City of Brantford

Transportation Master Plan Update

Executive Summary

February 23, 2007

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INTRODUCTION

The City of Brantford is poised for future growth; from an expanding industrial base to the continued growth of the education and retail sector, the community is showing signs of benefiting from its strategic location, within a one hour drive to the GTA, Hamilton, Kitchener-Waterloo, and Niagara. Recognizing that growth needs to be properly planned and managed, the City initiated a joint project to update their Transportation Master Plan and Official Plan through an integrated process, built upon a proactive public consultation program. At the same time, the City also undertook a Growth Management Study to identify future approaches to managing longer term growth demands in the community. Together, these initiatives provide the opportunity to address changing circumstances and directions in the community and to plan for the long-term.

In 2005, the City of Brantford completed its first Community Strategic Plan, developed through a consultative process, seeking input from a broad cross section of interests – the public, community organizations and agencies, City staff and residents throughout the City.

The Strategic Plan provides a high level direction for the future of the community characterized by four key goals, describing the results the City wants to achieve. These goals include:

- Economic Vitality and Innovation
- High Quality of Life and Caring for All Citizens
- Managed Growth and Environmental Leadership
- Excellence in Governance and Municipal Management

While all of these goals can have a linkage to the quality of the transportation system in the community, the goal of "Managed growth and environmental leadership" provides the context and framework for the completion of the Transportation Master Plan Update. The following four key long-term desired outcomes, define the future vision of how "managed growth and environmental leadership" will be achieved within the Community:

- Brantford will be known as a city that manages growth wisely, makes optimum use of its infrastructure, and is a leader in infill and brownfields redevelopment
- Brantford will be supported by well-developed and maintained transportation and servicing infrastructure (including roads, sidewalks, bicycle paths, trails, the airport, water and sewer systems, waste management, electricity distribution and telecommunications)
- Brantford will be well-served by quality local and inter-regional public transportation systems
- Brantford's natural and built heritage will be protected and enhanced

Study Approach

Within this framework, the Transportation Master Plan Update has undertaken a review of the transportation needs of Brantford for the next 25 years, based on updated

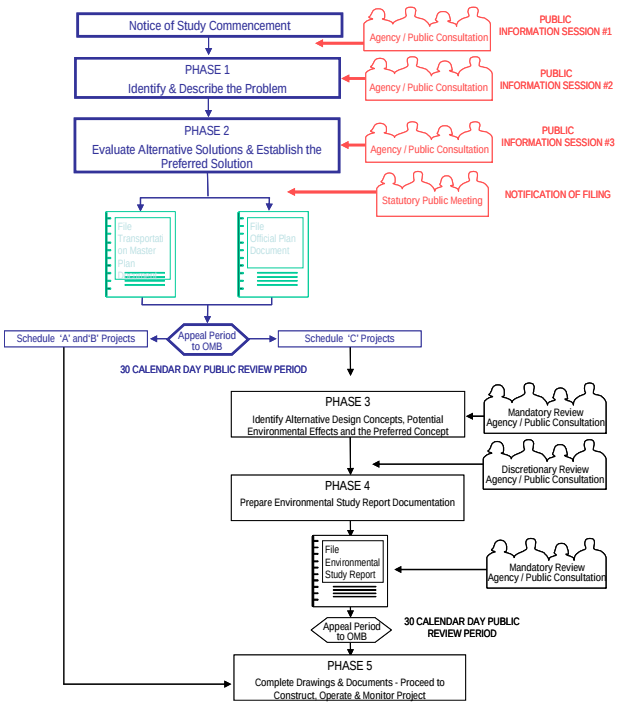
forecasts of future growth, changes to transportation patterns and infrastructure, and the community goals as expressed in the Strategic Plan.

The Transportation Master Plan Update was completed using a four phase process, designed to comply with the requirements of the Municipal Class Environmental Assessment process. Phase 1 established the strengths and deficiencies in the existing transportation network. Phase 2 examined the transportation impacts associated with alternative land use and growth scenarios that were developed as part of the Official Plan Review. Phase 3 developed a series of alternative transportation strategies and assessed their ability to accommodate future mobility needs in the City while supporting continued growth, and Phase 4 incorporated all of this previous work into a series of infrastructure plans and policies and identified an implementation program to guide the City forward for the next 25 years.

The four phase process includes:

Phase 1: The Development of a Study Foundation
Phase 2: Examining Transportation Impacts Associated with Strategic Land Use Planning
Phase 3: Developing and Testing Alternative Transportation Strategies
Phase 4: The Development of an Implementation Strategy

Figure 1 - Environmental Assessment Process – Master Plans



Public Consultation Program

The City recognizes that the choices the community makes today with respect to growth and development and long-term needs for transportation infrastructure will shape the community for years to come. A key factor influencing the development of the Transportation Master Plan Update and the Official Plan Review is the input that has been received from the various stakeholders and the general public on how growth should be accommodated in Brantford; how to intensify neighbourhoods while protecting

the character of the community; how to revitalize and build a vibrant downtown; and how to plan for an efficient transportation system to both foster and support growth.

The formal public consultation program for these two projects has been integrated, under the banner of "Shaping a Liveable Community". A substantial amount of public and external agency consultation was undertaken during the course of this study through newsletters, e-mails, letters, kitchen table discussion guides and a series of formal meetings to gather valuable public input and present components of both the Transportation Master Plan Update and the Official Plan Review. Three formal public consultation centres have been held throughout the study, along with two specific workshop sessions organized to discuss issues and opportunities at key points in the study.

As part of the initial outreach and research, a Public Attitude Survey was undertaken in late October / early November 2005 to gauge public opinion with respect to their level of satisfaction with their transportation system, barriers and opportunities to encourage use of alternative modes of travel, and key issues on to manage future growth in the community. A random sample of approximately 403 residents of the City were asked a series of 16 questions about how they travel around the City, what motivates their transportation choices, and the general effectiveness of different strategies in affecting their travel choices. Given the sample size, the results of the survey are considered accurate within +/-5%, based on a confidence level of 95% (19 times out of 20).

The first formal public consultation session, held on October 6, 2005 at the Brantford Civic Centre, served as an opportunity for the consulting team to introduce the projects and listen to the city-building ideas of City residents. This was followed by a stakeholder workshop held on January 28, 2006, where 35 residents shared their ideas on how to manage growth, incorporate intensification into their neighbourhoods, and develop a transportation strategy to accommodate future growth.

A second stakeholder workshop, held on May 10, 2006, focused on how land use and transportation strategies can support the revitalization of the downtown. This was followed by a second public consultation session held on May 31, 2006 at the Eagle Place Community Centre, where similar topics were discussed on a City wide basis. A third and final public consultation session was held on September 19th, 2006 at the T.B. Costain/SC Johnson Community Centre, where the recommended Transportation Plan and Official Plan Amendment were presented to the community. The Notice of Study Completion was posted on December 4, 2006.

Comments were received from the public and review agencies during the 30 day review period have been incorporated, to the extent possible, within the updated report. Comments were received from:

- Downtown BIA
- Multi-use Trail / Bikeway Committee
- One resident of Forest Road

50 Property Owners on Brant Avenue

- Indian & Northern Affairs Canada
- Grand River Conservation Authority
- Ministry of Natural Resources
- Ministry of Transportation

A summary of the comments received and the City's response is included in Chapter 1 of the Master Plan Report.

A SOLID FOUNDATION FOR GROWTH

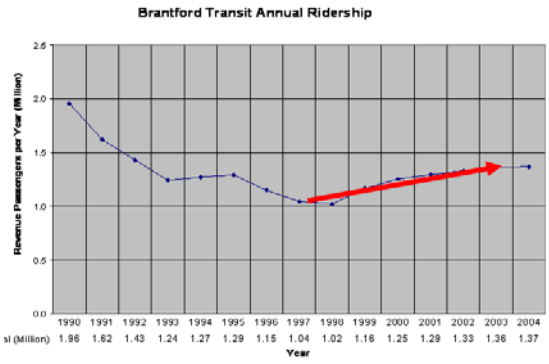
The last Brantford Transportation Study was completed in 1997, and many of the recommended projects from that study have been completed, except for a few of the longer range projects which were identified in the study. Since 1997, there have also been a number of significant changes in the transportation infrastructure in the Brantford area, including the completion of Highway 403, completion of sections of the Brantford Southern Access Road, additional multi-use trail system connections, and a 33% increase in transit usage.

Updated traffic count data on City roadways, and new information on the travel patterns and habits of residents were used to develop a strategic transportation model to forecast future travel demands associated with future growth and land use alternatives, and to test the effectiveness of alternative transportation strategies.

Table 1 – Current Mode of Travel in Brantford - PM Peak Hour

Mode of Travel	Share of Work Trips
Auto - Driver	81%
Auto - Passenger	9%
Transit	3%
Walk / Cycle	6%
Other	1%

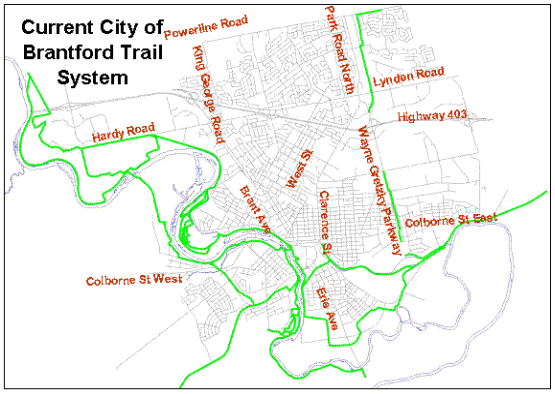
Table 1 summarizes the current shares of peak hour trips made by Brantford area residents by different modes of travel. Approximately 90% of trips are made by the private automobile, with 3% made by transit, 6% by walking / cycling, and 1% by other modes.



The City's investment in transportation infrastructure since 1997 has resulted in a strong transportation system in the City that includes a road network that generally functions well during peak periods.

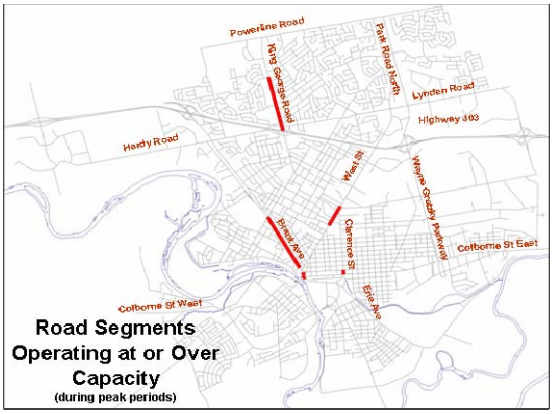
An extensive network of trails and paths that provide recreational opportunities and transportation choices for residents, and a steady increase in transit ridership, despite the continued reliance on the automobile for travel within the City.

Despite solid support for the construction of new trails in the City, residents do not feel that trails or bike lanes will influence the travel patterns to / from work.



Despite some localized congestion on King George Road, Brant Avenue, West Street, and Clarence Street, residents feel that the their road system operates relatively well.

Approximately 80% of respondents to the public attitude survey indicated that the road network generally meets their transportation needs today.



THE LAND USE – TRANSPORTATION CONNECTION

One of the key areas of integration between these two studies is the association between land use, built form and transportation. As a community grows, the location and form of growth will play a large role in defining the future transportation needs of the community.

Growth in a community can affect transportation needs in a number of ways. The location of new residential, employment, and commercial growth areas will define where the demand for travel will be in the future. Similarly, the manner in which these growth areas develop, will affect the decisions residents make with respect to how and how often they travel. Lower density development patterns are difficult to efficiently serve by transit and tend to encourage increased auto ownership and auto usage. The grouping of similar land uses within areas of a city can encourage more cross town travel to access designated employment or commercial areas.

More compact forms of development, on the other hand, tend to be more supportive and easier to serve by transit. Auto ownership levels and auto usage can be lower, in communities where infrastructure to support alternative transportation modes exists. Combining a mix of land uses within an area can significantly reduce average trip lengths as a wider range of goods, services, and employment opportunities are located within or near residential areas.

The link between higher densities and transportation sustainability has been widely recognized in the transportation planning research over the past decade, and figures prominently in the new “Places to Grow” Plan for the Greater Golden Horseshoe.

Proposed Places to Grow Plan Forecasts TO 2031

The Greater Golden Horseshoe (GGH) is one of the fastest growing regions in North America, covering an area that includes Peterborough, Barrie, Toronto, Kitchener-

Waterloo, and south to Niagara. Over the next 25 years, the population forecast for the GGH area will see it grow to approximately 11.5 million people. The proposed "Places to Grow Plan" for the Greater Golden Horseshoe, has been developed by the provincial government, in an effort to control and plan this future growth in a sustainable manner. The City of Brantford is located within the Greater Golden Horseshoe, and is designated as one of only nine designated Urban Growth Centres within the "Outer Ring" municipalities that surround the Greater Toronto Area. This 'outer ring' is expected to accommodate an additional 900,000 people by 2031.

Population and Employment Forecasts for Brantford

In 2001, the City of Brantford was home to 86,000 residents, and provided approximately 37,200 jobs for the city and surrounding communities[1]. Brantford has experienced steady growth over the past 5 years and the estimated base population in 2006 has grown to approximately 93,000. Total employment in the City is currently estimated at 42,800.

The City of Brantford has completed population, household, and employment projections to the years 2031 and 2046. The population of the City of Brantford is projected to increase from 93,000 in 2006 to 132,000 in 2031; a growth of 39,000 people. The number of jobs in the City of Brantford is projected to increase from 42,800 in 2006 to 70,000 in 2031.

Two land use development scenarios were identified for build-out within existing City of Brantford municipal boundaries.

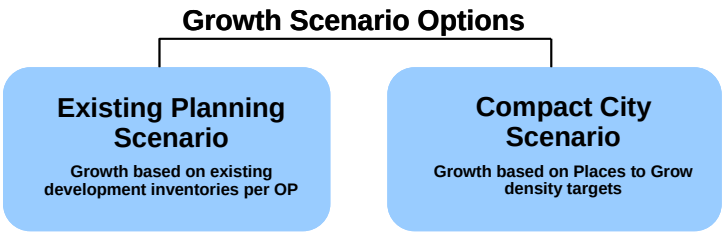
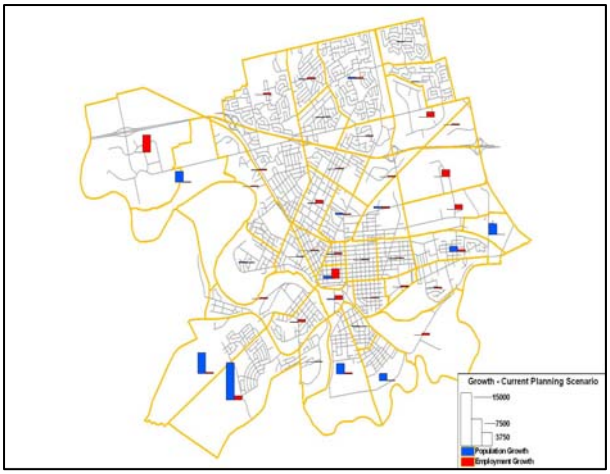


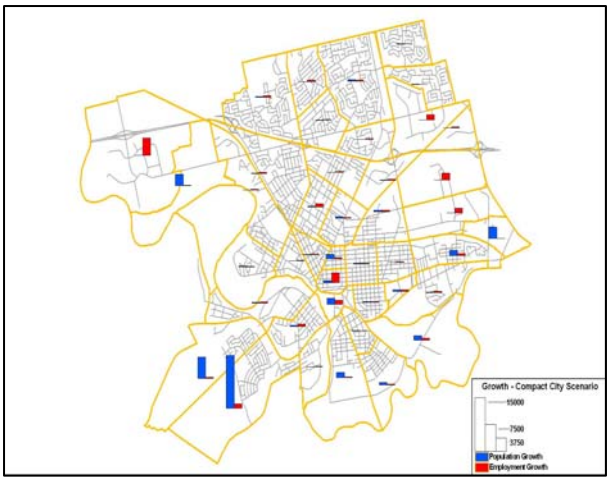
Figure 2 – Growth Scenarios

The ***'Existing Planning Scenario'*** represents growth in accordance with current planning policies, existing inventories of known infilling projects, and current estimates of development in residential greenfield areas. This scenario would result in an ultimate population at total build-out to City boundaries of approximately 124,000 people, which would occur by 2026. For the Existing Planning Scenario, additional population growth beyond 2026 would need to be accommodated outside of the current City boundaries, within Brant County.



