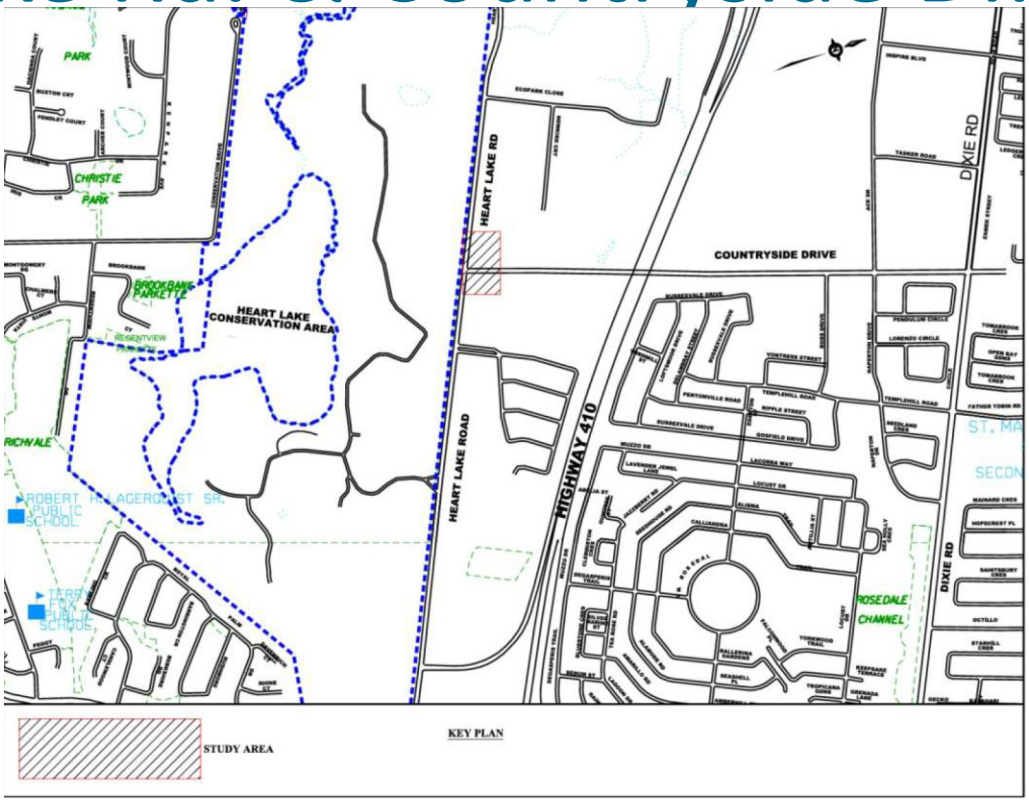
Heart Lake Rd. & Countryside Dr. Class EA



Stakeholder Group (SHG) Meeting February 25, 2022

Agenda

- Introduction of SHG
- Background: Function/Design Review
- Need & Justification - Traffic Study
- Drainage and Natural Environment Studies
- Update on other Studies
- Alternative Solutions (Preferred)
- Evaluation Matrix
- Utilities
- Next Steps
- Questions

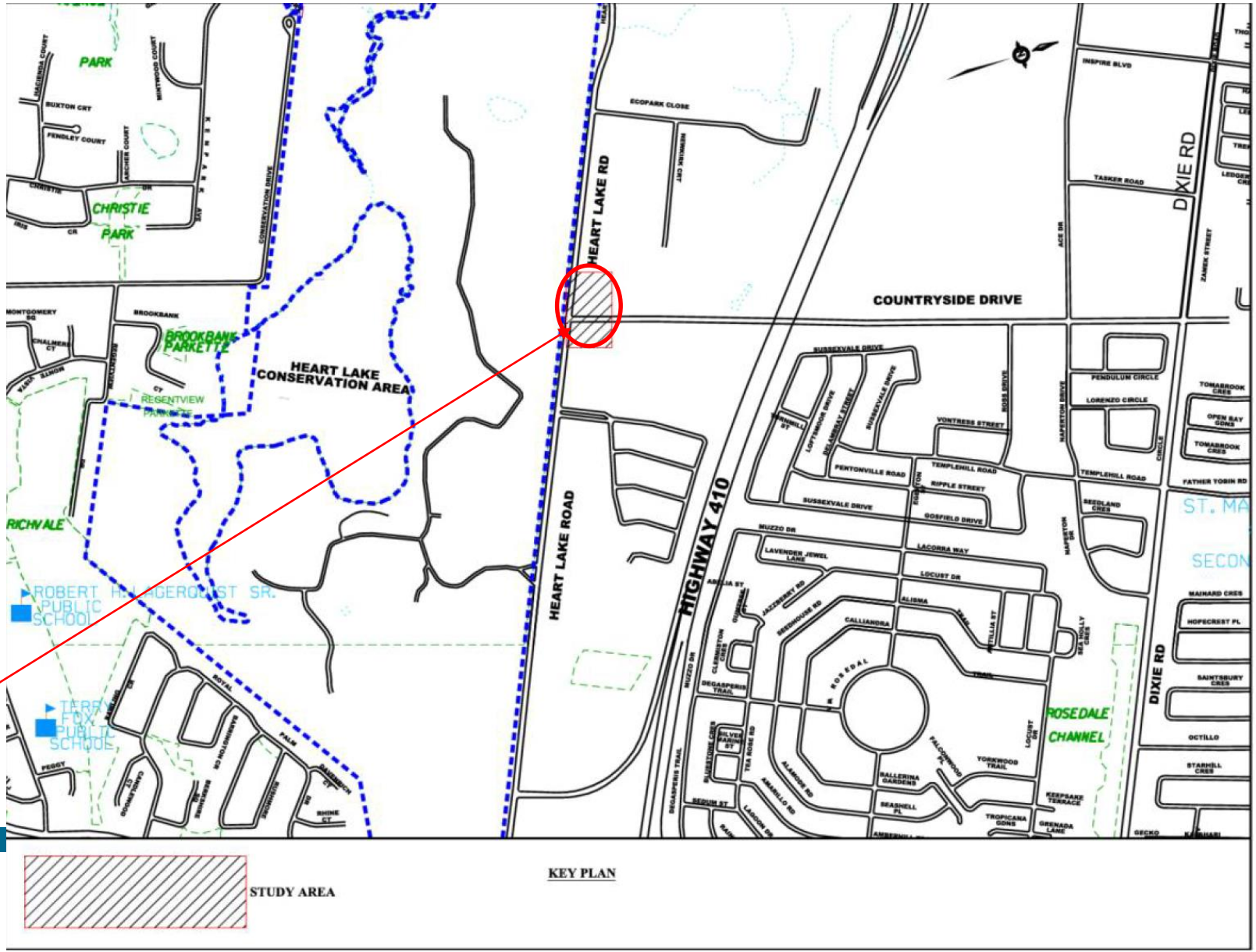
Introduction

The City of Brampton initiated a Schedule B Class Environmental Assessment (EA) for improvements to the intersection of Heart Lake Road and Countryside Drive

Desired Outcomes of this Class EA Study:

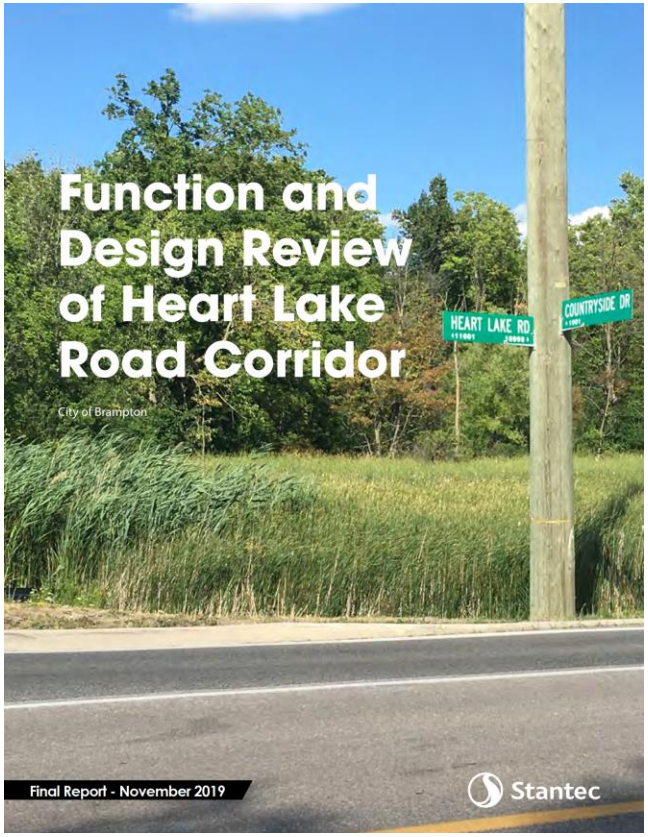
- ✓ Safety and Operations – Including Traffic Calming;
- ✓ Minimize natural environment impacts and wildlife mortality;
- ✓ Conservation of Cultural Heritage Landscape;
- ✓ Consider proposed land uses and meet travel demands;
- ✓ Vison Zero Initiative, Active Transportation, Safety.

Study Limits



Study Area

2019 Function & Design Review Study



Engineers, Scientists, Surveyors

Study Limits - Background

Function & Design Review of Heart Lake Rd From Sandalwood Parkway to Mayfield Road.

