

# Etobicoke Creek Trunk Sewer Improvements and Upgrades Schedule C Municipal Class Environmental Assessment

Online Public Engagement

Public Information Centre #2

May 18, 2022 – June 1, 2022

# Welcome!

## The Purpose of this Online Public Engagement is to:

### Project Overview



Provide a project overview and explain why the project is being undertaken.

### Receive Feedback



Provide details and seek input on the alternative solutions developed.

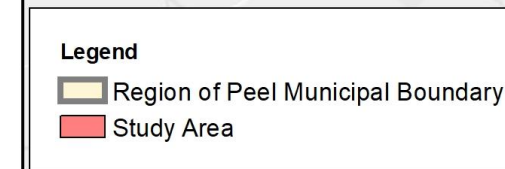
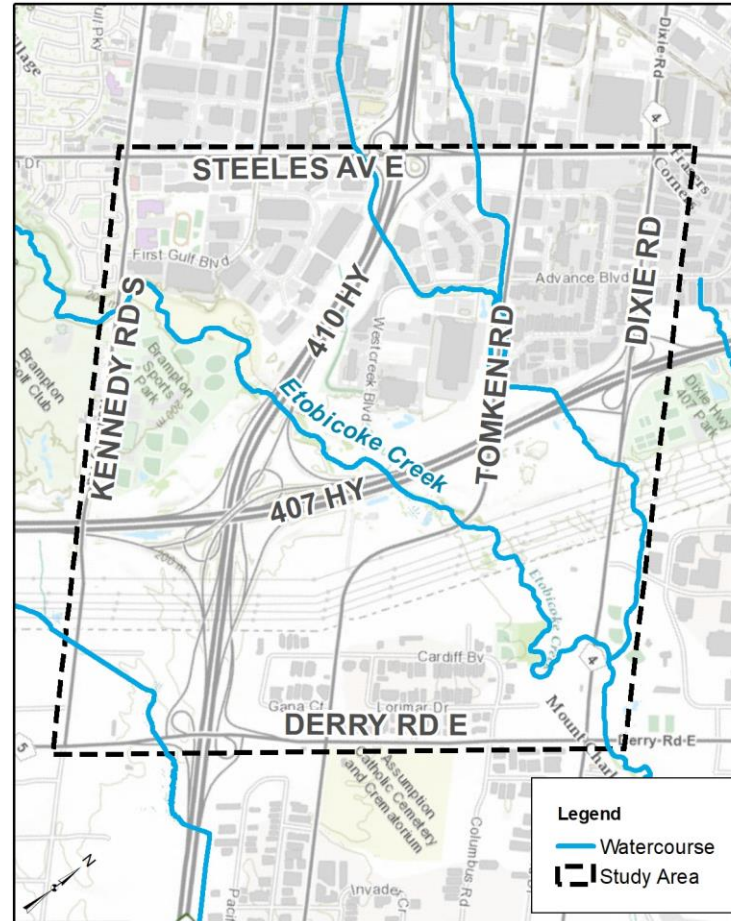
### Next Steps



Provide information on the next stages of the project.

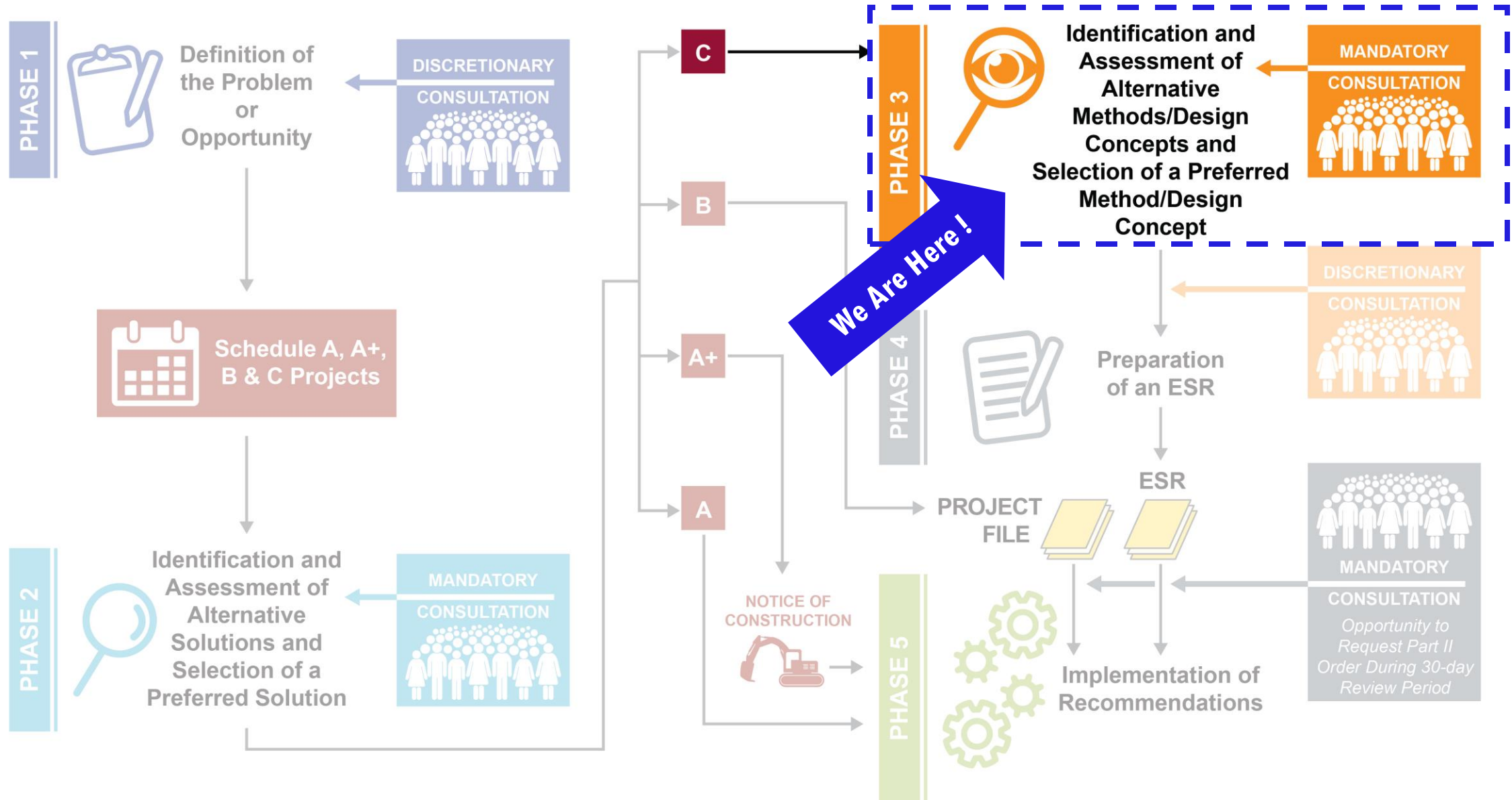
## Project Overview: What, why and how?

- The Etobicoke Creek Trunk Sanitary Sewers, from Kennedy Road to Derry Road in the City of Brampton, provides service to a large area extending north of Mayfield Road.
- Upgrades are required to address issues with the existing sanitary sewers and provide reliable sanitary service to future growth forecasted for the area.
- A Schedule 'C' Municipal Class Environmental Assessment (EA) Study is being undertaken to identify the preferred means to implement these upgrades.



# Class Environmental Assessment Process

# Class Environmental Assessment Process



# Phase 1



**Definition of the  
Problem or  
Opportunity**



## Problem Statement: Why are we doing this?



- “A review of the condition and capacity of the existing Etobicoke Creek Trunk Sewer reveals that while the existing sewer is in relatively good condition with isolated areas requiring structural repair or operational and maintenance attention, repair or rehabilitation would not address the operational challenges posed by deep manholes, access limitations and proximity to Etobicoke Creek.
- The sewer is considered to be constrained conveying existing flows along approximately 28% of its length and would be unable to accommodate the growth forecasts developed in alignment with City of Brampton’s growth plans.”

