



## Engineering Services Report

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**Report To:** General Government Committee

**Date of Meeting:** November 28, 2016

**Report Number:** EGD-040-16      **Resolution:**

**File Number:**      **By-law Number:**

**Report Subject:** Approval of Final Clarington Transportation Master Plan

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### Recommendations:

1. That Report EGD-040-16 be received; and
2. That Council approve the recommendations identified in the Clarington Transportation Master Plan – Final Report as provided in report EGD-040-16.

## Report Overview

This report recommends the approval of the Clarington Transportation Master Plan – Final Report by Clarington Council. It has taken into consideration the public and contributing agencies' comments. The full version of the Clarington Transportation Master Plan-Final Report can be found at <http://ctmp.clarington.net> and [www.clarington.net/ctmp](http://www.clarington.net/ctmp) or the Engineering Services Department can provide a hard copy if required.

## 1. Background

The purpose of this report is to obtain Council approval of the Clarington Transportation Master Plan (CTMP) – Final Report.

The Clarington Transportation Master Plan (CTMP) is a planning document that provides a comprehensive assessment of the long-term transportation system infrastructure and policy needs across all modes of transportation in the Municipality of Clarington (also referred to as Municipality or Clarington). The purpose of the CTMP is to provide a coordinated and integrated implementation strategy for the transportation system that will guide decision-making within the Municipality over the next 20 years.

The CTMP was prepared following the Master Planning process (i.e., Phases 1 and 2) of the Municipal Class Environmental Assessment process, and provides the context for the implementation of proposed transportation improvements within Clarington. Subsequent phases of the Class EA process (i.e., Phases 3 and 4) will be required for projects / studies with the potential for impacts to the environment. More detailed investigation and further consultation will be required to implement specific projects recommended in the CTMP.

An extensive consultation program was carried out as part of the CTMP to provide information to stakeholders on all components of the study and facilitate a full spectrum of community and agency input. The consultation program included:

- Establishment of a study website;
- Notification of consultation events via mail, email and information screens at the Municipal Administrative Centre;
- Steering committee and stakeholder meetings; and
- Two formal Public Information Centres (PICs).

The feedback received from the public and other stakeholders during the course of the study generally indicated a strong desire for improvements to:

- Active transportation
- Infrastructure and associated policies
- Transit integration
- Service and accessibility
- Selected areas of the road network.

## **2. Summary of Clarington Transportation Master Plan**

### **2.1 Problem Statement**

Clarington's population and employment is expected to grow by 50,000 people and 15,000 new jobs by 2031. This increase will put pressure on the existing transportation system and drive requirements for new infrastructure and programs. The key network deficiencies and transportation problems and opportunities that Clarington is expected to face by 2031 can be summarized as follows:

#### **Congestion on Roads Crossing Bowmanville Creek**

Increased pressure on Longworth Avenue and Concession Road 3 in the vicinity of Bowmanville Creek is due to the significant population growth in northern Bowmanville. The creek acts as a natural barrier to travel with Baseline Road, King Street / Highway 2, and Longworth Avenue as the only existing crossing within the urban area. Alternatives identified in the TMP to address this need include:

- The widening of Longworth Avenue (including the existing crossing which is designed to accommodate a four-lane cross-section)
- The extension of Longworth Avenue to the west
- The extension of Nash Road across Bowmanville Creek

#### **Congestion on Roads Leading to Highway 401 Interchanges**

Major issues here include:

- Courtice Road North and south of Highway 401
- Liberty Street north and south of 401
- Waverley Road at Highway 401

Analysis of these roads used to access Highway 401 revealed the need for at least one additional lane of traffic (in each direction) to accommodate the expected congestion.

It was also found that most trips accessing Highway 401 through the Bowmanville interchanges originate in central Bowmanville or north of Bowmanville.