[1] Statistics Canada

The ***'Compact City Scenario'*** is based on the intensification and density targets contained within the proposed 'Places to Grow Plan'. For example, the capacity of greenfield areas has been adjusted based on 50 people or jobs per gross hectare. Downtown density has been estimated at 150 people or jobs per hectare. A minimum of 40 percent of future residential units have been assumed to be provided through intensification within the built-up area. The compact City Scenario can accommodate the 2031 forecasted population within existing boundaries and would result in an ultimate build out at a population of 139,200, forecast to occur by 2036.



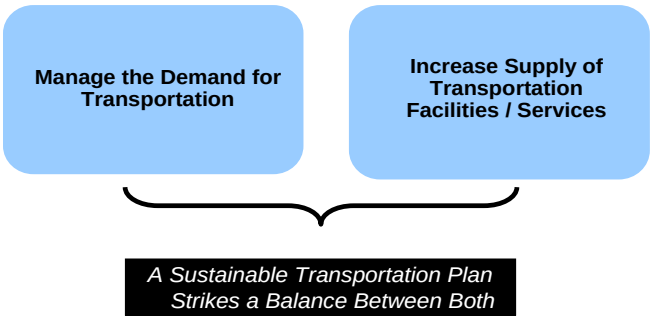
The transportation assessment of the various growth alternatives found that the increased density of land uses for the Compact City scenario would improve the ability to service the city efficiently with transit, by reducing long route structures through low density neighbourhoods. The higher density of population and employment within the downtown area also represents a potential opportunity to implement enhanced transit services in this area and should promote a more walkable downtown. It must be recognized, however, that implementing more effective forms of land use will not solve future transportation problems by itself. Based on the Compact City Growth Scenario, peak hour travel demands will still increase by 72% over today.

The land use assessment found that, without a noticeable increase in transit ridership or use of other alternative modes of transportation, increased traffic congestion could result on many major road corridors within the City.

TRANSPORTATION STRATEGIES TO SUPPORT GROWTH

In the most simple of terms, there are two basic strategies to address a growing demand for transportation. A municipality can either increase the supply of transportation infrastructure and services, or they can attempt to manage or reduce the demand for transportation in the community.

Figure 3 – Relationship Between Supply & Demand



An effective and sustainable transportation system attempts to strike a balance between the economic and social benefits of transportation with the need to protect the environment[2].

The key to the development of a successful and sustainable transportation strategy is finding the right balance between managing demand and providing new transportation capacity that encourages choice between modes of travel, and exploits the synergies that can exist between complimentary strategies. For instance, transit ridership to urban centres can be greatly improved with an effective parking management strategy. Similarly improvements designed to enhance walking and cycling can also benefit transit ridership.

A series of transportation strategy alternatives were developed for the City of Brantford for the key modes of travel in the community. Within each area, different visions of the transportation system were described ranging from a 'Status Quo' approach to an 'aggressive' approach. Based on input provided amongst the various transportation stakeholders and residents in the community a "made in Brantford" transportation strategy was developed, which reflects community constraints, opportunities, and the vision of what Brantford residents feel will make their community liveable.

Alternative transportation strategies, as summarized in Table 2, were assessed for:

- The future role of walking and cycling,
- Downtown parking,
- The future transit system,
- Optimization of the existing road network,
- Implementation of Transportation Demand Management strategies,
- Truck routing, and
- Road network improvements

[2] Strategies for Sustainable Transportation Planning: A Review of Practices and Options, Transport Canada, September 2005

Table 2 – Range of Transportation Strategy Alternatives

Mode of Travel / Policy Area	Alternative 1 – Minimal Change	Alternative 2- Modest Change	Alternative 3 – Aggressive Change
Walking & Cycling	Recreational Focus	Downtown & Recreational	City Wide Focus
Downtown Parking	Manage Demand	Increase Supply	Manage Demand & Increase Supply
Transit Service	Status Quo	Modest Improvement	Transit Focus
Optimizing Capacity of Existing Roads	Status Quo	Focus on Key Corridors	City Wide Implementation
Transportation Demand Management	Passive Approach	Targeted Approach	Aggressive Program
Truck Routing	Status Quo – Permissive Route System	Implement Truck Restrictions	Combination of Permissive Routes & Local Truck Restrictions
Road Network Improvements	Varies Based on Effectiveness of Other Strategies		

Each of the strategy alternatives was assessed based on series of broad criteria reflecting sustainable transportation objectives, and key elements of the City of Brantford Strategic Plan objectives. This assessment considered the effectiveness of each alternative strategy in terms of:

- Reducing Auto Traffic
- Supporting Transit
- Minimizing Impacts to the Environment
- Improving Travel Choice
- Enhancing the Community,
- Minimizing Capital Cost
- Minimizing Operating Cost
- Optimizing Use of Existing Infrastructure

The recommended transportation strategy promotes a balanced approach to transportation that:

- Emphasizes need to promote and invest in alternative modes of travel,
- Establishes the principal of municipal leadership by example,
- Actively promotes alternative transportation modes in the community, and
- Requires an investment in incentives to encourage participation and remove barriers.

Table 3 – Recommended Transportation Strategy

Mode of Travel / Policy Area	Recommended Approach	
	Short– Medium Term	**Long Term**
Walking & Cycling	**Downtown / Recreational Focus** • Enhance connections to/from and within the downtown and make downtown sidewalks and crossings fully accessible • Outside downtown, provide sidewalk/trail connections to recreational facilities and on key transit routes.	**Citywide Focus** • Update and Implement Multi-Use Trail and Bikeway Master Plan • Preferred mode of travel for Local Trips Under 5km in Length
Downtown Parking	**Increase Supply and Manage Demand for All Day Parking** • Increase the supply of all day and short term parking to address growth needs • Increase price for long term parking to encourage more transit use • Discourage new private parking facilities, invest in municipal parking spaces, and manage demand through pricing	
Transit Service	**Modest Improvement** • Service improvements on key routes. • Operational improvements to key performing routes • Addition of new routes • improve mode share to 4% of peak hour trips	**Transit Focus** • Provision of Trunk / Express Routes along major arterials • New north end terminal / downtown terminal • Enhance service / provide downtown shuttle service • Increased overall mode share to 6% of peak hour trips by 2031 • Increase annual ridership from 1.39 Million to 1.62 Million by 2016 (+17%), and 2.64 Million by 2031 (+90%)
Optimizing Capacity of Existing Roads	**Implement a City Wide Corridor Management & Optimization Program** • Initiate an active program of intersection / roadway improvements on key arterial road corridors • Provide signal priority and coordination for arterial roads during peak hours • Control number and location of new commercial entrances	
Transportation Demand Management	**Targeted Transportation Demand Management (TDM) Program** • Develop / support formal TDM programs at large employers. • Focus on Land Use and Behaviour Based Policies to encourage use of alternative modes of travel, attract additional transit ridership, and reduce overall peak hour travel demand • Reduce auto demand by 5% by 2031	
Truck Routing	**Implement a Hybrid Truck Routing System** • Maintain current 'Permissive Truck Route" system • Allow for localized Truck Restrictions, where enforcement has found it difficult to deter truck activity on non designated roads	
Road Network Improvements	Road network improvements will still be required to serve growth	

Effectiveness of Transportation Strategy in Meeting Future Demands

By adopting the recommended transportation strategy the City of Brantford will be investing in a multi-modal transportation plan. This investment will pay dividends in a number of areas. By promoting alternative forms of transportation, over the longer term, the City will improve transportation choice in the community, promote more liveable communities, and can also reduce road network improvement needs in key areas.

Based on projected travel demands and travel patterns in the community, it is estimated that the recommended transportation strategy will reduce peak hour auto demands by 10% compared to maintaining current mode shares. This will be achieved by:

- Improving the capacity of existing arterial roads by 5% through a program of intersection upgrades and signal timing improvements,
- Increasing the share of trips made by walk/cycle mode from 6% to 10% during the peak hour,
- Increasing the share of trips made by transit from 3% to 6% during the peak hour,
- Implementing downtown parking management policies that will reduce auto driver trips by 2%, and
- Adopting Transportation Demand Management (TDM) measures that will reduce auto demand by 5%.

Even with currently planned transportation improvements (transit, roads, walk/ cycle), the reduction of auto traffic by 10%, and operational improvements to increase the capacity of existing arterial roads by 5%, the City will face growing traffic congestion by 2031.

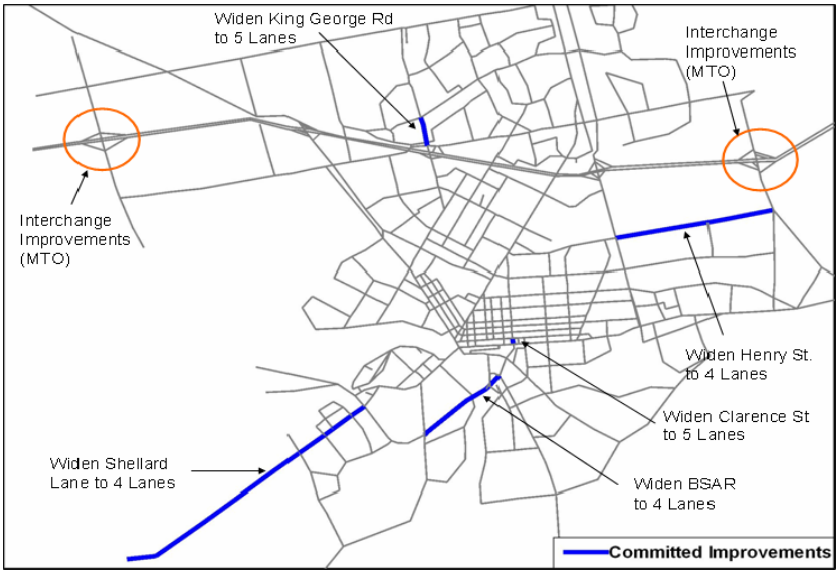
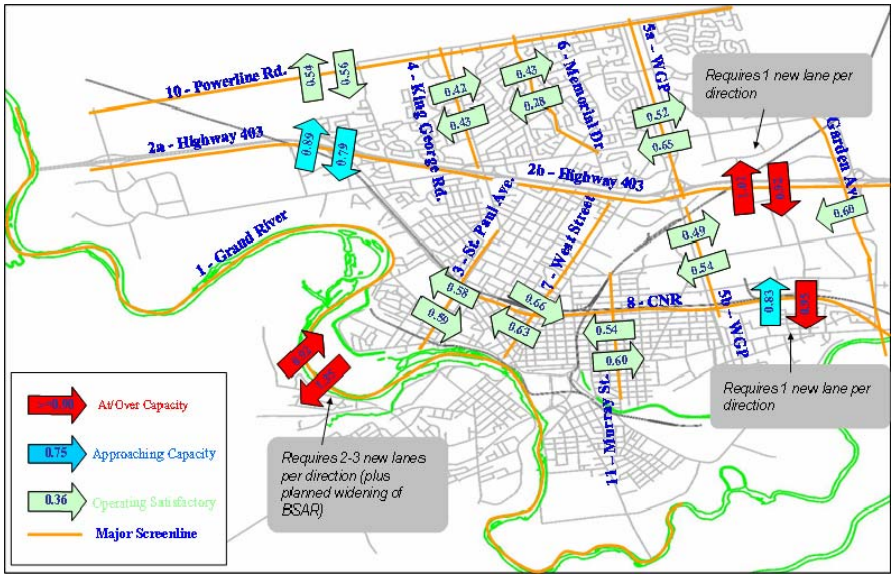


Figure 4 – Planned Improvements – 5 Year Capital Forecast

Even with the planned improvements from the City's current 5 year capital forecast, illustrated in Figure 4, above, additional improvements will be required. Figure 5, below, illustrates the key areas in the City where capacity improvements are forecast to be required even with the planned improvement in place. Key areas of the City, such as across the Grand River and crossing Highway 403 will experience significant capacity deficiencies without road network improvements.

Figure 5 – Future Peak Hour Capacity Deficiencies - 2031



Achieving the above noted trip reductions, however, will have some noticeable benefits in terms of deferring capital improvement needs. For example, based on planned growth in the Southwest area of the City, future traffic volume forecasts indicate that 4 new lanes of traffic in each direction would be required in the future if there is no change to current travel behaviour. By achieving the targets outlined above, the City can eliminate the need for one additional lane crossing the Grand River within the 2031 planning horizon.

TRANSPORTATION MASTER PLAN UPDATE

The recommended Transportation Master Plan Update for the City of Brantford is comprehensive in nature and includes a series of detailed recommendations and strategic policies that will be implemented over time. The Transportation Master Plan Update includes:

- Recommendations to develop a Transportation Demand Management program within the City and policies for implementing measures into existing and new growth areas,
- A strategy for enhancing the capacity of the existing road network in the City and policies that can be applied to manage the operation of key arterial road corridors,
- An updated policy for dealing with ongoing management of designated truck routes through the City and an Updated Truck Route Map
- A strategy for improving the transit system over the next 25 years to respond to growth and improve the share of trips made by transit, including land use and operational policies to encourage additional transit ridership,
- A series of policies and recommendations to support Walking and Cycling and an updated Cycling / Trail Network Infrastructure Plan outlining new walking / cycling trails and connections,
- A Road Network Improvement Plan to accommodate growth to 2031 and beyond, and
- A Transportation Plan for the Downtown to support ongoing revitalization initiatives and establish a strong transportation system to foster and support new growth.

The following sections highlight the key recommendation of the Transportation Master Plan Update.

A Plan for Managing Future Transportation Demand (TDM Programs)

A TDM Program is an institutional framework for implementing a set of TDM policies or incentives to encourage residents to either reduce the amount they travel, shift their time of travel to avoid peak periods, or change their mode of travel. Brantford does not currently have any formal TDM programs in place, although there have been some discussions about using some selective TDM programs in the Northwest development area.

The results of the Public Attitude Survey of Brantford residents indicates that there may be a market for the promotion of alternative transportation modes, if the right incentives and marketing campaign can be implemented and targeted to these potential users.

" About 31% of Brantford residents said they would consider using a different mode of travel to and from work..."

Based on a review of the opportunities available to promoted TDM in Brantford, best practises used in other comparable jurisdictions, and research into the attitudes of

Brantford residents, the following key policy directions have been recommended in the Transportation Master Plan Update.

