

# East Bayfront Transit EA

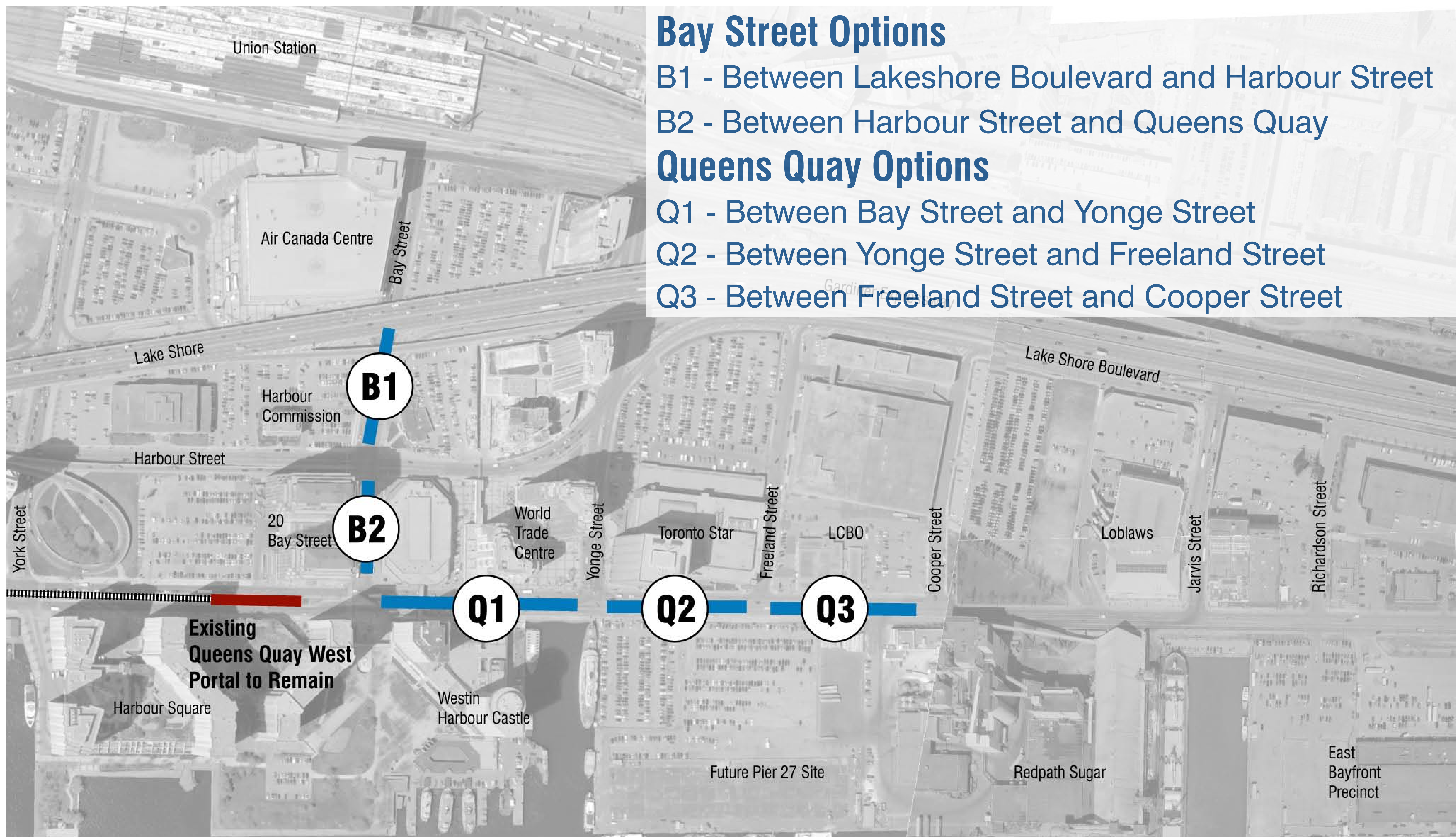
## Integrated Transit Network in the Eastern Waterfront



### Transit Specific Elements

- Streetcar tunnel portal location
- Queens Quay East streetcar connection to Cherry Street and interim streetcar loop at Parliament Street
- Expansion of the Union Station streetcar loop





## Bay Street Options

B1 - Between Lakeshore Boulevard and Harbour Street

B2 - Between Harbour Street and Queens Quay

## Queens Quay Options

Q1 - Between Bay Street and Yonge Street

Q2 - Between Yonge Street and Freeland Street

Q3 - Between Freeland Street and Cooper Street

## Bay Street Options

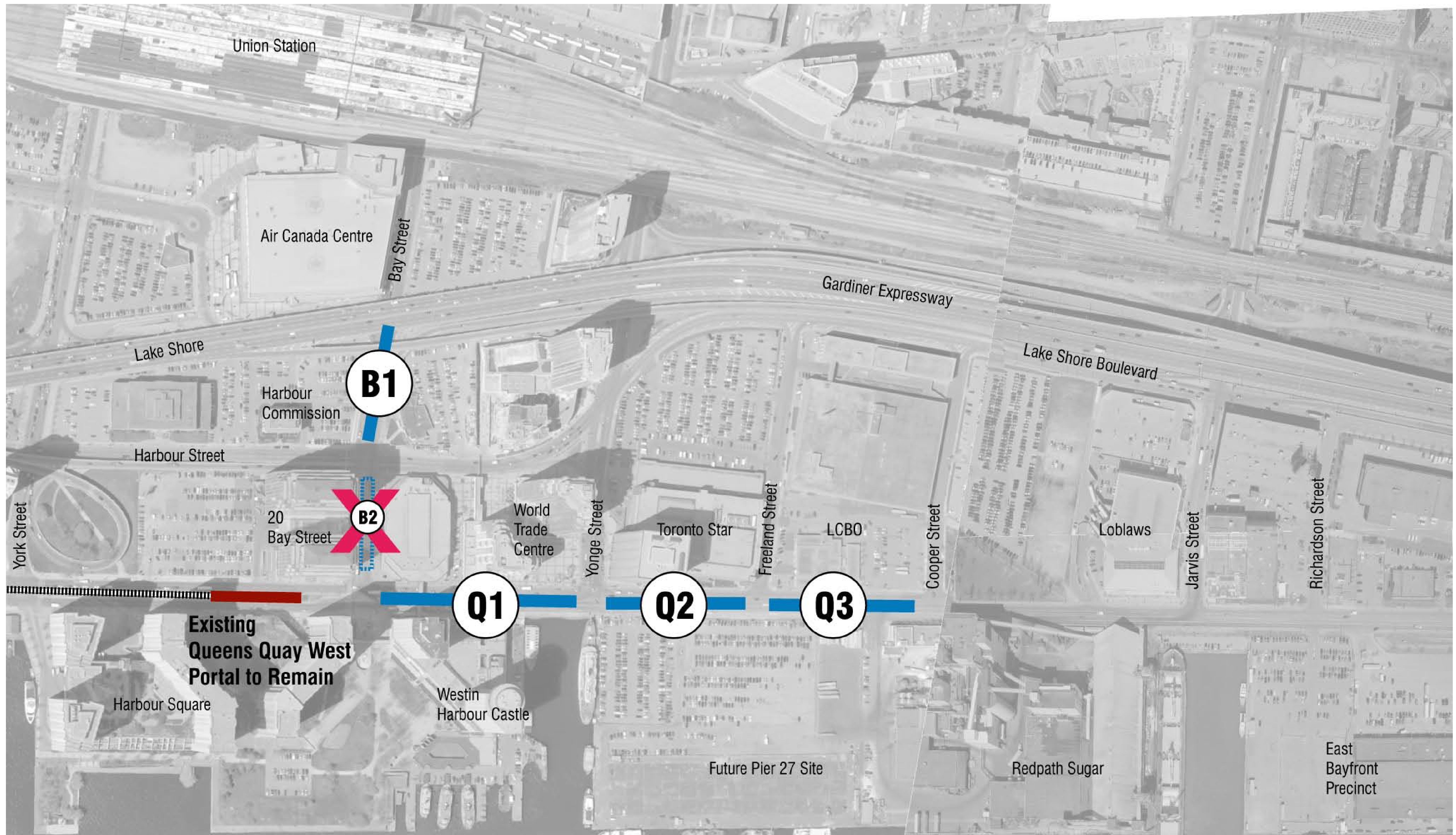
- Close / fill existing portal on Queens Quay and existing underground station
- Streetcars turn east and west through the Queens Quay / Bay Street intersection at grade, mixed with surface traffic and pedestrian movements
- Results in only 1 portal to serve Queens Quay West and Queens Quay East streetcars.

