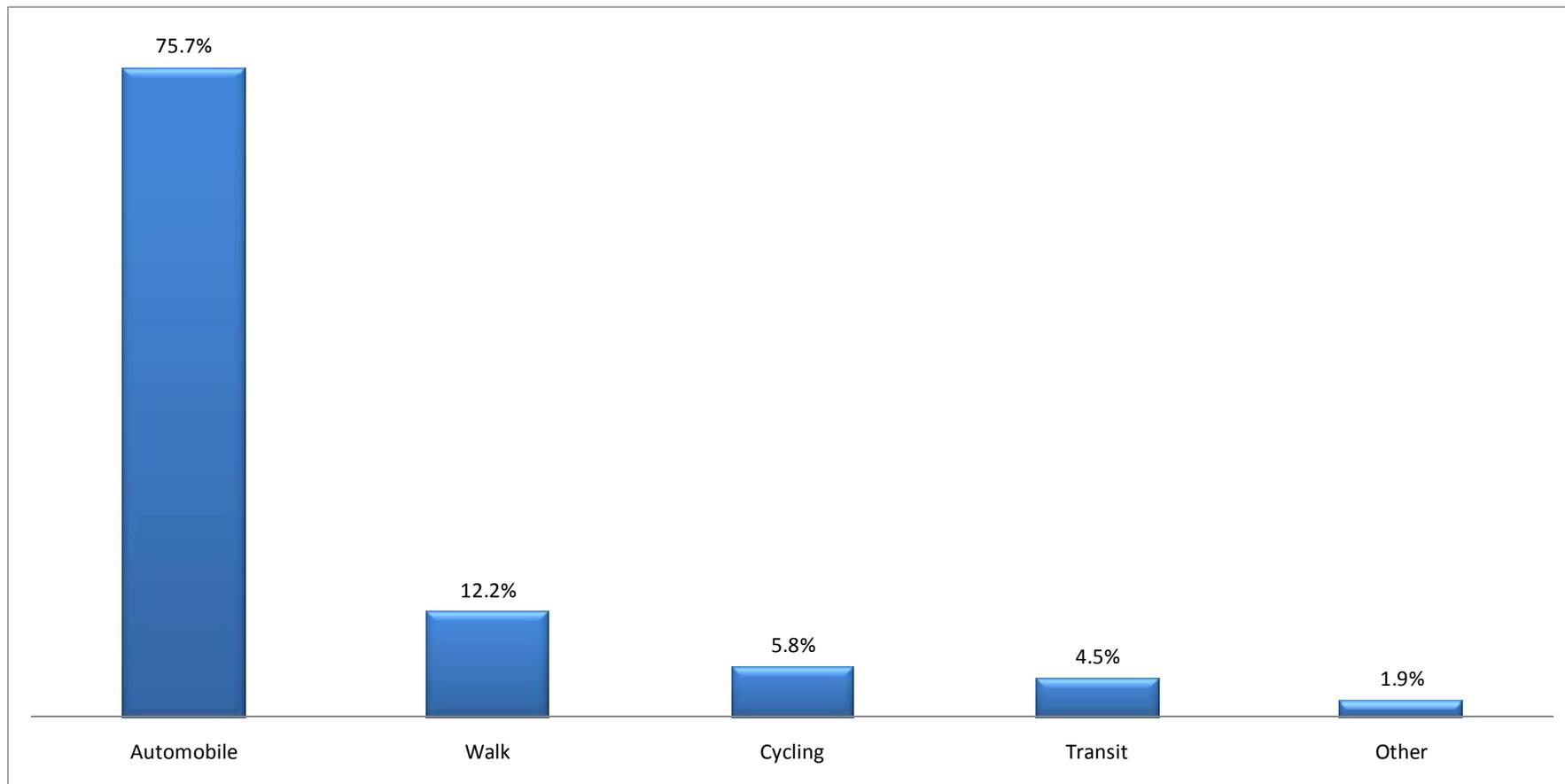
Number of PT Employees				
0	1	2	3+	Total
77%	0%	86%	0%	78%
7%	0%	0%	0%	6%
3%	0%	0%	0%	3%
10%	0%	14%	0%	9%
1%	0%	0%	0%	1%
2%	0%	0%	0%	2%
100%	100%	100%	0%	100%

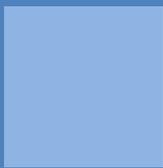
Household Type	Number of FT Employees				
	0	1	2	3+	Total
Single Family Detached	32%	35%	30%	2%	100%
Semi-Detached	32%	32%	26%	11%	100%
Townhouse	33%	44%	22%	0%	100%
Apartment	57%	29%	14%	0%	100%
Other	33%	67%	0%	0%	100%
Refused	100%	0%	0%	0%	100%
Total	36%	34%	27%	2%	100%

Number of PT Employees				
0	1	2	3+	Total
81%	17%	3%	0%	100%
84%	16%	0%	0%	100%
89%	11%	0%	0%	100%
86%	11%	4%	0%	100%
100%	0%	0%	0%	100%
100%	0%	0%	0%	100%
82%	16%	2%	0%	100%

Household Type	Household Trips								
	1	2	3	4	5	6	7	8+	Total
Single Family Detached	80%	73%	81%	76%	83%	100%	0%	100%	78%
Semi-Detached	6%	9%	6%	5%	0%	0%	0%	0%	7%
Townhouse	4%	2%	4%	5%	0%	0%	0%	0%	3%
Apartment	7%	14%	8%	10%	0%	0%	0%	0%	10%
Other	1%	2%	0%	0%	0%	0%	0%	0%	1%
Refused	3%	1%	0%	5%	17%	0%	0%	0%	2%
Total	100%	100%	100%	100%	100%	100%	0%	100%	100%

Household Type	Household Trips								
	1	2	3	4	5	6	7	8+	Total
Single Family Detached	38%	33%	17%	7%	2%	2%	0%	2%	100%
Semi-Detached	32%	47%	16%	5%	0%	0%	0%	0%	100%
Townhouse	44%	22%	22%	11%	0%	0%	0%	0%	100%
Apartment	29%	50%	14%	7%	0%	0%	0%	0%	100%
Other	33%	67%	0%	0%	0%	0%	0%	0%	100%
Refused	50%	17%	0%	17%	17%	0%	0%	0%	100%
Total	37%	35%	16%	7%	2%	2%	0%	1%	100%