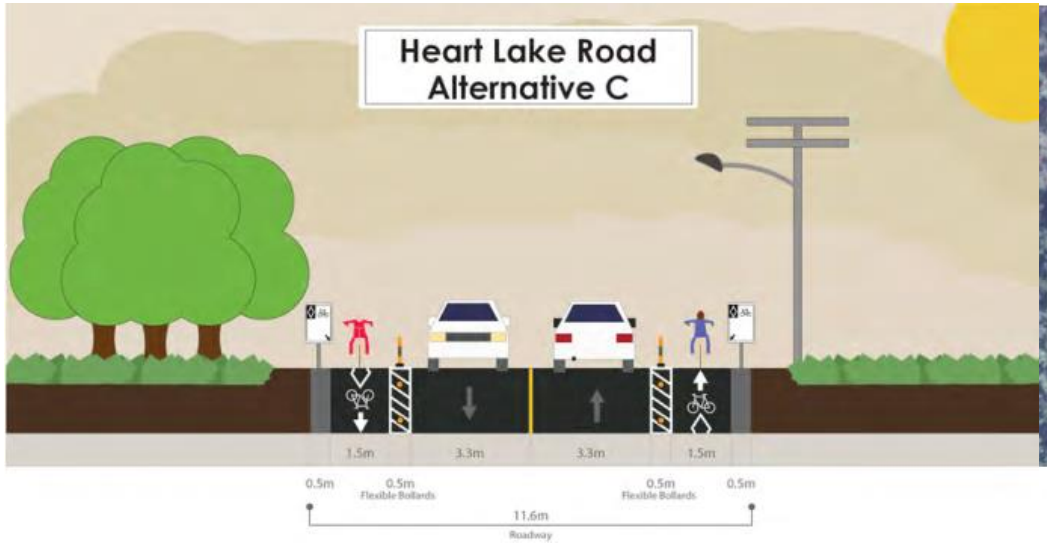
Recommendations (Short Term):

- ✓ **Transportation Improvements -** Narrower Lanes, M.U.T.;
- ✓ **Traffic Calming** - Reclassify as Collector Rd., 50 kmh speed limit; speed cushions between Mayfield and Hwy 410 Ramp; traffic circle at Conservation Area entrance;
- ✓ **Wildlife mortality** – Maintain solar powered flashers, maintain optical speed bars, install additional eco-passages, wildlife directional fencing, turtle nesting mounds.

Function & Design Review (Continued)

Recommendations (Long Term):

Separated bike lanes on Heart Lake Rd. & Roundabout at Countryside



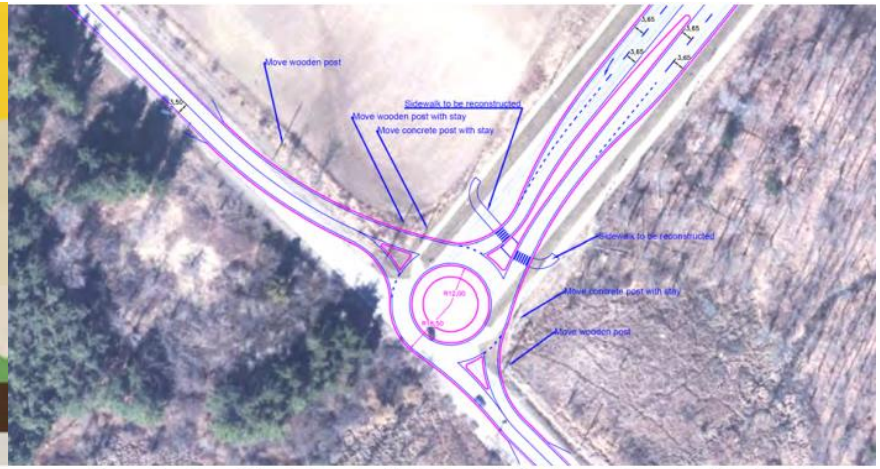


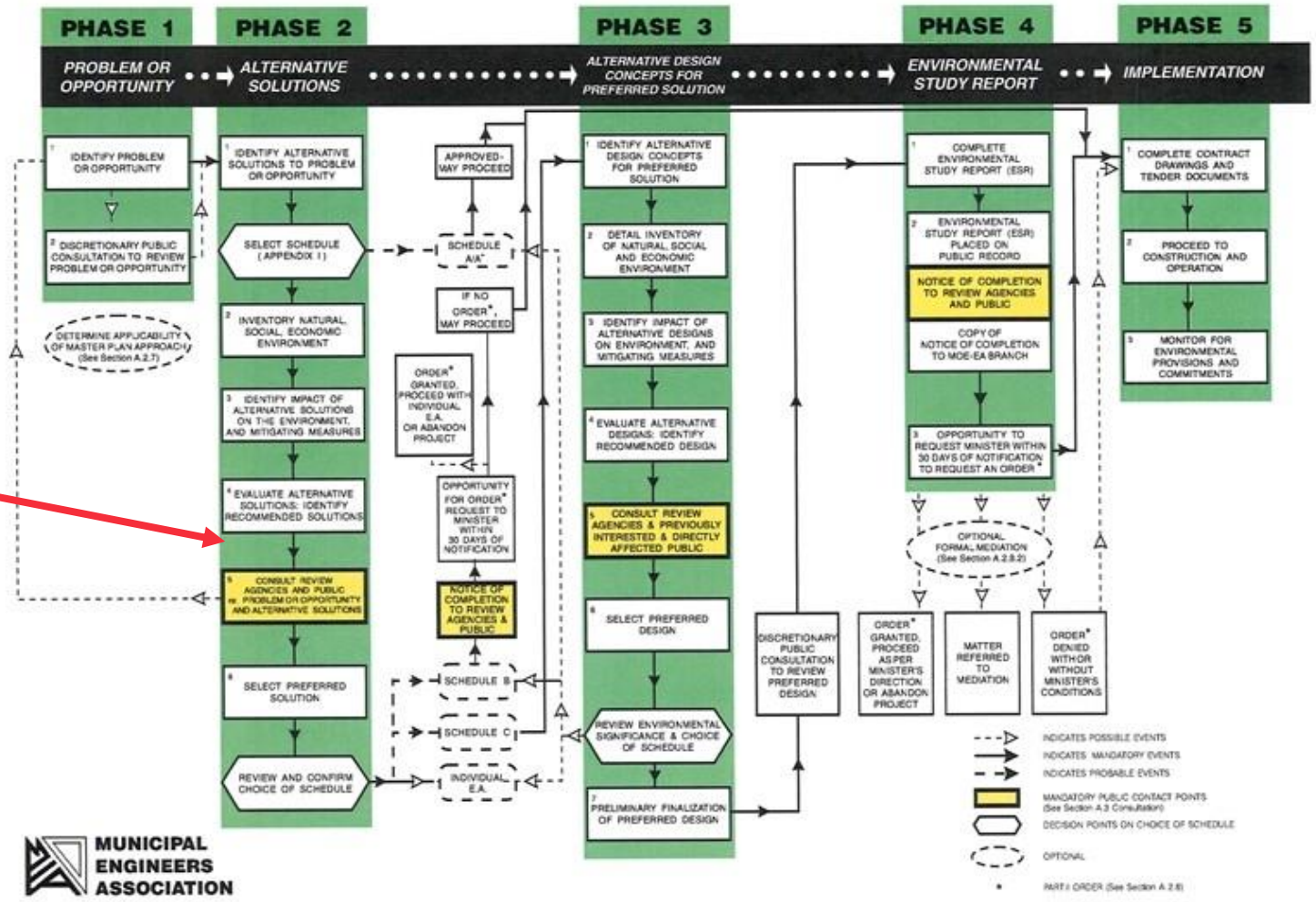
Figure 50: Roundabout at Countryside Option 2 (without encroachment on TRCA lands)

The EA Process

- ✓ The study is being undertaken in accordance with the Municipal Class EA planning and design process for Schedule “B” project.
- ✓ ***Study is for Heart Lake Rd. and Countryside Dr. intersection only***
- ✓ The “*Function & Design Review of Heart Lake Road Corridor (2019)*” provides background information, provide support for problem/opportunity identification for this intersection improvement
- ✓ Additional studies have been undertaken building upon existing background information and studies.

The Class EA Process

We are Here...



NEED AND JUSTIFICATION

Improve the safety and operations of the Heart Lake Road and Countryside Drive intersection including ***meeting the traffic demand*** of increasing population and growth.
while incorporating ***traffic calming and wildlife mortality reduction*** recommendations for the Heart Lake Road Corridor.

Paradigm Transportation Solutions Ltd (Paradigm)

TRAFFIC STUDY

- ✓ Westbound left-turn movement a critical movement under existing conditions, and operates over-capacity - will continue under future 2031 and 2041 traffic conditions.

SAFETY REVIEW (Paradigm)

- ✓ Collision history (2015 – 2019) revealed no fatal collisions.
- ✓ Majority were ‘single motor vehicle’ collisions - driver error/behaviour

SAFETY REVIEW (Continued)

- ✓ Investigation confirmed there is more than adequate approach and departure sight distance available;
- ✓ However, even with the adequate sight distances a high frequency of collisions were reported, and were determined to be attributed to aggressive driver behavior (i.e. speed).
- ✓ Correlates with the poor traffic operations stemming from a lack of gaps within the traffic stream along Heart Lake Road.
- ✓ Concluded that the current intersection traffic warrants improvement.

INTERSECTION IMPROVEMENTS

- ✓ Under base year conditions the intersection falls just short of meeting the threshold criteria for traffic signal control.
- ✓ Under future 2031 and 2041 traffic conditions the intersection is found to meet signal justification criteria.
- ✓ Under the 2041 horizon year operating under traffic signal control, the intersection was found to operate at acceptable levels of service and within capacity.