# Phase 2

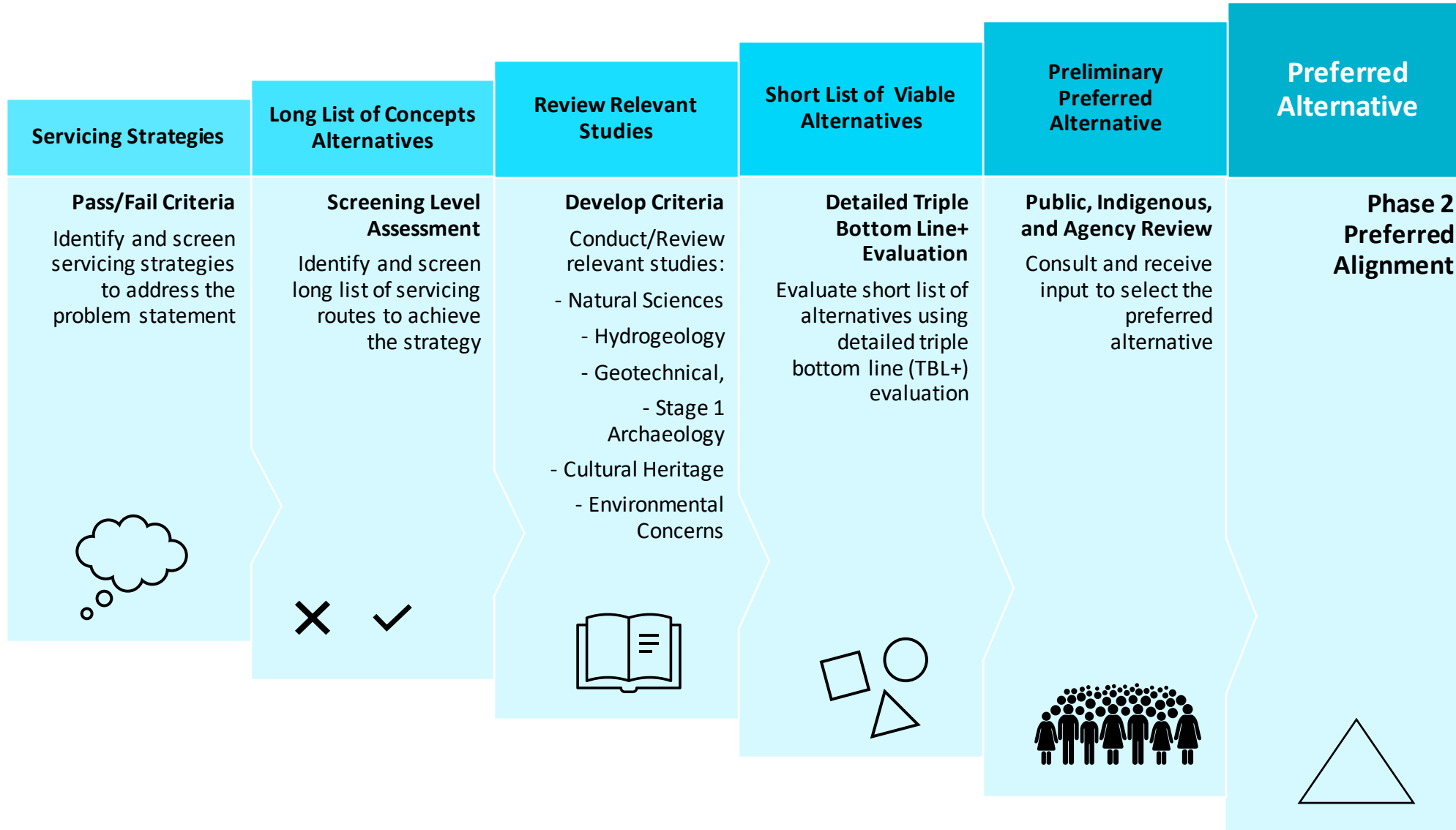


**Identification and  
Assessment of  
Alternative Solutions  
and Selection of a  
Preferred Solution**

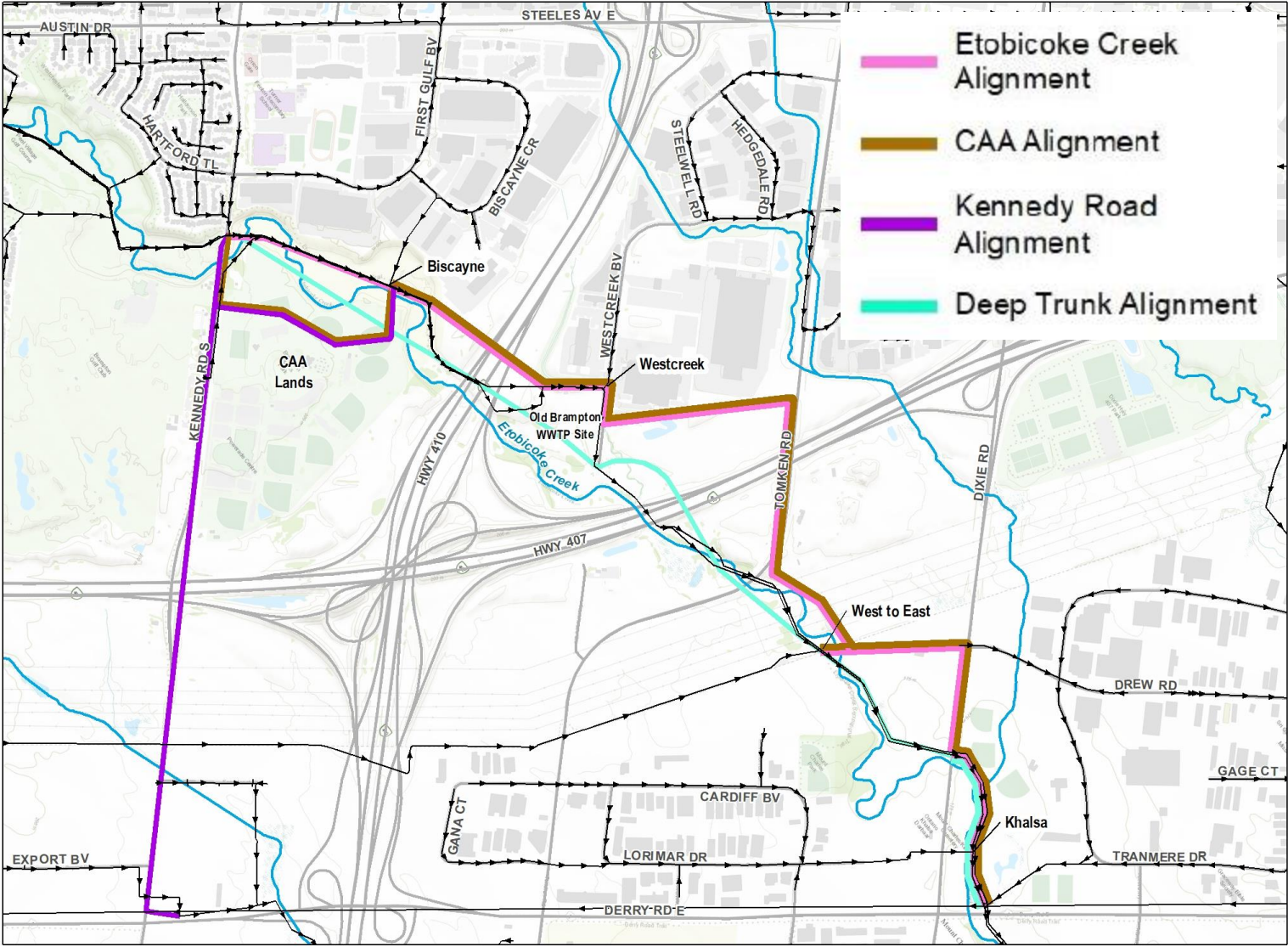








# Alternative Development Process: How do we arrive at a solution?



# Phase 2: Short-List of Viable Alternatives



# Evaluation of Alternatives

Category	Evaluation Criteria	Etobicoke Creek	CAA Lands	Kennedy Road	Deep Trunk
 Technical Considerations	<ul style="list-style-type: none"> <li>Implementation Feasibility</li> <li>Permits and Approvals</li> <li>Reliability</li> <li>Effectiveness</li> <li>Compatibility with Existing Infrastructure</li> <li>Maximize Lifecycle Investment</li> <li>Flexibility</li> <li>Operational Accessibility</li> </ul>	○	◐	◐	●
 Natural Environment	<ul style="list-style-type: none"> <li>Terrestrial Systems</li> <li>Aquatic Systems</li> <li>Soil Contamination</li> <li>Hydrogeology and Surface and Groundwater</li> <li>Soil, Bedrock and Geology</li> </ul>	○	◐	●	◐
 Socio-Cultural Environment	<ul style="list-style-type: none"> <li>Recreational Land Uses and Visual Landscape</li> <li>Future Planning Policies/Initiatives</li> <li>Disruption During Construction</li> <li>Archaeological and Cultural Resources</li> </ul>	◐	○	◐	●
 Economic Factors	<ul style="list-style-type: none"> <li>Capital Cost</li> <li>Operation and Maintenance</li> </ul>	●	◐	○	◐
<b>Alternative Ranking</b>		<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>

