

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.

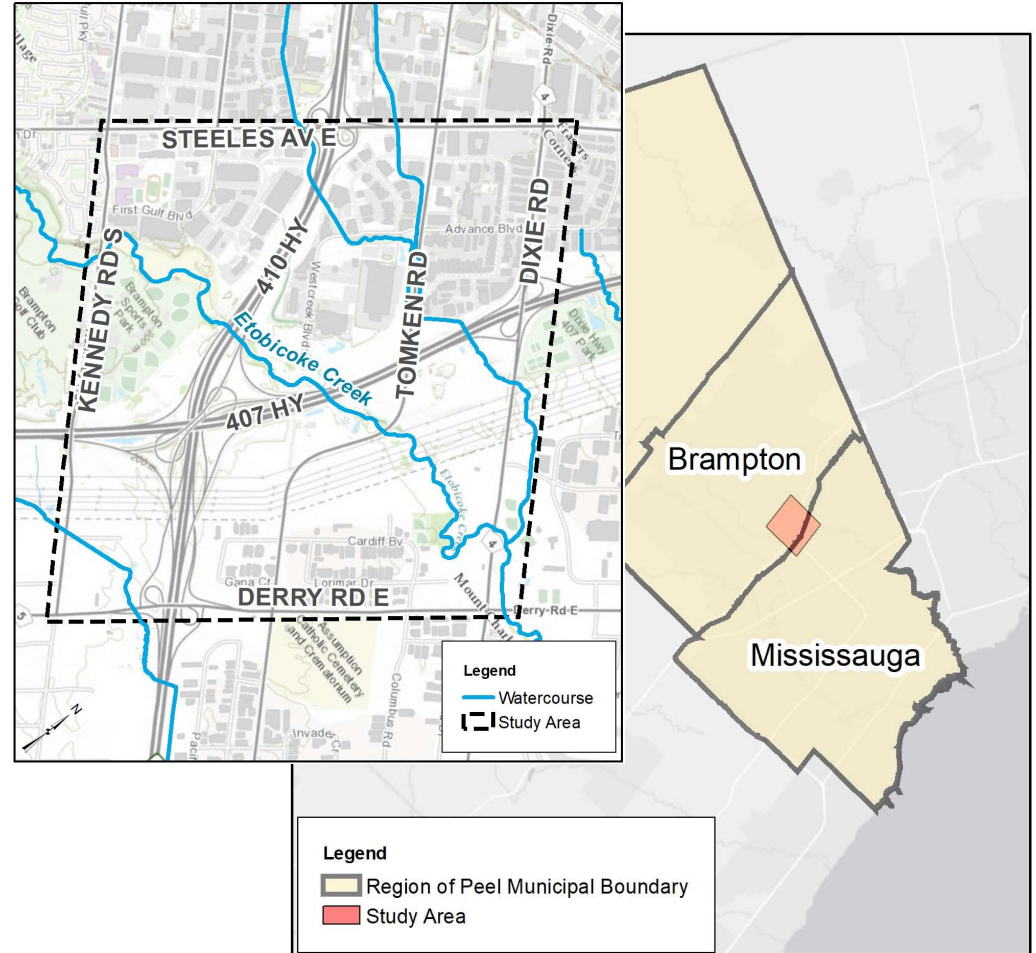
Next Steps



Provide information on the next stages of the project.

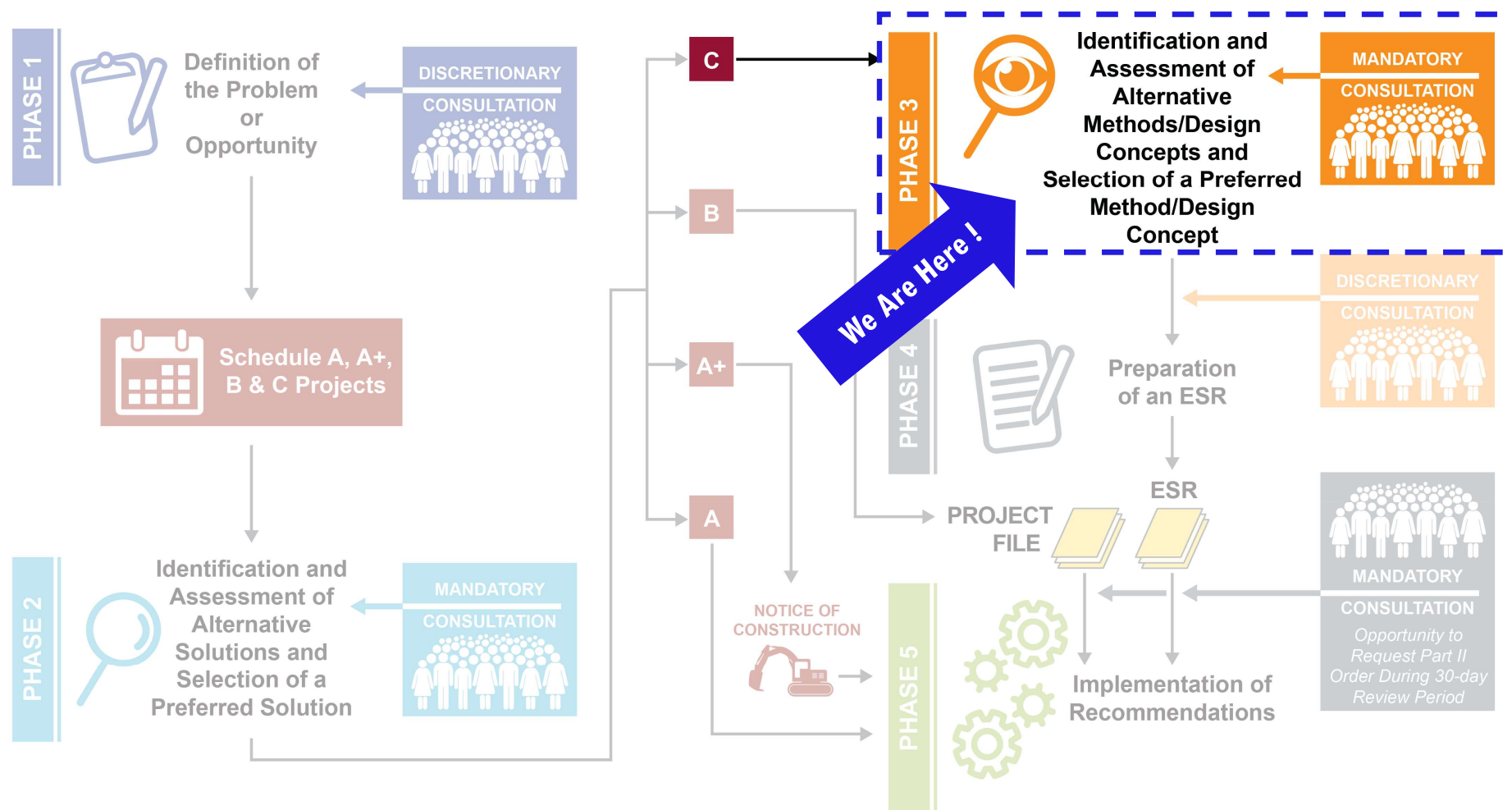
Project Overview: What, why and how?

