

ASSESSMENT OF EAST BAYFRONT PLANNING ALTERNATIVES							
CORRIDORS							
Objectives	Criteria	Indicators	Measure	OPTION 1: Queens Quay Only	OPTION 2: Queens Quay Local plus Lake Shore Express	Discussion	
A) Land Use	A1) Local population / employment growth in the study area	A1.1) Supports future road and transit capacity requirements for forecast development.	ROW width must be able to accommodate the required infrastructure for pedestrians/transit users, cyclists, and transit vehicles	Yes	Yes	Queens Quay: the proposed ROWs in the East Bayfront Precinct Plan are capable of accommodating the required infrastructure for pedestrians/transit users, cyclists, transit vehicles, and cars. Lake Shore Express: a 'surface transit' scheme would require conversion of traffic lanes in existing streets into transit-only lanes.	
			Supports future road capacity requirements for forecast development	Yes	Less	Lake Shore Express 'surface transit' scheme would result in a reduction of road capacity for forecast development requirements. There would be a capacity reduction in westbound Lake Shore Boulevard (800 vehicles/hr), northbound York Street (500 vehicles/hr), and southbound Bay Street (400 vehicles/hr) during the peak hour.	
	A2) City, TWRC, and Provincial Policies	A 2.1) Supports the City's Central Waterfront Secondary Plan (SP) and East Bayfront Class EA Master Plan objectives.	Waterfront streets will be remade as "places" with distinct identities. Streets will act as lively urban connections as well as traffic arteries. The needs of motorists will be balanced with efficient transit service and high-quality amenities for pedestrians and cyclists (SP P5). See also SP sections A2, C19, and policies P4, P18, and P20 .	Yes	Less	Option 2 is considered a less attractive transit service for the EBF because (a) Lake Shore Express would not serve demands to/from the EBF, and (b) Queens Quay Local would require approx. 4-min headways compared to 2 minutes for Queens Quay Only.	
		A 2.2) Supports the TWRC's Precinct Plan and Sustainability Framework (SF).	Establish Queens Quay as an active, beautiful east-west urban boulevard that provides for pedestrian amenity, commuter bike lanes, and mass transit, thereby creating the "main street" for East Bayfront (Pg 18 of the EBF Precinct Plan).	Yes	Yes	Both options would help achieve the transportation and urban design objectives set out in the TWRC EBF Precinct Plan.	
		A 2.3) Supports Provincial growth management plans (PGP), policies, and objectives.	All residences within 350 m of a Light Rapid Transit (LRT), streetcar or bus stop (SF pg 3-17); create bike paths and pedestrian linkages with and between waterfront neighbourhoods and the rest of the City (SF pg 3-17).	Yes	Yes	Both options would help accomplish the transportation objectives/actions set out in the TWRC Sustainability Framework.	
		Ability to reduce reliance on cars and promote transit, cycling, and walking - PGP Section 3.2.2(1)(b)	Yes	Less	Queens Quay Only would offer a more attractive service compared to Queens Quay Local - see discussion A 2.1. Therefore Option 1 has a higher potential to attract users. Both options have the same potential to promote cycling and walking in the EBF.		
		Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible - Section 3.2.3(2)(c)	Yes	Less			
B) Transportation	B1) Auto Dependence	B.1.1) Maximizes non-auto (transit, pedestrian and cycling) modal split for trips to, and within, the study area.	Potential to improve non-auto modal split for trips to and within the study area	Good	Less	Queens Quay Only would offer a more attractive service compared to Queens Quay Local - see discussion A 2.1. Therefore Option 1 has a higher potential to attract users. Both options have the same potential to promote cycling and walking in the EBF.	
		B.1.2) Maximizes non-auto (transit, pedestrian and cycling) modal splits for trips through the study area.	Potential to improve non-auto modal split for trips through the study area	Good	Similar or Less	Queens Quay: the combination of a re-designed Queens Quay East and the existing Bay Street tunnel would provide a fast and undistruptive transit service for trips through the study area. Lake Shore Express: despite transit-only lanes on existing streets, transit service would continue to be impeded by delay at Union Station as a result of high volume of pedestrian activities on Front Street (up to 2200 pedestrians during the peak hour crossing Front Street at Bay Street).	
	B2) Transit	B 2.1) Provides attractive transit service (few transfers).	No. of transfers required.	0	0	Both options would provide direct connection to Union Station as well as connection to West Don Lands and Port Lands	
		B 2.2) Provides attractive transit service (reliability, speed).	Service reliability	Good	Less	Lake Shore Express be a less reliable service between Port Lands and Union Station for reason discussed in B 1.2	
		B 2.3) Maximizes population and employment within 300m of transit.	Population and employment at full built-out within the study area and within 300m of the proposed transit facility	Same as Option 2	Same as Option 1	Both options would provide the same coverage. Lake Shore Express would not contribute to additional coverage as it would not provide service to/from the EBF.	
		B 2.4) Provides flexibility and adaptability for staging and expansion by preserving opportunities for existing and future connections.	No. of existing and future connection opportunities	5	4	Option 2 would require a transfer between the EBF and the Port Lands.	
