

# THE COMPLETE STREETS CATALOGUE:

Understanding  
Complete Streets in the  
Greater Golden  
Horseshoe Region

tcat

toronto centre for  
active transportation



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Clean Air Partnership (CAP) is a registered charity dedicated to improving air quality, minimizing greenhouse gas emissions and reducing the impacts of air pollution and climate change. The Toronto Centre for Active Transportation (TCAT), a project of CAP, advances knowledge and evidence to build support for safe and inclusive streets for walking and cycling, and believes that active transportation plays a critical role in creating environmentally and economically sustainable cities.



This work was generously supported by the Ministry of Municipal Affairs and Housing through the *Places to Grow Implementation Fund*.

Given the recent momentum around the concept of Complete Streets in Canada, there is a need to fully understand how this idea is being understood and implemented. Between 2014-2015, the Toronto Centre for Active Transportation (TCAT), Ryerson University and the University of Toronto worked together on a research project to develop multiple tools aimed at improving the capacity of the Greater Golden Horseshoe municipalities in planning and evaluating transportation infrastructure, particularly around active transportation.

The research team gathered the information presented here through collaboration with practitioners in the Greater Golden Horseshoe who have implemented, or are in the process of implementing, Complete Streets projects. Content here is also presented online in an easy-to navigate and accessible way so that municipalities seeking to implement their own Complete Streets projects can refer to existing examples and tailor approaches for their own needs.

We reviewed one example from each community (at our interviewee's choosing) to feature for this catalogue. Featured projects are not necessarily 'best practices', but were chosen in order to demonstrate the diversity of Complete Streets approaches throughout the Greater Golden Horseshoe. For more on our methodology see Appendix A on the last page (i) of this package.

This Catalogue is divided into three parts:

#### **Part A – The Checklist**

The checklist is a snapshot of the detailed information collected.

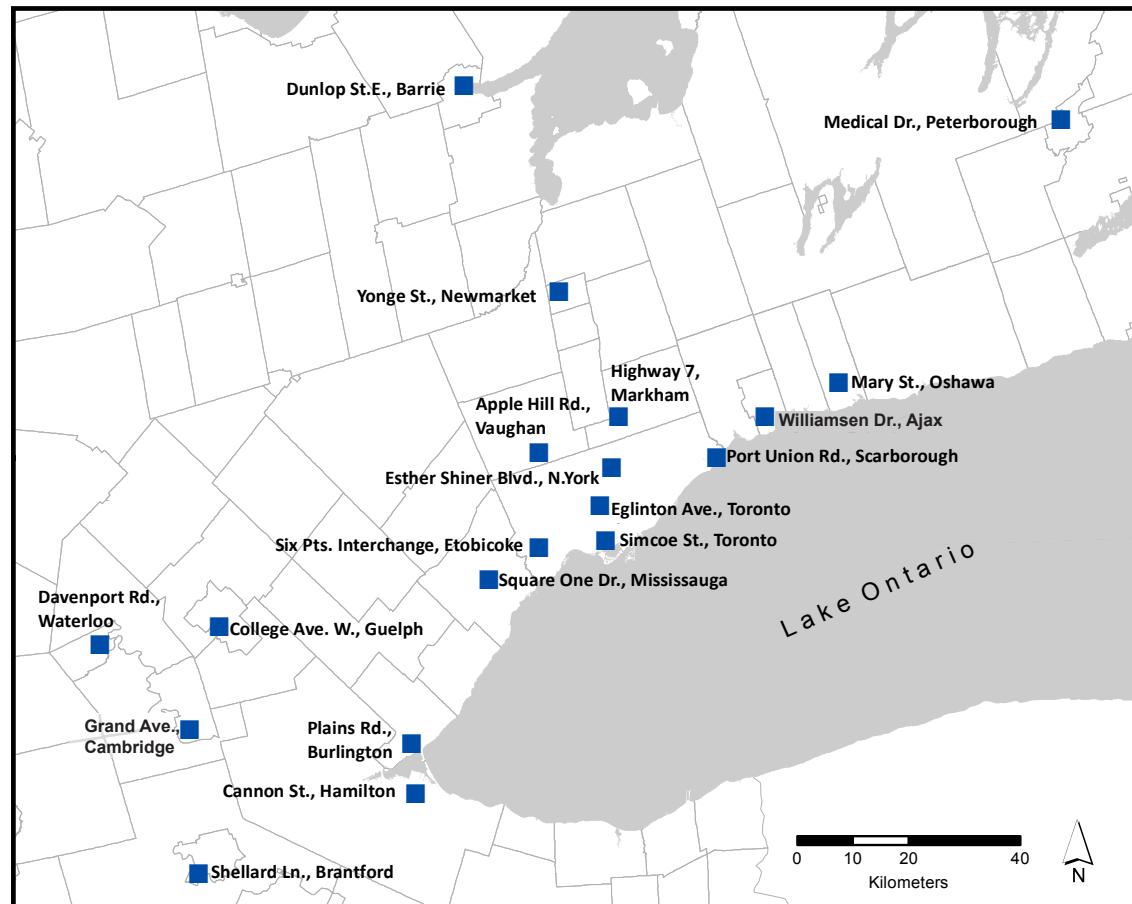
#### **Part B – Interview Data**

This section provides the next layer of detail (from municipal staff and online research) explaining context and key elements of each specific project.

#### **Part C – Case Studies**

Several cases were chosen to provide detailed background and insight into select projects that illustrate the range of possibilities of Complete Streets projects.