## Queens Quay Options

- Extend existing Bay Street tunnel easterly from the intersection of Queens Quay and Bay Street to a new portal on Queens Quay
- Streetcars would turn east and west under the Queens Quay / Bay intersection, grade-separated from traffic and pedestrian movements
- Existing portal would serve Queens Quay West streetcars; new portal would serve Queens Quay East streetcars

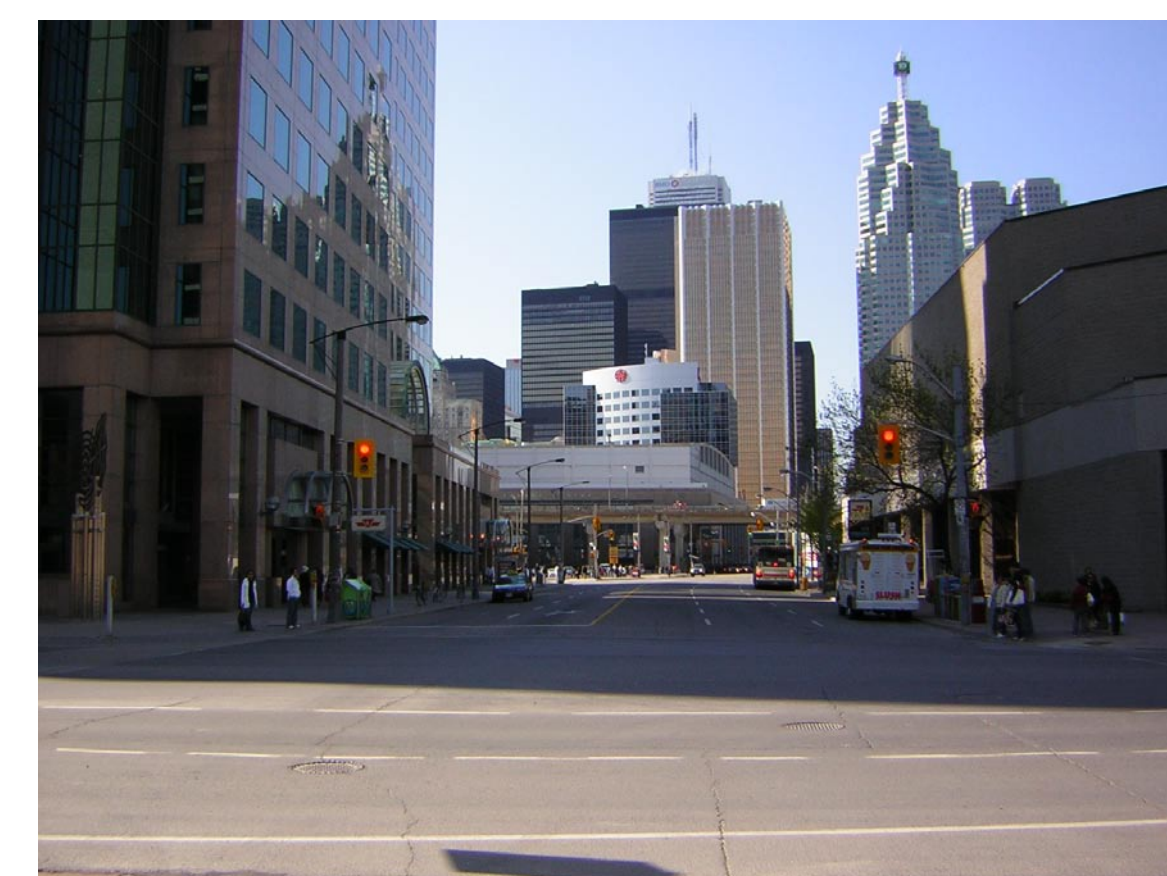


# Portal Options Considered (B2 Screened Out)



## B2 Screened Out

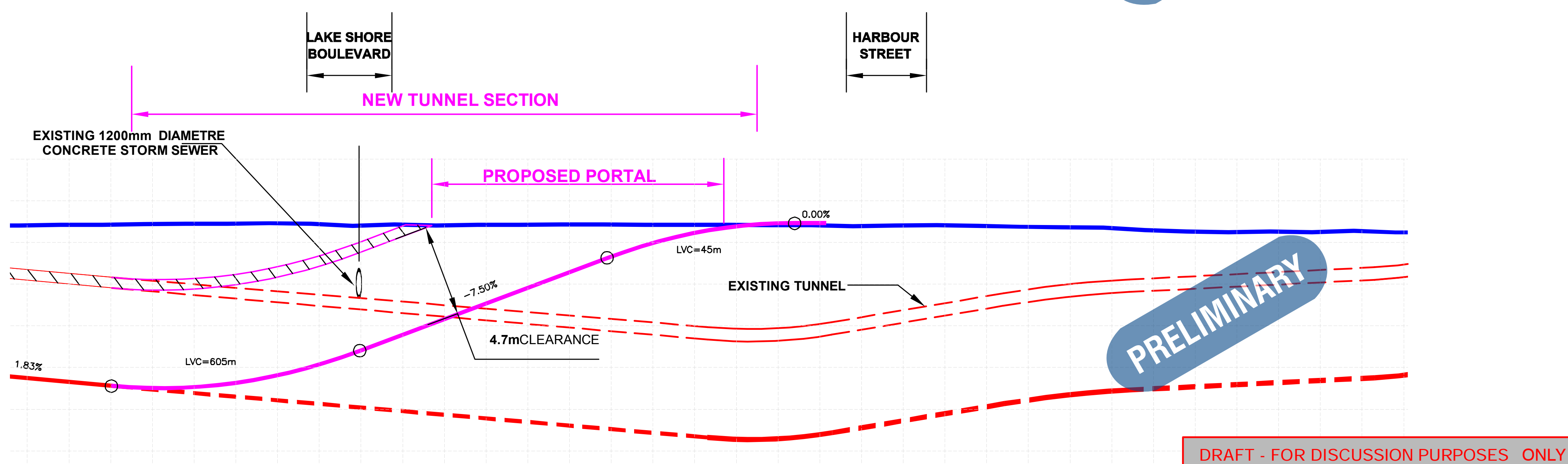
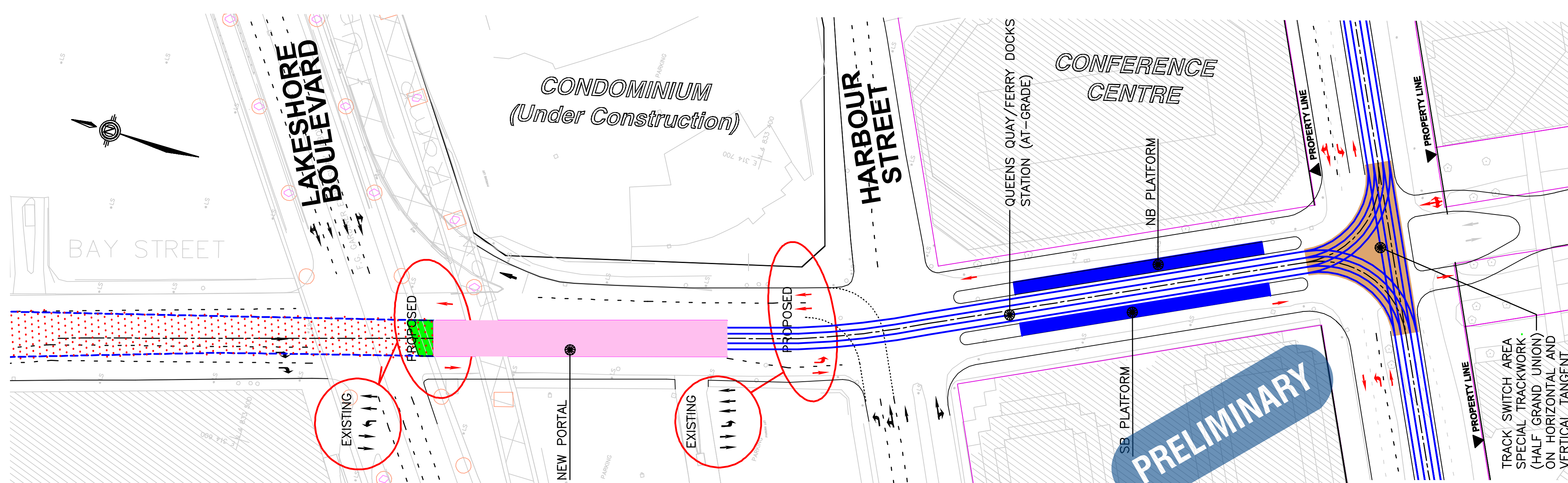
- Option B2 was screened out because distance from Harbour Street to Queens Quay Blvd. is inadequate to accommodate the required elements:
  - Short spacing between Harbour and Queens Quay precludes the ability for streetcars to be at-grade prior to entering the intersection
  - Track switches are required at the Queens Quay / Bay intersection to allow streetcars to turn from Bay Street to Queens Quay and vice versa
  - Must also provide adequate tangent between the portal and the track switches at the intersection





