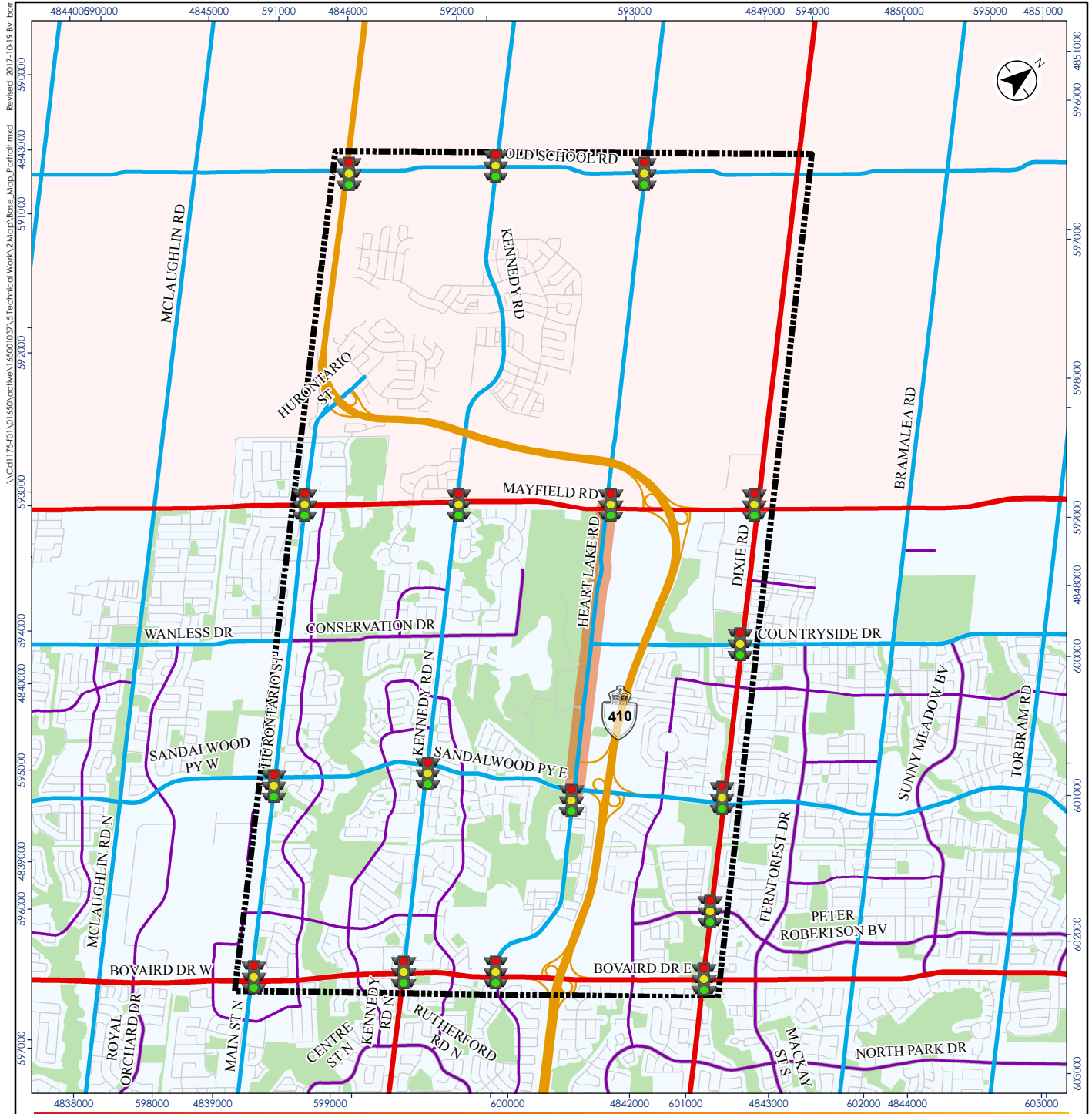


# Heart Lake Road Function and Design Review Public Information Centre

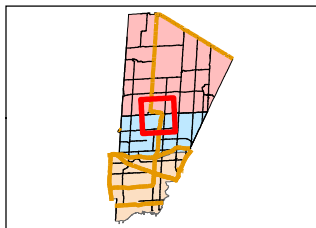
Date: Thursday, November 2, 2017

Time: 6:30 to 8:30 pm

Location: Loafer's Lake Recreation  
Centre – Auditorium  
30 Loafer's Lake Lane,  
Brampton



N:\CAD\175\1010\1650\cadd\1650\03\1650\Technical\Work\2\Map\Besa\_Midp\_Park.mxd Revised: 2017-10-19 By: bcr



**Notes**  
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**Legend**

	Study Area		Provincial Highway
	Study Corridor		Regional Road
	Parks		Arterial Road
	Caledon Municipality		Collector Road
	Brampton Municipality		Local Road
	Mississauga Municipality		Ramp
			Major Intersection

