CITY OF HAMILTON

Ancaster Transportation Master Plan

JUNE 2011

Hamilton
Public Works

DILLON
CONSULTING

CITY OF HAMILTON

ANCASTER
TRANSPORTATION MASTER PLAN

JUNE 2011

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EXECUTIVE SUMMARY

The community of Ancaster, in the City of Hamilton, has experienced rapid growth since the mid-nineties. This has led to an increase in traffic volumes in the Ancaster urban area, resulting in congestion and traffic infiltration. A Transportation Master Plan was undertaken to prepare a transportation strategy to support Ancaster's current and future transportation needs.

Hamilton is anticipated to experience population and employment growth by 2031 which will affect travel patterns across the region. According to the HTMP, the community of Ancaster had a population of 33,170 in 2006. This is expected to increase to approximately 36,000 by 2011 and 39,000 by 2031. During the same period, employment is expected to increase from 6,000 to over 13,000 jobs. Modelling undertaken as part of the ATMP reflects these population and employment projections. It also encompasses the AEGD (southeast of Ancaster) which is projected to contain over 28,000 jobs by 2031.

The Ancaster Transportation Master Plan (ATMP) started with a review of recommendations in a prior transportation study (Ancaster Comprehensive Transportation Study, 2001) and the 2007 Hamilton Transportation Master Plan (HTMP). It then compared these recommendations against existing conditions (a "Do-Nothing" scenario) and, either adopted, rejected or modified them to support Ancaster's transportation network.

The study was also coordinated with other planning strategies, including the Ontario Places to Grow Act (2005), the Growth Related Integrated Development Strategy (GRIDS) (2006), Vision 2020 (1992), the Rural Hamilton Official Plan (2006), and the Urban Hamilton Official Plan (2009). Findings from the Airport Employment Growth District (2010) study were incorporated as well those from the City's Rapid Transit Feasibility Study (2007).

The community of Ancaster is active and engaged. They value the heritage and cultural assets in their community. With this in mind, the specific objectives of the ATMP study were established to:

- Identify mobility needs for people and goods that are consistent with Ancaster values;
- Identify opportunities and targets for transportation mode choices, including public transit, cycling and pedestrian facilities;
- Identify infrastructure improvements that are sensitive to the community character, including the existing heritage features;
- Develop a transportation strategy that supports Ancaster's urban land uses;
- Integrate policies, programs, funding and infrastructure needs;
- Develop a Transportation Master Plan for Ancaster; and
- Satisfy Phases 1 & 2 of the Municipal Class EA process.

Ancaster is located in the southwest quadrant of the City of Hamilton. The study area is bounded to the north by the Niagara Escarpment, Jerseyville Road, and the section of Highway 403 between Trinity Road/Highway 52 and Shaver Road, and to the south by Garner Road and Book Road. The

western boundary is formed by Trinity Road/ Highway 52 and the eastern limit is a utility corridor that roughly extends from Scenic Drive to Glancaster Road. The study area is characterized as a mix of residential, commercial, industrial, institutional, open space, vacant and agricultural land uses.

Existing roads within the study area are primarily two lane and four lane arterial and collector roadways with the exception of Highway 403 and Highway 6 which are provincial highways, and the Lincoln M. Alexander Parkway. Transit service has grown over the past number of years, but is fairly limited. Cycling, pedestrian and trails facilities are also limited due to the natural barriers and/or missing connections; but recent plans have been approved to address these issues.

Recommendations from a number of studies for roads, transit, cycling, and goods movement were considered as part of this study. These recommendations, combined with input from various stakeholders, residents, and the City of Hamilton's Technical Advisory Committee helped shape the analysis. The public consultation program for the study included stakeholder meetings, a public information centre and numerous meetings with community groups such as the Ancaster Community Council, the Ancaster Heritage Village and Preserve Ancaster Village.

Specific transportation goals identified for the Ancaster transportation network were incorporated into the proposed network scenarios and include:

- Reduce commuter traffic infiltration and congestion:
    - 2006 single occupant vehicles mode split at 69% with a target to reduce to 52% by 2031;
    - 2006 auto passenger mode split is 11% with a target to maintain or increase this by 2031;
- Increase transit mode share:
    - 2006 transit mode split at 3% with a target of 12% by 2031;
- Provide facilities for alternative modes of transportation (e.g. walking and cycling):
    - 2006 walking/cycling mode split at 5% with a target of 15% by 2031;
- Involve a range of Transportation Demand Management (TDM) measures (carpooling, tele-work, etc.) and promote Active Modes (walking, cycling, etc.).

As the ATMP recommendations are implemented, the City should monitor progress on a regular basis to ensure that new transit service, walking/cycling infrastructure and related TDM programs are effective toward achieving these goals.

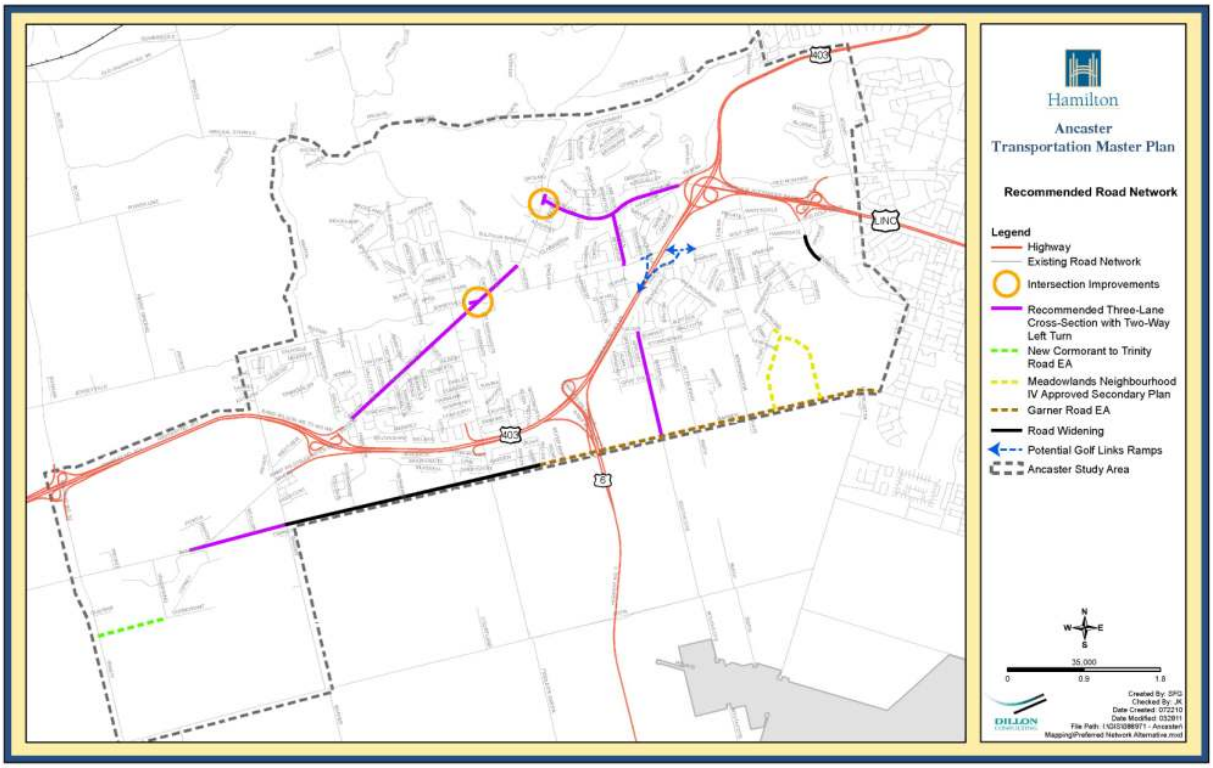
The City of Hamilton's transportation model was used to determine travel demand needs in the study area, factoring in the above mode share targets. Problem areas were identified and addressed through the development of twelve (12) possible network alternatives for Ancaster, including existing conditions (i.e. a "do nothing" alternative).

The study team heard from a tremendously engaged citizenry over the course of the study which had an impact on the outcome. Key comments received from the public throughout this study indicated:

- Significant concern regarding proposed arterial road widenings, roundabouts and centre two-way left turn lanes;
- A need to maintain community and historical village character;
- Willingness on residents' part to accept existing level of service for transportation;
- A need to address Highway 403 congestion/cut through traffic;
- A need to improve direct access to Highway 403; and
- A need to improve pedestrian and cycling connects.

Consistent with the Municipal Class EA process, the proposed network scenarios were evaluated according to a number of criteria related to transportation service, cost, engineering, socio-economics, cultural environment, and natural environment factors. All identified scenarios were examined for the 2031 horizon year to determine a Recommended Scenario.

Based on the evaluation criteria, Scenario 12 was ranked the highest of all scenarios and was chosen as the preferred network alternative. The figure below highlights the roadway improvements for Scenario 12.

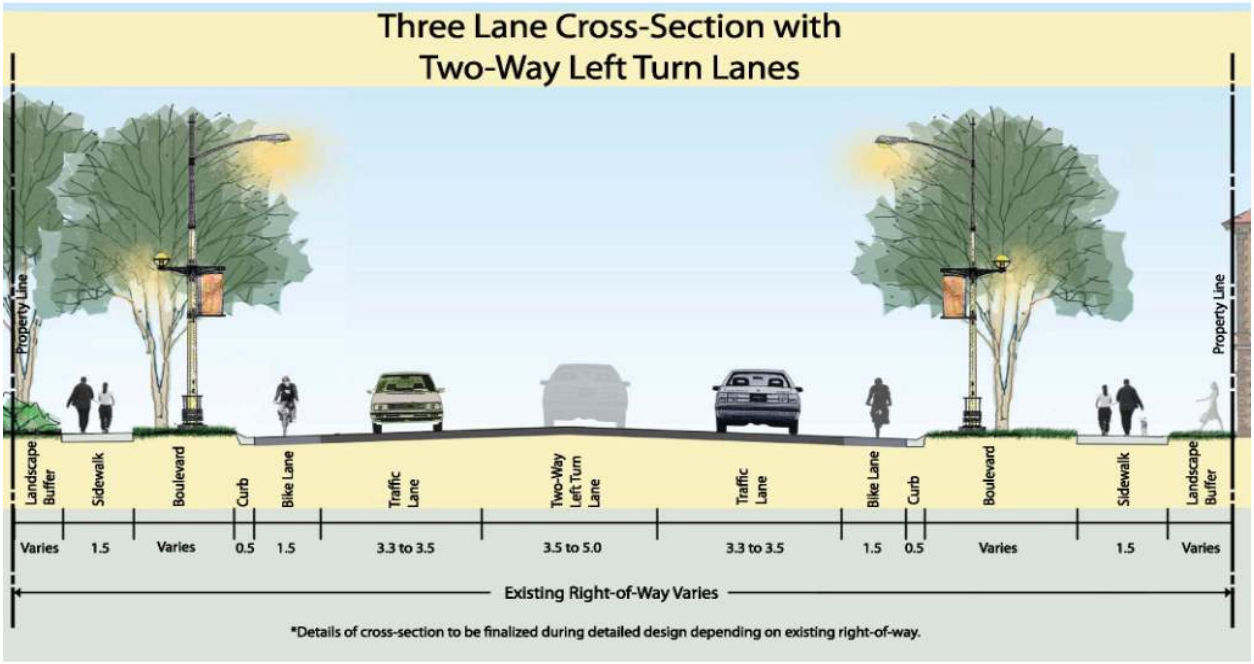


Its primary benefits include:

- Better utilization of existing roadway capacity by adding two-way left turn lanes to accommodate growth (population and employment);
- Ability to maintain community and historical village character; and
- Ability to promote active transportation by adding bike lanes and sidewalks.

Many of the roadway improvements recommended in Scenario 12 include use of a three-lane cross-section (i.e. one lane in each direction with two-way left turn lane), where feasible depending on the right-of-way available. A typical road cross section for the two-way left turn lane is illustrated in the next **Figure**. For roads identified within Scenario 12 sidewalks are recommended to be in place on both sides of the road as well as cycling lanes where identified in Hamilton's Cycling Master Plan, *Shifting Gears 2009*.

The list of recommended projects resulting from the ATMP is included in the following table and described below:



- Three lane cross-section including a centre two-way left turn lane, where feasible depending on the right-of-way, on sections of Wilson Street, Rousseaux Street, Mohawk Road, McNiven Road, Southcote Road and Garner Road (between Highway 2/Wilson Street and 50m west of Shaver Road);
- Widening Garner Road to four lanes between 50m west of Shaver Road and 50m east of Miller Drive;
- Widening Stone Church Road to four lanes between Harrogate Drive and Stonehenge Drive.

Road Name	From	To	Length (km)	Description of Works	Period	Anticipated Timing	Trigger	Project Cost (million)	DC Share %age	DC Share Amount (million)	Capital Project Share (million)	EA Schedule
New E/W Road (Ancaster)	Tradewind Dr ive/ Cormorant Road	Trinity Road	0.81	New Two-Lane Collector Road	Short	2011-2016	Development - Industrial Park	$1.9	100	$1.9	$0.0	B
Garner Road	Hwy 2 (Wilson St.)	50m west of Shaver Road	0.72	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Development - AEGD	$1.4	71	$1.0	$0.4	B
Golf Links Road	McNiven Road	Kitty Murray Lane	0.84	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Construction of Golf Links Ramps to Hwy 403	TBD	-	-	-	TBD
Golf Links Road	Kitty Murray Lane	Stone Church Road	-	Two Intersection Improvements (Martindale, Cloverleaf)	Long	Beyond 2021	Construction of Golf Links Ramps to Hwy 403	TBD	-	-	-	TBD
McNiven Road	Rousseaux Street	Golf Links Road	0.63	Road Widening to Three-Lanes with Two-way Left-turn Lane	Long	Beyond 2021	Development	$1.9	60	$1.1	$0.8	**B**
* Rousseaux Street/Mohawk Road	Wilson Street	McNiven Road	0.88	Road Widening to Three-Lanes with Two-way Left-turn Lane	Short	2011-2016	-	$2.6	0	$0.0	$2.6	B *
Rousseaux Street/ Wilson Street Intersection	-	-	-	Interim Intersection Improvements (slight modifications to existing)	Short	2011-2016	-	$0.5	0	$0.0	$0.5	B
Wilson Street/ Jerseyville Road Intersection	-	-	-	Single Lane Roundabout	Medium	2017-2021	-	$0.6	0	$0.0	$0.6	**B**
Stone Church Road	Harrogate Drive	Stonehenge Drive	0.34	Road Widening to Four-Lanes	Long	Beyond 2021	Development	$1.0	0	$0.0	$1.0	B
Garner Road	50m west of Shaver Road	50m east of Miller Dr.	3.17	Road Widening to Four-Lanes with Bike Lanes	Medium	2017-2021	Development - AEGD	$9.7	71	$6.9	$2.8	C
* Mohawk Road	McNiven Road	Hwy 403	1.30	Road Widening to Three-Lanes with Two-way Left-turn Lane	Short	2011-2016	-	$3.9	60	$2.3	$1.6	C
Rousseaux Street/ Wilson Street Intersection	-	-	-	Double Lane Roundabout	Medium	2017-2021	-	$2.6	0	$0.0	$2.6	**C**
Southcote Road	Calder Street	Garner Road	1.26	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Development	$3.4	60	$2.1	$1.4	C

Road Name	From	To	Length (km)	Description of Works	Period	Anticipated Timing	Trigger	Project Cost (million)	DC Share %age	DC Share Amount (million)	Capital Project Share (million)	EA Schedule
Wilson Street	Hamilton Dr	50m west of Halson Street	2.60	Two-way Left-turn Lane	Short	2011-2016	-	$7.8	85	$6.6	$1.2	C
Total								**$34.7**		**$21.9**	**$12.8**	

" * " when considering projects, Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project, under Schedule C.

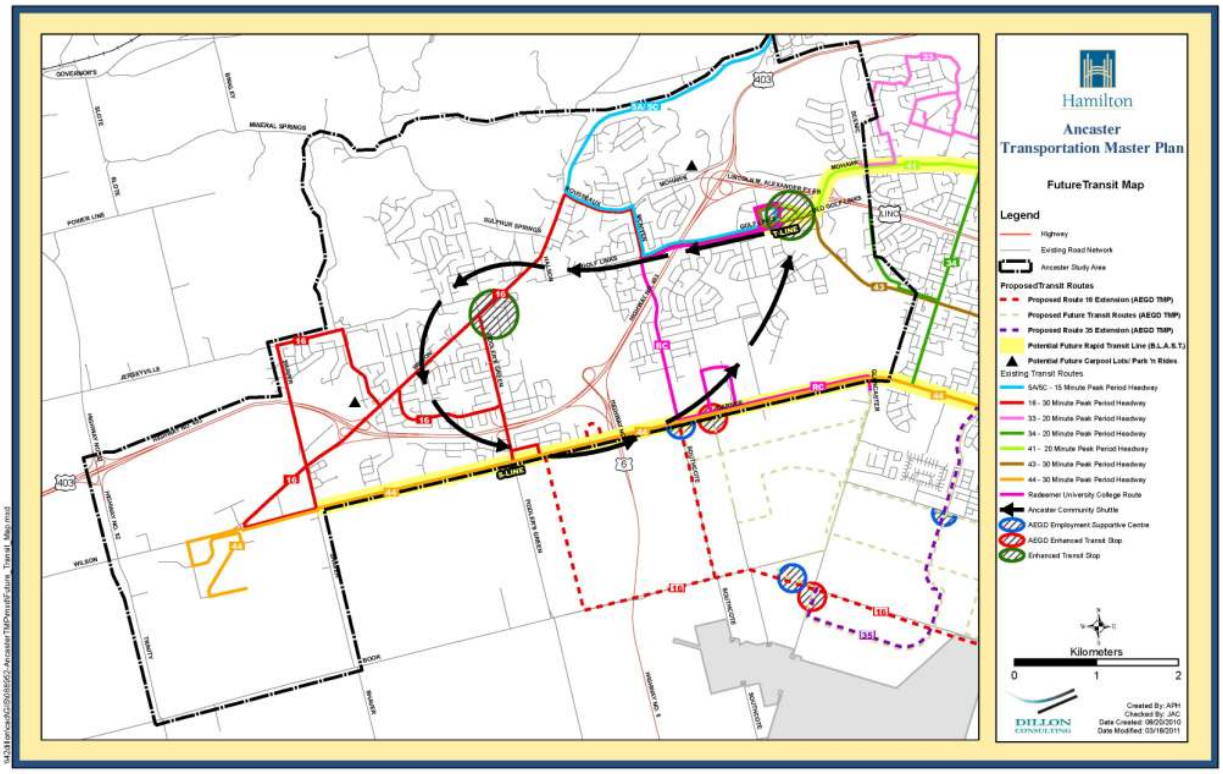
" TBD " To be determined in conjunction with the On & Off ramp at Golf Links Road

Further studies to be undertaken (Phases 3 & 4) for Schedule C projects

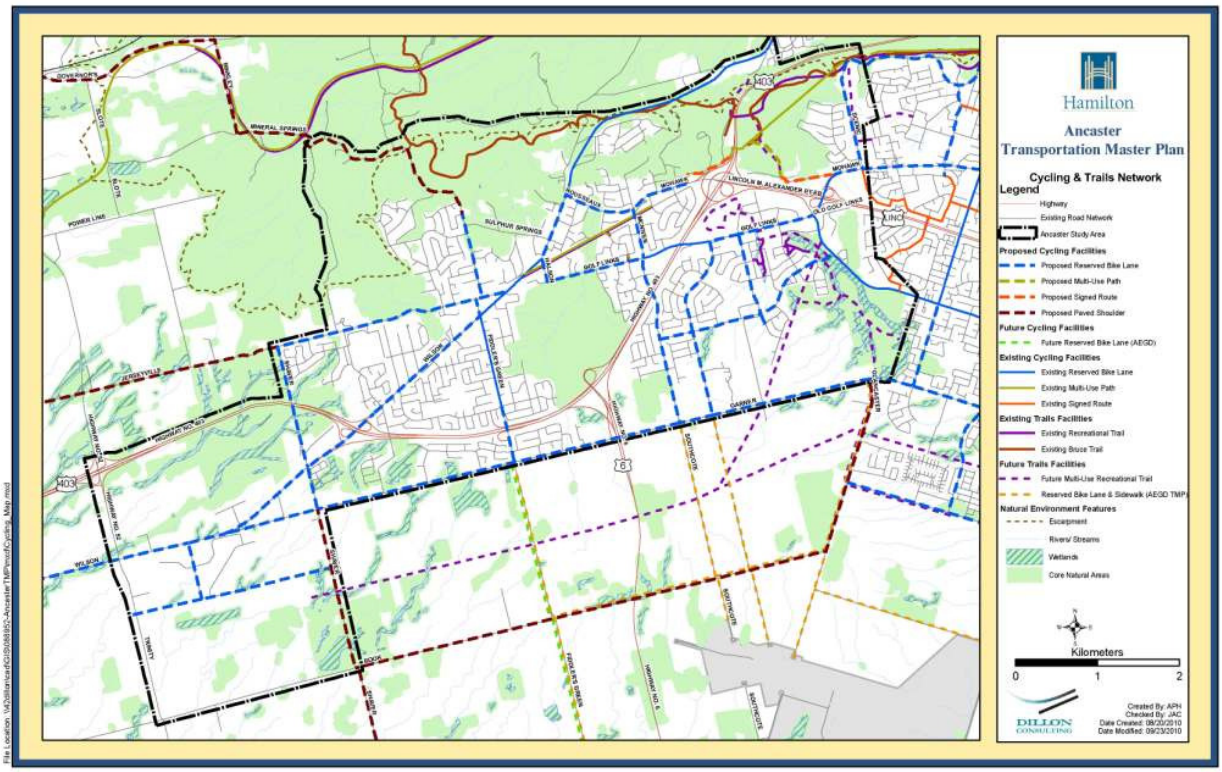
- New collector roads in Meadowlands and Ancaster Industrial Park developments;
- Two lane roundabout at the intersection of Wilson Street and Rousseaux Street, as the long-term solution. An interim traffic signal option is included in the plan, along with an additional southbound left turn lane to the exiting configuration;
- Single lane roundabout at the intersection of Wilson Street and Jerseyville Road;
- Sidewalks on both sides of the road for the above-noted projects, where feasible;
- Cycling lanes where identified in *Hamilton's Cycling Master Plan – Shifting Gears 2009*;
- Potential Highway 403 Road Ramps at Golf Links Road (dependent on results of ongoing MTO studies).

To supplement the infrastructure recommendations for the preferred road network a transportation strategy was developed which includes:

- Transit recommendations for increased service, including an Ancaster community shuttle to improve connections between important transit nodes and two. Enhanced transit stops, as illustrated in the next Figure.



- Transportation Demand Management (TDM) measures and guidelines; and
- Cycling/Pedestrian/Trails networks to provide multi-modal connections and other transportation-related infrastructure, as illustrated in the next Figure.



The addition of Highway 403 ramps was examined as part of the ATMP. Both ramp options provide greater egress/access from/to Ancaster. However it was found that a connection at Golf Links Road would provide a greater benefit to both Ancaster and Meadowlands residents travelling to/from the west on Highway 403 than ramps at Mohawk Road.

At the time of writing, a separate technical study was underway with coordination between the City and the Ministry of Transportation Ontario (MTO). Additional ramps were being considered. Any recommendation for additional connections to Highway 403 from the Ancaster area would need to be approved by the MTO.

Maintaining the historic character of Ancaster was identified as a key priority by residents throughout this study and was used in the development and selection of the Recommended Scenario. The ongoing Ancaster Community Node Secondary Plan will further address the historic character of Ancaster and will include policies related to heritage preservation.

The implementation plan recommended within the ATMP outlines the projects and programs needed to meet transportation goals by 2031. Each project identified is subject to budgetary review, approvals and continued priorities for the City based on new developments. As projects and programs are implemented, the City should monitor progress to ensure that desired outcomes for the transportation system are reached: supporting long-term growth in Ancaster in a safe, efficient, sustainable and environmentally-sound manner.

The following pages contain the City of Hamilton Public Works Committee amendments to the Ancaster Transportation Master Plan adopted April 18, 2011 and the City of Hamilton Council approval of the Public Works Committee report, dated April 27, 2011.

CITY OF HAMILTON
MOTION

Committee Date: April 18, 2011

MOVED BY COUNCILLOR FERGUSON.....

SECONDED BY COUNCILLOR .....

That Report (PW11027) and its Appendices be amended by the addition of the following subsections to read as follows:

Ancaster Transportation Master Plan (PW11027) (Wards 1 & 12)

(g) That the preferred solution of a roundabout at the intersection of Wilson Street and Jerseyville Road be elevated to a Schedule C in conjunction with the Wilson Street improvement project,

(h) That the preferred solution of a roundabout at Rousseaux Street and Wilson Street not be considered in the current Ancaster Transportation Master Plan,

(i) That the City continue best efforts to encourage the MTO to construct west bound access to the 403 at Main Street West in Hamilton and Mohawk road or as an alternative Golf Links Road in Ancaster.

(j) That the preferred improvements for McNiven Road between Golf Link Road and Mohawk Road be elevated to a Schedule C project

(k) That two pedestrian crossings be provided on Wilson Street during Phases 3 & 4 of the Municipal Class EA process for the Wilson Street project.

CITY COUNCIL
M I N U T E S

Wednesday, April 27, 2011
7:00 p.m.
Council Chambers
Hamilton City Hall
71 Main Street West

Present: Mayor R. Bratina

Councillors B. Clark, C. Collins, J. Farr, L. Ferguson, T. Jackson, B. Johnson, S. Merulla, J. Partridge, R. Pasuta, M. Pearson, R. Powers, T. Whitehead, S. Duvall, B. McHattie, B. Morelli

Mayor Bratina called the meeting to order and called upon Rev. Dr. Philip Wilson, Lead Pastor of Trinity Presbyterian Church in Hamilton, to lead Council in prayer.

APPROVAL OF THE AGENDA

The Clerk advised of the following changes to the agenda:

1. ADDED COMMUNICATIONS

5.13 Correspondence from Joe Minor respecting the active and on-going spill of a persistent bioaccumulative toxic pollutant (pfos) exiting City Property (John C. Munro/Hamilton International Airport)

Recommendation: Be referred to the General Manager of Planning for a report to the General Issues Committee

5.14 Correspondence from Peter Hutton, Chair, Waste Reduction Task Force, expressing support to keep the option of bi-weekly waste collection on the table for further discussion (Item 5 of Public Works Committee Report 11-006)

Recommendation: Be received.

GENERAL ISSUES COMMITTEE REPORT 11-012

(Bratina/Partridge)
That the TWELFTH Report of the General Issues Committee be adopted, and the information section received. **CARRIED**

PUBLIC WORKS COMMITTEE 11-006

Item 5 Waste Collection and Recycling Processing Procurement Processes for 2013-2020 (PW11030) (City Wide)

(Powers/McHattie)
That Item 5 respecting Waste Collection and Recycling Processing Procurement Processes for 2013-2020 be referred to the General Issues Committee for further discussion following the Solid Waste Management Master Plan Workshop scheduled for June 20, 2011.

The Referral Motion was **DEFEATED** on the following recorded vote:

Yeas:	Clark, Johnson, McHattie, Partridge, Pasuta, Pearson, Powers
Total Yeas:	7
Nays:	Bratina, Collins, Duvall, Farr, Ferguson, Jackson, Merulla, Morelli, Whitehead
Total Nays:	9

The Main Motion was **DEFEATED** on the following recorded vote:

Yeas:	Collins, Duvall, Farr, Ferguson, Jackson, Merulla, Morelli, Whitehead
Total Yeas:	8
Nays:	Bratina, Clark, Johnson, McHattie, Partridge, Pasuta, Pearson, Powers
Total Nays:	8

(Powers/Pasuta)
That the SIXTH Report of the Public Works Committee be adopted, and the information section received. **CARRIED**

PLANNING COMMITTEE REPORT 11-008

(Clark/Whitehead)
That the EIGHTH Report of the Planning Committee be adopted, and the information section received. **CARRIED**

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APPENDICES

1.0 INTRODUCTION

1.1 Purpose

The City of Hamilton retained Dillon Consulting Limited in 2008 to complete a Transportation Master Plan for the community of Ancaster to identify improvements to the existing transportation system that would support the mobility needs of Ancaster's residents, businesses and visitors to 2031 and result in a more liveable community.

The community of Ancaster, located in the City of Hamilton, has experienced rapid growth since the mid-nineties. This has caused traffic volumes to continue to increase, resulting in congestion on arterial and collector roadways and traffic infiltration into residential neighbourhoods. Between 2001 and 2006, the population increased from 27,000 to 33,000 in 2006, an increase of over 20%. During the same time period, Hamilton's total population increased by less than 3%, from 490,000 to 505,000. The significant population increase in Ancaster is primarily due to new low-density residential growth and has resulted in a significant strain on the community's transportation network. It is anticipated Ancaster will continue to grow, reaching a projected population of 40,000 by 2031.

The City completed a city-wide Transportation Master Plan (HTMP) in 2007, which identified a number of capacity improvements to the existing transportation network in Ancaster. The purpose of the Ancaster Transportation Master Plan (ATMP) is to review the recommendations made in the HTMP and develop a transportation network and strategy that address existing and future needs to the extent possible.

The HTMP identified a number of goals for the Ancaster transportation network, which were considered in the development of this TMP and include:

- Reduce auto trips by 20% by 2031;
- Achieve a transit mode share of 12% by 2031; and
- Involve a range of Transportation Demand Management (TDM) measures and promote Active Modes (walking, cycling, etc.).

Based on input received from stakeholders and the project team, the following study objectives were developed:

- Identify mobility needs for people and goods that are consistent with Ancaster values;
- Identify opportunities and realistic targets for transportation mode choices, including public transit, cycling and pedestrian facilities;
- Develop a transportation strategy that supports Ancaster's urban land uses;
- Integrate policies, programs, funding and infrastructure needs; and

- Identify infrastructure improvements that are sensitive to the community character, including the existing heritage features.

The Ancaster TMP (ATMP) identifies improvements to the transportation network that address the needs of transit, pedestrians, cycling, as well as automobiles for the short (2016), medium (2021) and long term (2031).

1.2 Background

Transportation decisions cannot be made in isolation and must consider existing land use planning policies, growth forecasts and other infrastructure planned for the area. A number of provincial and municipal policies were reviewed as part of this study as well as other relevant studies currently in the area and are documented in the Phase 1 Background Report (**Appendix A**). The Phase 1 Report provides a summary of the policies and studies reviewed, as well as key findings and impacts to the ATMP including:

- City of Hamilton Transportation Master Plan (2007). Relevant recommendations from this study are summarized in Section 2 of this report
- Growth Plan for the Greater Golden Horseshoe (2006). The Plan was developed under the Places to Grow Act (2005) and provides a policy framework for implementing the Province's plans for growth in the region to 2031. Growth is primarily planned through intensification of existing built-up areas;
- City of Hamilton Growth Related Integrated Development Strategy (GRIDS) (2006). GRIDS was adopted by Council in 2006 and is a planning process that helps to determine where the future growth of the City will take place over the next 30 or more years;
- Urban Hamilton Official Plan (2009) and Rural Hamilton Official Plan (2006). The Official Plans outlined the various land uses within the City and related policies.
- Ancaster Comprehensive Transportation Study (2000). This study provides an overall transportation plan intended to guide development, capital budgeting and transportation policies in the Community of Ancaster;
- Ancaster Community Plan (2005). The plan was prepared by the Ancaster Community Council and is intended to be a "living document", with the purpose of providing guidance to official City of Hamilton documents. The plan included a number of transportation recommendations;
- Red Hill Valley Project, which included construction of the Red Hill Creek Expressway. The expressway was completed in November 2007;
- North Glanbrook Industrial Business Park Transportation Master Plan. The plan was completed to support the development of the lands in accordance with the current approved land uses identified in the Secondary Plan for the area;
- South Mountain Transportation Master Plan Update (March 2006). The plan updated the approved 2000 South Mountain Transportation Master Plan;

- Hamilton Goods Movement Study. The primary objective of the study was to examine the City's technical potential to become an efficient, integrated and sustainable regional intermodal transportation centre within the Golden Horseshoe and the Greater Toronto Area-Windsor-Sarnia Trade Corridor;
- Truck Route Master Plan Review Study. The study incorporated a comprehensive system-wide review of the existing truck routes, traffic patterns as well as truck interaction with other modes of transportation, businesses and residents;
- Niagara to GTA Corridor Planning and Environmental Assessment Study, being completed by the Ministry of Transportation. The study was completed as part of the Growth Plan for the Greater Golden Horseshoe in order to provide for the efficient movement of people and goods to meet the objectives of the province's Growth Plan. At the time of writing the study was in its 90-day review period;
- Rapid Transit Feasibility Study. The study identified general opportunities and constraints with respect to providing rapid transit in Hamilton and investigated major considerations for rapid transit planning;
- Metrolinx Regional Transportation Plan for the Greater Toronto Hamilton Area. The plan is for a seamless, integrated transportation network, with a real focus on public transit, so that people and businesses can move more easily from York and Durham, through Toronto, Peel, Halton and onward to Hamilton;
- Hamilton Airport Employment Growth District (AEGD): By 2031 planned growth in the AEGD, which was not included in the HTMP, is expected to reach 28,000 employees. This growth will result in increased traffic associated with the growth district and a decrease in travel to and from downtown Hamilton;
- Intersection Assessment – Wilson Street and Rousseaux Street. The City completed a technical study to investigate options for improving the operational performance of the intersection of Wilson Street and Rousseaux Street;
- Intersection Improvements – Stone Church Road West and Omni Boulevard. The study was conducted in response to a neighbourhood traffic review conducted in 2003. The review was a result of concern expressed by local residents regarding existing traffic operations and safety issues within the Gurnett neighbourhood and highlighted opportunities for improvement and identified site-specific measures for the area to address local traffic and safety problems.

A City Wide Secondary Plan review carried out in 2009. The review identified priority areas for future Secondary Plans based on a number of different criteria, including: conformity with provincial planning documents; coordination with other City initiatives and projects; the need for detailed planning analysis; the desire to create complete and sustainable communities; and, the need to protect and revitalize valuable nature and cultural resources. The Ancaster Community Node (Wilson Street corridor from Hamilton Drive/ Meadowbrook Drive to Rousseaux Street) was identified as a priority area. The City initiated the Ancaster Community Node Secondary Plan in early 2011.

While the TMP recommends capital improvements for the overall transportation system in Ancaster, the Ancaster Community Node Secondary Plan will build on some of the recommendations of the TMP from a land use perspective and will include policies regarding heritage conservation and pedestrian-oriented activities.

1.3 Scope of Work

The ATMP study was initiated in 2008, with the scope and timelines revised in 2009 due in large part to input received from the Ministry of Transportation of Ontario (MTO) regarding additional access points to Highway 403 as well as input received from stakeholders regarding potential alternatives. The input received was used to revise the alternatives and identify additional ones for consideration. The study was completed following the Municipal Class Environmental Assessment process for Master Plans.

The scope for this study consisted of the following:

- Develop a sub-area transportation model for Ancaster, incorporating forecasts and travel demand related to the Hamilton Airport Employment Growth District;
- Assess transportation infrastructure requirements for the existing and expansion areas;
- Undertake traffic operational modelling to determine more detailed intersection impacts to the study area roadway network;
- Develop and evaluate alternative networks to satisfy future transportation demands within the study area;
- Identify appropriate cross-sections for key transportation corridors; and
- Identify transit, bicycle and pedestrian objectives and plan for related infrastructure requirements;
- Identify transportation demand management objectives and required policies; and
- Develop a financial strategy and staging program.

2. RELATIONSHIP TO HAMILTON TRANSPORTATION MASTER PLAN

The City-wide HTMP was completed in 2007 as part of the Growth Related Integrated Development Strategy, along with the Water/Wastewater and Stormwater Master Plans.

The overall purpose of the HTMP was to develop policies and strategies for the transportation network over the next 30 years. This network included roads, transit, cycling, walking facilities, and the City's connections to rail, marine and aviation facilities. Results of the HTMP are being used to develop new transportation and land use policies for the City's Official Plan and the Development Charges By-law Review. The final recommendations for the HTMP (May, 2007) reflect the Council endorsed "Nodes and Corridors" option as the preferred growth scenario for the City, as approved by Council on May 24, 2006. This growth concept is based on directing growth to an interconnected system of nodes (central focus of community activity) and corridors (mixed use, transit friendly linkages).

Recommendations in the HTMP are intended to aid the City in achieving the objectives of Vision 2020. The recommendations also reflect the nine Strategic Directions identified to guide development decisions as part of the GRIDS process, including Direction #6 - Expand transportation options that encourage travel by foot, bike and transit and enhance efficient inter-regional transportation connections.

Key elements of the HTMP include:

- Establishing a Bus Rapid Transit (BRT) network consisting of three primary spines and other interconnecting routes: A Lower City east-west corridor between McMaster University and Eastgate Square; a Central North-South Corridor on James Street and Upper James via Mohawk College; and, a Mountain East-West Corridor on the Lincoln Alexander Parkway (LINC) or parallel facility. The staged implementation of BRT could begin with updating and enhancing the existing B-Line, located on the Lower City east-west corridor;
- Establishing other priority transit routes between major nodes;
- Constructing 120 km of new on-street bike lanes and over 140 km of new multi-use paths;
- Introducing a series of road improvements to reduce localized congestion and improve access to employment lands and new communities;
- Considering expansion of the commuter rail and regional bus system to integrate with land use intensification policy objectives;
- Considering a potential incline railway near Wentworth Street, which can serve to reduce the barrier effect of the Escarpment for cyclists and pedestrians while potentially becoming a major tourist attraction for the City; and
- Focusing on continued improvement of the road system to address existing capacity issues and to ensure access for existing and new employment areas.

2.1 HTMP Guiding Principles and Travel Targets

The HTMP includes a number of guiding principles for transportation planning within Hamilton that were used as building blocks for the ATMP study:

- Offer safe and convenient access for individuals to meet their daily needs.
- Offer a choice of integrated travel modes, emphasizing active transportation, public transit and carpooling.
- Enhance the livability of neighbourhoods and rural areas.
- Encourage a more compact urban form, land use intensification and transit-supportive node and corridor development.
- Protect the environment by minimizing impacts on air, water, land and natural resources.
- Support local businesses and the community's economic development.
- Operate efficiently and be affordable to the City and its citizens.

The HTMP also includes a number of objectives and guiding principles for the development of its transportation networks, policies, and programs, which are included in ***Table 1***.

Table 1 – Statement of Transportation Objectives and Guiding Principles

In 2020, the City of Hamilton's transportation system will:	
Objective 1	**Offer safe and convenient access for individuals to meet their daily needs**
Principle 1(a)	Transportation facilities and services should be safe, secure and barrier-free
Principle 1(b)	Each transportation mode should have an acceptable level of service
Principle 1(c)	Non-travel alternatives and shorter trips should be encouraged
Objective 2	**Offer a choice of integrated travel modes, emphasizing active transportation, public transit and carpooling**
Principle 2(a)	Alternatives to single-occupant vehicle travel should be practical and attractive
Principle 2(b)	Transportation facilities and services should be continuous and seamlessly integrated
Principle 2(c)	The health benefits of active lifestyles should be recognized and promoted
Objective 3	**Enhance the livability of neighbourhoods and rural areas**
Principle 3(a)	Transportation facilities should reflect and complement their community context
Principle 3(b)	Noise and other undesirable impacts of traffic on residential areas should be minimized

In 2020, the City of Hamilton's transportation system will:	
Objective 4	**Encourage a more compact urban form, land use intensification and transit-supportive node and corridor development**
Principle 4(a)	Investment in transit-supportive land uses should be encouraged by quality public transit services and facilities
Principle 4(b)	Transportation facilities should meet current needs while remaining adaptable to those of the future
Principle 4(c)	Zoning, urban design and parking management strategies should minimize land consumed by automobile travel
Objective 5	**Protect the environment by minimizing impacts on air, water, land and natural resources**
Principle 5(a)	The use of greenspace for new infrastructure should be minimized
Principle 5(b)	Transportation technologies and behaviours should reduce energy consumption and air emissions
Principle 5(c)	The impacts of surface water runoff from transportation facilities should be minimized
Objective 6	**Support local businesses and the community's economic development**
Principle 6(a)	The efficiency of goods movement to, from and within the city should be maximized
Principle 6(b)	Businesses and institutions should remain accessible to employees and visitors
Objective 7	**Operate efficiently and be affordable to the City and its citizens**
Principle 7(a)	Maximum value should be extracted from existing facilities and services
Principle 7(b)	Decisions should take into account the life-cycle costs of transportation facilities and services
Principle 7(c)	Transportation funding opportunities involving other governments, the private sector and individual users should be considered

Source: 2007 City of Hamilton Transportation Master Plan

In addition, the HTMP identified the following transportation targets of daily trips made by single-occupancy vehicle, transit and cycling/walking. These targets are shown in ***Table 2***.