**Map 1 - Complete Streets Catalogue Projects**



**THE CHECKLIST**

Location	Project Name	Fully Implemented	Transit Improvement	Road Diet	Cycling Improvement	Pedestrian Improvement	Streetscaping	Traffic Calming	Accessibility Improvement	Case Study
										
Town of Ajax	Williamsen Drive				✓					
City of Barrie	Dunlop Street East					✓	✓	✓	✓	✓
City of Brantford	Shellard Lane			✓	✓	✓	✓	✓	✓	✓
City of Burlington	Plains Road				✓	✓	✓	✓		
City of Cambridge	Grand Avenue	✓			✓	✓				
City of Guelph	College Avenue West	✓		✓	✓		✓	✓		

**THE CHECKLIST**

Location	Project Name	Fully Implemented	Transit Improvement	Road Diet	Cycling Improvement	Pedestrian Improvement	Streetscaping	Traffic Calming	Accessibility Improvement	Case Study
										
City of Hamilton	Cannon Street			✓	✓	✓			✓	✓
City of Markham	Highway 7	✓	✓		✓	✓	✓		✓	
City of Mississauga	Square One Drive	✓				✓	✓	✓	✓	✓
Town of Newmarket	Yonge Street		✓		✓	✓	✓	✓	✓	
City of Oshawa	Mary Street	✓		✓	✓				✓	
City of Peterborough	Medical Drive	✓			✓	✓	✓			
City of Toronto Downtown	Simcoe Street			✓	✓	✓		✓	✓	✓
City of Toronto Etobicoke	Six Points Interchange				✓	✓	✓			

**THE CHECKLIST**

Location	Project Name	Fully Implemented	Transit Improvement	Road Diet	Cycling Improvement	Pedestrian Improvement	Streetscaping	Traffic Calming	Accessibility Improvement	Case Study
										
City of Toronto North York Centre	Esther Shiner Boulevard	✓			✓	✓	✓		✓	
City of Toronto Scarborough Centre	Port Union Road				✓	✓	✓	✓		
City of Toronto Yonge Eglinton	Eglinton Connects	✓	✓	✓	✓	✓	✓	✓		
City of Vaughan	Apple Mill Road				✓	✓	✓			
City of Waterloo	Davenport Road	✓		✓	✓	✓	✓	✓	✓	✓

**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Barrie	<p><b>Dunlop Street East</b> street improvements occur between Wallcaster Street and Toronto Street. At this stage, this project is a design-driven initiative to enrich the public realm and enhance placemaking. The parking lot parkettes are a central to this strategy.</p> <p>Other elements are contingent on future phases.</p>	<p>The abundance of parking along the segment led to strategic uses of parking lane spaces. Existing conditions include:</p> <ul style="list-style-type: none"> <li>• 2 traffic lanes and 2 parking lanes</li> <li>• Posted speed limit of 40km/h</li> <li>• The City is exploring options to further re-purpose traffic lanes for expanded public realm use (e.g. pedestrian streets).</li> </ul>	<p>No transit running directly along the street but, connections to transit nodes are present at several points.</p>	<p>Exploring options in future phases</p>	<p>This project installed a series of “patio parkettes” on parking spaces. A pilot of this approach was very successful, so it is now being implemented on an ongoing basis. Street-scape and pedestrian features include:</p> <ul style="list-style-type: none"> <li>• Pedestrian scrambles</li> <li>• Expanded use of zebra crossings</li> <li>• A suite of character pavers, planters and street furniture</li> <li>• Seasonal “patio parkettes” installed in parking spaces</li> </ul>	<p>Dunlop Street will be outfitted with the following accessibility improvements in future phases:</p> <ul style="list-style-type: none"> <li>• Gripping domes</li> <li>• Textured ‘shoulder’ for the sidewalk to improve accessibility and navigation.</li> </ul>

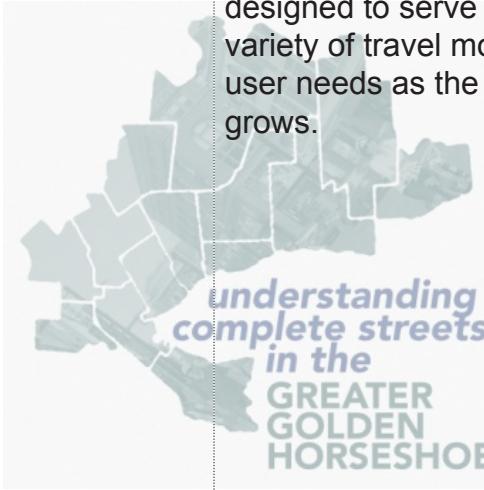
**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 <b>City of Burlington</b>						
 <b>Plains Road</b> (King Road to Francis Road) is a section of an ongoing retrofit project that is working toward a better balance between modes of travel. Given the large scale of the project, it is divided into seven phases.  Plains Road is a part of a city-wide strategy to coordinate road resurfacing work with bike infrastructure improvements and streetscaping upgrades. While Plains Road is constrained in terms of its right-of-way, other projects in the City have implemented painted green conventional bike lanes where space allows. <i>understanding complete streets in the greater golden horseshoe workshop</i> See <a href="http://www.tcat.ca/knowledge-centre/plains-road-case-study/">http://www.tcat.ca/knowledge-centre/plains-road-case-study/</a> for a case study looking at other sections of Plains Road.	<ul style="list-style-type: none"> <li>4 traffic lanes</li> <li>Posted speed limit was reduced from 60 – 70km/h in some sections to 50km/h.</li> </ul>	One of the busiest regular bus routes operates along this street.	Bike improvements included a widened shoulder with painted edgelines. This functions similar to a conventional bike lane but is not an official bike lane as its 1.5M width is short of the 1.7M standard.  Other upcoming sections along Plains Road will explore the potential of narrowing traffic lanes to achieve the full 1.7M for bike lanes.	More comprehensive streetscaping and urban design planned for future stages. Improvements currently implemented include: <ul style="list-style-type: none"> <li>Widened sidewalks</li> <li>Landscaped median that acts as a pedestrian refuge island.</li> <li>Crosswalks using distinctive on-road character paint designs.</li> <li>Trees and planters</li> <li>Lay-by parking buffers pedestrian realm from traffic.</li> </ul>	Street will be outfitted with the following accessibility improvements in future phases: <ul style="list-style-type: none"> <li>Gripping domes</li> <li>Textured 'shoulder' for the sidewalk to improve accessibility and navigation.</li> </ul>	

