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INTRODUCTION

The Town of Whitby is bounded by Lake Ontario to the south, Scugog Township to the north, City of Oshawa to the east, and the City of Pickering and Town of Ajax to the west. The population of Whitby has grown from approximately 93,860 in 2001 to 117,635 residents in 2006 and is expected to increase to 192,860 by 2031.

The transportation network identified in the Town’s Official Plan was last updated in 1995 and it does “now” not effectively address the present mobility needs of the community nor adequately protect for ultimate growth anticipated within the Town.

In recent years, there has been numerous transportation planning initiatives undertaken by various Provincial agencies and the Region of Durham further defining and refining mobility needs, issues and opportunities within and adjacent to Whitby. As a consequence, there is a “now” need for Whitby to complete it’s own transportation plan to ensure the Town grows and operates in a coordinated fashion that balances and optimizes liveability and mobility consistent with Provincial and Regional policies and objectives.

There has also been a dynamic drive in recent years to ensure a more coordinated blend in the planning of land uses, and auto and non-auto modes of travel. This drive has been a result of efforts to balance the demand for and provision of infrastructure in a manner which is effective and sustainable.

Failure to plan and protect for critical transportation infrastructure at this time, will limit opportunities for growth and safe travel from not only a Town, but Regional and Provincial perspective as well. In many locations, imminent protection is required as there is already significant congestion, limited opportunities for new mobility linkages, and near-term developments which may preclude viable routes. Missed opportunities for planning an efficient transportation system could result in operational problems with intensification.

To address strategic transportations, the Town of Whitby has completed a Transportation Master Plan (TMP) to define at a strategic level, an integrated mobility plan and guiding principles for the accommodation of future anticipated growth in a cost-effective, efficient, balanced and environmentally sensitive manner.

The intent of the findings and recommendations articulated in this document is that they are incorporated into other Town transportation planning and land use initiatives as well as serve as a supporting document for the updating of the Official Plan, and completion of future environmental assessment studies when implementing the individual projects.

THE MASTER PLAN REPORT

The Transportation Master Plan has been conducted in accordance with the Master Plan process as prescribed in the “Class Environmental Assessment for Municipal Road projects” (the Class EA) document. The purpose for completing this Study as a Master Plan has been to ensure that environmental assessment planning principals and public input are considered in the identification of existing and future transportation infrastructure requirements.

Approval of this document by the Town reflects endorsement of the Master Plan and overall transportation system requirements but does not represent formal approval of any individual element of the transportation system. Although the Master Plan is intended to satisfy Phases 1 and 2 of the Class EA process, formal approvals can only be granted following the appropriate environmental assessments and public review.

Transportation Master Plans typically differ from project specific studies (or traditional traffic impact studies) in that they are undertaken as strategic plans and recommend a series of transportation works which are distributed throughout a "large" study area and which are to be implemented over a period of time. The scope of these studies usually includes a broader analysis of the transportation system in order to identify a framework for future transportation requirements.  

While these
transportation requirements may be implemented as separate projects as part of a staging or implementation plan, collectively they form part of a larger transportation system management plan. As such, any elimination of an individual component of the Master Plan could affect the overall network and strategic plan.

The Whitby Transportation Master Plan was designed to integrate Regional and Provincial transportation and environmental planning, policies and requirements into a strategic transportation community framework for the Town. The strategy also involved an emphasis on the goals and objectives identified throughout the Master Plan process. In establishing mobility improvements for the Town, a balanced approach to the selection of solutions was undertaken considering the relative importance of all travel modes and not just solutions that favour the automobile. Modes and opportunities; namely transit, cycling, walking, transportation demand management and transportation systems management, were all equally considered in the tool kit of potential solutions to identified transportation problems.

Throughout the Master Plan, the public and various groups in addition to Provincial Ministries, Municipalities, Agencies and Authorities, have had several opportunities to make comments, identify issues and provide information relative to the Study. The comments and information provided by the public, interest groups, and stakeholders, have broadened the information base and facilitated good decision making in the completion of the Master Plan. It was pertinent to ensure stakeholder and public issues was incorporated throughout the document in the analysis, assessment of alternatives, and in the development of guiding principals and recommendations so as all facets of the transportation problem and solutions were considered.

**TRANSPORTATION VISION, GOAL AND OBJECTIVES**

The transportation vision is an image of a desirable future mobility state, and for Whitby, it can be defined as: To move people and goods within and across the municipality: safely, conveniently, and reliably by providing an integrated, accessible, and financially sustainable transportation system. This system will have a balanced range of mobility options and choice for all users which crosses and links into Regional and Provincial transportation infrastructure, connects all borders of Whitby including integration with the waterfront, and safeguards the natural environment, protects residents and the social community fabric, and enables economic prosperity.

A goal or a series of goals must be successfully achieved, often over many years, in order to reach a desired vision. To this end, the goal of the Whitby TMP is to: Establish, at a strategic level, an integrated and diversified transportation system and policy framework to support long-term growth and provide for efficient movement of people and goods to areas within and to/from the Town.

The values or principles developed as to how the Whitby transportation vision can be achieved are in recognition of existing and projected mobility, economic and environmental conditions and from the opinions and sentiments expressed by the public and affected agencies. That being said, the Town of Whitby’s transportation system should strive to be:

1. **Effective** - safely accommodates future travel demands and servicing needs at an adequate level of service, and is developed considering the fundamental requirement to provide for and ensure long term economic viability for the community.

2. **Accessible** - provides a reasonable transportation choice for all residents, regardless of age, income or level of mobility.

3. **Integrated** - coordinates not only local modes, but is coordinated with Regional and
Provincial transportation infrastructure and transit services.

4. **Multi-modal** - supports all known mobility user types including pedestrians, cyclists, transit riders, automobiles, goods movements, and envisions future methods not yet determined, ratified or commonplace (e.g. new electric devices, elevated people movers).

5. **Balanced** - provides for all trip types including local residents, businesses and visitors.

6. **Sensitive** – does not compromise the natural and socio-cultural environments, and in fact can provide opportunities to enhance such environs while providing a meaningful transportation service.

7. **Optimized** - maximizes the utilization of existing infrastructure before new transportation infrastructure for the same purpose is built.

8. **Affordable** - relies on an appropriate balance of Federal, Provincial, Municipal and private funding to facilitate the movement of goods and people.

9. **Sustainable** – can be maintained by the Municipality at an acceptable level of service and within its’ funding capabilities and resources.

10. **Coordinated** – blends land use and transportation service that supports the need for greater use of transit, pedestrian and cycling facilities and reduces dependence on the automobile.

---

**STRATEGIC TRANSPORTATION OPTIONS**

The consideration of planning alternatives or strategic options available to satisfy future mobility demands is an essential component of the Environmental Assessment process and development of the Master Plan. These alternatives cover a broad range of solutions with the potential of addressing the identified problems/opportunities while moving towards the long term Transportation Vision for the Town of Whitby. The strategic options set the stage for the development of the specific mobility network plan and for Whitby these include:

- The Do Nothing Alternative
- Transportation Demand Management (TDM) and Transportation Systems Management (TSM) Measures
- Improve Existing Transit Service
- Strategic Roadway Expansion

To achieve the Town’s target of a 15% reduction in automobile usage, it will be fundamental that Provincial, Regional and Town TDM and Transit strategies form an integral part, and in many instances the primary solution, to new and improved transportation strategies within the Town. This is particularly the case for existing built-up urban areas that presently have very little opportunity due to residential and commercial property constraints, for new and expanded infrastructure, and in areas where there are a number of sensitive environmental areas. Even if the 15% auto reduction target is achieved, there will still be a need for new road upgrades for capacity and servicing and other TSM, transit and improvement measures.

As such, a **multi-modal strategy** is required to meet the goal and objectives set out in this Transportation Master Plan and includes enhancements to the transit network and services, implementation of transportation demand management initiatives, physical/operational measures that optimize the existing road network, expansion of the active transportation system, and expansion of the roadway network to ensure the necessary access to future development lands is provided and minimum levels of service capacity are safely met. The **only option** or planning alternative that will “truly” solve the various needs identified in the Master Plan is a **systematic blend and balanced implementation of all the strategic options**.
FUTURE SYSTEM EVALUATION AND ALTERNATIVES

There are a number of significant Provincial and Regional planned and committed improvements to the transportation network in Whitby that are anticipated to be in place by 2021. These improvements have either EA or Council approvals, or are major studies currently underway and will form part of the roadway, transit and active transportation network.

To identify any additional improvement requirements necessary at the local municipal level, it was critical to understand future travel behaviour and system performance with these committed improvements considered. As such, the overall assessment of the future “2031 base case scenario” was premised on the planned and committed 2021 Regional and Provincial proposals being built.

The demand forecasting model for the 2031 base case assumes a 15% reduction in automobile usage. Measures and policies (rapid transit, intensification, Smart Commute) to achieve this reduction in auto usage are being planned, with some already initiated, by the Regional and Provincial governments. One of the objectives of this Master Plan is to identify, at a local municipal level, further incentives (e.g. walking, cycling, land use) to achieve this reduction target in auto usage.

The forecasted travel demand of the “base case” transportation network was modelled to determine whether adequate roadway capacity will exist to accommodate 2031 projected demands. This was undertaken at both a strategic and Sub-Area level in consideration that the Town of Whitby represents a large geographic area with many unique communities. Each of these communities or Sub-Areas has its own characteristics, transportation problems and opportunities. They are:

1. Sub-Area 1 – Lakeshore Whitby - bounded by Highway 401 to the north, Lake Ontario to the south, and the Town limits to the east and west.

2. Sub-Area 2 – South Whitby - bounded by Dundas Street to the north, Highway 401 to the south, and the Town limits to the east and west.

3. Sub-Area 3 – East Whitby - bounded by Taunton Road to the north, Dundas Street to the south, Brock Street to the west, and the Town limits to the east.

4. Sub-Area 4 – West Whitby - bounded by Taunton Road to the north, Dundas Street to the south, Brock Street to the east, and the Town limits to the west.

5. Sub-Area 5 – Central Whitby - bounded by the future east extension of Highway 407 to the north, Taunton Road to the south, and the Town limits to the east and west.

6. Sub-Area 6 – North Whitby - bounded by Townline Road to the north, the future east extension of Highway 407 to the south, and the Town limits to the east and west.

The determination of the recommended routes was based on a detailed identification and assessment of roadway solutions. The scope of the assessment was to identify those road solutions that have the potential of best solving the screenline capacity deficiency in 2031 when considering transportation, environmental and cost criteria. Moreover, the establishment of these solutions have assisted in understanding the integration of the transportation network and timing of the staging/implementation of improvements that are anticipated.

In addition to screenline capacity analysis, consideration for the need to protect for future servicing requirements was also a focus in the TMP. In particular, to support the long term growth and provide for efficient movement of people and goods, the Town will need to ensure corridors are protected to optimize the use of the existing roadway network, and to ensure effective connections to support and service development for all modes including transit and active transportation.

In addition, a localized review of specific issues for each of the Sub-Areas was also undertaken to ensure that while the TMP is based on strategic solutions, the recommendations put
forth reflect the certain unique needs within the various communities of the Town. Based on the identification and assessment of the various alternatives, it was concluded that several strategies, programs and investments are required to address forecasted transportation problems and opportunities in Whitby which have been premised on the balanced solution of Managing Transportation Demand, Encouraging and Facilitating Public Transit and Managing Transportation Supply. These strategies noted below are not presented in any order of importance, as they are all considered to be significant in their own right:

- Land use management;
- Ridesharing/increased auto occupancy;
- Parking management;
- Promotion of alternative modes;
- Active transportation strategies;
- Design guiding principles for streets;
- Cycling and leisure trails strategy;
- Transit orientated development policy;
- Special transit, operational, etc. studies;
- Missing links and connectivity in the transportation and transit network;
- Operational and physical improvements;
- Access management guidelines;
- Refined right-of-way multi-modal corridors and connectivity;
- Road improvements – expansions, new;
- Corridor protection;
- Road classification;
- Roundabouts; and
- Goods movement.

**RECOMMENDATIONS AND IMPLEMENTATIONS**

A Transportation Master Plan is a strategic plan which recommends a series of transportation works which are distributed throughout a "large" study area and which are to be implemented over a period of time. The scope of the recommendations for the Whitby TMP has included a broader analysis of the transportation system and development of a framework of future transportation requirements.

This TMP forms a strategic guiding document that outlines overall strategies for transportation in the Town over the next 20 years. To achieve the goals and objectives in this plan, a number of more detailed studies will need to be completed which will further involve the public and identify more detailed implementation programs.

The implementation plan for the Whitby TMP includes the identification of a staging plan, a recommended set of implementation strategies, the associated costs of the infrastructure, programs, and a set of principles to guide decision making. Future study requirements are identified and a monitoring program is included to ensure that the TMP investment priorities are matched to actual needs as they materialize and with the municipal fiscal realities.

**OFFICIAL PLAN UPDATE**

The TMP will be a source document that will feed into the Official Plan. Elements include new corridors and/or transportation infrastructure such as interchanges, new structures and Special Studies. Additional agency and public consultation will be required as part of any Official Plan update.

For some of the corridors where protection has been identified or has been reaffirmed, there are proposed modifications to the Official Plan roadway classification. These are primarily arterial routes but also include other potential critical elements of the Town’s transportation network. The recommended changes have been based on a number of factors, including:

- Anticipated traffic volumes;
- Multi-modal needs;
- Network connectivity and existing classifications;
- Servicing and utilities;
- Access control/provision requirements;
- Future Regional and Provincial plans;
- Accessibility needs and multi-modal choice desires; and
- Updates to past and planned land use.

It is important to note that further updates to the road network identified in the Official Plan will
be required to address local and collector street modifications and site specific intersection.

**GUIDING PRINCIPLES**

A number of principals, strategies and policies have been presented in the Master Plan for implementation over the next 20 years in order to achieve the Town’s Transportation Vision. Other general guiding principles that should be considered in the context of developing and implementing projects are noted below and should form a basis for decision making when implementing recommendations in this plan. They include:

1. Maximize existing transportation infrastructure before new transportation infrastructure is constructed.
2. Maximize use of non-auto modes in the provision of mobility services.
3. For all new developments, TDM opportunities should be maximized and limit auto trips generated to not exceed that of the adjacent system road capacity.
4. In the context of good transit and traffic network planning, spillover traffic from new communities should minimize its impact on adjacent subdivisions.
5. New facilities shall be adequate to achieve an acceptable standard of safety and service for the various modes.
6. Internal road systems shall provide for a safe and convenient internal circulation system and be complementary to abutting arterials.
7. New road networks should endeavour to be in a grid fashion to optimize efficiency in travel flows, access and maintenance.
8. Modify and implement truck routes as new highways/arterials are built to reduce heavy vehicles through the downtowns and heavy residential and pedestrian districts.
9. Context sensitive designs should be utilized to minimize property/proximity impacts of infrastructure to residential properties.
10. Context sensitive designs should be utilized to minimize impacts on sensitive environmental features (e.g. Iroquois Beach, PSWs) and the natural heritage system (including aquatic and terrestrial species).
11. The design and construction of new, realigned or redeveloped roads and paths should seek to maintain or enhance the quality of runoff, thereby limiting pollution to receiving watercourses. Stormwater management best management practices should be implemented for new facilities and when possible, whenever upgrading existing infrastructure.
12. The design and construction of new, redeveloped, or realigned roads and paths should identify where applicable opportunities for wildlife connectivity.
13. Develop parking management strategy and long-term plan for the downtowns.
14. A high degree of non-auto usage should be encouraged by optimizing access between development and transit.
15. A walking and cycling network should be established that achieves pleasant, convenient and safe access to and between all land uses, transit stations, parking areas, public streets and recreational destinations.
16. A walking and cycling network should be integrated and complement other agency mobility systems to provide seamless transportation across municipal boundaries.
17. Use of open spaces, utility corridors and unopened road allowances for walking and cycling linkages should be maximized.
18. The pedestrian and bicycle system should be oriented and developed to encourage maximum use of the transit system.
19. Intersections and roads should be designed to be attractive, safe and inviting for pedestrians, cyclists and vehicles which must share the space.
20. Development should incorporate amenities which will encourage bicycle use by employees and patrons.
21. Protect new linkages to provide strategic connections that maximize mobility opportunities for people and goods.
22. Incorporate accessible design standards based on the AODA in the built environment where possible (i.e. wide curbs on municipal streets).
TMP AND VISION MONITORING

The success of long-range plans depends on the ongoing monitoring of relevant conditions, actions and impacts. The Town of Whitby must remain aware of its progress towards the ultimate vision of this plan as well as key objectives, so that it can add, modify, or delete priorities as needed.

The Whitby TMP must retain some measure of flexibility and be adaptable to changes in travel behaviour, development priorities, and phasing of Regional and Provincial infrastructure improvements (both roadways and transit investments). This can be best accomplished through ongoing monitoring of relevant conditions and periodic updates to the Travel Demand Model and the TMP.

Performance measures are recommended to be monitored, such as travel mode shares, transit ridership, km of cycle and leisure trails, etc. to monitor the effectiveness of the TMP in achieving the overall vision and are based on the ten principles of the Whitby TMP.

Provided below are the proposed Town targets for auto reduction and mode share change. The targets have been developed considering existing mode shares, targets established by others, as well as what is considered appropriate for Whitby. These targets should be checked and reassessed on a regular basis.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Existing</th>
<th>2031 Target</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Driver</td>
<td>72%</td>
<td>61%</td>
<td>-15%</td>
</tr>
<tr>
<td>Auto Passenger</td>
<td>13%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Transit</td>
<td>6%</td>
<td>13%</td>
<td>117%</td>
</tr>
<tr>
<td>Walk/Cycle</td>
<td>6%</td>
<td>8%</td>
<td>27%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

For the Master Plan, it is recommended that the screenline and transportation analysis be updated every 5 years and the master plan reviewed based on the new analysis. This should occur once the new Transportation Tomorrow Survey (TTS) data is in place and incorporated into the travel demand model.

The review would incorporate changes in population and employment growth, travel demand characteristics, and commitment network improvements. It will also be used as a tool to confirm recommended roadway improvements as well as need to move from corridor protection to ‘improvement’ identified in this plan. Based on the results of the review, the Town may elect to update a specific portion of the plan (i.e. Sub-Area recommendations), amend a portion of the master plan or initiate a wholesale update of the document.

Updates to the Master Plan would feed into future Official Plan updates and Secondary Plans as appropriate.

The following Implementation Strategy Tables include:

E1 – Transportation Demand Management
E2 – Active Transportation
E3 – Transit
E4 – Transportation System Management
E5 – Roundabouts
E6 – Goods Movement
E7 – Roadway and Corridors
Table E1
Transportation Demand Management Strategy Implementation Plan

<table>
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<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adopt a TDM Policy and appoint/hire TDM Coordinator</td>
<td>2010-2015 X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2016-2021</td>
<td>Initial step of the TDM strategy. Policy based on TMP Guiding Principles and should promote methods to reduce auto use. Include in the Official Plan update.</td>
</tr>
<tr>
<td>2. Develop Trip Reduction Program for the Town Municipal Offices/Facilities</td>
<td>2010-2015 X</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>2016-2021 X</td>
<td>Internal Strategy developed by TDM Coordinator / Smart Commute.</td>
</tr>
<tr>
<td>3. Engage major employers, institutions and school boards to participate in trip reduction initiatives</td>
<td>2010-2015 X</td>
<td>X X</td>
</tr>
<tr>
<td></td>
<td>2016-2021 X</td>
<td>Internal Strategy developed by TDM Coordinator / Smart Commute.</td>
</tr>
<tr>
<td>4. Encourage development of Mobility Hubs</td>
<td>2010-2015 X</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>2016-2021 X</td>
<td>Include policies in Official Plan and Secondary Plans as appropriate.</td>
</tr>
<tr>
<td>5. Participate in the Region’s Commuter Lot Feasibility Study</td>
<td>2010-2015 X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2016-2021</td>
<td>Separate Study to be completed by the Region, with support by the Town TDM Coordinator.</td>
</tr>
<tr>
<td>6. Include TDM in the development process</td>
<td>2010-2015 X</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>2016-2021 X</td>
<td>Include in Secondary Plans as well as approval of large development applications as appropriate.</td>
</tr>
</tbody>
</table>
Table E2
Active Transportation Strategy Implementation Plan

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010-2015</td>
<td>2016-2021</td>
</tr>
<tr>
<td>1. Adopt an Active Transportation Policy</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Develop Guiding Principles for Streets</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3. Input into the Town’s Cycling and Leisure Trails Strategy</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4. Identify where future pedestrian/bicycle elevated structures are warranted and include in future capital planning.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5. Expansion of Waterfront Trail</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Rationale:** Walking and cycling form an important component of building active communities and reducing the dependence on the single occupant vehicle. While cycling and walking do not form a significant share of all trips made, it becomes an important component of Whitby’s overall transportation network and should be expanded as part of the transportation system.

- Include policies in Cycling and Leisure Trails Study currently underway. Include in Official Plan and Secondary Plans as appropriate.
- Establish principles that balance role of streets as corridors for all modes of circulation, utilities, access in addition to places for people, particularly in intensification nodes and corridors such as in the Downtowns.
- Cycling plan currently underway – final deliverable will include maps. Include policies in Official Plan and Secondary Plans as appropriate.
- Congested locations and freeways often pose as barriers. Identify locations, such as crossing of Victoria St to GO Station, for elevated pedestrian walkways/bike crossings and develop costing. Review needs to Iroquois Park and ensure all plans for improvements crossing Highway 401 and 407 include facilities. Identify dedicated facilities, separate structures where appropriate.
- Widen/twin water front trail from Region of Durham Pumping Station to Thickson Road.
Table E3
Transit Strategies Implementation Plan

**Rationale:** Strategies to encourage and facilitate effective public transit plays a significant role in reducing the auto share of travel. As the municipality grows, transit will need to play a larger role in moving people, particularly during the peak periods. For this to occur, transit must be accessible, convenient, reliable, and integrated. While transit in Whitby is planned and operated by Metrolinx/GO Transit and the Region of Durham, the Town will need to use its influence in regards to the structure of the local road network and land use planning decisions to help achieve transit mode share targets.

<table>
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<th>Next Steps/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>**2010-2015</td>
<td>2016-2021</td>
<td>2022-2031</td>
</tr>
<tr>
<td><strong>1. Develop a Transit Oriented Development policy</strong></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>2. Designate and support implementation of Higher Order Transit corridors</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>3. Complete Special Study to investigate and plan for alternative people mover systems to/from key destinations.</strong></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>4. Coordinate with the Region and DRT to implement a Transit Priority Plan</strong></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>5. Identify and protect for missing links that could benefit transit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. Request Region initiate and lead Dundas Street Corridor Study</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table E4
Transportation Systems Management Implementation Plan

**Rationale:** The TMP sets an auto reduction target of 15% by 2031, but automobile travel will continue to be the predominant mode of travel in Whitby. The plan needs to identify not only recommended capacity improvements to the roadway network based on forecasted screenline deficiencies, but also other improvements which minimize the need for additional widening and maximizes the use of the existing network. Strategies to make better use of the existing transportation system are required that achieve the objective of optimizing and best managing the supply of new and improved transportation infrastructure.

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</tr>
</thead>
<tbody>
<tr>
<td>2. Refine Right-of-Way Requirements to include Multi-Modal Corridors</td>
<td>2016-2021 X</td>
<td>Complete Separate Study. The right-of-way serves many public functions including facilities to move people, above and below utilities and municipal services, streetscaping, snow storage, parking, and so on, all of which must be considered. Update policies in the Official Plan and Secondary Plans as appropriate.</td>
</tr>
<tr>
<td>3. Traffic Operations Study</td>
<td>2016-2021 X</td>
<td>Technical analysis to identify “now” physical and operational improvements to critical intersections and mid block locations. Focus first on arterials.</td>
</tr>
<tr>
<td></td>
<td>2022-2031 X</td>
<td></td>
</tr>
</tbody>
</table>
Table E5
Roundabout Strategy Implementation Plan

**Rationale:** Roundabouts may have many benefits when appropriately installed and designed. They have been proven to reduce travel time; volume and severity of accidents; be part of traffic calming solutions and add to the streetscape environment. When operating within capacity, roundabouts generally produce lower queues and delays than traditional signalized intersections of comparable size, under similar traffic conditions. In some cases, they are an ideal alternative to signals and a solution for odd angled intersections. Roundabouts can also offer environmental benefits such as reduced fuel consumption, noise impacts and vehicle emissions as well as reduced energy costs compared to traffic signals.

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<tbody>
<tr>
<td>1. Develop a roundabout policy and process of evaluating roundabouts</td>
<td>2010-2015 X 2016-2021</td>
<td>Include traffic impact study requirements for developments and Town initiated Studies.</td>
</tr>
<tr>
<td>2. Establish Policy that all Secondary Plans should examine the opportunity for roundabouts</td>
<td>2016-2021 X 2022-2031</td>
<td>Include traffic impact study requirements for developments and Town initiated Studies.</td>
</tr>
<tr>
<td>3. Establish Policy that all signal warrant analysis include an assessment of roundabouts</td>
<td>2022-2031 X</td>
<td>Include in Public Works Departmental practices and procedures for internal/external analyses requirements.</td>
</tr>
<tr>
<td>4. Establish/include design and right-of-way guidelines into design standards</td>
<td>2010-2015 X 2016-2021</td>
<td>Utilize standards and best practices from the transportation industry.</td>
</tr>
<tr>
<td>5. Prepare public education guidelines for new roundabouts</td>
<td>2016-2021 X</td>
<td>One of the most important aspects of successfully implementing roundabouts within a municipality is educating the users of the roundabouts, including drivers, cyclists, pedestrians and heavy vehicle drivers. The education should provide an overview of the physical aspects of the roundabouts as well as the instructions for use. Utilize materials from best practices guides, TAC, ITE and MUTCD.</td>
</tr>
</tbody>
</table>

Table E6
Goods Movement Strategy

**Rationale:** A comprehensive goods movement strategy forms a central component to maintaining a strong economy and ensuring a healthy community. In Durham Region, many of the goods movements comprise of trucking movements in addition to CP/CN Rail freight traffic. These trucking movements rely heavily on major roads and highways for access to industrial and commercial centres.

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### Table E7

**Roadway Implementation and Corridor Protection Plan**

**Rationale:** Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.

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<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Description of Works</th>
<th>Anticipated Timing</th>
<th>Estimated Costs ($M)</th>
<th>Remarks/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2011-2016</td>
<td>2017-2021</td>
<td>2022-2031</td>
</tr>
</tbody>
</table>
| **Part A: Screenline Capacity Improvements – New Alignments, Widenings, Extensions**
Recommended major arterial system to alleviate the 2031 identified screenline capacity deficiencies within the Town. These modifications to the roadways are above and beyond those already approved/planned by 2031 and have been based on a 15% reduction in auto use due to improvements in transit and the introduction of TDM/TSM measures.

| Rossland Road | Lake Ridge Road | Brock Street | Widening from 4 to 6 lanes | X | ~ $19.0 | ~ $4.0 | Portion of widening subject to Regional approvals. Will require CP Rail approval for widening rail structure. |
| Bonacord Avenue | Lake Ridge Road | Existing Terminus | Extension of Corridor | X | ~ $6.0 | | Subject to MTO approvals. Prohibit trucks from entering the existing residential community to the east. Implement measures to mitigate including noise attenuation and berms, pedestrian crossings, and context sensitive designs. Implement in stages as development warrants. |
| New Mid-block arterial road (south of Highway 407) | Baldwin Street | Thickson Road | Extension of Corridor | X | ~ $8.5 | | Sensitive environmental areas and creek crossings will require mitigation and potentially large structures spanning valleys. Complete functional design in advance to refine cost estimates. Discuss and confirm intersection locations of the mid block arterial at Baldwin Street and Thickson Road with MTO and Regional staff. |
| Baldwin Street | Highway 407 | Taunton Road | Widening from 4 to 6 lanes | X | ~ $16.0 | | Widening subject to Regional approvals. |
Rationale: Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.

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</thead>
<tbody>
<tr>
<td>Anderson Street</td>
<td>Highway 407</td>
<td>Glen Dhu Drive</td>
<td>Widening from 2 to 4 lanes</td>
<td>X</td>
<td>~$26.0</td>
<td>Significant potential impacts to adjacent residents and properties south of Taunton Road. Additional right-of-way is anticipated and considers staging of implementation, right-of-way refinements and operational improvements in the interim.</td>
</tr>
<tr>
<td>Garden Street</td>
<td>Taunton Road</td>
<td>Willowbrook Drive and Dryden Boulevard</td>
<td>Widening from 2 to 4 lanes</td>
<td>X</td>
<td>~$5.0</td>
<td>Advance tree restoration projects to mitigate potential impacts with widening. Complete following widening of Baldwin Street and Thickson Road. Reassess noise and pedestrian access impacts/requirements.</td>
</tr>
<tr>
<td>Coronation Road</td>
<td>Taunton Road</td>
<td>Dundas Street</td>
<td>Extension of Corridor</td>
<td>X</td>
<td>$14</td>
<td>Approved through 407 East EA. Costs and property for the 20 m ROW is understood provided by MTO as replacement for Halls impacted by the WDL. Additional ROW expansion to be completed by others associated with development. A crossing of the CP Rail, and associated EA and grade separation costs will need to be further discussed with the various parties.</td>
</tr>
</tbody>
</table>

Part B: Corridor Protection (Multi-Modal), Missing Links, Servicing, Long Term Capacity, Access - Network deficiencies or “missing links” are necessary to improve overall connectivity and address more localized traffic management issues. Also need to identify anticipated deficiencies as development proceeds and opportunities to protect for transit and active transportation linkages. These network connections should be addressed as the opportunity arises from development or redevelopment both within the time frame of this TMP and as the TMP is updated.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Water Street</td>
<td>Brock Street</td>
<td>South Blair</td>
<td>Upgrading and realignment</td>
<td>X</td>
<td>$1.5*</td>
<td>EA Addendum – consider Arterial Parkway design elements.</td>
</tr>
<tr>
<td>Harbour Street</td>
<td>Watson Street</td>
<td>Water Street</td>
<td>Protect for future mobility corridor</td>
<td>X</td>
<td>NC</td>
<td>Timing based on traffic conditions on adjacent roads, serving need, or other issues/opportunities.</td>
</tr>
<tr>
<td>Galt St/Grand Truck Street</td>
<td>Watson Street</td>
<td>Victoria Street</td>
<td>Protect for future mobility corridor</td>
<td>X</td>
<td>NC</td>
<td>Timing based on traffic conditions on adjacent roads, serving need, or other issues/opportunities.</td>
</tr>
</tbody>
</table>
**Table E7**

**Roadway Implementation and Corridor Protection Plan**

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
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<th>Estimated Costs ($M)</th>
<th>Remarks/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burns Street Connection (west)</td>
<td>Dundas Street</td>
<td>Burns Street</td>
<td>Extension</td>
<td>X</td>
<td>$7-10*</td>
<td>Subject to MTO review due to proximity to Highway 401 and 407 WDL. Widening of Highway 401 to review requirements for Burns Street as part of the 407 East Transportation Corridor approval conditions. Environmental constraints will in part govern location of extension options and may require separate links. Special Study required to confirm location details. Consider dedicated transit link via Burns Street to the planned WDL transitway as part of the Special Study. Timing of improvement in conjunction with development of West Whitby, the need to connect transit between this area and Lakeshore Whitby (Whitby or Lake Ridge GO Station), development of LRT line on Dundas Street, or in conjunction with the widening/realignment of Hwy 401.</td>
</tr>
<tr>
<td>Burns Street Connection (east)</td>
<td>Hopkins Street</td>
<td>Thickson Road</td>
<td>Extension from grade separation of CP Rail</td>
<td>X</td>
<td>$6-9*</td>
<td>Timing based on traffic conditions on adjacent roads and/or development of LRT line on Dundas Street. Future crossing of CP Rail lines required. Anticipated if road is for autos, grade separation would be required. If for non autos and transit only, consult with Transport Canada opportunities for at-grade. If build grade separation, anticipated structure would go over rail. Would likely need to preload approaches and pile structure footings. Clearance of existing hydro towers is presently met with existing criteria.</td>
</tr>
</tbody>
</table>

**Rationale:** Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.
### Table E7

**Roadway Implementation and Corridor Protection Plan**

**Rationale:** Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system cannot adequately support the long-term traffic demands.

