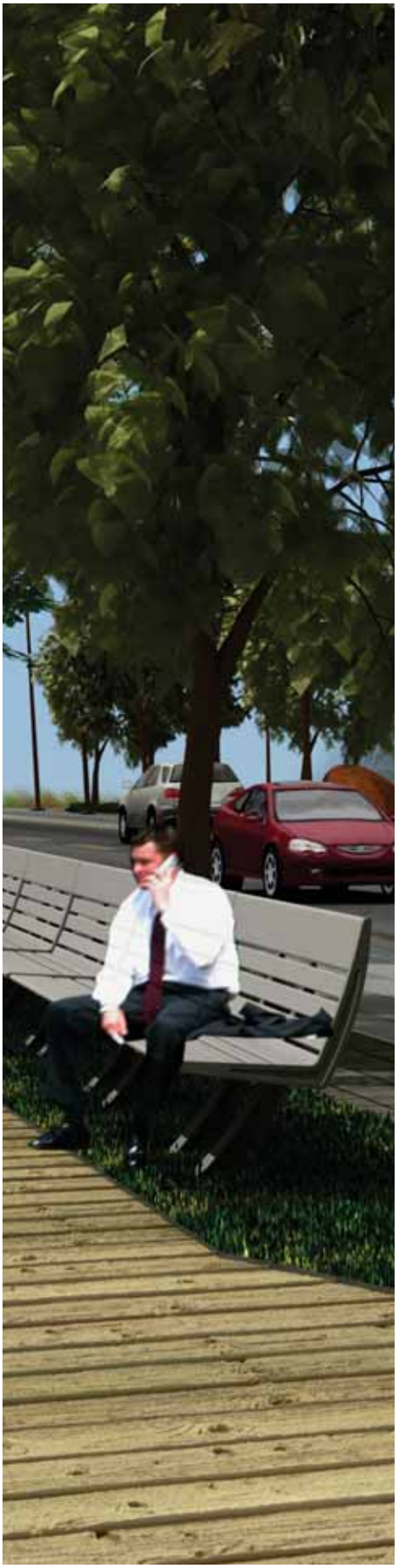
6

POTENTIAL ALTERNATIVE DESIGNS



Phase 3 of the Municipal Class Environmental Assessment (MCEA) process focuses on the identification and evaluation of alternative planning designs in accordance with the selected alternative solution. A total of seven alternative designs have been identified as listed below.

DO NOTHING	Do nothing, no improvements

Option 1	Connect existing sidewalks on Liberty Street
1A	no replacement parking
1B	with replacement parking

Option 2	Construct new east-west link Dufferin to Strachan*
2A	sharrows + no on-street parking
2B	sharrows + on-street parking
2C	road + multi-use path + no on-street parking
2D	multi-use path only

*sub-options for Option 2 include potential termination at Pirandello Street, Solidarity Way and various configurations at Strachan Avenue.

The development and assessment of the above options assume that the following background initiatives are in place:

- Strachan Avenue grade-separation at the Metrolinx/GO Rail corridor crossing;
- Dufferin Bridges replaced as per preferred alternative identified in the Dufferin Bridges EA Study;
- Preferred alternative as identified in the King-Liberty Pedestrian / Cyclist Link EA Study;
- Preferred LRT alignment as identified within the Waterfront West Light Rail Transit (WWLRT) studies;
- Exhibition Place GO Station Westbound Platform Expansion;
- Protection for GO Rail Service Expansion and electrification in the Lakeshore West Rail Corridor; and,
- Construction of all approved developments in Liberty neighbourhood.

The following sections describe each option in detail.

6.1 Do Nothing

The "Do Nothing" option assumes that no improvements will be made beyond those already planned and approved as listed above. This option represents the future base-case scenario. Connectivity and accessibility in the study area not improved with this alternative since the structure of the transportation network is unchanged within the study area.

6.2 Option 1– Connect Existing Sidewalks on Liberty Street

This option involves the construction of new sidewalks to connect the existing sidewalks along Liberty Street. Sidewalks are currently not provided on both sides of Liberty Street along sections between Dufferin Street and Atlantic Avenue. The construction of new sidewalks can serve to complete the existing discontinuous pedestrian connections but will result in a loss of existing on-street parking spaces. Under this option, new sidewalks will be constructed at the following sections of Liberty Street with a loss of on-street parking in each section:

- North side between Dufferin Street and Mowat Avenue (16 on-street parking spaces lost);
- South side between Mowat Avenue and Fraser Avenue (12 on-street parking spaces lost);
- South side between Fraser Avenue and Pardee Avenue (9 on-street parking spaces lost); and,
- South side between Jefferson Avenue and Atlantic Avenue (18 on-street parking spaces lost).

This alternative will result in a loss of a total of 55 on-street permit parking spaces. **Figure 6-1** illustrates the general concept of Option 1. Design options associated with this alternative solution consist of connecting the existing sidewalks on Liberty Street without replacement parking (Option 1A) and with replacement parking (Option 1B).

Figure 6-1 Option 1 - Connect Existing Sidewalks on Liberty Street

Option 1B – With Replacement Parking

- 55 on-street permit parking spaces removed
- Replacement parking will be provided as structured parking and can only be constructed as redevelopment occurs within the neighbourhood
- There are currently no redevelopment plans for the Lamport Stadium site
- 34 Hanna Avenue lot not ideal location for replacement parking as it is located further away from area where parking is lost

if parking is removed

rea is already

t support the
TPA)

6.2.1 Option 1A - No replacement parking

The study team met with the Toronto Parking Authority (TPA) in order to develop an understanding of the existing parking conditions within Liberty neighbourhood and potential locations that can provide replacement parking. It was indicated that the existing supply of public on-street and off-street parking within the Liberty neighbourhood currently operates at capacity. The existing on-street permit parking located along Liberty Street is generally used by tenants of the employment uses located in the western portion of Liberty neighbourhood. The existing off-street lots within Liberty neighbourhood include Lamport Stadium (329 surface spaces) and the 34 Hanna Avenue lot (184 surface spaces). Approximately 130 and 60 monthly permit holders currently use the Lamport Stadium and 34 Hanna Avenue surface lots, respectively. The TPA has indicated that these lots generally operate at capacity and that there is currently a waiting list for new applicants looking to apply for a monthly permit at these lots. TPA has also indicated that any new on-street parking provided within the neighbourhood would operate as paid parking.

Based on the above, the TPA indicated that the removal of existing public parking without the provision of replacement parking would not be a viable option as the existing on-street and off-street public parking supply already operates at capacity. Any removal of the existing public parking supply would not be in support of TPA's operations. Option 1A is not a viable option and therefore, not supported.

