TOWN OF CALEDON

Region of Peel
Working for you

Caledon Transportation Needs Study

Update

Study Report









March 2009

PHILIPS ENGINEERING

Paradigm Transportation Solutions Limited

PROJECT SUMMARY

PROJECT NAME: ..... **CALEDON TRANSPORTATION NEEDS STUDY UPDATE**

CLIENT: ..... **THE TOWN OF CALEDON & THE REGIONAL MUNICIPALITY OF PEEL**
CALEDON TOWN HALL
6311 OLD CHURCH ROAD
CALEDON, ON L7C 1J6

CONSULTANT:..... **PARADIGM TRANSPORTATION SOLUTIONS LIMITED**
2109 KERNS ROAD
BURLINGTON ON L7P 1P7

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EXECUTIVE SUMMARY

The Caledon Transportation Needs Study Update is a project conducted jointly by the Town of Caledon and the Regional Municipality of Peel to assess and identify the potential transportation improvements needed to accommodate future traffic demand within the Town. This study is an update of the Caledon Transportation Needs Study completed by the Town and the Region in September 2004. A number of changes have occurred since 2004 that have prompted the need for this study update, as follows:

- The most current plan for the Provincial Highway 427 extension has the highway ending in the vicinity of Major Mackenzie Drive.
- To meet Provincial growth guidelines, Caledon is now planning for substantial additional growth with a target population of 108,000 persons by year 2031.
- The new Provincial Metrolinx agency is actively planning new transportation directions for the Greater Toronto and Hamilton area, including improved public transit services to communities such as Caledon.
- Several other new transportation studies have recently been initiated that will have future implications on Caledon. This study helps provide a basis on which the Town can respond to these studies.

Current Transportation Conditions

The existing transportation conditions remain generally as outlined in the 2004 study. The key areas of concern continue to be as follows:

- Peak period congestion on the roadway network, particularly in the southern areas of Caledon such as Bolton area and along the Mayfield Road corridor is a problem for commuters and business activities in the Town.
- Excessive traffic volumes using the rural collector roadway network in the Town create safety and nuisance problems for local residents.
- Over 40% of the traffic on the Caledon road network during the weekday peak period is external or through traffic to and from adjacent areas travelling across the municipality. With limited capacity and discontinuities on the Provincial highway routes, this traffic spills over to arterial and collector roads within the Town creating additional congestion and environmental impacts.
- Caledon commuters are heavily dependant on automobile travel. Recent initiatives and plans to provide travel demand management and improved inter-regional transit as well as future integration with adjacent municipality's public transit services may help to reduce this automobile dependency in future.

Future Transportation Conditions

The future transportation conditions have been assessed for years 2011, 2021 and 2031 using the Region of Peel's travel forecasting model. The main inputs to this model are:

- Forecasts of population and employment growth within Caledon and adjacent to Caledon to year 2031. By year 2031 the population of Caledon is expected to almost double to over 108,000 persons.
- The existing plus committed roadway network, including the completion of the Highway 410 extension, the widening of Highway 10 to Orangeville, the extension of Highway 427 to Major Mackenzie Drive, the widening of Mayfield Road from Winston Churchill Boulevard to Regional Road 50, the widening of Airport

Road to Caledon East and the widening of Regional Road 50 south of Caledon. These roadway projects will substantially improve the peak period capacity of the current road network and are fully incorporated in the study findings.

The estimates of the future peak hour travel have been considered at a number of screenlines to provide an overview of the nature of the traffic growth. Table ES.1 below provides a summary of the existing and future traffic levels at these different screenlines. Overall, the peak hour traffic volumes in the southbound direction are expected to increase by about 70% to 110 % in comparison to year 2001 peak hour traffic volumes. The greatest increase occurs in traffic volumes crossing the Mayfield Road screenline with an estimated increase of 111%. It is also noted that the east west traffic volumes (e.g., crossing the Highway 10 screenline in the eastbound direction) are expected to increase even more with an estimated increase of 120% to 160%.

Table ES.1: Traffic Forecasts at Study Screenlines

Screenline	2001 AM Peak Hour Observed Volume (vph)	2011 AM Peak Hour Forecast Volume (vph)	2021 AM Peak Hour Forecast Volume (vph)	2031 AM Peak Hour Forecast Volume (vph)	Traffic Growth (2001 to 2031) (Percent of 2001 Volume)
1 North Town Boundary	3,265	4,098	5,145	6,259	92%
2 Charleson Sideroad	1,896	2,253	2,995	3,870	104%
3 Old Base Line Road	3,909	4,914	6,459	7,213	85%
3.2 Old Church Road	1,730	2,226	2,606	2,980	72%
4 King Street	7,218	9,884	10,938	12,555	74%
5 Mayfield Road	8,520	11,710	14,188	17,969	111%
6 East Town Boundary	1,760	2,037	2,545	2,756	57%
6a Mayfield Rd to Columbia Way (Westbound)	2,402	2,785	2,895	3,175	32%
7 Winston Churchill Boulevard	1,166	1,241	1,500	2,323	99%
8 Highway 10 (Hurontario Road)	2,799	3,543	5,510	7,357	163%
9 Airport Road	2,185	3,322	4,667	5,220	139%
10 Regional Road 50	1,681	2,049	2,335	3,789	125%
11 Forks of Credit	1,735	2,320	2,950	3,868	123%

NOTE: *Weekday AM peak hour volumes are shown in southbound or eastbound direction except where noted.*

Even with the committed roadway improvements, the estimated future traffic volumes will exceed the available roadway capacity in years 2021 and 2031. In year 2011, the capacity deficiencies on the arterial roadway network are relatively minor as a number of major projects such as the Highway 410 extension provide additional capacity at critical locations. The network capacity deficiencies in year 2021, however, are more substantial and widespread across the south area of Caledon. Figure ES.1 below illustrates the estimated year 2021 capacity deficiencies. Since a single arterial roadway lane has a capacity of about 800 vehicles per hour, it is clear that some of the year 2021 capacity deficiencies indicate the need for roadway improvements and widening. The capacity deficiencies in year 2031 are expected to be more severe, especially since there are few new roadway projects identified beyond year 2021. The year 2031capacity deficiencies are discussed in the main report.

Figure ES.1: Year 2021 Roadway Capacity Deficiencies



Future Transportation Improvement Needs

To deal with these future transportation system deficiencies, an overall transportation strategy is presented in this study update, consisting of the following components:

- Working with Peel Region and others to develop and implement travel demand management measures such as carpool lots to reduce peak vehicular traffic. The planned new carpool lot at Mayfield and Regional Road 50 will be an important improvement. Further efforts are required to support more sustainable forms of transportation including travel demand management and shifting travel demand away from private automobile use to alternate modes of transportation.

- Supporting the development of improved inter-regional public transit services and investigating opportunities for local transit services in Bolton in the short term and in Mayfield West in the longer term. GO Transit has recently improved services and will be studying future GO Rail service. The need for and feasibility of local transit service requires further investigation.

- Carrying out improvements to the arterial roadway network and working with the Provincial Ministry of Transportation to support improvements to the Provincial highway network where necessary to accommodate peak traffic requirements. The potential future improvements within Caledon are discussed below.

- Investigating traffic calming measures where specific problems exist on the rural collector road network that can not be resolved through the planned improvements to the related highways and arterial roads.

- Managing truck traffic on roads within the Town in cooperation with the Region and Ministry of Transportation to control the impacts of truck traffic. This includes consideration of the implications of truck restrictions, particularly on Regional and arterial roads.

- Organizing and carrying out more detailed transportation master plan studies in the congested urban areas. Studies have been conducted or are underway for Mayfield West to ensure the transportation system can accommodate the new growth. However, the Bolton area has existing transportation improvement needs and these will become more significant with new land use development and the impact of external transportation network changes. Development of a transportation master plan for the South Albion – Bolton area should be given priority.

- Working with the adjacent municipalities and Regions to ensure that the transportation system is well integrated across municipal boundaries.

The Town and the Region as well as the Ministry of Transportation of Ontario have several major roadway improvement projects planned and committed as shown in Figure ES.2 below. The potential additional roadway improvements to address the expected transportation needs are shown in Figure ES.3 below and the timing of these improvement needs is indicated in Table ES.2 below. It is noted that these improvements are subject to confirmation by future infrastructure planning studies such as the Region's Long Range Transportation Plan Update (to be completed in 2009) and the environmental assessment process.

Overall, the current plan to end Highway 427 in the area of Major Mackenzie Drive is expected to have a major impact on the Caledon transportation system in the future. The extension of Highway 410 and the widening of Highway 10 will greatly improve traffic conditions within the Town in the short term. However, the planned termination of Highway 427 will leave a major gap or discontinuity in the Provincial highway network and the high volumes of through traffic focused on the end of Highway 427 will have a substantial impact on the roads in the south east area of Caledon. Other current studies will further investigate how this future traffic impact can be managed and mitigated. However, the Town and the Region should continue to work with the Province to investigate solutions to this situation.

Based on the findings of this study, a number of further actions are recommended to the Town, as follows:

- The Town should consider preparing a Transportation Master Plan for the Bolton urban area.

- The Town and Region of Peel should request the Provincial Ministry of Transportation to consider development of a longer term plan for the extension of Highway 427 north to Highway 9. The study indicates that this improvement is required in the medium to long term time frame.

- The Town should participate in and monitor the progress of current transportation studies related to new facilities in and adjacent to Caledon.

Figure ES.2: Planned and Committed Roadway Projects

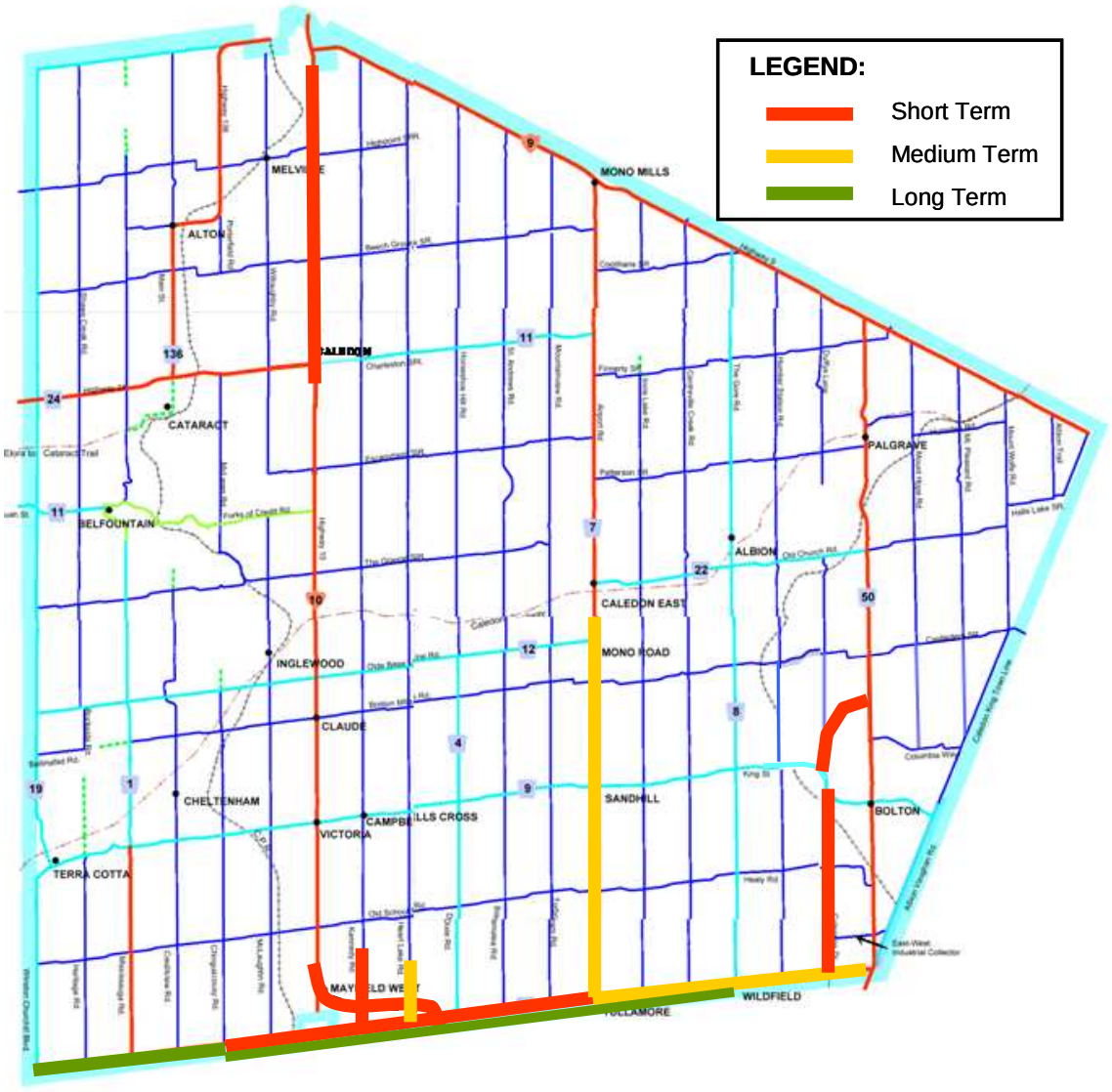

Figure ES.3: Potential Additional Improvements to Meet Transportation Needs

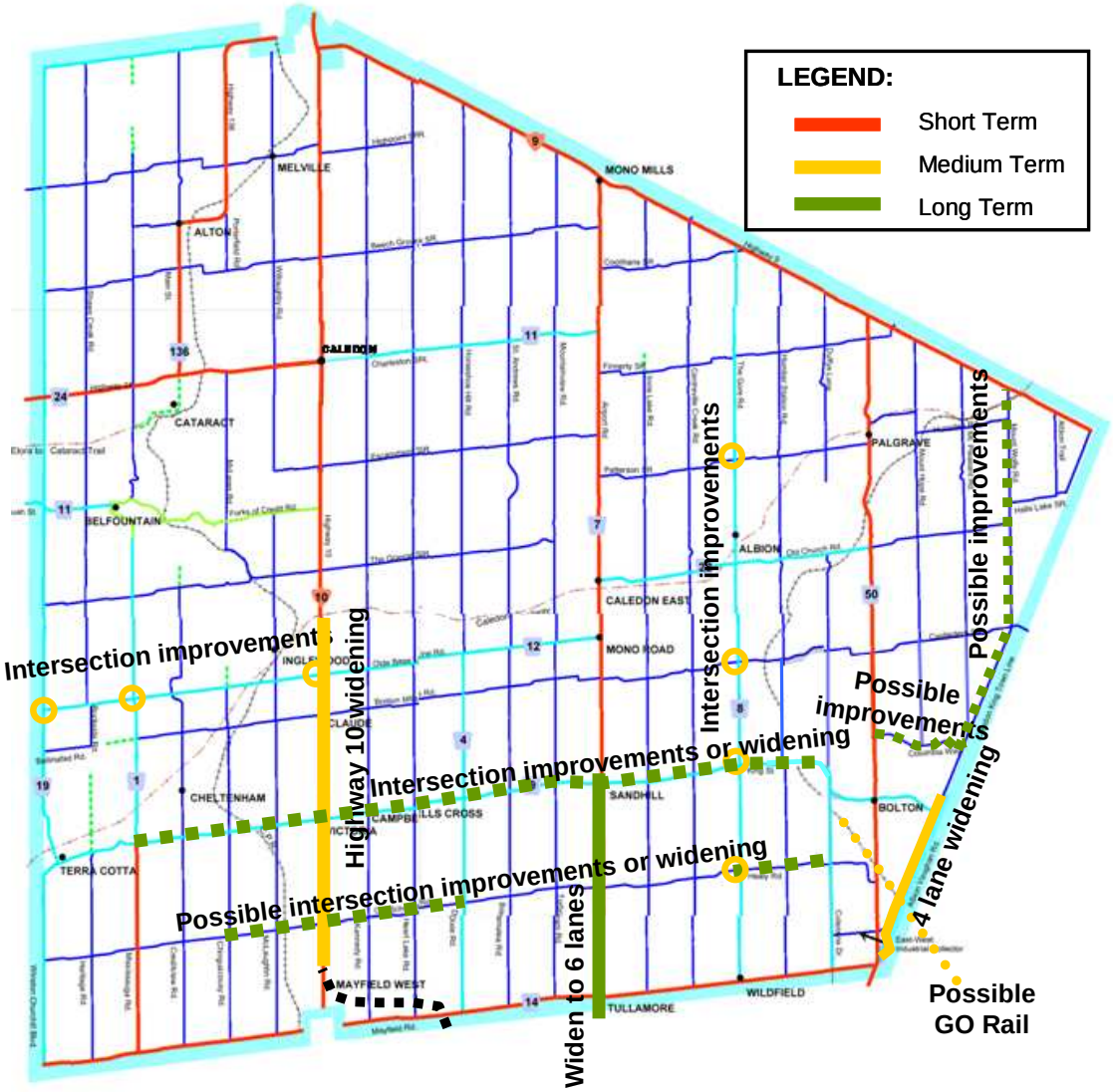

Table ES.2: Potential Additional Improvements to Meet Transportation Needs *

Corridor	Short Term Potential Improvements (by 2011)	Medium Term Potential Improvements (by 2021)	Long Term Potential Improvements (by 2031)
Highway 10 Corridor	None identified	Improvements and/or widening Highway 10 (Highway 410 to Olde Base Line)	
Airport Road Corridor	None identified	None identified	Widen Airport Road to six lanes (Mayfield to King)
Regional Road 50 – Townline Corridor (North of Bolton Area)	None identified	Improvements to the Gore Rd and/or to Mount Wolfe Rd – Caledon King Townline	
Humber Station Rd 50 – Albion Vaughan Road Corridor (Bolton Area)	Consider preparing transportation master plan for Bolton	Widening of Albion Vaughan Line (Mayfield to King) to four lanes	Improvements to Columbia Way (RR 50 to Caledon King Townline)
Mayfield Road – King Street Corridor	None identified	Intersection improvements and/or minor widening of King Street (Mississauga Rd – Coleraine Dr) Intersection improvements and/or minor widening of Old School Road (Mayfield West area, West of Bolton)	

***** *Subject to confirmation by future infrastructure planning studies such as such as the Region's Long Range Transportation Plan Update and the environmental assessment process.*

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1.0 INTRODUCTION

1.1 Background

In September 2004, the Town of Caledon in partnership with the Regional Municipality of Peel (Peel Region) completed the Caledon Transportation Needs Study. This study was carried out by a Town and Regional study team to investigate the existing and future peak travel demands on the transportation system within Caledon and to identify the general nature of improvements required to accommodate these peak transportation demands. The study considered transportation demand for several horizon years to year 2031, based on the planned population and employment growth within the Town and the surrounding municipalities.

The 2004 transportation needs study formed one component of Peel Region's long range transportation planning program and provided a significant input to the Regional Official Plan Strategic Update as well as the Town's Official Plan Review studies. It has also provided an important input to other ongoing transportation and land use activities such as development traffic impact studies.

The main findings of the 2004 transportation needs study are summarized as follows:

- Travel in Caledon is heavily oriented towards automobile traffic on the roadway system within the Town. This traffic is related both to development within Caledon as well as travel through the municipality by traffic to and from external areas. The result is congestion on the roadways, particularly in the southern areas of the municipality as well as excessive traffic on the collector and local roads within Caledon.

- Over the planning horizon to year 2031, Caledon traffic is expected to increase by over 100% in most areas, in comparison to traffic levels in year 2001. A number of committed transportation improvements will help to accommodate this increased traffic demand. These committed improvements include the extension of Highway 410 to connect to Highway 10, the widening of Highway 10 to Orangeville, the widening of Mayfield Road, the widening of Airport Road and the Bolton Arterial Roadway (BAR) improvements.

- The 2004 study found that the committed improvements would not be sufficient to fully accommodate the future peak travel demands and additional transportation system improvements are needed to maintain acceptable conditions. The identified needs include improvements to Provincial, Regional and Town roadways as well as further travel demand management and public transit service initiatives.

- One key future transportation improvement need identified in the 2004 study was the extension of Highway 427 north from the current terminus in south Vaughan to Highway 9 as envisaged in earlier studies by the Ministry of Transportation of Ontario (MTO). That roadway project would help to accommodate the forecast peak inter-regional travel demand within this corridor east of Peel Region. Without this important transportation improvement, the future peak travel demand on the roadway network within Caledon will be greater and substantial additional roadway improvements will be needed.

1.2 Need for Transportation Study Update

Since the 2004 transportation needs study was completed, there have been a number of changes in growth plans and transportation plans that are expected to have an impact on Caledon's transportation system. Some of these new directions include:

- The Ontario Ministry of Transportation (MTO) has prepared a Terms of Reference and is currently carrying

out the 427 Transportation Corridor Environmental Assessment Study. This study is examining the need for an extension of Highway 427 north from the current terminus and the alternatives for this extension. In conjunction with related Provincial policies, the study is primarily focused on Highway 427 extension alternatives that do not encroach on the designated Provincial Greenbelt. The technically preferred alternative plan for the Highway 427 extension has been identified as a freeway extension through the western area of Vaughan terminating just north of Major Mackenzie Drive. Since there are no plans to extend Highway 427 north of this terminus, traffic to and from areas to the north will need to utilize the area roadway network in Caledon and adjacent municipalities to connect to the Highway 427 facility. This plan is a significant departure from the earlier expectation that Highway 427 would be extended north to Highway 9. In conjunction with the MTO plans for the Highway 427 Corridor, additional studies have been initiated to ensure reasonable integration with the surrounding transportation networks. The Peel – 427 Transportation Master Plan is investigating the connecting arterial roadway network in Peel Region west and north of the proposed Highway 427 corridor. The Western Vaughan Individual Environmental Assessment (IEA) is investigating the required arterial roadway improvements in the western area of Vaughan. These studies are further discussed later in the report.

- In June 2006 the Provincial Government released the Growth Plan for the Greater Golden Horseshoe (GGH) area. This plan covers a twenty five year period and sets out targets for the accommodation of population and employment growth in the GGH. As a result of this new direction, municipalities are required to plan for new development to meet the targets in the Growth Plan, consistent with the policy directions of that plan. The implications for the Town of Caledon is that an increased population level needs to be accommodated within the municipality and the Town is responsible for carrying out the planning activities for this new development. In the 2004 transportation needs study the planned population level in year 2031 was about 84,000 persons. Since then, Caledon Council has endorsed population growth forecasts of 84,444 persons in 2021 and 108,000 persons in 2031. This may be compared to an estimated population of 57,000 persons in 2006. The future development is expected to increase the need for Caledon transportation system improvements. At this time, planning work regarding accommodation of additional growth is ongoing. The South Albion Bolton Community Plan is investigating the accommodation of additional employment development in developable vacant lands to the west of Bolton as well as additional residential infill within the existing Bolton urban area. Studies of the Mayfield West Phase Two development area west of Hurontario Street are ongoing.

- In 2006 the Provincial Government established the Greater Toronto Transportation Authority (GTTA), since renamed Metrolinx, to plan, fund and coordinate the implementation of an integrated multi-modal transportation system for the Greater Toronto and Hamilton Area (GTHA). This includes a mandate for overseeing GO Transit, the inter-regional transit authority serving the GTHA. The initial plans released by Metrolinx indicate that there will be substantial improvements in public transit facilities and services in the GTHA to help address growing transportation needs. One potential new project identified is a GO Rail line to serve the Bolton area.