Table 2 – Transportation Targets (2007 Hamilton TMP)

	Current Situation (based on 2001 data)	Potential Near Term Scenario (based on a goal of reducing auto vehicle-kilometres by 10% compared to 2001)	Potential Long Term Scenario (based on a goal of reducing auto vehicle-kilometres by 20% compared to 2001)
Estimated daily vehicle kilometres of travel by Hamilton residents	4.8 million km	4.3 million km	3.8 million km
Share of daily trips made by single-occupant drivers	68%	58%	52%
Share of daily trips made by using municipal transit	5%	9%	12%
Share of daily trips made by using walking or cycling	6%	10%	15%
Annual transit rides per capita (City-wide) (1)	40	60	80-100

Source: 2007 City of Hamilton Transportation Master Plan

Table 3, below contrasts Ancaster's mode split in 2006, with that of the City of Hamilton.

Table 3 – 2006 Mode Split

	City	Ancaster	2031 Targets
MODE SHARE	**100%**	**100%**	
Auto Driver	63%	69%	52%
Auto Passenger	12%	11%	>=11%
Transit (including GO Rail)	8%	3%	12%
Walking /Cycling	10%	5%	15%
Other	6%	11%	10%

Source: 2006 TTS data
"Other" mode share category includes motorcycles, taxis, and school buses.

The table above illustrates 2006 AM peak period travel patterns in the City of Hamilton and in the Ancaster area. The City-wide 2006 single occupant driver mode split was 69%; equivalent to the City-wide average. Conversely, transit use in the Ancaster area was only 3%, while the City-wide average was 8%. This means that achieving higher mode split targets in the Ancaster area will be more difficult than in more urbanized areas of Hamilton, especially in terms of transit and

alternative transportation modes. As with any plan, monitoring of results is essential to ensure that progress is being made. As the ATMP recommendations are implemented, the City should monitor progress on a regular basis to ensure that new transit service, walking/cycling infrastructure and related TDM programs are effective toward achieving these goals.

2.1.1 HTMP Network Recommendations

The HTMP recommended a number of road infrastructure improvements within the Ancaster study area. This was the most recent approved plan in place and recommended road infrastructure projects specific to Ancaster were considered during the development of network alternatives for this study. The HTMP road improvements recommended within Ancaster are shown below in ***Table 4*** and ***Figure 1***.

Table 4 – HTMP Proposed Road Network Improvements

Road Name	From	To	Description of Works
New E/W Road (Ancaster)	Tradewind Dr / Cormorant Road	Trinity Road	New Road
Garner Road	Hwy 2	Glancaster Road	Road Widening and Two-way Left-turn Lane
Wilson Street / Hwy 2	Hwy 52	Hwy 53	Two-way Left-turn Lane
Golf Links Road	McNiven Road	Kitty Murray La	Two-way Left-turn Lane
Jerseyville Road	Shaver Road	Wilson Street	Two-way Left-turn Lane
McNiven Road	Rousseaux Street	Golf Links Road	Road Widening
Mohawk Road	McNiven Road	Hwy 403	Road Widening
Scenic Dr.	Old City limits	Lavender Drive South Leg	Two-way Left-turn Lane
Shaver Road	Wilson Street	Garner Road	Two-way Left-turn Lane
Shaver Road	Hwy 403	Wilson Street	Conversion to urban cross-section
Southcote Road	Golf Links Road	Garner Road	Road Widening
Springbrook Road	Meadowlands Blvd	Garner Road	Two-way Left-turn Lane
Sulphur Springs Road	Wilson Street	Mansfield Dr.	Conversion to urban cross-section
Trinity Road	1 km S of Wilson Street	Hwy 403	Road Widening
Wilson Street	Hamilton Dr	just west of Halson Street	Road Widening

Hamilton

Ancaster Transportation Master Plan

Hamilton Transportation Master Plan (HTMP) Proposed Road Infrastructure Improvements (approved May 2007)

Legend

- Highway
- Existing Road Network
- Ancaster Study Area

Proposed Road Improvement

- New Road
- Road Widening
- Two-way Left-turn Lane

Figure 1

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Kilometers

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2.2 Study Framework

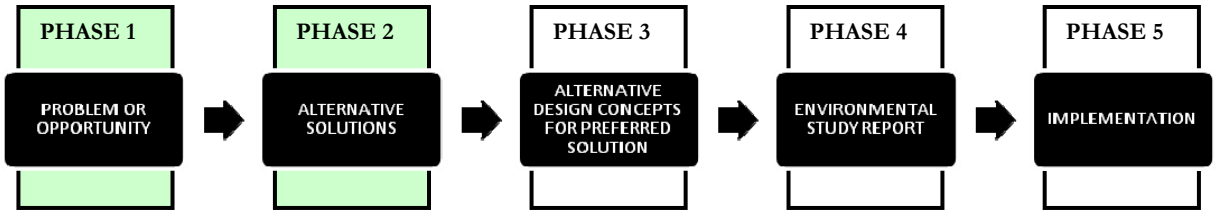
2.2.1 Municipal Class EA Process

Municipal transportation projects must meet the requirements of the Ontario *Environmental Assessment Act.* The Municipal Class Environmental Assessment, approved under the EA Act in October 2000, as amended in 2007, applies to a group or "class" of municipal projects which occur frequently and have relatively minor and predictable environmental impacts. These projects are approved under the EA Act as long as they are planned, designed and constructed according to the requirements of the Class EA document.

A Master Plan is a long-range plan that examines the whole infrastructure system and recommends a series of projects to be implemented over an extended period of time. Master Plans are not prepared to address site-specific problems such as traffic operations at individual intersections or in specific neighbourhoods. This Class EA has fulfilled the requirements of a Master Plan, Approach #2, in the Municipal Class Environmental Assessment planning process.

Integrating infrastructure needs with environmental planning principles, a Master Plan follows Phases 1 and 2 of the Class EA process (***Figure 2***).

Figure 2 – Municipal Class EA Process



Phase 1, "Problem/Opportunity" provides the justification of the need for improvements to the transportation network. Phase 2, "Alternative Solutions", consists of the identification and evaluation of alternatives to solve the problems identified in Phase 1. At the end of Phase 2, preferred solutions are combined to form the Master Plan.

The specific requirements of the Class EA document for a particular project depend on the type of project, its complexity and the significance of environmental impacts. Since a Master Plan covers Phases 1 and 2 of the Class EA process, projects that must follow all five phases of the process, such as widening an existing road where the construction value is greater than $2.7 Million, can proceed directly to Phases 3 and 4 of the Class EA process. Phase 3 includes the identification, evaluation and selection or the preferred design and Phase 4 consists of the documentation of Phases 1, 2 (including any required updates to this Master Plan) and 3 in an Environmental Study Report.

According to the project classifications included in the Class EA document, the projects included in this Master Plan are a combination of the following schedules:

- Schedule "A" projects are limited in scale and have minimal adverse environmental impacts. These projects are considered pre-approved under the Class EA and may proceed directly to

construction without following the Class EA process. An example of a Schedule "A" project is normal or emergency operations and maintenance of a roadway.

- Schedule "A+" projects are similar to Schedule "A" projects and are considered pre-approved under the Class EA, however public notification is required prior to construction. An example of such a project includes the construction of localized operational improvements, such as a turning lane at an intersection, where the construction cost is less than $2.7 Million.
- Schedule "B" projects have the potential for some adverse impacts and are approved under the EA Act provided they follow Phases 1 and 2 of the Class EA process and are "screened". An example of a Schedule "B" project is the widening of a roadway, where the construction cost is less than $2.7 Million.
- Schedule "C" projects have the potential for significant adverse environmental impacts and must follow all five phases of the Class EA process. An example of a Schedule "C" project includes the construction of a new road, where the construction value is greater than $2.7 Million.

Phases 3 and 4 of the Class EA must be completed prior to construction of any Schedule "C" projects.

This Transportation Master Plan Report has been prepared documenting the process followed and the recommendations made for the future road network.

2.3 Study Area

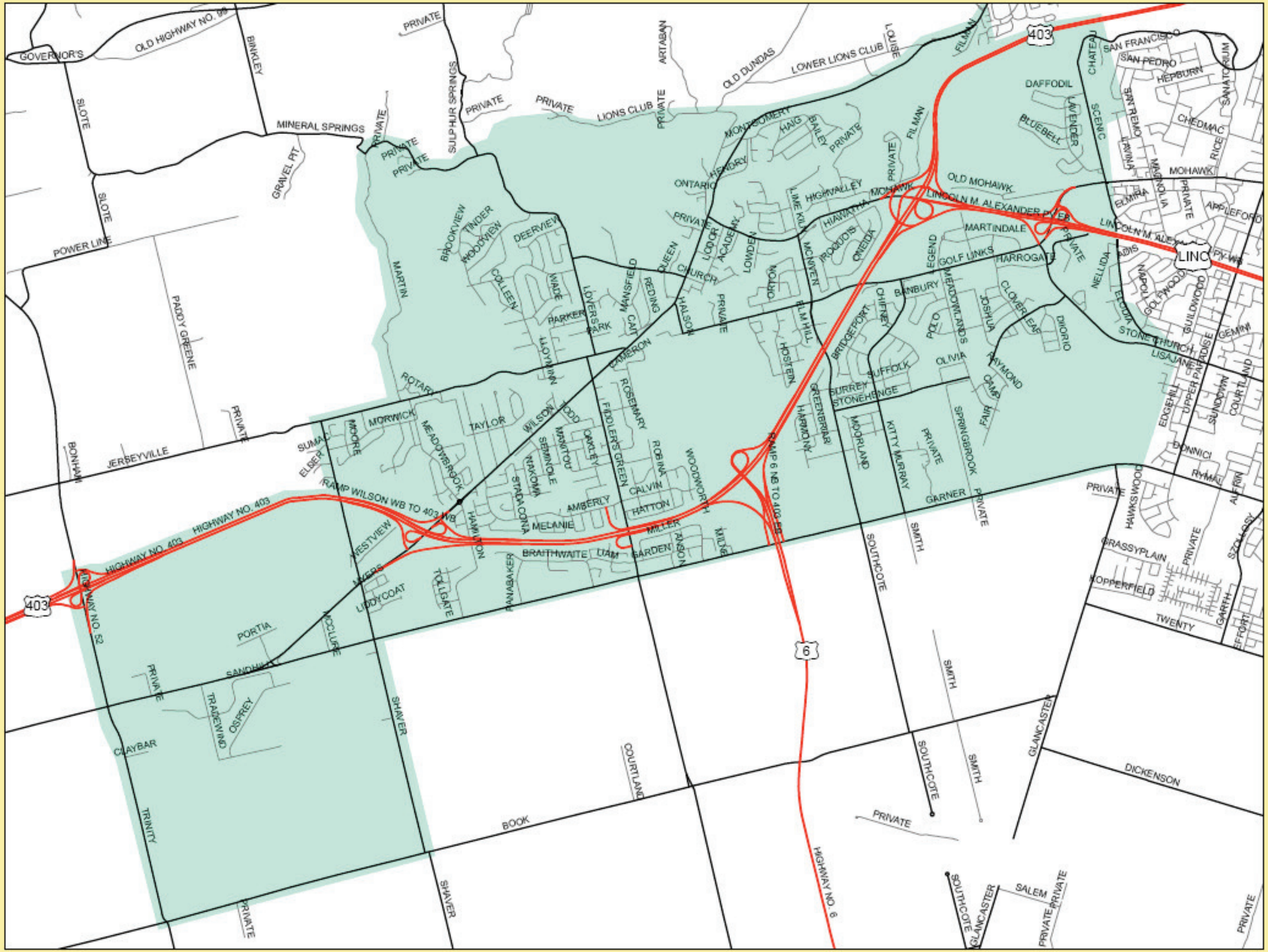
The community of Ancaster is located in the southwest quadrant of the City of Hamilton. The study area is bounded to the north by the Niagara Escarpment, Jerseyville Road, and a section of Highway 403 between Trinity Road/Highway 52 and Shaver Road, and to the south by Garner Road and Book Road. The western boundary is formed by Trinity Road/Highway 52 and the eastern limit is a utility corridor that roughly extends from Scenic Drive to Glancaster Road. The limits of the study area are illustrated in ***Figure 3***.

The study area has a mix of residential, commercial, industrial, institutional, open space, vacant and agricultural land uses. Ancaster's Village Core has many historic buildings and provides a unique mix of land uses, including residential, mixed-use, office, retail and institutional Land Use.

Hamilton

Ancaster Transportation Master Plan

Figure 3
Study Area



2.4 Problems, Opportunities and Constraints

Phase 1 of the Class EA process includes the identification of problems/opportunities. Based on input received from the City of Hamilton, Ancaster residents and stakeholders the following problems, opportunities and constraints were identified as part of the study:

Problems:

- Impacts of commuter traffic infiltration and congestion on the ability to preserve Ancaster's unique urban street character;
- Traffic operations concerns and the potential need for increased capacity on roadways and intersections within the study area; and
- Impacts of external truck traffic.

Opportunities:

- Local transit service modifications/enhancements opportunities;
- Cycling, trails and pedestrian facility enhancements opportunities; and
- Travel Demand Management opportunities within the study area (e.g., integrated parking facilities, car pool lots, etc.).

Constraints:

- Capacity issues on external road linkages (i.e., escarpment crossings, Highway 403);
- Limited network connectivity to Highway 403 (lack of westbound ramps) to provide alternative access;
- Lack of east/west network connectivity within the community;
- Traditional solution of increasing lanes on roadways could lead to higher levels of traffic congestion; and
- Proximity to the Niagara Escarpment. Capacity constraints exist on the limited number of external road linkages traversing the escarpment, including Old Dundas Road, Highway 403, and Wilson Street East. These limited routes up the Escarpment also make for challenging cycling and pedestrian connections.

2.4.1 Problem Statement

Based on the analysis completed during Phase 1, as well as input from the public and relevant agencies, the following problem/opportunity statement was developed:

> *The transportation system in Ancaster is currently experiencing several challenges including congestion, safety concerns, traffic infiltration, lack of pedestrian and cycling facilities, and need for direct access to Highway 403. The Ancaster Transportation Master Plan is being undertaken to address the concerns identified in a manner that is safe, efficient, sustainable, limits impacts to the environment, and supports the long term growth anticipated in Ancaster.*

3. EXISTING CONDITIONS

The following section describes the existing transportation infrastructure, services and programs in place in the Ancaster area.

3.1 Transportation

3.1.1 Roads

Currently, automobile use in the Ancaster area represents a significant part of trip making. Auto modal split for trips originating in Ancaster is approximately 80% during the AM peak period (2006 Transportation Tomorrow Survey (TTS). This is primarily due to the rural nature of the land use, which includes low density scattered residential use, and open space. As a result, transit service in the area is minimal as is cycling and pedestrian infrastructure.

The existing roads within the ATMP study area are primarily two lane and four lane arterial and collector roadways with the exception of Highway 403 and Highway 6 which are provincial highways, and the Lincoln M. Alexander Parkway.

A summary of roadway characteristics is identified in ***Table 5*** and illustrated in ***Figure 4***.

Table 5 – Roadway Characteristics

Direction	Roadway	Number of Lanes	Cross Section	Posted Speed	Classifications
East/West	Highway 403	Four	Rural	100 km/hr	Provincial Highway
	Lincoln M. Alexander Parkway	Four	Rural	70-90 km/hr	Parkway
	Garner Road	Two	Rural	60-80 km/hr	Major Arterial
	Golf Links Road	Two-Four	Urban	50 km/hr	Collector/Minor Arterial/Major Arterial
	Rousseaux Street/Mohawk Road	Two	Urban/ Rural	50 km/hr	Major/Minor Arterial
	Jerseyville Road	Two	Rural	50 km/hr	Minor Arterial
	Stonehenge Drive	Two	Urban	50 km/hr	Collector
North/ South	Highway 6	Two	Rural	80 km/hr	Provincial Highway
	Wilson Street	Two-Four	Urban/ Rural	50-80 km/hr	Major Arterial

Direction	Roadway	Number of Lanes	Cross Section	Posted Speed	Classifications
North/ South	Southcote Road/ McNiven Road	Two	Urban/ Rural	50 km/hr	Minor Arterial
	Fiddler's Green Road	Two	Urban/ Rural	50 km/hr	Minor Arterial
	Stone Church Road	Two	Rural	60 km/hr	Minor Arterial
	Shaver Road	Two	Rural	60 km/hr	Collector
	Trinity Road/Highway 52	Two	Rural	80 km/hr	Minor Arterial
	Kitty Murray Lane	Two	Urban	40-50 km/hr	Collector
	Lover's Lane	Two	Rural	50 km/hr	Collector

Hamilton

Ancaster Transportation Master Plan

Figure 4

Road Classifications & Existing Road Network

Legend

- Major Arterial
- Minor Arterial
- Collector
- Provincial Highway (Controlled Access)
- Parkway
- Minor Road
- Major Road
- Highway
- Ancaster Study Area

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Hamilton's new Urban Official Plan designates a number of major arterials, minor arterials and collector roads within Ancaster, as shown in ***Figure 4***.

The classification and function of Wilson Street did not change with the new Hamilton Urban Official Plan, despite the road classification being altered slightly (e.g. it is now referred to as a Major Arterial rather than an Arterial). Wilson Street's function as an arterial roadway and classification as such remains the same. The words "major" and "minor" were added as additional qualifiers for a number of roads.

A major arterial differs from a minor arterial largely based on traffic volumes and historical classifications. The "Major Arterial" classification for Wilson Street is a reflection that it is the main route through Ancaster. Road classification may describe the function of a road, but does not necessarily reflect a road's character. Wilson Street is recognized within this study as the community's historic main street and the road classification change does not suggest anything different.

3.1.2 Goods Movement

3.1.2.1 Full Time Truck Routes

In April 2010, the City of Hamilton completed a Truck Route Master Plan Study. The study purpose was to improve the efficient movement of goods in Hamilton with minimal impacts to the community and environment. The truck route system proposed within Ancaster for this study was developed in coordination with the City's Truck Route Master Plan; it is illustrated in ***Figure 5***.

The recommended truck route network, as identified in the Truck Route Master Plan, was founded on two basic principles: 1) the designation of roads as truck routes should not contradict their road classification; and 2) roads designated as truck routes should facilitate goods movement, while balancing the impacts of truck traffic with the greater interests of the community.[1] Full time truck routes in Ancaster are identified below.

East-West Truck Routes

- Highway 403
- Lincoln Alexander Parkway
- Wilson Street
- Garner Road/Rymal Road
- Jerseyville Road
- Rousseaux Street/Mohawk Road

North-South Truck Routes

- Fiddler's Green Road
- Highway 6
- Highway 52/Trinity Road

[1] April 2010, City of Hamilton Truck Route Master Plan Study, p. 22

Hamilton

Ancaster Transportation Master Plan

Figure 5

Existing Truck Routes

Legend

- Existing Road Network
- Full Time Truck Route
- Part Time Truck Route 7:00 a.m. to 7:00 p.m.
- Truck Route for Specified Users
- Ancaster Study Area

Kilometers

0 1 2

3.1.3 Cycling

The City's cycling infrastructure consists of on-street and off-street facilities, as described below.

On-Street Facilities

- Signed bike routes are designated bikeways, using signage and sometimes sharrows (pavement marking of bicycle stencil with two chevrons), where cyclists share the roadway with motor vehicle traffic (mostly low volumes) either side-by-side or single file.
- Bike lanes are bikeways where a portion of the roadway is dedicated to cycling traffic through signage, pavement marking and/or physical barriers.

Off-Street Facilities

- Multi-use Paths are off-street facilities; both paved and unpaved, designated for cyclist and pedestrian usage.

Currently, cycling and walking in Ancaster represent a minor proportion of the modal split - less than 5 percent during the AM peak period, and less than 3 percent during a 24 hour period (2006 TTS). The primary reason for this low modal split is a lack of cycling infrastructure to provide safe and convenient routes for both utilitarian and recreational cyclists combined with a lack of community recognition of the viability of cycling as a mode of transportation. In addition, the Niagara Escarpment acts as a natural barrier to cycling trips, challenging convenient travel for cyclists between Ancaster and the lower city. However, the existing bike racks on the entire HSR bus fleet help surmount this barrier.

The *Bikeways, Trails, and Parks* map distributed by the City of Hamilton identifies existing designated cycling routes in the Ancaster area. At the time of writing changes to the *Bikeways, Trails, and Parks* network were planned. Updates made in 2011 are not included in this report. Related infrastructure, current to December 2009, is illustrated in ***Figure 6***, and includes:

On-Street Routes (Designated Bike Lanes)

- Fiddler's Green Road between Amberly Boulevard and Wilson Street;
- Wilson Street between Fiddler's Green Road and Halson Street;
- Wilson Street from Rousseaux Street to Lower Lions Club Road. The route extends beyond the study area;
- Golf Links Road between Southcote Road and Kitty Murray Lane;
- Stone Church Road between Mohawk Road and Upper Paradise Road (the route extends easterly beyond the study area); and
- Mohawk Road between Stone Church Road and Old Mohawk Road.

Signed On-Street Bike Routes

- Scenic Drive, providing a connection between Mohawk Road and the Chedoke Radial Rail Trail;
- Filman Road, connecting Hiawatha Boulevard with the Chedoke Radial Rail Trail; and
- Golf Links Road between Kitty Murray Lane and Stone Church Road (note that bike lanes are anticipated for when this section of street will be reconstructed).

The existing network provides some connectivity for cyclist's within the Ancaster area. However, a much broader network of cycling lanes/trails in conjunction with cycling policies and strategies are required in order to achieve the City's targeted 15% cycling/walking daily modal split by 2021. Improvements to the cycling infrastructure were considered in the context of the City of Hamilton Cycling Master Plan – *Shifting Gears 2009*.

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Ancaster Transportation Master Plan

Figure 6

Bike Routes and Trails

Legend

- Existing Road Network
- Highway
- Ancaster Study Area
- Designated Bike Lane
- Cautionary Un-Signed Bike Route
- Signed On-Street Bike Route
- High Volume and/or Narrow Lane
- Multi-Use Path (shared with pedestrians)

Kilometers

0 1 2

3.1.4 Transit

Existing transit services in the study area are limited. Routes that provide service are Route 5 (B and C), Route 16, Route 33, Rouge 34, Route 43, Route 44 and the Redeemer University/College Shuttle. All of these routes are part of the Hamilton Street Railway (HSR) service.

Route 5 (B and C) – Delaware:	Provides service from the West Hamilton area into Ancaster along Wilson Street East. It continues service along Rousseaux Street/Mohawk Road to McNiven Road and then along Golf Links Road to provide service to the commercial centres near Martindale Crescent.
Service on Route 5: (within study area)	Monday to Friday from 6:00 AM to 1:00 AM, with no service on weekends in the study area. During weekdays buses generally run on 30 minute intervals during peak and off-peak periods.
Route 16 – Ancaster:	Provides service primarily along Wilson Street between Ancaster Business Park and Meadowlands. There is also a morning eastbound and afternoon westbound routing that connects Wilson Street to Garner Road, along Fiddler's Green and Amberly Boulevard. During weekdays, service is interlined with Route 43 Stone Church, eliminating transfers for passengers with trip ends across Hamilton's South Mountain.
Service on Route 16: (within study area)	Monday to Friday between 5:00 AM and 10:00 PM. On Saturdays, service is provided between 8:30 AM and 10:00 PM. There is no Sunday service. During weekdays, buses generally run at 30 minute frequencies during the peak periods and one hour frequencies during off-peak times. On Saturdays, service is provided at one hour frequencies.
Route 33 – Sanatorium:	Provides service between MacNab Transit Terminal on MacNab Street at Main Street and Scenic Drive at Lavender Drive. Mohawk College is serviced on this route along Fennell Avenue.
Service on Route 33: (within study area)	Monday to Friday between 5:20 AM and 1:20 AM. On Saturdays service is provided between 6:00 AM and 1:20 AM. Sunday and Holiday service is provided between 6:30 AM and 12:00 AM. During weekdays, buses run on 15 minute intervals during the peak periods and 30 minute intervals during off-peak periods. On Saturdays service is provided on 30 minute intervals during peak periods and one hour intervals during off-peak periods. Sunday and Holiday service is provided at 30 minute intervals until 6:00 PM, then hourly.

Route 34 – Upper Paradise:	Provides service between downtown Hamilton and the Upper Horning Loop. The route travels along Queen Street and Upper Paradise, with alternating buses providing service to the Glancaster Loop at the edge of the AEGD and the Upper Horning Loop at the edge of the Ancaster study area. Service is provided only to the Upper Horning Loop on Sundays and holidays.
Service on Route 34: (within study area)	Monday to Friday between 5:30 AM and 12:30 AM with 15 minute peak period and 30 minute off-peak period headways. On Saturdays, service is provided between 7:00 AM and 12:00 AM at 30 minute intervals. On Sundays and holidays service is provided hourly between 7:30 AM and 11:00 PM.
Route 43 – Stone Church:	Provides service from Highbury Drive in east Hamilton along Stone Church Road to Meadowlands Terminal on Martindale Crescent.
Service on Route 43: (within study area)	Monday to Friday between 5:10 AM and 1:00 AM. Saturday service is provided between 6:10 AM and 7:00 PM. There is no Sunday or holiday service. During weekdays buses generally run on 30 minute intervals during daily service and one hour intervals during night service, starting after 8:00 PM. On Saturdays service is provided on 30 minute intervals.
Route 44 – Rymal:	This is a new route introduced in September, 2009. It provides east-west service along Garner Road and Rymal Road, connecting Centennial Park with Redeemer College and Wilson Street. This route connects with the B-Line in the BLAST rapid transit system at Eastgate Terminal on Centennial Parkway. It may potentially form part of the future S-Line of the BLAST rapid transit system (see Section 2.1.4.1). The route provides service to the developed portion of the Ancaster Business Park.
Service on Route 44: (within study area)	Provided on weekdays only between 6:30 AM to10:00 AM and 3:00 PM to 6:30 PM on 30-minute intervals.
Redeemer University/ College Route:	Provides a shuttle service for Redeemer University students between the corner of Glancaster Road and Garner Road E. to Martindale Crescent. The shuttle runs along Garner Road, Southcote Road and Golf Links Road, connecting students to HSR Routes 5C, 16, 34, 41, 43, and 44. The shuttle provides limited service on weekdays and Saturdays, operating 9 services between 7:30 AM and 6:00 PM on weekdays and 4 services at 9:45 AM, 10:45 AM, 11:45 PM and 12:45 PM on Saturdays. There is no service from May 1 to Labour Day.

3.1.4.1 BLAST Rapid Transit

The City of Hamilton conducted a Rapid Transit Feasibility Study in November 2007 to investigate rapid transit and the feasibility of implementing rapid transit routes in the City. These rapid transit plans would form the Hamilton "B-L-A-S-T" rapid transit system. In 2008, Metrolinx released its final transportation strategy which identified the potential for Bus Rapid Transit (BRT) or Light Rail Transit (LRT) along two major corridors in Hamilton: the Upper James Street corridor extending from downtown to the airport (A-Line); and a corridor connecting McMaster University with Centennial Parkway (B-Line). The A-Line and B-Line are included in the first 15 years of Hamilton's Rapid Transit plans.

Beyond the 15-year horizon, the Metrolinx draft Regional Transportation Plan also identified three additional rapid transit corridors in Hamilton:

- The T-Line, a Mohawk Road route from Meadowlands to Centre Mall;
- The S-Line, a Centennial Parkway/Rymal Route; and
- A proposed L-Line, connecting downtown with Waterdown and the proposed BRT corridor along Dundas Street.

3.2 Environment

3.2.1 Natural Environment

This section provides an overview of the existing natural environment within and surrounding the community of Ancaster. Additional information on the natural environment is included in ***Appendix B***.

The lands surrounding Ancaster include two unique landforms, the Niagara Escarpment and Dundas Valley. The escarpment runs along the southern edge of Lake Ontario and is the most prominent feature in the study area. Considered a World Heritage Site, it cuts a 22 kilometre route through the northern portion of the study area. The Dundas Valley is a deep, large ravine that extends back into the Escarpment.

The Spencer Creek and Big Creek watersheds are both within the study boundary, with a small portion of Borer's Creek Watershed in the northeastern portion of the study area.

There are six Environmentally Significant Areas (ESA) within the Ancaster Urban Area. ESAs are natural resources that have been identified and designated by a local planning authority (e.g. City of Hamilton) because they meet a combination of several criteria, such as: unique habitat, rare species, large size, diverse native life forms, habitat for indigenous organisms, important ecological or hydrological function or rare/poorly represented earth science feature. The Provincial Policy Statement states natural features shall be protected for the long term:

1. ***Jerseyville Road Woodlot*** is 197 hectares with rolling topography that supports both floodplain and upland habitat. Plant communities include marshes, riparian thickets,

mature upland woods, and previously disturbed areas in various stages of natural succession;

2. ***Dundas Valley** is* 1200 hectares, located in the Niagara Escarpment and is a good example of Carolinian forest and cold water streams. The area contains a variety of natural features including dry upland forests (Red Maple, Red Oak, White Oak), mixed forests (Hemlock, Sugar Maple, Red Oak) and regenerating uplands (Bitternut Hickory, White Ash, Trembling Aspen);
3. ***Tiffany Falls*** is a 117 hectare area located in the northeast corner of Ancaster, immediately west (downslope) of the Highway 403 road cut across the Niagara Escarpment. The majority of the area is comprised of escarpment and ravine forests including deciduous upland woods and disturbed coniferous plantations;
4. ***Iroquoia Heights Conservation Area*** is 87 hectares located on the rim and upper slopes of the Niagara Escarpment at the southeast corner of the Dundas Valley re-entrant. It is situated north of Highway 403 and has been designated an ESA based on the presence of the significant Niagara Escarpment landform, diverse and high quality plant communities, and significant species;
5. ***Tiffany Creek Headwaters*** is 119 hectares and historically a cool water system located between Ancaster and Hamilton. The ESA contains a Provincially Significant Wetland Complex of the same name; and
6. ***Duff's Corner South Woodlot*** is a 55 hectare, large intra cropland maple-beech woodlot on clay silt plain. The area is considered locally significant due to the woodlot being an isolated remnant of the natural area within an intensively developed urban and agricultural landscape.

In addition to the six ESAs, there are five Areas of Natural and Scientific Interest (ANSI) in the study area. ANSIs are designated by the Ministry of Natural Resources and contain natural landscapes or features that have been identified as having life or earth science values related to protection, scientific study or education.

1. ***Ancaster Creek Valley*** (150 hectare Life Science ANSI) is located to the north east of the study area within Dundas Valley;
2. ***Sulphur Creek Valley*** (224 hectare Life Science ANSI) is located just north of the study boundary, adjacent to Ancaster Creek Valley;
3. ***Dundas Valley Forests*** (401 ha Life Science ANSI) is located in the northern reaches of the site boundary and the eastern portion of Dundas Valley;
4. ***Summit Bog*** *(*224 ha Life Science ANSI) is located within the western portion of Dundas Valley, west of the study area; and
5. ***Dundas Valley*** (418 hectare Earth Science ANSI) is located above the south wall of the Dundas Valley, a major east-west trending re-entrant in the Niagara Escarpment.

3.2.2 Social Environment

In 2001 the former Town of Ancaster was amalgamated into the City of Hamilton. The City of Hamilton's new Urban Official Plan (Council approval in July 2009, ministerial approval in March 2011) is the first Official Plan for the amalgamated communities. The ATMP study area is under the jurisdiction of the Urban Hamilton Official Plan (2009).

In 2003, the City of Hamilton initiated the Growth Related Integrated Development Strategy study, known as GRIDS. GRIDS is a *"planning process to identify a broad land use structure, associated infrastructure, economic development strategy and financial implications for the growth options to serve Hamilton for the next 30 years.*[2]*"*

The GRIDS process is part of the City's Building a Strong Foundation (BASF) initiative, which includes Vision 2020 as well as the new Official Plan. GRIDS is focused on growth in the urban areas of the City of Hamilton.

The historic downtown of Ancaster is identified as a Community Node in the GRIDS Growth Report. Community Nodes have pedestrian-oriented main streets and provide local retail functions and specialty retail. The nodes are well-served by transit and are surrounded by stable residential areas. As outlined in the GRIDS Report, the nodes are anticipated to achieve densities that will enhance services and further promote live-work opportunities, while at the same time maintaining the look and feel of a historic downtown.

As outlined in Chapter B.3.0, Section 3.4.3 of the new Official Plan, *"Within these downtown areas* [of the former municipalities of Ancaster, Dundas, Stoney Creek and Waterdown], *the City shall conserve individual cultural heritage properties and areas of heritage value, including streetscape features, traditional circulation patterns, and important views, and ensure that new development respects and reflects the design of surrounding heritage buildings."*

Chapter E.2.0, Section 2.3.3 of the Plan outlines the function, scale and design of Community Nodes, which includes Ancaster's Village Core, the Meadowlands area and the Upper James Street/Rymal Road area. The following aspects are applicable to the TMP:

- *Community Nodes shall be linked to the higher order transit system through connecting conventional transit or by rapid transit, where possible. Where possible, the City shall direct local routes through Community Nodes(Section 2.3.3.6);*
- *The Community Nodes shall be planned to have a strong pedestrian focus (Section 2.3.3.13);*
- *Pedestrian prominent streets shall be identified in each Community Node (Section 2.3.3.16);*
- *Streets within the Community Nodes shall be designed to provide strong pedestrian linkages and active transportation opportunities between the surrounding Neighbourhoods and the Nodes.*

[2] Growth Related Integrated Development Strategy study.

The policies included in the Official Plan were used in the development and selection of the Recommended Scenario.

3.2.3 Existing Land Use

Ancaster is located in the southwest quadrant of Hamilton; its history stretches back over 200 years. It was named by Lieutenant Governor John Graves Simcoe in 1793 after being surveyed to establish military roads. It was an influential industrial, commercial and farming community throughout the late 18th and early 19th centuries.

Ancaster can be characterized as a mix of urban and rural land uses and has an area of 177 square kilometres (17,700 hectares). As shown in ***Figure 7***, the community of Ancaster is a mix of residential, commercial, industrial, institutional, open space, vacant and agricultural lands.

The residential areas are primarily single-family, low density. Hamilton Golf and Country Club is a 36-hole golf course located in the centre of Ancaster, south of Golf Links Road. There is also an open space area at the east of Ancaster, located between Highway 403 and the Lincoln Alexander Parkway.

The two main commercial districts in Ancaster are located along Wilson Street and Golf Links Road. The commercial areas along Golf Links Road are fairly new "big-box" developments (e.g. Meadowlands Shopping Centre) and are located east of Highway 403, between Golf Links Road and the Lincoln Alexander Parkway. The Ancaster Town Plaza is located along Wilson Street, west of Fiddler's Green. There is a historic commercial area along Wilson Street, east of Fiddler's Green, which primarily includes specialty shops. The Ancaster Old Mill is a popular restaurant, which also includes a venue for large gatherings, is located on Old Dundas Road, west of Wilson Street.

There are several historic places of worship in Ancaster, contributing to the community's character. There are a number of churches along Wilson Street and Garner Street. Redeemer University College, a Christian university, is located on Garner Road East, east of Southcote Road.

The industrial lands are primarily located west of Shaver Road south of Garner Road West. The Ancaster Industrial Park is located between Shaver Road and Trinity Road, south of Garner Road, on approximately 267 hectares of land.

Existing community facilities within the study area include:

- Hamilton Library, Ancaster Branch;
- Community Centre, which includes an aquatic centre, arena and outdoor soccer fields, baseball diamond and walking trails; and
- Jerseyville Park, which includes public outdoor pool facilities.


Hamilton
Ancaster
Transportation Master Plan
Figure 7 – Land Use
Legend
Existing Road Network
Highway
Ancaster Study Area
Agricultural
Residential
Commercial
Industrial
Institution
Open Space
Village Area
Public
Deferred Development
Kilometers
0
1
2

3.2.4 Population and Employment Projections

Based on the 2006 census, the City of Hamilton had a population of approximately 505,000 up from 490,000 in 2001, a 2.9% increase. During the same period, Ancaster's population increased from approximately 27,000 in 2001 to 33,000 in 2006, an increase of approximately 21%.

Population and employment projections were based on the Hamilton Transportation Master Plan (HTMP) and GRIDS. The differences in population projections between both sources were not significant (+/- 5%). For this reason, HTMP figures were used as the benchmark with some localized adjustments for modelling purposes. This is detailed in the modelling appendix (see ***Appendix C***).

According to the HTMP, the community of Ancaster had a population of 33,170 in 2006. This is expected to increase to approximately 36,000 by 2011 and 39,000 by 2031. For modelling purposes, population figures were adjusted based on the above projections and expected future developments, leading to a total population of over 40,000 by 2031. During the same period, employment is expected to increase from 6,000 to 8,000 jobs. Modelling undertaken as part of the ATMP reflects these population and employment projections.

3.2.5 Future Development

A number of future developments in and near the study area are expected to impact future population and employment projections, as well as travel demand. These developments include areas of high growth, such as the area encompassed by Golf Links Road to the north, Garner Road to the south, Stone Church Road and the hydro easement to the east, and Kitty Murray Lane to the west; as well as specific developments identified in City plans. The latter include the Meadowlands Secondary Plan area and the Hamilton Airport Employment Growth District (AEGD). The significant employment growth of approximately 28,000 jobs expected in the AEGD will impact travel demand in the Ancaster area and, as such, was considered in the analyses for this study.

3.2.6 Cultural/Heritage

Ancaster has several historic buildings, with the downtown area along Wilson Street an important historic resource in the City of Hamilton. In 2008, the Historic Sites and Museum Board of Canada designated the Griffin's House a National Historic Site. The house stands as a testament to the brave men and women who travelled the Underground Railroad to freedom in Canada in the 19th century[3].

According to the City of Hamilton's Heritage Volume 2 – Inventory of Building with Architectural and/or Historic Interest (2002), there are 35 buildings of interest on Wilson Street, and over 140 in

[3] http://www.ancasterhistory.ca/history.php

the community of Ancaster. Maintaining the historic character of Ancaster was identified as a key priority by residents throughout this study and was used in the development and selection of the recommended scenario. The ongoing Ancaster Community Node Secondary Plan will further address the historic character of Ancaster and include policies related to heritage preservation.

Archaeological

The City of Hamilton's archaeological potential mapping was reviewed by City staff as part of this study and identified a number of locations that have potential for the discovery of archaeological artifacts, based on criteria used by both the City of Hamilton and Ministry of Tourism and Culture. A summary of the review is provided in ***Appendix D***. While many of the areas show surface disturbance, archaeological potential is presumed to exist except where displaced by extant buildings or other development. The City's archaeological potential mapping should be reviewed prior to implementation of any of the works identified in this plan to determine if an Archaeological Assessment is required. Clearance from the Ministry of Tourism and Culture should be obtained prior to construction.

4.0 EXISTING NETWORK ASSESSMENT

4.1 Road Network

The existing roads within the ATMP study area are primarily two lane and four lane arterial and collector roadways with the exception of Highway 403, Highway 6 which are provincial highways, and the Lincoln M. Alexander Parkway.