6.2.2 Option 1B – Provision of replacement parking

In terms of potential locations to provide replacement parking under Option 1B, the Lamport Stadium lot is located closest to the area where on-street parking would be lost. This lot is also in close proximity to the main employment uses within Liberty neighbourhood. TPA indicated that they currently do not have ownership of the Lamport Stadium surface lot. The lot is currently owned by Toronto Parks and Recreation and is operated by the TPA. Providing additional parking at this location will require a redevelopment and/or expansion of the lot. Any redevelopment and/or expansion plans at this location require discussions with Toronto Parks and Recreation.

The TPA currently owns and operates the surface lot at 34 Hanna Avenue. Any planned redevelopment of this property would occur as a joint-venture project with a private developer. The TPA is currently looking for private development partners to provide employment uses on this site. If the property were to redevelop, parking would be provided in an underground garage. The private property owner would own the building and underground parking while the underground parking garage or a portion of the parking garage would be operated by the TPA. Replacement parking for Option 1B can potentially be provided at this location however, 34 Hanna Avenue would only be a partial solution to compensate for the parking lost as the replacement parking is provided too far away from the impacted parking area on Liberty Street.

Based on the above opportunities, Option 1B is a viable option to carry forward however the provision of replacement parking is dependent on redevelopment opportunities in the neighbourhood. The timeframe for this redevelopment is currently unknown.

6.3 Option 2 – Construct East-West Link

Option 2 involves constructing a new east-west link along the southern edge of Liberty neighbourhood between Dufferin Street and Strachan Avenue. The purpose of the Liberty Village new street is to foster greater connectivity throughout the Liberty neighbourhood. Connection of Liberty Village's north-south street pattern will complete the neighbourhood grid allowing for increased accessibility throughout the neighbourhood for all modes of transportation.

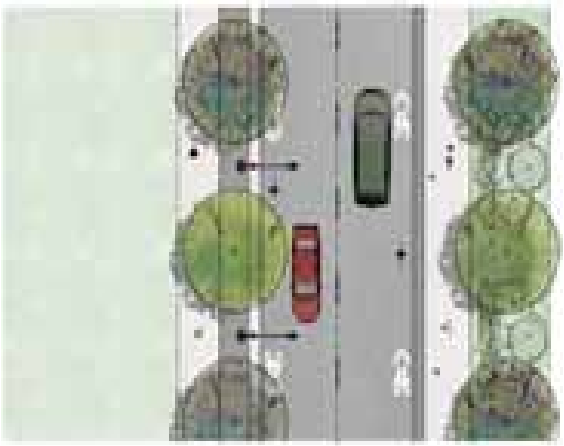
Constructing a new east-west link along the south side of Liberty neighbourhood faces some major challenges with respect to property requirements as 95% of lands required for new street are currently not owned by the City while Metrolinx/GO controls 100% of the lands at the south limit. The balance of lands on the north side are controlled by private landowners. Private lands in the study area currently do not have development agreements to secure lands for the new road. These private lands are also encumbered by heritage features and zoning restrictions. Limited area is available to provide a potential ROW for the new street between the existing buildings and rail corridor. As such, the concept of a varying ROW has been developed for the new street.

Design options developed for this alternative solution include the following:

Option 2D does not contain any roadway component and would not be able to enhance vehicular connectivity within Liberty neighbourhood. Implementing this option would also require a significant amount of private property acquisition along the south edge of Liberty neighbourhood. This option has been screened out from further consideration as it does not address the Needs and Opportunity Statement of this study, while it requires significant private property acquisition.

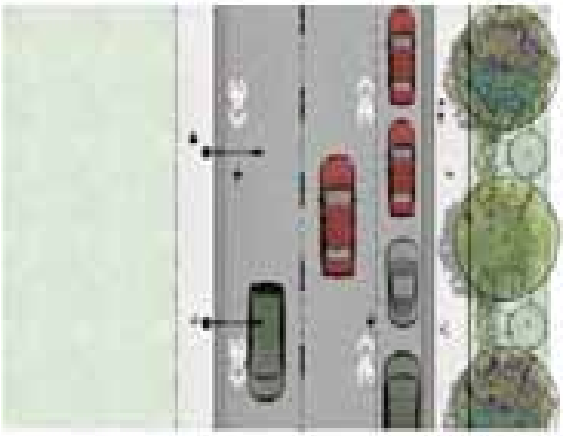
Combinations of one-way traffic operations and/or a potential street leg (e.g. Fraser Avenue to Pirandello Street) can be reviewed as a subset of **Options 2A**, **2B** and **2C**. These subset options would be carried forward for further consideration if the study findings reveal that a full street connection from Dufferin Street to Strachan Avenue cannot be feasibly implemented. However, the development and assessment of alternatives in this study have been carried out based upon the ultimate vision to provide a full street connection between Dufferin Street and Strachan Avenue.

Figure 6-2 illustrates a conceptual drawing of the various sub-options associated with Option 2.



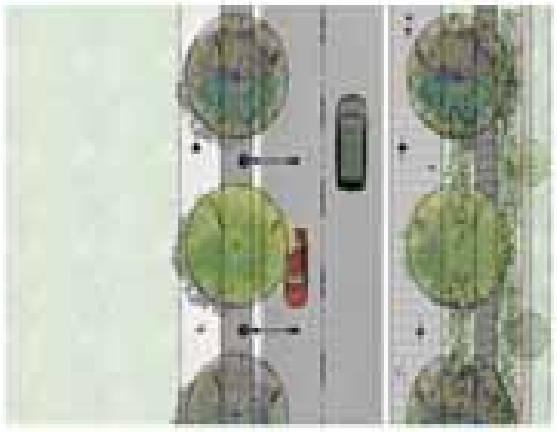
Option 2A –

Sharrows + No On-Street Parking;



Option 2B –

Sharrows + On-Street Parking;