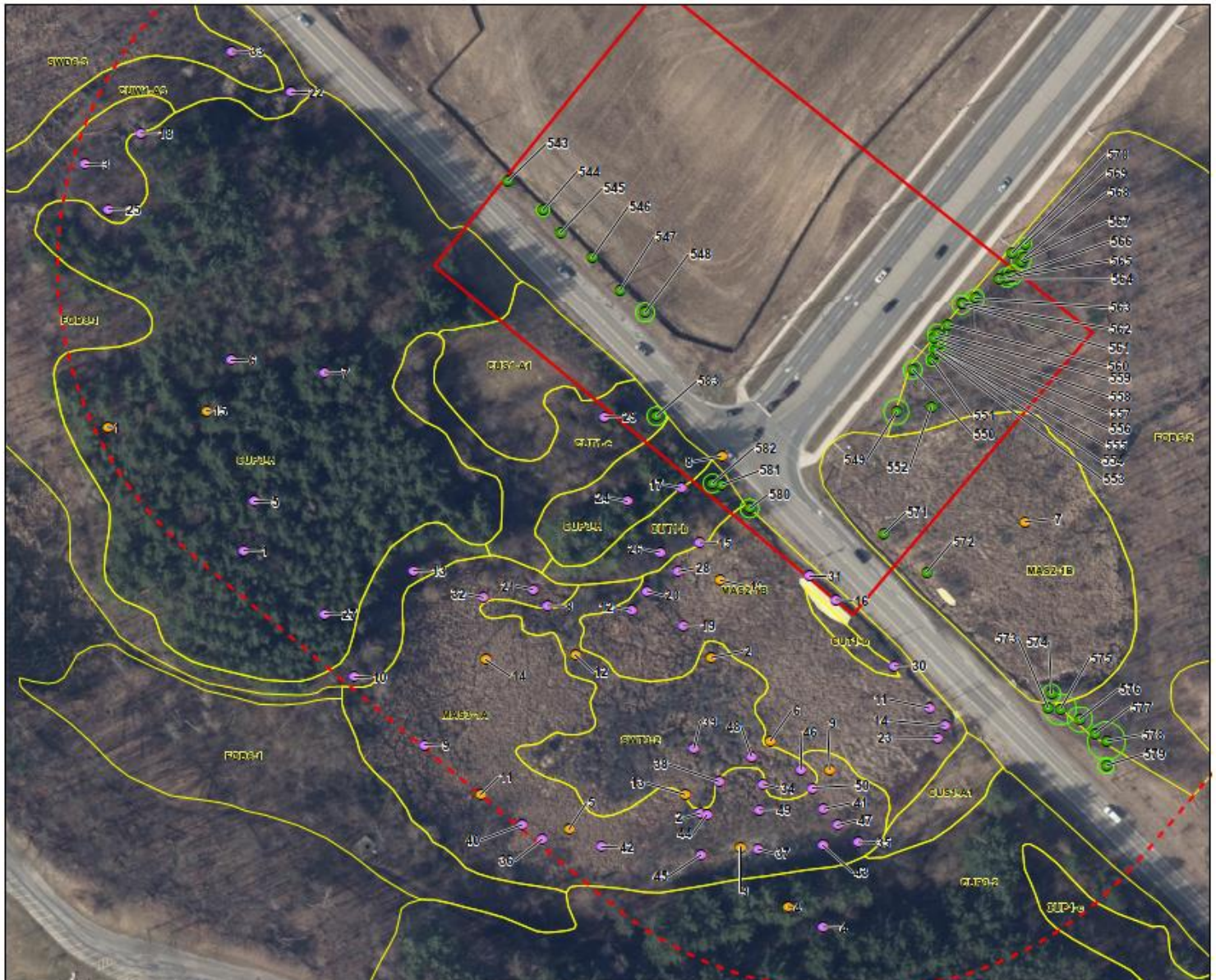
INTERSECTION IMPROVEMENTS (Continued)

- ✓ It was determined that the Heart Lake Road/Countryside Drive intersection would be suitable for roundabout implementation to mitigate poor intersection operations
- ✓ Several roundabout configurations were investigated;
- ✓ A single-lane roundabout with single lane entry on the northbound and southbound Heart Lake Road approaches along with dual lane entry on the westbound Countryside Drive approach will operate at acceptable levels of service and well within capacity under 2041 traffic conditions.

Other Studies – Summary of findings

- ✓Natural Environment Study (Beacon)
- ✓Drainage Study (MTE)
- ✓Phase I ESA (MTE)
- ✓Stage 1 Archaeological Investigation (ARA)
- ✓Cultural/Built Heritage Study (ARA)
- ✓Geotechnical Investigation (MTE)

Natural Environment



Existing Conditions | **Figure 2**

Heart Lake Road and Countryside Drive, Environmental Assessment, City of Brampton

Legend

- Subject Property
- Study Area (120 m)
- Turtle Nesting Berms
- Vegetation Communities
- Surveyed Tree Crown Radius
- Surveyed Trees
- Fauna (TRCA)
- Flora (TRCA)

Code	Vegetation Community
CUP1-C	Locust Deciduous Plantation
CUP3-2	White Pine Coniferous Plantation
CUP3-H	Mixed Conifer Coniferous Plantation
CUS1-A1	Native Deciduous Successional Savannah
CUT1-B	Buckthorn Deciduous Thicket
CUT1-C	Exotic Deciduous Thicket
CUW1-A3	Native Deciduous Successional Woodland
FOD5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest
FOD6-1	Fresh-Moist Sugar Maple - Ash Deciduous Forest
FOD8-1	Fresh-Moist Poplar Deciduous Forest
MAS2-1B	Narrow-leaved Cattail Mineral Shallow Marsh
MAS3-1A	Broad-leaved Cattail Organic Shallow Marsh
SWD6-3	Swamp Maple Organic Deciduous Swamp
SWT3-2	Willow Organic Thicket Swamp

BEACON ENVIRONMENTAL

Project: 220296
Last Revised: December, 2020

Client: MTE Consultants Inc.

Prepared by: DU
Checked by: AB
DRAFT

N

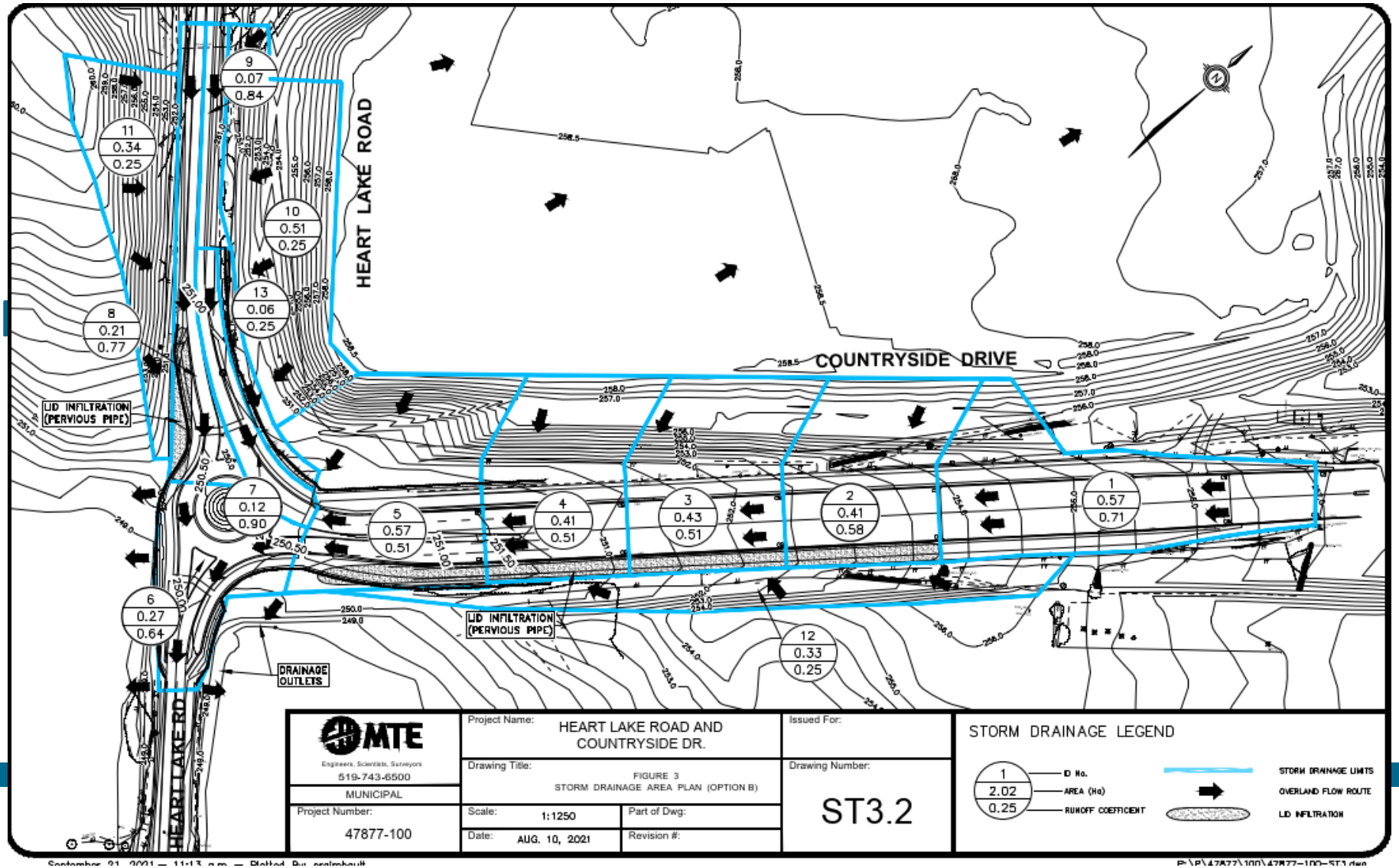
1:1,200

0 25 50 m

Natural Environment (Beacon

- ✓ Significant wetlands and woodlands near intersection (Part of Heart Lake PSW);
- ✓ Significant wildlife habitat in wetland & woodland communities – Endangered and threatened species:
  - ✓ Bats, turtles (incl. Snapping), waterfowl, raptor nesting, reptiles;
- ✓ Turtle nesting berms;
- ✓ No fish habitat;
- ✓ Adjacent to Heart Lake ANSI's

