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Background Report

Durham Region TMP
Current Policy and Practice Review

Prepared for the Regional Municipality of Durham
by IBI Group

February 2016

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Exhibits

1 Introduction

1.1 Purpose of this Report

The preparation of transportation policy recommendations is a key element of any update to Durham Region's Transportation Master Plan (TMP). Some of those recommendations will echo existing policies and practices, some will represent meaningful amendments or refinements of existing policies and practices, and others will be entirely new from a Regional perspective.

The purpose of this report is to introduce new areas of policy and practice that are recommended for integration into the TMP. It is not intended to be exhaustive nor highly detailed; rather, it identifies areas where current policies and practice are inconsistent with key objectives. For each of those areas it explains the rationale for doing things differently, recommends a new approach for the TMP, and suggests some possible implications of that new approach.

1.2 TMP Directions and Emerging Objectives

Six key strategic directions have been identified for the ongoing review of the Region of Durham's TMP:

1. Strengthen the bond between land use and transportation
2. Elevate the role of integrated public transit including Rapid Transit
3. Make walking and cycling more practical and attractive
4. Optimize road infrastructure and operation
5. Promote sustainable travel choices
6. Invest strategically in the transportation system
7. Improve goods movement to support economic development

For each of these directions, one or more "emerging objectives" have been identified (see Exhibit 1.1). These objectives may reflect *established goals* of the Region's Official Plan or Strategic Plan, *priorities and comments raised* by Regional staff or residents, or *relevant best practices* that are being increasingly adopted by other Canadian jurisdictions. In each case, existing Region of Durham policies and/or practices may not be adequate to achieve the identified objective; the TMP review is an opportunity to identify, study and commit to more effective approaches.

Exhibit 1.1 identifies the TMP directions, the suggested emerging objectives, and the chapters of this report in which they are addressed. Those chapters, listed below, represent discrete topics that will be addressed in the TMP in response to the emerging objectives:

- Chapter 2: Transportation and Land Use Integration
- Chapter 3: Complete Streets
- Chapter 4: Road Classification
- Chapter 5: Boulevard Jurisdiction
- Chapter 6: Multimodal Levels of Service
- Chapter 7: Transportation Demand Management
- Chapter 8: Transportation Costs and Funding

Exhibit 1.1: TMP Directions and Emerging Objectives

TMP DIRECTIONS	EMERGING OBJECTIVES	WHERE ADDRESSED
Strengthen the bond between land use and transportation	Intensifying land use in centres and corridors	*Chapter 2: Transportation and Land Use Integration*
	Shaping new developments to support walking, cycling and transit	
	Minimizing traffic impacts of intensification by designing streets to maximize walking, cycling and transit use	*Chapter 3: Complete Streets*
Provide competitive, integrated transit services	Making access routes and waiting areas safe, attractive and comfortable for transit users	*Chapter 3: Complete Streets*
	Protecting dedicated rights-of-way for transit on arterial streets to give priority to transit and minimize delay	*Chapter 4: Road Classification* and *Chapter 3: Complete Streets*
Make walking and cycling more practical and attractive	Providing safer, more comfortable and accessible facilities for walking and cycling along and across streets	*Chapter 3: Complete Streets*
	Protecting necessary rights-of-way on arterial streets so that appropriate cycling facilities can be provided	*Chapter 4: Road Classification* and *Chapter 3: Complete Streets*
	Reviewing jurisdictional responsibility for Regional road boulevards and related infrastructure elements.	*Chapter 5: Boulevard Jurisdiction*
	Making planning, design and operating decisions that consider the service objectives for walking and cycling	*Chapter 6: Multimodal Levels of Service*
	Building the awareness, understanding, willingness, skills and enthusiasm of cyclists and pedestrians	*Chapter 7: Transportation Demand Management*

TMP DIRECTIONS	EMERGING OBJECTIVES	WHERE ADDRESSED
Optimize road infrastructure and operation	Maximizing safety and comfort for all street users regardless of their age, ability, or mode, through better street planning, design, construction, operation and maintenance	*Chapter 3: Complete Streets*
	Making planning, design and operating decisions that consider service objectives for all modes, and the trade-offs between them	*Chapter 6: Multimodal Levels of Service*
Promote sustainable travel choices	Working with partners to engage, inform, assist and reward potential cyclists, pedestrians, transit users and carpoolers	*Chapter 7: Transportation Demand Management*
Invest strategically in the transportation system	Using evidence-based benefit cost analyses that maximizes the performance of the transportation network for its users and the Region	*Chapter 8: Transportation Costs and Funding*
Improve goods movement to support economic development	Identifying and protecting rights-of-way on arterial roads to provide suitable routes for goods movement	*Chapter 4: Road Classification*
	Making adequate provision in the design and operation or rights-of-ways for the needs of all modes of goods movement	*Chapter 3: Complete Streets and Chapter 5: Multimodal Levels of Service*

2 Transportation and Land Use Integration

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Intensifying land use in centres and corridors
- Shaping new developments to support walking, cycling and transit

2.1 Issues

Land use patterns have a strong influence on travel such as the number of trips taken and mode choice. The reverse is also true since transportation systems have a direct impact on the type, scale, and location of development that occurs.

The Canadian Institute of Planners recognizes the link between planning and the health of our communities. Its *Healthy Communities Practice Guide* points out that denser, more transit-friendly, and walkable neighbourhoods promote more physically active and sustainable lifestyles. Similarly, the medical officers of health in the GTHA also recognize this critical link between community design and the health of residents and communities as a whole in their report *Improving Health by Design in the Greater Toronto Hamilton Area*.

The lower demand for motorized trips that result from compact urban form is also important in reducing air pollution and greenhouse gas emissions. Not only does this improve public health due to lower incidence of respiratory illness, it also helps to slow the pace of climate change. Compact land uses also reduce the need for new transportation infrastructure in greenfield areas, preserving more of the natural waterways and forested areas and helping to mitigate some of the impacts of climate change, such as increased incidence and intensity of flooding.

Providing residents with a range of transportation choices is also integral to economic sustainability. Making efficient use of existing transportation corridors and infrastructure by promoting intensification along multi-modal corridors, and prioritization of transit and active modes, allows municipalities to better allocate resources to achieve their developmental objectives.

2.2 Current Framework

2.2.1 Province of Ontario

At the provincial level, the link between transportation and land use planning is made through the *Growth Plan for the Greater Golden Horseshoe*. Section 2.2.2 on Managing Growth describes how land use will be planned to support transit and active transportation modes. Specifically, the plan envisions designing transit-supportive communities, encouraging mixed-use development, and building pedestrian-friendly urban areas.

Sections 3.2.2 through 3.2.4 of the Growth Plan describe policies for optimizing existing infrastructure, planning new transportation corridors, moving people, and transporting goods. These policies complement those in Section 2.2.2 by outlining how transportation planning will be undertaken. The plan prioritizes public transit in transportation infrastructure planning and envisions the use of transit infrastructure to shape growth and land use.

The *2014 Provincial Policy Statement* also links land use and transportation planning and envisions land use patterns that promote active transportation and public transit over other travel modes. Sections 1.6.7 and 1.6.8 detail policies and recommendations specifically related to transportation and land use planning.

The Ministry of Transportation for Ontario (MTO), in its *Transit Supportive Guidelines*, provides a collection of land use planning guidelines to assist in implementing the vision of the *Growth Plan for the Greater Golden Horseshoe* and the *2014 Provincial Policy Statement*.

2.2.2 Durham Region

The land use and transportation planning policies in Durham Region are generally consistent with the provincial policies and guidelines discussed previously. Policy 8.2.1 of the August 2013 *Consolidation of the Durham Region Official Plan (ROP)* promotes transit-supportive development of urban areas through compact urban forms. Directive language is used and the wording aligns with the provincial policies:

“Urban Areas shall be planned and developed with regard for the principles of adaptability over time, sustainable development, harmony with nature and diversity and integration of structures and functions. In addition, the planning and development of Urban Areas shall be based on the following principles:

a) a more compact urban form which promotes transit-supportive Urban Areas...;
b) a mixture of uses in appropriate locations, with particular consideration given to Centres and Corridors;
c) intensification...;
d) good urban design principles;
e) increased public transit usage;
f) linkages for pedestrians and cyclists which link communities internally and externally and to the public transit system;
g) a grid system of arterial roads, and collector roads, where necessary, to provide for a transit-supportive road pattern while recognizing environmental constraints; and
h) a Greenlands System that complements and enhances the Urban System.”