- 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**

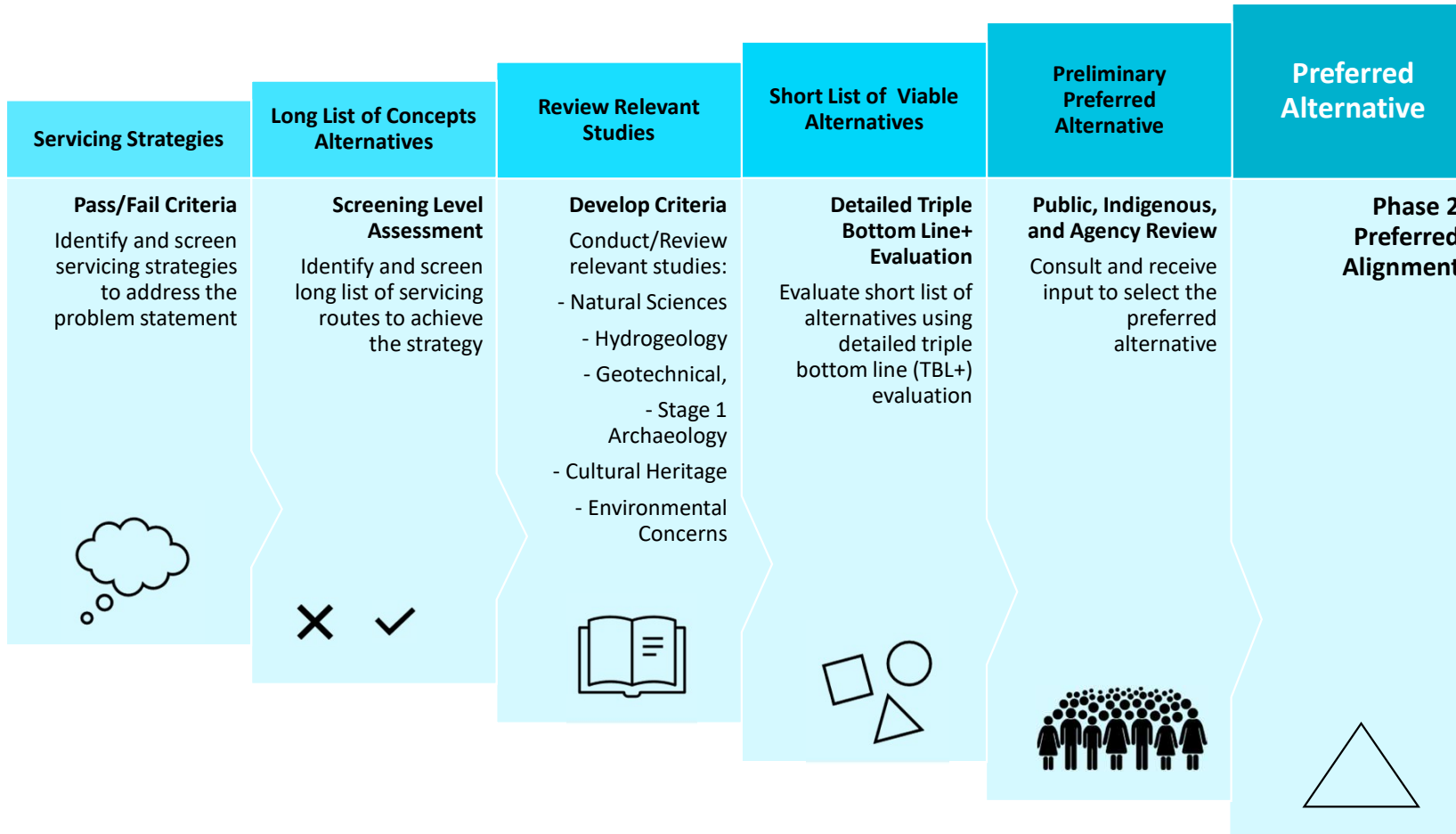


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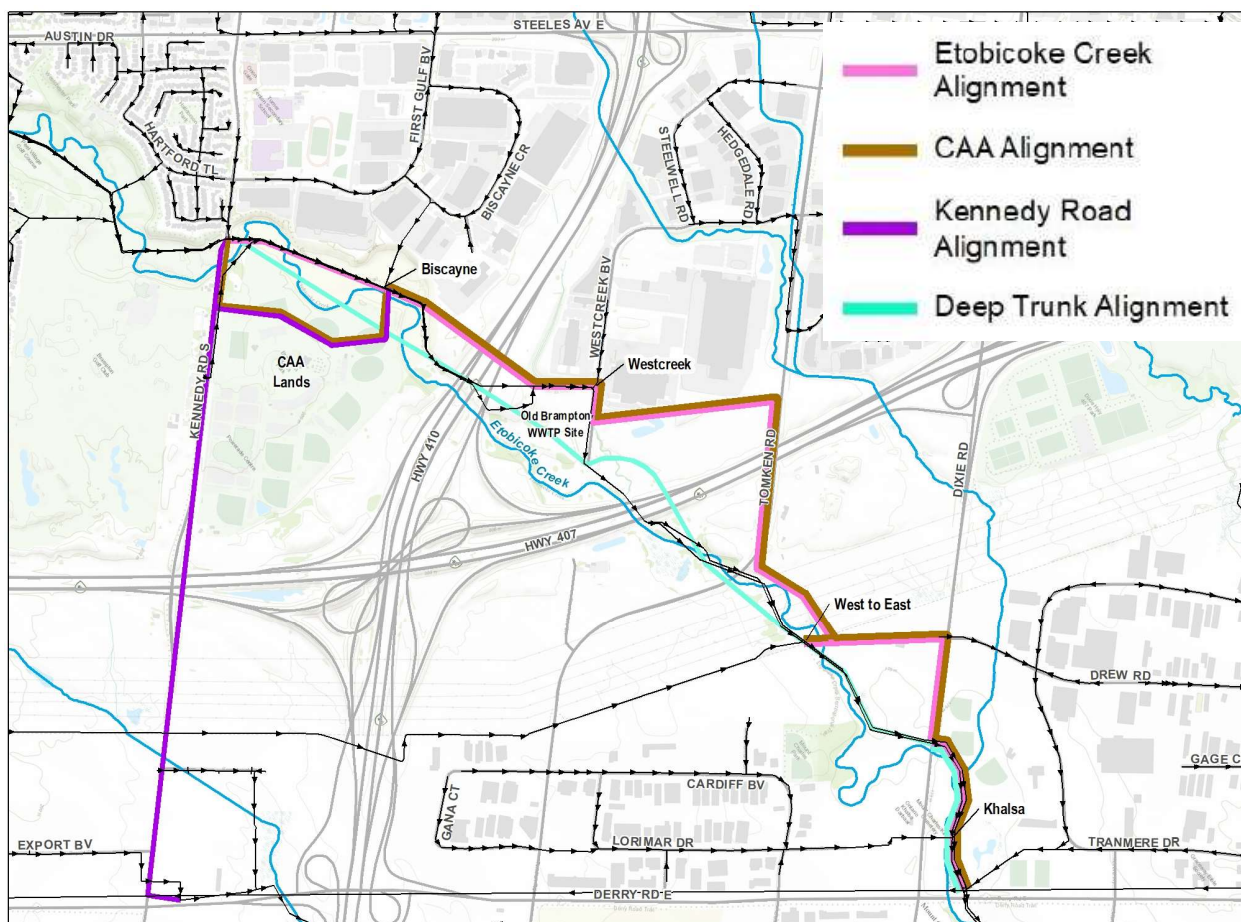
CONSULTATION























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"> Implementation Feasibility Permits and Approvals Reliability Effectiveness Compatibility with Existing Infrastructure Maximize Lifecycle Investment Flexibility Operational Accessibility 				
 Natural Environment	<ul style="list-style-type: none"> Terrestrial Systems Aquatic Systems Soil Contamination Hydrogeology and Surface and Groundwater Soil, Bedrock and Geology 				
 Socio-Cultural Environment	<ul style="list-style-type: none"> Recreational Land Uses and Visual Landscape Future Planning Policies/Initiatives Disruption During Construction Archaeological and Cultural Resources 				
 Economic Factors	<ul style="list-style-type: none"> Capital Cost Operation and Maintenance 				
Alternative Ranking		4	3	2	1