Municipal Leadership by Example
Leadership by example will be necessary to show residents and business in Brantford that there is an alternative to the automobile, and that small improvements can be made without significant impacts to individuals or businesses. A targeted TDM program focusing on major employers in the City should start with the City itself, as one of the major employers in the area. A pilot program, developed for City employees, can provide useful experience that will be invaluable in promoting the types of TDM solutions that are appropriate for Brantford residents, and the potential benefits that could be realized by businesses and employees.

Acting in a leadership role the City should:

- Develop City TDM Program for employees,
- Appoint a TDM Coordinator to promote benefits and coordinate activities,
- Develop incentive programs and promotional material to encourage business and employee participation in TDM events or programs,

Community Education and Awareness
Getting the message out is a key part of any program that seeks to invoke change. Some of the leading jurisdictions with successful TDM programs are using social or individualized marketing campaigns to encourage people to make more sustainable transportation choices. These programs recognize that each member of the public will have different motivations and reasons for the transportation choices they make, and the marketing programs need to reflect the benefits that matter most to each segment of the population.

To promote TDM the City should:

- Develop marketing material to “sell” benefits of TDM to major employers
- Develop a TDM pilot program at one large employer site
- Reach out to community groups for partnership opportunities
- Promote Sustainable transportation choices in the community and participate in community based events promoting healthy transportation alternatives

Development Tools & Incentives
While many Brantford residents expressed a willingness to consider alternative modes of travel to and from work, many cited the need to provide tools or incentives to help them overcome barriers to participation. Different incentive programs will appeal to different groups; therefore a flexible program is needed to reach a wide market. Some of the key programs that should be considered to encourage employees and business to participate in TDM pilot programs include:

- Develop / promote ride matching service for carpools
- Partner with community groups / taxi companies to offer “Guaranteed Ride Home Service” for regular carpoolers / transit riders in case of emergencies
- Provide reduced parking rates / preferred parking spaces in municipal / employer parking lots

- Consider subsidized transit passes for students and discounts for purchases of bulk transit passes

Land Use Polices

The connection between land use, urban form and transportation choices is becoming more widely understood. The recently approved 'Places to Grow' legislation has implemented policies to encourage increased density and broader mix of land uses within communities. These policies have been incorporated into the Official Plan where appropriate. In addition to density targets, the urban design and supporting infrastructure contained within new develop areas must also support alternatives to automobile use. In this context, the City should:

- Incorporate supportive infrastructure and urban design principles into large developments and employer sites to encourage non auto modes of travel. This could include showers, change rooms, convenient / accessible transit stops, preferential parking for carpools, building orientation to support transit, and other measures to create a pedestrian friendly environment.
- Support development of carpool lots adjacent to Highway 403 interchanges (in conjunction with MTO) to encourage carpooling for those residents who commute from Brantford to other adjacent communities.

A Plan for Optimization of the Existing Transportation System

The need for optimization of the existing transportation network is a key requirement for any municipality in times of fiscal restraint. Optimization of the existing transportation system includes maximizing the capacity of existing facilities, improving the performance and reliability of existing services, and making minor operational improvements to improve system performance.

Based on a review of the existing road network, opportunities available to enhance existing network capacity, and best practises used in other comparable jurisdictions, the following key policy directions have been recommended in the Transportation Master Plan Update.

" Undertaking intersection improvements, synchronizing traffic lights, and controlling the number or commercial driveways can increase the capacity of an existing road by up to 10%..."

"... in some corridors, optimization may defer need for widening for years"

Access Management

Access management is a technique used in conjunction with land use policies to control the number of entrances that are permitted on key arterial road corridors. A recent study, undertake as part of the City of London Transportation Master Plan, found that arterial road optimization and access management could increase the capacity of an arterial road by up to 5%. Within this context, the City of Brantford should implement the following key access management policies into their site planning and development processes and policies:

- Access to major commercial, industrial, residential land uses should be spaced at 250-300 m apart on Major Arterial Roads,
- Access should be restricted to side roads where feasible and the City should encourage combining entrances where feasible,
- Restrict entrances to right-in, right-out within 50m of signalized intersections,

- Manage / control new accesses in designated intensification corridors (King George Road, West Street)
- Wayne Gretzky Parkway and BSAR should remain controlled access roads to protect the integrity and operational ability of these roadways to accommodate future Citywide traffic demands. The only new access to these corridors should be via new municipal road connections, where these connections can be shown to improve the operation of existing intersections.

Arterial Road Optimization

Since the operation of key intersections in the City will often deteriorate sooner than the roadway will reach its functional capacity, the construction of turning lanes at key intersections can increase the capacity of the through lanes by removing turning vehicles from the through lanes. Studies have also indicated that traffic signal coordination along a busy arterial road can improve capacity and reduce vehicle delays along major corridors by 10-15% during peak periods, in addition to improving on-time service performance for transit. Within this context the City of Brantford should implement the following optimization measures and policies:

- All arterial roads should receive signal priority during peak hours,
- Adopt a maximum volume to capacity ratio of 0.90 before road widening should be considered,
- Consider intersection operational improvements, such as turning lanes, in key arterial road corridors,
- Consider separate left turn lanes where turning volumes exceed 60 vph

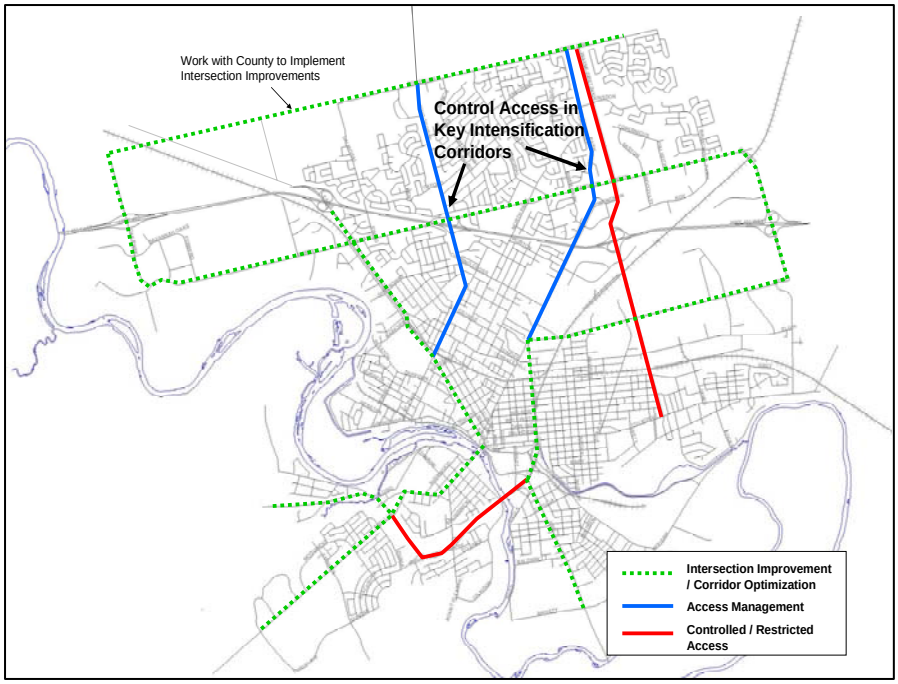


Figure 6 – Arterial Road Optimization Corridors

A Plan for Managing Truck Routes and Goods Movement

In the City of Brantford, truck movements are largely directed through the use of a permissive truck routing system. The current truck route by-law designates existing roadways as suitable for truck traffic, and signs are posted that indicate the route is acceptable for truck traffic. The by-law prohibits trucks from using non-designated routes, although there are some provisions that allow for local deliveries and use of non posted routes where the route forms part of the short path to the truck's destination. These provisions, enacted to address concerns of fairness raised by truckers and industry, have resulted in a truck route by-law that can be, at times, difficult to enforce.

Based on experiences in a wide variety of cities, truck route management falls into two basic types: restrictive and permissive. The strategic direction for the TMP identified the utilization of a "hybrid system" as the preferred strategy for truck route management. This strategy advocates continuing to use a permissive truck route system while identifying areas that may require the use of additional truck restriction signing to discourage inappropriate truck movements.

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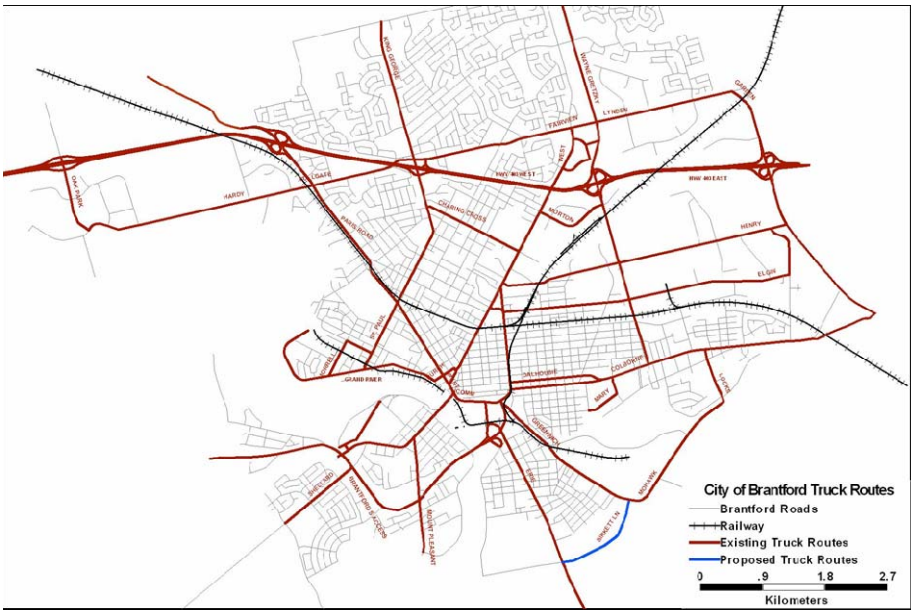


Figure 7 – Designated Truck Routes

Recommendations for implementation of localized truck restrictions have not been identified as part of the Transportation Master Plan Update, although the following policies should be incorporated:

- The implementation of truck restrictions should only be considered where existing permissive routing and other approaches have not addressed the problem of trucks using inappropriate or non designated routes.
- Truck restrictions should only be implemented in areas where the enforceability of the current permissive route bylaw is not effective, based on consultation with local police.
- Truck routes and truck restrictions should be established and amended from time to time to regulate the movement of commercial vehicles.
- Land Use planning should encourage the location of activities that require heavy truck traffic to areas near or adjacent to freeways and major arterials.

A Plan for Transit Improvements

The current transit system serves the 93,000 city residents using a fleet of 27 buses operating on nine fixed routes, which operate from the transit terminal on Darling Street. In 2005, the system carried 1.39 million fare paying passengers. This represents a market penetration of 15.2 rides per person. It is estimated that the current transit modal share is 3%.

There has been significant growth (roughly 33%) in ridership over the last eight years, thanks to a series of service improvements and the increased student population in the downtown area. The recent public attitudinal survey suggests that there is willingness by auto users to shift to transit provided there was improved level of transit service, better transit information, or financial incentive to use transit. The city is also poised for significant population and employment growth, with a significant portion of that growth to be accommodated within the downtown core area.

The preferred strategic direction for the TMP identified a "Modest Transit Improvement" as the preferred short-term planning direction, with an ultimate target for an aggressive focus on transit by 2031. Therefore the transit policies have been structured to provide an incremental approach to achieving these levels.

In the short to medium term, improvements to key performing transit routes will be provided through route optimization or the addition of new routes to improve overall mode share to 4% of peak hour trips. This will occur over the next 10 years.

Between 2016 and 2031, the City will begin a more aggressive 'Transit Focus', in conjunction with the realization of new growth in the downtown. The 'Transit Focus' will target improvements to key routes, through optimization and / or the addition of trunk routes along major arterials such as Colborne Street and the Toll Gate Road / Fairview Dr. / Lynden Road corridor, and on the West Street. and King George Road. corridors. It is envisioned that over 25 years this strategy will lead to increased transit ridership and improve the mode share by 6% as a result of growth and increased use of transit in the City.

Over the next 10 years the existing fleet will be upgraded to meet the 100% accessibility target and by 2031 the average age of the transit fleet will be reduced. Table 4 provides a breakdown of the capital cost for the transit improvement plan.

Short Term Service Improvements

In the short term, the transit service improvement strategy should focus on:

- An annual program of improvements to transit stops / shelters,
- Replacement of the aging fare box system and fleet,
- Improving downtown service / stop locations,
- Implementing various transit pass initiatives (U-Pass, Bulk Passes) and make passes convenient to purchase,
- Developing marketing / promotional materials to encourage and maintain transit ridership,
- Expanding service on Sundays and extending hours of service in key industrial areas,
- Investigating opportunities to implement transit priority on key corridors,

- Consider extending service to Paris (in conjunction with County),
- Developing transit supportive urban design guidelines to assist in making new developments easier to serve with transit,
- Investigating opportunities to provide bike racks on buses and/or bike storage at the transit terminal to encourage transit usage,
- Implementing transit service in new development areas to build ridership early, and
- Monitoring trends and report annually on progress

Medium to Longer Term Improvements

In the medium to long term, the transit service improvement strategy should focus on:

- Establishing satellite terminal(s) in the north end of the City (Lynden Park Mall / Brantford Mall),
- Restructuring routes to shorten travel times and/or create local circulator routes,
- Introducing trunk / express routes along key arterial corridors (Colborne Street., Toll Gate Road./Fairview Dr. / Lynden Road., West Street., King George Road) and between terminals and Via Station,
- Interlining (overlapping) trunk routes with local routes and allow transfers at key stops,
- Opportunities to increase service frequency on higher volume routes,
- Implementing a downtown transit shuttle service using small buses, short routes, frequent service (in conjunction with downtown growth),
- Planning for a new downtown transit terminal in a location that is convenient to major employment areas or attractions with increased capacity to accommodate new routes, and
- Increasing residential / employment density in key transit corridors (also referred to as intensification corridors)

Ridership by 2031 = +90%

Capital Cost = $24.4 Million

Table 4

Transit Improvement Plan

Project	Description	Total Program Cost
Bus Replacement	28 Buses	**$ 12,600,000**
New Buses For Service Expansion	6 Buses	**$ 2,700,000**
Existing Terminal Upgrades + Mall Terminal		**$ 1,700,000**
New Downtown Terminal & Upgrades to Existing		**$ 3,800,000**
Upgrade Stops / Shelters		**$ 200,000**
Repairs to Transit Service Centre		**$ 1,700,000**
Fare Box Replacement		**$ 800,000**
Marketing / Promotion / Route Optimization		**$ 900,000**
Total Capital Cost		**$ 24,400,000**

A Plan for Walking and Cycling

The City of Brantford completed a ”Multi-Use Trail/Bikeway Implementation and Design Plan” in March 2000. Since 2000, the City has been successful in implementing many of the proposed off-road cycling / trail facilities. The City has an extensive off-road cycling network that is oriented around the recreational areas on both sides of the Grand River and a multi-use trail has also been incorporated into the existing right-of-way along Wayne Gretzky Parkway, which allows for off-road cycling, walking, and rollerblading within this multi-modal transportation corridor.

However, the City has had difficulties garnering enough support to implement many of the on road cycling routes that were recommended in the plan. Recently, proposed bicycle lanes along Memorial Drive and North Park Street. have met with local opposition, and implementation has been deferred.