Option 2C –

Road + Multi-Use Path + No On-Street Parking; and,

Option 2D –

Multi-Use Path Only

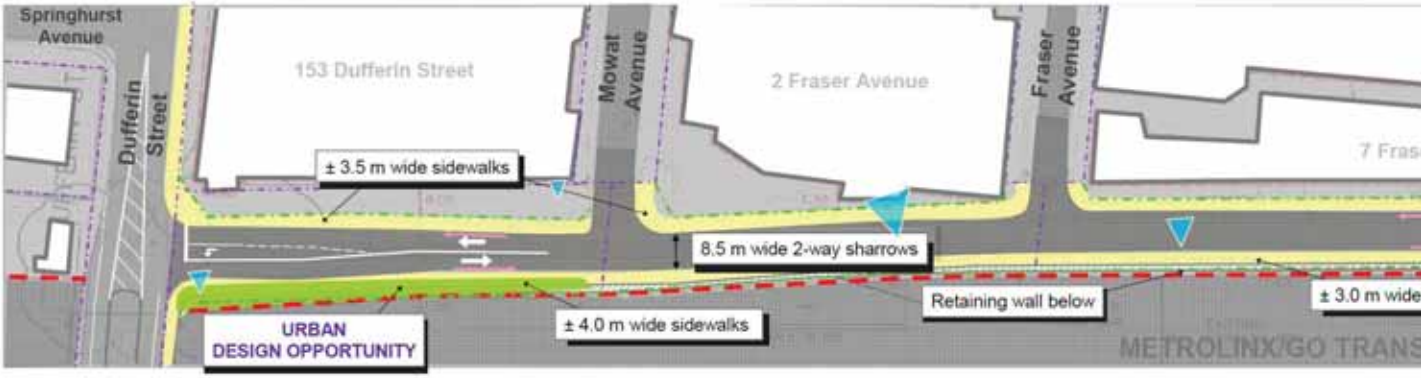
(*screened out*).

Due to the constraints identified between existing buildings and the Metrolinx/ GO Rail corridor along south edge of Liberty neighbourhood, generally a 15 metre wide right-of-way (ROW) can be provided for the majority of the new street corridor. The design of the new street cross-section has been developed based on the following base parameters:

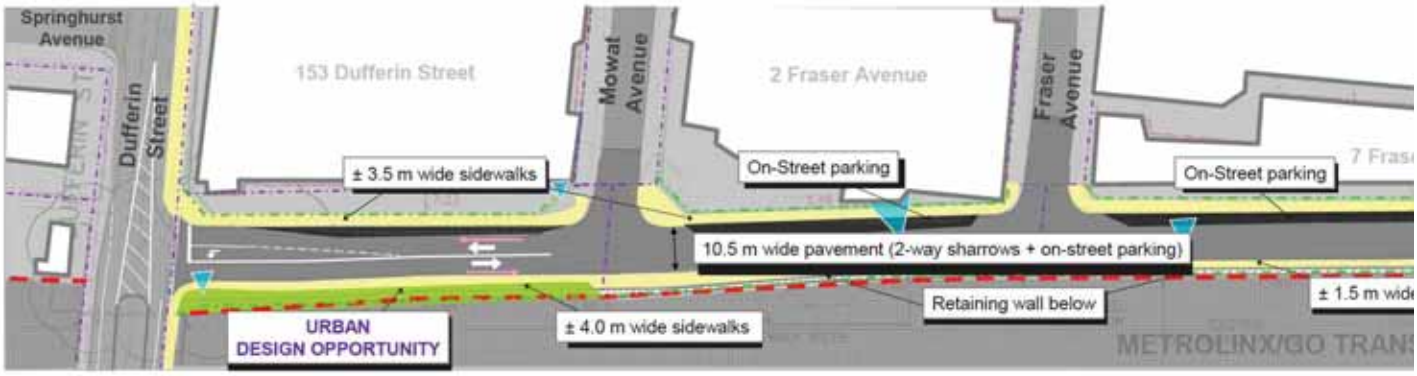
- 3.0 metre sidewalk on north side;
- 2.0 metre on-street parking (for **Option 2B** only);
- 8.5 metre two-way sharrows (for **Options 2A** and **2B**);
- Minimum 1.5 metre sidewalk south side (subject to refinement in later stages of the study; it has been indicated that 1.7 m is the minimum for new City streets);
- 3.3 metre wide traffic lanes (for **Option 2C**);
- 3.0 metre wide multi-use path (for **Option 2C**); and,
- Remaining ROW area allocated to boulevard landscaping and/ or sidewalks where additional ROW is available.

Under **Option 2A** where no on-street parking is provided, the additional 2.0 m ROW available is allocated to sidewalks and boulevard landscaping. Under **Option 2B**, approximately 85 parallel on-street parking spaces can be provided along the north side of the new street. The current design incorporates on-street parking on the north-side of the road as it is expected that the majority

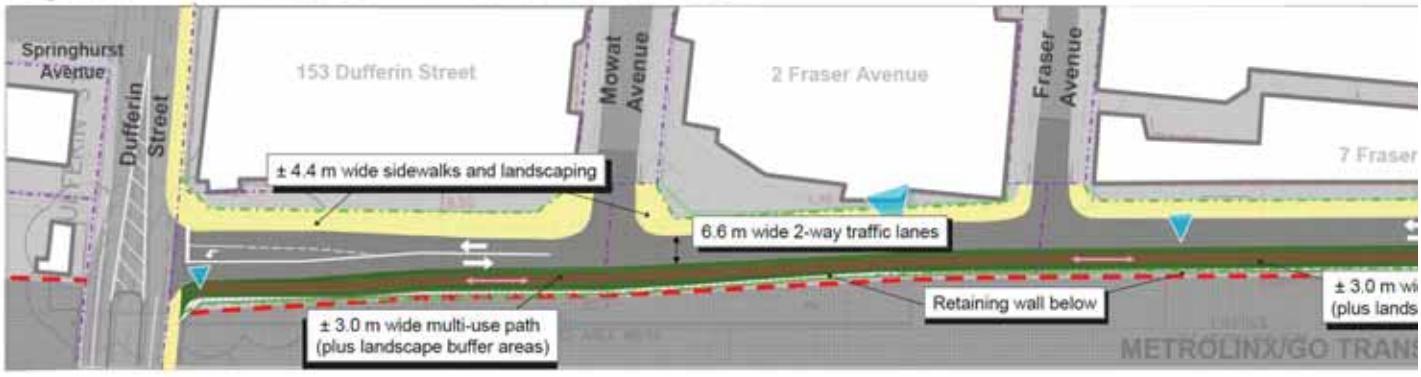
Option 2A: Sharrows + No On-Street Parking



Option 2B: Sharrows + On-Street Parking



Option 2C: Road + Multi-Use Path



Option 2D: Multi-Use Path Only

Similar layout to path component of Option 2C. Does not fully a Needs and Opportunities of this study. This option is screened

Figure 6-2 Option 2 – Construct New East-West Link

address the
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LEGEND
- Property lines
- Rail corridor property line
- Existing billboard signs
- Proposed new street ROW
- Vehicular Traffic Movements
- Cyclist Movements