Drainage Study



Drainage Study

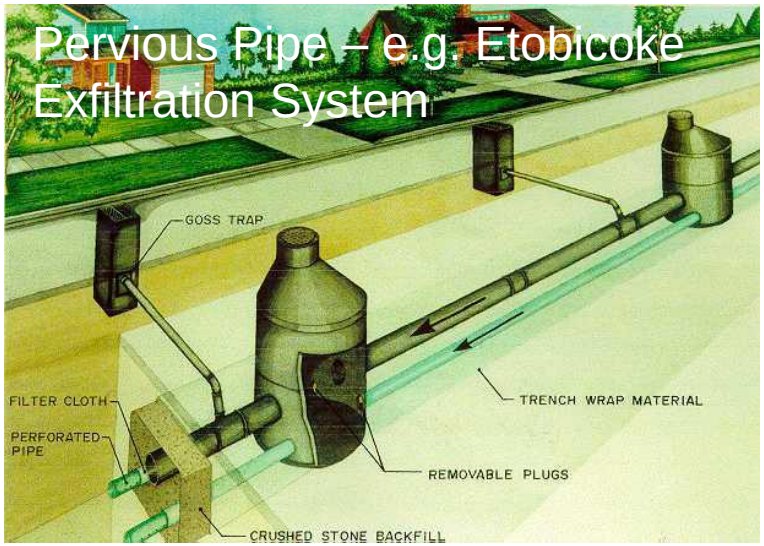
- ✓ Revised Draft study has been submitted to TRCA;
- ✓ Drainage basically the same as existing for signalized intersection;
- ✓ Roundabout results in an extra 14 l/s during 100 year storm compared to signalized intersection
- ✓ LID's recommended for quantity/quality control;
- ✓ Development drainage details to east (south side) on Countryside Drive to be included prior to construction ***IF*** their flows reach the Countryside Dr. road allowance.

Drainage Study

Existing	Proposed
• 300 mm storm sewer with sub drains	• Replace existing and enhance with LID to promote infiltration
• Ditch drainage with culvert crossing Countryside Drive	• Re-grade / enhance ditches and replace / relocate culvert
• Overland flow draining to ditch / wetlands (generally uncontrolled drainage)	• Flows contained and conveyed into ditches or infiltrated within project limits

Drainage Study

Existing



Bioswale – e.g. Haggert Ave

Phase 1 ESA


Heart Lake Road
Countryside Drive
Private Road
NORTH
PROJECT NORTH
Legend
Watercourse
Provincially Significant Wetland
ANSI
5m Contours
Data Sources:
Contains information licensed under the Open Government License Ontario.
Greater Toronto Area (GTA) Orthophotography Project 2013
Source: Data provided by Ontario Ministry of Natural Resources and Forestry
© Copyright: 2013 First Base Solutions Inc. All Rights Reserved
0 10 20 30 40 50 m
Scale (11x17): 1:1500
Project CRS: NAD83 / UTM zone 17N
MTE
Engineers, Scientists, Surveyors
Client
The Corporation of the City of Brampton
Project
Phase I ESA
Site
Heart Lake Road and Countryside Drive, Brampton, ON
Title
Site Features
Reviewed By: SCA
Prepared By: SAR
Drawn By: FLH
Date: December 2020
Project No: 47827-106
Figure No: 2

Phase 1 ESA

- ✓ No records of spills;
- ✓ Fill has been added over the years;
- ✓ Additional testing should be undertaken prior to construction;
- ✓ Excess fill regulations.

Stage 1 Archaeological

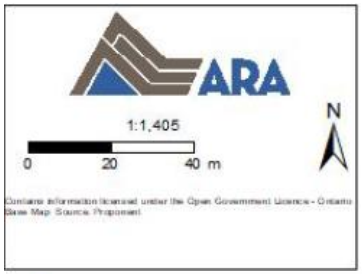


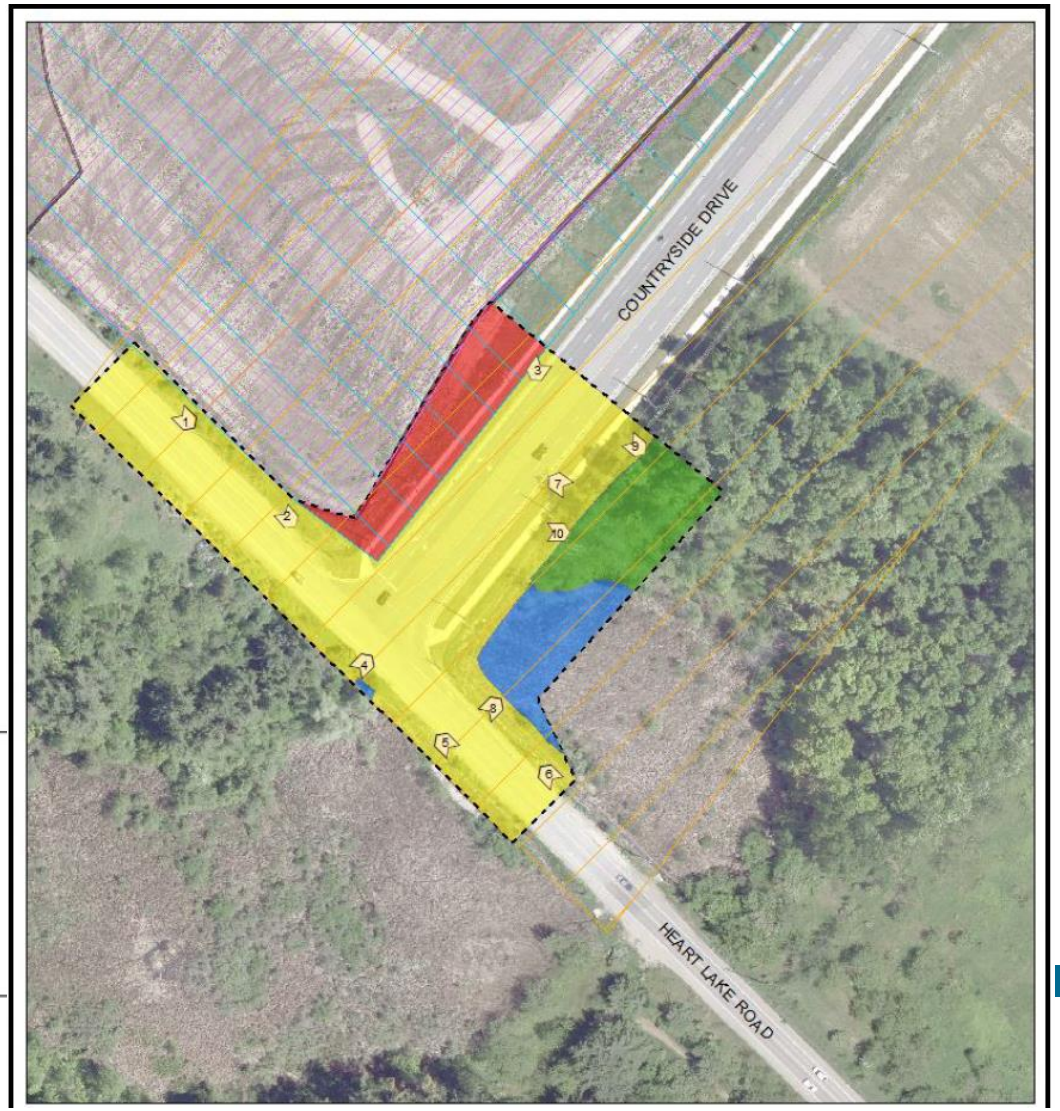
Image
Study Area

Previous Assessments

Licence #P029-100 (Stage 1)
CIF #P163-016-2007 (Stage 1)
CIF #P013-522-2009 (Stage 1–2)

Potential Modelling
(Recommended Survey Method)

Archaeological Potential
(Test Pit Survey at an Interval of 5 m)
No Archaeological Potential - Permanently Wet
(No Further Work)
No Archaeological Potential - Disturbed
(No Further Work)
Previously Assessed
(No Further Work)



Stage 1 Archaeological (ARA)

- ✓ Most areas have no archaeological potential – previously disturbed, permanently wet, previously assessed;
- ✓ Intersection options to be designed to avoid potential areas;
- ✓ If area on south side of Countryside east of Heart Lake Rd is disturbed, it may require a Stage 1 investigation;
- ✓ May require a Stage 1 investigation into property purchase area if not previously assessed.