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</tr>
</thead>
<tbody>
<tr>
<td>Highway 401 Crossings (Annes Street)</td>
<td>Burns Street</td>
<td>Nordeagle Avenue</td>
<td>New Bridge (2 to 4 lanes)</td>
<td>X</td>
<td>$18*</td>
<td>Would be subject to MTO review and approvals. Town should discuss with MTO officials the protection requirements for a grade separation of Annes Street across Highway 401. This should be completed as part of the Highway 401 widening study to ensure the flyover is protected and can be accommodated.</td>
</tr>
<tr>
<td>Mary Street/ Crawforth Street</td>
<td>Scott Street</td>
<td>Cochrane Street</td>
<td>Extension</td>
<td>X</td>
<td>$10*</td>
<td>TBD</td>
</tr>
<tr>
<td>Dryden Boulevard Connection</td>
<td>East of Anderson Street</td>
<td>Thickson Road</td>
<td>Extension (4 lanes)</td>
<td>X</td>
<td>$1*</td>
<td>Timing anticipated to occur in association with development. Work with Region on associated intersection upgrades at Thickson Road.</td>
</tr>
<tr>
<td>Bonacord/ Manning Connection</td>
<td>Cochrane Street</td>
<td>Brock Street</td>
<td>Extension plus grade separation of CP Rail</td>
<td>&gt;2031</td>
<td>NC</td>
<td>Not costed as timing beyond 2031 estimated. Timing would be based on traffic conditions on adjacent roads, and/or other issues and opportunities that need to be addressed. Would expect to be driven by area development.</td>
</tr>
</tbody>
</table>
### Table E7
ROADWAY IMPLEMENTATION AND CORRIDOR PROTECTION PLAN

**Rationale:** Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.

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</tr>
</thead>
<tbody>
<tr>
<td>Twin Streams Connection</td>
<td>Existing Terminus</td>
<td>Lake Ridge Road</td>
<td>Extension (2 lanes – protected for 4 lanes)</td>
<td>X</td>
<td>$16*</td>
<td>Timing of the extension between current terminus and Coronation Road would likely occur with development in West Whitby and could be completed through the Secondary Plan and plan of subdivision process. The portion between Coronation Road and Lake Ridge Road (over the 407 West Durham Link) would be subject to MTO approval. Timing would be based on reaffirmed need through the completion of a TMP update or with identification of localized east-west congestion issues in the Study Area.</td>
</tr>
<tr>
<td>Garden Street Extension</td>
<td>Robert Attersley Drive</td>
<td>Proposed mid-block arterial</td>
<td>Extension (2 to 4 lanes)</td>
<td>X</td>
<td>$12*</td>
<td>Sensitive environmental areas and creek crossings will require mitigation and potentially large structures spanning valleys. Complete functional design in advance to refine cost estimates. Timing based on timing of development to the north and the completion of the mid-block east-west arterial.</td>
</tr>
<tr>
<td>Mid-Block Arterial Extension</td>
<td>Proposed mid-block arterial at Baldwin Street</td>
<td>Highway 407 at Cochrane Street</td>
<td>Extension (2 to 4 lanes)</td>
<td>X</td>
<td>$15*</td>
<td>Timing of improvement would occur in conjunction with development of Brooklin Secondary Plan, increased congestion in downtown Brooklin, and/or construction of mid-block arterial. Discuss and confirm intersection locations of the mid block arterial at Baldwin Street and Thickson Road with MTO and Regional staff. Protect access to/from Heber Down Conservation Area at Cochrane Street.</td>
</tr>
</tbody>
</table>
**Table E7**  
**Roadway Implementation and Corridor Protection Plan**

**Rationale:** Even with a 15% reduction in auto usage, TDM, TSM and Transit measures, there will continue to be the need to provide roadway enhancements and protect corridors to alleviate the 2031 identified network deficiencies and servicing needs for area lands and all modes of travel. The recommended routes and connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.

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<tbody>
<tr>
<td>Coronation Road Extension</td>
<td>Taunton Road</td>
<td>Existing Coronation Road (north of Taunton)</td>
<td>Extension (2 lanes – protect for 4 lanes)</td>
<td>X</td>
<td>$0.5*</td>
<td>Timing of improvement likely to coincide with construction of the new Coronation Road south of Taunton Road and area development.</td>
</tr>
<tr>
<td>Highway 407 East Full Access Interchange at Cochrane Street</td>
<td></td>
<td></td>
<td>Protection Implement</td>
<td>X</td>
<td>NC</td>
<td>407 IEA did not seek approval for interchange although design does not preclude it. MTO have indicated EA would need to be completed by others and require MTO approval. Implementation timing would likely coincide with expansion of the Brooklin community and preliminary planning will be continuing over the next 5 years. In terms of funding, it is envisioned that the financing would be multi-partied, the specifics which would require further assessment in terms of benefits.</td>
</tr>
<tr>
<td>New Brooklin North/South Route</td>
<td>Highway 407 West Durham Link</td>
<td>Baldwin Street</td>
<td>New route to accommodate trips around Brooklin and service future development</td>
<td>X</td>
<td>NC</td>
<td>Designate in Official Plan as Arterial Parkway and note as Special Study area. Route required for servicing to accommodate future development lands in Brooklin, accommodate long distance and Provincial traffic, through Brooklin, and anticipated ultimate capacity needs. Connection, along with the Link to Highway 401, could service as the “new Highway12”. Initiate Study with the various interested land owners and agencies.</td>
</tr>
<tr>
<td>Highway 407 Grade Separation at Garrard Road</td>
<td></td>
<td></td>
<td>Protection Implement</td>
<td>X</td>
<td>NC</td>
<td>407 IEA did not seek approval for grade separation although design does not preclude it. MTO have indicated EA would need to be completed by others and require MTO approval. Timing would likely coincide with expansion of the Brooklin community.</td>
</tr>
</tbody>
</table>
Table E7
Roadway Implementation and Corridor Protection Plan

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<tr>
<td>Brooklin Arterial and Collector Road network</td>
<td></td>
<td></td>
<td>Protect extension of road network to accommodate new development.</td>
<td>X</td>
<td>$ 13*</td>
<td>Timing of improvement would occur in conjunction with development of Brooklin Secondary Plan or increased congestion in downtown Brooklin.</td>
</tr>
<tr>
<td>Brooklin Capacity Expansion</td>
<td></td>
<td></td>
<td>Protect corridor widenings of Lake Ridge Road, Cochrane Street, and Columbus Road</td>
<td>X</td>
<td>NC</td>
<td>Timing of improvement would occur in conjunction with development of Brooklin Secondary Plan or increased congestion in downtown Brooklin.</td>
</tr>
</tbody>
</table>

**Notes:**
NC – Not Costed
TBD – To Be Determined
Costing to be refined in future studies.
Costing estimates based on benchmark costs and considered order of magnitude for planning purposes. Excludes property and utility costs.
All arterial road corridors noted above to include provisions and considerations for active transportation and transit.
*C Costing estimates provided by the Town of Whitby based on recent road benchmark costs.
1 INTRODUCTION

1.1 Background

a. The Town of Whitby, as illustrated on Exhibit 1.1, is bounded by Lake Ontario to the south, Scugog Township to the north, City of Oshawa to the east, and the City of Pickering and Town of Ajax to the west.

b. The population of Whitby has grown from approximately 93,860 in 2001 to 117,635 residents in 2006 which is a 25% increase in just 5 years (Source: Region of Durham). The existing population as of May 2009 is noted as being 123,040 persons and it is identified in Durham’s Regional Official Plan Amendment (ROPA) No. 128 (June 3, 2009) that the population of Whitby will continue to increase to 192,860 by 2031.

c. Throughout the past several decades, the expansion of Whitby’s transportation system has been primarily limited to local and collector streets. While some Town arterials (e.g. Garden Street) have been upgraded, the majority of the expansion to the area arterial system has been focused on Regional facilities. In addition, many of the transportation corridors in Whitby that have been built, have focused on auto access to adjacent residential land uses and there is a “now” need to also address corridor and community servicing and capacity needs for all modes of travel within and through the municipality.

d. The transportation network identified in the Town’s Official Plan was last updated in 1995 when the population was measured at 75,800 persons (Source: Region of Durham), and it does “now” not effectively address the present mobility needs of the community nor adequately protect for ultimate growth anticipated within the Town.

e. There has also been a dynamic drive in recent years to ensure a more coordinated blend in the planning of land uses, and auto and non-auto modes of travel. This drive has been a result of efforts to balance the demand for and provision of infrastructure (transportation, utilities, stormwater management) in a manner which is not only effective, but financially and environmentally sustainable.

f. In recent years there has been numerous transportation planning initiatives undertaken by various Provincial agencies and the Region of Durham further defining and refining mobility needs, issues and opportunities within and adjacent to Whitby. As a consequence, there is a “now” need for Whitby to complete it’s own transportation plan to ensure the Town grows and operates in a coordinated fashion that balances and optimizes liveability and mobility consistent with Provincial and Regional policies and objectives.

g. Failure to plan and protect for critical transportation infrastructure at this time, will limit opportunities for growth and safe travel from not only a Town, but Regional and Provincial perspective as well. In many locations, imminent protection is required as there is already significant congestion, limited opportunities for new mobility linkages, and near-term developments which may preclude viable routes. Missed opportunities for planning an efficient transportation system could result in operational problems with intensification.

h. In consideration of the above, the Town of Whitby has completed a Transportation Master Plan (TMP) to define at a strategic level, an integrated mobility plan and guiding principles
for the accommodation of future anticipated growth in a cost-effective, efficient, effective
and environmentally sensitive manner.

i. The intent of the findings and recommendations articulated in this document is that they are
incorporated into other Town transportation planning and land use initiatives as well as serve
as a supporting document for the completion of future environmental assessment studies
when implementing the individual projects.

j. While components of this Master Plan can be implemented in stages over the long term, it
forms a mutually inclusive strategy whereas if any one part is removed, it could change the
integrity of the plan.
Town of Whitby Transportation Master Plan
Exhibit 1.1 - Study Area (Town of Whitby)

Legend

- Municipality

**Note: Existing Road Network Illustrated**
1.2 Study Area

a. For the purpose of the Master Plan, primary and secondary Study Areas were established. The primary Study Area encompasses the municipality of the Town of Whitby which is located within the Regional Municipality of Durham. Transportation network plans and guiding principles relative to Whitby were developed and considered within the context of the primary Study Area. A secondary Study Area, which includes travel demands and road network configurations beyond the Town’s borders, was also considered to ensure that Regional and Provincial issues relative to transportation needs, opportunities and initiatives were thoroughly examined and considered in the development of Study recommendations.

b. Refer to Exhibits 1.1 and 1.2 for illustrations of the Study Area from a Town and Regional perspective, respectively.

1.3 Transportation and Land Use Planning Context

a. There are a number of existing and ongoing policy documents and initiatives underway by various government agencies that need to be considered in the development of the Transportation Master Plan. Transportation policies and land use strategies typically “drive” transportation modifications and often dictate or direct their placement within the municipality. These existing documents and current initiatives are highlighted below and were taken into consideration in the assessment and development of policies and recommended corridors for protection in the Master Plan.

b. Where applicable, the recommendations in this Master Plan will be incorporated into modifications and future updates to these transportation and land use planning documents.

1.3.1 Provincial Strategies and Initiatives


1. Municipal Official Plans in Ontario are required to be consistent with the policies in the Provincial Policy Statements (PPS), which provide policy direction on matters of Provincial interest related to land use planning and development. Since the Transportation Master Plan is a strategy document that feeds into the Official Plan, it should also be consistent with the PPS. Some of the core transportation principles outlined in Section 1.6.5 of the existing PPS include:

1.6.5 - Transportation Systems

“1.6.5.1 - Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.

1.6.5.2 Efficient use shall be made of existing and planned infrastructure.

Connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.

1.6.5.4 A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support the
development of viable choices and plans for public transit and other alternative transportation modes, including commuter rail and bus.

1.6.5.5 Transportation and land use considerations shall be integrated at all stages of the planning process.”

1.6.6 Transportation and Infrastructure Corridors

“1.6.6.1 Planning authorities shall plan for and protect corridors and rights-of-way for transportation, transit and infrastructure facilities to meet current and projected needs.

1.6.6.2 Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.

1.6.6.3 The preservation and reuse of abandoned corridors for purposes that maintain the corridor’s integrity and continuous linear characteristics should be encouraged, wherever feasible.

1.6.6.4 When planning for corridors and rights-of-way for significant transportation and infrastructure facilities, consideration will be given to the significant resources in Section 2: Wise Use and Management of Resources.”

2. The Province is currently undertaking a review of the 2005 PPS to ensure that they continue to adequately address emerging land use issues that are of Provincial interest.

b. Places to Grow

1. In June 2006, the Province of Ontario released the Places to Grow Plan for the Greater Golden Horseshoe (GGH). This strategy builds on the Greenbelt Plan in an attempt to influence growth management and reduce urban sprawl. Regional governments were provided with population and employment growth projections to be incorporated in Regional plans. Urban Growth Centres were also identified with accompanying minimum density requirements.

2. While Whitby was not identified as an Urban Growth Centre, the policies and directions contained within the Places to Grow Plan have provided a good starting point for all local planning activities and were used as a resource in developing transportation principles for the municipality. For example, Dundas Street through Whitby and the Region was identified as a higher order transit corridor.


1. In 1992, the Ministry of Transportation and Ministry of Municipal Affairs and Housing released the Transit Supportive Land Use Planning Guidelines. The guidelines provide direction to development practices that support increased transit use. This includes development patterns that make transit less expensive, less circuitous, more efficient and more convenient, as well as those that make access to the system more attractive to the potential transit user.
d. **Metrolinx Act**

1. The Metrolinx Act (2006) establishes a number of requirements for transportation plans. The Act identifies that the municipal council of every single-tier and upper-tier municipality in the regional transportation area, and the municipal council of any lower-tier municipality in the regional transportation area designated by the Minister, shall adopt a transportation master plan governing transportation planning matters in the municipality. The Act also provides direction for the preparation of transportation master plans, including the need to remain consistent with the Minister’s transportation planning policy statements, and public consultation activities. The completion of this TMP was consistent with the Act requirements.

e. **The Big Move – Regional Transportation Plan (November 2008)**

1. Under the Metrolinx Act (2006), the Province has created a Crown Agency to develop, fund, coordinate and promote transportation within the Greater Toronto Hamilton Area (GTHA) municipalities including Durham. Metrolinx released the Regional Transportation Plan (RTP) in November 2008 which outlines an integrated transportation system aimed at enhancing quality of life, environment and prosperity. The plan outlines a 25 year Vision for sustainable transportation in the GTHA, as well as policies, program, and infrastructure investments required to help achieve the vision.

1.3.2 **Region of Durham**

a. **Regional Official Plan Amendment (ROPA) #114**

1. In July 2006, as a result of the Province’s Growth Plan, ROPA 114 was put forth to delete all policy and/or mapping components in conflict with the Growth Plan or that had to be addressed further in the Growth Plan conformity exercise. The resulting amendment incorporating the transportation, commercial, rural, environmental and certain aspects of the population employment and urban land components of the Official Plan Review, was adopted by Regional Council in September, 2006. Specific elements of ROPA 114 incorporated Regional TMP recommendations that support sustainable transportation, a strong emphasis on urban structure, and included transit, goods movement and transportation demand management policies. These transportation related strategies and policies have been considered within the context of developing Whitby’s TMP.

b. **Growing Durham (ROPA #128)**

1. The Growing Durham Plan (November 2008) is the Region’s response to the Places to Grow Plan released by the Province in June of 2006. The Places to Grow Plan contains population and employment projections and identifies Urban Growth Centres that are required to achieve minimum population/employment density targets by 2031.

2. The Growing Durham Plan recommends a balanced growth scenario (refer to plan in Appendix A) as the preferred means of implementing the Province’s population and employment forecasts and density requirements. The balanced growth scenario considers 2031 and 2056 planning horizons and aims to strengthen mobility within and beyond Durham Region and supports the development of growth corridors,
mobility and gateway hubs and planned and existing nodes that are served by transit. The recommended scenario favours east-west growth corridors in Whitby with Brock/Baldwin Street identified as the only north-south growth corridor. It also allocates significant population and employment growth to the north and west of Brooklin, with Columbus Road identified as a growth corridor.

3. The Growing Durham Plan provided the background for ROPA No. 128. At the time of writing this Master Plan, the Province has provided a draft decision letter on ROPA No. 128, and the Region is requesting revisions to the draft decision letter. Refer to Appendix A (Schedules C1 through C4) for the proposed ROPA No. 128 transportation plans which have been considered within the context of developing this TMP.

c. Region of Durham Transportation Master Plan (2005)

1. The Transportation Master Plan (TMP) was developed as a strategic planning document to address policies, program and infrastructure improvements required to address the Region’s transportation needs up to 2021 for both the movement of people and goods. The TMP is an approved document used by the Region to guide transportation policy and infrastructure development. A number of recommendations were made to improve the Region’s overall transportation network in response to planned growth and Regional staff have indicated that the TMP update is planned to be initiated in 2011.

d. Transportation Demand Management (TDM) Strategy

1. In response to the TMP, the Region completed a TDM Strategy which identifies the needs and interests of employers, assessed TDM’s market potential, and evaluated different ways of involving employers in commuting option initiatives. This resulted in a new Regional TDM service called “Smart Commute Durham” and a detailed action plan to guide its implementation.

e. Durham Region Cycling Spine Network (October 2008)

1. In response to the recommendations of the TMP, the Region developed a Cycling Spine Network that identified Regional cycling spines and areas to be further studied.


1. The guidelines are to assist in promoting a balance between mobility and livability in the planning, design and construction of features within and abutting the public road allowance. The guidelines promote a range of design objectives including the design of the road network (an interconnected, continuous and connected network) needed to support adjacent land uses (defining the character of the corridor, including the public space), street element design criteria (i.e. the location and dimensions of sidewalks, cross walks and intersections) landscaping, the design and placement of utilities and overall maintenance.
g. Durham Region Long Term Transit Strategy (LTTS)

1. The Region of Durham has developed a plan to establish the direction of transit in Durham Region and the role that rapid transit will take over a 50 year period. At the time of preparing this report, documentation has been completed and submitted to both the Federal and Province governments for their review. Within Whitby, highlights of the proposed LTTS include several rapid transit corridors. The LTTS also included a number of other deliverables, including Transit Oriented Development Strategy and Guidelines, a Goods Movement Strategy, a TDM Strategy and Action Plan, and A Preferred Transit Network and Implementation Strategy.

1.3.3 Town of Whitby

1. Whitby Official Plan

1. The Town of Whitby Official Plan was adopted in September 1994. The Plan provides policies and practices for a diverse municipal structure which consists of a large urban area to the south, an expanded urban area of the Brooklin Community to the north, and a large rural area which includes protected agricultural and environmentally sensitive lands and a corridor designated for the future Highway 407 East Transportation Corridor.

2. Included in Section 8.0 of the Town of Whitby Official Plan (April 2009 Consolidation) are the policies for Transportation, Servicing and Utilities. Goals include developing a transportation system that “provides a safe, convenient and efficient transportation system for the benefit of all resident groups and businesses in the Municipality; promotes a system which is responsive to environmental and aesthetic principles; provides a high level of road network capacity and transit that operates efficiently without substantial delay”. Objectives include “… minimizing social and environmental impacts and economic costs; and ensuring that the transportation system emphasizes all transportation modes including public transit, non-motorized and pedestrian movements.”

3. The Official Plan is currently being updated to reflect current conditions and to address growth management until 2031. The Official Plan is required to conform to the Region of Durham Official Plan, specifically the amendment known as ROPA 128. To achieve this conformity, the Town has hired a consortium led by Meridian Planning Consultants to prepare the following amendments to the Town’s Official Plan (refer to Appendix A for proposed plans).

i. West Whitby Secondary Plan Amendment (completion anticipated June 2010) – scope includes expansion of the built boundary as proposed by ROPA 128 westerly to the “West Durham Link” that extends between the future Highway 407 and Highway 401 identifying population and employment areas and land densities for the area.

ii. Intensification Strategy Amendment (completion anticipated June 2010) – scope includes identification of land use plans to achieve intensification targets set by the Province and allocated to Whitby by ROPA No. 128.

iii. Conformity to Province’s Growth Plan Amendment (completion anticipated June 2010) – scope includes policies to bring the current Official Plan into conformance with the Province by the current deadline of June 2010.
iv. By 2012, review and prepare amendments to the Official Plan to direct future growth of the Town.

4. In addition, the Port Whitby Secondary Plan is currently being reviewed through the Port Whitby Sustainable Community Plan (2010) which is being funded by a grant from the Federation of Canadian Municipalities (FCM). As part of the intensification review and through several zoning applications, this area has been identified as a target for planned intensification of the municipality. This review may not directly result in an update to this Secondary Plan or an OPA.

1.4 Environmental Considerations

a. The baseline environmental conditions in the Study area have been key considerations in the development and evaluation of solutions to the identified transportation problems considered within the context of this Master Plan. It is recognized that future detailed environmental information will be required and should be undertaken as part of future environmental assessment studies and design work to mitigate/eliminate potential impacts.

1.4.1 Provincial Environmental Legislation

a. **Greenbelt Plan (February 2005)**

1. The Greenbelt covers a large portion of the primary Study Area, stretching from northern Whitby, east to Ajax and south to Lake Ontario.

2. Lands around Heber Down Wetlands and Uplands, Macedonian Village near Coronation Road, Almond Village and Cranberry Marsh and Lynde Creek Marsh are located within the Greenbelt Plan Area and are subject to Greenbelt Act and the designations of the Greenbelt Plan.

3. The Greenbelt Plan builds upon other Provincial policies, including the Provincial Policy Statement and the Niagara Escarpment Plan (NEP). The Greenbelt Plan protects agricultural uses, natural heritage features and open space linkages; protects surface and ground water sources; supports recreation, culture and tourism; supports rural economies; and supports infrastructure and natural resources.

4. Whitby’s Greenbelt is classified as Protected Countryside. Lands designated as “Protected Countryside” are intended to enhance the spatial
extent of agriculturally and environmentally protected lands currently covered by the NEP while at the same time improving linkages between these areas and the surrounding major lake systems and watersheds. Section 4.2.1 of the Greenbelt Plan permits existing, expanded and new infrastructure within the Protected Countryside, subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, and the Planning Act and provided that it serves significant growth and economic development in southern Ontario beyond the Greenbelt.

5. The extent of the Greenbelt within the Town of Whitby is illustrated in Exhibit 1.3.

b. Oak Ridge’s Moraine

1. The northern portion of the Town of Whitby is located within the Oak Ridge’s Moraine and as such is subject to Oak Ridge’s Moraine Conservation Act (2001).

2. The Oak Ridge’s Moraine Conservation Plan protects unique environmental, geological and hydrological features; maintains and enhances the quality and character of natural streams and water supplies; protects healthy and diverse plant and animal habitat; protects prime agricultural areas; maintains landscape character; and ensures that all new development is compatible with the Oak Ridge’s Moraine Conservation Act.

3. Oak Ridge’s Moraine is one of Whitby’s significant environmental features. No new roadway alternatives within the boundaries of the Moraine were considered within the context of this Master Plan. At this time, any infrastructure adjustment would be limited to within existing corridors and comprise of only operational measures to address localized issues, such as safety or drainage problems at an intersection or bridge.

4. The extent of the Oak Ridge’s Moraine Conservation Plan within the Town of Whitby is illustrated in Exhibit 1.3.

1.4.2 Local Socio-Cultural Environment

a. The Town has a broad socio-cultural environment (refer to Exhibit 1.4) which was taken into consideration as part of the Transportation Master Plan process.

b. The Town consists of both an urban and rural fabric. In particular, south of Taunton Road the Town is predominantly urban while to the north, there are a number of smaller communities including Ashburn, Myrtle, Myrtle Station and Brooklin. Ashburn, Myrtle and Myrtle Station communities are located approximately 15 km from the centre of Whitby and are generally rural. It is of interest to note that Myrtle Station owes its existence to the construction of the Ontario and Quebec Railway in 1884. This railway crosses Highway 12 north of the established hamlet of Myrtle and at the time of preparing this document, has been identified by the Province as a future commuter rail corridor.

c. The urban community of Brooklin is situated along and north of Highway 7/12/Winchester Road extending northerly to Columbus Road. Since the mid 1990’s and even today, the Village of Brooklin is experiencing significant growth and is primarily made up of low density single family homes. The population of Brooklin in presently estimated at 16,500 and been identified by the Region (source: ROPA 128) as a future expansion area.
d. There are two additional rural villages located in Whitby: Macedonian Village and Almond Village. The hamlet of Macedonian Village is located within the Greenbelt adjacent to the Heber Down Conservation Area and is made up of forests and protected lands. This hamlet has between 70 to 80 residential homes and a municipal park. The majority of homes were built between the 1960’s and 1980’s, and there are a few homes that have been built on vacant building lots in the past 5-10 years.

e. Almond Village is a small community situated east of Lake Ridge Road and south of Dundas Street. For many years, Almond Village was a distinct community with its’ own school and church. There is now a smaller scale replica of the church and a historical information plaque. This hamlet has approximately 70 to 80 residential homes that were primarily built during 1950’s, 60’s and 70’s.

f. Downtown Whitby is located at “The Four Corners” of Dundas Street and Brock Street. Over 490 businesses are located in the downtown area. The downtown area also houses the largest number of significant heritage buildings in the municipality which includes residential buildings, commercial and institutional structures. Currently there are approximately 40 designated buildings under the Ontario Heritage Act.

g. Other cultural and recreational opportunities in Whitby include the Cullen Central Park, the Masonic Hall, the Whitby Courthouse Theatre, the Whitby Brass Band, the Station Gallery, the Centennial Building, the Whitby Museum, Whitby Public Library, Whitby Civic Recreation Centre, McKinney Centre, and the Iroquois Park Sports Centre.

h. There are also numerous parklands, sports fields, green space and conservation areas within Whitby that offer both active and passive recreational opportunities. The Waterfront with its cycling and walking trails, boating amenities, Heydenshore Park, and so on, are considered a major destination for local residents, community groups as well as tourists.

1.4.3 Local Economic Environment

a. Whitby has a strong industrial base in research, engineering and manufacturing of plastics, packaging, transportation equipment, pharmaceuticals, steel, and telecommunications. There are approximately 300 businesses in Industrial Zoned Areas, and there is employment in the Town for over 34,000 employees.

b. Whitby has one of the most diversified and stable economies, with one of the fastest growing populations. This represents a substantial opportunity for employers wishing to locate in Whitby with access to a local labour force of over 65,000 highly experienced people in all industries and working in all occupations. A sound transportation system to move goods and people is one of the many fundamental components to promote and attract and maintain business and employers to the community.

c. Employment areas are located throughout the Town with concentrated locations in the build-up areas within the south industrial and central industrial/commercial zones.

d. Port Whitby, a natural harbour on Lake Ontario, is among Whitby’s main assets economically. Port Whitby Marina provides a wide range of services including full season dockage and winter storage. The area east of Brock Street and south of Dundas Street also has a high concentration of employment.
There is also a wide variety of boutique stores within Downtown Whitby and Brooklin districts, with larger format commercial/retail services and entertainment destinations along the major arterials including Taunton Road, Victoria Street, and Thickson Road.

### 1.4.4 Local Natural Environment Constraints

a. There are several Natural Environment Features within the Study Area that were included in the assessment of roadway alternatives considered within the context of this Master Plan. These features are illustrated in Exhibit 1.3 and include:

1. **Wetlands** – There are a number of wetlands within Whitby. Generally wetlands fall within two categories: a) Provincially significant wetlands which are regulated by the Province and protected through the Provincial Policy Statement as well as Official Plans; and b) Locally or Regionally Significant wetlands for which policies associated with level of protection are included in the Official Plan. The Provincially Significant Wetlands in Whitby cover the central portion of Whitby and include Oshawa Iroquois Beach Wetland Complex, Whitby Harbour Wetland Complex, Lynde Creek Coastal Wetland Complex, Heber Down Wetland Complex, Cranberry Marsh, Corbett Creek Coastal Marsh, and Carruthers Creek Marsh Wetland Complex.

2. **Environmentally Significant Areas (ESA)** – The Environmentally Sensitive or Significant Area delineation is typically incorporated into the Official Plan where policies documenting level of protection are also included. Generally, the ESA lands shown on Exhibit 1.3 represent lands associated with the floodplains of watercourses (i.e. Pringle Creek, Lynde Creek and their tributaries) which are regulated by the Central Lake Ontario Conservation Authority (CLOCA).

3. **Wooded Areas** – Exhibit 1.3 shows wooded areas throughout Whitby. Many of the wooded areas are within the Oak Ridges Moraine and Greenbelt or are associated with watercourses. Wooded lands are typically identified and protected through Official Plans. The Region of Durham also has a tree cutting by-law for the protection of woodlots.

4. **Watercourses** – Watercourses within Whitby are also highlighted on Exhibit 1.3. Watercourses within the Town include Oshawa Creek West, Goodman Creek, Corbett Creek, Pringle Creek and Lynde Creek. These creeks support a diverse fish community and are managed as cold water fisheries. Aquatic species at risk are generally found in northern headwaters of the Lynde Creek and Pringle Creek. Major creeks and watercourses flow from the Oak Ridges Moraine to Lake Ontario.

b. It should be noted that the limits of the environmental constraints presented within Exhibit 1.3 are approximate and subject to change, and more detailed investigations and consultation will be required with the Central Lake Ontario Conservation Authority (CLOCA) and environmental approval authorities during future environmental assessments, design and implementation phases. Preliminary comments have been received from CLOCA regarding the TMP and have been incorporated into the document.
2 A VISION FOR TRANSPORTATION IN WHITBY

a. The transportation vision is an image of a desirable future mobility state, and for Whitby, it can be defined as: To move people and goods within and across the municipality: safely, conveniently, and reliably by providing an integrated, accessible, and financially sustainable transportation system. This system will have a balanced range of mobility options and choice for all users which crosses and links into Regional and Provincial transportation infrastructure, connects all borders of Whitby including integration with the waterfront, and safeguards the natural environment, protects residents and the social community fabric, and enables economic prosperity.

b. This vision has emerged as a result of consultation with the public, a review of existing transportation and planning documents and proposals for Whitby, Durham Region and the Greater Golden Horseshoe, along with environmental considerations and government fiscal realities.

2.1 Goal of the Whitby Transportation Master Plan

a. A goal or a series of goals must be successfully achieved, often over many years, in order to reach a desired vision. To this end, the goal of the Whitby Transportation Master Plan (TMP) is to: Establish, at a strategic level, an integrated and diversified transportation system and policy framework to support long-term growth and provide for efficient movement of people and goods to areas within and to/from the Town.

b. While the traffic modelling analysis undertaken for the TMP has been based on interim and 2031 planning horizon population and employment forecasts, the strategic policies and principles developed for the Master Plan are intended to be relevant for the foreseeable future, and only requiring adjustments as socio-economic fundamentals and philosophies change. Moreover, the transportation corridors recommended as part of this Study have considered corridor needs that should be protected to ensure opportunities are available for people mover systems in the ultimate Town build-out scenario, which may occur well beyond the 2031 planning horizon.

2.2 Transportation Principles

a. Defined below are the values or principles on how the Whitby transportation vision can be achieved. The following principles are presented in recognition of existing and projected mobility, economic and environmental conditions and from the opinions and sentiments expressed by the public and affected agencies. These principles are not presented in any order of importance, as they are all considered to be significant in their own right.

b. The Town of Whitby transportation system should strive to be:

1. Effective - safely accommodates future travel demands and servicing needs at an adequate level of service, and is developed considering the fundamental requirement to provide for and ensure long term economic viability for the community.

2. Accessible - provides a reasonable transportation choice for all residents, regardless of age, income or level of mobility.