		B 2.5) Provides for transit travellers wishing to travel through the study area but who are not destined for locations in the study area.	Approximate Headway (min)	2	4	Based on forecast transit demand in the Eastern Waterfront	
	Average trip time (min)		11	Similar to Option 1	Queens Quay: travel time estimation extrapolated from existing travel time on 509 Harbourfront between Union Station and Queens Quay West/Spadina		
	B3) Vehicles	B 3.1) Provides for local auto access.	Not a determining factor for corridors - considered in evaluating technology/ROW				
		B 3.2) Provides for auto travellers needing to travel through the study area but who are not destined for locations within the study area.	Impact on through automobile traffic flow	None	Yes	Lake Shore Express 'surface transit' scheme would result in a reduction of road capacity for forecast development requirements. There would be a capacity reduction in westbound Lake Shore Boulevard (800 vehicles/hr), northbound York Street (500 vehicles/hr), and southbound Bay Street (400 vehicles/hr) during the peak hour.	
B 3.3) Connects to other planned Waterfront Precincts at boundaries of the study area.		No. of connections with Waterfront Precincts	2	2	Both options would have the same vehicle connection opportunities with West Don Lands and Port Lands precincts.		
C) Socio-Economic Environment	C1) Automobile use in and through the study area	C1.1) Minimizes through auto travel on local roads.	Reduction in through auto traffic on local roads within the study area	No impact	No	Lake Shore Express surface transit scheme would create a capacity reduction of 800 vehicles (peak hour) in the westbound Lake Shore Boulevard. Possible traffic diversion to local roads within the study area.	
	C2) Tourism and waterfront access	C 2.1) Provides transit stop access to attractions.	Proximity to proposed activities (parks, open space, waterfront promenade, etc.) in the EBF;	Yes	Yes	Both options would provide the same transit stop access to planned attractions in the EBF. Both options would provide the same type of amenities for transit users - as part of the urban design for the EBF precinct.	
	C3) Existing and future businesses	C 3.1) Affects existing properties.	No. of exiting non-residential buildings immediately adjacent to ROW	15	23	Number of non-residential buildings within the study area that are immediately adjacent to each route	
C 3.2) Encourages commercial activity.		No. of planned development blocks adjacent to corridor	12	12	Both options cover the same development blocks within the EBF. Not including open space blocks/parcels. See EBF Precinct Plan (P44) for additional info.		

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CORRIDORS						
Objectives	Criteria	Indicators	Measure	OPTION 1: Queens Quay Only	OPTION 2: Queens Quay Local plus Lake Shore Express	Discussion
		C 3.3) Minimizes adverse effects to Redpath freight rail spur.	Provision for Redpath freight cars within the proposed right-of-way and maintain a direct connection to Redpath's facility	Yes	Yes	Both options would make the same provision for Redpath freight cars within the proposed Queens Quay East ROW. Refer to the EBF Precinct Plan and EBF Class EA Master Plan.
		C 3.4) Minimizes interference with rail service on the CN operations at the Cherry Street crossing.	Not applicable to EBF			
		C 3.5) Maximizes services within 300 m of concentrated commercial activity within precinct plans.	Ability to maximize services within 300 m of concentrated commercial activity within the precinct plan.	Same as Option 2	Same as Option 1	Both options would provide the same service coverage for commercial activity within the EBF. Lake Shore Express would not contribute additional coverage because it would not provide a service to EBF.
		C 3.6) Minimizes EMI adverse effects (after construction).	Not a determining factor for corridors			
	C4) Existing and future residences	C 4.1) Affects existing properties.	No. of existing residential buildings adjacent to the proposed transit facility	Same as Option 2	Same as Option 1	Both options would provide the same coverage. Lake Shore Express would not contribute additional coverage because it would not provide a service to EBF.
		C 4.2) Minimizes noise adverse effects (after construction).	No. of tight streetcar turns required along the proposed transit facility	2	2	Queens Quay/Cherry Street; Queens Quay/Bay Street
		C 4.3) Minimizes vibration adverse effects (after construction).	Not a determining factor for corridors			
	C5) Effects on contaminated soils	C 5.1) Minimize impacts on/of contaminated soils.	Approx. length of corridor required through contaminated lands (km)	2.6	5.6	Queens Quay: approx. 2.6 km long. Lake Shore Express: approx. 3 km long. Given the historical context of EBF, the potential for contaminations is throughout the entire study area. See EBF Class EA Master Plan, Pg 4-7. The potential to encounter contaminated soils is directly proportional to the route length. Option 2 has a higher potential because of both Queens Quay and Lake Shore Express.
D) Natural Environment	D1) Air quality	D 1.1) Minimizes adverse effects to Air Quality.	Not a determining factor for corridors			
		D 1.2) Maximizes opportunities to improve Air Quality.	Not a determining factor for corridors			
E) Cultural Environment	E1) Built Heritage Features	E 1.1) Minimizes built heritage features affected.	No. of built heritage features within 100 m of the proposed transit facility	1	1	Redpath Sugar Refinery (95 Queens Quay East) is the only significant heritage property located within the EBF (See EBF EA Master Plan, Pg 4-14). The Redpath Sugar Museum is located inside the refinery.
		E 1.2) Maximizes opportunities to enhance built heritage features.	Average distance (m) to built heritage features from the proposed transit facility	0	0	Redpath Sugar Refinery is located on Queens Quay East.