Since the approach to the Liberty Street/Highway 401 interchange will be challenging to upgrade due to a range of engineering and environmental factors as well as the existing residential and commercial property constraints, a new Highway 401 interchange at Lambs Road, and/or network improvements to encourage increased usage of the Holt Road interchange (already planned to be improved to a new full access interchange) may be able to address this need. The introduction of an interchange at Lambs Road would result in the partial or full removal of the Liberty Street and Bennett road interchanges.

### **Capacity issues within urban areas of Bowmanville and Courtice**

The 2031 base forecasts revealed three isolated congestion hot spots primarily in the vicinity of downtown Bowmanville and Courtice, including:

- Prestonvale Road South of Regional Highway 2 (Courtice)
- Scugog Street North of King Street / Regional Highway 2 (Bowmanville)
- Concession Road 3 east of Regional Road 57 (Bowmanville)

## **2.2 Active Transportation**

Public feedback received through the CTMP study process consistently demonstrated a desire for improvements to active transportation infrastructure, including modifications to existing routes, provision of new routes and development of policy approaches. It is recognized that recreational cycling and cycle tourism are important to maintaining a healthy and liveable community and enhancing Clarington's overall attractiveness for investment. Clarington will continue to work with cycling groups to promote and encourage the use of Clarington's off-road trail and on-road cycling infrastructure for recreational purposes.

In order to support an increased role for active transportation in Clarington, an Active Transportation System consisting of interconnected on-road facilities and off-road trails is recommended. The active transportation network at the overall municipal level includes both on-road facilities and off-road trails within Courtice, Bowmanville, Newcastle, and Orono, and identifies "Key Trails" that serve as important active transportation links that can be used for commuting purposes.

The following tables present estimates of the capital funding requirements to support the implementation of the proposed Active Transportation System to 2031. These are shown by community but in no particular order. The cost estimates are based on high-level unit per km costs developed from recently implemented on-road bicycle lanes and off-road trails in Clarington. Items marked with an asterisk are partially or fully completed.

Cycling Network					
Community	Facility Type	Route	Location	Length (km)	Cost (\$)
Courtice	Cycle Lane	Nash Road	Townline Road to Varcoe Road *	0.40	\$8,000
Courtice	Signed / Shared Lanes	Nash Road	Varcoe Road to Centerfield Drive *	0.40	\$6,000
Courtice	Cycle Lane	Nash Road	Centerfield Drive to Harry Gay Drive *	2.50	\$50,000
Courtice	Signed / Shared Lanes	Trulls Road	Pebblestone Road to Adelaide Avenue (extension) *	1.10	\$16,500
Courtice	Cycle Lane	Trulls Road	Adelaide Avenue (extension) to south of Avondale Drive *	2.60	\$52,000
Courtice	Signed / Shared Lanes	Trulls Road	South of Avondale Drive to Bloor Street	0.75	\$11,250
Courtice	Signed / Shared Lanes	Prestonvale Road	Highway 2 to Robert Adams Drive	0.17	\$2,550
Courtice	Cycle Lane	Prestonvale Road	Robert Adams Drive to Glenabbey Drive *	1.00	\$20,000
Courtice	Signed / Shared Lanes	Prestonvale Road	Glenabbey Drive to Bloor Street *	0.65	\$9,750
Courtice	Cycle Lane	Trulls Road	Bloor Street to Cigas Road	1.70	\$34,000
Courtice	Cycle Lane	Cigas Road	Trulls Road to Baseline Road/Courtice Road	0.95	\$19,000
Courtice	Cycle Lane	New Road to Future GO Station	Trulls Road to Future GO Station	0.65	\$13,000
Courtice	Paved Shoulder	Courtice Road	Baseline Road to South Service Road	0.40	\$70,000
Courtice	Signed / Shared Lanes	Sandringham Drive/Yorkville Drive	Prestonvale Road/Claret Road to Trulls Road/Yorkville Drive	1.00	\$15,000
Courtice	Separate facility	Highway 2	Townline Road to Courtice Road	3.00	\$60,000
Courtice to Bowmanville	Separate facility	Highway 2	Courtice Road to Green Road	5.40	\$1,890,000
Courtice to Bowmanville	Signed / Shared Lanes	Nash Road	Harry Gay Drive to Regional Road 57	5.90	\$88,500
Bowmanville	Separate facility	Highway 2	Green Road to Lambs Road	4.40	\$88,000