Currently in the City of Brantford, almost 6% of the work trips are made by walking/ cycling and the majority of the current trail system is “off road”. The result of the public attitude survey completed as part of this study suggested that the majority of residents in Brantford treat walking and cycling as a recreational pursuit as opposed to utilitarian / commuter alternative mode of travel. Similar feedback was received during a number of the public consultation sessions, held during the preparation of the Transportation Master Plan Update, although it was also recognized by many that this view needs to change.

While the public focus on cycling tends be recreational in nature today, it is recognized that over time the City should be encouraging a greater emphasis on walking and cycling as the preferred more of travel for short trips (under 5 km in length) within the City. The preferred strategy with respect to walking and cycling, therefore, builds upon the success of the City’s recreational trail system in a two phase program.

The first phase of the program focuses on enhancing access to the recreational trail system within the City, while improving linkages and routes to and within the downtown area, where many of the existing trips are shorter in length than in the suburban neighbourhoods. Within new development areas, walking and cycling infrastructure will be planned and provided, in such a way as to connect to the existing trial network, encourage increased walking and cycling for local short trips, and provide safe walking and cycling routes to neighbourhood schools and community centres.

Over time, it is expected that the focus of the walking and cycling program will shift from a recreational based program to one that promotes walking and cycling as a preferred mode for local trips under 5km in length. By 2031, it is envisioned that 10% of peak hour trips will be made by the cycling and walking mode, up from 6% today.

Based on a review of the opportunities available to promoted walking and cycling in Brantford, the following key policy directions have been recommended in the Transportation Master Plan Update.

Municipal Leadership by Example
Leadership by example will be necessary to show residents in Brantford that walking and cycling can be viable alternatives to the automobile. A pilot program, developed for City employees, can provide useful experience that will be invaluable in promoting walking and cycling solutions that are appropriate for Brantford residents, and the potential benefits that could be realized. Acting in a leadership role the City should:

- Encouraging Walking/Cycling Among City Employees
- Provide Infrastructure at Municipal / Public Facilities (i.e. bike racks/shelters/showers/change rooms/sidewalk connections)
- Develop incentive programs and promotional material to encourage business and employee participation

Walking / Cycling in New Development Areas
While implementing new walking and cycling infrastructure in existing neighbourhoods will evolve over time, the new growth areas should be planned from the start with a focus on promoting walking and cycling among new residents. To promote walking and cycling in new growth areas the City should:

- Require a Master Cycling / Walking Plan for Secondary Planning Areas,
- Require walking cycling facilities in other new development areas,
- Require sidewalks on both sides of new collector / arterial roads,
- Require sidewalks on one side for local roads,
- Adopt Cycling and Walking as the preferred mode of travel for local trips under 5km in Length

Development and Maintenance of Sidewalk Networks
A barrier free and comprehensive network of sidewalks will make travel by foot more attractive for Brantford residents and is a key factor in supporting transit usage. Specific recommendations include:

- All major arterial roads in the City that provide direct access to properties should have walking facilities on both sides of the road. This can be achieved through a sidewalk on each side, or a sidewalk on one side with a multi-use trail on the other side of the road, or multi-use trails on both sides of the road;
- Major arterial roads that have limited or controlled access should provide walking facilities (sidewalk or multi-use trail) along at least one side of the road;
- Develop a pedestrian sidewalk network that maintains a maximum walking distance of 400 metres to all transit stops, for areas served by fixed route transit.
- The City should develop a detailed Sidewalk Master Plan and annual sidewalk construction program to retrofit existing arterial and collector roads with sidewalks and should develop an implementation program that prioritizes new sidewalk construction for roadways with :
    - Existing schools or community centres,
    - Existing observed walking demand,
    - Existing / planned transit routes, and
    - In the downtown core area
- All new sidewalks shall be designed to be accessible

- Existing sidewalks in the downtown area should be retrofit to ensure full accessibility, and key pedestrian crossing locations should feature audible pedestrian crossing devices.

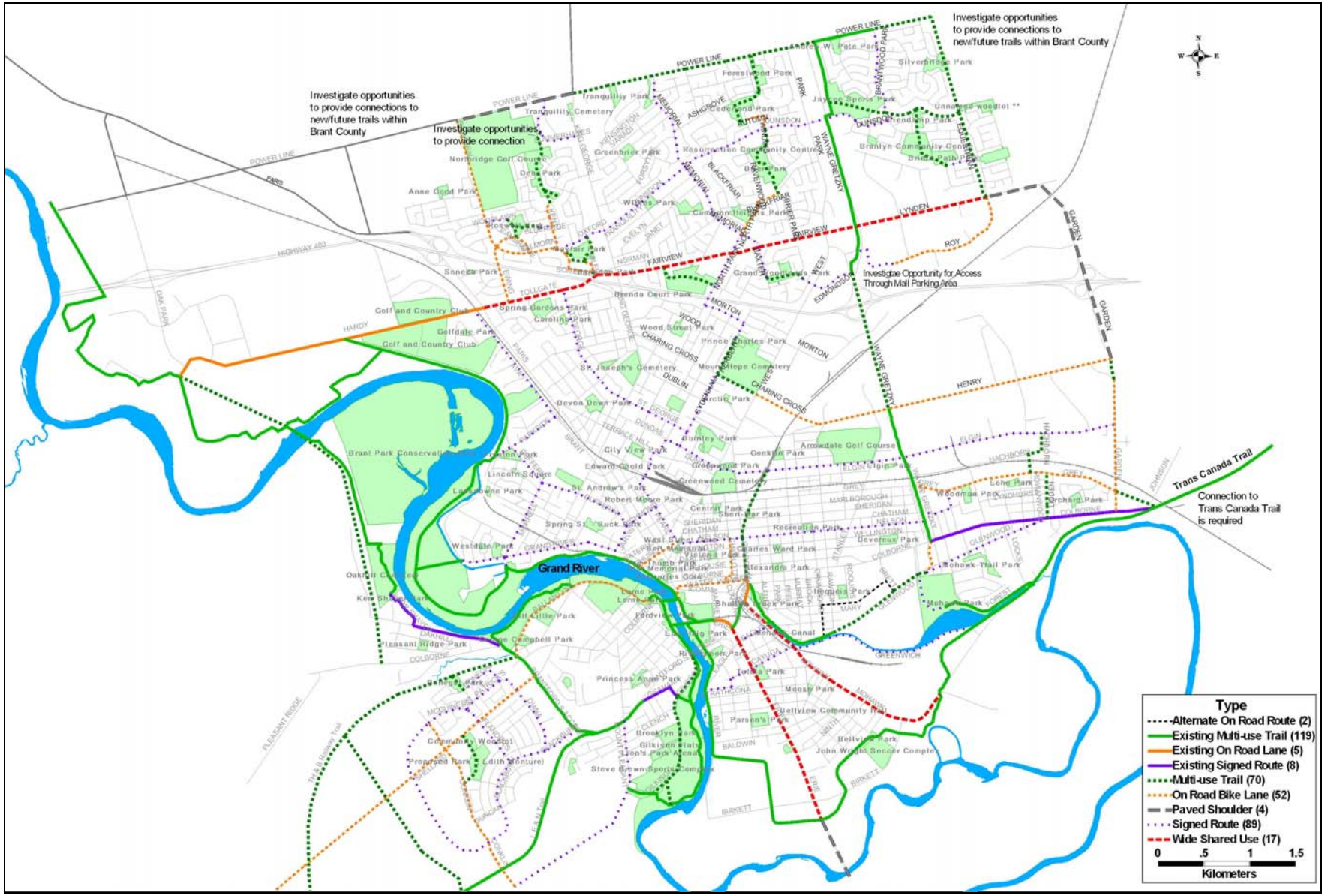
Integration of Cycling and Other Modes

While walking and cycling can compete with the automobile for trips under 5km in length, trips of this length only represent about 45-50% of the total trips in the peak periods. This is forecast to reduce over time with continued growth in greenfield, suburban development areas. By 2031, however, approximately 30% of peak period trips are forecast to be between 5 and 15km in length. By promoting the integration of walking and cycling policies and infrastructure with transit, the potential market for both modes can be increased. In this context, the City should explore opportunities for providing bicycle racks on buses, particularly on routes serving student populations, and large employment centres.

Development and Maintenance of Trail Networks

A barrier free and comprehensive network of trails, and bicycle lanes will make travel by foot and bicycle more attractive for Brantford residents. As part of the Transportation Master Plan Update, an updated Cycling and Trail Network Plan, illustrated in Figure 8, has been developed to reflect the new strategic direction. For the first time, the Cycling and Trail Network Plan will be included in the Official Plan, which should improve the ability of the City to implement the recommendations. A detailed summary of the trail maps and the lengths of different types of trails can be found in the Transportation Master Plan Update report.

Figure 8 – Recommended Cycling and Trail Network Plan



A Plan for Road Network Improvements

The selection of a 'preferred transportation strategy' will not eliminate the need for road improvements, but it may influence the amount of road improvements or the type of road improvements that will best compliment the strategy.

Based on the key network deficiencies, illustrated previously in Figure 5, a series of network alternatives were developed and evaluated. As noted previously, the key city wide capacity deficiencies were found for trips travelling:

- East-West and/or North-South across the Grand River,
- North - South across Highway 403 (particularly in the east end of the City),
- East - West across the West Street / Clarence Street corridors through the downtown,
- North - South across the CNR line in the east and west ends of the City, and
- East - West across Garden Avenue.

The development of the networks began with a screening process to test different improvement alternatives using the City's transportation model to determine how effective they would be in solving forecasted capacity issues in these key areas.

This screening evaluation was set up as simple Pass/Fail test using two criteria:

1) Does the improvement solve the forecast capacity deficiency?

2) Does the improvement solve other capacity deficiencies in the network?

Answering no to both of these questions suggests that the transportation improvement alternative has no "need and justification", and does not address the forecasted transportation capacity problems. These improvements, therefore, were dropped from further evaluation.

Based on forecasts of future population and employment growth in the City, the results of this screening process showed that:

1. The majority of the traffic using the City's road network is generated by internal trip making.
2. The construction of new by-pass routes around the outside of the City, or the upgrading of existing County Roads around the edge of the City would not draw enough traffic out of the congested road corridors to solve the forecasted capacity deficiencies.

As a result of the screening process, five network alternatives were developed that incorporated a number of different improvements that did show some ability to address the key capacity problems in the City. Additional improvements were included in each network to address other localized capacity issues, that are forecast to arise due to jogs in the road network, discontinuous street segments, or localized development growth. A full description of the road networks that were evaluated is contained in the full Transportation Master Plan Update Report.

Under the EA Process, municipalities are required to consider all aspects of the environment in their assessment and evaluation of infrastructure projects. The EA Act

includes a broad definition of the "environment", including the technical, natural, social, cultural, built and economic environments. The EA Process requires a systematic evaluation of alternatives in terms of their advantages and disadvantages; and proponents are required to consider both positive and negative effects on the natural, social, cultural, and economic environments as part of their assessment and evaluation process.

As part of the overall Public Consultation Strategy for the Transportation Master Plan Update and Official Plan Review, the proposed evaluation criteria and indicators for use in evaluating subsequent road improvement alternatives was presented to the public and comments were requested. A full description of the evaluation criteria and indicators used in the evaluation process can be found in the Evaluation Process Report. The evaluation criteria were grouped under the four key areas established as part of the Class EA process:

- ⇨ Traffic and Transportation
- ⇨ Socio-Cultural Environment
- ⇨ Natural Environment; and
- ⇨ Economic Environment

For the purpose of evaluation, each network alternative is subjected to a detailed comparative evaluation, using a "Reasoned Argument Process, which describes the advantages and disadvantages (or positive and negative affects) of each alternative in response to the evaluation criteria. Cumulative affects and benefits of all projects within the alternative are considered in the evaluation. Based on the descriptions provided, each alternative network is ranked in terms of how well it responds to the criteria. Opportunities to incorporate mitigation to offset potential adverse impacts are considered within this ranking process. This is commonly referred to a "Net Affects" evaluation.

It is important to note that the evaluation criteria were developed recognizing the system-wide approach used in a Master Planning Study, and the fact that for many alternative improvements the specific route or design details are not developed at this stage of study. Detailed route planning or design is typically undertaken in Phase 3 of the EA process: Assessment of Design Alternatives. Thus, the evaluation compares the relative difference in potential affects that could be experienced as a result of the improvement rather than undertaking detailed assessments of specific affects, since the degree of impact could change significantly depending on the final route and / or design treatment chosen.

Table 5, provides a summary of the evaluation results for the network alternatives. A full description of the evaluation results and detailed assessment can be found in the Full Transportation Master Plan Report.

Table 5 – Summary Evaluation of Alternative Networks

Category	Do Nothing (Committed Projects)	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5 (Hybrid)
Transportation / Traffic	**WORST** (in all criteria)	**4th BEST**	**2nd BEST** (Best in 2/4 criteria - Network Travel Time & Support for Transit)	**3rd BEST**	**5th BEST**	**BEST** (in all criteria)
Social / Cultural Environment	**BEST** (Best in 3/4 criteria - Agricultural, Heritage & Impacts on Neighbourhoods)	**2nd BEST**	**WORST**	**3rd BEST** (Best in 1/4 criteria - Agricultural Impacts)	**3rd BEST**	**3rd BEST** (Best in 1/4 criteria - Noise Impacts)
Natural Environment	**BEST** (Best in 3/4 criteria - Environmentally Sensitive Areas, Other natural Areas, Habitat Areas)	**2nd BEST** (Best in 1/4 criteria - Environmentally Sensitive Areas)	**WORST** (Best in 1/4 criteria - Air Quality)	**3rd BEST** (Best in 2/4 criteria - Environmentally Sensitive Areas, Air Quality)	**2nd BEST** (Best in 1/4 criteria - Environmentally Sensitive Areas)	**4th BEST** (Best in 1/4 criteria - Air Quality)
Economic Environment	**3rd BEST** (Best in 1/4 criteria - Capital Cost)	**2nd BEST**	**2nd BEST** (Best in 1/4 criteria - Support Future Growth Areas)	**WORST**	**4th BEST**	**BEST** (Best in 2/4 criteria - Affects on Businesses & Support Future Growth Areas)

TECHNICALLY PREFERRED

The Recommended Alternative:

- Provides the best transportation benefits
- Provides significant social / cultural benefits - reducing noise in neighbourhoods and minimizing neighbourhood disruption
- Potential for negative affects to Agricultural and Heritage Resource areas can be mitigated or avoided during route planning and design
- The potential for negative affects to Environmentally Sensitive Areas, Other Natural Areas, and Habitat Areas can also be mitigated or avoided during route planning and design
- Positive environmental benefits will result in terms of air quality due to reduced congestion
- Property acquisition costs will be potentially lower and there is significantly less potential for impacts on existing businesses.
- Provides the best support for the City's growth objectives and planned growth areas, including the downtown.

The recommended network improvements were presented to the public at PCC 3, on September 19, 2006. The Recommended Road Network Improvement Plan is illustrated in Figure 9, below.

