

# Heart Lake Road Function and Design Review Public Information Centre

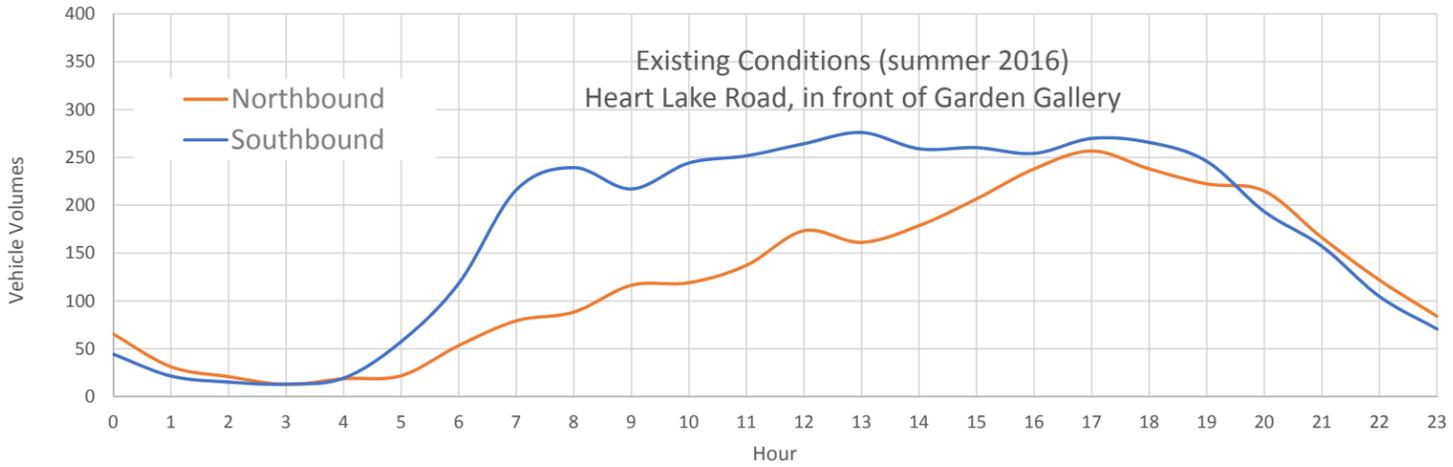
Date: Wednesday, May 16, 2018  
Time: 6:30 to 8:30 pm  
Location: Loafer's Lake Recreation Centre  
– Room 1  
30 Loafer's Lake Lane, Brampton

## The Function and Design Review of the Heart Lake Road Corridor

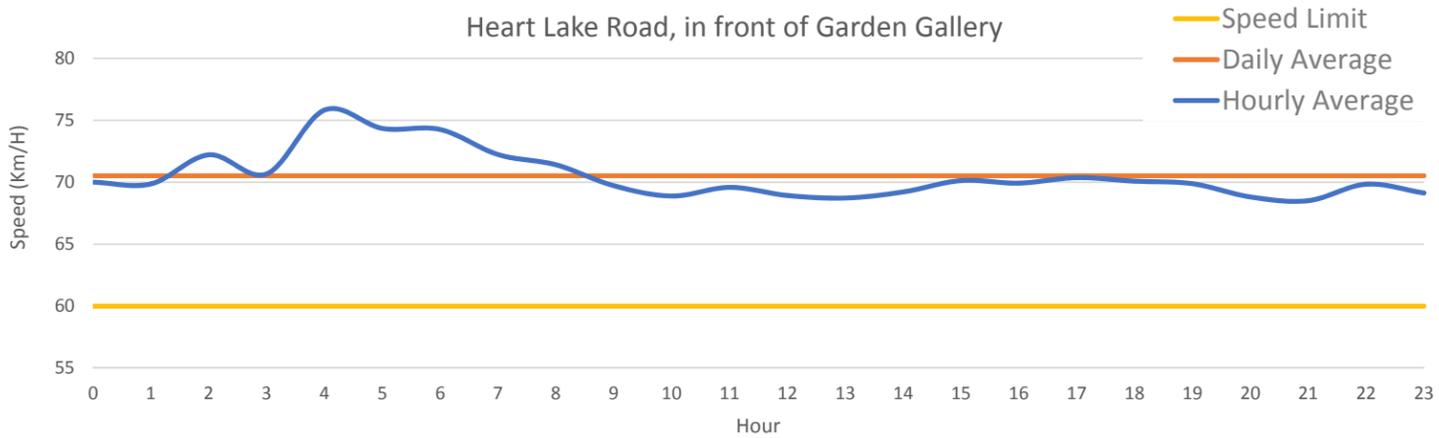
### Key Issues and Challenges

#### MULTIMODAL TRANSPORTATION

*Existing and forecasted volumes do not justify widening*



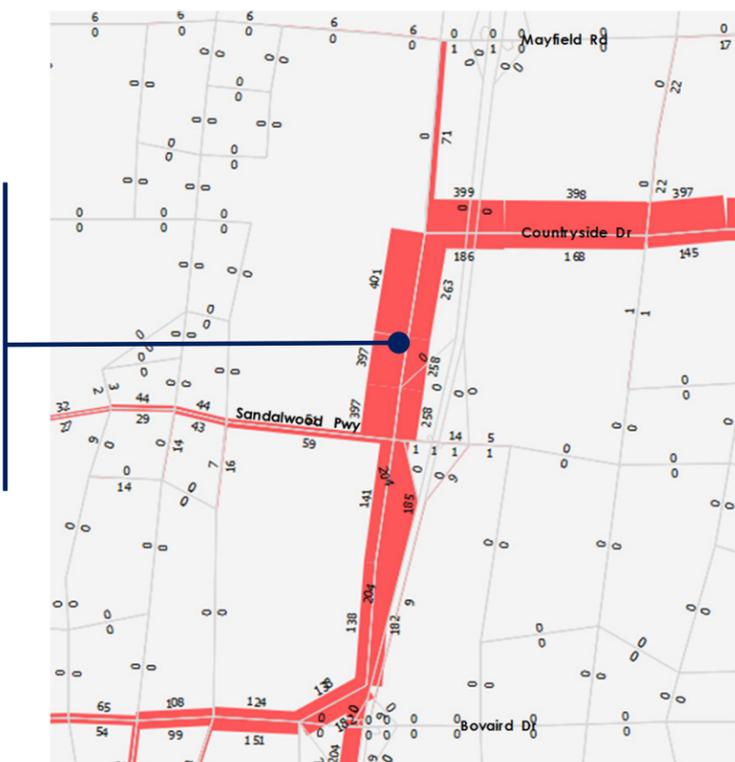
*Existing Conditions: Vehicles exceed speed limits*



*Heart Lake Road is identified as a candidate for bicycle lane in the latest City of Brampton TMP (2015)*



*Vehicular travel demand on Heart Lake Road is concentrated between Countryside and Sandalwood*