0 200 400 metres  
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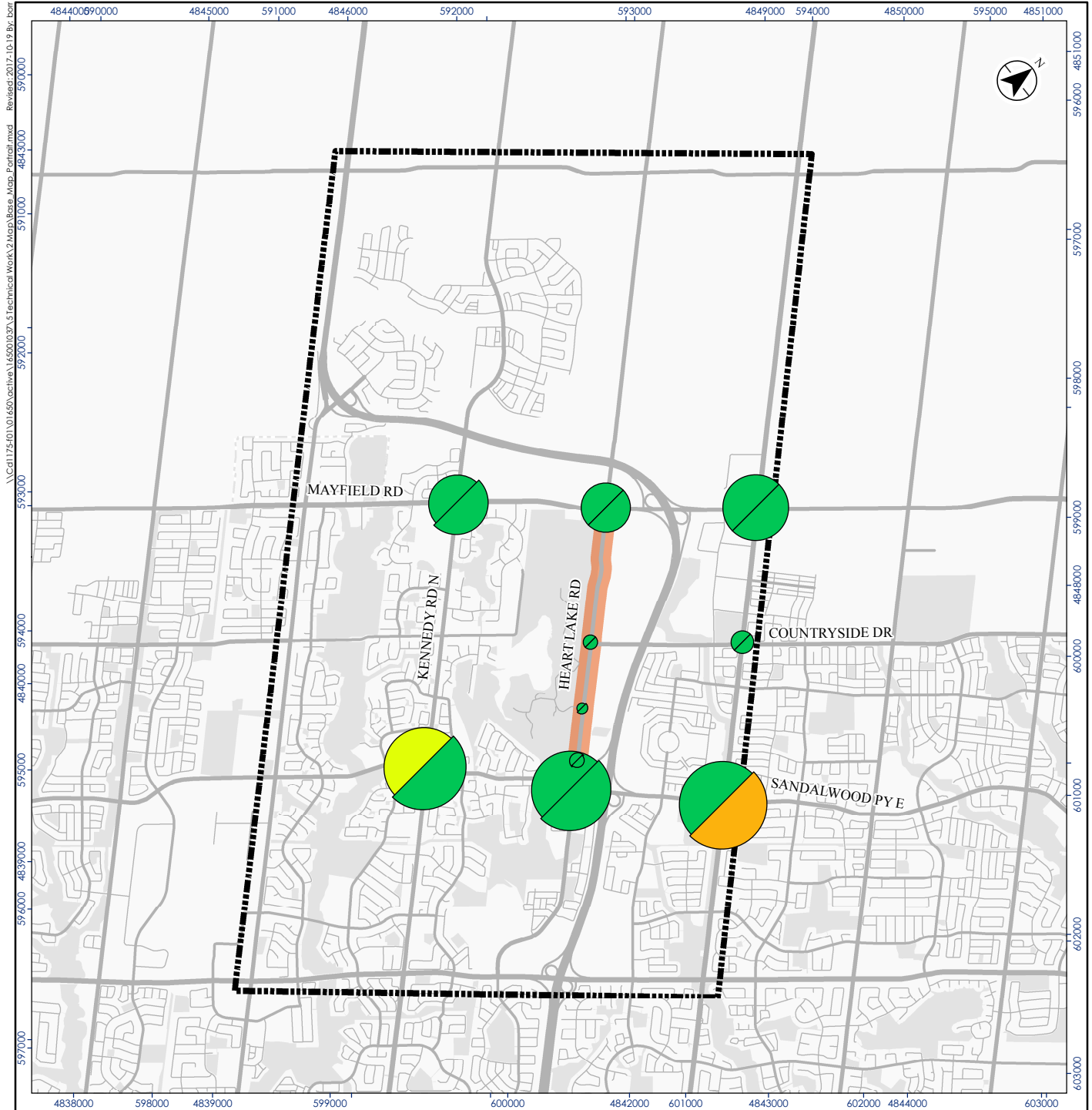


Project Location: Brampton, ON  
 165001037 REVA  
 Prepared by Brandon Orr on 2017-10-19

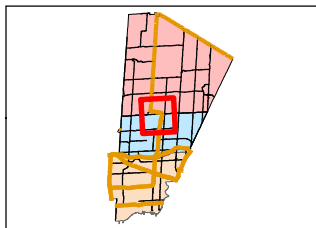
Client/Project: CITY OF BRAMPTON  
 HEART LAKE ROAD FUNCTION AND DESIGN REVIEW

Figure No. 1  
 Title: Study Area

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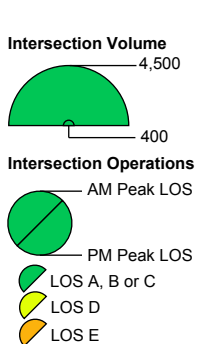
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- Legend**
- Study Area
  - Study Corridor
  - Parks
- Transportation**
- Provincial Highway
  - Regional Road
  - Arterial Road
  - Collector Road
  - Local Road
  - Ramp