Most Impacts/  
Least Benefits

○

**Least Preferred**

Moderate Impacts/  
Moderate Benefits

◐

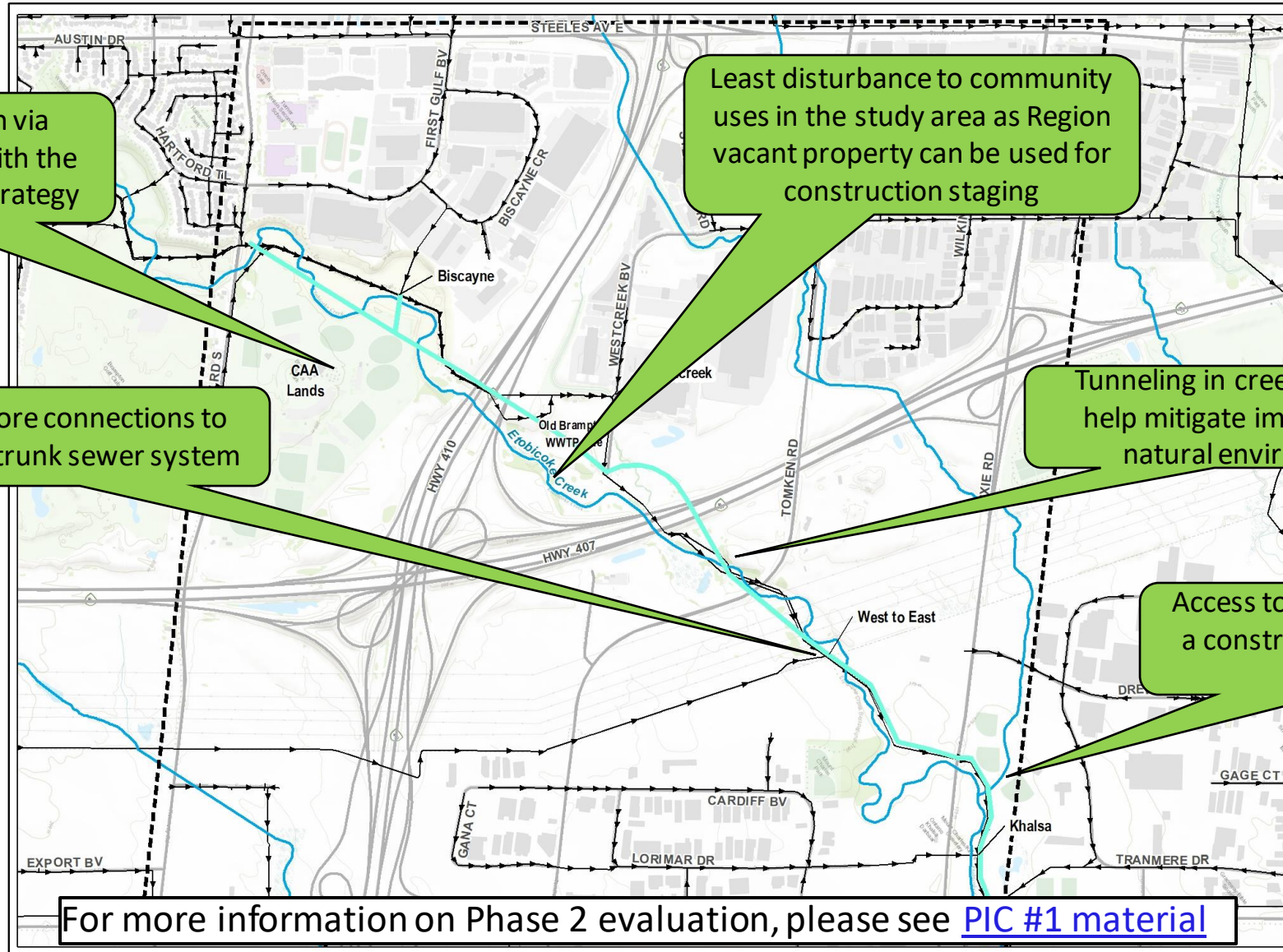
**Moderately Preferred**

Least Impacts/  
Most Benefits

●

**Most Preferred**

# Phase 2 Preferred Alternative - Deep Trunk Alignment Considerations



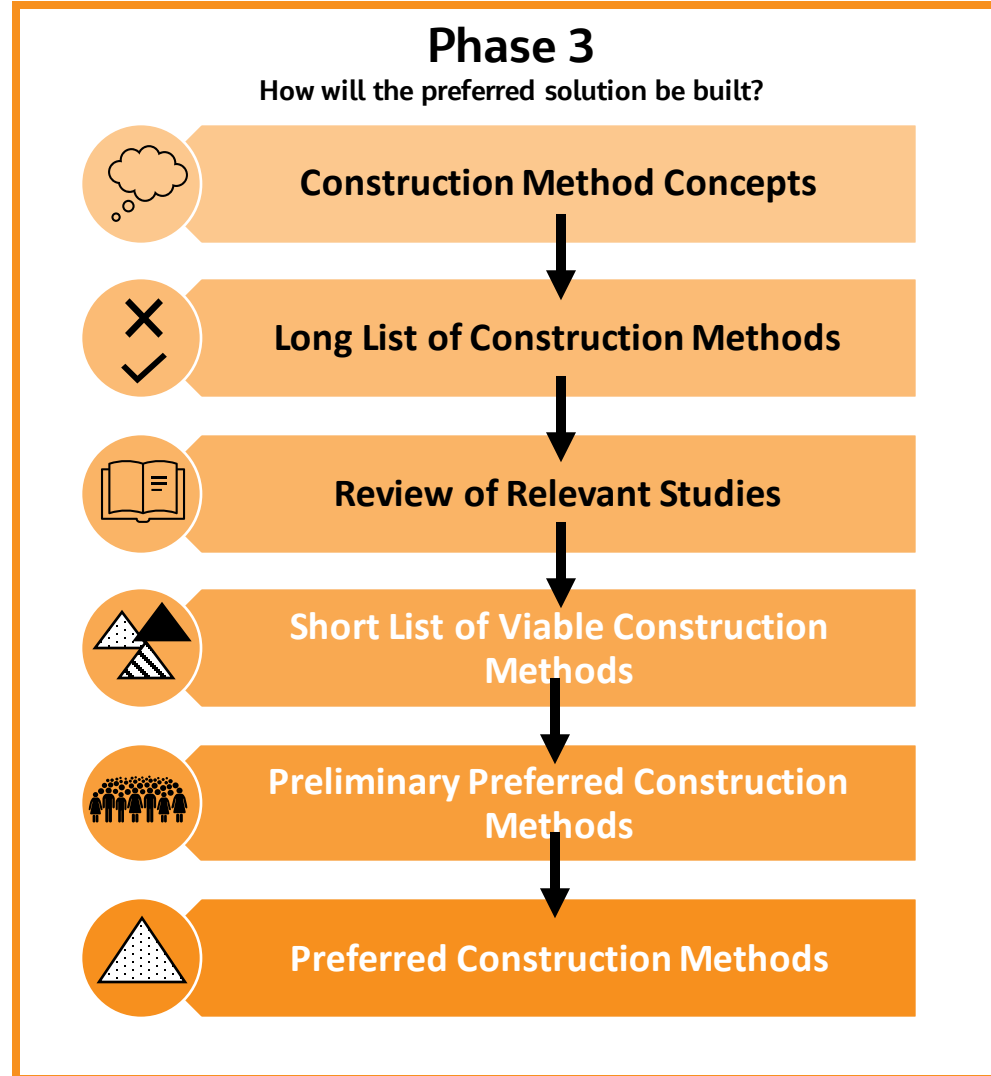
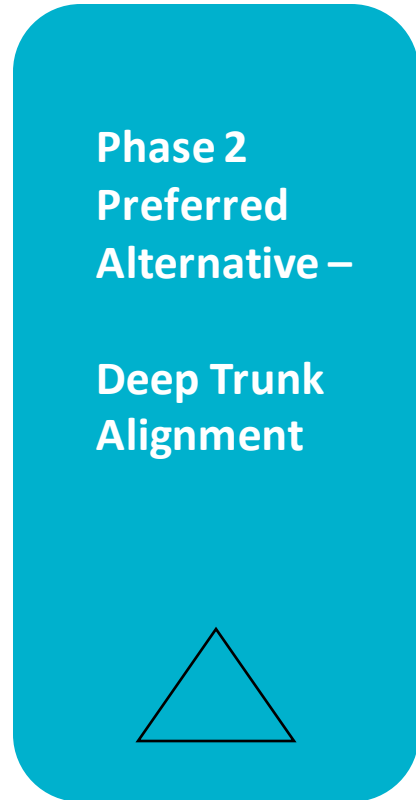
# Phase 3



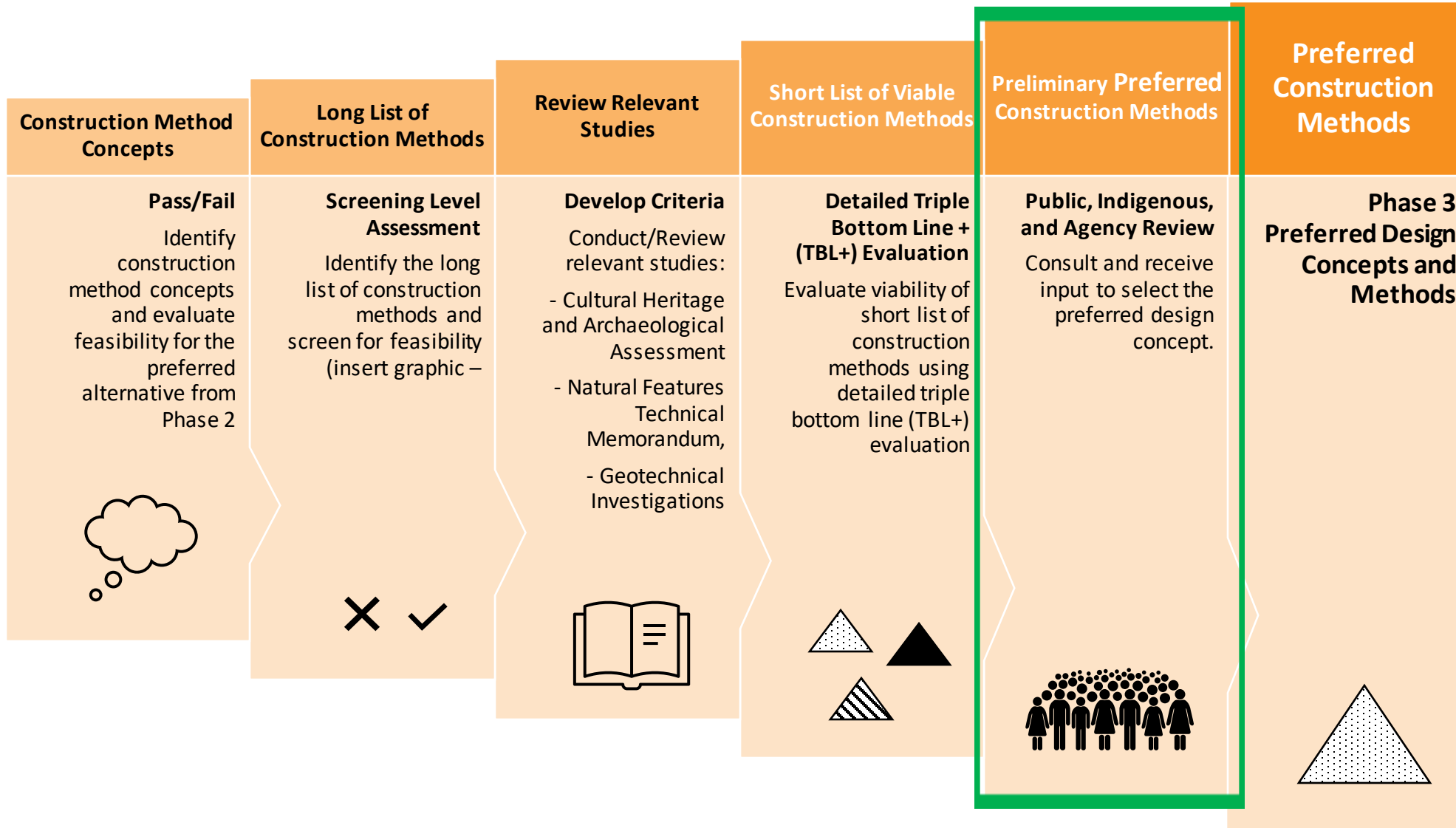
**Identification and  
Assessment of  
Alternative  
Methods/Design  
Concepts and Selection  
of a Preferred  
Method/Design Concept**



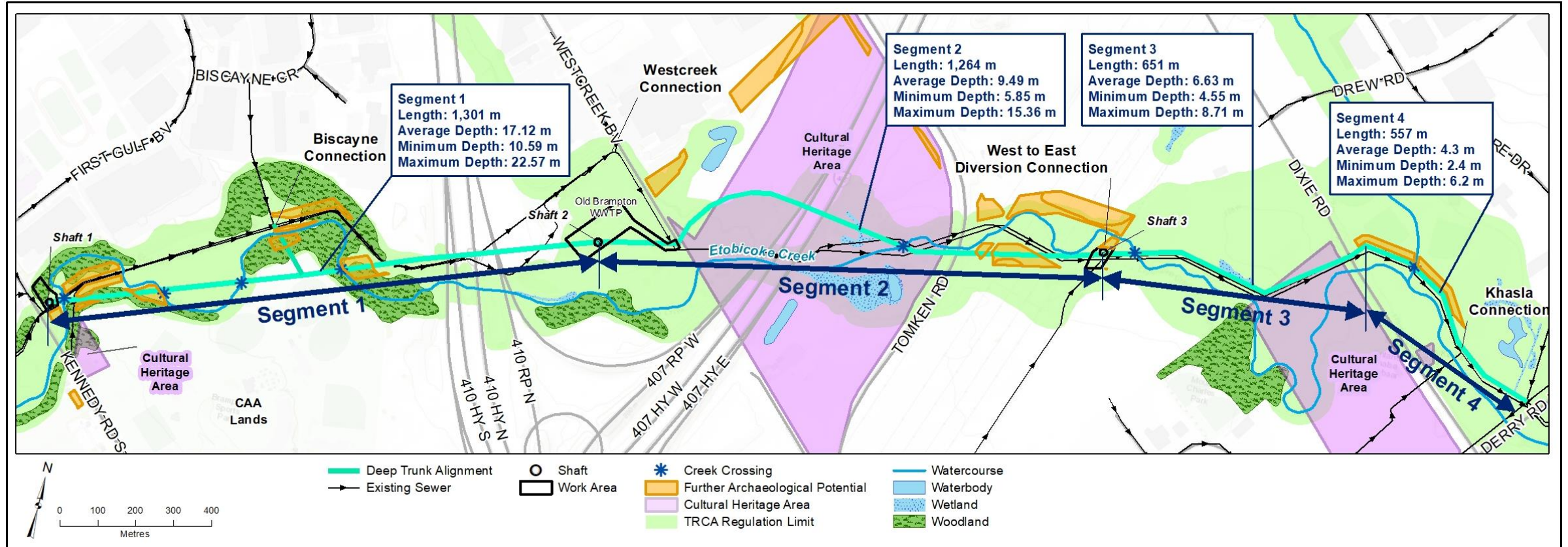
# What is the Relationship between Phase 2 and Phase 3?