## The Function and Design Review of the Heart Lake Road Corridor

### Key Issues and Challenges

#### WILDLIFE MORTALITIES



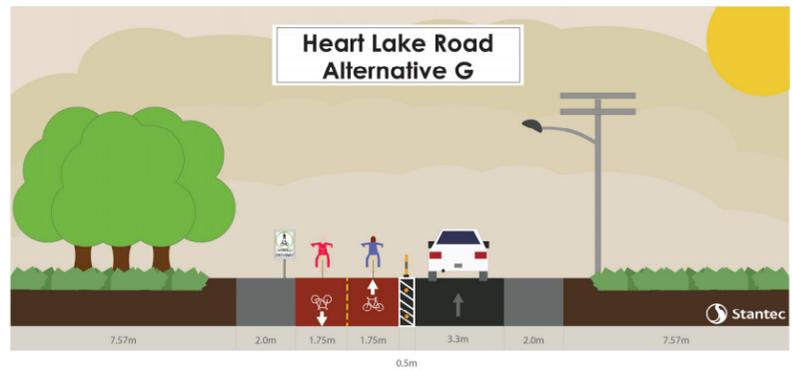
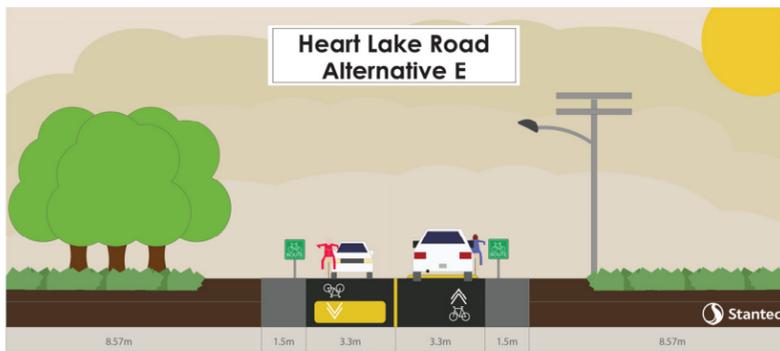
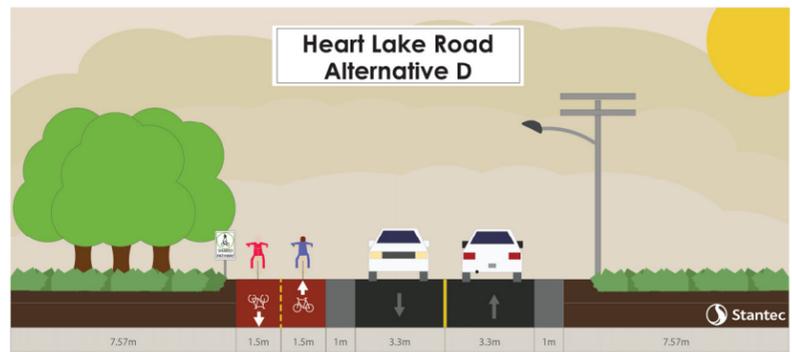
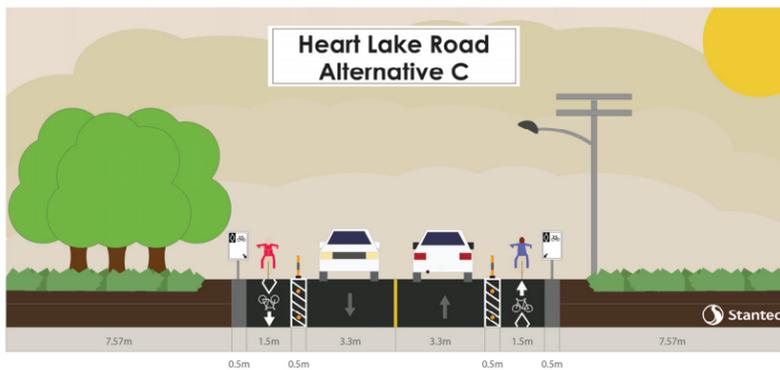
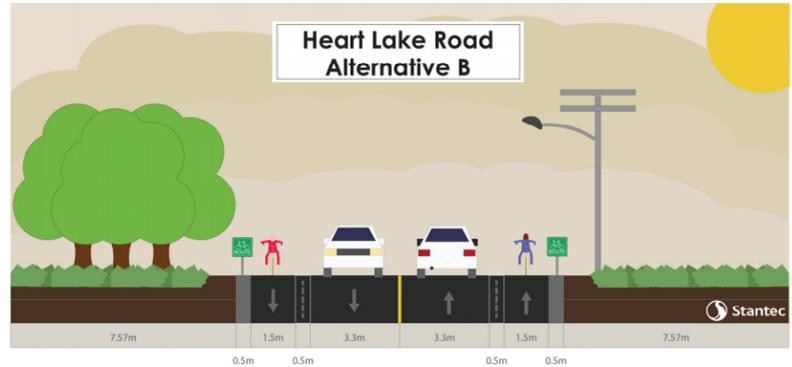
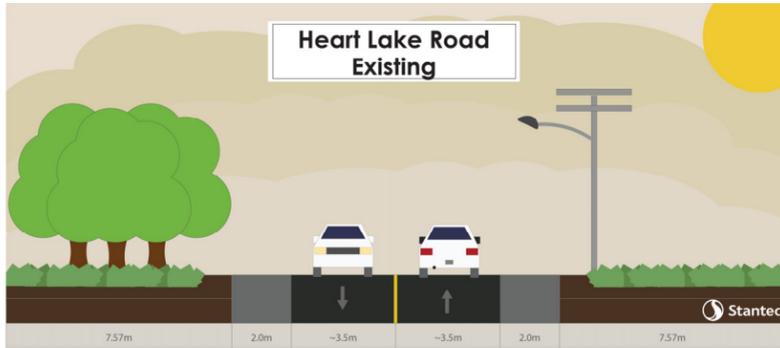
#### CULTURAL HERITAGE

- Study area is not currently listed on the City's Municipal Register of Cultural Heritage Resources (2016) or designated under the Ontario Heritage Act (OHA)
- Brampton Heritage Board received a delegation from the public seeking the possible recognition of Heart Lake Road as a cultural heritage landscape; the recognition was not defined at the time
- Full Heritage Impact Assessment must be conducted for the study area
- Roadway crosses one of the most Provincially and Regionally significant natural areas within the City of Brampton; Heart Lake Road is visually distinct from the surrounding lands since it is mostly bordered by natural areas that have not been used for residential development