3. Integrated - coordinates not only local modes, but is coordinated with Regional and Provincial transportation infrastructure and transit services.
4. **Multi-modal** - supports all known mobility user types including pedestrians, cyclists, transit riders, automobiles, goods movements, and envisions future methods not yet determined, ratified or commonplace (e.g. new electric devices, elevated people movers).

5. **Balanced** - provides for all trip types including local residents, businesses and visitors.

6. **Sensitive** - does not compromise the natural and socio-cultural environments, and in fact can provide opportunities to enhance such environs while providing a meaningful transportation service.

7. **Optimized** - maximizes the utilization of existing infrastructure before new transportation infrastructure for the same purpose is built.

8. **Affordable** - relies on an appropriate balance of Federal, Provincial, Municipal and private funding to facilitate the movement of goods and people.

9. **Sustainable** - can be maintained by the Municipality at an acceptable level of service and within its’ funding capabilities and resources.

10. **Coordinated** - blends land use and transportation service that supports the need for greater use of transit, pedestrian and cycling facilities and reduces dependence on the automobile.

### 2.3 Strategic Objectives

a. In order to achieve the above principles, the following strategic objectives need to be satisfied. These objectives have been utilized in the development of the guiding policies, procedures, infrastructure and initiatives, that are presented in this Master Plan:

1. **Transportation Principle: Effective** transportation system that safely accommodates future travel demands and servicing needs at an adequate level of service, and is developed considering the fundamental requirement to provide for and ensure long term economic viability for the community.

   i. The safe operation of transportation facilities is to be a major consideration in the infrastructure, service, and policy decisions of this plan.

   ii. Establish plans and programs to manage demand and make better use of existing supply of transportation service.

   iii. Access to major developments should be controlled and serviced by arterial roadways.

   iv. Residential driveway access should not be directed to arterials or major collectors. Utilization of “windrow” streets adjacent to major transportation corridors for access and servicing purposes should be considered in land use developments.

   v. Arterial roadway capacity should be optimized and, where necessary, enhanced to ensure efficient operation of the roadway and to minimize the potential for infiltration into neighbouring residential areas.

   vi. Arterial and connecting street configurations should be such as to maximize the effectiveness of the system and minimize the likelihood for infiltration and need for traffic calming.
vii. Street configurations should be such as to maximize the “capacity life” to defer as long as possible the need for widenings and new facilities.

viii. Streets should be configured to maximize “users to asphalt ratio” while maintaining adequate service levels (e.g. more grid patterns and less cul-de-sacs). For example, one measure of this is the current population to lane km ratio = 123,000 persons/1,050 lane km = 117 residents to lane km.

ix. Economic development effects and goods movement requirements should be addressed during the assessment of major transportation initiatives.

2. **Transportation Principle: Accessible** transportation system that provides a reasonable transportation choice for all residents, regardless of age, income or level of mobility.

   i. Maintain the ability to choose the auto for areas that are not serviced by transit but essential to serve personal accessibility needs and to ensure economic viability and growth within the community (i.e. rural areas within Whitby).

   ii. Maintain access and the ability to choose the auto for those destinations (e.g. waterfront park) and persons that may have mobility limitations and where the personal auto is the only real accessible choice.

   iii. Ensure new and upgraded transportation infrastructure is consistent with government policies and legislation for transportation accessibility. This includes conformance to the upcoming Accessibility for Ontarians with Disabilities Act (AODA) Built Form legislation (once enacted).

   iv. Review construction projects and development plans to identify where opportunities to accommodate improvements in accessibility and incorporate when possible, e.g. sidewalks, pathways, curb depressions, non-auto links, etc.

3. **Transportation Principle: Integrated** transportation system that connects local modes and nodes, and is coordinated with Regional and Provincial transportation infrastructure and transit service.

   i. In the development of new linkages, consideration should be given to the need to cross physical (i.e. rail, road) and natural barriers (water, valleys) so as to integrate Whitby land use origins and destination desires (e.g. waterfront).

   ii. The development of local transportation plans will consider and incorporate Regional and Provincial transportation initiatives and protect for linkages and facilities that maximize boundary less travel and efficiency of all mobility systems.

   iii. Promote the use of transit through transit oriented development and advocacy and support to the Region and Province in developing their strategic plans.

   iv. Establish and integrate goods movement related land uses within the Town to maximize opportunities to utilize the Region’s and Province’s higher order systems for heavy vehicles/trucks and rail service.
4. **Transportation Principle: Multi-modal** transportation system that supports all known mobility user types including pedestrians, cyclists, transit riders, automobiles, goods movements, and envisions future methods and modes not yet determined, ratified or commonplace (e.g. new electric devices, elevated people movers).

   i. Ensure new and upgraded transportation infrastructure considers and protects for walking, cycling and other non-auto mode forms of travel.

   ii. Ensure development plans consider and include a reasonable choice of travel modes and accessibility to all residents through the provision of transit services and access to/from active and traditional transportation infrastructure.

   iii. Plan new development with mixed use and higher densities along multi-modal nodes and corridors to support opportunities for transportation choices.

   iv. Promote and prioritize sustainable active transportation and non-auto travel modes such as walking and cycling by providing facilities and services, integrated with other modes, and land use developments that reduce the need for long distance commuting for work, education and shopping.

   v. Work with other government agency partners to develop and implement strategic directions for urban goods movement.

5. **Transportation Principle: Balanced** transportation system that provides for all trip types and uses including local residents, businesses and visitors.

   i. Develop the appropriate transportation linkages to provide sufficient movement of people and goods through Whitby while minimizing conflicts that deter user groups from comfortably sharing the same system.

   ii. Develop the appropriate transportation infrastructure and “Way” finding that can be easily negotiated by goods movements and links to key designations and attractions within the Town.

   iii. New linkages will be implemented as required to provide strategic connections which will maximize and integrate mobility opportunities for people and goods. Triggers should be based on solving a capacity issue, taking advantage of an opportunity (i.e. new development), satisfying a servicing need, or achieving a broad objective in the plan (i.e. facilitate a cycling route).

   iv. Ensure that the design of streets and right-of-ways balances its role to provide effective movement and access, while providing a sense of place for residents, businesses and visitors.

6. **Transportation Principle: Sensitive** transportation system that does not compromise the natural and socio-cultural environments, and in fact can provide opportunities to enhance such environs while providing a transportation service.

   i. Linkages between land use and transportation to be addressed during the assessment of any major transportation and planning initiatives. The concept of promoting a balance of liveability with mobility must be considered.

   ii. The social, natural, and cultural environments to be considered in the assessment and implementation of major transportation needs and initiatives.
so as to ensure every effort is made to mitigate/eliminate impacts and avoid areas of sensitivity and significance.

iii. Connection through neighbouring residential areas for auto trips should be carefully planned to minimize traffic infiltration on local streets by good network planning and provision of measures that encourage reduced auto usage via accommodation of transit use in design and facilities to support active travel modes.

iv. The development process requires the integration of transportation, land use, and environmental considerations in the establishment of plans so as to blend established communities with new areas without creating negative transportation and social impacts.

v. Transportation amenities should be developed which ensures the integrity of existing residential, commercial, industrial communities and recreational districts.

7. **Transportation Principle: Optimized** transportation system that maximizes the utilization of existing infrastructure before new transportation infrastructure for the same purpose is built.

i. The use of existing roadways will be optimized by initially improving intersections through physical (e.g. turn lanes) and operational modifications (e.g. signal timing), or by eliminating localized bottlenecks, where they represent constraints.

ii. Prior to building new arterials, assess other area existing facilities to determine if centre turn lanes or “basic” through lane widenings will solve the transportation problem and provide the necessary service requirements.

iii. Prior to building new arterials, assess if completing missing links on existing alignments will solve the transportation capacity and/or servicing problem(s).

iv. Prior to building new facilities (all modes), assess if other connections (e.g. interchanges, intersections, driveways) to the existing system would resolve the transportation deficiency and be more appropriate.

v. Coordinate with other levels of government in the development and implementation of traveller information systems to aid in trip planning, incident management, and parking management.

8. **Transportation Principle: Affordable** transportation system that relies on an appropriate balance of Federal, Provincial, Municipal and private funding to facilitate the safe and effective movement of goods and people.

i. New approaches such as the design/build and/or other finance opportunities with the private sector should be considered.

ii. Fiscal partnerships with other government agencies and the private sector should be pursued as they may offer significant opportunities for the funding of new transportation infrastructure.

iii. Infrastructure required to service growth to be provided by the development community.
iv. Investigate models for funding of infrastructure requirements and enhancements that will be necessary in planned intensification areas and establish a near term and long term strategies for financing.

9. **Transportation Principle: Sustainable** transportation system that is able to be maintained by the municipality at an acceptable level of service and within its’ funding capabilities and resources.
   i. Arterial and connecting street configurations should be designed such as to maximize the capacity and service life of the system while minimizing operational and financial maintenance and management requirements.
   ii. Identify opportunities and partner with other local municipalities and other government agencies for grant monies for sustainable initiatives.
   iii. Establish sustainable funding models for all transportation and related assets to establish measurable local government financial commitments in both operating and capital resources over the long term.
   iv. Develop “shelf” and “shovel” ready projects so as to be able to quickly capitalize on funding and grant opportunities when they arise.
   v. Implementation of infrastructure should consider and utilize, when appropriate, best practices and methodologies in sustainable design and construction while ensuring sound cost/benefit from a maintenance and asset management perspective.

10. **Transportation Principle: Coordinated** transportation system that blends land use and transportation service that supports the need for greater use of transit, pedestrian and cycling facilities and reduces dependence on the automobile.
   i. Reduce the propensity for and reliance on the automobile through a combination of supply management, demand management and land use management solutions.
   ii. Land use and densities should be optimized within the context of local Municipal, Regional and Provincial planning policies and plans so as to not exceed the mobility services provided and achievable, and reduce conflicts between the various travel modes and goods movement.
   iii. The development process should provide opportunities to improve transit, walking and cycling facilities while minimizing the impact of the new development on roadway reserve capacities.
   iv. All development proposals, secondary plans, neighbourhood plans, etc. will be reviewed considering transportation impacts and provide recommendations to implement measurable demand management and active transportation strategies to minimize the need for auto usage.
   v. Prioritize trip reduction for employers by encouraging TDM alternatives such as ridesharing, carpooling, telecommuting, flexible work hours and comprehensive parking strategies.
3 THE TRANSPORTATION PLANNING APPROACH

3.1 The Environmental Assessment Process

a. The Town of Whitby Transportation Master Plan (TMP) has been carried out in accordance with the Municipal Engineers Association (MEA) Class Environmental Assessment (EA) Document, October 2000 (as amended 2007), identified in Exhibit 3.1.

b. Described in the Class EA document are approaches which Master Plans can be undertaken. For Whitby’s TMP, the approach taken (referred to as Approach 1 in the Class EA document) includes the preparation of a Master Plan document at the conclusion of Phases 1 and 2 of the EA process along with the opportunity for public review before municipal approval.

c. The purpose for completing this Study as a Master Plan is to ensure that environmental assessment principals and public input are considered in the identification of existing and future transportation infrastructure requirements. This Whitby TMP documents the proposed recommendations to the Town’s transportation system, policies and guidelines.

d. Transportation Master Plans typically differ from project specific studies (or traditional traffic impact studies) in that they are undertaken as strategic plans and recommend a series of transportation works which are distributed throughout a “large” study area and which are to be implemented over a period of time. The scope of these studies usually includes a broader analysis of the transportation system in order to identify a framework for future transportation requirements. While these transportation requirements may be implemented as separate projects as part of a staging or implementation plan, collectively they form part of a larger transportation system management plan. As such, any elimination of an individual component of the Master Plan could affect the overall network and strategic plan.

e. Approval of this document by the Town reflects endorsement of the Master Plan and the overall transportation system requirements, but does not represent formal approval of any individual element of the transportation system.

f. Following municipal approval, the Master Plan will be the basis for, and should be used in support of, future investigations for the specific Schedule B and C projects identified within it. Schedule B projects would require the filing of the Project File for public review while Schedule C projects would have to fulfill Phases 3 and 4 of the Municipal Class EA process prior to filing an Environmental Study Report (ESR) for public review.

g. A number of initiatives in the Whitby TMP may not require Class EA approval (such as Transportation Demand Management (TDM) strategies). However, Class EA approval will be required for the majority of the proposed infrastructure modifications. The selection of the appropriate Class EA schedule is based on the construction value of the project and the associated guidelines set out in the Class EA. Four different levels of transportation projects are identified each requiring a different degree of EA investigation, they are:

1. **Schedule A Projects** – projects that involve minor modifications to existing facilities. Environmental effects of these projects are minimal and the projects are, therefore, considered pre-approved (e.g. local operational improvements and maintenance).
2. **Schedule A+ Projects** – projects that also generally involve minor modifications to existing facilities and are considered to be pre-approved under the EA Act, but a municipality is required to notify the public prior to project implementation (e.g. sidewalks and bike lanes within the existing right-of-way).

3. **Schedule B Projects** – projects that involve minor expansions to existing facilities. As there is some potential for adverse environmental effects, these projects are required to proceed through a screening process including public consultation (e.g. centre turn lane – depending on project value).

4. **Schedule C Projects** – projects that involve the construction of new major facilities and/or major expansions to existing facilities. These projects must pass through the entire EA planning process outlined in the Class EA (e.g. new road, rail bridge).

3.2 **The Transportation Study Approach**

a. The Whitby Transportation Master Plan was designed to integrate regional transportation planning and environmental assessment objectives and requirements into a comprehensive planning process. The strategy also involved an emphasis on the goals and objectives identified throughout the Master Plan process. In establishing mobility improvements for the Town, it is important to note that a balanced approach to the selection of solutions was undertaken considering the relative importance of all travel modes and not just solutions that favour the automobile. Modes and opportunities; namely transit, cycling, walking, transportation demand management and transportation systems management, were all equally considered in the tool kit of potential solutions to identified transportation problems.

b. Like most Master Plans completed at the municipal level, the Master Plan identifies forecasted travel demand to identify problems to be addressed. This leads to the identification of strategic solutions based on an overall long term Vision of Transportation.

c. The Town of Whitby is made up of a number of unique communities, each possessing its own land use characteristic, growth potential, and transportation problems and opportunities. As a result, the Town was separated into six Sub-Areas for the purposes of assessing specific community issues and opportunities and developing related recommendations. This is illustrated and discussed in Section 5.6.1 of this report.

3.3 **Public Consultation**

a. Several levels of consultation were completed for this Study and included internal involvement with Town Staff and Council, external agency involvement and review, and public involvement. A summary of the contact points is provided below.

3.3.1 **Internal Involvement**

a. The Master Plan was completed in consultation with staff from various Departments within the Town. Town staff were involved throughout the process to ensure issues and opportunities from a multi-discipline and strategic direction were incorporated into decision making and recommendations.

b. Presentations were also made to Town Council at “key” Study milestones regarding the process and directions in the draft analysis and findings. The purpose of these sessions was
to ensure that Council were well informed of the preliminary study results and played a meaningful role in establishing guidelines and recommendations.

3.3.2 External Agency Involvement

a. Contact was maintained with representatives from the Region of Durham and Central Lake Ontario Conservation Authority (CLOCA) throughout the Master Plan process to ensure pertinent issues, initiatives and requirements were considered in the development of the Study recommendations.

b. Town staff also contacted other area municipalities to ensure cross jurisdictional travel issues and opportunities were pursued and addressed where possible.

c. Contact was provided to various external regulatory and government approval ministries and agencies, notifying them of project commencement, information centre dates and requesting their comments.

d. Ongoing dialogue with these agencies will continue following completion of the Master Plan to enable coordinated and efficient implementation of system modifications and policies.

e. A copy of the relevant project correspondence is included in Appendix B.

3.3.3 Public Involvement

a. Throughout the Master Plan, the public and various groups in addition to Provincial Ministries, Municipalities, Agencies and Authorities, have had opportunities to make comments, identify issues and provide information relative to the Study. The comments and information provided by the public, interest groups, and stakeholders, have broadened the information base and facilitated good decision making in the completion of the Master Plan.

b. A detailed summary of the public input is provided in Appendix B.

c. The thrust of the public participation program was to allow for the exchange of ideas between the Project Team and the public. By providing individuals and interest groups with the opportunity to identify their concerns and special knowledge, the Project Team was able to respond to specific issues and comments.

d. A total of four (4) formal contacts with the public were made in conjunction with the preparation of this report and are detailed in Appendix B and noted below:

1. **Notice of Study Commencement and Initiation for Comment**
   October 2006
   Purpose: to detail the scope and purpose of the study, identify the Project Team and solicit input from the public.

2. **Public Information Centre No. 1 (3 sessions)**
   October 30, 2007 - Whitby Municipal Office, 2:00 to 4:00 pm, 6:00 to 8:00 pm
   November 7, 2007 - Brooklin Community Centre, 6:00 to 8:00 pm.
   Purpose: to present information related to the existing and future transportation conditions, strategic needs, issues and preliminary alternatives, next steps, and to seek feedback from interested residents and stakeholders.
3. **Public Information Centre No. 2** (3 sessions)
   November 5, 2009 - 6:30 to 8:30 pm, Heydenshore Pavilion, Port Whitby
   November 10, 2009 - 6:30 to 8:30 pm, Whitby Municipal Office
   November 12, 2009 - 6:30 to 8:30 pm, Winchester Public School, Brooklin
   Purpose: to present information on the transportation analysis, Sub-Area issues, alternative solutions, recommended network, and policies, and to seek feedback on work completed to incorporate into completing the plans.

4. **Notice of Study Completion and Invitation for Comment**
   April 30, 2010 to May 21, 2010
   Prior to presenting this Master Plan to Town Council for adoption and approval, the public was provided with the opportunity to review and provide input on the documentation and Study recommendations. All comments have been taken into account in finalization of the Master Plan, and are noted in *Appendix B*. 
4 STATE OF THE TRANSPORTATION SYSTEM

a. This section of the Transportation Master Plan identifies the existing transportation network in Whitby as well as committed plans for future expansion. The overall transportation system includes a network of roads, transit routes and active transportation infrastructure.

4.1 Existing System

4.1.1 Road Network

a. The existing roadway network within the Town of Whitby is identified in Exhibit 4.1. These facilities are comprised of Provincial, Regional and Municipal jurisdictional roads.

b. The major east-west route in the Town is Highway 401, which provides connections across southern Durham extending across southern Ontario from Windsor to Quebec. The Town is presently served by two interchanges to Highway 401, namely at Brock Street and Thickson Road. Flyovers also exist at Lake Ridge Road and Henry Street. The other Provincial facilities through Whitby include Highway 7/12 which extends from west of Durham Region to north of Whitby into Orillia.

c. Other major east-west roads that are under Regional jurisdiction include Victoria Street in south Whitby, Taunton Road through the mid part of Town, and Myrtle Road in the north. Significant north-south Regional roads include Lake Ridge Road and Thickson Road which extend from the Lakeshore communities to north of Whitby and Brooklin, respectively.

d. Key existing local Municipal arterials include: Garden Street; portions of Dundas Street, Brock/Baldwin Street, Rossland Road and Anderson Street; Garrard Road; and Columbus Road. These roads provide integral service across the Town, and connect into other Regional and Provincial systems both within the Municipal boundaries and beyond.

e. Refer to Appendix C for a summary of specific characteristics of each roadway, including their jurisdiction, classification and number of lanes. Recommended changes in road classification resulting from this Master Plan will require adoption in future Official Plans.

4.1.2 Transit Network

a. Local transit service in Whitby is provided by Durham Region Transit (DRT). Service coverage across the Whitby urban area is comprehensive and nearly all arterial roads receive service. Route design is generally in a “straight line” pattern with small loops to provide increased coverage. Major transit corridors provide frequent, efficient and direct service along major arterial roads and provide opportunities for intensification. Local bus routes in most cases are interconnected with rail via service to the Whitby GO Station located southwest of the Highway 401/Brock Street interchange with access via Brock Street, Henry Street and Victoria Street. Service frequencies vary by route, time of day and day of week. Generally, peak period service is provided every 15 to 30 minutes. A map illustrating the existing DRT bus service is included Appendix C.

b. GO Transit also provides interregional opportunities through Whitby and across the Greater Toronto Hamilton Area (GTHA) using both GO Trains and GO Buses. The current services provided in Whitby include:
1. **Lakeshore East GO Train** – Union Station to Oshawa. Daily service is provided with additional trains during weekday peak hours.

2. **Oshawa Highway 2/Dundas Street GO Bus** – Service between the Oshawa GO Station and Toronto through Downtown Whitby, connecting to local and regional routes as well as with the Whitby GO Station via Brock Street.


4. **Port Perry GO Bus** – Service connecting north Durham (Beaverton, Greenbank, Port Perry) through Brooklin via Baldwin/Brock Street to the Whitby GO Station.

   c. GO Transit continually assesses their schedules to fine tune to meet user demands and fleet availability. While the schedules of service may vary depending on the route and time of day, generally there is daily service on all the routes with the peak hour peak direction frequencies being greater than off peak service (e.g. weekends, late evening, and holidays).

### 4.1.3 Active Transportation Network

a. The Town presently has a well developed sidewalk system (450 km) that continues to expand as new roadways are built and upgraded. The Municipality, as per the Ontario Municipal Act 2001, is responsible for all sidewalks on lower and upper tier roadways. Sidewalks are planned and typically provided on all urban roadways and tend to be on both sides on higher order facilities such as arterials, residential collectors and one side on local streets and industrial collectors. It is envisioned that as accessibility needs becomes more predominate, sidewalks and active pathway provision requirements will expand.

b. There are approximately 82 km of multi-use trails in Town owned Parks and along the Whitby Waterfront, and approximately 14 km of bike lanes/paved shoulders/multi-purpose paths on road (Town and Region) allowances. At present, there are limited opportunities for cycling on the area road network and this aspect of the mobility system needs to be enhanced so as to achieve the Town’s “Transportation Vision.” The Town is in the process of completing its Cycling and Leisure Trails Study which identifies the Town’s major network—refer to Section 4.2.4. For further discussion.

c. Since 2008, the Municipality has implemented the practice of implementing cycling and pathway facilities with local road construction projects where the opportunity has presented itself, and in some cases on Regional boulevards as well. These pathways not only accommodate bikes but other accessible (e.g. scooters) and recreation (e.g. roller bladers) users as well. The TMP recognizes that the active transportation network requirements will exceed that specified in the Cycling and Leisure Trails Study as site specific and user’s needs will evolve as local communities develop and that rights-of-way will be necessary to accommodate such needs.

### 4.2 Planned System and Initiatives

a. There are a number of significant Provincial and Regional planned and committed improvements to the transportation network in Whitby that are anticipated to be in place by 2021. These improvements have either EA or Council approvals, or are major studies
currently underway and will form part of the roadway, transit and active transportation network. These are highlighted in Exhibit 4.2 and noted below.

b. To identify any additional improvement requirements necessary at the local municipal level, it was critical to understand future travel behaviour and system performance with these committed improvements considered. As such, the overall assessment of the future “2031 base case scenario” was premised on the planned and committed 2021 Regional and Provincial proposals being built.

4.2.1 Provincial Roadways

a. Ministry of Transportation of Ontario (MTO) Highway 407 East Transportation Corridor Extension from Brock Road (Pickering) to Highway 35/115 (Clarington).

1. Planned for an ultimate ten (10) lanes on the main highway with two planned six (6) lane ultimate link connections to Highway 401, one in West Whitby near Halls Road and the other to the east in Clarington. The facility will also accommodate a right of way for dedicated transit as well as transit stations. Refer to Appendix D an illustration of the proposed route alignment, interchanges, flyovers, and transit station locations.

2. MTO completed the Individual Environmental Assessment (IEA) Study and documentation in January 2010 for the highway/transitway extension. On May 26, 2010, a Notice of Approval to Proceed with the Undertaking was signed by the Minister of Environment. A Federal-Provincial agreement identified a completion date of 2013 for the Highway 407 East Transportation Corridor however, no decisions have been made about its implementation.

3. Over the next few years, Town staff should work with MTO officials in regards to local road network modifications, timing, staging, and financial arrangements associated with the new highway. This includes:
   i. The need for the initial stage of the freeway to extend through Whitby.
   ii. Coordinating the funding/construction of Coronation Road in the West Whitby Secondary Plan Area which is required due to the loss of Halls Road to accommodate the freeway link. The realignment of Coronation Road from Dundas Street to Taunton Road was part of the approved Highway 407 EA.

4. The Highway 407 East Transportation Corridor and West Durham Link will complement the existing Regional and Town transportation system and help relieve existing and future projected congestion within the Town. Particular features of the highway are:
   i. Highway 407 Mainline
      • Ultimate 10 lanes.
      • 2031 planning horizon base case model – 4 lanes.
      • Extends easterly from Brock Road (along an alignment north of Highway 7/Winchester Road), then crosses Highway 7 just west of Ashburn Road and continues easterly into Oshawa.
      • Interchanges at Lake Ridge Road, Baldwin Street and Thickson Road.
      • Flyovers at Coronation Road, Cochrane Street, Ashburn Road, Anderson Street. Highway 7 crosses over the mainline.
- Transitway stations on south side of mainline at Lake Ridge Road, Baldwin Street and Thickson Road.

ii. West Durham Link
- Ultimate 6 lanes.
- 2031 planning horizon base case model – 4 lanes.
- Extends from Highway 407 to Highway 401 east of Lake Ridge Road near Halls Road.
- Interchanges at Taunton Road, Rossland Road and Highway 401 with partial interchanges at Highway 7/Winchester Road and Dundas Street.
- Transitway stations on west side at Dundas Street, Rossland Road and Taunton Road.

b. Highway 7/Winchester Road Widening Brock Road, Pickering to Brock Street, Whitby
1. Environmental assessment completed and approved for widening from 2 to 4 lanes. Utility relocation, property acquisition and advance structure construction has begun. MTO representatives have indicated widening to be completed by 2012.

c. MTO Highway 401 Widening Salem Road in Ajax to Brock Street in Whitby
1. Current Preliminary Design and Class Environmental Assessment Study being undertaken by the Province. The project is to incorporate the following:
   i. Widening and realignment to ultimate 12 lane express-collector system west of the West Durham Link and 10 lanes east of the West Durham Link. This will include:
      - Connection to Highway 407 West Durham Link.
      - New interchange at Lake Ridge Road.
      - Replacement/new interchange at Brock Street and flyover at Henry Street.
      - Realignment of Lake Ridge Road to the west of the existing road.

2. Details on implementation staging of highway improvements have not yet been identified at the time of preparing this report.

3. Over the next few years, Town staff should work with Ministry officials in regards to ensure the scope of the EA work incorporates local freeway issues and requirements, provisions for local road network modifications are considered/protected, and to further establish timing and staging. Some of the specific Town transportation issues to be considered include:
   i. Provision of sidewalks and bike lanes on structures.
   ii. Continued recognition of Burns Street as a Type ‘C’ arterial road with a 26-30 metre right-of-way (as designated in the Town of Whitby Official Plan).
   iii. Construction of the Lake Ridge Road interchange in concert with the Highway 407/West Durham Link construction and as part of the initial phase of the Highway 401 widening.
   iv. Detailed assessment of future conditions, deficiencies and requirements for additional interchange capacity and servicing to/from/across Highway 401.
   v. Connections to/from Highway 401 westbound via Garden Street.
   vi. Detailed assessment of the Brock Street South to Highway 401 Westbound on ramp which is fundamental to adequately accommodate future travel demands.
d. **MTO Highway 401 Widening from Brock Street, Whitby to Stevenson Road, Oshawa**

1. The Province has completed an EA Study for the widening to a 10 lane cross section with interchange upgrades. This project has been on hold; however is anticipated to be reassessed now that the Highway 407 East Transportation Corridor has been approved.

e. **Implementation Staging and Coordination of Projects**

1. Given the number of various Provincial initiatives being planned and undertaken in the Whitby/Durham area, Town staff should regularly consult with Ministry officials to ensure implementation and construction staging issues are assessed and coordinated. This includes understanding of coordination requirements, if any, with Town and Regional projects.

### 4.2.2 Regional Roads

a. A number of Regional Road improvements are planned to be implemented by 2021 to support the land use framework in the Regional Official Plan. These are identified in Exhibit 4.2 and included in the base case modeling.

b. **Region of Durham Transportation Master Plan (2005)** - was developed as a strategic planning document to address policies, program and infrastructure improvements required to address the Region’s transportation needs up to 2021. The plan is an approved document used by the Region to guide transportation policy and infrastructure development. It deals with three coordinated strategies to achieve a Vision for Transportation in the Region, namely:

   1. Providing more travel choices;
   2. Improving the road system; and
   3. Mitigating environmental and community effects.

c. Recommendations articulated in the Region’s TMP have been taken into account in the development of the Town of Whitby’s Transportation Master Plan and included in Part III of this report.

### 4.2.3 Transit Network

a. There are significant plans in place to improve transit services in Durham Region by both Durham Region Transit (DRT) and Metrolinx (GO Transit). The objective of these improvements is to increase overall transit mode share and reduce single-occupant vehicle use. These initiatives have been included as part of the base case modelling as a key component to the reduction in single occupant vehicle trips and in the development of the Master Plan recommendations for the various modes of infrastructure and policy recommendations. These initiatives are outlined below and highlighted on Exhibit 4.3.

b. **Region of Durham Official Plan**

   1. The Plan identifies a Transit Priority Network of Transportation Hubs, Commuter Stations, Transit Spines, Commuter Rail and Freeway Transit which encourages a complementary higher density and mixed uses for Transportation Hubs and Commuter Stations.
2. In the Official Plan, Transit Spines are identified on Victoria Street, Dundas Street, Rossland Road, Taunton Road, Conlin Road, Columbus Road (east of Baldwin Street), Brock/Baldwin Street, and Thickson Road. Freeway Transit is also identified on the proposed Highway 407 East Transportation Corridor and West Durham Link. The plan also supports the extensions of GO Rail service to Bowmanville, Uxbridge and the Seaton Community along existing rail corridors.

c. Durham Region Long Term Transit Strategy (LTTS)

1. The Region has completed a Long Term Transit Strategy to establish the direction of transit in Durham Region and the role that rapid transit will take over a 50 year period.

2. Within Whitby, the salient highlights of the LTTS include the following:
   i. Light Rail Transit (3-5 minute peak frequency)
      • Taunton Road from Whites Road in Pickering to Simcoe Street in Oshawa
      • Dundas Street/Highway 2 from west Durham Region boundary to Courtice Road in Clarington
   ii. Bus Rapid Transit (5 minute peak service)
      • Brock/Baldwin Street from Victoria Street to Brawley Road in Whitby
      • Winchester Road from Baldwin Street to Simcoe Street in Oshawa
   iii. Enhanced Conventional (Priority) Transit (10 minute peak frequency)
      • Rossland Road between Sideline 22 in Pickering and Courtice Road in Clarington
      • Thickson Road between Winchester Road and Victoria Street
      • Highway 7/Winchester Road between Brock Road in Pickering and Baldwin Street in Whitby
   iv. Protect for Future Rapid Transit
      • Bayly/Victoria/Bloor Street between Brock Road in Pickering and Courtice Road in Clarington
      • Baldwin Street between Winchester Road and Brawley Road in Whitby
      • Columbus Road/7th Concession between Brock Road in Pickering and Simcoe Street in Oshawa

3. These above routings are consistent with the Transit Spine network in the Region’s Official Plan, with the exception of Highway 7/Winchester Road replacing Columbus Road and Conlin Road as the preferred transit corridor.

4. Success of these transit initiatives along with the balanced integration of other modes is fundamental to ensure that modal share targets set by Whitby are achievable. Town staff should work closely with Region officials to ensure coordination and integration between Town and Regional infrastructure.

d. The Big Move – Regional Transportation Plan

1. In addition to 25 year vision of the Regional Transportation Plan (RTP) for sustainable transportation in the GTHA, the RTP also identifies a number of “quick win” projects which are all due to be in service within 5 years. The most critical to
Whitby is the implementation of rapid transit service along Dundas Street connecting Kennedy Subway Station or Scarborough Centre to Oshawa through Whitby.

2. In the 15 year timeframe, Bus Rapid Transit (BRT) has been identified along Highway 407 and extending into Whitby (and West Durham Link) with priority measures such as bus bypass shoulders and improved station access where necessary. In the later years of the RTP, this corridor will be provided with a dedicated transitway which is being protected along Highway 407.