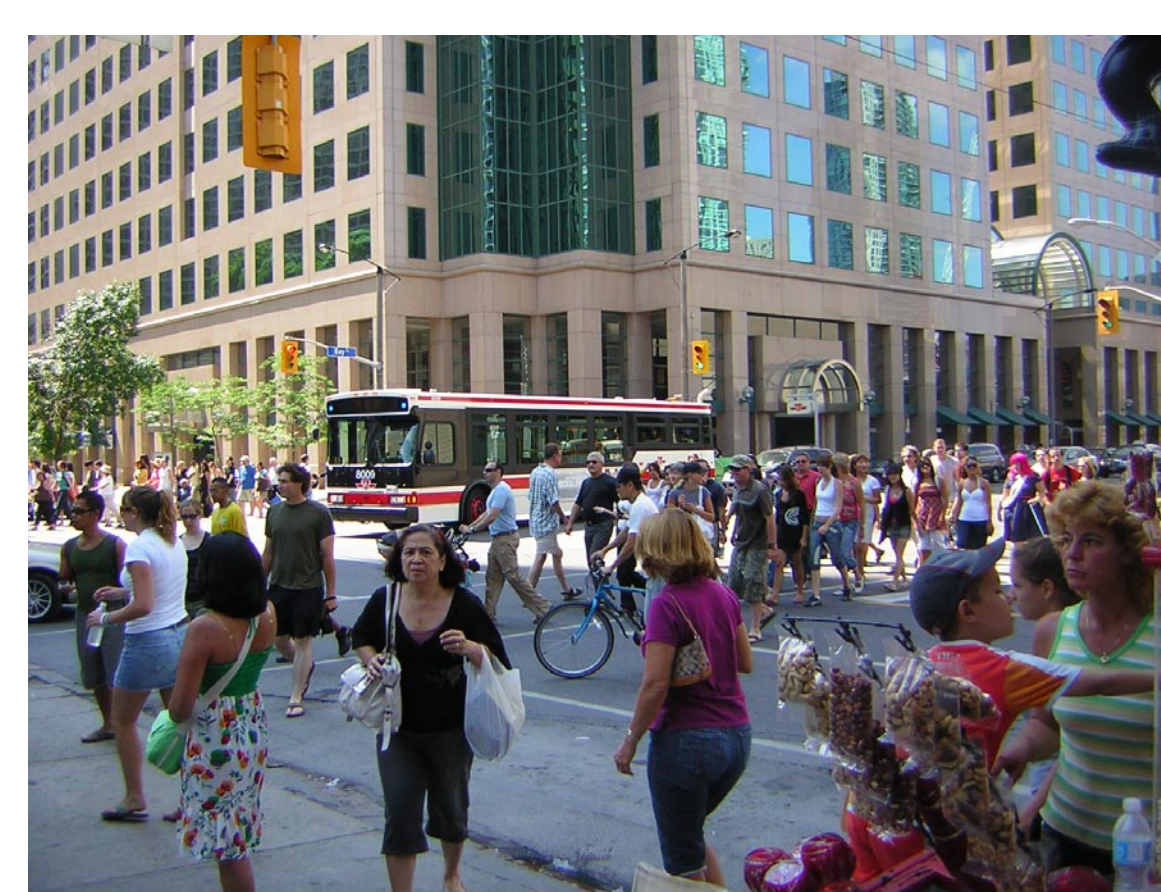
# Bay Street Portal Options B1

## Between Lakeshore Blvd. and Harbour Street



### Advantages

- 1 portal as opposed to 2 portals serving 2 lines - continuous boulevard across the ROW along the Queens Quay corridor
- Continuous streetcar ROW on the surface generates best flexibility in stop locations relative to destinations