## The Function and Design Review of the Heart Lake Road Corridor

### ALTERNATIVES

#### TRANSPORTATION ALTERNATIVES



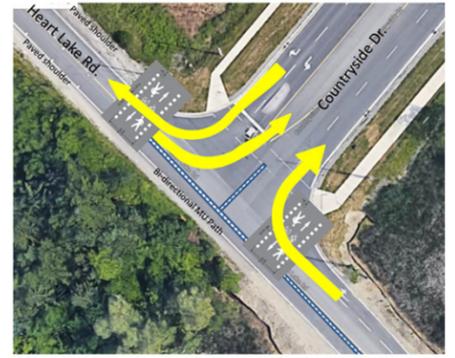
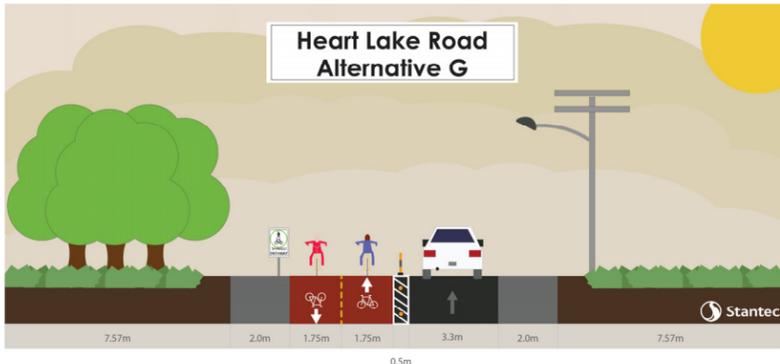
**Heart Lake Road Alternative F**



## The Function and Design Review of the Heart Lake Road Corridor

### ALTERNATIVES

#### TRANSPORTATION ALTERNATIVES



#### TRAFFIC CALMING



Roundabout at Countryside



Stop control or traffic circles at intersections



Speed Cushions  
Lane Narrowing with rumble strips

#### WILDLIFE MITIGATION



Wildlife crossing structure (concrete culvert)



Wildlife directional fencing



Turtle nesting beaches



Natural Area / Wildlife Signage

## The Function and Design Review of the Heart Lake Road Corridor

### EVALUATION CRITERIA

Category	Criteria	Factor	
Multi-Modal Transportation	Roadway geometry	Satisfies desirable design criteria	
	Access	Proximity to community facilities	
	Traffic	Impacts to traffic operations	
	Traffic calming	Reduce speed	
	Cycling	Attract cyclists and promote bicycle connectivity	
	Safety	Improve safety for all road users	
Social and Cultural Environment	Built cultural heritage resources and landscapes	Preserve cultural heritage features	
	Agricultural resources	Minimize impacts to agricultural lands	
	Land use	Minimize impacts to existing residential/ recreational properties	
	Economic environment	Accommodate planned development and growth	
Natural Environment	Designated natural areas	Minimize impacts to designated natural areas	
	Wildlife and terrestrial habitat	Minimize impacts to wildlife	
	Vegetation	Minimize impacts to vegetation	
	Surface water and drainage	Minimize impacts to surface water and ground water	
	Terrestrial habitat design factors		Minimize impacts to designated natural areas
			Minimize impacts to wildlife
		Minimize impacts to vegetation	