	E2) Cultural Landscapes	E 2.1) Minimizes cultural landscapes affected.	No. of existing cultural landscape features identified within 100 m of the proposed transit facility within the EBF Precinct (Cherry Street to Lower Jarvis Street)	4	4	Royal Canadian Yacht Club and Ferry (263 Queens Quay East), Waterside Sports Club and Bistro (255 Queens Quay East), "Entertainment District" (132 Queens Quay East), Redpath Sugar Refinery (95 Queens Quay East)
		E 2.2) Maximizes opportunities to enhance cultural landscape features.	Transit access to existing and future cultural landscape features	Yes	Yes	Both options would provide the same transit access to existing and future cultural landscape features in the EBF. Both options would provide the same type of amenities for transit users - as part of the urban design for the EBF precinct.
	E3) Archaeological Features	E 3.1) Minimizes archaeological features affected.	No. of archaeological features within 100 m of the proposed transit facility	1	1	Polson Iron Works and Knapp's Roller Boat is the only known archaeological feature within the study area (See EBF Class EA Master Plan, Pg 4-14).
	E4) First Nations peoples and activities	E 4.1) Minimizes adverse effects to lands and resources used for traditional purposes.	Land Claims affected; lands used for First Nations traditional purposes	Same as Option 2	Same as Option 1	The entire study area is within First Nations land claim. There is no apparent current uses of the lands by First Nations for traditional purposes (See EBF Class EA Master Plan, Pg 4-15).
F) Cost	F1) Capital costs	F 1.1) Minimizes construction costs.	Total route length (km)	2.6	5.6	OPTION 1: 2 km of exclusive ROW on Queens Quay East and 0.6 km of existing tunnel/loop upgrades. OPTION 2: 2 km of exclusive ROW on Queens Quay East and 0.6 km of existing tunnel/loop upgrades plus 5.2 km of transit-only lanes and reconstruction of Front Street between York and Bay streets.
		F 1.2) Minimizes transit vehicle acquisition costs.	Capital Cost of transit vehicles (\$ M) required to carry forecasted passengers	179 or 81	126 or 81	OPTION 1 requires 35 LRV or 54 buses (articulated). OPTION 2 requires 16 LRV on QQ plus 29 buses (articulated) on LE, or 25 buses (articulated) on QQ plus 29 buses (articulated) on LE. Based on forecast ridership and vehicle load standards: 125 passengers for LRV, 80 passengers for articulated buses.
	F2) Property acquisition	F 2.1) Minimizes property acquisitions.	Additional ROW area (m2) required to construct the proposed transit facility	0	0	Queens Quay East ROW as proposed in the EBF Precinct Plan will be respected. Provision of transit-only lanes on Lake Shore Boulevard, York Street, and Bay Street would be achieved within the existing ROW. Front Street ROW would be reduced from the existing width (see Union Station District Study).
	F3) Operating costs	F 3.1) Minimizes the net operating cost.	Annual vehicle operating cost to carry forecast ridership (dependent on total route length)	2	5.2	OPTION 1 requires 35 LRV or 54 buses (articulated). OPTION 2 requires 16 LRV on QQ plus 29 buses (articulated) on LE, or 25 buses (articulated) on QQ plus 29 buses (articulated) on LE. Based on forecast ridership and vehicle load standards: 125 passengers for LRV, 80 passengers for articulated buses.

EVALUATION OF EAST BAYFRONT PLANNING ALTERNATIVES							
CORRIDORS							
Objectives	Criteria	Indicators	Measure	OPTION 1: Queens Quay Only	OPTION 2: Queens Quay Local plus Lake Shore Express	Discussion	
A) Land Use	A1) Local population / employment growth in the study area	A1.1) Supports future road and transit capacity requirements for forecast development.	ROW width must be able to accommodate the required infrastructure for pedestrians/transit users, cyclists, and transit vehicles	●	●	Queens Quay: the proposed ROWs in the East Bayfront Precinct Plan are capable of accommodating the required infrastructure for pedestrians/transit users, cyclists, transit vehicles, and cars. Lake Shore Express: a 'surface transit' scheme would require conversion of traffic lanes in existing streets into transit-only lanes.	
			Supports future road capacity requirements for forecast development	●	◐	Lake Shore Express 'surface transit' scheme would result in a reduction of road capacity for forecast development requirements. There would be a capacity reduction in westbound Lake Shore Boulevard (800 vehicles/hr), northbound York Street (500 vehicles/hr), and southbound Bay Street (400 vehicles/hr) during the peak hour.	
	A2) City, TWRC, and Provincial Policies	A 2.1) Supports the City's Central Waterfront Secondary Plan (SP) and East Bayfront Class EA Master Plan objectives.	Waterfront streets will be remade as "places" with distinct identities. Streets will act as lively urban connections as well as traffic arteries. The needs of motorists will be balanced with efficient transit service and high-quality amenities for pedestrians and cyclists (SP P5). See also SP sections A2, C19, and policies P4, P18, and P20.		●	◐	Option 2 is considered a less attractive transit service for the EBF because (a) Lake Shore Express would not serve demands to/from the EBF, and (b) Queens Quay Local would require approx. 4-min headways compared to 2 minutes for Queens Quay Only.
		A 2.2) Supports the TWRC's Precinct Plan and Sustainability Framework (SF).	Establish Queens Quay as an active, beautiful east-west urban boulevard that provides for pedestrian amenity, commuter bike lanes, and mass transit, thereby creating the "main street" for East Bayfront (Pg 18 of the EBF Precinct Plan).		●	●	Both options would help achieve the transportation and urban design objectives set out in the TWRC EBF Precinct Plan.