0 200 400 metres  
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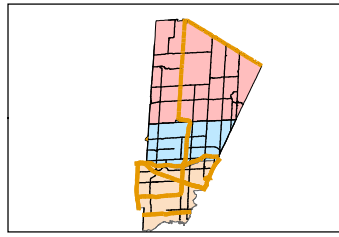
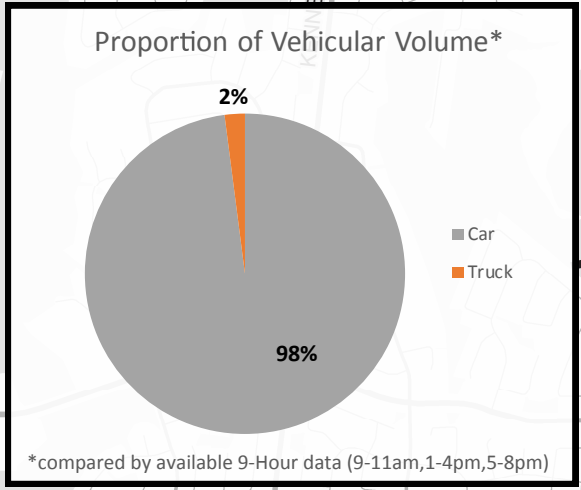
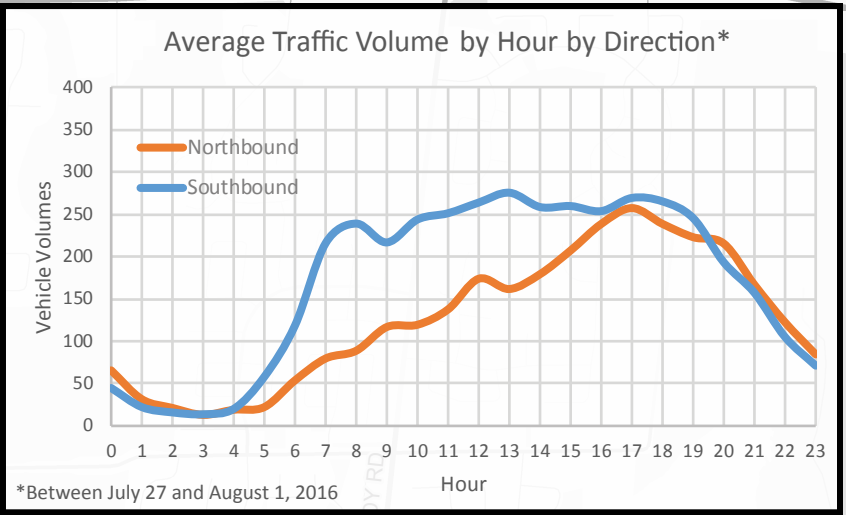
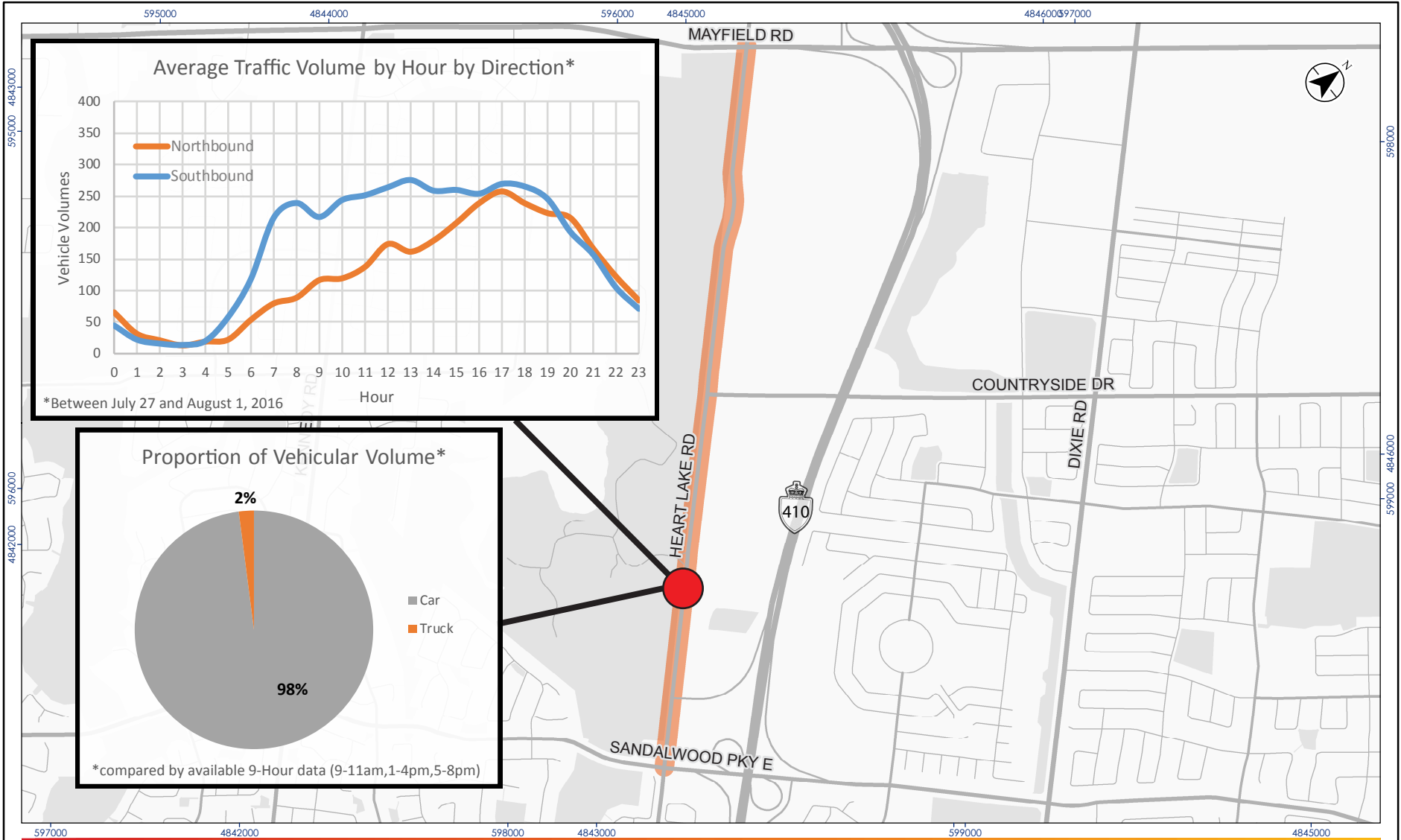
Project Location: Brampton, ON  
 16501037 REVA  
 Prepared by Brandon Orr on 2017-10-19