In addition to these new policy directions at the Provincial level, there has been ongoing transportation planning activities that have changed transportation conditions within Caledon. The Region of Peel has developed an active travel demand management program in partnership with the lower tier municipalities and major employers. One outcome of this program is a new carpool lot near the corner of Highway 50 and Mayfield Road. Development in Mayfield West is proceeding and plans have been developed and approved for the widening of Kennedy Road and Heart Lake Road north of Mayfield Road. GO Transit has initiated a direct express bus service along Highway 50 serving the Bolton area and providing direct connections to and from the Malton GO Train station.

Recognizing these various changes and particularly the Highway 427 plans, the Town and Region determined that an update of the 2004 Caledon Transportation Needs Study should be carried out. The study purpose is similar to the

2004 study, namely:

- To prepare estimates of the peak travel demands on the Caledon transportation network for selected future years to 2031 that reflect recent population and employment forecasts as well as known committed transportation improvements.

- To identify the nature and extent of transportation system deficiencies in future and to assess the need for improvements to the transportation system within Caledon.

The study was directed by a project team consisting of staff representatives of the Town of Caledon and the Region of Peel who met regularly. The project team held a meeting with a senior staff advisory group to review progress and direction and a workshop was held with members of Caledon Council to discuss the preliminary study findings and direction.

The study work program covered the following activities:

- The Region of Peel travel forecasting model was utilized for this study. This model was updated since the 2004 study, so the updates to the model were reviewed with Peel Transportation Planning staff. Further changes were made to the traffic analysis zones (TAZ) in the Bolton and Mayfield West areas to help model future growth and travel patterns.

- The estimated TAZ population and employment estimates for years 2011, 2021 and 2031 were reviewed subject to the overall Regional totals.

- The traffic and land use data used in the 2004 study was reviewed and updated where necessary with data provided by the Town and Region.

- The status and current findings of a number of related transportation studies was reviewed and monitored during the study.

- Travel forecast were prepared for years 2011, 2021 and 2031 and refined as appropriate to provide reasonable estimates of the future conditions.

- An assessment of future transportation improvement needs was prepared. In conjunction with the assessment of roadway improvement needs, the study also included the development of a local, inter-municipal and inter-regional transit strategy that will help respond to the future needs.

This report provides documentation of the study investigations and findings. Since this study is primarily an update of the 2004 Caledon Transportation Needs Study, the report generally focuses on areas where conditions have changed or the information has been updated. Section 2.0 of the report provides an overview of the existing conditions and Section 3.0 outlines the travel forecasting methodology and provides the updated travel forecasts. The assessment of the future transportation needs and strategies to meet these needs are discussed in Section 4.0 of the report. The summary conclusions and recommendations of the study are provided in Section 5.0.

The draft report developed through this study was circulated to other municipalities and agencies. Comments were received from the County of Wellington, Toronto and Region Conservation Authority, Caledon Environmental Advisory Committee, York Region and Halton Region. The comments received have been incorporated in the final report as appropriate.

2.0 Existing Conditions

2.1 Review of Related Transportation Policies

In the 2004 study report, the relevant transportation related policies of Peel Region and Caledon as related to transportation are reviewed in some detail. These policies have not changed significantly since that time but some important changes are noted below.

The Region of Peel Official Plan (Office Consolidation, November 2005) provides a regional strategic policy framework for guiding growth and development in Peel. The Plan contains goals and objectives that promote sustainable development and healthy communities, including the following general goals:

- To integrate the transportation system in Peel with the transportation plans of the area municipalities, neighbouring municipalities and the Province.
- Coordinate planning with adjacent regions and municipalities, to establish a planned transportation network that considers and coordinates the road linkages across municipal boundaries that will accommodate cross-boundary traffic.
- Ensure that adequate transportation capacity on Regional roads is based on a "Level of Service Policy" adopted and periodically reviewed by Regional Council.
- Protect and preserve the natural environment, consistent with the objectives and policies in this Plan, the area municipal official plans, the Environmental Assessment procedures, and if applicable, the Niagara Escarpment Plan where Regional roads are proposed to be widened, reconstructed or improved. Where portions of Regional roads have scenic, environmental, or cultural heritage characteristics, it is intended to retain and protect the unique features of the road section.

In 2005, the Region of Peel adopted Regional Official Plan Amendment (ROPA) 16 dealing with the transportation network and policies. This amendment was based on the various studies carried out by the Region and the member municipalities as well as the need to respond to current transportation conditions and trends. The changes address a wide variety of revisions to the earlier Official Plan policies. Some of the key areas of interest to the Caledon transportation system include:

- A strong commitment to investigate and implement transportation demand management (TDM) programs to alleviate the growth in single occupant peak period automobile travel.
- Identification of the importance of the Provincial freeway network, including the future extension of Highway 427 as far north as Highway 9.
- To encourage the study and protection of a Bram West Parkway facility along the boundary of Brampton and Halton Hills
- To work with other agencies to identify east-west arterial roadway connections to the Highway 427 extension south of the Greenbelt.

The Town of Caledon Official Plan (Office Consolidation, December 31, 2002) identifies the following policies as related to the transportation system:

- To plan and support a transportation system that provides for both inter and intra Town traffic movements,

balances demand with capacity, protects and stewards ecosystems, and protects heritage sites and sensitive human environments.

- The Town will coordinate local road improvements, as appropriate, with the Region and the Province, and will encourage these authorities to maintain and improve roads within Caledon, as appropriate.

- The road network will be based on the following functional classification system as shown on Schedule J (Town of Caledon Official Plan):

  a) Freeways

     i. Roadways under Provincial jurisdiction.
     ii. Roadways intended to serve large volumes of inter-regional and long distance traffic at high speeds.
     iii. Roadways of high speed design with uninterrupted flow, with access only achieved through grade separated interchanges, designated by the Ministry of Transportation as Controlled Access Highways.

  b) High Capacity Arterials

     i. Roadways under Provincial or Regional jurisdiction.
     ii. Serve high volumes of medium to long distance inter and intra regional traffic at moderate speeds and will provide access to major attraction centres.
     iii. Will generally have a 30 to 50 metre road allowance width with 2 to 6 lane capability and limited property access.
     iv. On-street parking will be discouraged.

  c) Medium Capacity Arterials

     i. Roadways under Regional or Town jurisdiction.
     ii. Serve moderate volumes of medium distance traffic at moderate speeds with limited property access.
     iii. Will have a 20 to 36 metre road allowance with 2 to 4 lane capability.
     iv. On-street parking will be discouraged.

  d) Low Capacity Arterials

     i. Roadways under Regional jurisdiction.
     ii. Serve low to moderate volumes of short distance traffic at relatively low speeds and are sections of medium capacity arterial roadways where physical or environmental barriers restrict rights-of-way width or design speed.
     iii. Will have a 20 metre road allowance with 2 lane capability.
     iv. On-street parking will be discouraged.

  e) Collectors

     i. Roadways under the Town's jurisdiction.
     ii. Serve low to moderate volumes of short distance traffic between local and arterial roads.
     iii. Provide individual property access with some limitations.
     iv. Will generally have a 20 to 26 metre road allowance with 2 to 4 lane capability.

v. On-street parking may be permitted.

f) Local Roads

i. Roadways under the Town's jurisdiction.
ii. Serve local traffic only and provide connections to collector roadways.
iii. Provide direct property access.
iv. Will have a 17 to 20 metre road allowance with 2 lane capability.
v. On-street parking may be permitted.

To provide for the safe efficient movement of trucks through and within the Town and to minimize the impact of heavy trucks on residential areas, the Town's Official Plan policies include the following:

- Will generally encourage the primary through truck traffic on high capacity arterial roadways, where road pavement structure is deemed structurally adequate. The Town will endeavour to keep the arterial roads open to truck traffic throughout the year.

- Will permit truck use on medium capacity arterials and collector roadways only as connectors to service high capacity arterial routes, pending structural suitability.

In addition to policies of the Region and Town, there have been a number of policy directions established by the Government of Ontario that will have a significant impact on future transportation within the Town of Caledon. Some of the key Provincial policy initiatives are outlined below.

- In 2005, the Provincial Government passed the Places to Grow Act to establish a framework for managing growth within the Province of Ontario. The Growth Plan for the Greater Golden Horseshoe (GGH) was completed in 2006 and outlines a broad strategy for management of growth and provision of infrastructure to year 2031 for this area. The plan identifies population and employment targets for single and upper tier municipalities. For example, the population growth target for Region of Peel requires accommodation of an almost 60% increase in population from year 2001 to year 2031. The plan also identifies conceptual transportation corridors including a GTA West transportation corridor that would connect the City of Vaughan and City of Guelph, crossing the southern portion of Caledon. It also identifies a conceptual proposed higher order transit corridor to the south eastern area of Caledon. To meet the growth targets set out in the Places to Grow plan, Caledon will be required to continue to accommodate its share of population and employment growth in accordance with Regional growth allocation.

- In 2005, the Provincial Government also passed the Greenbelt Act. This legislation created the authority for the creation of the Greenbelt Area and the establishment of the Greenbelt Plan. The Greenbelt Plan contains policies for providing permanent agricultural and environmental protection as well as providing for a wide range of recreation, tourism and cultural opportunities in the area. The Greenbelt Area consists of about 1.8 million acres of land in southern Ontario that includes the Oak Ridges Moraine, the Niagara Escarpment and about 1 million acres of protected countryside. Within the designated Greenbelt area, development will be greatly restricted and carefully managed. A substantial portion of Caledon, including the entire northern portion of the Town falls within the designated Greenbelt area.

- The Greater Toronto Transportation Authority (GTTA) was created by the Provincial Government in 2006 to plan and coordinate a balanced transportation system for the Greater Toronto and Hamilton Area (GTHA). This agency has since be renamed Metrolinx and has been actively pursuing plans to improve public transit within the GTHA, including improvements to GO Transit facilities and services. In conjunction with Metrolinx planning activities the Provincial Government has announced a broad series of new public transit projects to

be pursued, including a GO Train line from Union Station to Bolton and a number of higher order transit services within Mississauga and Brampton.

- The Ministry of Transportation of Ontario has initiated an Environmental Assessment Study for the GTA West Corridor. The study area extends from Highway 400 in the east to the west side of Guelph in the west and north from Highway 401/Highway 407 including the southern portion of Caledon. This study is not expected to be complete until early 2010, including the needs assessment. However, it is a possible future project that would have a major impact on development and travel patterns within Caledon.

2.2 Caledon Transportation System

Roadway Network

The primary component of the transportation system in Caledon is the roadway network shown in Figure 2.1 below. The different types of roadways as identified in the Caledon Official Plan are as follows:

- Freeway
- High capacity arterial roadway
- Medium capacity arterial roadway
- Low capacity arterial roadway
- Collector roadway
- Local roadway

Highway 410 extension from Bovaird Drive to Mayfield Road is a freeway facility that was opened to traffic in September 2007. Construction of the further extension of Highway 410 to Highway 10 is underway, and expected to be completed by fall 2009.

The designated high capacity arterials in Caledon are as follows:

- Highway 10 (MTO)
- Highway 9 (MTO)
- Mayfield Road (Regional Road 14)
- Airport Road (Regional Road 7)
- Former Highway 50 (Regional Road 50)
- Former Highway 24 / Charleston Sideroad (Regional Road 24)
- Former Highway 136 / Main Street (Regional Road 136)
- Mississauga Road (Mayfield to King) (Regional Road 1)

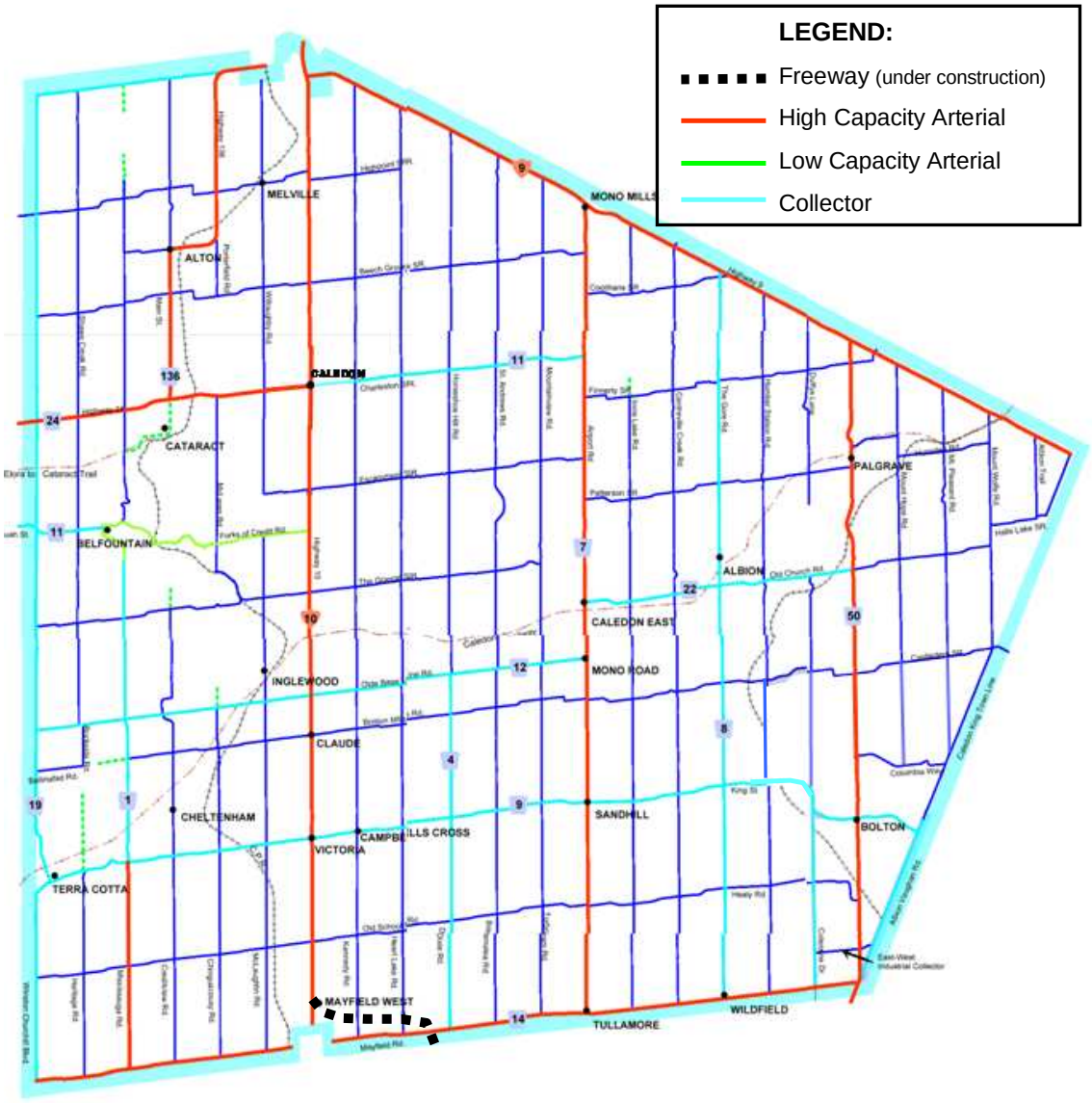
The designated medium capacity arterial roadways in Caledon are as follows:

- Winston Churchill Boulevard (Regional Road 19 – Mayfield Rd. to Beech Grove Side Road, (Town road north of Beech Grove Side Road))
- Mississauga Road (Regional Road 1 – King Street to Bush St., Town road north of Bush St.)
- Dixie Road (Regional Road 4 – Mayfield Rd. to Olde Base Line Rd.)
- The Gore Road (Regional Road 8 – Mayfield Rd. to Hwy 9)
- Coleraine Drive (Mayfield Rd. to King St.)
- Albion Vaughan Road (Mayfield Rd. to north of King St.)
- King Street (Regional Road 9 – Winston Churchill Blvd. to Townline)
- Olde Base Line Road (Regional Road 12 – Winston Churchill Blvd. to Airport Rd.)
- Old Church Road (Regional Road 22 – Airport Rd. to RR 50)
- Charleston Sideroad (Regional Road 11 – Hwy 10 to Airport Rd.)

The medium capacity arterial roads are all Regional roads at present except Coleraine Drive and Albion Vaughan Road. The only designated low capacity arterial is Forks of the Credit Road/Bush Street (Regional Road 11 – Winston Churchill Blvd. to Hwy 10).

The remainder of the east-west, north south grid of roadways within Caledon is designated as collector roads. These roads are generally continuous roadways, evenly spaced at intervals of 3 km between the east-west roadways and 1.4 km between the north-south roadways. There are some discontinuities in these roadways due to geographic constraints such as the Niagara Escarpment. Also, the east-west roadways are not continuous across Airport Road in several areas. Local roadways are generally located within the settlements and urban areas.

FIGURE 2.1: CALEDON ROADWAY NETWORK



Goods Movement and Truck Routes

Goods movement and the provision of safe and efficient truck routes is an important consideration within Caledon. Heavy truck traffic is generally related to the aggregate mining activities, farming operations and industrial activity within the Town as well as truck travel through the municipality. While truck travel is important to the economic health of the Town, it is necessary to restrict truck traffic in sensitive areas. Truck traffic within Caledon is managed by each of the roadway agencies through restrictions on heavy truck operation on their respective roadways.

Heavy trucks are allowed to travel on Highways 10 and 9 without specific restrictions, except under unusual conditions that may require special load or other restrictions. Heavy trucks are allowed to use Regional roads except

where specifically restricted by By-law. Regional By-law 57-2005 (Part 12) provides for the heavy truck restrictions shown in Table 2.1 below.

TABLE 2.1: HEAVY TRUCK RESTRICTIONS ON REGIONAL ROADS IN CALEDON

Regional Road	Area of Restriction	Heavy Trucks Prohibited
1 (Mississauga Road)	King St. – Bush St.	Anytime
4 (Dixie Road)	Mayfield Road – Old Base Line Road	Anytime
8 (The Gore Road)	King St. - Highway 9	Anytime
9 (King Street)	Winston Churchill Blvd – Mississauga Rd.	Anytime
11 (Bush /Forks of the Credit Road)	Highway 10 and the boundary between the Region of Peel and the County of Wellington	Anytime
12 (Olde Base Line Road)	Winston Churchill Blvd. – Airport Rd.	Anytime

Heavy truck operation is restricted (i.e., No Heavy Trucks) on all roads under the Town of Caledon's jurisdiction, except:

- Coleraine Drive (Mayfield Rd. to King St.)
- Albion Vaughan Road (Mayfield Rd. to King St.)
- All industrial subdivision roads.

There are no axle load restrictions on roadways under the Town's jurisdiction. The Town also provides some longer term management of truck traffic through land use planning policies and practices. Land uses that tend to generate higher volumes of truck traffic are located adjacent to high capacity arterials where possible to minimize truck traffic on more sensitive roads

Other Transportation System Components

Public transit services within Caledon are limited at present. The current services include:

- Caledon Community Services provides a community transit service for elderly and disabled persons. This is a door-to-door pre-booked service. While a valuable social service, it has very little impact on peak period traffic demand.
- GO Transit operates weekday peak period bus service in Caledon as follows:
    - Along Hwy 10 between Orangeville and Brampton GO Station. The major bus stops / timing points in Caledon are at Hwy 10 and Charleston Side Road, Hwy 10 and King St., and Snelgrove and Mayfield Rd.

- Bolton via King St. and Hwy 27 through Nobleton. The major bus stops / timing points in Caledon are at Albion Vaughan Rd. and Industrial Rd., Queen St. and Queensgate Blvd., and King St. and Humberlea Rd.

- GO Transit has added a new GO bus service to Bolton since September 4, 2007. The new service runs between Bolton (Highway 50 and Columbia Way) and Malton GO Station, connecting with the Georgetown GO Train service. It initially consisted of three weekday morning southbound trips and four weekday afternoon northbound trips. In September 2008 additional mid-day trips have been added to this route. In future this route will also connect to the planned Mayfield Road Commuter Parking Lot at Mayfield Road and Regional Road 50.

In addition to the GO Transit bus services within Caledon, GO provides peak period commuter rail service on the Georgetown Line with stations at Mount Pleasant, Brampton and Bramalea that offer rail service to downtown Toronto. These stations have parking facilities to accommodate park-and-ride trips originating as vehicle trips from Caledon.

PMCL & Greyhound operate services along Hwy 10 and Regional Rd 50 connecting to Brampton and Toronto. Services are limited to 1 trip each way daily on each route and are generally outside peak periods. Fares are competitive with GO Transit fares.

Brampton Transit operates local bus services on Collingwood Ave and Mayfield Rd near the south Caledon boundary. At present it is not expected that these services attract significant numbers of trips from Caledon due to lack of adjacent development and any park-and-ride provisions. However, future development in the Mayfield West area, near the Brampton boundary, could make some use of these existing Brampton Transit services. Recently, the Town of Caledon has initiated discussions with Brampton Transit to extend bus services along Airport Road to provide service to industrial developments within Caledon.

Caledon has several major trailways through the municipality that accommodate recreational hiking and cycling for residents and visitors. There are also bikeway/walkway paths that have been developed and pedestrian circulation is provided through sidewalks in urban areas of the Town. These facilities provide recreational travel as well as local circulation within communities. In future, the pedestrian facilities will also facilitate access to public transit services in the urban areas. In general, the trailway, bikeway and pedestrian facilities are outside the scope of this study but they are important components of local community circulation.

2.3 Traffic Conditions

The existing traffic conditions in Caledon have been established largely through traffic data provided by the Ministry of Transportation, Peel Region and the Town of Caledon. This data indicates the considerable range of traffic conditions using the network of roadways within Caledon.

Table 2.2 below provides examples of the range of current weekday traffic volumes on arterial roadways in Caledon at the present time. The daily traffic volumes on high capacity arterials range from about 6,000 vehicles per day up to about 33,000 vehicles per day. The highest daily volumes are noted on Regional Road 50, south of the Bolton area, and on Highway 10 north of Brampton. It is noted that these two roadway facilities have two through lanes in each direction at the locations indicated while the other roadways have one lane in each direction. The daily traffic volumes on medium capacity arterials are considerably lower, typically in the range of 4,000 to 9,000 vehicles per day.

TABLE 2.2: TYPICAL EXISTING DAILY TRAFFIC VOLUMES

Daily Traffic Volumes (Two Way Vehicles Per Day)		
High Capacity Arterials		
Roadway	**Location**	**Daily Taffic Volume (2 way)**
Highway 10	King Street	20,600
Highway 9	Airport Road	12,400
1 - Mississauga Road	N. of Mayfield	5,800
7 - Airport Road	N. of Olde Baseline	13,200
14 - Mayfield Road	W. of Hwy 10	14,100
24 - Charleston SDRD	W. of Hwy 10	11,400
50 - Hwy 50	N. of Mayfield	33,300
Medium-Capacity Arterials		
4 - Dixie Road	N. of Mayfield	6,000
9 - King Street	W. of Airport	8,700
8 - Gore Road	N. of Patterson	3,600
11 - Bush	W. of Mississauga	4,100
12 - Olde Baseline Road	W. of Hwy 10	3,900
22 - Old Church Road	E. of Airport	5,200
24 - Charleston SDRD	W. of Airport	5,600

A further comparison of weekday AM peak hour traffic in 2001 and 2006 at selected locations was carried out using cordon count data provided by Peel Region. These traffic volumes by direction are illustrated in Table 2.3 below. This data indicates the heavy weekday AM southbound peak direction orientation of the traffic. It is also noted that while the peak traffic volumes have increased in most locations (e.g., Mayfield Road), there are some locations where traffic volumes have decreased (e.g., Highway 50 north of Mayfield Road). Since there is some variation in observed traffic volumes on specific individual days, these decreases are probably due to normal day to day variation in traffic.