Most Impacts/
Least Benefits



Least Preferred

Moderate Impacts/
Moderate Benefits



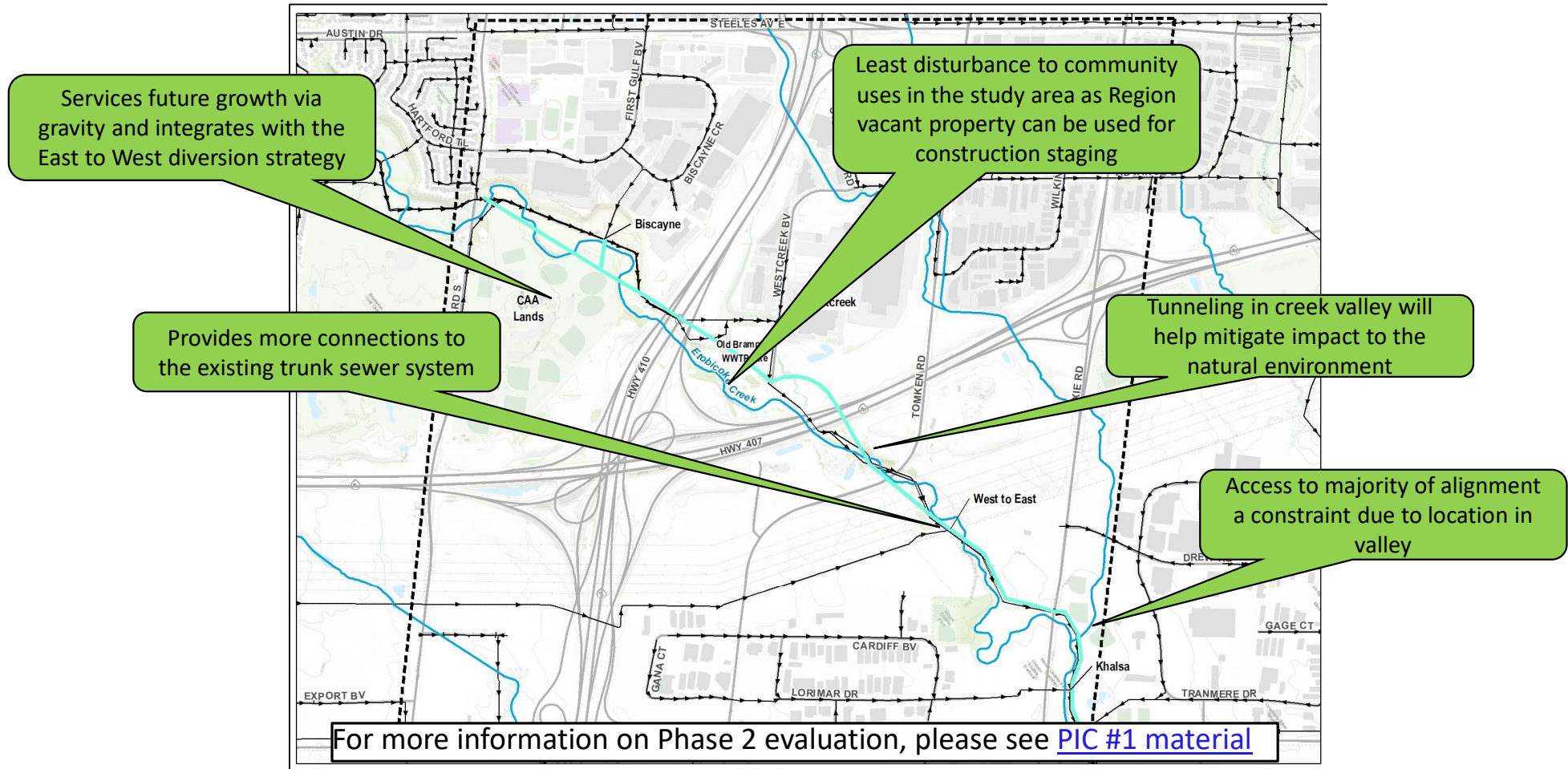
Moderately Preferred

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**

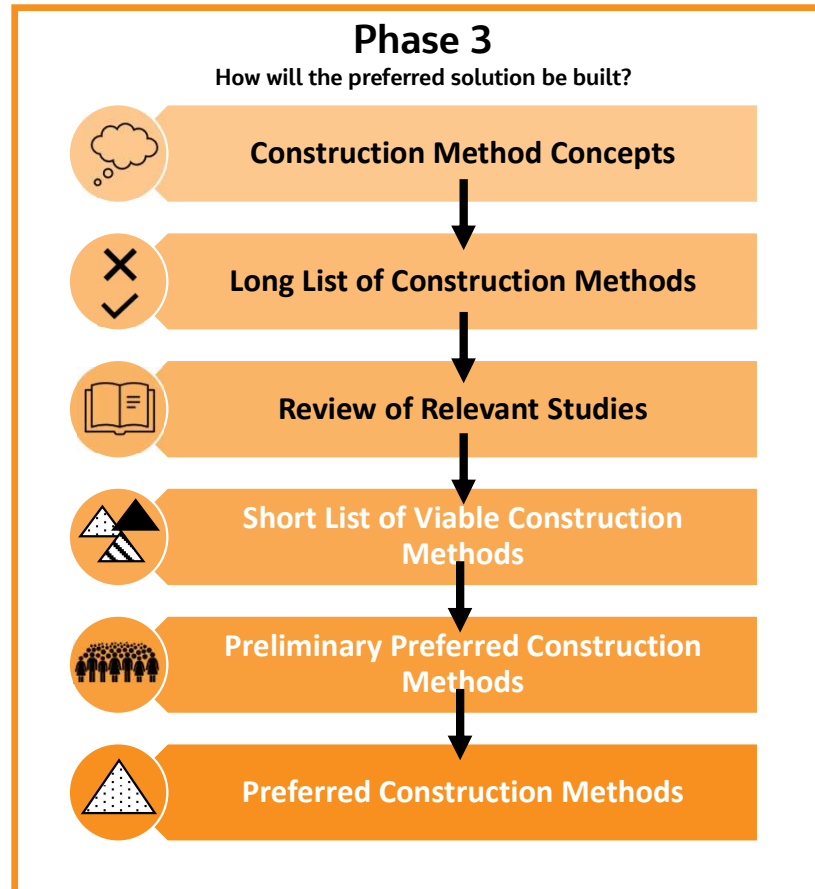


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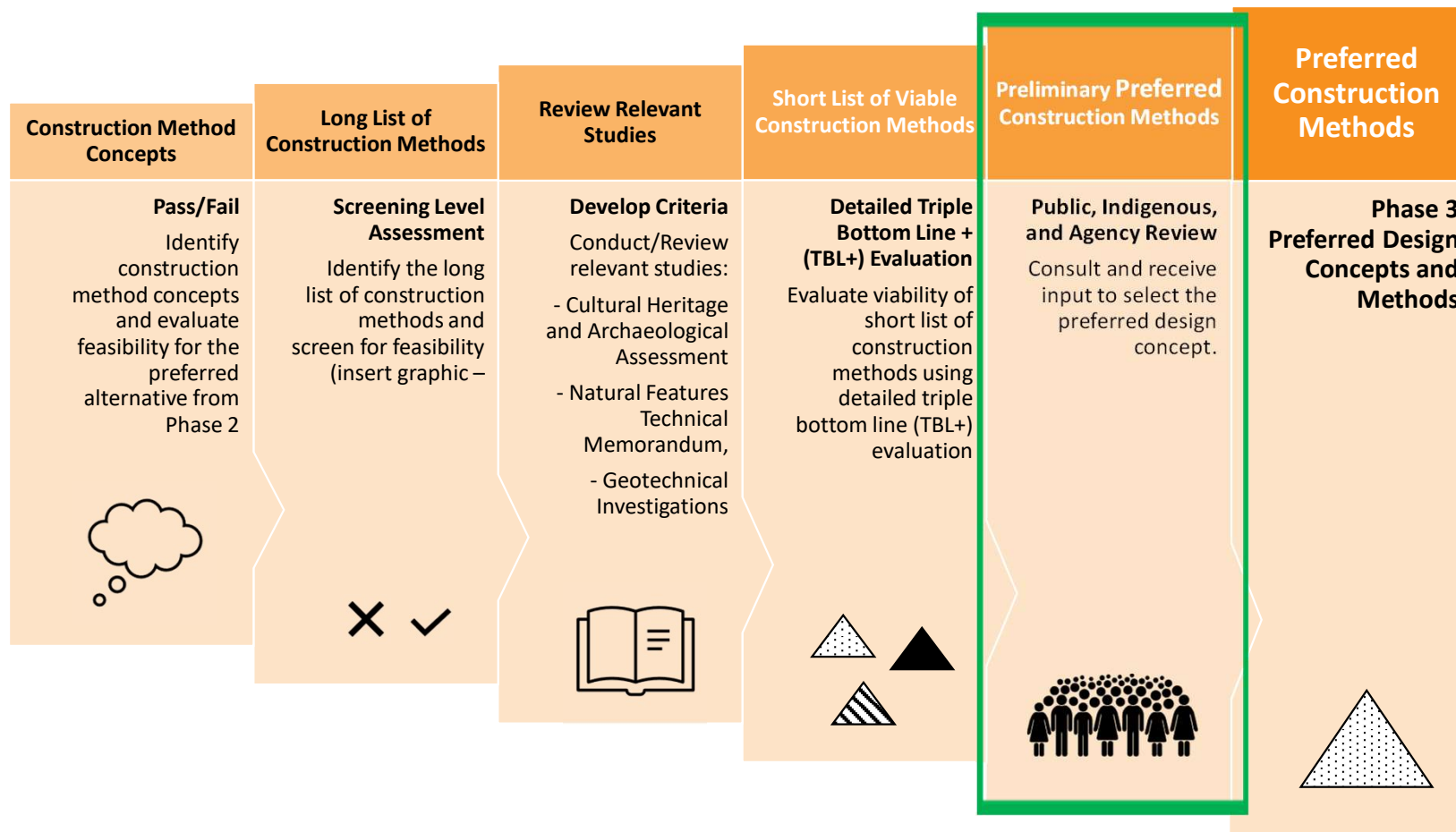
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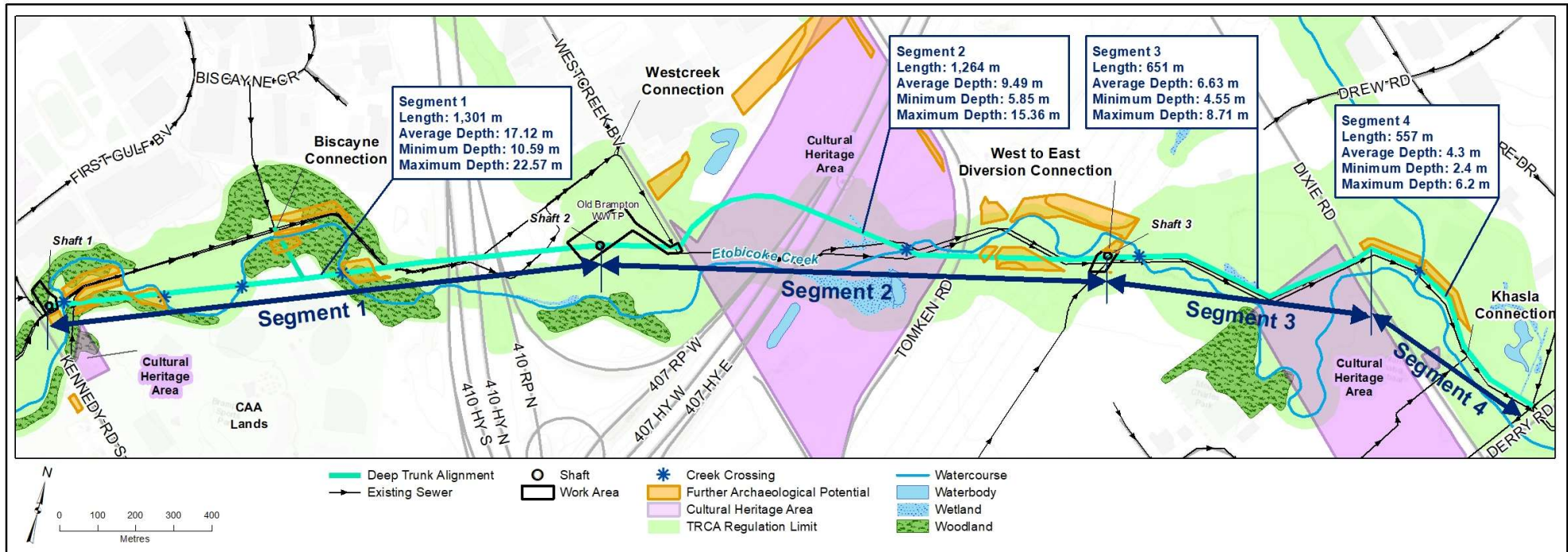
What is the Relationship between Phase 2 and Phase 3?