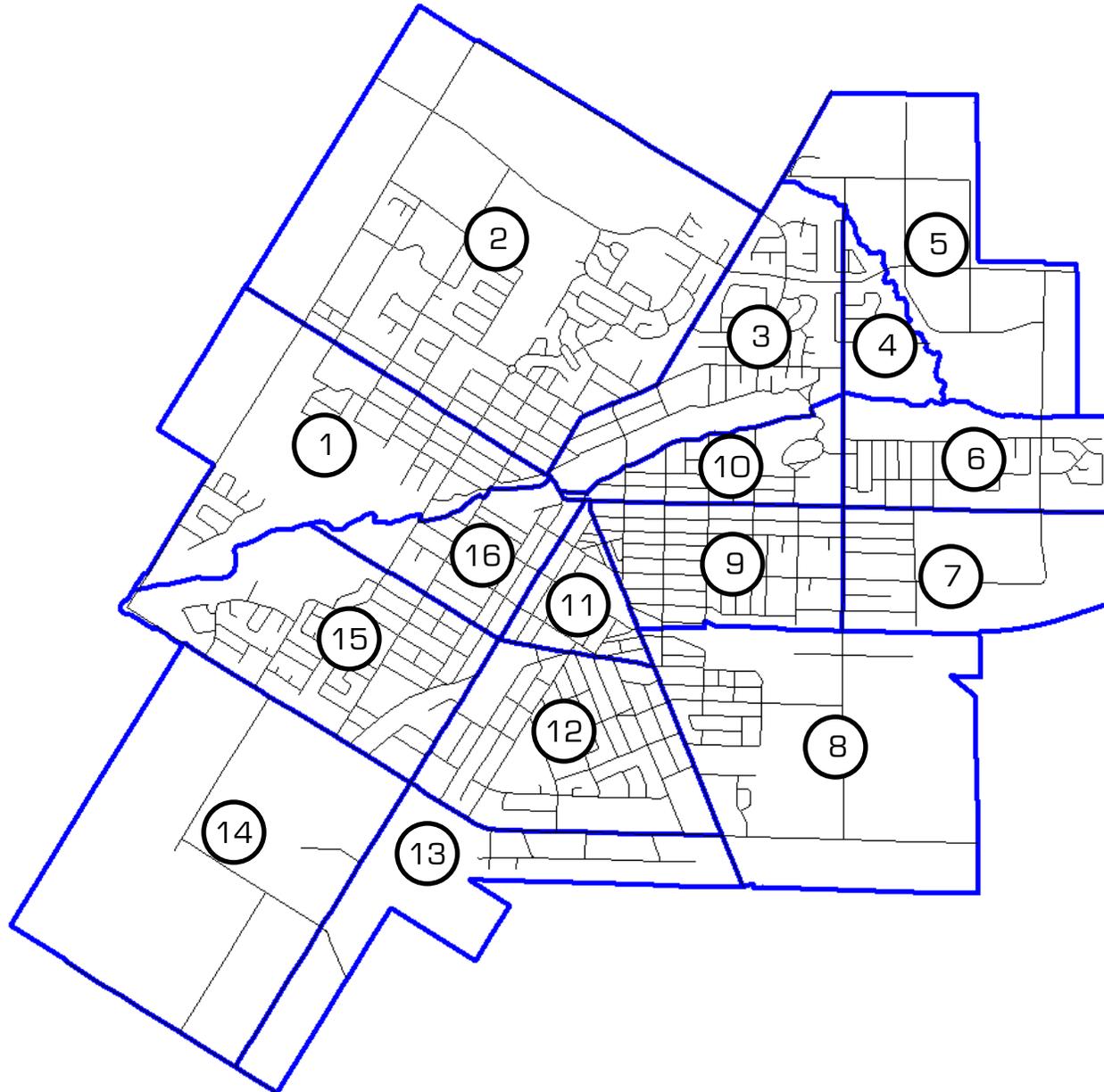


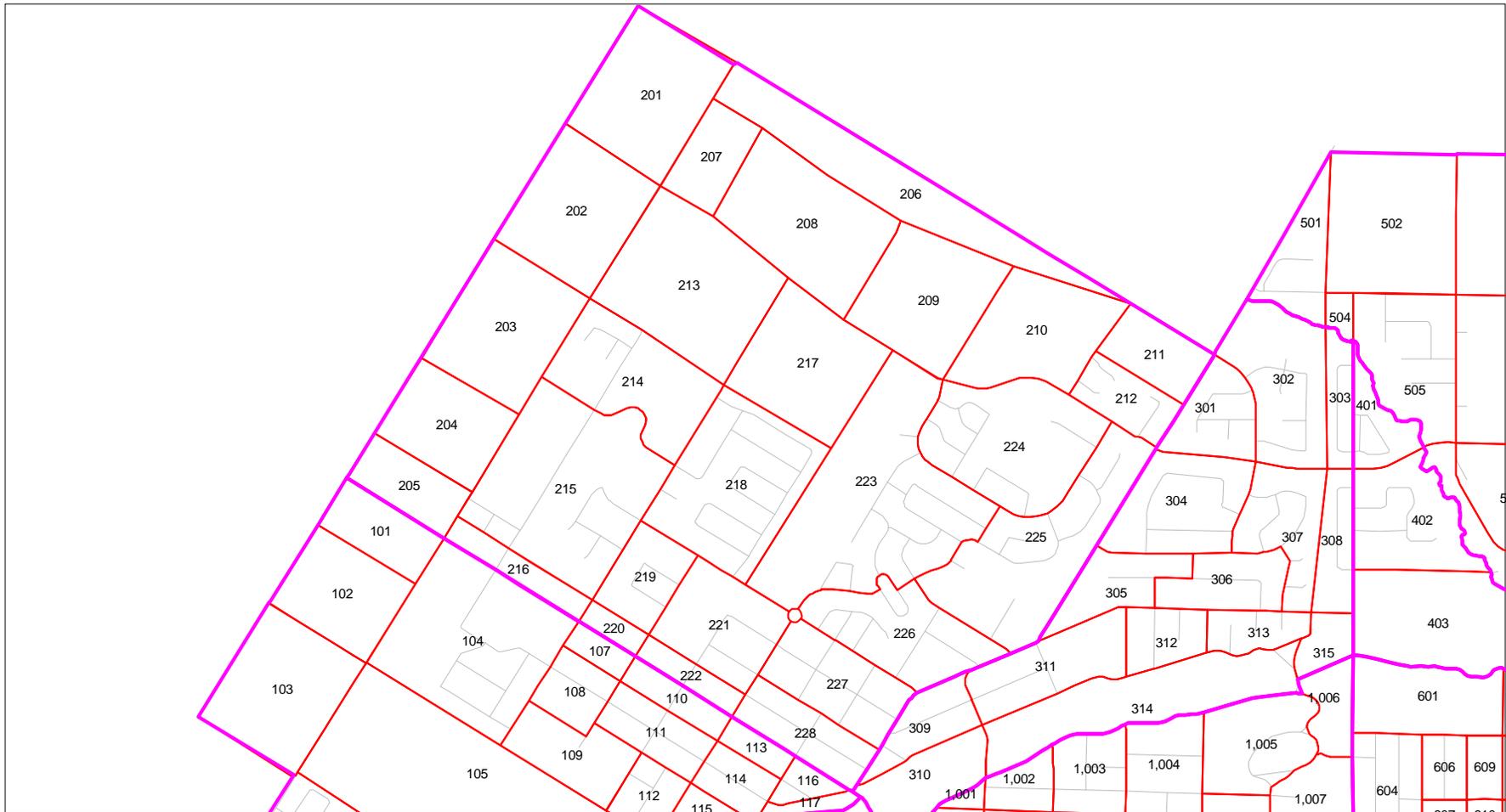
C

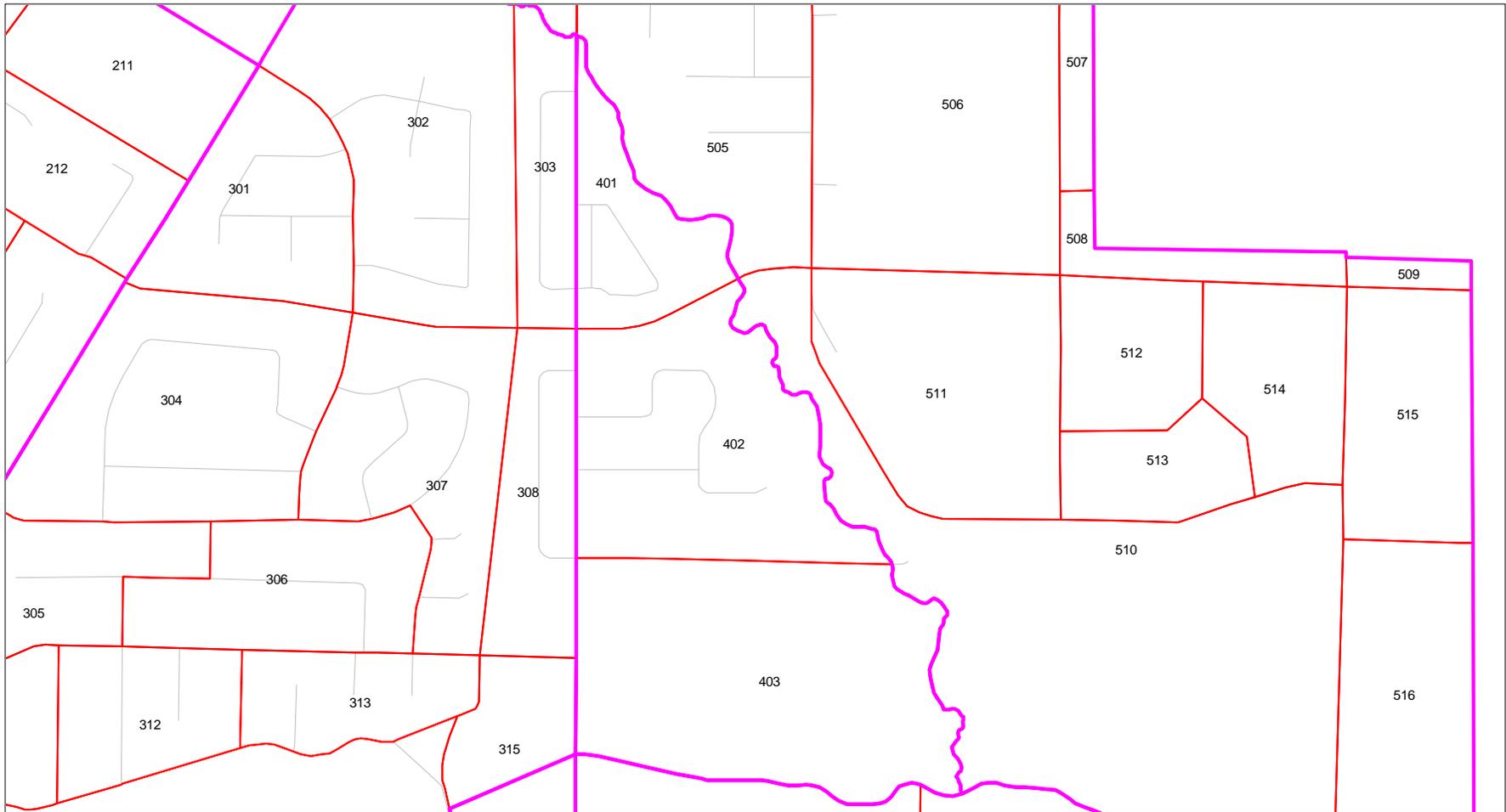


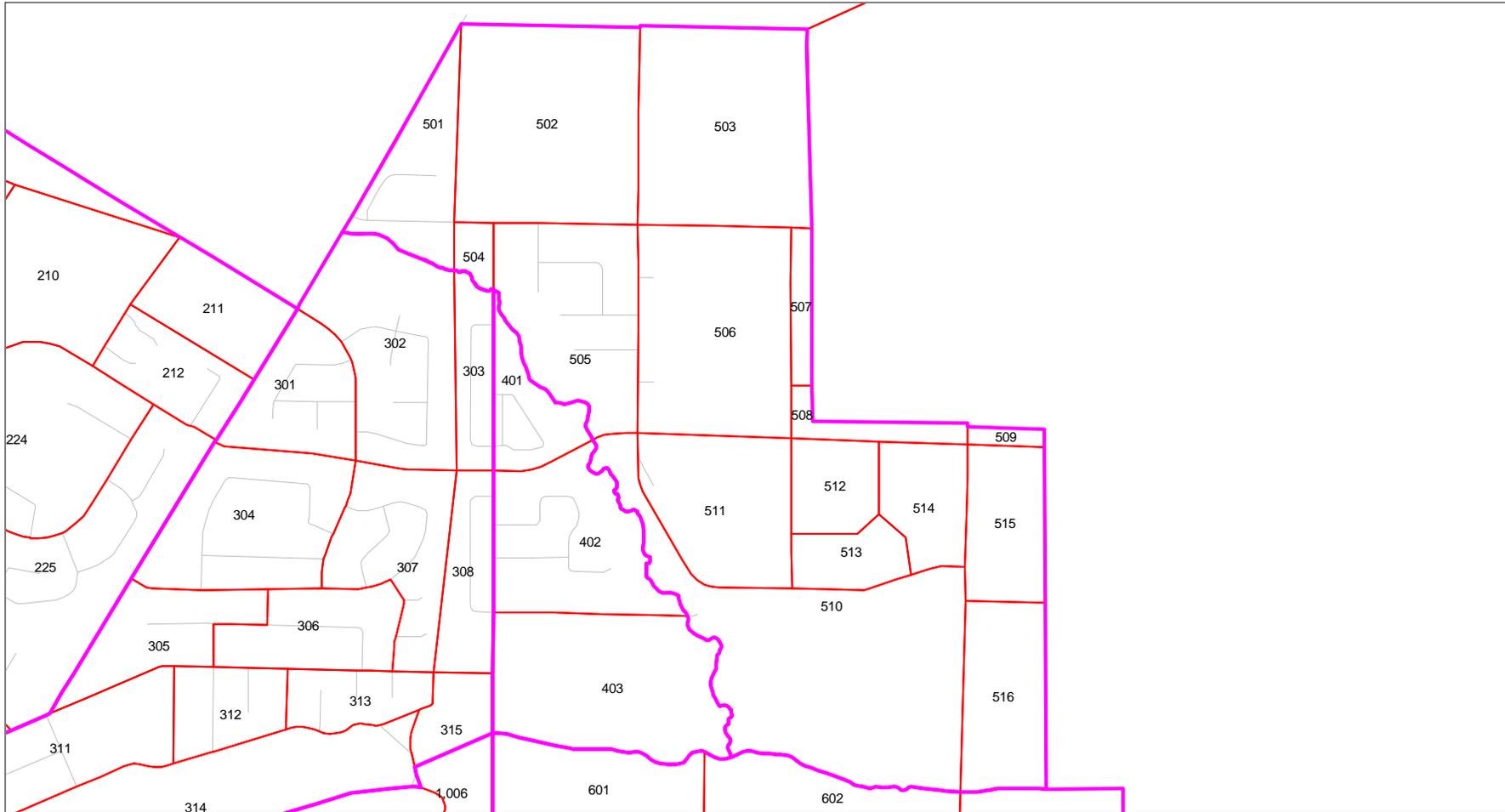
**Model
Development**

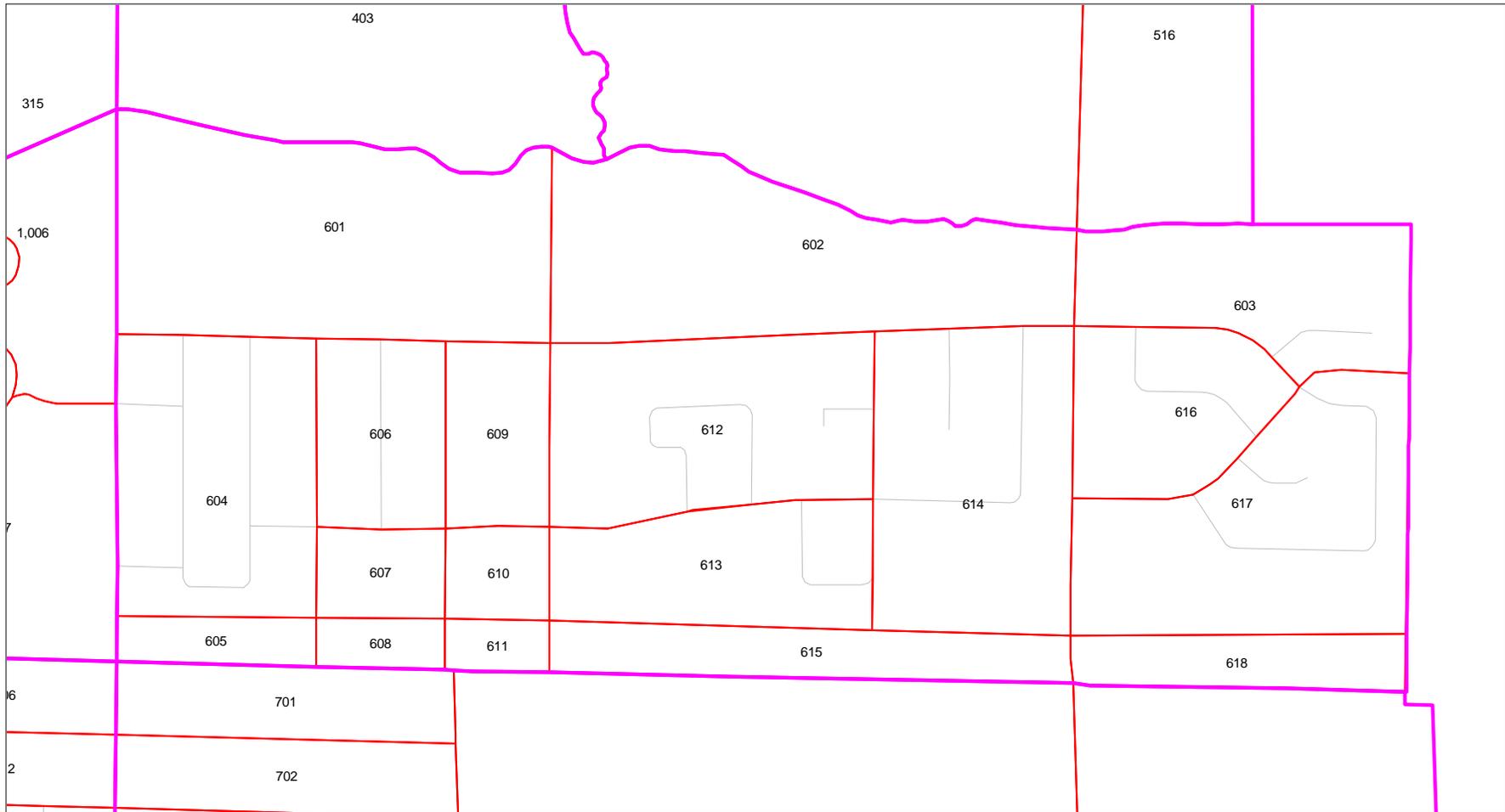




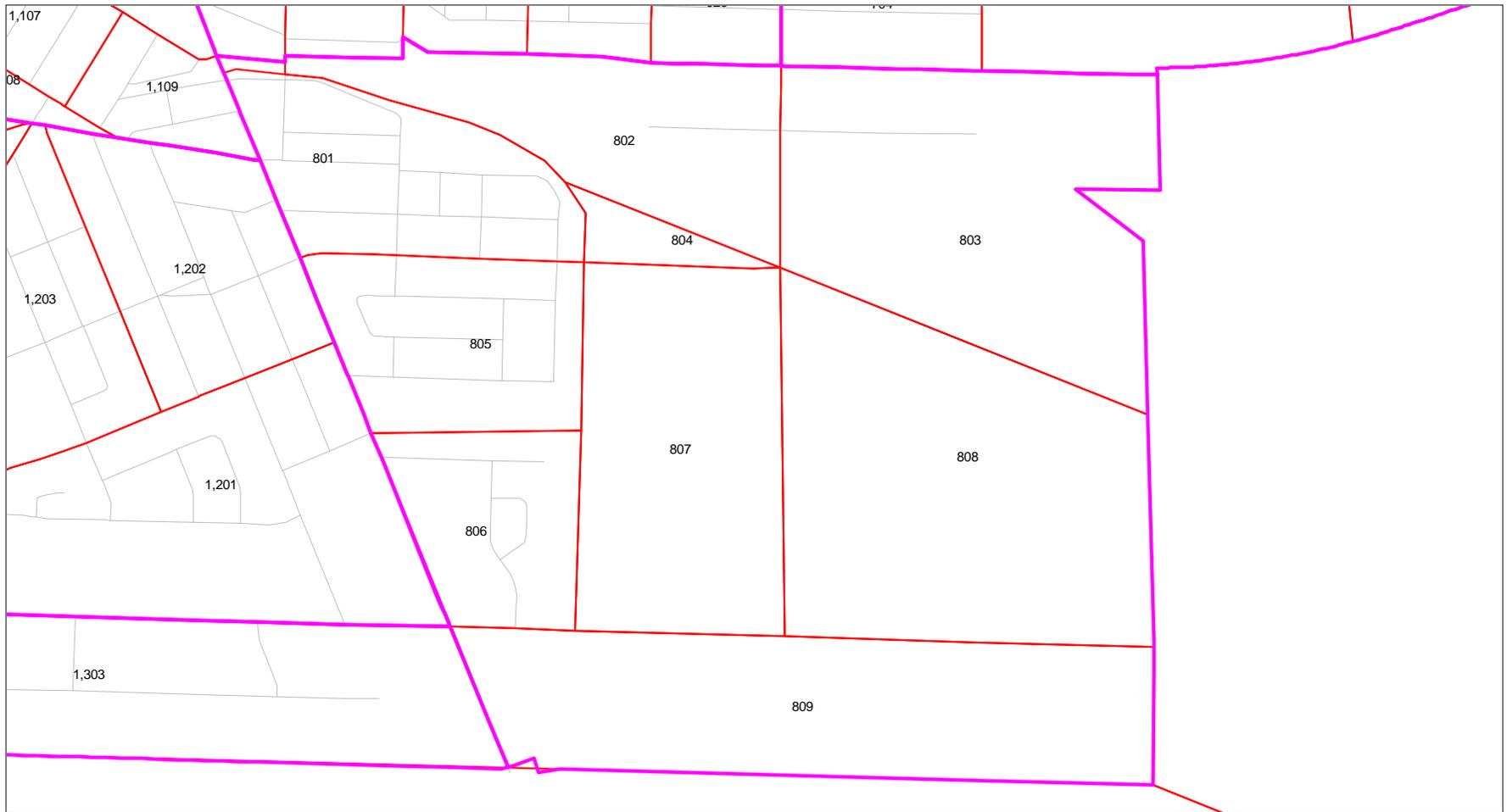