Cycling Network					
Community	Facility Type	Route	Location	Length (km)	Cost (\$)
Bowmanville	Cycle Lane	Green Road	Nash Road to Baseline Road *	4.10	\$82,000
Bowmanville	Paved Shoulder	Baseline Road/Holt Road	Holt Road (at OPG Darlington) to Baseline Road/Green Road	2.70	\$472,500
Bowmanville	Cycle Lane	Baseline Road	Martin Road to Lambs Road	3.30	\$66,000
Bowmanville	Cycle Lane	Aspen Springs Drive	Bonnycastle Drive to Regional Road 57 *	0.17	\$3,400
Bowmanville	Signed / Shared Lanes	Lake Road/Port Darlington	Liberty Street to Port Darlington/East Beach Road	1.60	\$24,000
Bowmanville	Cycle Lane	Longworth Avenue	Green Road to 400m east of Regional Road 57	1.26	\$25,200
Bowmanville	Cycle Lane	Longworth Avenue	Don Morris Court to Laurelwood Street *	0.45	\$9,000
Bowmanville	Cycle Lane	Longworth Avenue	Argent Street to Mearns Avenue *	1.00	\$20,000
Bowmanville	Cycle Lane	Concession Road 3	Regional Road 57 to Mearns Avenue	2.50	\$50,000
Bowmanville	Cycle Lane	Middle Road	Bowmanville North Boundary to Bons Avenue	1.40	\$28,000
Bowmanville	Cycle Lane	Scugog Street	4th Street to Concession Street *	0.80	\$16,000
Bowmanville	Separate facility	Regional Road 57	Stevens Road to Aspen Springs Drive (Future GO Station)	0.75	\$15,000
Bowmanville	Signed / Shared Lanes	Liberty Street	Concession Road 3 to Longworth Avenue	0.75	\$11,250
Bowmanville	Cycle Lane	Concession Street	Liberty Street to Mearns Avenue *	0.80	\$16,000
Bowmanville	Cycle Lane	Lambs Road	Rail Crossing to Baseline Road	3.10	\$62,000
Bowmanville to Newcastle	Signed / Shared Lanes	Concession Street/Arthur Street	Mearns Avenue to Arthur Street/Highway 2 *	9.40	\$141,000
Newcastle	Cycle Lane	Rudell Road/Edwards Street	Rudell Road/Highway 2 to Edward Street/Brookhouse Drive *	1.40	\$28,000

Cycling Network					
Community	Facility Type	Route	Location	Length (km)	Cost (\$)
Newcastle	Cycle Lane	Mill Street	Edward Street to Highway 401	0.35	\$7,000
Newcastle	Signed / Shared Lanes	Mill Street	Highway 401 to Toronto Street	0.29	\$4,350
Newcastle	Multi Use Path	Mill Street	Toronto Street to Port of Newcastle Drive	0.26	\$91,000
Newcastle	Cycle Lane	Brookhouse Drive	Highway 2 to Edward Street *	0.35	\$7,000
Newcastle	Cycle Lane	Mill Street/North Street	Concession Road 3 to Edward Street	2.50	\$50,000
Newcastle	Signed / Shared Lanes	Highway 2	Rudell Road to Brookhouse Drive	1.60	\$32,000
<b>Total</b>				<b>73.80</b>	<b>\$3,714,250</b>

Supporting policy measures were also developed to increase the attractiveness, awareness, and visibility of active transportation in Clarington. Policy recommendations include marketing strategies to promote use of Clarington’s active transportation facilities and the development of an Active Transportation Plan. The recommended active transportation program could be overseen by a new Active Transportation Advisory Committee who would assist with the development of an Active Transportation Master Plan, which is intended to further develop and prioritize a funding mechanism for the policies and programs that support and encourage use of active transportation.