		A 2.3) Supports Provincial growth management plans (PGP), policies, and objectives.	Ability to reduce reliance on cars and promote transit, cycling, and walking - PGP Section 3.2.2(1)(b)		●	◐	Queens Quay Only' would offer a more attractive service for the EBF compared to 'Queens Quay Local' - see discussion A 2.1. Therefore Option 1 has a higher potential to attract users. Both options have the same potential to promote cycling and walking in the EBF.
	Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible - Section 3.2.3(2)(c)		●	◐			
Summary for Land Use				●	◐		
B) Transportation	B1) Auto Dependence	B.1.1) Maximizes non-auto (transit, pedestrian and cycling) modal split for trips to, and within, the study area.	Potential to improve non-auto modal split for trips to and within the study area	●	◐	Queens Quay Only would offer a more attractive service compared to Queens Quay Local - see discussion A 2.1. Therefore Option 1 has a higher potential to attract users. Both options have the same potential to promote cycling and walking in the EBF.	
		B 1.2) Maximizes non-auto (transit, pedestrian and cycling) modal splits for trips through the study area.	Potential to improve non-auto modal split for trips through the study area	●	◐	Queens Quay: the combination of a re-designed Queens Quay East and the existing Bay Street tunnel would provide a fast and undistruptive transit service for trips through the study area. Lake Shore Express: despite transit-only lanes on existing streets, transit service would continue to be impeded by delay at Union Station as a result of high volume of pedestrian activities on Front Street (up to 2200 pedestrians during the peak hour crossing Front Street at Bay Street).	
	B2) Transit	B 2.1) Provides attractive transit service (few transfers).	No. of transfers required.		●	●	Both options would provide direct connection to Union Station as well as connection to West Don Lands and Port Lands
		B 2.2) Provides attractive transit service (reliability, speed).	Service reliability		●	◐	Lake Shore Express be a less reliable service between Port Lands and Union Station for reason discussed in B 1.2
		B 2.3) Maximizes population and employment within 300m of transit.	Population and employment at full built-out within the study area and within 300m of the proposed transit facility		●	●	Both options would provide the same coverage. Lake Shore Express would not contribute to additional coverage as it would not provide service to/from the EBF.
		B 2.4) Provides flexibility and adaptability for staging and expansion by preserving opportunities for existing and future connections.	No. of existing and future connection opportunities		●	◐	Option 2 would require a transfer for trips between the EBF and the Port Lands.
		B 2.5) Provides for transit travellers wishing to travel through the study area but who are not destined for locations in the study area.	Approximate Headway (min)		●	◐	Based on forecast transit demand in the Eastern Waterfront
			Average trip time (min)		●	●	Queens Quay: travel time estimation extrapolated from existing travel time on 509 Harbourfront between Union Station and Queens Quay West/Spadina
	B3) Vehicles	B 3.2) Provides for auto travellers needing to travel through the study area but who are not destined for locations within the study area.	Impact on through automobile traffic flow		●	◐	Lake Shore Express 'surface transit' scheme would result in a reduction of road capacity for forecast development requirements. There would be a capacity reduction in westbound Lake Shore Boulevard (800 vehicles/hr), northbound York Street (500 vehicles/hr), and southbound Bay Street (400 vehicles/hr) during the peak hour.
	Summary for Transportation				●	◐	
C) Socio-Economic Environment	C3) Existing and future businesses	C 3.1) Affects existing properties.	No. of exiting non-residential buildings immediately adjacent to ROW	●	◐	Number of non-residential buildings within the study area that are immediately adjacent to each route	
		C 3.2) Encourages commercial activity.	No. of planned development blocks adjacent to corridor	●	●	Both options cover the same development blocks within the EBF. Not including open space blocks/parcels. See EBF Precinct Plan (P44) for additional info.	

EVALUATION OF EAST BAYFRONT PLANNING ALTERNATIVES						
CORRIDORS						
Objectives	Criteria	Indicators	Measure	OPTION 1: Queens Quay Only	OPTION 2: Queens Quay Local plus Lake Shore Express	Discussion
		C 3.3) Minimizes adverse effects to Redpath freight rail spur.	Provision for Redpath freight cars within the proposed right-of-way and maintain a direct connection to Redpath's facility	●	●	Both options would make the same provision for Redpath freight cars within the proposed Queens Quay East ROW. Refer to the EBF Precinct Plan and EBF Class EA Master Plan.
		C 3.5) Maximizes services within 300 m of concentrated commercial activity within precinct plans.	Ability to maximize services within 300 m of concentrated commercial activity within the precinct plan.	●	●	Both options would provide the same service coverage for commercial activity within the EBF. Lake Shore Express would not contribute additional coverage because it would not provide a service to EBF.
	C4) Existing and future residences	C 4.2) Minimizes noise adverse effects (after construction).	No. of tight streetcar turns required along the proposed transit facility	●	●	Queens Quay/Cherry Street; Queens Quay/Bay Street
	C5) Effects on contaminated soils	C 5.1) Minimize impacts on/of contaminated soils.	Approx. length of corridor required through contaminated lands (km)	●	○	Queens Quay: approx. 2.6 km long. Lake Shore Express: approx. 3 km long. Given the historical context of EBF, the potential for contaminations is throughout the entire study area. See EBF Class EA Master Plan, Pg 4-7. The potential to encounter contaminated soils is directly proportional to the route length.