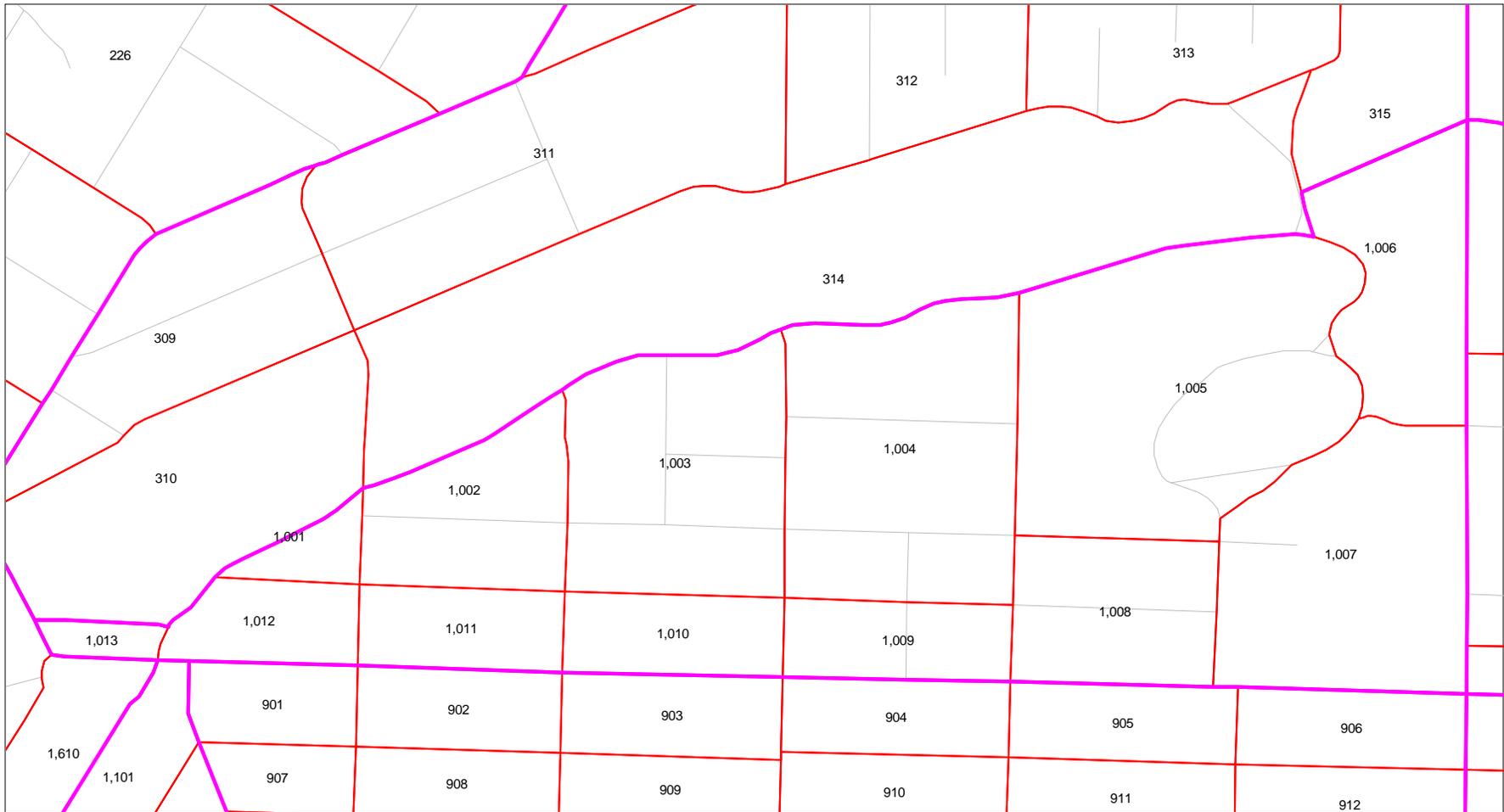


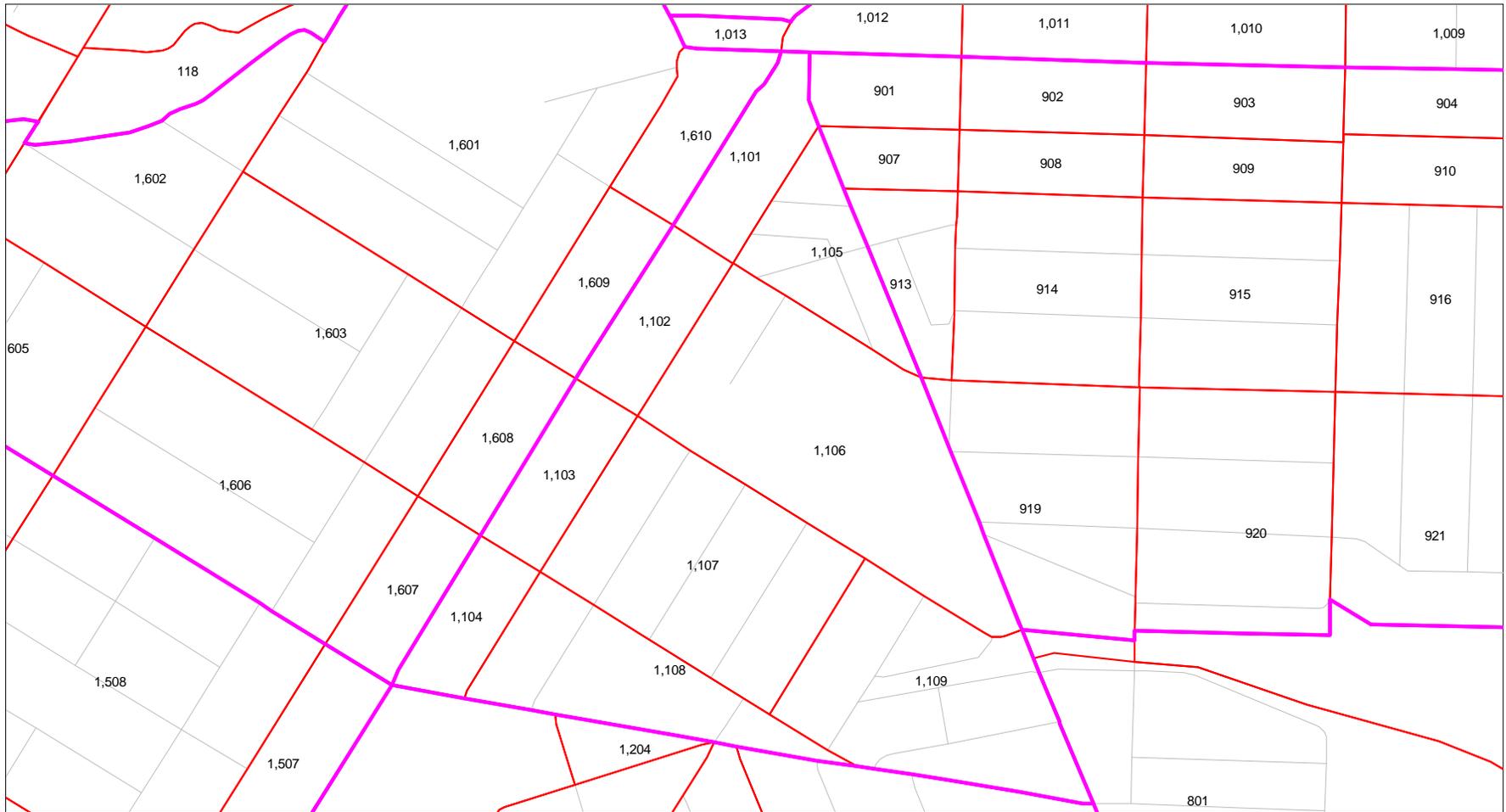


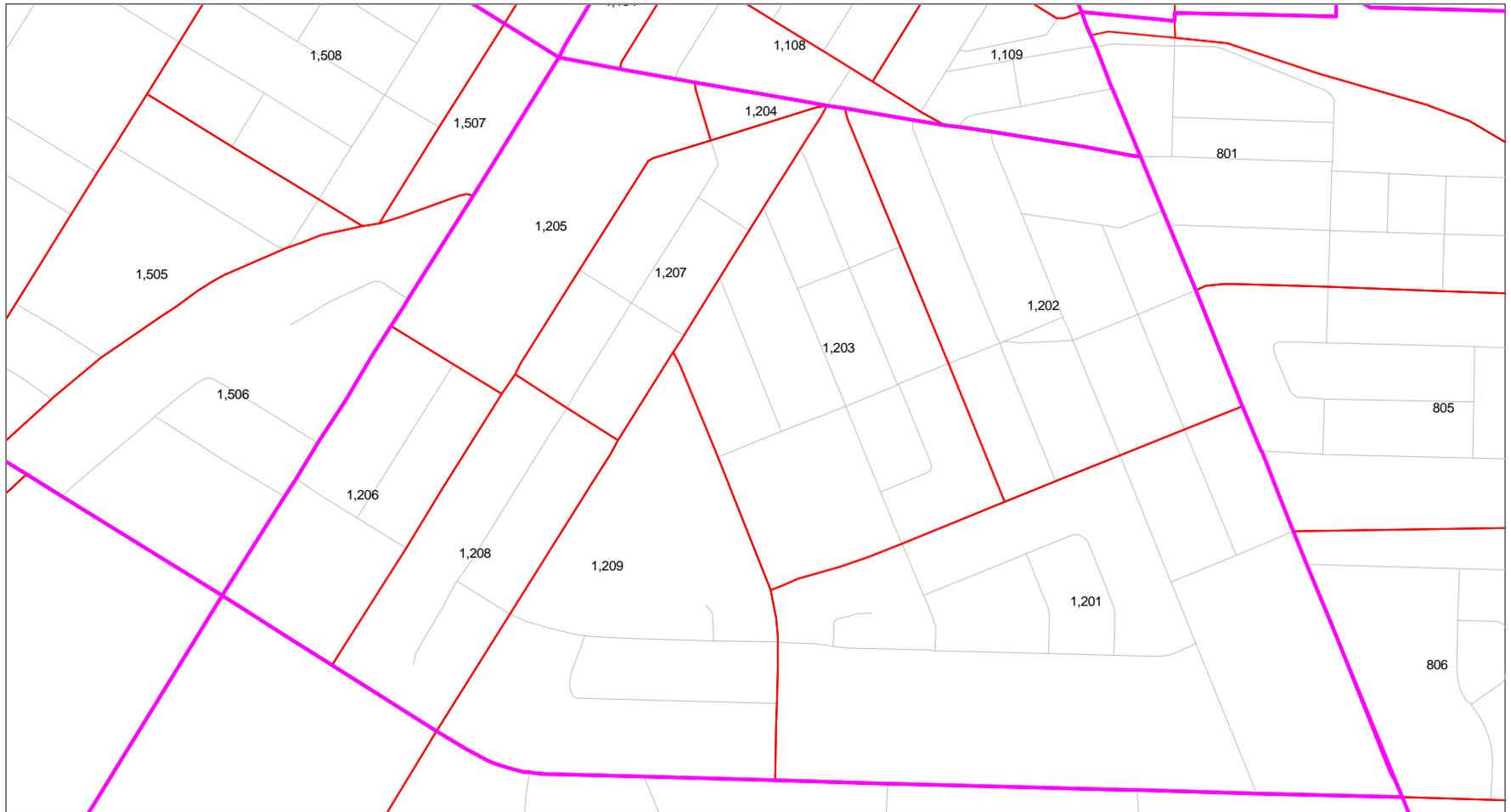




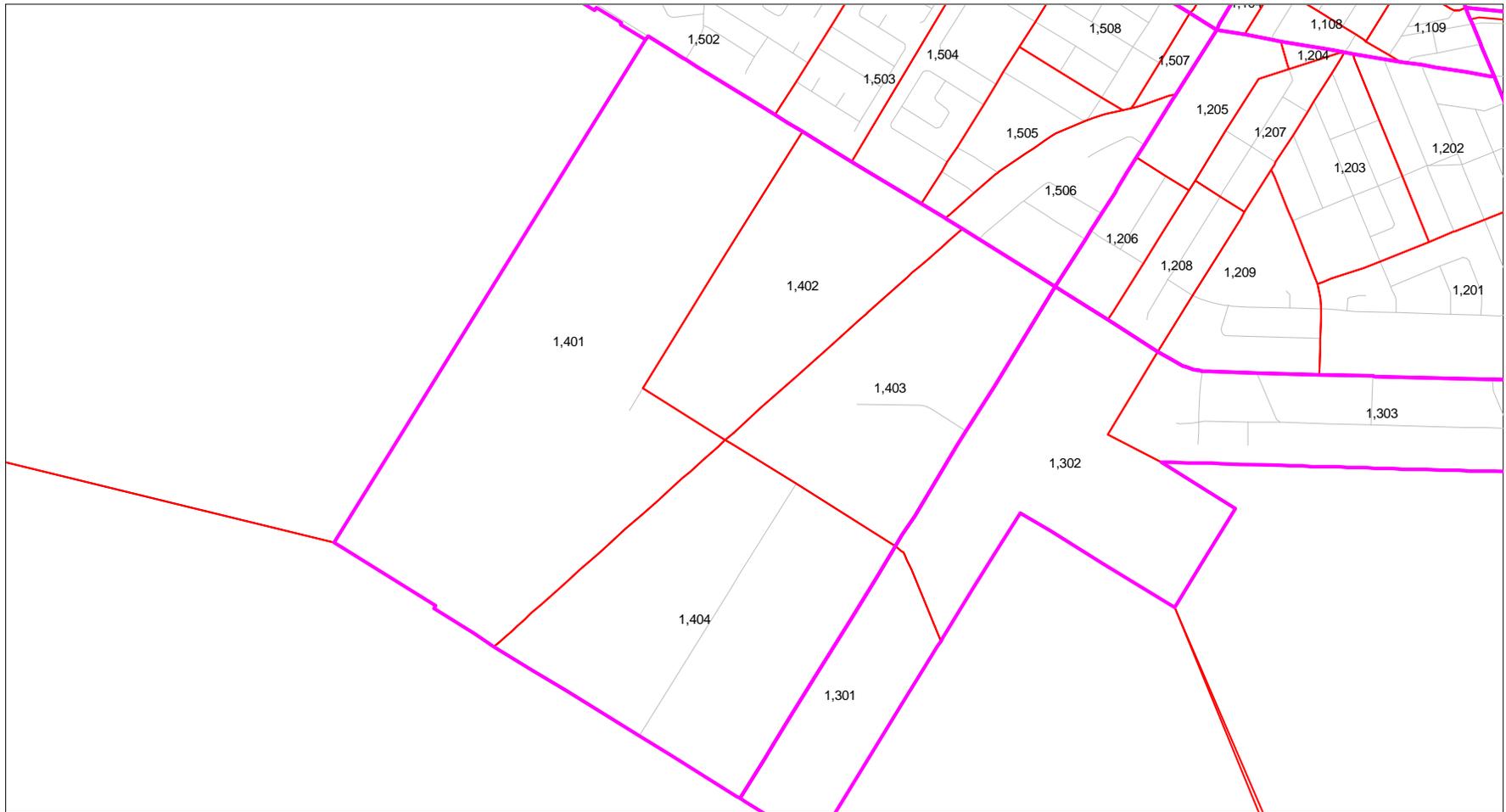


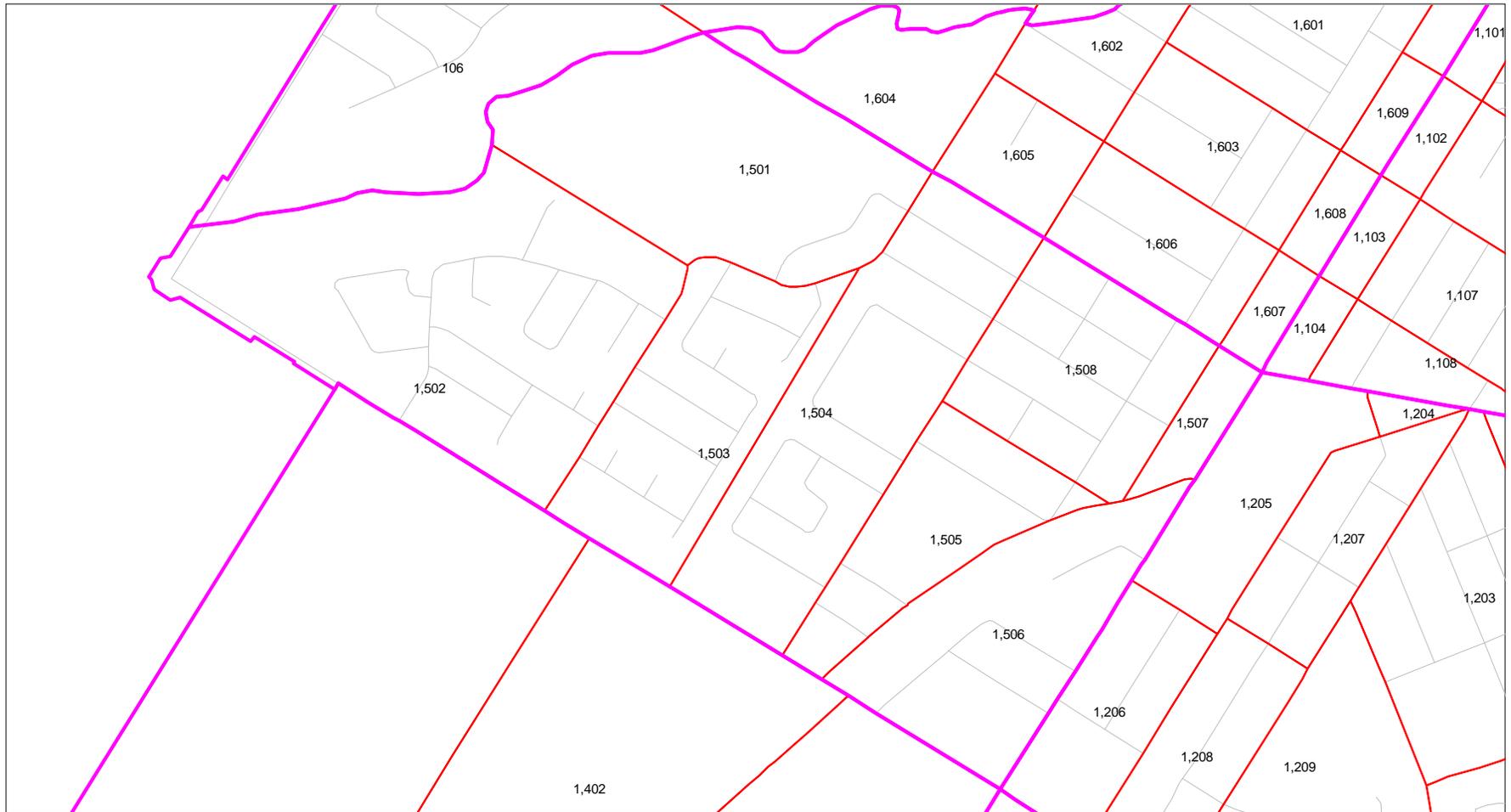
















Productions

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.95