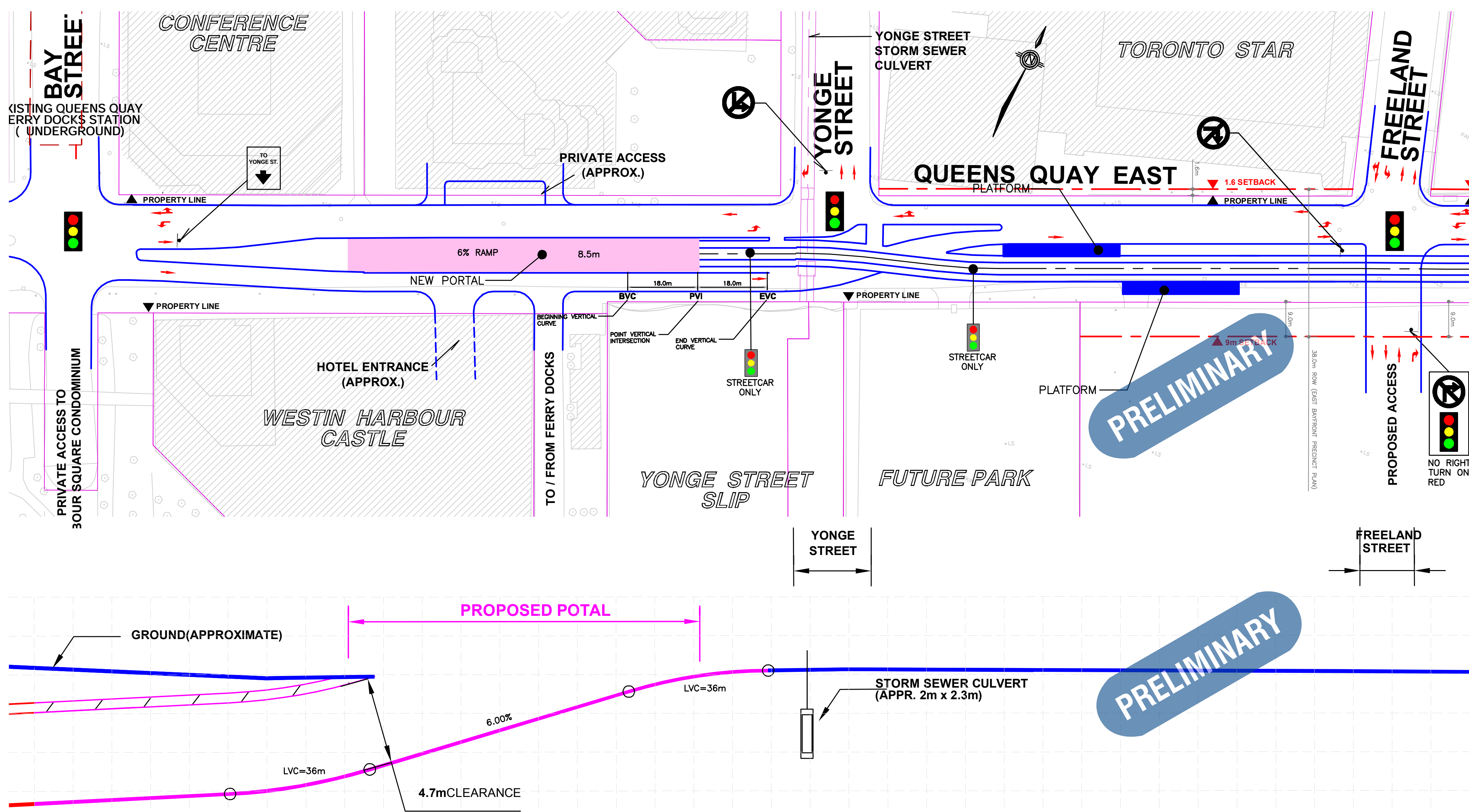
### Disadvantages

- At grade turns at Queens Quay / Bay: problematic and difficult to operate reliably with short headways; conflicts between streetcars, cars and pedestrians; longer delay and lower service reliability
- Portal located in an existing built-up area - large volume of at-grade streetcar turning movements at Queens Quay / Bay has high potential for generating noise and vibration effects on existing residents and businesses
- Reduces north-south roadway capacity and ability for motorists to travel in and around the study area
- Portal restricts access to west side of Bay Street to existing commercial and residential properties on Bay Street (portal) and Queens Quay between Bay and Yonge (streetcar ROW crosses Westin Harbour driveways)



# Queens Quay Portal Options Q1

## Between Bay Street and Yonge Street

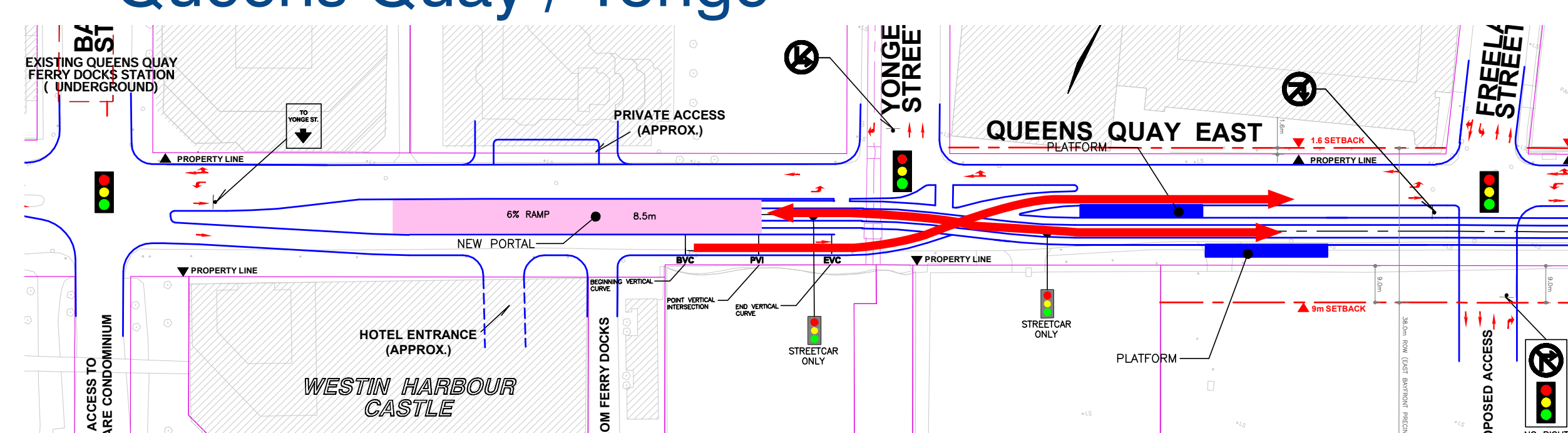


### Advantages

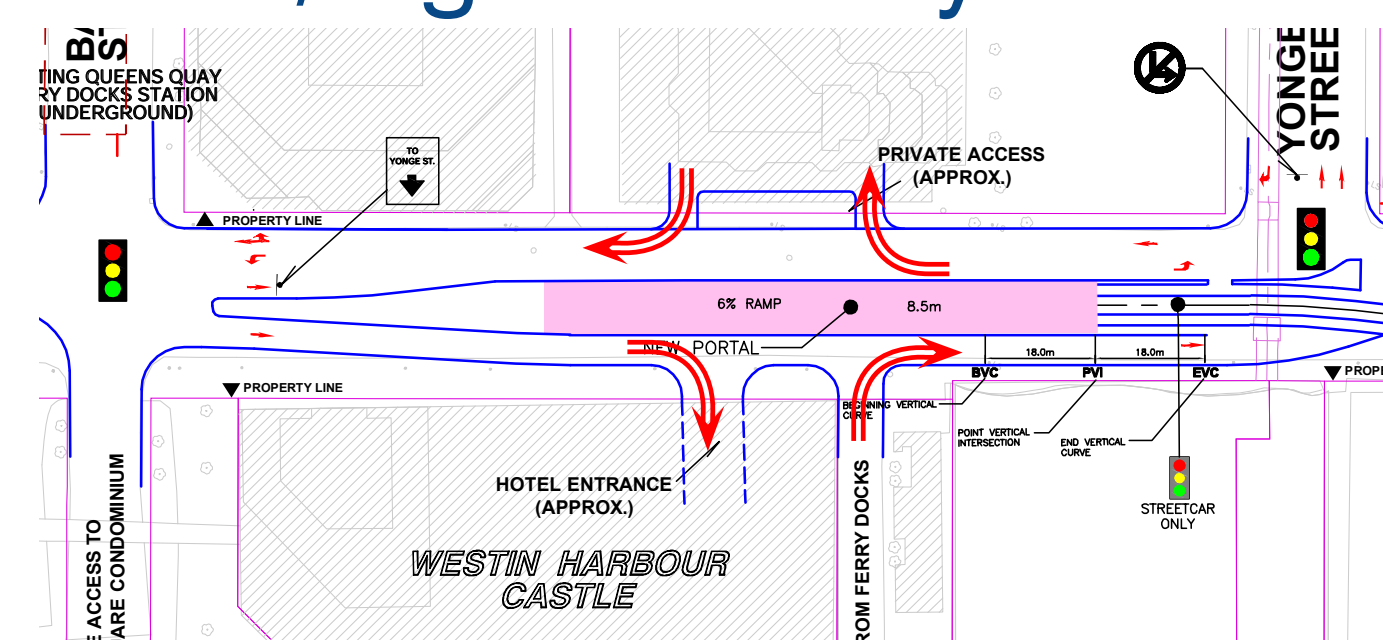
- Can accommodate a transit stop on the surface at the foot of Yonge Street
- No impact on roadway capacity attributed to the portal