Roadway characteristics were identified on the primary road network through a site survey of the area. The survey examined intersection control and configuration, number of travel lanes, and the posted speed limit. These are illustrated in ***Figure 8***.

4.2 Existing Traffic Volumes

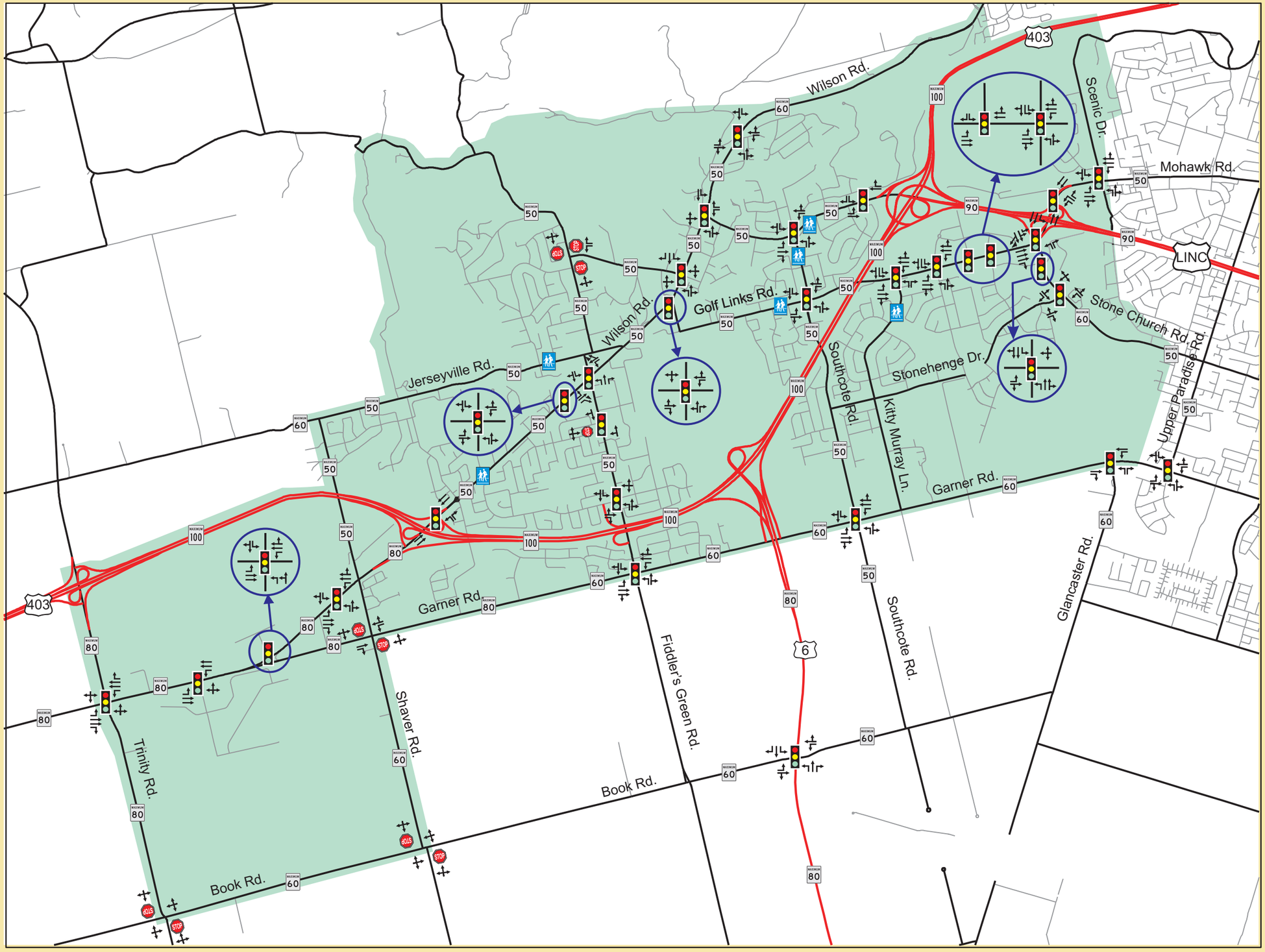
Existing AM and PM peak hour turning movement volumes and Average Annual Daily Traffic (AADT) volumes were provided by the City of Hamilton in 2007 for the majority of intersections within the Ancaster study area.

Detailed traffic data including turning movement counts and AADT are presented in ***Appendix C*** and were used to validate the transportation demand model. As a summary, the AADT volumes are illustrated in ***Figure 9***.

Hamilton

Ancaster Transportation Master Plan

Figure 8
Existing Intersection Control and Lane Configuration



Legend

- Existing Lane Configuration
- Existing Traffic Signal
- Existing Stop Sign
- Existing Pedestrian Crossing
- Major Road
- Minor Road
- Highway
- Ancaster Study Area

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Ancaster Transportation Master Plan

Figure 9

Average Annual Daily Traffic Counts (Daily Weekday Volumes)

Legend

- Existing Road Network
- Highway
- Ancaster Study Area
- ✖ AADT Volume Count Locations
- 1,000 Daily Weekday Volumes (2007)

Kilometers

0 1 2

2006 Count (MTO)

46,362
47,562

Outstanding Counts (City)

11,553
11,756

No Hourly Volumes (MTO)

2006 Count (MTO)

22,539
22,387

403
LINC
6

GOVERNOR'S
OLD HIGHWAY NO. 99
SLOTE
BINKLEY
MINERAL SPRINGS
GRAVEL PIT
POWER LINE
RADY GREENE
JERSEYVILLE
SULPHUR SPRINGS
ARTABAN
OLD DUNDAS
LOWER LIONS CLUB
LIONS CLUB
MONTGOMERY
HAIG
MASSEY
ALEXANDER
MEWBURN
HENDRY
ONTARIO
LIME KILN
BRIAR HILL
BROAD LEAF
HIGHVALLEY
FILMAN
MOHAWK
OLD MOHAWK
LINCOLN M. ALEXANDER PY EB
DAFFODIL
SCENIC
BLUEBELL
LAVENDER
WOODLAND
FALLING BROOK
DEERVIEW
RIDGEVIEW
WOODVIEW
BROOKVIEW
COLLEEN
CHATTERSON
WADE
TEMPLER
LOVERS
JUDITH
PARKER
THORNWOOD
CAIT
BLAIR
APRIL
LLOYMANN
ACADEMY
LOBOR
LOWDEN
ALTERRA
ORION
SEYMOUR
MONVEN
IROQUOIS
SENECA
ONEIDA
HAWATHA
CHANNER
ELM HILL
HOSTEIN
DORVAL
LEGEND
GOLF LINKS
OLD GOLF LINKS
BANBURY
CHIFNEY
CITATION
MEADOWLANDS
LOWINGER
ARMOUR
JOSHUA
BIGGS
CLOVERLEAF
DIORIO
STONE CHURCH
BRIDGEPORT
STONEHENGE
MOORLAND
APPLELEY
GREENBRIAR
ALMA
HARMONY
GRAY COURT
KITTY MURRAY
CAMP
LAMPMAN
FAIR
SPRINGBROOK
GLANCASTER
SMITH
SOUTHCOTE
ROTARY
MEADOWBROOK
VALRIDGE
MORWICK
MOORE
VALMONT
LAUREL
KATSURA
TRANQUILITY
NORMA
GALLEY
TAYLOR
VALLEYVIEW
CENTRAL
ORCHARD
PARKVIEW
WILSON
ST. MARGARETS
ROSEMARY
YAMAHA
SEMINOLE
SPRING
TOMAHAWK
CORNWALLIS
STADACONA
CUMMING
CARNEGIE
SYMPHONY
CONCERTO
RAVINA
BROOKS
CALVIN
ROBINA
WOODWORTH
ELGIN
ENMORE
HATTON
AMBERLY
DEVONSHIRE
MELANIE
KENDRICK
BRAITHWAITE
BLASDELL
FOXBOROUGH
LIAM
DERBYSHIRE
GARDEN
ANSON
BUSH
GABEL
MILNE
MILLER
GARNER
RAMP WILSON WB TO 403 WB
RAMP 403 WB TO 403 EB
RAMP 403 WB TO 6 SB
RAMP 6 NB TO 403 EB
HIGHWAY NO. 403
HIGHWAY NO. 52
HIGHWAY NO. 6
PRIVATE
WYERS
HIDDICOAT
TOLLGATE
HAMILTON
PANABAKER
MCCLURE
PORTIA
MASON
OSPREY
SHAVER
SANDHILL
TRADEWIND
CORMORANT
CLAYBAR
TRINITY
BOOK
COURTLAND
FIDDLER'S GREEN

961
1,033
990
1,514
4,194
4,404
5,216
7,706
1,586
1,720
11,895
11,695
12,148
11,616
9,422
8,329
21,250
19,350
7,394
7,723
2,331
2,459
9,099
9,779
10,545
10,659
5,377
4,771
2,129
1,095
10,258
10,722
5,361
5,593
1,306
1,525
5,571
5,474
4,098
3,312
1,205
1,326
1,055
1,005
4,527
9,700
7,348
6,441
6,531
6,692
4,886
4,499
4,890
4,413
8,576
9,553

4.3 Roadway Safety

Collision data for the Ancaster area was obtained from the City of Hamilton road authority for the five-year period from January 2003 to December 2008. The collision data only included "reportable" collisions that had been recorded in the City of Hamilton collision records. These collision records generally exclude minor collisions not considered reportable in accordance with the Ontario standard Motor Vehicle Accident Report. During this time period, a total of 542 collisions occurred within the study area limits. Of those 542 collisions, 264 (approximately 49%) occurred at intersections and 278 (approximately 51%) occurred at mid-block locations.

During the five-year study period, there were no fatal collisions in the Ancaster study area. There were 308 injury collisions, 234 property damage only collisions, and 30 self-reportable collisions. The majority of collisions occurred during the day (67%), while the remaining 33% occurred during non-day times including night, dawn and dusk. The majority of collisions occurred under dry conditions (70%), while 30% of collisions occurred during less than ideal road surface conditions (e.g. wet, ice, snow).

The majority of collisions occurred during the fall and winter months with fewer collisions reported during the summer months. This is expected due to the less than ideal environmental and road surface conditions during the winter months. Examining collisions at intersections, most involved "rear-end" collisions that resulted in injury. The majority of collisions occurred during the day (68%), in clear weather and under dry road conditions.

The following section describes the process for determining impacts, if any, for road safety within Ancaster.

4.3.1 Network Safety Screening

Problem locations were identified using a calculation of risk and overrepresentation methodology as outlined in the City of Hamilton's *2009 Traffic Safety Status Report (Volume 1)*. This was done by sorting collision incidents into a set of predefined road groups (e.g. signalized intersections, stop controls, mid-block, etc.) and collision types (e.g. rear-end, right-angle, etc.). Using this methodology, all locations were then grouped and sorted by the indicator. In particular, where collision types were found to be overrepresented, greater potential exists for the application of programs or techniques to reduce the number of collisions. Further, the City evaluates the frequency of collisions at each location and checks to determine if the number of collisions exceeded the upper 95% confidence limits for the expected number of collisions for sites in that group of locations.

The most recent five-year roadway network screening period available (2005-2009) indicated that of the 60 most overrepresented collision locations from the City of Hamilton, none were located within the Ancaster study area. While safety deficiencies were not specifically identified within the study area, there may be opportunities to make safety improvements.

In order to identify higher-risk collision locations within the Ancaster study area, the frequency of collisions was evaluated based on available data provided by the City. Although the collision

locations listed below are not overrepresented as compared to other Hamilton area intersections, they should be monitored for potential safety concerns.

Unsignalized Intersections

At the time of writing, the intersection of Wilson Street and Shaver Road experienced the highest frequency with 2.2 collisions per year. Four of the eleven collisions that occurred during the five-year period evaluated were identified as right angle type collisions, three were turning movement collisions, and two were rear-end collisions. A modern roundabout is now in place at this intersection, which may have a positive impact on the type and frequency of collisions.

Signalized Intersections

The frequency of collisions at signalized intersections ranged from 0.2 collisions per year to 5.6 collisions per year.

The highest frequency of collisions occurred at the intersection of Golf Links Road and Stone Church Road. Sixteen of the twenty-eight collisions that occurred during the five-year period evaluated were identified as turning movement collisions, four were angle collisions, and six were rear-end collisions.

At the intersection of Golf Links Road and Cloverleaf Drive/Neville Drive, the average collision frequency was 3.6 collisions per year. Eight of the eighteen collisions were identified as turning movement collisions, three were angle collisions, and five were rear-end collisions.

At the intersection of Golf Links Road and Meadowlands Boulevard/Legend Court, the average collision frequency was 3.2 collisions per year. Six of the sixteen collisions were identified as turning movement collisions, four were angle collisions, and three were rear-end collisions.

At the intersection of Wilson Street and Rousseaux Street, the average collision frequency was 2.2 collisions per year. Four of the eleven collisions were identified as turning movement collisions, one was an angle collision, and six were rear-end collisions.

4.3.2 Potential Mitigation Measures

As noted above, collisions within Ancaster were not found to be sufficiently high as to require mitigation. However, as part of the solution to improve transportation safety, the addition of two-way left turn lanes (TWLTLs) was recommended on select road sections along McNiven Road, Mohawk Road/Rousseaux Street, Southcote Road, and Wilson Street.

While there is no definitive methodology presently available to predict collision reduction through the application of TWLTLs, there are many studies that highlight the safety benefits of four-lane to three-lane conversions. Based on available studies, it was found that the use of TWLTLs resulted in an approximate 20-40% reduction in total crashes, 25% reduction in left-turn crashes, and 40% reduction in rear-end crashes, depending on the context of the application. Based on the ATMP analysis, three-lane cross-section with TWLTLs are recommended as an effective way to improve

transportation safety while providing similar traffic capacity to a four-lane road and allowing for improvements to pedestrian and cycling infrastructure.

Another potential improvement for intersection safety is the installation of traffic signals or roundabouts. Although traffic signals can be effective at reducing certain types of collisions, they should only be installed if they sufficiently meet warrant criteria and are justified by traffic engineering judgment. Roundabouts are another potential safety improvement, as they reduce the number of intersection conflict points.

Other mitigation measures which can be used to improve safety include, but are not limited to, geometric roadway improvements (i.e. clear sightlines, fewer skewed intersections, etc.), advance warning signage, and flashing beacons.

Locations with overrepresented collisions or safety concerns were not identified within this study. The later would require detailed safety audits to be performed and mitigation measures recommended based upon the context of individual locations.

5.0 DEMAND FORECASTING MODEL FOR ANCASTER

Transportation network analysis was undertaken using the City of Hamilton's AM Peak Hour Model (Hamilton model) to determine travel demand needs. The sub-area of Ancaster was further developed within the Hamilton model to more accurately estimate transportation demands in the study area, referred to as the Ancaster model.

5.1 Planned Roadway Improvements

In order to determine which roadway improvement projects, if any, were required for the ATMP, the existing road network was first tested using travel demand volumes in the 2031 horizon (i.e. a do-nothing scenario). Next, roadway improvements identified for Ancaster within the HTMP were examined. It should be emphasized that the HTMP had a much broader, region-wide scope. Transportation improvements identified within the HTMP included projects such as the widening to four lanes of Wilson Street (between Halson Street and Hamilton Street) and McNiven Street/ Southcote Road (from Mohawk to Garner Road).

Subsequent Ancaster model scenarios used the HTMP infrastructure improvements as a base and tested potential roadway modifications to the HTMP recommendations to determine a recommended scenario.

The HTMP proposed infrastructure improvements were used as the ATMP base case model. These improvements are identified below in ***Table 6*** and shown in ***Figure 10***.

Table 6 – Hamilton TMP Proposed Infrastructure Improvements in Ancaster

Road Name	From	To	Description	Anticipated Timing
New E/W Road (Ancaster)	Tradewind Drive/ Cormorant Road	Trinity Road	New Road	2007-2011
New Mid-block Collector (Ancaster)	Cormorant Road	Tradewind Drive	New Road	2007-2011
Garner Road	50m east of Miller Drive	50m west of Southcote Road	Road Widening and Two-way Left-turn Lane	2012-2021
	Hwy 2	50m west of Shaver Road	Road Widening and Two-way Left-turn Lane	2012-2021
	50m west of Fiddler's Green	50m east of Fiddler's Green	Road Widening and Two-way	2012-2021

Road Name	From	To	Description	Anticipated Timing
	Road	Road	Left-turn Lane	
	50m east of Fiddler's Green Road	50m west of Miller Drive	Road Widening and Two-way Left-turn Lane	2012-2021
	50m east of Southcote Road	50m west of Kitty Murray Lane	Road Widening and Two-way Left-turn Lane	2012-2021
	50m east of Kitty Murray Lane	50m west of Glancaster Road	Road Widening and Two-way Left-turn Lane	2012-2021
	50m east of Glancaster Road	Old Hamilton boundary	Road Widening and Two-way Left-turn Lane	2012-2021
	50m west of Miller Drive	50m east of Miller Drive	Road Widening	2012-2021
	50m east of Kitty Murray Lane	50m west of Kitty Murray Lane	Road Widening	2012-2021
	West of Shaver Road	50m east of Shaver Road	Two-way Left-turn Lane	2012-2021
	50m west of Southcote Road	50m east of Southcote Road	Two-way Left-turn Lane	2012-2021
	50m west of Glancaster Road	50m east of Glancaster Road	Two-way Left-turn Lane	2012-2021
	50m east of Shaver Road	50m west of Fiddler's Green Road	Road Widening and Two-way Left-turn Lane	2012-2021
Wilson Street/Hwy 2	Hwy 52	Hwy 53	Two-way Left-turn Lane	2012-2021
Golf Links Road	McNiven Road	Kitty Murray	Two-way Left-	2012-2021

Road Name	From	To	Description	Anticipated Timing
		Lane	turn Lane	
Jerseyville Road	Martin Road	Lloyminn Avenue	Two-way Left-turn Lane	2012-2021
Jerseyville Road	Shaver Road	Martin Road	Two-way Left-turn Lane	2012-2021
Jerseyville Road	Wilson Street	Lloyminn Avenue	Two-way Left-turn Lane	2012-2021
McNiven Road	Mohawk Road	Golf Links Road	Road Widening	2007-2011
Mohawk Road	McNiven Road	Hwy 403	Road Widening	2007-2011
Scenic Drive	Old City Limits	Lavender Drive South Leg	Two-way Left-turn Lane	2007-2011
Southcote Road	Golf Links Road	Garner Road	Road Widening	2012-2021
Springbrook Road	Meadowlands Boulevard	Garner Road	Two-way Left-turn Lane	2012-2021
Sulphur Springs Road	Wilson Street	Mansfield Drive	Conversion to urban cross-section	2012-2021

Note: infrastructure improvements identified in the *HTMP* may extend beyond the Ancaster study area.

Hamilton

Ancaster Transportation Master Plan

Hamilton Transportation Master Plan (HTMP) Proposed Road Infrastructure Improvements (approved May 2007)

Legend

- Highway
- Existing Road Network
- Ancaster Study Area

Proposed Road Improvement

- New Road
- Road Widening
- Two-way Left-turn Lane

Figure 10

N
W E
S

Kilometers

0 1 2

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Created By: APH
Checked By: JDK
Date Created: 08/20/2010
Date Modified: 06/03/2011

File Location: \\42dillon\cad\GIS\088952-AncasterTMP\mxd\Proposed Road Infrastructure Improvements.mxd

5.2 Overview of Existing Model

Information from the City of Hamilton's EMME/2 transportation model was used to calibrate and validate traffic flows in the Ancaster Transportation Master Plan, and includes:

- Networks for 2004, 2011, 2021 and 2031;
- AM peak hour auto trip matrices for 2004, 2011, 2021 and 2031;
- AM peak hour total person trip matrices for 2004, 2011, 2021 and 2031;
- City of Hamilton population data for 2001, 2006, 2011, 2016, 2021 and 2031;
- City of Hamilton employment data for 2001, 2011, 2021 and 2031; and
- IBI Group's Model Development Draft Report (Dated April 2005).

5.3 Base Year Network Representation

A number of data sources were combined to develop an EMME/2 sub-area model for Ancaster for a 2006 base year. The existing Hamilton model, developed by IBI Group, only contained network and trip table data for 2004 and 2011. Available land use data included population and employment numbers for 2006, but not 2004. As a result, a 2011 network was adopted as the most appropriate base network to represent the 2006 road network within the study area.

The base year road network used in the Hamilton EMME/2 model was reviewed for accuracy within the study area (including roadway speed and capacity) and additional detail was added for consistency with the zone system. Changes to the model included the addition of roadway links, splitting various zones to reflect current land use patterns and barriers, the addition of "centroid connectors" to more accurately reflect traffic volume flows, and revisions to existing connectors.

Care was taken to accurately depict the model road network based on existing conditions. At this level of analysis, model performance is evaluated based on a "screenline" level of detail (i.e. a comparison of simulated vs. counted vehicle volumes along key sections). As such, road network attributes (i.e. speed, capacity, etc.) may have been modified in order to match model results to existing conditions.

Table 7 below lists the road network modifications made to adapt the 2006 base year model to existing conditions. The link attributes used in the Ancaster base model are presented in ***Figure 11***.

Table 7 – 2006 Base EMME/2 Network Modifications

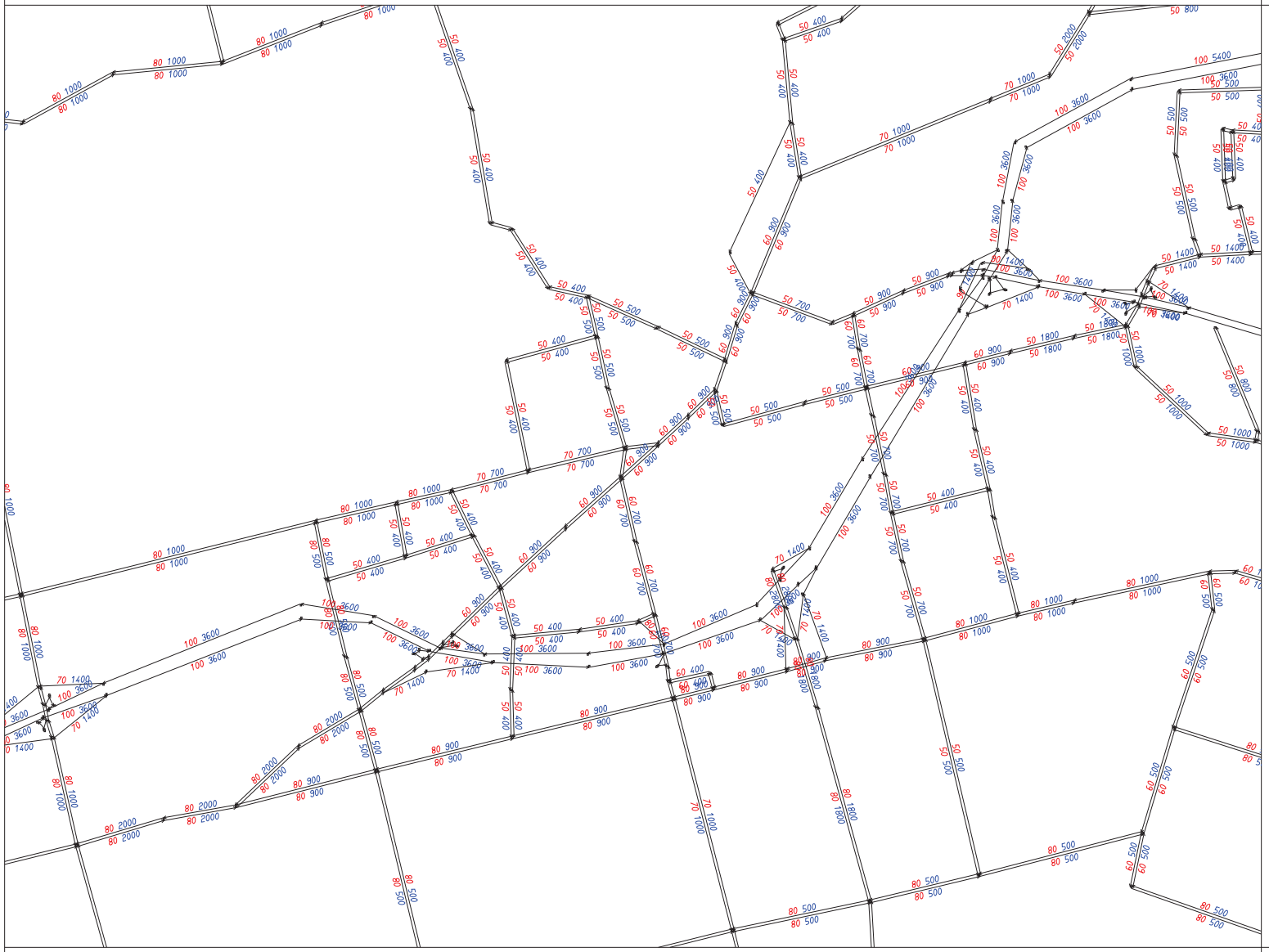
Location	Network Modification	Justification
Highway 6 between Highway 403 and Upper James	• Roadway link added	• Better represent existing road network
Garth Street between Rymal Road and Twenty Road	• Roadway link added	• Better represent existing road network

Location	Network Modification	Justification
Hamilton Drive from Wilson Street to Garner Road	• Roadway link added representing residential collector with 50 km/h speed	• Roadway represents a significant access point to/from Ancaster and surrounding area
Kitty Murray Lane from Golf Links Road to Garner Road	• Roadway link added representing residential collector with 50 km/h speed	• Differentiate demand from parallel Southcote Road corridor for north-south trips accessing Ancaster and Redeemer College • Better represent demand at Southcote Road at Golf Links Road intersection
Stonehenge Road from Kitty Murray Lane to Southcote Road	• Roadway link added representing residential collector with 50 km/h speed	• Differentiate demand from parallel Golf Links Road corridor for east-west trips accessing Ancaster and Redeemer College • Better represent demand at Southcote Road at Golf Links Road intersection
Sulphur Springs Road from Lovers Lane to Wilson Street	• Roadway link added representing residential/ commercial collector with 50 km/h speed	• Better represent demand along Wilson Street at Fiddler's Green Road and Jerseyville Road intersections
Old Dundas Road from Wilson Street to Old Ancaster Road	• Roadway link added representing residential/ commercial collector with 50 km/h speed	• Better represent demand along Wilson Street in northeast area of Ancaster
Lovers Lane & Sulphur Springs Road from Jerseyville Road to Governors Road	• Modify link speed limit to 50 km/h	• Better represent existing network conditions
Hwy 403/Mohawk Road interchange	• Mohawk Road eastbound to Hwy 403 southbound ramp removed	• Better depict existing network at interchange
Mohawk Road from McNiven Road to Highway 403	• Reduce roadway capacity to represent 2-lane residential arterial	• Better represent existing network conditions

Location	Network Modification	Justification
Wilson Street from Montgomery Drive to Highway 403	• Modify link speed limit to 60 km/h • Reduce capacity to represent two-lane urban arterial	• Better represent existing network conditions
Old Dundas Road from Montgomery Drive to Wilson Street	• Roadway link added representing one-way residential collector	• Better represent existing network conditions
Garner Road from Wilson Street to Southcote Road	• Reduce capacity to represent 2-lane major arterial	• Better represent existing network conditions
McNiven Road from Mohawk Road to Golf Links Road	• Reduce capacity to represent 2-lane minor arterial	• Better represent existing network conditions
Southcote Road from Golf Links Road to Garner Road	• Reduce speed limit to 50 km/h	• Better represent existing network conditions
Jerseyville Road from Meadowbrook Drive to Fiddler's Green Road	• Reduce speed limit to 70 km/h	• Better represent existing network conditions
Morwick Drive from Shaver Road to Meadowbrook Drive	• Roadway link added representing a residential collector	• Added to better load vehicle trips onto network from local traffic zone
Stevenson Street from Jerseyville Road to Morwick Drive	• Roadway link added representing a residential collector	• Added to better load vehicle trips onto network from local traffic zone
Lloyminn Avenue from Jerseyville Road to Lovers Lane	• Roadway link added representing a residential collector	• Added to better load vehicle trips onto network from local traffic zone
Mohawk Road, west of Highway 403 interchange	• Added turning movement ban for U-turns	• Illegal turning movements being performed in model • Assigns travel to proper ramp

FREE FLOW SPEED & TOTAL ROAD CAPACITY (1 WAY)

emme/2



LINKS:
mod=c
&!ci=1
&!cj=1

LAYERS:
Capacity
Speed

Figure 11
2006 Base Network Speed and Capacity

WINDOW:
577261/ 781716
587402/ 789321

EMME/2 PROJECT: Hamilton Airport
SCENARIO 5000: 2006 Ancaster TMP (2010-08-13)

10-08-13 16:59
MODULE: 2.13
DMG.UTYU...jdk

5.4 Zone Summary

The data used as input to the Ancaster model was based mainly on the modified Greater Toronto Area (GTA) zone system developed by the Data Management Group (DMG). In order to provide a finer level of evaluation, reflect recent development patterns, and delineate a number of combined commercial/residential zones, the zone system in the Ancaster sub-area was expanded from the original 10 zones.

In total, there are 409 zones in the EMME/2 model representing Hamilton, the Niagara Region, the GTA, and adjacent areas, with 26 zones used to represent Ancaster.

The distribution of zones used in the model is summarized in ***Table 8*** and depicted in ***Figure 12***.

Table 8 – Zone Summary

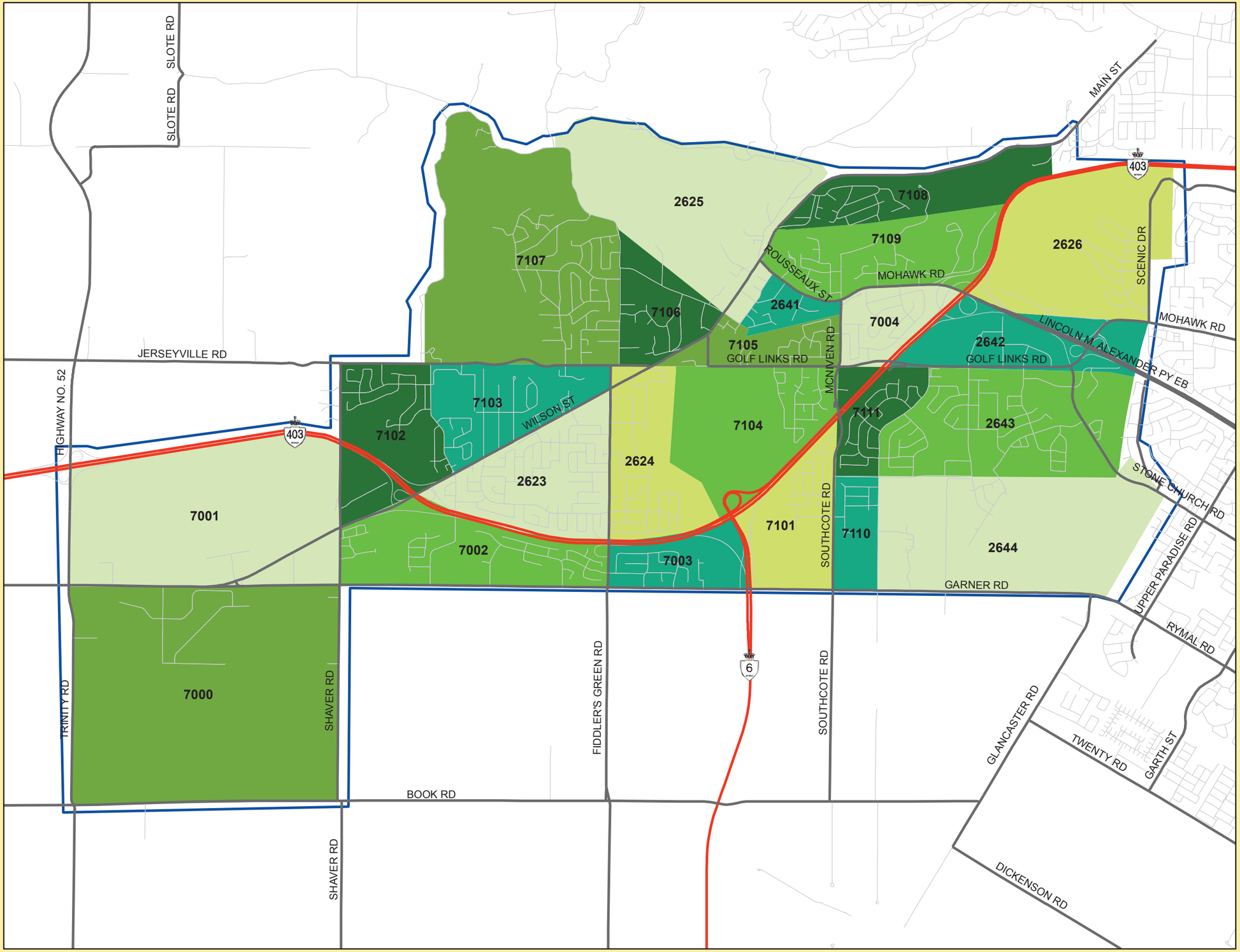
Area	Number of Zones
Ancaster	26
Rest of Hamilton	149
Niagara Region + Adjacent Areas	112
GTA + Adjacent Areas	122
TOTAL	409

Hamilton

Ancaster Transportation Master Plan

Figure 12

Modified Transportation Zones



Legend

- Minor Road
- Major Road
- Highway
- Transportation Zones
- Ancaster Study Area

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5.5 Population and Employment Adjustments

The original Hamilton EMME/2 model contained population and employment data, based on the HTMP. More recently, the Growth Related Integrated Development Strategy (GRIDS) was developed, which contained revised population projections to the 2031 horizon year.

HTMP population projections were used in the model for the 2016, 2021, and 2031 horizon years. The rationale for not adopting Ancaster population distributions as outlined in GRIDS is that the overall differences between GRIDS and HTMP population was within ±5% and that specific breakdowns for Ancaster were not available. In order to determine the impact of the GRIDS population figures compared to the HTMP figures, a sensitivity test was carried out in the Ancaster model.

A comparison was made between the HTMP population projections for 2031 (i.e. 39,221) and a GRIDS projection (e.g. 41,110). Additional population projected under GRIDS was included in the two zones likeliest to accommodate future growth. The resultant auto volumes showed that critical roadway corridors in the Ancaster area would experience low auto volume growth (i.e. less than 2%) under the "worst-case" GRIDS population scenario. It was concluded that the effect of higher GRIDS population forecasts on critical roadway links was not significant. As a result, HTMP trip tables were used as a base in the Ancaster model for future horizon year analysis.

The comparison between HTMP and GRIDS population figures is shown in ***Table 9***.

Table 9 – HTMP and GRIDS Population Comparison for Ancaster

Horizon	HTMP	GRIDS	Difference	% Change
2006	33,170	32,226	944	2.8%
2011	36,314	35,308	1,006	2.8%
2016	38,532	39,509	-977	2.5%
2021	39,571	41,019	-1,448	3.7%
2026	39,143	40,893	-1,750	4.5%
2031	39,221	41,110	-1,889	4.8%

Additional developments that were approved after the GRIDS study was completed (referred to as "post-GRIDS") were included in the model update. Since the locations of these developments were known, the revised population information was used to factor the auto trip data in the transportation zones of the Ancaster model. Post-GRIDS development adjustments within the Ancaster model represent an increase of 2,600 residents in the Ancaster population figures for the 2016, 2021, and 2031 horizon years.

Hamilton's Airport Employment Growth District (AEGD) was one of the biggest developments taken into consideration for the Ancaster model update. The AEGD is expected to experience significant employment growth by the year 2031, which will impact travel demand in the Ancaster area. The Ancaster model for the 2031 horizon includes employment of over 28,000 jobs in the AEGD area, as broken down in Table 10 below.

Table 10 – AEGD Population and Employment Modifications

Emme Zones	Employment		
	2016	2021	2031
2645	-	-	1,251
2647	2,252	4,503	8,124
7201	-	-	3,326
7202	542	1,084	1,084
7203	688	1,376	3,876
2682	1,394	2,788	10,668
Total	4,876	9,751	28,329

Table 11 represents the overall Ancaster area population and employment modifications, including adjustments for developments approved after the GRIDS study was completed (i.e. post-GRIDS development) as well as the AEGD. ***Appendix C*** contains more detailed information regarding population and employment adjustments.

Table 11 – Ancaster Population and Employment Modifications

Emme Zones		Population					Employment					% Adjustment	
Old	New	2001	2006	2016	2021	2031	2001	2006	2016	2021	2031	Pop	Emp
2622	2622	1,149	1,170	1,112	1,096	1,075	74	79	90	94	105	100%	10%
	7000	0	0	0	0	0	669	715	807	850	948	0%	90%
2623	2623	2,504	2,713	2,924	2,930	2,895	366	400	441	462	495	30%	30%
	7002	2,504	2,713	3,109	3,113	3,079	183	200	220	231	248	30%	15%
	7102	1,669	1,809	1,911	1,916	1,893	61	67	73	77	83	20%	5%
	7103	1,669	1,809	1,949	1,953	1,930	611	667	735	770	825	20%	50%
2624	2624	1,814	1,806	2,416	2,573	2,532	396	423	498	564	602	45%	65%
	7003	605	602	858	910	896	0	0	0	0	0	15%	0%
	7101	605	602	1,230	1,277	1,265	30	33	38	43	46	15%	5%
	7104	1,008	1,004	1,328	1,415	1,393	183	195	230	260	278	25%	30%
2625	2625	791	818	693	779	805	195	200	224	235	265	15%	25%
	7107	2,372	2,453	2,434	2,688	2,764	507	519	582	610	688	45%	65%
	7108	791	818	811	896	921	0	0	0	0	0	15%	0%
	7109	1,318	1,363	1,381	1,522	1,564	78	80	90	94	106	25%	10%
2626	2626	1,309	1,289	1,293	1,274	1,250	196	193	197	195	208	100%	100%
2640	2640	1,018	1,038	986	972	954	27	28	30	31	34	100%	10%
	7001	0	0	0	0	0	242	250	271	277	305	0%	90%
2641	2641	521	509	510	533	526	161	164	173	175	186	25%	45%
	7105	626	611	611	639	631	0	0	0	0	0	30%	0%
	7106	938	916	917	959	946	196	201	211	214	228	45%	55%
2642	2642	0	0	0	0	0	196	211	223	226	238	0%	100%
	7004	1,155	1,314	1,251	1,233	1,211	0	0	0	0	0	100%	0%
2643	2643	2,857	4,795	4,828	4,923	4,842	772	887	989	1,042	1,111	70%	100%
	7111	1,224	2,055	1,993	2,034	2,000	0	0	0	0	0	30%	0%
2644	2644	316	580	3,559	3,511	3,456	311	574	830	1,052	1,099	65%	100%
	7110	210	386	1,661	1,639	1,610	0	0	0	0	0	35%	0%
Totals		28,971	33,170	39,763	40,788	40,437	5,454	6,085	6,952	7,500	8,096		

5.6 Trip Generation and Distribution

The 2006 base year matrix for the EMME/2 model was created to reflect anticipated population and employment levels in 2006. Using the standard Fratar distribution procedure, the base year matrix was re-balanced to the 2006 trip end totals, including the new Ancaster sub-zones described earlier (see ***Table 8***).

Similar to the 2006 base year, the trip matrices for the future horizon years of 2016, 2021, and 2031 were factored to include the new Ancaster sub-zones using the Fratar distribution procedure. Future horizon trip matrices used the projected population and employment figures as indicated in *Section 5.5* (see *Table 11*).

Table 12 below provides a summary of the number of trips attracted and produced by the Ancaster model during the AM Peak in the study area. In comparing the 2006 base and 2016 horizon years, a slight drop in trips is detectable, especially for vehicles destined to Ancaster. This is likely due to shifting demographics and increased employment in areas adjacent to Ancaster (i.e. the AEGD). More detailed information describing the Trip Generation and Distribution process can be found in *Appendix C*.