R Square	0.90
Adjusted R Square	0.82
Standard Error	276.91
Observations	16

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	9795914	4897957	63.88	0.00
Residual	14	1073518	76679.89		
Total	16	10869433			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Population	0.24	0.04	6.69	0.00	0.17	0.32	0.17	0.32
Employment	0.21	0.06	3.52	0.00	0.08	0.33	0.08	0.33

Attractions

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.97
R Square	0.94
Adjusted R Square	0.87
Standard Error	216.53
Observations	16

ANOVA

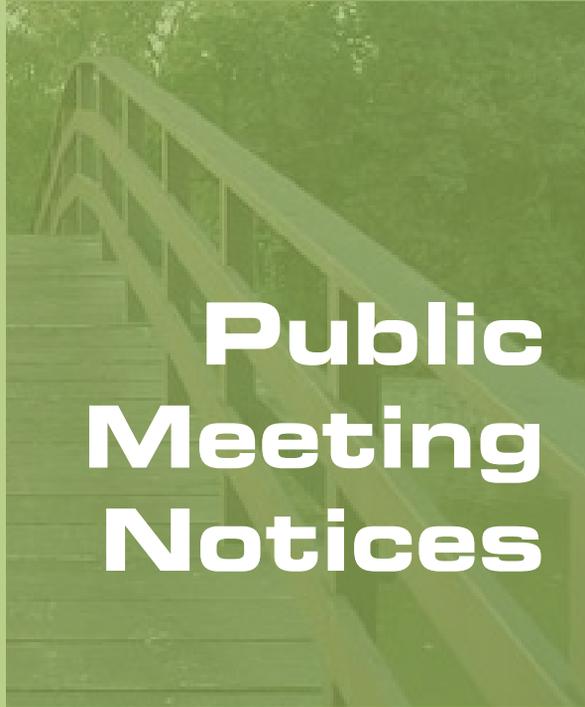
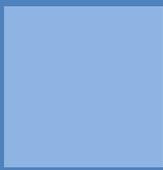
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	10672504	5336252	113.82	0.00
Residual	14	656372.5	46883.75		
Total	16	11328877			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Population	0.26	0.03	9.29	0.00	0.20	0.33	0.20	0.33
Employment	0.20	0.05	4.28	0.00	0.10	0.29	0.10	0.29