BHR Assessment Results Map

ARA

1:11,000

0 250 500 m

N

- Project Location
- Built Heritage Resource (BHR 1)
- Property Parcel

Built/Cultural Heritage (ARA)

- ✓ Wetland is considered a BHR;
- ✓ Heart Lake Rd is considered a CHL;
- ✓ Depending on final impacts, undertake a Heritage Impact Assessment to evaluate final details;
- ✓ If bus stops or seating areas included, examine opportunities for interpretive signing

Geotechnical

LEGEND

BH101-20 MTE BOREHOLE

30m OFFSET FROM WETLAND

WETLAND BOUNDARY

REFERENCES:

- AERIAL IMAGE FROM GOOGLE EARTH PRO
- GROUND SURFACE ELEVATIONS SURVEYED BY MTE

N

NORTH

0 20 40 60 80 100m

Scale(11x17): 1:2000

MTE Engineers, Scientists, Surveyors

CLIENT: CITY OF BRAMPTON

PROJECT: HEART LAKE ROAD & COUNTRYSIDE DRIVE EA

SITE: HEART LAKE ROAD & COUNTRYSIDE DRIVE, BRAMPTON, ONTARIO

TITLE: SITE PLAN

Project No. 47877-100

Figure No. 2

NOV. 2020

March 31, 2020 – 12:40 p.m. – Plotted By: dyross

Project: 47877-100 CAD: P:\P\47877\100\BH FIGURES\47877-100-BHFIGURES.DWG

2 SITE PLAN

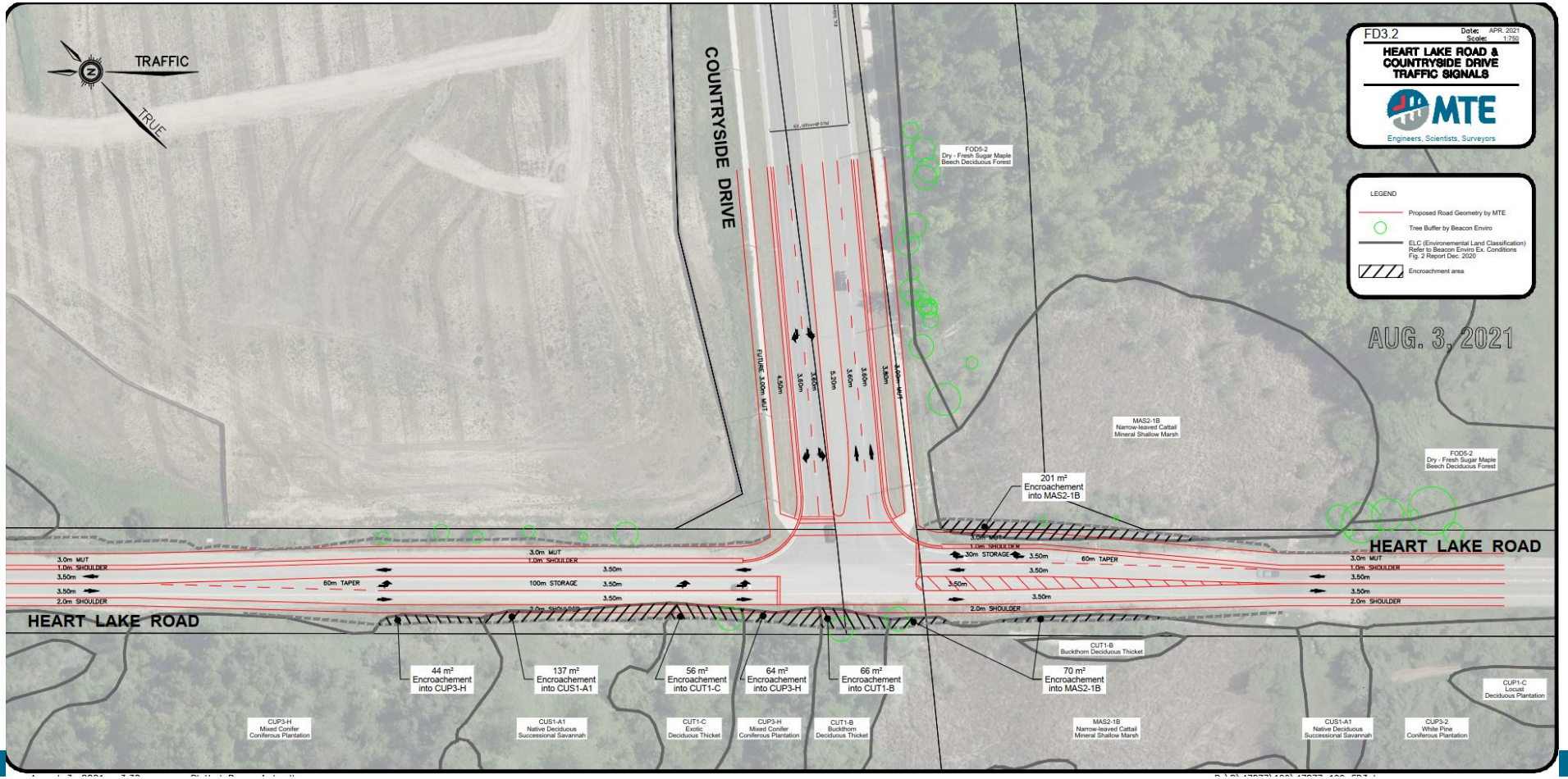
Geotechnical

- ✓ Underlying soil is glacial till – Gravelly silt;
- ✓ Pavement structure: 450 B, 150 A, 110 Binder, 50 Surface Asphalt;
- ✓ Peat deposit between 2-4 m, found on west side of Heart Lake south of Countryside Drive;
- ✓ Dewatering expected in excavations greater than 2 m deep;
- ✓ Excavated soil generally acceptable to be re-used on site – however some topsoil may need to be removed to a specialized site (waste transfer site)

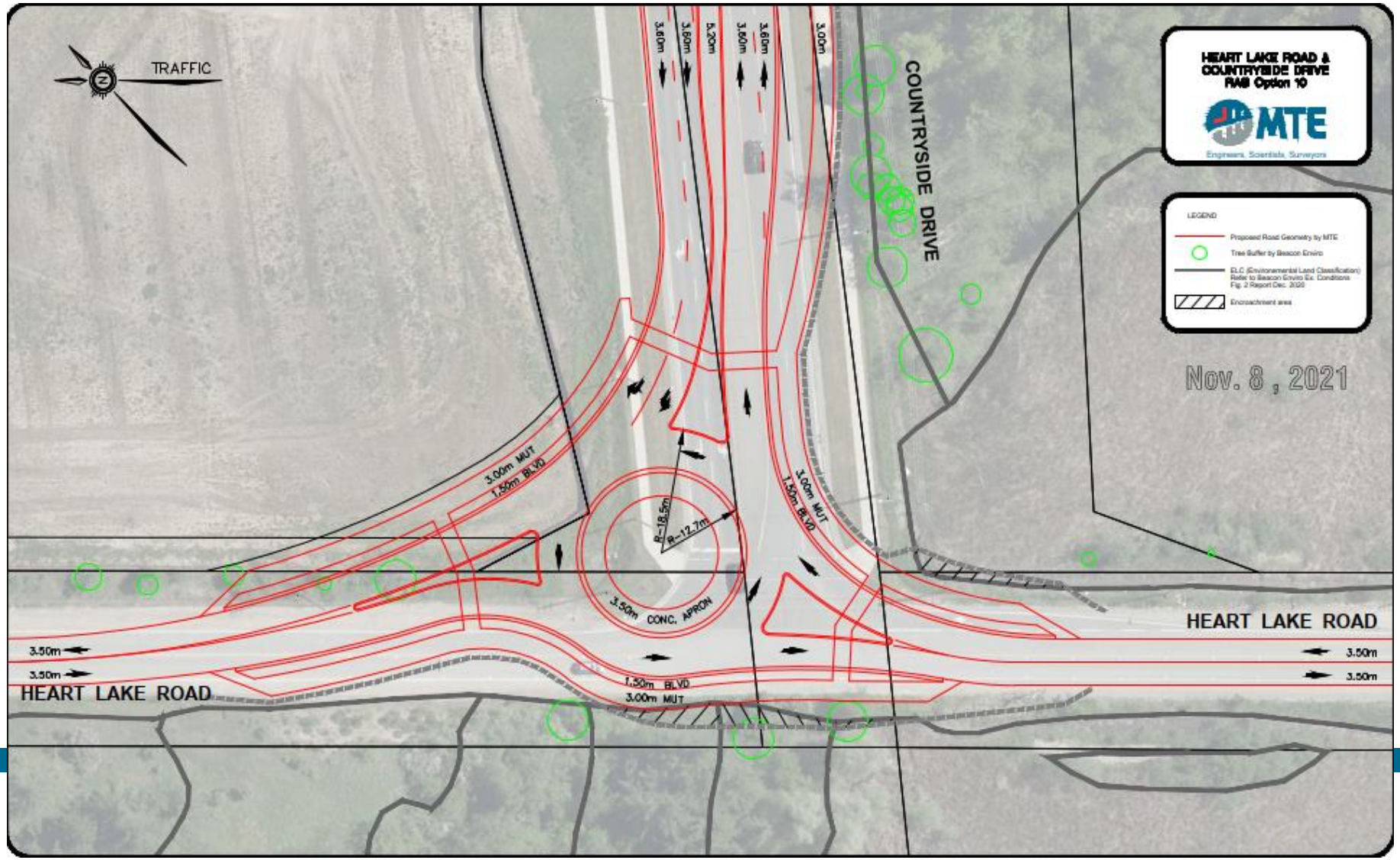
ALTERNATIVES

- ✓ DO NOTHING
- ✓ SIGNALIZED INTERSECTION WITH TURN LANES
- ✓ ROUNDABOUT

SIGNALIZED WITH TURN LANES



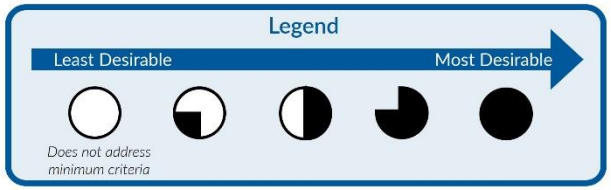
ROUNDABOUT


TRAFFIC
COUNTRYSIDE DRIVE
HEART LAKE ROAD & COUNTRYSIDE DRIVE RAB Option 10
MTE
Engineers, Scientists, Surveyors
LEGEND
Proposed Road Geometry by MTE
Tree Buffer by Beacon Enviro
ELC (Environmental Land Classification) Refer to Beacon Enviro Ex. Conditions Fig. 2 Report Dec. 2020
Encroachment area
Nov. 8 , 2021
3.60m
3.60m
5.20m
3.60m
3.60m
3.00m
3.00m MUT
1.50m BLVD
R=18.5m
R=12.7m
3.50m CONC. APRON
3.00m MUT
1.50m BLVD
HEART LAKE ROAD
3.50m
3.50m
3.50m
3.50m
HEART LAKE ROAD
1.50m BLVD
3.00m MUT