3. In 16-25 years Durham, Toronto and York is to be connected by a new rapid transit service along the rapidly developing Taunton Road/Steeles Avenue corridor.

4. Metrolinx’s 15 year plan and the GO Transit 2020 Plan have identified express rail service between Toronto and Oshawa. This includes the electrification of the corridor which will reduce overall travel time and allow more frequent train service. The GO Transit 2020 Plan has also identified service frequency improvements between Toronto and Oshawa with peak service every 15 minutes or less, counter peak service every 30 minutes or less and twice hourly off-peak service.

5. These improvements in transportation will have a significant impact on transit use and were incorporated into the overall Master Plan. It should be noted, however, that these projects are conditional on planning and funding approvals.

6. At the time of finalizing this report, Metrolinx approved revisions to the plan to be presented to the Government of Ontario for approval. The plan notes 5 major projects to be completed in 10 years at $9.5 billion including York Region's VIVA Next Bus Rapid Transit, the Sheppard Light Rail Transit (LRT) line, the refurbishment of the Scarborough Rapid Transit (RT), a Finch LRT and the Eglinton Crosstown LRT.

c. **GO Transit East Extension Oshawa to Bowmanville**

1. GO Transit has proposed an extension of train service easterly from Oshawa into Bowmanville (no date has been committed to). Service is also planned to be expanded and enhanced, which will better enable the Region to achieve transit mode share objectives and reductions in auto usage. Part of the construction plans will include upgrades to local road infrastructure including rail grade separations at CN Rail/South Blair Street, a new grade separated GO track crossing Thornton Road, and a new commuter station on the north side of Highway 401 just west of Thornton Road (at its intersection with the Consumers Drive extension). Refer to Appendix D for the proposed plan.

2. The introduction of this service may change travel behaviour and demands through Whitby, with a reduction in auto trips between Bowmanville/Oshawa and Toronto.

4.2.4 **Active Transportation**

a. The Town of Whitby Official Plan (April 2007 Consolidation) references pedestrian and non-motorized movement. It encourages the promotion and creation of bicycle routes/lanes on major arterial roads, in new developments/redevelopments, linking major open space and park systems which provide access to major activity and employment centres, and in existing
linear features such as utility corridors, easements and abandoned railways. It also recognizes that more study is required to define appropriate active transportation routes.

b. One of the strategic directions of the Official Plan is to “develop a linked system of bikeways and pathways, which incorporates trail-based recreational activities and encourages cycling as an alternate mode of transportation”.

c. In 2005, the Town completed a Working Draft Bicycle Plan which identified some of the key arterial routes and policies for cycling. The purpose of the 2005 study was to provide information to the Region for incorporation into their cycling plan and to provide the Town with a “starting point” for the development of cycling facilities in road allowances. Building on the previous transportation work undertaken and Official Plan, the Town recently initiated a Cycling and Leisure Trails Study which is to be completed in 2010. The objective of the study is to develop a connected network of cycling and leisure trail routes, which allows cycling in Whitby to be more convenient, comfortable and safe.

d. Recognizing that cycling systems are built out over many years, it is recommended that dedicated funding be established for both installation and maintenance for such active travel facilities.

e. The Region developed a Draft Trail Network in 2006 which identified existing trails and proposed an enhanced network based on a number of criteria including, but not limited to:

1. Interconnection and enhancement to the Lake Ontario waterfront trail;

2. A Regional trail system that establishes connections between:
   • Area municipalities;
   • The Oak Ridges Moraine and Lakes Ontario, Scugog and Simcoe;
   • Other key destination points such as marinas, parks, conservation areas; and
   • Trails beyond the Region’s boundary.

f. The Draft Regional Trails Network in Whitby includes the existing Lynde Creek Trail, Pringle Creek Trail and Lake Ontario Waterfront Trail. The Lynde Creek Trail and Pringle Creek Trail are proposed to merge north of the Whitby urban area before extending further north and connecting into the Oak Ridges Moraine Trail in Scugog. Both are also extended southward to connect to the Lake Ontario Waterfront Trail.

g. The Durham Region Cycling Spine Network (October 2008) identifies Regional cycling spines and areas to be further studied. In Whitby, Taunton Road, Victoria Street and Lake Ridge Road have been noted as spines with Dundas Street requiring further review. Various sections of the off road multi-purpose paths have been/plan to be implemented by the Town with preparatory grading and property work completed by the Region.
5 TRAVEL DEMANDS AND FUTURE GROWTH

5.1 Existing Travel Demand Characteristics

a. Understanding existing travel behaviour provides the basis for forecasting future travel demand. In addition to using traffic counts undertaken by the Town, Region and MTO, information gleaned from the 2006 Transportation Tomorrow Survey (TTS)\(^1\) was used to identify notable characteristics about current typical weekday peak hour travel in Whitby. It should be noted that it is industry standard to base infrastructure requirements on weekday peak hour travel characteristics.

b. Summarized in Table 5.1 below are the TTS 2006 a.m. peak period (6:00 to 9:00 a.m.) travel characteristics for the origin and destination “work” trips to/from Whitby. For the purpose of this Study, it has been assumed the converse is true for the p.m. peak period.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Percentage of Work Total Trips</th>
<th>Work Trips to Whitby</th>
<th>Work Trips from Whitby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durham Region</td>
<td>91%</td>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>Clarington</td>
<td>12%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Oshawa</td>
<td>32%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Whitby</td>
<td>35%</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Scugog</td>
<td>3%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Ajax</td>
<td>5%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Pickering</td>
<td>3%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Uxbridge</td>
<td>1%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Toronto</td>
<td>5%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>York Region</td>
<td>2%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Peel Region</td>
<td>1%</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

c. The key salient statistics noted in Table 5.1 are as follows:

1. The majority of work trips (91%) to Whitby are from within Durham Region with 35% from Whitby itself and 32% from Oshawa.

2. Approximately 46% of the people that live in Whitby and work, travel west to Toronto, York and Peel.

3. Approximately 21% of the work trips leaving Whitby are destined to places within the Town.

d. Based on review of the above, it can be concluded that the greatest pressures on present peak travel in Whitby during peak periods is on east-west travel. Given the geographic

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\(^1\) The Transportation Tomorrow Survey is a travel behaviour survey conducted by the University of Toronto Data Management Group. This telephone survey is undertaken every 5 years with participating Greater Golden Horseshoe municipalities. Questions probe household travel behaviour and demographic characteristics of travels. The survey data is an essential tool in the demand forecasting process.
configuration of the Town being primarily north-south oriented, there is the likelihood that north-south routes are experiencing higher travel demands for those trips actually destined to/from the west – i.e. an east-west problem is manifesting itself into a north-south problem.

e. It is expected the peak flow to/from the east/west will be the predominant direction for the foreseeable future. This is based on the existing and planned employment growth centres, and the location of Whitby relative to Lake Ontario and the Oak Ridges Moraine.

f. Summarized in Table 5.2 are the primary modes of travel during the a.m. peak period for all purpose trips to/from Whitby (source: TTS data). Based on a review of the statistics in Table 5.2, it can be concluded that:

1. For trips entering Whitby during the a.m. peak period, the percentage of automobile trips is much higher than other modes. It is assumed that this is due to the lack of adequate rail and bus transit service into Whitby during the a.m. peak period and transit connections to employment areas.

2. Internal trips within Whitby have a much higher share of walking and cycling trips. It is assumed that this is due to the closer proximity of origins (i.e. home) and destinations (e.g. school).

3. Improved inter-regional and local transit service, as well as pedestrian/cycling linkages will assist in reducing the dependency on auto for local and regional trips to and internal within Whitby.

4. The greater number of destinations (e.g. work, school, shopping) within closer proximity to living areas will aid in reducing the auto use.

Table 5.2 – Percentage of AM Peak Period All Purpose Trips To/From Whitby by Mode

<table>
<thead>
<tr>
<th>Mode</th>
<th>Percentage of All Purpose Trips AM Peak Period (6:00 am to 9:00 am)</th>
<th>Internal Trips (within Whitby)</th>
<th>Trips from Whitby</th>
<th>Trips to Whitby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto (Driver)</td>
<td>54%</td>
<td>78%</td>
<td>86%</td>
<td></td>
</tr>
<tr>
<td>Auto Passenger</td>
<td>17%</td>
<td>8%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Local Transit</td>
<td>4%</td>
<td>3%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>GO Train</td>
<td>0%*</td>
<td>11%</td>
<td>1%*</td>
<td></td>
</tr>
<tr>
<td>Walk/Cycle</td>
<td>16%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
<td>0%</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

* Due to limited GO Train service

5.2 Population and Employment Growth

a. Summarized in Table 5.3 below are the population and employment forecasts used in the transportation demand forecasting model for this Master Plan. The forecasts have been based on the Province’s Places to Grow projections and Region of Durham’s ROPA 128.
Table 5.3 – Population and Employment Growth (up to 2031)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transportation Model Forecast</td>
<td>ROPA 128 Forecast</td>
</tr>
<tr>
<td>2006</td>
<td>115,600</td>
<td>115,600</td>
</tr>
<tr>
<td>2021</td>
<td>164,612</td>
<td>156,915</td>
</tr>
<tr>
<td>2031</td>
<td>197,536</td>
<td>192,860</td>
</tr>
</tbody>
</table>

b. A significant portion of the population growth is planned in West Whitby and northwest Brooklin. Employment growth in Whitby is also planned for areas adjacent to the Highway 407 East Transportation Corridor and the West Durham Link. There are also zones within the municipality anticipated for intensification, namely along the major arterials such as Dundas Street, Taunton Road, Brock Street and Thickson Road, and in Port Whitby.

c. These growth areas will place a significant strain on the existing transportation system unless suitable improvements and strategies are implemented.

5.3 Demand Forecasting Approach

a. A demand forecasting exercise was completed for the Whitby Transportation Master Plan to determine the existing and forecasted (2021 and 2031) travel demand associated with planned population and employment land use in the Town of Whitby, and to evaluate physical and operational improvements and policy initiatives which will satisfy the transportation needs identified. A detailed explanation of transportation modelling approach and application is summarized in Appendix E.

b. The modelling approach used a modified version of the Region of Durham p.m. peak demand forecasting (EMME/2) model to provide information to identify deficiencies, evaluate capacity-related infrastructure solutions and assess strategies aimed at reducing travel demand and/or auto use. The model was updated to include new network, travel, and population/employment assumptions. The model derives system-wide volumes in consideration of horizon year travel demands and transportation infrastructure. Origin and destination information from the TTS has been incorporated into the demand forecasting model.

c. In order to assess overall transportation conditions in the Town of Whitby and permit an assessment of relevant and practical transportation servicing opportunities, a series of screenlines were used. A “screenline” is an imaginary or real boundary that defines a broad corridor through which traffic flows. The screenline may represent one road link or several road links. The screenlines used for this Study are illustrated in Exhibit 5.1.

d. The model compares the capacity of the roads crossing the screenline with the volume of traffic anticipated to determine whether there will be adequate roadway capacity across the screenline in the future. The V/C (volume/capacity) ratio for an intersection/roadway indicates the degree of saturation that is being achieved. A volume to capacity ratio of 1.0 represents the "theoretical capacity" and usually represents forced flow. The "practical capacity" is dependent upon what level of service is considered acceptable for the surrounding environment and traffic patterns.

e. For this TMP, a v/c ratio of 0.90 was considered to represent "practical capacity" and usually represents unstable flow. The planning and design of new facilities to
relieve the v/c constraints should be completed well in advance of, often many years prior to, practical capacities being reached.

5.4 Existing Transportation System Performance

a. A model was developed to identify the existing demand and level of service on the area network based on existing population/employment, transportation infrastructure and travel behaviours. The results of the screenline analysis for existing conditions are illustrated in Exhibit 5.2.

b. Based on the results of the demand forecasting model, a number of screenlines have been identified as operating at/beyond capacity during the p.m. peak hour, including:

- East of Lake Ridge Road
- West of Brock Street
- West of Thickson Road
- East of Thickson Road
- South of Dundas Street
- South of Rossland Road
- South of Taunton Road

C. Based on the assessment of existing conditions, it has been concluded that a number of areas of the roadway network are currently operating at a poor level of service during peak periods and there is a clear need for enhancements to the Whitby transportation system to accommodate existing and future anticipated travel demands.

5.5 Future Transportation System Performance

a. The analysis began with the assessment of a future “base-case” condition for the 2031 horizon year. The future “base-case” condition included approved roadway expansions identified by the Province and the Region as described in Section 4 of this report. The purpose of the base case analysis was to quantify the magnitude of the strategic “transportation problems” within the primary Study Area and also represents the “Do Nothing” alternative in terms of Master Plan roadway solutions.

b. The demand forecasting model for the 2031 base case also assumes a 15% reduction in automobile usage from 2006 conditions. This was based on consideration of the previous target set by the Region for 2021 being a 15% reduction from 2001 conditions. Measures and policies (rapid transit, intensification, Smart Commute) to achieve this reduction in auto usage are being planned, with some already initiated, by the Regional and Provincial governments. One of the objectives of this Master Plan is to identify, at a local municipal level, further incentives (e.g. walking, cycling, land use) to achieve this reduction target in auto usage.

c. To assess the success of the 15% auto reduction target, ongoing monitoring of the various mode shares will be required. Performance measures to assess the mode share reduction are noted in Section 12 of this document. This will aid in enabling which programs are reaching their goals and which need refinement or adjustments to better meet targets. This exercise should be completed by all levels of government.
d. The forecasted travel demand of the “base case” transportation network was modelled to determine whether adequate roadway capacity will exist to accommodate 2031 projected demands. This was undertaken at both a strategic and Sub-Area level.

e. The findings from the p.m. peak hour demand forecasting model of the 2031 “base case” scenario from a Town Wide perspective are illustrated in Exhibit 5.3. Based on a review of the analysis results, the screenline deficiencies are noted as follows:

East/West travel:
1. West of Brock Street - over capacity (eastbound)
2. Remaining screenlines - approaching capacity (eastbound)

North/South travel:
1. South of Taunton Road - over capacity (southbound)
2. Remaining screenlines south of Winchester Road - approaching capacity (northbound and southbound)

f. While the demand forecasting model was based on the p.m. peak hour, it has been assumed that the same deficiencies are projected to occur in the opposite direction during the a.m. peak hour.

g. The 2031 base case screenline deficiency assessment indicates a generally better system performance than under existing conditions. This is likely due to the construction of Highway 407 East Transportation Corridor and the West Durham Link through Whitby, the expansion of certain Regional roads, and the assumed auto reduction factors based on improvements to the transit, TDM and active transportation network.

h. In addition to utilizing the demand forecasting model to assess future needs, the review of land servicing requirements and network connectivity was also taken into account when assessing and establishing alternative and recommendation infrastructure solutions.

5.6 Town Wide Screenline Need and Justification Summary

a. Based on the above assessment, the following has been concluded:

1. Existing operating conditions within the Town of Whitby, at a strategic level, are exceeding the capacity of the surrounding road system; and

2. Even in the long term with other area Regional and Provincial road improvements and 15% reduction in auto volumes, the critical screenlines within the Town are projected to be operating at/near capacity.

b. On the basis of the above two transportation problem statements, it has been concluded that there is a need and justification to proceed with identifying improvement solutions within the context of this Master Plan. The scope of the specific problems, potential solutions and timing requirements are required to be examined in greater detail to ensure the appropriate solutions that meet the overall Transportation Vision are identified.

c. The Town of Whitby represents a large geographic area with many unique communities. Each of these communities has its own characteristics and thus transportation problems and opportunities. For example, Lakeshore Whitby will experience a higher level of intensification and redevelopment growth than will occur in undeveloped “Greenfield”
lands, such as in north and west Whitby. The transportation characteristics and the ability to address growth in each of these areas may result in different problems/opportunities and potential strategies to address them.

d. From a capacity perspective, using one north/south and one east/west screenline through the Town as noted in Exhibit 5.1 does not truly represent the extent of the transportation condition in a specific geography and may result in a localized problem not being identified. As such, further analysis on a more localized area basis was considered.

e. In addition, considering the need to protect for future servicing requirements was also a focus in the TMP. In particular, to support the long term growth and provide for efficient movement of people and goods, the Town will need to ensure corridors are protected to optimize the use of the existing roadway network, and to ensure effective connections to support and service development for all modes including transit and active transportation.

f. As a result the above, it was determined that there is a clear need and justification to:

1. Further investigate problem areas in Whitby;
2. Identify Sub-Areas with unique characteristics and problems/opportunities;
3. Identify and assess alternative solutions from the Sub-Area analysis;
4. Develop and protect a transportation system to enable long term mobility, access, safety and goods movement; and
5. Identify linkages that ensure connectivity of the transportation network, thereby optimizing transit and active transportation opportunities and minimizing traffic infiltration through residential neighbourhoods.

### 5.6.1 Sub-Area Transportation Assessment

a. The Town was divided into six Sub-Areas which were used to further refine the area specific problems and recommended solutions. The Sub-Areas are based on distinct communities in Whitby that have unique land use and transportation characteristics. These are illustrated in Exhibit 5.4 and identified below:

1. **Sub-Area 1 – Lakeshore Whitby** - bounded by Highway 401 to the north, Lake Ontario to the south, and the Town limits to the east and west.

2. **Sub-Area 2 – South Whitby** - bounded by Dundas Street to the north, Highway 401 to the south, and the Town limits to the east and west.

3. **Sub-Area 3 – East Whitby** - bounded by Taunton Road to the north, Dundas Street to the south, Brock Street to the west, and the Town limits to the east.

4. **Sub-Area 4 – West Whitby** - bounded by Taunton Road to the north, Dundas Street to the south, Brock Street to the east, and the Town limits to the west.

5. **Sub-Area 5 – Central Whitby** - bounded by the future east extension of Highway 407 to the north, Taunton Road to the south, and the Town limits to the east and west.

6. **Sub-Area 6 – North Whitby** - bounded by Townline Road to the north, the future east extension of Highway 407 to the south, and the Town limits to the east and west.
b. Provided in this section of the document is the review of the strategic operating conditions and issues for each of the Sub-Areas considered within the context of this Master Plan. Specifically, the Master Plan considered both the:

1. Interrelated needs of adjoining Sub-Areas and travel corridors; and
2. Unique needs of the Sub-Areas.

c. Highlighted in Exhibits 5.5 through 5.7 are the volume to capacity modelled projections for the 2031 planning horizon for the critical screenlines through the Town and Sub-Areas. Some of these screenlines extend through more than one Sub-Area and represent one aspect of the interrelated elements between communities that have been considered in the assessment of Sub-Area needs. The same modelling assumptions as that previously noted (e.g. base case with 15% reduction in auto use) that was applied at the Town wide level was also employed for the Sub-Area review.

d. In addition to the screenline analysis, a localized review of specific issues was also undertaken and is highlighted in the following sections. The purpose of this assessment was to ensure that while the TMP is based on strategic solutions, the recommendations put forth reflect the certain unique needs within the various communities of the Town. In particular, for each Sub-Area the following has been described:

1. Highlight of the significant physical issues, characteristics and environmental constraints that may limit the ability to accommodate forecasted travel demand and future land servicing needs; and
2. Identification of areas where transportation capacity deficiencies or limitations, or servicing challenges presently exist and/or are expected to occur.

5.6.2 Sub-Area 1 – Lakeshore Whitby

a. Existing Characteristics and Constraints

1. There are significant recreational, cultural, tourist, and travel features and destinations within the area and trips to/from the various amenities are frequent and comprise of all modes and user groups. Some of the major locations are:
i. The Waterfront Park and Trail system, Marina facilities adjacent to Whitby Harbour and Lake Ontario, beaches and permitted Lake swimming, the soccer fields south of Victoria Street between Watson Street and Gordon Street, and Lynde Shores Conservation Area (for hiking, fishing and bird watching).

ii. The Iroquois Park Sports Centre (hockey, figure skating, etc.) and related tennis courts, skateboard park and baseball fields, the Station Gallery, and the GO Transit Station.

2. Residential areas are primarily concentrated in the western portion of the Sub-Area while industrial lands are concentrated to the east. In general, trip making characteristics comprise of residential/commuter trips in the west part of the Sub-Area, commercial and employment trips to the east, and a blend of recreational, residential and employment trip types in the centre between Gordon Street and South Blair Street.

3. As a result of the various trip making patterns and mode choices, there is a tendency for peaking of travel to occur not just during the traditional weekday a.m. and p.m. peaks, but also during the evenings and weekends. This is particularly the case in the central part of the Sub-Area during the summer.

4. Commuter auto type trips are generally destined to the west and do so via Victoria Street, and Highway 401 via Brock Street and Salem Road. The major commercial and employment zones have auto trips typically utilizing Victoria Street and Thickson Road. Trips to major shopping zones are mainly by auto.

5. Significant commuter trips are experienced at the Whitby GO Station which has parking capacity for approximately 3,150 vehicles that includes approximately 1,150 spaces within a new parking structure. The peaking of outbound flows from the GO parking lots has been noted as creating significant inflow of auto volumes into the residential neighbourhood to the north creating congestion and infiltrating problems. As well, the new parking structure has exacerbated residents’ concerns regarding speeding and “shortcutting” on local streets from motorists traveling to/from the GO Station.

6. There is limited pedestrian and cycling access to the GO Station from the north.

7. There are significant natural environmental features and Provincially Significant Wetlands (PSW) within the area, including the Lynde Shores Conservation Area and Marsh, Cranberry Marsh, Pringle Creek and its tributaries, and Corbett Creek and its tributaries. The ability and/or desire to build new infrastructure facilities across and/or through these features is limited.

8. Mixed use intensification is anticipated in the Sub-Area immediately to the north and south of Victoria Street near Brock and Henry Streets. The Whitby Harbour has also been designated as a Waterfront Place in Growing Durham and will be subject to an intensification strategy by the Town. This will increase auto and non-auto trip making across Victoria Street to the Port Area.

9. An easterly extension of Water Street from South Blair Street to Thickson Road has been identified by Town Council as not being supported and direction has been given to remove from the Town’s TMP and Official Plan.
10. Residents in the central part of Lakeshore Whitby have expressed concerns in recent years regarding the levels of truck traffic and their desire for restrictions on local streets as well as on Brock Street.

11. The soil conditions (from a structural and brownfield perspective) could result in the construction of new infrastructure and some development being financially unviable.

b. **Key Transportation Challenges and Opportunities**

1. There is limited network routing leading to/from Victoria Street and Highway 401 which creates localized capacity and access constraints from the Lakeshore area.

2. There is limited ability to provide significant additional road capacity in the area due to the proximity of Lake Ontario, environmentally sensitive areas, existing land uses, and the CN/VIA/GO Rail corridor.

3. Lakeshore Whitby is a relatively compact area with significant environmental constraints. Planned intensification in this area will see increased transportation demand with limited opportunity for traditional transportation infrastructure expansion.

4. As residential land uses intensify in the central part of the Sub-Area, there will be competing requirements and travel characteristics of the user types (car, trucks, pedestrians, transit) that will require an integrated plan.

5. There are challenges in the ability for both auto and non-auto trips to cross over Victoria Street, particularly during peak travel times, due to the heavy travel demands on Victoria Street and limited gaps.

6. From an east-west screenline perspective (refer to Exhibit 5.5), there are projected 2031 deficiencies east of Lake Ridge Road and west of Brock Street. Even with a widened Victoria Street, capacity problems are anticipated at the major intersections within the Sub-Area, particularly in the vicinity of Brock Street where there are physical constraints to major roadway expansions.

7. While there are some dedicated cycling trails (including the waterfront trail), there are not complete linkages between major residential areas to the west and attraction destinations within the Sub-Area.

8. South of Victoria Street, there are no continuous east-west routes for autos, pedestrians or cyclists. While there are local connections to accommodate internal trips and access to Victoria Street, they are limited in their network connectivity, ability to accommodate larger flows of auto traffic, and design attributes for dedicated pedestrian or cycling facilities.

9. The primary north-south routes that provide direct service to/from the Lakeshore Sub-Area include Brock Street, Henry Street and Thickson Road. The ability of
these roads to fully service this community is governed by the capability of
Victoria Street (and connecting intersections) to process the volumes.

10. Brock Street south of Highway 401 leading into the Port area and Watson Street
have limited reserve capacity and service capability in their present
configuration. Major widenings of these routes is not envisioned in the near term
due to the significant property and proximity impacts that would result.
Thickson Road does have the ability to increase capacity, the benefits of which
could be to/from the industrial/employment lands as well as the potential to
improve transit service and off road active transportation facilities.

11. The Lakeshore Sub-Area has primarily localized transportation issues, however,
given the limited infrastructure in the area; these local issues will have a major
impact on travel opportunities and service for the area.

12. Henry Street has limited capacity and motorists often “short cut” onto other
adjacent local side streets. Physical and operational improvements to Henry
Street are justified to improve capacity and mitigate the “infiltration” of traffic.
Other measures, such as car pooling, cycle paths, shuttle service, should be
pursued by government and private agencies to reduce auto trips to the GO
Transit Station.

13. The existing infrastructure leading to the GO Transit Station is limited in
capacity and a combination of new infrastructure (e.g. such as elevated rail,
pedestrian structures, etc.) as well as a new station by Lake Ridge Road, should
be pursued and considered as part of any new development to accommodate the
long term/future growth anticipated in both south and west parts of Whitby.

14. GO Transit is currently in the planning stages for the construction of a new Train
Maintenance Yard and Storage Facility to be located south of Victoria Street at
Hopkins Street. GO Transit officials have documented that the scope of the
project is to include replacing the existing Hopkins Street/CN Rail overpass with
a new structure which spans additional rail tracks. It is understood that access to
the future planned (EA approved) realigned Victoria Street is to be maintained
and that Hopkins Street will continue to serve the industrial lands to the south.

15. There are also plans as part of the GO Train Maintenance Yard project to build a
new grade separation of the CN Rail tracks at South Blair Street which will
eliminate existing concerns from area residents regarding train whistles at the
current level crossing. This will also improve opportunities to improve the flow
of trucking movements to/from the Port industrial area.

16. GO Transit is also planning for a new GO Bus Maintenance and Storage Facility
on Wentworth Street and Boundary Road, in the City of Oshawa, just east of
Whitby. It is expected that the facility will add additional bus trips on the
surrounding road system including Thickson Road. Analysis (by GO
Transit/Region of Durham) may be required to determine if localized operational
and physical adjustments are required to the road system to serve the bus facility.

17. Active transportation and transit will need to be a fundamental component of the
transportation characteristics and future solutions for this area. The cycling
network to/from the waterfront and existing/future development lands and
recreational facilities is presently incomplete which will limit the ability to increase cycling modal share in this Sub-Area. There are some unopened road allowances that may offer non-auto linkages.

18. Future developments in the Sub-Area should have restrictions on auto trips generated, based on the available reserve capacities. Transportation Demand Measures to support growth, such as elevated pedestrian structures across roads, bike parking/amenities, traffic circles, modified road designs, transit only routes/access, transit shuttles, pedestrian/cyclist priority routes, must be considered for all new land uses. The traditional transportation design and methodologies will not work in this area given the physical and environmental constraints.

19. It will also be necessary to accept that the existing roads in Sub-Area will become busier with more traffic as development proceeds.

5.6.3 Sub-Area 2 – South Whitby

a. Existing Characteristics and Constraints

1. In general, the area is comprised of commercial development with some residential located in the Michael Boulevard, Henry Street and Burns Street areas.

2. The downtown core has many historic buildings and is generally configured in a grid pattern with high pedestrian activity.

3. There are numerous restaurants and shops within the downtown on Brock Street and Dundas Street which contribute to significant shopping and entertainment trip making by residents, employees, local businesses, as well as tourists.

4. Cultural and recreational land uses include the Rotary Centennial Park, Whitby Seniors Centre, and Peel Park which are located in the Burns Street corridor near Brock Street. The Whitby Library is also located along Dundas Street which is visited by many user groups using all travel modes.

5. The Almond Village hamlet exists on the east side of Lake Ridge Road which is a small well established community.
6. A number of municipal parking lots and on-street parking metres are situated in the downtown Dundas/Brock core to provide service to the various patrons.

7. The main larger format commercial area is located in the eastern part of the Sub-Area along the Thickson Road corridor and on Consumers Drive (Whitby AMC Entertainment Centrum and Theatres). Trips to major shopping zones such as these typically are characterized by automobile use.

8. South Whitby is a relatively established and compact area. Planned commercial growth and intensification in this area will see increased transportation demand with significant constraints in expanding the roadway network.

9. Commuter auto trips are generally destined to the west via Highway 401 and Dundas Street, and GO Transit. Facilities parallel to Highway 401, particularly Dundas Street and Victoria Street to the south, can be significantly impacted by incidents on the highway. These streets are considered as the primary “Emergency Detour Routes” to Highway 401 through Whitby.

10. Heavy trucks to/from Highway 401 utilize Brock Street through the downtown core to reach destinations to/from the north. Residents and business owners have expressed the desire for heavy trucks to use an alternative route to enhance the downtown as more pedestrian friendly and to improve air quality.

11. The CP Rail line creates a physical barrier to potential extensions/widenings in the transportation network within this Sub-Area.

12. The Lynde Creek and Pringle Creek watercourses create environmental constraints in the provision of new facilities. This relates also to the physical constraints with the structural capability of the soil conditions near the Corbett Creek floodplain east of Hopkins Street, along with the drainage and structure/design requirements of any new facilities that cross these watercourses.

b. **Key Transportation Challenges, Deficiencies and Opportunities**

1. In the 2031 planning horizon, major east-west screenline deficiencies (refer to Exhibit 5.5) were identified in the west end of the Sub-Area east of Lake Ridge Road and west of Brock Street (same as Sub-Area 1). The south of Dundas Street screenline is also noted as being at/near capacity, supporting the need to protect for the extension of Burns Street/Coronation Road into West Whitby to accommodate future development.

2. In the north-south direction, major north-south roads include Lake Ridge Road, Henry Street, Brock Street and Thickson Road. The major deficiency identified in this Sub-Area is located south of Dundas Street between Lake Ridge Road and Brock Street which is projected to be at/near capacity by the 2031 planning horizon.

3. Existing “pinch points” along Dundas Street, through the downtown and at the CP Rail crossing, will limit the ability and/or opportunities for dedicated higher order transit initiatives such as that proposed by the Region, unless mitigative solutions are provided to accommodate the displaced/impacted traffic.
4. Within the existing developed area of the Sub-Area, there are limited opportunities for major widenings of infrastructure rights of way (for all modes) due to physical impact to adjacent properties/buildings and limited road allowances. All opportunities to enhance existing and protect mobility corridors should be capitalized to ensure options are available in the future when intensification becomes a reality and traffic levels exceed system capacity.

5. Brock Street through downtown Whitby is constrained at the “four corners” through the use of curb extensions, turn restrictions and peak parking restrictions. These measures were set in place to alleviate congestion and due to geometric constraints with turning radii. It has been observed that motorists “short cut” onto adjacent side streets to avoid the “four corners” intersection. Peak hour congestion through this location also reduces the attractiveness of the area from an economic perspective as shoppers choose “easier” alternate routes. Consideration should be given to reassessing operations at this intersection to improve operations and enhancing pedestrian, cycling and streetscaping opportunities.

6. In addition to side streets, Garden Street has become the primary alternate route to Brock Street for local all purpose trips to/from the south – in essence avoiding/detouring around the downtown. This has both advantages and disadvantages from a transportation and economic perspective.

7. The existing access to Highway 401 is constrained by the interchange configuration at Brock Street and capacity constraints along Thickson Road approaching Highway 401. It is envisioned that improvements in access capacity to/from Highway 401 will be realized once MTO widens the freeway and upgrades the interchanges. New access and service requirements to/from Highway 401 should be assessed and implemented where appropriate to maximize the utilization and effectiveness of the arterial system connecting from this Sub-Area to the freeway.

8. There are localized capacity constraints along key corridors such as Henry Street, Brock Street, and Dundas Street. Localized opportunities to improve efficiency should be optimized.

9. There are access constraints to/from the GO Station from the north due to limited Highway 401 crossings, congestion on Dundas Street and Brock Street, and lack of adequate system capacity to/from the station.