Summary for Socio-Economic Environment				●	◐	
E) Cultural Environment	E2) Cultural Landscapes	E 2.2) Maximizes opportunities to enhance cultural landscape features.	Transit access to existing and future cultural landscape features	●	●	Both options would provide the same transit access to existing and future cultural landscape features in the EBF. Both options would provide the same type of amenities for transit users - as part of the urban design for the EBF precinct.
Summary for Cultural Environment				●	●	
F) Cost	F1) Capital costs	F 1.1) Minimizes construction costs.	Total route length (km)	●	○	OPTION 1: 2 km of exclusive ROW on Queens Quay East and 0.6 km of existing tunnel/loop upgrades. OPTION 2: 2 km of exclusive ROW on Queens Quay East and 0.6 km of existing tunnel/loop upgrades plus 5.2 km of transit-only lanes and reconstruction of Front Street between York and Bay streets.
		F 1.2) Minimizes transit vehicle acquisition costs.	Capital Cost of transit vehicles (\$ M) required to carry forecasted passengers	◐	●	OPTION 1 requires 35 LRV or 54 buses (articulated). OPTION 2 requires 16 LRV on QQ plus 29 buses (articulated) on LE, or 25 buses (articulated) on QQ plus 29 buses (articulated) on LE. Based on forecast ridership and vehicle load standards: 125 passengers for LRV, 80 passengers for articulated buses.
	F2) Property acquisition	F 2.1) Minimizes property acquisitions.	Additional ROW area (m2) required to construct the proposed transit facility	●	●	Queens Quay East ROW as proposed in the EBF Precinct Plan will be respected. Provision of transit-only lanes on Lake Shore Boulevard, York Street, and Bay Street would be achieved within the existing ROW. Front Street ROW would be reduced from the existing width (see Union Station District Study).
	F3) Operating costs	F 3.1) Minimizes the net operating cost.	Annual vehicle operating cost to carry forecast ridership (dependent on total route length)	●	○	OPTION 1 requires 35 LRV or 54 buses (articulated). OPTION 2 requires 16 LRV on QQ plus 29 buses (articulated) on LE, or 25 buses (articulated) on QQ plus 29 buses (articulated) on LE. Based on forecast ridership and vehicle load standards: 125 passengers for LRV, 80 passengers for articulated buses.
Summary for Cost				●	◐	

NOTE:

ASSESSMENT OF EAST BAYFRONT PLANNING ALTERNATIVES							
TECHNOLOGIES							
Objectives	Criteria	Indicators	Measure	OPTION 1: Streetcar/LRV in Dedicated Right-of- Way	OPTION 2: Bus in Dedicated Right-of-Way	Discussion	
A) Land Use	A1) Local population / employment growth in the study area	A1.1) Supports future road and transit capacity requirements for forecast development.	Ability to accommodate forecast travel demand (auto and non-auto modes)	Yes	Less than streetcar	Bus has a lower capability to accommodate the forecast transit demand	
	A2) City, TWRC, and Provincial Policies	A 2.1) Supports the City's Central Waterfront Secondary Plan (SP) and East Bayfront Class EA Master Plan objectives.	New streetcar and some bus routes will operate in exclusive rights-of way on existing streets (SP Policy P4)	Yes	Yes		
		A 2.2) Supports the TWRC's Precinct Plan and Sustainability Framework (SF).	Consistency with the East Bayfront Precinct Plan	Yes	Yes		
		A 2.3) Supports Provincial growth management plans, policies, and objectives.	Modify ROW and introduce regulation which increase the relative speed of transit travel compared to automobile travel (SF pg 3-16)	Yes	Yes	Dedicated right-of-way increases the relative speed of transit travel compared to automobile travel	
			Attractiveness to developers/permanence	Same	Same	Equal attractiveness to developers/permanence	
			Ability to reduce reliance on cars and promotes transit, cycling, and walking - PGP Section 3.2.2(1)(b)	Yes	Yes	Both options are considered as different forms of higher-order transit; both options support higher-order transit objectives	
Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible - Section 3.2.3(2)(c)	Yes	Yes					
B) Transportation	B1) Auto Dependence	B.1.1) Maximizes non-auto (transit, pedestrian and cycling) modal split for trips to, and within, the study area.	Not a determining factor				
		B 1.2) Maximizes non-auto (transit, pedestrian and cycling) modal splits for trips through the study area.	Not a determining factor				
	B2) Transit	B 2.1) Provides attractive transit service (few transfers).	i) Continuity with the existing Harbourfront LRT	Yes	None	Streetcar/LRV from the Eastern Waterfront could travel through to the Western Waterfront via the existing Harbourfront LRT along Queens Quay West	
			ii) Continuity with the future Cherry Street streetcar	Yes	None	The ability to provide a continuous service from Union Station to the West Don Lands, King Street, Broadview Avenue, and beyond via existing and future transit facilities	
		B 2.2) Provides attractive transit service (reliability, speed).	i) Headway between vehicles from East Bayfront entering Union Station	106 seconds	67 seconds	Bus has a lower passenger capacity, requires larger number of vehicles (compared to streetcar) to carry the same passenger volume, hence shorter headways.	
			ii) Gap between vehicles from East Bayfront entering Union Station	46 seconds	7 seconds	Based on headway and an estimated dwell time of 60 seconds at Union Station. Gap is the time difference between the first vehicle exiting the platform area and the following vehicle arriving at the platform area.	