This Policy reinforces General Policy 1.3.1 that calls for creating healthy, sustainable Urban Areas that support active transportation.

Policy 8.3.10 of the ROP also requires that municipal official plans of the lower-tier municipalities promote transit-supportive development, mixed uses, and intensification of existing urban areas. All municipalities in Durham Region are therefore required to follow the principles of integrated transportation and land use planning.

The ROP also identifies specific Regional Centres and Regional Corridors within the Region's urban areas where denser, mixed use development is envisioned as explained in Section 8A.1. These areas are intended to be developed so as to support active modes and transit use, tying the land use vision to the Region's transportation goals. Paragraph c of Policy 8A.1.2, for example, directs that development in the Regional Centres shall favour pedestrians and public transit while Policy 8A.1.5 directs that Regional Corridors shall be designed to promote public transit. The policies in Section 8A.2 further detail density targets for these Centres and Corridors, which are generally in line with the Province's Growth Plan and general best practices for transit-supportive urban densities.

Area municipalities are also encouraged to pursue similar development practices at a smaller scale through Local Centres and Local Corridors, as explained in Paragraph c of Policy 8A.2.2 and Policy 8A.2.10.

Beyond this, the Region's *Long Term Transit Strategy – (Appendix N) Transit Oriented Development Strategy* describes how the transit-supportive land use planning envisioned by the ROP will be accommodated throughout the Region. It designates almost 40 "TOD Places" where specific TOD guidelines, consistent with MTO's *Transit Supportive Guidelines*, should be adopted. Metrolinx has also developed *Mobility Hub Guidelines* to describe how development should best be accommodated in the vicinity of mobility hubs. This *Long Term Transit Strategy* also aligns with the projected transit and goods movement networks identified in *The Big Move*.

The Region's Planning and Economic Development Department implements these policies and strategies through the Regional Official Plan Amendment process. The department reviews development-related activities to ensure that plans conform to the intent of the ROP. The department also works with lower-tier municipalities to ensure that their municipal official plans are consistent with the ROP as well as provincial planning documents.

2.3 Proposed Policy Change

2.3.1 Recommendation

Regional planning staff must be well trained in using the tools and guidelines that are available to aid decision-making, such as the Province's *Transit Supportive Guidelines*. This education should also extend to developers so that they are aware of the Region's perspectives and requirements on various land use issues. Brochures and guidelines that are distributed to developers should also reflect these perspectives.

This additional training should be applied more rigorously in the review of site designs during the development approvals process. Greater attention should be paid to the way developments are oriented to sidewalks, transit stops, and cycling facilities. For example, large surface parking lots fronting onto key Regional roads force pedestrians and transit users to walk longer distances from the sidewalk or transit stop to building entrances. Issues like these are deterrents to active transportation and transit, and are counter to the ROP's objective of offering greater transportation choices.

To help re-enforce what transit oriented development means in the Durham Region context, the guidelines documented in the *Long Term Transit Strategy – (Appendix N) Transit Oriented Development Strategy* should be reviewed and reinforced through training, practice, and inclusion in other related documents. This means not only making this a part of the training program for planning staff, but also familiarizing developers with the strategy to help align proposals more closely with the objectives of the ROP.

Planning policy in the Region could also provide more support for developers to achieve intensification targets in centres and corridors. Policies that relax minimum parking requirements, for example, are sometimes used by other municipalities to reduce the cost to developers of rolling out dense projects in intensification areas. It is noted that parking standards are under municipal jurisdiction; however, the Region could provide a coordinating and influencing role.

Summary of recommendation

- That the Region develops and implements a training program on Transit Oriented Development for relevant Regional staff.
- That the Region conducts more rigorous review of site designs in the development review process, with a focus on pedestrian, cycling, and transit access.
- That the Region provides more planning policy influence for achieving intensification targets in centres and corridors, working across departments and with municipalities.

2.3.2 Implications

These recommendations help the Region to move toward the strategic goals in its ROP through specific operational initiatives. Over time, this should lead to an improvement in the quality of development proposals submitted.

Some developers and sections of the public may view this focused move toward more dense development as a major change from current practice in Durham Region. It will therefore be important to educate stakeholders on what intensification means for them, both in terms of its advantages and its potential challenges. This is critical to overcoming potential resistance to change that come about due to lack of information.

3 Complete Streets

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Minimizing traffic impacts of intensification by designing streets to maximize walking, cycling and transit use
- Making access routes and waiting areas safe, attractive and comfortable for transit users
- Providing safer, more comfortable and accessible facilities for walking and cycling along and across streets at controlled crossings
- Maximizing safety and comfort for all street users regardless of their age, ability, or mode, through better street planning, design, construction, operation and maintenance
- Protecting necessary rights-of-way on arterials for cycling, transit and goods movement
- Making adequate provision in the design and operation or rights-of-ways for the needs of all modes of goods movement

3.1 Issues

The U.S. National Complete Streets Coalition, Complete Streets for Canada, and the Ontario Professional Planners Institute all similarly define a Complete Street as one that allows safe and comfortable access along and across roadways for users of all ages and abilities, and using a range of modes including walking, cycling, public transit and automobiles.

Providing safe mobility for all travel modes is a critical step to reducing the number of injuries and deaths on the Region's roads that result from conflicts between pedestrians, cyclists and drivers. Complete Streets can promote walking and cycling as an attractive transportation choice and are fundamental to more active, healthier lifestyles. As such, many cities in the U.S., and a growing number in Canada, are adopting Complete Streets as part of their toolkits to address the increasing incidence of chronic diseases.

In *The Social Implications of Sustainable and Active Transportation*, Transport Canada notes that communities where people walk and cycle more provide more opportunities for socializing and self-policing. Having more "eyes on the street", achieved through designing walkable, mixed-use communities, helps to reduce crime and improve neighbourhood security. Furthermore, expanding the choices of transportation modes available to Durham Region's residents by building networks of Complete Streets ensures that a person's ability to travel around the Region is not limited by their age, ability, or income level. This social equity is a primary aim of Complete Streets Policy, as expressed by the U.S. National Complete Streets Coalition's *Complete Streets Local Policy Workbook*.

As discussed in Section 2.1, reducing the need for motorized trips is critical to reducing air pollution, including greenhouse gas emissions, while lowering the Region's demand for fossil fuels. A well designed and properly implemented Complete Streets Policy could help to achieve this by ensuring that the automobile is not the only option for many trips around Durham Region.

Exhibit 3.1 presents ten key elements of an effective Complete Streets Policy, as recommended by Complete Streets for Canada. Note that a Complete Street is context sensitive, as highlighted by Element 8. This means that a Complete Street in Rural Durham Region may accommodate trucks and agricultural equipment while one in a Regional Centre may include sidewalks and bike lanes.

Exhibit 3.1: Complete Streets for Canada's 10 Policy Elements for Complete Streets

Complete Streets For Canada's 10 Policy Elements For Complete Streets
Element 1: Language and Intent Uses strong policy language such as 'must implement' or 'will implement' when referring to Complete Streets elements.
Element 2: Users and Modes Must mention, at minimum, that 'all users' includes pedestrians, bicyclists and transit users of all ages and abilities.
Element 3: Applies to all Projects Must apply to all projects including new projects, retrofit/reconstruction projects, and repair/maintenance and/or other projects for the entire right-of-way.
Element 4: Exceptions Exceptions to the policy are clear and require a procedure for approval.
Element 5: Encourages Connectivity Aims to create a comprehensive, integrated, connected network to benefit all users and modes.
Element 6: Jurisdictions Is adoptable by all agencies to cover all roads at the municipal, regional/county/district, and provincial level.
Element 7: Design Criteria Cites the use of the latest and best design criteria and guidelines to aid in implementation.
Element 8: Community Context States the context of the roadway and the surrounding community context dictates what Complete Streets elements will be accommodated.
Element 9: Performance Measures Establishes performance standards with measurable outcomes.
Element 10: Implementation Plan Includes specific next steps for policy implementation.

It is important to note that a complete streets approach does not mean that every street will accommodate every mode with equal priority. The emphasis is instead on ensuring that the Region considers the needs of all modes when planning or modifying its streets and has a well defined process for determining which complete streets elements should be incorporated. In the Durham Region context, this could mean that some streets make specific provisions for commercial vehicles while others prioritize pedestrian movements.