## The Function and Design Review of the Heart Lake Road Corridor

### EVALUATION OF TRANSPORTATION ALTERNATIVES

Category	Criteria	Factors	A	B	C	D	E	F	G	
			Do Nothing	Two Lanes with Paved Shoulders and Rumble Strips	Two Lanes with Separated Bike Lanes	Two Lanes with Separated Bi-directional Multi-Use Path on one side	Narrow Roadway with Shared Bike Lanes	Hybrid Multi-Use Trail in Heart Lake Conservation Area	One way operation with Separated Bike Lanes	
Multi-Modal Transportation	Roadway Geometry	Satisfies Desirable Design Criteria	- The existing vehicular lane widths of ~3.5m make the roadway more comfortable for cars and promote faster speeds.	✓ Would require the vehicular lane to be narrowed to 3.3m and the addition of a painted 0.5m rumble strip buffer and 1.5m paved shoulder for cycling with another 0.5m of unpaved shoulder. The existing un-paved shoulder would have to be partially paved. (MTO, 2013) A 0.5m painted buffer would be required.	✓ Would require the vehicular lane to be narrowed to 3.3m and the addition of a 0.5m buffer with flexible bollards and 1.5m paved dedicated bicycle lane and another 0.5m of unpaved shoulder. The existing un-paved shoulder would have to be partially paved and flexible bollards would have to be installed. (MTO, 2013) A 0.5m painted buffer would be required.	✓ Would require the vehicular lane to be narrowed to 3.3m and a 3.0m bi-directional multi-use facility would be placed on either the east or west side of the roadway with a 0.5m shoulder buffer. This would require the vehicular lanes to be shifted to the east or west side. (MTO, 2013). A controlled crossing is required at Countryside Drive and future access to residential development.	✓ Would require the vehicular lane to be narrowed to 3.3m and the overall paved width of the roadway gets narrowed with traffic calming measures along the roadway including speed cushions and traffic circles. The rationale is to make the roadway feel less like a high-speed route and more like a slower local route.	* Would require appropriate multi-use trail connections between existing boulevard paths along Countryside Drive and Sandalwood Parkway to connect to the existing internal trail within the Heart Lake Conservation Area. Pedestrians would also be accommodated on the multi-use trail. Refurbishment of the existing trail/old access road entrance opposite Countryside Drive is required.	× Change Heart Lake Road to one-way operation going northbound between Sandalwood Parkway and Countryside Drive. This alternative will increase the travel distance from Heart Lake Road (north) to the Conservation Area by 1.8km, and from the Conservation Area to Heart Lake Road (south) by 4.0km.	
	Access	Proximity to Community Facilities	✓ Existing vehicular access to facilities maintained. × Currently requires cyclists to share the roadway (ride with traffic) along Heart Lake Road which provides a direct access to the main Heart Lake Conservation Area Entrance and other properties along the corridor.	✓ Existing vehicular access to facilities maintained. - Would provide direct access to the main Heart Lake Conservation Area entrance off of Heart Lake Road. A cyclist will have to ride with traffic along Heart Lake Road to access the Conservation Area entrance.	✓ Existing vehicular access to facilities maintained. ✓ Would provide direct access to the main Heart Lake Conservation Area entrance off of Heart Lake Road. A cyclist will have to ride with traffic along Heart Lake Road to access the Conservation Area entrance.	✓ Existing vehicular access to facilities maintained. ✓ Would provide direct access into the Heart Lake Conservation Area and reduce conflict points for active transportation road users if the multi-use facility were to be placed on the west side of the roadway.	✓ Existing vehicular access to facilities maintained. ✓ Would provide direct access to the main Heart Lake Conservation Area entrance off of Heart Lake Road and would require cyclists exiting towards the north and entering from south to cross one vehicular lane of traffic.	* Would provide a direct access into the Heart Lake Conservation Area and reduce conflict points via protected crossings for entering and exiting. - Does not provide continual/direct access to all destinations along Heart Lake Road. * Trail could also accommodate pedestrians	× Vehicular access to destinations along Heart Lake Road will be limited to access from the south.	
	Traffic	Impacts to Traffic Operations	× Maintain existing operations. Does not promote cycling or walking, does not conform with the municipal transportation master plan vision.	✓ Little to no impacts on traffic operations.	✓ Little to no impacts on traffic operations.	✓ Little to no impacts on traffic operations.	✓ Little to no impacts on traffic operations.	✓ May generate minor impacts on adjacent corridors by making the corridor less appealing for through vehicles.	✓ Little to no impacts on traffic operations. Conforms to municipal transportation master plan vision.	× Significant impacts to traffic operations, would require considerable extra travel distance for vehicles to travel southbound from within the corridor. Would also generate impacts on adjacent corridors.
	Speed	Reduce Speed	- The roadway will maintain poor speed compliance with the existing compliance rate at 11%, indicating that only 11% of drivers travel at or below the posted speed limit. Heart Lake Road also includes advisory and warning signage which is meant to raise awareness/identify the wildlife crossing potential hazard.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for 3.3m vehicular lane widths. The rumble strip buffer will further re-inforce narrow roadway cues even if visually, the corridor looks wide and rural.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for 3.3m vehicular lane widths. The physical flexible bollards will create a visual wall to make the roadway look more urban and less rural to promote slower speeds.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for 3.3m vehicular lane widths. (Columbia Pike Street Space Planning Task Force, 2003) (MTO, 2006) (MTO, 2013)	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for 3.3m vehicular lane widths. The addition of traffic calming measures such as speed cushions and traffic circles have been found to be effective ways to reduce vehicular speed, volume and increase safety along roadways.	- The roadway will remain mostly unchanged beyond intersection improvements at Heart Lake Road and Countryside Drive that will have minor positive impacts on traffic speed.	- Increase in volume is forecasted on Countryside Drive eastbound due to forced right turns northbound at the intersection of Heart Lake Road and Countryside Drive. It may also increase overall trip length for vehicles as it forces all vehicles to go northbound. - The option may increase speeding.	
	Cycling	Attract Cyclists and Promote Bicycle Connectivity	- Currently no cycling infrastructure is in place.	- The signed route will connect with future and existing boulevard paths on Countryside Drive and Sandalwood Parkway. This facility type has a low attractiveness for cyclists.	* The separated bicycle lane will connect with existing boulevard paths on Countryside Drive and Sandalwood Parkway. This facility type has a high attractiveness for cyclists.	* The separated bi-directional multi-use trail will connect with existing boulevard paths on Countryside Drive and Sandalwood Parkway. This facility type has a high attractiveness for cyclists.	✓ The shared route will connect with existing boulevard paths on Countryside Drive and Sandalwood Parkway. This facility type will be attractive to cyclists based on the effectiveness of traffic calming measures.	* Direct internal connections to Heart Lake Conservation Area will be made to the existing boulevard paths on Countryside Drive and Sandalwood Parkway. A new section of the recreational trail through the Conservation Area lands will complete a gap in the Esker Lake Recreational Trail.	* The separated bi-directional multi-use trail will connect with existing boulevard paths on Countryside Drive and Sandalwood Parkway. This facility type has a high attractiveness for cyclists.	
Social and Cultural Environment	Safety	Improve Safety For All Road Users	- The roadway will remain unchanged. Speed compliance will remain low and there are no traffic calming measures to help reduce the severity of collisions with vehicles or cyclists beyond the existing speed optical bars.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for the narrowed lanes. The lower speed limit will work towards reducing the severity of collisions and the paved shoulders will reduce conflicts between cyclists and vehicles.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for the narrowed lanes. The dedicated bicycle lanes with flexible bollards will significantly reduce conflicts between cyclists and vehicles by providing physical and visual cues separating the two modes.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for the narrowed lanes. The separated bi-directional multi-use path will significantly reduce conflicts between cyclists and vehicles by providing complete separation between the two modes.	✓ The operating speeds will be reduced to 50km/h to adhere to appropriate design speed standards for narrowed lanes. Traffic calming measures such as speed cushions and traffic circles will further reinforce reduced vehicular speeds. There is no dedicated space for cyclists on the roadway and existing conflicts will still remain.	- The roadway will remain mostly unchanged beyond intersection improvements at Heart Lake Road and Countryside Drive that will have minor positive impacts on traffic speed and collisions.	✓ One-way operation would allow cyclists to use the southbound lane for travel along the corridor, separated from traffic which would enhance cyclist safety greatly.	
	Built Cultural Heritage Resources and Landscapes	Preserve Cultural Heritage Features and Landscapes	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural characteristics adjacent to the roadway remain intact, comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	
	Agricultural Resources	Minimize Impacts to Agricultural Lands	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Road	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	* No impacts to agricultural lands located north of Countryside Road/east side of Heart Lake Rd	
	Land Use	Minimize Impacts to Existing Residential/Recreational Properties	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * No impact to recreational facilities at Heart Lake Conservation Area	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * No impact to recreational facilities at Heart Lake Conservation Area	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * No impact to recreational facilities at Heart Lake Conservation Area	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * No impact to recreational facilities at Heart Lake Conservation Area	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * No impact to recreational facilities at Heart Lake Conservation Area	* No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre * Enhanced connections to existing recreational facilities at Heart Lake Conservation Area	× Significant impacts to existing facilities. Would require vehicles leaving the properties along the roadway to travel much further to go southbound. × Would increase the distance vehicles accessing the corridor would have to travel.	
	Economic Environment	Accommodate Planned Development and Growth	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development, Private School development, residential development within the Countryside Villages Secondary Plan area	× Would require vehicles leaving the properties along Heart Lake Road to travel much further to go southbound. Would increase the distance vehicles accessing the corridor would have to travel.	
Natural Environment	Designated Natural Areas	Minimize Impacts to Designated Natural Areas	* No impacts.	* Work will not occur outside of the Right of Way therefore no impact to Designated Natural Areas	* Work will not occur outside of the Right of Way therefore no impact to Designated Natural Areas	* Work will not occur outside of the Right of Way therefore no impact to Designated Natural Areas	* Work will not occur outside of the Right of Way therefore no impact to Designated Natural Areas	✓ Minor impacts to vegetated areas inside Heart Lake Conservation Area.	* Work will not occur outside of the Right of Way therefore no impact to Designated Natural Areas	
	Wildlife and Terrestrial Habitat	Minimize Impacts to Wildlife	* No impacts.	* Paved shoulders may deter turtle nesting sites that exist along gravel shoulders	* Paved shoulders may deter turtle nesting sites that exist along gravel shoulders	* Paved shoulder surface may deter turtle nesting sites that exist along gravel shoulders	* Continue to implement the wildlife signs, concrete box culvert (ecopassage), fencing, and artificial turtle nesting mounds	* Refurbishment to the existing trail/old access road entrance may remove some existing habitat within Heart Lake Conservation Area	* No impacts.	
	Vegetation	Minimize Impacts to Vegetation	* No impacts to vegetation; no change to Right of Way	* No impacts to vegetation; no change to Right of Way	* No impacts to vegetation; no change to Right of Way	* No impacts to vegetation; no change to Right of Way	* No impacts to vegetation; no change to Right of Way	* Removal of old growth vegetation within the existing trail/old access road entrance	* No impacts to vegetation; no change to Right of Way	
	Surface Water and Drainage	Minimize Impacts to Surface Water and Ground Water	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands and potentially impact surface and groundwater * No change to paved portion of shoulder	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands - Paving a portion of the shoulder would create greater impervious cover	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands - Paving a portion of the shoulder would create greater impervious cover	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands - Paving a portion of the shoulder would create greater impervious cover	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands - Paving a portion of the shoulder would create greater impervious cover	* No salt or fluids originating from vehicles and salt distributing vehicles affect the existing trail/old access road entrance * No pavement increase to existing shoulder	- Salt and/or sand from road winter operations can cause changes in the water quality to neighboring wetlands * No pavement increase to existing shoulder	
Scoring										
* Most Preferred			* 7	* 6	* 8	* 7	* 7	* 10	* 6	
✓ Moderately Preferred			✓ 3	✓ 7	✓ 6	✓ 8	✓ 9	✓ 4	✓ 2	
- Least Preferred			- 5	- 4	- 3	- 0	- 1	- 3	- 3	
× Fail			× 2	× 0	× 0	× 2	× 0	× 0	× 6	
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## The Function and Design Review of the Heart Lake Road Corridor