5.7 Auto Assignment

The auto trip assignment was performed using EMME/2's standard equilibrium assignment and tangent volume delay functions. Several iterations of the trip assignment algorithm were completed and analyzed to ensure consistency with the Ancaster roadway network.

5.8 Base Year Screenline Validation

In order to evaluate the performance of the Ancaster model, validation was carried out on a screenline basis. The traffic volumes simulated by the model were compared to traffic volumes observed in the field. It was found that the travel demand model was within acceptable parameters. Overall simulated/counted ratios were within approximately 8% in the peak direction (i.e. northbound and eastbound in the AM Peak Hour). Given the level of detail available in the EMME/2 model this is considered to be a good fit for Ancaster and the surrounding area.

Figure 13 illustrates the screenlines used in the Ancaster model for analysis. ***Table 13*** summarizes the simulated-to-counted volumes for each screenline in the 2006 base year.

See ***Appendix C*** for more detailed information regarding model validation.

Table 121 – Trip Generation by Zone

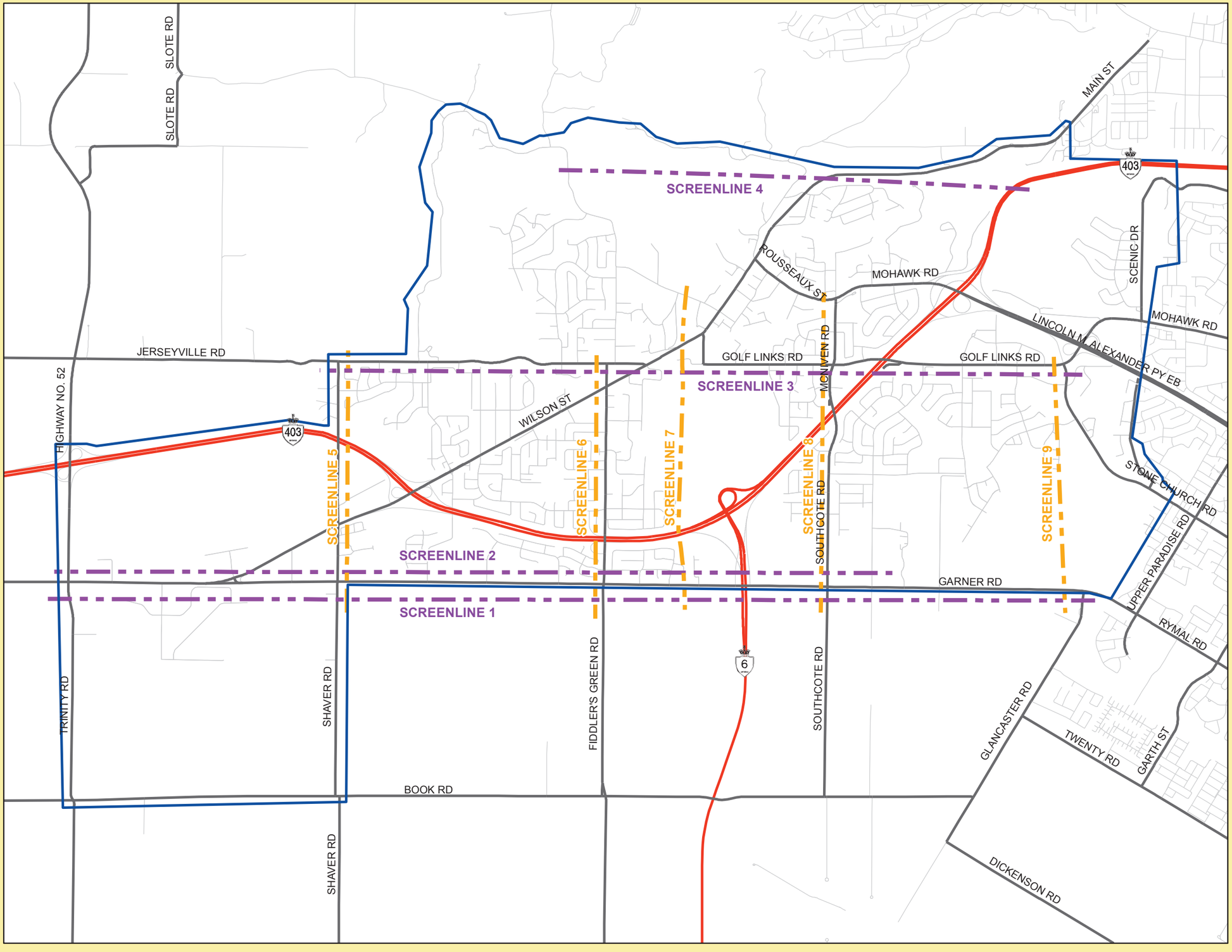
Zone	Origins				Destinations			
	2006	2016	2021	2031	2006	2016	2021	2031
422-424	728	751	755	762	1,599	1,664	1,681	1,745
503-504	1,717	1,767	1,793	1,835	1,303	1,240	1,242	1,342
2622	185	160	161	169	55	49	51	55
2623	566	432	456	480	255	157	184	198
2624	297	317	353	370	205	204	229	243
2625	134	108	116	126	137	113	119	129
2626	182	179	179	182	92	87	88	92
2640	173	135	135	142	25	18	19	20
2641	89	82	82	84	74	65	65	67
2642	11	10	9	10	135	124	123	127
2643	608	598	610	689	339	329	336	378
2644	115	540	614	615	198	333	370	389
7000	9	7	7	8	242	212	219	236
7001	7	6	6	6	122	86	86	92
7002	562	453	479	502	141	102	103	110
7003	188	107	118	124	25	5	6	6
7004	207	185	183	186	15	13	13	14
7101	0	0	0	0	0	0	0	0
7102	375	278	293	308	57	41	41	43
7103	396	304	322	340	409	294	298	314
7104	165	174	194	203	97	97	108	115
7105	98	90	90	93	5	5	5	5
7106	157	143	144	148	92	81	83	84
7107	382	359	378	409	344	287	303	328
7108	125	117	123	132	9	7	8	8
7109	211	201	211	228	65	54	57	62
7110	71	239	273	272	9	12	13	14
7111	284	264	267	296	12	12	12	13
Total	**8,042**	**8,006**	**8,351**	**8,719**	**6,061**	**5,691**	**5,862**	**6,229**

Hamilton

Ancaster Transportation Master Plan

Figure 13

Travel Demand Screenlines



Legend

- Minor Road
- Major Road
- Highway
- Ancaster Study Area
- Screenlines

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Table 132 – 2006 Base Year Screenline Summary

Number	Screenline	Direction	AM Peak 2006 Vol. Counted	AM Peak 2006 Vol Simulated	Screenline Ratio
1	South of Garner Road	NB	1,440	1,587	1.10
		SB	854	997	1.14
2	North of Garner Road	NB	2,192	2,201	1.00
		SB	2,225	1,566	0.70
3	South of Jerseyville Road	NB	2,695	2,263	0.84
		SB	1,721	995	0.58
4	South of Lion's Club Road	NB	5,269	5,542	1.05
		SB	2,941	2,487	0.85
5	East of Shaver Road	EB	2,728	2,306	0.85
		WB	2.263	2,672	1.18
6	West of Fiddler's Green Road	EB	4,283	3,186	0.74
		WB	3,398	2,822	0.83
7	West of Highway 6	EB	3,988	3,863	0.97
		WB	3,256	3,217	0.99
8	West of Southcote Road	EB	4,332	4,401	1.02
		WB	4,072	3,726	0.92
9	West of Stone Church Road	EB	1,419	728	0.51
		WB	1,486	699	0.47
NB/EB (Peak Direction) Totals			**28,346**	**26,077**	**0.92**
SB/WB Totals			**22,216**	**19,161**	**0.86**
GRAND TOTAL			**50,562**	**45,238**	**0.89**

5.9 Future Horizons and Scenarios

Once validation for the Ancaster model was completed for 2006 base year conditions, various scenarios were run for the future horizon year of 2031. A 2031 "Do-Nothing" scenario was created for analysis purposes that reflected a roadway network that was the same as existing conditions. The next step was to include all HTMP proposed roadway infrastructure improvements, as well as projects listed in the City's capital budget, development charge studies, secondary plans, and related EA studies, up to the 2031 horizon year. These projects included the:

- AEGD TMP study area;
- Trinity Church connection;
- Red Hill Valley Parkway;
- GRIDS (Growth Related Infrastructure Development Strategy); and
- Other approved developments within Ancaster.

Roadway projects identified within the HTMP were added to the Ancaster model network, for the 2016, 2021, and 2031 horizon years. The *Proposed Road Infrastructure Improvements* from the HTMP are summarized below in ***Table 14***.

Table 14 – HTMP Proposed Infrastructure Improvements (Ancaster Projects)

Road Name	From	To	Description	Horizon[1]
Garner Road	Shaver Road	Fiddler's Green Road	Road Widening and TWLTL	2021
Golf Links Road	McNiven Road	Kitty Murray Lane	TWLTL	2021
Jerseyville Road	Shaver Road	Wilson Street	TWLTL	2021
McNiven Road	Mohawk Road	Golf Links Road	Road Widening	2016
Mohawk Road	McNiven Road	Highway 403	Road Widening	2016
Scenic Drive	Lavender Drive (South Leg)	Old City Limits	TWLTL	2016
Shaver Road	Wilson Street	Garner Road	TWLTL	2021
Southcote Road	Golf Links Road	Garner Road	Road Widening	2021
Trinity Road	1km S of Wilson St	Highway 403	Road Widening	2031
Wilson Street	Hamilton Drive	Halson Street	Road Widening	2021

Notes:
[1] Denotes the earliest year a specific improvement was included in the model.
[2] Project implemented earlier than HTMP anticipated timing.
TWLTL = Two-Way Left Turn Lane

The 2031 horizon was used to test various road network configurations, referred to as "scenarios". The "Do Nothing" scenario was first established to reflect the road network as it exists today with additional travel demand from the 2031 horizon. Next, a "base scenario" was created which included all HTMP improvements, as this was the approved plan in place to meet 2031 needs across the entire City. Individual HTMP road improvements were tested within subsequent scenarios. All scenarios were evaluated against environmental assessment criteria to determine a "Recommended Scenario". This is further discussed in **Section 6.0**.

Interim horizon years of 2016 and 2021 were primarily used to review the impacts of increased population and employment on the existing road network and to evaluate the impacts of improvements listed in the HTMP. The 2016 and 2021 horizons were also used to determine the phasing (i.e. timing) of roadway projects ultimately required in the 2031 horizon.

5.10 Description of Problem

Based on the results of the modelling completed, the following problems were identified:

- Lack of sufficient roadway capacity across the Niagara Escarpment;
- Lack of adequate connections to Highway 403; and
- Traffic infiltration within Ancaster neighbourhoods.

Previous studies, including the HTMP, recommended additional roadway capacity for critical roadway links in Ancaster. The current study examined prior findings; incorporated input from stakeholders, community groups and City staff; and established goals for the transportation network that were broader than system capacity alone. As part of the EMME/2 modelling and analysis, the effect of additional capacity along various roadways and across the escarpment were tested to determine the impacts. In general, the more roadway capacity that was added within a given scenario, the more traffic was attracted through the Ancaster study area.

In order to address problem areas within the Ancaster study area, various improvement scenarios were identified and assessed, starting with a "Do Nothing" scenario. Additional scenario options were compared against each other and ranked according the Municipal Class EA process, as outlined in **Section 6.1.3**. The scenario that achieved the highest ranking became the Preferred Network Alternative, or Recommended Scenario.

As an alternative to the widening of roadways, transportation demand anticipated for Ancaster roads can be managed by promoting trip reduction techniques (e.g. tele-commuting, car-pooling, etc.) as well as through transit service improvements and greater promotion of active modes of transportation (i.e. walking and cycling) through infrastructure improvements.

Detailed descriptions of the 2031 horizon scenarios are available in ***Appendix C***, including EMME/2 output and a scenario comparison table. The methodology used to establish a preferred scenario is detailed in **Section 6.0**.

6. 2031 NETWORK ASSESSMENT

Increased traffic demands associated with anticipated growth in Ancaster were initially forecasted using a sub-area model developed based on the City of Hamilton's AM Peak Hour City-wide model. The model forecasts allowed for an assessment of potential regional capacity issues at a screenline level. Through this analysis, it was determined that the overall road network is anticipated to have some capacity issues by the 2031 horizon year, related to planned development in the area and increased pass-through trips.

As identified in **Section 2.4** and **2.4.1** a number of problems and concerns were identified early in the study based on discussions with City staff and feedback from the public. These included:

- Impacts of commuter traffic infiltration and congestion on the ability to preserve Ancaster's unique urban street character;
- Impact of the proximity of Highway 403 to Ancaster;
- Traffic operations concerns and the potential need for increased capacity on roadways and intersections within the study area;
- Impacts of external truck traffic;
- Need for direct access to Highway 403;
- Lack of pedestrian and cycling facilities; and
- Safety concerns.

These were considered when developing the network alternatives and were incorporated into the Problem/Opportunity Statement.

6.1 Proposed Network Alternatives

6.1.1 Identification of Alternatives

Consistent with the requirements of the Municipal Class EA process, a series of transportation network alternatives (referred to below as scenarios) were developed to address the Problem/Opportunity statement identified during Phase 1. The alternatives were assessed against a number of evaluation criteria in order to determine the preferred transportation network alternative.

In order to identify potential alternatives, major problem areas in 2031 were identified by modelling the existing network. The modelling identified a number of specific areas, or corridors, within the study area, where forecasted travel demands would result in congestion and poor levels of service. These corridors included:

- Wilson Street between Highway 403 and Montgomery Drive;
- Rousseaux Street/Mohawk Road;
- McNiven Road;

- Golf Links Road/Halson Street (between Wilson Street and Southcote Road); and
- Fiddler's Green Road.

The corridors were identified as the most important roadway corridors in the network, as well as those with transportation problems, including congestion, accessibility, pedestrian and speed concerns, and intersection safety concerns. The transportation network within the remainder of Ancaster was also considered in the development of alternatives.

The following outlines the alternative scenarios that were identified. The initial scenarios included individual projects and progressed to include combinations of projects in order to identify scenarios with greatest benefit for the study area. Individual scenarios that produced favourable results were combined with other individual scenarios that had also produced favourable results.

Through this iterative process combinations of favourable projects were tested and evaluated to finally arrive at a recommended network alternative. Each scenario is described below and illustrated in ***Figure 14***.

Scenario 1 - "Do-nothing"

- As required by the Class EA, a "Do Nothing" scenario was included to represent the existing roadway network under 2031 transportation demand conditions.
- Forecasted growth by 2031 will increase travel demands within Ancaster and the "Do-Nothing" scenario does not have a transportation network capable of supporting these demands.

Scenario 2 – HTMP Recommendations with Ramp from Mohawk Road (eastbound) to Highway 403 (westbound)

- Included all HTMP recommendations with the addition of a ramp from Mohawk Road (eastbound) to Highway 403 (westbound).
- The City in conjunction with the MTO is currently completing a review of the potential for a new access to Highway 403 and will identify the location of any future ramps.

Scenario 3 – HTMP Recommendations with Ramps from Golf Links Road to and from Highway 403 westbound

- Included HTMP recommendations and the addition of an on-ramp and off-ramp at Highway 403/Golf Links Road
- Enabled vehicles to access Highway 403 westbound when travelling east or west along Golf Links Road. Vehicles travelling eastbound on Highway 403 would be able to exit onto Golf Links Road.

Scenario 4 – HTMP Recommendations with Rousseaux Street Widening

- Included HTMP recommendations and widening Rousseaux Street/Mohawk Road to a four-lane road with an urban cross-section between Wilson Street and McNiven Road.

Scenario 5 – HTMP Recommendations except for a Wilson Street Two-Way Left Turn Lane

- Included HTMP recommendations, with the exception of only widening Wilson Street to a three lane urban cross-section that includes a Two-Way Left Turn Lane between Hamilton Drive and just west of Halson Street.

Scenario 6 – HTMP Recommendations except Widen Rousseaux Street and Maintain Existing Cross-Section on Mohawk Road

- Included HTMP recommendations, however Rousseaux Street/Mohawk Road was widened to four lanes between Wilson Street and McNiven Road and the two-lane cross-section on Mohawk Road was maintained.

Scenario 7 – HTMP Recommendations except Maintain McNiven Road Two-Lane Cross-Section between Golf Links Road and Mohawk Road

- Included HTMP recommendations, however a two-lane cross-section was maintained on McNiven Road between Golf Links Road and Mohawk Road.

Scenario 8 – **Combination of Scenarios 3 & 7**

- Included HTMP recommendations with the addition of an on-ramp and off-ramp connecting Golf Links Road with Highway 403 in the westbound direction and a two-lane cross-section on McNiven Road, between Golf Links Road and Mohawk Road.

Scenario 9 – **Combination of Scenarios 3 &** ***4***

- Included HTMP recommendations, on-ramp and off-ramp connecting Golf Links Road with Highway 403 in the westbound direction and widening Rousseaux Street/Mohawk Road from two to four lanes, between Wilson Street and McNiven Road.

Scenario 10 – HTMP Recommendations plus Lime Kiln Connection

- Included HTMP recommendations and a roadway link between between Mohawk Road and Wilson Street via Lime Kiln Road and Hendry Lane.

Scenario 11 – Combination of Scenarios 5, 6 &7

- Included HTMP recommendations with the exception of providing a Two-Way Left Turn Lane on Wilson Street; widening Rousseaux Street to four lanes; and maintaining McNiven Road as two-lanes.

Scenario 12 – Two Lanes plus Two-Way Left Turn Lane on Wilson, Rousseaux, Mohawk, McNiven

- Included three-lane cross-sections (i.e. one lane in each direction with Two-Way Left Turn Lane) on Wilson Street, Rousseaux Street, Mohawk Road and McNiven Road.

All scenarios were modelled and evaluated against a number of criteria, as required under the Municipal Class EA process. These criteria are described below in **Section 6.1.3**.

Figure 14, on the following page, shows the evaluated scenarios. Each scenario is represented by a corresponding colour.

HAMILTON TRANSPORTATION MASTER PLAN RECOMMENDATIONS*

- Includes all planned HTMP improvements to 2031
- AM Peak Volume Impacts: Wilson (Town Centre) 790 vph, Rousseaux 1010 vph, Mohawk 1240 vph, McNiven 830 vph

MOHAWK ON-RAMP TO HWY 403 WB (S2)

- Negligible network impacts
- No support from MTO
- AM Peak Volume Impacts: Wilson (Town Centre) 790 vph, Rousseaux 1000 vph, Mohawk 1280 vph, McNiven 820 vph

GOLF LINKS RAMPS (S3)

- Traffic primarily to/from south and east Ancaster (e.g. not Town Centre area)
- AM Peak Volume Impacts: Wilson (Town Centre) 780 vph, Rousseaux 980 vph, Mohawk 1290 vph, McNiven 870 vph

WIDEN ROUSSEAUX (S4)

- Some traffic drawn from Halson / Golf Links to extra capacity on Rousseaux
- AM Peak Volume Impacts: Wilson (Town Centre) 790 vph, Rousseaux 1460 vph, Mohawk 1370 vph, McNiven 810 vph

WILSON TWO-WAY LEFT TURN LANE (S5)

- Negligible network impacts
- AM Peak Volume Impacts: Wilson (Town Centre) 780 vph, Rousseaux 1010 vph, Mohawk 1230 vph, McNiven 830 vph

WIDEN ROUSSEAUX & MAINTAIN MOHAWK CROSS-SECTION (S6)

- Reduced volumes on Wilson South and Mohawk
- AM Peak Volume Impacts: Wilson (Town Centre) 710 vph, Rousseaux 1430 vph, Mohawk 960 vph, McNiven 750 vph

MAINTAIN MCNIVEN CROSS-SECTION (S7)

- Reduce speed to 40 km/h
- Reduced volumes on McNiven and Mohawk
- Minor volume increase on Wilson (Town Centre)
- AM Peak Volume Impacts: Wilson (Town Centre) 840 vph, Rousseaux 1000 vph, Mohawk 1080 vph, McNiven 500 vph

COMBINATION OF S3 & S7 (S8)

- Minor improvement on Halson / Golf Links
- Travel favoured on Wilson (Town Centre)
- AM Peak Volume Impacts: Wilson (Town Centre) 890 vph, Rousseaux 970 vph, Mohawk 1140 vph, McNiven 480 vph

COMBINATION OF S3 & S4 (S9)

- Significant improvements to Halson / Golf Links
- Volumes increases on Mohawk and Rousseaux
- AM Peak Volume Impacts: Wilson (Town Centre) 800 vph, Rousseaux 1480 vph, Mohawk 1430 vph, McNiven 860 vph

LIME KILN LINK (S10)

- Not to be carried forward due to technical confirmation
- More volume to Wilson / Rousseaux Area
- Lime Kiln draws significant volume of 560 vph
- AM Peak Volume Impacts: Wilson (Town Centre) 740 vph, Rousseaux 830 vph, Mohawk 1290 vph, McNiven 870 vph

COMBINATION OF S5, S6, & S7 (S11)

- Minor improvement on Halson / Golf Links
- Travel favoured on Wilson (Town Centre)
- AM Peak Volume Impacts: Wilson (Town Centre) 890 vph, Rousseaux 970 vph, Mohawk 1140 vph, McNiven 480 vph

WILSON, ROUSSEAUX, MOHAWK, MCNIVEN TWO-WAY LEFT TURN LANE (S12)

- Best balance of operational improvement versus social impact
- AM Peak Volume Impacts: Wilson 721 vph, Rousseaux 1256 vph, Mohawk 1021 vph, McNiven 676 vph

Hamilton

Ancaster Transportation Master Plan

Figure 14
Evaluated Scenarios

Legend

- Highway
- Existing Road Network
- Ancaster Study Area

Hamilton Transportation Master Plan Improvements (May 2007)

- 2 Two-Way Left Turn Lane
- 3 Road Widening
- 4 Conversion to Urban Cross-Section

*HTMP recommendations are shown as they relate to a number of scenarios.

Note:
Scenario 1-Do Nothing was not included as it represents the existing roadway network conditions

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6.1.2 Evaluation of Proposed Network Alternatives

The twelve scenarios were evaluated based on a number of criteria related to transportation service, socio-economics, natural environment and cost.

The evaluation was carried out by assessing each of the proposed scenarios against the evaluation criteria, and comparing them against one another in order to determine which scenario was most closely addressed the Problem/Opportunity Statement. The evaluation completed was qualitative and based on relative impacts. The evaluation is documented in ***Table 15***.

The following provides a summary of the criteria used:

Transportation Service:

- *Supports sustainability principles* – Identified how well an alternative promotes the use of sustainable modes of transportation: transit, cycling and walking. Alternatives that promote non-auto modes were preferred.
- *Volume to Capacity ratios or Vehicles Per Hour on key arterials (i.e. Wilson, Rousseaux, McNiven)* - Identified the impact of an alternative on the volume per hour and volume to capacity ratios on key arterials in the Community of Ancaster. Key arterials are defined as Wilson, Rousseaux/Mohawk, Golf Links and McNiven. Alternatives resulting in lower volume to capacity ratios on these arterials were preferred.
- *Traffic infiltration/cut-through traffic* – Identified the impact of an alternative on cut-through traffic. Cut-through traffic is defined as auto traffic using residential/local roadways to avoid arterial road congestion that neither originates nor is destined to the residential neighbourhood impacted. Cut-through traffic can be avoided by ensuring delays on arterial roadways are minimized and capacities are not exceeded. Alternatives that reduce delays on arterial roads and therefore minimize cut-through traffic were preferred.
- *Pedestrian facilities and ability to improve safety* – Identified the impact of an alternative on pedestrians. A narrower roadway cross-section was preferred.
- *Potential impacts to public transit services (i.e., travel time, reliability, etc.)* – Identified the impact of an alternative on public transit service and reliability. As roadways become more congested, it becomes more difficult to offer fast and reliable public transit service. Alternatives that reduce roadway delay and minimize delays to public transit vehicles were preferred.
- *Ability to improve access to local businesses and residents* – Identified the improvement in access to businesses and residential areas with entrances on a main arterial roadway. Alternatives that improve access were preferred.

Socio-Economic:

- *Consistent with future land uses* – Compared alternative to the planned land uses within the Community of Ancaster (e.g. Village Area, Shopping Centre Commercial, Agricultural, Residential 1, etc). Alternatives that were consistent with planned land uses are preferred.

- *Impact on residential properties* – Identified the impact of an alternative on residential property as a result of road widenings. Alternatives that minimized the amount of residential property impacted were preferred.
- *Impact on archaeological features* - Identified the potential for impacts on archaeological features.
- *Impact on heritage features* – Identified the impact of an alternative on Heritage Features (i.e. historic structures, landmarks). Alternatives that minimized the impact on heritage features were preferred.
- *Impact on community character* – Identified the overall impact on the character and "feel" of the area. Alternatives that maintained the current character of the area were preferred.
- *Impact on businesses* – Identified the impact of an alternative on business property as a result of road widenings. Alternatives that minimized the impact on business properties were preferred.

Natural Environment:

- *Potential impacts on natural environment (terrestrial, aquatic & environmentally sensitive areas)* – Identified the impact of an alternative on the natural environment. As a result of widening or new road construction, land may be required in environmentally sensitive areas or areas of environmental significance. Alternatives that minimized the impacts to environmentally sensitive areas were preferred.

Cost:

Capital cost (assumes HTMP base cost is $86M) – Compared estimated capital cost to implement the alternative to the HTMP base cost. Alternatives that reduced capital costs were preferred. Road improvement costing was based on benchmark costs and typical roadway cross-sections. Unit prices were selected according to typical market values for the study area. The benchmark costs contain typical engineering and construction contingency allowances. Estimates took into consideration the costs typically associated with earthworks, underground servicing, utility servicing, street and traffic lighting, structures, roadworks and amenities, and drainage.

Note: Once a Recommended Alternative was identified further cost refinements were made as part of the study. These were based on individual project cost refinements or removal of some recommended HTMP projects. For example, most costs for improvements to Garner Road were removed as most roadway improvements are being considered within the context of a separate Environmental Assessment. Removing Garner Road and other such projects resulted in much lower estimated costs for the Recommended Scenario in subsequent stages of the study (as compared to the evaluation of alternatives stage). Therefore, the refined costs for the Recommended Scenario presented in the implementation section of the report should not be directly compared to costs identified within the evaluation portion of the study.

Table 15 – Evaluation of Scenarios

Criteria		Scenario 1 Do Nothing	Scenario 2 HTMP with Ramp from Mohawk Road (EB) to Highway 403 (WB)	Scenario 3 HTMP with Ramps from Golf Links Road to & from Highway 403 WB	Scenario 4 HTMP with Rousseaux Street Widening	Scenario 5 HTMP, except Wilson Street Two Way Left Turn Lane	Scenario 6 HTMP, except Widen Rousseaux and Maintain Existing Cross-Section on Mohawk	Scenario 7 HTMP except Maintain McNiven Road 2-lane cross-section (between Golf Links and Mohawk)	Scenario 8 Combination of Scenarios 3 & 7	Scenario 9 Combination of Scenarios 3 & 4	Scenario 10 HTMP plus Lime Kiln Connection	Scenario 11 Combination of Scenarios 5, 6 and 7	Scenario 12 Two Way Left Turn Lane on Wilson, Rousseaux, Mohawk, McNiven (same cross-sections) - 3 lane cross-section
Transportation Service	Supports sustainability principles	Sustainable modes become less attractive as traffic volumes increase **X**	No change or shift to sustainable modes **X**	No change or shift to sustainable modes **X**	No change or shift to sustainable modes **X**	Reduced cross-section (compared to HTMP) leaves more room for sidewalks and bicycle lanes √	Reduced cross-section of Mohawk (compared to HTMP) leaves more room for sidewalks and bicycle lanes √	Reduced cross-section leaves more room for sidewalks and bicycle lanes √	Reduced cross-section leaves more room for sidewalks and bicycle lanes √	No change or shift to sustainable modes **X**	No change or shift to sustainable modes **X**	Reduced cross-section leaves more room for sidewalks and bicycle lanes √	Reduced cross-section leaves more room for sidewalks and bicycle lanes √
	Impacts on congestion	Traffic congestion continues to increase as population and employment rises **X**	Westbound on-ramp results in negligible decrease in traffic on both Wilson and Rousseaux –	Slight decrease in volume to capacity ratio on Rousseaux and on Golf Links west of McNiven. Increase on Golf Links east of McNiven. Slight increase on McNiven √	Significant increase in traffic at Rousseaux/Mohawk. Draws escarpment crossing traffic from Hwy 403 **X**	No significant detrimental impacts –	Significant increase in traffic on Rousseaux; decrease in traffic on Mohawk. Draws some escarpment crossing traffic from Hwy 403 –	Significant drop in traffic on McNiven and Mohawk/Rousseaux. No significant detrimental impacts to road network –	Significant drop in traffic on McNiven and Mohawk/Rousseaux. Decreased traffic on Golf Links west of McNiven √	Significant increase in traffic at Rousseaux/Mohawk to. Draws escarpment crossing traffic from Hwy 403 **X**	Increases attractiveness of Wilson escarpment crossing over Hwy 403 - draws traffic from Hwy 403 **X**	No significant detrimental impacts –	Provides some operational benefits to local property owners with a slight improvement in through capacity on Mohawk, Rousseaux and McNiven √
	Traffic infiltration / cut-through traffic	Drivers may increasingly look for short-cutting opportunities along local residential streets. **X**	Minimal impact to cut-through traffic. Modelling predicts most traffic will be from immediate residential neighbourhoods –	Slight positive impact to cut-through traffic due to less traffic on arterials and increased volumes on Highway 403 √	No impact to cut-through traffic –	No impact to cut-through traffic –	No impact to cut-through traffic –	No impact to cut-through traffic –	Slight positive impact to cut-through traffic due to less traffic on arterials √	Slight positive impact on cut-through traffic due to less traffic on arterials √	No impact to cut-through traffic –	Slightly positive impact to cut-through traffic due to less traffic on arterials √	No impact to cut-through traffic –
	Pedestrian facilities and ability to improve safety	No change to existing conditions **X**	Recommended road widenings make pedestrian movements less comfortable due to wider cross-sections –	No significant change –	Road widening makes pedestrian movements less comfortable due to wider cross-sections –	Narrower cross-section (compared to HTMP recommendation) makes pedestrian movements more comfortable √	Maintaining cross-section of Mohawk makes pedestrian movements more comfortable (compared to HTMP recommendations). Wider cross-section on Rousseaux makes pedestrian crossings less comfortable –	Narrower cross-section (compared to HTMP recommendation) makes pedestrian movements more comfortable √	Narrower cross-section (compared to HTMP recommendation) makes pedestrian movements more comfortable √	Road widenings make pedestrian movements less comfortable due to wider cross-sections –	Increased traffic in established neighbourhoods will decrease comfort of pedestrians **X**	Narrower cross-section will make pedestrian crossings easier √	Narrower cross-section (compared to HTMP recommendation) makes pedestrian movements more comfortable √
	Potential impacts to public transit service (i.e., travel time, reliability, etc)	Speed and reliability of public transit will gradually decrease as a result of increased traffic congestion **X**	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –	No significant impact to transit service –
	Ability to improve access to local businesses and residents	No improvement to existing conditions **X**	No improvement to existing conditions **X**	No improvement to existing conditions **X**	No improvement to existing conditions **X**	Centre turn lane allows for safer left turn movements, improving access along roadway √	No improvement to existing conditions **X**	No improvement to existing conditions **X**	Centre turn lane allows for safer left turn movements, improving access along roadway √	No improvement to existing conditions **X**	No improvement to existing conditions **X**	Centre turn lane allows for safer left turn movements, improving access along roadway √	Centre turn lane allows for safer left turn movements, improving access along roadway √
Summary of Transportation Service		**X**	–	–	**X**	√	–	–	√	**X**	**X**	√	√
	Consistent with future land uses	Not supportive of planned growth	Changes future use of undeveloped lands due to construction of ramp	Changes future use of undeveloped lands due to construction of ramps	Provides increased accessibility for future uses	No impact on future uses as area is already developed	Provides increased accessibility to future uses on Rousseaux	No impact on future uses as area is already developed	Changes future use of undeveloped lands due to construction of ramps	Provides increased accessibility to future uses on Rousseaux. Impacts on undeveloped lands due to construction of on-ramp	Not consistent as area not designated for development	Changes future use of undeveloped lands due to construction of on-ramp. Provides increased accessibility to future uses on Rousseaux	Provides increased accessibility to future uses on Rousseaux

Socio-Economic	Consistent with future land uses	Not supportive of planned growth X	Changes future use of undeveloped lands due to construction of ramp –	Changes future use of undeveloped lands due to construction of ramps –	Provides increased accessibility for future uses √	No impact on future uses as area is already developed √	Provides increased accessibility to future uses on Rousseaux √	No impact on future uses as area is already developed √	Changes future use of undeveloped lands due to construction of ramps –	Provides increased accessibility to future uses on Rousseaux. Impacts on undeveloped lands due to construction of on-ramp –	Not consistent as area not designated for development X	Changes future use of undeveloped lands due to construction of on-ramp. Provides increased accessibility to future uses on Rousseaux –	Provides increased accessibility to future uses on Rousseaux √
	Impact on residential properties	No impacts –	Potential for approx. 10 properties to be impacted to reinstate ramp –	Potential for approx. 10 properties to be impacted due to proposed off-ramp –	Potential for minor impacts to aprox. 50 properties X	Eliminates potential impacts to approx. 40 properties (between Halson and Meadowbrook) √	Eliminates potential impacts to approx 45 properties if Mohawk maintained. Potential for minor impacts to approx. 50 properties for Rousseaux widening X	Eliminates impacts to approx. 45 properties √	Potential for approx. 10 properties to impacted by off-ramp. Eliminates potential impacts to approx. 45 properties by maintaining a two-lane cross-section –	Potential for minor impacts to approx. 60 properties X	Potential impacts to approx. 25 properties X	Potential for minor impacts to approx. 50 properties for Rousseaux widening X	Potential minor impacts to approx. 50 properties, however benefits approx. 130 properties –
	Impact on archaeological features	No impacts √	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –	Potential for impacts –
	Impact on built heritage features	No impacts √	Limited potential for impacts –	Limited potential for impacts –	Limited potential for impacts –	Potential impact on 1 heritage building –	Limited potential for impacts –	Limited potential for impacts –	Limited potential for impacts –	Limited potential for impacts –	Limited potential for impacts –	Potential impact on 1 heritage building on Wilson –	Limited potential for impacts –
	Impacts on community character	No impacts √	Widening will impact residential feel of neighbourhood X	No impacts √	Widening will impact residential feel of neighbourhood X	Limited impact –	Widening will impact residential feel of neighbourhood X	Limited impact –	Widening will impact residential feel of neighbourhood X	Widening will impact residential feel of neighbourhood X	Significant impact as area is currently naturalized X	Widening will impact residential feel of neighbourhood X	Limited impact –
	Impact on businesses	No impacts, however increased congestion makes some locations less desirable –	No impacts –	No impacts –	No impacts –	Improves access to businesses √	No impacts –	No impacts –	No impacts –	No impacts –	No impacts –	Improves access to businesses √	Improves access to businesses √
Summary of Socio-Economic Environment Ranking		–	–	–	–	√	–	–	–	–	X	X	√
Natural Environment	Potential impacts on natural environment (terrestrial, aquatic & environmentally sensitive areas)	No impacts	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation	Significant negative impacts to environmentally significant areas	Limited impacts to landscaped vegetation	Limited impacts to landscaped vegetation
Summary of Natural Environment Ranking		√	√	√	√	√	√	√	√	√	X	√	√
Cost	Capital cost	No capital cost	$500k more than HTMP ($86 million)	$1M more than HTMP ($87 million)	$3M more than HTMP ($89 million)	$5M less than HTMP ($81 million)	$1M less than HTMP ($85 million)	$2M less than HTMP ($84 million)	$1M less than HTMP ($85 million)	$4M more than HTMP ($90 million)	Greater than HTMP (More than $90 million)	$8M less than HTMP ($78 million)	$3M less than HTMP ($83 million)
Summary of Cost Ranking		√	–	–	–	√	√	√	√	X	X	√	√
OVERALL RANK		–	–	–	–	–	–	–	–	X	X	–	√
													RECOMMENDED

Notes:

- TWO WAY LEFT TURN LANE = "Two Way Left Turn Lane"
- VPH = "Vehicles Per Hour"
- EB / WB = "Eastbound" / "Westbound"
- LOS = "Level Of Service", a traffic engineering term used to describe intersection performance - ranging from 'A' (the best) to 'F' (the worst).
- V/C = "Volume to Capacity" ratio, a traffic engineering term used to describe the proportion of vehicles utilizing a road relative to that road's intended capacity. A ratio greater than 1.0 is beyond capacity.
- All vehicle statistics referred to are based on one-hour *morning* period, as per EMME/2 model results for 2031.
- Qualitative ranking for Scenario 1 is compared to Scenario 0 - Do Nothing. Rankings for Scenarios 2 - 11 are in comparison to Scenario 1 - HTMP
- All costs are planning level 2010 costs and are rounded to the nearest $1 million)

Legend

✓ **Relatively Positive**

X **Relatively Negative**

\- **Relatively Neutral**

6.1.3 Recommended Network Alternative

The preferred network alternative was determined to be Scenario 12, which recommended three-lane cross-sections on Wilson Street, Rousseaux Street, Mohawk Road and McNiven Road; and potential Golf Links ramps to Highway 403 (as identified in Scenario 3). This was later refined to include:

- Three lane cross-section including a centre two-way left turn lane, where feasible depending on the right-of-way, on sections of Wilson Street, Rousseaux Street, Mohawk Road, McNiven Road, Southcote Road and Garner Road (between Highway 2/ Wilson Street and 50m west of Shaver Road);
- Widening Garner Road to four lanes between 50m west of Shaver Road and 50m east of Miller Drive;
- Widening Stone Church Road to four lanes between Harrogate Drive and Stonehenge Drive;
- New collector roads in areas of development (i.e. Meadowlands and Ancaster Industrial Park);
- Two lane roundabout at the intersection of Wilson Street and Rousseaux Street, as the long-term solution. An interim traffic signal option is included in the plan, along with an additional southbound left turn lane to the exiting configuration;
- A single lane roundabout at the intersection of Wilson Street and Jerseyville Road;
- Sidewalks on both sides of the road, where feasible;
- Cycling lanes where identified in *Hamilton's Cycling Master Plan – Shifting Gears 2009*;
- Potential Highway 403 Road Ramps at Golf Links Road (dependent on results of ongoing MTO studies).

These recommendations are explained further in **Section 9.0** and are show below in ***Figure 15***.

Hamilton

Ancaster Transportation Master Plan

Figure 15

Preferred Network Alternative

Legend

- Highway
- Existing Road Network
- Intersection Improvements
- Recommended Three-Lane Cross-Section with Two-Way Left Turn
- New Cormorant to Trinity Road EA
- Meadowlands Neighbourhood IV Approved Secondary Plan
- Garner Road EA
- Road Widening
- Potential Golf Links Ramps
- Ancaster Study Area

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7. OPERATIONAL MODELLING ANALYSIS

This section outlines the assessment of future traffic operations in the Ancaster study area for the Recommended Scenario based on the Ancaster transportation demand model. This analysis was undertaken to ensure that appropriate infrastructure would be planned in the Ancaster area to the future horizon year of 2031.

The Ancaster transportation demand model looked at the study area on a regional scale to identify screenline level capacity issues. Conversely, operational modelling analysis was carried out for the Recommended Scenario in order to identify intersection-level deficiencies. For the analysis of signalized/unsignalized intersections, Trafficware's Synchro (Version 6) analysis software package was used; and in the analysis of roundabouts, the US Federal Highway Administration (FHWA) methodology was used. These allowed for a planning-level calculation of the Level-of-Service (LOS) to help determine any recommended intersection mitigation measures.

Table 16 outlines the intersections included as part of the operational analysis. The main intersections of interest were those roadways classified as arterials or collectors. Local roads were not examined as part of this analysis.