TABLE 2.3: COMPARISON OF TRAFFIC VOLUMES AT SELECTED LOCATIONS

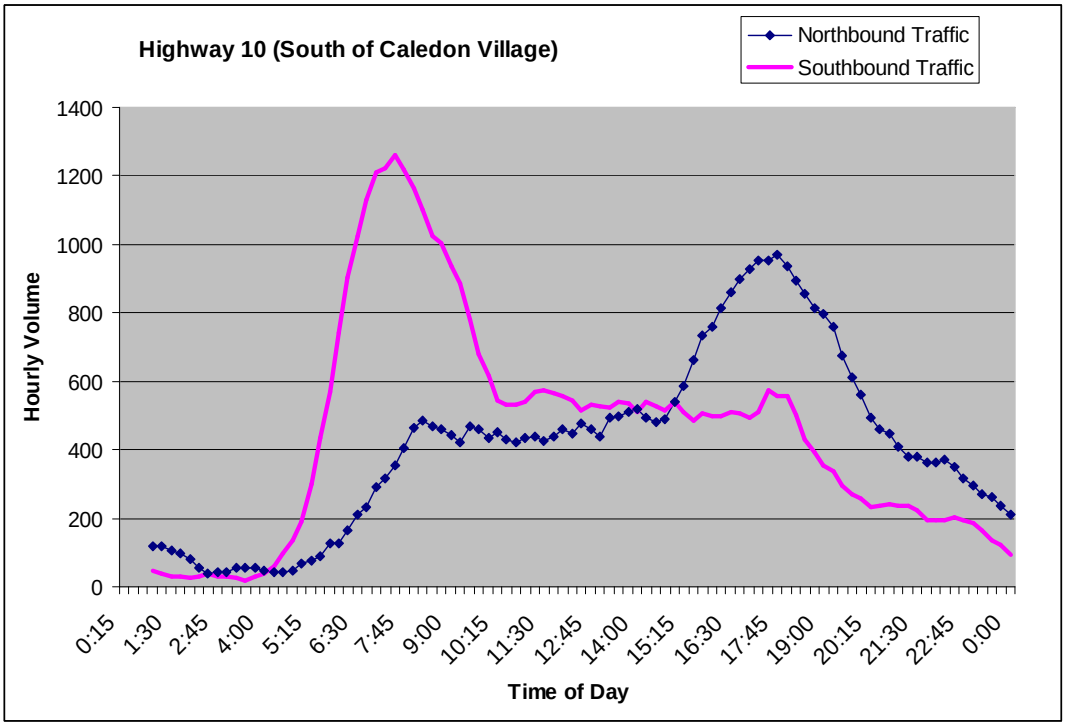
		2001 AM Peak Hour Traffic Volume				2006 AM Peak Hour Traffic Volume			
Roadway	**Location of Count**	**Volume (vph)**	**Direction**	**Volume (vph)**	**Direction**	**Volume (vph)**	**Direction**	**Volume (vph)**	**Direction**
Mayfield Road	West of Hwy 50	282	EB	311	WB	372	EB	427	WB
Highway 10	South of Charleston Sdrd	1,510	SB	489	NB	1,486	SB	611	NB
Airport Road	South of Highway 9	587	SB	236	NB	566	SB	234	NB
Highway 50	North of Mayfield Rd	1,746	SB	1,010	NB	1,531	SB	962	NB
Highway 50	North of Columbia Way	746	SB	373	NB	711	SB	360	NB

The weekday traffic on the roadway network in Caledon has distinct peaking characteristics. This is illustrated by the data in Figure 2.2 that shows the pattern of northbound and southbound traffic on Highway 10, south of Caledon

Village. In this particular case, the observed total daily traffic was 20,300 vehicles (both directions). The morning peak hour traffic volume was 1,260 vehicles per hour in the southbound direction, occurring between 6:30 AM and 7:30 AM. The afternoon peak hour traffic volume was 970 vehicles per hour in the northbound direction, occurring between 4:45 PM and 5:45 PM. The mid-day traffic volumes are about 500 vehicles per hour in each direction. This example demonstrates the significant impact commuter traffic has on capacity requirements of the roadway network.

For analysis purposes in this study, the focus has been on existing and future weekday morning peak hour traffic volumes. While the relative morning and afternoon peak hour volumes vary somewhat from location to location, the data in Figure 2.2 illustrates that the importance of the morning peak traffic in determining the "worse case" traffic volume. Further, the Region's travel forecasting model has been designed to analyze the morning peak hour condition so the focus on morning conditions ensures greater consistency in the analysis.

FIGURE 2.2: WEEKDAY PEAKING CHARACTERISTICS OF CALEDON TRAFFIC (2003)



A second characteristic of Caledon traffic patterns is the amount of recreational traffic, primarily during summer weekend periods. Detailed counts of the summer traffic were limited. However, MTO data indicated that SADT (summer average daily volumes) on Highways 10 and 9 was typically 6 % to 30 % higher than the AADT (annual average daily traffic). Typically, this traffic is related to Friday evening and Sunday evening travel to and from cottage country traveling through Caledon. The primary routes tend to be Highway 10, Highway 9, Airport Road and Regional Road 50. Since this traffic occurs much less frequently over a full year than the weekday peak traffic, it has less of an impact on the Town's road network. However, it does add to traffic congestion at specific times and locations.

The primary arterial routes in Caledon handle relatively high volumes of heavy truck traffic. Table 2.4 below provides a summary of observed 2008 eight hour truck volumes on some of the primary truck routes in Caledon. In some areas, the two way truck volume exceeds 1,000 vehicles per day and truck traffic amounts to almost 30 % of the total daytime traffic. The volumes on the other routes are generally less, in the order of 200 to 600 trucks over eight hours. On average, the heavy trucks constitute about 10% of the total traffic on these routes. This relatively high amount of

truck traffic reflects the importance of these routes in accommodating the movement of goods within Caledon.

TABLE 2.4: JULY 2008 TRUCK TRAFFIC VOLUMES

TRUCK COUNTS - 8 HR DAILY TRUCK VOLUMES		
Regional Road	**Total 2-Way Truck Volume**	**% of 2-Way Total Traffic Volume**
Airport Road (N-S)		
North of Caledon East	456	9%
South of Caledon East	655	16%
South of King St	1,234	22%
Highway 50 (N-S)		
North of Bolton	869	10%
South of Bolton	609	4%
Charleston Sdrd (E-W)		
West of Main Street	1,055	29%
East of Main Street	417	29%
Old Church Rd (E-W)		
East of The Gore Rd	209	11%
West of The Gore Rd	184	8%
King St. (E-W)		
East of Hwy 10	630	14%
West of Hwy 10	371	11%
East of Townline	295	5%
Mayfield Road (E-W)		
West of Hwy 10	213	5%
West of Airport Rd	278	4%
East of Airport Rd	1,075	16%

To provide a more comprehensive overview of traffic patterns in Caledon, a number of screenlines have been identified at selected locations in the Town. A screenline is an imaginary line crossing a number of roads, such as the north south roads crossing Mayfield Road, between Caledon and Brampton. A screenline comparison of volume to capacity is a basic transportation planning tool used to address the performance of the routes which link major destinations, and to define the need for additional capacity. The screenlines utilized for the transportation needs study update are almost the same as the screenlines used in the 2004 study. These screenlines are illustrated in Figure 2.3 below and are as follows:

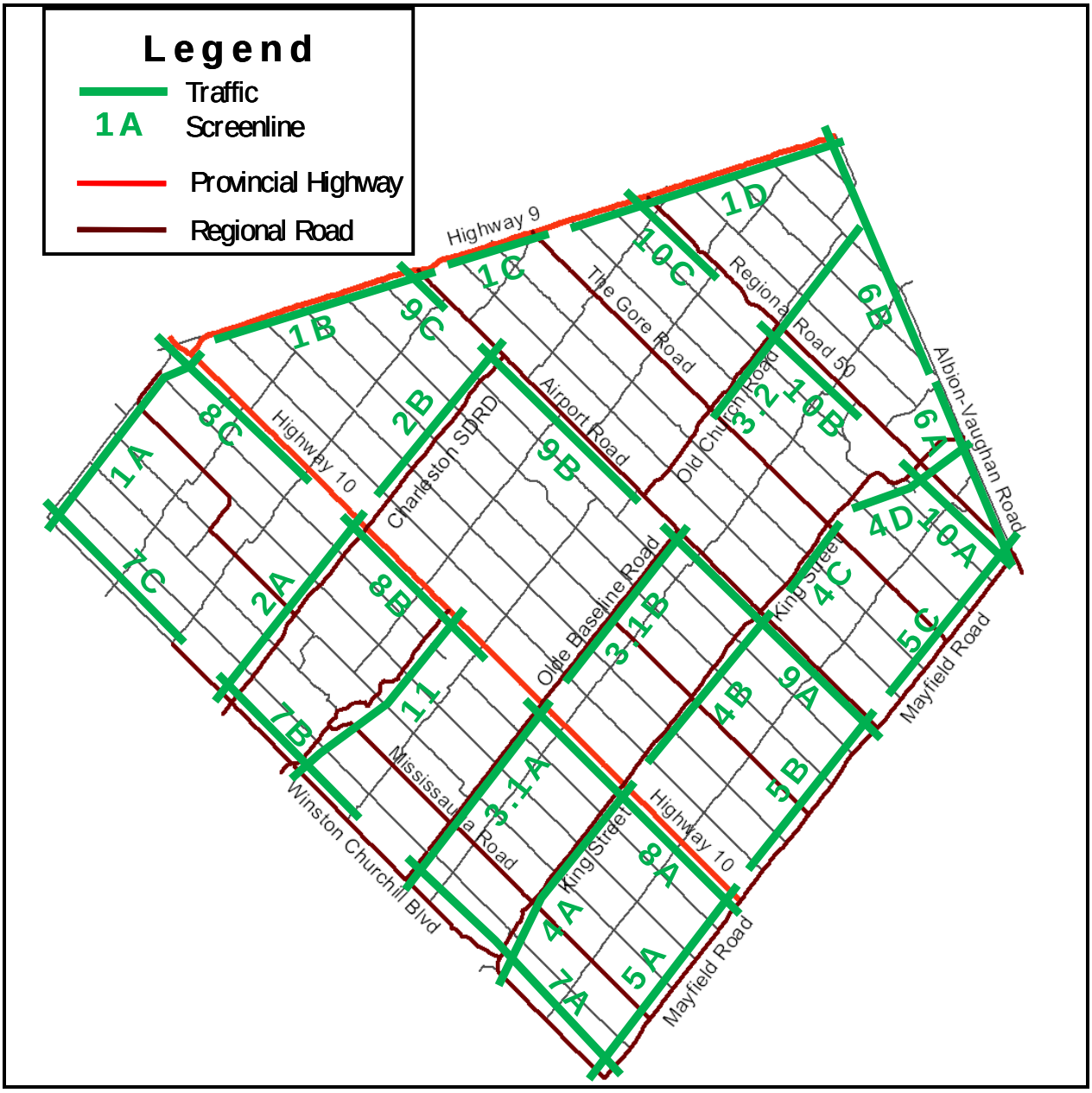
- Screenline 1 North Caledon Boundary (south side)
- Screenline 2 Charleston Sideroad (north side)
- Screenline 3.1 Olde Base Line Road (south side)
- Screenline 3.2 Old Church Road (south side)

- Screenline 4 King Street (south side)
- Screenline 5 Mayfield Road (north side)
- Screenline 6 Townline Road (west side)
- Screenline 7 Winston Churchill Blvd (east side)
- Screenline 8 Hwy 10 (west side)
- Screenline 9 Airport Road (west side)
- Screenline 10 Regional Road 50 (west side)
- Screenline 11 Forks of the Credit Road (south side)

In most cases, these screenlines have been further divided into screenline sections to enable more detailed analysis of traffic conditions as indicated in Figure 2.3.

A full summary of the current AM and PM peak hour, peak direction traffic volumes at the screenline segments was provided in the 2004 study report and has been updated for this report. The analysis focused on the total peak hour, peak direction traffic in each location. Generally, the peak direction traffic was found to be oriented in the southbound and eastbound directions at all screenlines in the morning. The exception was the screenline on the east side of Bolton (Albion Vaughan Road) where the peak direction in the morning is westbound.

FIGURE 2.3: TRAFFIC ANALYSIS SCREENLINES



At a broad level, some of the main characteristics of the existing travel patterns in Caledon during the weekday AM peak hour are as follows:

- 3,250 vehicles per hour southbound crossing the north Caledon boundary
- 7,200 vehicles per hour southbound crossing King Street
- 8,500 vehicles per hour southbound crossing Mayfield Road
- 1,150 vehicles per hour eastbound crossing the west Caledon boundary

- 2,800 vehicles per hour eastbound approaching Highway 10
- 2,200 vehicles per hour eastbound approaching Airport Road
- 1,700 vehicles per hour eastbound approaching Regional Road 50

As indicated in this data, there is a considerable volume of traffic crossing into Caledon on the north and west boundaries from neighbouring municipalities. In comparing traffic volumes used in the 2004 study with more recent traffic counts, there does not appear to be a high rate of traffic growth during the 2001 to 2006 period. The peak traffic orientation continues to be southwards towards the major activity areas of the Greater Toronto Area (GTA).

The Region of Peel has provided a high level analysis of weekday morning peak commuting patterns in Caledon, based on the 2001 and 2006 Transportation Tomorrow Survey (TTS) data. Appendix A provides an overview of this analysis. Several key characteristics of the commuting patterns should be noted, as follows:

- Through trips (i.e., trips that do not originate within Caledon or have a destination in Caledon but only travel through the Town) amounted to 37% of all person trips and 42% of all automobile trips in Caledon in year 2001. In year 2006 this had increased to 39% for person trips and 45% for vehicle trips. This data further emphasizes the significance of through traffic in Caledon and also that through traffic appears to be increasing.

- The total amount of weekday AM peak period travel in Caledon appears to have increased by 15% to 17% over the five year period from 2001 to 2006. This is an average increase of about 3% annually and is a higher than normal increase in traffic activity. For comparison, the population of Caledon grew by about 12.7% over the same period.

- The overall peak period persons per automobile (i.e., average auto occupancy) decreased from about 1.26 person trips per auto trip in 2001 to about 1.24 person trips per auto trip in 2006. While this is a relatively high auto occupancy level, the decline from year 2001 to 2006 indicates a slight increase in overall automobile use for personal travel.

2.4 Discussion of Existing Deficiencies

Stakeholder Concerns

The transportation concerns of various stakeholders in Caledon were identified during the 2004 study though different stakeholder consultation activities. These concerns related to several broad areas, as follows:

- Peak period traffic congestion on the roadway network is a primary concern. This problem generally has been noted in the Bolton area, on the north-south routes approaching the Highway 410 route to the south, and on Mississauga Road.
- Excess traffic, particularly on the non-arterial roads is a second area of concern. Peak traffic volumes on the collector roads have been increasing in recent years and create concerns associated with speeding traffic, conflicts with farm equipment, cyclists and pedestrians who are also using these roads.
- Through traffic has been identified as a significant concern in Caledon. Traffic generated by growth to the west and north of the municipality has created increased traffic that is generally traveling across Caledon to reach employment and other opportunities within larger activity centres of the GTA.
- The impact of traffic on the local environment within the various villages and hamlets in Caledon is a significant concern. Through traffic creates safety concerns for pedestrian activity within the villages and hamlets. Also, in some cases the volume of traffic creates problems related to noise, dust and general intrusion.
- Caledon commuters are heavily dependant on private automobile travel. There are very limited opportunities

to utilize public transit as an alternative to the automobile. Other facilities, such as car pool lots that could encourage less single occupant automobile travel are also very limited.

These primary areas of concern have continued to the present time.

Peak Period Congestion Areas

Capacity is a term used to describe the maximum volume of traffic that can be accommodated on a particular roadway. The existing capacity of the roadways in Caledon varies considerably, depending on the number of lanes available, the intersection control, the competing traffic volumes and the roadway surface. Estimates of the roadway capacity have been developed at each of the analysis screenlines to enable roadway deficiencies to be identified. Estimates of the existing weekday AM peak hour traffic volume, the existing roadway capacity and the general nature of the capacity deficiency have been developed and are provided in Appendix B of the report.

To identify capacity deficiencies at the screenline level, 85% of the combined individual link capacities at the screenline has been used to identify critical areas. This recognizes that achieving full utilization (i.e., 100% of the combined individual link capacities) is very difficult across a number of different roadway links. The use of 85% of the total screenline capacity would generally represent a level of service "D" condition as defined in the Highway Capacity Manual. Peak period demand in excess of 85% of the screenline capacity represents a deficiency and indicates a need for improvements.

A summary of the primary areas of morning peak hour congestion in Caledon is provided in Table 2.5 below. These areas are related to the following:

- The traffic demand in the Bolton area is generally reaching or exceeding the available roadway capacity on all screenlines due to ongoing growth and limited arterial roadway improvements. The Bolton Arterial Roads (BAR) plan will help to address this concern with the construction of a new arterial roadway connection between Highway 50 and King Street on the northwest quadrant of the Bolton urban area. Also, the upgrading of Coleraine Drive between King Street and Mayfield Road will provide additional north south roadway capacity. However, the Bolton urban area has limited east-west roadway capacity and this is a critical area. The details of the BAR improvements, the plans for the critical Mayfield and Highway 50 area, the need for east west connections as well as the plan for future connections to Highway 427 are all important issues that require further investigation in the Bolton area. Since there is also new development proposal to be considered, this area will require an overall transportation master plan study in future.

- The southbound traffic in the south-central area of Caledon is heavily focused on the Highway 410 corridor to the south and is approaching the available capacity in this area. The MTO are currently constructing the Highway 410 extension to connect to Highway 10 and this will greatly improve the north south traffic conditions in this area.

- The southbound traffic in the Mississauga Road – Highway 10 corridor is approaching the available capacity in the area south of the Forks of the Credit Road. North-south capacity is reduced in this area due to geographic and other constraints.

- The eastbound traffic along the Mayfield Road corridor towards the Highway 410 corridor and other major north-south roads due to residential growth west of Peel Region and in Brampton is approaching the current available capacity on this route.

It should be noted that the volume to capacity summaries shown in Table 2.4 represent average conditions over a screenline and may not fully reflect the actual congestions at critical points in the network. For example, the volume to capacity ratio along Mayfield Road is greater than along King Street or Olde Base Line Road, which are also in the same north-south screenlines. For this reason, the investigation will consider more specific corridors in the analyses

of future conditions.

TABLE 2.5: AREAS OF EXISTING CONGESTION

Screenline Location	Direction of Peak Travel (AM peak hour)	Volume to Capacity Ratio	General Situation
Crossing King St (between Kennedy Rd & Airport Rd)	Southbound	0.9	Traffic orientation towards Hwy 410 corridor in Brampton
Crossing King St (between Humber Station Rd. & Town Line)	Southbound	1.0	R.R. 50 corridor traffic, capacity constraint through Bolton
Crossing Mayfield Rd. (between Innis Lake Rd. & Albion Vaughan Rd.)	Southbound	0.9	Hwy 50 plus Bolton traffic oriented towards R.R. 50 corridor
Crossing Albion Vaughan Road (between Columbia Way & Mayfield Rd.)	Westbound	1.0	Limited capacity for traffic oriented to R.R. 50 corridor and Brampton
Crossing Forks of the Credit (Mississauga Rd. – Hwy 10)	Southbound	0.8	Limited capacity for southbound volume in Hwy 10 – Mississauga Rd corridor.

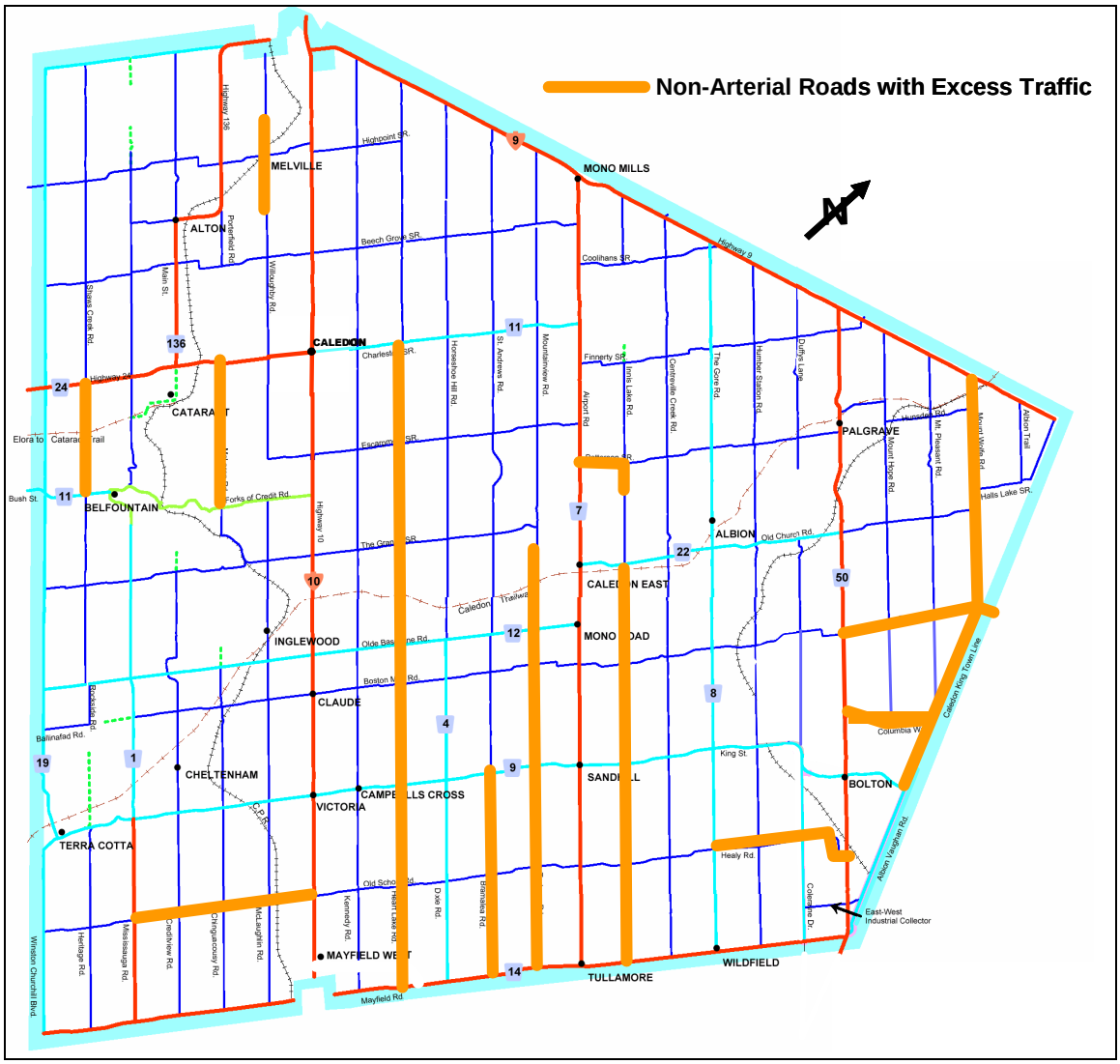
Areas of Excess Traffic

An area of concern in Caledon that was investigated in the 2004 study was the problem of excess volumes of traffic on the rural collector road network within the Town. In general terms, the excess volumes of traffic are caused by congestion on the arterial routes, short cutting opportunities that attract traffic or by specific network situations such as the connection of Heart Lake Road to Highway 410 prior to 2007. In the 2004 transportation needs study the following daily traffic volume thresholds were utilized to identify specific areas of concern:

- The desired maximum volume on a gravel surface roadway is 400 vehicles per day.
- The desired maximum volume on a collector roadway in an area with significant environmental features such as rolling and hilly terrain and designated heritage features as well as reduced road width and limited sight distances is 1,000 vehicles per day.
- The desired maximum volume on a collector roadway through a hamlet or village area is 2,000 vehicles per day.
- The desired maximum volume on a collector roadway in other areas is 3,000 vehicles per day.