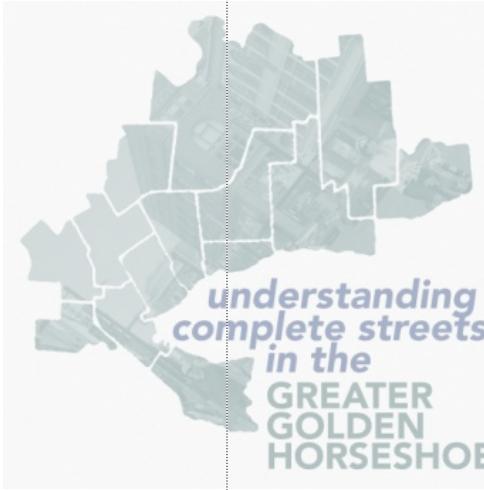
**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Hamilton	<p><b>Cannon Street</b> is between Ottawa and Sherman St. The area is transitioning from its traditional industrial economic base and towards more diverse uses and ways of getting around. Part of this shift is toward more residential and mixed uses along the corridor.</p> <p>Cannon Street will also play a larger role in connecting the renovated football stadium to surrounding neighbourhoods.</p>  <p><i>understanding complete streets in the GREATER GOLDEN HORSESHOE</i></p>	<p>Originally designed to accommodate truck traffic. Changes to the economy and shifts in local land-use have prompted changes in road use:</p> <ul style="list-style-type: none"> <li>Changed from 3-5 traffic lanes (depending on segment of road) to 2-3 traffic lanes with parking lane along some segments.</li> <li>Posted speed limit of 50km/h</li> </ul>	<p>Intermittent bus service along the corridor – not a major transit route.</p>	<p>Cycling improvements include:</p> <ul style="list-style-type: none"> <li>Separated bi-directional (contra flow) bike lane using planters and bollards.</li> <li>On-street green paint treatments denoting bike lanes</li> <li>Two types of bike boxes are present to improve intersection safety (one-stage and two stage).</li> </ul>	<p>Comprehensive pedestrian improvements are forthcoming pending the implementation of the Cannon Street Masterplan. Current improvements have been made to help transition of the street in the meantime.</p>	<p>The “Urban Rail System” is implemented along Cannon as it is elsewhere across the City. This award-winning accessibility approach includes:</p> <ul style="list-style-type: none"> <li>Textured way-finding symbols to aid navigation for the visually impaired.</li> <li>Key services and businesses extend this network directly to their doorstep where necessary.</li> </ul>

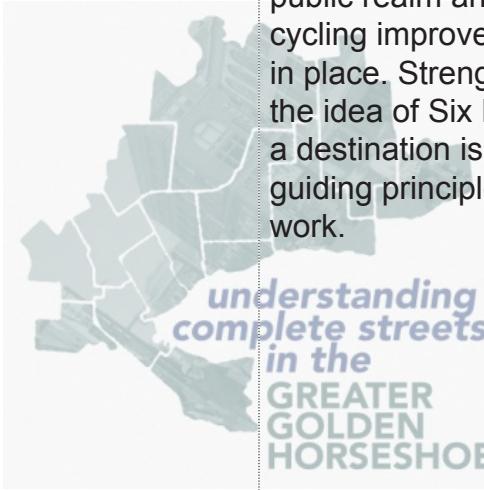
**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Markham	<p><b>Highway 7 West</b> running through Markham is a large-scale road resurfacing effort along a regional highway. Cycling and streetscape improvements are integrated with the VivaNext BRT capital project. Highway 7 is an example of extending capital improvements to all modes and abilities.</p> <p>This infrastructure is designed to serve a wider variety of travel modes and user needs as the city centre grows.</p> 	<ul style="list-style-type: none"> <li>Six traffic lanes</li> <li>Posted speed limit of 60-70 km/h depending on section.</li> </ul>	<p>Highway widened to accommodate two dedicated bus rapid transit lanes in the centre of the street.</p> <p>Near a Mobility Hub as identified by Metrolinx.</p>	<ul style="list-style-type: none"> <li>Bike lanes with painted buffer</li> <li>On-street green paint treatments denoting bike lanes</li> <li>Left turn bike boxes with comprehensive explanatory signs describing how they are used</li> </ul>	<ul style="list-style-type: none"> <li>Transit medians act as pedestrian crossing islands.</li> <li>Multiple-stage pedestrian crossing signals</li> <li>Streetscape amenities including planters, furniture and pavers planned for future phases.</li> </ul>	<p>New VivaNext station platforms feature gradual inclines, extra wide door clearances, height-sensitive fare devices and grab bars for lowering onto benches.</p>

**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 Town of Newmarket	 <p><b>Yonge Street</b> (between Davis and Mulock) is a Complete Streets project happening in concert with regional capital investments in transit (VivaNext). The project anticipates growth in and around the Urban Growth Centre of Newmarket and seeks to make this investment as inclusive as possible.</p> 	 <ul style="list-style-type: none"> <li>4 traffic lanes converted to 2 traffic lanes plus a left turning lane</li> <li>Posted speed limit changed from 50km/h to school friendly 40km/h.</li> </ul>	 <p>Highway widened to accommodate two dedicated bus rapid transit lanes in the centre of the street. Near a Mobility Hub as identified by Metrolinx.</p>	 <ul style="list-style-type: none"> <li>Bike lanes with painted buffer</li> <li>On-street green paint treatments denoting bike lanes</li> <li>Left turn bike boxes with comprehensive explanatory signs describing how they are used</li> <li>Potential to implement signalized left turns in future phases</li> </ul>	 <ul style="list-style-type: none"> <li>Transit medians act as pedestrian crossing islands.</li> <li>Multiple-stage pedestrian crossing signals</li> <li>Streetscape amenities including planters, furniture and pavers planned for future phases.</li> </ul>	 <p>New VivaNext station platforms feature gradual inclines, extra wide door clearances, height-sensitive fare devices and grab bars for lowering onto benches.</p>