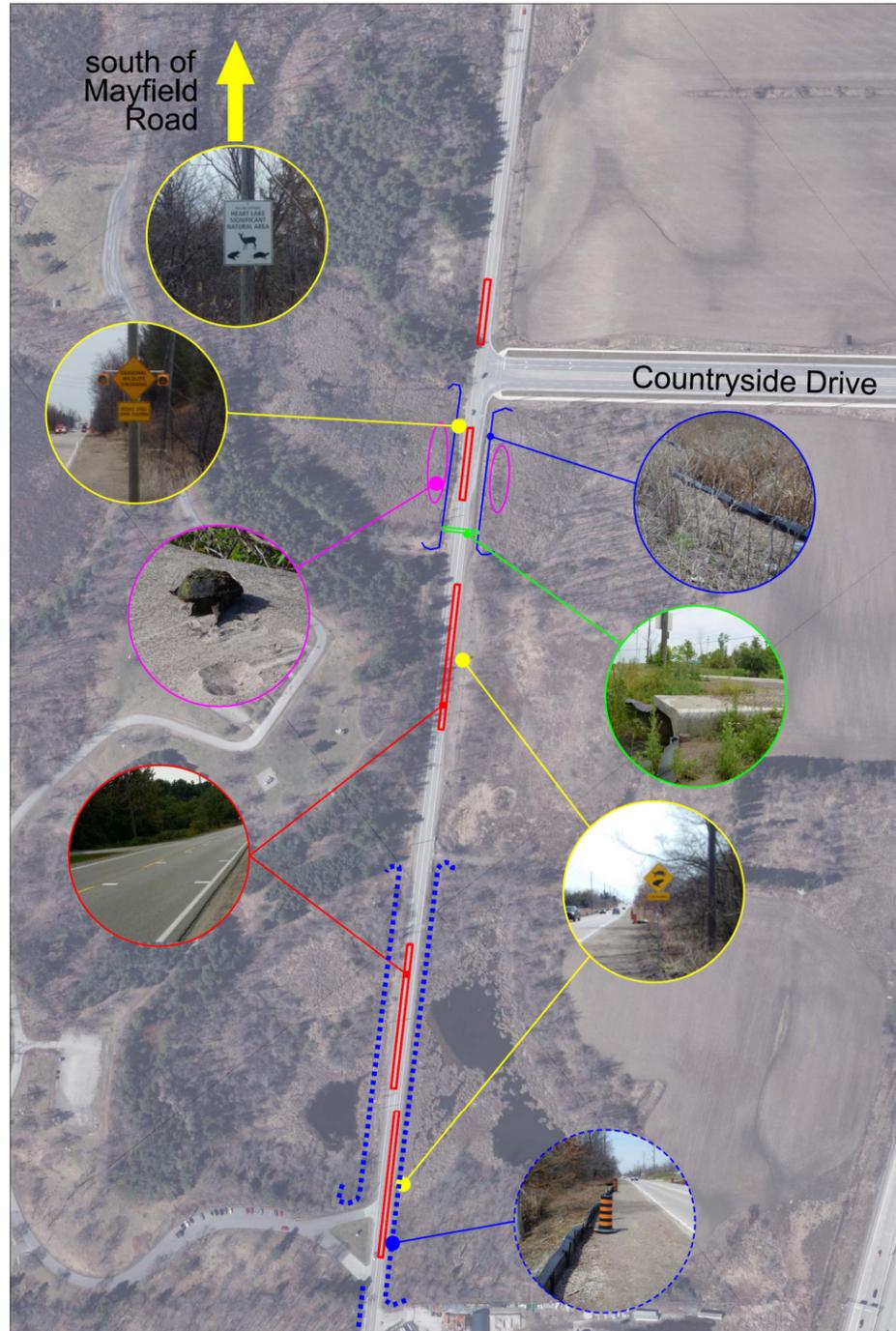
### EVALUATION OF TRAFFIC CALMING ALTERNATIVES

Category	Criteria	Factors	A Do Nothing	B Stop control or traffic circles at intersections (Heart Lake Conservation Area/New Residential Development)	C Speed Cushions Lane Narrowing with rumble strips	D Traffic Deflection at Countryside Drive One way operation with Separated Bike Lanes	E Roundabout at Countryside Option 1	F Roundabout at Countryside Option 2
								