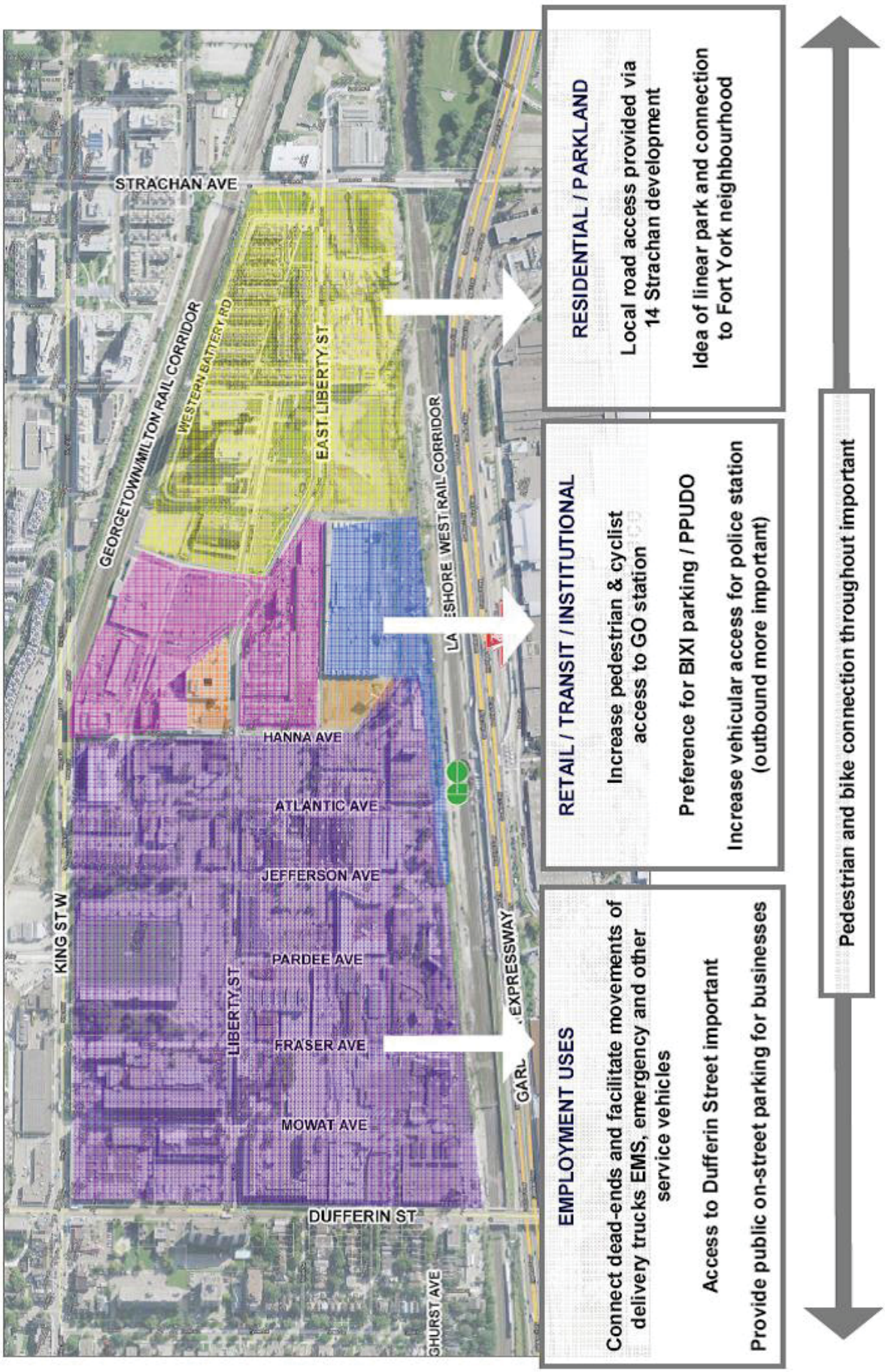


Figure 6-3 Context Zones within Liberty Neighbourhood

of people parked at the new street would be destined to the neighbourhood uses located to the north. On-street parking is not provided between the section of Atlantic Street and the 1A Atlantic Avenue property due to ROW constraints. East of Pirandello Street, on-street parking is not considered due to ROW constraints. However, providing on-street parking on the south side of the street is also an option at various sections of the street as the nature of parking demand would vary along the corridor depending on the abutting land uses. In **Option 2C,** on-street parking is not provided throughout the corridor with the exception of the designated Passenger Pick-Up/Drop-Off (PPUDO) spaces between Jefferson and Atlantic due to the ROW constraints. Functional plans of the **Options 2A**, **2B** and **2C** can be found in **Appendix J**.

In recognizing the various context zones of the neighbourhood (**Figure 6-3**), it was determined that the cross-section elements for the new street should vary throughout the corridor. The west end of the study area consists of employment uses and is characterized by dead-end streets. The new street corridor at Dufferin Street is situated on an embankment and is approximately six (6) to eight (8) metres higher than the existing rail tracks. This area provides a view corridor of the CN tower towards the east and is as a potential gateway opportunity to provide a lookout point within the neighbourhood. As such, wider sidewalks have been provided along the south side of the corridor for **Options 2A** and **2B**. For **Option 2C**, the 3.0 metre multi-use path is maintained throughout the new street corridor. The view corridor opportunities offered by the existing topographical features in this area along with a landscaped sidewalk/multi-use path area would form the concept of a linear public open green space along the south side of Liberty neighbourhood (**Figure 6-4**)

Linear public open green space concept on south side of new street

Potential lookout point at Atlantic Avenue

Public sitting areas

Urban public open space fronting 9 Hanna Avenue

Figure 6-4 Urban Design Concepts

Retail, transit and institutional land uses are concentrated in the central portion of the neighbourhood near Atlantic Avenue. The Exhibition Place GO station is located at the foot of Atlantic Avenue. Comments received at POH#1 indicated a preference for increased pedestrian connections to the GO Station. Discussions held at previous TAC meetings also identified the opportunity to provide formal Passenger Pick-Up and Drop-Off (PPUDO) facilities surrounding the GO station as informal PPUDO activity is anticipated to occur even if the new street design did not provide for any formal PPUDO facilities.

All sub-options for Option 2 incorporate three (3) designated PPUDO parking spaces and one (1) taxi space is provided on the north side of the new street between the section of Jefferson Avenue and Atlantic Avenue. A potential look-out point can also be provided at the south edge of Atlantic Avenue as illustrated in the Site B urban design concept shown in **Figure 6-4.**

For all options, the undevelopable lands between the 9 Hanna Avenue police station and the new street create an opportunity to provide public open space amenities. A potential public green space, sitting area and/or playground are potential open space concepts that can be incorporated into this area as illustrated in the urban design concepts shown in **Figure 6-4.**

6.3.1 Connection at Pirandello Street

Constructing an east-west roadway connection east of Pirandello Street could be made feasible upon the relocation of the existing TELUS and CN telecommunications infrastructure, and utilities located at the south end

of Pirandello Street within the rail property. The City completed a feasibility study in December 2013 which concludes that this existing infrastructure and utilities can be relocated to a point 27 metres southwest of its current location. An acquisition of lands from the Metrolinx/GO Rail corridor will be required to facilitate an east-west roadway connection through this area. Based on feedback received from Metrolinx, the alignment for all Option 2 sub-options have been developed to minimize property impacts to the railway property assuming that the relocation of telecommunications tower and associated infrastructure is technically feasible.