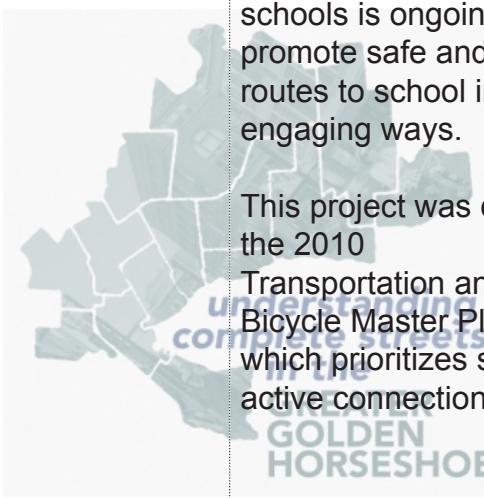
**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Toronto: <b>Etobicoke Centre</b>	<p><b>Six Points</b> is a complex intersection of several major arterials (intersection of Bloor, Kipling and Dundas). The project includes a large-scale redesign of traffic flows and an comprehensive redevelopment of largely brownfield sites.</p>	<ul style="list-style-type: none"> <li>4-plus traffic lanes depending on road segment.</li> <li>Posted speed is 50km/h.</li> </ul>	<p>Near the Kipling Mobility Hub as identified by Metrolinx. Regular bus service connects to this hub.</p>	<ul style="list-style-type: none"> <li>On-boulevard cycle tracks will be implemented</li> <li>Exploring priority signals for future phases.</li> </ul>	<ul style="list-style-type: none"> <li>Widened sidewalks</li> <li>New sidewalks connecting existing paths, open spaces, and future development</li> </ul>	
 <p><i>understanding complete streets in the GREATER GOLDEN HORSESHOE</i></p>	<p>To support this work, a comprehensive plan of public realm and cycling improvements is in place. Strengthening the idea of Six Points as a destination is a guiding principle of this work.</p>				<ul style="list-style-type: none"> <li>A suite of new signalized crossings with on-street markings</li> <li>Landscaped pedestrian refuge island on Dundas Street.</li> <li>Increased tree canopy, planters street furniture are in the design stages for future phases.</li> </ul>	

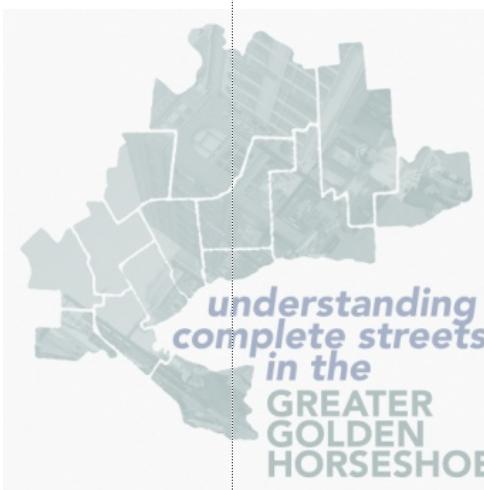
**INTERVIEW DATA****Major Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 City of Toronto: <b>Yonge/Eglinton Centre</b>	 Yonge/Eglinton Centre is a key focal point along the larger <b>Eglinton Connects</b> project. This segment of the project spans from Avenue Road to Mount Pleasant. This is a comprehensive Complete Streets retrofit that seeks to create an attractive and safe public realm to support intensification along the avenues.	 <ul style="list-style-type: none"> <li>4 traffic lanes converted into 3 traffic lanes including turning lane</li> <li>Lay-by parking</li> <li>Posted speed is 60km/h</li> <li>Road narrowing throughout to accommodate a widened boulevard.</li> </ul>	 A partially underground LRT will replace the current on-street bus service. As the current dedicated bus lane will not be needed once the LRT is implemented, some of this space will be reallocated toward Complete Streets improvements.  Yonge-Eglinton is also a Mobility Hub as identified by Metrolinx.	 <ul style="list-style-type: none"> <li>On-boulevard cycle tracks will be implemented.</li> <li>Exploring bike priority signals for future phases.</li> </ul>	 <ul style="list-style-type: none"> <li>Additional on-street crosswalk markings</li> <li>Upcoming elevated mall walkway will improve pedestrian flow across intersection.</li> <li>Urban design details including planters, furniture and pavers in the design stages</li> </ul>	 Gripping Domes

**INTERVIEW DATA****Minor Arterial Streets**

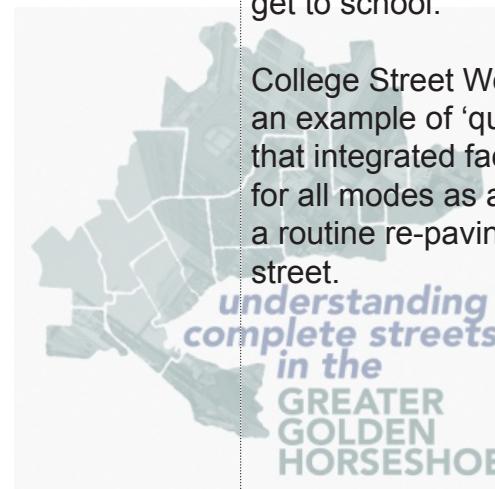
Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
Town of Ajax	<b>Williamsen Drive</b> (Ravenscroft Road to Harwood Avenue for the western portion; Thackery Drive to Audley Road for the eastern portion) is an upcoming project that will connect a school, a community centre and residential uses.	On-street parking redirected to one side of the street only. This allows for a right-of-way that accommodates for a better balance of transportation modes.	Lanes were narrowed for this same reason.	Regular bus service along the road connects to a nearby GO Station.	Conventional bike lanes together with a painted buffer where right-of-way allows.	
 <i>uncertaining comple Streets in the GOLDEN HORSESHOE</i>	A Safe Routes to School partnership with local schools is ongoing to promote safe and active routes to school in engaging ways.	2 traffic lanes, with left turn lane removed at several segments to allow for a wider right-of-way.	Posted speed is 50km/h.	Bike lanes exist alongside an off-road multi-use trail along some sections. Staff decided to make the bike lane continuous rather than divert cycle traffic to the multi-use trail for these sections.	This was done in the interests of maintaining a continuous bike network.	
	This project was driven by the 2010 Transportation and Bicycle Master Plan, which prioritizes safe and active connections.					