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



Trunk Sewer Segments for Phase 3

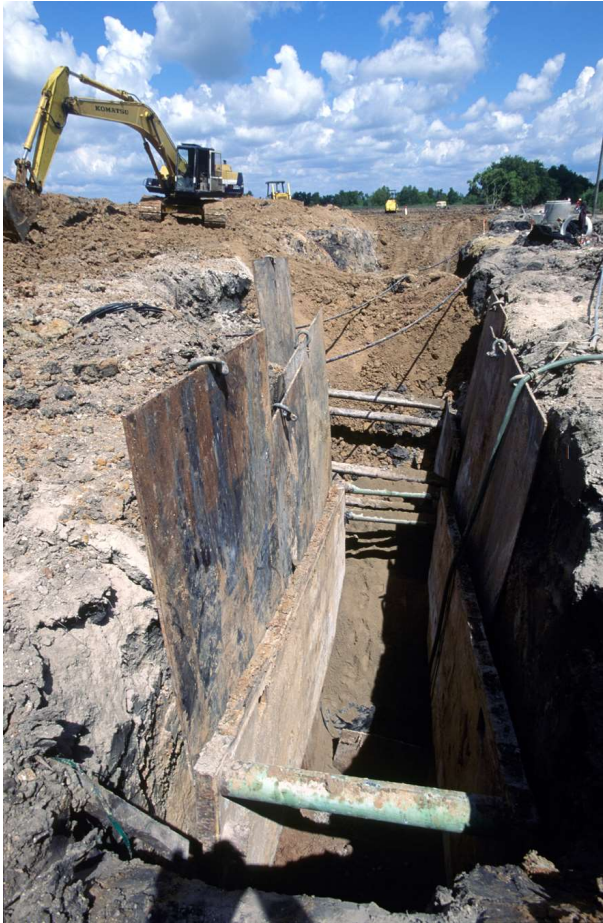


Construction Method Concepts



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

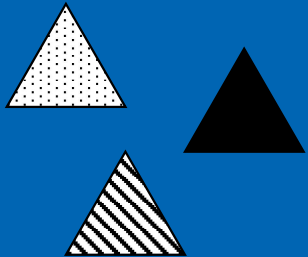


Develop Criteria

Phase 3: Tunneling Methodologies Preliminary Evaluation

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

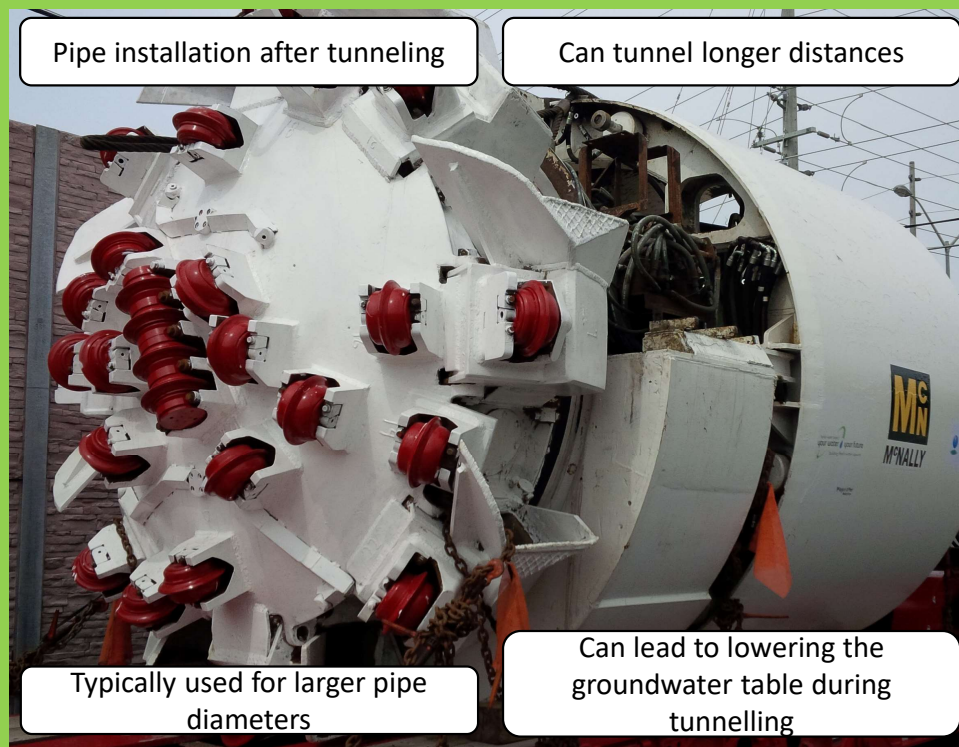
Short List of Viable Construction Methods



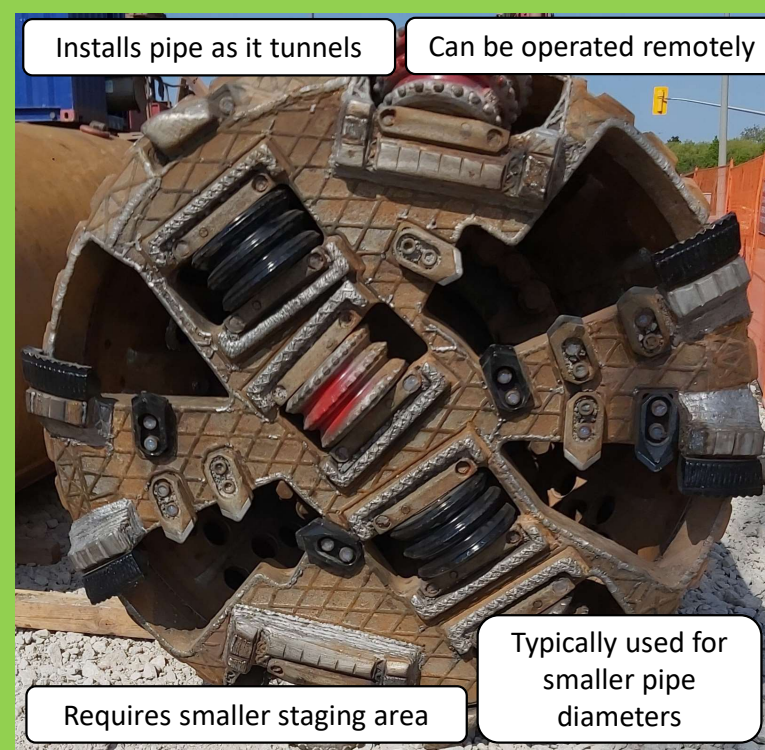
Detailed Triple Bottom Line + (TBL+) Evaluation