- Using these criteria, the roadways with excess volumes of traffic were identified as shown in Figure 2.4 below.

FIGURE 2.4: AREAS OF EXCESS TRAFFIC ON NON-ARTERIAL ROADS



The major areas of excess traffic include:

- The north-south collector roads in the south central area of Caledon (i.e., Heart Lake Road, Bramalea Road, Torbram Road). The problem of excess traffic on these roadways is generally related to traffic connecting to the Highway 410 corridor further south in Brampton and should be alleviated when the connection of Highway 410 to Highway 10 is completed.
- There appears to be some traffic spillover from Airport Road to Torbram and Innis Lake Roads.
- Collector roadways around the Bolton urban area such as Columbia Way and Healey Road/
- The Mount Wolfe Road – Caledon King Townline route along the east side of Bolton

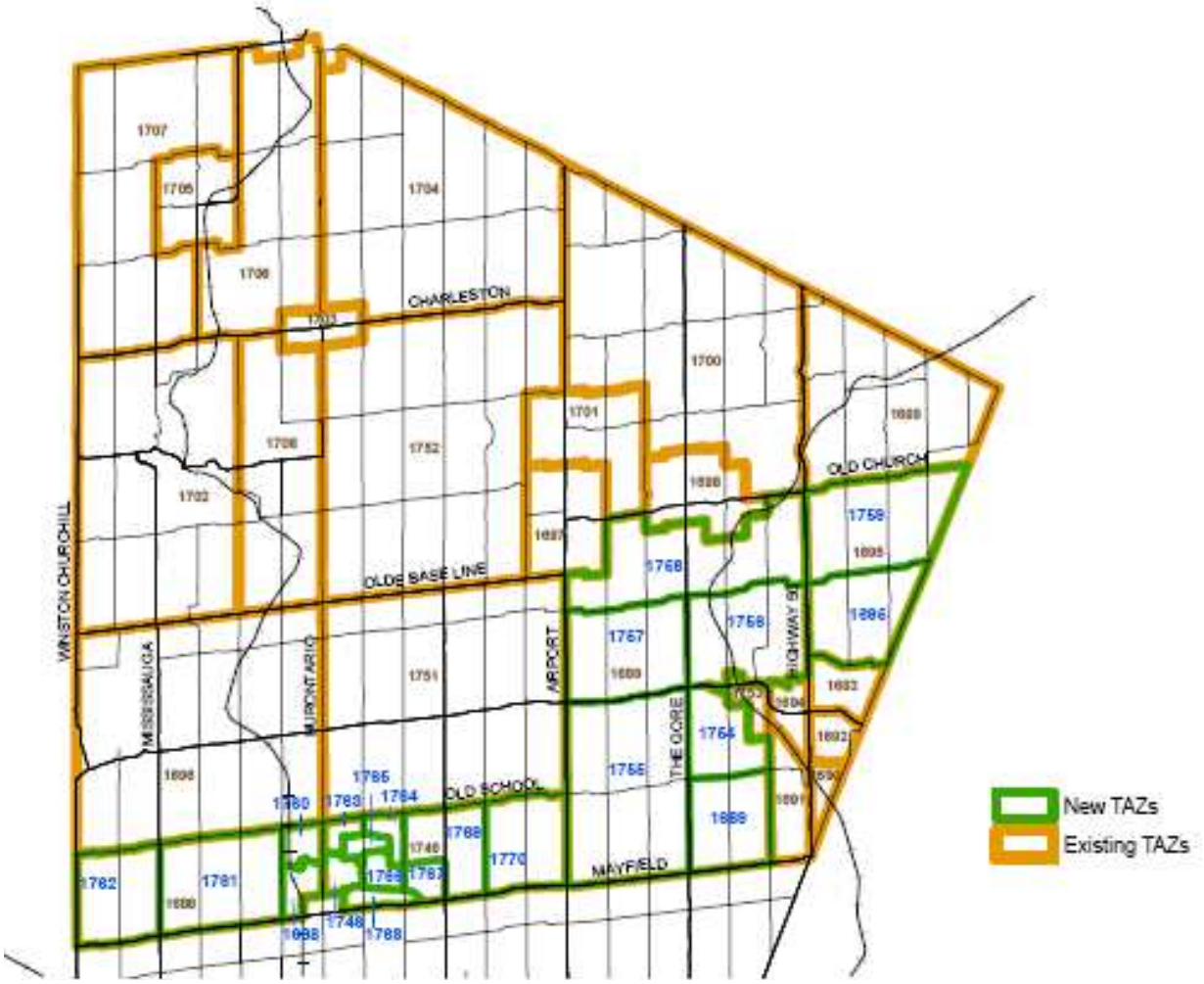
There are a number of other specific areas of excess traffic on collector roads that are related to the roadway condition (e.g., rolling terrain, gravel surface) and traffic through villages and hamlets. In these areas, the poor roadway geometry creates a safety concern or the adjacent residential development is sensitive to the traffic volumes.

3.0 FUTURE CONDITIONS

3.1 Future Development

The traffic zones previously utilized to analyze travel patterns in Caledon were updated in this study to better reflect the higher level of activity in the southern area of the Town by creating additional smaller zones from the larger zones used previously. Figure 3.1 below shows the traffic analysis zones (TAZ) used in this study.

FIGURE 3.1: TRAFFIC ANALYSIS ZONES



The forecasts of population and employment growth in each TAZ for the horizon years of 2011, 2021 and 2031 are shown in Table 3.1 below. The overall population in Caledon is expected to increase to at least 108,000 persons by year 2031 compared to the current population of almost 60,000 persons for an increase of 85% to 90%. Employment in Caledon is expected to increase to about 48,000 employees from the estimated existing employment level of about 25,000 employees. This more recent growth forecast can be compared to estimates of a population of about 84,450 persons and 32,410 employees by 2031 that were utilized in the 2004 transportation needs study. These current land use forecasts represent an increase in long term development over 25% higher than the forecasts utilized in the 2004

study.

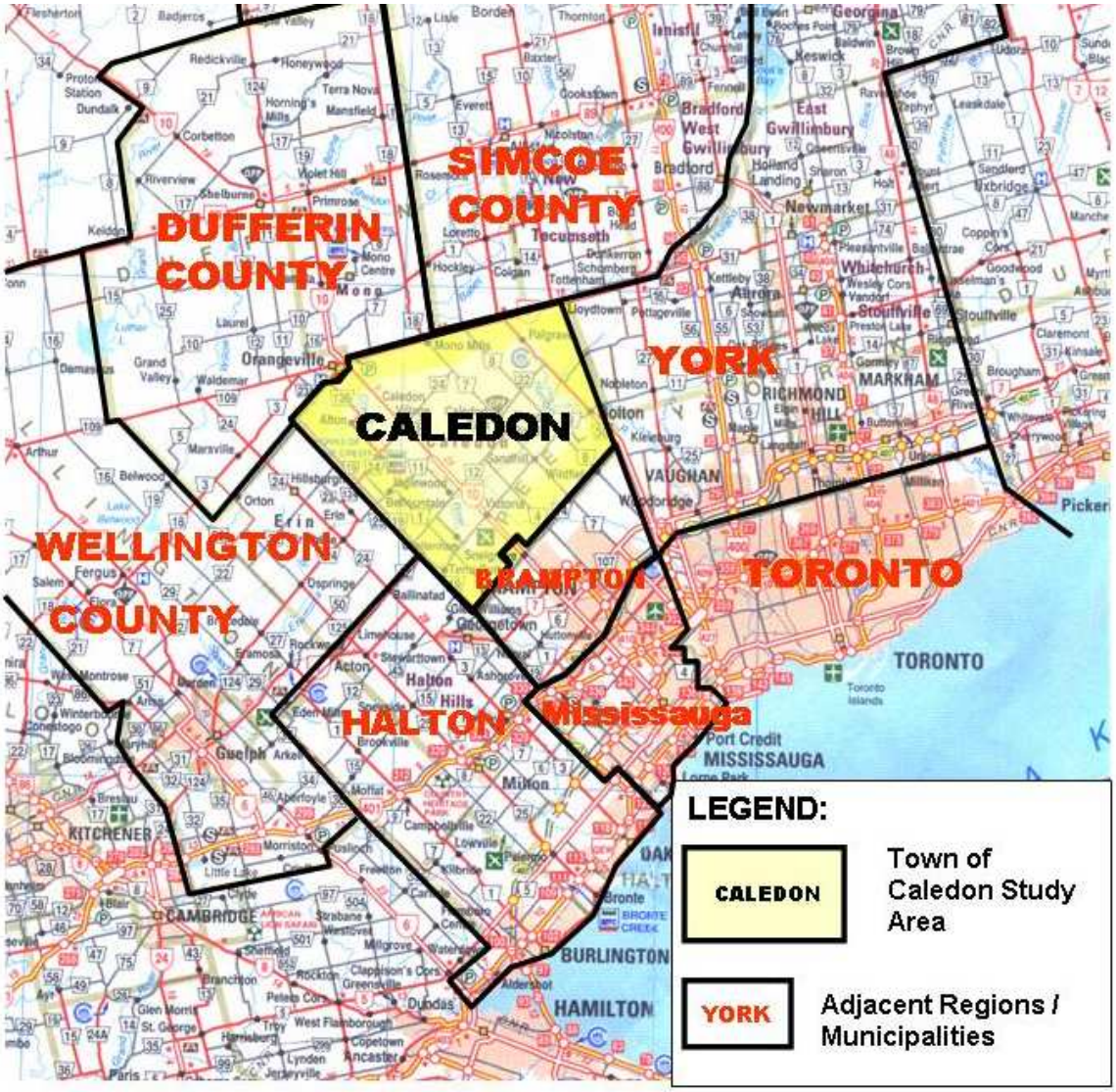
TABLE 3.1 STUDY ESTIMATES OF CALEDON POPULATION AND EMPLOYMENT

	2011		2021		2031	
Traffic Zone Number	Population	Employment	Population	Employment	Population	Employment
1688	69	21	1,488	259	7,825	600
1760	45	6	1,000	50	4,000	400
1761	340	177	400	190	3,000	246
1762	155	85	200	90	2,000	100
1689	443	680	432	1,500	5,600	2,000
1754	234	750	228	1,500	7,250	2,000
1755	822	175	800	350	1,200	400
1756	470	1,500	457	5,536	3,500	7,530
1757	185	200	181	400	486	500
1758	725	200	706	400	1,000	500
1690	5,026	853	5,220	874	4,817	1,028
1691	287	11,491	285	11,469	250	14,344
1692	6,774	1,604	6,737	1,382	6,038	1,149
1693	7,984	846	7,806	789	6,849	725
1694	6,633	2,265	6,837	1,961	6,343	1,644
1695	416	106	1,100	132	929	156
1759	788	111	968	111	900	111
1696	2,843	654	3,352	758	3,879	915
1697	4,275	1,260	8,077	1,312	7,150	1,462
1698	748	139	728	134	639	129
1699	2,846	302	5,035	323	4,580	349
1700	2,501	349	2,485	330	2,223	307
1701	342	169	1,434	157	1,959	142
1702	1,553	224	1,512	221	1,779	215
1703	1,673	292	1,757	265	1,624	236
1704	1,610	327	1,567	296	1,780	263
1705	1,146	254	1,831	231	2,063	208
1706	538	129	524	116	460	102
1707	761	96	741	83	650	69
1708	1,542	311	1,641	287	1,530	261
1746	4,250	335	4,250	340	4,250	350
1763	1,080	30	4,225	50	4,250	50
1764	60	40	200	50	1,000	50
1765	500	180	2,100	500	2,100	500
1766	500	410	2,100	2,750	2,100	3,600
1767	60	25	148	775	200	3,600
1768	1,000	80	1,200	761	2,425	1,000
1769	175	30	175	50	200	78
1770	200	5	200	20	300	80
1751	1,970	471	1,918	471	2,111	471
1752	1,344	356	1,367	308	1,307	258
1753	4,006	474	3,942	632	3,459	632

As noted earlier, the transportation system within Caledon is heavily impacted by traffic generated by development outside the municipality. Figure 3.2 below illustrates the strategic geographic position of Caledon on the outer limit of

the Greater Toronto Area. Existing and future development in the areas to the north and west of Caledon, such as the western section of Simcoe County, Dufferin County, Wellington County and the northern section of Halton Region create traffic demands that are likely to use roadways through Caledon.

FIGURE 3.2: CALEDON GEOGRAPHIC PERSPECTIVE



Through the 2004 study and more recent information, estimates of the population and employment growth in the surrounding areas have been assembled. Table 3.2 provides a summary of the estimates of population and employment growth in these surrounding areas. The major 2011 to 2031 growth areas are the Brampton and Mississauga (about 585,000 person growth), York Region (about 770,000 persons growth) and Halton (about 405,000 persons). However, growth in some of these areas is slowing in the longer term as the developable land becomes fully utilized. Overall, the surrounding area population is expected to increase by over 80% or almost 2 million persons from year 2001 to year 2031.

TABLE 3.2: ESTIMATES OF POPULATION AND EMPLOYMENT GROWTH IN SURROUNDING AREAS

Municipality	2011		2021		2031	
	Population	Employment	Population	Employment	Population	Employment
Brampton	528,360	227,600	663,214	288,901	740,000	322,904
Mississauga	723,000	471,626	748,000	494,491	784,000	504,444
Halton Region	520,000	280,000	650,000	340,000	780,000	390,000
Wellington County	224,100	94,600	252,300	109,900	292,400	125,300
Dufferin County	65,100	19,700	79,000	22,500	92,200	26,700
Simcoe County (west)	95,200	n.a.	113,600	n.a.	132,600	n.a.
York Region	1,060,000	590,000	1,300,000	700,000	1,500,000	780,000

3.2 Ongoing and Future Transportation Projects and Studies

There are a number of committed transportation improvements underway within Caledon by different agencies and there are also some transportation planning activities that will have implications for the future development of the Caledon transportation system. These projects and studies are outlined below.

Highway 10 Widening

The Ministry of Transportation of Ontario (MTO) is currently carrying out the construction work for the widening Highway 10 to four lanes (two in each direction) from 1 kilometre south of Caledon Village to Highway 9 at the northern Caledon boundary. This project is expected to be completed in 2009.

Highway 410 Extension

MTO is currently carrying out the construction for the extension of Highway 410 from the previous terminus at Bovaird Drive in Brampton to a continuous connection to Highway 10, south of Old School Road in Caledon. Partial connections of Highway 410 to Mayfield Road were completed in 2007 and the full connection to Highway 10 is expected to be completed in 2009.

Dufferin South Arterial Route

The Dufferin South Arterial Route (SAR) provides a connection between Dufferin County Road 109 (former Highway 9) west of the Orangeville urban area and Highway 10 south of the Highway 10 and Highway 9 intersection. This new two lane arterial roadway provides a bypass of the Orangeville urban area for east – west traffic. It was completed in 2005. It is not clear if there are plans to continue this road east of Highway 10 to form a continuous east – west connection around Orangeville. This road project does not have a major impact on roads within Caledon.

Bolton Arterial Roads

The Bolton Arterial Roads (BAR) plan includes a new arterial roadway connection between Highway 50, (north of Bolton) to King Street (west of Bolton) and connects to Coleraine Drive to the south. The other primary component of the BAR plan is the widening of Coleraine Drive to a four lane arterial roadway from King Street south to Mayfield Road. The widening of Coleraine Drive from King Street to Mayfield Road is expected to be completed in 2009 and the new roadway section between King Street and Highway 50 is expected to be commenced within the next one to two years.

Region of Peel Roadway Program

The Region of Peel has an active ongoing program of roadway improvements to accommodate planned growth in the Region. The major roadway projects in Caledon and the approximate year of construction are as follows:

- Widening of sections of Mayfield Road from Hurontario Street to Dixie Road is currently underway and the overall widening program between Winston Churchill Blvd and Highway 50 will be carried out in a number of different phases through to about year 2025. The planned improvements will have Mayfield Road widened to four full lanes from Winston Churchill Blvd to Chinguacousy Road, to six full lanes from Chinguacousy Road to The Gore Road and to four full lanes from The Gore Road to Highway 50.

- Widening of Highway 50 to six full lanes south of George Bolton Parkway to Highway 7 in several phases from the present time to about year 2015.

- Widening of Airport Road to four full lanes from Mayfield Road to Caledon East by year 2019.

These projects are reviewed on a regular basis and the timing and details of the improvements are subject to change.

Town of Caledon

The Town of Caledon also has a capital program for arterial roadway improvements related to new development and growth. Identified projects include:

- Widening of Kennedy Road to 4 full lanes from Mayfield Road to the north limit of the Mayfield West urban area.

- Widening of Heart Lake Road to 4 full lanes from Mayfield Road to the north limit of the Mayfield West urban area.

The foregoing projects are generally committed projects that are underway in many cases or are in advanced stages of planning and design work. In addition to these projects, there are a number of transportation studies underway that are likely to have future implications for the Caledon Transportation system. These transportation studies are outlined below.

Highway 427 Transportation Corridor Environmental Assessment

The Ministry of Transportation of Ontario (MTO) is currently carrying out this environmental assessment study for an extension of Highway 427 from the existing terminus near Highway 407 north through a study area that extends to the southern limit of the Greenbelt. This is approximately equivalent to an area east of the intersection of Mayfield Road and Highway 50. Through the study work to date, MTO has indicated that the technically preferred alternative is a new freeway alignment in the western area of Vaughan with interchanges at Langstaff Road, Rutherford Road and Major MacKenzie Drive. This study is planned to be completed in 2009 with the submission of an Environmental Study Report. While earlier studies have indicated a need for the extension of Highway 427 north through Simcoe County, the current study makes no provision for an extension north of the preferred terminus located just north of the existing Major MacKenzie Drive. Traffic using this freeway corridor to and from Caledon and other communities north of the planned terminus will have to utilize the available roadway network connecting to the corridor. This changes one of the basic assumptions of the 2004 Caledon Transportation Needs Study which assumed that Highway 427 would be extended as far north as Highway 9 by year 2031. More information can be found in the project website http://www.427corridor.com/.

Peel - Highway 427 Extension Area Transportation Master Plan Study

The Region of Peel, the City of Brampton, and Town of Caledon, in consultation with Region of York and MTO, has initiated a transportation master plan study to develop a plan to connect the existing and panned arterial roadway network to the Highway 427 extension. This study was initiated in early 2008 and will investigate the most appropriate roadway network configuration to connect the terminus of Highway 427 to the existing roadway network in the surrounding area. The study is expected to continue through to early 2009 and will result in a recommended roadway network plan for this area. More information can be found in the project website http://www.peel427tmp.ca/.

Western Vaughan Transportation Improvements Individual Environmental Assessment

This study was initiated in late 2007 by the Region of York in consultation with other municipalities to develop a plan for the arterial roadway network in the western area of Vaughan. The study area is generally consists of an area bounded by Highway 50, Highway 407, Highway 400 and Teston Road – Nashville Road. It is intended to address some of the major roadway discontinuities within this area and to accommodate the planned urban development within the area. The study is expected to continue through to 2010 for the completion of an Environmental Study Report. More information can be found in the project website http://www.westvaughaniea.com/.

GTA West Corridor Environmental Assessment Study

The Ontario Ministry of Transportation (MTO) has initiated an environmental assessment (EA) study for the GTA West transportation corridor. The terms of reference for the study were approved in early 2008 and the study investigations are currently underway. The preliminary study area extends from Highway 400 in the east to the west side of Guelph and from Highways 401/407 in the south to the southern areas of Caledon, north Halton and South Wellington County. The needs assessment component of this study is expected to be completed in early 2010. While it is too early to comment definitively on the implications of this possible transportation corridor, if it does proceed, it would potentially create a major new transportation route crossing the southern area of Caledon in the east –west direction with significant implications for both transportation and land use in Caledon. More information can be found in the project website http://www.gta-west.com/.

Metrolinx Regional Transportation Plan for Greater Toronto and Hamilton

Metrolinx is the new agency (initially the Greater Toronto Transportation Authority) created by the Government of Ontario to plan and fund an integrated transportation system to serve the needs of the Greater Toronto and Hamilton Area (GTHA). Metrolinx is currently developing an overall regional transportation plan that is expected to be released in the fall of 2008. This plan will establish a framework for the ongoing development of the major elements of the GTHA transportation system and will establish priorities for new projects such as major transit lines and other facilities. More information can be found at the Metrolinx website http://www.metrolinx.com.

Bolton GO Rail Service Study

In 2007, the Government of Ontario announced a list of 52 rapid transit projects through its Move Ontario 2020 initiative. This list included GO Transit rail service to Bolton. Since that time, GO Transit has taken steps to proceed with a feasibility study for this service. The outcome of this study is expected to be available some time in 2009 and indicates the clear interest in the potential GO Rail line to Bolton.

Other Related Studies

In addition to the foregoing, there are a number of other transportation and planning studies that are related to transportation in Caledon, as follows:

- The City of Brampton is conducting the Brampton Transportation and Transit Master Plan Update. This study will assess the potential expansion of the urban boundary in the north west area of Brampton and develop a transportation master plan to accommodate the additional growth.

- The Regions of Peel and Halton together with the City of Brampton, Town of Caledon and Town of Halton Hills are conducting the Halton-Peel Boundary Area Transportation Study to identify a long term transportation network to accommodate planned development in this area.

- The County of Simcoe has recently completed a Transportation Master Plan for transportation improvements to accommodate planned growth in Simcoe County.

- South Albion – Bolton Community Plan

- Mayfield West Phase 2 Secondary Plan

- Secondary Plans within Brampton (Springdale, Countryside, Mount Pleasant)

- York Region Transportation Master Plan.

- City of Vaughan Transportation Master Plan.

3.2 Future Traffic Forecasts

Future travel forecasts were developed for horizon years of 2011, 2021 and 2031 in a similar manner as in the 2004 study. The forecasts were developed using the Region of Peel EMME/2 travel model which generates future travel estimates using a standard four-stage methodology of trip generation, trip distribution, modal split and traffic assignment. The Region's network models the weekday AM peak hour. This model's primary inputs are land use data, including population and employment data, and the transportation network. The model is maintained by the Region, including calibration of the model, updating it with the most current land use descriptions and maintaining transportation networks for analysis. Calibration of the model is carried out by comparing with Transportation Tomorrow Survey (TTS) data.