EVALUATION MATRIX

Heart Lake Road at Countryside Drive Environmental Assessment

Draft Evaluation Matrix



Evaluation Criteria	Do Nothing	Signalized Intersection with Turn Lanes	Roundabout
Natural Environment			
1. Minimize impacts to Designated Natural Areas, vegetation, wildlife, aquatic features	1. No impacts to existing Natural Areas, vegetation, wildlife or aquatic features, but Heart Lake Road traffic will continue at speed limit, increasing chance of wildlife strikes	1. a) Traffic with green light will continue at speed limit increasing chance of wildlife strikes b) Wildlife fencing and erosion controls to be installed	1. a) All traffic will slow down to navigate roundabout, which should reduce wildlife strikes b) Wildlife fencing and erosion controls to be installed
2. Minimize impacts to wetlands	2. No impacts to designated wetlands	2. Some intrusions into designated wetlands (271m²)	2. Minimal intrusion into designated wetlands (45m²)
3. Minimize impacts to surface water and groundwater	3. No change in runoff/ surface drainage	3. Least pavement drainage/surface water runoff	3. More pavement resulting in more drainage/ surface water runoff
4. Minimize air quality impacts and effects on climate change	4. Traffic volumes will continue to increase, resulting in increase delays / congestion	4. Traffic delays/congestion resulting in vehicles idling at red lights	4. Less traffic delays due to vehicles not having to stop at red lights, less vehicle starting/stopping
	● 4	◔ 1	◕ 3
Planning Objectives			
1. Adhere to Transportation Master Plan	1. Does not implement required improvements per Transportation Master Plan	1. Adheres to Transportation Master Plan	1. Adheres to Transportation Master Plan
2. Adhere to Official Plan	2. Other transportation improvements will be required to adhere to the Official Plan	2. Adheres to Official Plan	2. Adheres to Official Plan
3. Adhere to Active Transportation Master Plan	3. Does not adhere to Active Transportation Master Plan	3. Adheres to Active Transportation Master Plan	3. Adheres to Active Transportation Master Plan
4. Adhere to Region Official Plan Policies	4. Other transportation improvements will be required to adhere to Official Plan Plolicies	4. Adheres to Region Official Plan Policies	4. Adheres to Region Official Plan Policies
	○ 0	● 4	● 4

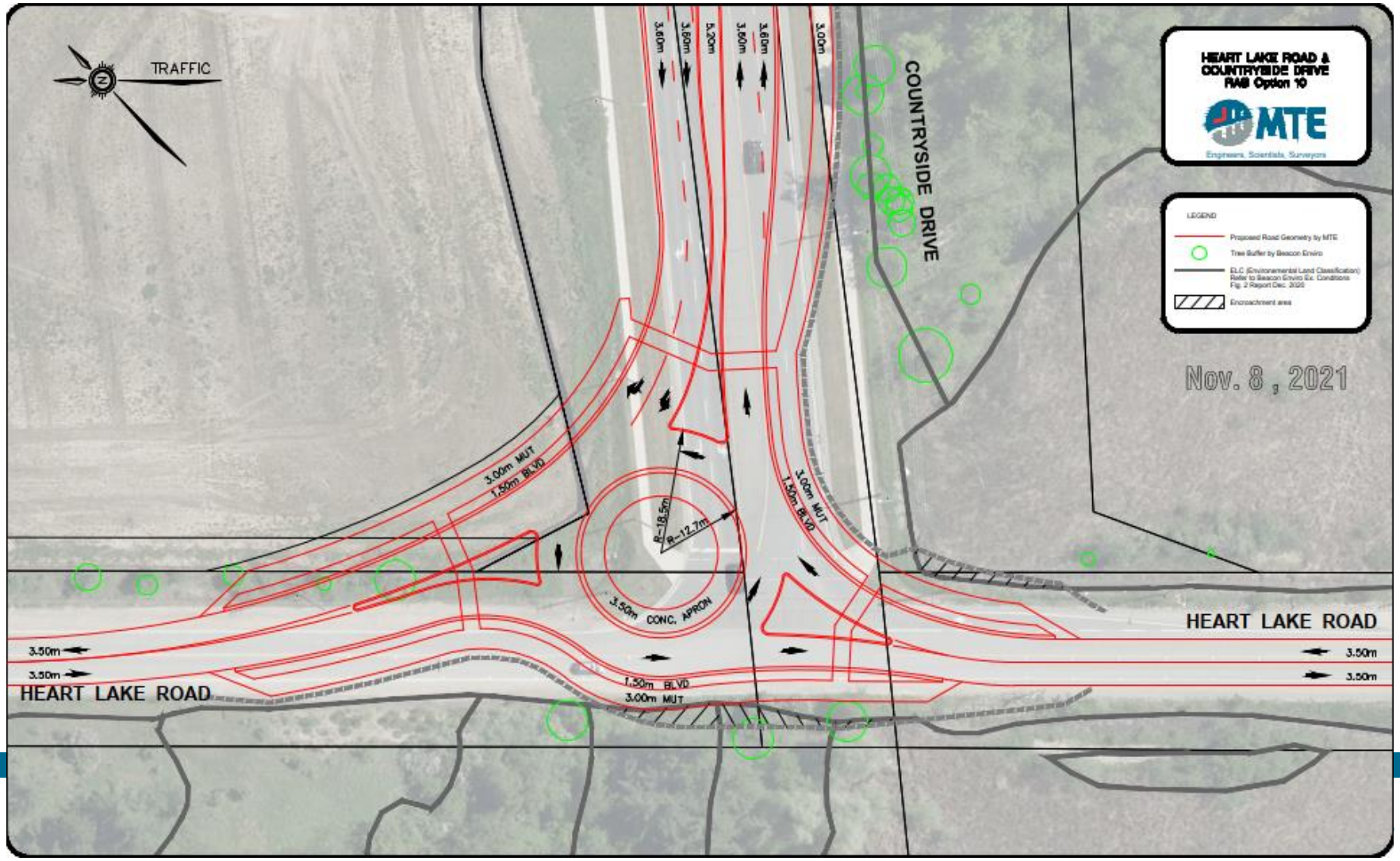
BRAMPTON

MTE

Evaluation Criteria	Do Nothing	Signalized Intersection with Turn Lanes	Roundabout
Social and Cultural Environment			
1. Improve visual aesthetics	1. Visual aesthetics will remain the same, no opportunities to enhance landscape	1. Landscaping opportunities behind curb/ sidewalk/MUT	1. Opportunities for landscaping in center island and behind sidewalk/MUT
2. Preserve archaeological and cultural heritage features	2. No impacts to archaeological/ heritage features	2. a) No direct impacts to archaeological/ heritage features b) Some impact on existing rural road cross section	2. a) No direct impacts to known archaeological features b) Disrupt existing linear views c) Changes the existing cross section d) Additional Stage 1/2 Archaeological investigation required in property purchase area
3. Preserve the agricultural setting, community character and public realm	3. No impacts to existing setting, character or public realm	3. Signals contribute to urban look and setting	3. Opportunity to enhance the public realm, and all traffic must slow to navigate roundabout
4. Minimize traffic noise	4. Traffic noise will continue to increase as traffic volumes increase	4. Traffic noise will not decrease	4. Traffic noise will decrease due to less stop/starts of traffic
5. Minimize disruption due to construction	5. No disruption due to construction, however, increasing congestions may cause disruption	5. Least time for construction and traffic can be maintained during construction	5. Most time for construction and traffic can be maintained during construction
6. Minimize impacts to existing accesses in the area	6. No impacts to existing access, however, increasing congestion may impact access	6. No accesses impacted in the area	6. No accesses impacted in the area
	2	2	3
Economic Development			
1. Beneficial to business/ community with respect to travel time	1. Travel time will not be reduced, and will increase as traffic volumes increase	1. More delays than with a roundabout due to stopped traffic stopped for red lights	1. Roundabout provides more free flowing traffic, and results in less traffic delays/congestion
2. Minimize capital and construction costs	2. No construction or capital costs	2. Road improvements and signal installation have lowest capital/construction costs - est. $1.15 million	2. Highest Capital Costs due to additional pavement, curb, signage and line markings - est. $1.57 million
3. Minimize property impacts/ requirements	3. No additional property required	3. No additional property required	3. Approximately 550 sm of property is required on NE corner, which can be obtained through the subdivision approvals
4. Minimize operating and maintenance costs	4. Operating and maintenance costs do not change	4. Operating and maintenance costs include powering and maintaining signals	4. No signal power and maintenance costs
	3	2	2