3.2 Current Framework

While Durham Region has no explicit policies or guidelines addressing complete streets, a number of current policy statements are consistent with complete streets principles. These can be found in the August 2013 *Consolidation of the Durham Region Official Plan* (ROP), the 2003 TMP, the 2007 *Arterial Corridor Guidelines* (the Guidelines), and the *Long Term Transit Strategy*. They are summarized below, using the Complete Streets for Canada's 10 *Policy Elements for Complete Streets* as a framework (note that, in the absence of an explicit Complete Streets Policy, Elements 3, 4, 9 and 10 are not applicable).

Element 1: Language and Intent

Uses strong policy language such as 'must implement' or 'will implement' when referring to Complete Streets elements.

The ROP clearly prioritizes transit and pedestrian modes in several areas. For example, Policy 8.2.1 ensures that planning and development in Urban Areas ***shall*** provide linkages for pedestrians and cyclists, and develop a transit-supportive grid pattern of roads. Policy 8A.1.2 states that Centres ***shall*** be developed using urban design that favours pedestrian traffic and public transit and Policy 11.3.22 states that the Region ***will implement*** a Regional Cycling Plan that establishes a cycling network, among other objectives.

The *Arterial Corridor Guidelines* are consistent with the intent of the ROP in recognizing that arterials in the Region must be shared by all modes, although some modes may have priority over others. These are guidelines, however, so the language is less prescriptive than would be needed in a Complete Streets Policy.

Element 2: Users and Modes

Must mention, at minimum, that 'all users' includes pedestrians, bicyclists and transit users of all ages and abilities.

Policy 11.1.1 of the ROP states that the goal is to provide an integrated, safe, efficient and reliable transportation system for all users and modes. The ROP does not provide a precise definition of users but reference is made to pedestrians, cyclists, and transit users throughout the document. No reference is made to the range of ages and abilities of users to be accommodated.

The *Arterial Corridor Guidelines* recognize the need to accommodate all modes, including pedestrians, cyclists, transit, private cars, and trucks. Throughout the guidelines, consideration is also given to users of varying ages (e.g. timing of pedestrian signals for elderly users) and abilities (e.g. orientation of curb ramps to direct visually impaired users). The guidelines are also consistent with the ROP in calling for expanded right-of-way uses to accommodate modes other than the car.

However, of the 15 street typologies described in the Guidelines, only three are considered "bicycle supportive", none of which are residential or commercial main streets. With the Regional Cycling Plan now complete, the Guidelines should be revisited to include more bicycle-supportive typologies, which can then be applied to the locations for cycling improvements identified in the Cycling Plan.

Element 5: Encourages Connectivity

Aims to create a comprehensive, integrated, connected network to benefit all users and modes.

The ROP requires that the transportation network accommodate all modes. For example, Policy 8.2.1 specifies that development of urban areas shall be based on creating linkages for pedestrians and cyclists to provide connectivity within and between communities. This Policy also places an emphasis on transit-supportive urban design. Policies 11.3.22 and 11.3.24 make further considerations for pedestrians and cyclists by requiring the development of a Regional Cycling Plan for both on and off-road networks, and supporting safe, direct, convenient and comfortable pedestrian access throughout Durham Region.

At the implementation level, the *Arterial Corridor Guidelines* promote the development of a fine grid within the broader concession road network to provide convenient, accessible routes for pedestrians, cyclists, and transit users of all abilities. Section 3.1 of the Guidelines details specific actions to achieve better connectivity for drivers and pedestrians.

Durham Region's *Regional Cycling Plan 2012 (Working Consolidation)* further encourages connectivity by considering the construction of facilities to close gaps in the cycling network even where these facilities are outside the Region's road construction program.

Element 6: Jurisdictions

Is adoptable by all agencies to cover all roads at the municipal, regional/county/district, and provincial level.

The absence of a comprehensive complete streets Policy means that there is no single policy framework or set of design guidelines that can be adopted by the Region as well as lower-tier municipalities. This can lead to a situation where elements of complete streets are adopted sporadically and make it difficult to realize the benefits of the concept.

That being said, those policies in the ROP that are consistent with the goals of complete streets are largely required to be adopted by lower-tier municipalities. Policy 7.3.14, for example, directs that lower-tier municipalities ***shall*** include transportation considerations for all modes in preparing secondary plans.

The *Arterial Corridor Guidelines* apply to all arterial roads regardless of jurisdiction, and are adoptable by the lower-tier municipalities. Similarly, the *Transit-Oriented Development Strategy* contained in the Region's *Long Term Transit Strategy* is adoptable by lower-tier municipalities. However, these are not mandatory and while the Region may take steps to ensure that a Regional road implements a complete streets approach, there is little that requires sidewalks and streetscaping, which are the responsibility of lower-tier municipalities, also incorporate the recommendations.

It is noteworthy that the Town of Ajax is among the first municipalities in Canada to adopt a Complete Streets Policy. This policy was a part of the Town's 2013 *Transportation Master Plan Update*, and is consistent with the ROP and TMP.

Element 7: Design Criteria

Cites the use of the latest and best design criteria and guidelines to aid in implementation.

The ROP is written at a general policy level and does not speak to design guidelines. The arterial classification system is largely based on the Institute of Transportation Engineers *Transportation and Land Development (2002)* and the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads (1999)*. However, no reference is drawn from industry best practice in complete streets so while the *Arterial Corridor Guidelines* include elements of the concept, it is not an appropriate guide to implementing complete streets.

Element 8: Community Context

States the context of the roadway and the surrounding community context dictates what Complete Streets elements will be accommodated.

The ROP recognizes the various urban structures present in the Region and Section 8 lays out how Centres, Corridors and Waterfront Places are to be treated differently. For example, Policy 8A.1.2 prioritizes pedestrians and transit users in Centres, which have different developmental goals than other parts of the Region.

The *Arterial Corridor Guidelines* are written to provide flexibility in which elements should be adopted. They recognize that arterial roads in Durham Region pass through diverse areas and a single treatment cannot be applied throughout. Sample cross-sections are provided for rural roads, urban arterials in commercial areas, and residential streets. Provisions are also made for streets where pedestrians take priority, such as through narrower roadways at intersections with adjacent retail uses.

3.3 Proposed Policy Change

3.3.1 Recommendation

While several of the Region's policy documents are consistent with complete streets best practices, there is no comprehensive policy that indicates a commitment to the concept. This lack of guidance for decision-making may lead to inconsistent implementation of complete streets, and makes it challenging to achieve the public health, social, and environmental benefits of complete streets.

It is recommended that Section 11 – Transportation System of the updated ROP should describe the Region's vision for and definition of complete streets, their goals, the types of users and transportation modes to be accommodated, and how lower-tier municipalities should incorporate the policy. The TMP should provide more detail through a comprehensive Complete Streets Policy that includes including additional design specifics, an implementation plan, and linkages to other transportation planning, design, construction, operation and maintenance practices.

A set of complete street design guidelines that are consistent with industry best practices, similar to those developed by the City of Edmonton, should also be developed to complement any new policies in the ROP and TMP. Edmonton's guidelines are among the most comprehensive among large Canadian municipalities, as they include a toolkit of design elements, processes and principles, and an implementation strategy. Similar guidelines in the Durham Region context will provide specific guidance for designing the Region's roadways, and will provide a single reference point for implementation strategies that incorporate pedestrians, cyclists, transit users, drivers, and truck operators into a balanced, complete, and safe transportation system.

The new complete street design guidelines would complement an update of the *Arterial Corridor Guidelines* to be completed as part of the TMP update. They would provide design guidance for Regional roads to achieve the associated benefits and ensure that a common set of design guidelines is used across all local municipalities as well as the Region.

To ensure consistent implementation, the Region should adopt a policy of screening every new roadway plan or modification to determine which complete streets elements should apply based on its vision for complete streets and the design guidelines.

Summary of recommendation

- That the ROP should explain and commit to a complete streets approach.
- That the TMP should provide a comprehensive Complete Streets Policy statement.
- That the Region should update its Arterial Corridor Guidelines to reflect the Complete Streets Policy.
- That the Region should develop detailed complete street guidelines and an implementation strategy that defines how new projects will be assessed.

3.3.2 Implications

Many Complete Streets Policy elements are already included in the Region's policy documents and guidelines. However, the recommended changes to the ROP, the *Arterial Corridor Guidelines* and the TMP will have further impacts on the design process for all roadways in the Region, including those under the responsibility of lower-tier municipalities. New checkpoints will be needed to first assess whether a roadway needs to be designed as a complete street, then to determine how best to incorporate the required elements into the right of way, with reference to the appropriate design guidelines.