10. There is a need to provide multi-modal facilities to key destinations in the Sub-Area such as the Whitby Entertainment Centrum and the downtown core.

11. There is a critical need to safely and efficiently accommodate cyclists and pedestrians across Highway 401 to reach major destination points (e.g. GO Transit Station) in Lakeshore Whitby.

12. There is a need to enhance the integration and accessibility of transit and non-auto forms of travel to/from the commercial/shopping areas and other parts of the Sub-Area and Town.
5.6.4 Sub-Area 3 – East Whitby

a. Existing Characteristics and Constraints

1. In general, the lands adjacent to Dundas Street, Taunton Road, Brock Street and Thickson Road are primarily commercial land uses. The remaining lands within this Sub-Area comprise of residential uses, institutional and recreational.

2. Commuter trips generated by the residential component that are destined to the west and do so via Dundas Street, Rossland Road, and Highway 401 (via Thickson Road).

3. The area has a number of neighbourhood parks and schools which reflects its high residential population. There are significant numbers of those walking and cycling within the Sub-Area.

4. Major institutional uses in this Sub-Area include the Town of Whitby Municipal Offices, Region of Durham Municipal Headquarters, and Provincial Land Registry Offices.

5. Pringle and Corbet Creeks and their tributaries flow through this Sub-Area with crossing structures at the arterial road crossings.

6. Most of the residential area south of Rossland Road is well established. Areas north of Rossland Road are somewhat newer and there are more reported issues related to “short cutting” and “speeding” in these neighbourhoods.

7. The environmental areas and park lands limit the ability of interconnected roadways but offer many opportunities for non-auto travel and recreational activities.

8. The Resurrection Cemetery is situated on the south side of Taunton Road west of Anderson Street. Any further road widening of the road beyond 4 basic lanes could directly impact the cemetery.

9. The Mount Lawn Cemetery also exists and is situated just south of the planned extension of Manning Road to connect into Adelaide Avenue in Oshawa.

10. The CP Rail extends east/west through the lower part of the Sub-Area crossing Garden and Dundas Streets.
b. **Key Transportation Challenges, Deficiencies and Opportunities**

1. In the north-south direction, the major north-south roads include Brock Street, Garden Street, Anderson Road, Thickson Road and Garrard Road. North-south screenline deficiencies were noted south of Taunton Road (refer to Exhibit 5.6).

2. In the east-west direction, Dundas Street, Rossland Road and Taunton Road form the major east-west routes. It has been projected that in 2031, these screenlines will be characterized by unstable flow and poor levels of service.

3. There are no continuous east-west streets between the arterial roads of Dundas Street, Rossland Road or Taunton Road. This creates increased operational demands and challenges for internal north-south routes and limits the ability to disperse the travel flows, improve overall transit routing structure and create direct and continuous cycling routes.

4. Opportunities to create continuous east-west streets include the missing links along Dryden Boulevard between Anderson Street and Thickson Road, and the Manning/Adelaide Road extension east of Garrard Road.

5. In particular, Dryden Boulevard extends from Brock Street to Thornton Road, with the exception of a missing piece just east of Anderson Street to Thickson Road. It is anticipated that this connection will occur when development proceeds and will offer new linkages for all modes of travel in the Sub-Area.

6. The existing right-of-ways along the arterials within the Sub-Area are well established which limits the ability for a major widening to accommodate other modes of travel such as transit and cycling. The accommodation of non-auto modes with the existing system may require additional property and/or changes in lane composition/configuration.

7. Major improvements in the road system will be limited in this Sub-Area. Maximizing the capacity life of existing infrastructure through widenings and/or intersection upgrades will be essential.

8. Capacity constraints in this area are contributed by the traffic generated from retail uses north of Taunton Road.

9. There is a need to provide multi-modal facilities (i.e. streets with sidewalks and where applicable bicycle lanes and dedicated transit lanes) to key destinations such as Region of Durham and Town of Whitby headquarters to mitigate future congestion and accommodate long term travel demands. Maximum utilization of existing road right of ways and park trails for cycling and walking is recommended.

10. The provision of higher order transit on Dundas Street may trigger the need for additional parallel facilities to accommodate displaced capacity. Further extensions where feasible, e.g. Mary Street, should be protected. As well, further widening of Dundas Street may be cost prohibitive (e.g. new CP Rail bridge, property impacts) and/or create major access and operational issues, again justifying the need to protect for additional east/west linkages.
11. There are limited opportunities to build new roads and widen existing facilities as the area is primarily built. New and redeveloped properties should investigate strategies and amenities which encourage and enable non-auto travel.

5.6.5 Sub-Area 4 – West Whitby

a. Existing Characteristics and Constraints

1. Within the existing urban area, lands are primarily residential with the exception of the commercial corridor along Dundas Street. The western part of the Sub-Area is mainly undeveloped and contains significant environmental features including woodlots, wetlands and the Lynde Creek watershed and tributaries.

2. The vacant undeveloped lands in the West are the subject of a Secondary Planning Study which is anticipated to have a minimum expected density of 26,500 combined persons and jobs. The proposed land use configuration and arterial road system is included in Appendix A.

3. The proposed Highway 407 East Transportation Corridor and West Durham Link is planned to extend through the West Whitby area in the vicinity of Halls Road.

4. Many of the commuter trips generated by the residential component are destined to the west and do so via Dundas Street, Rossland Road, and Highway 401 (via Brock Street or Salem Road in Ajax).

5. Brock Street and Lake Ridge Road are often used for goods movement to/from the north. CP Rail also provides for freight goods movement through the Study Area and traverses east/west with grade separations at Rossland Road, Cochrane Street and Brock Street.

6. Transportation bottlenecks exist during peak periods on Rossland Road as the number of travel lanes are reduced west of McQuay Boulevard from 2 to 4 lanes.

7. Major intensification is planned for the West Whitby area and transportation servicing for all modes will be required. As lands develop, there will be competing requirements and travel characteristics of the user type (cars, trucks, pedestrians, cyclists, and transit) and an integrated plan will be required.
b. **Key Transportation Challenges, Deficiencies and Opportunities**

1. In the east-west direction, Dundas Street, Rossland Road and Taunton Road form the major east-west routes. East-west screenline deficiencies were identified east of Lake Ridge Road and west of Brock Street. For both screenlines, the problem area extends from Taunton Road to Victoria Street, which includes Sub-Area 1 (Lakeshore Whitby) and Sub-Area 2 (South Whitby). The Sub-Area screenline deficiency is illustrated in **Exhibit 5.5**.

2. In the north-south direction, the major north-south roads include Lake Ridge Road, Cochrane Street and Brock Street. The development of West Whitby will provide another north-south mid-block arterial road (Coronation Road) in this Sub-Area. No north-south screenline deficiencies were identified in this Sub-Area with the opening of the West Durham Link and Coronation Road.

3. Future north-south road extensions in West Whitby north of Rossland Road will require crossing of the CP Rail line – a future grade separation is anticipated.

4. The development of the West Whitby community will see an increase in trips. There are limited travel options for residents in this community to access the Whitby GO Station without going through a congested portion of the downtown (via Dundas Street). An alternate route, e.g. via Burns Street extension, would assist in accessing the existing GO Station. Additional GO service, such as through a new station near Lake Ridge Road, would also assist in accommodating future transit needs.

5. The introduction of the Highway 407 West Durham Link will provide additional north-south access in the Sub-Area and will alter travel patterns for people and goods. Transitway stations located on this link will provide additional inter-regional connections to/from Whitby, including potential new GO services.

6. McQuay Boulevard is designated as a collector road but has daily volumes approaching 11,000 vehicles and is operating well beyond desired levels. In addition, residents in the area have expressed concerns over speeding and “shortcutting”. Improvements to existing intersections to enhance flow, in addition to the protection of new east/west routes should be implemented.

7. Additional east-west capacity from this zone will assist in processing existing and future projected volumes to/from the west. This may be in the form of intersection operations in the near term, and westerly extensions in the longer term.

8. There are no continuous east-west mid-block arterial or collector roads providing connectivity within the Sub-Area. Missing links which can accommodate all modes including transit and cycling should be protected.
5.6.6 Sub-Area 5 – Central Whitby

a. Existing Characteristics and Constraints

1. In general, the Sub-Area consists of a large commercial component to the south bordering Taunton Road with adjacent residential, and environmentally sensitive and Provincially Significant Wetlands to the north and west. Main attractions include Cullen Central Park, Heber Down Conservation Area, McKinney Arena, and Lyndebrook Golf Course.

2. There are a number of institutional uses along the Taunton Road corridor including Whitby Hydro, Town of Whitby Operations Centre and Fire Headquarters, the Durham Board of Education Centre, and Region of Durham Police Services Headquarters.

3. The Brock Street/Taunton Road district is identified as a Regional Centre in Growing Durham and the Town’s Intensification Strategy and it is anticipated that further intensification of the area will occur in the longer term.

4. As a result of the commercial component, there is a tendency for peaks in travel to also occur during evenings and weekends and not just during the traditional weekday a.m. and p.m. peak periods. Trips to major shopping zones are typically characterized by automobile use.

5. Commuter auto type trips are generally destined to the west and do so via Taunton Road. Taunton Road is a Type A Regional Road which spans the Region of Durham and has been identified by the Region and Metrolinx as a Higher Order Transit corridor.
6. A significant portion of the lands east of Brock Street are presently undeveloped and designated for employment. Lands within the West Whitby Secondary Plan area west of Brock Street are also planned for development and comprise mainly of residential north of Taunton Road.

7. There are limited/constrained opportunities to provide additional road capacity in the northern section of this Sub-Area due to the environmentally sensitive areas and woodlots.

8. The proposed cul-de-sac of Garrard Road at the future Highway 407 East Transportation Corridor may limit future land use opportunities and/or trigger other area new/upgraded infrastructure.

9. Residents have expressed concerns regarding the lack of pedestrian connectively between residential areas and commercial areas. In particular, the on-site pedestrian circulation at commercial developments does not encourage active transportation.

b. Key Transportation Challenges, Deficiencies and Opportunities

1. In the north-south direction, the major north-south roads include Lake Ridge Road, the future West Durham Link, Brock Street, Anderson Street and Thickson Road. Screenline deficiencies in 2031 (refer to Exhibit 5.6) were identified north of Taunton Road between Cochrane Street and Garrard Road.

2. In the east-west direction, the Highway 407 East Transportation Corridor and Taunton Road form the major east-west routes. Capacity conditions in 2031 were found on the screenline just east and west of Baldwin Street (refer to Exhibit 5.7).

3. Arterial roads near Taunton Road are projected by 2031 to experience significant congestion. This will increase the likelihood of motorists using alternate residential routes (e.g. Robert Attersley Drive, McKinney Drive, Broadview Avenue) to avoid congestion. This is already occurring to some degree during certain peak hours due to access constraints and peak intersection congestion.

4. Alternative routings and servicing for all modes will be required to service the existing commercial corridor on Taunton Road, residential areas to the north and travel demands from future developments.

5. Continued efforts to expand the cycling facilities through paved shoulders, multi-purpose pathways, etc. should be pursued so as to promote active transportation and reduce the reliance on the automobile.

6. The easterly extension of Coronation Road from where it reconnects north of Taunton Road to Cochrane Street should be further pursued as part of the future planning for the West Whitby Secondary Plan area as servicing these lands will be required. Dedicated non-auto facilities should be part of this connection and be integrated with the nearby Heber Down Conservation Area and Cullen Central Park.
5.6.7 Sub-Area 6 – North Whitby

a. Existing Characteristics and Constraints

1. Baldwin Street (also known as Highway 7/12) is the main roadway extending through this Sub-Area and is under the jurisdiction of the Ministry of Transportation of Ontario (MTO). Baldwin Street is the prime alternative route to Highway 400 from the GTA leading to north of Lake Simcoe into Orillia. The Village of Brooklin is located in the downtown of this Sub-Area and is anchored by Baldwin Street which generally maintains two lanes with on-street parking.
2. There is a new Community Centre and Library being built in downtown Brooklin just west of Baldwin Street on Vipond Road, with the completed target date set for 2010. All travel modes are projected to be generated to/from this site comprising of pedestrian, cyclist trips in addition to transit and automobiles.

3. The downtown core of Brooklin is characterized by commercial shops, restaurants, and boutique businesses of which generates local tourist and shopping trips. Many visitors travel to the downtown via walking or cycling and also visit Vipond Arena and Grass Park where many special events are held during the year.

4. There is a well established shopping and Heritage District within the Village of Brooklin. It is anticipated that the village will continue to intensify its commercial district and that new retail and employment land uses will occur on the vacant lands south of Winchester Road within Brooklin.

5. Auto trips traveling within and through this Sub-Area comprise of local residential trips as well as non-local recreational and tourist traffic travelling through the area via Highway 7/12 and destined to cottage country and other recreational areas to the north.

6. Residential commuter auto trips are generally destined to/from the west and do so via Highway 7/Winchester Road, Columbus Road and Myrtle Road and comprise of a significant portion of the auto movements to/from the Sub-Area. As a result of the significant residential commuter trips, there is a tendency for travel patterns to peak during the a.m. and p.m. peak periods.

7. Over the past 15 years, this Sub-Area has experienced significant population growth at a rate of approximately 14% per year to current levels of approximately 16,500 persons. It is also anticipated that residential growth will continue in the north-western part of the Sub-Area. By 2031, it is estimated the population of Brooklin area will be 25,000.

8. It is identified that development will ultimately extend north of Columbus Road, perhaps upwards to Brawley Road. Beyond Brawley Road however, development is constrained due to environmentally sensitive lands of the Greenbelt and Oak Ridges Moraine and prime agricultural uses. New road corridors or major modifications to existing facilities north of Brawley Road are not anticipated in the foreseeable future due to these natural heritage features.

b. Key Transportation Challenges, Deficiencies and Opportunities

1. There are significant commercial vehicles (heavy trucks) which travel through the Village to reach destinations to/from the north. The heavy truck movements often conflict with the desired movements of pedestrians and cyclists and create additional congestion within the downtown corridor, thus impacting the “small town” atmosphere of the area. There is the desire to provide an alternative to Baldwin Street for heavy vehicles travelling to/from the north.

2. Baldwin Street is one of the primary north-south corridors to northern Durham Region which results in a significant amount of commuter traffic through
downtown Brooklin and reduces the pedestrian orientation of the community. There is a need to address congestion issues on Baldwin Street through downtown Brooklin.

3. While the population of Brooklin has increased significantly over the past decade, the infrastructure serving the area has not kept pace with growth, which has resulted in local congestion and utilization of other less desirable routes.

4. The ability for major expansions to the existing road network through either new routes or road widenings is limited within the older parts of Town due to physical property constraints.

5. Due to the lack of high capacity east-west routes and access to them into/from Brooklin, local residents have expressed concerns regarding motorists speeding as well as drivers who “short cut” on local streets to avoid congestion on the surrounding arterials and secondary highways. While the new Highway 407 East Transportation Corridor and Highway 7/Winchester Road widening will offer new and improved east-west screenline capacity, it is expected that there will remain inadequate servicing access to the west, including that to/from the future Highway 407. Moreover, the existing road network does not accommodate internal servicing requirements for future development areas and the extension of existing mobility corridors (for auto and non-autos) along with new routes will be required to service all modes effectively in the longer term.

6. Town staff have previously indicated to MTO that a future Highway 407 interchange at Cochrane Street will be necessary to service future development lands and to relieve anticipated congestion leading to/from Brooklin and Highway 407. A Cochrane Street/Highway 407 interchange has also been noted by the Region as part of their Durham Growing Durham proposal. The 407 East IEA did not protect (seek approval) for an interchange at Cochrane Street. MTO staff have noted that any interchange at this location will be subject to its own class EA (completed by others) and require MTO approval.

7. Localized intersection improvements will also be necessary to maximize the existing system and address local operating deficiencies and constraints at intersections. This will be particularly evident as the downtown core intensifies with residential and non-residential land uses.

5.7 Need and Justification Summary

a. Based on the assessment of existing and future transportation conditions, it can be concluded that there is a need to protect for and implement, when appropriate, improvement solutions within the Town of Whitby, beyond those road and transit measures identified by the Region and Province, to efficiently and safely accommodate future demands.

b. New measures planned by the Region and Province for implementation by 2031, will significantly improve inter-regional transportation needs, but alone do not satisfy the problems that have been identified within the Town pertaining to internal capacity, servicing, and all mode travel.
c. Moreover, policies and other directives from senior levels of government, specifically regarding land use, will necessitate new multi-modal integrated solutions be implemented by the Town and as part of new and redevelopment land proposals.

d. The following sections in the Master Plan further expand on the possible transportation solutions and protection requirements for the Town and various Sub-Areas and implementation strategies over the long term.
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6 IDENTIFICATION AND EVALUATION OF ALTERNATIVE PLANNING OR STRATEGIC TRANSPORTATION SOLUTIONS

6.1 Strategic Transportation Options

a. The consideration of planning alternatives or strategic options is an essential component of the Environmental Assessment process. These alternatives must cover a broad range of solutions with the potential of addressing the identified problems/opportunities while moving towards the long-term Transportation Vision for the Town of Whitby.

b. This section describes the identification and evaluation of the strategic level alternative solutions that will address the overall transportation problems in the Town.

c. Consistent with the Class EA process for Municipal Road Projects, the following alternative solutions were considered.

1. Strategic Option 1 – The Do Nothing Alternative – This alternative was included to generally provide a base condition to permit comparison with other planning alternatives. This is not a true Do nothing scenario as development will occur and there will be changes to the infrastructure in an attempt to accommodate mobility demands associated with development. Under this scenario, there would be “no changes” to the transportation system beyond those already planned and committed roadway and transit improvements by the Province and Region (noted in Exhibits 4.2 and 4.3). This includes, but not limited to, the extension of Highway 407 through Whitby and West Durham Link and Highway 401 widening.

   It is fundamental to note that a true Do-Nothing option, that is, no improvements are made to any aspect of the transportation in an attempt to address additional demands associated with future development, is not a realistic or practical option.

2. Strategic Option 2 – Implement Transportation Demand Management (TDM) and Transportation Systems Management (TSM) Measures – This alternative includes aggressive programs and policies that influence transportation demand and maximize the use of existing infrastructure. TDM are solutions that affect auto travel demand such as high occupancy vehicle lanes, park and ride facilities, staggered or flexible work hours and car pool-matching. TSM solutions look to maximize use of existing infrastructure, including physical lane improvements at major intersections and signal coordination.

3. Strategic Option 3 – Improve Existing Transit Service – This alternative provides for improvements to high end transit and provision of local services to increase transit capacity and encourage increased usage by residents, tourists, and employees in new and existing development areas. In particular, this option would include implementation of the Region’s Long Term Transit Strategy (e.g. light rail transit on Dundas Street) and Province’s Highway 407 transitway. This option would also involve implementing and integrating local, Regional and Provincial strategies to support new and improved transit supportive amenities (e.g. new Lake Ridge Road GO Station), dedicated transit lanes/routes, and transit supportive land uses to encourage a dramatic shift in transit mode split.
4. **Strategic Option 4 – Strategic Roadway Expansion** – This alternative considers the provision of new/upgraded roadways and connection of missing road links beyond those already approved by the Region and Province to both increase system capacity and provide service to development lands. This alternative also affords opportunities to provide dedicated active transportation facilities such as sidewalks and bicycle paths.

6.2 **Evaluation of Strategic Options**

a. For this Master Plan, the strategic options have been evaluated from an integrated/combined perspective. This is in recognition of the fact that for Master Plans, there is not one stand alone solution, but more a broad assembly of approaches that should be taken. Therefore, Alternative 2 builds on Alternative 1, Alternative 3 builds on Alternative 2, and so on. The methodology used for the evaluation was a pair-wise comparison using qualitative measures to assess the criteria. This was a strategic analysis to set the broad solution to include all modes and programs of a TMP.

b. In consideration of this, the following evaluation has considered a combination of the strategic options and was based on the criteria and measures noted in Table 6.1 below.

**Table 6.1 – Criteria for Evaluation of Strategic Options (Alternative Solutions)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Service</td>
<td>Level of Service on roadways and service to future development areas.</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>Impact on natural environmental features through removal/disruption.</td>
</tr>
<tr>
<td>Socio-Cultural Environment</td>
<td>Impact on residents through potential displacement/disruption. Disruption to community/recreation features.</td>
</tr>
<tr>
<td>Economic Environment</td>
<td>Impact on business/commercial property and potential impact on desirability of Whitby to employers.</td>
</tr>
<tr>
<td>Cost</td>
<td>Relative capital cost.</td>
</tr>
</tbody>
</table>

c. Summarized in Table 6.2 is the evaluation of integrated strategic options. The intent of this evaluation was to identify the alternative that best solves the broad transportation problem(s) while minimizing environmental impacts and costs. The evaluation assumes equal weighting of all criteria and is meant to provide direction towards a strategic alternative moving forward. A more fulsome evaluation of roadway corridors proceeds this evaluation in Appendix G.

6.3 **Preferred Strategic Option**

a. In consideration of the evaluation of the strategic options or planning alternatives, it can be concluded that a multi-modal strategy is required to meet the goal and objectives set out in this Transportation Master Plan. This includes the enhancements to the transit network and services, implementation of transportation demand management initiatives, physical/operational measures that optimize the existing road network, expansion of the active transportation system, and expansion of the roadway network to ensure the necessary access to future development lands is provided and that minimum levels of capacity service are safely met.
### Table 6.2 – Assessment of Strategic Options (Alternative Solutions)

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Option 1 Do-nothing</th>
<th>Option 1+ Option 2 (TDM/TSM)</th>
<th>Option 1+2+ Option 3 (Improve Transit)</th>
<th>Option 1+2+3+ Option 4 (Improve Roads)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Service</td>
<td>Will be difficult to achieve 15% auto reduction target without other measures. Does not provide the required transportation capacity and automobile reduction, but will not be enough to mitigate the need for roadway expansion. There are still remaining deficiencies in the network that have not been addressed, resulting in decreased LOS and increased delays. Does not accommodate future service needs to development areas.</td>
<td>Moves further towards enabling ability to reach 15% auto reduction target. Provides some localized transportation capacity and automobile reduction, but will not be enough to mitigate the need for roadway expansion. There are still remaining deficiencies in the network that have not been addressed, resulting in decreased LOS and increased delays. Does not accommodate future service needs to development areas.</td>
<td>Provides additional ability to reach 15% auto reduction target. Provides additional transportation capacity but not enough to mitigate the need for roadway expansion. There are still remaining deficiencies in the network that have not been addressed, resulting in decreased LOS and increased delays. Provides some accommodation of future service needs to development areas.</td>
<td>Provides most enhanced ability to reach 15% auto reduction target. Provides additional capacity within the Town to best accommodate future 2031 demands. Best resolves screenline deficiencies of the solutions considered. Accommodates new and enhanced active transportation facilities. Provides accommodation of future service needs to development areas.</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>Least potential impact on natural features.</td>
<td>Minimal potential impact on natural features.</td>
<td>Some potential impact on natural features. New/upgraded corridors may be required to accommodate transit and/or displaced autos.</td>
<td>Potential impact on natural features will depend on scope of new/upgraded corridors.</td>
</tr>
<tr>
<td>Socio-Cultural Environment</td>
<td>Least potential for displacement of community and/or recreation features, residents and community character. Traffic infiltration on residential streets is anticipated to increase.</td>
<td>Minimal potential for displacement of community/recreation features, residents and community character. Traffic infiltration on residential streets is anticipated to increase.</td>
<td>Some potential for displacement of community/recreation features, residents and community character. Will depend on scope of improvement corridors. Some potential relief to traffic infiltrating on residential streets.</td>
<td>Potential for some displacement and impacts from increased traffic volumes. Will depend on scope of improvement corridors. Best solution to deter the potential for traffic infiltration/short cutting on residential streets.</td>
</tr>
<tr>
<td>Economic Environment</td>
<td>Least potential for displacement of business/commercial property. Congestion on arterial roads and lack of service may reduce the attractiveness of Whitby as a destination for new commercial/employment development.</td>
<td>Minimal potential for displacement of business/commercial property. Congestion on arterial roads and lack of service may reduce the attractiveness of Whitby as a destination for new commercial/employment development.</td>
<td>Some potential for displacement of business/commercial property. Congestion on arterial roads and lack of service may reduce the attractiveness of Whitby as a destination for new commercial/employment development.</td>
<td>Some potential for displacement of business/commercial property. Improvement in congestion and corridor service will add to the attractiveness of Whitby as a destination for new commercial/employment development.</td>
</tr>
<tr>
<td>Relative Capital Cost</td>
<td>Low</td>
<td>Low/Medium</td>
<td>Medium/High</td>
<td>High</td>
</tr>
</tbody>
</table>

**Preferred Strategic Solution**
b. In terms of the specific strategies, the following is noted:

1. While the “Do Nothing” option has lower environmental impacts and costs, it does not solve the transportation problems, would restrict future growth and decrease the overall performance of the transportation system. It is not expected with this option that the 15% auto reduction targets could be achieved. Given the intensification policies and targets being set by the Region and Province, this alternative will not be able to address future servicing and access requirements. It will also not enhance new initiatives for active transportation at the local level.

2. A combination of TDM, TSM and Transit, in addition to planned Regional and Provincial initiatives, will address many of the future capacity deficiencies, but these solutions alone will not reduce automobile mode share or servicing needs enough to mitigate any roadway expansion which may also be required for active transportation improvements.

3. To achieve the Town’s target of a 15% reduction in automobile usage, it will be fundamental that Provincial, Regional and Town TDM and Transit strategies form an integral part, and in many instances the primary solution, to new and improved transportation strategies within the Town. This is particularly the case for existing built-up urban areas that presently have very little opportunity due to residential and commercial property constraints, for new and expanded infrastructure, and in areas where there are a number of sensitive environmental areas. Even if the 15% auto reduction target is achieved, there will still be a need for new road upgrades for capacity and servicing for all modes.

4. The only option or planning alternative that will “truly” solve the various needs identified in the Master Plan is a systematic blend and balanced implementation of all the strategic alternatives. This includes the protection of new road arterial corridors at key locations that can not only service future development, but can also accommodate opportunities for other services such as transit and active transportation modes.

5. While corridors are being identified in this Master Plan for protection, implementation of such should not occur until such time that the immediate/near term need can be confirmed and required environmental assessments are completed.
PART III – RECOMMENDED TRANSPORTATION PLAN

a. The Transportation Master Plan for the Town of Whitby incorporates Transportation Demand Management (TDM)/Transportation Systems Management (TSM), transit and roadway improvement recommendations in an overall plan up to the 2031 planning horizon. The Transportation Master Plan was carried out in accordance with Phases 1 and 2 of the Class Environmental Assessment for Municipal Roads.

b. A Transportation Master Plan is a strategic plan which recommends a series of transportation works which are distributed throughout a "large" study area and which are to be implemented over a period of time. The scope of the recommendations for the Whitby TMP has included a broader analysis of the transportation system and development of a framework of future transportation requirements.

c. While these transportation requirements identified in this document may be implemented as separate projects as part of a staging or implementation plan, collectively they form part of the larger transportation system management plan for Whitby. As such, any elimination of an individual component of this Master Plan could affect the overall network and strategic plan.

d. Several strategies, programs and investments are required to address forecasted transportation problems and opportunities in Whitby. These start with the identification of strategies to reduce overall auto demand and minimize the need for roadway expansion. Part III of this document presents three primary strategies for transportation in Whitby:

   Section 7: Managing Transportation Demand
   Section 8: Encouraging and Facilitating Public Transit
   Section 9: Managing Transportation Supply
7 MANAGING TRANSPORTATION DEMAND

a. TDM can be defined as strategies that attempt to reduce travel, congestion and pollution by diverting travellers or changing their mode. Three primary goals of TDM are to:

1. Decrease the demand for inefficient and unsustainable services and facilities;
2. Shift demand to more sustainable modes of travel; and
3. Decrease overall travel demand specifically during the peak periods.

b. To achieve the goals of TDM, a number of recommendations are included in the TMP. It should be noted that many of these actions will need to be coordinated with the Region and the Province for implementation as their operation/management may not be under the Town’s responsibility.

7.1 Transportation Demand Management Strategy

7.1.1 Region of Durham

a. The 2005 Region of Durham TMP identifies TDM as an important component of creating a more balanced transportation system and reducing the peak period automobile mode share by 15%. Several TDM strategies were recommended moving forward that also need to be considered as part of the Whitby TMP. These Regional strategies are included in Appendix F.

b. Since the implementation of the plan, the Region has initiated a Region-wide Smart Commute initiative, focused on promoting trip reduction strategies for primarily work trips. Several Regional staff members lead the program, with an initial focus on working with employers to implement trip reduction initiatives.

c. The Region has also developed (is developing) the following which should be utilized by the Town as reference and guide where appropriate, in the development of local initiatives and policies:

1. TDM initiatives as part of the DRT Long Term Transit Strategy;
2. TDM guidelines for the review of development applications; and
3. A Commuter Lot Feasibility Study.

7.1.2 Town of Whitby

a. A TDM Strategy should be developed by the Town that works cooperatively with TDM initiatives being advanced by Durham Region and Smart Commute Durham. Recommendations should be both Town-wide and address specific Sub-Area problems/opportunities. This should be led by a TDM Coordinator who is responsible for promoting the implementation of the TDM Strategy through advocacy, education, review of municipal and regional policies and plans, and coordination with the Region’s TDM Coordinator.

b. The Whitby TDM program should focus on various different initiatives and objectives to reduce single occupant vehicle travel. These include:

1. Land Use Management - Encourage pedestrian, bicycle and transit-friendly land use planning and site design and design street layouts and connection points to
reduce the potential need for traffic calming. Reference the Transit Oriented Development (TOD) Strategies outlined in the DRTs Long Term Transit Strategy in this initiative.

2. Ride Sharing/Increased Automobile Occupancy – Review opportunities for potential HOV lanes and coordinate with Smart Commute Durham on opportunities to establish preferred parking incentives for car/van pools, subsidies for carpoolers, potential for shuttles, etc.

3. Parking Management - Develop a comprehensive parking management strategy which includes a review of parking requirements, ratios and pricing, shared parking policies for mixed developments, “Smart” parking lots and communications, etc.

4. Promotion of Alternative Modes - Promote and build facilities for active transportation and coordinate with the Region to integrate the Town and Region’s cycling network. Work with and coordinate activities with Smart Commute Durham to help promote TDM, and as well as with DRT and GO Transit to promote transit use.

c. The following strategies are recommended to achieve these initiatives and objectives:

1. TDM Strategies for the Official Plan
   i. Adopt a TDM Policy
      • The initial step of the TDM Strategy is to adopt a Town-wide TDM policy statement. The TDM policy should promote and support travel demand management initiatives including the formation of a comprehensive TDM Strategy to achieve the following objectives:
        • Eliminate trips – through appropriate land use planning and teleworking initiatives;
        • Reassign trips – by encouraging the use of less congested arterial roads;
        • Reduce peak period trips – by investigating opportunities to encourage alternative work arrangements (i.e. staggered shifts, compressed work week) of major employers;
        • Link trips – by encouraging mixed use land-use planning in the Official Plan, Secondary Plan and site application process, thereby promoting walking between activities;
        • Increase transit use – by encouraging DRT and GO Transit to enhance service and encouraging transit supportive development within walking distance of primary and secondary transit corridors;
        • Increase active transportation – by developing an active transportation network and encouraging employers and institutions to include amenities at their locations (i.e. bike racks);
        • Increase vehicle occupancy – through the establishment and participation of ridesharing organizations; and
        • Engage employers in being part of the solution - through cooperation with Smart Commute Durham.
2. Develop Trip Reduction Program for the Town Municipal Offices/Facilities:
   i. It is recommended that the Town continue to work with Smart Commute Durham to develop a trip reduction program for its Municipal offices. This will help the Town reach its TDM and auto share reduction strategies for its own staff and provide a leading example for other employers in the Town looking to undertake their own trip reduction strategy. It would also help alleviate some of the congestion issues in Sub-Area 3 (East Whitby) by encouraging an increase in car pooling and transit and cycling modal share.
   
   ii. Specific trip reduction initiatives that should be considered within the next 5 years include:
       • Participation in Smart Commute Durham Carpool Zone rideshare matching program;
       • Participation in the guaranteed ride home program;
       • Advocacy for improved transit, pedestrian and cycling facilities;
       • Marketing and promotion of sustainable transportation;
       • Implementation of multi-modal facilities such as bicycle lanes on Rossland Road and bike access via Bassett Boulevard; and
       • Potential implementation of shuttle bus or vanpool services.

   iii. Opportunities should also be developed that take advantage of the adjacent location of the Region’s Headquarters to the Town of Whitby’s Municipal offices that promote trip reduction and overall TDM. These could include a coordinated Carpool Zone group (to increase ridesharing opportunities), parking coordination and reduction strategies, bicycle parking, advocacy and education opportunities, etc.