It is anticipated that a partial east-west roadway connection can also be considered between Dufferin Street and Pirandello Street should the relocation of the TELUS and CN infrastructure and utilities not occur in time for the construction of the new street.

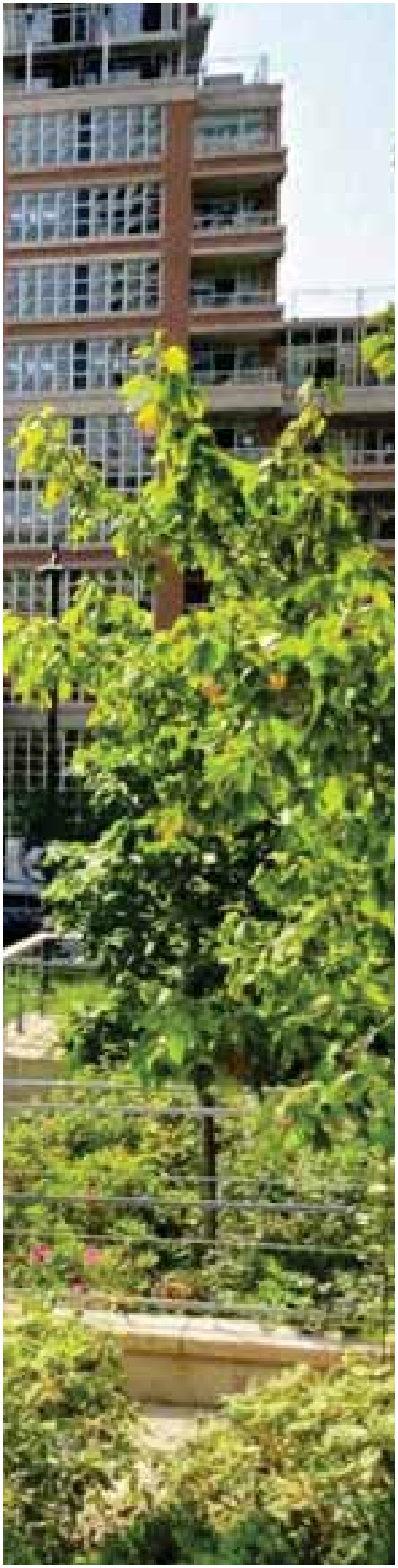
The two main sub-options evaluated for Option 2 would include an east-west connection which terminates at Pirandello Street and one that extends east of Pirandello Street.

6.3.2 Connection at Strachan Avenue

The new street options which consider a connection east of Pirandello Street can be further broken down in to sub-options which include:

- Sub-option (a): Meet Strachan Avenue At-Grade;
- Sub-option (b): Provide Underpass Connection at Strachan Avenue; and,
- Sub-option (c): No connection to Strachan, Terminate at 14 Strachan Local Road.

The following sections discuss **sub-options (a)** to **(c)** in detail.



Sub-Option (a): Connect to Strachan At-Grade

Our review suggests that an at-grade east-west roadway connection between Solidarity Way and Strachan Avenue is technically possible. The horizontal distance between the eastern limits of the Solidarity Way and Strachan Avenue is approximately 40 metres. The elevation of Solidarity Way is proposed at approximately 88.5 metres at the corner bend while the existing elevation of the Strachan Avenue roadway immediately east of this area is approximately 88.0 metres.

The following configurations of the Liberty New Street/Strachan Avenue intersection were assessed as part of this study:

- Unsignalized right-in/right-out operations;
- Unsignalized right-in/right-out/left-in operations;
- Unsignalized full movement intersection; or,
- Signalized full movement intersection.

The review determined that the provision of an outbound left-turn or an inbound left-turn traffic movement at the new intersection at Strachan can only be provided upon a reconfiguration of the Strachan bridge structure. Based on the existing roadway configuration along Strachan Avenue, the provision of a northbound left-turn storage lane at the new street intersection will require a widening of the Strachan Avenue roadway and bridge structure. A northbound left-turn storage lane and taper will need to extend southerly onto the Strachan bridge structure in order to meet minimum design standards. The additional storage and taper can only be provided through a narrowing of the existing northbound through traffic lane, bike lane, and/or sidewalk, or the widening of the bridge structure. It was determined that it would not be feasible to provide a northbound left-turn lane under the existing configuration of the Strachan bridge structure.

A traffic signal was not recommended for this intersection as there is insufficient sight distance for outbound left-turn movements to operate at this location. A traffic signal at this location is also not preferred if adequate sight distances were provided as it would be situated approximately 90 meters from the East Liberty Street/Strachan Avenue signalized intersection. The distance between these two intersections would not meet the minimum spacing between traffic signals as outlined within the guidelines stated in the Transportation Association of Canada (TAC) Roadway Design Manual, 1999 (Section 2.3.1.7 of the TAC manual recommends minimum spacing between signalized intersections along arterial roadways to be at least 200 metres).

Through the Project Team`s review and consultation with TAC members, right-in/right-out traffic operations have been recommended for the Liberty New Street/Strachan Avenue intersection. **Figure 6-5** illustrates a functional plan of an at-grade roadway connection to Strachan Avenue.