Figure 9

RECOMMENDED ROAD NETWORK IMPROVEMENTS

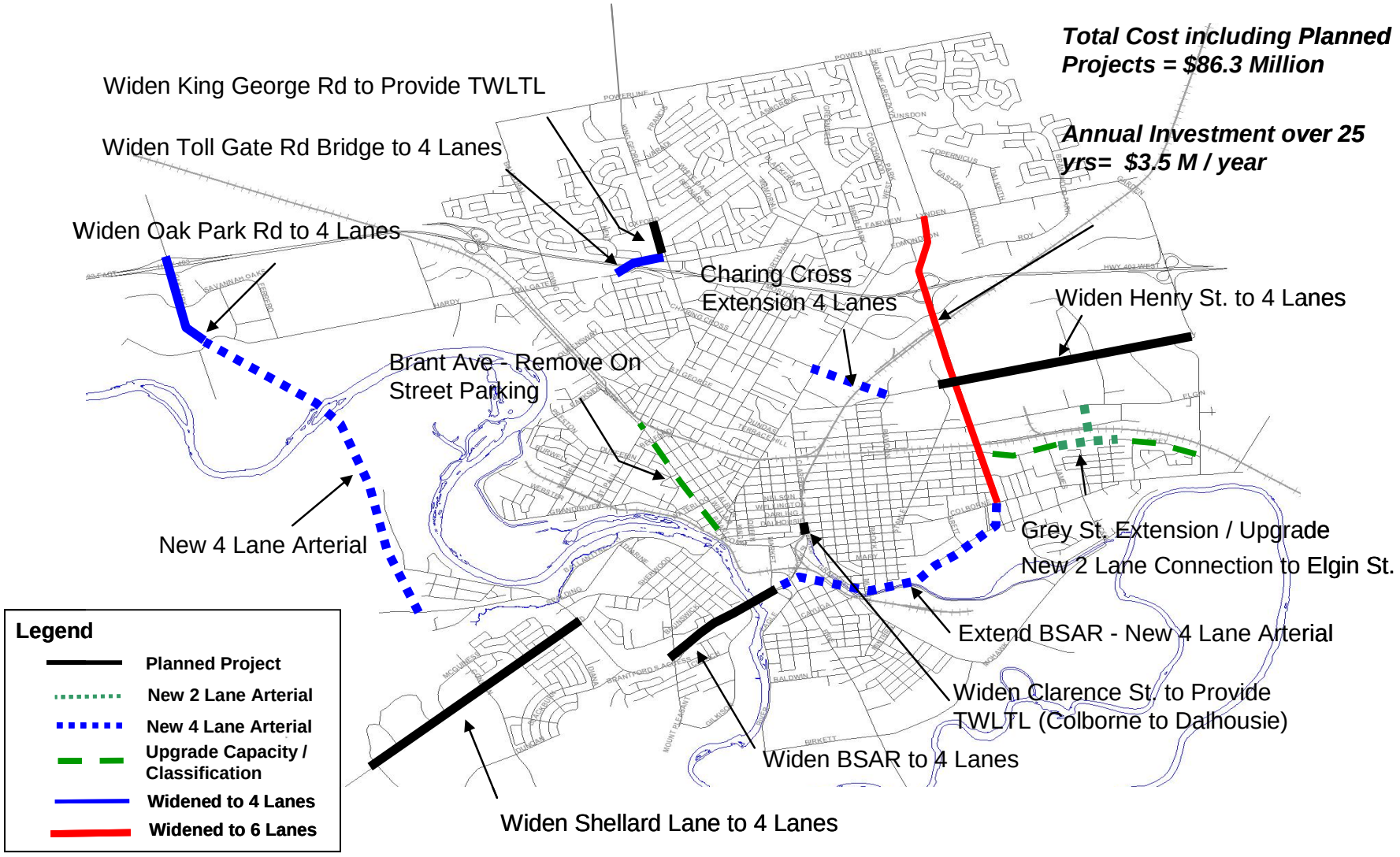
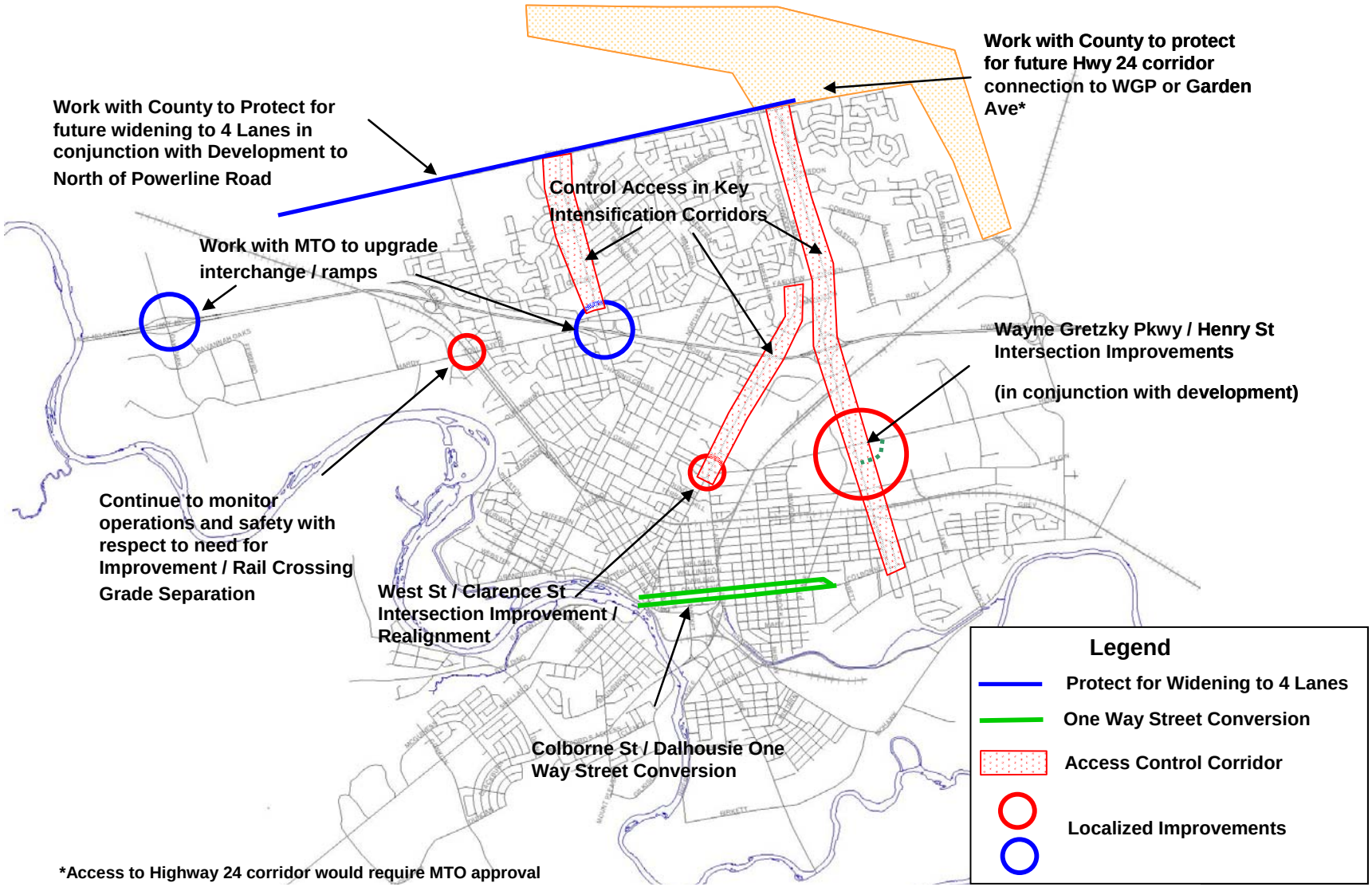


Figure 10


Work with County to protect for future Hwy 24 corridor connection to WGP or Garden Ave*
Work with County to Protect for future widening to 4 Lanes in conjunction with Development to North of Powerline Road
Control Access in Key Intensification Corridors
Work with MTO to upgrade interchange / ramps
Wayne Gretzky Pkwy / Henry St Intersection Improvements
(in conjunction with development)
Continue to monitor operations and safety with respect to need for Improvement / Rail Crossing Grade Separation
West St / Clarence St Intersection Improvement / Realignment
Colborne St / Dalhousie One Way Street Conversion
Legend
Protect for Widening to 4 Lanes
One Way Street Conversion
Access Control Corridor
Localized Improvements
*Access to Highway 24 corridor would require MTO approval

A Plan to Support Downtown Revitalization

The Downtown Revitalization Plan is a companion piece to the City's Master Plan, which guides overall development and growth in Brantford over a twenty five-year time horizon and serves as the basis upon which capital improvements are made over this period.

Downtown Revitalization Plan was initiated to address a number of concerns in the downtown including:

- Changing economy
- Unattractive environment
- Deficient pedestrian and cycling amenities
- Downsides to the existing parking provisions, abundant long-term on/off-street parking which is encouraging long term commuter parking

Within this context the key objectives of downtown core area strategy includes:

- Diverting through and truck traffic to alternative by-pass routes around the core area,
- Providing greater priority for pedestrians, public transit and bicycles on downtown roadway rights-of-way, and
- Parking policies that favour short-term business oriented parking over all-day commuter-oriented parking".

The Downtown Revitalization Strategy envisions a vibrant, people focused place. Given that increased population / employment in the downtown will increase pedestrian demands on downtown streets, opportunities for creating a "People Place" as opposed to rendering downtown transportation system as a thoroughfare is fundamental.

Transportation is seen as a key feature in supporting downtown Brantford revitalization. Conversion to a two-way street system has been suggested as one key improvement to support downtown revitalization as it primarily supports destination traffic and can introduce opportunities to lower vehicle speeds and enhance pedestrian access and safety.

The 2002 Community Improvement Plan for the Downtown Recommended 3 key Transportation Measures to Support Downtown Revitalization:

- **On Street Parking** – Allow 2 hours free parking in the downtown and improve parking signage

- **Access to Off Street Parking Facilities-** Improve access between Colborne Street. and off-street public parking facilities

- **One Way Street System –** Convert Colborne and Dalhousie Streets to two way operation if economically feasible

Within this context, the work program for the Transportation Master Plan Update has undertaken to develop a “Downtown Transportation Plan”. It is important to note that changes to the downtown transportation system will not revitalize the downtown on their own; however, transportation improvements can provide positive support for other downtown revitalization initiatives and can support future growth.

Existing / Future Downtown Growth

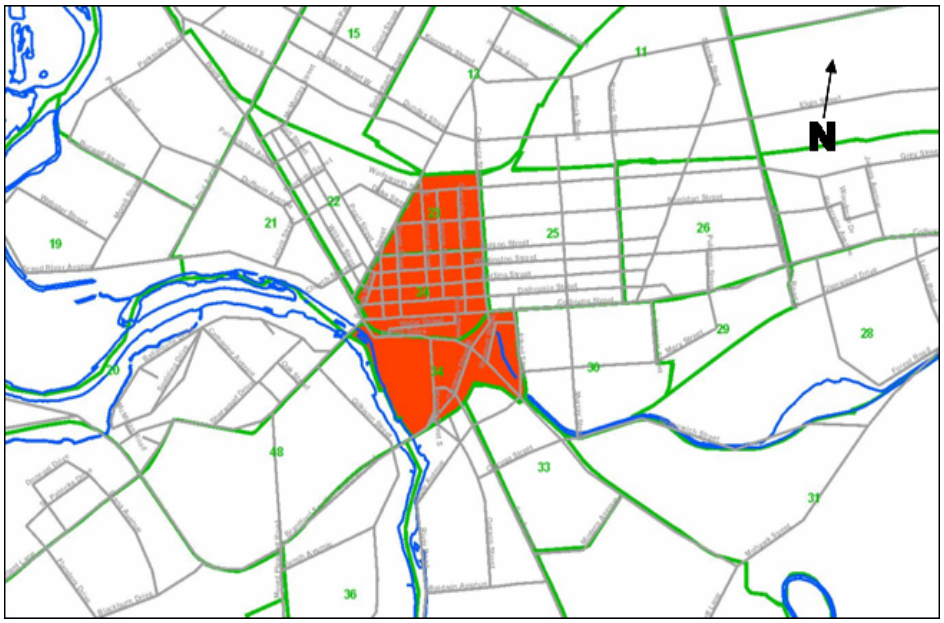
The Compact City growth scenario, adopted for the Official Plan Update and the Transportation Master Plan Update directs significant growth into the downtown, in accordance with its designation as Urban Growth Centre within the ‘Places to Grow’ plan. Table 6 summarizes the 2031 population and employment forecasts for the downtown area. Within the downtown population is expected to grow by 153% over today and employment is forecast to grow by over 80%.

Table 6 –Population and Employment Growth in the Downtown

	Population	Employment
2005	2,370	5,250
2031	6,000	9,500
Increase	3,630	4,250
% Increase	153%	81%

For the purpose of forecasting, the projected growth has been assumed to occur within the existing downtown urban core area, generally defined by West Street and Brant Avenue to the west, Elgin Street to the north, Clarence Street in the east, and the BSAR, to the south.

Figure 11 – Downtown Growth Areas



Role of the Downtown Street System

Based on today's travel patterns, the downtown street system primarily serves downtown destinations, although this varies depending on the corridor. Dalhousie Street is currently acting as a local street, with only 14% of traffic during the p.m. peak period proceeding through the downtown. Much of the through traffic to the west end of the City is currently using Clarence Street to the BSAR to proceed across the Grand River.

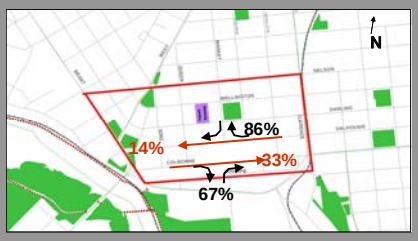
In the eastbound direction, along the Clarence Street corridor, the share of through traffic increases to about 33%, due to the direct connection to the Lorne Bridge across the River. With future planned growth, this role will change, as illustrated below, with through traffic making almost 50% of the total downtown traffic volume during peak periods, due to significant growth in the southwest that will increase East-West travel demands.

Figure 12 – Downtown Traffic Patterns

Today's Patterns

Dalhousie St – Primarily serves downtown destinations, less than 15% of peak hour traffic is passing through downtown

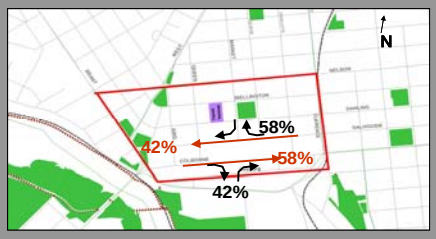
Colborne St – Serves through and downtown traffic – 33% or 1/3rd of all vehicles in the peak hour are passing through downtown



Future Patterns – Do Nothing

Dalhousie St – Will continue to serve downtown destinations, through traffic will increase to 42% of peak hour volumes

Colborne St – Through traffic will become more prominent than downtown traffic – 52% of vehicles passing through the downtown



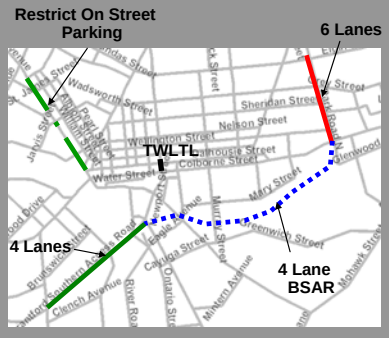
Creating a "People" Place

The Downtown Revitalization Strategy envisions a vibrant, people focused place and increased population / employment in the downtown will increase pedestrian demands on downtown streets. A two way street system, focused on serving destination traffic, can introduce opportunities to lower vehicle speeds and enhance pedestrian access and safety.

The Recommended Road Network Improvements will reduce through traffic from the downtown and will facilitate initiatives that focus on making the downtown street system more pedestrian focused.

Within this context, conversion to a two-way street system is recommended as a key improvement to support downtown revitalization.