Client/Project: CITY OF BRAMPTON  
 HEART LAKE ROAD FUNCTION AND DESIGN REVIEW

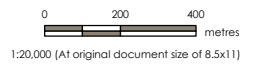
Figure No. 2  
 Title

**Intersection Volumes and Operations  
 Weekday AM and PM Peak Hours**

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- Legend**
- Study Corridor
  - Parks
  - Transportation**
  - Provincial Highway
  - Regional Road
  - Arterial Road
  - Collector Road
  - Local Road
  - Ramp



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
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  3. Orthomogery © First Base Solutions, 2016. Imagery Date, 20XX.



Project Location: 165001037 REVA  
 Municipality of: Prepared by Brandon Orr on 2017-10-20

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Client/Project: CITY OF BRAMPTON  
 HEART LAKE ROAD FUNCTION AND DESIGN  
 REVIEW

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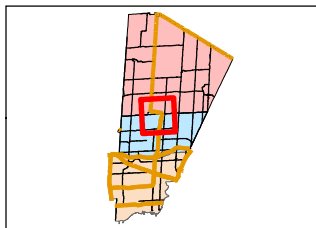
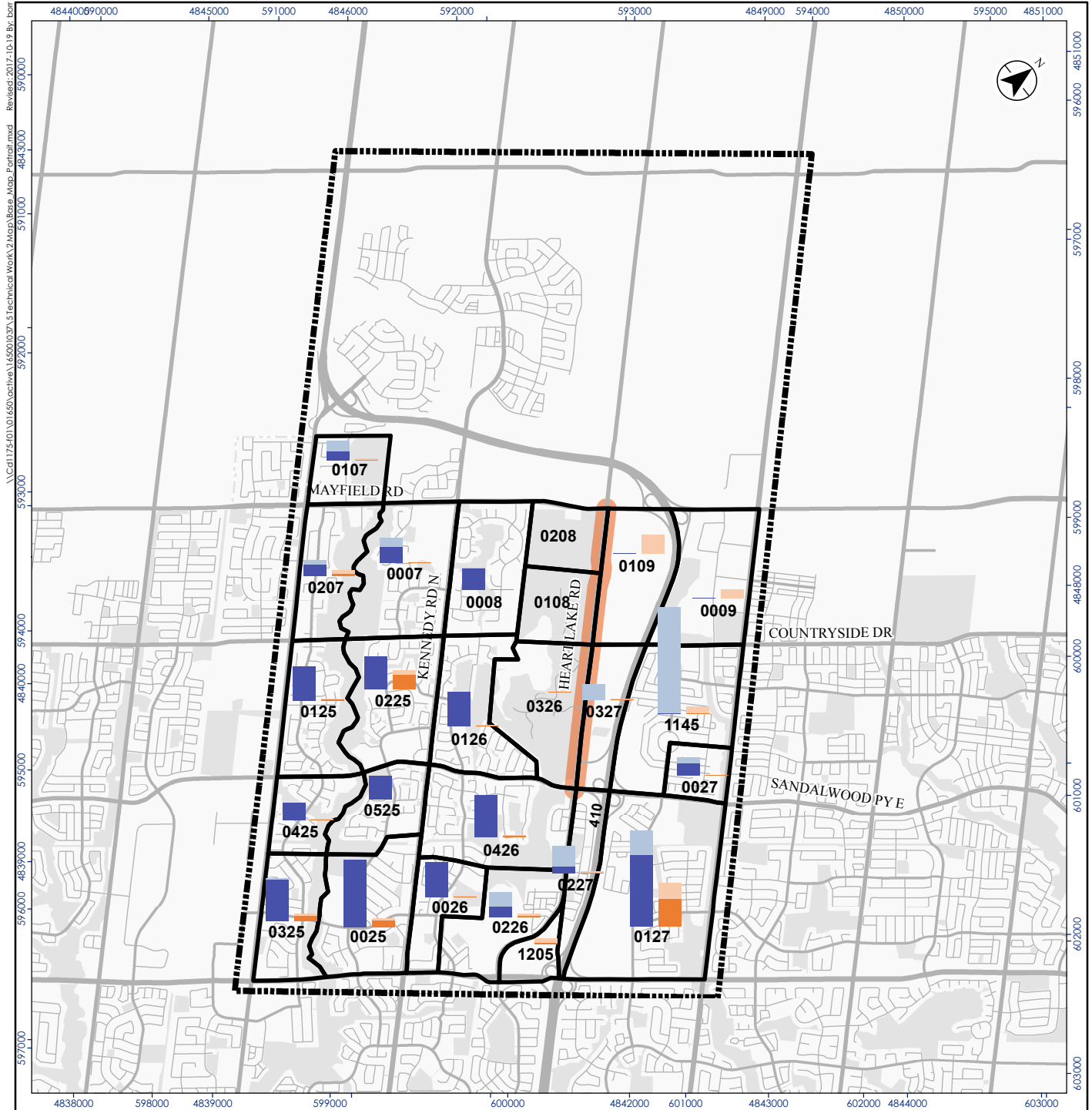
Figure No.: **3**