### Disadvantages

- Two portals on Queens Quay
- Portal has to be located in the centre of the road to prevent blockage of access to Westin Harbour Castle Hotel - would require eastbound through traffic to weave across streetcar ROW at Queens Quay / Yonge



- Access to Westin Harbour Castle Hotel and condominium on Queens Quay reduced to right-in / right-out only

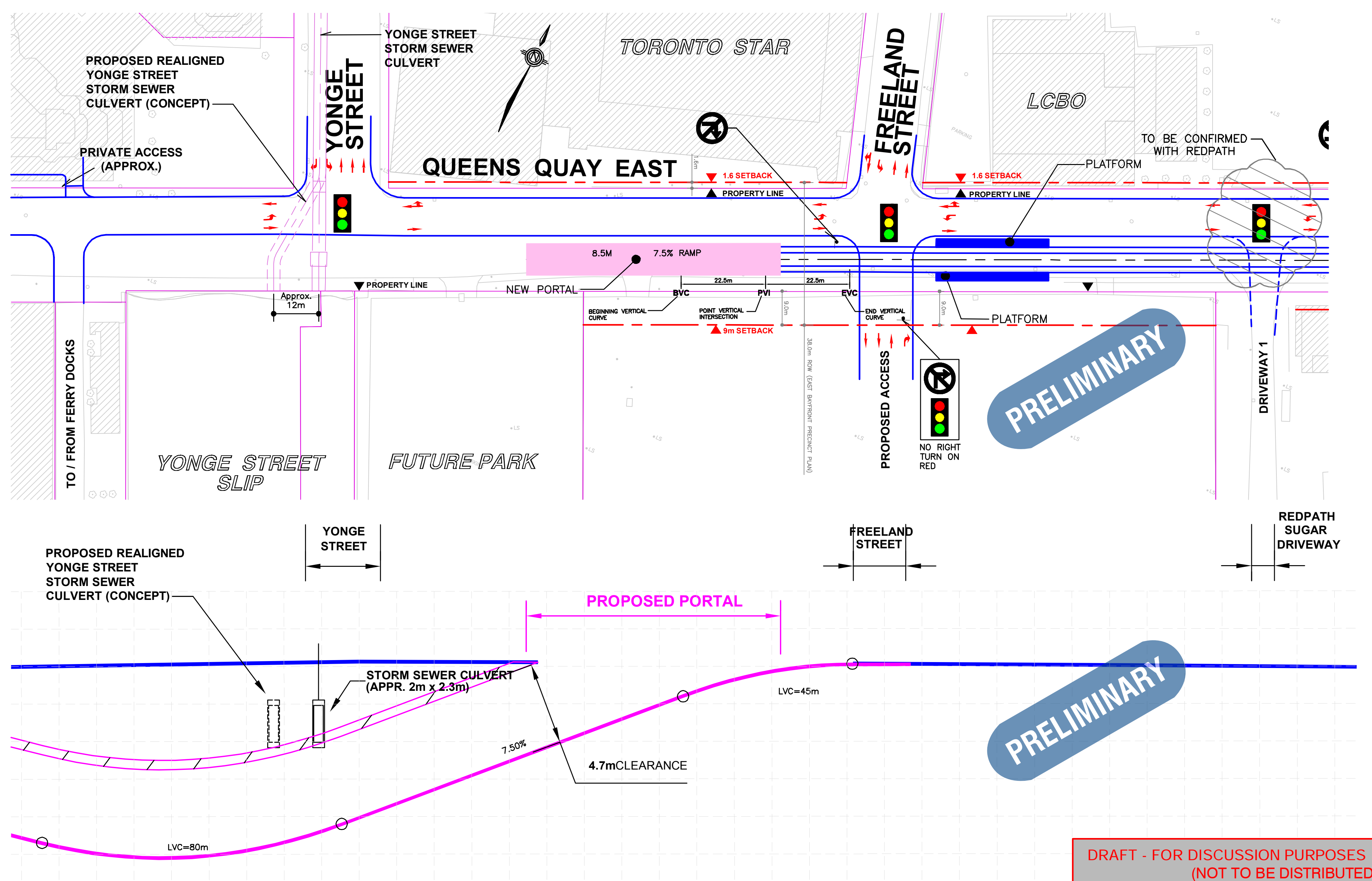


- Portal located in an existing built-up area between Bay Street and Yonge Street – least opportunities of all portal options to achieve desirable urban design goals and objectives; least flexibility to accommodate Martin Goodman Trail.



# Queens Quay Portal Options Q2

## Between Yonge Street and Freeland Street



### Advantages

- Transit - better quality of services as a result of shorter delay at intersections, shorter travel time, and better service reliability
- No impact on existing commercial and residential properties between Bay Street and Yonge Street
- No impact on vehicular/ pedestrian access to the Ferry Docks
- Compatible with either south side or centre option right of way
- Portal fits within ROW - extra width available on the south side of Queens Quay between Bay and Yonge for public realm improvement
- Fits full width of tree-lined Martin Goodman Trail

### Disadvantages

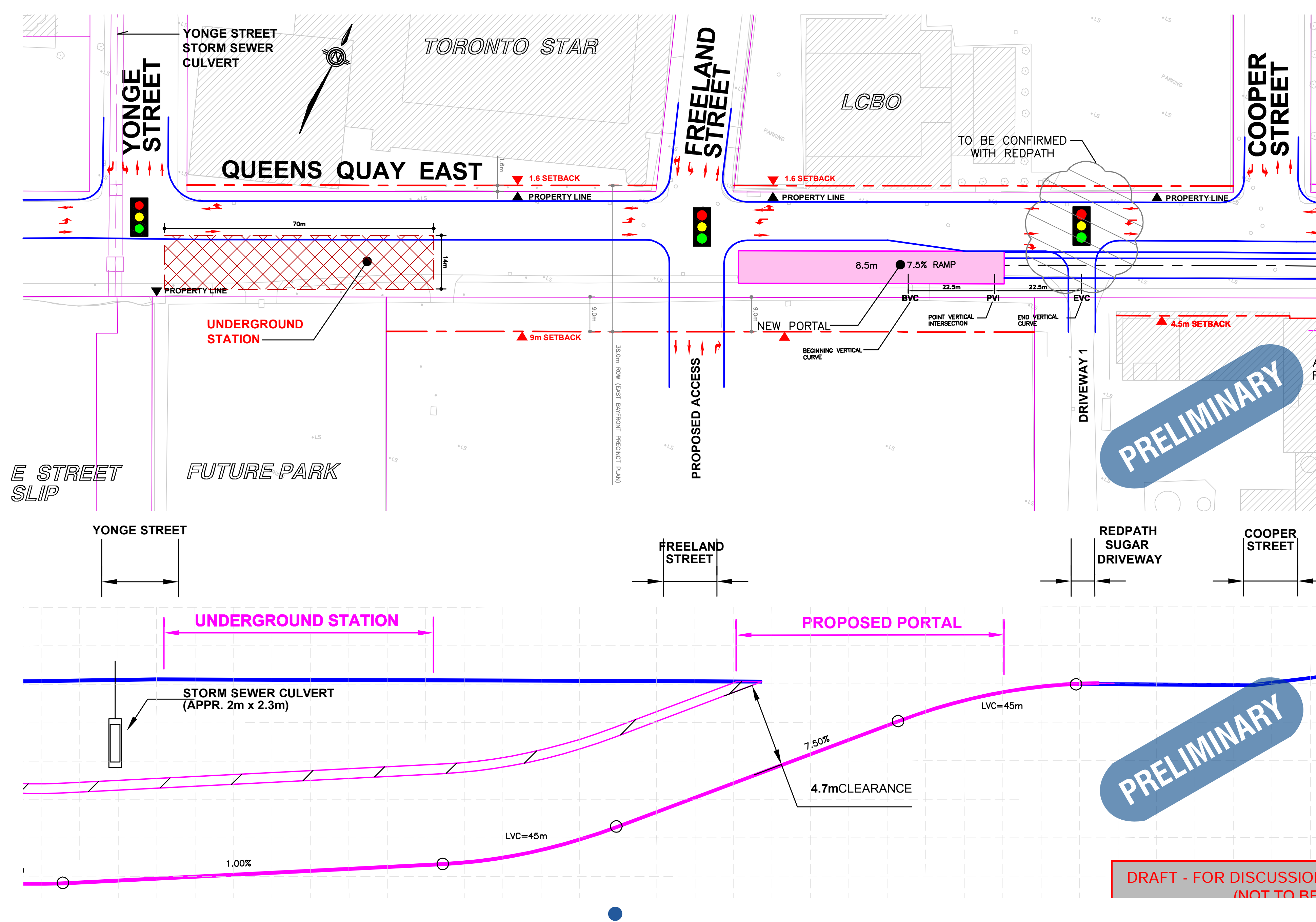
- Two portals on Queens Quay
- Requires realignment of Yonge Street storm sewer culvert at the Queens Quay / Yonge Street intersection
- Precludes a transit stop at the foot of Yonge Street - closest stops are at Bay and Freeland