# Design Concept Development Process: How do we arrive at a solution?



# Trunk Sewer Segments for Phase 3





# Construction Method Concepts



Pass/ Fail

# Phase 3: Construction Method Concept – Open-Cut Construction Considerations



- Open-cut construction for the installation of infrastructure
- Allows for alignment to change direction as needed
- Disruptive to local area and environment
  - Impact traffic
  - Generate noise pollution and dust
  - Require larger area of land to dig
- Trenches deeper than 8 m are generally not feasible due to limitations in digging equipment

# Phase 3: Construction Method Concept – Tunneled Construction Considerations



- Installed below ground without the use of extensive trenches
- Cannot accommodate directional changes in alignment within a short distance
- Can generate vibration
- More expensive versus trenched construction
- Requires a minimum cover of twice the size of the tunnel

## Phase 3: Construction Method Concepts – Pass/Fail

### Pass/Fail Criteria

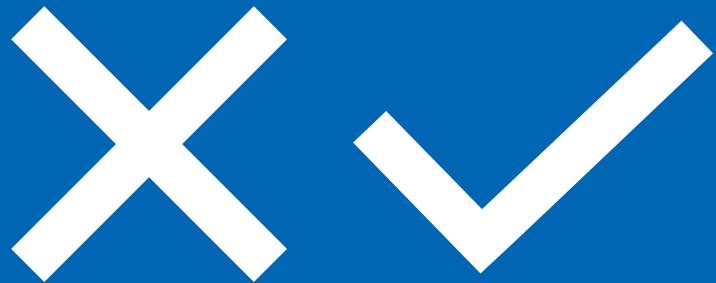
- Depth of pipe:
  - Is the depth less than 8 m? → Best constructed by **Open-Cut**  
**or**
  - Is the depth more than 8 m? → Best constructed by **Tunnel**
- Alignment:
  - Does it have multiple directional changes? → Best constructed by **Open-Cut**  
**or**
  - Is the alignment a straight alignment? → Best constructed by **Tunnel**

## Phase 3: Design Concepts – Pass/Fail

	Tunneling Methods	Open Cut
Segment 1	✓	✗
Segment 2	✓	✗
Segment 3	✓	✓
Segment 4	✗	✓

✗ Not Feasible  
✓ Feasible

# Long List of Construction Methods



Screening Level Assessment

## Phase 3: Long List of Tunneling Methodologies

	Tunneling Methods			
	Hand Mining	Drill and Blast	TBM	MTBM
Segment 1	✗	✗	✓	✓
Segment 2	✗	✗	✓	✓
Segment 3	✗	✗	✗	✓
Segment 4	✗	✗	✗	✗

Note: Hand Mining and Drill and Blast were eliminated from further analysis at the Screening Level Assessment due to length of segments, slow progress, health and safety concerns, geotechnical conditions, and disruptive nature of the methods





# Review Relevant Studies



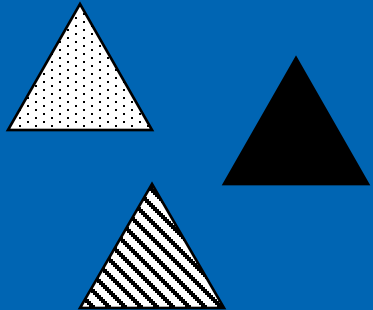
Develop Criteria



# Phase 3: Tunneling Methodologies Preliminary Evaluation

Category	Evaluation Criteria
 <p>Technical Considerations</p>	<ul style="list-style-type: none"> <li>• Tunnelling Considerations</li> <li>• Geotechnical and Hydrogeological Conditions</li> <li>• Property Requirements</li> <li>• Accessibility</li> <li>• Maintainability</li> <li>• Schedule</li> </ul>
 <p>Natural Environment</p>	<ul style="list-style-type: none"> <li>• Terrestrial Environment</li> <li>• Aquatic Environment</li> <li>• Groundwater Impacts</li> <li>• Contaminated Lands</li> <li>• Soil Management</li> </ul>
 <p>Socio-Cultural Environment</p>	<ul style="list-style-type: none"> <li>• Impact to Cultural Heritage</li> <li>• Archaeological Potential</li> <li>• Impact to Recreation</li> </ul>
 <p>Economic Factors</p>	<ul style="list-style-type: none"> <li>• Cost of Tunneling and Infrastructure</li> </ul>

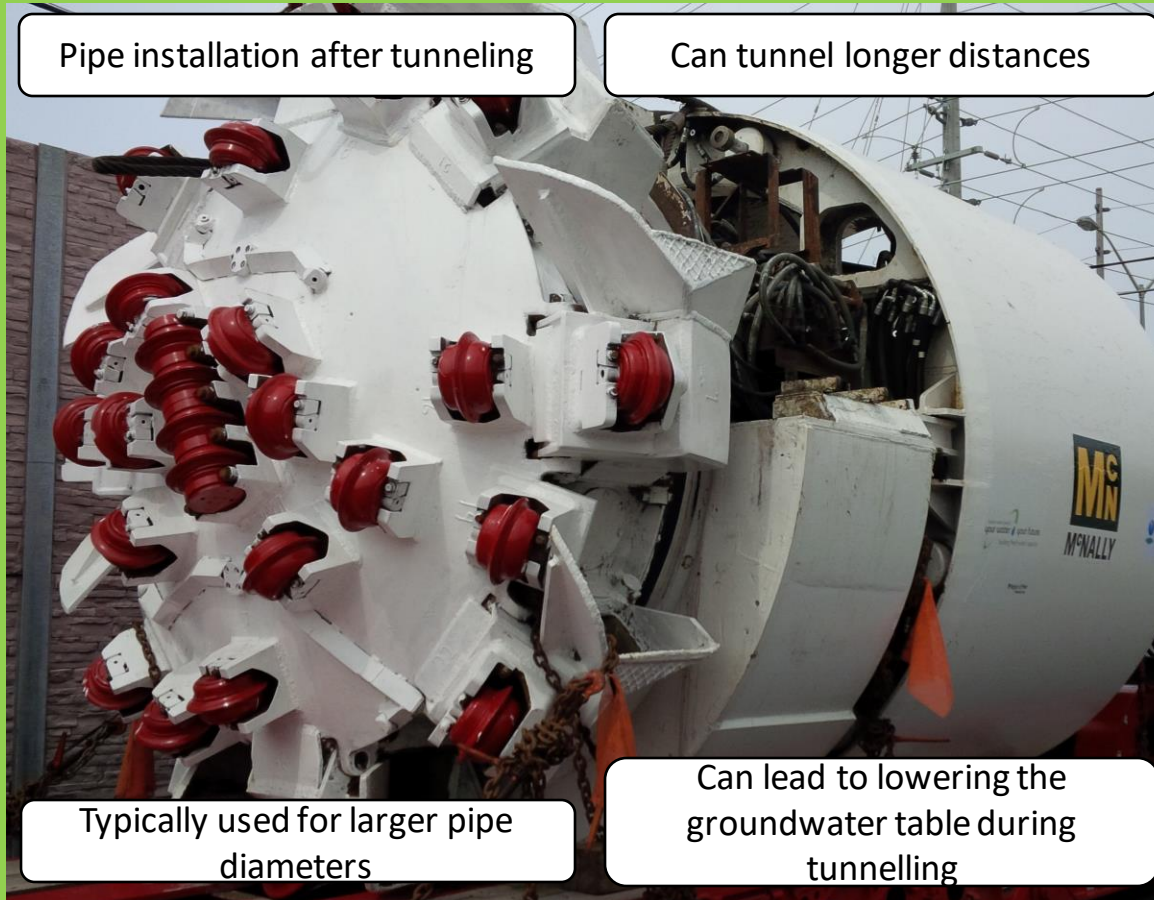
# Short List of Viable Construction Methods



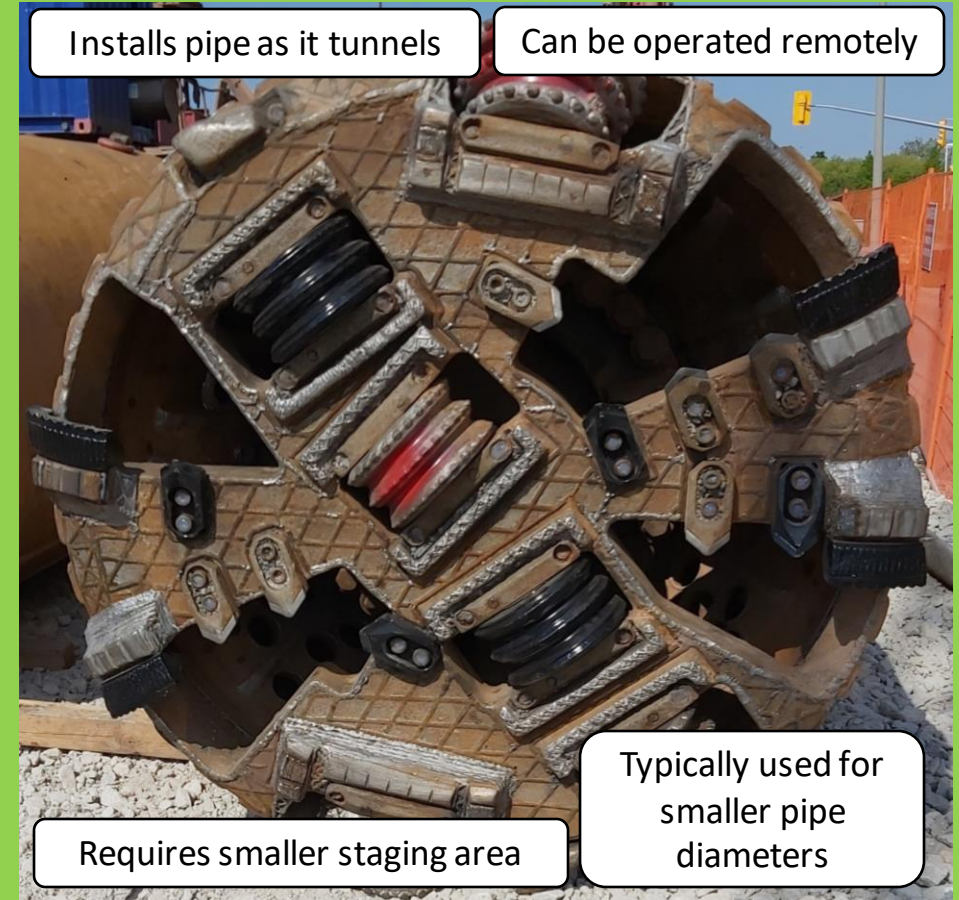
Detailed Triple Bottom Line + (TBL+) Evaluation