Phase 3: Tunneling Methodologies

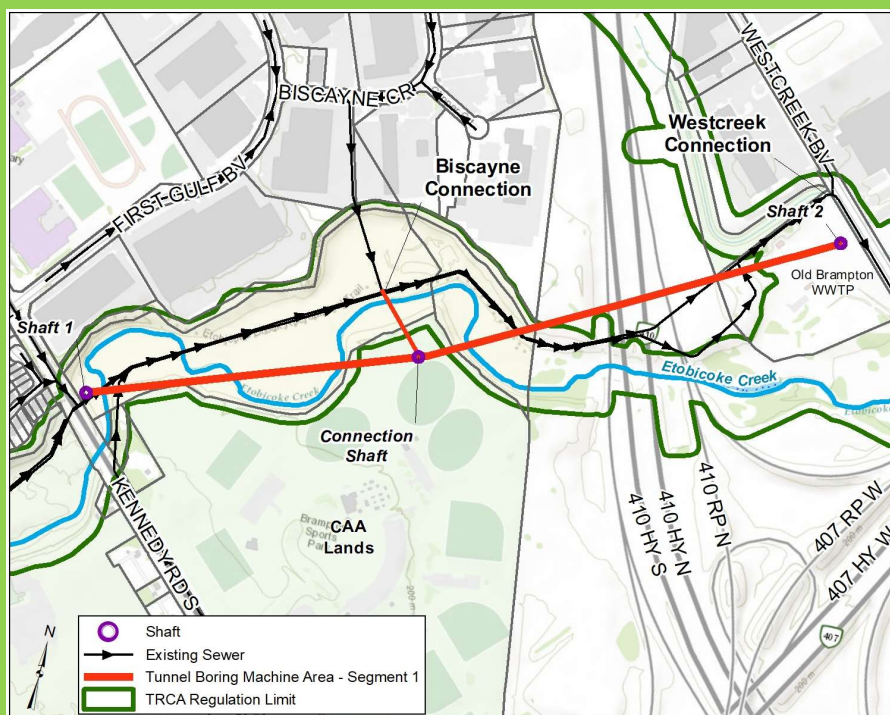
TBM



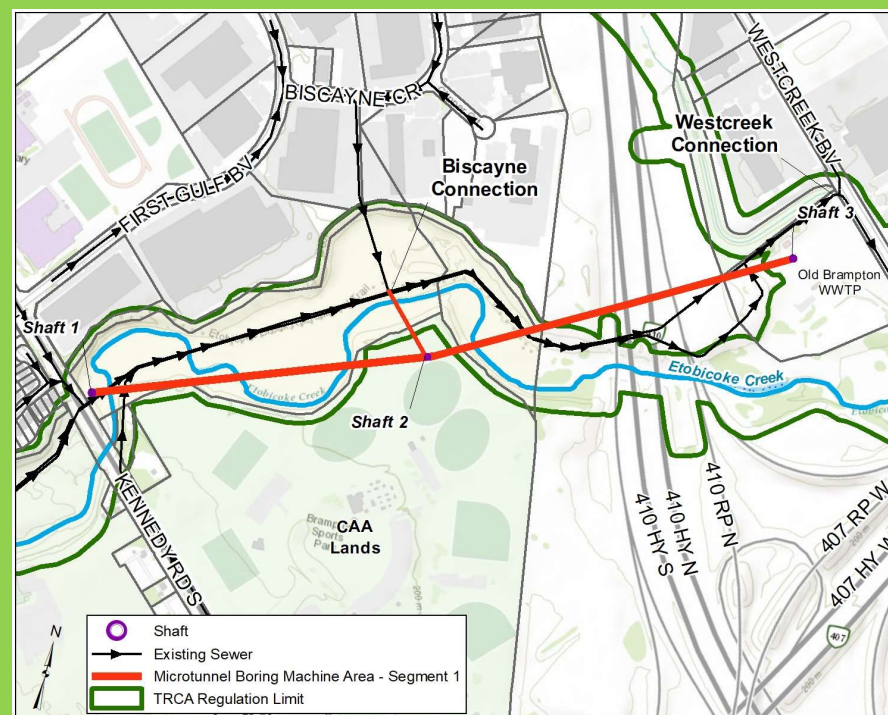
MTBM



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

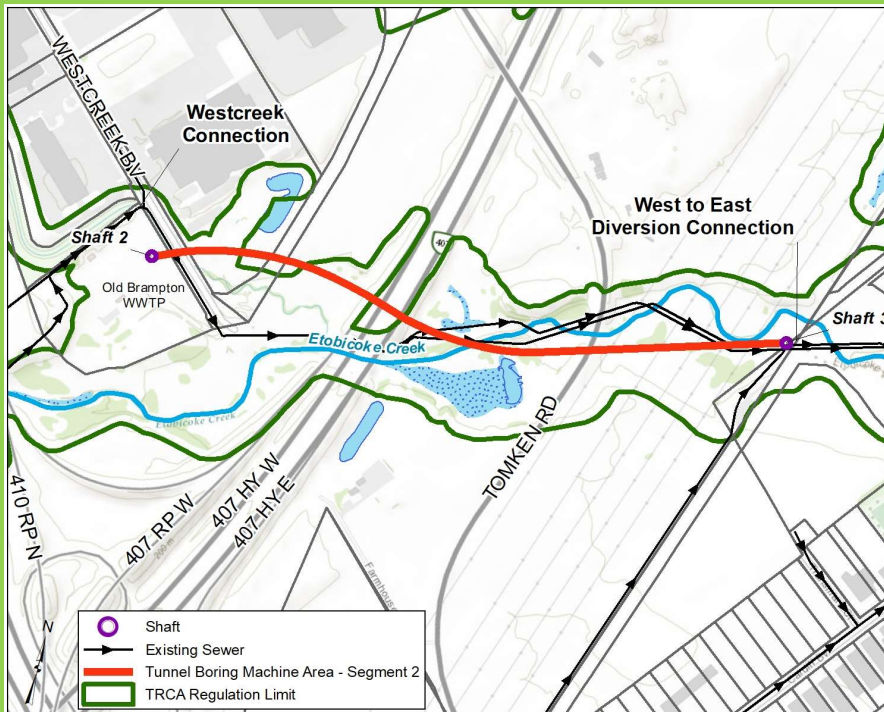


TBM

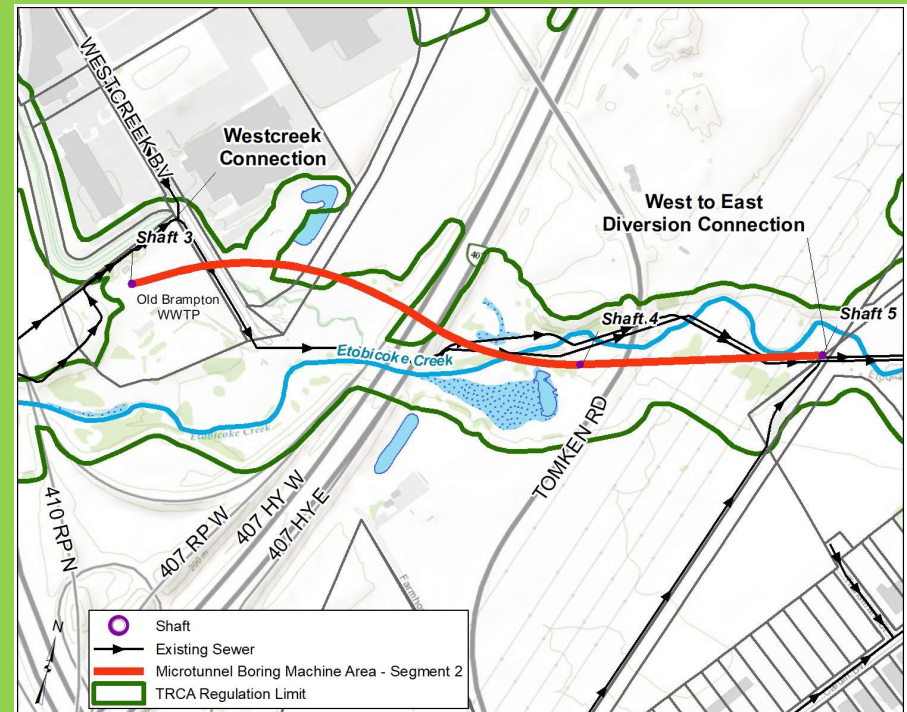


MTBM

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

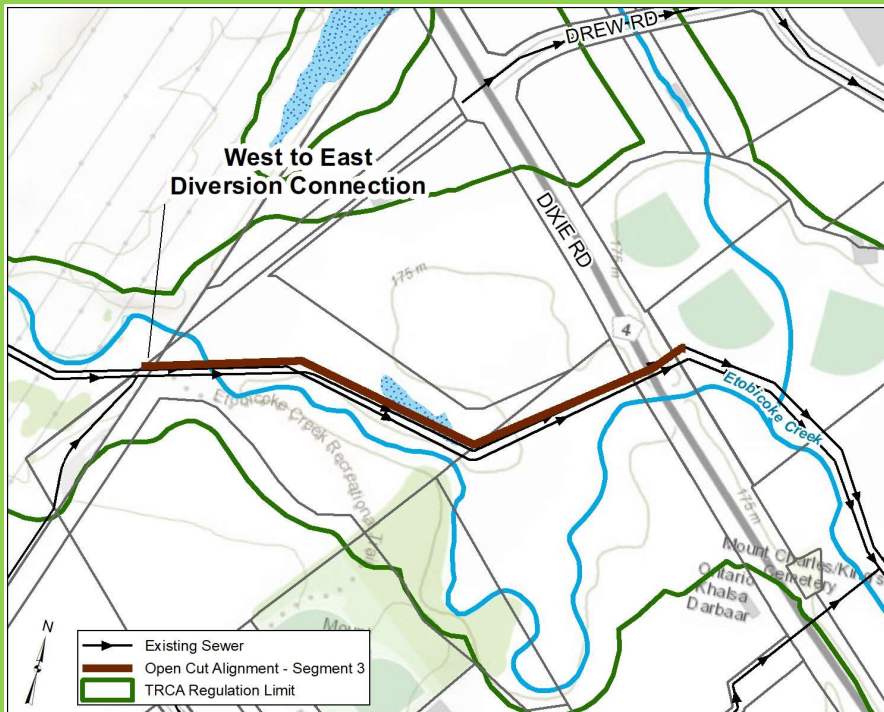


TBM

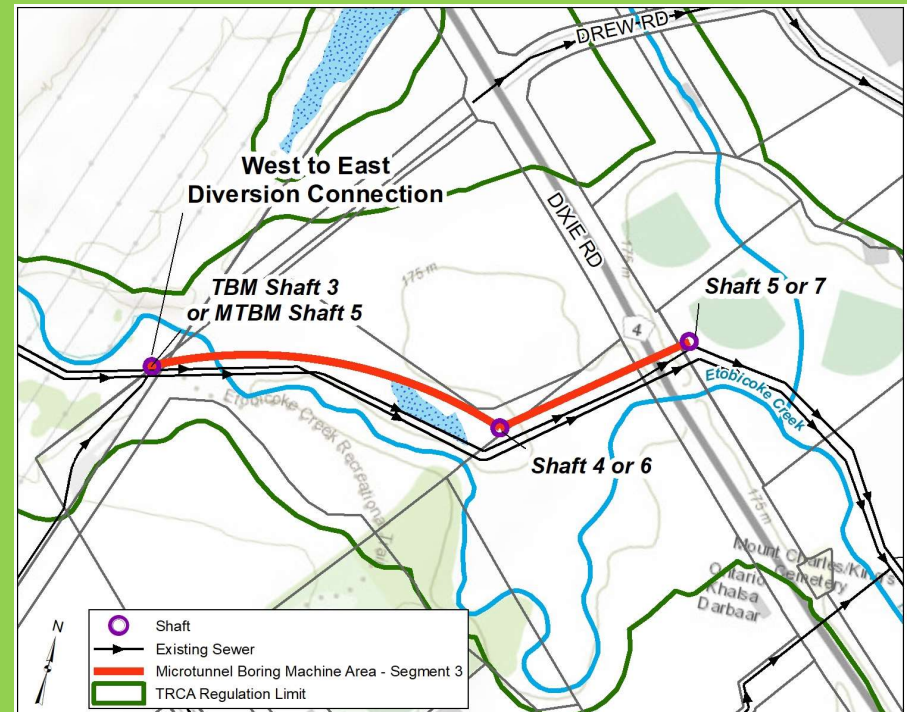


MTBM

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"> Tunnelling Considerations Geotechnical and Hydrogeological Conditions Property Requirements Accessibility Maintainability Schedule 						
 Natural Environment	<ul style="list-style-type: none"> Terrestrial Environment Aquatic Environment Groundwater Impacts Contaminated Lands Soil Management 						
 Socio-Cultural Environment	<ul style="list-style-type: none"> Impact to Cultural Heritage Archaeological Potential Impact to Recreation 						
 Economic Factors	<ul style="list-style-type: none"> Cost of Tunneling and Infrastructure 						
Concept Selection		X	✓	X	✓	X	✓