# Queens Quay Portal Options Q3

## Between Freeland Street and Cooper Street



### Advantages

- Same as Option Q2

### Disadvantages

- Two portals on Queens Quay
- Highest construction costs associated with the portal (longest tunnel, requires an underground station at the foot of Yonge Street)
- Portal close to Redpath Sugar's main entrance - end of streetcar ramp in conflict with driveway





## Complete assessment of factors pre-determined during development of the EA Terms of Reference:

- Planning Policies
- Urban Design
- Transportation
- Socio-Economic Environment
- Natural Environment
- Cultural Environment
- Cost

## Evaluation based on key decision relevant factors

Objectives	Criteria	Indicators (the degree to which the alternative...)	Measure
A) Planning Policy	A1) Local population / employment growth in the study area	A1.1) Supports future transit and road capacity requirements for forecast development	
	A2) City, TWRC, and Provincial Policies	A2.1) Supports the City's Central Waterfront Secondary Plan, East Bayfront Class EA Master Plan, and standards for transportation planning and design	Provides all ROW amenities as per Master Plan
		A2.2) Supports Goals and Intentions of Central Waterfront Design Competition	Compatible with streetcar ROW on the south side of Queens Quay?
		A2.3) Supports Waterfront Toronto's East Bayfront Precinct Plan and Sustainability Framework	Minimise car use, increase walking, cycling, and public transit use  Vibrant, diverse, and economically strong community (qualitative)



# Portal Evaluation Overall Summary



- ✓ Yes. Meets criteria
- Challenging. May meet criteria
- ✗ No. Cannot meet criteria: Critical fail

SUMMARY	B1: LAKE SHORE - HARBOUR	Q1: BAY-YONGE	Q2: YONGE-FREELAND	Q3: FREELAND-COOPER
<b>Planning Policies</b>				
Compatibility with City of Toronto policies and Waterfront Toronto goals	Compatible	Somewhat compatible Does not support results from Waterfront Toronto's Central Waterfront Design Competition	Compatible Portal location consistent with Central Waterfront Secondary Plan	Compatible
<b>Summary</b>	✓	○	✓	✓
<b>Urban Design</b>				
Effect on Queens Quay streetscape between Bay and Yonge	Improvement	Reduction	Improvement	Improvement
Number of streetcar tunnel portals	One Bay Street	Two Queens Quay	Two Queens Quay	Two Queens Quay
Potential for achieving public space enhancement and public realm improvement	Some	Minimal	High Portal fits within ROW	High Portal fits within ROW
Ability to accommodate a continuous tree-lined Martin Goodman Trail	Some	Minimal	High Fits full width of Martin Goodman Trail	High Fits full width of Martin Goodman Trail
<b>Summary</b>	○	✗	✓	✓
<b>Transportation</b>				
Quality of transit service and operation	Poor Delays at Harbour, Bay, and Yonge intersections result in longer travel time and lower service reliability	Adequate	Better Grade-separated operation through Harbour, Bay, and Yonge intersections results in shorter delay, shorter travel time, and better service reliability	Better Grade-separated operation through Harbour, Bay, and Yonge intersections results in shorter delay, shorter travel time, and better service reliability
Impact on roadway capacity and traffic operation	Reduces north-south roadway capacity and ability for motorists to travel in and around the study area	Complex intersection operation at QQ/Yonge as a result of need for eastbound traffic to weave across streetcar ROW	No major impact	No major impact
<b>Summary</b>	✗	✗	✓	✓



# Portal Evaluation Overall Summary



SUMMARY	B1: LAKE SHORE - HARBOUR	Q1: BAY-YONGE	Q2: YONGE-FREELAND	Q3: FREELAND-COOPER	
<b>Socio-Economic</b>					
Existing/future commercial properties with driveway affected by undertaking	West side of Bay Street between Lake Shore and Harbour	Westin Harbour Castle Hotel / Toronto Island Ferry Docks	Westin Harbour Castle Hotel / Toronto Island Ferry Docks	None	Redpath Sugar
Effects	Entrance limited to SB right-in / right-out only	Streetcar tracks in conflict with driveways	Access reduced to eastbound right-in/ right-out only	None	End of streetcar ramp in conflict with main driveway - likely requires driveway modification
Existing and future residential properties with driveway affected by undertaking	Harbour Square Condominium	World Trade Centre Condominium	MT 27 residential development	None	None
Effects	Bay Street entrance requires modification	Access on Queens Quay reduced to westbound right-in/ right-out only	Portal will be located just west of Freeland Street (main entrance); however, it is anticipated that full access can be maintained	None	None
Potential for minimizing perceived noise and vibration effects on existing residents	Lowest Streetcars will operate at-grade between Harbour Street and Yonge Street and through the QQ/Bay Intersection	Lower Streetcars will reach surface between Bay Street and Yonge Street	Higher Streetcars will be underground between Harbour Street and Yonge Street	Higher Streetcars will be underground between Harbour Street and Yonge Street	Higher Streetcars will be underground between Harbour Street and Yonge Street
<b>Summary</b>					
<b>Cost</b>					
Potential to minimize construction cost	Medium	Highest	Medium	Lowest	
Potential to minimize vehicle acquisition cost	Lower	Higher	Higher	Higher	
Potential to minimize property acquisition cost	Potentially costly measure for mitigating access issues at Westin Harbour Castle Hotel	Potentially costly measure for mitigating access issues at Westin Harbour Castle Hotel	No major property acquisition anticipated	No major property acquisition anticipated	
Potential to minimize transit operation cost during and after construction	Lower	Higher	Higher	Higher	
<b>Summary</b>					