Recommended Long Term Network Improvements



Downtown Road Network Improvements

To implement the conversion to a two way street system, some improvements will be required on Dalhousie and Colborne Streets. Based on forecasts of future growth, a two way street system will function satisfactorily until 2016 with the following minor improvements:

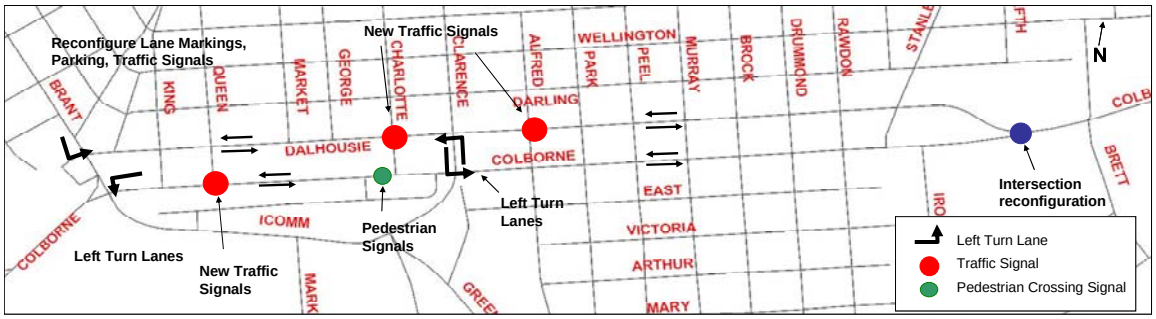
- New southbound left turn lane on Brant Avenue at Dalhousie Street
- New westbound left turn lane on Colborne Street at Brant Avenue / Icomm Drive
- Reconfiguration of the Dalhousie Street / Colborne Street intersection (design alternatives may include a round-about, traditional intersection, or partial one way street on Dalhousie Street)
- Reconfiguration of pavement makings, signage, and traffic signals

Assuming completion of the recommended long term road network improvements in the downtown, the proposed two way street system will continue to operate at acceptable levels with the following minor improvements:

- Install new traffic signals on Dalhousie Street at Charlotte Street and Alfred Street,
- Install new traffic signals on Colborne Street at Queen Street,
- Install Pedestrian Signals on Colborne Street in the vicinity of Charlotte Street, and
- Construct northbound and south bound left turn lanes on Clarence Street at Dalhousie Street and Colborne Street

Figure 13, below, illustrates the recommended improvements.

Figure 13 – Recommended Improvements to Support One Way Street Conversion



The downtown transportation plan also includes a number of specific recommendations to support downtown growth and revitalization that were included in the City's overall transportation strategy. These include measures to improve the downtown transit system, walking and cycling trial connections into the downtown, and the development of a downtown parking strategy. The key elements of these recommendations are summarized below.

Enhanced Transit for the Downtown

Enhancing transit usage in the downtown is one of the key strategies that will support downtown growth. The recommended approach includes service improvements in the short term, building to the creation of a downtown shuttle service and a potential new downtown transit terminal in the longer term. The key recommendations include:

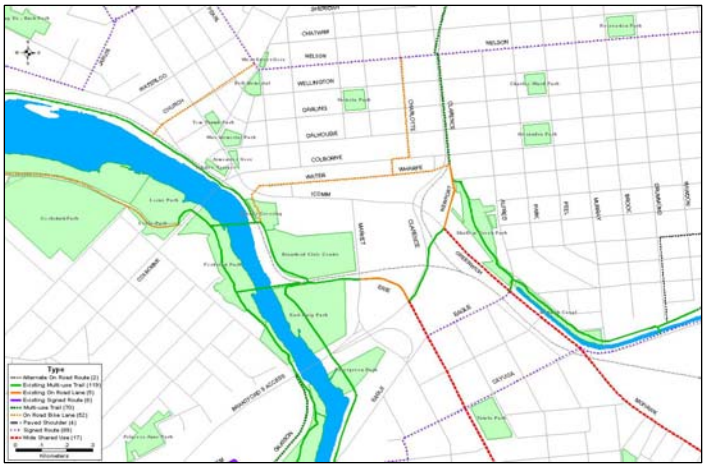
- Improvements to downtown transit stop locations / shelters
- Provide new transit terminal in central location (in close proximity to new development nodes if possible)
- Implement downtown shuttle service to complement existing fixed routes using:
  - Small Buses
  - Short Routes
  - Frequent headways (i.e. 10-15 minutes)
  - Designed to link employment / residential areas, key attractions (Sanderson Centre, Market Square, Casino), municipal parking lots, and existing Via Rail station.
- Incorporate Transportation Demand Management Policies into new development applications for major employers in the downtown

Improve Walking & Cycling Facilities in the Downtown

Enhancing walking and cycling facilities in the downtown will be required to support the anticipated increase in pedestrian and cycling activity generated by increased downtown growth. The recommended improvements include trail connections into the downtown, on road cycling routes through the downtown (on signed routes and dedicated lanes), and policies to support cycling and walking. Figure 14 illustrates the recommended walking and cycling trail connections within the downtown area. The other key recommendations include:

- Provision of fully accessible pedestrian crossings in the downtown;
- The examination of opportunities to enhance sidewalk width and incorporate streetscape improvements through the downtown as a result of the conversion to a two way street system;
- Provision of cycling facilities at all municipal owned attractions / buildings in the downtown, such as bicycle racks / storage, showers / lockers, etc;
- Examining the feasibility of introducing bicycle racks on transit buses; and
- Providing destination signing on the existing recreational trail system at key connections into downtown to highlight destinations served by connection routes.

Figure 14 - Recommended Walking & Cycling Trail Connections in the Downtown



Parking Strategies for the Downtown

The demand for on-street parking has greatly increased in two years, in part due to the increase in enrolment at Laurier University. Off street parking facilities in the downtown core are reaching their practical capacity, and new employment growth in the downtown core will increase the demand. The need for additional parking spaces in the downtown was identified in the 2004 Downtown Parking Study.

The current parking supply in the downtown is estimated at 3,720 spaces, comprised of:

- 463 on street spaces (13%)
- 1242 municipal spaces (33%)
- 2015 private spaces (54%)

New population and employment growth is expected to increase the parking demand to 7600 spaces by 2031 based on current parking spaces per capita trends.

Figure 15 – Existing Downtown Parking Garage

By managing the supply, price and regulation of parking facilities, opportunities to significantly affect travel behaviour can be realized. When appropriately applied, parking management can significantly reduce the number of parking spaces required, the cost of building new parking facilities, and provide a variety of economic, social and environmental benefits

" Managing the supply and demand for parking in the downtown can reduce auto traffic by 2%..."

Based on a review of the opportunities available to manage parking in the downtown, the following key policy directions have been recommended in the Transportation Master Plan Update.

Develop Detailed Parking Plan for Downtown

The City should complete a detailed downtown parking plan to:

- Identify opportunities to provide new municipal lots near employers / key destinations,

- Establish a supply of 6,000 to 6,800 spaces by 2031 (10 % reduction in spaces on per capita basis)
- Provide a target of 50% of spaces in municipal lots, 40% in private lots, 10% on street to allow for better management of parking prices and parking demands, and
- Develop an infrastructure plan to provide 2200 new municipal spaces by 2031, which may require new surface lots or a new parking garage

Implement Parking Management Policies

Parking management policies should be incorporated into the Official Plan or implemented at municipally controlled lots in the downtown that include:

- Lower parking requirements for development in downtown and along major transit routes;
- Encouraging "Cash in Lieu" of private parking for downtown redevelopment, with the cash payments invested in new municipal parking lots;
- Establishing a preferential parking program in downtown municipal lots for carpools, with a target of 5-10% of supply, and provide discounts for carpools;
- Increasing long term (all day) parking rates to encourage transit usage (a transit monthly pass currently cost twice as much as a monthly parking pass)
- Increasing hourly parking rate at municipal lots and metered spaces to encourage turnover, but provide first ½ hour free in municipal lots and on street to encourage short term parking to support area businesses;
- Consideration of converting existing metered parking to pay and display;
- Development of a standby bus parking area for the Sanderson Centre (i.e. Darling Street behind building); and
- Development of Urban Design Guidelines for parking facilities / downtown development

IMPLEMENTATION & MONITORING

A Transportation Master Planning process is intended to address the requirements of Phases 1 and 2 Municipal Class EA planning process, providing an assessment of the problem or opportunity and an assessment of alternative solutions. The recommendations from a Transportation Master Plan can be implemented in a number of ways. Many of the policy recommendations have been incorporated into policy documents within the Official Plan update. These recommendations would be implemented through processing of land use applications under the Planning Act. For infrastructure projects recommended as part of the Master Plan that fall within the Schedule B category, approval of the Master Plan will constitute approval to proceed with the project. For more extensive Schedule C projects, with higher potential for environmental affects (both positive and negative), further project specific Environmental Assessment

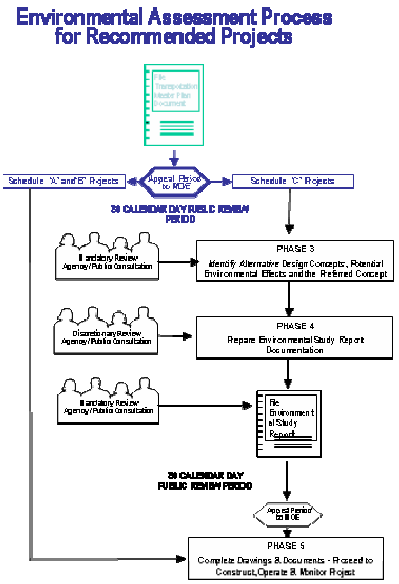


Figure 16 - EA Process

Studies may need to be completed by the City to examine alternative designs prior to implementation.

To guide the City in managing the implementation of the infrastructure plans recommended in this Transportation Master Plan Update, a suggested timing for recommended projects has been developed based on technical assessment that considered:

- Forecasts of transportation demands for interim horizon years and assessment of when the improvements are required to address deficiencies. The horizon years assessed include:
  - 2011 – 0-5 years
  - 2016 – 5 – 10 years
  - 2021 – 10 – 15 years
  - 2031 – 15 – 25 years
  - Beyond 2031

- The need to undertake future Class EA studies to determine the recommended design for road improvements projects. For Schedule C projects this could include route planning (for new road corridors), preliminary engineering design (initial design, mitigation of local impacts, refine cost estimates, etc) , and property acquisition (where required). For Schedule A and B projects, this would include completion of detailed design and preparation of tender drawings.

- Opportunities to integrate bicycle / walking infrastructure work with road work where feasible

- The desire to distribute capital budget requirements across the life of the plan.

It should be noted that the City may chose to implement the recommended projects in a different order or phasing that has been suggested in the Master Plan to accommodate council priorities, the need to coordinate with other infrastructure works (i.e. sewer work), planned developments in the area, or other considerations beyond the scope of this project to consider.

Figures 17 through 22 illustrates the recommend phasing and implementation plan for road works recommended as part of the Transportation Master Plan Update. A detailed capital program summary and phasing plan for road improvements, walking and cycling trail infrastructure, and transit investments is provided in Tables 7 through 10.

Transportation Plan Monitoring

A Transportation Master Plan is not intended to be a static document. As growth and economic conditions change over the next few years the City should consider the need to update this Master Plan to take advantage of or reflect changes beyond the scope of this study to address. The following recommendations should be considered in the ongoing monitoring of transportation conditions in the City.

The City should maintain a Transportation Master Plan, incorporating a traffic demand forecasting model, to provide recommendations on the management of future travel demand, the pedestrian system, the bikeway system, the transit system, the rail system and the roadway network. The Master Plan may also contain recommendations on traffic calming, parking management, truck routing, and community transportation, monitoring and implementation. The Transportation Master Plan will be monitored on an annual basis, taking into consideration the following:

- the results of the annual traffic count program at key screenlines and on key roadways;
- the results of the annual traffic count program at selected key intersections and routes;
- new trends and technologies in traffic operations and management;
- private sector initiatives in implementing traffic demand management measures;
- the status and progress towards achieving transportation system performance targets;
- the status of transportation related provincial initiatives, policies and funding programs;
- population growth and land use changes within the community; and
- the need to re-assess, amend or update components of the Transportation Master Plan.

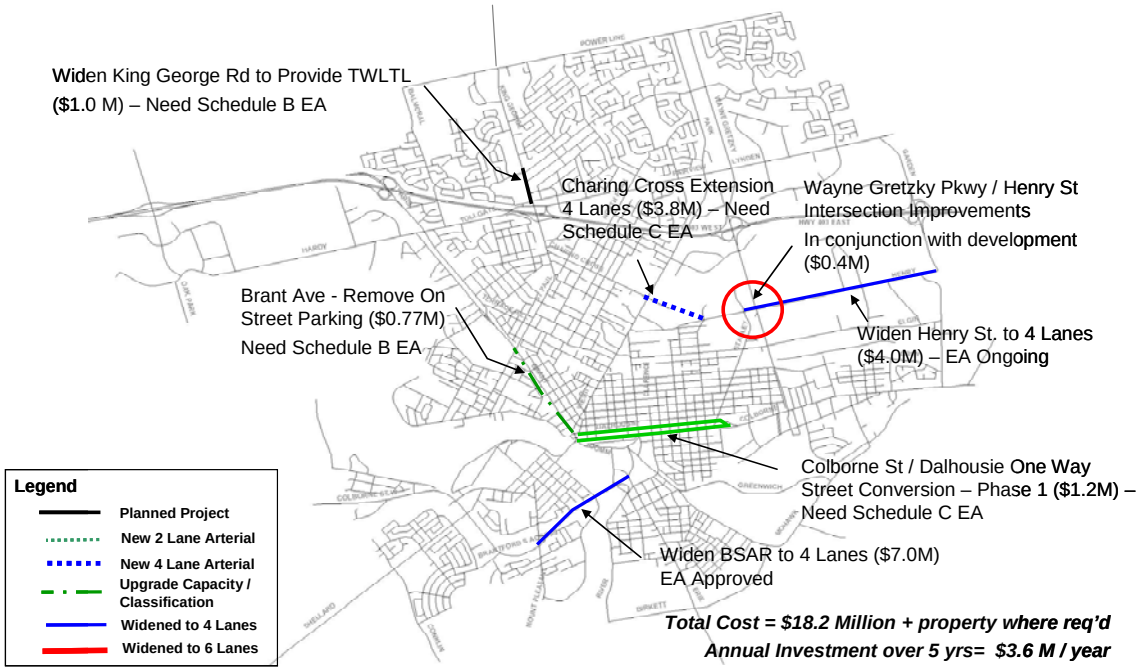
The City should establish and maintain guidelines for the preparation of transportation impact studies to be carried out to assess the impact on the Transportation Master Plan, the road system and adjacent land uses from proposed developments and land use changes that will result in a significant increase in traffic.

The City should continue to participate in the Transportation Tomorrow Survey (TTS), undertaken every 5 years, to provide an update of transportation patterns in the City and surrounding area and to ensure that up to date information is available to assess changing transportation trends in the community;

The Director of Transportation should provide a Transportation Perspective Report to Council every 5 years, (scheduled for 6 months following the release of published TTS data), to advise council on recent trends with respect to transportation patterns within the City, and the need to update the Transportation Master Plan;

It is recommended that the Transportation Master Plan be reviewed and/or updated every 5 years, in conjunction with statutory requirements to review the Official Plan. Given the close integration between land use planning, land use policy, and transportation; any updates to the Transportation Master Plan should be undertaken in conjunction with the Official Plan Update, as was done with this study.