Multi-Modal Transportation	Roadway Geometrics	Satisfies Desirable Design Criteria	– The existing vehicular lane widths of 3.5m make the roadway more comfortable for cars and promote faster speeds.	✓ Added stop signs or traffic circle to the Heart Lake Road and Conservation Area Entrance. Traffic circles consist of a raised island located in the centre of an intersection which requires vehicles to travel through the intersection and around the island. Traffic speed would have to be reduced to 50km/h and the roadway would have to be re-classified as either a collector or local roadway.	* Speed cushions are raised sections of the roadway designed to discourage motor vehicle drivers from travelling at excessive speeds. These are an acceptable measure for roadways with low volumes (MTO, 2013). To implement this measure on Heart Lake Road, the traffic speed would have to be reduced to 50km/h and the roadway would have to be re-classified as either a collector or local roadway.  * Vehicular lane would be narrowed to 3.3m along with rumble strips to give physical and auditory cues to drivers that they should not use the wider shoulder. (MTO, 2013). This would require a reduction in the speed limit as lane widths of 3m are recommended for roadways that operate at vehicular speeds of 50km/h or less.	– Roadway would be closed to general traffic going south from Countryside Drive, but would still allow local traffic and general traffic exiting northbound.  – Change Heart Lake Road to one-way operation going northbound between Sandalwood Parkway and Countryside Drive.	– Convert the existing non-signalized intersection at Countryside Drive to a roundabout. This would replace the existing free movement northbound and southbound approaches with yielding approaches going around a raised island. This option is less complex and extends onto the existing TRCA lands on the west portion of the intersection.	✓ Convert the existing non-signalized intersection at Countryside Drive to a roundabout. This would replace the existing free movement northbound and southbound approaches with yielding approaches going around a raised island. This option involves more complexity without impacting the TRCA lands but requires the relocation of hydro lines on the east side of the intersection.
	Traffic Calming	Reduce Speed	– The roadway will maintain poor speed compliance with the existing compliance rate at 11% and 85th percentile speeds at 80km/h despite the posted speed limit of 60km/h.	✓ The speed limit will be reduced to 50km/h to adhere to appropriate design speed standards for traffic circles. Traffic circles are effective at promoting speed reduction and reducing vehicular volume. (Columbia Pike Street Space Planning Task Force, 2003) (MTO, 2006) (MTO, 2013)	✓ The speed limit will be reduced to 50km/h to adhere to appropriate design speed standards for speed cushions. Speed cushions are highly effective at reducing speed and reducing vehicular volume.  ✓ Case studies have found a relationship between narrower road widths and slower vehicular speeds, although a narrow roadway is not the only determining factor and their effectiveness depend on other factors including roadway curvature, roadside development, type of traffic control, among others. The rumble strip buffer will further re-inforce narrow roadway cues even if visually, the corridor looks wide and rural.	– This may initially reduce traffic volume, however, deflecting traffic away from the corridor will not help reduce traffic speed along the corridor and may even promote higher speeds as there are few obstacles and vehicular interactions along the roadway.  – It would effectively increase volume on certain portions of the roadway and would have minimal impacts on travel speed, despite a potential reduction in the speed limit to 50km/h. It may also increase overall trip length for vehicles as it forces all vehicles to go northbound with the nearest southbound route located far away east of Highway 110.	✓ The roundabout will physically require all vehicles to reduce their speed in order to pass around the raised island. This is highly effective compared to the existing north-south movements that are unimpeded and free-flowing.	✓ The roundabout will physically require all vehicles to reduce their speed in order to pass around the raised island. This is highly effective compared to the existing north-south movements that are unimpeded and free-flowing.
	Safety	Improve Safety for all Road Users	× Currently no cycling infrastructure is in place.	✓ A reduced speed limit and addition of a traffic circle will reduce speeds along the roadway and improve cyclist comfort.	✓ A reduced speed limit and addition of speed cushions will reduce speeds along the roadway and improve cyclist comfort.  ✓ A narrower roadway will have some effect toward encouraging slower speeds with some minor improvement to cyclist comfort.	– Lower traffic volumes will improve cyclist comfort somewhat, but there would be little improvement to traffic speed.  ✓ One-way operation would allow cyclists to use the southbound lane for travel along the corridor, separated from traffic which would enhance cyclist safety greatly.	✓ Slower vehicular operation through the Countryside Drive intersection along with a more direct line-of-sight for cyclists will greatly enhance safety.	✓ Slower vehicular operation through the Countryside Drive intersection along with a more direct line-of-sight for cyclists will greatly enhance safety.
Social and Cultural Environment	Built Cultural Heritage Resources and Landscapes	Preserve Cultural Heritage Features	✓ Natural character of the roadway remains intact; comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural character of the roadway remains intact; comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural character of the roadway remains intact; comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	✓ Natural character of the roadway remains intact; comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands	× Requires vegetation adjacent to roadway to be removed to accommodate roundabout design  × Encroaches on the TRCA lands	✓ Natural characteristics adjacent to the roadway remains intact; comprised of varied topography, wetlands, treed ridges, forested areas, and rolling agricultural lands
	Land Use	Minimize Impacts to Existing Residential/Recreational Properties	✓ No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre  ✓ No impact to recreational facilities at Heart Lake Conservation Area	✓ No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre  * Would enhance access to the recreational facilities at Heart Lake Conservation Area by slowing traffic down at the access	✓ No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre  ✓ No impact to recreational facilities at Heart Lake Conservation Area	× Significant impacts to planned residential developments, and existing commercial and recreational facilities. Would prevent access to site along the roadway from the north.  × One way operation with separated bike lanes would result in large impacts to planned residential developments, and existing commercial and recreational facilities. Would require vehicles leaving the properties along the roadway to travel much further to go southbound.	✓ No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre  ✓ No impact to recreational facilities at Heart Lake Conservation Area	✓ No impacts to residential developments planned in the Metrus Development north of Lakeside Garden Centre  ✓ No impact to recreational facilities at Heart Lake Conservation Area
	Economic Environment	Accommodate Planned Development and Growth	✓ No impact to planned industrial/employment development; Private School development; residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development; Private School development; residential development within the Countryside Villages Secondary Plan area	✓ No impact to planned industrial/employment development; Private School development; residential development within the Countryside Villages Secondary Plan area	× Significant impacts to planned residential developments, and existing commercial and recreational facilities. Would prevent access to site along the roadway from the north. Would increase the distance vehicles accessing the corridor would have to travel.  × One way operation with separated bike lanes would result in large impacts to planned residential developments, and existing commercial and recreational facilities. Would require vehicles leaving the properties along the roadway to travel much further to go southbound. Would increase the distance vehicles accessing the corridor would have to travel.	✓ Improved connections between the east and west sides of the roadway for planned industrial / employment development; Private School development; residential development within the Countryside Villages Secondary Plan area	✓ Improved connections between the east and west sides of the roadway for planned industrial / employment development; Private School development; residential development within the Countryside Villages Secondary Plan area
Natural Environment	Designated Natural Areas	Minimize Impacts to Designated Natural Areas	✓ No impacts to designated natural areas.	✓ No impacts to designated natural areas.	✓ No impacts to designated natural areas.	✓ No impacts to designated natural areas.	× Impacts to lands associated with the Heart Lake Conservation Area	✓ Minor impact to lands adjacent to the intersection of Countryside Dr and Heart Lake Rd
	Wildlife and Terrestrial Habitat	Minimize Impacts to Wildlife	✓ No impacts to wildlife.	✓ No impacts to wildlife.	✓ No impacts to wildlife.	✓ No impacts to wildlife.	✓ No impacts to wildlife anticipated.	✓ No impacts to wildlife anticipated.
	Vegetation	Minimize Impacts to Vegetation	✓ No impacts to vegetation.	✓ No impacts to vegetation.	✓ No impacts to vegetation.	✓ No impacts to vegetation.	– Impacts to vegetation; change to Right of Way at Heart Lake Rd.	✓ No impacts to vegetation; moderate change to Right of Way off Countryside Dr and Heart Lake Road.