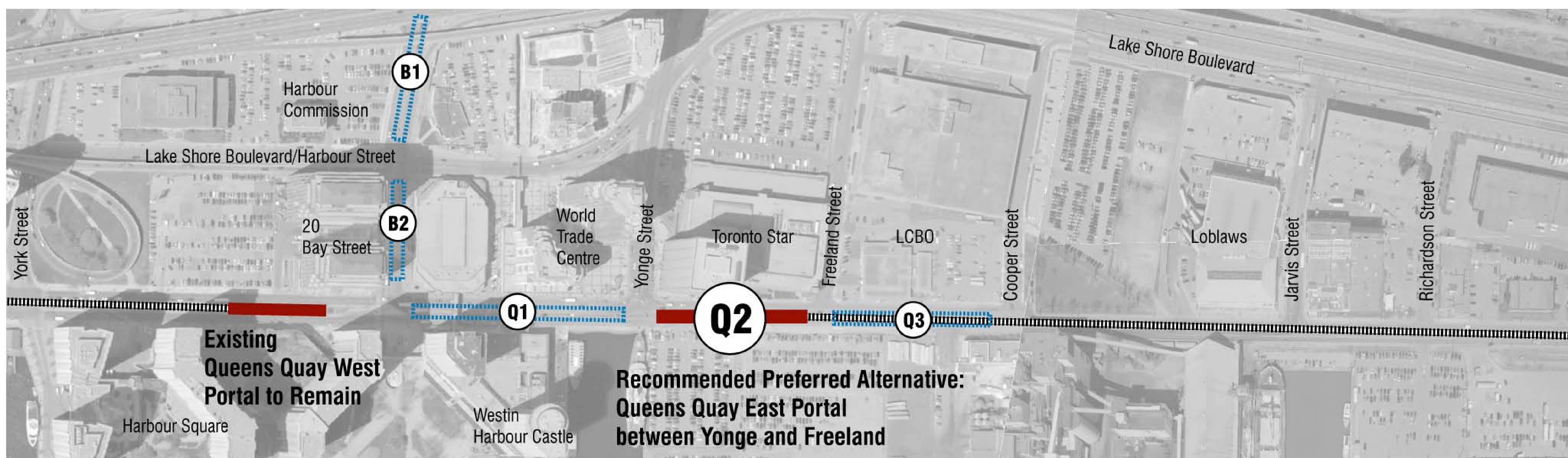


# Portal Evaluation Overall Summary

SUMMARY	B1: LAKE SHORE - HARBOUR	Q1: BAY-YONGE	Q2: YONGE-FREELAND	Q3: FREELAND-COOPER
Planning Policies	✓	○	✓	✓
Urban Design	○	✗	✓	✓
Transportation	✗	✗	✓	✓
Socio-Economic	✗	✗	✓	○
Natural	Not Decision Relevant	Not Decision Relevant	Not Decision Relevant	Not Decision Relevant
Cultural	Not Decision Relevant	Not Decision Relevant	Not Decision Relevant	Not Decision Relevant
Costs	✗	✓	○	✗
	<b>Not Carried</b>	<b>Not Carried</b>	<b>Carried</b>	<b>Not Carried</b>

## Option Q2 between Yonge Street and Freeland selected as the preferred portal location

- Transit - better quality of service as a result of shorter delay at intersections, shorter travel time, and better service reliability; no impact on roadway capacity
- Portal fits within ROW - extra width available on the south side of Queens Quay between Bay and Yonge for public realm improvement
- Lowest impact on existing commercial and residential properties

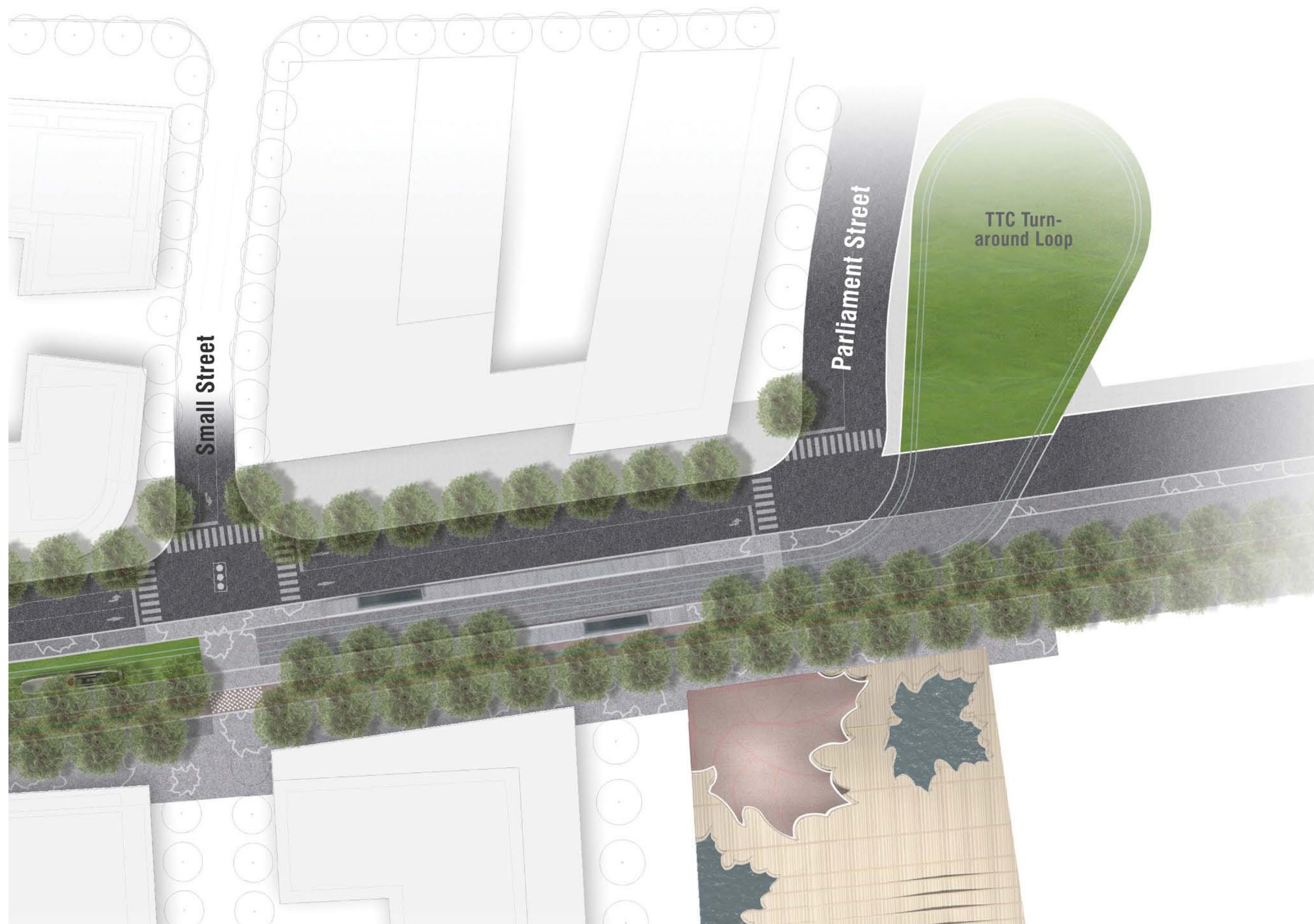




# Queens Quay East Streetcar Connection to Cherry Street

- Alignment of Queens Quay Blvd. east of Parliament to be confirmed by Lower Don Lands Class EA Master Plan
- Interim terminus loop at Small / Parliament until Queens Quay Blvd. extended to Cherry Street
  - minimise interim effect on developable property
  - maintain operation during construction of extension
- EBF Transit EA will show location of interim loop and conceptual connections:
  - with approved West Don Land Streetcar on Cherry Street
  - connection with future streetcar network in the Port Lands via Cherry Street