Most Impacts/
Least Benefits




Least Preferred

Moderate Impacts/
Moderate Benefits



Moderately Preferred

Least Impacts/
Most Benefits



Most Preferred

Preliminary Preferred Design Methods




Public, Indigenous, and Agency Review

Post-Evaluation Refinement

Evaluation results of construction methodologies

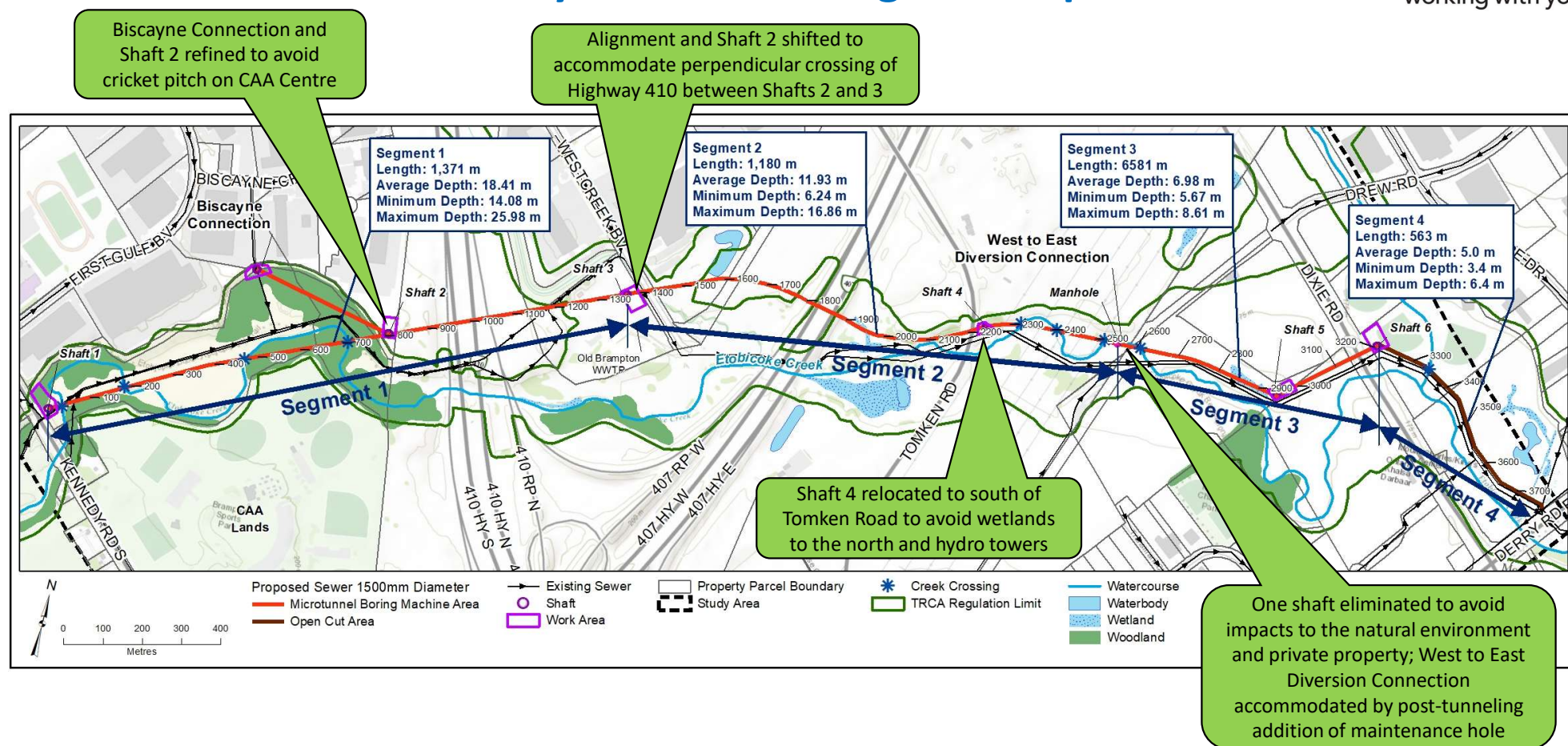
- Segment 1 – MTBM
- Segment 2 – MTBM
- Segment 3 – MTBM
- Segment 4 – Open-cut



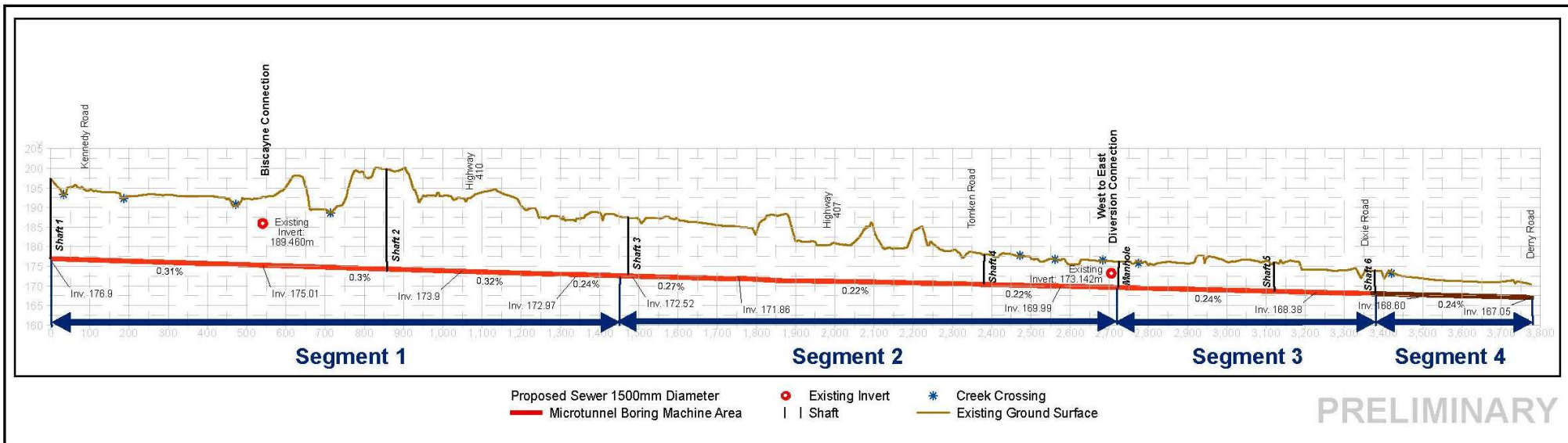
Post-evaluation of construction methodologies, alignment was refined based on:

- 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



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

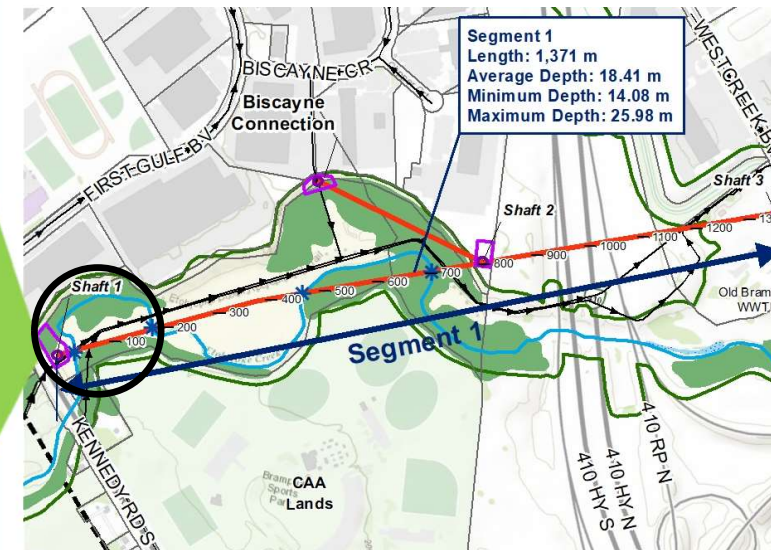


Shaft Site Selection Criteria:

- 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

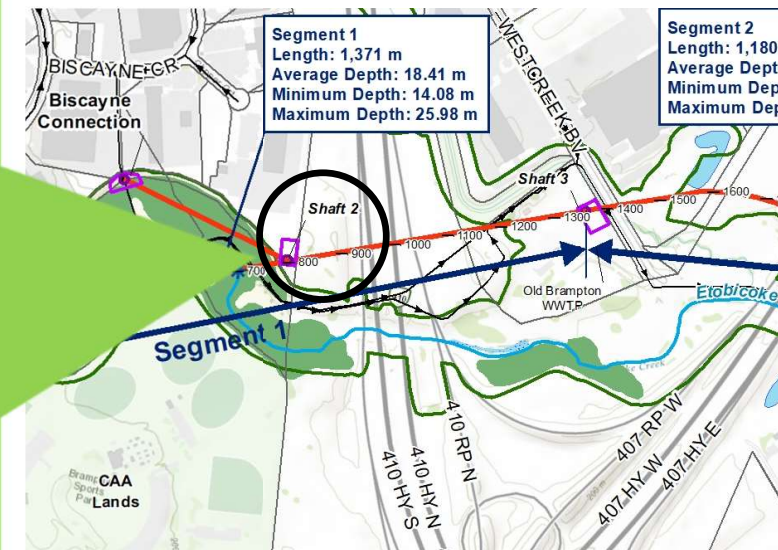


Shaft Site Selection Criteria:

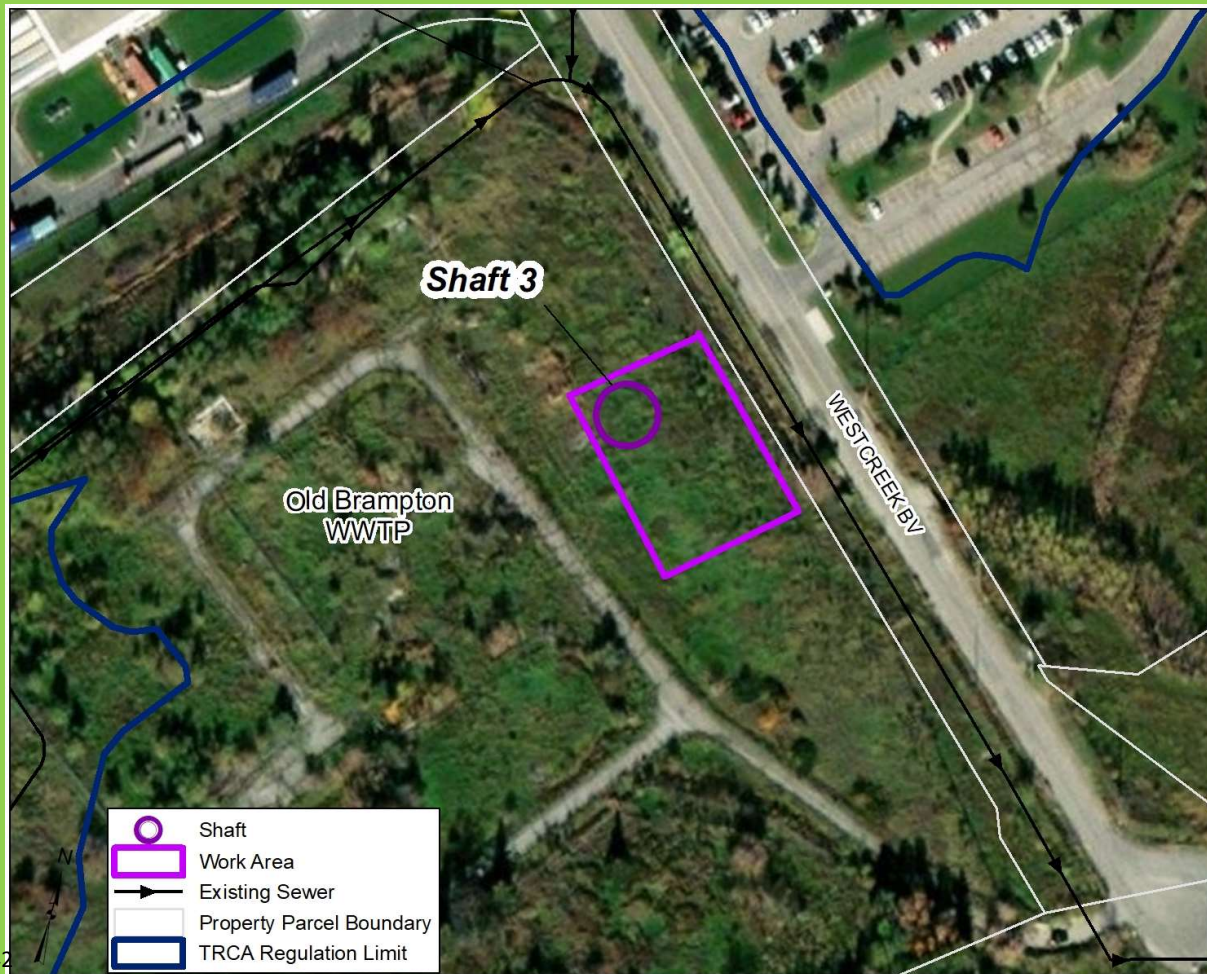
- Location defined by need to avoid the City of Brampton's cricket pitch
- Biscayne Connection avoids creek crossing