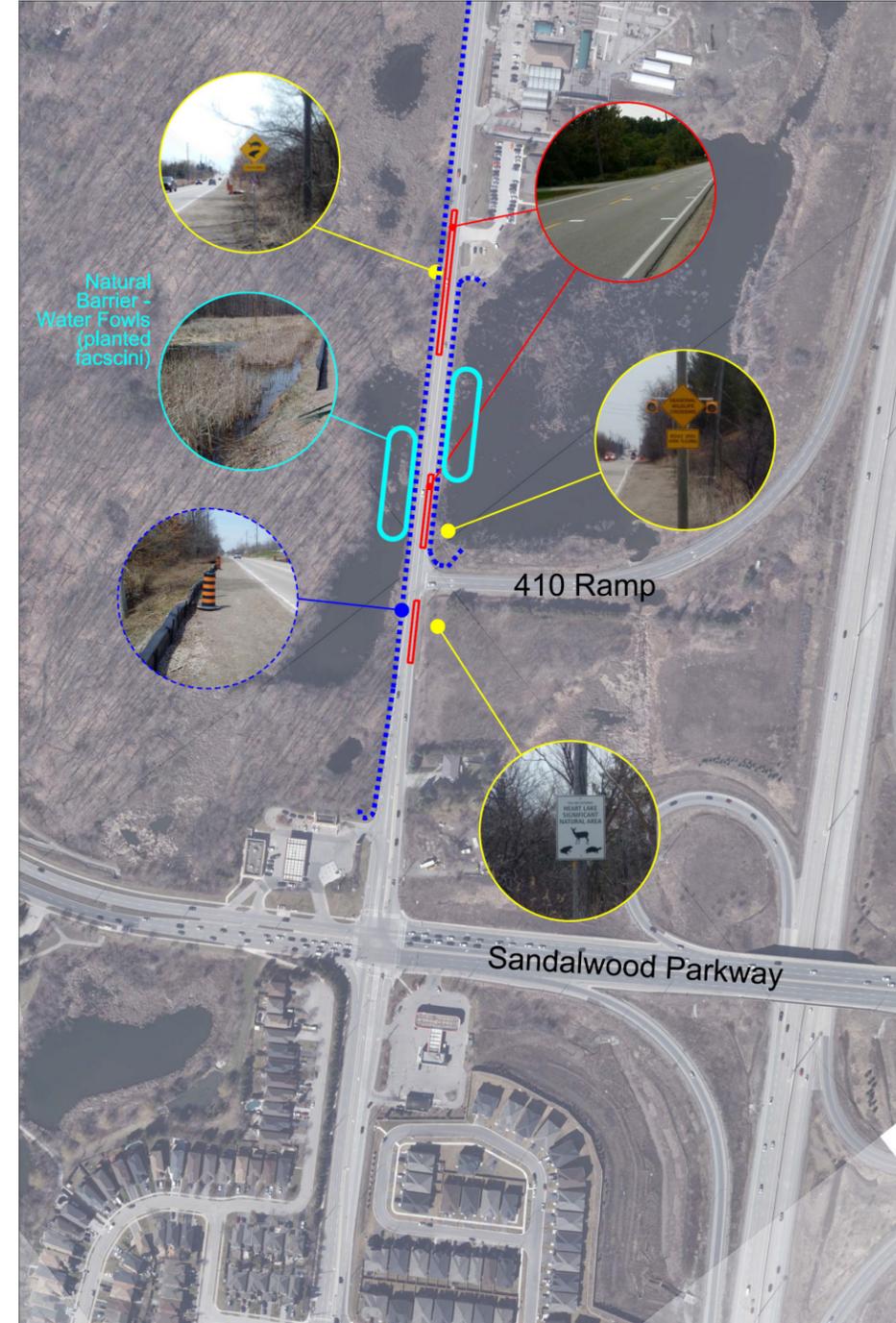
### EVALUATION OF WILDLIFE MITIGATION ALTERNATIVES

Category	Criteria	Factors	A Do Nothing	B Maintain Solar Powered Flashing Amber Lights	C Maintain Pavement Markings (optical speed bars)	D Additional Eco-Passage Tunnel(s)	E Wildlife Directional Fencing	F Turtle Nesting Mounds
								
Terrestrial Habitat Design Factors	Designated Natural Areas	Minimize Impacts to Designated Natural Areas	✓ Existing wildlife mitigation measures have been recently implemented and there is little post-mitigation monitoring	× No effect to minimize impacts to Designated Natural Areas	× No effect to Designated Natural Areas	* Provides connection to Designated Natural Areas and habitat	* Provides protection for turtles from crossing the road	* Provides a mitigation tool used to reduce mortality of nesting females and hatchlings
	Wildlife	Minimize Impacts to Wildlife	– Current mitigation measures used to minimize impacts to wildlife have not been determined if the effectiveness of the signage is working	– Minimal impact on driver behaviour to slow down due to presence of wildlife habitat	× No effect to minimize impacts to wildlife	* Provides off road passage of turtles/frogs/snakes between vegetated areas	* Provides protection to turtles wishing to cross the roadway	* Proves a mitigation tool used to reduce mortality of nesting females and hatchlings
	Vegetation	Minimize Impacts to Vegetation	✓ No impact to vegetation that exists along Heart Lake Road	× No effect on Vegetation	× No effect on Vegetation	✓ Minor impact to vegetation at the entrance and exit	✓ Minor impact to vegetation along the roadway edge of pavement	✓ Minor impacts to vegetation during the construction of the turtle nesting mounds

## The Function and Design Review of the Heart Lake Road Corridor IMPLEMENTED MEASURES TO MITIGATE SPEED AND WILDLIFE MORTALITY