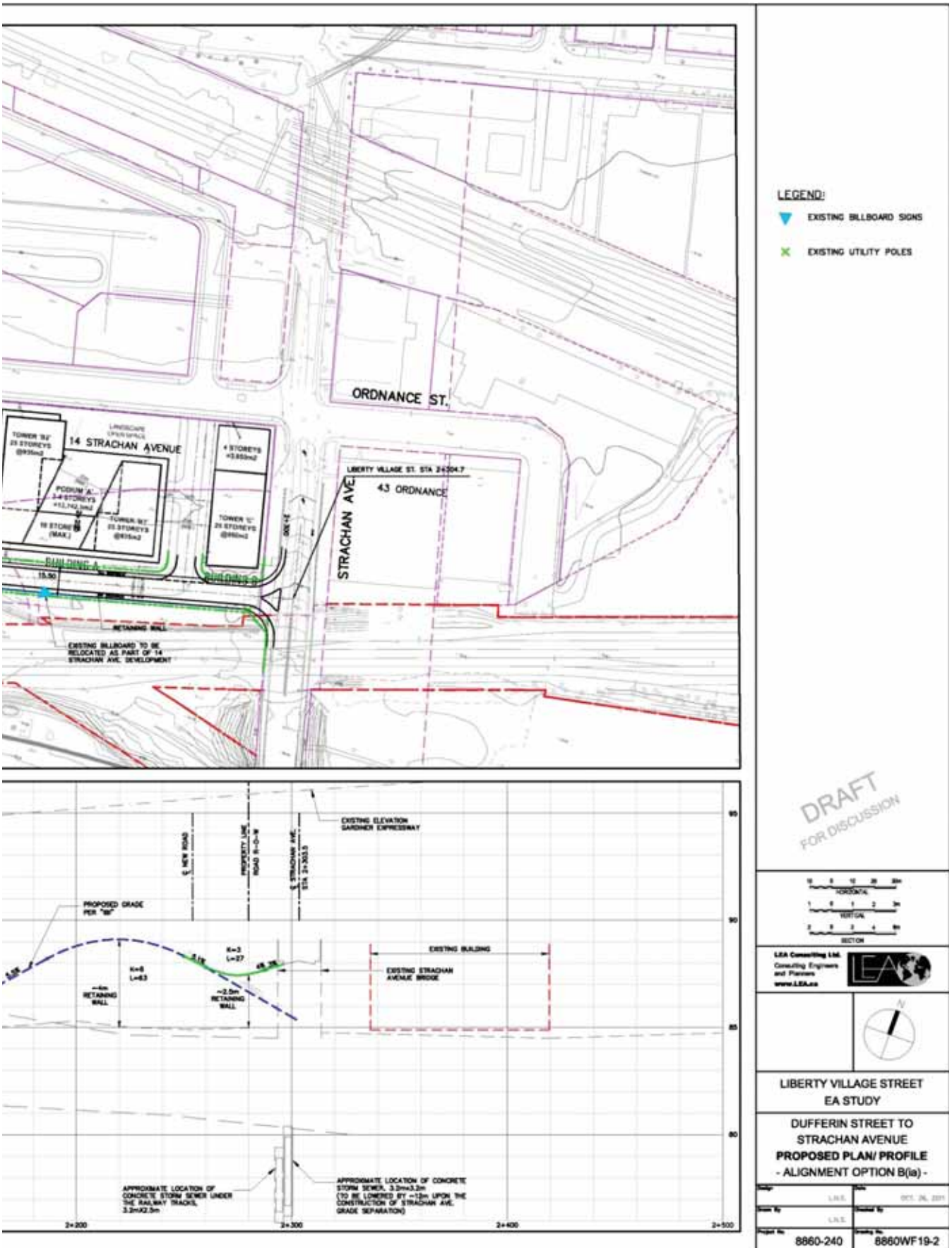
An at-grade pedestrian crossing can be provided at the west leg of the new at-grade intersection. The crossing distance can also be minimized by narrowing the pavement width and extending the existing median along Strachan

Avenue. However, an at-grade pedestrian crossing to the other side of Strachan Avenue cannot be provided as a signalized intersection is not feasible at this location.

For cyclist movements, the sharrows provided along the new street will be able to connect to the existing Strachan Avenue southbound bike lanes under Options 2A and 2B. However, an at-grade bike connection to the northbound Strachan bike lanes would not be feasible as a signalized at-grade crossing cannot be provided at the new intersection. Alternatively, cyclist and pedestrian underpass connections underneath the Strachan bridge can be provided along with at-grade roadway connection under the options which provide sharrow operations.

For Option 2C, the multi-use path can either terminate at Strachan Avenue and/or continue as underpass below the Strachan bridge towards the Fort York area while a roadway connection to Strachan can still be provided at-grade.

Figure 6-5 Option 2 Sub-Option (a) - Potential East-West At-Grade Roadway Connection to Strachan Avenue


ORDNANCE ST.
14 STRACHAN AVENUE
STRACHAN AVE.
43 ORDNANCE
LIBERTY VILLAGE ST. STA 2+304.7
EXISTING BILLBOARD TO BE RELOCATED AS PART OF 14 STRACHAN AVE. DEVELOPMENT
RETAINING WALL
LEGEND:
EXISTING BILLBOARD SIGNS
EXISTING UTILITY POLES
DRAFT
FOR DISCUSSION
EXISTING ELEVATION GARDINER EXPRESSWAY
PROPOSED GRADE PER "B"
EXISTING BUILDING
EXISTING STRACHAN AVENUE BRIDGE
~4m RETAINING WALL
~2.5m RETAINING WALL
APPROXIMATE LOCATION OF CONCRETE STORM SEWER UNDER THE RAILWAY TRACKS, 3.2mH2.5m
APPROXIMATE LOCATION OF CONCRETE STORM SEWER, 3.2mH3.2m (TO BE LOWERED BY ~1.2m UPON THE CONSTRUCTION OF STRACHAN AVE. GRADE SEPARATION)
2+200
2+300
2+400
2+500
LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca
LIBERTY VILLAGE STREET EA STUDY
DUFFERIN STREET TO STRACHAN AVENUE
PROPOSED PLAN/ PROFILE
- ALIGNMENT OPTION B(ia) -
8860-240
8860WF19-2

Sub-Option (b): Connection Under Strachan Avenue Bridge

Opportunities to provide an underpass roadway connection from Solidarity Way towards Strachan Avenue are constrained by the clearance of the existing Strachan Avenue north bridge structure and the subsurface concrete storm sewers along Strachan. The underpass connection will need to connect to Ordnance Street east of Strachan Avenue. The roadway connection east of Strachan will require property taking and impacts to existing buildings located at 35 Strachan Avenue and 11 Ordnance Street. Land will be required from the rail corridor east of Strachan Avenue in order to provide for an adequate underpass connection that can link to Ordnance Street. Discussions with Metrolinx have indicated that options which impact the rail corridor property east of Strachan would not be preferred.