		Destination																				Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		21
Origin	1	0	85	70	0	0	0	65	22	77	61	46	85	0	0	101	41	0	7	9	0	7	676
	2	145	370	138	0	0	41	65	86	123	67	224	70	0	22	125	195	2	31	39	0	84	1827
	3	73	43	97	24	0	90	49	24	73	24	0	24	0	0	0	45	0	28	40	0	92	727
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	5
	5	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	155	0	2	0	0	3	182
	6	0	63	24	0	0	203	207	42	37	21	37	24	0	0	20	54	0	21	12	0	48	811
	7	62	87	49	0	0	187	149	125	146	21	46	73	0	0	60	0	0	12	5	0	11	1032
	8	0	130	0	0	0	61	310	134	93	19	45	120	47	22	40	87	0	3	9	0	36	1157
	9	61	65	69	0	155	78	134	22	0	57	58	207	0	0	40	58	0	7	31	0	64	1105
	10	41	65	73	0	0	43	67	19	61	0	0	97	0	0	136	21	36	4	27	0	33	723
	11	0	221	24	0	0	58	0	79	61	56	0	73	0	0	0	69	0	1	2	0	5	650
	12	40	138	0	0	0	24	49	71	24	44	49	97	0	0	44	73	0	9	27	0	15	706
	13	41	65	0	0	0	0	0	22	0	0	0	0	0	0	20	22	0	0	0	0	0	170
	14	20	43	0	0	0	19	0	45	0	0	0	0	0	0	80	0	0	17	13	0	14	252
	15	106	106	0	0	0	19	60	86	40	42	112	65	0	40	222	20	0	14	37	0	30	1000
	16	122	216	95	0	0	34	125	89	370	63	0	0	0	0	42	20	0	9	36	0	27	1247
	17	0	4	0	0	0	8	31	0	0	5	0	0	0	0	0	0	0	0	32	0	33	113
	18	13	25	45	0	0	24	0	3	4	16	0	11	0	4	28	5	4	8	35	0	146	368
	19	23	60	31	0	3	38	0	7	16	15	0	29	0	3	31	41	29	16	0	0	143	484
	20	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
	21	37	110	81	1	4	71	16	27	38	40	6	56	0	0	53	18	47	89	141	13	5	852
Total	783	1923	795	26	161	1000	1326	903	1161	551	621	1031	47	91	1043	921	118	281	497	13	800	14093	

		Destination																				Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		21
Origin	1	0	91	67	9	43	0	50	16	110	40	31	90	0	0	81	31	0	7	10	0	8	683
	2	113	463	156	21	100	29	59	70	206	52	180	87	0	298	118	177	2	33	41	0	88	2292
	3	64	61	124	16	80	73	50	22	138	21	0	34	0	0	0	46	0	30	43	0	97	898
	4	9	8	16	2	11	10	7	3	18	3	0	4	0	0	0	6	0	2	0	0	2	102
	5	41	39	79	10	51	47	32	14	88	13	0	22	0	0	0	29	0	2	0	0	3	470
	6	0	74	26	3	17	138	178	32	58	15	28	29	0	0	18	46	0	22	13	0	50	748
	7	45	101	51	7	33	126	126	95	229	15	34	84	0	0	53	0	0	12	5	0	11	1030
	8	0	35	0	0	0	9	60	23	33	3	8	32	460	66	8	17	0	3	10	0	38	806
	9	75	128	123	16	79	88	191	29	0	70	74	404	0	0	60	83	0	7	32	0	68	1526
	10	16	41	41	5	27	15	31	8	51	0	0	61	0	0	64	10	38	5	29	0	35	477
	11	0	188	19	2	12	28	0	44	69	29	0	61	0	0	0	43	0	1	3	0	5	506
	12	54	297	0	0	0	30	76	100	70	58	67	207	0	0	72	114	0	10	29	0	16	1201
	13	93	238	0	0	0	0	0	54	0	0	0	0	0	0	55	58	0	0	0	0	0	498
	14	66	224	0	0	0	57	0	151	0	0	0	0	0	0	313	0	0	18	14	0	15	858
	15	58	93	0	0	0	10	38	49	47	22	63	56	0	388	146	13	0	15	40	0	31	1070
	16	44	126	50	7	32	12	53	34	290	22	0	0	0	0	18	9	0	10	38	0	28	773
	17	0	4	0	0	0	8	33	0	0	6	0	0	0	0	0	0	0	0	33	0	35	119
	18	13	27	47	0	0	26	0	3	4	17	0	11	0	4	29	5	4	8	37	0	154	389
	19	24	63	33	0	3	40	0	8	16	16	0	30	0	3	33	43	31	17	0	0	151	510
	20	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
	21	39	116	86	1	4	75	17	29	40	42	6	59	0	0	56	19	49	93	149	13	6	899
Total	754	2422	917	101	491	823	998	786	1469	443	492	1269	460	759	1125	748	124	297	524	13	845	15861	

		Destination																				Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		21
Origin	1	0	148	64	8	106	0	61	21	146	52	41	94	0	0	82	35	0	10	14	0	11	892
	2	168	844	164	22	274	34	79	105	306	76	262	102	0	538	134	219	3	47	58	0	125	3560
	3	63	73	86	11	144	56	44	22	135	20	0	26	0	0	0	37	0	43	60	0	137	959
	4	8	10	12	2	19	8	6	3	18	3	0	4	0	0	0	5	0	3	0	0	3	103
	5	104	121	142	19	237	92	73	37	222	34	0	43	0	0	0	61	0	3	0	0	5	1192
	6	0	99	20	3	34	118	176	36	63	16	30	25	0	0	15	42	0	31	18	0	71	795
	7	54	148	43	6	72	117	136	115	272	18	40	79	0	0	48	0	0	17	7	0	16	1189
	8	0	61	0	0	0	11	78	34	48	5	11	36	544	115	9	20	0	5	14	0	54	1044
	9	102	213	118	16	196	93	236	40	0	93	98	432	0	0	62	94	0	10	46	0	96	1943
	10	21	66	39	5	65	16	37	11	67	0	0	63	0	0	65	11	54	7	41	0	49	615
	11	0	278	16	2	27	27	0	54	83	35	0	58	0	0	0	43	0	2	4	0	7	635
	12	56	376	0	0	0	24	71	105	72	59	68	169	0	0	57	98	0	14	41	0	23	1234
	13	104	325	0	0	0	0	0	60	0	0	0	0	0	0	47	53	0	0	0	0	0	589
	14	101	423	0	0	0	69	0	236	0	0	0	0	0	0	367	0	0	26	19	0	21	1261
	15	56	109	0	0	0	7	33	47	45	21	59	42	0	450	107	10	0	22	56	0	45	1109
	16	47	163	37	5	62	9	50	36	303	23	0	0	0	0	15	7	0	14	54	0	40	867
	17	0	6	0	0	0	12	46	0	0	8	0	0	0	0	0	0	0	0	47	0	49	169
	18	19	38	67	0	0	36	0	4	5	23	0	16	0	6	42	7	5	12	52	0	218	550
	19	34	89	46	0	4	57	0	11	23	22	0	43	0	5	46	61	44	24	0	0	213	722
	20	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10
	21	55	164	121	2	6	106	24	41	56	60	9	83	0	0	79	26	70	132	211	19	8	1273
Total	992	3760	974	101	1245	893	1152	1016	1866	569	619	1315	544	1113	1172	830	176	420	742	19	1196	20713	



Public Meeting Notices



City of Stratford Transportation Master Plan

NOTICE OF STUDY COMMENCEMENT PUBLIC PARTICIPATION INVITED

The City of Stratford is initiating a Transportation Planning Study to identify long-term transportation needs and improvements. The specific Study Objectives include:

The purpose of the study is to conduct an area wide transportation review to determine:

- ▶ The need and justification for medium and long range transportation needs of the City for a 20 year time period,
- ▶ Improvement needs for arterial and collector roads,
- ▶ How to best accommodate truck traffic,
- ▶ The impact of the proposed Highway 7/8 bypass,
- ▶ Programs and plans to accommodate and promote active transportation modes (walking, cycling)
- ▶ Transportation demand management initiatives (TDM) to reduce auto use,
- ▶ Traffic calming policies and programs
- ▶ The development of new policies for inclusion in the Official Plan
- ▶ Cost for improvements over the first 5 years of the plan.