Evaluation Criteria	Do Nothing	Signalized Intersection with Turn Lanes	Roundabout
Engineering and Technical			
1. Congestion and collisions will continue	1. Is safe for all travel modes	1. Safe for all travel modes	1. Safe for all travel modes. Roundabout reduces severity of collisions (i.e. less conflict points and sideswipes vs head-on or "T bone" collisions)
2. Create an Active Transportation Friendly Environment (Cyclists, pedestrians etc.)	2. No additional sidewalks or cycling facilities	2. Sidewalks, cycle facilities provided. Motorist must stop at red light and be aware of pedestrians.	2. Sidewalks, cycle facilities provided. Requires pedestrians to be sure motorists are aware of their presence. Cyclists can use Roundabout or multi-use path at Roundabout
3. Accommodate future travel demands	3. Future travel demands not accommodated	3. Future travel demands accommodated (20 years)	3. Future travel demands accommodated (20 years). Roundabout results in less delays/congestion
4. Improve transportation mode choice including transit	4. Transportation mode choice not improved	4. All transportation modes accommodated including transit	4. All transportation modes accommodated including transit
5. Accommodate emergency services	5. Fire trucks can be accommodated, but may experience congestion in future	5. Fire Truck can use priority signal to enhance access through intersection	5. Fire trucks can navigate roundabout within acceptable response times - less congestion
6. Minimize impacts to utilities in the corridor	6. No utility relocations required	6. Utility relocations will be required, but somewhat less than Roundabout	6. Utility relocations required will be slightly more than signalized due mainly to additional street lighting
	1	4	3
Overall Evaluation Score			
	Does not meet planning objectives nor active transportation requirements, and will result in increased congestion.	Meets Planning and Engineering/ Technical objectives; some intersections encroach into natural areas; idling traffic will continue/ increase; and noise and urban look will increase.	Meets Planning and Engineering/ Technical objectives; visual/ landscaping can be enhanced; less idling/ congestion; lower lifecycle cost due to very low maintenance with no intrusions into wetlands; Pedestrians/ cyclists may be initially unfamiliar with Roundabouts.
	10	13	15

ROUNDABOUT IS PREFERRED

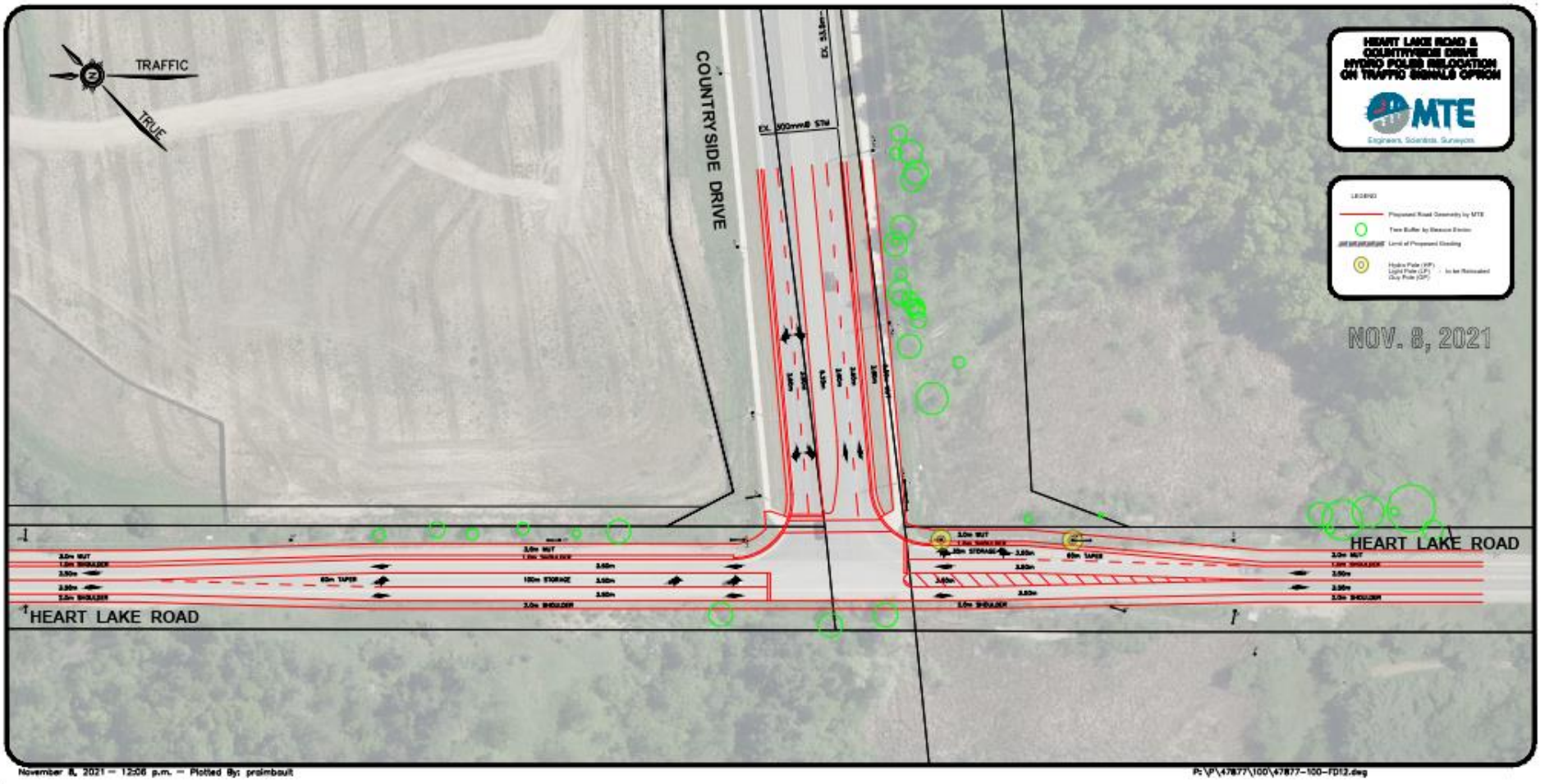


UTILITY ISSUES

- Hydro, some communications cables
- Not a lot of conflicts, but Hydro relocations & new Streetlighting is critical;
- Region of Peel Watermain/Wastewater
- Now that alternatives have been developed, specific comments can be based on the actual alternatives.