The most current Regional travel forecasting model has been updated considerably from the model utilized in the 2004 study. These changes include:

- The current model utilizes a refined trip distribution component that is based on a Fratar methodology.

- The travel analyses zones and roadway network have been extended to include portions of Simcoe, Dufferin and Wellington Counties.

- The traffic analysis zone (TAZ) data have been updated to include the most current estimates of population and employment data, consistent with the Provincial Places to Grow Plan.

The Peel Region model was further refined to disaggregate the TAZ and refine the roadway network in the south area of Caledon as described in Section 3.1. The smaller zones in this area will enable more accurate estimates of the traffic patterns associated with future growth in this area. Changes were also made to the roadway network in each horizon year to include the known committed roadway projects as described in Section 3.2. The key road network changes are as follows:

- For the year 2011 forecasts, the completion of the Highway 410 extension to Highway 10, the widening of Highway 10 from Caledon Village to Orangeville, the planned widening of Mayfield Drive, the BAR

connection from Regional Road 50 to King Street and some other planned improvements are included in the roadway network.

- For the year 2021 forecasts, the completion of Highway 427 north to Major Mackenzie Drive, improvements to the arterial road connections to the Highway 427 terminus, further widening of Mayfield Road and widening of Airport Road and some other planned improvements are included in the roadway network.

- For the year 2031 forecasts planned further widening of Mayfield Road and some other planned improvements are included in the roadway network.

In order to minimize any inconsistency between EMME/2 volume projections and actual volumes on roadways, the methodology used in the analysis focused on the change in forecast volumes between the various horizon years. Therefore, projected volumes for future horizon years were determined by calculating the difference between the specific horizon year and the 2001 model volumes. This difference was then added to existing volumes observed at the same location. These observed volumes were actual count volumes provided by a variety of sources including the MTO, Peel Region, the Town of Caledon and counts arranged by Paradigm.

A summary of the traffic forecasts at each study screenline is provided in Table 3.3 below. This table indicates that the forecast 2031 traffic volumes crossing the various screenlines in the peak direction (i.e., southbound and eastbound) are almost double the observed traffic volumes in year 2001. The major increases in traffic occur at the following screenlines:

- Traffic volumes at the screenline at Mayfield Road (i.e., southbound traffic crossing Mayfield Road) are expected to increase by about 9,500 vehicles per hour (vph) in 2031 in comparison to year 2001 or an increase of over 110% of existing traffic volumes. This traffic increase can be largely attributed to planned growth in the southern areas of Caledon.

- The traffic volumes at the King Street screenline (i.e., southbound traffic crossing King Street) are expected to increase by about 5,500 vph although the percent increase over existing traffic is only about 75% of existing.

- The eastbound traffic from west of the Highway 10 screenline is expected to increase by about 4,500 vph or about 160% of the existing traffic.

- The screenline that appears to have lower levels of increased traffic activity is the east Town boundary where the year 2031 traffic volumes in both the eastbound or westbound direction. At this screenline, the increase in traffic volume is about 800 vph to 1000 vph with the higher volumes in the westbound direction.

The estimated future traffic volumes have been compared to the estimates developed during the 2004 study. Generally the updated estimates of future traffic tend to be lower than the previous estimates in years 2011 and 2021 but are fairly similar to the previous traffic estimates for year 2031. This difference is attributed to a number of changes in the traffic forecasts, as follows:

- The estimates of population and employment in Caledon and throughout the GTA have been updated for each horizon year. These are the most current estimates available.

- The travel forecasting model methodology has been refined in several areas and this will impact future estimates. The more detailed zones and network in the external areas should improve the forecasts of through traffic within Caledon.

- The road network in each horizon year has been updated to reflect the most current road improvement

plans, including the likely extension of Highway 427 to Major MacKenzie Drive before year 2021.

The impact of the external traffic appears to be slightly reduced from the estimates in the previous study. The increased southbound traffic volume crossing the north town boundary (i.e., Highway 9) screenline) is about 3,000 additional vph from 2001 to 2031 whereas this was previously estimated to be about 3,400 vph. The increased traffic from 2001 to 2031 crossing the Winston Churchill Boulevard screenline is about 2,300 vph as compared to about 2,000 vph in the previous study. These differences between the previous study estimates and the current estimates are not significant.

TABLE 3.3: TRAFFIC FORECASTS AT STUDY SCREENLINES

Screenline	2001 AM Peak Hour Observed Volume (vph)	2011 AM Peak Hour Forecast Volume (vph)	2021 AM Peak Hour Forecast Volume (vph)	2031 AM Peak Hour Forecast Volume (vph)	Traffic Growth (2001 to 2031) (Percent of 2001 Volume)
1 North Town Boundary	3,265	4,098	5,145	6,259	92%
2 Charleson Sideroad	1,896	2,253	2,995	3,870	104%
3 Old Base Line Road	3,909	4,914	6,459	7,213	85%
3.2 Old Church Road	1,730	2,226	2,606	2,980	72%
4 King Street	7,218	9,884	10,938	12,555	74%
5 Mayfield Road	8,520	11,710	14,188	17,969	111%
6 East Town Boundary	1,760	2,037	2,545	2,756	57%
6a Mayfield Rd to Columbia Way (Westbound)	2,402	2,785	2,895	3,175	32%
7 Winston Churchill Boulevard	1,166	1,241	1,500	2,323	99%
8 Highway 10 (Hurontario Road)	2,799	3,543	5,510	7,357	163%
9 Airport Road	2,185	3,322	4,667	5,220	139%
10 Regional Road 50	1,681	2,049	2,335	3,789	125%
11 Forks of Credit	1,735	2,320	2,950	3,868	123%
NOTE: *Weekday AM peak hour volumes are shown in southbound or eastbound direction except where noted.*					

Figure 3.3 below is a plot of the forecast weekday AM peak hour traffic volumes for year 2031. In this figure, the width of the lines representing the roadways represents the volume of traffic by direction. This figure graphically illustrates that the higher traffic volumes occur primarily in the south area of Caledon. The north-south routes within Caledon with higher volumes of traffic are primarily Highway 10, Airport Road and Regional Road 50. The traffic volumes along Mayfield Road are higher than the north south routes, particularly in the eastbound direction. The high traffic volumes on the new Highway 410 are evident in this figure as well as the much higher traffic volumes on the roadway network to the south of Caledon. The high traffic volumes on the Highway 427 extension are also visually evident in this figure.

FIGURE 3.3: YEAR 2031 TRAFFIC VOLUMES



3.4 Review of Future Transportation Deficiencies

The future roadway network capacity deficiencies have been identified on a broad level by comparing the forecast demand to 85% of the estimated roadway capacity at each screenline section. The use of 85% of the available capacity recognizes that at a screenline that covers several different roadways, it is very difficult to achieve a fully balanced utilization of the available capacity on all the roads crossing the screenline. Therefore, for a screenline level assessment, it is more practical to consider a reduced capacity such as 85% of the total capacity to identify potential deficiencies.

For future years 2011, 2021 and 2031 graphical exhibits of the weekday AM peak hour peak direction capacity deficiencies at each screenline are provided in Appendix B of the report. It should be noted that these capacity deficiencies are based on the future roadway network for each horizon year that includes all known committed roadway projects as outlined previously. However, it does not include possible future projects such as the GTA West Corridor that are not yet approved or included in a capital program. A summary description of the capacity deficiencies at each screenline is provided in Table 3.4 below.

TABLE 3.4: SUMMARY OF FUTURE CAPACITY DEFICIENCIES

Screenline	Future Roadway Deficiencies
1. North Caledon Boundary (Southbound)	▫ Capacity deficiencies of 150 to 200 vph crossing Highway 9 in the vicinity of Gore Road from 2011 to 2031 ▫ Capacity deficiency of 350 vph in 2021 and of 600 vph in 2031 at the eastern crossing of Highway 9 (RR 50 to Mount Wolfe)
2. Charleston Sideroad (Southbound)	▫ No significant capacity deficiency with committed roadway improvements in place.
3. Olde Base Line Road (Southbound)	▫ Capacity deficiencies occurring by 2011 and increasing to about 1,900 vph by 2031 in Highway 10 corridor ▫ Capacity deficiency of 450 vph to 500 vph in 2021 and 2031 in Airport Rd corridor
4. King Street (Southbound)	▫ Capacity deficiencies at all crossings of 50 vph to 300 vph in 2011, of 250 vph to 450 vph in 2021 and 800 vph to 900 vph in 2031.
5. Mayfield Road (Southbound)	▫ Capacity deficiencies are minimal with the extension of Highway 410 and other committed projects in place.
6. Town Line (both directions)	▫ Capacity deficiencies in westbound direction of 100 vph in 2011 increasing to 500 vph in 2031 at the south end near Bolton
7 Winston Churchill Blvd (Eastbound)	▫ No significant capacity deficiency with committed roadway improvements in place.
8. Highway 10 (Eastbound)	▫ Capacity deficiencies of 900 vph by year 2021 and increasing to 1,700 vph by year 2031 in south section.
9. Airport Road (Eastbound)	▫ Capacity deficiencies of 350 vph by year 2021 and increasing to 800 vph by year 2031 in south section.
10. Regional Road 50 (Eastbound)	▫ No significant capacity deficiency with committed roadway improvements in place.
11. Forks of Credit (Southbound)	▫ Capacity deficiency of 350 vph in year 2011 increasing to 1,900 vph by 2031.

The estimated capacity deficiencies in year 2011 are in the order of 100 vph to 500 vph and generally existing along the Highway 10 / Winston Churchill Blvd corridor between Forks of the Credit Road and King Street; crossing King Street between Dixie Road and Airport Road and crossing King Street in Bolton. Recognizing that the capacity of a single arterial roadway lane is about 800 vph, these deficiencies are relatively minor.

In year 2021 the capacity deficiencies increase and occur at many of the screenlines in the southern area of Caledon. It is noted that in 2021, there are capacity deficiencies in the eastbound direction along sections of the King Street / Mayfield Road corridor as well as in the southbound direction. These capacity deficiencies are in the order of 200 vph up to 1000 vph in the worse case. This would generally indicate the need for more significant roadway improvements

in the critical corridors.

In year 2031, the capacity deficiencies in the southern area of Caledon are more severe, with deficiencies in the order of 500 vph to 1900 vph in the major corridors. The most critical areas appear to be the Highway 10 / Winston Churchill Blvd corridor with capacity deficiencies up to 1900 vph, the Dixie Road/Airport Road corridor with capacity deficiencies up to 900 vph, the Regional Road 50 corridor with capacity deficiencies of up to 900 vph and the Mayfield Road corridor with capacity deficiencies of up to 1700 vph.

It is noted that these estimates of capacity and traffic volumes are conducted at a very general level. However, they serve to indicate areas where there will be likely future transportation problems.

4.0 Assessment of Future Transportation Needs

4.1 Review of Strategic Options

In the 2004 Caledon Transportation Needs Study, a number of possible strategic options to address future roadway capacity deficiencies were identified and assessed. These strategic options consist of a broad range of strategies that could help to address future problems. A further review of the relevance and current status of these options is provided below.

Decreased Level of Service

Accepting a decreased level of service in specific areas is an acceptable and possibly inevitable outcome of increased development and higher volumes of traffic on a community's road network. It has the advantages of encouraging traffic peaks to spread out more than might otherwise happen, it encourages single occupant motor vehicle travellers to consider alternate modes of travel and it also indirectly helps to discourage suburban sprawl. However, it also increases travel time, causes inconvenience to travellers and adds to the cost of goods movement by truck. In many areas of Caledon, the congestion levels are not severe and there is some flexibility to accommodate a decreased level of service, particularly where improvements would be costly or have significant impacts.

In considering the implications of decreased level of service and increased congestion, it is important to recognize the hierarchical nature of the road network and the implications of congestion at different levels. Provincial highways (i.e., Highways 410, 10 and 9) should provide a good level of service for Provincial and inter-regional traffic, Regional roads should provide a good level of service for inter-municipal traffic, and Caledon municipal roads handle local municipal traffic and provide connectivity to the Regional and Provincial roads. An appropriate road hierarchy helps to minimize through traffic spillover problems and localized congestion. However, some congestion during peak periods will occur and may be tolerable as an alternative to costly road improvements or to improvements that have significant impacts.

Improved Public Transit Services

Since the 2004 study, there has been a new GO Transit express service implemented for the Bolton area. It also appears that there is possibly a GO Rail service to Bolton in the longer term and the future Highway 427 extension may include provisions to accommodate future higher order public transit services. These developments will help to encourage peak commuter travel between Bolton and GTA activity centres to use public transit and reduce the reliance on private vehicle travel. As these inter-municipal commuter services are improved and additional development occurs in Bolton, there will be an increasing interest in some local transit service which would further encourage the use of transit for commuting travel.

The newly developing Mayfield West area is adjacent to developed areas of Brampton that currently have local transit services. As this community grows, there will be a need for public transit services to accommodate commuting and other types of travel. Since Brampton Transit provides links to the main activity areas within Brampton as well as GO Rail stations, extension of Brampton Transit to serve Mayfield West could attract commuter travel and reduce the automobile traffic that would otherwise occur.

Overall, the potential for public transit service in Caledon appears to be increasing and this strategy will help to reduce the impact of increased commuter travel in future.

Travel Demand Management

Since the 2004 study, the Region of Peel has moved forward with an active travel demand management (TDM)

program for the Region. As part of this program, carpool lots are being planned and implemented at key locations. One planned carpool location is the south west corner of Mayfield Road and Regional Road 50. This is a busy travel corridor and this car pool lot will help to capture single occupant vehicle trips and increase the overall car occupancy. Development of other carpool facilities, especially on corridors such as Highway 10 and Regional Road 50 that are served by GO Transit would be helpful in encouraging reduced automobile travel. The new Metrolinx agency is expected to play an active role in these TDM projects to deal with inter-regional travel. There are various other TDM measures being implemented across Peel Region and collectively these measures are helping to reduce the impact of peak period automobile traffic growth. TDM remains an important strategy to help address the traffic growth in Caledon and should be part of transportation plans.

Traffic Calming on Collector Roadways

The problem of excess traffic on collector roads will be alleviated in some areas by new roadway projects such as the extension of Highway 410 and the widening of Highway 10. However, where high levels of congestion develop on the arterial roadway network, excess traffic on adjacent collector roadways is likely to occur. In these specific cases, traffic calming is one measure that can be used to discourage through traffic and to help improve local safety and environmental conditions. It is a viable strategy in these specific locations but each location requires investigation to develop an appropriate solution. Overall, traffic calming will not alleviate future capacity deficiencies but it is a strategy to help manage the impacts of excess congestion.

Arterial Roadway Improvements

While arterial roadway improvements are costly and may have undesirable impacts, this strategy is likely to continue as a primary means of accommodating traffic growth in the community. However, many of the strategies noted above, if implemented in combination, will help to reduce the need for arterial roadway improvements.

A Preferred Transportation Strategy for Caledon

The preferred transportation strategy for Caledon is to actively plan and implement a broadly based plan that incorporates each of the strategies outlined above to best advantage. In summary this means:

- Supporting and participating in Regional efforts to implement travel demand management measures within and adjacent to Caledon.
- Working with Metrolinx to encourage further carpool lot development in the major corridors such as Highway 10, Highway 410 and Highway 427. Also, working closely with both Metrolinx and GO Transit to support the development of improved inter-regional commuter bus services and longer term development of GO rail service to Bolton.
- Investigating the future implementation of local public transit services in the major urban areas when conditions warrant and ensuring that land use plans and other transportation plans will reasonably accommodate future public transit services.
- Supporting the planning and implementation of capacity improvements to Provincial highways and arterial roadways where required to accommodate peak traffic volumes for longer distance travel. This will include working with MTO in regards to planning of needed longer term extensions to Highway 427 and the GTA West Corridor. Caledon's transportation plans should be reviewed and updated as these studies are approved.
- Where specific local traffic conditions become a problem, investigating and implementing traffic calming

measures on rural collector roads.

- Planning improvements to the roadway network in Caledon as required to address identified capacity deficiencies. The strategies outlined above will have to reduce future increases in peak period vehicular travel but this study has identified increases in traffic demand that indicate the need for future roadway improvements.

- Accepting increased peak period congestion in areas where roadway improvements will be very costly or have significant impacts.

4.2 Arterial Roadway Improvement Needs

As part of this study, a more detailed review of the future arterial roadway improvement needs has been carried out. This review is intended to identify the nature of the improvements that are likely to be needed in the future in each of the primary corridors in the Town. The review has generally considered the same corridors as were utilized in the 2004 study for consistency and to help understand any changes that may have taken place in terms of roadway improvement needs. The potential improvements are described as short term (i.e., required by year 2011), medium term (i.e., required by year 2021) and long term (i.e., required by year 2031).

Winston Churchill Boulevard – Mississauga Road Corridor (Southbound in AM Peak)

A review of the traffic conditions in this corridor indicates that there is a capacity deficiency of 50 vph to 500 vph in the short term (2011), increasing to 250 vph to 1000 vph in the medium term (2021) and further increasing to 800 vph to 1900 vph in the long term (2031). The details of the travel forecasts indicate that the deficiencies occur primarily through the area between King Street and the Forks of the Credit Road and also that the main capacity deficiency is along the Highway 10 route. Highway 10 has recently been widened to four through lanes north to Caledon Village and this widening is currently being extended further north to Highway 9 in the short term.

Generally, this capacity deficiency is similar to that identified in the previous 2004 study and the potential improvements to address it would be similar. The key arterial roads are Highway 10, Mississauga Road and Winston Churchill Boulevard. Highway 10 will be further discussed below. Possible roadway improvements on Winston Churchill Boulevard between Ballinafad Road and Olde Base Line are currently being examined by the Region. The potential improvements to Winston Churchill Boulevard and Mississauga Road to address the capacity deficiency along those roads are as follows:

- Possible improvements to Winston Churchill Boulevard (Regional Road 24 to south of Old Base Line Road) under review by the Region.

- In the medium term, improvements to arterial roadway intersections including:

    - Winston Churchill Blvd and Olde Base Line Road (e.g., turn lanes)

    - Olde Base Line Road and Mississauga Road (e.g., turn lanes, signals)

    - Olde Base Line Road and Highway 10 (e.g., turn lanes, channelization)

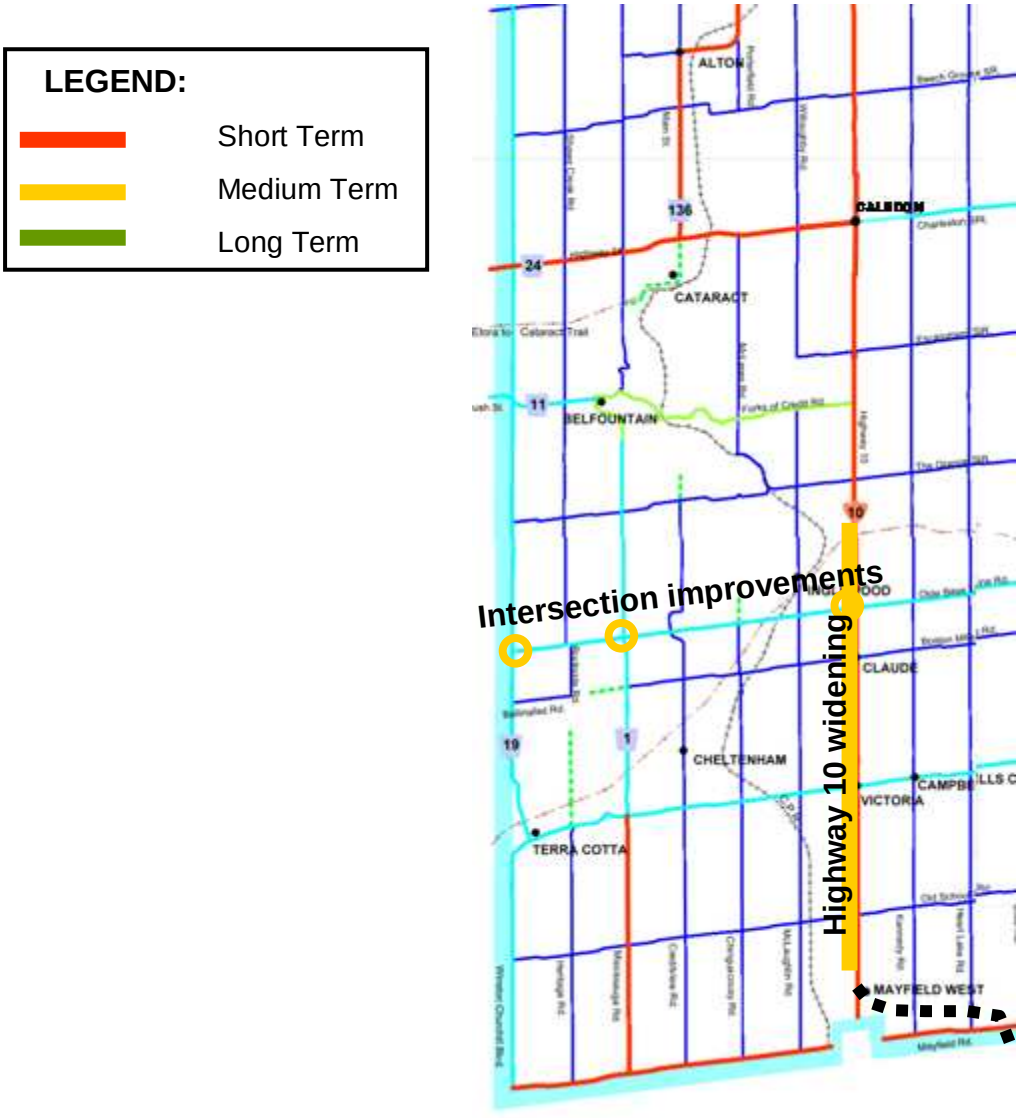
These improvements would generally increase the roadway capacity by up to 600 vph with further capacity problems to be addressed by improvements to Highway 10.

Highway 10 Corridor (Southbound in AM Peak)

The current work on Highway 10 will complete the four lane cross-section north from Caledon Village to Orangeville. The new highway will have signalized intersections at major cross streets and access to various fronting on properties. When the Highway 410 connection to Highway 10 is completed, this corridor is expected to attract additional traffic and further capacity improvements to the section of Highway 10 from the Highway 410 connection as far north as Olde Base Line Road or Caledon Village appear to be required in the medium to long term.

The potential improvements to Highway 10 could consist of widening to provide additional through lanes, major improvements to signalized intersections such as auxiliary turn lanes and channelization, grade separations at major intersections and access and turning restrictions. These improvements could increase peak direction capacity by an additional 800 vph and will be needed in the medium term. In conjunction with the previously suggested improvements in the Winston Churchill Boulevard – Mississauga Road corridor, these improvements would largely address the expected future capacity problems in the north – south direction on the west side of Caledon. The potential roadway improvements in this corridor are illustrated graphically in Figure 4.1 below.