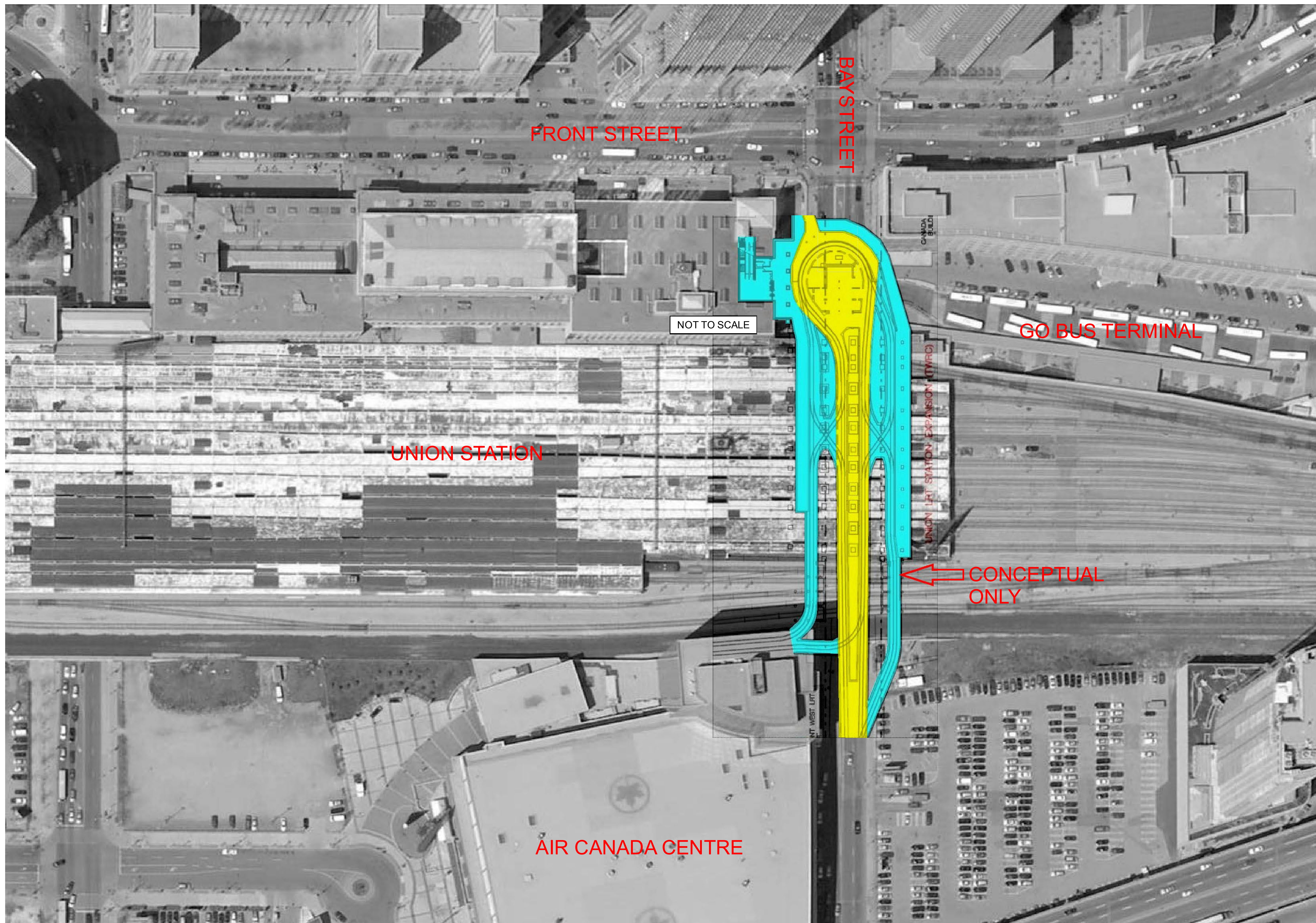
## Interim Parliament Loop



Conceptual Only



# Union Station Loop Expansion



Conceptual Only

Significant platform expansion required to carry high transit volumes from east and west of Union Station

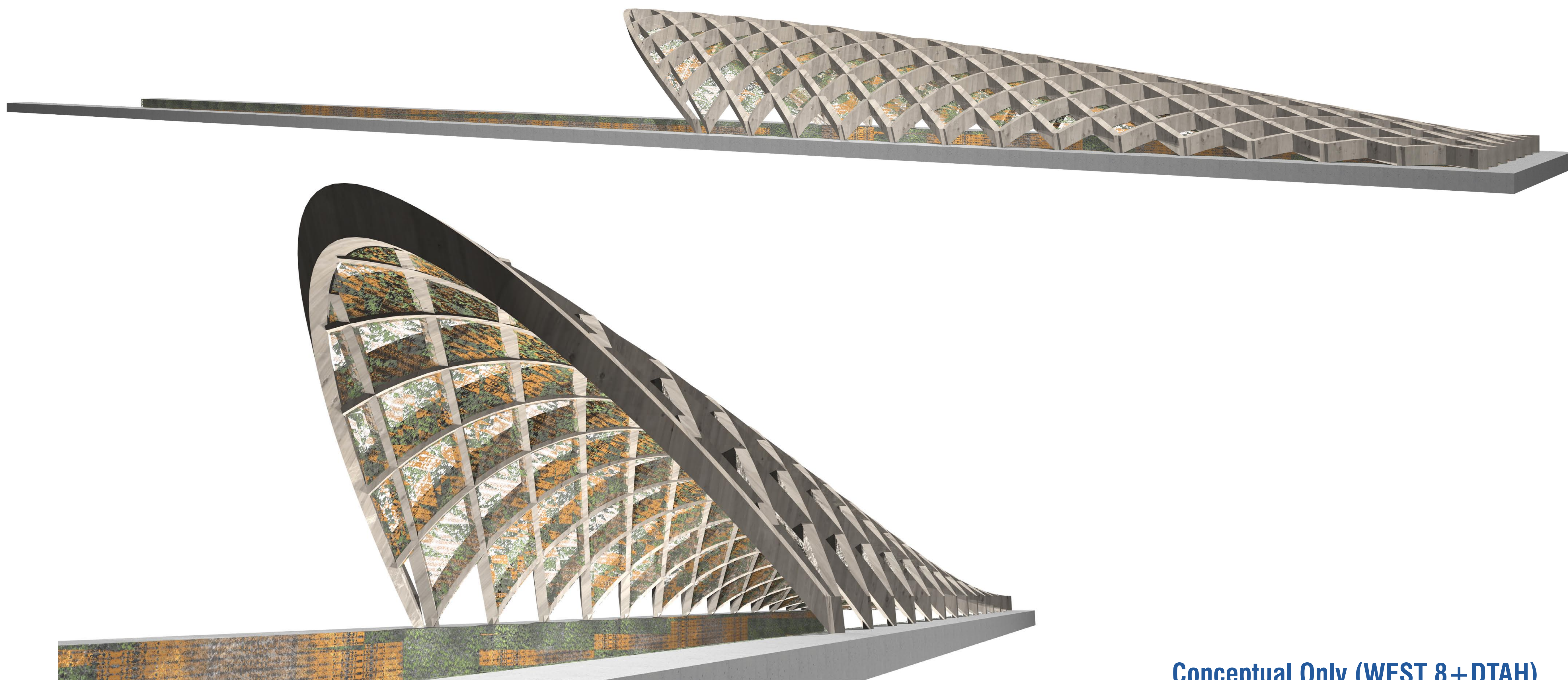


Conceptual Only



# Potential Portal Canopy

Q2 - Between Yonge Street and Freeland Street



Conceptual Only (WEST 8+DTAH)