A Complete Streets Policy is also recommended to support new development areas and for implementation along identified active transportation corridors. Capital funding is required to support the implementation of the proposed Active Transportation System. It is also recommended that a fixed annual budget be allocated to support non-network infrastructure related initiatives.

### 2.3 Transit Services

The need for improved transit services within Clarington was noted by members of the public during the course of this study. While not a direct provider of transit service within the municipality, Clarington will work with Durham Region and Metrolinx to review and support the implementation of existing initiatives, as well as these recommended services as part of DRT and GO Transit:

- GO Rail Bowmanville Extension and encourage the extension of service to urban areas of Courtice and Bowmanville, especially to the new GO stations in these communities
- Higher-Order Transit on Regional Highway 2 to Courtice

- An extension of higher-order transit service along Regional Highway 2 through to the Bowmanville GO Rail station
- 407 Transitway bus service (not higher order transit)
- Enhanced service on Regional Highway 2 from Courtice to Newcastle
- Restructured service to Orono
- Expanded service in Courtice and Bowmanville
- Expanded service to areas with existing service gaps
- Expanded service in growth areas

It is further recommended that Clarington assume a strong support role through a number of recommended measures to facilitate transit use. It should be noted that all of the recommendations, with the exception of GO Transit services (both rail and bus), are subject to the approval of the DRT Commission and Regional budget considerations.

## 2.4 Transportation Demand Management (TDM)

The core goal of TDM is to reduce the number of motor vehicles (particularly single-occupancy autos) on the road during peak periods of congestion by encouraging people to shift travel modes, use rideshares / carpools, shift times of travel, and shift trip making patterns. The focus of TDM is on optimizing the movement of people rather than the movement of motor vehicles and making more effective use of existing infrastructure. A number of initiatives were included as part of the recommended TDM strategy to encourage use of alternative transportation modes within the community:

- Work closely with Metrolinx and the Region of Durham to support Smart Commute Durham, promote TDM and monitor implementation and the benefits of TDM measures throughout Clarington and co-host special events with Smart Commute Durham.
- Encourage the Region and Smart Commute Durham to develop and implement school-based TDM programs at both the elementary and high school
- Take a lead role in supporting the Municipality's large employers in implementing trip reduction
- Lead by example through establishing a visionary TDM program for the Municipality of Clarington
- Develop a parking strategy for Bowmanville
- Promote existing carpool lots and support the development of new lots
- Require TDM Plans for major developments



### **Long Term Road Network**

Through the CTMP it was demonstrated that the public is interested in:

- Improving safety, whether through reducing speeds or providing wider shoulders on roadways
- improving the existing road network, including rural roads
- Providing for added connectivity through new connections.

To address these issues a number of road network alternatives were developed based on the expected capacity deficiencies, and were evaluated against a broad range of criteria to compare their respective advantages and disadvantages using both quantitative and qualitative measures. The identified improvements were packaged into three network alternatives and carried forward for further evaluation against the “Do Nothing” scenario.

#### **Alternative A**

- A 4-lane extension of Longworth Avenue from Regional Road 57 to Holt Road
- 4-lane widening of Longworth Avenue from Scugog Street to Regional Road 57
- Baseline Road and Holt Road improvements are also included.

#### **Alternative B**

- A 4-lane extension of Longworth Avenue from Regional Road 57 to Maple Grove Road
- 4-lane widening of Longworth Avenue from Scugog Street to Regional Road 57, road upgrade
- 4-lane widening of Maple Grove Road from the new extension to Bloor Street, and road upgrade
- 4-lane widening of Bloor Street from Maple Grove Road to Holt Road. Baseline Road and Holt Road improvements are also included.

**Alternative C** – similar to Alternative A, in addition to the implementation of a new full Highway 401 interchange at Lambs Road. With the introduction of an interchange at Lambs Road, this alternative identifies the removal of the Liberty Street and Bennett Road interchanges.