FIGURE 4.1: POTENTIAL ROADWAY IMPROVEMENTS IN THE WINSTON CHURCHILL BLVD – HIGHWAY 10 CORRIDOR TO MEET FUTURE TRANSPORTATION NEEDS



Airport Road Corridor (Southbound in AM Peak)

The Airport Road corridor includes Airport Road and also the parallel arterial roads of Dixie Road to the west and to Gore Road to the east. The Region of Peel plans to widen Airport Road to four lanes as far north as Caledon East by year 2019. The assessment of future traffic conditions in this corridor for year 2021 assumes that this improvement will be completed. However, even with the planned Airport Road improvements, this corridor is expected to have capacity deficiencies of 400 vph to 450 vph in year 2021 and 500 vph to 900 vph in year 2031. The additional traffic growth in the long term appears to be related to growth in overall through traffic combined with additional development within Caledon east and other areas in the south of Caledon.

The study findings indicate that the widening of Airport Road to four lanes in the medium term is an important project in accommodating future travel needs. However, some further improvements appear to be required in the medium to long term and could include further improvements to Airport Road such as additional provisions at major intersections, widening for additional through lanes in the southern section from Mayfield Road to King Street or improvements to parallel routes such as Dixie Road.

For purposes of this study, it is expected that the most likely potential improvement would be the long term widening of Airport Road to a six lane section north to about King Street. However, it is recognized that the other options are also feasible and further study will be required to confirm the most appropriate plan. The potential roadway improvements in this corridor are illustrated graphically in Figure 4.2 below.

FIGURE 4.2: PLANNED AND POTENTIAL ROADWAY IMPROVEMENTS IN THE AIRPORT ROAD CORRIDOR TO MEET FUTURE TRANSPORTATION NEEDS



Regional Road 50 – Townline Corridor (North of Bolton Area) (Southbound in AM Peak)

In this study update, this screenline does not have a significant capacity deficiency in the short term but in year 2021 there is a deficiency of about 350 vph and in year 2031 there is a deficiency of 350 vph to 600 vph in this corridor in the peak direction. This is consistent with the findings of the 2004 study which identified that this corridor would have a long term capacity deficiency of about 500 vph in the long term without Highway 427 extended north to Highway 9. The primary options to address this capacity deficiency appear to be as follows:

- Tolerating increased congestion, including the likely spillover of excess traffic to the parallel collector roads.
- Improvements to Regional Road 50 to increase capacity. Since Regional Road 50 passes through some local residential settlement areas such as Palgrave where the right of way is constrained by existing

development, this option will have some challenges. Further, since the Regional Road 50 intersections currently have signals and turning lanes, provision of additional capacity would likely require widening to provide additional through lanes which will be difficult.

- Improvements to a primary alternate route such as Mount Wolfe Road and Caledon King Townline to increase capacity. While this route is the obvious continuous route bypassing most residential areas, it is located within the Oak Ridges Moraine with significant natural features that present challenges. Also, these local conditions will increase the cost of roadway upgrading. It is also currently designated as a collector roadway and if it is being improved to accommodate more traffic, it would be appropriate to consider an arterial designation.

- Improvements to an alternate parallel arterial roadway such as the Gore Road. While this road is further west, it is a Regional road and improvements such as intersection improvements (e.g., turn lanes at minor cross streets) would increase overall corridor capacity and may be more acceptable in terms of impacts.

These options will require further study of the impacts involved to determine the most appropriate solution. It is noted that this is a medium to long term issue and will not likely require short term actions. For purposes of this study, it is assumed that medium to long term improvements to Gore Road (e.g., intersection improvements) and Mount Wolfe Road (e.g., alignment and intersection improvements) represent the potential roadway improvements required in this corridor.

Humber Station Rd 50 – Albion Vaughan Road Corridor (Bolton Area)

This corridor generally encompasses the area in and around the Bolton urban area. The current planned new arterial projects were developed through the Bolton Arterial Road (BAR) plan and include:

- New four lane arterial road connecting Highway 50 (north of Columbia Way) to Coleraine Drive at King Street and via Duffy's Lane.

- Widening Coleraine Drive to four lanes from King Street to Mayfield Road with appropriate continuation south into Brampton.

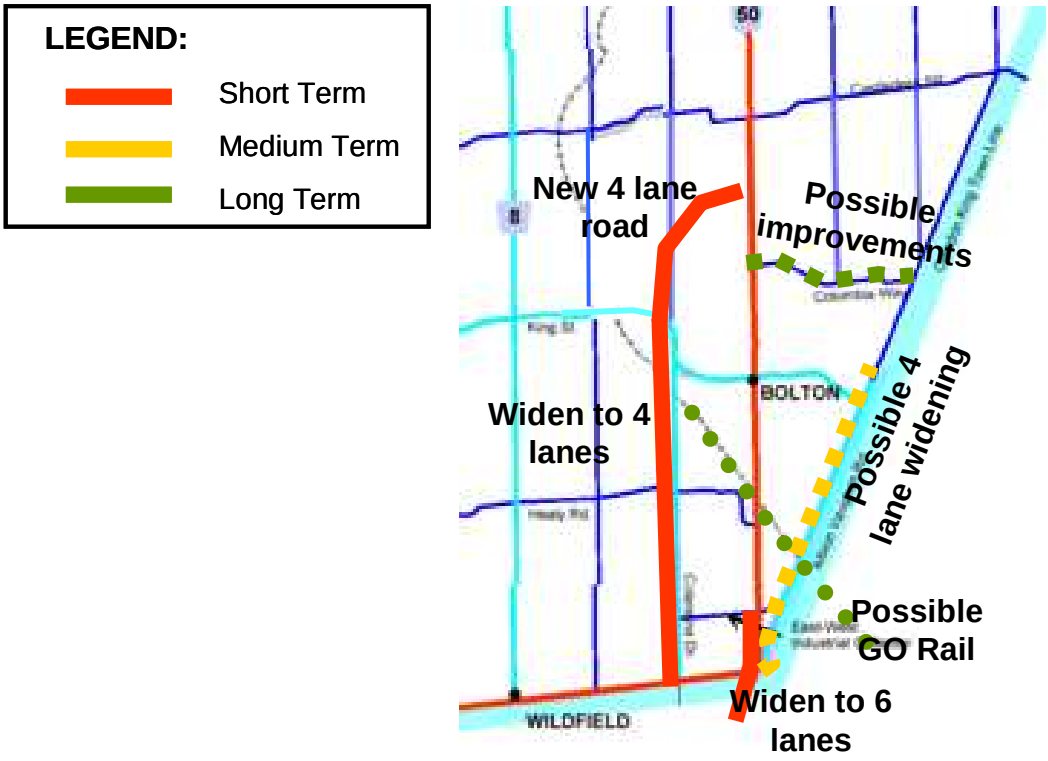
These projects will be completed within the short term and will increase the roadway capacity in the north south direction within this corridor. In addition to the BAR plan, the Region plans to widen Regional Road 50 to six lanes north from Highway 7 to George Bolton Parkway in the short term. These plans are illustrated in Figure 4.3 below.

The study update indicates that even with the planned improvements, capacity deficiencies will continue to exist in the medium to long term in both the north south direction and the east west direction. The north – south capacity deficiency is about 450 vph in year 2021 and about 900 vph in year 2031. The east – west capacity deficiency is about 200 vph in year 2021 and about 500 vph in year 2031. This suggests that additional improvements are required to the Bolton area roadway network.

In the 2004 study it was suggested that one potential improvement would be widening of Albion Vaughan Road to 4 lanes from Mayfield Road to King Street in the medium term. This improvement would be consistent with possible improvements to roads on the east side of Caledon further north and would provide a route around the Bolton core area, for traffic to and from the east via King Road. It also appears to be an improvement that does not have major impacts. A second potential improvement identified in the 2004 study, was improvements to Columbia Way between Regional Road 50 and Caledon King Townline, such as alignment and intersection improvements to ensure reasonable safety and to improve east- west capacity. Both these improvements should be considered as potential improvements in the medium to long term and have been indicated on Figure 4.3. However, it is not clear if these

improvements will fully address the medium to long term capacity deficiencies. The Bolton area is a more complex area with a full urban area road network; additional development expected and localized traffic issues. This situation is difficult to assess with a Regional scale model and without more extensive consultation with local stakeholders. Also, the transportation needs of the Bolton area will be influenced by the final plan for arterial roadway connection to Highway 427. Recognizing these considerations, it is recommended that a more detailed transportation master plan should be undertaken for the Bolton area.

FIGURE 4.3: PLANNED AND POTENTIAL NEW ROADWAY IMPROVEMENTS IN THE BOLTON AREA



Mayfield Road – King Street Corridor (Eastbound in AM Peak)

This east – west corridor crossing the southern area of Caledon was discussed as separate corridors in the 2004 study. However, it is discussed in this study update as a combined east – west corridor. The Region is planning to complete substantial improvements to Mayfield Road across Caledon with a planned six lane section between Chinguacousy Road and the Gore Road and a planned four lane section to the east and the west of the central area. Even with the planned improvements to Mayfield Road, the study travel forecasts indicate capacity deficiencies in this corridor as follows:

- In year 2021, there is a capacity deficiency of about 350 vph to 900 vph. This is generally in the Highway 10 to Airport Road area and on the more southerly routes of Mayfield Road, Old School Road and King Street.
- In year 2031, there is a capacity deficiency of 800 vph to 1700 vph in the Highway 10 to Airport Road area and on the southerly routes of Mayfield Road, Old School Road and King Street.

This medium to long term capacity deficiency appears to be more significant than in the 2004 study which indicated

that the planned improvements to Mayfield Road plus some further potential improvements to King Street could address the expected east – west capacity requirements to year 2031. One reason for this apparent increase in east – west traffic demand may be the planned termination of Highway 427 in the vicinity of Major MacKenzie Drive. This will result in more traffic travelling east – west to and from the future terminus of this major transportation facility. It is noted that this capacity deficiency could be alleviated by the possible future GTA West Corridor noted in Section 3.2 of this report. However, the status of that facility is unknown for another couple of years and details will likely take longer to determine.

The possible options to address the identified capacity deficiency include the following:

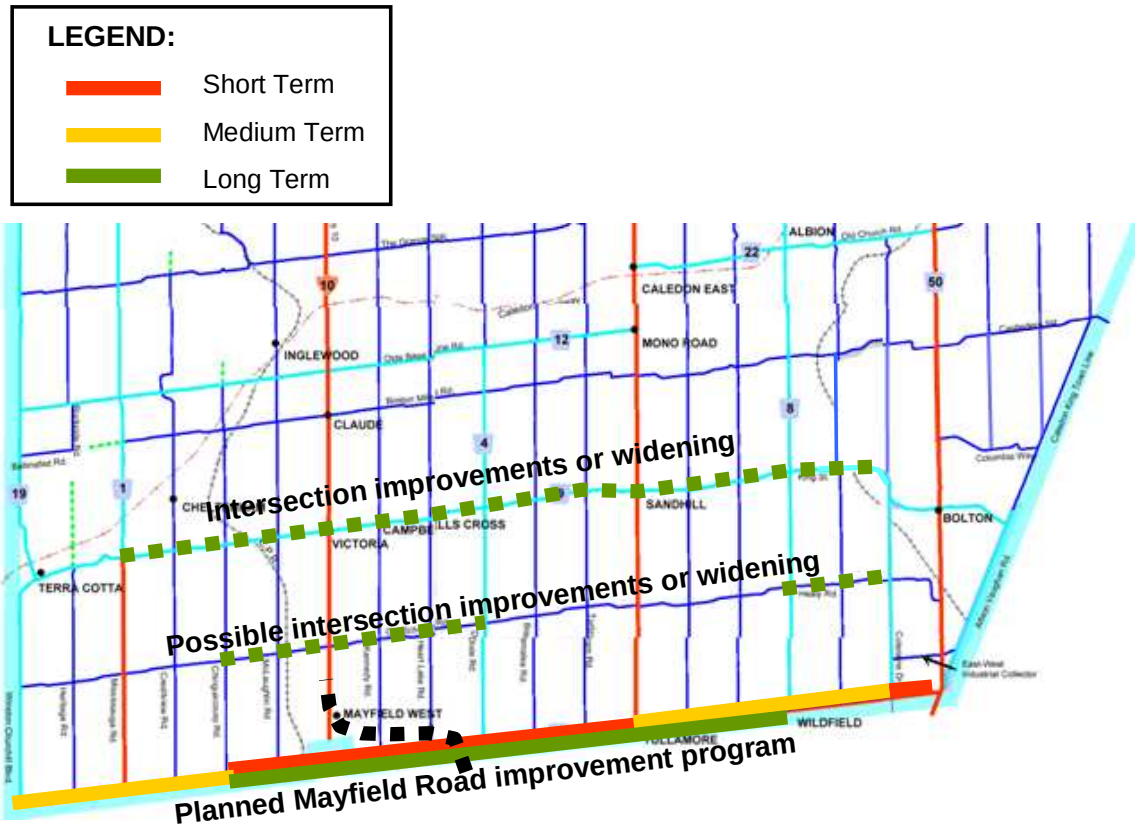
- Further upgrading of Mayfield Road beyond the planned six lane section through the critical area. This will be difficult and costly in the McLaughlin to Heart Lake Road area where the right of way is constrained by development.

- Improvements to King Street from Mississauga Road to Bolton area consisting of widening at critical locations and intersection improvements. This type of improvement was identified as a potential improvement in the 2004 study and would still be considered as a potential option. However, there are constraints to major improvements along King Street and upgrading this route to fully address the capacity deficiencies is likely to be difficult.

- Improvements to critical sections of Old School Road closer to the future Mayfield West development and west of Bolton to provide additional capacity. At this time, this roadway is designated as a collector roadway and does not have substantial capacity for east – west traffic. However, as planned development occurs in these areas, improvements such as higher standard roadway geometry, road widening and intersection improvements could increase the east – west capacity along this route by 400 vph to 500 vph and make a significant contribution to accommodating the future traffic needs.

It is also possible that potential longer term improvements such as a future GTA West Corridor will help to overcome this identified deficiency. At this time, it is suggested that potential improvements to King Street and to critical sections of Old School Road are the primary candidates to address some of the identified east – west corridor capacity deficiency. The timing of these improvements will be medium to long term. These plans should be further reviewed when there is more information available on the GTA West Corridor project. Figure 4.4 below illustrates the potential improvements in this east – west corridor.

FIGURE 4.4: PLANNED AND POTENTIAL NEW ROADWAY IMPROVEMENTS IN THE EAST – WEST CORRIDOR



Road Network Connectivity at Caledon's Boundaries

The 2004 study reviewed suggested provisions for ensuring reasonable roadway connectivity at the Caledon boundaries to accommodate existing and future traffic. Since that study some changes have been made and the implications for these changes are discussed in this section of the report.

Existing and planned future Provincial highway connections are as follows:

- Highway 410 connection from the existing terminus at Mayfield Road to form a continuous connection with Highway 10 is under construction and will be completed in 2009. The widening of Highway 10 from Caledon Village to Highway 9 to four lanes is underway and will be completed in the short term. These projects will complete a continuous north – south highway connection through Caledon.

- Plans are being developed by MTO to extend Highway 427 north to approximately Major MacKenzie Drive where it is planned to terminate. This will leave a discontinuity in the Provincial highway network since this major highway facility will only connect to Regional arterial roadways. It is recognized this highway is outside Caledon boundaries but it will have an impact on traffic patterns and roadway requirements that impact Caledon.

- The potential future GTA West Corridor would likely cross the southern area of Caledon, connecting to Provincial highways to the east and west, including Highway 427. The status of this facility will not be known for some time

but it could form an important component of the future highway network in and around Caledon.

At the north Caledon boundary, the primary change since the 2004 study is the completion of the Dufferin County Road 109 to provide a bypass of Orangeville, connecting Highway 10 south of the Town to Dufferin County Road 109 west of Orangeville. This new road provides important connections to the Provincial highway network.

There are no direct roadway changes along the east Caledon boundary in terms of roadway connectivity requirements. Some of the roadway connections previously noted were identified as likely roadway connections to a future Highway 427 extension. While the status of extending Highway 427 north of Major MacKenzie Drive is uncertain, maintaining connectivity to east – west roads in York Region is still important. It is noted that the Western Vaughan Transportation Improvements EA will consider the roadway network at the south east area of Caledon and is likely to have some implications for road connections to Caledon.

On the southern Caledon boundary, one primary change in regards to future roadway connectivity is the current study of arterial roadway connection to Highway 427. This study is preparing a master transportation plan for the arterial roadway connections, including the connections with the existing roadway network within Caledon. Also, in the Mayfield West area, Caledon has completed environmental assessment studies for improvements to Kennedy Road and Heart Lake Road to the Brampton boundary, providing continuous connections to these roads within Brampton. The roads in the northwest area of Brampton and at the Peel – Halton boundary are currently being investigated through a joint study of the two Regions and the City of Brampton to determine roadway requirements for additional urban development on the west side of Brampton. The findings and recommendations of that study will potentially have implications for the connectivity of the roads at the south west corner of Caledon. Studies of the Mayfield West Phase Two area west of Hurontario Street are underway and will develop land use and local transportation plans for this area. The widening of McLaughlin Road and Chinguacousy Road to provide continuous arterial road connections to these roadways within Brampton will require confirmation.

On the western boundary of Caledon, there are no significant changes to the roadway connectivity considerations outlined in the 2004 report.

Staging of Roadway Improvements

There are a substantial number of major roadway projects that are underway or are planned that form important components of the future Caledon transportation system, as follows:

- The extension of Highway 410 as a four lane access controlled freeway from the current terminus at Mayfield Road to form a continuous connection with Highway 10 and with full interchanges at Mayfield Road and Valleywood Boulevard will be complete in 2009.

- The widening of Highway 10 to four through lanes from Caledon Village to Highway 9 will increase the capacity of this route and help to better accommodate through traffic. In conjunction with the Highway 410 extension, this improvement is expected to alleviate traffic congestion on parallel routes in Caledon. This widening will be completed within the short term.

- Mayfield Road widening is underway and will be continued in phases for a number of years. The current staging plan is:

    - Completion of widening to four lanes from Chinguacousy Rd to Airport Rd in the short term.

    - Widening to four lanes from Airport Rd to Regional Rd 50 to four lanes in the medium term.

    - Widening to four lanes from Winston Churchill Boulevard to Chinguacousy Rd in the long term.

- Widening to six lanes from Chinguacousy Rd to the Gore Rd in the long term.

The Mayfield Road widening program is ongoing and may change in response to specific needs.

- Widening of Kennedy Road to four lanes from Mayfield Road to south of Old School Road is planned to be carried out in the short term.
- Widening Coleraine Drive to four lanes from King Street to Mayfield Road is planned to be completed in the short term.
- Construction of a new four lane road connecting Regional Road 50 to Coleraine Drive (part of the BAR) is planned to be completed in the short term.
- Widening of Airport Road to four lanes from Mayfield Road north to Caledon East is planned to be carried out in the medium term.
- Widening of Heart Lake Road to four lanes from Mayfield Road to south of Old School Road is planned to be carried out in the medium term.

The potential additional roadway needs within Caledon, in addition to the planned projects, that have been identified through this study are summarized in Table 4.1 below.

The list of roadway needs outlined below does not include projects outside Caledon. The critical project is the longer term extension of Highway 427 north to Highway 9. This has been identified in earlier Provincial highway needs studies and it was investigated during the 2004 Caledon Transportation Needs Study. The 2004 study demonstrated that the lack of this northerly extension of Highway 427, there will be a significant amount of through commuter traffic on the arterial roadway network within Caledon. This study has further demonstrated that some substantial capacity deficiencies are anticipated in the medium to long term if Highway 427 ends at Major MacKenzie Drive.

TABLE 4.1: POTENTIAL ADDITIONAL ROADWAY IMPROVEMENT NEEDS

Corridor	Short Term Potential Improvements	Medium Term Potential Improvements	Long Term Potential Improvements
Highway 10 Corridor	None identified	Improvements and/or widening Highway 10 (Highway 410 to Olde Base Line)	
Airport Road Corridor	None identified	None identified	Widen Airport Road to six lanes (Mayfield to King)
Regional Road 50 – Townline Corridor (North of Bolton Area)	None identified	Improvements to the Gore Rd and/or to Mount Wolfe Rd – Caledon King Townline	
Humber Station Rd 50 – Albion Vaughan Road Corridor (Bolton Area)	Consider preparing transportation master plan for Bolton	Widening of Albion Vaughan Line (Mayfield to King) to four lanes	Improvements to Columbia Way (RR 50 to Caledon King Townline)
Mayfield Road – King Street Corridor	None identified	Intersection improvements and/or minor widening of King Street (Mississauga Rd – Coleraine Dr) Intersection improvements and/or minor widening of Old School Road (Mayfield West area, West of Bolton)	

4.3 Other Transportation Improvements

The potential roadway improvements identified above will not fully address the expected peak capacity deficiencies. As part of the preferred transportation strategy outlined in Section 4.1, other measures will be necessary to help accommodate future travel needs of the community and are outlined below.

Travel Demand Management

In recent years, the Region of Peel in partnership with member municipalities has been developing and implementing an active travel demand management program. This includes a range of measures to help reduce peak period automobile travel by encouraging use of alternate modes of travel, encouraging less travel during the peak periods and encouraging increased automobile occupancy. The Region in partnership with Caledon and the City of Brampton are planning a new carpool parking lot on the south west quadrant of Mayfield Road and Regional Road 50. This facility will also make provision for GO Transit as well as Brampton Transit and York Regional Transit bus stops to provide inter-regional public transit connections. The facility is expected to be constructed and in operation within the short term. A further potential carpool facility has been identified in the Highway 10 and Mayfield Road area that could be linked to an extension of the Hurontario Street AcceleRIDE service (Brampton bus rapid transit service). Also, the potential for additional carpool lots along the Highway 10 corridor to help accommodate traffic growth in that corridor have been identified. These future projects are currently under discussion with Metrolinx, the agency responsible for overall transportation planning and funding for the GTHA.

These TDM initiatives in the critical Highway 10 and Regional Road 50 corridors will help to increase automobile occupancy as well as to encourage the use of public transit services connecting to these facilities. In the future TDM

measures should continue to be investigated and the current working partnership between Peel Region and the member municipalities provides a useful mechanism for this activity. In particular, further investigations should be conducted on determining the need and future demand for additional carpool and transit park and ride facilities.

Public Transit Services

Since the 2004 study, GO Transit services in Caledon have been improved with the Bolton GO express service on Regional Road 50. GO Transit plans to further improve this service in the fall of 2008 with additional bus trips to be operated. The planned new carpool lot at Regional Road 50 and Mayfield Road is expected to enhance the ridership potential of this new service which will in turn support possible further improvements to the services. The potential of further improvements to GO Transit bus services along the Highway 10 corridor in conjunction with new carpool lots has also been proposed to Metrolinx. It is also noted that public transit services are being improved within Brampton, adjacent to the south areas of Caledon. More recently, GO Transit has initiated a study of the feasibility of commuter rail service to Bolton, connecting to Union Station in downtown Toronto. The timing of this new service is unknown but a GO Rail commuter service is expected to further attract peak period commuter trips. These initiatives by other agencies will help to encourage the use of public transit for peak period commuter travel and will also help to develop greater interest in public transit travel generally.

The Region of York is currently updating its Transportation Master Plan and is considering possible future bus services on King Road, Highway 9 and Major Mackenzie Drive that would extend to Bolton area. The Town should work with York Region to continue to explore these opportunities to develop transit service connections across municipal boundaries.