SOUTH OF COUNTRYSIDE DRIVE

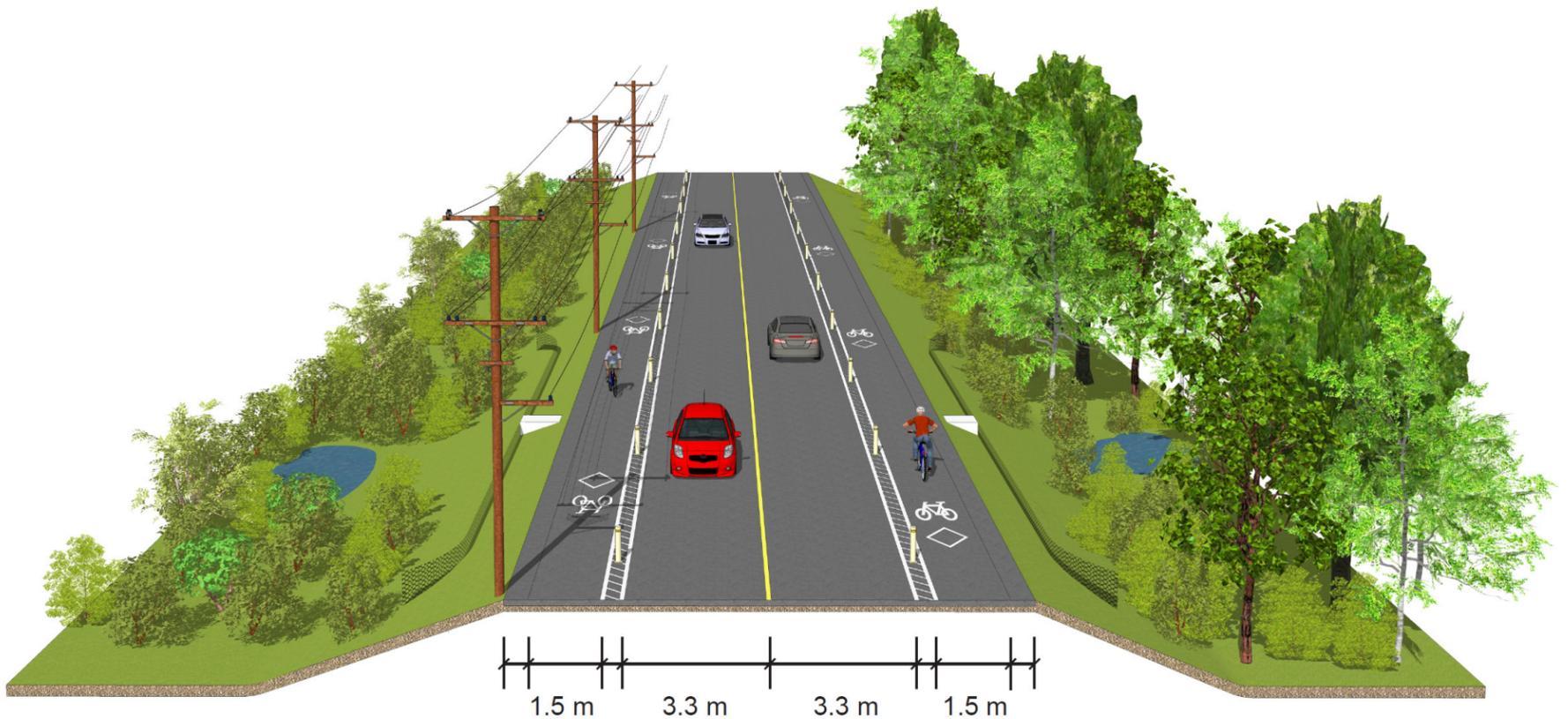


NORTH OF SANDALWOOD PARKWAY

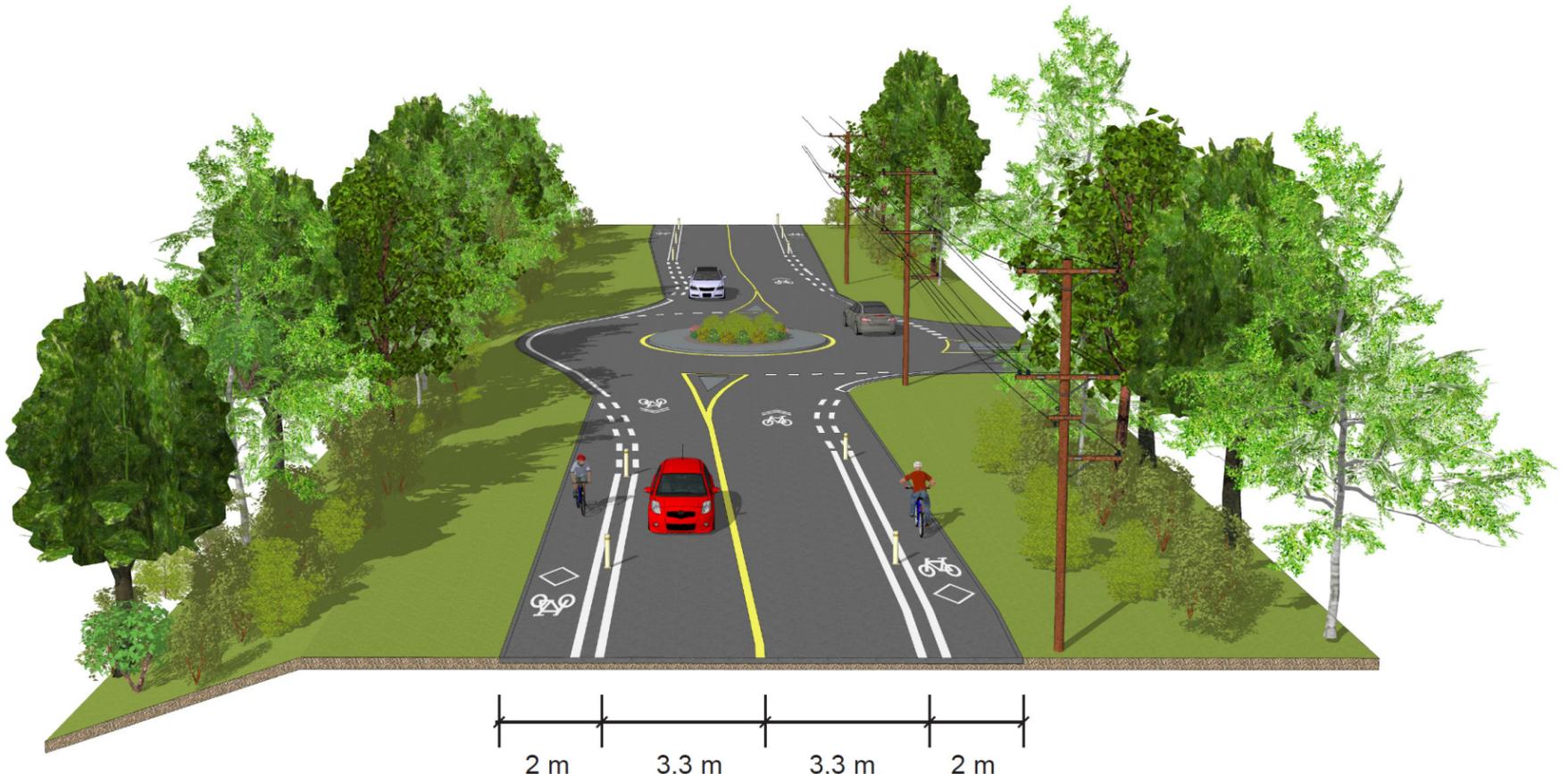
## The Function and Design Review of the Heart Lake Road Corridor

### PREFERRED ALTERNATIVES

Timeframe	Recommended Preferred Solutions
Short-Term (0-2 years)	<p><b>Wildlife Mortality Mitigation:</b></p> <ul style="list-style-type: none"> <li>• Maintain existing solar powered flashing amber lights</li> <li>• Maintain and re-paint optical speed bars</li> <li>• Install (2) additional eco-passages tunnels</li> <li>• Install wildlife directional fencing</li> <li>• Implement turtle nesting mounds</li> </ul> <p><b>Traffic Calming:</b></p> <ul style="list-style-type: none"> <li>• Re-classify road as a local collector road</li> <li>• Lower speed limit to 50 km/h</li> <li>• Implement speed cushions between Mayfield Rd and the Hwy 410 SB off-ramp</li> <li>• Traffic circle at conservation entrance</li> </ul> <p><b>Transportation Improvement:</b></p> <ul style="list-style-type: none"> <li>• Implement a hybrid multi-use trail through Heart Lake Conservation Area with connections to the existing boulevard path at Heart Lake Rd/Countryside Drive</li> </ul>
Ultimate	<ul style="list-style-type: none"> <li>• Lane narrowing on Heart Lake Road</li> <li>• Roundabout at Countryside Drive</li> <li>• Traffic circles at future major development accesses to Heart Lake Road</li> <li>• Implement <u>Alternative C</u> with separated bike lanes</li> </ul>



Ultimate | Southbound View – 250m South of Countryside Drive



Ultimate | Southbound View – Access to Heart Lake Conservation Area