3. Engage Major Employers and Institutions to Participate in Trip Reduction Initiatives:
   i. Once a trip reduction strategy is in place at the Town’s municipal offices, the Town should approach larger employers to encourage their own trip reduction strategy and encourage businesses to become members of Smart Commute Durham. Suggested initial target areas are employers in Sub-Area 1 (Lakeshore Whitby) and Sub-Area 2 (South Whitby). These areas have limited opportunities for roadway expansion and there is a strong desire to manage transportation demand and encourage transit and active transportation. This could be done via Smart Commute Durham and/or the Town’s TDM Coordinator.

   ii. The Town should work with the School Boards to further develop its school trip reduction strategy. This could include educational strategies on smart commuting options, school location criteria, bell times, inclusion of active transportation amenities (i.e. secure bike racks). These strategies can be aimed at both ‘driving age’ students and students that are dropped off at school.

4. Encourage Development of Mobility Hubs:
   i. Metrolinx’s Regional Transportation Plan (RTP) “The Big Move” identifies the need to create a system of connected Mobility Hubs at key intersections in the Regional Rapid Transit Network that provides
“travellers with access to the system, supports high density development, and demonstrates excellence in customer service”.

ii. The Metrolinx plan identifies a number of Mobility Hubs throughout the GTHA located at major transit station areas with significant levels of transit service and places with high transit supportive development potential. The Whitby GO Station does not qualify as a Metrolinx Mobility Hub as it does not meet the population/employment densities within the defined boundary of 800 metres.

iii. As part of the Town’s TDM strategy, it is recommended that intensification and transit supportive development strategies be pursued around the Whitby GO Station and in downtown Whitby in an effort to advance and support efforts to achieve the Metrolinx Mobility Hub designation (in accordance with policies 7.15 and 7.16 of Metrolinx’s ‘Big Move’ Regional Transportation Plan). This designation would assist the Town in promoting and attracting transit supportive type development to the area and reduce auto usage and parking demands.

5. Participate in the Region’s Commuter Lot Feasibility Study
i. One of the key recommendations identified in the Regional TMP was to engage in a Commuter Lot Feasibility Study. The implementation of commuter lots needs to be carefully considered in the overall master planning context. While commuter lots can discourage long-distance trip making via automobiles, the inappropriate placement and design of lots may do little to improve local congestion issues and mode share targets. As the Region undertakes this study, the Town’s TDM Coordinator or appropriate representative should participate. Opportunities/components for consideration to address TDM priorities include, but are not limited to:
   • Parking layout and design (i.e. at grade or multi-storey garage);
   • Compatibility with transit supportive development policies;
   • Potential for employer shuttles to Mobility Hubs and major destinations;
   • Access to DRT and the future Highway 407 transitway; and
   • Local area congestion issues.

6. Include TDM in the Development Process
i. Methods of managing transportation demand should be included in the planning process, including approvals of Secondary Plans implementation of zoning and approval of large site plan applications. This may involve the cooperation of several property owners. Guiding principles for developing TDM strategies at the Secondary Plan or plan of sub-division level include:
   • Consistency with Official Plans and Transportation Master Plans;
   • Consistency with the Province’s and Metrolinx’s plans;
   • Land uses that minimize automobile requirements for all purpose trips;
   • Development thresholds that mandate the generation of auto trips be limited to that of available surrounding reserve system capacity;
   • Infrastructure improvements that increase reserve capacities must be a combination of auto, active transportation and transit;
• Measurable transportation strategies that demonstrate auto reduction e.g. residential high rise development designs with additional bicycle parking for visitors, safer and more clear bicycle routing in commercial plazas;
• Design, configuration and network layout that negates infiltration, speeding and need for traffic calming; and
• Access management at schools, parks, institutions and mixed land uses that negates the need for “after” retrofits and traffic calming.

7.2 Active Transportation Strategy

a. Walking and cycling form an important component of building active communities and reducing the dependence on the single occupant vehicle. While cycling and walking do not form a significant share of all trips made, it becomes an important component of Whitby’s overall transportation network and should be expanded as part of the transportation system.

b. The provision of infrastructure and facilities will only go so far in reaching a significant shift in mode share and encouraging active transportation needs to use a multi-faceted approach. To be successful, Whitby’s active transportation plan needs to include the initiatives/objectives:

1. **A connected, safe and well designed network** - this includes exclusive facilities for pedestrians and cyclists (sidewalks, bicycle lanes, trails) that are connected to origins and destinations within and beyond Whitby.

2. **Attractive and accommodating pedestrian and cycling amenities both on the network and at key destinations** – this includes shower facilities and lockers at major employers, appropriate pedestrian and cyclist signalling, and water fountains and benches along trail networks.

3. **An effective education and promotion strategy** – the intent of this is to inform motorists of pedestrian and cyclist safety, to educate the public on the benefits of active transportation and the appropriate use of infrastructure and facilities.

4. **An integrated network** – the network must be well integrated with other modes such as transit, recognizing that active transportation may form only one part of an overall trip. The provision of shelters and benches at bus stops that are accessible, and the provision of secure bicycle parking facilities at transit stations is an important component of the strategy.

5. **An accessible network that promotes use of all members of the community** – with an aging population and the incoming Accessibility for Ontarians with Disabilities Act (AODA) Built Environment standard, accessibility will need to play an important part in the design. Accessibility will need to be considered in the location and width of sidewalks, use of curb cuts, pedestrian crosswalks and signals, etc.

6. **Mixed use and pedestrian oriented neighbourhood design** - walking and cycling strategies require a strong land use connection to support infrastructure, as destinations must be within close proximity of origins to increase its modal share.
c. The 2005 Durham TMP recommends several strategies to encourage cycling and walking in the Region that need to be considered as part of the Whitby TMP. These are outlined in Appendix F. Other Regional initiatives such as the Regional Cycling Plan and promotion activities carried out by Smart Commute Durham were also considered. While active transportation is primarily planned at the local level, inter-municipal connections continue to be important and therefore the general coordination with Regional initiatives needs to form a part of Whitby’s Active Transportation Strategy.

d. The following activities are recommended to achieve the above initiatives/objectives:

1. Adopt an Active Transportation Policy
   i. The initial step of the Active Transportation Strategy is to adopt a Town-wide policy statement that stresses active transportation’s role in contributing to the reduction of automobile mode share by 15%. The policy statement should be incorporated into the Official Plan Amendment.

   ii. To achieve this goal, growth in Whitby will need to be conducted in a manner that identifies opportunities to increase the ease of both pedestrian and cycling trips. This can be assisted through the provision of infrastructure; policies and programs; and land development strategies. These include:
       • Improve overall road network connectivity with appropriate pedestrian and cycling infrastructure;
       • Provide grade separated pedestrian/cyclist structures across major barriers (highways, rail, watercourses, arterials) to reach prime destinations (e.g. across Victoria Street to the GO Station);
       • Incorporate cycling facilities in accordance with the Town’s Cycling and Leisure Trails Plan;
       • Provide sidewalks that are accessible for persons with disabilities on both sides of all new and reconstructed urban collector and arterial roads;
       • Expand and dedicate facilities and routes for active travel modes whenever and where possible;
       • Commit to a dedicated funding program for new and improved facilities;
       • Improve the extent and quality of pedestrian and cyclist infrastructure based on the principles of connectivity and continuity, directness of route, and safety and comfort;
       • Implement educational and promotional programs to encourage active transportation within the community and for developments;
       • Encourage stronger live-work relationships in land use planning decisions;
       • Ensure new developments are bicycle and pedestrian friendly through appropriate urban design policies and practices, including at the site plan approvals process;
       • In conjunction with DRT, increase coordination between the transit network and bicycle and pedestrian trips (including the provision of bicycle parking along proposed higher order transit routes and stations); and
2. Develop Guiding Principles for Streets
   i. The Town should develop guiding principles for streets, particularly in intensification nodes and corridors (i.e. Downtown Whitby). The principles should balance to the role of roads as corridors for circulation and access, rights-of-way for utilities and services, in addition to places for the public. Key elements of the principles include:
      • Pedestrian and transit oriented streets through pedestrian scale design;
      • Sidewalks located on both sides of the street and wide to accommodate high flow of pedestrians;
      • Roadway width policies to minimize pedestrian crossings;
      • Generous street level windows (building design);
      • Placement of street furniture at special "places" created at intersections, and represent opportunities to use the work of local artists and crafts of people; and
      • Street lighting and trees which defines the space for pedestrians and street trees that also provide shade in the summer.

3. Town’s Cycling and Leisure Trails Strategy
   i. The strategy should be broadly based on the principles identified above and include the following elements:
      • Plans to expand the overall cycling network to increase network connectivity, continuity, safety and security;
      • Development of cycling and trails infrastructure design guidelines for various infrastructure types including shared on-street routes, exclusive bicycle lanes and multi-use paths;
      • Identification of integration opportunities with other modes. This would include transit and at car pool lots;
      • Support programs designed to educate cyclists, employers and the general public, and promote the use of cycling for both recreation and utilitarian purposes;
      • A facilities and amenities plan that forms part of the overall strategy;
      • Integration with the Region’s cycling strategy, including potential connections to cycling networks on Taunton Road, Victoria Street, Dundas Street and Lake Ridge Road; and
      • Be flexible and dynamic so as to adapt, change and expand as the municipality grows and evolves.

4. Missing links in the cycling network should be identified with a focus on key Sub-Area needs and opportunities, including:
   i. **Sub-Area 1 (Lakeshore Whitby)** - Active transportation forms a strong component of the transportation characteristic in this area and will be a critical necessity in the future due to lack of ability to significantly expand the road system. However, the cycling network at present to/from the waterfront and existing/future development lands and recreational facilities is incomplete, which will limit the ability to increase cycling modal share. The cycling and leisure trails plan should focus on Lakeshore Whitby as a key destination for both recreational and utilitarian active transportation. Considerations should be made to improving connections:
• Along the waterfront (cycling/pedestrians);
• To the Whitby GO Station, including the provision of future elevated structures (e.g. across Victoria Street) for cycling/walkway;
• To Iroquois Park Recreational Facility; and
• To the areas north of Highway 401.

ii. **Sub-Areas 2/3/4 (South, West, East Whitby)** – There are limited connections across the Highway 401 corridor for cyclists and pedestrians. Crossings at Brock Street and Thickson Road are not considered cyclist friendly due to the need to cross at the highway interchanges. To encourage active transportation in Whitby:
• Corridors should be identified that connect South Whitby with Lakeshore Whitby and reach from the east to the west;
• Within South Whitby, an adequate east-west route should also be identified. Two options include Dundas Street and an extension of Burns Road into West Whitby and East Whitby; and
• Corridors that maximize integration of trails, schools, parks, road bike paths, and other major attraction destinations should be developed.

iii. **Sub-Areas 5/6 (Central, North Whitby)** - There are limited planned connections across the future Highway 407 East Transportation Corridor and from the Brooklin area to/from the south. The goal should be to bike safely from the north end of Whitby to Lake Ontario.
ENCOURAGING AND FACILITATING PUBLIC TRANSIT

a. Public transit in Whitby plays a significant role in reducing the auto share of travel. As the municipality grows, transit will need to play a larger role in moving people, particularly during the peak periods. For this to occur, transit must be accessible, convenient, reliable, and integrated.

b. Transit in Whitby is planned and operated by Metrolinx/GO Transit and Durham Region/Durham Region Transit. Therefore, the Town does not have direct decision making authority over transit other than:

   1. Structure of local road network to accommodate transit and better facilitate movement; and
   2. Land use planning decisions that support transit usage.

c. The Town will need to use these tools to help ensure the level and capacity of transit service provided matches or exceeds the amount of service required to meet the 15% auto mode share reduction target.

d. The Durham TMP covers a broad number of transit strategies to help increase its modal share. This includes the designation of a transit priority network, designation of higher-order transit corridors, and requests to senior levels of government to improve inter-regional transit connections. Recommendations to promote transit from the Region’s TMP are identified in Appendix F and should be considered in the implementation of the Town’s TMP. Durham Region Transit (DRT) has also recently completed a Long Term Transit Strategy to assess current service and provide recommendations for long-term service delivery. This will have an impact on transit service delivery in Whitby and the implementation of recommendations in this plan should be monitored to ensure local policies and strategies are compatible and consistent.

e. Several strategies are recommended moving forward to achieve the goals and objectives of this TMP and include:

   1. Develop a Transit Oriented Development (TOD) Policy
      i. Effective transit begins with the development of policies that are transit supportive to encourage ridership. Creating transit supportive development can be achieved through a series of policies and practices that influence urban structure, mix of land uses, density of development, distances to transit facilities and services, parking management and design, creation of transit corridors/rights-of-way, and provision of pedestrian amenities. The policy should:
         • Establish guidelines for both greenfield development as well as intensification around key transit corridors and nodes; and
         • Include all secondary plans and development applications to ensure new developments support transit use and ridership targets.
      ii. While transit-supportive development policies should be applied Town-wide, a series of transit corridors and nodes should be identified based on higher order transit routes identified in the DRT Long Term Transit Strategy and become the focus for transit oriented development. Emphasis
should be placed on achieving the targeted reduction in automobile mode share in these nodes and corridors.

iii. One of the keys to a successful transit system is the ability to operate in an environment that maximizes the opportunity to cost effectively attract passengers. Urban structure, land use and urban/infrastructure design play a key role in achieving this goal, including a transit oriented policy that adheres to the following principles:

- Define an urban structure within the urban development boundary that supports higher densities and mixed uses at logical corridors and nodes. Transit supportive development should be promoted in existing built up areas with limited opportunity for infrastructure expansion;
- Encourage high density development at origins and destinations (concentrations of people and jobs increases the potential catchment area for transit services and potential utilization per revenue vehicle kilometre or hour traveled);
- Promote a mix of compatible land uses and live/work opportunities;
- Emphasize the establishment of a human scale pedestrian environment and the role of streets as not only means of circulation and access, but as ‘places’ in the urban fabric;
- Support Main Street environments with reduced impact of vehicles in certain areas (i.e. downtown Whitby);
- Universal access to attract a number of persons with disabilities or limited mobility (i.e. curb cuts);
- Continuous development along transit corridors;
- Continuous grid form road network with small scale blocks (to facilitate direct two-way bus movement and minimize the need for circuitous route designs);
- Strong emphasis on pedestrian environments and pedestrian to transit stops/stations;
- Integration of the bicycle network with the transit network, including cycling routes to and cycling amenities at transit stops/stations;
- Appropriate parking policies and pricing strategies (parking prices that are greater than or equal to a two-way transit fare); and
- Priority in mixed traffic (transit waiting in traffic with auto traffic will do little to attract users to the system).

iv. The Town of Whitby has completed (June 2010) an Intensification Strategy as part of the Official Plan Review. The strategy focuses on ensuring 45% of new development is located in the Provincially identified built boundary, focused on Intensification Areas (centres/nodes) and Corridors (local/regional roads and transit routes). The Intensification Strategy will introduce provisions that will help achieve this objective.

v. The DRT Long Term Transit Strategy provides an effective starting point in the development of Transit Orientated Development (TOD) guidelines that should be referenced by the Town in the development of related policies. Key elements defined in the TOD Strategy include Mobility (i.e. urban grid street pattern), Public realm (i.e. public art), Land use (i.e. mixed use development), Built form (i.e. density), Parking management and design (i.e. reduced parking requirements), and Transit station design.
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(i.e. designing transit stations as a place). Specific performance measures are also noted that provide a guiding direction on the level of transit supportive development preferred in different urban environments (i.e. downtown, urban neighbourhoods). The Strategy identifies TOD Places within the Region based on planned service levels, their role as a key destination and their development potential. The guideline suggests that the Regional requirement for Secondary Plans be adhered for TOD Places in advance of or as part of development review.

2. Based on the Sub-Area assessment undertaken within the context of this Master Plan, the review of TOD Places in the DRT Long Term Transit Strategy, and the preliminary results of the Town of Whitby Intensification Strategy, key areas that should be a focus for transit supportive development include:

i. **Sub-Area 1 (Lakeshore Whitby)** – Intensification in this area should be supportive of transit with key linkages to the Whitby GO Station and employment opportunities in the Sub-Area. The Whitby GO Station should be identified as a primary transit supportive node (with the potential to become a Mobility Hub). The Whitby GO Station and Port Whitby were also identified as a TOD Place in the DRT Long Term Transit Strategy.

ii. **Sub-Area 2 (South Whitby), Sub-Area 3 (East Whitby) and Sub-Area 4 (West Whitby)** – Downtown Whitby has the potential to support intensification and transit supportive development. The downtown is located at the intersection of two major transit routes in the Region on Dundas Street and Brock Street. The opportunity to encourage transit use through land use management should be encouraged and carried forward in the Official Plan. This will also support the proposed Light Rail Transit route on Dundas Street and the proposed Bus Rapid Transit route on Brock Street. Downtown Whitby is also identified as a TOD Place in the DRT Long Term Transit Strategy.

iii. **Sub-Area 3 (East Whitby)** – The area of Rossland Road and Garden Street is identified as a TOD Place in the DRT Long-Term Transit Strategy. There are a number of intensification opportunities in the area. The area also has two major employment generators that being the Town of Whitby Municipal offices and the Region of Durham Headquarters. Enhanced Conventional (Priority) Transit is also proposed on Rossland Road.

iv. **Sub-Area 4 (West Whitby)** – There is an ideal opportunity to implement transit supportive development practices in a new greenfield development in West Whitby. Dundas Street and Taunton Road are identified as Light Rail Transit corridors in the DRT Long Term Transit Strategy and the future 407 West Durham Link transitway will span the western boundary of the Secondary Plan area with stations at Dundas Street, Rossland Road and Taunton Road. High density mixed use development should be focused on these areas.

v. **Sub-Area 5 (Central Whitby)** – The commercial area at Taunton Road and Baldwin Street was identified by Growing Durham as a Regional Node. It is also identified in the DRT Long Term Transit Strategy as a
TOD Place. With existing localized congestion issues in this area and the designation of Taunton Road as a Light Rail Transit corridor and Baldwin/Brock Street as a Bus Rapid Transit corridor in DRT’s Long Term Transit Strategy, there is an opportunity to influence demand in this area by promoting transit-oriented development around this node.

vi. **Sub-Area 6 (North Whitby)** – Downtown Brooklin (Winchester Road and Baldwin Street) is identified as a TOD Place in the DRT Long-Term Transit Strategy. This area can be described as a small town pedestrian oriented environment with a number of intensification opportunities. Bus Rapid Transit is proposed on Baldwin Street to Winchester Road and on Winchester Road east of Baldwin Street. The DRT Long Term Transit Strategy also recommended corridor protection occur north and west on these corridors for future expansion of the higher order transit network.

3. Undertake a People Mover Special Study in Sub-Area 1 and 2 (Lakeshore and South Whitby)
   i. In consideration of the intensification anticipated with the Port Area and parts of downtown and West Whitby, a Special Study should be undertaken to investigate and plan for alternative people mover systems to move residents and recreationalists to/from key destinations and protect the required right-of-way allowances. For example, a people mover system through the Port Area which connects service between residential, Waterfront, existing GO station, future GO station, UOIT and VIA Rail. This is premised on the recognition that Whitby south of Dundas Street and Highway 401 will intensify well beyond the road capacity potential and crossing Highway 401 to reach GO Transit services will become more difficult.

4. Designate and Support Implementation of Higher Order Transit Corridors
   i. The Town should support and the implementation of higher order transit corridors identified by both the Region and by Metrolinx. This includes implementation of higher order transit on the arterial road network as well as the Highway 407/West Durham Link transitways. Transit oriented development policies should be focused on these corridors and should be designated as a separate schedule as part of the Town’s Official Plan update.

5. Coordinate with the Region to Implement a Transit Priority Plan
   i. Traffic delays can reduce the on-time performance and reliability of transit service (i.e. delays, missed transfers) and limit route expansion opportunities. This will reduce the overall level of service for transit passengers and limit the ability for the Town to reach the 15% auto reduction target.

   ii. To be effective, transit must operate at a competitive level of service to the private automobile, which means providing comparable travel times and reliability to the automobile. This can be accomplished by giving transit priority along key corridors and congested areas where many transit services converge.
iii. Cost effective transit priority solutions can improve the overall level of transit service, mitigate bus delays and reduce operating costs in a growing system. This will help significantly in increasing overall ridership and achieving the modal share targets for the Town.

iv. The DRT Long Term Transit Strategy contains a long-term transit priority strategy. It is recommended that the Town work with the Region and DRT to implement the strategies and recommendations contained within the LTTS. Initial improvements could include:
   • The development of priority lanes at congested intersections to allow buses to ‘jump the queue’;
   • Minor geometric design improvements at intersections where buses have difficulty making turning movements;
   • Site specific access improvements where transit vehicles are off the public roadway;
   • Shifting bus stop locations on local streets where transit vehicles have difficulty merging back into lanes of traffic or moving to the far side of intersections to avoid transit vehicles having to stop twice;
   • On-street parking restrictions and enforcement at locations where parked vehicles can block buses from accessing stops or effectively manoeuvring on the road network;
   • Traffic signal priority for approaching buses (in the medium to long-term) coordinated with the Town/Region’s signal system;
   • Allowing ‘buses only’ left turns from through lanes at specific signalized intersections; and
   • Implementation of exclusive or semi-exclusive bus only lanes on key corridors. Funding of which will be subject to further Study.

6. Identify and Protect for Missing Links that could Benefit Transit
   i. It is important that missing links in the existing roadway network are identified and protected to improve greater connectivity in the roadway network, which allows transit routes to be more direct and can shorten walking distances to transit stops. This decreases the overall travel time to/from and on transit vehicles, making the service more efficient and effective.

   ii. In Whitby, a number of missing links were identified in the road network that, if connected, would support improved transit and therefore assist in achieving the target to achieve a 15% reduction in auto use. Potential missing links in the road network that would benefit overall transit ridership are identified in Section 9.2.2 of this report.
MANAGING TRANSPORTATION SUPPLY

a. The Transportation Master Plan sets an auto reduction target of 15% by 2031, but automobile travel will continue to be the predominant mode of travel in Whitby. The plan needs to identify not only recommended capacity improvements to the roadway network based on forecasted screenline deficiencies, but also other improvements which minimize the need for additional widening, promotes appropriate functional use of the network, increases overall connectivity and continuity (particularly for use by transit vehicles), and maximizes the use of the existing network. Several strategies are outlined in this section of the report that achieve the objective of optimizing and best managing the supply of new and improved transportation infrastructure.

9.1 Transportation Systems Management

a. One important technique in managing transportation supply is Transportation Systems Management (TSM). TSM refers to techniques that increase the efficiency, safety, capacity, or level of service of a transportation facility without increasing its size. Examples for Whitby include, but are not limited to:

1. Traffic signal improvements (e.g. new installations for autos/pedestrians, improved signal timing/phasing);
2. Improved intersection turning lanes and mid-block centre turn lanes;
3. Access/driveway management;
4. Improved incident prevention and response;
5. Special event control, emergency transportation management (e.g. vehicle signal pre-emption, emergency detour plans, incident management);
6. Improved weather information and response to weather events;
7. Traffic control devices including installing medians and parking removal, channelization, signage, pavement markings, school traffic control devices;
8. Information management and construction management; and
9. Restriping for high occupancy vehicle (HOV) lanes.

b. TSM should be organized to support a broad range of management strategies and to achieve a variety of objectives, including congestion reduction, road and parking facility cost savings, consumer cost savings, traffic safety, and environmental objectives. This means that they should support Transportation Demand Management activities. The goal is to shift emphasis from expanding capacity to making better use of existing transportation systems.

c. TSM needs to form a vital component of Whitby’s transportation strategy moving forward. This involves identifying areas that maximize use of existing capacity. Several strategies are recommended moving forward to achieve these objectives:

1. Prepare Access Management Guidelines
   i. Access management is a method of controlling access onto major streets and activity sites to minimize conflicts and friction caused by multiple, closely spaced driveways and intersections. Some of the methods include consolidation of driveways, provision of service lanes or windrow streets, and installation of medians. The benefit of access management is to improve overall vehicular, pedestrian and cyclist safety as well as improve overall traffic flow. To achieve these objectives, it is recommended that
the Town prepare Access Management Guidelines which help maximize the flow and improve overall safety on the roadway network.

2. Refine Right-of-Way Requirements as a Multi-Modal Corridor  
i. Each roadway classification should be designed to make the most effective use of available space in a corridor and to accommodate multiple modes. To achieve this, it is recommended that the Town revisit its Road Right-of-Way Dimension Guidelines for each road classification. This should include requirements for high occupancy vehicles, transit only lanes, and bicycle lanes and trails (where applicable). These requirements should be utilized for new developments as well as any road restructuring or improvements that involve changes to the existing right-of-way. The right-of-way serves many public functions including facilities to move people, above and below utilities and municipal services, streetscaping, snow storage, parking, and so on, all of which must be considered.

9.2 Roadway/Corridor Network Improvement Plan  
a. Identified in Exhibit 9.1 are the new and existing reconfirmed recommended corridors for protection. The associated changes to the transportation schedule in the Official Plan related to the corridors to be protected are noted in Exhibit 9.2 and only those roads where there is a recommended change or addition is shown. It is important to note that the changes shown in Exhibit 9.2 are for mainly strategic arterials. It is recognized that when the Official Plan is updated, additional changes to the transportation schedule will be required to address all the edits to the local and collector system as well.

b. Identified below is a description of the elements included within the context of the protection plan. Each of these corridors will require future approvals and alignment refinement in the completion of separate Class environmental assessment studies and detail designs.

c. The staging of lane requirements (e.g. 2 to 4) within the designated right-of-way will be further assessed as development proceeds and as part of future traffic analysis completed for environmental assessment studies.

9.2.1 Screenline Capacity Improvements  
a. This section of the TMP identifies the recommended major arterial system to alleviate the 2031 identified screenline capacity deficiencies within the Town. These modifications to the roadways are above and beyond those already 2031 approved/planned and have been based on a 15% reduction in auto use due to improvements in transit and the introduction of TDM/TSM measures.

b. These roadway alternatives extend through the different Sub-Areas and are representative of corridors. Refinement of alignments is required to be completed as part of future environmental assessment studies and detailed designs to mitigate any potential social and natural environmental impacts.
Town of Whitby Transportation Master Plan
Exhibit 9.1 - Recommended Protected Corridors

Legend
- Grade Separation
- Potential Grade Separation
- Full Potential Interchange
- Full Interchange
- Partial Interchange
- Highway 407
- West Durham Link
- Regional Road Improvement
- Beyond Durham TMP
- Town Corridor Protection
- Municipality

* Potential road alignments subject to further study

Created By: SFG
Checked By: KK
Date Created: January 27, 2009
Date Modified: June 16, 2010
File Path: I:\GIS\081261 - West Whitby\TMP\Edits_042210\9.1 - Recommended Protected Corridors.mxd
c. The determination of the corridors was based on a detailed identification, assessment and evaluation of roadway corridors which is documented in Appendix G. The scope of the assessment was to identify those road solutions that have the potential of best solving the screenline capacity deficiency in 2031 when considering transportation, environmental and cost criteria. Moreover, the establishment of these alternatives have assisted in understanding the integration of the transportation network and timing of the staging/implementation of improvements that are anticipated.

d. It is important to recognize that other road improvement solutions have also been identified for specific Sub-Area capacity, local service and multi-modal network connectivity and transit purposes and needs, which are further discussed for each of the individual Sub-Areas later in this section.

e. Based on analysis of the 2031 projected traffic conditions and evaluation of screenline alternatives, the following capacity is recommended to address the 2031 screenline capacity deficiencies. Note that the timing for implementation will be driven in part by when future development and growth occurs within the Town, particularly in those areas which are presently undeveloped.

1. Widen Rossland Road from 4 to 6 lanes between Lake Ridge Road and Brock Street including a widening of the CP Rail road overpass.
2. Extend Bonacord Avenue at 2 lanes from its current terminus to Lake Ridge Road.
3. Construct a new mid-block arterial road at 2 lanes from south of the Highway 407 East Extension between east Town limits to Baldwin Street.
4. Widen Brock/Baldwin Street from 4 to 6 lanes between Highway 407 East Transportation Corridor and Taunton Road.
5. Widen Anderson Street from 2 to 4 lanes between Highway 407 East Transportation Corridor and north of Rossland Road.
6. Widen Garden Street from 2 to 4 lanes between Taunton Road and south of Taunton Road.
7. Extend realigned Coronation Road with protection to 4 lanes from Taunton Road through the West Whitby Secondary Planning Area to Dundas Street. This is also expected to require a structure across the CP Rail.

f. For each of the roadway improvements included in this plan, it is necessary to identify what schedule of project they are considered under the Class EA and whether or not they require the completion of Phases 3 to 4 of the Class EA process to be considered approved. This is identified in Part IV of this report.

9.2.2 Other Sub-Area Network Improvements and Future Corridor Protection

a. This section identifies network deficiencies or “missing links” that are necessary to improve overall connectivity and address more localized traffic management issues in each of the Sub-Areas. It also identifies anticipated deficiencies as development proceeds and opportunities to protect for transit and active transportation linkages.

b. These network connections should be addressed as the opportunity arises from development or redevelopment both within the time frame of this TMP and as the TMP is updated. The recommended connections also ensure roadway networks are planned comprehensively in new development areas and not developed ad-hoc.
c. Without the provision of new key routes, future growth will likely result in an urban development form that is more land extensive since the existing road system can not adequately support the long-term traffic demands.

d. The following connections or servicing roads are recommended to be protected as part of the long-term transportation network.

9.2.2.1 Sub-Area 1 – Lakeshore Whitby

a. **Waterfront Twinning of Pathway** – Active transportation forms a strong component of the transportation characteristic in Lakeshore Whitby. The existing path system between Brock Street to Thickson Road is operating at/near capacity, particularly east of South Blair Street, and has a number of locations with inadequate visibility. Connections along the Lakeshore are particularly important to encourage active transportation and recreational activity in this area.

1. **Recommendation:** Protect for a twinning/widening of the existing active pathway corridor (cycling/pedestrian) from east of the Region of Durham Water Pumping Station (boardwalk) to Thickson Road.

b. **Water Street (Brock Street to South Blair Street)** – A Class Environmental Assessment (EA) Study for the realignment and upgrading of Water Street between Brock Street and South Blair Street was undertaken by the Town in 2002. The need for the realignment was to correct geometric and drainage deficiencies. Due to significant structural soil and drainage issues, the full right-of-way for the road class of Arterial C (30m) is required for design.

1. **Recommendation:** Maintain the paved shoulders for multi-modal use and on-street parking as designed in the approved EA Study. Protect realignment in the Official Plan.

2. **Recommendation:** Redesignate the road from an Arterial C to an *Arterial Parkway*. This designation does not presently exist in the Town or the Region’s Official Plan. The proposed right-of-way is not proposed to reduce with this change (minimum 30 m for this case) but may have unique design criteria such as maintaining a rural cross section with vegetated swales and wide median as well as with designated shoulder parking (south side) with a single lane traffic in each direction.

c. **People Mover Special Study** – Intensification in the Port Area and parts of downtown and West Whitby will result in increased demand on the road network that may be well beyond the road capacity potential (including crossings of Highway 401 to reach GO Transit services). Options to address this should include multi-modal forms of travel, including consideration of technologies that have not yet been determined, ratified or commonplace (for example, a people mover system through the Port Area which connects service between residential, Waterfront, existing GO station, future GO station, UOIT and VIA Rail).
1. **Recommendation:** Undertake a Special Study to investigate and plan for alternative people mover systems to move residents and recreationalists to/from key destinations in the Port Area and protect the required right-of-way allowances.

d. **Harbour Street/Galt Street/Grand Truck Street Road Allowances** – There are existing (open and unopened) road allowances extending on Harbour Street from Water Street to Watson Street, and on Galt Street from Watson Street to Victoria Street via Grand Trunk Street. The Galt Street connection to Victoria Street may now be precluded for autos due to the CN Rail structure; however other Town lands exist in the area which could be used. These rights-of-way are also being used/planned as utility corridors for Regional services.