# Phase 3: Tunneling Methodologies

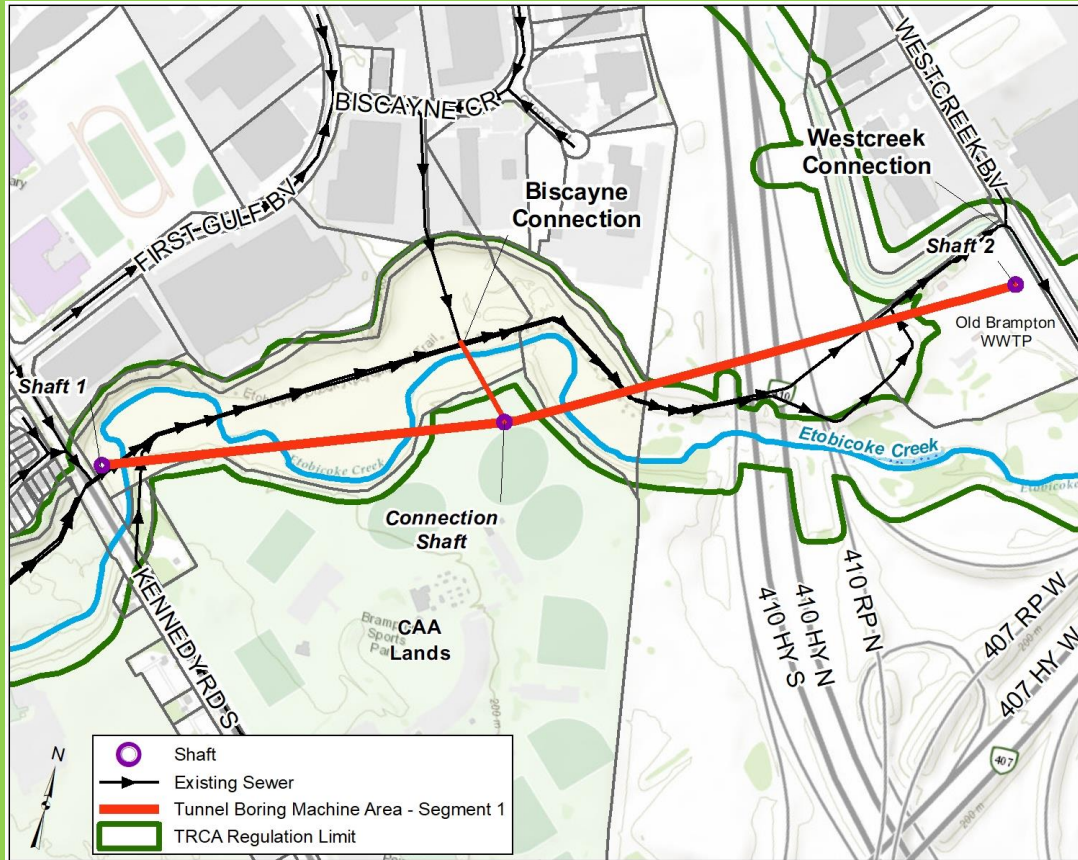
## TBM



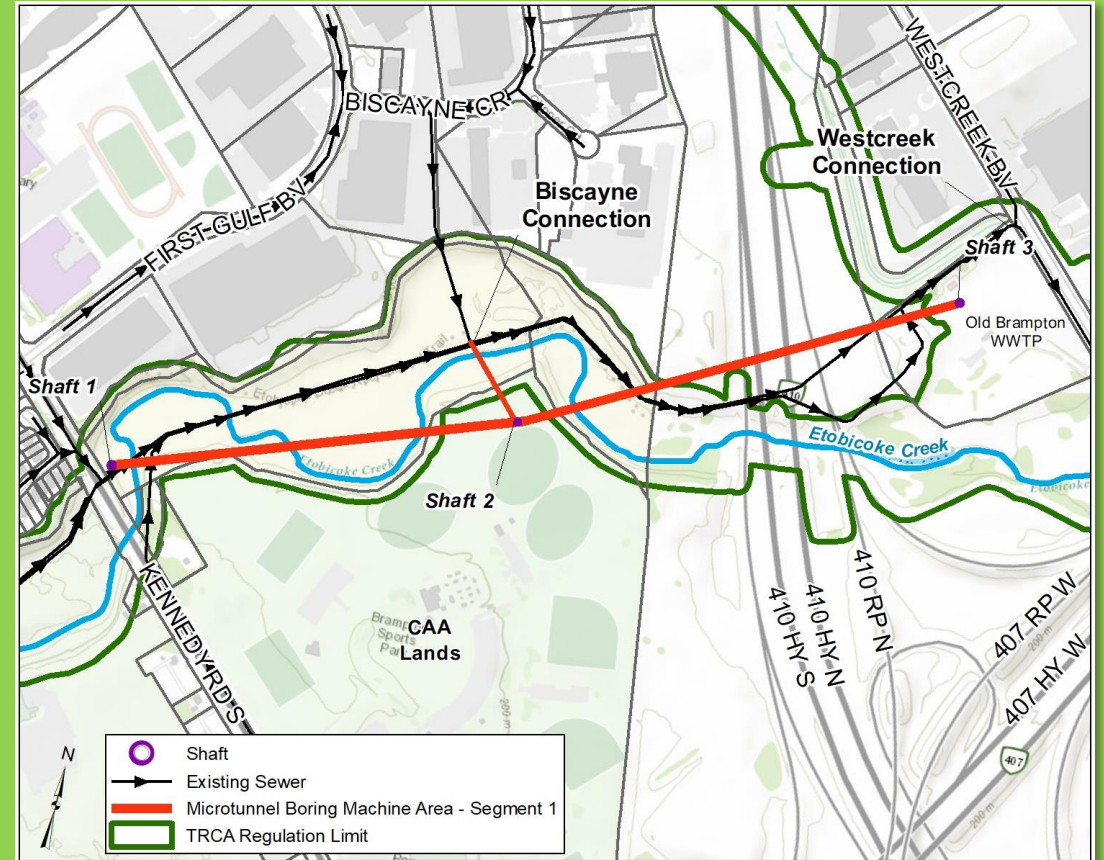
## MTBM



# Phase 3: Short List of Viable Design Methods - Segment 1

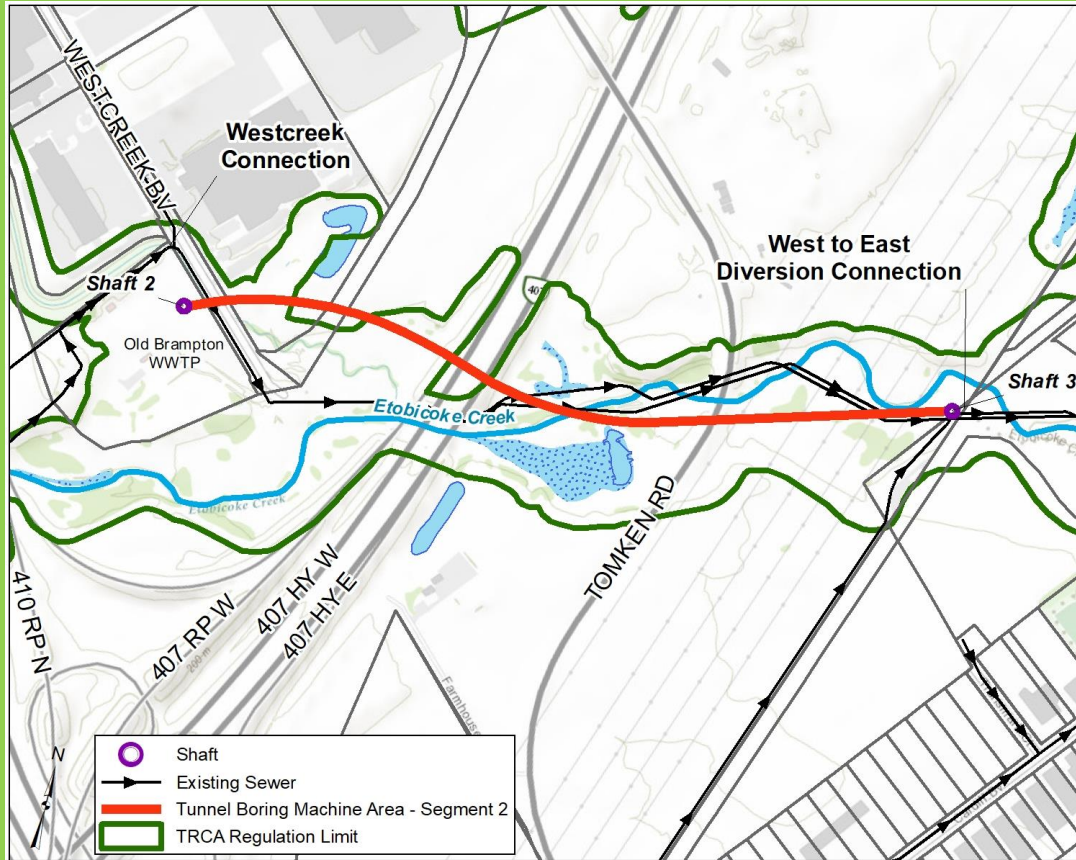


TBM

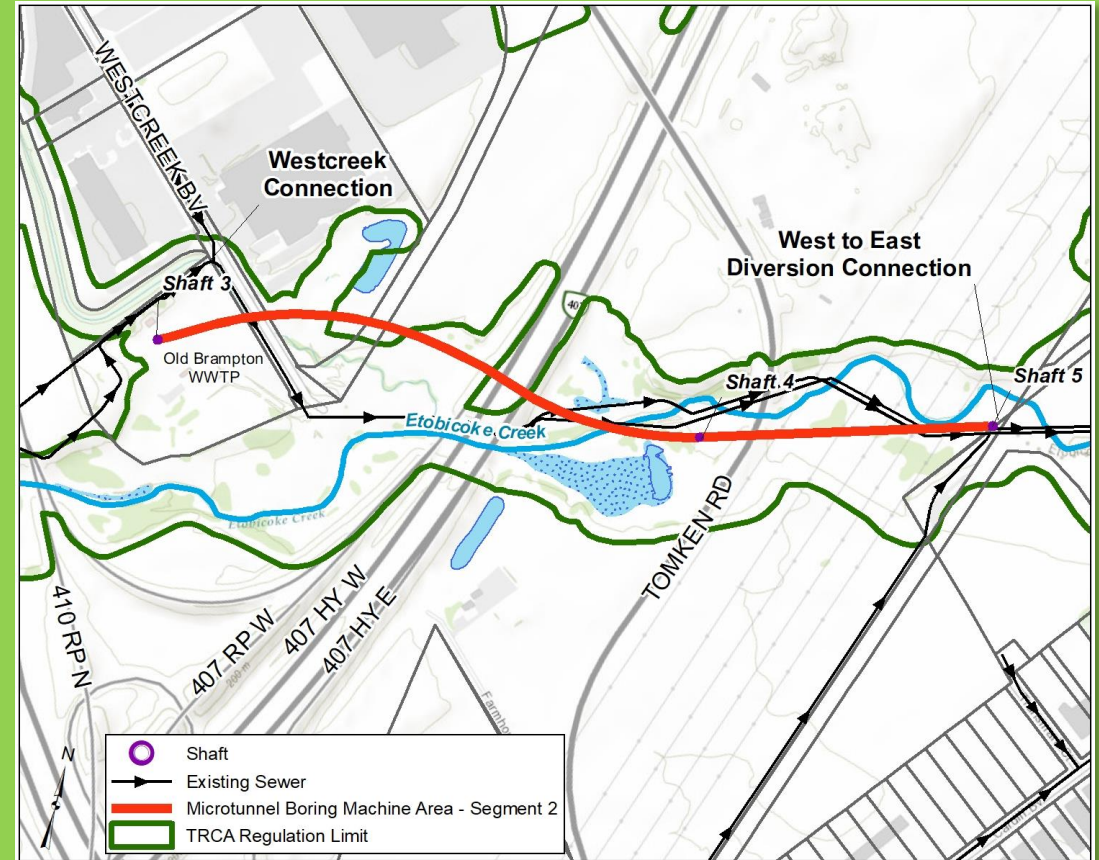


MTBM

# Phase 3: Short List of Viable Design Methods - Segment 2

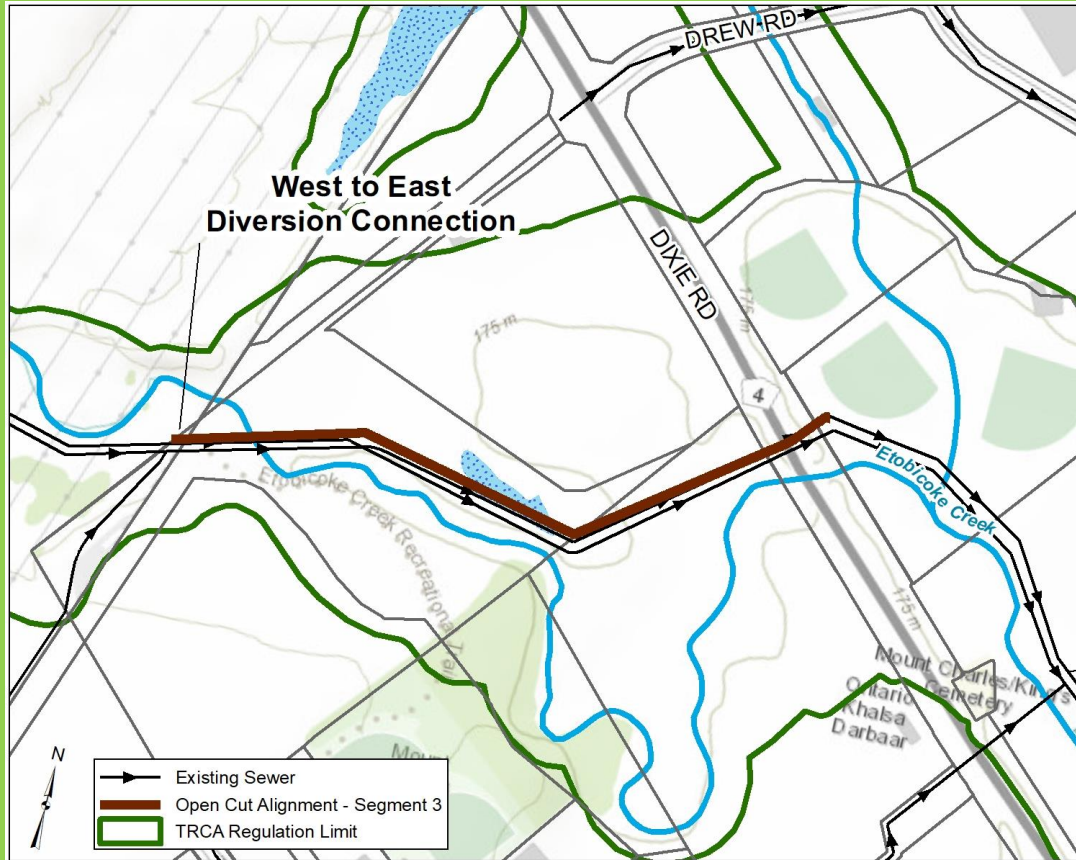


TBM

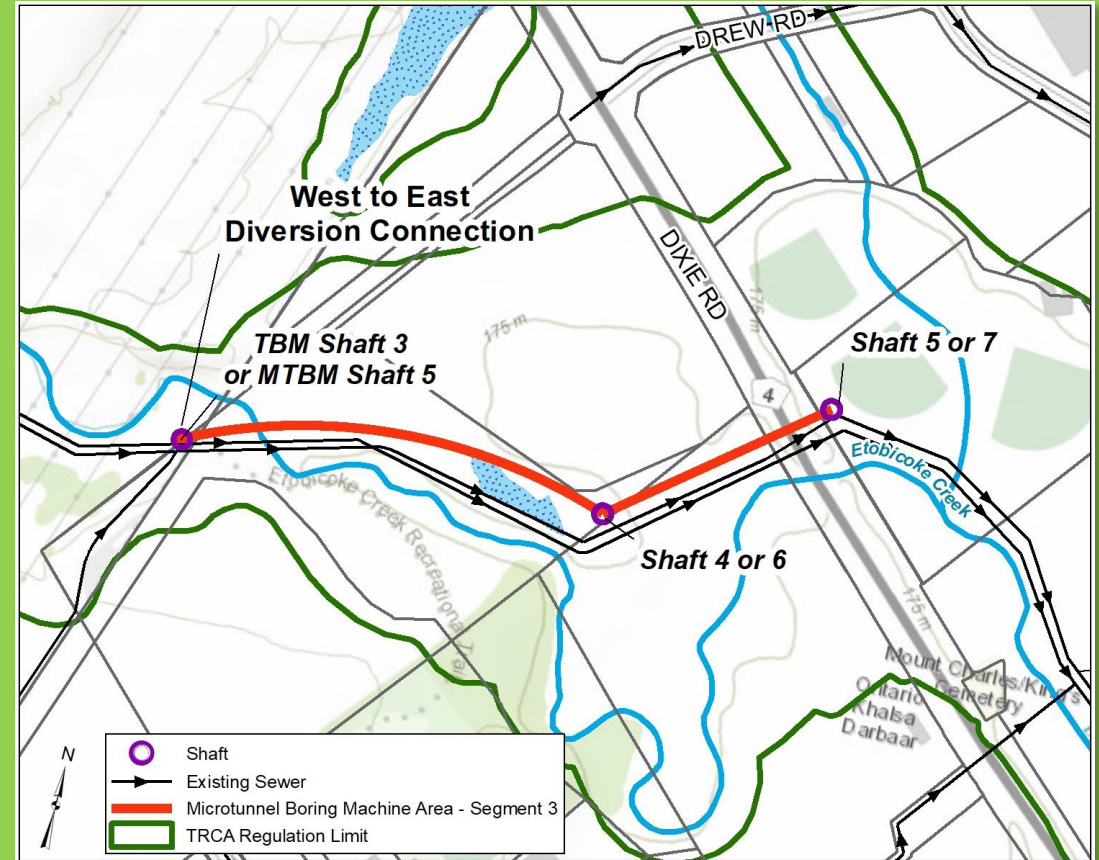


MTBM

# Phase 3: Short List of Viable Design Methods – Segment 3



Open-Cut







MTBM

# Phase 3: Short List of Viable Design Methods - Segment 4



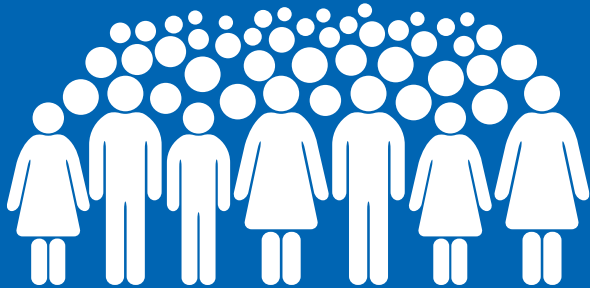
Open-Cut

# Phase 3: Tunneling Methodologies Preliminary Evaluation

Category	Evaluation Criteria	Segment 1		Segment 2		Segment 3		
		Rock TBM	MTBM	Rock TBM	MTBM	Open-Cut	MTBM	