Table 16 – Operational Analysis Intersections

Intersection	Synchro Analysis			FHWA Roundabout Analysis	
	2016	2021	2031	2021	2031
Garner Road & Hamilton Drive					X
Garner Road & Kitty Murray Lane	X	X	X		
Garner Road & Southcote Road		X	X		
Golf Links & Kitty Murray Road			X		
Golf Links Road & Martindale Crescent (West)			X		
Golf Links Road & Neville Drive	X	X	X		
Golf Links Road & Southcote Road	X	X	X		X
Golf Links Road & Stone Church Road	X	X	X		
Mohawk Road & McNiven Road	X	X	X		X
Wilson Street & Fiddler's Green Road			X		X
Wilson Street & Halson Street			X		X
Wilson Street & Jerseyville Road			X		X
Wilson Street & Rousseaux Street	X	X	X	X	X
Wilson Street & Shaver Road					X
Wilson Street & Trinity Road		X	X		

7.1 Traffic Volumes

The EMME/2 Ancaster transportation model acts on a regional scale, providing a coarse overview of the expected transportation demand in the study area. In order to translate regional roadway link volumes into future intersection turning movement volumes, some adjustment was required.

In the EMME/2 model, each transportation zone's generated trips access the roadway network via "centroid connector" link points. In reality, traffic is generally dispersed amongst a number of local and collector roads rather than concentrated onto a single centroid access point. This characteristic of the EMME/2 model tended to result in a greater degree of traffic fluctuation and variability along a given corridor. Localized trip patterns were heavily influenced by "centroid connector" locations.

In the development of future turning movements used for operational analysis, EMME/2 volumes were not used directly due to the "coarseness" of the model and the fact that the travel demand model operates based on roadway link delay, instead of intersection capacity constraints. As such, EMME/2 turning movement volumes can be much higher than what would be experienced at an intersection in reality. As a result growth factors were used as a more appropriate means to bridge the gap between the EMME/2 transportation demand model and an operations model better suited for intersection operations analysis (i.e. Trafficware's Synchro software).

7.1.1 AM Peak Hour Volume Development

For the AM Peak Hour, link volumes and select intersection movements were extracted from the EMME/2 model for the 2006 base year as well as the future horizon years 2016, 2021, and 2031. From this data, turning movement growth factors were calculated by taking the volumes in each future horizon years and dividing by the volume in the base year.

Existing Ancaster intersection counts were obtained from the City of Hamilton and used as the base value for approximating future turning movement volumes in the operational analysis. The growth factors for each future horizon year were applied to the existing AM Peak Hour intersection turning movement counts to obtain future turning movement volumes.

The future horizon intersection volumes developed were used in both the intersection analysis and the roundabout analysis.

7.1.2 PM Peak Hour Volume Development

The process of developing PM Peak Hour volumes was similar to the development of the AM Peak Hour volumes. Since the EMME/2 model provided by the City of Hamilton was only an AM Peak Hour transportation demand model, adjustments were required to translate turning movements from AM to PM Peak Hour. This process assumes that individuals travelling in the PM Peak Hour are generally returning to the origin they started from in the AM Peak Hour.

As with the AM Peak Hour, link volumes and select intersection movements were extracted from EMME/2. These movements were then transposed (e.g. northbound through traffic becomes southbound through, westbound right traffic becomes southbound left, etc.) prior to calculating the

growth factors for each horizon year. The growth factors for each future horizon year were then applied to the existing PM Peak Hour intersection turning movement counts to obtain the future turning movement volumes.

7.2 Traffic Operations

As indicated earlier traffic operations analysis was only carried out for the Recommended Scenario (Scenario 12). Intersections were optimized at a planning-level of detail and improvements recommended were based on lowering the volume-to-capacity (v/c) ratio (i.e. increasing traffic flowing through a given intersection using the same number of lanes) and increasing the overall intersection level-of-service (LOS) (i.e. reducing the delay experienced by motorists). Signalized/unsignalized intersection operations were evaluated using Trafficware's Synchro software.

The City of Hamilton has a policy in place to evaluate the potential for roundabouts at intersections where traffic signals are being considered. In addition to signalized intersection LOS analysis, the use of roundabouts was also considered within the Ancaster area.

Roundabout evaluations were performed at key Ancaster intersections, as identified above in ***Table 16***, using the FHWA methodology. A LOS rating was assigned to each intersection, based on the average delay and compared to the signalized option. Roundabouts were operationally considered viable at intersections where an improved LOS rating was exhibited, over the signalized option.

The LOS analysis for both signalized intersections and roundabouts is based on planning-level volume forecasts for future horizons with travel patterns that differ from existing conditions. The LOS at specific intersections and for critical turning movements should be examined at a more detailed level of study in future years when more accurate information is available about land use plans and resulting traffic volumes. At such a stage, more detailed assessments can be carried out to ensure that City of Hamilton standards are met for geometric design and other criteria and to determine mitigation for any operational issues if these materialize.

Intersection level of service outputs and additional information from the Synchro software and FHWA Roundabout analysis is provided in ***Appendix D***.

7.2.1 Methodology

Intersection operational analysis was examined starting from a future state (i.e. 2031 horizon) and working backwards to the present in order to establish phasing for improvements recommended by the 2031 horizon year.

If required, the 2021 and 2016 horizons were tested with and without a given improvements to determine if an intersection could be expected to perform under existing geometric conditions. More problematic intersections were analyzed in all future horizons (e.g. Wilson Street &

Rousseaux Street intersection). Mitigation measures were assessed critically so as to avoid unnecessary expansion of intersections within the Ancaster area.

The LOS was determined for both signalized intersections (using Synchro analysis) and roundabouts (using FHWA methodology). In cases where a roundabout LOS was significantly better than a signalized intersection LOS, the roundabout was considered, at a high level, to be a feasible option at that location (e.g. pending a more detailed study of any geometric constraints). Intersections with existing roundabouts were checked to confirm their continued satisfactory operation by the 2031 horizon.

7.2.2 Results

The operational analysis confirms that there are indeed roadway capacity constraints in the Ancaster area, particularly in the PM Peak Hour. Due to right-of-way (ROW) constraints along many corridors and a study objective to limit roadway capacity increases, some intersections in the Ancaster area will continue to have a poor LOS by the 2031 horizon year. The signalized intersection LOS results for the 2031 horizon are summarized in Tables 17.

Table 17 – 2031 Horizon Intersection LOS

Intersection Locations	
Acceptable (v/c of 0.85 or less)	
AM Peak Hour	**PM Peak Hour**
Garner Road & Kitty Murray Lane (LOS B)	Garner Road & Kitty Murray Lane (LOS C)
Golf Links Road & Kitty Murray Lane (LOS C)	Wilson Street & Fiddler's Green Road (LOS C)
Golf Links Road & Martindale Crescent (LOS B)	Wilson Street & Jerseyville Road (signalized) (LOS A)
Golf Links Road & Neville Drive (LOS B)	Wilson Street & Trinity Road (LOS B)
Golf Links Road & Stone Church Road (LOS C)	
Wilson Street & Fiddler's Green Road (LOS C)	
Wilson Street & Halson Street (LOS B)	
Wilson Street & Jerseyville Road (signalized) (LOS A)	
Poor (v/c of 0.85 – 1.00)	
AM Peak Hour	**PM Peak Hour**
Garner Road & Southcote Road (LOS D)	Wilson Street & Halson Street (LOS D)
Golf Links Road & Southcote Road (LOS D)	Wilson Street & Rousseaux Street (LOS D)
Wilson Street & Jerseyville Road (unsignalized) (LOS F)	
Wilson Street & Trinity Road (LOS C)	
Very Poor (v/c greater than 1.00)	
AM Peak Hour	**PM Peak Hour**
Mohawk Road & McNiven Road (LOS F)	Garner Road & Southcote Road (LOS E)
Wilson Street & Rousseaux Street (LOS F)	Golf Links Road & Kitty Murray Lane (LOS D)
	Golf Links Road & Martindale Crescent (LOS F)
	Golf Links Road & Neville Drive (LOS F)
	Golf Links Road & Southcote Road (LOS F)
	Golf Links Road & Stone Church Road (LOS E)
	Mohawk Road & McNiven Road (LOS F)
	Wilson Street & Jerseyville Road (unsignalized) (LOS F)

In addition to signalized/unsignalized intersection operational analysis, the operational analyses of roundabouts were evaluated for eight intersections (including one existing roundabout) within the study area. Roundabout LOS results for the 2031 horizon are summarized in ***Table 18***.

The intersection of Garner Road and Hamilton Drive is currently unsignalized, however it is anticipated that operational intersection improvements (i.e. traffic signals or a roundabout) will likely be required by the 2031 horizon due to poor side street LOS. While potential traffic signals would operate at a LOS 'B' in 2031, the implementation of a roundabout at this location should be considered as a viable option.

Table 18 – 2031 Horizon Roundabout LOS

Intersection	Single Lane Roundabout LOS		Double Lane Roundabout LOS	
	AM	PM	AM	PM
Garner Road & Hamilton Drive*	D	B	A	A
Golf Links Road & Southcote Road*	F	F	A	B
Mohawk Road & McNiven Road	F	F	D	F
Wilson Street & Fiddler's Green Road	A	F	A	A
Wilson Street & Halson Street	C	F	A	A
Wilson Street & Jerseyville Road*	C	E	A	A
Wilson Street & Rousseaux Street*	F	F	A	A
Wilson Street & Shaver Road†	E	F	A	A

Notes:
** Indicates roundabout considered viable option operationally, barring any geometric constraints.*
† Existing roundabout

At most locations signalized intersections will continue to perform well up to 2031. However, based on the above roundabout analysis, further consideration should be given to employing roundabouts at the following locations in Ancaster:

- Garner Road & Hamilton Drive;
- Golf Links Road & Southcote Road;
- Wilson Street & Jerseyville Road; and
- Wilson Street & Rousseaux Street.

Signalized intersection locations with a poor or very poor LOS should be monitored and mitigation measures implemented as appropriate (e.g. advance turning movements, signal optimization).

7.2.3 Centre Two-Way Left Turn Lanes

Many of the corridors in the Ancaster area (particularly near the village core) are fronted by single-family residential and commercial developments, characterized by frequent driveways. The HTMP recommended that a number of roadways should be widened to accommodate city-wide demands (e.g. Garner Road, McNiven Road, Mohawk Road, Wilson Street). Based on study objectives and goals, the following corridors were recommended for widening to a three-lane cross-section instead of four-lanes:

- Wilson Street;
- Rousseaux Street;
- Mohawk Road;
- McNiven Road; and
- Southcote Road.

Three-lane cross sections would provide centre two-way left turn lanes (TWLTLs) that would serve local driveways and intersections with local streets (i.e. centre two-way left turn lane would become a left turn lane), removing left turn traffic from through lanes and improving corridor operations and enhancing safety.

Three lane roads with centre TWLTLs have been shown to carry similar traffic volumes to four lane roads (i.e. two lanes in each direction) with the benefit of a narrower road right-of-way. There are many studies that highlight the safety benefits of TWLTL conversions from four lanes to three. Based on available studies, it was found that the addition of a TWLTL resulted in an approximate 20-40% reduction in total collisions, 25% reduction in left-turn collisions, and 40% reduction in rear-end collisions, depending on the context of the application.[4][5] Based on the ATMP analysis, TWLTLs are recommended as an effective way to improve transportation safety without significantly decreasing roadway capacity.

Another important benefit of three lane roads with centre TWLTLs is the ability to accommodate pedestrians and cyclists. There are many good examples of re-designed four lane roads that have been improved by adopting a three-lane road cross-section in order to include sidewalks and cycling lanes within the same right-of-way.

[4] *Improving Road Safety with Two-Way Left-Turn Lanes*, Minnesota DOT, April 2009

[5] *Safety Evaluation of Center Two-Way Left-Turn Lanes on Two-Lane Roads*, US FHWA, March 2008

7.3 Additional Intersection Analysis

Three specific study area intersections were examined in greater detail to evaluate potential improvements. These included:

1. Wilson Street at Rousseaux Street;
2. Wilson Street at Jerseyville Road; and
3. Halson Street at Golf Links Road.

7.3.1 Evaluation of Proposed Intersection Operational Improvements

The Wilson Street intersections were assessed in more detail than the Halson Street and Golf Links intersections. To determine the preferred intersection improvement option, the Wilson Street intersections were evaluated using the Municipal Class EA categories outlined in **Section 6.1.3**:

- Transportation Service;
- Socio-Economic;
- Natural Environment; and
- Cost.

Intersection evaluation criteria for these two intersections were the same as those used for evaluating the road network alternatives (see **Section 6.2.2**) with the exception of the *Cost* category. Operational and Maintenance Costs and Property Costs were added to better compare the proposed improvement options at the intersection level.

The third intersection, Halson Street at Golf Links Road, was examined only for the purpose of determining future traffic signal needs (additional alternatives were not proposed nor evaluated). As such, the evaluation was limited to traffic operations analysis.

7.3.1.1 Wilson Street at Rousseaux Street

The Wilson Street and Rousseaux Street intersection was identified as a critical junction for accessibility to and from the Ancaster area. Under existing geometric and operational conditions, this signalized intersection is operating poorly. In order to mitigate these poor operating conditions, two potential long-term options were identified for evaluation under the Municipal Class EA process. In addition to the long-term recommended options, an "interim option" was identified, which would act as a short-term solution until a long-term solution could be implemented.

The long-term intersection options proposed in the ATMP build upon intersection options previously proposed in the *iTRANS Ancaster Intersection Assessment – Wilson/Rousseaux* report (May 2008). The proposed intersection improvement options are discussed below.

Long-Term Option #1: Intersection Geometry and Bridge Improvements

This option primarily focused on geometric and operational improvements to the existing intersection at Wilson Street and Rousseaux Street (see ***Figure 16***). Improvements include:

- Geometric modifications to accommodate dual turning lanes for the westbound left and southbound left turning movements;
- Geometric modifications to accommodate a second receiving lane westbound on Rousseaux Street (from the southbound left turning movement) and southbound on Wilson Street (from the westbound left turning movement);
- Widening the existing bridge structure on Wilson Street over Ancaster Creek to accommodate the dual southbound left turn lanes; and
- Optimization of the intersection traffic signals to accommodate the new intersection geometry and traffic volumes.

Long-Term Option #2: Double Lane Roundabout

This option required a more extensive alteration to the intersection than Option #1, rebuilding it into a modern double lane roundabout (see ***Figure 17***). Improvements included:

- The realignment of the intersection to the southwest of its current location;
- The construction of a new bridge structure on Wilson Street across Ancaster Creek to accommodate the intersection realignment; and
- The closure (i.e. creation of a cul-de-sac) of Old Dundas Road would reduce access to Wilson Street and Rousseaux Street. Vehicles from Old Dundas Road would be required to access Wilson Street via Montgomery Drive.

Interim Option: Minor Intersection Geometry Improvements

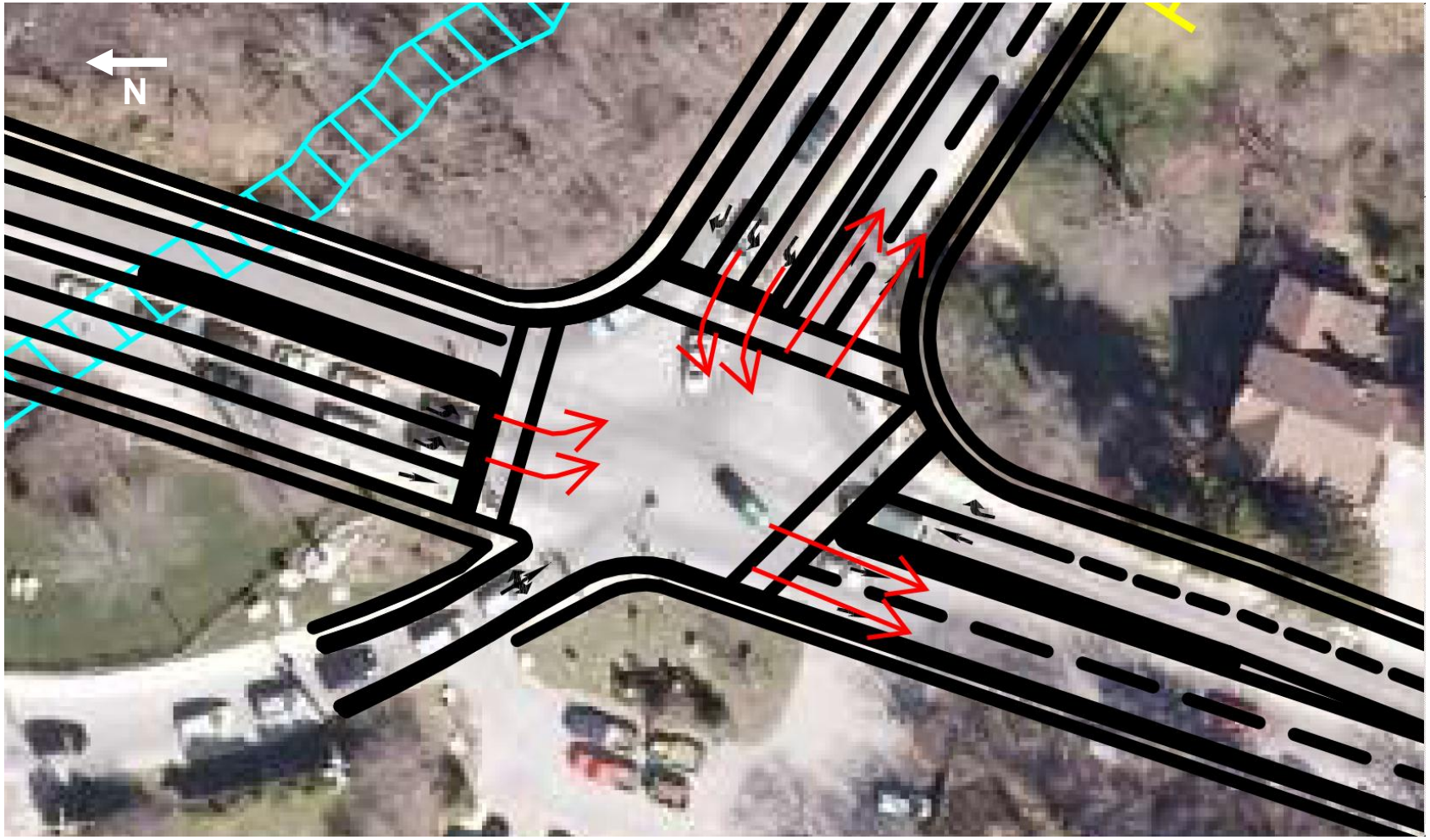
The interim option is intended only as a short-term solution to mitigate the intersection's currently poor conditions until a more permanent long-term solution can be implemented. The criteria for evaluating this interim option included whether the solution provided immediate short-term benefits and whether it would be significantly lower in cost than a permanent long-term solution.

The following improvements (see ***Figure 18***) are proposed as part of the interim option:

- Geometric modification within the existing right-of-way (ROW) to accommodate dual turning lanes for the southbound left turning movement;
- Geometric modifications to accommodate a second receiving lane on eastbound Rousseaux Street (from the southbound left turning movement); and

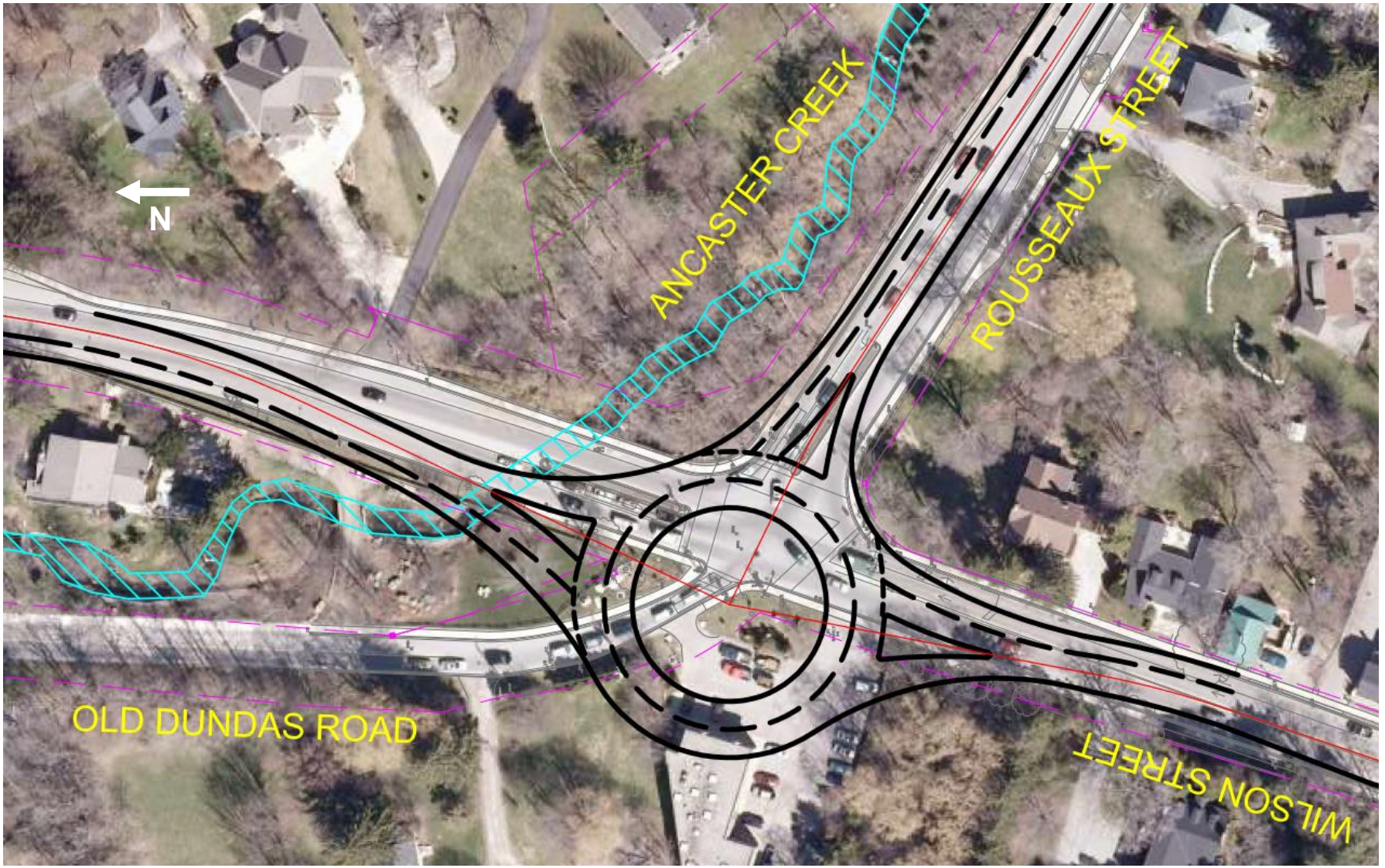
Optimization of the intersection traffic signals to accommodate the new intersection geometry and traffic volumes.

Figure 16 – Wilson/Rousseaux Improvement Option #1



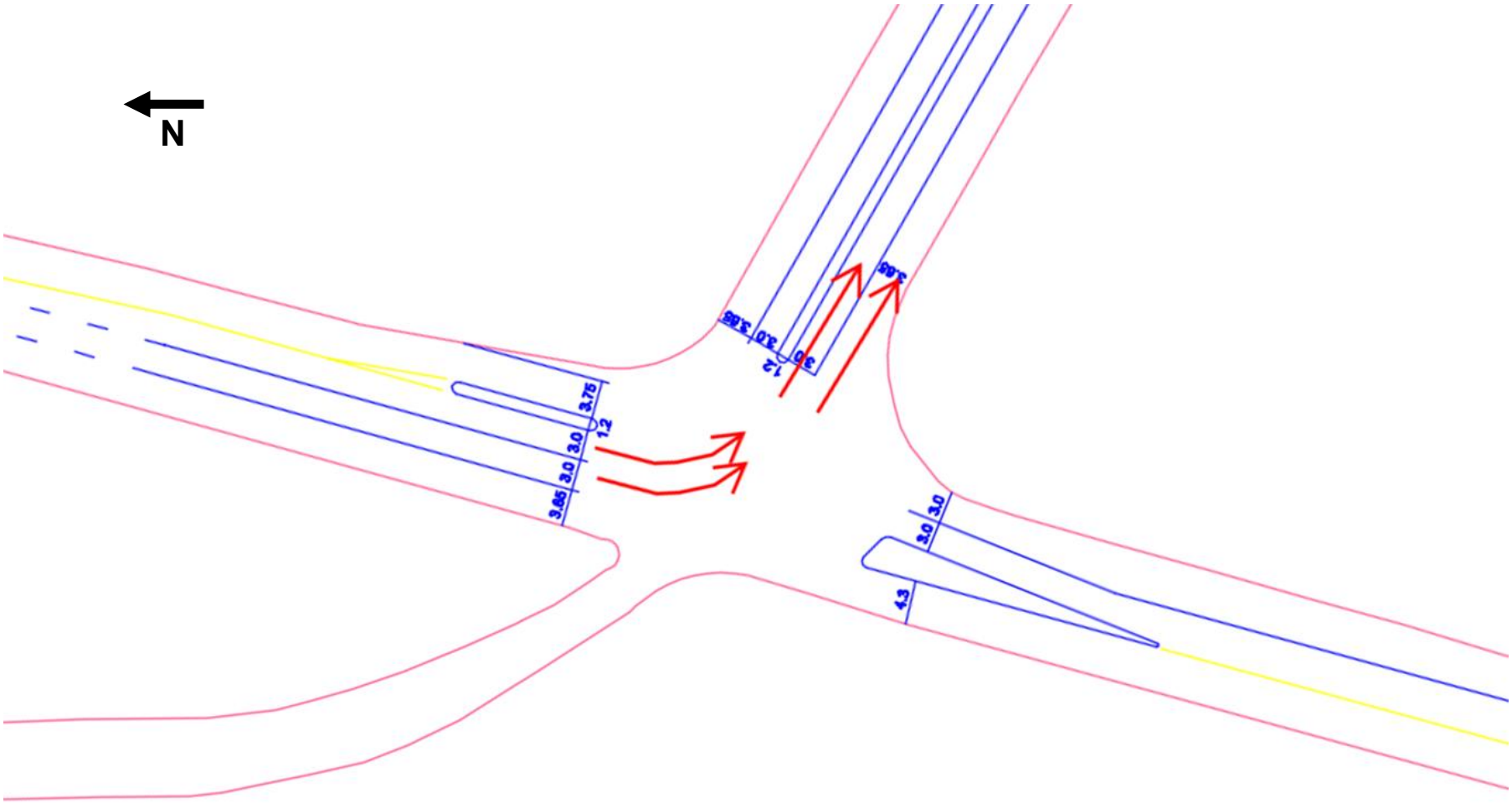
Source: iTRANS Wilson/Rousseaux Assessment (2008)

Figure 17 – Wilson/Rousseaux Improvement Option #2



Source: iTRANS Wilson/Rousseaux Assessment (2008)

Figure 18 – Wilson/Rousseaux Interim Improvement Option



Source: Dillon Consulting (2010)

7.3.1.2 Wilson Street at Jerseyville Road

The Wilson Street & Jerseyville Road intersection was identified for improvement primarily due to safety concerns with respect to pedestrian crossings and turning vehicles. In order to mitigate these concerns, three potential long-term options were identified for evaluation and comparison under the Municipal Class EA criteria. Implementation of the intersection improvements would be incorporated in conjunction with the Wilson Street three-lane cross section (including a two-way left turn lane) construction as part of the recommended network alternative (Recommended Scenario), as discussed in **Section 6.1.4**.

The long-term intersection options proposed in this TMP report coincide with some of the intersection options previously proposed in the *Ourston Intersection Control Study – Wilson Street and Jerseyville Road/Cameron Drive* report from October 2006.

The proposed intersection improvement options are outlined below.

Option #1: Signalization and Turning Lanes

This option was proposed to address concerns related to both turning vehicles and improved pedestrian crossing safety (see ***Figure 19***). Improvements included:

- Intersection geometry improvements at the existing location, particularly for the westbound right turning movement from Wilson Street onto Jerseyville Road;
- Dedicated left-turn lanes on all intersection approaches; and
- Installation and optimization of traffic signals, including pedestrian phases.

Option #2: Realigned Intersection

This option was proposed primarily to address pedestrian crossing safety across the intersection through geometric modifications (see ***Figure 20***). Improvements included:

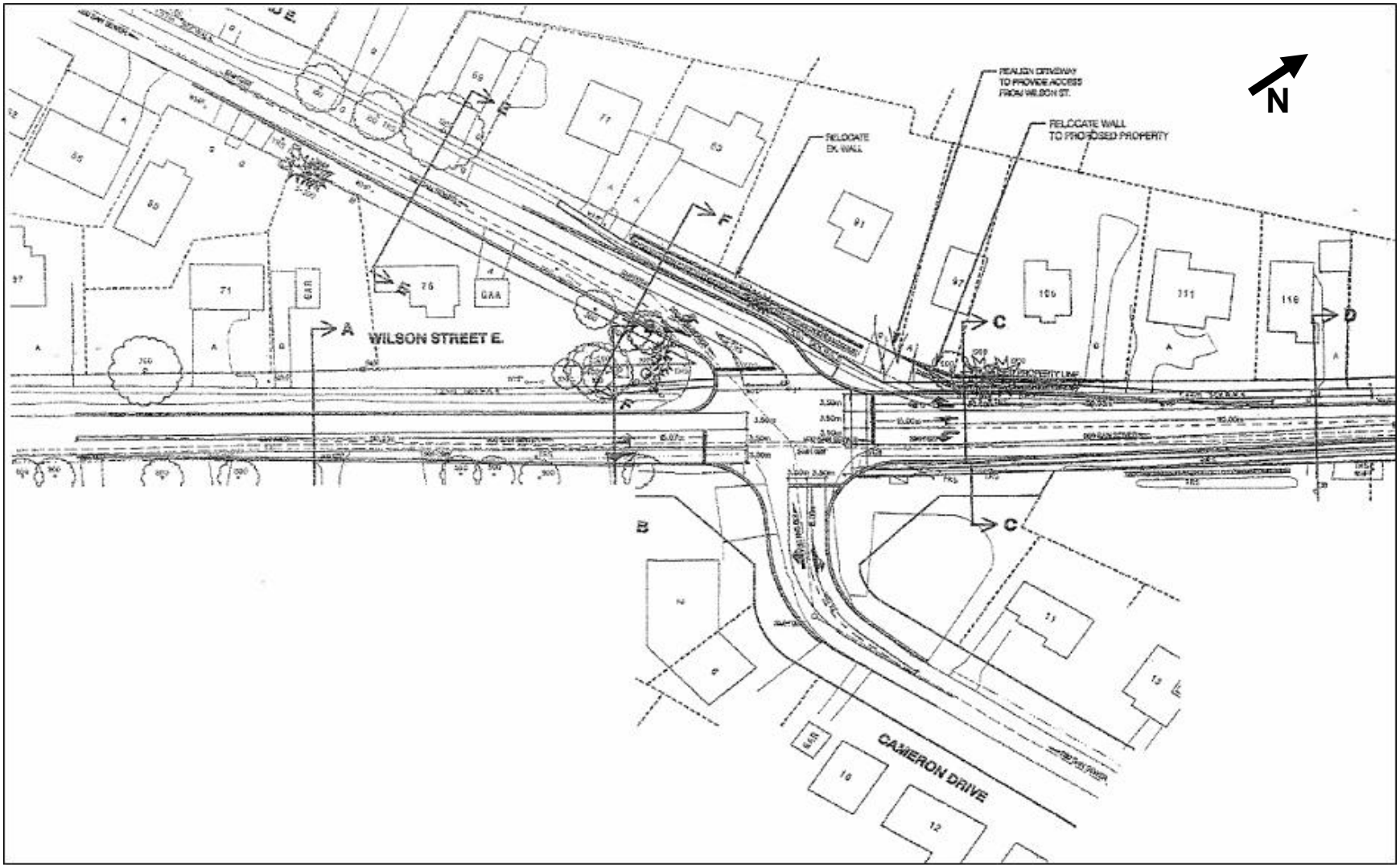
- Realignment of the Jerseyville Road approach of the intersection further west to create a 90-degree offset intersection with Cameron Drive; and
- Pedestrian crossing enhancements/treatments, including improved sightlines.

Option #3: Single-Lane Roundabout

This option required a more extensive alteration to the intersection, than Option #1 and #2 rebuilding it into a modern single-lane roundabout (see ***Figure 21***). Improvements included:

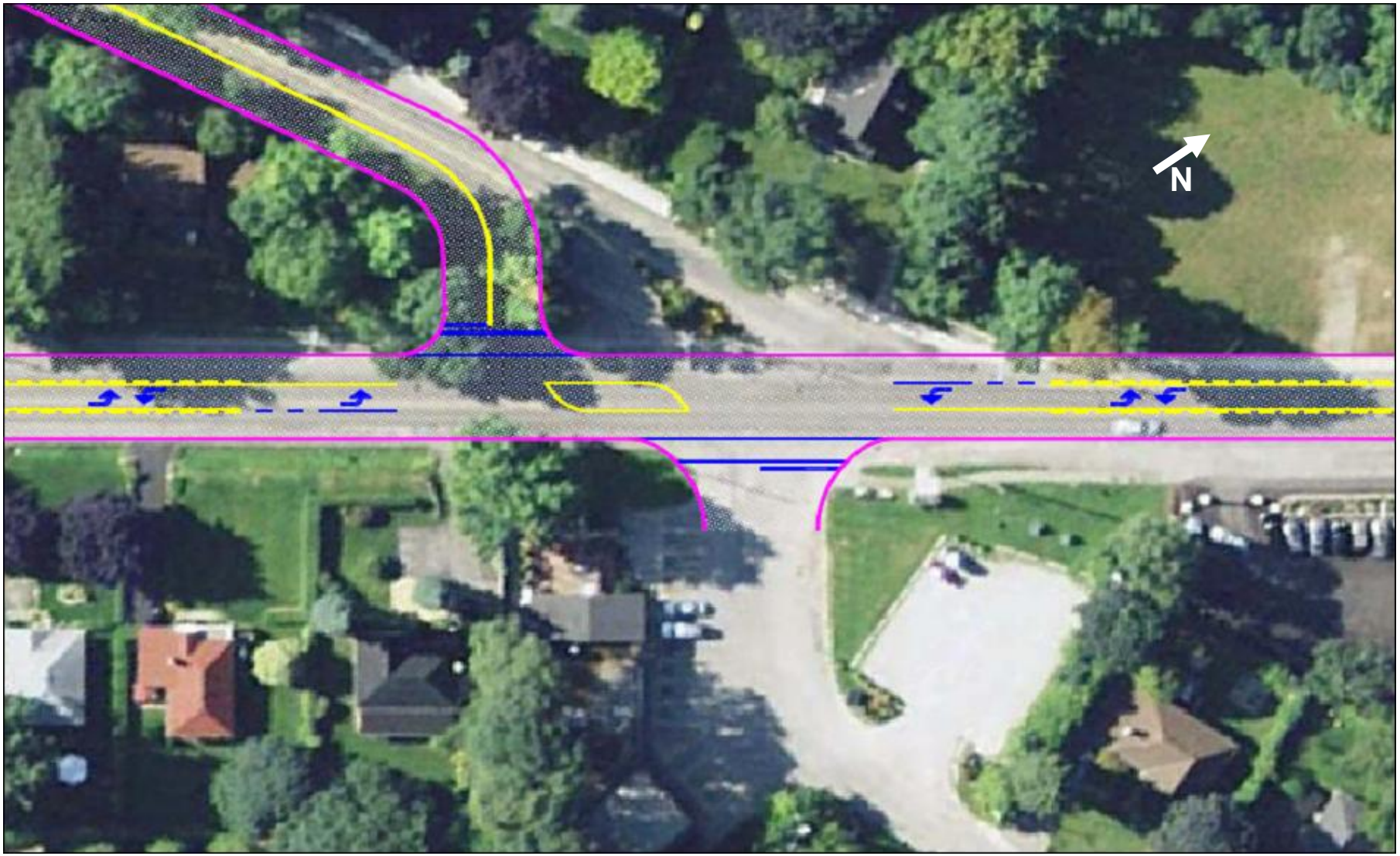
- Minor realignment of the intersection compared to current location;
- Addition of a channelized right turn from Jerseyville Road to Wilson Street; and
- Pedestrian crossing enhancements/treatments, including improved sightlines.

Figure 19 – Wilson/Jerseyville Improvement Option #1



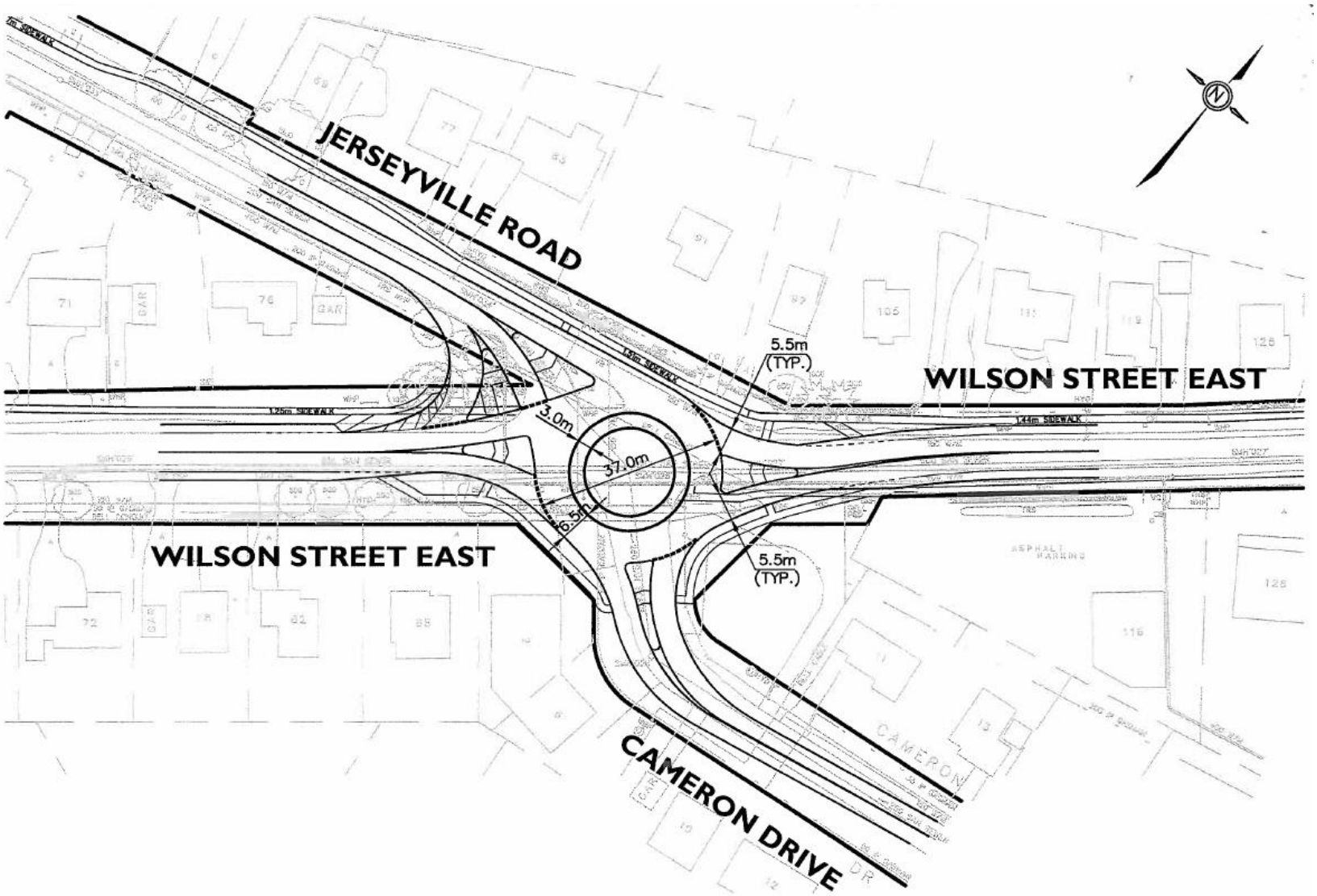
Source: City of Hamilton (2006)

Figure 20 – Wilson/Jerseyville Improvement Option #2



Source: Google Earth and Dillon Consulting (2010)

Figure 21 – Wilson/Jerseyville Improvement Option #3



Source: Ourston Intersection Control Study (2006)

7.3.2 Halson Street at Golf Links Road

The intersection of Halson Street at Golf Links Road was examined for the potential future addition of traffic signals. Due to the less extensive modifications required at this location, no geometric or EA evaluations were performed. Only a high-level operational analysis was examined using synthesized intersection volumes based on data from two adjacent intersections. No turning movement counts for this intersection were available at the time of this study.