1. **Recommendation:** Protect existing road allowances and abandoned rail spur lines for future mobility corridors. Depending on future development in the area, these corridors may be restricted to certain modes of travel.

### 9.2.2.2 Sub-Area 2 – South Whitby

a. **Burns Street Connections** – South Whitby is largely built out and has minimal opportunities for local east-west connections. Dundas Street serves as the major east-west arterial, however, is constrained in downtown Whitby at Brock Street. The other logical east-west road is Burns Street, however, the arterial has a missing link between Thickson Road and Hopkins Road to the east. To the west, the street ends near Michael Boulevard, with no connection back to Dundas Street. The completion of this road would provide an alternate east-west route through South Whitby that would alleviate traffic through downtown Whitby, would provide an alternate and faster transit route and enhance accessibility to the Whitby GO Station and a potential future Lake Ridge Road GO Station for West Whitby residents. The route also provides a potential trails connection from Lakeshore Whitby to the north (via Henry Street). This connection would entail passing through, or adjacent to, a flood plain and wetlands, and these factors would need to be considered in any future design.

1. **Recommendation:** Continue to protect for the missing arterial link of Burns Street between Hopkins Street and Thickson Road including grade separation at the CP Rail crossing.

2. **Recommendation:** Continue to protect for the missing arterial link of Burns Street at Michael Boulevard west and then north to Dundas Street. Review the need for more than one connection or a split connection (one way system) to “avoid” the wetland area. The connection location(s) for the intersection of the Burns Street extension to Dundas Street should be subject to a Special Study and would require MTO approvals due to the proximity to Highway 401 and Highway 407 West Durham Link.

3. **Recommendation:** Protect for a designated transit connection (potentially under the Link) to connect with the West Durham Link transitway. This would require MTO approval.
4. **Recommendation**: Coordinate the Burns Street extension works with MTO construction of the realignment and widening of Highway 401 to minimize disruption to the area environmental features.

b. **Highway 401 Crossings** – One of the deficiencies identified in this Sub-Area is the lack of north-south crossings over Highway 401 connecting South Whitby to Lakeshore Whitby. This limits accessibility to Lakeshore Whitby and creates bottlenecks at existing crossings. For cyclists and pedestrians, three of the five existing/planned crossings are interchanges, which are not considered “cyclist friendly”. The Region has already identified a new crossing at Hopkins Street. However, even with this crossing in place, localized capacity issues are still forecasted. As the Town grows, the need for additional crossings or expanded capacity on existing crossings will need to be protected.

1. **Recommendation**: Protect for additional crossings of Highway 401 to improve north-south connectivity and access to/from Lakeshore Whitby. Continue to protect for crossing at Annes Street.

2. **Recommendation**: All new and upgraded road and rail structures crossing Highway 401 should be assessed for new/improved bicycle/pedestrian facilities.

3. **Recommendation**: Work with the Ministry of Transportation Ontario and Region to assess the capacity and future service requirements for Highway 401 crossings as part of the Highway 401 widening and related transportation planning studies.

### 9.2.2.3 Sub-Area 3 – East Whitby

a. **Mary Street/Crawforth Street Extension** – There is limited ability to increase the capacity on Dundas Street for transit and other active modes of transportation. Durham Region has plans to implement higher order transit on Dundas Street which is anticipated to affect through capacity and may displace existing users. Mary Street/Crawforth Street presently extends in an east-west directly paralleling Dundas Street to the north with sections of discontinuity, namely at the CP Rail corridor and east of Kathleen Street. Connecting the missing links on this street would provide an alternative east-west corridor, primarily for local traffic to avoid congestion on Dundas Street.

1. **Recommendation**: Continue to protect the Mary Street/Crawforth Street corridor east to Garrard Road and extend the protection to Cochrane Street (Sub-Area 2). Complete a functional alignment design to establish base line costs, requirements, identifying/confirming limitations and preferred connection points to Dundas Street.

2. **Recommendation**: As part of the Durham Transit planning for higher order transit on Dundas Street, work with the Region in the completion of a detailed corridor operations study for the area to establish challenges, opportunities and requirements for all modes. Reaffirm corridor protection requirements for parallel facilities (e.g. Colborne Street, Dunlop Street).

b. **Dryden Boulevard Connection** – There is a lack of a continuous east-west mid-block arterial in East Whitby. Dryden Boulevard provides a potential, however, there is a missing link between Anderson Street and Thickson Road. The completion of this
missing link would improve overall connectivity in the network, overall transit routing structure, and allow direct and continuous cycling routes.

1. **Recommendation:** Maintain the protection of the missing link of Dryden Boulevard east of Anderson Street to Thickson Road to improve overall east-west connectivity in the network and to relieve overall congestion on Taunton Road thereby reducing the likelihood for short cutting on other “parallel” less desirable residential streets.

### 9.2.2.4 Sub-Area 4 – West Whitby

#### a. Bonacord Avenue – Manning Road Connection

This connection would create a continuous east-west route that would extend into Ajax and ultimately improve traffic distribution, potential transit routing and active transportation. This would improve network connectivity at both the local and regional level and facilitate servicing requirements. It is likely that this would take place beyond the 2031 time horizon, however, should be protected.

1. **Recommendation:** Protect for the connection of Manning Road to Bonacord Avenue to increase east-west regional and local connectivity and as a potential transit or active transportation corridor. This would include a grade separation crossing of the CP Rail line and require rail authority approvals.

#### b. Twin Streams Road Connection

With the development of West Whitby and the extension of Coronation Road, there is a potential to connect Twin Streams Road to Coronation Road and potentially Lake Ridge Road to provide greater road access to West Whitby and alleviate traffic issues from Country Lane. This would also improve overall transit routing potential as well as active transportation. It should be noted that an extensive area of flood plain and Mature Woodland is within the proposed extension, and these factors would need to be considered in any future design.

1. **Recommendation:** Protect for the extension of Twin Streams Road from its present terminus to Lake Ridge Road. This would require MTO approvals associated with the crossing of the West Durham Link.

### 9.2.2.5 Sub-Area 5 – Central Whitby

#### a. Garden Street Extension

One of the challenges identified in the Central Whitby Sub-Area is the significant congestion on arterial roads near the commercial areas north of Taunton Road at Garden Street. As a result, a number of motorists are using alternate lower order routes such as Robert Attersley Drive to avoid congestion and reroute to the north. This is partly due to a lack of a mid-block north-south arterial in the Sub-Area.

There is also a new residential development planned north of Taunton Road, west of Thickson Road, with no direct connection between this area and the retail areas along Taunton Road. This will add additional traffic on Thickson Road and Taunton Road and reduce the number of transit or cycling/walking trips made between these two areas.

The extension of Garden Street north to the recommended mid-block arterial would alleviate some congestion on the arterial road network, reduce infiltration on residential
collectors, improve active transportation opportunities, and allow transit to make direct connections between growing residential, employment and commercial zones.

The connection would go through a significant environmental area and the benefits/impacts would need to be thoroughly investigated as part of any further environmental assessment studies. Alternative alignments and impacts assessed in this sub-area are included in Appendix G.

1. **Recommendation:** Protect for the northerly extension of Garden Street from its present terminus to the proposed Mid-block arterial.

b. **Mid-Block Arterial Extension** – As North and Central Whitby continues to be develop, there will be additional localized constraints around north-south travel along Baldwin Street and Thickson Road, particularly with the opening of Highway 407 East Transportation Corridor.

The proposed mid-block arterial (located north of Conlin Road) will extend from Garrard Road (and potentially east into Oshawa) to Baldwin Street. Extending this road to Cochrane Street at the protected Cochrane/Highway 407 interchange (see below) will provide additional north-south and east-west capacity in Central and North Whitby and reduce localized congestion on Baldwin Street and Thickson Road. This will also alleviate traffic congestion through downtown Brooklin, improve active transportation opportunities and provide an alternate transit route.

The connection may require enhancements to Cochrane Street and traverse sections of significant environmental areas. The benefits/impacts of the extension would need to be thoroughly investigated as part of any further environmental assessment studies.

1. **Recommendation:** Examine the need and protect for the alignment of a north-south route on the west side of Brooklin extending from Highway 407 southerly to reconnect with the proposed Mid-Block Arterial at Baldwin Street.

c. **Coronation Road Extension** – A new Coronation Road is planned between Taunton Road and Dundas Street with the development of the West Whitby area and/or construction of the West Durham Link. The proposed alignment of this road connects to Taunton Road west of the existing Coronation Road alignment north of Taunton Road. This creates a disconnect on a significant north-south arterial road, thereby reducing the attractiveness of this corridor for north-south travel and creating localized traffic issues on Taunton Road. Connecting the existing alignment north of Taunton Road to the planned alignment south of Taunton Road would increase north-south connectivity in the network, reduce potential turning movements on Taunton Road and Coronation Road (for north-south through traffic) and create another arterial road (and other mode options) spanning the entire length of Whitby.

1. **Recommendation:** Protect for a connection of realigned Coronation Road south of Taunton Road to the existing alignment north of Taunton Road.

9.2.2.6 Sub-Area 6 – North Whitby

a. **Highway 407 Interchange at Cochrane Street** – While not precluded, a Highway 407 interchange at Cochrane Street is of strategic significance to North and Central Whitby.
and should be protected for the future. The interchange could potentially connect to a future Brooklin north-south route, service the rapidly developing area and relieve local congestion issues at the interchange at Baldwin Street and Thickson Road at Highway 407. The spacing between the planned interchanges at the West Durham Link connection and Baldwin Street will allow for a mid-section interchange. This is also identified in the Durham ROPA 128 as a future interchange.

1. **Recommendation:** Protect for a full movement interchange along Highway 407 at Cochrane Street. *As the Highway 407 East IEA did not seek approval for such an interchange, a future interchange will require a separate environmental assessment and MTO approvals.*

b. **New Brooklin North/South Route** – The proposed facility would service future development lands to the north, create a continuous route from Highway 401 to Highway 7/12 north of Whitby for heavy vehicles and long distance travel, and resolve traffic issues within the downtowns of Whitby and Brooklin. In particular, there are a number of local traffic issues through the heart of Brooklin during peak weekday and weekend periods. These include heavy truck traffic essential for north-south goods movement, peak summer recreational traffic destined to the north, heavy local pedestrian and commercial shopping traffic on the main street, and infiltrating traffic through the adjacent residential areas to “avoid” the downtown and other network capacity constraints.

1. **Recommendation:** Work with MTO and Regional officials regarding the completion of a Special Study for a potential extension of the Highway 407 link. At this time, the jurisdiction of an extension has not yet been identified. It is recommended at this time that the extension be directed to connect with Highway 7/12 to the north. This however does not preclude from other connections and linkages from the extension to Lake Ridge Road and new east-west mid block arterials/collectors serving new development lands. The rationale for the connection to Highway 12 was to maintain the Provincial linkage between Highway 401 and Highway 7/12 and is consistent with origin-destination analysis trip desires. Although a Special Study will confirm, the extension to primarily connect with Lake Ridge Road was not identified at this time as being preferred in that fewer trips would expect to take this route and be a duplication of the planned Lake Ridge Road/Highway 401/407 linkages/interchanges/corridor. Utilizing Brawley Road as the extension was also not identified as being preferred at this time due to the existing topography, impacts to adjacent residents, and recognition that a new internal roadway will be required anyways to serve future development. Not withstanding this, a Special Study will be required to comprehensively assess these various options.

2. **Recommendation:** Consideration should be given to an Arterial Parkway designation that permits for wider rights-of-way (30 m to 55 m) and larger medians (e.g. 10m). The Parkway classification in this area would be envisioned to provide for a divided 4 lane cross section with picturesque design features characteristic of the northern environmental setting while accommodating goods movement. Accommodation of active modes would also be envisioned with strategic at grade connections to adjacent development lands. The function would permit land servicing, goods movements, high quality operations, and active transportation. The Parkway designation intent is to implement something
different for the municipality which blends in a road with the sensitive natural environment that is found in the northern part of Brooklin.

3. **Recommendation:** Basic criteria of an extension should be that it can service not only future development lands under a controlled access fashion, it will also serve as a high quality route around Brooklin with the potential for the Link and extension ultimately becoming the new Highway 12 from Highway 401. This would permit opportunities for the Municipality to pursue the opportunity to transfer existing Highway 12 under its jurisdiction through downtown Brooklin.

4. **Recommendation:** The timing of such a facility will depend on a number of factors including future development and the construction of Highway 407. In consideration of this, it is recommended with the Town meet with MTO staff to review potential interim, in addition to the longer term, options for new alternative facilities to Highway 7/12 through downtown Brooklin.

5. **Recommendation:** Initiate the Special Study within the next five years.

c. **Brooklin Arterial/Collector Road Network** – As the Brooklin area continues to develop, there is a need to designate an arterial/collector road network to facilitate effective movement of vehicles, cyclists and pedestrians. Two east-west corridors that would facilitate this type of network and are appropriately spaced include Carnwith Drive and Vipond Road.

1. **Recommendation:** Protect for the westerly extension of Carnwith Drive and Vipond Road to the proposed Link extension and Country Lane, respectively as a continuous roadway and transit supportive route to service developing areas within the Brooklin community.

d. **Protect for Capacity Expansion** – The development of Brooklin may also see a need for increased capacity on some existing arterials beyond the 2031 timeframe. To ensure that future development does not preclude the opportunity to accommodate traffic on the roadway network, strategic corridors should be protected for potential widening in the future. Two corridors that will form a significant part of the future transportation network in Brooklin include Cochrane Street, Columbus Road and Lake Ridge Road. These arterial roads are currently two-lane cross sections.

1. **Recommendation:** Protect the right-of-way (and appropriate road classification) along Cochrane Street (between Highway 407 and Columbus Road), Columbus Road and Lake Ridge Road for a future 4-lane cross section. This should include accommodating cycling facilities.

e. **Garrard Road Connection** – While not precluded, the Highway 407 East Transportation Corridor did not seek approval for a grade separation at Garrard Road. Therefore, Garrard Road is planned to terminate on both the north and south side of Highway 407, eliminating this north-south connection. The model identified a high degree of congestion at Thickson Road near Winchester Road and Highway 407. It has also been considered that maintaining a north-south connection across Highway 407 is essential to support area transportation servicing needs and future development. Elimination of this connection would constrain and limit future employment land use opportunities in the Garrard Road corridor and may result in local traffic issues on the north-south network, particularly as the Brooklin community continues to grow.
1. **Recommendation**: Protect Garrard Road for a grade separated crossing of the Highway 407 east Transportation Corridor to provide future north-south capacity when demand warrants. *As the Highway 407 East IEA did not seek approval for such a grade separation, a future grade separation will require a separate environmental assessment and MTO approvals.*

**9.2.3 Road Classification**

a. For some of the corridors where protection has been identified or has been reaffirmed, there are proposed modifications to the Official Plan roadway classification. These are primarily arterial routes but also include other potential critical elements of the Towns transportation structure. The recommended changes are identified in Exhibit 9.2 with reference text in Exhibit 9.3 and adjoining transportation excerpts from the Official Plan. The rationale for the classification changes has been based on a number of factors, including:

1. Anticipated traffic volumes;
2. Multi-modal needs;
3. Network connectivity and existing classifications;
4. Servicing and utilities;
5. Accessibility needs and multi-modal choice desires;
6. Access control and provision requirements;
7. Future Regional and Provincial plans; and
8. Updates to past and planned land use.

b. The road classifications identified in this document are recommended for incorporation into future Official Plans and Secondary Planning documents undertaken by the Town.

c. While detailed investigations of Collector roads was not undertaken for this Study, it was recognized that there are a variety of collector type roads within the Town and it is recommended the Town’s design criteria be expanded to address the following types:

1. Minor and major collectors; and
2. Industrial and residential collectors.

d. Due to significant geometric constraints, it is not anticipated that Brawley Road can achieve the design standard requirements for Type A Road Classification. As part of the review of a future Special Study regarding a new north-south route along the west side of Brooklin to reconnect with Highway 12, the classification of Brawley Road should be reassessed. Maintaining a Type A arterial in north Whitby continues to be recommended, although in the long term may not be Brawley Road.

**9.3 Mitigating Traffic Infiltration in Local Neighbourhoods**

a. When arterial roads become congested, many motorists resort to the use of local and collector residential roads to avoid bottlenecks in high traffic areas. In these situations, the intended use of local and collector roads are compromised and the increased traffic through neighbourhoods causes potential safety issues, quality of life issues and public frustration.
b. For new developments, the potential for traffic infiltration into local neighbourhoods should be reviewed in secondary plans/plans of subdivision and measures should be implemented through appropriate road design, road allowance, and network layout, that mitigates residential complaints regarding “speeding” and “shortcutting” (i.e. inherently calms streets) without sacrificing the performance of the system (e.g. road network connectivity and access).

c. Impacts to Emergency Services and response times and Durham Region Transit should be considered in the development and assessment of mitigative improvements.

9.4 Roundabouts

a. Roundabouts are circular intersections in which all traffic travels in a counter-clockwise direction around a central island. Modern roundabouts have developed as re-engineered versions of old-style traffic circles, incorporating design elements to improve capacity and safety. Although roundabouts have been part of the Transportation Management Systems’ arsenal of alternatives throughout the world, these are relatively new features in Canada. Currently there are no roundabouts within the Town of Whitby.

b. Roundabouts may have many benefits when appropriately installed and designed. They have been proven to reduce travel time; reduce the volume and severity of accidents; be part of traffic calming solutions and add to the streetscape environment. When operating within capacity, roundabouts generally produce lower queues and delays than traditional signalized intersections of comparable size, under similar traffic conditions. In some cases, they are an ideal alternative to traffic signals and a solution for odd angled intersections. Roundabouts can also offer environmental benefits such as reduced fuel consumption, noise impacts and vehicle emissions as well as reduced energy costs compared to traffic signals.

c. Roundabouts are not always the solution. Implementation of roundabouts may be more costly or require more property allowances than conventional intersection designs. However, at new intersections or those requiring the widening of one or more approaches, roundabouts can be cost comparable. Major street movements may be delayed, as all movements within a roundabout are given equal priority. Due to the complexity of vehicle interactions in the roundabout, cyclists can be vulnerable and experience some safety concerns. Roundabouts can also reduce the progressive movement of vehicles along corridors with signal progression.

d. Provided in the following sections include guidelines for planning appropriate installations of roundabouts for intersection control on local, collector and arterial roads under the jurisdiction of the Town of Whitby, as authorized under the legislation of the Highway Traffic Act (HTA).

9.4.1 Application and Evaluation of Roundabouts

a. Roundabouts should be considered for implementation in Whitby for the following situations:

1. At proposed intersections where traffic signals are warranted (or anticipated to be in near future);
2. At existing or proposed intersections where all-way stop control is warranted (or anticipated to be in near future);
3. At existing intersections with identified capacity issues or safety issues;
4. At existing intersections that would warrant traffic signal control if not for geometric constraints;
5. Where suitable intersections are identified as a component of large-scale road improvement plans or new development plans; and
6. On road construction projects where major rehabilitation and/or road widening is occurring.

b. Roundabouts are not recommended for implementation under the following circumstances:
1. On roadways with typical daily volumes greater than 20,000 vehicles per day; or
2. On sections of roadways where circulatory flow between an entry point and the next exit point is greater than 1,800 vehicles per hour; or
3. At intersections with ROW constraints.

c. Special design considerations may be required to accommodate certain transportation variances within the roundabout, such as:
1. High volumes of pedestrians (e.g. school crossings);
2. High volumes of bicycle traffic;
3. LRT routes / rail crossings;
4. Multiple lane roadways;
5. Large vehicles;
6. Transit routes / transit priority; and
7. At the intersection of roadways under different jurisdictions (i.e. Durham Region).

d. It is recommended that traffic operational analysis be undertaken to determine the appropriate application of roundabouts, be investigated on a site by site basis by a Professional Engineer who has demonstrated experience and has the resources to effectively complete a detailed technical review.

e. The effectiveness of a roundabout can be evaluated based on the following criteria:
1. Capacity of roundabout - Degree of Saturation and Volume/Capacity (at entry);
2. Queue length (at entry point) and Delays; and
3. Pedestrian volumes, cyclist volumes, transit movements, right of way requirements, number of lanes and large vehicle volumes.

f. The size of a roundabout is determined according to the amount of traffic and appropriate travel speed of the vehicles using the circular intersection. Therefore significant design variations are required for roundabouts on local roadways versus those on arterial or collector roadways.

9.4.2 Installation of Roundabouts

a. The review process for the installation of roundabouts should follow the Municipal Engineers Association (as amended 2007) Municipal Class Environmental Assessment guidelines. This will ensure appropriate site assessment, lifecycle analysis,
environmental impacts and benefits, and review and approvals processes are considered in conjunction with appropriate public consultation.

b. Roundabouts on local roads require design variations to accommodate larger vehicles and space limitations. These roundabouts will be smaller to control slower preferred vehicle speeds, but require mountable aprons to accommodate truck traffic and emergency vehicles.

c. All Secondary/Subdivision Plans should examine the opportunity for roundabouts and that the appropriate road allowance provisions be protected.

d. The design of roundabouts should be included in the Town’s design standards. This will provide clear indication to the development community on property requirements, etc. Typical designs should identify rights-of-way, setbacks, pedestrian areas, etc. for various intersection street combinations – e.g. 2 lane arterial to 4 lane arterial, 2 lane collector to 2 lane arterial, and so on.

9.4.3 Public Education Regarding Roundabouts

a. One of the most important aspects of successfully implementing roundabouts within a municipality is educating the users of the roundabouts, including drivers, cyclists, pedestrians and heavy vehicle drivers. The education should provide an overview of the physical aspects of the roundabouts as well as the instructions for use. All users should be familiar with the instructions for all of the modes within the roundabout to clearly comprehend expectations and procedures. The detailed instructions for drivers should educate with regards to approaching, entering, operating within, turning at and exiting from the roundabout. Cyclists should be educated about the various provisions that can accommodate different levels of cycling abilities at roundabouts. Pedestrians should be educated about the facilities provided, actions required by the pedestrian and safety recommendations regarding crossings at roundabouts.

9.5 Goods Movement Strategy

a. A comprehensive goods movement strategy forms a central component to maintaining a strong economy and ensuring a healthy community. In Durham Region, many of the goods movements comprise of trucking movements in addition to CP/CN Rail freight traffic. These trucking movements rely heavily on major roads and highways for access to industrial and commercial centres.

b. The Regional TMP identified a Strategic Goods Movement Network to facilitate the movement of heavy vehicles within and through the Region. The network is based on:

1. Existing haul routes;
2. Location of major generators of truck traffic;
3. ROP road designations; and
4. Routing of truck routes around residential areas.

c. Within Whitby, the Regional TMP identifies truck routes on the following corridors:

1. Highway 401;
2. Highway 407;
3. Lake Ridge Road;
4. Thickson Road; and
5. Taunton Road.

d. Regional recommendations were also made to improve this strategic goods movement network by:

1. Signing preferred truck routes;
2. Identifying and promoting potential locations for inter-modal facilities;
3. Disseminating information on the network widely;
4. Confirming its suitability for the movement of hazardous goods;
5. Considering roadway geometric standards that better accommodate trucks in design; and
6. Eliminating by-law restrictions to truck movement on preferred routes where possible.

e. In addition, the Region has identified a shift to rail based goods movement from road based goods movement as a top priority in an effort to reduce congestion on Regional roads. Although Whitby does not currently have any inter-modal facilities located within the town, this strategic direction will affect truck volumes within the Town.

f. To achieve these recommendations, the Region recommended the establishment of a Chairman’s Roundtable on Goods Movement to provide a forum for on-going dialogue between industry, affected stakeholders, local municipalities, senior governments and the Region. Performing/participating in goods movement surveys and other data collection initiatives to better understand the structure and nature of freight activity is also vital.

g. Within the Town of Whitby, the largest industrial area with the highest demands for goods movement is located in Lakeshore Whitby, at Thickson Road and Highway 401. This area is well serviced by the Region’s preferred truck route corridors along Thickson Road and Highway 401. However, there are other areas within the Town that are known as heavy truck routes. Port Whitby, Downtown Brooklin and Downtown Whitby all receive heavy truck traffic, which can be an issue given the limited right-of-way and high level of pedestrians and conflicting traffic. Proposed development in West Whitby will see an increase in employment lands, which may add new destinations for truck traffic.

h. To address goods movement within the Town, the following strategies should be undertaken, with consultation as appropriate with other government agencies (e.g. Region of Durham, Ministry of Transportation):

1. Ensure active coordination with the Region and other adjacent municipalities in the development of industrial areas and roadway connections;
2. Encourage active collaboration among industry and businesses to share utilities and infrastructure in freight facilities;
3. Develop a land use strategy which locates freight intensive land uses in a manner that maximizes access to key transportation corridors and/or inter-modal hubs;
4. Ensure direct connectivity between industrial areas, where practical;
5. Utilize roadway design principles (e.g. lane width, turning radius, gateway features, traffic calming, etc.) to promote or deter goods movement along identified corridors, where appropriate;
6. Protect the integrity of major road corridors by limiting direct driveway access to truck routes, while encouraging appropriate adjacent land use planning with adequate truck accessibility;

7. Assess the potential implementation of noise attenuation berms and barriers to minimize noise impacts on sensitive areas;

8. Review truck by-laws on a predefined regular basis with the Region, MTO and key stakeholders to address topics such as route locations, operational approaches (e.g. restricted hours), enforcement, and fine structures; and

9. Improve existing and planned truck route networks through standard designated route signage, standard road geometrics, stronger pavement and bridges to support heavier truck traffic.

i. Building upon the outlined goods movement strategy, criteria should be established to evaluate new and existing truck routes for their suitability. This evaluation should consider factors such as:

1. Overall benefit to the complete goods movement network including access to highways, inter-modal facilities, and airports;

2. Feasibility of developing the proposed route to support the road geometry and quality of service required for truck use;

3. Potential to minimize roadway friction due to obstacles such as lane widths, traffic signals, at-grade railway crossings, bicycle lanes, multi-use pathways, pedestrians, etc.;

4. Protection of sensitive land uses (e.g. residential areas, pedestrian focused developments, CBDs, etc.) from the undesirable impacts of freight activity; and

5. Potential to maximize safety, comfort, and service required by non-commercial transportation modes.

j. A comprehensive Town-wide assessment of preferred truck routes should be undertaken to best meet goods movement requirements within the Town. Two potential designated truck routes for consideration as part of this assessment include:

1. A new/improved north-south truck route in West Whitby extending from Highway 401 to north of Whitby (to Highway 12). This route has the potential to reduce through heavy movements through Downtown Whitby and Brooklin. Completion of the Highway 401 interchanges at Highway 407 West Durham Link will enable this plan. Utilization of existing Lake Ridge Road as part of this route should also be considered, along with the implementation of the proposed Lake Ridge Road interchange (timing not confirmed by MTO) and a potential extension of the West Durham Link northerly to ultimately reconnect with Highway 12 north of Brooklin.

2. Victoria Street (upon the completion of the planned Region’s widening to 4 lanes from the Whitby Shores community to Ajax). Many commercial vehicles presently use this route to/from the west to access Highway 401 and following widening, additional capacity and service will be available. This designation would also reduce commercial vehicle traffic at the Brock Street interchange. This would require further discussions with the Region.
a. The implementation plan for the Whitby TMP includes the identification of a staging plan, a recommended set of implementation strategies, the associated costs of the infrastructure and programs, and a set of principles to guide decision making. Future study requirements, including Environmental Assessment requirements are identified and a monitoring program is included to ensure that the TMP investment priorities are matched to actual needs as they materialize and with the municipal fiscal realities.

b. The staging plan presents an estimate of the timelines when the recommended infrastructure improvements as well as services, programs and studies should be in place to support the forecasted growth and the overall vision of the plan.

c. As the population and employment grows within the Town, infrastructure must be built when the need arises to accommodate demand. Thus, roadway improvements must be staged in a timely fashion so that they are built to accommodate growing traffic demand and alleviate traffic congestion.

d. For policies and programs that reduce single occupant vehicle travel and better manage the transportation network, recommendations should be initiated in the short-term. The TMP positions the municipality for a 15% reduction in automobile mode share, and the policies and programs developed in this plan need to be initiated immediately to start changing travel behaviours. The achievement of this target will mitigate the need for future roadway widenings and expansions not identified in this plan.

e. Corridor protection to manage growth should also occur in the near-term and be included in the Official Plan update.
10  RECOMMENDED IMPLEMENTATION STRATEGIES

a. This section of the Master Plan identifies the proposed implementation plan for the following transportation strategies:

1. Strategies to reduce single occupant vehicle travel;
2. Strategies to make better use of the existing transportation system;
3. Corridor protection; and
4. Roadway capacity improvements.

b. The capital expenditure associated with the implementation of improvements should be tied to a financial strategy that is linked to municipal budgets and the development charges by-law.

c. The following identifies future Study and environmental assessment requirements, anticipated timing, and roadway construction costs.

d. This TMP forms a strategic guiding document that outlines overall strategies for transportation in the Town over the next 20 years. To achieve the goals and objectives in this plan, a number of more detailed studies will need to be completed which will further involve the public and identify more detailed implementation programs moving forward.

10.1 Strategies to Reduce Single Occupant Vehicle Travel

10.1.1 Transportation Demand Management (TDM) Strategy

a. A TDM strategy should be further developed and implemented for the Town of Whitby with the objective of reducing single occupant vehicle travel and achieving the 15% vehicle reduction target.

1. Provided in this table is the proposed Town targets for auto reduction and mode share change. The targets have been developed considering existing mode shares, targets established by others, as well as what is considered appropriate for Whitby. These targets should be checked and reassessed on a regular basis.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Existing</th>
<th>2031 Target</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Driver</td>
<td>72%</td>
<td>61%</td>
<td>-15%</td>
</tr>
<tr>
<td>Auto Passenger</td>
<td>13%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Transit</td>
<td>6%</td>
<td>13%</td>
<td>117%</td>
</tr>
<tr>
<td>Walk/Cycle</td>
<td>6%</td>
<td>8%</td>
<td>27%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

b. Summarized in Table 10.1 are the six key recommendations in achieving the TDM strategy outlined in Section 7.1 of the TMP. The initial step is to identify an existing staff person (or new hire) to act as the TDM Coordinator for the Town. The role of the TDM Coordinator would be to further develop the TDM strategy, including a TDM policy as well as a TDM program for the Town Municipal offices.

c. While based on the principles of this plan, the TDM strategy would be a separate exercise that could be done internally (with the TDM Coordinator); with the assistance of Smart Commute Durham or by contracting it out to an external TDM expert if internal resources are not in place.
d. Given the ongoing updates to the Town’s Official Plan and the various Secondary Plans; the first priority for the overall TDM strategy would be to adopt the TDM policy identified in this Master Plan and incorporate them into the Town’s planning documents. This stresses the importance land use plays in helping manage transportation demand and meet single occupant vehicle reduction targets. A key component of the Official Plan update should be a strong emphasis placed on the Whitby GO Station and downtown Whitby as potential Mobility Hubs. This would require policies that promote intensification, mixed use development, and pedestrian friendly design, which are supportive of the TDM strategy.

e. Once these policies are in place, the TDM Coordinator should be in the position to provide input into all Secondary Plans and large development applications brought forward to the Town.

f. The implementation of TDM measures should begin with a trip reduction program developed for the Town. This would include coordination with other municipal departments and the Region to meet the vehicle reduction targets and the goals and objectives of this plan. To be effective, the Town will need to show a leadership role of ‘walking the talk’ before pursuing other major employers to develop their own TDM programs. The effectiveness of this program should be measured by conducting annual travel surveys of municipal employees and comparing it to the base line.