BRAMPTON

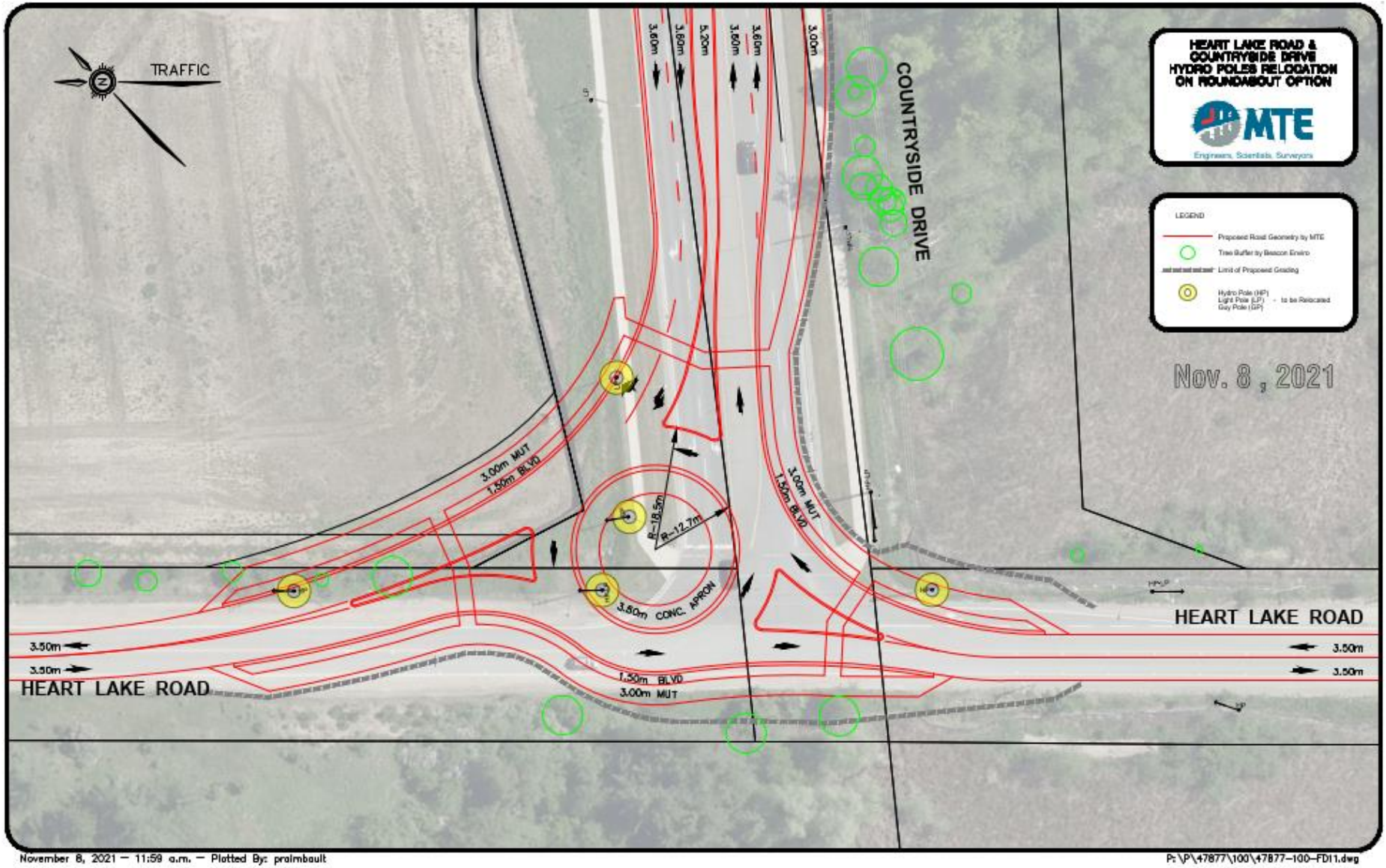
MTE



Engineers, Scientists, Surveyors

BRAMPTON

MTE



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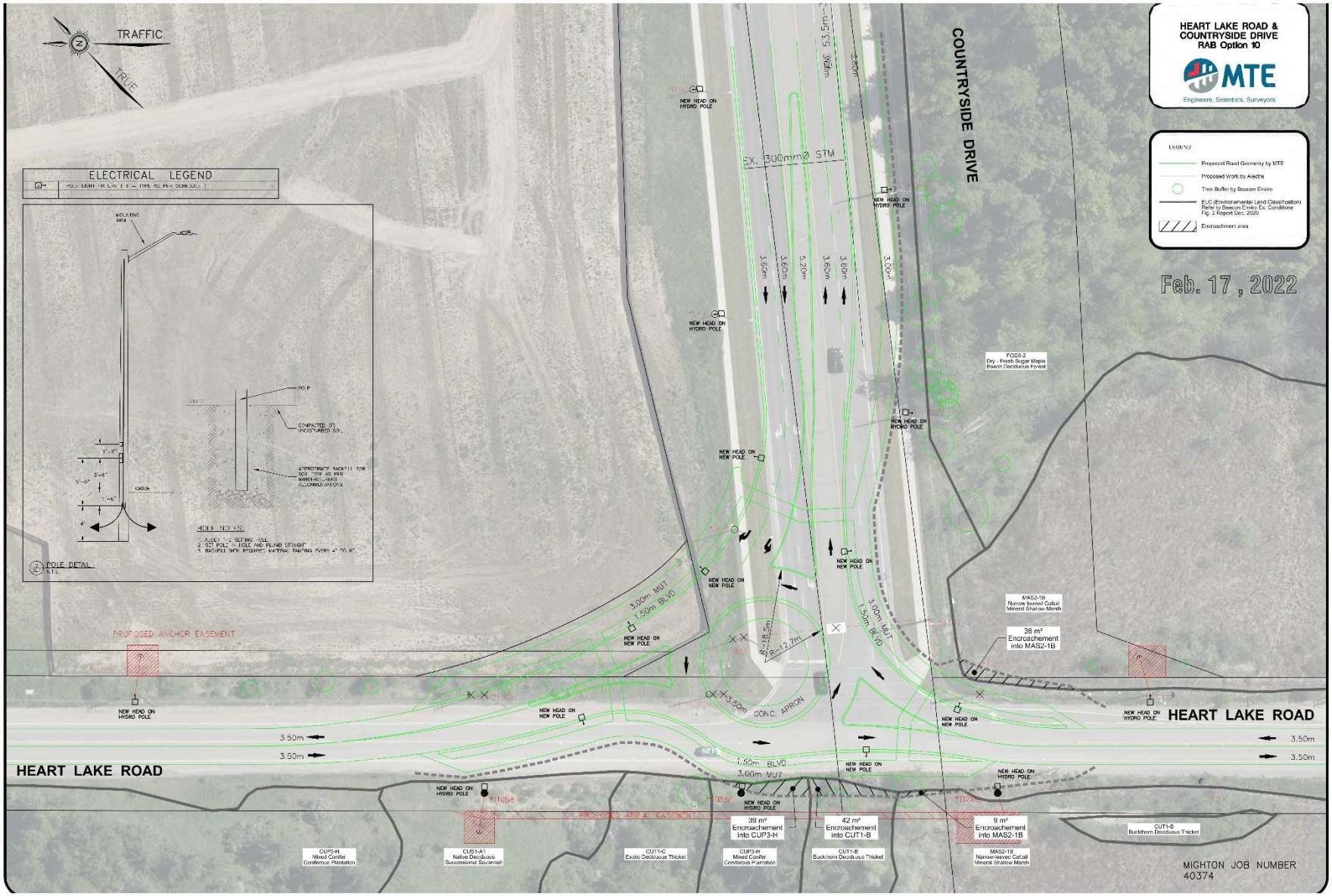

HEART LAKE ROAD & COUNTRYSIDE DRIVE RAB Option 10
MTE
Engineers, Scientists, Surveyors
LEGEND
Proposed Road Geometry by MTE
Proposed Work by Alectra
Tree Buffer by Beacon Enviro
ELC (Environamental Land Classification) Refer to Beacon Enviro Ex. Conditions Fig. 2 Report Dec. 2020
Encroachment area
Feb. 17, 2022
TRAFFIC
TRUE
ELECTRICAL LEGEND
POLE DETAIL
COUNTRYSIDE DRIVE
HEART LAKE ROAD
EX. 300mmØ STM
NEW HEAD ON HYDRO POLE
NEW HEAD ON NEW POLE
PROPOSED ANCHOR EASEMENT
PROPOSED AERIAL EASEMENT
3.00m MUT
1.50m BLVD
3.50m CONC. APRON
38 m² Encroachement into MAS2-1B
39 m² Encroachement into CUP3-H
42 m² Encroachement into CUT1-B
9 m² Encroachement into MAS2-1B
FOD5-2 Dry - Fresh Sugar Maple Beech Deciduous Forest
MAS2-1B Narrow-leaved Cattail Mineral Shallow Marsh
CUP3-H Mixed Conifer Coniferous Plantation
CUS1-A1 Native Deciduous Successional Savannah
CUT1-C Exotic Deciduous Thicket
CUT1-B Buckthorn Deciduous Thicket
MIGHTON JOB NUMBER 40374

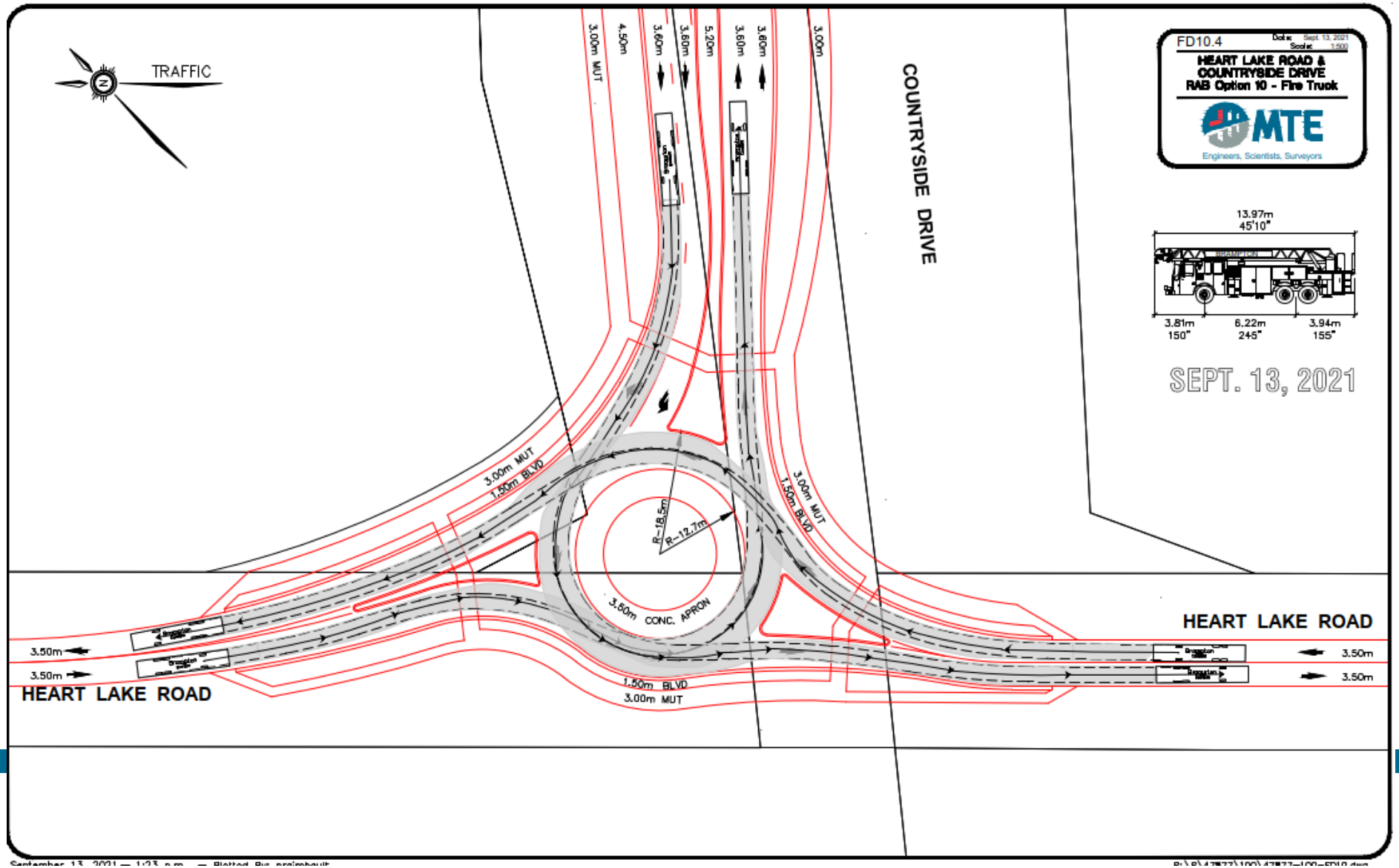
Next Steps:

- ✓Review Comments/Info from SHG
- ✓Complete Preliminary Preferred Design
- ✓Finalize Technical Studies
- ✓Public Information Centre (PIC) 1
- ✓Finalize Recommended Design
- ✓Write Environmental Project Report
- ✓Notice Of Completion

Questions?


882 Countryside Dr
Exit Street View
Report a problem


10820 Heart Lake Rd
Exit Street View
Report a problem


TRAFFIC
3.00m MUT
4.50m
3.60m
3.80m
5.20m
3.60m
3.60m
3.00m
COUNTRYSIDE DRIVE
FD10.4
Date: Sept. 13, 2021
Scale: 1:500
HEART LAKE ROAD &
COUNTRYSIDE DRIVE
RAB Option 10 - Fire Truck
MTE
Engineers, Scientists, Surveyors
13.97m
45'10"
3.81m
150"
6.22m
245"
3.94m
155"
SEPT. 13, 2021
3.00m MUT
1.50m BLVD
R=18.5m
R=12.7m
3.00m MUT
1.50m BLVD
3.50m CONC. APRON
HEART LAKE ROAD
3.50m
3.50m
HEART LAKE ROAD
1.50m BLVD
3.00m MUT
3.50m
3.50m