It will also be necessary to review the *Regional Cycling Plan* and *Long Term Transit Strategy* to ensure that those areas where cycling and transit networks overlap are designed with all the appropriate complete streets elements, including pedestrian facilities and streetscaping.

The policy change will also require that Regional staff is well trained in the principles of complete streets to ensure proper design and implementation of the concept.

4 Road Classification

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Protecting dedicated rights-of-way for transit on arterial streets to give priority to transit and minimize delay
- Protecting necessary rights-of-way on arterial streets so that appropriate cycling facilities can be provided
- Identifying and protecting rights-of-way on arterial roads to provide suitable routes for goods movement

4.1 Issues

Generally, roads provide two key functions: (a) access to adjacent properties, and/or (b) movement between two points. Local streets focus principally on the former, freeways focus entirely on the latter, and collector roads, arterial roads and rural highways need to perform varying degrees of both. Conventional road hierarchies traditionally reflect this balance, and provide insight and direction for making decisions related to the planning, design, operation and maintenance of road infrastructure.

However, conventional road hierarchies tend to reflect an auto-centric perspective and do not provide sufficient guidance for the accommodation of transit, cyclists and pedestrians. Durham Region's current road hierarchy has been identified as having inconsistencies with emerging objectives for cycling and public transit.

4.2 Current Framework

The ROP recognizes six types of roads, namely Freeways, Type A Arterials, Type B Arterials, Type C Arterials, Collectors, and Local Roads. Design criteria for arterials, which comprise almost all Regional roads, are specified in *Schedule E – Table E7* of the ROP. The classification system for arterial roads is clear, concise and consistent with accepted Transportation Association of Canada and Institute of Transportation Engineers best practices. The 2007 Arterial Road Classification Review that refined this classification system also consulted other systems in use across the GTHA and drew from local examples.

4.2.1 Provisions for Active Transportation

The classification system was developed before the *Regional Cycling Plan* was completed and has omitted guidance for cycling provisions on each type of arterial. The 2007 *Arterial Corridor Guidelines*, however, describe various provisions for pedestrians, cyclists, and transit, although only three of the 15 sample cross-sections are bicycle-supportive. The ROP, *Regional Cycling Plan*, and *Arterial Corridor Guidelines* are therefore not aligned in how they envision cycling facilities to be developed along various arterials.

4.2.2 Prioritization of Transit Vehicles

The traffic volume criteria for classifying arterials is automobile-focused and does not consider the conditions under which transit vehicles should have priority over other vehicles. The *Long Term Transit Strategy* includes higher order transit on some Type A Arterials such as Taunton Road and, while the ROP states that Type A Arterials may be used as transit spines, the "Transit Corridor" typology defined in the *Arterial Corridor Guidelines* does not prioritize transit. Instead, the description in Section 8.5 states that "...priority is placed on the movement of vehicles with transit often accommodated in dedicated lanes or medians..." and Section 9.7 illustrates a 6-lane cross-section with dedicated transit lanes. This is useful for wide rights-of-way with dedicated transit lanes but these guidelines do not necessarily prioritize transit vehicles over other vehicles in mixed traffic.

Toronto's 2013 *Road Classification System* by comparison includes both traffic volumes and transit passenger volumes as criteria for classifying roads. This ensures that roads having relatively high transit volumes compared to automobile volumes are given appropriate priority in their design and maintenance. The Region of Waterloo's 2010 *Context Sensitive Regional Transportation Corridor Design Guidelines* take a similar people-focused approach by using People Moving Capacity as a design criterion for its arterials.

Appendix O – The 39 TOD Places & 'T' Street Guidelines in the Region's *Long Term Transit Strategy* provides specific guidelines on how arterials that are intended to prioritize transit should be designed. This is a valuable resource that should be consulted when updating the *Arterial Corridor Guidelines* but the *Long Term Transit Strategy* has not been enacted or adopted by the Region.

4.2.3 Access Management

The Region has no comprehensive guidelines for access management on Regional roads, although several stand-alone policies and internal practices already exist. This could lead to a lack of clarity on how roadways should be designed and inconsistency in how policies are applied across the Region.

The ROP defines intersection spacing standards as part of its arterial road criteria. While these standards vary depending on the arterial class, they are not context sensitive. These standards therefore do not reflect whether the arterial road is in a designated Regional Centre, a Regional Corridor, or a suburban setting, even though each of these settings may have different intersection spacing and access requirements.

4.3 Proposed Policy Change

4.3.1 Recommendation

Along with the development of a comprehensive Complete Streets Policy and guidelines, as discussed in Chapter 3 of this document, three other significant changes are warranted.

First, *Schedule E – Table E7* of the ROP should be updated to include cycling criteria for each class of arterial road identified. The *Regional Cycling Plan* provides the necessary guidance as to which cycling facilities are most appropriate to each arterial class. The *Arterial Corridor Guidelines* should also be updated to show how the *Regional Cycling Plan* impacts the street typologies defined, particularly for bicycle-supportive streets.

Second, given the ROP's vision of a multimodal network and its commitment to denser, more compact, transit-oriented development (e.g. Policy 7.3.9, 8A.1.2, 8A.1.5), transit passenger volumes should be a key design criterion for arterial roads, alongside traffic volumes. Recognizing that there are cases where the movement of transit passengers may take priority over other modes, both the ROP and the *Arterial Corridor Guidelines* should identify the conditions under which specific transit priority treatments should be accommodated within each of the arterial classes.

Finally, once the review of the arterial classification is complete, the Region should develop comprehensive access management guidelines to provide consistency and transparency in how roadway access is planned, approved, and implemented. Such guidelines should be context sensitive, recognizing that Regional Centres and corridors have unique development objectives that must be supported by the roadways that pass through them.

Summary of recommendation

- That the ROP's Table E7 should be updated to include cycling facility criteria for arterial roads.
- That the Region should update its *Arterial Corridor Guidelines* to reflect the Regional Cycling Plan.
- That the ROP's Table E7 and the updated *Arterial Corridor Guidelines* should define conditions under which transit priority treatments would be accommodated within each arterial class.
- That the Region should develop and adopt access management guidelines for all arterial classes.

4.3.2 Implications

Updating the ROP's Table E7 to provide guidance on cycling provisions for each class of arterial road is a relatively minor change that provides much clarity to staff and the public.

The addition of transit passenger criteria could result in reclassification of some arterials in the Region where transit ridership is high relative to traffic volumes. There are not many such arterial roads in Durham Region's current network but as transit volumes and mode shares increase in the coming decades as the ROP intends, there will be a greater requirement for clear thresholds for transit priority treatments.

Moving towards a single set of access management guidelines will mean that some elements of the existing arterial design criteria may no longer apply. For example, shorter intersection spacing may be allowed on arterials in Regional Centres to improve walkability. This may result in lower auto travel speeds and supports transit and active transportation.

5 Boulevard Jurisdiction

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Reviewing jurisdictional responsibility for Regional road boulevards and related infrastructure elements.

5.1 Issues

A review of the jurisdictional responsibility for Regional road boulevards and the related infrastructure elements was requested by the TMP Steering Committee in response to issues raised by area municipal staff and Region of Durham staff.

This chapter outlines current responsibilities and the principles behind them, practices in other GTHA jurisdictions and potential alternatives for consideration.

5.2 Current Framework

5.2.1 Durham Region

Section 55 (1) of the Ontario *Municipal Act* assigns responsibility for construction and maintenance of sidewalks along Regional roads to area municipalities in which the road is located, unless otherwise agreed upon. Since the Act does not assign responsibility for illumination and cycling facilities within boulevards, the typical practice is to combine this responsibility with jurisdiction over sidewalks.

Jurisdictional responsibilities in Durham Region are consistent with the typical practices outlined by the *Municipal Act*. The following is a summary of the current responsibilities for infrastructure within the boulevards of Regional Roads.

Element	Current Practice
Sidewalks	Area municipalities currently own, build and maintain sidewalks along Regional roads, and manage associated liability. The Region is responsible for providing a platform for sidewalk construction within Regional road rights-of-way.
Multi-use pathways	Region is 100% responsible for providing the platform for multi-use paths within Regional road rights-of-way for routes designated within the Regional Cycling Plan. Area municipalities are responsible for the construction, maintenance and repair of multi-use paths on Regional Roads.
Bike Lanes and Paved Shoulders	Region is 100% responsible for construction and maintenance of all on road cycling facilities and paved shoulders on Regional Roads for routes designated in the Regional Cycling Plan.