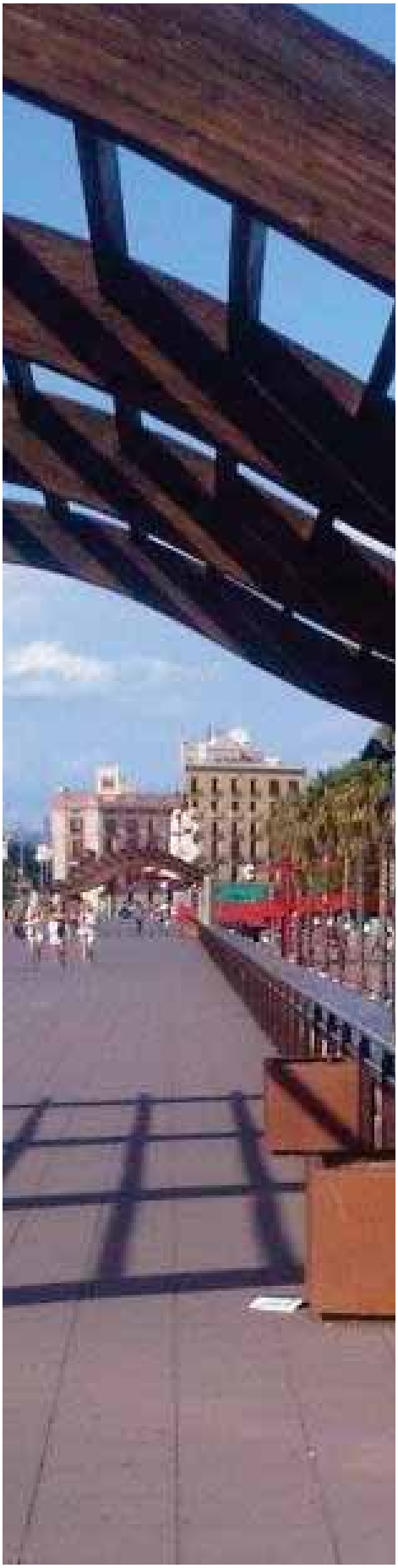
It is noted that a simultaneous underpass connection at Strachan Avenue and an east-west road connection at Solidarity Way cannot be feasibly implemented due to grade differences within this area (see **Figure 6-6**). The proposed elevation of Solidarity Way is at 88 metres at its eastern terminus while the roadway surface below the Strachan bridge structure is required to be at least 80.25 meters or lower in order to achieve a minimum vertical roadway clearance of 5 metres underneath the Strachan bridge structure. Since the horizontal distance between the Solidarity Way and Strachan Avenue is only 40 metres, a roadway connection is not technically feasible due to a minimum grade difference of 7.75 metres between the two points given that Solidarity Way would be an existing condition which the new street would tie into. An underpass east-west roadway connection from Solidarity Way to Strachan Avenue cannot be provided without modifying the roadway profile of Solidarity Way which is currently under construction. This underpass connection would require changes to a previously approved development application and land conveyance agreements with the City.

In comparison to the at-grade connection to Strachan illustrated in sub-option (a), sub-option (b) which provides an underpass at Strachan Avenue is not technically preferred. However, it can be noted that a potential pedestrian and cyclist underpass connection can also be considered in conjunction with sub-option (a) which provides a roadway connection at-grade at Strachan as a lower vertical clearance is required for an underpass pedestrian and cyclist connection compared to a roadway.

6.3.3 Sub-Option (c): Terminate at Solidarity Way

An alternate sub-option that would maintain the design of the East-West connection would be to terminate the new street at the Solidarity Way local road as proposed by the private development local road and not provide further roadway connection to Strachan Avenue. This sub-option is illustrated in **Figure 6-7**. This option is technically feasible. Compared to sub-option (a), the new street under this option would facilitate more local traffic operations as no direct connection to Strachan Avenue is provided.

As part of the needs and justification statement, the objective of the current study is to provide improved connectivity to the Liberty neighbourhood for all modes of travel. Terminating the roadway at Solidarity Way would not be in support of the core objectives of this EA study.