Based on the synthesized intersection volumes, it was determined that traffic signals would likely be warranted sometime between 2021 and 2031. If traffic signals were to be constructed at this location, they would be expected to operate with a good LOS beyond the 2031 horizon. As an alternative, a single lane roundabout was also considered at a high-level (using FHWA methodology). A roundabout would be expected to operate at a good LOS beyond the 2031 horizon.

Traffic volumes and turning movement counts should be regularly monitored to determine more accurately when the installation of traffic signals would be warranted at the Halson Street and Golf Links Road intersection.

7.3.4 Recommended Intersection Operational Improvements

Each of the proposed intersection improvement options identified in **Section 7.4.1** was evaluated using appropriate EA criteria to determine the intersection operational improvements to be recommended.

Wilson Street at Rousseaux Street

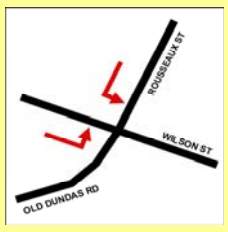
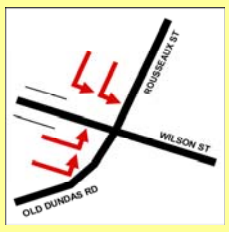
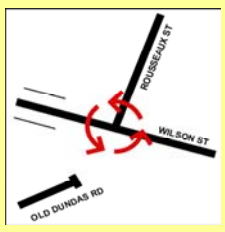
Two potential long-term improvement options were proposed for the Wilson Street and Rousseaux Street intersection. ***Table 19*** outlines the evaluation undertaken to determine the recommended intersection improvement option.

In the short-term, an interim solution is proposed to work within the existing roadway right-of-way. This consists of modifying the southbound left turning movement to dual turning and receiving lanes. Ultimately, the desired long-term solution at this location would be the implementation of a double-lane roundabout; however this solution would require significant infrastructure and property investment.

Wilson Street at Jerseyville Road

Three potential long-term improvement options were proposed for the Wilson Street and Jerseyville Road intersection. ***Table 20*** outlines the evaluation undertaken to determine the recommended intersection improvement option.

Table 19 – Wilson/Rousseaux Evaluation

Criteria		Existing Conditions Do Nothing 	Option 1 Intersection Geometry and Bridge Improvements 	Option 2 Double Lane Roundabout 
Transportation Service	Supports sustainability principles	No change or shift to sustainable modes –	No change or shift to sustainable modes –	No change or shift to sustainable modes –
	Impacts on Capacity, including Level of Service	Traffic volumes continue to increase at intersection by 2031 (AM & PM Peak - LOS F, Intersection Delay >200 seconds in AM) X	Minimal Level of Service improvement over existing option; acceptable LOS up to 2021 and worse LOS by 2031 (AM Peak - LOS F, PM Peak - LOS D, Intersection Delay >100 seconds in AM). –	Roundabout capacity expected to extend beyond 2031 (AM & PM Peak - LOS A) √
	Traffic infiltration / cut-through traffic	Drivers may increasingly look for short-cutting opportunities along local residential streets. X	Improved level of service makes alternative routes less attractive –	Improved level of service - more attractive, less potential for alternative routes √
	Pedestrian facilities and ability to improve safety	No change to existing conditions. A standard intersection has 32 conflict points. –	No change to existing conditions. A standard intersection has 32 conflict points. Wider intersections less pedestrian friendly. –	Can accommodate pedestrians. Roundabouts shown to reduce accidents as much as 75%. Reduction in accidents attributed to slower speeds and reduced number of conflict points. A modern roundabout has 16 conflict points. √
	Potential impacts to public transit service (i.e., travel time, reliability, etc.)	Currently, intersection configuration makes transit less desirable X	By 2031, intersection configuration makes transit less desirable X	Less congestion makes transit more desirable √
	Ability to improve access to local businesses and residents	No change –	No change over existing conditions –	A number of businesses and residents impacted by cul de-sac on Old Dundas. Alternate routes available. X
Summary of Transportation Service		X	–	√
Socio-Economic	Consistent with future land uses	Area is already fully developed √	Area is already fully developed √	Area is already fully developed √
	Impact on residential properties	No impacts √	Minimal residential property required at southeast corner –	Property required –
	Impact on archaeological features	No Impacts √	Potential impacts –	Potential impacts –
	Impact on built heritage features	No impacts √	No impacts √	No impacts √
	Impacts on community character	No impacts √	Minimal impacts to overall community character - localized improvement. –	Minimal impacts to overall community character - localized improvement. –
	Impact on businesses	Increased congestion makes businesses less desirable destinations –	Impacts on adjacent properties due to localized widening –	Property on the southwest corner would have to be expropriated. X
Summary of Socio-Economic Environment		–	–	–
Natural Environment	Potential impacts on natural environment (terrestrial, aquatic & environmentally sensitive areas)	No impacts	Impacts Ancaster Creek and associated natural area due to widening of bridge structure but can be mitigated	Impacts Ancaster Creek and associated natural area due to widening of bridge structure but can be mitigated
Summary of Natural Environment		√	–	–
Cost	Capital Cost	No capital cost √	$2.54M Capital Costs Includes bridge rehabilitation and widening of existing structure, which has shorter lifespan than a new bridge (Option 2) X	$2.63M Capital Costs New bridge required has a longer lifespan than Option 1 X
	Operational and Maintenance Costs	Higher operational and maintenance costs than Option 2 –	Higher operational and maintenance costs than Option 2 –	Minimizes overall community impact as Wilson Street and Rousseaux Street do no require widening. However, one building must be removed √
	Property Costs	No property costs √	Lower property costs due to impacts of road widening –	Higher property costs due to impacts of roundabout X
Summary of Cost		√	–	–
OVERALL		–	–	√

RECOMMENDED
This alternative was not carrier forward based on recommendations by the Public Works Committee.

Notes:

- LOS = "Level Of Service", a traffic engineering term used to describe intersection performance - ranging from 'A' (the best) to 'F' (the worst).

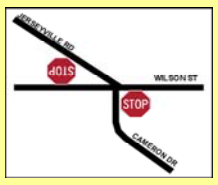
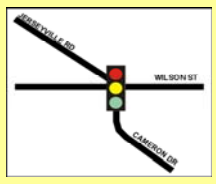
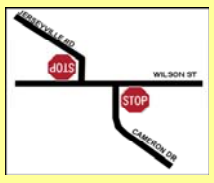
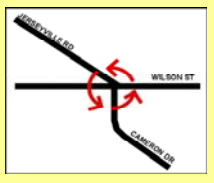
Legend

✓ **Relatively Positive**

X **Relatively Negative**

- **Relatively Neutral**

Table 20 – Wilson/Jerseyville Evaluation

	Criteria	Existing Conditions Two-Way Stop on Jerseyville 	Option 1 Signalization and Turning Lanes 	Option 2 Realigned Intersection 	Option 3 Single-Lane Roundabout 
Transportation Service	Supports sustainability principles	No change or shift to sustainable modes –	No change or shift to sustainable modes –	No change or shift to sustainable modes –	No change or shift to sustainable modes –
	Impacts on Capacity, including Level of Service	Traffic volumes on Wilson Street continue to increase by 2031 (AM & PM Peak - LOS F on Jerseyville Road approach) X	Available intersection capacity beyond 2031 (AM & PM Peak - LOS A). Traffic signals do not meet warrant requirements by 2031, but may eventually be warranted due to side street delay. –	No significant improvement to Jerseyville approach compared to Existing Conditions X	Intersection volumes approaching capacity by 2031 (AM Peak - LOS C, PM Peak - LOS E) –
	Traffic infiltration / cut-through traffic	No Change –	Easier left-turn movement from Jerseyville may attract additional volumes to intersection to avoid Wilson Street & Fiddler's Green Road. –	No Change –	Easier left-turn movement from Jerseyville may attract additional volumes to intersection to avoid Wilson Street & Fiddler's Green Road. –
	Pedestrian facilities and ability to improve safety	No existing pedestrian facilities. Pedestrians report long waits to cross Wilson during busy periods. Geometry at northwest corner allows turns from Wilson Street right onto Jerseyville to occur at higher speeds. X	Improves pedestrian movement. Signalized intersection less safe than a modern roundabout. A standard intersection has 32 conflict points. –	Improved pedestrian movement; however pedestrians still need to cross multiple lanes of travel at a time. Perpendicular intersections easier to negotiate than existing conditions. Vehicles turning right from Wilson Street to Jerseyville Road will need to –	Most desirable for pedestrians than Options 1 and 2. Roundabouts shown to reduce accidents as much as 75%. Reduction in accidents attributed to slower speeds and reduced number of conflict points. A modern roundabout has 16 conflict points. Pedestrians on √
	Potential impacts to public transit service (i.e., travel time, reliability, etc)	No Change –	No Change –	No Change –	No Change –
	Ability to improve access to local businesses and residents	No Change –	No Change –	No Change –	No Change –
	Summary of Transportation Service	X	–	–	√
Socio-Economic	Consistent with future land uses	No impacts √	Land required from east of the intersection to accommodate wider cross-section on Wilson Street. No known future development at this location. –	Land required from property on southwest corner of intersection. No future development at this location. –	Land required from east of the intersection to accommodate roundabout. No known future development at this location. –
	Impact on residential properties	No impacts √	No impacts √	Would require the purchase of residential land on the southwest corner. No building impacts. –	Minimal impacts to land on southwest corner. –
	Impact on archaeological features	No Impacts √	No Impacts √	Potential impacts –	Potential impacts –
	Impact on built heritage features	No impacts √	No impacts √	No impacts √	No impacts –
	Impacts on community character	No impacts √	Minimal impacts –	Minimal impacts –	Minimal impacts –
	Impact on businesses	No impacts √	Minimal impacts on adjacent properties due to road widening –	Minimal impacts on adjacent properties due road realignment and property requirements √	Minimal impacts due to property requirements
	Summary of Socio-Economic Environment	√	–	–	–
Natural Environment	Potential impacts on natural environment (terrestrial, aquatic & environmentally sensitive areas)	No impacts	Limited impacts to landscaped vegetation.	Greater impacts to landscaped vegetation and mature trees. Landscaping could be added on northwest corner.	Some impacts to landscaped vegetation. Landscaping could be added to centre of roundabout.
	Summary of Natural Environment	√	-	X	-
Cost	Capital Cost	No Capital Cost √	$400k Capital Costs Assumes work would be undertaken at same time as TMP recommendations for Wilson Street (3-lane cross section). Costs assume full signalization and road work on side roads. X	$250k Capital Costs Assumes work would be undertaken at same time as TMP recommendations for Wilson Street (3-lane cross section). Costs assume road work associated with Jerseyville realignment. X	$600k Capital Costs Assumes work would be undertaken at same time as TMP recommendations for Wilson Street (3-lane cross section). Costs assume construction of roundabout excluding sub-grade costs associated with upgraded Wilson. X
	Operational and Maintenance Costs	No Change √	Higher operational and maintenance costs than all other options X	Lower operational and maintenance costs than Option 1 –	Lower operational and maintenance costs than Option 1 –
	Property Costs	No impacts √	Minimal property impacts –	Greater property impacts than Options 1 and 3 X	Minimal property impacts –
	Summary of Cost	√	X	X	-
	OVERALL	-	-	X	-
					RECOMMENDED

Notes:
- LOS = "Level Of Service", a traffic engineering term used to describe intersection performance - ranging from 'A' (the best) to 'F' (the worst).

Legend
✓ **Relatively Positive**
X **Relatively Negative**
- **Relatively Neutral**

In the analysis, intersection pedestrian signal (IPS) and traffic signal warrants were checked under future volume conditions; but were determined to be unwarranted by 2031. Instead, a single-lane roundabout was recommended for this intersection.

7.3.4 Other Operational Issues

A number of other traffic operations issues were identified over the course of this study either through discussion with City staff or through input from the public. The following locations were identified:

- Ancaster Town Plaza access on Wilson Street (southwest of Fiddler's Green intersection): the need for an auxiliary southwest right turn lane into the town plaza should be investigated; and
- Ancaster Fair Grounds - Regional Road 52 and Wilson Road: the need for an auxiliary southbound right turn lane should be invested.

These operational issues should be investigated in more detail to determine an appropriate course of action.

7.4 Summary of Operations Analysis

The following findings are based on the traffic operations analysis performed as part of the Ancaster TMP:

- Despite proposed intersection mitigation measures, some intersections in the Ancaster area will continue to experience capacity issues by the 2031 horizon year. This is primarily due to a lack of roadway capacity across the Niagara Escarpment. There are a limited number of Niagara Escarpment crossings within the study area (Highway 403 & Wilson Street) and transportation modelling suggests a continued demand for trips across the escarpment. This problem will not be solved by additional roadway capacity on Wilson Street alone, suggesting that an emphasis should be placed on alternative modes to the single occupant vehicle (e.g. walking, cycling, transit, carpooling and Transportation Demand Management) in Ancaster and across Hamilton. As within many urban areas, residents of Ancaster will have to accept a certain level of traffic congestion.
- Modelling analysis showed that any addition of roadway capacity (e.g. road widening) attracted more volume to the Ancaster area. As such, roadway widening was limited within the Recommended Scenario (Scenario 12) and TWLTLs were considered where appropriate.
- No improvements were recommended within the Ancaster village core on Wilson Street from Rousseaux Street to Halson Street.

- Roundabouts were determined to be operationally viable and are recommended as an alternative to signalized intersections at the intersections of:
    - Garner Road at Hamilton Drive;
    - Golf Links Road at Southcote Road;
    - Wilson Street at Jerseyville Road; and
    - Wilson Street at Rousseaux Street.
- The Wilson Street & Rousseaux Street intersection is a critical intersection and plays a strong role in providing access and mobility within the study area, particularly to/from the north and east. Improvements to this intersection will address current congestion problems and will increase vehicle capacity. By 2031, a multi-lane roundabout is recommended. Interim intersection improvements could be made that would provide a good level of service up to 2021 without requiring any modifications to the bridge structure crossing Ancaster Creek.
- A single-lane roundabout is recommended for the Wilson Street & Jerseyville Road intersection. This should be constructed at the same time as the implementation of a three-lane cross-section on Wilson Street to reduce cost.
- The corridors of Wilson Street, Rousseaux Street/Mohawk Road, McNiven Road/Southcote Road, Golf Links Road, Fiddler's Green Road, and Garner Road are critical for access and mobility within Ancaster. They should continue to be monitored for potential traffic operations issues as development occurs (e.g. through more detailed corridor analyses or traffic impact studies).
- Operational issues at Ancaster Town Plaza and Ancaster Fair Grounds should be investigated further to determine the need for traffic operations and geometric changes.

8. TRANSPORTATION SYSTEM POLICIES FOR ANCASTER

A number of infrastructure improvements were identified as part of the analyses undertaken. In addition to these improvements, the ATMP considered policies and programs to complement the infrastructure plan for Ancaster to 2031. These are based on the guiding principles (see **Section 2.1**) and travel targets, as identified in the Hamilton TMP and discussed below.

8.1 2021 Hamilton TMP Travel Targets

The HTMP identified a number of transportation targets for the short- and long-term (2021). These are described under four main transportation policy themes, which are proposed to be adopted for 2031 and beyond in the Ancaster TMP study. These are:

- Promote a Strong and Vibrant Economy;
- Build Liveable Communities;
- Provide a Balanced Transportation Network; and
- Improve Public Transit.

The targets are based on proposed policy directions set out in the HTMP as well as the Official Plan review. In the long-term, the target is to reduce overall vehicle use by 20% from existing (2001) levels. In the Ancaster area, achieving this reduction will require a comprehensive and multi-faceted approach that will involve:

- Incorporating a compatible mix of uses in neighbourhoods;
- Improving the roadway system and facilities including parking, walking and cycling infrastructure;
- Maximizing the use of existing capacity and helping to induce a non-auto mode split increase;
- Reducing the community's dependence on single occupant automobile travel;
- Promoting public transit, increasing transit service levels and service coverage;
- Establishing the key nodes and links as high density, transit-supportive and pedestrian-friendly areas and corridors; and
- Considering the role and the needs of goods movement.

8.2 Roads

The Ancaster road network should adhere to the key objectives and supporting strategies identified by the HTMP. These objectives and supporting strategies include:

- Maximizing the efficiency of the existing road network in order to minimize the need for new escarpment crossings and other potentially high-impact projects; and

- Focussing road improvements on goods movement corridors and enhancing access to employment lands.

8.3 Goods Movement

The Summary of Proposed Recommended Policies (Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton) addresses goods movement policies for the City of Hamilton. Where appropriate, these policies should be considered within Ancaster. Recommended policies include:

- Improve dialogue with the goods movement industry and other stakeholders to elevate the issue of goods movement;
- Maintain, protect and enhance the existing goods movement network to support the economic development strategy;
- Clearly define land uses adjacent to transportation corridors to facilitate location of transportation dependent industry and commerce enterprises close to network access points with minimum intrusion on other uses; and
- Maximize the efficiency of the existing goods movement network by regulating on-street and off-street loading.
- In addition to the recommended policies above, the community of Ancaster should refer to the City of Hamilton's Truck Route Master Plan[6] when setting appropriate policy and designating goods movement routes. ***Figure 22*** illustrates the existing goods movement network in Ancaster.

[6] The City of Hamilton Truck Route Master Plan is available at:
http://www.hamilton.ca/CityDepartments/PublicWorks/TrafficEngineeringAndOperations/TruckRouteStudy.htm

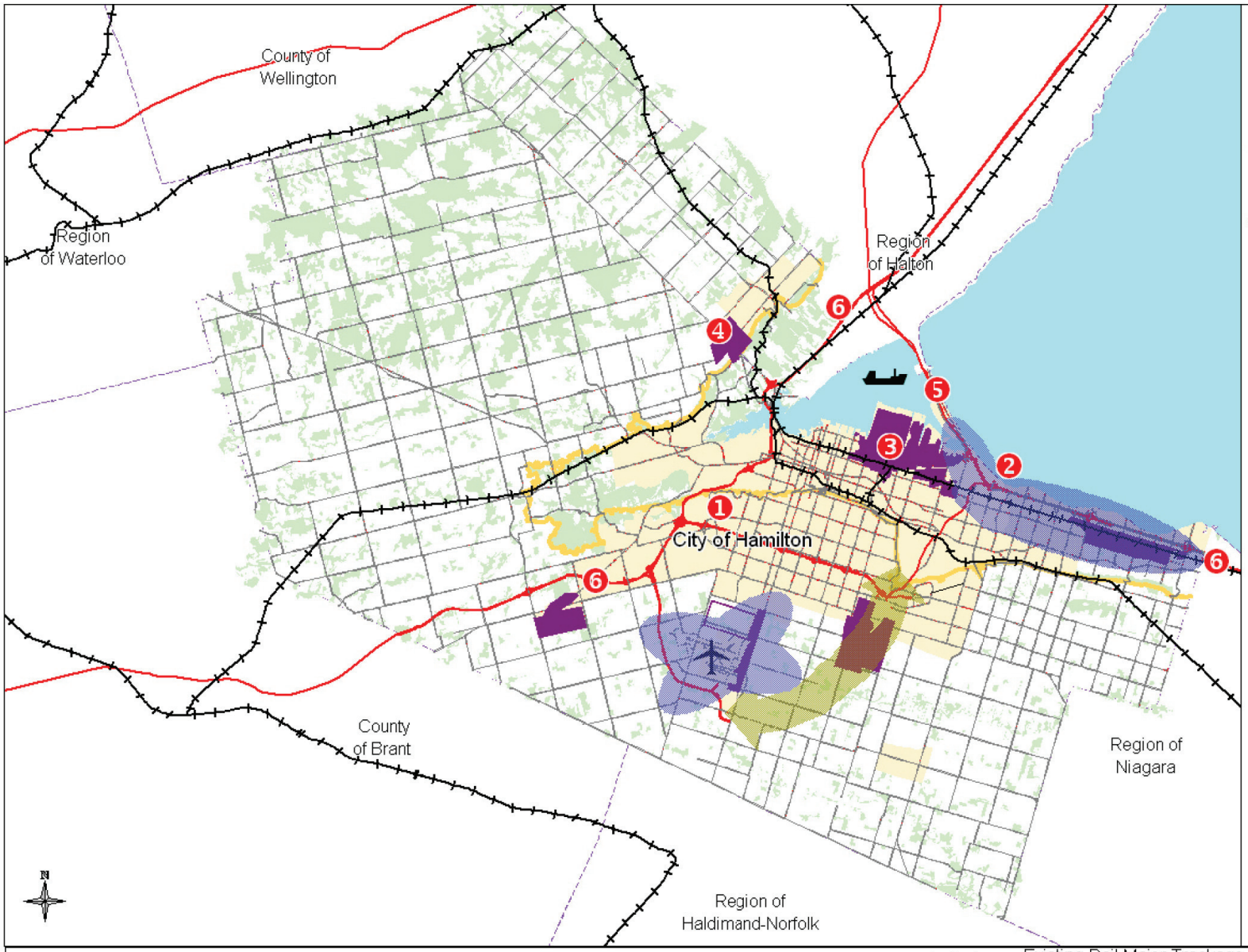


Figure 22

Existing Goods Movement Network

Corridors for further assessment under the Transportation Master Plan

Strategic land use area:
- Aerotropolis Logistics Cluster
- Port / Multimodal Logistics Cluster

Designated Employment Area

Focused Improvement Area

1. Address Highway 403 Congestion/Incidents
2. Improve Connection Between Burlington St. & QEW
3. Improve Operation of Burlington Street
4. Expand Hwy 6 Capacity
5. Evaluate Year Round Lift Bridge Operation
6. Signage to Port/Airport

Existing Rail Major Trackage
Niagaga Escarpment
Major Highways
Urbanized Area
Green Area

IBI GROUP

Hamilton Goods Movement Study

June 2005

8.4 Parking Policy

The city-wide TMP Parking Policy Paper (Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton) provides parking policy recommendations. The following policies apply in Ancaster:

- Adopt off-street parking policies, including required parking ratios established through zoning that attempt to balance the need to supply sufficient parking to support residential and business while avoiding excess parking supply that can discourage transit use;
- In consultation with Business Improvement Associations, implement minimum charges and time restrictions for on-street parking in all downtown areas to encourage parking turn-over;
- Improve parking options and related incentives for transit and active transportation modes; and
- Minimize any negative impacts of parking on urban design and pedestrian activity.

The focus on parking for Ancaster will be the identification of on-street parking areas on the arterial and major collector corridors.

8.5 Transit

Improving public transit is a primary approach that is emphasized in the 2007 Hamilton TMP to reduce single-occupant vehicle travel. The HTMP addresses the following primary objectives of the transit strategy:

Establish a layered transit system including proposed rapid transit, commuter rail, intercity rail and regular bus;

- Enhance transit supportive development around major nodes and corridors (e.g. identifying locations for Enhanced Transit Stops); and
- Improve parking facilities for transit riders near major transit terminals.

In addition, the following policies should be carried through in Ancaster:

- Improve and extend the Hamilton Street Railway Company (HSR) service on major routes;
- Increase coordination between the transit network and pedestrian/cycling networks, promoting multi-modal trips;
- Improve service to Redeemer College and Meadowlands Neighbourhoods #3, 4 & 5; and
- Explore opportunities to partner with community-based organizations to improve the delivery of accessible transit service.

8.6 Travel Demand Management (TDM)

The Travel Demand Management Policy Paper (Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton) identifies two types of objectives for TDM.

1. **System objectives** are higher level transportation goals:
   - Reduce single-occupant vehicle trips;
   - Increase walking, cycling, transit and/or carpooling trips;
   - Control growth in traffic volumes, congestion and parking demands;
   - Shift transportation demand to off-peak hours; and
   - Improve air quality and preserve efficient goods movement.

2. **Program objectives** for TDM could include the following general outcomes:
   - Establish public awareness and support for sustainable travel options;
   - Promote practical, user-oriented information about sustainable travel options to residents, employers and institutions;
   - Provide tools and assistance to partners who are undertaking their own TDM measures; and
   - Encourage employers and educational institutions to support commuter options for their employees and/or students.

8.6.1 Transportation Management Associations (TMAs)

The use of Transportation Management Associations (TMAs) is recommended for TDM programming, policy input and demand analysis. TMAs should also be used for the following TDM initiatives:

- Promote carpooling using the Smart Commute Carpool Zone website (located at www.carpoolzone.ca). This successful initiative is a free program run by Metrolinx in partnership with numerous local municipalities. It facilitates use by individuals who reside in Ontario to create a profile and search for other commuters to share a ride to/from work.
- Urge employers within the Ancaster Business Park to join the Smart Commute Hamilton Transportation Management Association, which entitles member organizations to participate in a discounted public transit ticket scheme, as well as gain access to a variety of survey, mapping and other useful analysis tools which aim to increase employee productivity and morale, while reducing absenteeism as a result of improved health and wellness. Member organizations also gain a more leveraged 'voice' on transportation matters as they potentially relate to items such as parking, traffic congestion, shuttle bus implementation, public transit services, etc.

8.7 Cycling/Trails/Pedestrians

The HTMP identifies the need to promote and encourage walking and cycling 'through the provision of facilities and programs'. This is done in order to help build active communities and reduce the dependence on single occupant vehicle travel, including the "associated infrastructure costs, air quality, safety and congestion programs" that arise with overdependence on automobile travel.

The goal is to provide the incentives (i.e. via the proper infrastructure) to increase the mode share for cycling and walking to 15 percent (city-wide) as recommended in the HTMP.

To achieve the objectives of the HTMP, the following cycling policies are recommended:

- Facilitate efficient and safe travel for commuters and other cyclist and pedestrians through expansion and improvement of the network of on-street cycling and pedestrian facilities and Escarpment connections; and
- Promote recreational cycling, walking, and active transportation through the development of off-street facilities.

To achieve these objectives, the development of Ancaster will need to be conducted in a manner that identifies opportunities to increase the ease of both pedestrian and cycling trips through a series of infrastructure provisions, policies and programs, and land development strategies. These include:

- Encouraging stronger live-work relationships in land use planning decisions;
- Improving road network connectivity;
- Improving the extent, connectivity and quality of pedestrian and cyclist infrastructure;
- Encouraging cycling and walking through education, promotion and enforcement support programs;
- Ensuring new development is bicycle and pedestrian friendly through appropriate urban design policies and practices; and
- Increasing coordination between the transit network and bicycle and pedestrian trips (including the provision of bicycle parking along the proposed transit priority corridor/ future RT route).

8.7.1 Cycling/Trails Design Guidelines

The design of cycling bikeways in Ancaster is guided by the City of Hamilton's Shifting Gears 2009 Cycling Master Plan. The document presents a recommended guideline for the uniform design of bikeways throughout the City based on adopted basic bikeway guidelines, recommended by the Transportation Association of Canada, Ontario Ministry of Transportation and other agencies, and modified to suit local circumstances.

The four established cycling design facilities that the City of Hamilton typically utilizes are as follows:

- **Multi-Use Recreational Trails/Paths –** Multi-Use trails are physically separated from the roadway by an open space, barrier or separate right-of-way. Paths can be designated for cyclists only, or can be shared with pedestrians, inline skaters, etc. An asphalt surface offers the possibility of snow clearing. The City generally considers three design types, Accessways, Stable-edge Trails, and Dynamic-edge Trails, each having different width requirements. The preferred minimum width is 4.0 m, increasing to 6.0 m on heavy traffic trails.
- **Signed Bike Routes** – Signed bike routes are roadways that are shared-use, where cyclists and motorists share the same travel lanes, either side-by-side or single file depending on lane width. These types of facilities are typically designated by signage only. Pavement markings, such as Sharrows may also be applied to critical locations to increase cyclist safety. These facilities are sometimes referred to as bicycle boulevards
- **Reserved Bike Lanes** – Reserved Bike Lanes have a portion of the roadway or shoulder designated by signing, pavement markings and/or physical barriers as a bicycle only lane. The width of a bike lane is typically 1.5 m to 1.8 m with an absolute minimum of 1.2 m.
- **Paved Shoulders** - Paved shoulders are part of the continuous paved surface of a roadway, but are separated from the motor vehicle lanes by a solid edgeline. Typically there are no other pavement markings. Paved shoulders can also provide refuge for pedestrians in less urban areas.

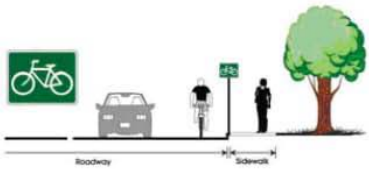
Typical cross-sections of these facilities are illustrated in ***Figure 23*****.**

Figure 23 – Types of Bikeways

MULTI-USE TRAIL

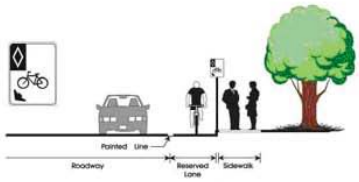
A pathway physically separated from motorized traffic by an open space or barrier. The pathway is shared with pedestrians and designated by signage and/or pavement markings.

SIGNED BIKE ROUTE



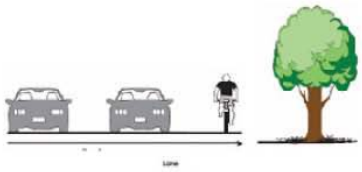
A roadway, designated by signage, with shared use by cyclists and motorists.

RESERVED BIKE LANE



A portion of the roadway or shoulder which is designated by signing and pavement marking for exclusive use by cyclists.

PAVED SHOULDERS



Paved shoulders are part of the continuous paved area of a roadway, but are separated from the motor vehicle lane by a solid painted edge line. Typically there are no other pavement markings and only guide signing.

Source: Shifting Gears 2009

8.7.2 Sidewalk Guidelines

The placement of sidewalks in Ancaster should be based on the road type and the surrounding land use, as identified in the 2007 Hamilton Transportation Master Plan. Overall, the following guidelines are recommended:

- **Arterial Roads** – Sidewalks on both sides for residential and commercial areas (ideally) in urban areas.
- **Collector Roads** – Sidewalks on both sides for residential and commercial areas (ideally) in urban areas.
- **Local Roads** – Commercial local streets within Ancaster's urban area require sidewalks on both sides of the street and wider curb lanes for cyclists. Residential local streets within Ancaster require sidewalks on one or both sides of the street, with possible exceptions for cul-de-sacs.

8.7.3 Pedestrian Network

In addition to the above-recommended guidelines, the following pedestrian policies are recommended:

- Promote the amenity of the sidewalk through the design and distribution of street furniture, information kiosks, receptacles, trees and planting boxes, and public and private signage and lighting;
- Provide adequate lighting along major pedestrian routes;
- Monitor levels of service and safety for non-motorized users of the transportation infrastructure and adjust policies, programs and practices as needed (e.g. opportunities arising from changes to the Ontario Traffic Manual Book 15 - Pedestrian Control and Protection); and
- Implement a non-motorized maintenance program. Expand programs to clean and remove snow from pedestrian and bicycle facilities.

9. DEVELOPING A TRANSPORTATION STRATEGY FOR ANCASTER

In the preparation of a transportation strategy up to 2031 emphasis was placed on the principles identified in the HTMP. This section of the report focuses on operating requirements and strategies for the road network, a preliminary transit service design, a TDM strategy, and the establishment of a cycling and pedestrian network to reach the modal split targets identified in the HTMP.

9.1 Road Network Modifications

9.1.1 Roadway Modifications

As described earlier, a number of roadway capacity improvements are required in the Ancaster area to accommodate increases in population and employment to 2031 while maintaining mobility and community impact objectives. Without an appropriate transportation strategy in place, demand for vehicle trips and capacity issues in and around the study area will continue to increase.

A number of roadway improvements and recommendations were identified within the study area to support the recommended transportation network – Scenario 12, as described in **Section 6.1.3**. Roadway improvements identified in Scenario 12 consisted of three-lane cross sections to provide centre two-way left turn lanes at mid-block driveways and local intersections for the corridors of:

- Wilson Street – between Hamilton Drive and Halson Street;
- Rousseaux Street/Mohawk Road – between Wilson Street and Highway 403;
- McNiven Road – between Mohawk Road and Golf Links Road;
- Southcote Road – between Garner Road and Calder Road; and
- Garner Road – between Wilson Street and 50 metres west of Shaver Road.

In addition, a number of new roadway widenings and new roadway construction projects were identified, including widening Garner Road to four lanes between 50 metres west of Shaver Road and 50 metres east of Miller Drive. Timing for the implementation of these projects is discussed in **Section 12.0**.

The proposed roadway improvement projects are summarized in ***Table 21*** and shown in ***Figure 24***.

Table 21 – Summary of Recommended Roadway Improvements

	Road Name	From	To	Length (km)	Description of Works
1	New E/W Road (Ancaster)[1]	Tradewind Dr / Cormorant Road	Trinity Road	0.81	New Two-Lane Collector Road
2	Stonehenge Road[2]	Meadowlands Blvd	Raymond Road	0.25	New Two-Lane Collector Road
3	Raymond Road[2]	Fair Street	Garner Road	1.14	New Two-Lane Collector Road
4	New N/S Road (Ancaster)[2]	Raymond Road	Garner Road	0.90	New Two-Lane Collector Road
5	Garner Road	Hwy 2 (Wilson St)	50m west of Shaver Road	0.72	Road Widening to Three-Lanes with Two-way Left-turn Lane
6	Golf Links Road[3]	McNiven Road	Kitty Murray Lane	0.84	Road Widening to Three-Lanes with Two-way Left-turn Lane
8	McNiven Road	Rousseaux Street	Golf Links Road	0.63	Road Widening to Three-Lanes with Two-way Left-turn Lane
9	Rousseaux Street / Mohawk Road[4]	Wilson Street	McNiven Road	0.88	Road Widening to Three-Lanes with Two-way Left-turn Lane
10	Rousseaux Street & Wilson Street Intersection	-	-	-	Interim Intersection Improvements (slight modifications to existing)
12	Stone Church Road	Harrogate Drive	Stonehenge Drive	0.34	Road Widening to Four-Lanes
13	Garner Road	50m west of Shaver Road	50m east of Miller Dr	3.17	Road Widening to Four-Lanes with Bike Lanes
14	Mohawk Road[4]	McNiven Road	Hwy 403	1.30	Road Widening to Three-Lanes with Two-way Left-turn Lane
16	Southcote Road	Calder Street	Garner Road	1.26	Road Widening to Three-Lanes with Two-way Left-turn Lane
17	Wilson Street	Hamilton Dr	50m west of Halson Street	2.60	Two-way Left-turn Lane

Notes:
[1] Development led project.
[2] Will be reviewed through plan of subdivision.
[3] Addition of centre two-way left turn lane subject to further study as part of Golf Links Ramps proposal.
[4] When considering projects, Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project.

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Ancaster Transportation Master Plan

Figure 24

Recommended Road Network

Legend

- Highway
- Existing Road Network
- Intersection Improvements
- Recommended Three-Lane Cross-Section with Two-Way Left Turn
- New Cormorant to Trinity Road EA
- Meadowlands Neighbourhood IV Approved Secondary Plan
- Garner Road EA
- Road Widening
- Potential Golf Links Ramps
- Ancaster Study Area

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9.1.2 Recommended Roadway Cross-Sections

A conceptual cross-section was developed specific to the recommended Right-of-Ways in the Ancaster study area.

A typical cross-section was developed for a three-lane arterial roadway (Right-of-Way varies), as recommended for Wilson Street, Rousseaux Street/Mohawk Road, and McNiven Road. The cross-section includes a 3.5 to 5.0 metre provision for a centre two-way left turn lane, as well as bike lanes and sidewalks on either side of the road. Where excess Right-of-Ways exist the sidewalks should be widened to 2.0 m on the arterial roadways. This is shown in ***Figure 25***. The right-of-way required will be consistent with the Urban Hamilton Official Plan.

9.1.3 Intersection Modifications

Operational analyses carried out as part of this study resulted in recommendations for a number of operational improvements at intersections within the study area. Two specific intersections were examined further to evaluate potential improvements (Wilson Street at Rousseaux Street and Wilson Street at Jerseyville Road) and a third intersection (Halson Street at Golf Links Road) was examined for the future potential for new traffic signals.

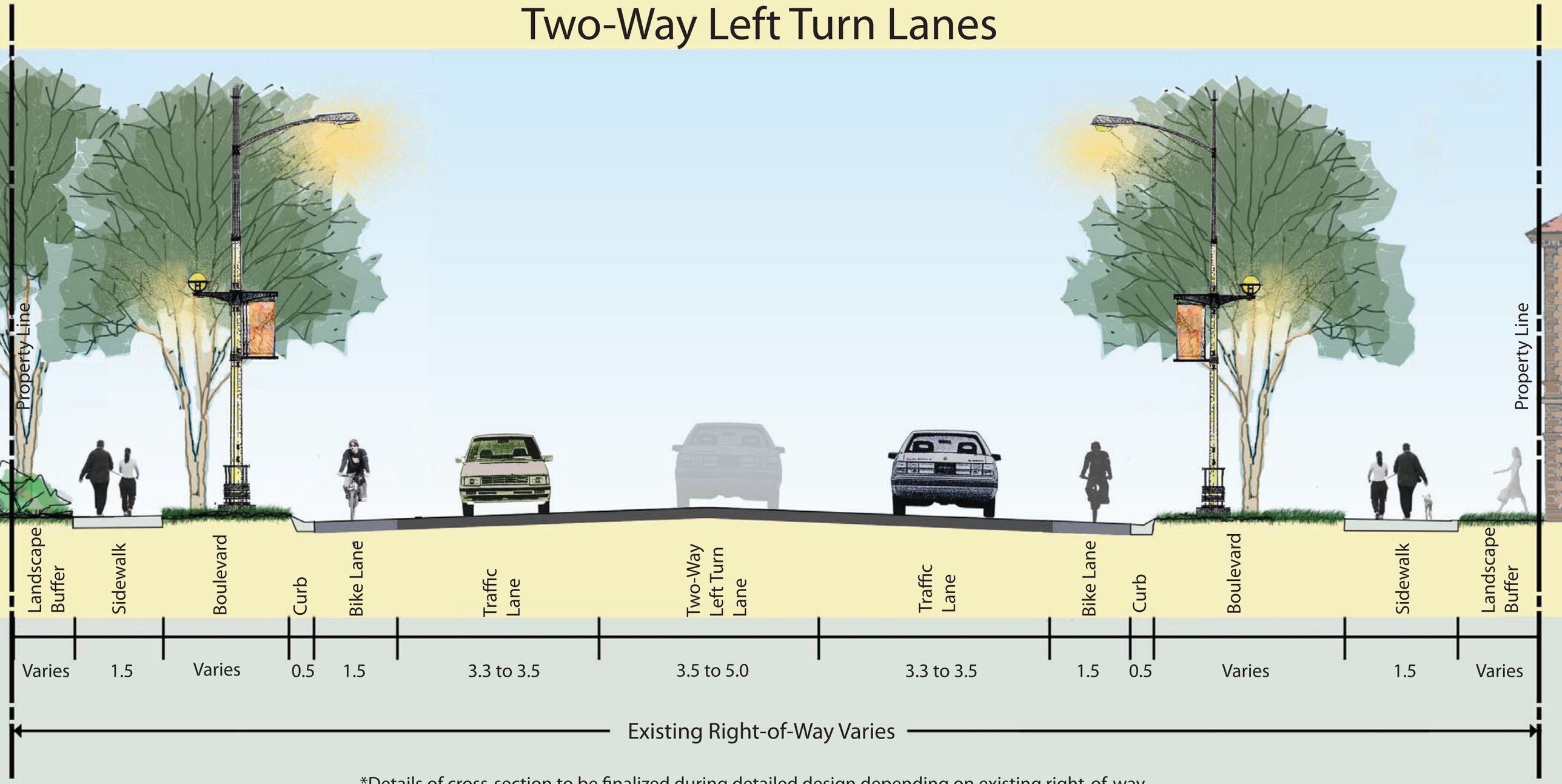
The Wilson Street and Rousseaux Street intersection was identified as a critical junction for accessibility to and from the Ancaster area. Under existing geometric and operational conditions, this signalized intersection is operating poorly. The recommended long-term solution at this location was to implement a double-lane roundabout; however, this solution would require significant investments in infrastructure and property acquisition. The short-term solution for this intersection is to work within the existing roadway right-of-way to modify the southbound left turning movement to dual turning and receiving lanes.