		B 2.3) Maximizes population and employment within 300m of transit.	Not a determining factor				
		B 2.4) Provides flexibility and adaptability for staging and expansion by preserving opportunities for existing and future connections.	i) Potential for providing direct services to the Western Waterfront and points further west	High	Low	Adaptability with respect to the existing Harbourfront LRT, future Western Waterfront LRT extension, and the existing Queensway LRT	
	ii) Potential for providing direct connections to the north via Cherry Street and Broadview Avenue		High	Low	Adaptability with respect to the future Cherry Street streetcar and the existing transit facilities on King Street and Broadview Avenue		
	iii) Potential for providing direct connections to the Port Lands and points further east		High	Low	Streetcar/LRV offers greater flexibility and adaptability for meeting any additional capacity needs in the future.		
	B 2.5) Provides for transit travellers wishing to travel through the study area but who are not destined for locations in the study area.	Opportunity to provide for services to/from the study area	Better	Yes	Both options provide services to/from the study area. However, streetcar/LRV on Queens Quay East will offer a better connection to the study area as per B2.4(ii), B2.4(iii), and B2.4(iii).		
	B3) Vehicles	B 3.1) Provides for local auto access.	Left-turn at intersections possible?	Partial	Partial	Provision for left-turn at intersection is dependent on ROW design	
		B 3.2) Provides for auto travellers needing to travel through the study area but who are not destined for locations within the study area.	Ability to maintain roadway capacity within a given ROW width?	No	No	Provision of dedicated transit ROW would reduce the number of lanes available to private vehicles, within a given ROW width.	
		B 3.3) Connects to other planned Waterfront Precincts at boundaries of the study area.	Not a determining factor				
	C) Socio-Economic Environment	C1) Automobile use in and through the study area	C1.1) Minimizes through auto travel on local roads.	Reduction of through road capacity for autos?	Yes	Yes	Provision of dedicated transit ROW would reduce the number of lanes available to private vehicles, within a given ROW width.
C2) Tourism and waterfront access		C 2.1) Provides transit stop access to attractions.	Not a determining factor				
C3) Existing and future businesses		C 3.1) Affects existing properties.	Not a determining factor				
		C 3.2) Encourages commercial activity.	Attractiveness to developers/permanence	Same	Same	Equal attractiveness to developers/permanence	
		C 3.3) Minimizes adverse effects to Redpath freight rail spur.	Not a determining factor				
		C 3.4) Minimizes interference with rail service on the CN operations at the Cherry Street crossing.	Not a determining factor				
		C 3.5) Maximizes services within 300 m of concentrated commercial activity within precinct plans.	Not a determining factor				
C 3.6) Minimizes electromagnetic interference (EMI) adverse effects (after construction).		Not a determining factor					
C4) Existing and future residences		C 4.1) Affects existing properties.	Not a determining factor				
		C 4.2) Minimizes noise adverse effects (after construction).	Noise level adjacent to ROW	Similar to bus	Similar to streetcar	Straight section. Comparing bus versus streetcar on new track (e.g. Gerrard Street East, Queens Quay west of Spadina)	
			Noise level generated during turns	More than bus	Less than streetcar	Although streetcars generate more noise around turns, a larger turning radius creates less noise compared to a tighter turning radius.	
		C 4.3) Minimizes vibration adverse effects (after construction).	Vibrations generated during vehicle operation	More than bus	Less than streetcar	Although streetcars produce more vibration on straight sections, the vibration levels are significantly less on new tracks (e.g. Gerrard Street East, Queens Quay west of Spadina) compared to old tracks (e.g. Queens Quay east of Spadina).	
C5) Effects on contaminated soils		C 5.1) Minimize impacts on/of contaminated soils.	Not a determining factor				
D) Natural Environment		D1) Air quality	D 1.1) Minimizes adverse effects to Air Quality.	Annual local emission of greenhouse gas pollutants and critical air pollutants (grams/VKT)	None	None	Comparing streetcar/LRV with hydrogen fuel cell bus and trolley bus.
			D 1.2) Maximizes opportunities to improve Air Quality.	Ability to improve transit modal split - based on attractiveness to potential new users	High	High	Exclusive ROW would allow transit vehicles to operate without disruptions from non-transit vehicles, thereby providing a faster and more reliable service.

ASSESSMENT OF EAST BAYFRONT PLANNING ALTERNATIVES						
TECHNOLOGIES						
Objectives	Criteria	Indicators	Measure	OPTION 1: Streetcar/LRV in Dedicated Right-of- Way	OPTION 2: Bus in Dedicated Right-of-Way	Discussion
E) Cultural Environment	E1) Built Heritage Features	E 1.1) Minimizes built heritage features affected.	Not a determining factor			
		E 1.2) Maximizes opportunities to enhance built heritage features.	Not a determining factor			
	E2) Cultural Landscapes	E 2.1) Minimizes cultural landscapes affected.	Not a determining factor			
		E 2.2) Maximizes opportunities to enhance cultural landscape features.	Not a determining factor			
E3) Archaeological Features	E 3.1) Minimizes archaeological features affected.	Not a determining factor				
E4) First Nations peoples and activities	E 4.1) Minimizes adverse effects to lands and resources used for traditional purposes.	Not a determining factor				
F) Cost	F1) Capital costs	F 1.1) Minimizes construction costs.	i) Relative comparison of costs associated with potential upgrade/modification on the Union Station loop to accommodate existing services as well as the proposed transit operations	Less than bus	Higher than streetcar	Option 2 requires more unload/load areas than Option 1 due to shorter headways (higher arrival rate) - requires larger platforms than Option 1.