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Title: **Vehicular Volume Profile along Heart Lake Road**

V:\016501\active\165001037\5 Technical Work\2 Map\_Volume\_Profile\_Base.mxd Revised: 2017-10-20 By: bovr

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**Legend**

- Study Area
- Study Corridor
- Parks
- Transportation**
  - Provincial Highway
  - Regional Road
  - Arterial Road
  - Collector Road
  - Local Road
  - Ramp
- Small Geographic Unit (SGU)
- Future Population
- Existing Population
- Future Employment
- Existing Employment



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Project Location: Brampton, ON  
 16501037 REVA  
 Prepared by Brandon Orr on 2017-10-19

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 HEART LAKE ROAD FUNCTION AND DESIGN REVIEW

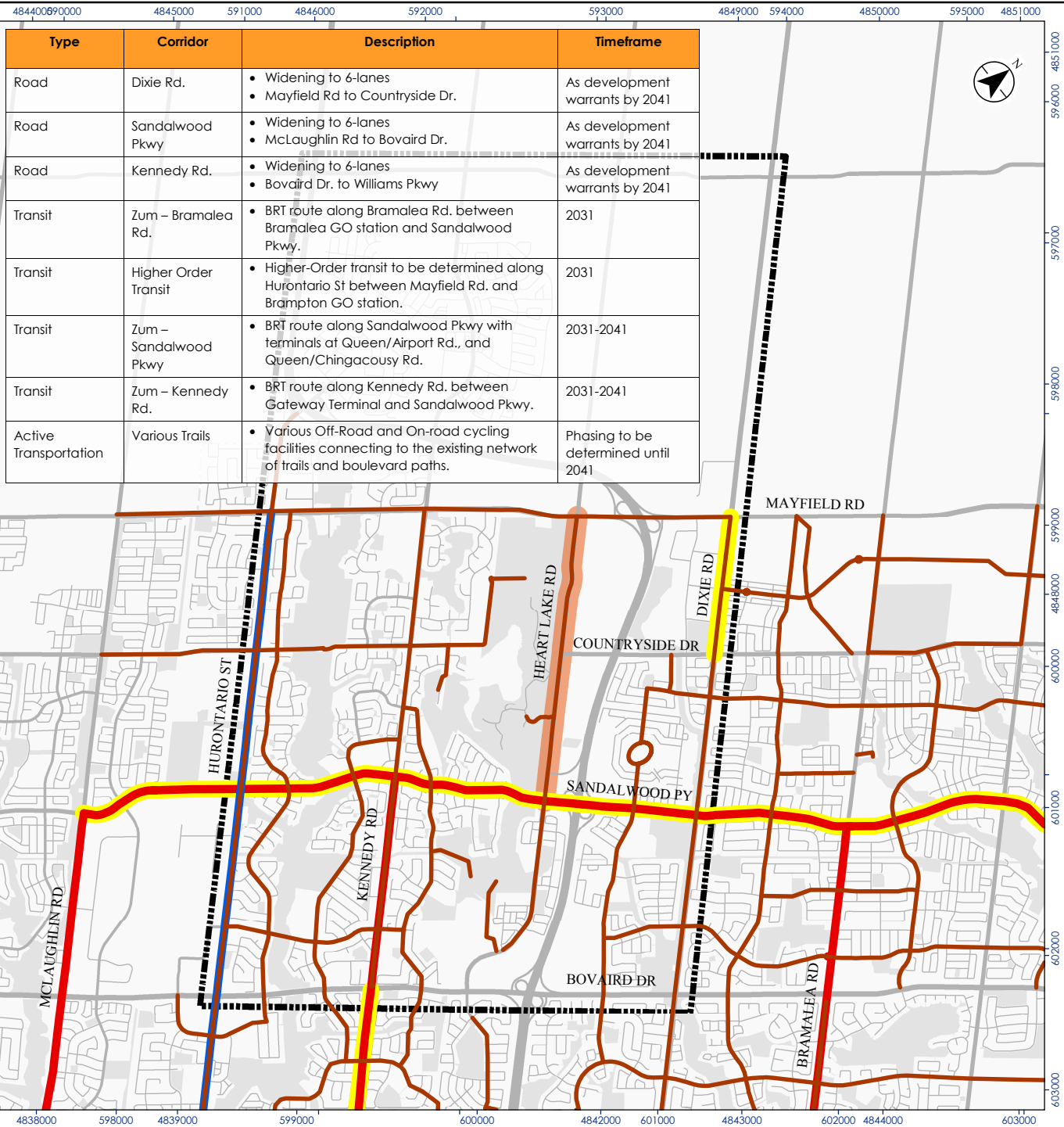
Figure No. 5  
 Title

**Study Area Population & Employment Forecast**

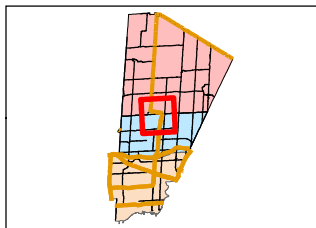
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
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Type	Corridor	Description	Timeframe
Road	Dixie Rd.	<ul style="list-style-type: none"> <li>Widening to 6-lanes</li> <li>Mayfield Rd to Countryside Dr.</li> </ul>	As development warrants by 2041
Road	Sandalwood Pkwy	<ul style="list-style-type: none"> <li>Widening to 6-lanes</li> <li>McLaughlin Rd to Bovaird Dr.</li> </ul>	As development warrants by 2041