**INTERVIEW DATA****Minor Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Brantford	<p><b>Shellard Lane</b> is an ongoing project (from Veteran's Memorial Parkway westward past McGuiness Drive) that builds capacity for all modes of travel. The project anticipates future growth in the area and is an important connection between schools, open spaces and the surrounding neighbourhood.</p> 		Intermittent bus service	<ul style="list-style-type: none"> <li>Sidewalk widening to accommodate bikes and pedestrians.</li> <li>Paved off-street multi-use trail on one side of the street</li> <li>Sidewalk on other side of street.</li> <li>On-street markings at intersections to signal to drivers the presence of other modes crossing from the boulevard trail.</li> </ul>	<ul style="list-style-type: none"> <li>Additional crosswalks with on-street markings installed</li> <li>Sidewalk widened by 1M larger than standard.</li> <li>Installed large medians with fences to discourage mid-block crossings in unsafe areas.</li> </ul>	Attempted gripping textures (domes) for other projects in the City, but some durability issues arose. Gripping domes were breaking off in other projects so this type of approach was not used here.

**INTERVIEW DATA****Minor Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Guelph	<b>College Avenue West</b> (between Janefield Avenue and Edinburgh Road) is a project that acts as an important East-West cycling connection. Guided by the Bicycle Policy (2009) and Cycling Master Plan (2013), this street serves a high proportion of students who use a variety of modes of transportation to get to school.	2 traffic lanes, with left turn lane removed at several segments to allow for a wider right-of-way.	Regular bus service along the corridor.	<ul style="list-style-type: none"> <li>Conventional bike lanes in place of former traffic lane</li> <li>Culverts pushed back to accommodate cycling facilities</li> <li>Bike friendly sewer grate design</li> <li>Studying the appropriateness of bike boxes and intersection facilities.</li> </ul>	This project focussed on improving on-street facilities at this stage.	



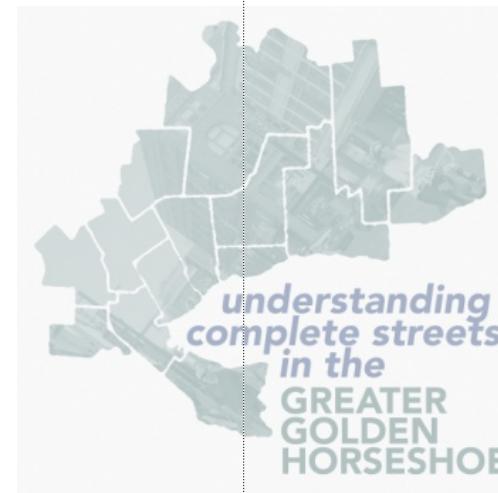
**INTERVIEW DATA****Minor Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 City of Peterborough	 <b>Medical Drive</b> is a new build street project that runs from Sherbrooke Street to Parkhill Road. The project is a minimal approach that incorporates an off-road multi-use trail that serves to strengthen travel connections between institutional uses (medical), a highschool and nearby mixed-use development.			 <ul style="list-style-type: none"> <li>Paved off-street multi-use trail on one side of the street</li> <li>Sidewalk on other side of street</li> </ul>	 Additional crossing with on-street markings implemented at key points near the high school	 The multi-use trail is a preferred surface for many users in chairs as it is considered a safe and most comfortable option.



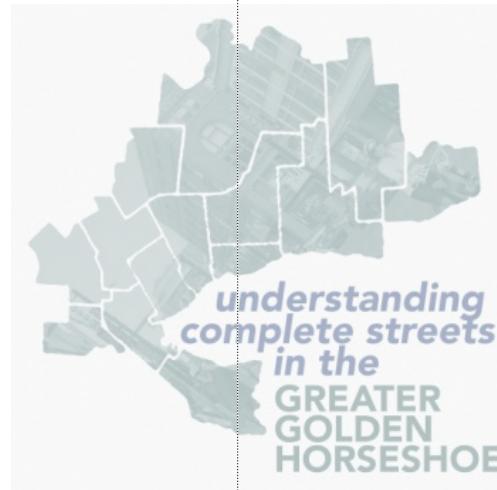
**INTERVIEW DATA****Minor Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 City of Toronto: <b>North York Centre</b>	 <b>Esther Shiner Road</b> connects a series of shopping destinations with institutions like North York General Hospital. This new-build project provided key infrastructure to support future development on the nearby Canadian Tire lands.	 Posted speed is 50km/h.	 Near a major subway station (a block north of Esther Shiner). Private retail shuttles (IKEA) and local bus service operate along this street.	 Conventional bike lanes	<ul style="list-style-type: none"> <li>Sidewalks are 4m wide to accommodate comfortable pedestrian flow along this 'shopping street'.</li> <li>Sidewalks widened beneath rail corridor to eliminate pinch points.</li> <li>Pedestrian crosswalks with zebra crossings</li> <li>Large landscaped median that acts as a pedestrian refuge island</li> <li>Planters and street trees to soften edges</li> </ul>	Surrounding infrastructure (rail corridor) meant that the street has a slope of the eastern end. This project used grading that was sensitive to accessibility needs of persons using chairs and walkers.