The Wilson Street and Jerseyville Road intersection was also identified for improvement, primarily due to safety concerns with respect to pedestrian crossings and turning vehicles. In the analysis, intersection pedestrian signal (IPS) and traffic signal warrants were examined under future volume conditions; but were determined to be unwarranted by 2031. A single-lane roundabout was recommended for this intersection as the most beneficial solution.

In addition, the Halson Street and Golf Links Road intersection was identified as requiring the addition of traffic signals sometime between 2021 and 2031 (as evaluated without the Highway 403 ramps at Golf Links Road). As this was a high-level analysis specific costs for modifications of this intersection were not calculated.

Figure 25: Typical Cross-Section

Three Lane Cross-Section with Two-Way Left Turn Lanes



*Details of cross-section to be finalized during detailed design depending on existing right-of-way.

9.1.4 Potential Highway 403 Ramps

The potential for additional connections to Highway 403 from the Ancaster area was considered as a means to reduce vehicle demand on arterial corridors within the study area. Two scenarios were examined within the Ancaster transportation model to determine the potential impacts – ramps at Golf Links Road and ramps at Mohawk Road.

9.1.4.1 Golf Links Road Ramps

The addition of freeway ramps connecting Golf Links Road and Highway 403 was considered as part of the ATMP analysis. The proposed interchange would reflect a half-diamond configuration and have the following connections:

- An off-ramp from Highway 403 eastbound to Golf Links Road eastbound/westbound; and
- An on-ramp from Golf Links Road eastbound/westbound to Highway 403 westbound.

The addition of ramps at Golf Links Road and Highway 403 was modelled and had the following benefits:

- Provide direct 403 westbound access to North Ancaster and Meadowland area residents;
- Improve westbound access to Highway 403 and Highway 6 for residents travelling between the Airport Employment Growth District (AEGD) and north Ancaster;
- Shift traffic away from Wilson Street, between Rousseaux Street and Highway 403 (approximately 50 vehicles per hour);
- Vehicle volume reductions on Golf Links Road between Halson Street and McNiven Road / Southcote Road (approximately 40 to 50 vehicles per hour during peaks); and
- Reduce volumes by approximately 150 vehicles per hour on Garner Road between Southcote Road and Shaver Road.

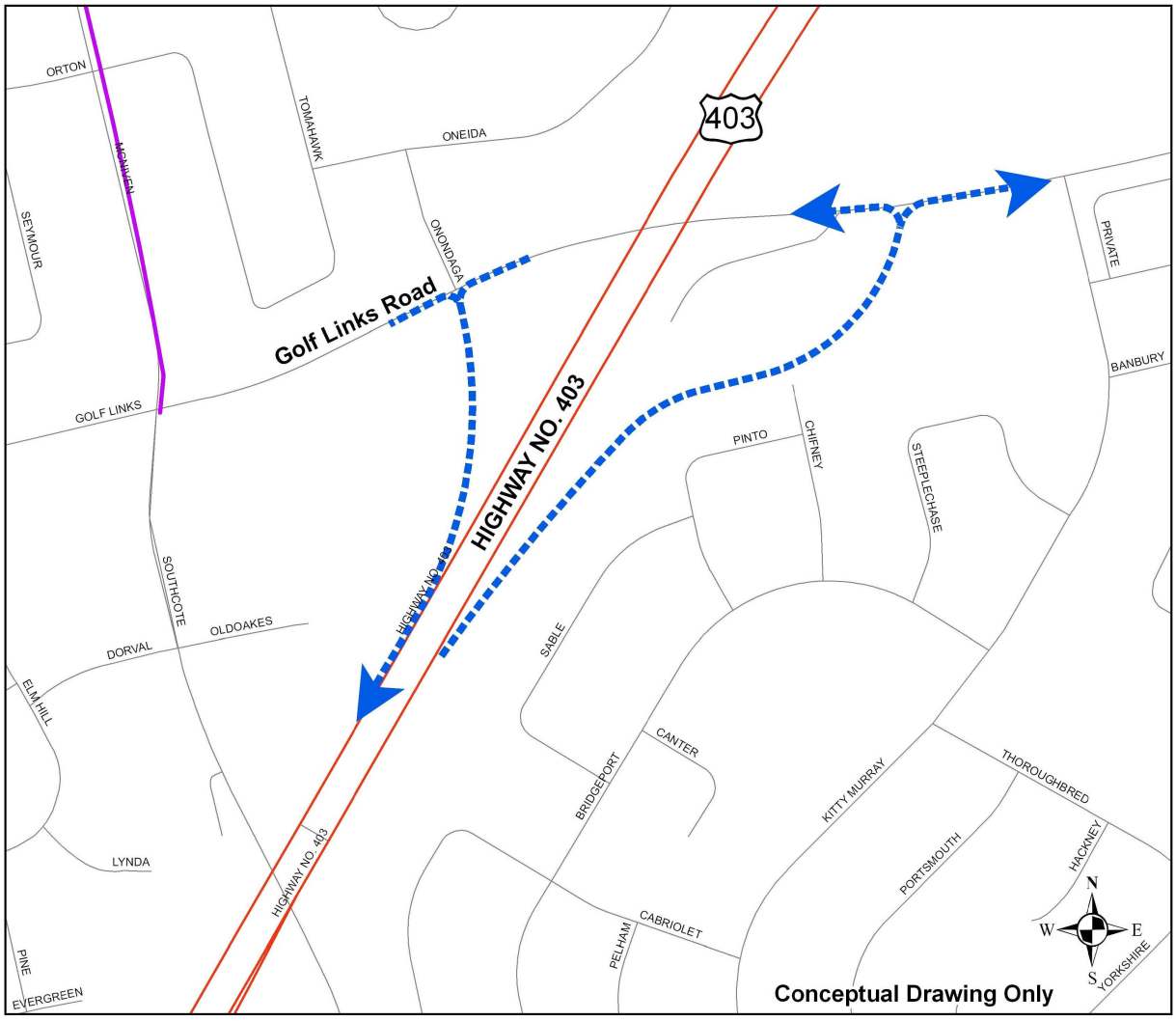
9.1.4.2 Mohawk Road Ramps

A potential ramp was examined that would connect Mohawk Road eastbound to Highway 403 westbound. Although this connection would provide localized access to the interchange at Mohawk Road (attracting less than 100 vehicles per hour) it also had some design issues. The location is such that it cannot accommodate a truck climbing lane on Highway 403 and only provides localized benefits to the area west of the interchange. A ramp at this location would provide negligible reductions in traffic volumes along Wilson Street.

9.1.4.3 Further Study

Both ramp options provide greater egress/access from/to Ancaster. However it was found that a connection at Golf Links Road would provide a greater benefit to both Ancaster and Meadowlands residents travelling to/from the west on Highway 403 than ramps at Mohawk Road. ***Figure 26*** provides a conceptual drawing of the potential Golf Links Road ramps.

Figure 26 – Proposed Golf Links Ramps



At the time of writing, a separate technical study was underway with coordination between the City and the Ministry of Transportation Ontario (MTO). Additional ramps were being considered. Any recommendation for additional connections to Highway 403 from the Ancaster area would need to be approved by the MTO.

9.1.5 Collector/Local Road Network

Anticipated growth within the Meadowlands area in Ancaster will require that a number of additional collector roads be constructed in order to provide adequate access to lands that will be developed. The City's new Cycling Master Plan, Shifting Gears 2009 identifies the type of cycling facilities that should be provided. As well, sidewalks should be provided on both sides of the street, where required.

As outlined in the Secondary Plans in the Meadowlands area, two additional collector roads are planned, connecting Stonehenge Drive to Garner Road in the south. In addition, the Stonehenge Drive collector road will be completed to fully connect the corridor between Southcote Road and Stone Church Road. These projects would be completed and funded through development charges.

No other collector roads were identified beyond those in the Meadowlands area, with the exception of an east/west access to the Ancaster Business Park on Trinity Road, south of Wilson Street (Cormorant Road to Trinity Road). At the time of writing, an Environmental Assessment was underway for that project. Other approved developments within Ancaster can be serviced through existing arterial and collector roads.

9.1.6 On-Street Parking

The placement of on-street parking in Ancaster should be based on the road type and the surrounding land use. The following policies are recommended:

Arterial Roads

- No on-street parking permitted with the exception of only allowing short-term on-street parking where main street retail abuts the street in the Ancaster Village Core.

Collector Roads

- In newer developments (e.g. Meadowlands), allow parking on both sides of the street.
- In established areas, allow parking on one or both sides of the street, as space allows.

Local Roads

- Allow on-street parking on one side of the street.
- Locate parking on same side of the street as the sidewalk to provide pedestrians a buffer.
- On single access roadways, locate parking on side of street with fewest access points.

9.2 Transit

9.2.1 HTMP Recommended Transit Network

The HTMP recommends a strategic higher order transit network using Rapid Transit (RT). The purpose of the network is to provide high quality transit service throughout the city in an effort to reach the 12% transit mode split target by 2031.

The City of Hamilton conducted a Rapid Transit Feasibility Study in November 2007 to assess rapid transit and the feasibility for implementing rapid transit routes in the City. In 2008, Metrolinx released its final transportation strategy which identified the potential for BRT or LRT along two major corridors in Ancaster: the corridor running along Mohawk Road from the City of Hamilton, ending near the Meadowlands Shopping Centre on Golf Links Road (T-Line); and a corridor running along Garner Road (S-Line). These two lines would form part of the B-L-A-S-T rapid transit system. However, both the T-Line and the S-Line were identified beyond the 15-year horizon in the plan.

Over the long-term it is recommended that an 'Ancaster Community Shuttle' route be introduced. The purpose of this shuttle would be to connect major hubs in the Ancaster area that are not presently connected. The basic routing proposed for this shuttle is shown below in **Figure 28**.

9.2.2 Opportunities/Constraints

Transit service in the Ancaster area is limited, which has resulted in a transit modal split less than 2 percent during the AM and PM peak hours (2006 TTS). Transportation choices by existing residents have already been determined and this will be difficult to change, even when transit services are improved. The largest increase in ridership is expected to come from new residents and employees in the area whose travel choices have not been predetermined. As such, new or improved transit service should be introduced early; before new commuters make alternative transportation choices (e.g. single occupant vehicle use).

Improved transit service is an important part of the transportation solution in Ancaster. Current scheduling challenges due to high levels of roadway congestion make improvements to the current system difficult. Major corridors in Ancaster (e.g. Wilson Street, McNiven Road, Rousseaux Street, and Mohawk Road) should be highlighted as transit priority corridors. Wherever possible, along these corridors solutions should be implemented that reduce transit travel time and enhance reliability.

In order for Ancaster to achieve a high transit ridership a community shuttle is recommended in the long term. A community shuttle is in line with Section 2.3.3 of the Official Plan which discusses linking "community nodes" to the higher order transit system. As identified in the Official Plan, "community nodes", such as Meadowlands and the Ancaster Village Core should be connected to other areas of high transit ridership (e.g. Redeemer College) while also providing improved connections to the pedestrian network.

The present funding mechanism for conventional transit tends to constrain opportunities to improve service levels within existing urban neighbourhoods, new neighbourhoods where higher transit mode choices are being promoted, and between existing major trip generators. Recent changes to area rating excluded conventional transit, making it difficult to establish a timeline for transit service improvements that is in keeping with HTMP objectives. Given the scale of transit ridership growth required to meet 2031 objectives, funding of service needs to be revisited.

Any roadway congestion reduction measures along the arterial roads linking Meadowlands with Wilson Street, and on Wilson Street, will help to improve transit service reliability, thus improving

its attractiveness. Transit priority or other such measures should be explored and implemented where feasible.

9.2.3 Enhanced Transit Stops

Enhanced Transit Stops can include land uses such as convenience stores, recreational facilities, restaurants, among others. They are oriented around transit to provide convenient access for employees and residents to and from these locations.

Two Enhanced Transit Stops are recommended within Ancaster. These would be located at the following locations:

Meadowlands Shopping Centre: Near the vicinity of the Meadowlands Shopping Centre on Golf Links Road, an Enhanced Transit Stop at this location would allow for improved connections between Hamilton Street Railway (HSR) users and the proposed T-Line of B-L-A-S-T Rapid Transit.

Wilson Street at Fiddler's Green Road: an Enhanced Transit Stop at this location would improve connectivity for pedestrians, cycling and transit users in Ancaster's downtown core.

Enhanced transit stops generally differ from regular transit stops along a transit corridor. They may include additional amenities such as enhanced signage, passenger shelters, drinking fountains, benches, trash receptacles, bicycle racks, additional lighting, decorative paving, and greenery (e.g. trees, scrubs, groundcover, etc.). The location for proposed enhanced transit stops is included in ***Figure 27***.

Hamilton

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Figure 27

FutureTransit Map

Legend

- Highway
- Existing Road Network
- Ancaster Study Area

ProposedTransit Routes

- Proposed Route 16 Extension (AEGD TMP)
- Proposed Future Transit Routes (AEGD TMP)
- Proposed Route 35 Extension (AEGD TMP)
- Potential Future Rapid Transit Line (B.L.A.S.T.)
- Potential Future Carpool Lots/ Park 'n Rides

Existing Transit Routes

- 5A/5C - 15 Minute Peak Period Headway
- 16 - 30 Minute Peak Period Headway
- 33 - 20 Minute Peak Period Headway
- 34 - 20 Minute Peak Period Headway
- 41 - 20 Minute Peak Period Headway
- 43 - 30 Minute Peak Period Headway
- 44 - 30 Minute Peak Period Headway
- Redeemer University College Route
- Ancaster Community Shuttle
- AEGD Employment Supportive Centre
- AEGD Enhanced Transit Stop
- Enhanced Transit Stop

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9.2.4 Transit Service Design

A transit strategy was recommended that would accommodate a 12% municipal transit modal split for Ancaster, consistent with overall City goals. It should be noted that this route concept and the anticipated ridership does not mean that this modal split target will be achieved. Much of this will depend on transit supportive land use patterns and parking policies being achieved, the implementation of transit priority infrastructure, and system improvements elsewhere in Ancaster being completed to ensure an attractive level of transit service for the entire trip. Any efforts to improve land use mix and increase density within 400 m of the Wilson Street corridor would help to support future transit improvements.

Figure 27 illustrates the transit service for Ancaster. As shown, there are eight routes, as well as one proposed "community shuttle" route. The community shuttle route would improve connections to the Meadowlands Shopping Centre and Golf Links Road, Southcote Road and Garner Road. The shuttle should be considered as part of a long term transit strategy and could connect with the two BLAST lines and other important "nodes" within Ancaster (e.g. the Village Core on Wilson Street, Golf Links Road within the Meadowlands commercial area, Redeemer College, etc).

9.3 Transportation Demand Management (TDM)

9.3.1 HTMP Recommendations

As previously mentioned, the HTMP identified two types of objectives for TDM; System objectives and Program objectives.

Based on these two broad objectives, the HTMP identified a number of policies that should be implemented to meet its mode split targets. The targets that apply to the Ancaster area are identified below:

- Apply travel demand management strategies as an essential part of land use controls and the provision of transportation infrastructure and services;
- Build public awareness of sustainable travel options and their personal and community benefits;
- Maximize the effectiveness and value of municipal TDM investments by fostering partnerships with local businesses, educational institutions and community groups;
- Work with other governments and agencies to strengthen TDM initiatives in Ancaster through intergovernmental partnerships; and
- Monitor TDM initiatives and their effects, with the goal of continually improving related tools and services.

9.3.2 Recommended Strategies for Ancaster

A Transportation Demand Management strategy should be developed for the Ancaster area that attempts to delay, defer or even eliminate the need for significant capital investment in new transportation infrastructure by:

- Influencing auto demands in the commuter peak periods;
- Promoting walking and cycling as alternatives to travel by private auto; and
- Promoting public transit and ride sharing as alternatives to travel by private auto.

To achieve these, the following TDM plan is recommended for the community of Ancaster:

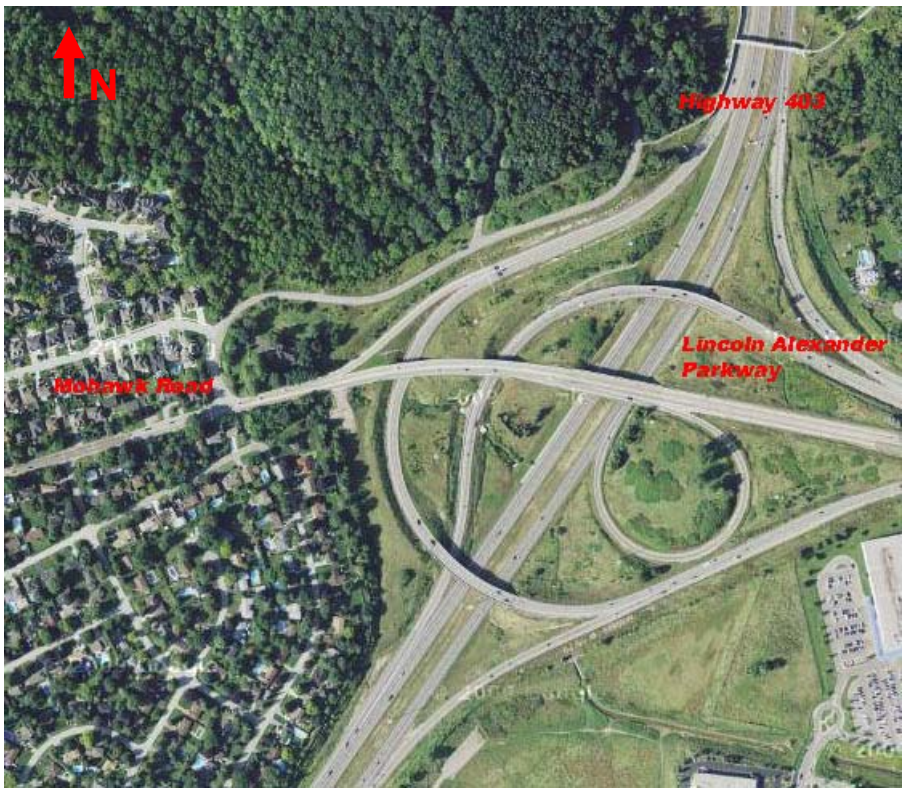
- ***Trip Elimination***
    - Support teleworking and alternative work arrangements for employees, when possible. Employers are encouraged to work with Smart Commute Hamilton in order to receive telecommuting guidance.
    - Optimize electronic payment opportunities and web-based information dissemination using Intelligent Transportation Systems technology. This could consist of parking space information, public transit schedules, general information updates, etc.
- ***Trip Scheduling***
    - Investigate opportunities to shift schedule start and end time of major employers outside of peak periods.
    - Permit flex hours within administrative/office staff core to spread peak arrival and departure times as much as possible.
- ***Trip Reassignment***
    - Encourage the use of less congested corridors by improving pedestrian and cyclist accessibility in major areas and by increasing transit service.
- ***Modal Choice***
    - Investigate the feasibility of increasing transit service hours and adjusting fares to attract new riders.
    - Investigate the feasibility of introducing a community shuttle between Enhanced Transit Stops and the Meadowlands Shopping Centre.
    - Investigate the feasibility of implementing parking charges at appropriate locations to improve attractiveness of alternative modes.
    - Promote cycling and provide links to existing local cycling trails; provide secure bicycle storage facilities.
    - Provide on-site shower facilities to promote cycling/walking to work

- ***Trip Sharing***
    - Investigate feasibility of implementing carpool/vanpool programs to reduce SOVs by promoting the Hamilton Car Share program. The program is currently in its start-up phase with three cars in Hamilton's downtown core. However, if Ancaster can get 30 interested citizens to support a car with a utilization rate of 25% to 30% then there could be an additional car established in the community.
- ***Employer Engagement***
    - Urge employers in the Ancaster Business Park to become Smart Commute Partners (see http://www.smartcommutehamilton.ca/en/membership). This would enable them to receive a customized suite of services, including a carpool zone sub-group tailored to their site and their employees.

9.3.3 Park and Rides/Carpool Lots

The Ministry of Transportation (MTO) in its 2007 *Central Region Carpool Lots Opportunity* study, identified a potential Park n' Ride/Carpool Lot at the interchange of the Lincoln M. Alexander Parkway/Mohawk Road/Highway 403. This general location is shown below in ***Figure 28***, however, an exact carpool lot location is yet to be determined.

Figure 28 – Lincoln M. Alexander Parkway/Mohawk Road/Highway 403 Carpool Lot



Source: Google Earth

A Park n' Ride/Carpool Lot in this location would provide convenient access for commuters trying to travel north on Highway 403, east on the Lincoln Alexander Parkway or west on Mohawk Road.

A second location for consideration is at Highway 403 and Wilson Street. A Park n' Ride/Carpool Lot in this vicinity would provide eastern and western access to commuters on Highway 403. A general location is shown below in ***Figure 29***, however, an exact carpool lot location has yet to be determined.

Figure 29 – Highway 403 and Wilson Street Carpool Lot

Source: Google Earth

Other locations of future Park n' Ride/Carpool Lots include those identified in the Hamilton AEGD Transportation Master Plan. These include the following locations:

- Garner Road and Smith Road;
- Upper James Street, north of Dickenson Road; and
- Book Road and Southcote Road.

9.4 Cycling/Pedestrian Trails

9.4.1 Opportunities and Constraints

Input received over the course of this study from City and public stakeholders was incorporated into the active transportation networks (e.g. trails or pedestrian/cycling facilities that were proposed as part of ongoing developments). One of the significant cycling challenges identified in achieving the HTMP's principles in Ancaster is the limited width on some of the streets planned for bike lanes: competing interests such as trees, on-street parking, and turning lanes are also present or planned. The study area is reasonably flat, so cycling is a very viable option for transportation within the study area, and there already exist good cycling connections crossing the Niagara Escarpment to other areas of the city with bike lanes on Wilson St (towards Dundas, McMaster University, and downtown). Cycling connections to the West Mountain exist as well, but the Cycling Master Plan does identify the need to improve these connections.

9.4.2 Recommended Cycling/Pedestrian Trails Network

It was recommended to improve cycling connectivity within the study area and surrounding lands by adopting the recommendations provided in the City of Hamilton's new Cycling Master Plan, *Shifting Gears 2009*. ***Table 22*** shows some of the major proposed cycling facilities within the Ancaster area, as identified in the plan.

Table 22 – Proposed Cycling Facilities

Off-Road	From	To	Design Concept	Priority Ranking (as per CMP)
Chedoke Trail	Hwy 403	Scenic	Pave Existing Trail	202
Iroquoia Heights	Chedoke Trail	Old Mohawk Road	Pave Existing Trail	212
On-Street				
Cormorant	Trinity	Shaver	Bike Lane	189
Fiddler's Green	Jerseyville	Wilson	Bike Lane	67
Fiddler's Green	Amberly	Garner	Bike Lane	145
Garner	Wilson	Glancaster	Bike Lane	144
Golf Links	Halson	Southcote	Bike Lane	46
Golf Links	Kitty Murray	Stone Church	Bike Lane	155
Jerseyville	Shaver	Wilson	Bike Lane	51
Kitty Murray	*full length*		Bike Lane	79
Lovers Lane	Sulpher Springs	Jerseyville	Bike Lane	92
Meadowlands	*full length*		Bike Lane	84
Mohawk	Old Mohawk	Scenic	Bike Lane	29
NcNiven	Mohawk	Golf Links	Bike Lane	187
Rousseaux/Mohawk	Wilson	Filman	Bike Lane	127

Off-Road	From	To	Design Concept	Priority Ranking (as per CMP)
Scenic	Mohawk	Chateau	Bike Lane	26
Shaver	Jerseyville	Wilson	Bike Lane	183
Shaver	Wilson	Garner	Bike Lane	146
Southcote	Golf Links	Garner	Bike Lane	159
Stonehenge	*full length*		Bike Lane	80
Sulphur Springs	Mineral Springs	Lovers Lane	Paved Shoulder	161
Tradewind	*full length*		Bike Lane	200
Wilson	Fiddler's Green	Hwy 52	Bike Lane	10
Wilson	Rousseaux	Halson	Bike Lane	17
Mineral Springs	Binkley	Sulphur Springs	Paved Shoulder	29r
Shaver	Garner	Carluke	Paved Shoulder	42r

These cycling facilities are also shown in ***Figure 30*** and should be designed in accordance with City standards. The City developed a priority ranking and individual cost estimates for the projects listed above as part of the Shifting Gears 2009 study. The last column in Table above reflects the priority ranking of each project in the context of all cycling projects across the entire city, but it is recognized that actual implementation is best suited when subject roadways are scheduled for reconstruction.

Hamilton

Ancaster Transportation Master Plan

Figure 30

Cycling & Trails Network

Legend

- Highway
- Existing Road Network
- Ancaster Study Area

Proposed Cycling Facilities

- Proposed Reserved Bike Lane
- Proposed Multi-Use Path
- Proposed Signed Route
- Proposed Paved Shoulder

Future Cycling Facilities

- Future Reserved Bike Lane (AEGD)

Existing Cycling Facilities

- Existing Reserved Bike Lane
- Existing Multi-Use Path
- Existing Signed Route

Existing Trails Facilities

- Existing Recreational Trail
- Existing Bruce Trail

Future Trails Facilities

- Future Multi-Use Recreational Trail
- Reserved Bike Lane & Sidewalk (AEGD TMP)

Natural Environment Features

- Escarpment
- Rivers/ Streams
- Wetlands
- Core Natural Areas

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Pedestrians

The City of Hamilton Urban Official Plan emphasizes the importance of creating "pedestrian-oriented and transit-supportive communities within which all people can attain a high quality of life". It also encourages direct connections to transit facilities.

Within Ancaster it is important that a positive environment for pedestrians is created. Pedestrians should feel safe, have convenient access to and from places of interest and be able to navigate easily to their destination.

Pedestrian environments supported by transit should be encouraged; and access to transit facilities should be provided via sidewalks, walkways and direct links to other neighbouring areas. To encourage employees and residents to engage in active transportation it is also important that Enhanced Transit stops (described in **Section 9.2.3**) be well-lit and have appropriate signage.

Without safe and easy access to transit stations, cyclists and pedestrians are far less likely to use the transit system. The Hamilton Urban Official Plan identifies access to transit through site layout and location, traffic management and bicycle parking as measures necessary to consider when designing transit facilities such as stations, hubs or stops.

Pedestrian Crossings

As a result of resident feedback, it is recommended that opportunities be sought to implement crosswalks, Intersection Pedestrian Signals (where warranted), and other roadway treatments to increase safety for pedestrians in the study area. Specifically, it is recommended that sidewalks be included on both sides of the street where Scenario 12 recommends roadway improvements. This includes along the following corridors:

- Garner Road (Highway 52 to 50m east of Miller Drive);
- Golf Links Road (McNiven Road to Kitty Murray Lane);
- McNiven Road (Mohawk Road to Golf Links Road);
- Rousseaux Street (Wilson Street to McNiven Road);
- Stone Church Road (Harrogate Drive to Stonehenge Drive);
- Mohawk Road (Golf Links Road to Highway 403);
- Southcote Road (Calder Street to Garner Road); and
- Wilson Street (from the Village Core to Fiddler's Green Road).

While specific locations for pedestrian crossings are not part of this study, a number of areas are recommended for future consideration, based on the information received at the December 2010 Public Information Centre (PIC) and residents' input. It was clearly conveyed that Ancaster residents are concerned with the current state of pedestrian access in Ancaster. Specific suggestions included increasing the number of pedestrian crossings and turning the Village Core

into a pedestrian thoroughfare with limited or no vehicle access to make the village core more walkable.

Pedestrian crossings will be considered on Wilson Street, with the locations to be determined as part of Phases 3 and 4 of the Wilson Street Improvements Schedule C Class EA. Locations for the signals are to be determined based on consultation with residents.

Trails

The City of Hamilton Recreational Trails Master Plan (RTMP) focuses on providing a "multi-purpose off-road recreational trail system" that connects all major areas (natural, cultural, major land use) within the City of Hamilton. Initiatives identified in the RTMP, whether completed or proposed, were considered when developing recommendations for this study.

In addition to those identified in the RTMP, future trails within Ancaster are proposed within the AEGD and connecting to the Meadowlands area.

The complete trails network is shown in ***Figure 30*** above.

10. PUBLIC CONSULTATION

Public and agency consultation was completed throughout the study, as required under the Municipal Class EA. Consultation material, including notices, presentation materials and comments received, are included in ***Appendix E***.

A study website was maintained throughout the study at: www.hamilton.ca/AncasterTMP.

10.1 Notice of Study Commencement

The Notice of Study Commencement was published in both the Ancaster News and the Hamilton Spectator April 25 and May 2, 2008. A copy of the notice along with a covering letter and fax back form were sent to key agencies, including First Nations, on May 7 and May 27, 2008. In addition, Dillon made a brief presentation at the May 5, 2008 Ancaster Community Council Meeting introducing the study, including the project purpose and the consultation program that would be completed throughout the study.

Following the distribution of the notice and community council meeting, over 50 comment forms and letters were received, with most requesting to be kept apprised of the study progress and to be invited to the Public Information Centre.

The City received several comments from residents regarding traffic in Ancaster prior to the study initiation. Copies of this correspondence were forwarded to the study team and have been included in this summary.

10.2 Stakeholder Meeting # 1

Stakeholder Meeting # 1 was held on September 15, 2008, from 6:30 p.m. to 8:30 p.m. and was attended by 10 people. A copy of the presentation is included in ***Appendix E***. A questionnaire was circulated to those in attendance in order to gain a better understanding of the existing traffic concerns in the area.

10.3 Technical Agency Meeting # 1

The first technical agency meeting was held on October 6, 2008 and included representatives from the City, the Niagara Escarpment Commission, the Hamilton Conservation Authority and the Ministry of Transportation. A copy of the presentation is included in ***Appendix E***.

10.4 Technical Agency Meeting # 2

The second technical agency meeting was held on February 4, 2009 and included representatives from the City, the Hamilton Conservation Authority and the Ministry of Transportation. A copy of the presentation is included in ***Appendix E***.

10.5 Stakeholder Meeting # 2

Stakeholder Meeting # 2 was held on February 9, 2009, from 6:30 p.m. to 9:00 p.m. This meeting was attended by 47 people. A copy of the presentation is included in ***Appendix E***. Similar to Stakeholder Meeting #1, a questionnaire was circulated to those in attendance to gain a better understanding of the transportation concerns in the area.

10.6 Ancaster Community Council Meetings

Throughout the study, the team also made presentations to the Ancaster Community Council on May 9, 2008, September 8, 2009 and April 4, 2011.

10.7 Summary of Comments Received

Table 23 summarizes comments received prior to the Public Information Centre and how the comments have been addressed. A number of the comments received were related to the proposed improvements at the Wilson/Rousseaux intersection as well as related to the increased traffic in Ancaster over the last several years. Many residents expressed the desire to protect the small town and historic character of Ancaster.

Table 23 – Public and Agency Comments Received Prior to Public Information Centre

Comments Received	Study Team Response
Comments from Agencies	
Ministry of the Environment • Master planning process should follow Phases 1 and 2 of the Municipal Class EA. • Provided additional First Nations that should be contacted	• Master Plan followed Phases 1 and 2. • First Nations contacts were sent the Notice of Commencement and PIC notices.
Hamilton Conservation Authority • Requested a copy of the Wilson-Rousseaux Intersection Assessment Final Report	• Report is available on the project website www.hamilton.ca/AncasterTMP
Hamilton Cycling Committee • Concerns regarding cyclists on Old Ancaster/Old Dundas Road • Paved shoulders should be considered for Old Dundas Road • Consideration should be given to on-street cycling lanes on: Rousseaux Street/Mohawk Road, McMiven Road, Stonehenge Road, Kitty Murray Lane, Jerseyville Road, Fiddlers Green Road and Shaver Road	• Cycling infrastructure plans were reviewed and included as part of the study

Comments Received	Study Team Response
• Go service may be considering service to Ancaster	
Save Ancaster Village Environment (SAVE) • Increased traffic volumes resulting from recent development in Ancaster, including the infill on Wilson Street • Pathways should be provided through the Mt. Mary development for pedestrians and cyclists • Concerned about traffic from outside Ancaster using Wilson Street as an alternative access to the Lincoln Alexander Parkway.	This study recommends a pedestrian environment that has safe and easy access to transit stops, has improved facilities such as sidewalks, walkways and direct links to neighbouring areas, and provides a positive environment for pedestrians.
Residents Concerned About Old Dundas-Ancaster Road • concerns related to the recommendation to reverse the direction of Old Dundas Road: o safety concerns related to increased volumes o currently a number of locations on road with high collision rates o increased number of recreational users has the potential to increase pedestrian/vehicle collisions o conflicts with wildlife o impact on the character of Old Dundas o high cost for improvements • Recommends entry and exit to Old Dundas Road be restricted at the Wilson/Rousseaux intersection	• Recommended Scenario does not consider the reversal of Old Dundas Road. • Roundabout alternative at Wilson Street & Rousseaux Street includes the closure (i.e. cul-de-sac) of the Old Dundas Road access.
Lloyd Ferguson, Councillor Ward 12 • ramps are required to westbound Highway 403 from Mohawk Road • new ramp is required on Highway 6 northbound to Garner • Wilson/Rousseaux intersection to be reviewed • Wilson should be widened to three lanes, from the Hanlon to Fiddlers Green	• Study team met with Councillor Ferguson several times throughout the study to review his concerns • City will continue best efforts to encourage the MTO to construct west bound access to the Highway 403 at Main Street West in Hamilton and Mohawk Road or as an alternative Golf Links Road in Ancaster

Comments Received	Study Team Response
Hydro One, Real Estate Management • Requested to be contacted once plans are available.	Due to the level of detail required for a master plan, it is recognized that Hydro One be consulted as part of a Preliminary Design project undertaken following the completion of the master plan.
Comments from Public	
Roadway Capacity, Traffic Volumes and Congestion	
Additional east-west capacity required	Several major constraints exist in Ancaster Expansion of roadway capacity within the Ancaster study area is not recommended. More capacity would likely attract additional traffic due to large demand of pass-by trips through Ancaster.
Overall traffic volumes too high and keep increasing with development	Comments noted. Land use considerations are not being reviewed as part of the study
Include road widenings and additional turning lanes to improve congestion issues	Limited road widenings are included in the Recommended Scenario. Some intersection improvements (i.e. turning lanes) are included in the plan. General public is not supportive of road widening
Problem of traffic congestion has not been justified.	Comments noted. Existing congestion issues have been identified. In addition the long-term "do nothing" scenario was modelled, and showed significant congestion.
Increasing capacity will not alleviate congestion concerns.	Analysis agrees with this comment.
Consideration must be given to the cumulative impact of new development on traffic volumes	Comments noted. Land use considerations are not being reviewed as part of the study. Population and employment growth were considered
Problem with cut-through traffic from outside Ancaster	Analysis agrees with this comment to a certain extent
Wants more new roads instead of road widenings.	Due to existing constraints in and surrounding Ancaster, there is limited opportunity for new roads
Concern regarding increased traffic volumes on Church Street, Lodor Street and Academy Street	Comments noted. Master Plan mainly focused on overall road network.
Oppose the proposal to reverse traffic flows on Old Dundas Road	The Recommended Scenario does not propose the reversal of Old Dundas Road.
Opposed to improvements at Old Dundas and Wilson	Comments noted. Improvements are needed to provide for projected traffic growth

Comments Received	Study Team Response
Considered roundabout at Highway 52/ Jerseyville Road	This is built, however intersection not part of the Ancaster study area.
Opposed to roundabout at Wilson Street/Jerseyville Road. Would rather have eastbound exist closed	Roundabout at this location was found to be the preferred alternative.
Need advance left turn phases on McNiven at signals to improve traffic congestion	Traffic Operations Section will be review as part of regular traffic signal optimization.
Improve signal operations at Golf Links Road intersection	To be reviewed as part of regular traffic signal optimization.
Widen McNiven but close Rousseaux School and rebuilding elsewhere	School closure has not been considered as part of the study
Several residents against widening McNiven Road: • Add lanes for cycling or transit only use • Concerned with speeds & street racing • Access from driveways on McNiven • Traffic volumes do not warrant widening • One resident against bike lanes on McNiven. Think alternate route is used. • Include traffic calming measures • Existing volumes do not warrant additional capacity	• Comments noted and were reviewed as part of the recommended scenario. • Recommend scenario includes a centre turn lane.
Improvements required on Wilson Street from Halson to Fiddler's Green	Improvements part of the Recommended Scenario.
Widen Wilson Street to 3-lanes with centre TWLTL, cycling lanes and sidewalk.	Improvements part of the Recommended Scenario.
Need traffic signals and pedestrian crosswalk on Wilson Street	This study recommends examining in more detail the opportunity to provide pedestrian crossings on Wilson Street; pedestrian crossings will be considered in the next phases of study.
Difficult to enter Wilson Street due to the lack of available gaps in traffic	Recommended scenario should improve overall traffic operation on Wilson Street
Include roundabout at Wilson/ Rousseaux	Alternative evaluated as a potential intersection treatment.
Counteract traffic calming measures on Mohawk Road	Comments noted
Traffic on Rousseaux is from Dundas – there should be an alternate route to use	Comments noted and is under review
Golf Links Road could be connected to Jerseyville Road with a roundabout at the intersection to provide more capacity	Connection not considered. Would have significant residential property impacts.