 Technical Considerations	<ul style="list-style-type: none"> <li>Tunnelling Considerations</li> <li>Geotechnical and Hydrogeological Conditions</li> <li>Property Requirements</li> <li>Accessibility</li> <li>Maintainability</li> <li>Schedule</li> </ul>	◐	●	◐	◐	○	◐	Most Impacts/ Least Benefits ○ Least Preferred
 Natural Environment	<ul style="list-style-type: none"> <li>Terrestrial Environment</li> <li>Aquatic Environment</li> <li>Groundwater Impacts</li> <li>Contaminated Lands</li> <li>Soil Management</li> </ul>	◐	●	◐	◐	○	●	Moderate Impacts/ Moderate Benefits ◐ Moderately Preferred
 Socio-Cultural Environment	<ul style="list-style-type: none"> <li>Impact to Cultural Heritage</li> <li>Archaeological Potential</li> <li>Impact to Recreation</li> </ul>	◐	◐	◐	○	○	◐	Least Impacts/ Most Benefits ● Most Preferred
 Economic Factors	<ul style="list-style-type: none"> <li>Cost of Tunneling and Infrastructure</li> </ul>	○	●	○	◐	○	●	
<b>Concept Selection</b>		<b>X</b>	<b>✓</b>	<b>X</b>	<b>✓</b>	<b>X</b>	<b>✓</b>	