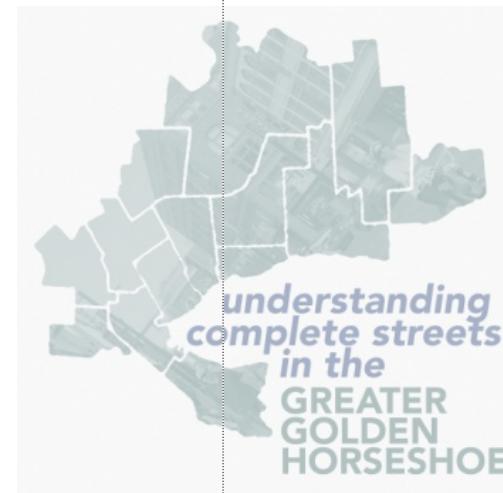
**INTERVIEW DATA****Minor Arterial Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 City of Toronto: <b>Scarborough Centre</b>	 <b>Port Union Road</b> (Lawrence Avenue East to Island Road) grew out of an addendum to an older environmental assessment from 2003. The project provides an important connection between the Waterfront Trail (to the south) and the Rouge Park trail system (to the north).	 <ul style="list-style-type: none"> <li>3 traffic lanes converted to 4 traffic lanes (including bike lane).</li> <li>Right hand turn bulb-outs for traffic calming purposes.</li> <li>Posted speed limit is 60km/h</li> </ul>	 <p>Regular bus service with connections along corridor to regional transit</p> <p>Near a Mobility Hub as identified by Metrolinx</p>	 <p>Conventional bike lanes (widened from the original design)</p> <p>Signage strategy forthcoming</p>	<ul style="list-style-type: none"> <li>Proposing new sections of sidewalk be implemented</li> <li>Landscaped medians serving as pedestrian refuge island</li> <li>Longer crossing times at signals</li> <li>Character pavers and planters added</li> </ul>	<p>Accessibility measures to be integrated into future phases.</p>

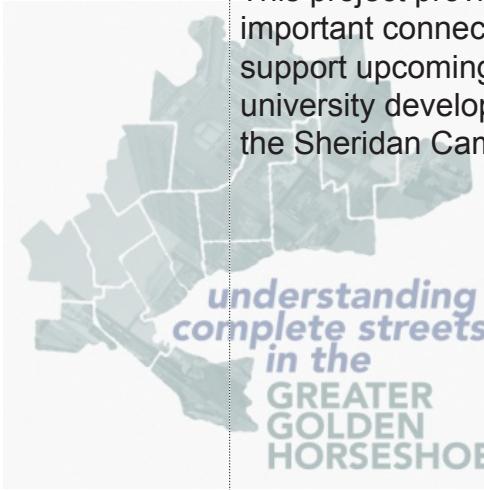


**INTERVIEW DATA****Collector Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 City of Cambridge	 <b>Grand Avenue</b> (Cedar Street to Park Hill Road E) was realized through a collaborative process. In order to minimize impact to parking, cycling infrastructure planned for a regional road was moved to a calmer parallel municipal street with a wider right-of-way. Provides a connection between key destinations and cultural institutions.	 <ul style="list-style-type: none"> <li>Removal of on-street parking was implemented in phases to ease the transition.</li> <li>Posted speed is 50km/h</li> <li>2 traffic lanes with centre left turn lane</li> </ul>	 Regular Bus Service	 Conventional bike lanes. Investigating bike boxes and intersection features going forward.	 Crosswalk zebra stripe markings at controlled intersections	



**INTERVIEW DATA****Collector Streets**

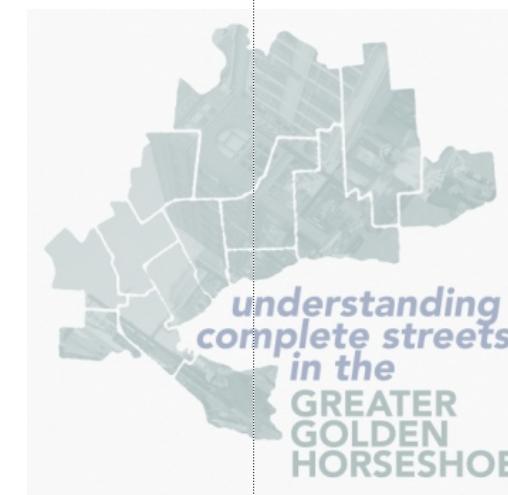
Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
 <b>City of Mississauga</b>	 <p><b>Square One Drive</b> (from City Centre Drive to Living Arts Drive) is designed as pedestrian-oriented 'flush street' where the sidewalk and traffic lanes are on the same plane (curbless edges). This design approach places all modes on the same level, encouraging all users to be more vigilant and aware of each other.</p> <p>This project provides an important connection to support upcoming university development on the Sheridan Campus.</p>  <p><i>understanding complete streets in the GREATER GOLDEN HORSESHOE</i></p>	 <ul style="list-style-type: none"> <li>2 traffic lanes</li> <li>Posted speed is 50km/h</li> <li>Traffic calming measures include roundabouts and pedestrian oriented on-street textures</li> </ul>	 <p>Regular bus service along the street.</p>	 <p>While no specific bike facilities are planned, the flush street is intended to be a more multi-mode friendly design.</p>	 <ul style="list-style-type: none"> <li>Landscaped median and pedestrian refuge island</li> <li>Additional on-street crosswalk markings</li> <li>Extensive planters, trees and green landscaping.</li> <li>Character pavers</li> <li>Street Furniture</li> </ul>	 <p>The on-street pedestrian textures have an accessibility function as vision impaired persons can feel when they are in the traffic lane.</p> <p>Lack of curbs overcomes some accessibility barriers.</p>

**INTERVIEW DATA****Collector Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
City of Oshawa	<b>Mary Street</b> is a Complete Street project running from Athol Street to Adelaide Street. Council identified traffic speeds along this street as a challenge.  This project set out to reduce vehicle speeds through a targeted road diet while also integrating a more multimodal approach to getting around this neighbourhood.	<ul style="list-style-type: none"> <li>4 traffic lanes along some segments</li> <li>4 traffic lanes converted to 2 traffic lanes (plus bike lane) along some segments.</li> <li>Posted speed is 50km/h.</li> <li>New all-way stop at Hillcroft and Mary Street</li> </ul>	Regular bus service along the corridor.	Conventional bike lanes	The project connects existing pedestrian realm assets including planters, character pavers and street furniture at key intersections.	City standard, with added gripping domes on sidewalk.