Comments Received	Study Team Response
Safety Concerns:	
Need traffic calming throughout especially in village core as speeds are quite high	Comments noted. Traffic calming measures are not appropriate for arterial roads
Include additional traffic signals to slow traffic	Traffic signals are only implemented as warranted and are not intended for traffic calming
Concerned with safety of pedestrians, pets, and driveway accesses along Golf Links Road	Comments noted
Traffic calming required on Golf Links Road	Comments noted. Traffic calming measures are not appropriate for arterial roads
Concerned with Auto-Deer collisions at Highway 403 off-ramp on Mohawk Road	Information on the frequency of auto-deer collisions along this stretch of Highway 403 will be requested from MTO.
McNiven/Golf Links Road intersection – sight lines create hazard, would be more dangerous with additional lanes	Comments noted. Will be reviewed during the design stages
McNiven/Mohawk intersection safety concerns due to aggressive drivers	Comments noted.
Safety concerns related to the Tim Horton's Drive Through on Wilson Street.	Comments noted
Concerned with degraded air quality from idling at Drive Thru	The study is not looking at changes to the City's current policies regarding the provision for drive-through or idling vehicles.
Wilson/Rousseaux intersection: • Right turn movements from Rousseaux to Wilson (am period). Drivers currently ignoring red light when making right turn movements • Left turn movements onto Wilson Street • Southbound through traffic (pm period) that currently uses cycling lane to pass on the right to keep traffic flowing through intersection • Need for additional turning lanes at intersection One resident stated he is in favour of a signalized right-turn lane from Rousseaux onto Wilson	A review of the iTRANS report conducted as a component of the study. Alternatives considered include the construction of a roundabout, additional turning lanes, signal optimization, and geometric roadway improvements. Recommended interim solution is to provide a southbound left turn lane and receiving lane

Comments Received	Study Team Response
Safety of the following intersections (sight lines, ability to cross) noted by residents: • Book Road/Trinity Road • Butter Road/Trinity Road • Lowden Ave/Mohawk Road • Wilson/Rousseaux	Concerns forwarded to the appropriate department at the City for review.
Several residents concerned with safety of children at Rousseau School (McNiven & Mohawk): • Respiratory side-effects from air pollution caused by increased traffic volumes • Would like air quality studies conducted to assess road widening effects • Pedestrian safety – lack of facilities • Want pedestrian crossing to Rousseau School • High speeds along McNiven • Some suggestions for 4-way stop near Rousseau school	As the master plan is a high level, big-picture document, site-specific air quality studies will not be completed. Three-lane cross-sections with bicycle lanes are planned in this area, which will improve safety
Would like connections from Garner Road in both directions to the new Highway 6 (Airport Road Connection).	Additional connections would have to be studied and approved by MTO. MTO has no plans to provide this connection
Community Character:	
Deterioration of visual character of the town: • Request heritage considerations in designs • Recommend use of architectural firms familiar with heritage work • Need for architectural control over private development projects • Request for By-laws pertaining the height, setback and design of in-fill developments	Cultural/heritage impacts to be reviewed in the next phase of the study process Land use considerations are not being reviewed as part of the study.
Maintain the local character of Ancaster, including the village core	Cultural/heritage impacts considered in the evaluation of alternatives.
Roads should remain narrow through village core, with on-street parking on both sides of the road	Comment noted. No improvements proposed for the village core

Comments Received	Study Team Response
Encourage pedestrian- oriented design, including additional crosswalks; and preserve existing ambiance and pedestrian amenities	This study recommends examining in more detail the opportunity to provide pedestrian crossings on Wilson Street; pedestrian crossings will be considered in the next phases of study.
Character /look of older roads should be preserved	Comments noted
Preserve the quality of life in downtown village core	Comments noted
Preserve historic areas/neighbourhoods	Comments noted
Several roads in Ancaster have the "Special Character Designation", which needs to be considered	Comments noted
More businesses along Wilson Street will keep speeds lower, even on 4 lane roads, as in Dundas Core and Westdale Village.	Comments noted
Concerns regarding the impact of the recently completed construction on the Sulphur Springs Road on the heritage character of the area, the loss of mature trees and change in the topography of the area	Comments noted
Opposed to widening and urbanizing Wilson Street	Comments noted
Opposed to 4-lane Wilson Street. Would like a centre left turn lane and centre planted median islands.	This study recommends a three-lane cross section with a centre two-way left turn lane on Wilson Street from Hamilton Drive to Halson Street.
Concerns regarding widening of Rousseaux Street: • Recent improvements already cost tax payers • Degrade community • Disagrees that traffic congestion warrants expansion • Don't want to attract new commercial or industrial development	This study recommends a three-lane cross-section with a centre two-way left turn lane. The purpose of a two-way left turn lane is to assist turning vehicles and improve safety as transportation demand increases in future horizon years.
Concerns about preserving nature areas	Comments noted
Cycling:	
Increase facilities for cycling and walking for public health	The provision for additional cycling facilities has been included in the plan, consistent with the City's Cycling Master Plan – Shifting Gears 2009.

Comments Received	Study Team Response
Safety of cyclists using rail trail if McNiven, Rousseaux or Mohawk are widened.	Comments noted
Pedestrian:	
Proposed changes should be pedestrian oriented and include: • Current safety concerns regarding crossing Wilson Street • Pedestrian crosswalk in front of Town Hall or Memorial School • Left turn lanes and roundabouts will improve traffic flow and further reduce gaps for pedestrian crossings • Safety concerns for pedestrians (children) on McNiven at Mohawk identified by several residents • Recommend improved pedestrian facilities in vicinity of Rousseau School • Concern for pedestrians due to aggressive drivers and increased speeds in village core • Recommend Marked Pedestrian Crossover and sidewalks as minimum on McNiven Road if widened to 4 lanes. • Concerned with preserving the pedestrian walkways along Rousseaux (if widened) • More pedestrian crossings required • Sidewalks on both sides of McNiven, Lime Kiln, Mohawk and Rousseaux and flashing pedestrian crossover to school on McNiven.	• This study recommends a pedestrian environment that has safe and easy access to transit stops, has improved facilities such as sidewalks, walkways and direct links to neighbouring areas, and is a positive environment for pedestrians. • Opportunities should be explored for pedestrian crossings on Wilson Street, and will be considered in the next phases of study. • This study's Recommended Scenario identifies the need for sidewalks on both sides of the road where roadway improvements are recommended (i.e. Wilson Street, Rousseaux Street, Mohawk Road, and McNiven Road).
Transit:	
Pollution, noise and speeds of Transit buses, which seem empty on McNiven Road	Comment noted.
Need for additional public transit routes in area and/or changes to the existing routes	This study is recommending the addition of a "community shuttle" to improve existing transit service.
Potential for weekend bus service to McMaster University	Hamilton Street Railway (HSR) plans to modify Route 16 so that it provides direct service between Ancaster and McMaster University. This route provides service on Saturday.

Comments Received	Study Team Response
Area rating and its role in transit service extension of transit to the Ancaster Industrial Park was identified	Comment noted.
Smaller buses should be used in Ancaster instead of medium sized buses with more frequent service, with linkage to transit terminals	This study is recommending the addition of a "community shuttle" that would link transit terminals in major areas of Ancaster (e.g. Village Core, Meadowlands, Redeemer College).
Improve transit service throughout community	This study is recommending improved transit service to help increase transit mode share.
New Developments in Study Area and Relationship to Other Ongoing Studies	
Consideration should be given to the long term attraction of the Meadowlands development	Long term transportation impacts included a review of the transportation forecasts from the Hamilton model.
Meadowlands development will be less attractive as other "big box" stores are opened in the area	Long term transportation impacts included a review of the transportation forecasts from the Hamilton model.
Impact of Mary Mount development on traffic volumes and community congestion	The increase in traffic volume related to new development is based on City planning policy and density targets (including GRIDS). The TMP considers the impact of growth and not if/where growth should occur
How will the ATMP relate to the recommendations made in other studies in the area i.e. Wilson/Rousseaux study and HTMP	The HTMP is the guiding document for all transportation related initiatives with the City. The ATMP reviewed the HTMP recommendations and incorporated those that were appropriate to the community of Ancaster.
Concerns regarding the proposed changes at the Wilson/Rousseaux intersection, including the impact on other intersections in the area	The previous study for the intersection provides technical input into the Ancaster TMP.
Concerns with additional traffic issues relating from new subdivision developments and new townhouse developments.	The increase in traffic volume related to new development is based on City planning policy and density targets (including GRIDS). The TMP considers the impact of growth and not if/where growth should occur

Comments Received	Study Team Response
Traffic analysis should include traffic demand from the Airport Employment Growth Development area and the anticipated 300 acre residential development in the meadowlands area north of Garner.	Both studies were considered as part of the ATMP.
Highway 403	
Review need for additional access to Highway 6 (from Garner Road) and Highway 403 (from Mohawk Road and Fiddler Green)	Ongoing discussions with MTO throughout the study regarding westbound access to Highway 403.
Review access to Highway 403 to decrease traffic through village core	Additional connections to Highway 403 considered at Mohawk Road and Golf Links Road. Connection recommended at Golf Links Road. Approval required from MTO.
Add ramps to and from Highway 403 at Highway 6 to reduce commuter traffic in Ancaster	Additional connections would have to be studied and approved by MTO.
Traffic issues in Ancaster are a result of it's proximity to Highway 403	Traffic analysis included a review of Highway 403 ramps at Golf Links Road and Mohawk Road.
Reopen exit off Mohawk Road to Westbound Highway 403	Additional connections to Highway 403 considered at Mohawk Road and Golf Links Road. Connection recommended at Golf Links Road. Approval required from MTO.
Add interchange at Highway 403 and Golf Links Road (meadowlands traffic)	Connection recommended at Golf Links Road. Approval required from MTO.
Concerned that additional access to the 403 will not solve congestion issues as Highway 403 is at capacity and congested also.	Highway 403 is not under the City's jurisdiction, and the provision for additional lanes is at the discretion of MTO. A separate Environmental Assessment would be required by MTO to provide the additional lanes.
Several residents oppose to new Highway 403 ramps on Golf Links Road due to the potential for traffic volumes and speeds to increase along Golf Links.	Comments noted
Need better routes for diverting traffic off of Highway 403	Comments noted
Provide ramps on Southcote Road or Garner Road	Additional connections would have to be studied and approved by MTO.
Divert traffic to Highway 53	Comments noted
Reopen westbound ramp on Mohawk Road	Additional connections to Highway 403 considered at Mohawk Road and Golf Links Road. Connection recommended at Golf Links Road. Approval required from MTO.

Comments Received	Study Team Response
Other	
Concern regarding the environmental impacts of road widenings and roundabouts	Environmental impacts considered in the evaluation of alternatives.
Cost of proposed improvements	Relative capital costs considered in the evaluation of alternatives.
Roundabouts do not introduce gaps in the traffic: • Making a left turn to/from driveways in close proximity to the roundabout difficult • Increased difficulty for pedestrians crossing roadways • Concern regarding potential increase in collisions resulting from continuous traffic flow	• Driveways in close proximity to any intersection can be difficult (i.e. near traffic signals), not just near roundabouts. • Roundabouts can provide pedestrian refuge islands and have fewer conflict points compared to traditional intersections. • Roundabouts have been shown to reduce collisions by as much as 75%. • The reduction in collisions is attributed to slower speeds and reduced number of conflict points. • Studies have shown that roundabouts can lessen the frequency and severity of pedestrian-involved collisions by 50 to 80 percent.
Difficult for taxis to find locations in the rural area.	Comment forwarded to the appropriate City department. Rural area not included under this study
Why does Academy Street have two different posted speed limits?	Comment forwarded to the appropriate City department.
There should be no further commercial or residential development in the core	Comment forwarded to the appropriate City department.
Restrict commercial vehicles (truck) access	Truck routes reviewed as a component of the study.
Additional policing required in area related to traffic speeds	To be reviewed by the appropriate City department.
Not in favour of roundabouts for high volume intersections	Comments noted
Implement travel demand management techniques in Ancaster instead of road widening	TDM strategies included in the HTMP as well as the ATMP In addition to TDM, the HTMP recommended an increase in roadway capacity
Accept traffic congestion within Ancaster as the "price" for living in small community with character	Comments noted
Hopes maintaining congestion will deter infiltration by commuters	Comments noted

Comments Received	Study Team Response
Concerned with property values decreasing along widened roads	Comments noted
In favour of promoting Integrated Mass Transportation System	Comments noted
Need for improved regular maintenance of Martin Road, from Jerseyville Road to Mineral Springs Road to ensure continued safe access to property. Alternative would be to officially close road, which is not preferred due to potential for "bush parties" and vandalism	Maintenance issues are not being reviewed as part of this Master Plan study
Need for a stop sign on Thoroughbred Boulevard/Yorkshire Drive	Comment forwarded to the appropriate City department.

10.8 Public Information Centre

A Public Information Centre (PIC) was held on December 8, 2010 at the Ancaster Old Town Hall between 6:00 p.m. and 8:00 p.m. to present the recommended solution for improvements to the transportation network in Ancaster. Notice of the PIC was issued on November 26 and December 3, 2010 and was published in the Hamilton Spectator, Ancaster News, and Dundas Star News. The PIC included a drop-in session, with displays summarizing the study findings as well as a formal presentation. A copy of the material presented is included in ***Appendix E***.

The PIC provided stakeholders with an opportunity to contribute input into the process during the open house, by asking questions and providing comments following the evening's presentation, and submitting comment forms.

The PIC was attended by over 250 individuals. ***Table 24*** provides a summary of the comments received as well as the study team's response. Comments received covered a wide range of general topics, including the Environmental Assessment process, the preferred alternatives, access to Highway 403, pedestrian crossings, and community priorities. A summary report of the PIC, complete with further information on public comments received is included in ***Appendix E***.

Table 24 – Summary of Public Comments Received

Comments Received	Study Team Response
Time Frame for Review and Comments	
• Community should be provided additional time to review and comment on the materials presented at the PIC. • Another PIC should be held on the study. • December 8 PIC should have been held at a larger venue.	• Review period for comments was extended until January 31, 2011. • When planning for a PIC it is difficult to anticipate the number of people who will attend. We acknowledge the venue was not large enough to accommodate the number of residents who attended and as a result the displays were made available for viewing in the weeks following the PIC at Councilor Ferguson's office. The boards were also posted on the City's website. • Additional opportunities for public comments were provided at the April 18th Public Works Committee Meeting. • Residents will also be able to comment on the plan during the 30-day public review period.
• Consultation should have begun earlier in order to allow the public to have a more meaningful role in the planning process.	• Opportunities for consultation have been provided to date on the study, including following the Notice of Commencement. • Presentations were made to the Ancaster Community Council on May 5, 2009, September 8, 2009 and April 4, 2011. • Two stakeholder meetings, with invited representatives from a number of organizations in the Community were held in order to receive preliminary input on the study findings. • Project newsletter was issued in December 2008. • Members of the public provided comments at the April 18th Public Works Committee Meeting. • Residents will also be able to comment on the plan during the 30-day public review period.
• Focus should be on finding a solution that meets the needs of the community rather than completing this project as quickly as possible.	• Study team is focused on developing a transportation plan that works for the community and improves the overall transportation network.
Environmental Assessment Process	
• ATMP study should be put on hold until the Garner Road. Environmental Assessment (EA) is completed.	• The need for the Garner Road EA was identified in the Hamilton Transportation Master Plan. • A widened Garner Road as well as the Airport Employment Growth District (AEGD) considerations were incorporated in the

Comments Received	Study Team Response
	transportation modelling in order to project anticipated traffic growth in Ancaster over the next 20 years.
• Mineral Springs should not be included in the ATMP's study boundary.	• Mineral springs is not included within the Ancaster TMP study area, however, it was included within the Shifting Gears cycling plan.
• The recommended solution presented at the PIC should be revised to incorporate community feedback.	• Community feedback received throughout the study process, including following the PIC has been reviewed and integrated into the preferred solution.
Preferred Alternatives	
• A bypass around Ancaster is needed to discourage commuter traffic through the community.	• There are a number of constraints that limit the potential for a bypass around Ancaster including the Dundas Valley Environmentally Sensitive Area, significant cost of a bypass as well as available land. The potential for a bypass was not considered as part of the study.
• Priority should be placed on discouraging commuter traffic through Ancaster, rather than improving traffic flow.	• The purpose of the Ancaster Transportation Master Plan is to identify opportunities to improve the transportation network in Ancaster. The City's overall master plan is intended to address transportation routes within the City and between communities. • Highway 403, which is not within the City's jurisdiction to widen, poses significant constraints in terms of the overall network in Ancaster. • A major component of the study objectives was to identify options for improving alternative modes within the study area in order to meet the many competing needs and 2031 future demands.
• Modelling analysis should be reviewed in order to truly understand the origins and destinations of those currently driving through Ancaster.	• As part of the modelling completed, we examined the origins and destinations of vehicle volumes travelling on selected roadway segments up to 2031 (including impacts of the AEGD and various new and planned road infrastructure).
• Traffic should be diverted to Garner Road rather than increasing congestion in downtown Ancaster.	• It is difficult to influence the route choice of individual commuters. In general, people will choose the shortest, most direct and/or convenient route when travelling to a destination. • The study includes widening Garner Road to a three lanes between Highway 2 (Wilson St. west) and Shaver Road and to four lanes from Shaver Road to east of Miller Drive. A separate study is currently underway for the section east of Highway 6.

Comments Received	Study Team Response
• Public transportation in Ancaster should be improved and have more linkages to the downtown core, GO Transit, and the waterfront.	• The study includes improvements to the transit system in Ancaster, including the addition of a "community shuttle" connecting the Meadowlands area with the village core.
• "Do nothing" should be considered.	• The "Do Nothing" (no change to the current network) alternative was modeled and showed significant congestion and other operational concerns by 2031.
• Add a middle turning lane, bike lanes, and sidewalks to Wilson Street from Halson Street to Fiddler's Green	• This is included in the Recommended Plan.
• Consider widening Golf Links Road between the Meadowlands and Wilson Street.	• While a three lane cross section with two way left turn lanes on Golf Links Road is being considered in conjunction with potential access to Highway 403, widening is not being considered between Halson Street and Southcote Road.
• Study should review previous transportation studies conducted by the Town of Ancaster (e.g. *Downtown Ancaster Study* performed by Jack Diamond).	• At the outset of the study previous studies were reviewed as appropriate.
• Increase traffic flow on non-residential and non-school zone roads to improve traffic.	• Traffic volumes have been directed towards arterial roads. The purpose of arterial roads is to accommodate higher volumes of traffic than local streets. The hierarchy of streets is included in the City's Official Plan.
Existing Traffic Issues	
• Speed limit on Wilson Street should not be increased.	• There are no plans to increase speed limits as part of the study.
• The Lincoln Alexander Parkway should be widened.	• This was not considered as it is beyond the scope of this study.
• More exits are needed on the Lincoln Alexander Parkway.	• This was not considered as it is beyond the scope of this study.
• City should consider synchronizing traffic lights on Wilson Street at Fiddler's Green and the Fortinos Plaza.	• This is an operational issue, which will be reviewed by the City.
• Interim traffic calming measures should be instituted between Rousseaux Street and Lodor Street.	• Traffic calming measures are considered at a neighbourhood level/smaller scale level and were not considered as part of this community-wide study. • Comments regarding the need for traffic calming in this area will be reviewed in the next phases of the study.

Comments Received	Study Team Response
• Create a right hand turning lane on Wilson Street at the Food Basics Plaza.	• A right turn lane at this location is considered a local operational issue and has been forwarded to the appropriate City staff for consideration and noted in the study report.
Recommended Solution	
• Adding a third lane on Rousseaux Street/Mohawk Road would destroy the unique character of the street. • Add a few left turning lanes at appropriate intersections rather than a continuous middle lane	• The proposed three-lane cross section (two through lanes with a centre two-way left turn lane) is not intended to significantly increase the capacity of the road. • The purpose of the two-way left turn lane is to assist turning vehicles and improve safety as transportation demand increases in future horizon years.
• Rousseaux Street, Mohawk Road, and McNiven Road should not be widened as it will encourage commuter traffic in the area, which will create more traffic problems overall.	
• A centre lane on Rousseaux Street/ Mohawk Road would help residents get in/out of their residential properties.	
• Traffic on McNiven Road is not a problem and as a result the road should not be widened.	• Traffic volumes are expected to increase on McNiven Road by 2031, which is why consideration was given to widening this road. • Road widening is planned to be completed beyond 2021.
• Traffic congestion is a way to encourage modal shifts and the viability of sustainable transportation choices.	• The plan is focused on improving the transportation system as a whole, which includes alternative transportation modes in an effort to reduce congestion.
Access to Highway 403	
• An on-ramp for westbound traffic to Highway 403 from Golf Links Road will help reduce traffic congestion in the Meadowlands.	• As part of the TMP, on and off ramps are being considered connecting Golf Links Road to/from Highway 403 west, pending MTO approval. • The ramps will service both Ancaster and Meadowlands residents and it is anticipated some traffic currently using Wilson Street and Garner Road would shift to Highway 403.
• An on-ramp to Highway 403 from Main Street should be built to	• A westbound on-ramp at Main Street and Highway 403 (beside the Colombia College) is being

Comments Received	Study Team Response
accommodate traffic from Dundas and Westdale/McMaster.	evaluated in coordination with the Ministry of Transportation Ontario (MTO) in a separate study. The City will continue to pursue this with MTO outside of this study.
• Additional westbound access to Highway 403 from Mohawk Road is needed.	• Highway 403 ramp locations were considered at both Mohawk Road and at Golf Links Road. • Analysis showed that while the Mohawk Road ramp provided limited localized benefits to residents around the Mohawk Road corridor, ramps located at Golf Links Road provided a greater benefit to both Ancaster residents and the residents of the Meadowlands.
Roundabouts & Pedestrian Crossings	
• Signalized crosswalks are more effective and safer than roundabouts.	• Roundabouts have been shown to reduce collisions by as much as 75%. • The reduction in collisions is attributed to slower speeds and reduced number of conflict points. • Studies have shown that roundabouts can lessen the frequency and severity of pedestrian-involved collisions by 50 to 80%. There are four reasons why pedestrians are safer at roundabouts: • *Shorter crossing distances*: Pedestrian crossing distances are often shorter because extra lanes are not needed on an approach, and where splitter islands are present the crossing is done in two-stages. • *Look in One Direction Only*: Pedestrians only have to look in one direction for oncoming traffic whereas at traffic signals cars approach a crosswalk from the left and the right, often at steep angles outside of peripheral vision. • *Lower vehicle speeds*: There is more time to make eye contact with a motorist and avoid a crash, and if a crash does occur it will be less severe. • *Fewer conflict points*: For a single-lane roundabout, there are 2 vehicle-pedestrian conflict points on each leg, as opposed to 4 otherwise. At multi-lane roundabouts, as at other intersections, an additional conflict is added for each additional lane that a pedestrian must cross. While illegal
• Roundabouts are preferred solutions for pedestrian safety.	
• Roundabouts are only as good as the people who are using them and are often ineffective and poorly used.	
• Roundabouts are unsafe for pedestrians and cyclists.	

Comments Received	Study Team Response
• Signal lights at every intersection are a frustration for motorists and will increase gas consumption (air quality emissions) and traffic congestion in the community.	• For all intersections where signals were considered an assessment was carried out to determine whether a roundabout would be more appropriate.
• One or two pedestrian activated signal lights should be placed in strategic locations where they will be used by pedestrians and have minimal effects on traffic.	• The study recommends the addition of pedestrian crossing on Wilson Street be considered as part of the "Schedule C" Class EA for Wilson Street improvements.
Population Growth in Ancaster	
• City should stop residential development in Ancaster to avoid traffic congestion related to population growth.	• The study did not identify any changes to land use planning and growth in Ancaster. • Wilson Street is a Major Arterial Road
• Ancaster should only be zoned for low density development.	
• Urban growth should be restricted to arterial roads.	
Ancaster Village Core	
• It is important to preserve the heritage of Ancaster and ensure the village core remains in its present form.	• The study recommends a three-lane cross-section with bike lanes on Wilson Street between Halson Street and Hamilton Drive. • The addition of pedestrian crossings will be considered on Wilson Street during the "Schedule C" Class EA. • It is intended the three-lanes will reduce congestion in the village core, and make walking and cycling more attractive to Ancaster residents. • Widenings are not being considered for Wilson Street within the village core
• Traffic flow through the village core should be discouraged rather than improved.	
• Traffic calming measures are needed in the village core.	
• Ancaster's main street (Wilson Street) should not be widened.	
• Parking should be reinstated on Academy Street between Wilson Street and Lodor Street to improve business in the village core.	• Opportunities for on-street parking were not considered as part of the study. Comments will be reviewed by the City.
• Ancaster's downtown is not a pedestrian mall or shopping centre. Reducing traffic in along Wilson	• Under the TMP Recommended Scenario, traffic volumes along Wilson Street within the Ancaster Village Core (between Halson Street and

Comments Received	Study Team Response
Street between Rousseaux Street and Halson Street will hurt businesses in this area.	Rousseaux Street) are not anticipated to increase significantly from existing conditions to the 2031 horizon.
Active Transportation and Pedestrian Safety	
• Priority should be placed on making Ancaster walkable, safe, and bike-friendly. • Ancaster needs continuous and safe bike lanes and sidewalks. • Bike lanes should be added along Wilson Street in the village core. • Bike lanes in Ancaster are in a state of disrepair.	• The study includes recommendations to improve the pedestrian and cycling environment in Ancaster. • Cycling lanes recommended in the City's Cycling Master Plan – Shifting Gears 2009 have been included in this study. • Sidewalks on both sides of the street are included along major corridors (i.e. arterials and collectors).
• Safety concerns associated with increasing the Wilson Street right-of-way (ROW) to three-lanes.	• Based on available studies, it was found that the addition of a two-way left turn lane resulted in an approximate 20-40% reduction in total collisions, 25% reduction in left-turn collisions, and 40% reduction in rear-end collisions, depending on the context of the application.
• A sidewalk is needed on Mohawk Road from Highway 403 to McNiven Road.	• The City is completing a Pedestrian Master Plan which will include conducting a sidewalk and pedestrian facility inventory and developing a 20 year plan that will recommend pedestrian infrastructure improvements. Comments will be provided to that study team.
General/Other Comments	
• Wilson Street needs to be re-paved from Rousseaux Street to Halson Street. • Mohawk Road needs to be re-paved.	• Comments referred to City's infrastructure planning staff.
• City should clarify the impact that increased traffic will have on road conditions in the community.	• Environmental impacts were considered in the evaluation of alternatives
• City should ensure that a representative from MTO is available at the next meeting.	• Councillor Ferguson and staff have met with MTO to review the issues. The City will continue to work with MTO to encourage additional access to Highway 403 be constructed outside of this study.

11. SUMMARY OF RECOMMENDED TRANSPORTATION SYSTEM

The following section summarizes the recommendations from the Transportation Master Plan for the Ancaster area.

11.1 Road Network Modifications

- Modify the road network through roadway widenings and new roadway construction projects, which includes the addition of three-lane cross-sections with centre two-way left turn lanes on sections of Wilson Street, Rousseaux Street, McNiven Road, Southcote Road and Garner Road. Roadway modification efforts to improve LOS at the Wilson Street and Rousseaux Street intersection must provide for appropriate bus stop positioning; these efforts will help to keep the busses flowing as best as possible and ensure good conditions for passengers transfers to be made as scheduled.
- Implement improvement options at the Wilson Street/Rousseaux Street and Wilson Street/Jerseyville Road intersections. This includes the long-term solutions of a double-lane roundabout at Wilson Street /Rousseaux Street and a single-lane roundabout at Wilson Street/Jerseyville Road.
- Subject to approval by the MTO, connect an off-ramp from Highway 403 eastbound to Golf Links Road eastbound/westbound; and an on-ramp from Golf Links Road eastbound/westbound to Highway 403 westbound.

11.2 Transit

- Introduce an "Ancaster Community Shuttle" over the long term, connecting major "community nodes", including Meadowlands, the Ancaster Village Core and Redeemer College.
- Construct Enhanced Transit Stops at the Meadowlands Shopping Centre and at the intersection of Wilson Street/Fiddler's Green Road.
- Increase service on transit routes that serve the Ancaster Village Core.

11.3 Transportation Demand Management

- Support teleworking and alternative work arrangements for employees, when possible. Employers are encouraged to work with Smart Commute Hamilton in order to receive telecommuting guidance.
- Optimize electronic payment opportunities and web-based information (e.g. travel time information) dissemination using Intelligent Transportation Systems technology.
- Investigate opportunities to shift schedule start and end time of major employers outside of peak periods.

- Permit flex hours within administrative/office staff core to spread peak arrival and departure times as much as possible.
- Encourage the use of less congested corridors by improving pedestrian and cyclist accessibility into downtown areas and by increasing transit service.
- Investigate feasibility of implementing carpool/vanpool programs to reduce SOVs by promoting the Hamilton Car Share program.
- Urge employers to become Smart Commute Partners
- Consider a Park n' Ride/Carpool Lot near the interchange of the Lincoln M. Alexander Parkway/Mohawk Road/Highway 403.

11.4 Cycling/Trails/Pedestrians

- Create a comprehensive and interconnected network of cycling routes and trails, as identified in Shifting Gears 2009 and the Trails Master Plan.
- Provide sidewalks on both sides of the road for residential and commercial areas on all arterial and collector roadways.
- Provide sidewalks on both sides of the road and wider curb lanes for cyclists on commercial local roads. Residential local roads within Ancaster should require sidewalks on one or both sides of the street, with possible exceptions for cul-de-sacs.
- Seek opportunities to implement crosswalks, Intersection Pedestrian Signals (where warranted), and other roadway treatments to increase safety for pedestrians in the study area.
- Consider wider sidewalks where feasible during detailed design.
- Provide a "multi-purpose off-road recreational trail system" that connects all major areas (natural, cultural, major land use) within the City of Hamilton as identified in the Trails Master Plan.
- Build multi-use trails running along the hydro easement in the AEGD and connecting to the Meadowlands area, such as the proposed trail from Shaver Estates Park to Tollgate Drive, south of the 403 at Brooking Court;
- Promote the amenity of the sidewalk through the uniform design and distribution of street furniture, information kiosks, receptacles, trees and planting boxes, and public and private signage and lighting;
- Provide adequate lighting along major pedestrian routes;
- Monitor levels of service and safety for non-motorized users of the transportation infrastructure and adjust policies, programs and practices as needed; and
- Implement a non-motorized maintenance program. Expand programs to clean and remove snow from pedestrian and bicycle facilities.

12. IMPLEMENTATION PLAN

12.1 Financial Strategy

Having established a transportation strategy to the year 2031, the next critical step was to define its cost. A Financial Strategy for the Ancaster network to 2031 was developed as part of this study. The plan is divided into:

- Road Widening/New Alignments; and
- New Intersections/Traffic Management.

12.1.1 Capital Costs – New Widening/New Alignments

Costs for the potential roadway improvements identified in the Recommended Scenario are included in ***Table 25***. Costs will be confirmed during the design phase and future environmental assessment process (for Schedule C projects). The cost estimates serve as a approximate value that best reflect the various elements of future planned road reconstruction.

Costs for the Recommended Scenario should not be compared to costs of other scenarios. As noted in **Section 6.1.2** the HTMP roadway improvement costs were considered as the base costs from which all other scenario costs were compared. Costs were adjusted for the Recommended Scenario based on refinements or removal of some recommended HTMP projects, resulting in much lower costs for the Recommended Scenario than the HTMP base costs.

Table 25 – Costs and EA Schedule

	Road Name	From	To	Length (km)	Description of Works	Project Costs (Millions)
1	New E/W Road (Ancaster)[1]	Tradewind Drive/ Cormorant Road	Trinity Road	0.81	New Two-Lane Collector Road	$1.90
2	Stonehenge Road[2]	Meadowlands Boulevard	Raymond Road	0.25	New Two-Lane Collector Road	DC
3	Raymond Road[2]	Fair Street	Garner Road	1.14	New Two-Lane Collector Road	DC
4	New N/S Road (Ancaster)[2]	Raymond Road	Garner Road	0.90	New Two-Lane Collector Road	DC
5	Garner Road	Hwy 2 (Wilson Street)	50m west of Shaver Road	0.72	Road Widening to Three-Lanes with Two-way Left-turn Lane	$1.38

	Road Name	From	To	Length (km)	Description of Works	Project Costs (Millions)
6	Golf Links Road	McNiven Road	Kitty Murray Lane	0.84	Road Widening to Three-Lanes with Two-way Left-turn Lane	DC
7	Golf Links Road	Kitty Murray Lane	Stone Church Road	-	Two Intersection Improvements (Martindale, Cloverleaf)	DC
8	McNiven Road	Rousseaux Street	Golf Links Road	0.63	Road Widening to Three-Lanes with Two-way Left-turn Lane	$1.88
9	*Rousseaux Street	Wilson Street	McNiven Road	0.88	Road Widening to Three-Lanes with Two-way Left-turn Lane	$2.62
10	Rousseaux Street/Wilson Street Intersection	-	-	-	Intersection Improvements (slight modifications to existing)	$0.48
11	Wilson Street/ Jerseyville Road Intersection	-	-	-	Single Lane Roundabout	$0.60
12	Stone Church Road	Harrogate Drive	Stonehenge Drive	0.34	Road Widening to Four-Lanes	$1.04
13	Garner Road	50m west of Shaver Road	50m east of Miller Drive	3.17	Road Widening to Four-Lanes with Bike Lanes	$9.67
14	*Mohawk Road/ Rousseaux Street	McNiven Road	Hwy 403	1.30	Road Widening to Three-Lanes with Two-way Left-turn Lane	$3.89

	Road Name	From	To	Length (km)	Description of Works	Project Costs (Millions)
15	Rousseaux Street/Wilson Street Intersection	-	-	-	Double Lane Roundabout	* Not considered as part of TMP
16	Southcote Road	Calder Street	Garner Road	1.26	Road Widening to Three-Lanes with Two-way Left-turn Lane	$3.43
17	Wilson Street	Hamilton Dr	50m west of Halson Street	2.60	Two-way Left-turn Lane	$7.77
	Total					**$34.66**

Notes:

[1] *Development led project.*

[2] *Will be reviewed through plan of subdivision.*

** When considering projects, Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project, under Schedule C.*

The Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project, under Schedule C.

The northern project limit for the Southcote Road widening from Calder Road to Garner Road could be revisited depending on plans for cycling or multi-use path infrastructure.

Costing is based on benchmark costs and typical cross-sections. The benchmark costs contain typical contingency allowances for engineering and construction. It is assumed that most new construction projects would be funded by "growth" via development charges (e.g. up to 100% in areas of new development). In some instances, roadway improvements would be funded through "cost-sharing" with a percentage funded by development and the remainder funded by the City. For example, the recommended road widening on Garner Road between Highway 2 and 50 metres west of Shaver Street will be triggered by development in the AEGD and will be 70% funded by development charges, with the remaining 30% of funding coming from the City.

12.2 Staging Plan

The timing for infrastructure improvements recommended in this report was determined based on modelling analysis and development plans. Projects were evaluated up to the 2031 horizon in order to determine what overall improvements were needed for the Short (2011-2016), Medium (2017-2021) and Long Term (beyond 2021).

Each project identified is subject to budgetary review, approvals and continued priorities for the City based on new developments.

Table 26 includes a summary of the Ancaster Implementation Plan. Capital costs and timing are listed in addition to the applicable Municipal Class EA project schedule.

Table 27 outlines additional studies to be completed prior to project implementation.

Table 26 – Implementation Plan Summary

Road Name	From	To	Length (km)	Description of Works	Period	Anticipated Timing	Trigger	Project Cost (million)	DC Share %age	DC Share Amount (million)	Capital Project Share (million)	EA Schedule
New E/W Road (Ancaster)	Tradewind Drive/ Cormorant Road	Trinity Road	0.81	New Two-Lane Collector Road	Short	2011-2016	Development - Industrial Park	$1.9	100	$1.9	$0.0	B
Garner Road	Hwy 2 (Wilson St.)	50m west of Shaver Road	0.72	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Development - AEGD	$1.4	71	$1.0	$0.4	B
Golf Links Road	McNiven Road	Kitty Murray Lane	0.84	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Construction of Golf Links Ramps to Hwy 403	TBD	-	-	-	TBD
Golf Links Road	Kitty Murray Lane	Stone Church Road	-	Two Intersection Improvements (Martindale, Cloverleaf)	Long	Beyond 2021	Construction of Golf Links Ramps to Hwy 403	TBD	-	-	-	TBD
McNiven Road	Rousseaux Street	Golf Links Road	0.63	Road Widening to Three-Lanes with Two-way Left-turn Lane	Long	Beyond 2021	Development	$1.9	60	$1.1	$0.8	**B**
* Rousseaux Street/Mohawk Road	Wilson Street	McNiven Road	0.88	Road Widening to Three-Lanes with Two-way Left-turn Lane	Short	2011-2016	-	$2.6	0	$0.0	$2.6	B *
Rousseaux Street/ Wilson Street Intersection	-	-	-	Interim Intersection Improvements (slight modifications to existing)	Short	2011-2016	-	$0.5	0	$0.0	$0.5	B
Wilson Street/ Jerseyville Road Intersection	-	-	-	Single Lane Roundabout	Medium	2017-2021	-	$0.6	0	$0.0	$0.6	**B**
Stone Church Road	Harrogate Drive	Stonehenge Drive	0.34	Road Widening to Four-Lanes	Long	Beyond 2021	Development	$1.0	0	$0.0	$1.0	B
Garner Road	50m west of Shaver Road	50m east of Miller Dr.	3.17	Road Widening to Four-Lanes with Bike Lanes	Medium	2017-2021	Development - AEGD	$9.7	71	$6.9	$2.8	C
* Mohawk Road	McNiven Road	Hwy 403	1.30	Road Widening to Three-Lanes with Two-way Left-turn Lane	Short	2011-2016	-	$3.9	60	$2.3	$1.6	C
Rousseaux Street/ Wilson Street Intersection	-	-	-	Double Lane Roundabout	Medium	2017-2021	-	$2.6	0	$0.0	$2.6	**C**
Southcote Road	Calder Street	Garner Road	1.26	Road Widening to Three-Lanes with Two-way Left-turn Lane	Medium	2017-2021	Development	$3.4	60	$2.1	$1.4	C

Road Name	From	To	Length (km)	Description of Works	Period	Anticipated Timing	Trigger	Project Cost (million)	DC Share %age	DC Share Amount (million)	Capital Project Share (million)	EA Schedule
Wilson Street	Hamilton Dr	50m west of Halson Street	2.60	Two-way Left-turn Lane	Short	2011-2016	-	$7.8	85	$6.6	$1.2	C
Total								**$34.7**		**$21.9**	**$12.8**	

" * " when considering projects, Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project, under Schedule C.

" TBD " To be determined in conjunction with the On & Off ramp at Golf Links Road

Further studies to be undertaken (Phases 3 & 4) for Schedule C projects

Table 27 – Additional Studies Recommended

Road Name	From	To	Description of Works	EA Schedule	Additional Studies Recommended
New E/W Road (Ancaster)	Tradewind Dr / Cormorant Road	Trinity Road	New Two-Lane Collector Road	B	• Environmental Impact Study to review potential impacts on adjacent wetland • Terrestrial Assessment • Fisheries Assessment (if new watercourse crossing required) • Archaeological Assessment
Garner Road	Hwy 2 (Wilson St.)	50m west of Shaver Road	Road Widening to Three-Lanes with Two-way Left-turn Lane	B	• Terrestrial Assessment • Fisheries Assessment (if watercourse crossings impacted) • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Golf Links Road	McNiven Road	Kitty Murray Lane	Road Widening to Three-Lanes with Two-way Left-turn Lane	TBD	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Golf Links Road	Kitty Murray Lane	Stone Church Road	Two Intersection Improvements (Martindale, Cloverleaf)	TBD	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
McNiven Road	Rousseaux Street	Golf Links Road	Road Widening to Three-Lanes with Two-way Left-turn Lane	B	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
* Rousseaux Street/Mohawk Road	Wilson Street	McNiven Road	Road Widening to Three-Lanes with Two-way Left-turn Lane	B	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Rousseaux Street/Wilson Street Intersection	-	-	Interim Intersection Improvements (slight modifications to existing)	B	
Wilson Street/Jerseyville Road Intersection	-	-	Single Lane Roundabout	B	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed • Built Heritage Assessment
Stone Church Road	Harrogate Drive	Stonehenge Drive	Road Widening to Four-Lanes	B	• Terrestrial Assessment • Fisheries Assessment (if watercourse crossings impacted) • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Garner Road	50m west of Shaver Road	50m east of Miller Drive	Road Widening to Four-Lanes with Bike Lanes	C	• Terrestrial Assessment • Fisheries Assessment (if watercourse crossings impacted) • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
* Mohawk Road	McNiven Road	Hwy 403	Road Widening to Three-Lanes with Two-way Left-turn Lane	C	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Rousseaux Street/Wilson Street Intersection	-	-	Double Lane Roundabout	C	• Terrestrial Assessment • Built Heritage Assessment • Fisheries Assessment (if watercourse crossings impacted) • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed

Road Name	From	To	Description of Works	EA Schedule	Additional Studies Recommended
Southcote Road	Calder Street	Garner Road	Road Widening to Three-Lanes with Two-way Left-turn Lane	C	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed
Wilson Street	Hamilton Dr	50m west of Halson Street	Two-way Left-turn Lane	C	• Terrestrial Assessment • Archaeological Assessment, if lands beyond existing right-of-way (ROW) disturbed • Built Heritage Assessment • Streetscape Study

Notes:
**** When considering projects, Rousseaux Street and Mohawk Road improvements will influence each other and should therefore be considered as one project, under Schedule C.***