# Preliminary Preferred Design Methods



Public, Indigenous, and Agency Review

## Post-Evaluation Refinement

### Evaluation results of construction methodologies

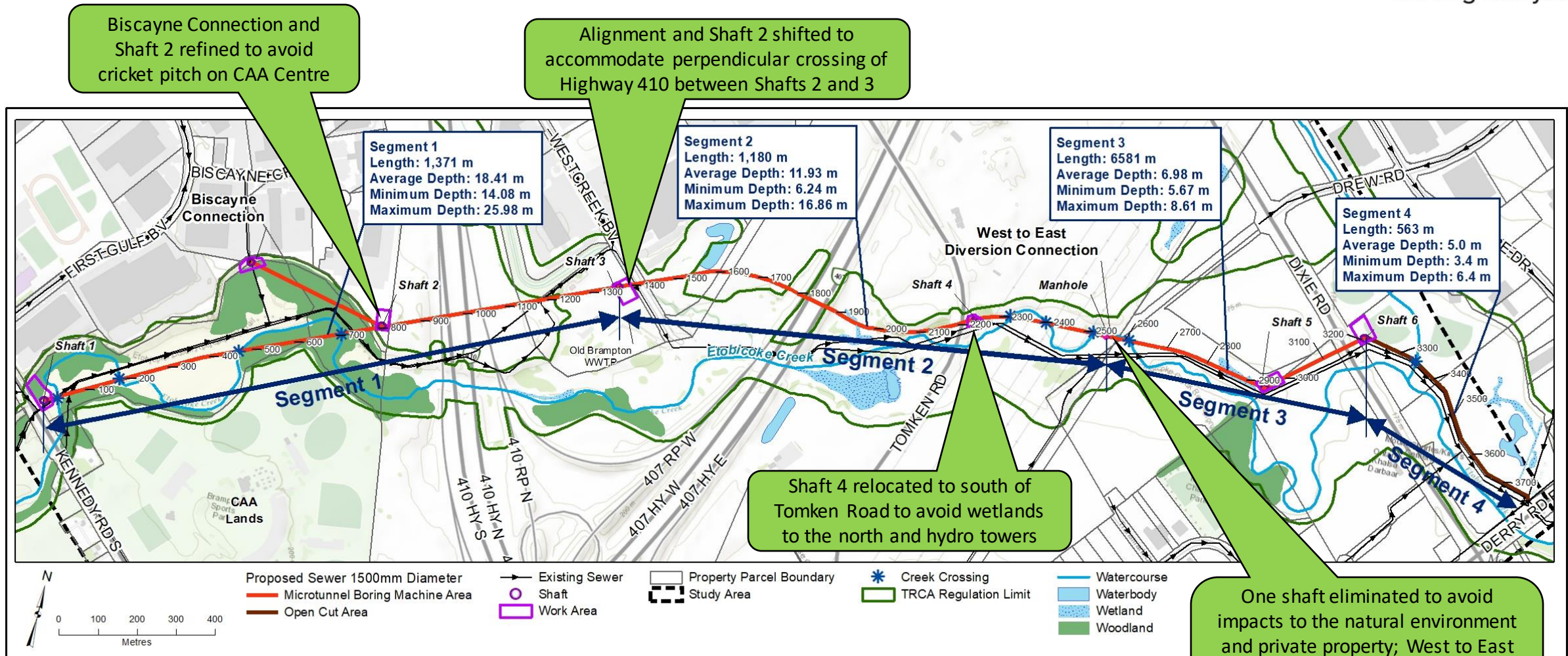
- Segment 1 – MTBM
- Segment 2 – MTBM
- Segment 3 – MTBM
- Segment 4 – Open-cut



Post-evaluation of construction methodologies, alignment was refined based on:

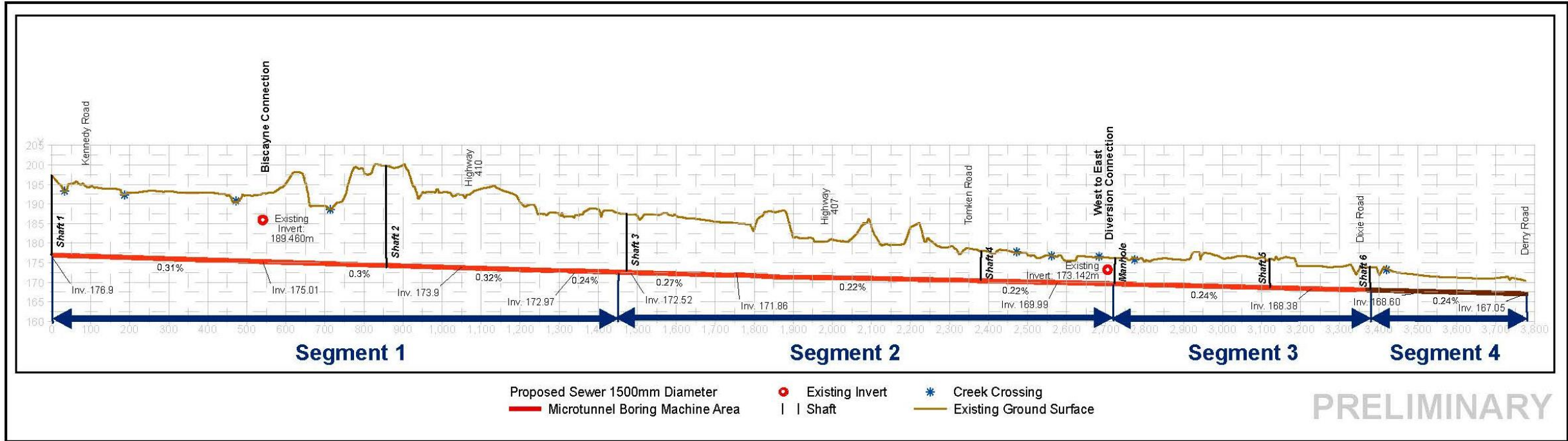
- Input from project stakeholders
- Natural environment investigations
- Avoidance of the natural environmental areas
- Technical limitations of the MTBM
- Site constraints

# Phase 3: Refined Preliminary Preferred Design Concept



One shaft eliminated to avoid impacts to the natural environment and private property; West to East Diversion Connection accommodated by post-tunneling addition of maintenance hole

# Phase 3: Refined Preliminary Preferred Design Concept Profile



# What is a Tunnelling Shaft?



# During Construction Shaft Location



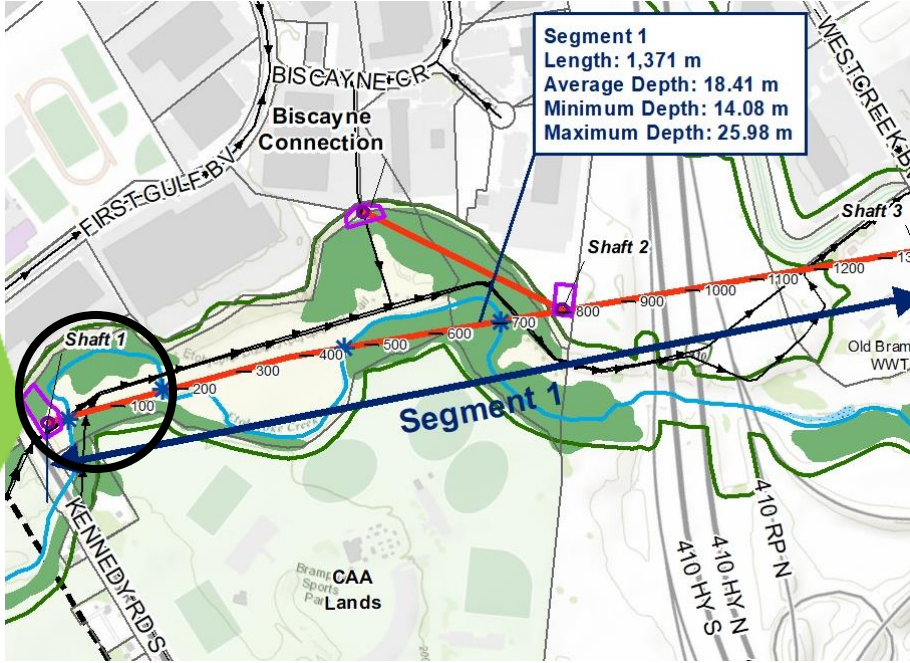
# Post Construction Shaft Location



# Phase 3: Preliminary Shaft Locations – Shaft 1



- Shaft Site Selection Criteria:**
- Location defined by required connection to existing sewers
  - Proximity to Kennedy Road
- Constraints:**
- Proximity to trails
  - Within natural environment
  - Close (<50 m) to creek
  - Within Area of Potential Environmental Concern
  - Permanent and temporary easements needed





# Phase 3: Preliminary Shaft Locations – Shaft 2

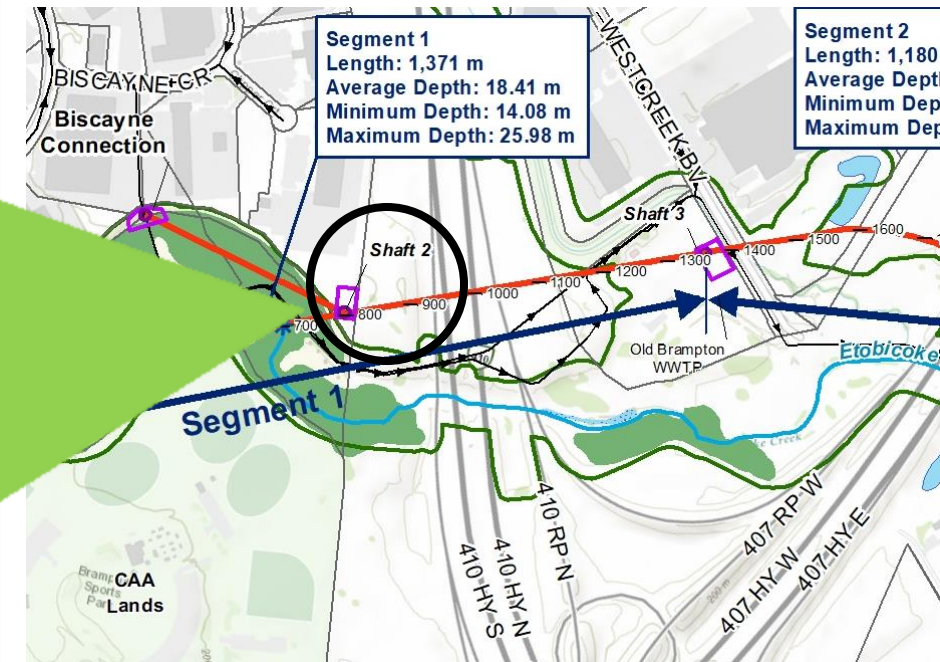


### Shaft Site Selection Criteria:

- Location defined by need to avoid the City of Brampton's cricket pitch
- Biscayne Connection avoids creek crossing

### Constraints:

- Private property requirements
- Not easily accessible; will need temporary access during construction
- Within Area of Potential Environmental Concern
- Permanent and temporary easements needed