			ii) Relative comparison of costs associated with required upgrade/modification on the existing Bay Street tunnel to accommodate proposed transit operations	Significantly less than bus	Significantly higher than streetcar	Bay Street tunnel would require widening in order to accommodate buses.
			iii) Relative comparison of infrastructure costs (transit lane construction, tracks and overhead wires)	Higher than bus	Lower than streetcar	Streetcar would incur higher infrastructure costs due to track work and overhead wires
		F 1.2) Minimizes transit vehicle acquisition costs.	Relative comparison of estimated vehicle acquisition cost required	Medium	Low	
	F2) Property acquisition	F 2.1) Minimizes property acquisitions.	Not a determining factor			
F3) Operating costs	F 3.1) Minimizes the net operating cost.		Operating cost per seat-kilometre	\$0.09	\$0.13/\$0.12	

EVALUATION OF EAST BAYFRONT PLANNING ALTERNATIVES							
TECHNOLOGIES							
Objectives	Criteria	Indicators	Measure	OPTION 1: Streetcar/LRV in Dedicated Right-of- Way	OPTION 2: Bus in Dedicated Right-of-Way	Discussion	
A) Land Use	A1) Local population / employment growth in the study area	A1.1) Supports future road and transit capacity requirements for forecast development.	Ability to accommodate forecast travel demand (auto and non-auto modes)	●	◐	Bus has a lower capability to accommodate the forecast transit demand	
	A2) City, TWRC, and Provincial Policies	A 2.1) Supports the City's Central Waterfront Secondary Plan (SP) and East Bayfront Class EA Master Plan objectives.	New streetcar and some bus routes will operate in exclusive rights-of way on existing streets (SP Policy P4)	●	●		
		A 2.2) Supports the TWRC's Precinct Plan and Sustainability Framework (SF).	Consistency with the East Bayfront Precinct Plan		●	●	
			Modify ROW and introduce regulation which increase the relative speed of transit travel compared to automobile travel (SF pg 3-16)		●	●	Dedicated right-of-way increases the relative speed of transit travel compared to automobile travel
			Attractiveness to developers/permanence		●	●	Equal attractiveness to developers/permanence
	A 2.3) Supports Provincial growth management plans, policies, and objectives.	Ability to reduce reliance on cars and promotes transit, cycling, and walking - PGP Section 3.2.2(1)(b)		●	●	Both options are considered as different forms of higher-order transit; both options support higher-order transit objectives	
Expanding transit service to areas that have achieved, or will be planned so as to achieve, transit-supportive residential and employment densities, together with a mix of residential, office, institutional and commercial development wherever possible - Section 3.2.3(2)(c)		●	●				
Summary for Land Use				●	◐		
B) Transportation	B1) Auto Dependence	B.1.1) Maximizes non-auto (transit, pedestrian and cycling) modal split for trips to, and within, the study area.	Not a determining factor				
		B 1.2) Maximizes non-auto (transit, pedestrian and cycling) modal splits for trips through the study area.	Not a determining factor				
	B2) Transit	B 2.1) Provides attractive transit service (few transfers).	i) Continuity with the existing Harbourfront LRT	●	○	Streetcar/LRV from the Eastern Waterfront could travel through to the Western Waterfront via the existing Harbourfront LRT along Queens Quay West	
			ii) Continuity with the future Cherry Street streetcar	●	○	The ability to provide a continuous service from Union Station to the West Don Lands, King Street, Broadview Avenue, and beyond via existing and future transit facilities	
		B 2.2) Provides attractive transit service (reliability, speed).	i) Headway between vehicles from East Bayfront entering Union Station	●	○	Bus has a lower passenger capacity, requires larger number of vehicles (compared to streetcar) to carry the same passenger volume, hence shorter headways.	
			ii) Gap between vehicles from East Bayfront entering Union Station	●	○	Based on headway and an estimated dwell time of 60 seconds at Union Station. Gap is the time difference between the first vehicle exiting the platform area and the following vehicle arriving at the platform area.	
		B 2.3) Maximizes population and employment within 300m of transit.	Not a determining factor				
		B 2.4) Provides flexibility and adaptability for staging and expansion by preserving opportunities for existing and future connections.	i) Potential for providing direct services to the Western Waterfront and points further west	●	○	Adaptability with respect to the existing Harbourfront LRT, future Western Waterfront LRT extension, and the existing Queensway LRT	
	ii) Potential for providing direct connections to the north via Cherry Street and Broadview Avenue		●	○	Adaptability with respect to the future Cherry Street streetcar and the existing transit facilities on King Street and Broadview Avenue		
	iii) Potential for providing direct connections to the Port Lands and points further east		●	◐	Streetcar/LRV offers greater flexibility and adaptability for meeting any additional capacity needs in the future.		
	B 2.5) Provides for transit travellers wishing to travel through the study area but who are not destined for locations in the study area.	Opportunity to provide for services to/from the study area	●	◐	Both options provide services to/from the study area. However, streetcar/LRV on Queens Quay East will offer a better connection to the study area as per B2.4(ii), B2.4(iii), and B2.4(iii).		