Element	Current Practice
Cycle Tracks	Cycle tracks are specially designed bicycle paths on the same elevation as and separated from the sidewalk, i.e. higher elevation than traffic lanes. By this definition, they would be treated the same as multi-use pathways.
Streetscaping	Region is responsible for the installation and maintenance of street trees and grass cutting in Regional road boulevards and medians. Area municipalities are responsible for the installation and maintenance of enhanced streetscape elements (e.g., planters, benches, etc.) within Regional road rights-of-way.
Illumination	Area municipalities are responsible for installation, operation and maintenance of all illumination on Regional roads in urbanized areas. The Region takes responsibility for illumination of isolated intersections on Regional roads in rural areas.
Signalization	Region is responsible for installation and operation of traffic signals on all Regional and area municipal roads, subject to cost-sharing arrangements for unwarranted signals requested by municipalities.
Transit stops	Durham Region Transit (DRT) is responsible for transit stop amenities including shelter, standing pad, pole and signage, waste receptacles, benches.

While the current practice has worked for many decades, the Region's vision to create a multi-modal transportation network has highlighted a number of issues:

- The Region is responsible for providing the platform for multi-use pathways as part of road construction, but there are sometimes delays in the final completion of the pathways by area municipalities. There are also challenges in coordinating construction.
- Several Regional roads served by DRT have gaps in the sidewalk network. The lack of sidewalks connecting transit stops is an issue for transit passengers, accessibility and liability. A map of existing sidewalks on Regional roads (situated on one or both sides of the road) is shown on Exhibit 5.1.
- There have been delays in implementing street lighting after Regional road corridors have been urbanized where area municipalities have not programmed expenditures for these corridors. There are potential safety and liability issues if lighting is inadequate.
- As the Region builds out future rapid transit corridors, there will be a need for enhanced streetscaping on these corridors. Under the current situation

these enhancements would fall under the responsibility of area municipalities.

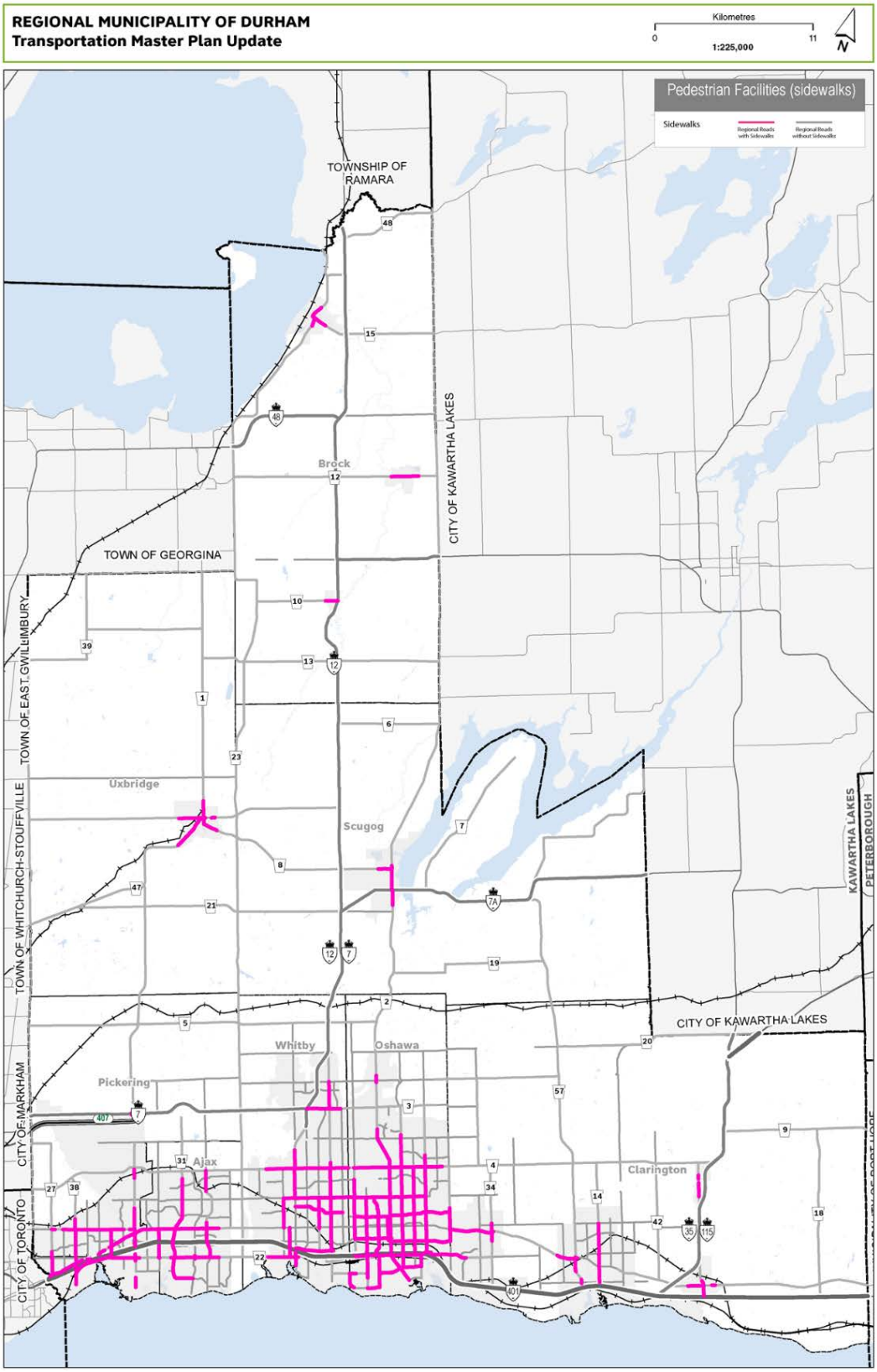
- The Region is responsible for the maintenance of trees within the boulevard on Regional roads but this is not a core program. Municipalities may have greater access to arborists and tree crews.

5.2.2 Practices in Other Jurisdictions

Practices with respect to boulevard jurisdiction vary by upper-tier municipalities throughout the Greater Golden Horseshoe, and are evolving.

- **Peel Region:** In 2013, council endorsed the uploading of sidewalks, illumination and multi-use paths. Operations and maintenance costs for assuming responsibility of sidewalks and illumination is $3.7M (for 271 km of sidewalks and trails, and 8,012 street lights).
- **Waterloo Region**: The Region assumes responsibility for capital construction of sidewalks, illumination and cycling facilities and area municipalities operate and maintain.
- **Halton Region**: Currently, area municipalities build and maintain sidewalks as part of Regional road projects. This practice is currently under review.
- **Niagara Region:** The Region, area municipalities and hydro are all responsible for illumination, depending on the road segment; however the Region is now working towards assuming full jurisdiction. Currently the Region constructs sidewalks and area municipalities operate and maintain them. The Region owns, constructs and maintains on-street cycling facilities.
- **York Region:** Current practice is similar to Durham, with the exception that York Region assumed the cost of constructing sidewalks and streetscaping on recently completed rapid transit corridors. York Region also has a Municipal Partnership Program that provides funding for pedestrian or cycling improvements on an application basis by area municipalities. The fund is currently $500,000 per year. York Region is in the process of reviewing its policies. The emerging direction is that York Region will assume responsibility for planning, design, construction, operation and ownership of boulevard elements within Regional rights-of-way, including sidewalks, cycling facilities, illumination and streetscaping. This proposed policy change will be presented to Regional Council in Spring 2016.

Exhibit 5.1: Existing Pedestrian Network



5.2.3 Legal and Funding Context

Regardless of who assumes responsibilities for boulevard infrastructure, the following must be met:

- Providing resources and funding for construction inspection, maintenance and repair;
- Adhering to Minimum Maintenance Standards For Municipal Highways (Ont. Reg. 239/02) under the Municipal Act; and
- Absorbing costs due to claims (slips and falls, etc.).

Typical unit costs for construction of boulevard infrastructure are as follows:

- $150-300 per meter for new sidewalk construction;
- $5,000 - $6,000 per luminaire for new installation; and
- $600,000 per km for construction of high quality multi-use path.

Information on cost implications from other Regions helps to bracket the range of potential costs for Durham Region.