# Phase 3: Preliminary Shaft Locations – Shaft 3

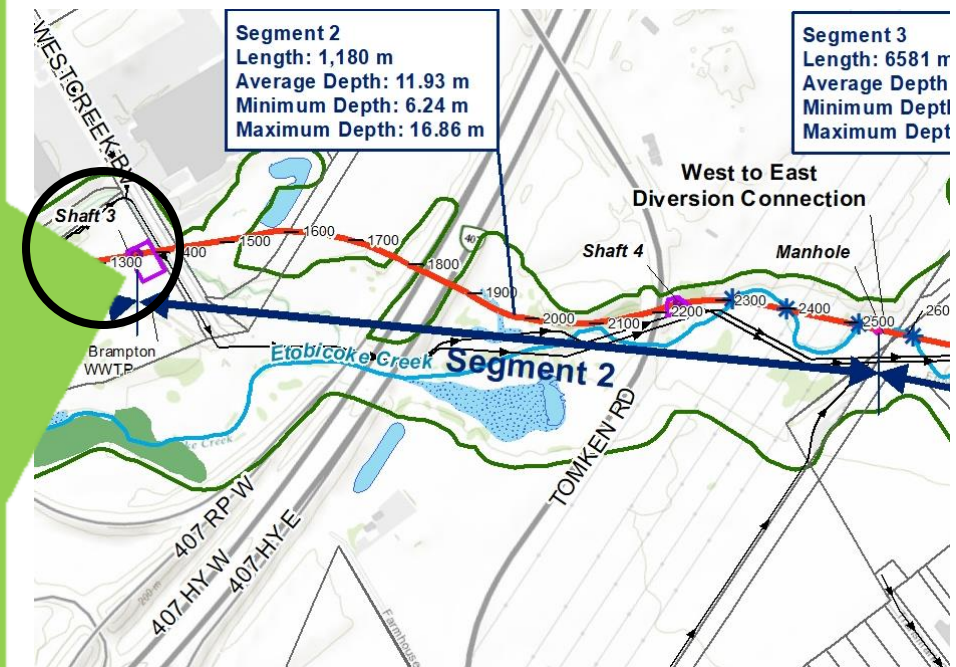


### Shaft Site Selection Criteria:

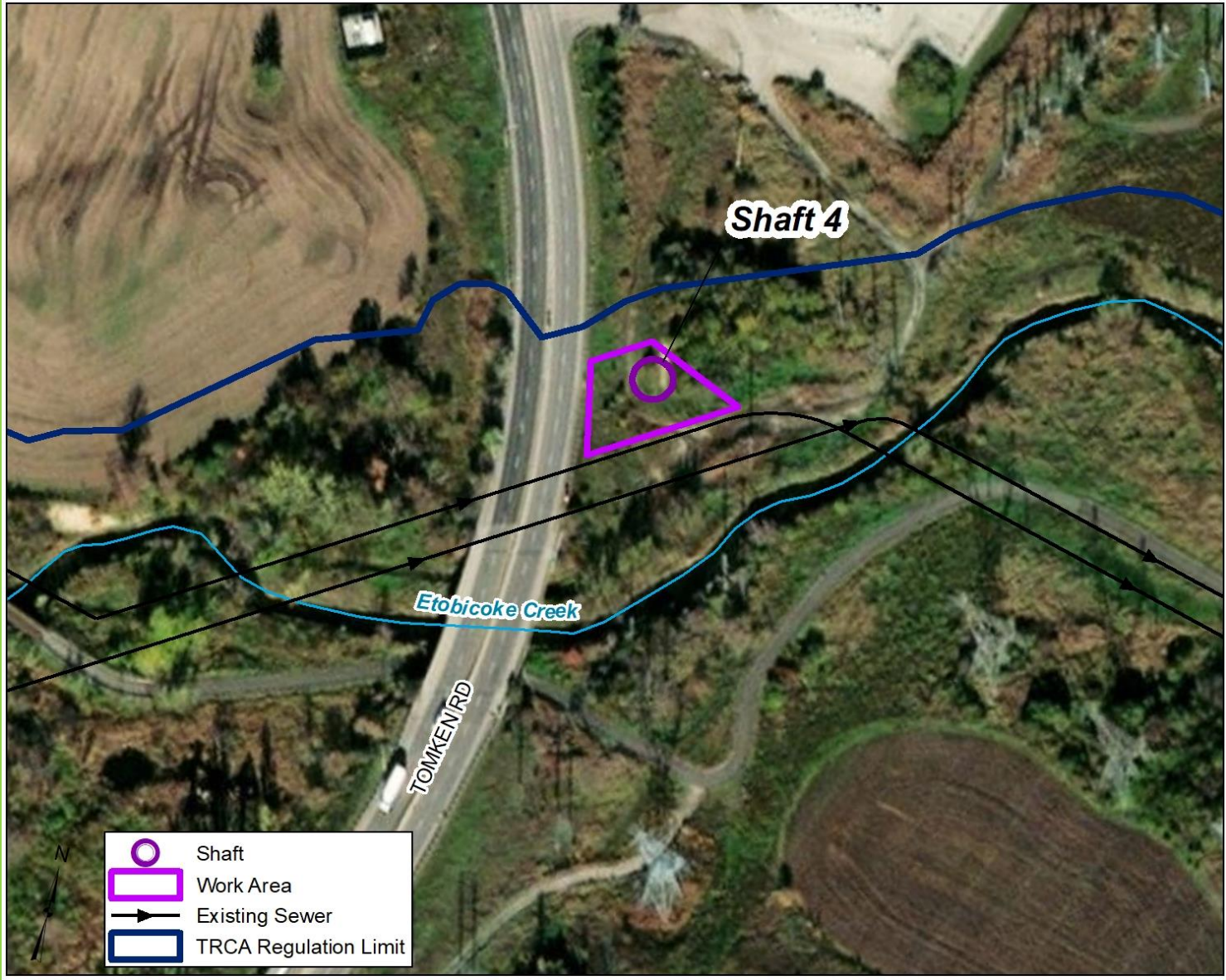
- Location defined by opportunity to use property owned by Region of Peel
- Close to Westcreek Boulevard
- Allows for upstream and downstream microtunnel drives to be within typical ranges

### Constraints:

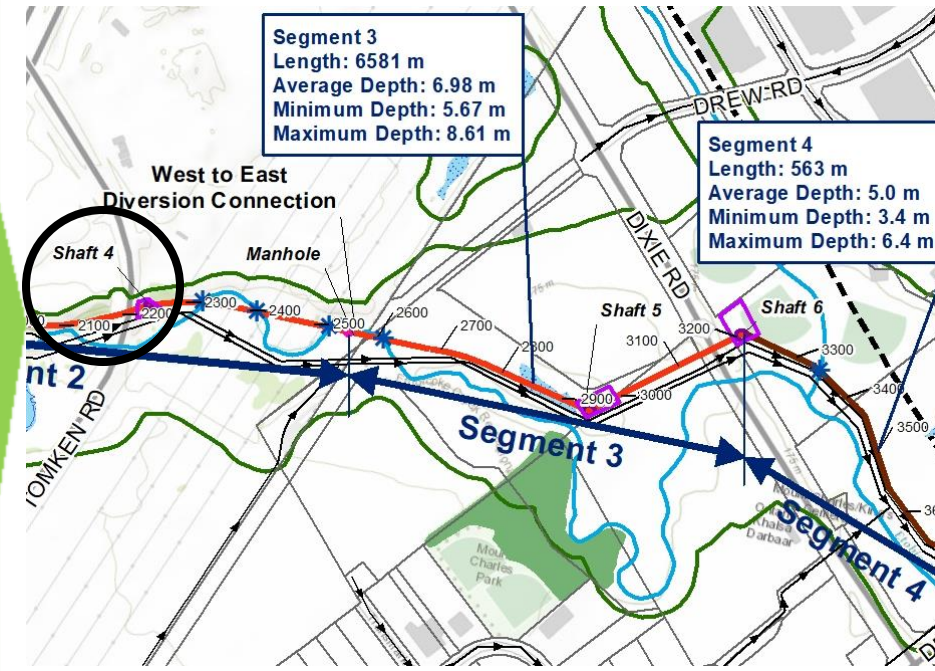
- Within the natural environment
- Within Area of Potential Environmental Concern



# Phase 3: Preliminary Shaft Locations – Shaft 4



- Shaft Site Selection Criteria:**
- Location defined by avoidance of wetland north of Tomken Road
  - Avoids hydro towers
  - Allows for typical drive lengths of MTBM
- Constraints:**
- Within hydro corridor owned by IO/MTO/407 ETR Lands
  - Within the natural environment
  - Close in proximity (<50 m) to creek
  - Within Area of Potential Environmental Concern
  - Permanent and temporary easements needed



# Phase 3: Preliminary Shaft Locations – Shaft 5

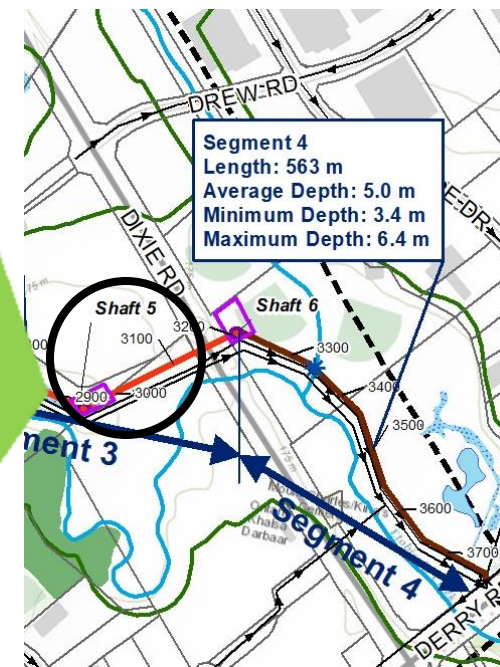


### Shaft Site Selection Criteria:

- Location defined by alignment's directional change
- Avoids crossing the existing sewers
- Within existing Region of Peel easement
- Mostly within City of Mississauga property

### Constrains:

- Partially within private property during construction
- Will need a temporary paved road
- May impact one Cultural Heritage Resource
- Permanent and temporary easements needed



# Phase 3: Preliminary Shaft Locations – Shaft 6

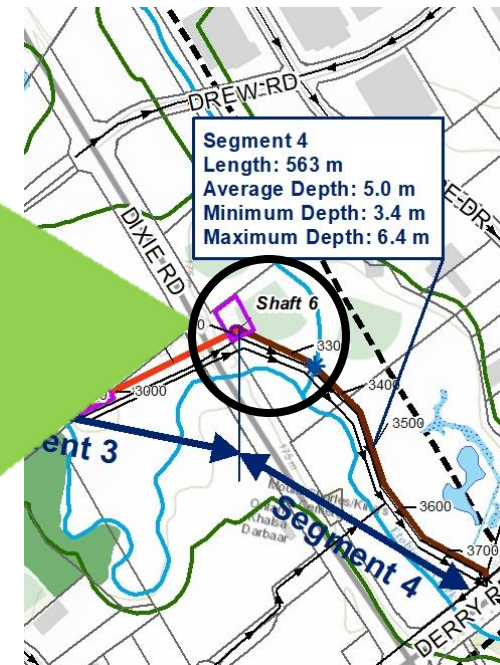


### Shaft Site Selection Criteria:

- Location defined by extent of open-cut segment
- Allows for trenchless crossing of Dixie Road
- Avoids crossing the existing sewers

### Constraints:

- Potential impact to accessing the baseball diamond
- Relatively close to creek (>50m)
- Permanent and temporary easements needed



# Next Steps in Consultation and Engagement

## Phase 4



Preparation of an  
Environmental  
Study Report



# How to Stay Connected and Involved

Phase 3	Phase 4		Phase 5	
	Document Study Outcomes in Environmental Study Report for Review and Comment		Initiate Field Investigations for Preferred Design	
May 2022	Summer 2022	September 2022	June 2022	December 2022
2nd Online Public Engagement to seek Impacts of Implementation		Issue Notice of Completion		Complete Preliminary Design



## How to Stay Connected and Involved?

Send your feedback or your questions on this project to the email below before June 1, 2022

**Italia Ponce, P.Eng.**

Project Manager

10 Peel Centre Drive, 4<sup>th</sup> Floor,  
Suite A

Brampton, ON, L6T 4B9

905-791-7800 Ext. 4583

Italia.ponce@peelregion.ca

- Environmental Study Report to be completed in late summer 2022
- If you would like to be kept updated on this project:



<https://www.peelregion.ca/pw/water/environ-assess/etobicoke-creek-sewer-improvement.asp>



<https://twitter.com/peelpublicworks?lang=en>



<https://www.facebook.com/regionofpeel>