Figure 17 **IMMEDIATE ROAD NETWORK PRIORITIES – 2006 - 2011**



Colborne Street / Dalhousie Street One Way Street Conversion – Phase 1

Prior to implementing the one way street conversion it will be necessary to complete a Schedule C EA Study to refine the design details for the conversion and to provide an opportunity for local business owners to provide input into the study, particularly where improvements may affect on street parking.

The following improvements are required to implement phase 1 on the conversion.

Intersection/Location	Improvements	Cost
Dalhousie/Brant	Southbound Left Turn Lane	$110,000
Colborne/Icomm	Westbound Left Turn Lane	$60,000
Dalhousie/Colborne	Intersection work - Adjustments to curb/island - turning lanes	$210,000
Minor Intersections Lane Configuration	Pavement Marking / Signs (27 @ $1,700 per intersection)	$46,000
Signals	Modify Existing Traffic Signals (14 @ $50,000/intersection)	$700,000
Class EA		$70,000
Total Cost		**$1,200,000**

Figure 18 – Phase 1 Improvements Downtown

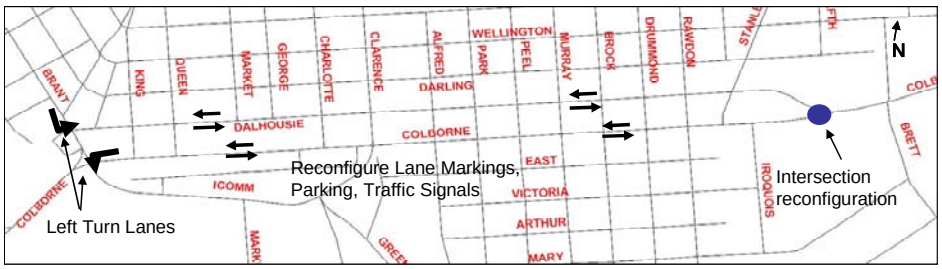
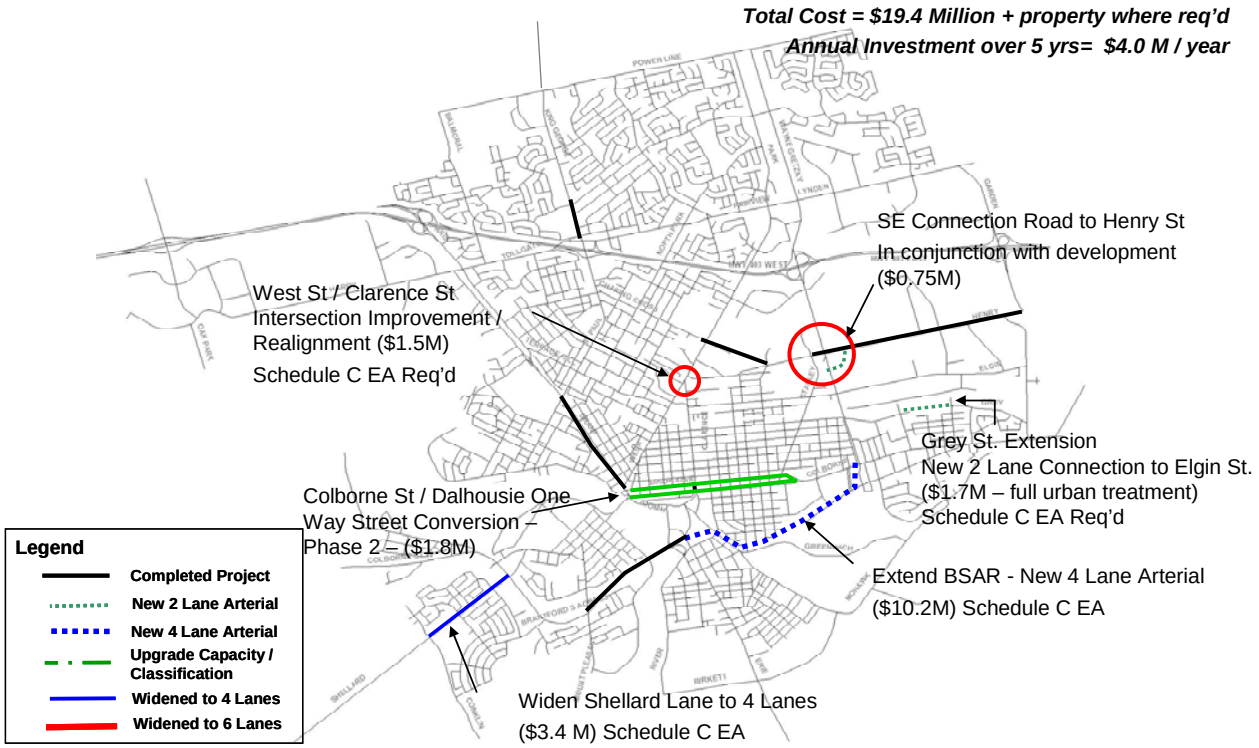


Figure 19

MEDIUM TERM ROAD NETWORK PRIORITIES – 2012 - 2016



The BSAR extension is forecast to be required between 2012 and 2016, based on forecasts of population and employment growth for the 2011 and 2016 horizon years provided by the City planning department. Should development of the Southwest residential lands or growth in the downtown proceed more quickly than forecast, the need for this connection could be accelerated. The EA study for the BSAR extension through the Glebe lands will need to be completed in accordance with the Canadian Environmental Assessment Act requirements. The lead time for completion of this study to finalize the route and design features may require initiating this study prior to 2011.

Comments received from the public and agencies, during the 30 day review period, highlight the need to ensure that care is taken during this subsequent EA study to mitigate adverse environmental and neighbourhood impacts associated with the construction of this new facility. For example, vegetative screening and plantings can reduce adverse visual affects, noise barrier or berms can mitigate increased noise where warranted, and the route planning can further review the actual route to minimize affects on existing neighbourhoods

The Grey Street extension is forecast to be required between 2012 and 2016 based on forecasts of population and employment growth, however there is potential for development in this area which may trigger the need for this connection earlier than forecast. The cost to implement this connection is based on providing a full municipal road cross section with urban drainage to arterial road standards.

The Wayne Gretzky Parkway / Henry Street intersection improvements may be required prior to 2012 to accommodate currently planned development in the area and so that the work is planned to coincide with the planned upgrade and widening of Henry Street.

Colborne Street / Dalhousie Street One Way Street Conversions – Phase 2

The following improvements are required to implement phase 2 on the conversion. The two way left turn lane on Clarence Street was also included in the recommended road network improvement plan, as this project is currently included in the City's 5-10 year capital forecast and would be required with or without the One Way Street Conversion. The estimate for this project includes an estimate of the cost to acquire property on the west side of Clarence Street to facilitate the widening. If CN Rail decides to abandon the spur line that runs along the East side of Clarence Street, the City should acquire this property for the widening.

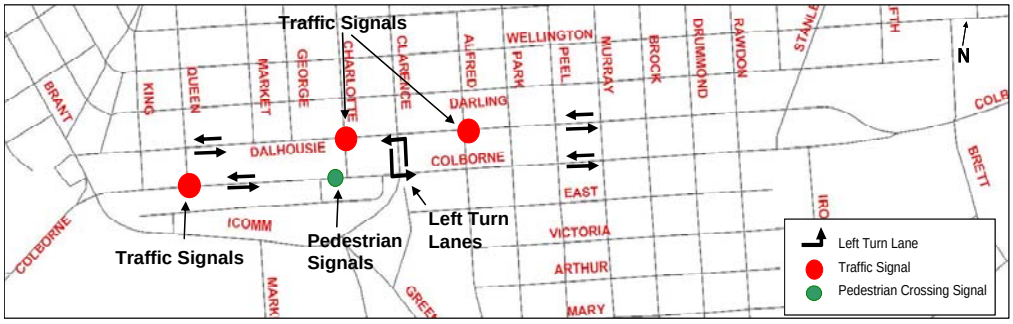
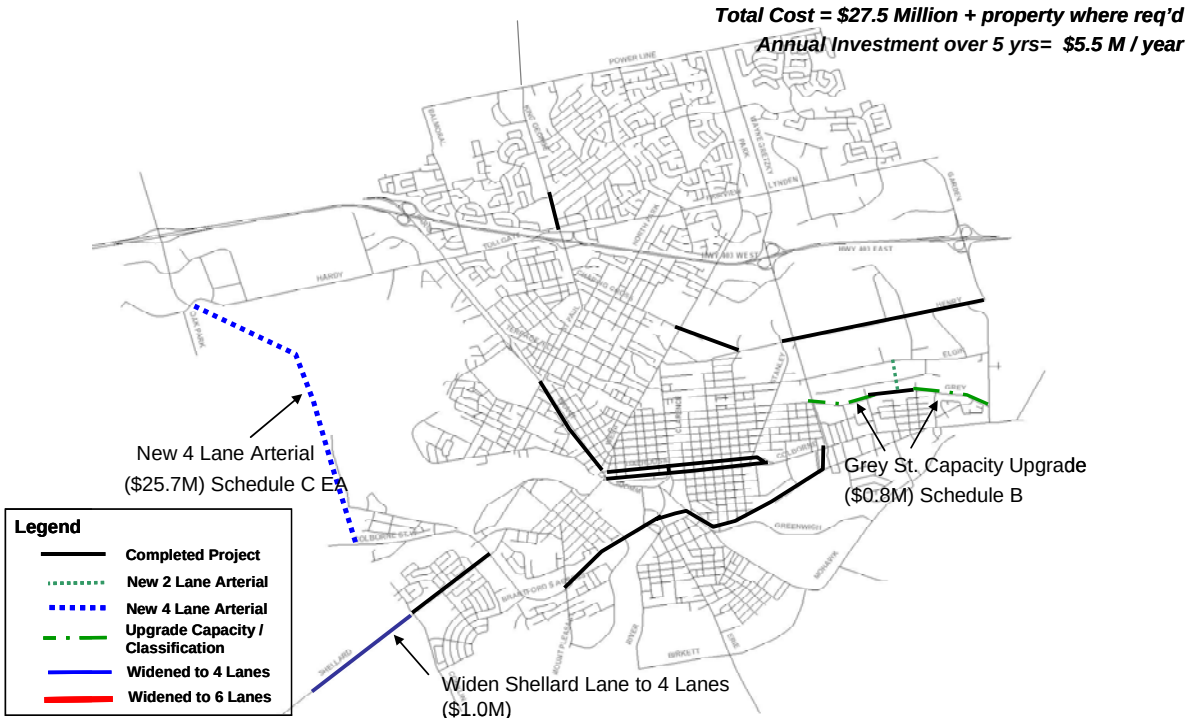


Figure 20 – Phase 2 Improvements Downtown

Intersection/Location	Improvements	Future (By 2016)
Signals	Install Three New Traffic Signals + Pedestrian Signal	$350,000
Dalhousie/Clarence	Two Way Left Turn Lane along Clarence St	$1,000,000
Colborne/Clarence	Property Acquisition	$550,000
Total Cost		**$1,900,000**

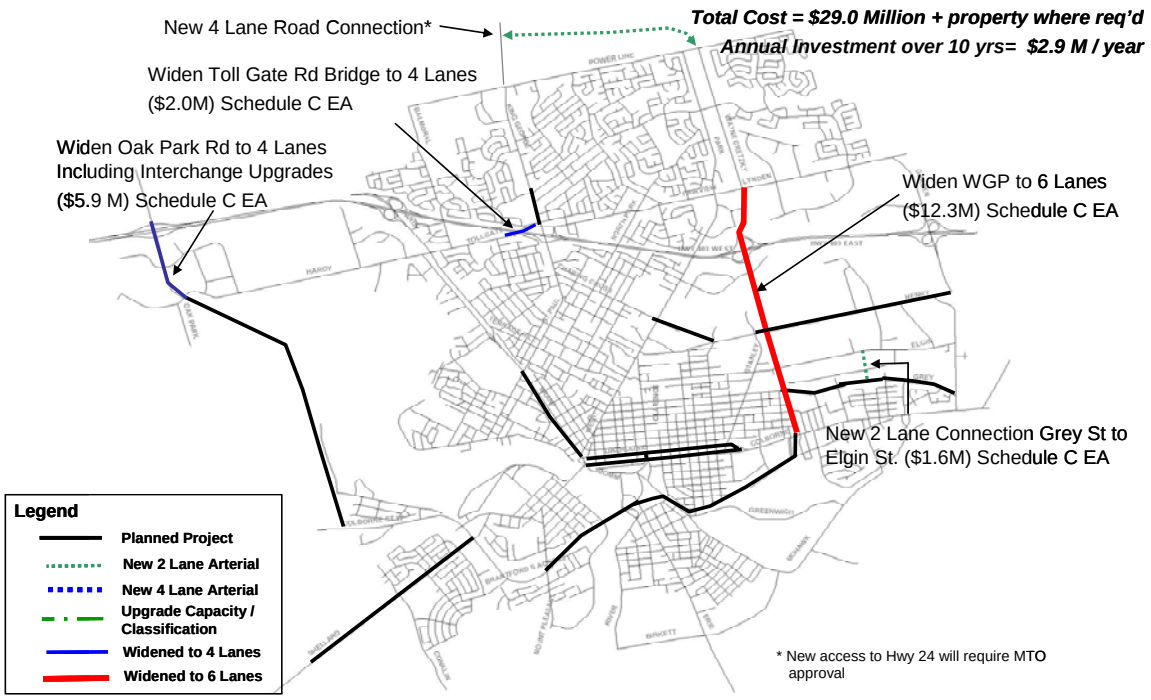
Figure 21 ROAD NETWORK PRIORITIES – 2017 - 2021



The Oak Park Road extension is forecast to be required between 2017 and 2021, based on forecasts of population and employment growth for the 2016 horizon year provided by the City planning department. Should development of industrial lands in the Northwest development area proceed more quickly than forecast, or if operational problems arise on Hardy Road at the CN Rail Crossing, the need for this connection could be accelerated.

Given the need to undertake detailed route planning and preliminary design for this new connection, the Environmental Assessment Study for this new road connection may need to be initiated well before 2017, to ensure that a corridor is protected from future development and that sufficient design work and public consultation can be included to address environmental concerns in the corridor. Comments from review agencies, such as Ministry of Natural Resources, have highlighted the need for continued consultation during the subsequent EA study to ensure that the route planning and design of this facility considers the potential affects on natural features in the area and incorporates mitigation measures to address any identified impacts.

Figure 22 LONG TERM ROAD NETWORK PRIORITIES – 2022 - 2031 and Beyond



The widening of Wayne Gretzky Parkway to 6 lanes is forecast to be required between 2022 and 2031, although this is based on projected population and employment growth estimates prepared by the City Planning Department. Should city wide growth proceed quicker than forecast, or if operational problems arise at key intersections in the corridor, the need for this improvement may occur prior to 2022.

The need for and timing of the new arterial road connection between Highway 24 and Wayne Gretzky Parkway is related to potential growth to the north of Powerline Road, within lands currently under the jurisdiction of Brant County. The need for this road connection may also be influenced by the recommendations resulting from Ministry of Transportation's Highway 24 corridor study, which is not scheduled to be completed until 2008 / 2009. The City and County should work together to protect a corridor should the need for this route be required in the future.

With the construction of the Oak Park Extension by 2021, combined with full build out of the Northwest Industrial area, the existing 2 lane section of Oak Park Road and the interchange with Highway 403 will also require improvements. Widening to 4 lanes through the interchange will require the reconstruction of the interchange ramps and widening of the existing bridge across Highway 403. Depending on the timing for full build out of this industrial park, the interchange upgrades may be required prior to 2021 and the City and MTO should continue to monitor the operations of this interchange after completion of the Oak Park Road extension.