- Recent data from the City of Ottawa shows that the average cost to maintain 1 km of sidewalks and pathways is $10,700 per linear km of road (e.g. sidewalks on both sides).
- In Peel Region, operations & maintenance costs for assuming responsibility of sidewalks and illumination was estimated at $3.7M (for 271 km of sidewalks and trails, and 8,012 street lights). This equates to $13,650 per km.
- A 2009 report from York Region estimated that the operating cost implications of assuming responsibility for sidewalks and illumination would be approximately $6.5 million per year. Of this, sidewalks comprised $4.2 million and illumination comprised $2.3 million. The corresponding capital cost implications were $3.9 million and $2.6 million for sidewalks and lighting respectively, based on a 10 year projection of needs.

5.3 Proposed Policy Change

5.3.1 Alternatives for Consideration

There is presently no requirement for the Region to change responsibilities for infrastructure within boulevards on Regional Roads.

However, there is a range of alternatives to the Region's current policies and practices that could be considered. The full set of possible alternative scenarios for jurisdictional responsibility of Regional road boulevards and their elements is shown in Exhibit 5.2.

Exhibit 5.2: Possible Alternatives for Jurisdictional Responsibility for Road Boulevard Elements

Alternative	Description
1	Status Quo
2	Establish a Municipal Partnership Program which would establish a fund to assist area municipalities in accelerating the completion of sidewalk gaps or completing construction of multi-use pathways on Regional roads.
3	Region builds the sidewalk, cycling and illumination infrastructure planned in the boulevard and hands over to the area municipalities to maintain current split in jurisdictional responsibilities for operation and maintenance of boulevard elements
4	Region assumes jurisdictional responsibility for specific elements of boulevard infrastructure (i.e. sidewalks only, lighting only). Note that the implementation of street lighting cannot be separated from the construction timing of sidewalks without increasing the potential liability to the municipality.
5	Region assumes full responsibility for all Regional road boulevard surface infrastructure

5.3.2 Conclusion

The above background information and alternatives were reviewed by Regional staff and the TMP Steering Committee. The review concluded that while there may be some benefit to harmonizing the standards that guide the design and construction of boulevard elements, there is no strong rationale to implement changes to jurisdiction. The conclusion was that no change should be made (Option 1, Status Quo).

6 Multimodal Levels of Service

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Making planning, design and operating decisions that consider the service objectives for walking and cycling
- Making planning, design and operating decisions that consider the service objectives for all modes, and the trade-offs between them

These objectives are clearly similar, with the second objective being inclusive of the first.

6.1 Issues

Durham Region's transportation network should be designed for all users. That does not mean every road needs to be designed for all users, but people should be able to access a network of facilities that serves there travel needs. It is therefore important to measure the levels of service (LOS) experienced not only by motor vehicle drivers but also by pedestrians, cyclists and transit users. This multimodal level of service (MMLOS) approach integrates measures that are suitable for each mode into the Region's road design process. As a decision-making tool, MMLOS helps staff allocate street right-of-way based on trade-offs among different users, monitor network performance, identify problem areas, and understand the impacts that changes could have on one mode versus another.

For example, whereas traditional traffic LOS measures may indicate that changing traffic signal timing at an intersection would move more vehicles along an arterial road, an MMLOS approach could show that this change may have a negative effect on pedestrians or transit users crossing the arterial using the minor street. Staff would then be better equipped to analyze the trade-off when making a final decision.

Beyond these operational considerations, MMLOS indicators help planners and policy makers to determine appropriate cost estimates, benefits, and project prioritization when considering investments that impact different modes, such as replacing traffic lanes with transit-only lanes. Similarly, these indicators can be used to establish service standards for the desired network or corridor and provide guidance for staff on project implementation.

6.2 Current Framework

6.2.1 Durham Region

The 2003 TMP established that roads could provide an acceptable level of service at up to 90% of their vehicular capacity during peak periods. This use of volume-to-capacity ratio is common in traffic engineering, but it reveals nothing about the level of service experienced by pedestrians, cyclists and transit users.

45 indicators were suggested in the 2003 TMP as part of a broad Transportation Monitoring Program to assess progress toward the Region's transportation vision. These indicators measure several different aspects of the transportation network and they do not focus on measuring level of service specifically. Exhibit 6.1 shows the subset of indicators that most closely relate to level of service.

Exhibit 6.1: Potential Level of Service Indicators Suggested by the 2003 TMP

Transportation Network Goal	Potential Indicator
Goal B – Use the System Efficiently	• 24-hour / AM peak transit seat-km per capita • AM period traffic growth relative to population growth at screenlines • Arterial and Expressway Road Utilization Index (veh-km/lane-km) • Arterial lane-km per 1,000 capita • Expressway lane-km per 1,000 capita • HOV lane-km per 1,000 capita • Off-street parking spaces • % of 24-hour auto person-trips in AM peak period at screenlines • % of 24-hour transit person-trips in AM peak period at screenlines
Goal C – Move People and Goods Safely, Reliably and Efficiently	• % of lane-km rated as Good to Very Good • % of winter event responses that met or exceeded municipal standards • AM public transit travel times between main central areas and regional nodes • Annual injuries / fatalities per 1,000 • Average home-work trip distance • Farebox as a % of budget (Transit) • Operating costs for conventional transit per regular passenger-trip • Operating costs for Regional Roads per lane-km • Operating costs for Winter Control Maintenance of Regional Roads per lane-km • Passenger-trips per person in service area • Road expenditures per capita • Transit expenditures per capita
Goal D – Provide Choice in Services	• Bicycle volumes on arterial and collector roads • Households within 400m of transit routes • Major employment within 400m of transit routes • Pedestrian volumes on arterials and collector roads

Source: 2005 Consolidation of Durham Region Transportation Master Plan, Table 7

Note that few of the indicators highlighted in the exhibit focus on non-motorized transportation.

6.2.2 Other Jurisdictions

Several cities have shifted focus from traffic LOS to MMLOS to better cater to all transportation system users. The City of Ottawa's 2013 *Transportation Master Plan* specifically calls for the use of MMLOS to assess road designs and allocate right of way. Pedestrians, cyclists, transit customers, and motor vehicles are each considered and a context-sensitive approach is adopted, recognizing that people expect urban and rural locations to have different levels of service for various modes.

Ottawa is still in the process of developing its MMLOS indicators, but several cities in the U.S. have already adopted the indicators shown in Exhibit 6.2. The City of Edmonton has also tested the concept of MMLOS, initially adopting the Highway Capacity (HCM) method, but later moving to a broader "family of measures" covering each mode.

In general, several approaches can be used in the calculation of MMLOS indicators:

- *Formula evaluation*, which uses statistical modelling to predict the user experiences.
- *Point sum total*, which assigns points for meeting various criteria that are then summed to arrive at a final score.
- *Checklist*, which also has a list of criteria but does not assign points; rather, LOS is determined by counting which criteria are met, then looking up the corresponding LOS score in a reference table.

Exhibit 6.2: Performance Measures Adopted by some U.S. Cities

Pedestrians	Transit
• Safety: Rate of crashes, injuries, and fatalities (typically based on Police Records) • Pedestrian LOS (Highway Capacity Manual) • Public Life Surveys • WalkScore (walkability ratings) • Pedestrian Environmental Quality Index (PEQI) • Minimal delay at crossings • Foot traffic volume	• On-time performance • Average speed • Farebox recovery ratio • Ridership per revenue hour • Operating cost per hour
Bicyclists	**Freight**
• Safety: Crash records, injuries, and fatalities • Bicycle LOS (Highway Capacity Manual) • Travel Time and Delay • Bicycle Environmental Quality Index • Bicycle counts	• Freight delivered by hour • Time spent loading/unloading
Vehicles	**Emergency Vehicles**
• LOS • Travel Time • Corridor Impact Analysis • Safety: Crash records, injuries, and fatalities	• Response time
Multi-Modal	**Sustainability**
• Multi-Modal LOS • Retail revenues and business growth	• LEED Neighborhood Development • STARS • GreenRoads

Source: National Association of City Transportation Officials – *Urban Street Design Guide* (2013)

6.3 Proposed Policy Change

6.3.1 Recommendation

Durham Region should define an MMLOS framework to help inform trade-offs on modal priorities within regional road corridors, and to focus efforts on creating a more transit-oriented, multi-modal transportation network. Such a framework would provide staff and residents with greater clarity about what to expect and how to make consistent decisions about including and prioritizing sustainable

travel modes in road planning and design. In the longer term, adopting a MMLOS approach should allow the methodical and deliberate improvement of conditions for walking, cycling and transit.

A detailed study to determine specific MMLOS measures and indicators for each mode would be required. This study would also determine MMLOS indicators needed for each class of road in the Region.