**INTERVIEW DATA****Collector Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Toronto: <b>Downtown</b>	<p><b>Simcoe Street</b> (From Queen Street West to Front Street) is a bike-focussed pilot project that provides a North-South connection to the existing network.</p> <p>The street runs through a dense, complex built up area and aims to provide a better balance of mode choices and increased safety for all road users.</p>	<ul style="list-style-type: none"> <li>3 traffic lanes converted to 1-2 traffic lanes (one is shared between parking and rush hour traffic lane)</li> </ul>	<p>High volume subway service and medium volume streetcar service at key nodes along corridor.</p>	<p>Simcoe is one of the first streets in Toronto to use contra-flow bike lanes separated by a parking lane. Bollards are also used along some segments. Other improvements include:</p> <ul style="list-style-type: none"> <li>Signage explaining the contra-flow movement</li> <li>On-street markings at intersections to signal drivers.</li> </ul>	<p>No specific pedestrian or public realm enhancements were a part of this project, but the reduced car traffic has had the effect of improving pedestrian conditions.</p>	<p>Gripping domes</p>



**INTERVIEW DATA****Collector Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
<b>City of Vaughan</b> 	<b>Apple Mill Road</b> (between Millway Avenue and Edgeley Boulevard) is a part of an incremental effort to improve street functionality in Vaughan Metropolitan Centre. The upcoming project connects to a range of retail destinations as well as new network opportunities along an improved Highway 7. 	 <ul style="list-style-type: none"> <li>• 2 though lanes and 2 parking lanes</li> <li>• Posted speed limit of 50km/h.</li> </ul>	 Near a major transit hub including an upcoming subway station and VivaNext bus rapidway – both expected around 2016.	 Grade separated cycle tracks	 A range of planned streetscape amenities are in the design phases.	

**INTERVIEW DATA****Collector Streets**

Location	General Description	Traffic	Transit	Cycling	Pedestrians	Accessibility
						
City of Waterloo	<p><b>Davenport Rd.</b> (between Northfield Drive and Lexington Road South) provides a key connection between a shopping destination and public realm assets including a nearby park.</p> <p>The neighbourhood also supports low and mid-density residential uses.</p> 	<ul style="list-style-type: none"> <li>Converted 4 traffic lanes to 3 traffic lanes, including turning lane.</li> <li>Centre medians and roundabouts installed as traffic calming measures</li> <li>Posted speed limit of 50km/h</li> </ul>	<p>A bus transit hub at the Conestoga Mall along Davenport Rd.</p> <p>Regular bus service along the corridor.</p>	<ul style="list-style-type: none"> <li>Conventional bike lanes</li> <li>Left turn lay-bys at 3-way intersections act as a safe waiting area for cyclists crossing traffic lanes</li> </ul>	<ul style="list-style-type: none"> <li>Landscaped medians</li> <li>Pedestrian refuge islands</li> <li>Additional crosswalk facilities with on-street markings</li> </ul>	<ul style="list-style-type: none"> <li>Curb cuts and ramps where possible</li> <li>Accessible pedestrian islands</li> <li>Gripping domes</li> <li>Audio crossing signals</li> </ul>

# City of Toronto - Downtown SIMCOE STREET



## DESCRIPTION

Simcoe Street in Downtown Toronto is an example of how Complete Streets approaches can be integrated into a complex, mature urban context. This pilot project provides a key north-south connection, as it links with on recent east-west cycling investments along Richmond St. W and Adelaide St. W. Currently running between Queen St. West to the north and Front St. to the south (with further phases to come), Simcoe St works toward improved active transportation network connections and a more inclusive balance of route options for pedestrians and cyclists.

Simcoe is notable because it is the first project in the Downtown to use a vehicle parking lane as a buffer for a contra-flow bike lane. In order to accommodate for this new facility, a road diet approach was taken, as 3 traffic lanes were converted to 2, including an off-peak parking lane. The public realm has seen offshoot benefits, as pedestrians are increasingly choosing Simcoe as a route since the street improvements.



## Key Features

### + CONTRA-FLOW BUFFERED BIKE LANES

Increased the flexibility of the facilities together with buffered bike lanes (with bollards) and sharrows in order to accommodate loading, pick-up and drop-off activity

### + CONNECT - GROW - RENEW

The guiding principle for Simcoe Street was to connect network gaps, expanded safe route options and renew existing routes by improving their performance for all users.

### + ABILITY TO TEST INSTANTLY

Large numbers of cyclists in the area allowed for rapid feedback (via intercept surveys) and early stage observation.



## CHALLENGES

As the project commissioned a full-scale environmental assessment, the front end of the Simcoe Street work required significant resources. However, this level of background study also yielded benefits as it provided a comprehensive understanding of available options and garnered meaningful buy-in.

Another challenge had to do with the prevalence of construction barriers. The large scale of construction in the Downtown led to complications in terms of how the project was initially received (e.g. bikes diverted off the intended paths). Construction pinch points also made Complete Streets solutions harder to study, as cyclists were sometimes unable to use the facilities as they were designed to be used.

# City of Hamilton CANNON STREET



## DESCRIPTION

Cannon Street is compelling example of using the concept of Complete Streets to help drive the transformation of an industrial area in transition. Running between Ottawa and Sherman Streets, Cannon Street is a major arterial that was initially designed for truck traffic. As the manufacturing economy changes, so does the functionality of the neighbourhood. With community and councillor support, city staff updated the street to reflect contemporary needs and uses.

The cycling facilities achieved by the project include contra flow cycle tracks (Cannon is a one-way street) separated by planters and supported by additional signals in both directions. Given that the corridor cuts through an older area, other cycling facilities (conventional bike lanes) were used along where the cycle tracks were not feasible. Street design began by considering the edges first – a practice that ensures that active transportation facilities are fairly integrated at the onset of the project. Overall project implementation cost for this phase of the project was in the area of \$850K.



## Key Features

### + BIKE BOXES

Two types of bike boxes (one and two stage) have been implemented to allow cyclists to cross over traffic lanes at intersections, improving safety and visibility for all users.