	B3) Vehicles	B 3.1) Provides for local auto access.	Left-turn at intersections possible?	○	○	Provision for left-turn at intersection is dependent on ROW design	
		B 3.2) Provides for auto travellers needing to travel through the study area but who are not destined for locations within the study area.	Ability to maintain roadway capacity within a given ROW width?	○	○	Provision of dedicated transit ROW would reduce the number of lanes available to private vehicles, within a given ROW width.	
		B 3.3) Connects to other planned Waterfront Precincts at boundaries of the study area.	Not a determining factor				
Summary for Transportation				●	○		
C) Socio-Economic Environment	C1) Automobile use in and through the study area	C1.1) Minimizes through auto travel on local roads.	Reduction of through road capacity for autos?	○	○	Provision of dedicated transit ROW would reduce the number of lanes available to private vehicles, within a given ROW width.	
	C2) Tourism and waterfront access	C 2.1) Provides transit stop access to attractions.	Not a determining factor				
	C3) Existing and future businesses	C 3.1) Affects existing properties.	Not a determining factor				
		C 3.2) Encourages commercial activity.	Attractiveness to developers/permanence	●	●	Equal attractiveness to developers/permanence	
		C 3.3) Minimizes adverse effects to Redpath freight rail spur.	Not a determining factor				
		C 3.4) Minimizes interference with rail service on the CN operations at the Cherry Street crossing.	Not a determining factor				
		C 3.5) Maximizes services within 300 m of concentrated commercial activity within precinct plans.	Not a determining factor				
	C 3.6) Minimizes electromagnetic interference (EMI) adverse effects (after construction).	Not a determining factor					
	C4) Existing and future residences	C 4.1) Affects existing properties.	Not a determining factor				
		C 4.2) Minimizes noise adverse effects (after construction).	Noise level adjacent to ROW	●	●	Straight section. Comparing bus versus streetcar on new track (e.g. Gerrard Street East, Queens Quay west of Spadina)	
			Noise level generated during turns	◐	●	Although streetcars generate more noise around turns, a larger turning radius creates less noise compared to a tighter turning radius.	

EVALUATION OF EAST BAYFRONT PLANNING ALTERNATIVES						
TECHNOLOGIES						
Objectives	Criteria	Indicators	Measure	OPTION 1: Streetcar/LRV in Dedicated Right-of- Way	OPTION 2: Bus in Dedicated Right-of-Way	Discussion
		C 4.3) Minimizes vibration adverse effects (after construction).	Vibrations generated during vehicle operation			Although streetcars produce more vibration on straight sections, the vibration levels are significantly less on new tracks (e.g. Gerrard Street East, Queens Quay west of Spadina) compared to old tracks (e.g. Queens Quay east of Spadina).
	C5) Effects on contaminated soils	C 5.1) Minimize impacts on/of contaminated soils.	Not a determining factor			
Summary for Socio-Economic Environment						
D) Natural Environment	D1) Air quality	D 1.1) Minimizes adverse effects to Air Quality.	Annual local emission of greenhouse gas pollutants and critical air pollutants (grams/VKT)			Comparing streetcar/LRV with hydrogen fuel cell bus and trolley bus.
		D 1.2) Maximizes opportunities to improve Air Quality.	Ability to improve transit modal split - based on attractiveness to potential new users			Exclusive ROW would allow transit vehicles to operate without disruptions from non-transit vehicles, thereby providing a faster and more reliable service.
Summary for Natural Environment				NDF	NDF	
E) Cultural Environment	E1) Built Heritage Features	E 1.1) Minimizes built heritage features affected.	Not a determining factor			
		E 1.2) Maximizes opportunities to enhance built heritage features.	Not a determining factor			
	E2) Cultural Landscapes	E 2.1) Minimizes cultural landscapes affected.	Not a determining factor			
		E 2.2) Maximizes opportunities to enhance cultural landscape features.	Not a determining factor			
	E3) Archaeological Features	E 3.1) Minimizes archaeological features affected.	Not a determining factor			
	E4) First Nations peoples and activities	E 4.1) Minimizes adverse effects to lands and resources used for traditional purposes.	Not a determining factor			
Summary for Cultural Environment				NDF	NDF	
F) Cost	F1) Capital costs	F 1.1) Minimizes construction costs.	i) Relative comparison of costs associated with potential upgrade/modification to the Union Station loop to accommodate existing services as well as the proposed transit operations			Option 2 requires more unload/load areas than Option 1 due to shorter headways (higher arrival rate) - may require larger platforms than Option 1.
			ii) Relative comparison of costs associated with required upgrade/modification on the existing Bay Street tunnel to accommodate proposed transit operations			Bay Street tunnel would require widening in order to accommodate buses.
			iii) Relative comparison of infrastructure costs (transit lane construction, tracks and overhead wires)			Streetcar has a higher infrastructure costs due to track work and overhead wires
	F 1.2) Minimizes transit vehicle acquisition costs.	Relative comparison of estimated capital cost required				
	F2) Property acquisition	F 2.1) Minimizes property acquisitions.	Not a determining factor			
F3) Operating costs	F 3.1) Minimizes the net operating cost.	Operating cost per seat-kilometre				
Summary for Cost						
OVERALL						