Table 7 –Implementation Plan - Road Works

Road Network Improvement Implementation Plan

Project	Description	Estimated Cost (2006$)					EA Schedule	Notes
		2007-2011	2012-2016	2017-2021	2022-2031	Beyond 2031		
King George Rd Widening to 5 lanes	Dunsden Rd to Tollgate Rd	**$ 1,000,000**					B	
Downtown One Way Street Conversion	Brant Ave to Colborne / Dalhousie	**$ 1,200,000**	**$ 1,800,000**				C	1
	Brant Ave / Dalhousie Southbound Left Turn Lane	$ 110,000					B	
	Colborne St / Brant Ave /Icomm Dr Westbound Left Turn Lane	$ 60,000					B	
	Localized Intersection Improvements (various locations)	$ 210,000					B	
	Lane Marking	$ 50,000					B	
	Traffic Signal Modifications	$ 700,000					B	
	Class EA	$ 70,000						
	Clarence St Widening to 5 Lanes - Install Turning Lanes between Colborne St to Dalhousie St		$ 1,550,000				B	
	New Traffic Signals / Pedestrian Crossing Signals		$ 250,000				B	
Brant Ave Upgrades	Localized Turning Lanes and Removal of On Street Parking, St Paul to Dalhousie	**$ 770,000**					B	
Henry St Wdening to 4 Lanes	Wayne Gretzky Pkwy to Garden Ave	**$ 4,000,000**					C	
BSAR Widening to 4 Lanes	Mt Pleasant to Erie Ave including Grand River Bridge	**$ 7,000,000**						
Clarence St / West St Intersection	Realign West St and Clarence St intersection		**$ 1,500,000**				C	
Charing Cross Exrtension	New 4 Lane Arterial Road - West St to Henry St	**$ 3,800,000**					C	
WGP / Henry St intersection improvements	Dual Turning Lanes	**$ 400,000**					A	
	SE Connection Road to Henry St		**$ 750,000**				B	
Shellard Lane Widening to 4 Lanes	Colborne St W to Conklin Rd		**$ 3,400,000**				C	
Shellard Lane Widening to 4 Lanes	Conklin Rd to West City Limit			**$ 1,000,000**			C	2
BSAR Extension	New 4 Lane Arterial Road Extension - Market St to Colborne St E		**$ 10,200,000**				C	3
Grey St Extension	New 2 Lane Arterial Road - James to Rowanwood		**$ 1,700,000**				C	4
Oak Park Rd Extension	New 4 Lane Arterial - Hardy Road to Colborne St W			**$ 25,700,000**			C	5
	Widen Existing Oak Park Rd to 4 Lanes - Hardy Rd to N of Hwy 403				**$ 5,900,000**		C	
Wayne Gretzky Parkway Widening to 6 Lanes	Colborne St to Lynden Road				**$ 12,310,000**			
Grey St Capacity Upgrade	Wayne Gretzky Pkwy to James			**$ 480,000**			B	
	Rowanwood to Garden Ave			**$ 290,000**			B	
Grey St / Elgin St Connection	New 2 Lane Road Connection across CNR (Between James and Rowanwood)				**$ 1,600,000**		C	
Tollgate Road Widening to 4 Lanes	Widening St George Rd to King George Rd including bridge across Highway 403				**$ 1,900,000**		C	
New Arterial Road Connection Between Hwy 24 and Wayne Gretzky Parkway	New 2 Lane Aererial Road Connection					**$ 7,330,000**	C	6
	Total Capital Cost	**$ 18,170,000**	**$ 19,350,000**	**$ 27,470,000**	**$ 21,710,000**	**$ 7,330,000**		
	Annual Capital Program Needs	**$ 3,634,000**	**$ 3,870,000**	**$ 5,494,000**	**$ 2,904,000**			

Notes

1) The need and justification for the Downtown One-Way Street Conversion and associated Schedule B improvements has been provide through the Transportation Master Plan. Prior to implementation it is recommended that a Schedule C EA (Phase 3 and 4) be completed for the One Way Street Conversion to refine the specific design treatments and to ensure adeqaute opportunity for detailed consultation with downtown business owners.
2) The EA for the Shellard Lane widening should be completed for the entire section, although implementation could be phased to match development in the area
3) A coordinated Provincial / Federal EA will be required to be completed for the portion of the BSAR extension that was previously recommended to use portions of the Glebe Farm lands. For the portion of the corridor between Market St and the Glebe lands, the City has obtained EA approval, but this may need to be updated prior to implementation
4) Grey St extension may also be implemented in conjunction with future development of the adjacent lands through the Draft Plan Approval process. This could affect implementation timing, and the share of costs to be borne by the municipality
5) Although the Oak Park Road Extension is recommended for implementation between 2016 and 2021, the EA study and preliminary design should be completed between 2007 and This would allow the route to be protected from future development pressure and would provide flexibility to construct improvements in phases, which could include a two lane roadway as an initial phase between and 2016. A phased implmentation could spread the financial commitment across a longer timeframe reducing the annual budget commitment. The Highway 403/ Oak Park Road interchange be required upon full build out of the industrial park and connection of the new Oak Park Road extension. For planning purposes this has been assumed to occur between 2021 and 2031.
6) The new arterial road connection should be protected for and implemented in conjunction with the County as part of any new development to the north of Powerline Road. The need for this connection may occur earlier depending on overall land needs and development patterns in the City. The route may be identifiied through future Secondary Plan studies / OP Amendments, and approvals would be subject to the requirments of the Planning Act. Access to Highway 24 would be subject to MTO review and approval.
7) Project Cost Estimates have been completed based on 2006 construction unit cost estimates, excluding property costs, engineering costs and other non-roadway utility costs that may be included with capital projects. Project Costs have not been adjusted to reflect the contributions funded through development charges or shared funding agreements between the City and the province/ or County. Many growth related projects would be eligible for funding through development charges, reducing the financial impact on the property tax base.

Table 8 –Implementation Plan - Cycling & Trail Network

Trail Network Improvement Implementation Plan

Project	Description	Length	Unit Cost	Estimated Cost (2006$) by Horizon Year 2007-2011	2012-2016	2017-2021	2022-2031	EA Schedule	Notes
Walking / Cycling Corridors									
Powerline Road Trail	Multi use trail	3.4	$ 75,000	$ 255,000				A	
	Paved Shoulder	1.3	$ 197,000	$ 256,100				A	
Balmoral / Ewing	On-road Bicycle Lane	2.1	$ 26,500		$ 55,650			B	
Tollgate / Fairview	Wide Shared Use Lane	4.2	$ 560,000			$ 2,352,000		B	4
Downtown / CNR Trail	Multi use trail	1.4	$ 75,000			$ 105,000			
Wayne Gretzky Parkway	Multi use trail	1.6		$ 1,900,000				B	1
Memorial Dr	Signed Route	2.3	$ 1,725	$ 3,968				A	
Dunsdon St	Signed Route	3.8	$ 1,725	$ 6,469				A	
North Park / Sydenham Route	Signed Route	1.9	$ 1,725	$ 3,278				A	
	Multi use trail	1.0	$ 75,000	$ 75,000				A	
Charing Cross Route	On-road Bicycle Lane (new)	0.6	$ 162,000	$ 97,200				B	3
	Signed Route	0.5	$ 1,725	$ 863				A	
Elgin St Route	Signed Route	4.8	$ 1,725		$ 8,194			A	
Garden Ave	Paved Shoulder	3.0	$ 197,000			$ 591,000		A	
	On-road Bicycle Lane (widen)	1.5	$ 262,000			$ 393,000		B	2
St George St Route	Signed Route	2.1	$ 1,725		$ 3,623			A	
Ava Road Route	Signed Route	1.4	$ 1,725		$ 2,415			B	
Nelson / Pearle St Route	Signed Route	4.7	$ 1,725	$ 8,108				A	
BSAR / Glenwood Route	Multi use trail	1.7	$ 75,000		$ 127,500			A	2
	Signed Route	1.4	$ 1,500		$ 2,100			A	
Grey St Route	On-road Bicycle Lane (new)	0.5	$ 162,000		$ 81,000			B	3
	On-road Bicycle Lane (paint)	1.8	$ 17,000		$ 30,600			B	
Erie Ave	Wide Shared Use Lane	2.3	$ 262,000			$ 602,600		B	
	Paved Shoulder	0.7	$ 197,000			$ 137,900		A	
Mohawk St	Wide Shared Use Lane	2.7	$ 262,000			$ 707,400		B	2
Greenwich St Route	Signed Route	2.0	$ 1,725		$ 3,450				
Oak Park Road	Multi use trail	4.2	$ 75,000			$ 315,000		A	2
Gilkison St	Multi use trail	1.9	$ 75,000			$ 142,500			
Henry St	On-road Bicycle Lane (widen)	0.8	$ 262,000	$ 209,600				B	
	On-road Bicycle Lane (new)	2.5	$ 162,000	$ 405,000				B	2
Ballantyne Dr	On-road Bicycle Lane (widen)	2.0	$ 262,000	$ 524,000				B	
Mount Pleasant Rd	Signed Route	2.5	$ 1,725		$ 4,313			A	
Shellard Lane	On-road Bicycle Lane (new)	3.8	$ 162,000		$ 615,600			B	3
Conklin Rd	On-road Bicycle Lane (new)	2.1	$ 162,000		$ 340,200			B	3
TH & B Railway Trail	Multi use trail	5.0	$ 75,000		$ 375,000			A	
Neighbourhood Walking Cycling Trails / Connections									
Mayfair Neighbourhood	Signed Route	1.2	$ 1,725	$ 2,070				A	
	Multi use trail	2.3	$ 75,000	$ 172,500				A	
	On-road Bicycle Lane (paint)	2.4	$ 17,000	$ 40,800				B	
Wayne Gretzky Sports Centre	Multi use trail	0.6	$ 75,000	$ 45,000				A	
Grandwoodlands Park Loop	Signed Route	1.0	$ 1,725		$ 1,725			A	
	Multi use trail	0.5	$ 75,000		$ 37,500			A	
Roy Blvd / Mall Loop	Signed Route	0.6	$ 1,725		$ 1,035			A	
	On-road Bicycle Lane (paint)	1.5	$ 17,000		$ 25,500			B	
Brantwood Park Trail	Signed Route	1.3	$ 1,500	$ 1,950				A	
	Multi use trail	4.3	$ 75,000	$ 322,500				A	
Brier Park Route	Multi use trail	1.8	$ 75,000		$ 135,000			A	
	On-road Bicycle Lane (paint)	1.0	$ 17,000		$ 17,000			B	
Holmedale Neighbourhood	Signed Route	5.7	$ 1,500		$ 8,550			A	
Downtown	On-road Bicycle Lane (paint)	2.0	$ 17,000	$ 34,000				B	
Cayuga St	Signed Route	1.2	$ 1,725		$ 2,070			A	
Eagle St	Signed Route	0.4	$ 1,725		$ 690			A	
Grey St / Cainsville	Multi use trail	1.5	$ 75,000			$ 112,500		A	
Mohawk Park	Signed Route	0.6	$ 1,725		$ 1,035			A	
	On-road Bicycle Lane (widen)	0.4	$ 262,000		$ 104,800			B	2
Shellard Lane Neighbourhoods	Multi use trail	2.3	$ 75,000		$ 172,500			A	
	Signed Route	7.1	$ 1,725		$ 12,248			A	
Mary St Neighbourhood Route	On-road Bicycle Lane (paint)	1.3	$ 17,000		$ 22,100			B	
Total Capital Cost by Horizon Year				$ 4,363,404	$ 2,191,396	$ 5,458,900	$ -		
Annual Capital Program Needs				$ 872,681	$ 438,279	$ 1,091,780	$ -		
Total Length of New Facilities		**120.0**	**km**						

Notes

1) Based on Draft EA Report by Phillips Engineering, August 2006
2) Assumes construction at same time as road works, normal reconstruction, or rehabilitation
3) Assumes widening would occur with construction, therefore no curb or drainage relocation
4) Assumes widening to implement Shared Use Lane only - includes removal and replacement of curbs, drainage, light poles, etc

PN 87495

Transit Improvement Implementation Plan

The implementation of the Transit Improvement Plan has been phased over a 15 year horizon, between 2007 and 2021. The initial 5 year period focuses on modest service improvements and fleet upgrades and the introduction of a north end satellite terminal. In the 5 to 10 year period, in addition to fleet replacement, additional buses will be required for service expansion. A new downtown terminal would occur in this period, along with enhanced marketing and promotional activities. Beyond 2016, additional buses will be required for service expansion, including the enhanced service in the downtown, along with ongoing marketing and route optimization.
Table 9 summarizes the recommended transit investments by horizon period.

Table 9

Transit Improvement Implementation Plan

Project	Description	Estimated Cost (2006$) by Horizon Year				Total Program Cost
		2007-2011	2012-2016	2017-2021	2022-2031	
Bus Replacement	28 Buses	$ 9,000,000	$ 3,600,000			$ 12,600,000
New Buses For Service Expansion	6 Buses		$ 1,350,000	$ 1,350,000		$ 2,700,000
Existing Terminal Upgrades + Mall Terminal		$ 1,700,000				$ 1,700,000
New Downtown Terminal & Upgrades to Existing			$ 3,800,000			$ 3,800,000
Upgrade Stops / Shelters		$ 200,000				$ 200,000
Repairs to Transit Service Centre		$ 900,000	$ 800,000			$ 1,700,000
Fare Box Replacement		$ 800,000				$ 800,000
Marketing / Promotion / Route Optimization		$ 200,000	$ 350,000	$ 350,000		$ 900,000
Total Capital Cost by Horizon Year		**$ 12,800,000**	**$ 9,900,000**	**$ 1,700,000**	**$ -**	**$ 24,400,000**
Annual Capital Program Needs		**$ 3,200,000**	**$ 1,980,000**	**$ 340,000**	**$ -**	

Summary of Capital Expenditures

Table 10 provides a summary of the capital expenditure plan for the key capital infrastructure recommendations contained in the Transportation Master Plan Update. Approximately 20% of the program is directed towards investments in the City's transit system, 10% of the capital expenditures are required for walking and cycling trail expansion, and 70% of the program budget is for road network improvements. The annual transportation program investment is estimated at approximately $6.8 million per year over the initial 15 years of the plan; not including any potential funding that may be obtained through development charges, provincial / federal funding programs, or other sources.

Table 10

Capital Expenditure Plan

Improvement Plan	Funding Allocation	Estimated Cost (2006$) by Horizon Year				Total Program Cost
		2007-2011	2012-2016	2017-2021	2022-2031	
Transit Improvements	20%	$ 12,800,000	$ 9,900,000	$ 1,700,000		$ 24,400,000
Cycling and Walking Trails	10%	$ 4,363,404	$ 2,191,396	$ 5,458,900		$ 12,013,700
Road Network Improvements	70%	$ 18,170,000	$ 19,350,000	$ 27,470,000	$ 21,710,000	$ 86,700,000
Total Capital Cost by Horizon Year		**$ 35,333,404**	**$ 31,441,396**	**$ 34,628,900**	**$ 21,710,000**	**$ 123,113,700**
Annual Capital Program Needs		**$ 7,066,681**	**$ 6,288,279**	**$ 6,925,780**	**$ 4,342,000**	