Road	Kennedy Rd.	<ul style="list-style-type: none"> <li>Widening to 6-lanes</li> <li>Bovaird Dr. to Williams Pkwy</li> </ul>	As development warrants by 2041
Transit	Zum – Bramalea Rd.	<ul style="list-style-type: none"> <li>BRT route along Bramalea Rd. between Bramalea GO station and Sandalwood Pkwy.</li> </ul>	2031
Transit	Higher Order Transit	<ul style="list-style-type: none"> <li>Higher-Order transit to be determined along Hurontario St between Mayfield Rd. and Brampton GO station.</li> </ul>	2031
Transit	Zum – Sandalwood Pkwy	<ul style="list-style-type: none"> <li>BRT route along Sandalwood Pkwy with terminals at Queen/Airport Rd., and Queen/Chingacousy Rd.</li> </ul>	2031-2041
Transit	Zum – Kennedy Rd.	<ul style="list-style-type: none"> <li>BRT route along Kennedy Rd. between Gateway Terminal and Sandalwood Pkwy.</li> </ul>	2031-2041
Active Transportation	Various Trails	<ul style="list-style-type: none"> <li>Various Off-Road and On-road cycling facilities connecting to the existing network of trails and boulevard paths.</li> </ul>	Phasing to be determined until 2041



- Legend**
- Study Area
  - Study Corridor
  - Parks
  - Future Improvements**
  - Future Road Widening
  - Zum BRT
  - Higher Order Transit
  - Future Cycling Improvement

- Transportation**
- Provincial Highway
  - Regional Road
  - Arterial Road
  - Collector Road
  - Local Road
  - Ramp

0 200 400 metres  
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Project Location: Brampton, ON  
16501037 REVA  
Prepared by Brandon Orr on 2017-10-19