For comparison purposes, the “Do Nothing” alternative was included as part of the evaluation of network alternatives. Each of the alternatives were assessed using the refined Durham Region Travel Demand model to determine how well the improvements addressed the capacity deficiency and improved the operation of the transportation network.

### **Recommended improvements**

Based on the results of the evaluation of alternatives, Alternative C was identified as the recommended alternative, based on the following rationale:

Addresses capacity deficiencies on Longworth Avenue and Concession Road 3 to the east of the Bowmanville Creek, resulting in a volume over capacity ratio reduction from 1.02 (congested) to 0.65 (free-flow traffic).

Addresses capacity deficiencies on Liberty Street adjacent to Highway 401 and improves network performance in Bowmanville by shifting commuter “through” traffic away from the Liberty Street through the downtown core and onto the Holt Road/Highway 401 interchange, resulting in a 29% reduction in traffic along Liberty Street.

Supports planned population and employment growth by providing accessibility to growing areas

Improves east-west movement within Bowmanville due to Longworth Avenue improvements and extension, as well as the Baseline Road improvements.

Although Alternative C includes the full Longworth Extension through to Regional Highway 2 near Holt Road, it is recommended that both the full extension (with improved / widened Holt Road) and the shortened extension through to Maple Grove Road (with improvement to Maple Grove Road and Bloor Street) be carried forward for further study as part of the EA process. The full extension performs marginally better from a technical point of view by providing a more direct route to Holt Road and its Highway 401 interchange, but the full extension crosses through a known Provincially Significant Wetland. Both the full extension and the shortened extension also have the potential issues with property impacts. Future phases of the EA process will evaluate the benefits, impacts, and potential mitigation measures (e.g. route alternatives) in more detail.

## 2.5 Intersection Operations

Growth in traffic also triggers the need for modifications to intersection control and / or road geometry at selected locations. The below noted modifications at the following intersections are recommended to address the future (i.e., Horizon Year 2031) capacity issues identified through the CTMP assessment process:

### Regional Highway 2/Prestonvale Road

- Westbound left-turn phase becomes permissive and protected

### Regional Highway 2/Scugog Street

- Eastbound and northbound left-turn phases become permissive and protected.
- Southbound shared thru/right configuration modified to separate through and right-turn lanes.

The intersection of Regional Road 57 / Concession Road 3 is proposed to be reconfigured which would result in North Scugog Court being converted into a cul-de-sac and Concession Road 3 connecting directly with Regional Road 57. The current road configuration has the potential to create blockages for traffic attempting to turn left onto Concession Road 3 from Regional Road 57 as westbound traffic on North Scugog

Court queues. No further modifications are required at this intersection and stop sign control is suggested to be retained, with the intersection monitored to determine when signals would be required.

### **Implementation Strategy**

The key recommendations of the CTMP are intended to be implemented through a series of strategic policies and specific infrastructure optimization / improvements. The capital funding requirements for the proposed road network improvements recommended as part of this CTMP for short term (2015 to approximately 2021) and medium term (approximately 2021 to horizon year 2031) time horizons are estimated to be \$65,000,000.

Several of the recommended projects are classified as Schedule C, requiring a higher level of public consultation. According to the Class Municipal EA process, additional studies (i.e., environmental assessments) are required to obtain approval to proceed with project implementation. The six identified Schedule C projects, all located within or adjacent to Bowmanville, are as follows:

- Baseline Road from Mearns Avenue to Holt Road – Upgrade Standards/Bridge Construction
- Baseline Road from Lambs Road to Waverly Street – Widening to 4 lanes
- Longworth Avenue Extension (A):
  - Longworth Avenue Extension (a and b) from Regional Road 57 to Bowmanville
  - West Urban Boundary – Widening to 4 lanes
  - Longworth Avenue Extension (a) from Bowmanville West Urban Boundary to Holt Road – New Arterial 4 lanes
  - Holt Road from Longworth Avenue Extension (a) to Highway – Widening to 4 lanes