**Table 10.1 – Transportation Demand Management Strategy Implementation Plan**

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>EA Approvals</th>
<th>Next Steps</th>
<th>Future Study Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010-2015</td>
<td>2016-2021</td>
<td>2022-2031</td>
<td></td>
</tr>
<tr>
<td>1. Adopt a TDM Policy</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
</tr>
<tr>
<td>2. Develop Trip Reduction Program for the Town Municipal Offices/Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
</tr>
<tr>
<td>3. Engage major employers and institutions to participate in trip reduction initiatives</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
</tr>
<tr>
<td>4. Encourage development of Mobility Hubs</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
</tr>
<tr>
<td>5. Participate in the Region’s Commuter Lot Feasibility Study</td>
<td>X</td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>6. Include TDM in the development process</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note: For all elements, consult and engage special interest groups, stakeholders, business community, Accessibility agencies, Seniors Centre, Region, MTO, GO Transit, in the development of the program and plans. This includes projects initiated by others.
10.1.2 Active Transportation Strategy

a. An Active Transportation Strategy should be developed for the Town of Whitby which supports the TDM Strategy and the objective of reducing single occupant vehicle travel and achieving the 2031 vehicle reduction target. Consultation with other agencies (e.g. Region, MTO), stakeholder groups, should be included in the development of strategies.

b. Summarized in Table 10.2 are the two key recommendations in achieving the Active Transportation Strategy outlined in Section 7.2 of this Master Plan. Since the Town of Whitby is already engaged in a Cycling and Leisure Trails Plan, the policies and strategies developed in this TMP should be incorporated into this strategy. Policies adopted in the strategy should also be incorporated into the Town’s Official Plan update and future Secondary Plans.

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps</th>
<th>Future Study Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010-2015</td>
<td>2016-2021</td>
<td>2022-2031</td>
</tr>
<tr>
<td>1. Adopt an Active Transportation Policy</td>
<td>X</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>2. Develop Guiding Principles for Streets</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Input into the Town’s Cycling and Leisure Trails Strategy</td>
<td>X</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>4. Identify where future pedestrian/bicycle elevated structures are warranted and include in future capital planning and DC updates.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Expansion of Waterfront Trail</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: For all elements, consult and engage special interest groups, stakeholders, business community, Accessibility agencies, Seniors Centre, Region, MTO, GO Transit, in the development of the program and plans. This includes projects initiated by others.
10.1.3 Strategies to Encourage and Facilitate Effective Public Transit

a. As discussed in Section 8, the Town of Whitby’s primary influence in regards to transit relates to the structure of the local road network and land use planning decisions. However, transit forms a key component of reaching the Town’s modal share reduction targets and will require participation from the Town.

b. Summarized in Table 10.3 are the four key recommendations identified in Section 8 of this TMP to encourage and facilitate effective public transit in the Town of Whitby. The first step is to develop a transit supportive land use and urban design strategy to be incorporated in the Town’s Official Plan update. The Town has recently completed an intensification strategy which identifies areas for intensification. The majority of areas identified for intensification are located along the Transit Spine network identified by the Region of Durham. This is a good first step to support transit. Additional policies and principles outlined in Section 8 should also be incorporated into the intensification strategy, future Secondary Plans and Official Plan update.

c. Missing links in the roadway network that support effective transit use should also be identified and protected for in the Official Plan update. A key rationale for connecting these missing links is the delay in transit or the inability for transit coverage targets to be reached. The Town would need to work with Durham Region Transit to prioritize the implementation of missing links to maintain an effective transit network in Whitby.

d. Transit priority implementation will be a key component of the strategy. Transit routes operate on Regional and Town roadways and the consideration of transit priority measures are applicable to both jurisdictions. Town staff will need to work with Durham Region Transit representatives to identify areas of potential transit delay that would benefit from a transit priority application. This process should be based on transit priority applications identified in the DRT Long Term Transit Strategy.

e. Ongoing dialogue should occur between the Town and Region to review development plans and reconstruction plans along with the associated transit services and frequencies to ensure coordination and opportunities are enhanced.

Table 10.3 – Transit Strategy Implementation Plan

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a Transit Oriented Development policy</td>
<td>2010-2015</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2016-2021</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2022-2031</td>
<td>EA Approvals: n/a</td>
</tr>
<tr>
<td></td>
<td>Future Study Requirements</td>
<td>Include policies in Official Plan and Secondary Plans as appropriate.</td>
</tr>
<tr>
<td>2. Designate and support implementation of Higher Order Transit corridors</td>
<td>2010-2015</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2016-2021</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2022-2031</td>
<td>EA Approvals: n/a*</td>
</tr>
<tr>
<td></td>
<td>Future Study Requirements</td>
<td>Identify Transit Corridors and policies in Official Plan and Secondary Plans as appropriate.</td>
</tr>
<tr>
<td>3. Complete Special Study to investigate and plan for alternative people mover systems to/from key destination.</td>
<td>2010-2015</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2016-2021</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>2022-2031</td>
<td>Future Study Requirements: Initial area of focus being Sub-Area 1 and 2 (Lakeshore and South Whitby) – A people mover system through the Port area which connects service between residential, Waterfront, existing GO station, future GO station, UOIT and VIA. Whitby south of</td>
</tr>
</tbody>
</table>
4. Coordinate with the Region and DRT to implement a Transit Priority Plan

5. Identify and protect for missing links that could benefit transit

6. Request Region initiate and lead Dundas Street Corridor Study

*Note: the implementation of specific higher order transit projects requires EA approval (to be completed by the Region)

10.2 Strategies to Make Better Use of the Existing Transportation System

10.2.1 Transportation Systems Management (TSM) Strategy

a. A TSM Strategy should be developed for the Town of Whitby which supports Region-wide TSM initiatives. The objective of TSM is to maximize the use of the existing roadway infrastructure before expanding existing or constructing new facilities. A particular area of concern in the longer term is addressing the north-south capacity deficiencies north and south of Taunton Road between Baldwin/Brock Street and Thickson Road.

b. Summarized in Table 10.4 outlines key recommendations to achieve the TSM Strategy outlined in Section 9.1 of this Master Plan. Each of these initiatives would involve a separate study.

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps</th>
<th>Future Study Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010-2015</td>
<td>2016-2021</td>
<td>2022-2031</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Prepare Access Management Guidelines</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Refine Right-of-Way Requirements to include Multi-Modal Corridors</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 10.2.2 Roundabout Strategy

a. Recommended in **Section 9.4** is the development of a roundabout strategy to assess the applicability of roundabouts for existing and new intersections. This would require a separate study be conducted which includes roundabout warrants, opportunities for implementation, as well as a public education.

b. Summarized in **Table 10.5** are the three key recommendations to achieve the Roundabout Strategy outlined in **Section 9.4** of this Master Plan.

#### Table 10.5 – Roundabout Strategy Implementation Plan

<table>
<thead>
<tr>
<th>Proposed Recommendation</th>
<th>Planning Horizon</th>
<th>Next Steps</th>
<th>Future Study Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a roundabout policy and process of evaluating roundabouts</td>
<td>X</td>
<td>n/a</td>
<td>Include traffic impact study requirements for developments and Town initiated Studies.</td>
</tr>
<tr>
<td>2. Establish Policy that all Secondary Plans should examine the opportunity for roundabouts.</td>
<td>X</td>
<td>n/a</td>
<td>Include traffic impact study requirements for developments and Town initiated Studies.</td>
</tr>
<tr>
<td>3. Establish Policy that all signal warrant analysis include an assessment of roundabouts</td>
<td>X</td>
<td>n/a</td>
<td>Include in Public Works Departmental practices and procedures for internal/external analyses requirements.</td>
</tr>
<tr>
<td>4. Establish/include design and right-of-way guidelines into design standards</td>
<td>X</td>
<td>n/a</td>
<td>Utilize standards and best practices from the transportation industry.</td>
</tr>
<tr>
<td>5. Prepare public education guidelines for new roundabouts</td>
<td>X</td>
<td>n/a</td>
<td>One of the most important aspects of successfully implementing roundabouts within a municipality is educating the users of the roundabouts, including drivers, cyclists, pedestrians and heavy vehicle drivers. The education should provide an overview of the physical aspects of roundabouts as well as the instructions for use. Utilize materials from best practices guides, TAC, ITE and MUTCD.</td>
</tr>
</tbody>
</table>
10.2.3 Road Classification Strategy

a. All municipal road classifications should be reviewed and updated as part of any Official Plan updates. Refer to Exhibits 9.2 and 9.3 for proposed (mainly arterial) road classifications stemming from the TMP. When the Official Plan is updated, additional updates to the local and collector system classification is also envisioned and should be assessed and undertaken.

b. Consider the reclassification of existing Water Street from an Arterial C to an Arterial Parkway.

10.2.4 Goods Movement Strategy

a. Section 9.5 of this report recommends that the Town of Whitby undertake a comprehensive goods movement strategy in cooperation with the Region. This would require a separate study with the policies and preferred goods movement corridors included in the Official Plan update.

b. The Study should be initiated within the next 5 years and would be expected to cost in the order of $50,000 and $75,000. The Study would establish data requirements and ongoing performance measures to be utilized by the Town and Region for assessment of the strategy. Data may include, but not be limited to, classification counts on links and at intersections and survey information from interested stakeholders.

10.3 Corridor Protection

a. Summarized in Section 9.2 are the “missing links” and future servicing roads that should be protected to improve overall connectivity and address more localized traffic management issues in each of the Sub-Areas. It also identifies anticipated deficiencies as development proceeds and opportunities to protect for transit and active transportation linkages.

b. Each of these corridors should be identified in the Official Plan update and Secondary Plans as appropriate. The network connections should be addressed as the opportunity arises from development or redevelopment both within the time frame of this TMP and as the TMP is updated. While no EA approval is required to protect corridors, applicable EA approval will be required for the construction of facilities including consideration of alternatives if the need arises.

c. An important component of corridor protection is to note when the corridor should be reviewed (moved from protection to study or opportunity).

d. A summary description of the works and EA requirements of these projects are illustrated in Table 10.6. Note that for the type of EA schedules, the following is noted:

1. Schedule A - pre approved
2. Schedule A+ pre approved with public notice
3. Schedule B – activities requiring screening process
4. Schedule C – activities requiring full planning process of the Class EA
10.4 Roadway Improvements

a. The 2031 network contains recommended widenings and new roadway alignments. The total costs and anticipated timing of these projects are illustrated in Table 10.6. With each of these improvements, the exact limits of the road widenings/extensions would need to be determined through Phase 3 and 4 of the Class EA Process. The timing of these roadway improvements will be dictated by the development of the lands that require them for access and network continuity. The determination of the staging plan was based on the following considerations:

1. Result of the 2031 transportation demand forecasting model which assumes all Regional and Provincial roadway improvements and achievement of the 15% auto mode share reduction.
2. The concentration of the capacity deficient areas.
3. The need to service new development.
4. The uncertainty of the lane configuration on Baldwin Street due to proposed bus rapid transit plans and the fact widening to 6 lanes is not yet planned by the Region and there may be the desire to defer such a widening for environmental, property and other geometric reasons.

b. The roadway network improvement plan will require future environmental assessment activities before being finalized. For the Schedule ‘C’ projects identified in this study, they will need to proceed to Phases 3 and 4 of the planning and design process and will include a review and selection of a preferred design alternative.

c. Costing is based on benchmark costs and typical cross sections. The benchmark costs contain normal engineering and construction contingency allowance. Property requirements is not included as part of this assessment and would need to be confirmed during next transportation planning and design phases. Utility costs were also not included and should be determined during later phases of the design process with direct input from utility companies. It must be noted that this is order-of-magnitude costing.

d. For the projects noted in Table 10.6, fine tuning of the cost estimates should be undertaken over the next few years and reconfirmed as the need arises.

e. Two projects occur on Regional Roads and are estimated to cost approximately $20 million over the next 20 years. Both of these projects will be required during the 2021 to 2031 time horizon.

f. The implementation of the plan will also require some physical and operational improvements to intersections and mid-block locations maximize the capacity life of the existing transportation system. The number locations that will need to be assessed will need to be based on a more detailed micro-traffic operations study which identifies ‘hot spots’ that need improvements. The study would be used to determine short-term (0 to 5 years) improvements and as well as capital implications. The planning for the completion of a traffic operations study should be undertaken in the near term.

g. For each of the projects, the Town should complete a functional plan as part of the Class EA and move towards construction and implementation. The Class EA process typically takes 1 to 2 years with a year for implementation following approval. It is recommended that each of the projects be spread out based on the ability to finance and staff resources to carry out. Table 10.6 outlines priorities for implementation, however, specific timing
should be based on the assessment of an annual traffic count program with projected timing of growth.

h. Future planning and design, including environmental assessments, for any infrastructure projects (e.g. Burns Street extensions) will need to address requirements as outlined by the approval agencies, such as MOE, CLOCA, MTO, Rail Authorities, for specific environmental studies (e.g. hydrological investigations, storm water management plans, corridor control) and mitigative strategies. See Appendix B for preliminary agency comments and requirements.

i. As part of any road widening, extension, and new routes, the fundamental premise of maximizing existing capacity and infrastructure and methods to reduce single occupant vehicle travel should be inherent in the decision making and planning. This includes incorporating the various other strategies, e.g. TSM, TDM, transit, active transportation, etc. in concert with the road projects.

j. All future municipal road projects will require coordination and in some cases approval, from the Region and Province, to ensure infrastructure planning, design and implementation is coordinated (e.g. MTO Highway 401 widening, Region Victoria Street widening). Communication with the various agencies should be initiated early in the planning stages and continued throughout design and construction.
## Table 10.6 – Roadway Capital Costs and EA Schedule – New Alignments, Widenings and Extensions

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Description of Works</th>
<th>Anticipated Timing</th>
<th>Estimated Costs ($M)</th>
<th>Anticipated EA Schedule</th>
<th>Remarks/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROADWAY CAPACITY INITIATIVES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rossland Road</td>
<td>Lake Ridge Road</td>
<td>Brock Street</td>
<td>Widening from 4 to 6 lanes</td>
<td>X</td>
<td>~$19.0</td>
<td>~$4.0</td>
<td>C, CEAA Widening confirmation and approvals subject to Regional approvals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Will require CP Rail approvals for widening of rail structure.</td>
</tr>
<tr>
<td>Bonacord Avenue</td>
<td>Lake Ridge Road</td>
<td>Existing Terminus</td>
<td>Extension of Corridor</td>
<td>X</td>
<td>~$6.0</td>
<td>C</td>
<td>Subject to MTO approvals. Prohibit trucks from entering the existing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>residential community to the east. Implement measures to mitigate including</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>noise attenuation and berms, pedestrian crossings, and context sensitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>designs. Implement in stages as development warrants.</td>
</tr>
<tr>
<td>New Mid-block arterial road (south of Highway 407)</td>
<td>Baldwin Street</td>
<td>Thickson Road</td>
<td>Extension of Corridor</td>
<td>X</td>
<td>~$8.5</td>
<td>C</td>
<td>Sensitive environmental areas and creek crossings will require mitigation and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>potentially large structures spanning valleys. Complete functional design in</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>advance to refine cost estimates.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>Discuss and confirm intersection locations of the mid block arterial at</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Baldwin Street and Thickson Road with MTO and Regional staff.</td>
</tr>
<tr>
<td>Baldwin Street</td>
<td>Highway 407</td>
<td>Taunton Road</td>
<td>Widening from 4 to 6 lanes</td>
<td>X</td>
<td>~$16.0</td>
<td>C</td>
<td>Widening confirmation and approvals subject to Regional approvals.</td>
</tr>
<tr>
<td>Anderson Street</td>
<td>Highway 407</td>
<td>Glen Dhu Drive</td>
<td>Widening from 2 to 4 lanes</td>
<td>X</td>
<td>~$26.0</td>
<td>C</td>
<td>Significant potential impacts to adjacent residents and properties south of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Taunton Road. Additional right-of-way is anticipated and considers staging of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>implementation, row refinements and operational improvements in the interim.</td>
</tr>
</tbody>
</table>
### Anticipated Timing

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Description of Works</th>
<th>Anticipated Timing</th>
<th>Estimated Costs ($M)</th>
<th>Anticipated EA Schedule</th>
<th>Remarks/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garden Street</td>
<td>Taunton Road</td>
<td>Willowbrook Drive and Dryden Boulevard</td>
<td>Widening from 2 to 4 lanes</td>
<td>X</td>
<td>~ $5.0</td>
<td>C</td>
<td>Advance tree restoration projects to mitigate potential impacts with widening. Complete following widening of Baldwin Street and Thickson Road. Reassess noise and pedestrian access impacts/requirements.</td>
</tr>
<tr>
<td>Coronation Road</td>
<td>Taunton Road</td>
<td>Dundas Street</td>
<td>Extension of Corridor</td>
<td>X</td>
<td>$ 14</td>
<td>C - if grade separation at CP Rail required</td>
<td>Approved through 407 East EA. Costs and property for the 20 m ROW is understood provided by MTO as replacement for Halls impacted by the WDL. Additional ROW expansion to be completed by others associated with development. A crossing of the CP Rail, and associated EA and grade separation costs will need to be further discussed with the various parties.</td>
</tr>
</tbody>
</table>

### CORRIDOR PROTECTION / SERVICING INITIATIVES

<table>
<thead>
<tr>
<th>Water Street</th>
<th>Brock Street</th>
<th>South Blair Street</th>
<th>Upgrading and realignment</th>
<th>X</th>
<th>$ 1.5*</th>
<th>EA Addendum – consider Arterial Parkway design elements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harbour Street</td>
<td>Watson Street</td>
<td>Water Street</td>
<td>Protect for future mobility corridor</td>
<td>X</td>
<td>NC</td>
<td>n/a</td>
</tr>
<tr>
<td>Galt Street/Grand Truck Street</td>
<td>Watson Street</td>
<td>Victoria Street</td>
<td>Protect for future mobility corridor</td>
<td>X</td>
<td>NC</td>
<td>n/a</td>
</tr>
<tr>
<td>Burns Street Connection (west)</td>
<td>Dundas Street</td>
<td>Burns Street terminus</td>
<td>Extension</td>
<td>X</td>
<td>$ 7-10*</td>
<td>C</td>
</tr>
<tr>
<td>Road Name</td>
<td>From</td>
<td>To</td>
<td>Description of Works</td>
<td>Anticipated Timing</td>
<td>Estimated Costs ($M)</td>
<td>Anticipated EA Schedule</td>
</tr>
<tr>
<td>---------------------------</td>
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</tr>
<tr>
<td>Burns Street Connection (east)</td>
<td>Hopkins Street</td>
<td>Thickson Road</td>
<td>Extension from grade separation of CP Rail</td>
<td>X</td>
<td>$6-9*</td>
<td>TBD C, CEAA</td>
</tr>
<tr>
<td>Highway 401 Crossings (Annes Street)</td>
<td>Burns Street</td>
<td>Nordeagle Avenue</td>
<td>New Bridge (2 to 4 lanes)</td>
<td>X</td>
<td>$18*</td>
<td>C</td>
</tr>
<tr>
<td>Road Name</td>
<td>From</td>
<td>To</td>
<td>Description of Works</td>
<td>Anticipated Timing</td>
<td>Estimated Costs ($M)</td>
<td>Anticipated EA Schedule</td>
</tr>
<tr>
<td>-------------------------------</td>
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</tr>
<tr>
<td>Mary Street/ Crawforth Street</td>
<td>Scott Street</td>
<td>Cochrane Street</td>
<td>Extension</td>
<td>X</td>
<td>$ 10*</td>
<td>TBD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dryden Boulevard Connection</td>
<td>East of Anderson Street</td>
<td>Thickson Road</td>
<td>Extension (4 lanes)</td>
<td>X</td>
<td>$ 1*</td>
<td>B</td>
</tr>
<tr>
<td>Bonacord/ Manning Connection</td>
<td>Cochrane Street</td>
<td>Brock Street</td>
<td>Extension plus grade separation of CP Rail</td>
<td>&gt;2031</td>
<td>NC</td>
<td>C, CEAA</td>
</tr>
<tr>
<td>Twin Streams Connection</td>
<td>Existing terminus</td>
<td>Lake Ridge Road</td>
<td>Extension (2 lanes – protected for 4 lanes)</td>
<td>X</td>
<td>$ 16*</td>
<td>C</td>
</tr>
<tr>
<td>Road Name</td>
<td>From</td>
<td>To</td>
<td>Description of Works</td>
<td>Anticipated Timing</td>
<td>Estimated Costs ($M)</td>
<td>Anticipated EA Schedule</td>
</tr>
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</tr>
<tr>
<td>Garden Street Extension</td>
<td>Robert Attersley Drive</td>
<td>Proposed mid-block arterial</td>
<td>Extension (2 to 4 lanes)</td>
<td>X</td>
<td>$ 12*</td>
<td>C</td>
</tr>
<tr>
<td>Mid-Block Arterial Extension</td>
<td>Proposed mid-block arterial at Baldwin Street</td>
<td>Highway 407 at Cochrane Street</td>
<td>Extension (2 to 4 lanes)</td>
<td>X</td>
<td>$ 15*</td>
<td>C</td>
</tr>
<tr>
<td>Coronation Road Extension</td>
<td>Taunton Road</td>
<td>Existing Coronation Road (north of Taunton)</td>
<td>Extension (2 lanes – protected for 4 lanes)</td>
<td>X</td>
<td>$ 0.5*</td>
<td>B</td>
</tr>
<tr>
<td>Highway 407 East Interchange at Cochrane Street</td>
<td>Protection for full access interchange</td>
<td>X</td>
<td>NC</td>
<td>Provincial EA</td>
<td>407 IEA did not seek approval for interchange although design does not preclude it. MTO have indicated EA would need to be completed by others and require MTO approval. Implementation timing would likely coincide with expansion of the Brooklin community and preliminary planning will be continuing over the next 5 years. In terms of funding, it is envisioned that the financing would be multi-partied; the specifics would require further assessment in terms of benefits.</td>
<td></td>
</tr>
<tr>
<td>Road Name</td>
<td>From</td>
<td>To</td>
<td>Description of Works</td>
<td>Anticipated Timing</td>
<td>Estimated Costs ($M)</td>
<td>Anticipated EA Schedule</td>
</tr>
<tr>
<td>----------------------------</td>
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<td>-----------------------------------------------------------</td>
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<td>-----------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>New Brooklin North/South Route</td>
<td>Highway 407 West Durham Link</td>
<td>Baldwin Street</td>
<td>New route to accommodate trips around Brooklin and service future development</td>
<td>X</td>
<td>NC</td>
<td>NA</td>
</tr>
<tr>
<td>Highway 407 Grade Separation at Garrard Road</td>
<td></td>
<td></td>
<td>Protection for grade separation over Highway 407</td>
<td>X</td>
<td>NC</td>
<td>C</td>
</tr>
<tr>
<td>Brooklin Arterial and Collector Road network</td>
<td></td>
<td></td>
<td>Protect extension of road network to accommodate new development.</td>
<td>X</td>
<td>$13*</td>
<td>NA</td>
</tr>
<tr>
<td>Brooklin Capacity Expansion</td>
<td></td>
<td></td>
<td>Protect corridor widenings of Lake Ridge Road, Cochrane Street, and Columbus Road</td>
<td>X</td>
<td>NC</td>
<td>NA</td>
</tr>
</tbody>
</table>

Notes:
NC – Not Costed, NA – Not Applicable, TBD – To Be Determined.
Costing to be refined in future studies.
Costing estimates based on benchmark costs and considered order of magnitude for planning purposes. Excludes property and utility costs.
All arterial road corridors noted above to include provisions and considerations for active transportation and transit.
*Costing estimates provided by the Town of Whitby based on recent road benchmark costs. Excludes property and utility costs.
11 GUIDING PRINCIPLES AND OTHER CONSIDERATIONS

a. Given the strategic nature of the work undertaken as part of this TMP, there will be a need for future detailed analysis of the transportation system to be completed in conjunction with the review of individual projects and development proposals.

b. A number of principals, strategies and policies have been presented throughout this Master Plan for implementation over the next 20 years in order to achieve the Town’s Transportation Vision. Other general guiding principles that should be considered in the context of developing and implementing projects are noted below and should form a basis for decision making when implementing recommendations in this plan. They include:

1. Maximize existing transportation infrastructure before new transportation infrastructure is constructed.

2. Maximize use of non-auto modes in the provision of mobility services.

3. For all new developments, TDM opportunities should be maximized and limit auto trips generated to not exceed that of the adjacent system road capacity.

4. In the context of good transit and traffic network planning, spillover traffic from new communities should minimize its impact on adjacent subdivisions.

5. New facilities shall be adequate to achieve an acceptable standard of safety and service for the various modes.

6. Internal road systems shall provide for a safe and convenient internal circulation system and be complimentary to abutting arterials.

7. New road networks should endeavour to be in a grid fashion to optimize efficiency in travel flows, access and maintenance.

8. Modify and implement truck routes as new highways/arterials are built to reduce heavy vehicles through the downtowns and heavy residential and pedestrian districts.

9. Context sensitive designs should be utilized to minimize property/proximity impacts of infrastructure to residential properties.

10. Context sensitive designs should be utilized to minimize impacts on sensitive environmental features (e.g. Iroquois Beach, PSWs) and the natural heritage system (including aquatic and terrestrial species).

11. The design and construction of new, realigned or redeveloped roads and paths should seek to maintain or enhance the quality of runoff, thereby limiting pollution to receiving watercourses. Stormwater management best management practices should be implemented for new facilities and when possible, whenever upgrading existing infrastructure.

12. The design and construction of new, redeveloped, or realigned roads and paths should identify where applicable opportunities for wildlife connectivity.
13. Develop parking management strategy and long-term plan for the downtowns.

14. A high degree of non-auto usage should be encouraged by optimizing access between development and transit.

15. A walking and cycling network should be established that achieves pleasant, convenient and safe access to and between all land uses, transit stations, parking areas, public streets and recreational destinations.

16. A walking and cycling network should be integrated and complement other agency mobility systems to provide seamless transportation across municipal boundaries.

17. Use of open spaces, utility corridors and unopened road allowances for walking and cycling linkages should be maximized.

18. The pedestrian and bicycle system should be oriented and developed to encourage maximum use of the transit system.

19. Intersections and roads should be designed to be attractive, safe and inviting for pedestrians, cyclists and vehicles which must share the space.

20. Development should incorporate amenities which will encourage bicycle use by employees and patrons.

21. Protect new linkages to provide strategic connections that maximize mobility opportunities for people and goods.

22. Incorporate accessible design standards based on the AODA in the built environment where possible (i.e. wide curbs on Town streets).
12 MONITORING PROGRAM

a. The success of long-range plans depends on the ongoing monitoring of relevant conditions, actions and impacts. The Town of Whitby must remain aware of its progress towards the ultimate vision of this plan as well as key objectives, so that it can add, modify, or delete priorities as needed. The Whitby Transportation Master Plan must retain some measure of flexibility and be adaptable to changes in travel behaviour, development priorities, and phasing of Regional and Provincial infrastructure improvements (both roadways and transit investments). This can be best accomplished through ongoing monitoring of relevant conditions and periodic updates to the Travel Demand Model and the TMP.

b. Through this Study, the Town has adopted a strategic direction and laid out a plan to attain the transportation goals associated with it. Many of the components of the plan are based on forecasted future travel demand over the transportation network resulting from forecasted population and employment growth as it is expected today. The TMP must be able to respond to changes in development patterns that might impact demand.

c. Ongoing monitoring is also necessary in determining the effectiveness of the initiatives identified in the plan in meeting the adopted vision.

d. A number of performance measures are recommended that could be used to monitor the effectiveness of the TMP in achieving the overall vision and are based on the ten principles of the Whitby TMP outlined in Section 2.3 of this report. A sample of these performance measures are included in Table 12.1 below:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Principle</th>
<th>Program/Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycling and Leisure trails facility supply (kilometres of bicycle lanes, shoulder, mode share and inter-regional connections)</td>
<td>2. Accessible 3. Integrated 4. Multi-Modal</td>
<td>Town of Whitby Region of Durham TTS Data</td>
</tr>
<tr>
<td>Number of signalized intersections operating at LOS E or better</td>
<td>1. Effective 7. Optimized</td>
<td>Town of Whitby Traffic Count program</td>
</tr>
<tr>
<td>Residents per lane km road Number of cul-de-sacs</td>
<td>1. Effective</td>
<td>Town of Whitby Asset Management Inventory</td>
</tr>
<tr>
<td>Measure</td>
<td>Measure Description</td>
<td>Principle</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
</tbody>
</table>
| Average employment and population density (population/employment per  | Average employment and population density (population/employment per ha) within 300m radius of a higher  | 1. Effective  
2. Accessible  
4. Multi-Modal  
10. Coordinated            | Town of Whitby                                         |
| order transit network corridor or node                                 |                                                                                                           |                                  |                                          |
| Number of transit priority measures implemented (per year)            | Number of transit priority measures implemented (per year)                                                 | 7. Optimized                     | Region of Durham/DRT Town of Whitby      |
| AM peak period auto occupancy                                          | AM peak period auto occupancy                                                                             | 1. Effective  
2. Accessible  
4. Multi-Modal  
| Number of employers participating in Smart Commute Durham or Town of  | Number of employers participating in Smart Commute Durham or Town of Whitby TDM Program                    | 1. Effective  
2. Accessible  
3. Integrated  
4. Multi-Modal  
7. Optimized  
10. Coordinated            | Region of Durham  
Town of Whitby TDM Coordinator                                  |
| Whitby TDM Program                                                    |                                                                                                           |                                  |                                          |
| Number of new water crossings                                          | Number of new water crossings                                                                            | 6. Sensitive                     | Town of Whitby                           |

A number of other monitoring tools are required moving forward to ensure the plan is implemented effectively. These are identified below:

1. Traffic Flow
   i. Ongoing monitoring of traffic flows over the transportation network should continue to ensure that the Town has up-to-date and comprehensive traffic data regarding traffic volumes and areas of delay. Traffic data represents a critical input to the development of the travel demand model and would likewise be vital to future model updates and ongoing traffic assessments. It is recommended that the Town continue with a traffic count program. It should be coordinated with that of the Region and be of sufficient detail to capture the traffic conditions of the most significant Whitby roads and the screenlines used in the transportation analysis.

2. Regional and Provincial Improvements
   i. The Whitby TMP is based on a number of Regional roadway and provincial highway improvements being in place by 2021 and 2031. The timing of these improvements will need to be monitored as they will have an impact on the timing of required local road improvements. For example, if the construction of the West Durham Link is not in place by 2021, this may result in the need for other north-south capacity improvements to mitigate traffic impacts.

3. TDM/TSM
   i. The Town’s goals for TDM/TSM are twofold – one as a municipality and the second as a major employer. In conjunction with the Region of Durham, the Town should monitor vehicle trips and vehicle occupancy at major employment centres and continue to strive for the reduction in single occupant vehicles. As an employer, the Town should monitor staff trips
and incorporate programs to reduce single occupant vehicle travel to Town Hall.

f. Transportation Master Plan Review and Updating

1. The Town of Whitby TMP was developed based on inputs obtained from the 2006 Transportation Tomorrow Survey (TTS). Future updates to the travel demand model would require current information regarding travel patterns and socio-economic data.

2. Periodic updates to the travel survey are critical inputs to any future updates to the travel demand model and would begin to develop a consistent set of time series data for monitoring changes in travel behaviour. Since the model is owned by the Region of Durham, this would be their responsibility to update the travel demand model based on the new TTS data.

3. The TMP will be a source document that will feed into the Official Plan Amendment. For the Master Plan, it is recommended that the screenline and transportation analysis be updated every 5 years and the master plan reviewed based on the new analysis. This should occur once the new TTS data is in place and incorporated into the travel demand model. The review would incorporate changes in population and employment growth, travel demand characteristics, and commitment network improvements. It will also be used as a tool to confirm recommended roadway improvements as well as need to move from corridor protection to ‘improvement’ identified in this plan. Based on the results of the review, the Town may elect to update a specific portion of the plan (i.e. Sub.Area recommendations), amend a portion of the master plan or initiate a wholesale update of the document.