Client/Project: CITY OF BRAMPTON  
HEART LAKE ROAD FUNCTION AND DESIGN REVIEW

Figure No. 4

**Planned Future Improvements**

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# Travel Demand

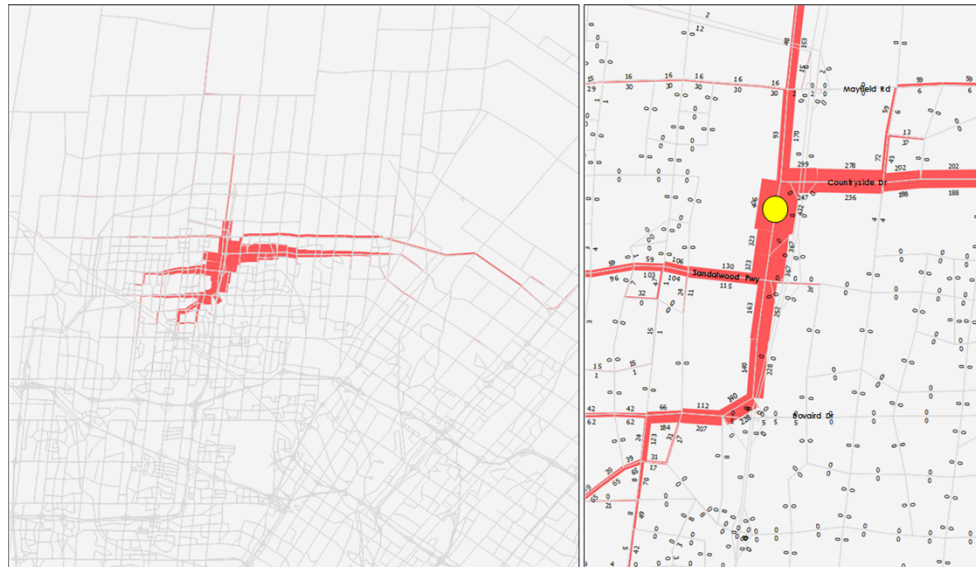
## SLA @ Heart Lake Road

### Demand 2016 / Network 2016 AM Peak



## SLA @ Heart Lake Road

### Demand 2016 / Network 2016 PM Peak



## Forecast

Link	Horizon					
	No changes on Network			Improved Network at Horizon		
	2021	2031	2041	2021	2031	2041
<b>Southbound</b>						
Heart Lake Rd, between Countryside Dr and Sandalwood Pwy	401	415	430	388	422	309
<b>Northbound</b>						
Heart Lake Rd, between Sandalwood Pwy and Countryside Dr	263	429	472	262	464	355

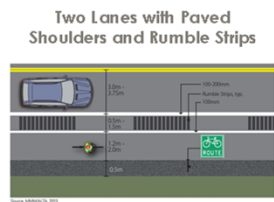
# Alternatives

## Bike Lane Alternatives

Alternative	Description
A	Do Nothing
B	Two Lanes with Paved Shoulders and Rumble Strips
C	Two Lanes with Separated Bike Lanes
D	Two Lanes with Separate Bi-directional Multi-Use Path on one Side
E	Narrow roadway and incorporate complete streets design
F	Hybrid Multi-Use Trail in Heart Lake Conservation Area
G	One-Way Road Operation with Separated Bike Lanes

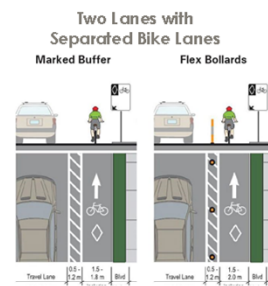
### Alternative B

- One direction on both sides of the roadway
- Provides dedicated spaces for cyclists away from traffic
- Provides a buffer between vehicles and cyclists



### Alternative C

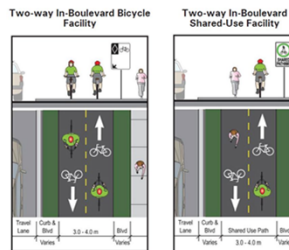
- Similar to paved shoulder with added protection
- One direction on both sides of the roadway
- Provides dedicated spaces for cyclists away from traffic
- Provides either a physical or marked buffer between vehicles and cyclists



### Alternative D

- Completely separated facility on one side of the roadway.
- Bi-directional path; no need to cross the street to go the opposite direction.
- Can be multi-use for cyclist and pedestrian use.
- Provides a physical buffer between vehicles and the pathway.

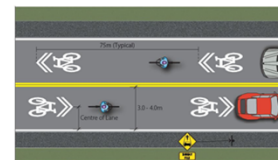
#### Two Lanes with Separate Bi-directional Multi-Use Path on one side



### Alternative E

- Introduce roadway design elements that discourage high speed through traffic.
- Reduce speed limit to 40km/h
- Narrow the roadway as a traffic calming measure
- Roadway to be shared with cyclists
- Reduce the environmental footprint of the roadway on the corridor

#### Narrow Roadway/Incorporate Complete Streets Design



## Alternatives B, C, D and E

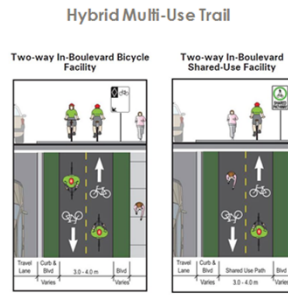




# Alternatives

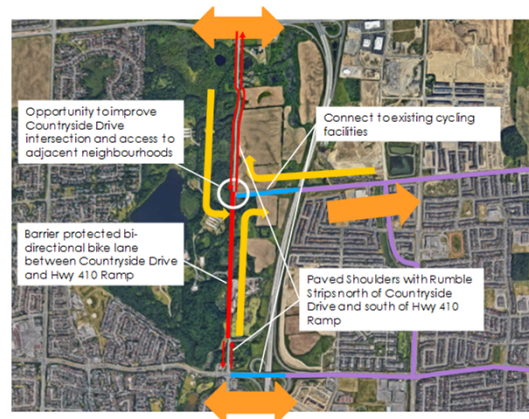
## Alternative F

- Same facility type as Alternative D
- Leverages existing recreational trails network and adds connections to them from existing regional and local cycling routes.
- Enhance existing Heart Lake Conservation Area Trails for cycling use.
- Routing that goes through the conservation area instead of along Heart Lake Road.