### + VISUALLY ENGAGING SAFETY FEATURES

The planters used to separate the cycle tracks lend an aesthetic quality to this safety feature. Bike lanes are treated with green paint to signal the presence of cyclists and to add definition to the streetscape.

### + CYCLING COMMUNITY DRIVEN

Yes We Cannon is a cycling advocacy group that was instrumental in implementing this project, collecting over 2,500 signatures in support of street improvements. The group continues to support and monitor the project on social media.

## 3.4 Kilometres

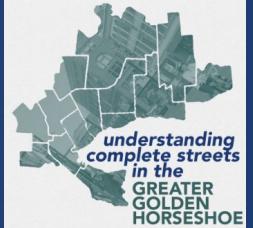
*of planter separated cycling facilities were added along Cannon St.*



## CHALLENGES

Motor vehicles backing out into the street is a concern, as much of the aging housing stock (interspersed with historical industrial uses) feature irregular driveways that were organically constructed before the time of comprehensive planning controls. This scenario makes backing out onto the street unpredictable, as driveways do not occur in a regular pattern. The issue is addressed by using a variety of cycling facilities (e.g. bollards instead of planters) at key points which allow vehicles to pull through. This challenge may improve over time as road users become acclimatized to new facilities.

# City of Brantford SHELLARD LANE



## DESCRIPTION

Shellard Lane is an example of a municipality taking road reconstruction as an opportunity to improve how the streetscape works for all modes and users. Significant recent growth (with more to come) and a concentration of schools along the corridor makes Shellard Lane an important connection in the community. City staff recognized the unique needs of students of all ages and made pedestrianization and active uses a priority in the reconstruction effort, which runs from Veterans Memorial Parkway to a kilometre west of Conklin Road.

Federal gas tax funds covered around half of the \$8.5M project costs, with phase 2 pending council approval and slated to begin in spring 2015. Although the project expanded the number of traffic lanes from 2 to 4, the road widening design accounted for the needs of a range of users. Investments in active transportation facilities, pedestrian infrastructure and safety measures work toward increasing the capacity of Shellard Lane for a variety of ages and modes of travel.



## Key Features

### + COMBINATION OF FACILITIES

A paved on-boulevard trail together with a pedestrian-only sidewalk allows for a variety of travel modes while maintaining a separation with pedestrians. On-street markings at intersections increase visibility at crossing points.

## Multi-use Trail

**provides a safe and active route to 3 nearby schools**

### + ADDITIONAL PEDESTRIAN SIGNALS

Two signalized crossings were installed near schools to provide safer crossing points for the large student population.



### + LANDSCAPED MEDIAN WITH FENCE

In order to separate increased traffic flow, medians were installed with landscaping to add definition and visual appeal to the street. In order to dissuade dangerous crossings, fencing was installed along key sections of the median.

## CHALLENGES

A central challenge of this Complete Streets project was to provide safe crossings for the many students that use Shellard Lane as a way to get to school. The installation of two new crossing signals and a barrier fence on the median have not fully addressed the problem, as students have been seen climbing the fence on the median as a shortcut to school. Planners and school administration are working out a collaborative solution that will promote safer crossing behaviors and direct students to the signalized intersections.

# City of Mississauga Square One Drive



## DESCRIPTION

Square One Drive is an extension of an existing street that anticipates increased pedestrian and vehicular traffic as the Civic Centre grows. The expansion of the Sheridan College campus provided an opportunity a Complete Streets approach to enhance the public realm, increase safety and build capacity for all modes of travel. Square One Drive provides an aesthetically pleasing connection to public transit hubs, major shopping destinations (Square One Mall), educational institutions and green space assets (Scholar's Green Park).



## Key Features

### + FLUSH STREET APPROACH

The design integrates all elements of the street and public realm on a single, curbless plane with pedestrian-oriented on street texturing. This encourages more awareness and safer interaction between modes of travel, while also eliminating many accessibility barriers.

*Connects destinations and institutions through Placemaking*

### + SINGLE LANE ROUNDABOUT

A traffic-calming feature used to decrease speeds and strike a better balance for all modes of travel. This is an important component to ensure the safety of the flush street design.



### + GREEN MEDIAN

A landscaped median with extensive plantings of trees and grasses uses a network of designated crossing paths that connect to surrounding destinations. This context sensitive design references the landscapes of nearby Scholar's Green Park.

## CHALLENGES

As with any project that changes the functionality of streets, there was a need for education around how the roundabout works. To increase awareness and understanding, several tactics were used throughout the consultation and early stages of implementation, including interactive digital animations, a brochure and a website.

## APPENDIX A - METHODOLOGY NOTE

The first step of this project was to gain a high level understanding of who is implementing Complete Streets projects and to discern whether policies, design guidelines and performance measurements are currently being used. In order to do this, an online survey was developed and sent to key contacts within municipalities identified as Urban Growth Centres (outlined in the Growth Plan for the Greater Golden Horseshoe).

The online survey was open between Sep 29th and Dec 5th, 2014. Secondly, a paper copy of the survey was included in the participant package for all 220 registrants of TCAT's 2014 Complete Streets Forum on Oct 6th. Thirdly, participation in the survey was solicited in TCAT's newsletter circulated on Nov 27th. In total, 12 surveys were submitted on-line, 5 submitted during phone interviews and 10 surveys were completed at the Complete Streets Forum. Survey responses were received from 27 municipalities.

This catalogue provides information from the 19 respondents who responded "yes" to our survey question: "Are there any existing or upcoming (fully funded) examples of Complete Streets in your community?"

Of the "yes" cases, we followed up with a comprehensive phone interview and / or internet research to collect detailed data around the following categories:

- Reason for implementation
- Surrounding land-use context
- Traffic lanes, traffic calming, posted speed limits
- Transit service and improvements
- Cycling facilities and improvements
- Pedestrian infrastructure and improvements
- Urban design and accessibility measures

Information communicated here is based entirely on this data, with the exception of the case studies in Part C which required an additional follow-up interview.



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