This study will complete Phase 1 and 2 of the Municipal Class Environmental Assessment Process and will have several opportunities for public involvement. A consulting team made up of Paradigm Transportation Solutions Limited and GSP Group Inc are assisting the City with this important initiative.

PARTICIPATE IN THE TRAVEL SURVEY

As part of the study we need to understand your existing travel patterns and requirements. For example, we need to identify how many trips by car, bus, cycling or walk you make between 3:00 PM and 6:00 PM on a typical weekday. Where do you travel during this time period? Your help will be requested as part of a sample telephone survey that will commence in early May. You can also participate in the survey by logging on to the City of Stratford Web Site Public www.city.stratford.on.ca and clicking the link called **Transportation Survey** where you can complete a short web survey regarding your travel patterns. The survey is a very important part of identifying existing and future transportation needs.

Notices of public meetings will be advertised through the media. Members of the public who want to provide input and/or be kept informed of the study progress are invited to contact:

Phil Grubb, P.Eng., Project Manager, Paradigm Transportation Solutions Limited
43 Forest Road, Cambridge, ON N1S 3B4
Phone: 519-896-3163, Fax: 1-866-722-5117, Email: pgrubb@ptsl.com

Ms. Barbara Dembek
Director of Building & Planning, P.O. Box 818, Stratford, ON N5A 6W1
Phone 519-271-0250 Ext. 221, Fax 519-271-5966, Email: bdembek@city.stratford.on.ca

City of Stratford Transportation Master Plan

NOTICE OF PUBLIC MEETING PUBLIC PARTICIPATION INVITED

Location: KCC Hall

Date: May 12, 2010

Time: 6:00 PM – Open House – 7:00 Presentation

The City of Stratford is holding a Public Meeting for the Transportation Planning Study which is intended to address long-term transportation needs and improvements. The specific Study Objectives include:

The purpose of the study is to conduct an area wide transportation review to determine:

- ▶ The need and justification for medium and long range transportation needs of the City for a 20 year time period,
- ▶ Improvement needs for arterial and collector roads,
- ▶ How to best accommodate truck traffic,
- ▶ The impact of the proposed Highway 7/8 bypass,
- ▶ Programs and plans to accommodate and promote active transportation modes (walking, cycling)
- ▶ Transportation demand management initiatives (TDM) to reduce auto use,
- ▶ Traffic calming policies and programs.
- ▶ The development of new policies for inclusion in the Official Plan
- ▶ Cost for improvements over the first 5 years of the plan.

This study will complete Phase 1 and 2 of the Municipal Class Environmental Assessment Process and will have several opportunities for public involvement. A consulting team made up of Paradigm Transportation Solutions Limited and GSP Group Inc are assisting the City with this important initiative.

PARTICIPATE IN THE TRAVEL SURVEY

Members of the consulting team will be present to review the results of the study to date and to obtain input on future transportation needs, issues, opportunities and constraints. You can also participate in the travel survey by logging on to the City of Stratford Web Site Public www.city.stratford.on.ca and clicking the link called **Transportation Survey** where you can complete a short web survey regarding your travel patterns. The survey is a very important part of identifying existing and future transportation needs.

Members of the public are encouraged to provide input by attending and participating in this meeting or if not available to contact:

Phil Grubb, P.Eng., Project Manager, Paradigm Transportation Solutions Limited
43 Forest Road, Cambridge, ON N1S 3B4
Phone: 519-896-3163, Fax: 1-866-722-5117, Email: pgrubb@ptsl.com

Ms. Barbara Dembek
Director of Building & Planning, P.O. Box 818, Stratford, ON N5A 6W1
Phone 519-271-0250 Ext. 221, Fax 519-271-5966, Email: bdembek@city.stratford.on.ca

City of Stratford Transportation Master Plan

NOTICE OF PUBLIC MEETING PUBLIC PARTICIPATION INVITED

Location: KCC Hall

Date: Wednesday June 16, 2010

Time: 6:30 PM – Open House – 7:00 Presentation

The City of Stratford is holding a second Public Meeting for the Transportation Planning Study which is intended to address long-term transportation needs and improvements. The specific Study Objectives include:

The purpose of the study is to conduct an area wide transportation review to determine :

- ▶ The need and justification for medium and long range transportation needs of the City for a 20 year time period,
- ▶ Improvement needs for arterial and collector roads,
- ▶ How to best accommodate truck traffic,
- ▶ The impact of the proposed Highway 7/8 bypass,
- ▶ Programs and plans to accommodate and promote active transportation modes (walking,cycling)
- ▶ Transportation demand management initiatives (TDM) to reduce auto use,
- ▶ Traffic calming policies and programs.
- ▶ The development of new policies for inclusion in the Official Plan
- ▶ Cost for improvements over the first 5 years of the plan.

This study will complete Phase 1 and 2 of the Municipal Class Environmental Assessment Process and will have several opportunities for public involvement. A consulting team made up of Paradigm Transportation Solutions Limited and GSP Group Inc are assisting the City with this important initiative.

PARTICIPATE IN THE TRAVEL SURVEY

Members of the consulting team will be present to outline a preliminary recommended Transportation Plan and to obtain your input on these recommendations. Background information on the study can be found on the City of Stratford Web Site Public www.city.stratford.on.ca.

Members of the public are encouraged to provide input by attending and participating in this meeting or if not available to contact:

Phil Grubb, P.Eng., Project Manager, Paradigm Transportation Solutions Limited
43 Forest Road, Cambridge, ON N1S 3B4
Phone: 519-896-3163, Fax: 1-866-722-5117, Email: pgrubb@ptsl.com

Ms. Barbara Dembek
Director of Building & Planning, P.O. Box 818, Stratford, ON N5A 6W1
Phone 519-271-0250 Ext. 221, Fax 519-271-5966, Email: bdembek@city.stratford.on.ca

City of Stratford Transportation Master Plan

NOTICE OF COMMITTEE MEETING

Location: COUNCIL CHAMBERS, CITY HALL

Date: Monday, September 13, 2010

Time: 7:30 PM Following or Following the Formal Session of Council

The City of Stratford Planning and Heritage Committee is receiving for approval the Transportation Planning Study which is intended to address long-term transportation needs and improvements.

The study addresses an area wide transportation review to determine :

- ▶ The need and justification for medium and long range transportation needs of the City for a 20 year time period,
- ▶ Improvement needs for arterial and collector roads,
- ▶ How to best accommodate truck traffic,
- ▶ The impact of the proposed Highway 7/8 bypass,
- ▶ Programs and plans to accommodate and promote active transportation modes (walking,cycling)
- ▶ Transportation demand management initiatives (TDM) to reduce auto use,
- ▶ Traffic calming policies and programs.
- ▶ The development of new policies for inclusion in the Official Plan
- ▶ Cost for improvements over the first 5 years of the plan.

This study will complete Phase 1 and 2 of the Municipal Class Environmental Assessment Process and has had several opportunities for public involvement. A presentation will be made by the consulting team made up of Paradigm Transportation Solutions Limited and GSP Group Inc.

Members of the public are encouraged to review a copy of the report on the City of Stratford web site at www.city.stratford.on.ca and to provide input by attending this meeting or if not available to contact:

Phil Grubb, P.Eng., Project Manager, Paradigm Transportation Solutions Limited
43 Forest Road, Cambridge, ON N1S 3B4
Phone: 519-896-3163, Fax: 1-866-722-5117, Email: pgrubb@ptsl.com

Ms. Barbara Dembek
Director of Building & Planning, P.O. Box 818, Stratford, ON N5A 6W1
Phone 519-271-0250 Ext. 221, Fax 519-271-5966, Email: bdembek@city.stratford.on.ca