#### Longworth Avenue Extension (B):

- Longworth Avenue Extension (a and b) from Regional Road 57 to Bowmanville West Urban Boundary – Widening to 4 lanes
- Longworth Avenue Extension (b) from Bowmanville West Urban Boundary to Maple Grove Road – New Arterial 4 lanes
- Maple Grove Road from Longworth Avenue Extension (b) to Bloor Street – Widening to 4 lanes
- Holt Road from Baseline Road to north limit of Highway 401 interchange – Widening to 4 lanes
- Lambs Road from Regional Highway 2 to Baseline Road – Widening to 4 lanes
- Lambs Road Interchange

Note that Longworth Avenue Extension (A) and Longworth Avenue Extension (B) are alternate road network options that are to be assessed in the same Schedule C Class EA project.

### 3. Recommendations

It is recommended that Council approve the Clarington Transportation Master Plan – Final Report. In addition it is recommended, pending approval of the Clarington Transportation Master Plan – Final Report, that a Notice of Study Completion, Attachment No. 1, be published as required by the Municipal Class Environmental Assessment process.

### 4. Strategic Plan Application


Recommendations of this report implement Action 4.1 of the Strategic Plan and Council's four year objective: "Enable safe, efficient traffic flow and active transportation".

### 5. Concurrence

This report was prepared in consultation with the Planning Services Department, the Operations Department and several other external agencies.

### 6. Conclusion

The approval of the Clarington Transportation Master Plan-Final Report will be a guiding document moving forward in establishing a strong transportation network to support Clarington's future growth.

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Attachments:

Attachment No. 1 Final Clarington TMP Notice of Completion

There are no interested parties to be notified of Council's decision.

ASC/RA/jb



## Notice of Study Completion

# Clarington Transportation Master Plan

The Municipality of Clarington has prepared their first Transportation Master Plan following a Municipal Class Environmental Assessment (MCEA) for a municipal-wide Transportation Master Plan (TMP). This study has followed an approved process under the Environmental Assessment Act and was conducted in accordance with the requirements of Phases 1 and 2 of the Municipal Class Environmental Assessment document (October 2000, as amended in 2007). Master Plans are long-range plans that integrate infrastructure requirements for existing and future land use with environmental assessment planning principles in an effort to make comprehensive planning decisions. This Transportation Master Plan outlines improvements needed to the Municipality's transportation network to meet the forecasted travel demand to year 2031. On **December 12, 2016**, the Municipality of Clarington Council approved the recommendations in the Clarington Transportation Master Plan (CTMP) recognizing that each individual project recommended in the Plan will be subject to the provincial Municipal Class Environmental Assessment process, and Council approval for funding prior to implementation.

The CTMP provides the context and justification to implement specific transportation projects in the Municipality by 2031, including selected intersection improvements, road widenings and road extensions. All the recommended road network improvements will be subject to further study, public consultation and, unless previously approved, the requirements of the Municipal Class Environmental Assessment process. In addition the Plan includes strategies for the management of transportation demand, transit improvements and the expansion of Clarington's active transportation network which are equally as important as the road network improvements.

The CTMP is strategically aligned with the Municipality's Official Plan Review and Update to ensure a seamless planning process. The study will incorporate public consultation to define a scope of issues, develops a multi-modal transportation vision (i.e., active transportation modes such as walking and cycling, and established modes such as personal assistive devices, public transit, automotive, rail initiatives, goods movement, etc.), forecasts future travel demands, identifies opportunities, existing deficiencies, recommends new transportation facilities, establishes policies and priorities, and provides an action plan for implementation.

The Clarington Transportation Master Plan is available for public viewing at the Municipality of Clarington's website at <http://ctmp.clarington.net> and [www.clarington.net/ctmp](http://www.clarington.net/ctmp) at all Clarington Libraries and at the Clarington Town Hall during regular business hours (40 Temperance Street, Bowmanville, ON L1C 3A6).

For further information on the Clarington Transportation Master Plan please contact the following project team members:

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