At the present time there is no local public transit service within Caledon, other than Caledon Community Services which is a specialized service for seniors and persons with disabilities. This service does not impact peak period travel needs in the community. The 2004 Caledon Transportation Needs Study discussed the future needs and potential for local public transit services in urban areas of Caledon. Essentially, this may be summarized as follows:

- The Bolton urban area has a population of about 25,000 persons and further ongoing growth in both population and employment opportunities is planned in the community. A community of this size typically has sufficient local activity centres such as larger employers, secondary schools, shopping centres and recreational facilities that attract interest in public transit services. The new and improved GO Transit services will further support potential for a local public transit service in the community. The Bolton urban area could reasonably be expected to warrant an initial local public transit services in the short term. One of the challenges for a new public transit service in Bolton is that it is not close to established local transit service in Brampton or York Region and can not be readily served by extensions of existing bus routes.

- The Mayfield West area is just starting to develop and has an existing population of perhaps 3,000 persons. However, the current planned growth in the area east of Hurontario Street is over 13,000 persons plus large areas designated for commercial and employment uses. Further development in Mayfield West is currently under consideration and could increase the size of this future urban area. As this planned growth in Mayfield West takes place, there will increasing interest in public transit services for commuting and local community travel. Mayfield West area is adjacent to urban areas of Brampton that currently have local bus services connecting to activity centres in Brampton. Expansion of these services to also serve the Mayfield West communities offers one potential option for development of a local transit service.

The challenge in developing local public transit services in Bolton or Mayfield West is that public transit operations are costly and can not be supported through passenger fares. Also, ridership takes time to develop and most municipalities are reluctant to support a lightly used service while the community adjusts and learns to use the service. There are Provincial funding programs in place to help support public transit and this eases the burden on the

local taxpayers. With the recent new public transportation initiatives being developed by the Metrolinx agency, there may be additional support in future for a new public transit service in an area such as Bolton. At this time, Caledon should continue to work to encourage improved inter-regional public transportation services and monitor the community interest and need for local public transit services. The need for a transportation master plan for the Bolton area was identified earlier and a further investigation of a local public transit service should be included in that study. As new developments are being planned in Bolton and Mayfield West, flexibility for future local public transit services should be included in these plans.

Management of Excess Traffic on Collector Roads

The concerns with problems of excess traffic using the rural collector roads in Caledon were discussed in the 2004 study report. These problems continue to exist although some of the planned roadway improvements in the short term will enable the Provincial highway and the arterial roadway network to better accommodate the peak period commuter traffic and should alleviate some of the most severe problems of traffic on rural collector roads. The strategy of developing and implementing appropriate traffic calming measures to deal with specific problem areas is still appropriate for problem areas that continue following the improvements to overcome capacity and network connectivity deficiencies on the highway and arterial roadway networks.

5.0 An Updated Transportation Strategy for Caledon

This study has been carried out as an update to the 2004 Transportation Needs Study for Caledon. The updated study is needed to assess the impact of more recent Provincial and local growth targets that increase the expected level of development within Caledon and to assess the implications of the most current plans for the Highway 427 Extension project. In addition to these changes, there are a number of recent transportation directions under study by other agencies which will have impacts on the Caledon transportation system when the plans are finalized. Until these plans are known, they can not be fully reflected in the Town's transportation plans. However, this updated needs study is intended to provide a more current base from which to assess future transportation plans by others.

The additional growth in Caledon is generally expected to occur in the southern areas of the Town, primarily in the Mayfield West and Bolton urban areas. The most current plans for the Highway 427 Extension project have the highway terminating in the area of Major MacKenzie Drive in the City of Vaughan, just east of the Peel – York boundary. These two major changes from the conditions considered in the 2004 study appear to have created additional peak traffic primarily in the southern area of Caledon and along the eastern portion of the Town.

The overall strategy to address the expected traffic growth generally is similar to the strategy outlined in the previous study and consists of:

- Working with Peel Region and others to develop and implement travel demand management measures such as carpool lots to reduce peak vehicular traffic.
- Supporting the development of improved inter-regional public transit services and investigating opportunities for local transit services in Bolton in the short term and in Mayfield West in the mid to long term.
- Carrying out improvements to the arterial roadway network and working with the Provincial Ministry of Transportation to support improvements to the Provincial highway network where necessary to accommodate peak traffic requirements.
- Investigating traffic calming measures where specific problems exist on the rural collector road network that are not resolved through the planned improvements to the related highways and arterial roads.

It is also increasingly important for the Town to monitor ongoing transportation related studies by other agencies to understand the implications on Caledon. For example, the study currently underway for the GTA West Transportation Corridor will ultimately have significant implications for Caledon when the final plan is known. At this time the study is just commencing and the findings will not be available for a couple of years.

Importance of Provincial Transportation Plans

The current committed Provincial highway projects, namely the extension of Highway 410 to connect to Highway 10 and the widening of Highway 10 north to Orangeville are important improvements to help accommodate longer distance traffic travelling through Caledon. These two improvements will also provide relief in the short term for some of the excess traffic using the rural collector roads in Caledon.

The plans for Highway 427 are also important to the Town of Caledon. The current plan to have Highway 427 terminate in the vicinity of Major MacKenzie Drive will leave a discontinuity in the Provincial highway network between the end of Highway 427 and Highway 9. Traffic from areas to the north using Highway 427 will be forced to use the existing roadway network. Extending this freeway facility north closer to Caledon, will create a more localized traffic attraction that will impact the surrounding road network. The current Highway 427 Arterial Road Connections Transportation Master Plan will address this problem in the areas around the freeway terminus. However, the impacts

will extend into much of Caledon. A longer term extension of Highway 427 north to connect to Highway 9 is an important improvement that will need to be further pursued with the Provincial Government.

The GTA West Corridor plans will be unknown for a couple of years. However, an east – west transportation corridor through the southern area of Caledon will have significant implications for both land use and transportation. This study has identified a mid to long term capacity deficiency in the east – west direction across this area of Caledon and a new freeway corridor would help to resolve that problem. However, there are implications for land use planning and for the arterial roadway system that will require careful investigation by the Town. At this time, the Town should closely monitor the progress of this study.

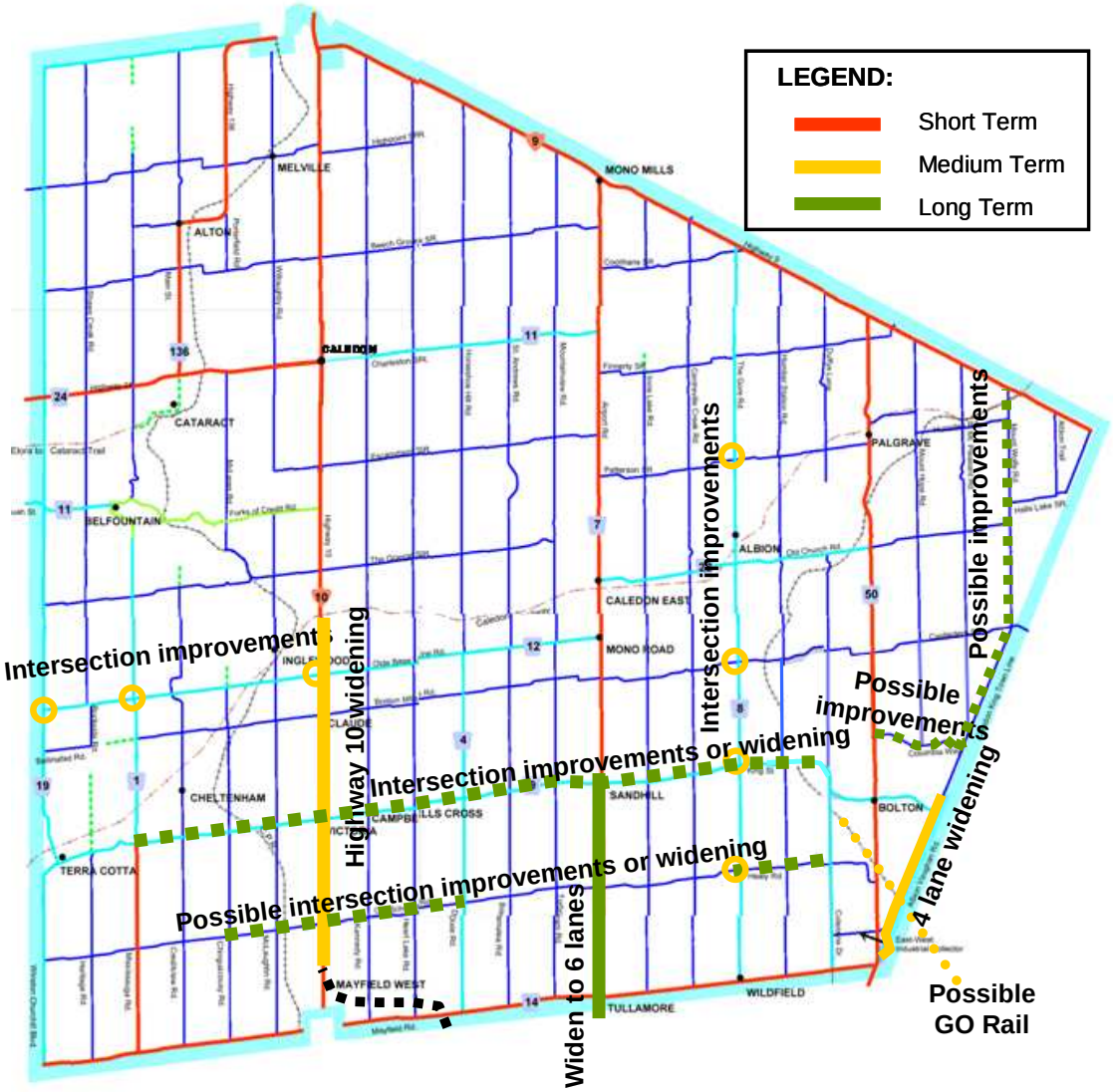
Current Planned Roadway Program

In the investigation of future transportation needs this study has assumed that the various roadway projects noted below will be completed and this additional network capacity is recognized in the assessment of future transportation needs that are in addition to these projects:

- Extension of Highway 410 to Highway 10 in the short term
- Widening Highway 10 to 4 lanes from Caledon Village to Orangeville in the short term
- Widening of Mayfield Road to four lanes throughout and six lanes in the centre section within the study period.
- Widening of Kennedy Road to four lanes from Mayfield Road to south of Old School Road in the short term.
- Widening Coleraine Drive to four lanes from King Street to Mayfield Road in the short term.
- Construction of a new four lane road connecting Regional Road 50 to Coleraine Drive (part of the BAR) in the short term.
- Widening of Airport Road to four lanes from Mayfield Road north to Caledon East in the medium term.
- Widening of Heart Lake Road to four lanes from Mayfield Road to south of Old School Road in the medium term.

In addition to these committed projects, the potential roadway improvements identified in Figure 5.1 below represent the scale of additional improvements that appear to be needed. These improvements are summarized below for each time horizon.

FIGURE 5.1: POTENTIAL IMPROVEMENTS TO MEET 25 YEAR TRANSPORTATION NEEDS



Short Term (Year 2011) Improvements

- No additional improvements have been identified other than the current committed projects.

Medium Term (Year 2021) Improvements

- Intersection improvements along Olde base Line Road (at Winston Churchill Blvd, Mississauga Road and Highway 10)
- Widen and/or improvements to Highway 10 (Highway 410 to Olde Base Line Road)
- Intersection improvements (turn lanes) on Gore Road (Highway 9 to Healey Road – Patterson Sideroad,

Castlederg Sideroad, King St and Healey Rd).

- Widen Albion Vaughan Townline to 4 lanes (Mayfield Rd to King St).

Long Term (Year 2031) Improvements

- Widen Airport Road to 6 lanes (Mayfield Road to King Street)
- Intersection improvements and possible widening in critical sections of King Street (Mississauga Road to Coleraine Drive).
- Possible improvements to Old School Road (Chinguacousy Road to Dixie Road and the Gore Road to Coleraine Drive)
- Possible improvements to Mount Wolfe Road – Caledon King Townline (Columbia Way to Highway 9).
- Possible improvements to Columbia Way (mount Hope Road to Caledon King Townline.
- GO Transit rail service to Bolton

For the identified roadway improvements, a more detailed environmental study assessment will be needed to confirm the need and justification as well as to finalize the details of the preferred improvement plan. Some of these projects, such as the widening or other improvements to Highway 10 and the GO Transit rail extension to Bolton are the responsibility of other agencies. In these cases, the Town and Region will need to work closely with these agencies to ensure that the improvements meet the needs of all parties.

The Town should protect the necessary right of way for these potential improvements. The Official Plan (Policy 5.9.5.5 and Schedule K) generally identifies right of way widths and makes provision for these rights of way to be protected. The right of way widths indicated on the Official Plan generally can accommodate the potential improvements identified in this study, with some possible exceptions as follows:

- The designated right of way width for Airport Road is 36 metres. If the six lane widening from Mayfield Road to King Street is confirmed, a 45 metre or 50 metre right of way should be considered.
- The designated right of way widths for Old School Road (Chinguacousy to Dixie) and Healey Road (The Gore Road to Coleraine Drive) are 26 metres. To enable future improvements, a 30 metre right of way should be considered in the sections identified.
- The designated right of way widths for the section of Mount Wolfe Road south of Old Church Road and Caledon King Townline are 26 metres. To enable possible future improvements, a 30 metre right of way should be considered.

If further study confirms the need to improve Mount Wolfe Road and Caledon King Townline, it may be appropriate to change the classification of these facilities to medium capacity arterial rather than collector as currently classified in the Official Plan.

Transit Service Improvements

The transit service priority improvements are the inter-regional commuter services, particularly to the Bolton urban area. GO Transit has improved the bus service with implementation of a Regional Road 50 peak period express services and are planning to add additional trips this year. Also, GO Transit is initiating a feasibility study for GO

Transit rail service to Bolton this year. The timing of possible rail service is unknown until that study is competed. However, commuter rail service to Bolton would be a significant improvement to public transit services for the Bolton urban area and could also accommodate trips from the southern area of Caledon through parking and ride connections.

To support the inter-regional commuter transit services in Bolton and with ongoing development in the southern areas of Caledon, increasing interest in local transit services is expected. Also, in the short term, Bolton is the area with the most potential to warrant a public transit service. Local transit services would offer alternate travel for persons travelling to and from work, provide student travel to secondary schools within urban areas of Caledon and to post-secondary institutions outside Caledon and provide travel to other activities within the urban areas of the Town. Also, the new carpool lot to be built at Mayfield Road and Regional Road 50 is expected to be utilized as a focal point for inter-regional transit services and would be offer a potential interface with a local transit service. In an earlier section of the report, the need for development of a transportation master plan for the Bolton area was identified. As part of this study, further investigation of the potential for local public transit services should be considered.

Local public transit services in Mayfield West and areas adjacent to the City of Brampton are also expected to be needed in the medium term as development proceeds. In this area, the option of extending Brampton Transit services appears to have more potential and should be discussed with the City of Brampton. Provision should be made in the development plans within Mayfield West to accommodate future public transit services. There are well developed Provincial guidelines on planning new development to accommodate efficient public transit services.

Monitoring of the Caledon Transportation System

The 2004 Transportation Needs Study outlines some straightforward performance measures that can be used to monitor the transportation system in Caledon and identify problems or undesirable trends. These performance measures still are valid as a basic monitoring tool and should be utilized.

Recommended Further Actions

Based on the findings of this study, a number of further actions are recommended to the Town, as follows:

- The Town should consider preparing a Transportation Master Plan for the Bolton urban area. This plan is needed to integrate the current Bolton Arterial Roads (BAR) projects with the Highway 427 Extension Area Transportation Master Plan and with planned improvements to related Regional roads. It is also needed to incorporate other new projects such as the Mayfield Carpool Facility and the Bolton GO Rail corridor into an overall plan that addresses existing and future transportation needs in the Bolton urban area.

- The Town and Region of Peel should request the Provincial Ministry of Transportation to consider development of a longer term plan for the extension of Highway 427 north to Highway 9. If Highway 427 is terminated in the area of Major MacKenzie Drive, there will be a significant gap in the Provincial highway network. Without this highway extension, the traffic between areas to the north of Caledon and the Highway 427 terminus will be forced to use various roadways through Caledon creating congestion, traffic safety concerns and impacts on the communities in the eastern area of the Town.

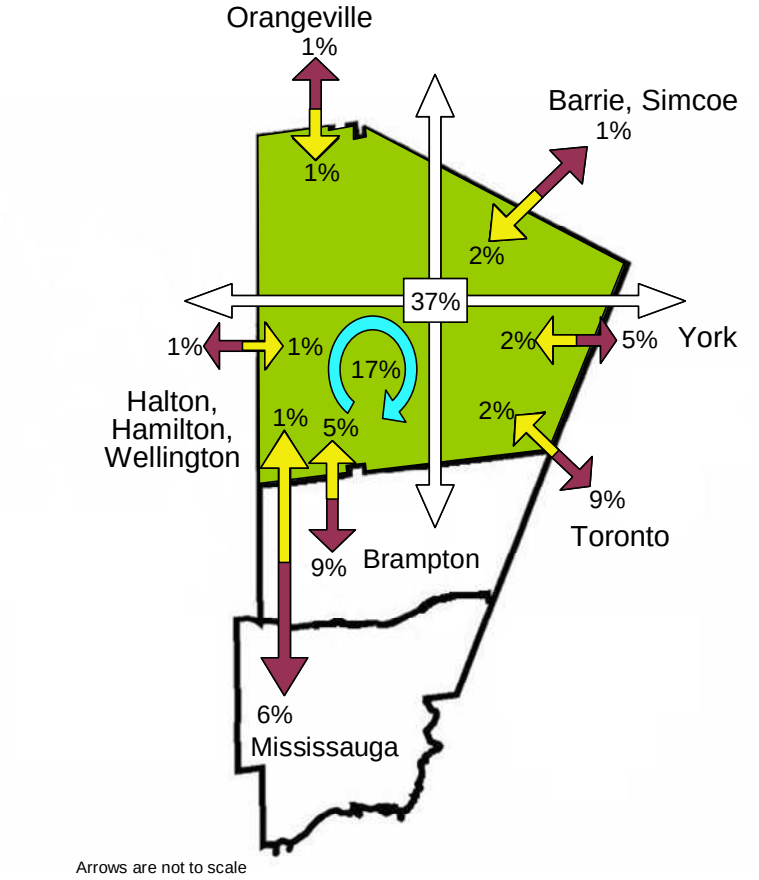
- The Town should participate in and monitor the progress of current transportation studies related to new facilities in and adjacent to Caledon. These studies by other agencies will potentially result in transportation plans that will have significant implications for the Town. The GTA West Corridor study is one of the most significant studies in terms of the implications for transportation and land use within Caledon and should be monitored closely. As the plans from these other studies become known, the need to update Caledon's plans should be considered.