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

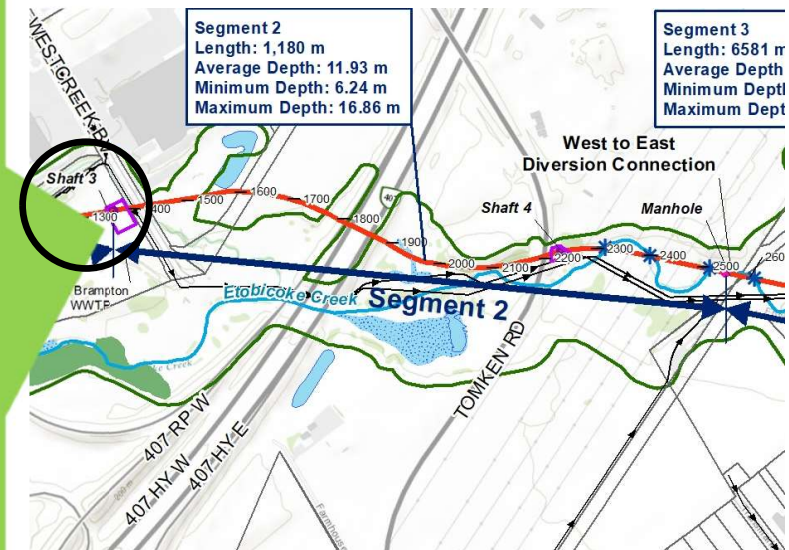


Shaft Site Selection Criteria:

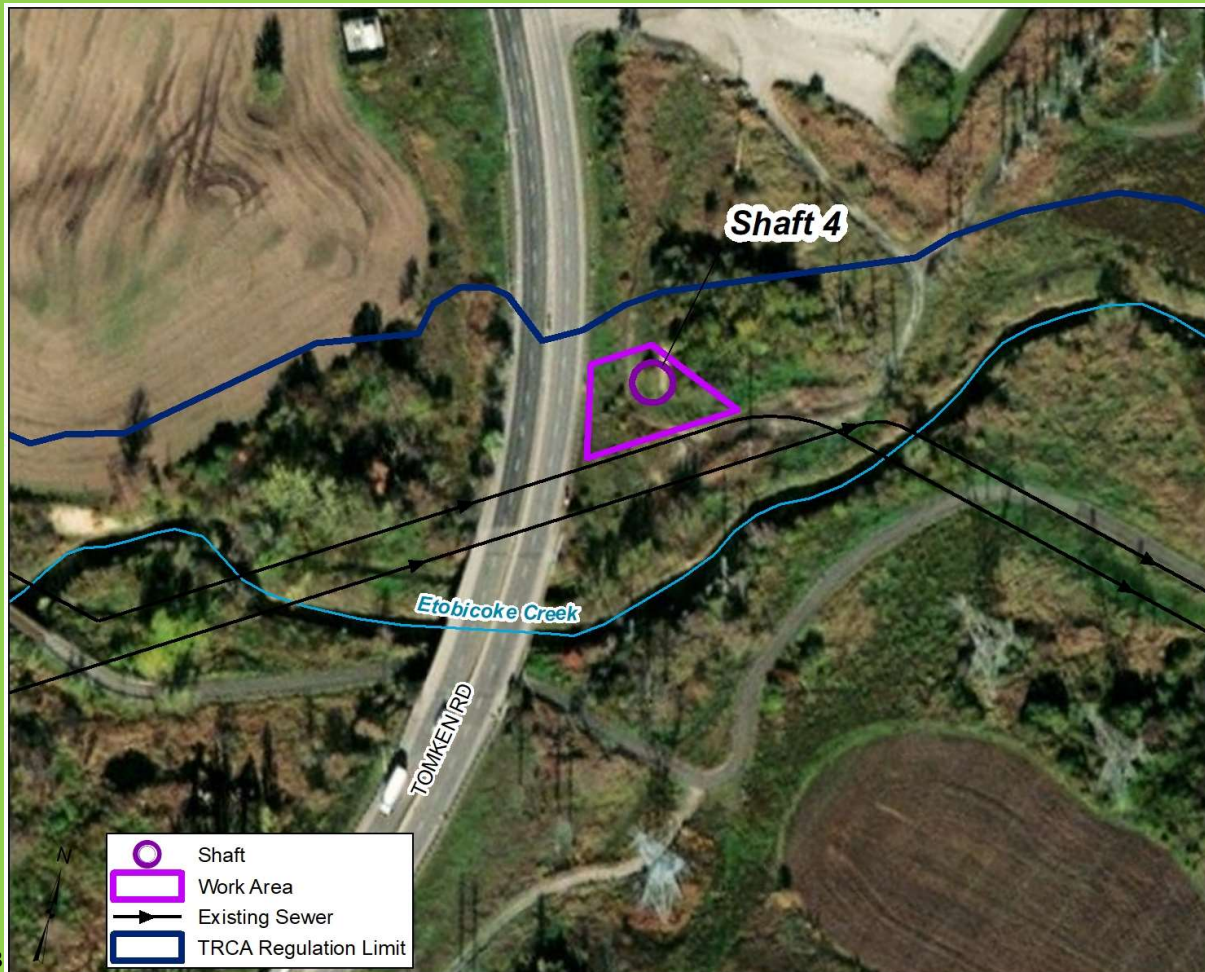
- Location defined by opportunity to use property owned by Region of Peel
- Close to Westcreek Boulevard
- Allows for upstream and downstream microtunnel drives to be within typical ranges

Constraints:

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



Phase 3: Preliminary Shaft Locations – Shaft 4

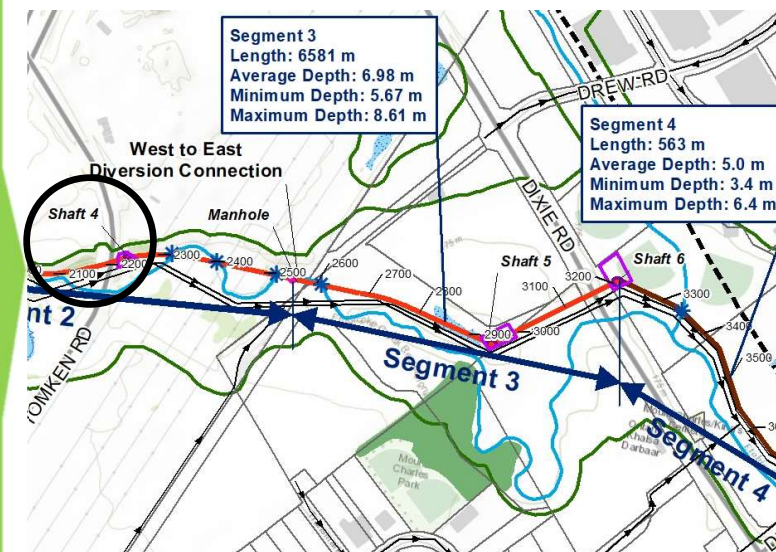


Shaft Site Selection Criteria:

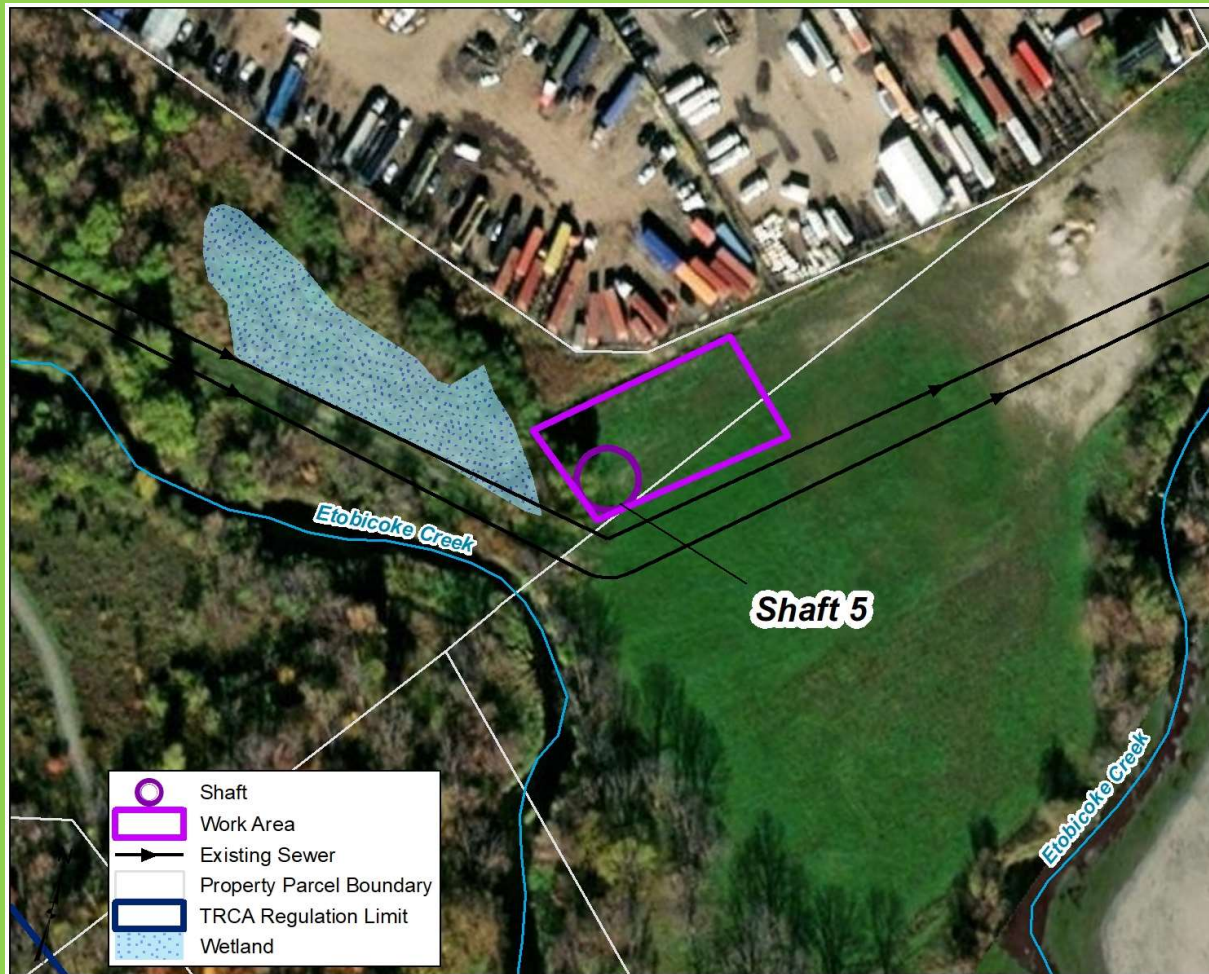
- Location defined by avoidance of wetland north of Tomken Road
- Avoids hydro towers
- Allows for typical drive lengths of MTBM

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

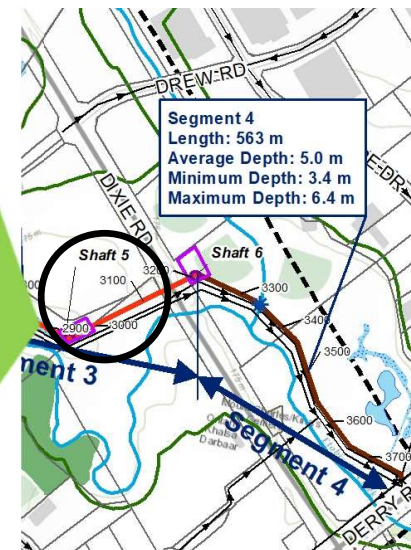


Shaft Site Selection Criteria:

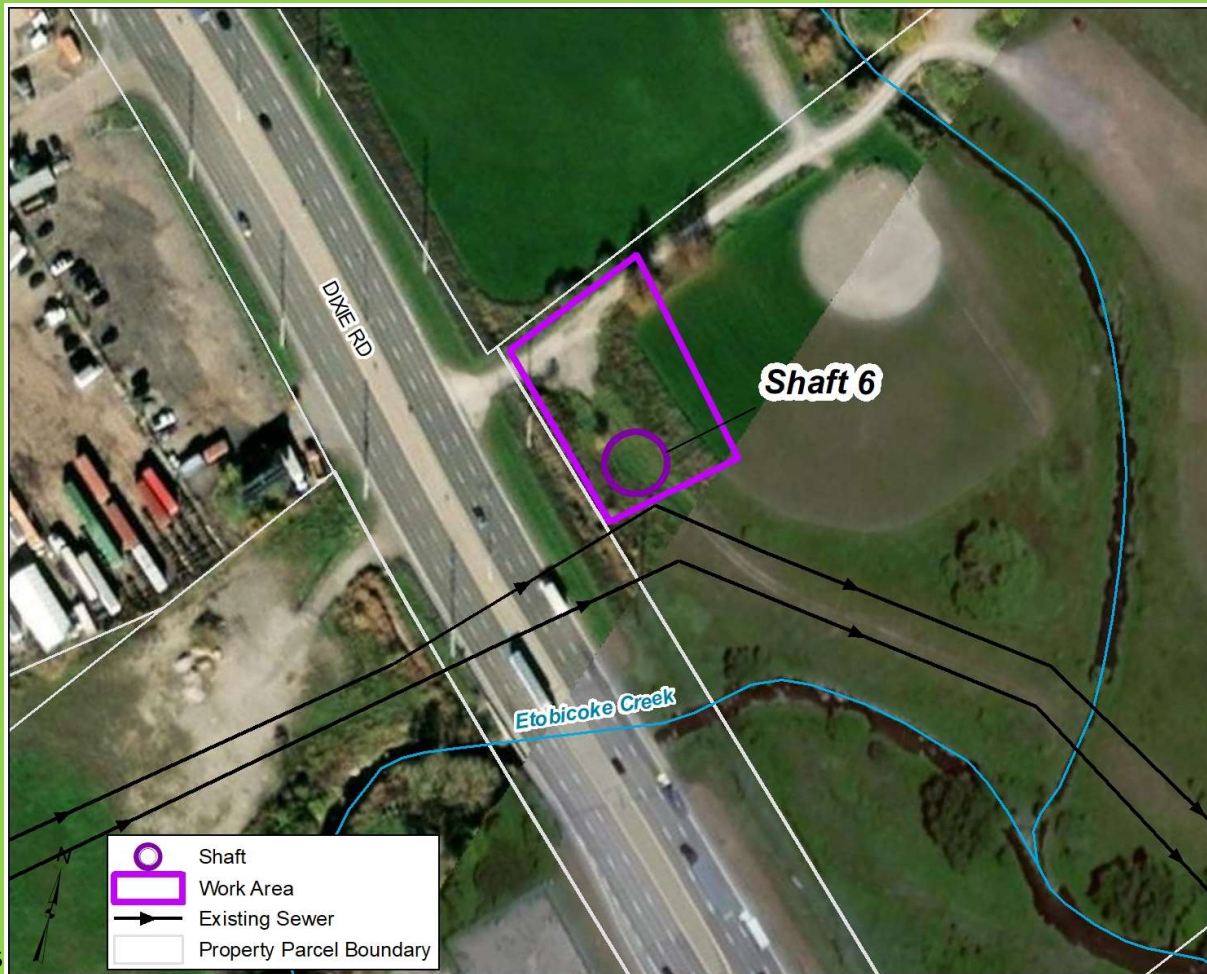
- Location defined by alignment's directional change
- Avoids crossing the existing sewers
- Within existing Region of Peel easement
- Mostly within City of Mississauga property

Constraints:

- 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

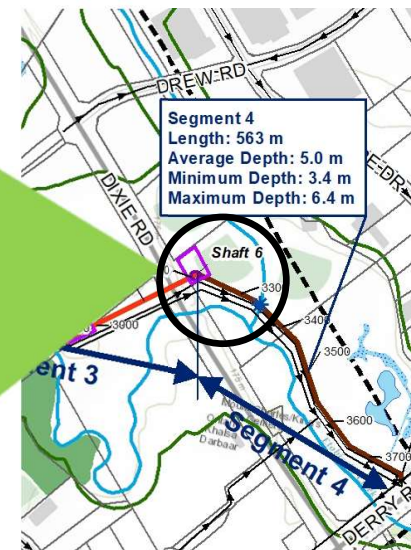


Shaft Site Selection Criteria:




- 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



Mitigation Considerations for Potential Construction Impacts

Evaluation Category	Evaluation Criteria	Mitigation Considerations for Potential Construction Impacts
<p>Technical</p> 	<ul style="list-style-type: none"> • Tunnelling Considerations • Geotechnical and Hydrogeological • Property Requirements • Accessibility • Maintainability • Schedule 	<ul style="list-style-type: none"> • Disturbed areas to be restored • Access restricted and controlled to any construction areas • Easements requirements to be minimized • Construction vehicles and equipment traffic controlled to reduce disruption • Mitigation of construction impacts (noise, traffic, public safety)
<p>Natural Environment</p> 	<ul style="list-style-type: none"> • Terrestrial Environment • Aquatic Environment • Groundwater Impacts • Contaminated Lands • Soil Management 	<ul style="list-style-type: none"> • Mitigation measures to be implemented for stream protection sediment and erosion control • Construction activities scheduled to adhere to required breeding bird and fisheries restriction requirements and planned for wildlife and habitat protection • Tree and vegetation protection measures to be implemented • Environmental management plan implemented for construction • Soils management plan in place for any potential contamination • Groundwater dewatering will adhere to regulatory requirements
<p>Socio-Cultural Environment</p> 	<ul style="list-style-type: none"> • Impact to Cultural Heritage • Archaeological Potential • Impact to Recreation 	<ul style="list-style-type: none"> • Temporary relocation of trails • Monitoring and protection plans developed for any Cultural Resources • Managing traffic through traffic management plans • Construction operations will occur in accordance with municipal noise by-laws • Impact to public transit will be minimized through temporary relocation of bus stops • Access disruption to businesses, institutions, residences will be minimized

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

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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/enviro-assess/etobicoke-creek-sewer-improvement.asp>



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



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