Summary of recommendation

- That the TMP commit to a study, as a short-term priority, that would develop a multimodal level of service (MMLOS) framework and guide its implementation.

6.3.2 Implications

One concern that was raised through Edmonton's adaptation of a MMLOS approach was whether it would result in a list of unmitigated risks, recognizing that many roads would have poor levels of service for one or more modes. However, it was felt that walking, cycling and transit should not be treated differently than automobiles where LOS is an accepted measure for identifying deficiencies. In the Durham Region context, similar consideration would need to be given to how the Region would address the risks associated with roads with poor levels of service for non-auto modes. It is not the intent that the MMLOS tool would be used to create a list of deficiencies, or to rank every road in the system. Rather, it would be a tool to make trade-offs and help focus investments.

7 Transportation Demand Management

As shown in Exhibit 1.1, the emerging objectives addressed in this chapter are:

- Building the awareness, understanding, willingness, skills and enthusiasm of cyclists and pedestrians
- Working with partners to engage, inform, assist and reward potential cyclists, pedestrians, transit users and carpoolers

7.1 Issues

TDM is part of a broad effort to bring about travel behaviour change that includes “hard” transportation facilities and services, even though TDM programs rely on information, promotion, education and incentives to achieve their ends.

Municipal TDM programs typically begin by focusing on commuting patterns, and by engaging commuters through their workplaces. Canadian municipalities, in the last decade, have also started to engage more vigorously with schools, neighbourhoods and families in order to reach a broader cross-section of travellers and trip purposes.

TDM programs consider walking, cycling, transit, carpooling and travel substitutes like telework to be a “suite” of mobility options that collectively provide an alternative to automobile dependence. In largely suburban and rural environments like Durham Region, where infrastructure for those options tends to be less well developed, and where legacy travel patterns are more auto-reliant than in urban areas, it can be more challenging to shift travel behaviour.

7.2 Current Framework

7.2.1 Metrolinx

The overall GTHA Smart Commute program strategy is governed by Metrolinx’s *The Big Move*, the Regional Transportation Plan for the GTHA. More specifically, *The Big Move* includes a strategy dedicated to transportation demand management: *Strategy #4 – Create an Ambitious Transportation Demand Management Program*. In line with *Strategy #4* and as the corporate lead for the Smart Commute program, Metrolinx has developed a Smart Commute Five-Year Strategy for the 2014/15 – 2019/20 period, including a new mission to “achieve measurable travel behaviour change through high quality, cost effective transportation demand management solutions.”

Metrolinx provides funding support for Durham’s TDM program, in return for measured performance accountability.

7.2.2 Region of Durham

The Durham Region Official Plan includes policies that continue to support a TDM program aimed at reducing single-occupant vehicle travel during peak periods. It encourages employers to implement measures that reduce car commuting by providing transit passes, enabling and rewarding carpooling, and promoting cycling and alternative work arrangements.

Durham's 2003 TMP recommended developing a TDM program, creating a full-time staff position, engaging with local businesses, offering a ridematching service, pursuing funding sources, and studying the feasibility of carpool parking lots. All of these recommendations have been filled, mostly through the Smart Commute program supported by Metrolinx. Since 2007, Smart Commute Durham (one of 13 similar organizations across the GTHA) has recruited more than 20 member employers and offers them ridematching services, an Emergency Ride Home program, special events, carpool parking signage, carpool recruitment and retention strategies, and general program development assistance. Smart Commute Durham has also developed a bike lending program, and rural and small urban community commuter parking lots. The Region is currently undertaking a review of Smart Commute Durham's business plan and operating model.

Over the last seven years, Durham has developed a moderately scaled workplace-based TDM program. However, best practices in Canada extend considerably beyond Durham's current programs and have the potential to support other TMP initiatives related to active transportation and public transit. Schools are one key audience for travel behaviour initiatives, and Durham Region's Health Department coordinates delivery of an Active and Safe Routes to School program in conjunction with local municipalities such as Ajax.

This broadening of the policy direction for TDM is reflected and supported by the new Smart Commute strategic directions set by Metrolinx, which have recently been modified to increase the emphasis on programming for schools and communities to increase the health, economic and quality of life benefits in the GTHA.

7.3 Proposed Policy Change

7.3.1 Recommendation

The TMP should clearly position TDM initiatives as an integrated component of larger investments in facilities and services for public transit and active transportation, rather than as a stand-alone program. It should also clearly identify the need for staff and budget resources that are commensurate with the outcomes desired.

The TMP should re-emphasize the importance of working with employers, and integrate the final recommendations of the Smart Commute Durham Business Plan and Operating Model Review. It should also emphasize the need to expand

TDM initiatives beyond workplaces to also reach schools, neighbourhoods and individuals through social marketing and other services, both as independent TDM initiatives as well as through collaboration with Durham Region Transit, Durham Region Health, school boards, area municipalities, and other partners. It should note the potential impact of TDM initiatives and supportive features when introduced as part of the development approvals process, and direct progress in that area.

Summary of recommendation

- That the TMP direct expansion of the workplace engagement portion of Smart Commute Durham's activities, in accordance with Metrolinx performance objectives.
- That the TMP direct new TDM efforts, to be developed over time, that engage with schools, neighbourhoods, families and the development community to maximize the benefits of TDM measures and support the Region's overall transportation goals.

7.3.2 Implications

As detailed in the current Smart Commute Durham business plan review, current TDM resources have fallen below the levels needed to deliver the future performance required by Metrolinx. The TMP should emphasize both the need to support service delivery with staff and budget, but also the value benefits in terms of supporting the Region's far greater investments in public transit and active transportation infrastructure and services.

The recommendations reflect the need to more fully integrate TDM into the Region's activities, beyond a focus on workplace engagement. This, in turn, implies the need for a greater awareness of and support for TDM and Smart Commute among staff, decision makers, and key stakeholders. The establishment of well-defined connections (at both policy and program levels) between TDM and public health, public transit, active transportation, land use planning and economic development will foster these relationships.

8 Strategic Transportation Investments

As shown in Exhibit 1.1, the emerging objective addressed in this chapter is:

- Using evidence based cost benefit analyses that considers full life cycle costing and benefits of the networks to users and the Region

8.1 Issues

Building and operating Durham Region's transportation system incurs capital costs for infrastructure and equipment, and operating costs for maintenance and wages. Economic sustainability requires the allocation of scarce resources to infrastructure that provides the most benefits at the lowest cost to ensure confident long-range planning.

8.2 Current Framework: Capital

The Region is forecast to spend about $690 million on capital works for Regional roads between 2015 and 2023 according to the 2014 budget. The preferred alternative in the *Long Term Transit Strategy* also lays out $1.8 billion in capital costs during this period, most of which is allocated to rapid transit.

Property taxes will fund $40 million in transit capital costs and about $350 million in Regional road capital works between 2015 and 2023. Development charges and grants from provincial and federal governments will provide $550 million in this period and are described in the following sub-sections. However, the capital plan for Region's preferred transit network still needs an additional $1.5 billion in funding.

8.2.1 Development Charges

New developments in the Region are charged a fee based on the projected costs of capital expenditures required to provide municipal services to those developments. These capital expenditures are exclusive of upgrade and replacement costs for existing infrastructure and equipment, which are funded by other means.

The applicability and calculation methodology for development charges across Ontario are governed by the *Development Charges Act, 1997*. This Act also requires Durham Region to complete a development charge background study to estimate how development will occur, what capital and operating costs would be required to support the development, and the applicable development charges.

The development charges that fund transportation in the Region are imposed through three by-laws: 16-2013, which funds Regional roads; 86-2001 (as amended by by-law 24-2013), which is a residential development charge

specifically for GO Transit; and 47-2012 (as amended by by-law 23-2013), which funds Regional transit.