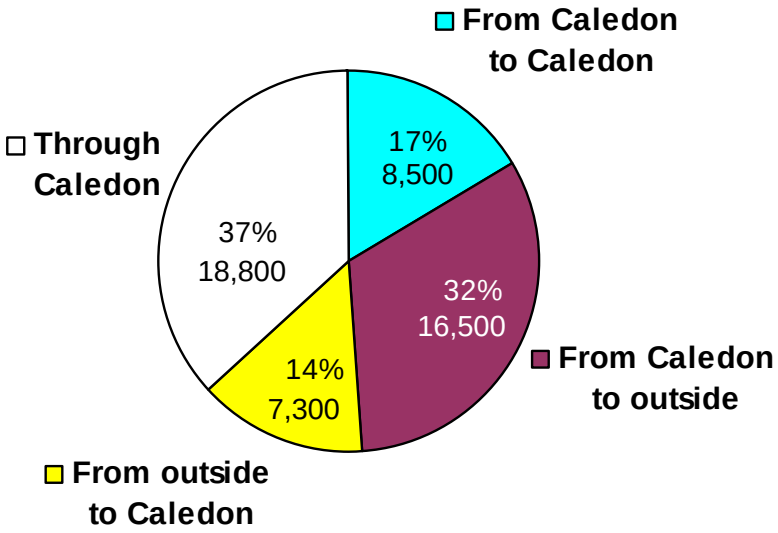
Appendix A

Commuting Patterns in Caledon

Commuting Patterns in Caledon

2001 Person Trips, Morning Peak Period: 6am-8:59am

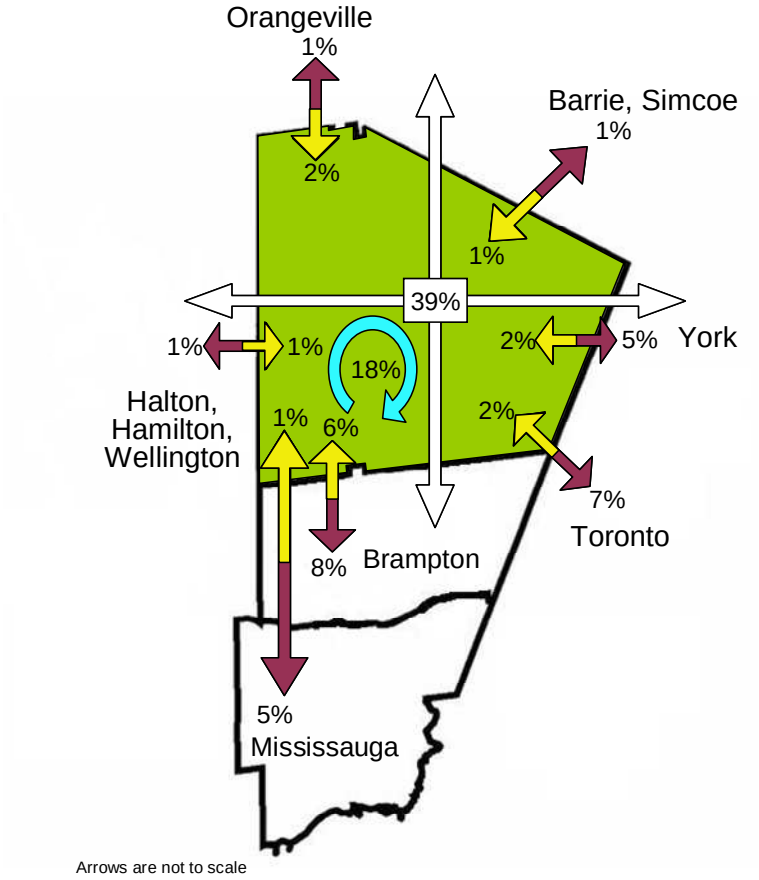


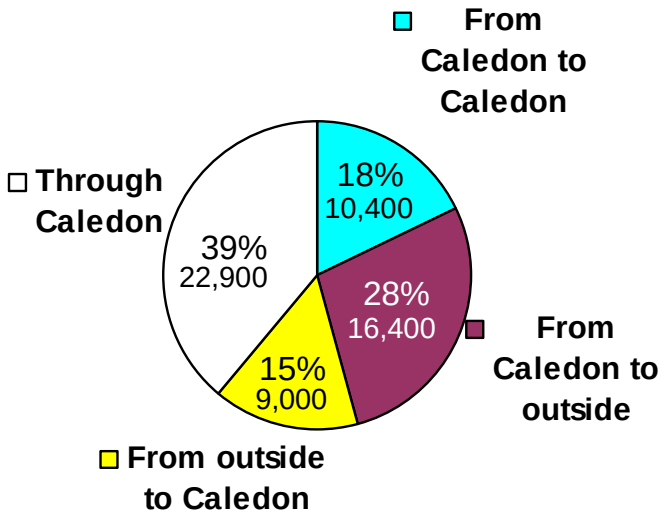


Total number of Caledon Trips = 51,100

Commuting Patterns in Caledon

2006 Person Trips, Morning Peak Period: 6am-8:59am

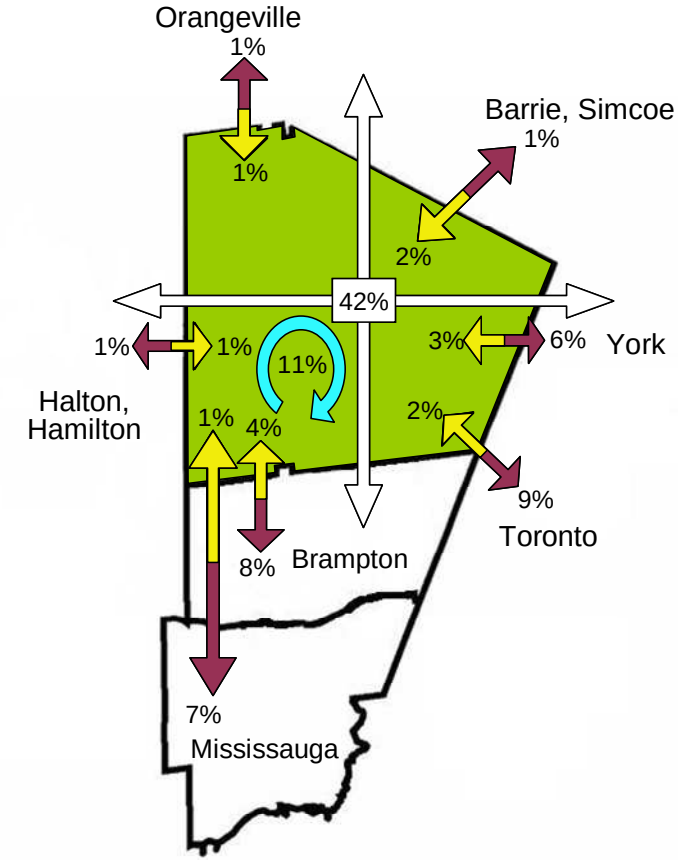


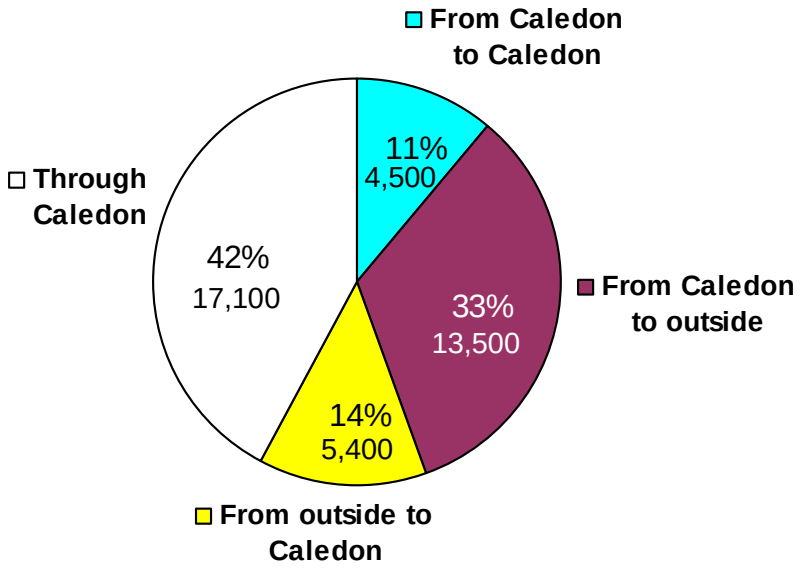


Total number of Caledon Trips = 58,700

Commuting Patterns in Caledon

2001 Auto Trips, Morning Peak Period: 6am – 8:59am

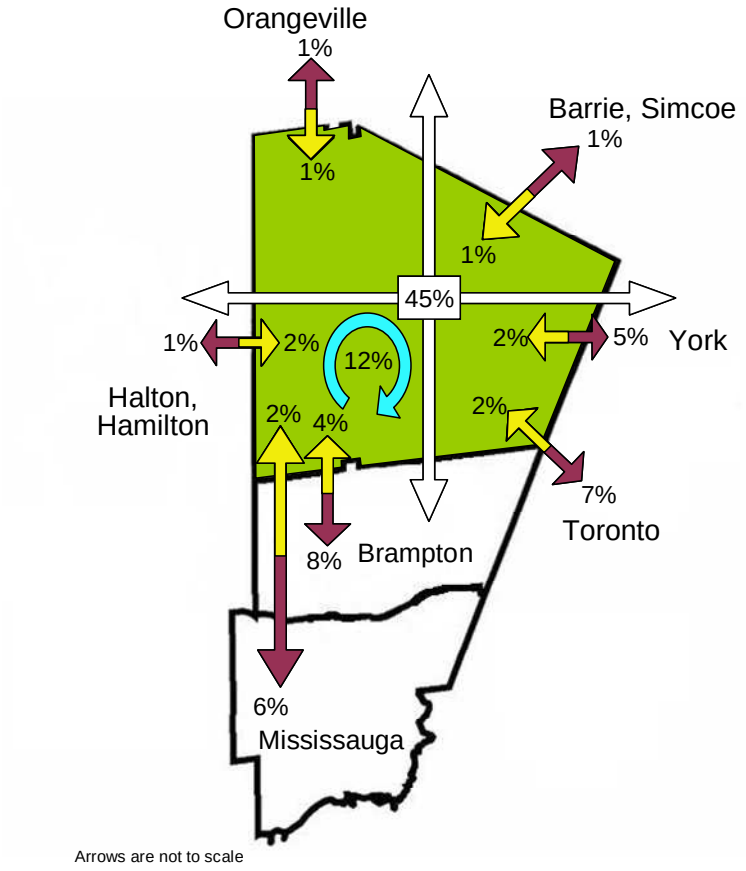




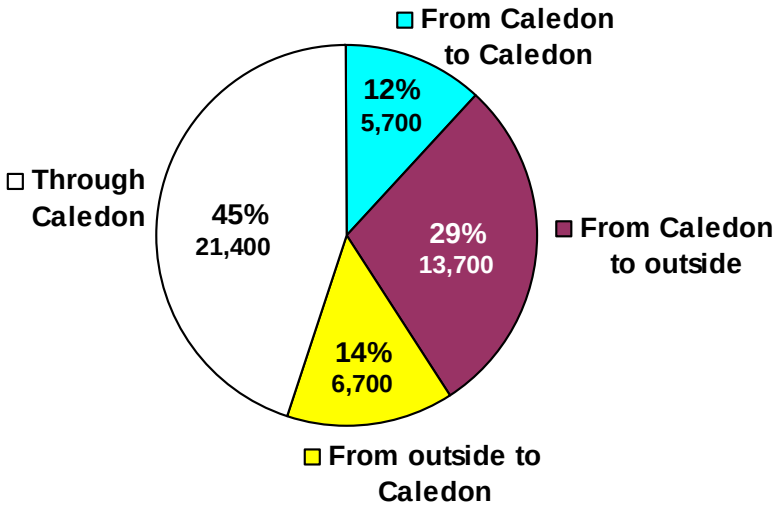
Total number of Caledon Trips = 40,500

Commuting Patterns in Caledon

2006 Auto Trips, Morning Peak Period: 6am – 8:59am



Arrows are not to scale



Total number of Caledon Trips = 47,500

Appendix B

Future Traffic Analyses

TABLE B.1: TRAVEL FORECAST AND ANALYSES SUMMARY

Screenline	Capacity (existing + committed)				Existing Volumes	Emme2 Increase + Existing			Volume/Capacity				85% Capacity Deficiency			
	2001	2011	2021	2031		2011	2021	2031	Existing	2011	2021	2031	Existing	2011	2021	2031
1 North Town Boundary	**6,910**	**7,710**	**7,710**	**7,710**	**3,265**	**4,098**	**5,145**	**6,259**	**0.47**	**0.53**	**0.67**	**0.81**				
1a Winston Churchill to Highway 10	3,075	3,875	3,875	3,875	961	1,432	1,785	2,308	0.31	0.37	0.46	0.60				
1b Kennedy Road to Airport Road	1,830	1,830	1,830	1,830	791	927	1,240	1,520	0.43	0.51	0.68	0.83				
1c Glen Haffy Road to The Gore Road	505	505	505	505	450	503	492	539	0.89	1.00	0.97	1.07	21	74	63	110
1d Humber Station Road to Town Line Road	1,500	1,500	1,500	1,500	1,063	1,236	1,628	1,892	0.71	0.82	1.09	1.26			353	617
2 Charleson Sideroad	**4,305**	**5,105**	**5,105**	**5,105**	**1,896**	**2,253**	**2,995**	**3,870**	**0.44**	**0.44**	**0.59**	**0.76**				
2a Winston Churchill to Highway 10	2,465	3,265	3,265	3,265	1,194	1,415	1,842	2,436	0.48	0.43	0.56	0.75				
2b Kennedy Road to Airport Road	1,840	1,840	1,840	1,840	702	838	1,153	1,434	0.38	0.46	0.63	0.78				
3.1 Old Base Line Road	**5,270**	**6,070**	**6,070**	**6,070**	**3,909**	**4,914**	**6,459**	**7,213**	**0.74**	**0.81**	**1.06**	**1.19**			**1,300**	**2,054**
3a Winston Churchill to Highway 10	2,820	2,820	2,820	2,820	2,169	2,911	3,234	3,952	0.77	1.03	1.15	1.40		514	837	1,555
3b Kennedy Road to Airport Road	2,450	3,250	3,250	3,250	1,740	2,003	3,225	3,261	0.71	0.62	0.99	1.00			463	499
3.2 Old Church Road	**3,115**	**3,115**	**3,115**	**3,115**	**1,730**	**2,226**	**2,606**	**2,980**	**0.56**	**0.71**	**0.84**	**0.96**				**332**
4 King Street	**10,100**	**11,075**	**11,875**	**11,875**	**7,218**	**9,884**	**10,938**	**12,555**	**0.71**	**0.89**	**0.92**	**1.06**		**470**	**844**	**2,461**
4a Winston Churchill to Highway 10	3,725	3,725	3,725	3,725	1,992	3,205	3,407	3,946	0.53	0.86	0.91	1.06		39	241	780
4b Kennedy Road to Airport Road	2,450	2,450	3,250	3,250	2,148	2,360	3,149	3,659	0.88	0.96	0.97	1.13	66	278	387	897
4c Innis Lake Road to The Gore Road	1,500	1,500	1,500	1,500	729	1,187	1,018	1,148	0.49	0.79	0.68	0.77				
4d Humber Station Road to Town Line Road	2,425	3,400	3,400	3,400	2,349	3,132	3,364	3,802	0.97	0.92	0.99	1.12	288	242	474	912
5 Mayfield Road	**12,575**	**17,900**	**19,300**	**19,300**	**8,520**	**11,710**	**14,188**	**17,969**	**0.68**	**0.65**	**0.74**	**0.93**				**1,564**
5a Winston Churchill to Highway 10	4,400	4,400	4,400	4,400	2,352	2,629	3,072	3,834	0.53	0.60	0.70	0.87				94
5b Kennedy Road to Airport Road	3,850	8,050	9,450	9,450	2,547	4,981	6,480	8,586	0.66	0.62	0.69	0.91				554
5c Innis Lake Rd to Albion-Vaughn Townline	4,325	5,450	5,450	5,450	3,621	4,100	4,636	5,549	0.84	0.75	0.85	1.02			4	917
6 East Town Boundary	**3,940**	**4,740**	**4,740**	**4,740**	**1,760**	**2,037**	**2,545**	**2,756**	**0.45**	**0.43**	**0.54**	**0.58**				
6a Mayfield Road to Columbia Way - EB	2,350	3,150	3,150	3,150	886	1,100	1,401	1,570	0.38	0.35	0.44	0.50				
6a Mayfield Road to Columbia Way - WB	2,350	3,150	3,150	3,150	2,402	2,785	2,895	3,175	1.02	0.88	0.92	1.01	405	108	218	498
6b Mount Pleasant Road to Highway 9	1,590	1,590	1,590	1,590	874	937	1,144	1,186	0.55	0.59	0.72	0.75				
7 Winston Churchill Boulevard	**3,880**	**3,880**	**4,780**	**4,780**	**1,166**	**1,241**	**1,500**	**2,323**	**0.30**	**0.32**	**0.31**	**0.49**				
7a Mayfield Road to Old Base Line Road	1,890	1,890	2,790	2,790	715	746	928	1,580	0.38	0.39	0.33	0.57				
7b The Grange Sdrd to Charleston Sdrd	1,375	1,375	1,375	1,375	391	425	512	683	0.28	0.31	0.37	0.50				
7c Beech Grove Sdrd to E. Garafraxa Townline	615	615	615	615	60	70	60	60	0.10	0.11	0.10	0.10				
8 Highway 10 (Hurontario Road)	**5,020**	**6,620**	**6,620**	**7,420**	**2,799**	**3,543**	**5,510**	**7,357**	**0.56**	**0.54**	**0.83**	**0.99**				**1,050**
8a Mayfield Road to Old Base Line Road	2,340	3,140	3,140	3,940	1,302	1,869	3,583	5,131	0.56	0.60	1.14	1.30			914	1,782
8b The Grange Sdrd to Charleston Sdrd	1,390	1,390	1,390	1,390	494	519	622	836	0.36	0.37	0.45	0.60				
8c Beech Grove Sideroad to Highway 9	1,290	2,090	2,090	2,090	1,003	1,155	1,305	1,390	0.78	0.55	0.62	0.67				
9 Airport Road	**4,870**	**5,670**	**6,470**	**6,470**	**2,185**	**3,322**	**4,667**	**5,220**	**0.45**	**0.59**	**0.72**	**0.81**				
9a Mayfield Road to Old Base Line Road	2,340	3,140	3,940	3,940	1,295	2,401	3,698	4,157	0.55	0.76	0.94	1.06			349	808
9b Walkers Road to Charleston Sideroad	890	890	890	890	232	263	311	405	0.26	0.30	0.35	0.46				
9c Beech Grove Sideroad to Highway 9	1,640	1,640	1,640	1,640	658	658	658	658	0.40	0.40	0.40	0.40				
10 Regional Road 50	**4,765**	**6,165**	**6,165**	**6,165**	**1,681**	**2,049**	**2,335**	**3,789**	**0.35**	**0.33**	**0.38**	**0.61**				
10a Mayfield Road to King Street	2,575	3,175	3,175	3,175	1,001	1,038	1,351	2,485	0.39	0.33	0.43	0.78				
10b BAR to Old Chruch Road	900	1,700	1,700	1,700	150	460	331	592	0.17	0.27	0.19	0.35				
10c Patterson Sideroad to Highway 9	1,290	1,290	1,290	1,290	530	551	653	712	0.41	0.43	0.51	0.55				
11 Forks of Credit	**2,320**	**2,320**	**2,320**	**2,320**	**1,735**	**2,320**	**2,950**	**3,868**	**0.75**	**1.00**	**1.27**	**1.67**		**348**	**978**	**1,896**

FIGURE B.1: SUMMARY OF 2011 CAPACITY DEFICIENCIES

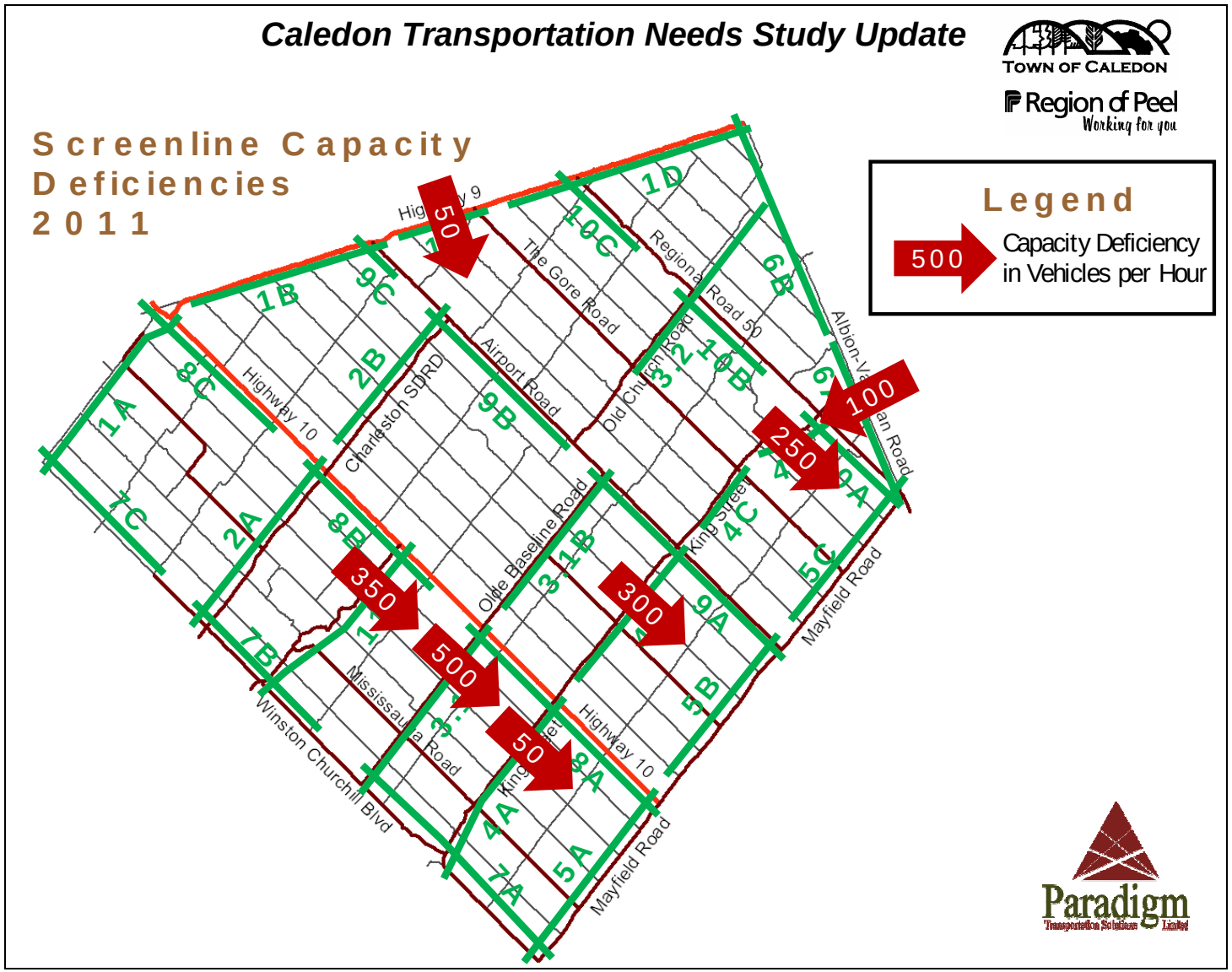


FIGURE B.2: SUMMARY OF 2021 CAPACITY DEFICIENCIES

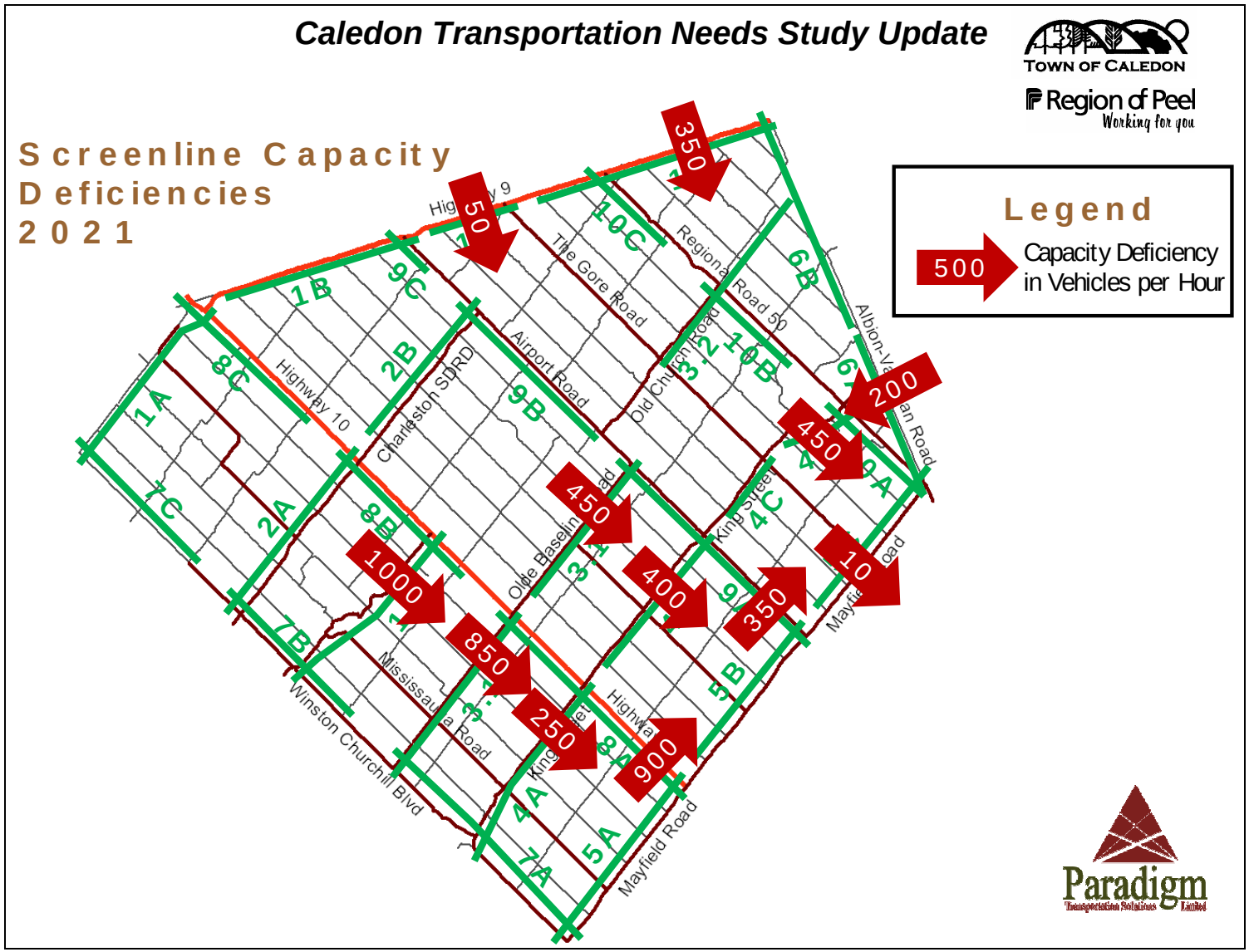


FIGURE B.3: SUMMARY OF 2031 CAPACITY DEFICIENCIES