## Alternative G

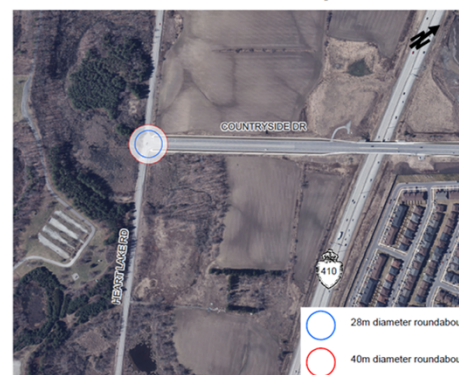
- One-Way vehicular road operation between Countryside Drive and the Hwy 410 off-ramp.
- Convert one lane to barrier protected bi-directional bike lane.
- Left/Through restriction at Heart Lake Road/Countryside Drive.
- Two Lanes with Paved Shoulders and Rumble Strips north of Countryside Drive and south of Hwy 410 Off-ramp.







## Roundabout

- Existing Conditions
  - Poor pedestrian/cyclist environment at the intersection despite existing links
  - Potential for enhancements
- Roundabout:
  - Traffic Calming qualities
  - Reduces the frequency and severity of collisions
  - Requires a large footprint
  - May require more construction and cost
- Traffic signals are not warranted








### Potential Roundabout diameter concepts



# Mitigating Wildlife Mortality

PREVIOUSLY IMPLEMENTED OR CONSIDERED				
Mitigation Measure	Image	Location	Effectiveness	Preliminary Evaluation / Comments
Natural Area / Wildlife Signage		Installed in 2016	Low	May serve as an educational/awareness tool and reduce speed
Solar-powered flashing amber lights to slow traffic		Installed in 2016	Low	May serve as an educational/awareness tool and reduce speed
Optical speed bars		Installed in 2016	Low	Not effective at speed reduction.
Wildlife crossing structure (concrete culvert)		Installed in 2016, 100 m south of Countryside Drive	High	Soils in some areas may not be suitable for culverts. Must be combined with fencing
Wildlife directional fencing		Installed in 2016 south of Countryside Drive, 190 m on the east side and 140 m on the west side	High, particularly when connected to a crossing opportunity	Maintenance required; populations may become isolated
Turtle nesting beaches		Within installed directional fencing	Low	Provides safe nesting locations but may take many years before they're used

## POTENTIAL ADDITIONAL MITIGATION MEASURES

Mitigation Measure	Image	Location	Effectiveness	Preliminary Evaluation / Comments
Additional wildlife culverts		Hotspot locations 1 and 2	High	Must be in combination with directional fencing. Soils at these locations may not be suitable for culverts. However, alternative installation methods can be considered
Extend exclusionary fencing		Hotspots 1 and 2, and along entire stretch of roadway where mortality has been documented	High	Recommended in combination with additional nesting beaches and eco-passages
Stop control at intersections		It is required to determine if/where they are warranted (based on MTO Guidelines) to make sure they ensure fluid and safe traffic conditions	Low to moderate	May reduce traffic speed but slow moving animals will also need to be excluded from the roadway
Speed cushions and rumble strips		It is required to determine if/where they would be required in order to act as effective traffic calming measures	Low to moderate	Will reduce traffic speed but slow moving animals will also need to be excluded from the road way. Carry forward for further analysis
Lane narrowing		It is required to determine if/where they would be required in order to act as effective traffic calming measures	Low	
Traffic deflection at Mayfield road		If justified, at the intersection of Heart Lake Road and Mayfield Road	Low	May reduce traffic speed but unlikely to reduce wildlife-vehicle mortality unless combined with other mitigation
Turn restrictions			Low	
Permanent / seasonal road closure		Countryside to Sandalwood	High	Has been used effectively in other jurisdictions. There is an impact on local businesses. This option was previously screened out by the municipality

# Heart Lake Wildlife Mortalities



 <p>Date: 12/3/2013</p>	<b>Wildlife Type</b> <b>Frequency of Sightings</b>	<p>● 55-71</p> <p>● 72-114</p>	<p>0 25 50 100 Meters</p> 	<p><b>Disclaimer:</b>                  The Data used to create this map was compiled from a variety of sources &amp; dates. The T.R.C.A. takes no responsibility for errors or omissions in the data and retains the right to make changes and corrections at any time without notice. For further information about the data on this map, please contact the T.R.C.A. GIS Department. (416) 661-6600.                  Created By: GIS/Information Technology                  May not be reproduced without permission.</p>
	<p>● 1</p> <p>● 2-42</p> <p>● 43-54</p>			