The 2013 *Development Charge Background Study* and the 2012 *Background Study Regarding a Proposed Development Charge By-Law for Regional Transit Service* detailed the necessary charges to cover the eligible costs of the transportation system, including:

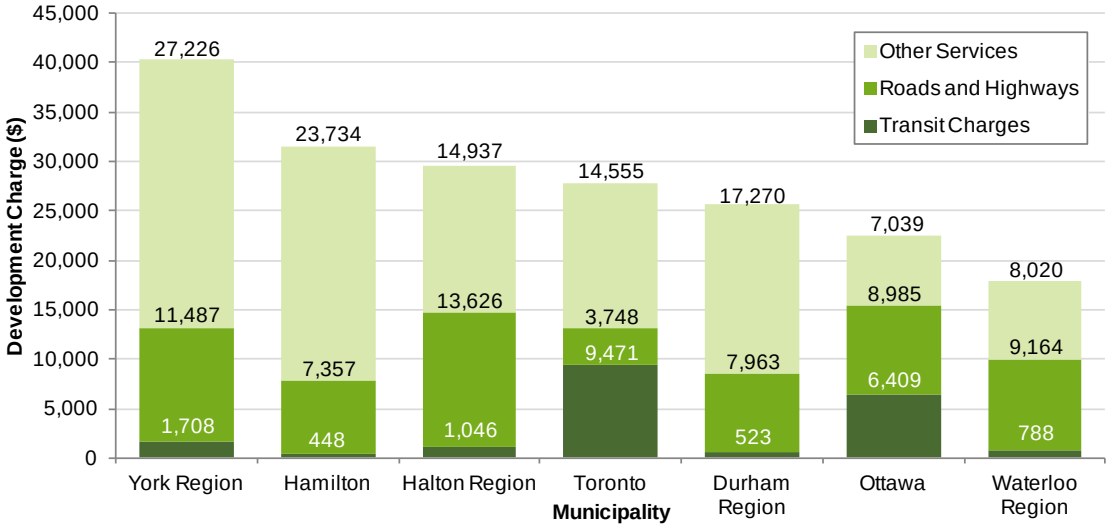
- $1 billion of the Region's $1.7 billion 2013-2028 Regional roads capital works program
- $40.3 million of the $279 million Regional transit capital expenditures for 2013-2022

The remaining capital costs are not eligible as they exceed the ten-year historical service level capital spending cap set by the Development Charge Act.

Development charges in Durham Region are generally lower than other large Ontario municipalities, as shown in Exhibit 8.1. As explained in the 2012 *Background Study Regarding a Proposed Development Charge By-Law for Regional Transit Service*, this is largely because there is significant rapid transit investment occurring in Toronto, York Region, and Ottawa, compounded by the historically high levels of service provided in those municipalities. The exhibit focuses on upper tier municipalities but it is noteworthy that Mississauga and Brampton have also had comparably high levels of transit service historically, explaining why their development charges for public transit are three times that of Durham Region.

Since development charges are tied to historical levels of service, improving transit service in Durham Region going forward will allow higher development charges to support future investments. In turn, improved transit will facilitate more intense development in transit corridors thereby benefiting the development community.

Exhibit 8.1: Development Charges for Single & Semi-Detached Units for Selected Municipalities



Notes:
Transit-related development charges for Halton Region are for GO Transit only. Municipal public transit development charges are levied by the Oakville and Burlington separately and are not included here.

8.2.2 Grants

Grants are offered by provincial and federal governments to support transportation expenditures in Durham Region. These grants are often awarded for specific projects, such as the $82 million in provincial funding for the Phase 1 Highway 2 Bus Rapid Transit project, and do not represent a stable or predictable source of ongoing funding.

The *Metrolinx Investment Strategy* states that 15% of the $2 billion generated annually by Metrolinx's proposed funding tools would be allocated to municipalities to support local transit, road and bridge improvements. To access this funding, the Region would be required to match dollar-for-dollar any amounts requested; so while this represents a potential stable funding source, it depends on the Region's ability to source matching funds. An additional 10% of the fund, which does not need matching contributions from the Region, is available for highways, active transportation, freight movement, and other transportation initiatives but not for transit infrastructure or operations.

Durham Region has provided an official response to the *Metrolinx Investment Strategy* outlining its position on funding options such as increasing gas taxes, applying a parking space levy, and amending the *Development Charge Act.* However, neither *Metrolinx* nor the Provincial Government has released a final suite of funding options that the Region can rely on.

The 2010 *Long Term Transit Strategy* assumed that one-third of bus replacement costs for Durham Region Transit would come from the Ontario Bus Replacement Program, but this program was eliminated in 2010.

8.2.3 Gas Taxes

Since 2004, the Province of Ontario has distributed to municipalities a portion of its gas tax revenues to support public transit investments such as vehicle replacements, Bus Rapid Transit implementation, and some operating expenditures. In 2014, Durham Region received $8 million from this source and this represents one of the few stable, predictable sources of funding for transit.

The federal government administers a similar gas tax, which is used to fund environmentally sustainable infrastructure projects. None of the more than $16 million the Region received from the Government of Canada in 2014 was spent on the transportation system. However, the Durham Region's 2015 *Transportation Service and Financing Report* has suggested to Regional Council that the funds from this tax could be directed to future road and bridge rehabilitation projects.

8.3 Current Framework: Operating

The preferred transit strategy described in the Region's *Long Term Transit Strategy* calls for $670 million in operating costs in the period 2015-2023, or an average of $75 million per year. The road network also requires significant annual maintenance and operating costs, which was budgeted at about $30 million for 2014 to fund programs such as winter maintenance, traffic signs and signals, as well as facilities and equipment operations. Transit revenues and property taxes are the largest sources of funding for operating expenses but it is clear that the Region's transit plan will require significant additional revenues.

8.3.1 Property Taxes

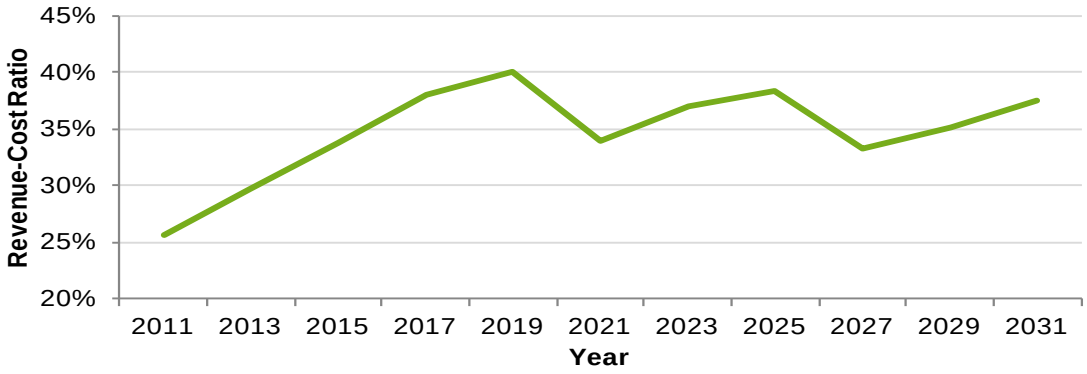
Property taxes are the primary funding source for ongoing operational expenses for the transportation system. The Region's 2014 budget allocated about $46.6 million in property taxes to fund operating expenses and net property tax funded capital at Durham Region Transit (DRT).

8.3.2 Transit Revenues

DRT had estimated revenues of $24 million in 2013, with $20 million coming from fares and the U-Pass program. This covered about a third of its operating costs of about $70 million. The revenue-operating cost ratio is expected to remain around 35% to 40% through 2031 according to the *Long Term Transit Strategy*, as shown in Exhibit 8.2. This ratio is comparable to York Region Transit's, but lower than the 45% average of neighbouring operators such as MiWay, Brampton Transit, and Hamilton Street Railway in 2012. Durham's lower urban densities, compared to these other municipalities, partly explain this difference.

The *Long Term Transit Strategy* projected about $250 million in revenue between 2015 and 2023 but without other stable, predictable sources of operational funding the Region would have to rely on property tax increases to close the $420 million gap in operational funding.

Exhibit 8.2: Projected Revenue-Operating Cost Ratio for the Preferred Transit Strategy, 2011-2031



Source: 2010 Long Term Transit Strategy

8.4 Proposed Policy Change

8.4.1 Recommendation

Durham Region has few policy options for raising new capital or operating funds for transportation systems. Given this, it is critical that investments in transportation infrastructure be based on evidence based cost benefit analyses that maximizes the performance of the network for its users and the Region. The analyses should take into account all financial and economic costs and benefits including life cycle costs and future implications on operating budgets and performance of the network.

Summary of recommendation

- That the TMP include policies enabling Durham Region to expand development charge funding for transit beyond historical service level caps, pending the outcome of the on-going provincial review.
- That the TMP will, upon release of further information from the province, review innovative tools to generate revenues for transportation capital and operating needs.

8.4.2 Implications

The Region's existing business processes, including the Transportation Servicing and Financing Studies, Transit Servicing and Financing Studies, Asset Management Study, and development charge studies for example, can be used to provide the evidence based analysis and secure budgetary funding required to implement projects.

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