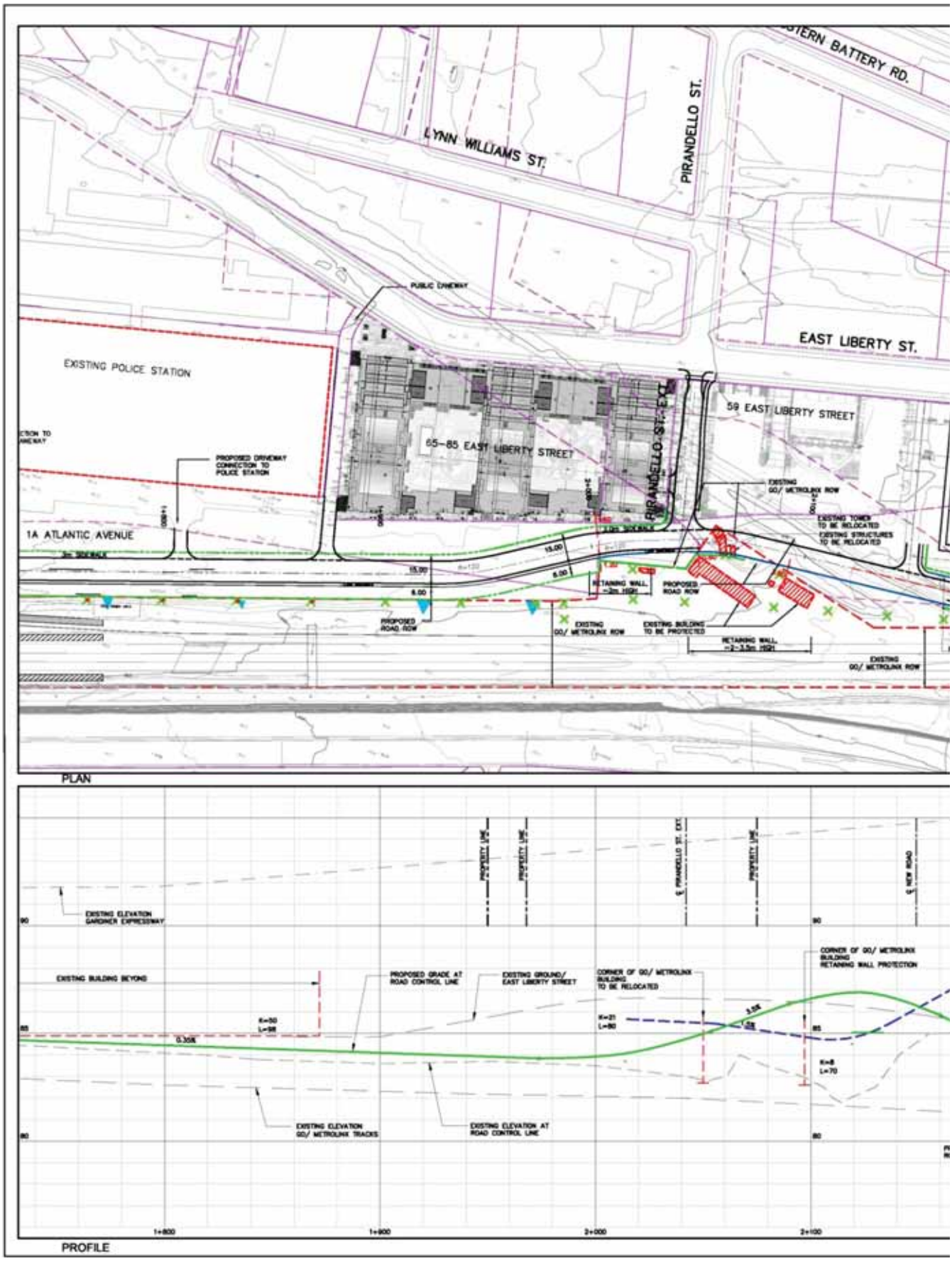
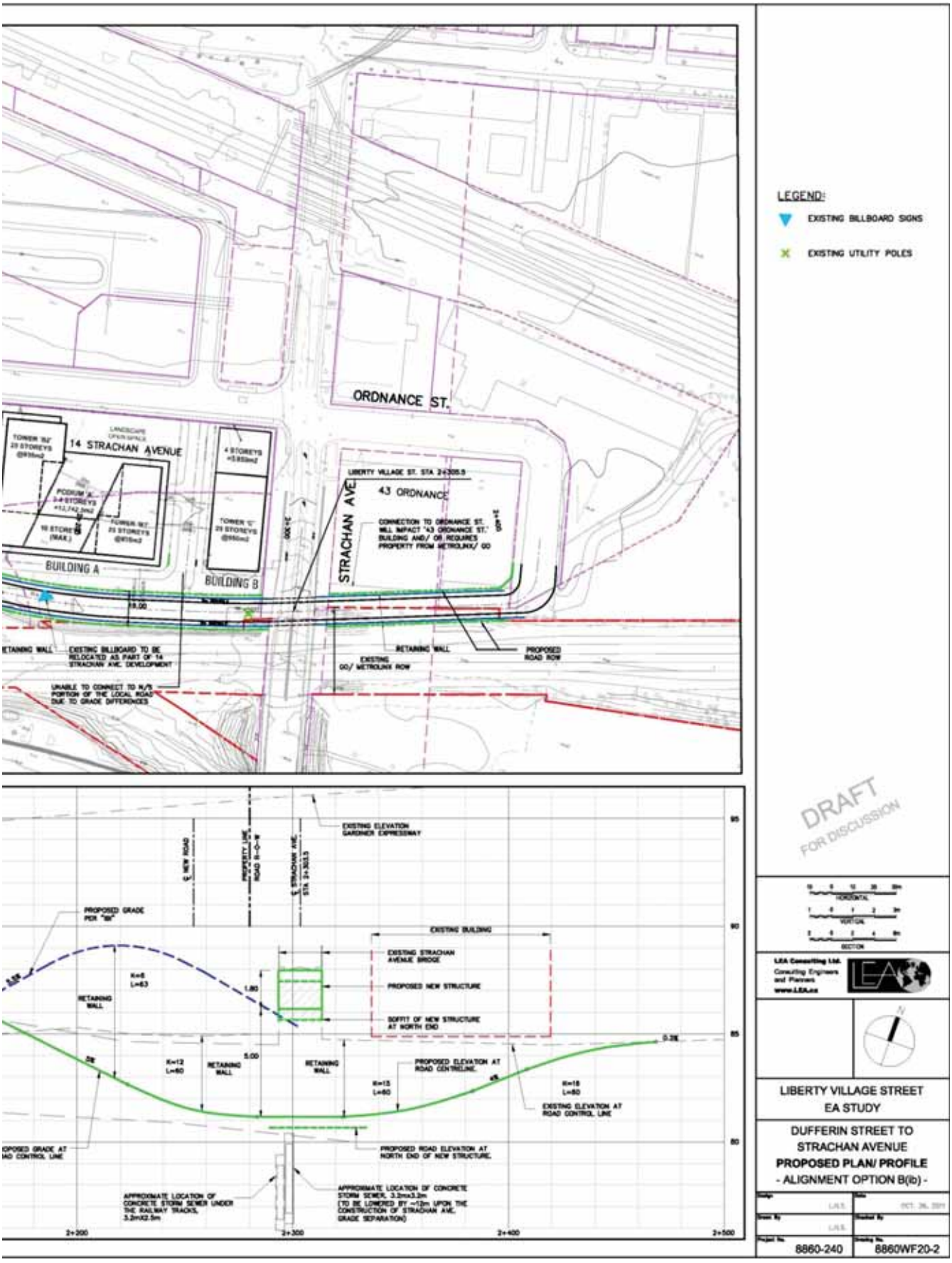


Figure 6-6 Sub-Option (b) - Potential East-West At Underpass Roadway Connection at Strachan Avenue


ORDNANCE ST.
14 STRACHAN AVENUE
BUILDING A
BUILDING B
STRACHAN AVE.
43 ORDNANCE
LIBERTY VILLAGE ST. STA. 2+305.5
CONNECTION TO ORDNANCE ST. WILL IMPACT "43 ORDNANCE ST." BUILDING AND/ OR REQUIRES PROPERTY FROM METROLINX/ GO
EXISTING BILLBOARD TO BE RELOCATED AS PART OF 14 STRACHAN AVE. DEVELOPMENT
UNABLE TO CONNECT TO N/S PORTION OF THE LOCAL ROAD DUE TO GRADE DIFFERENCES
RETAINING WALL
EXISTING GO/ METROLINX ROW
PROPOSED ROAD ROW
LEGEND:
EXISTING BILLBOARD SIGNS
EXISTING UTILITY POLES
EXISTING ELEVATION GARDINER EXPRESSWAY
PROPOSED GRADE PER "BB"
EXISTING BUILDING
EXISTING STRACHAN AVENUE BRIDGE
PROPOSED NEW STRUCTURE
SOFFIT OF NEW STRUCTURE AT NORTH END
PROPOSED ELEVATION AT ROAD CENTRELINE
EXISTING ELEVATION AT ROAD CONTROL LINE
PROPOSED ROAD ELEVATION AT NORTH END OF NEW STRUCTURE
APPROXIMATE LOCATION OF CONCRETE STORM SEWER UNDER THE RAILWAY TRACKS, 3.2mX2.5m
APPROXIMATE LOCATION OF CONCRETE STORM SEWER, 3.2mx3.2m (TO BE LOWERED BY ~1.0m UPON THE CONSTRUCTION OF STRACHAN AVE. GRADE SEPARATION)
RETAINING WALL
2+200
2+300
2+400
2+500
DRAFT
FOR DISCUSSION
LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca
LIBERTY VILLAGE STREET EA STUDY
DUFFERIN STREET TO STRACHAN AVENUE
PROPOSED PLAN/ PROFILE
- ALIGNMENT OPTION B(ib) -
8860-240
8860WF20-2

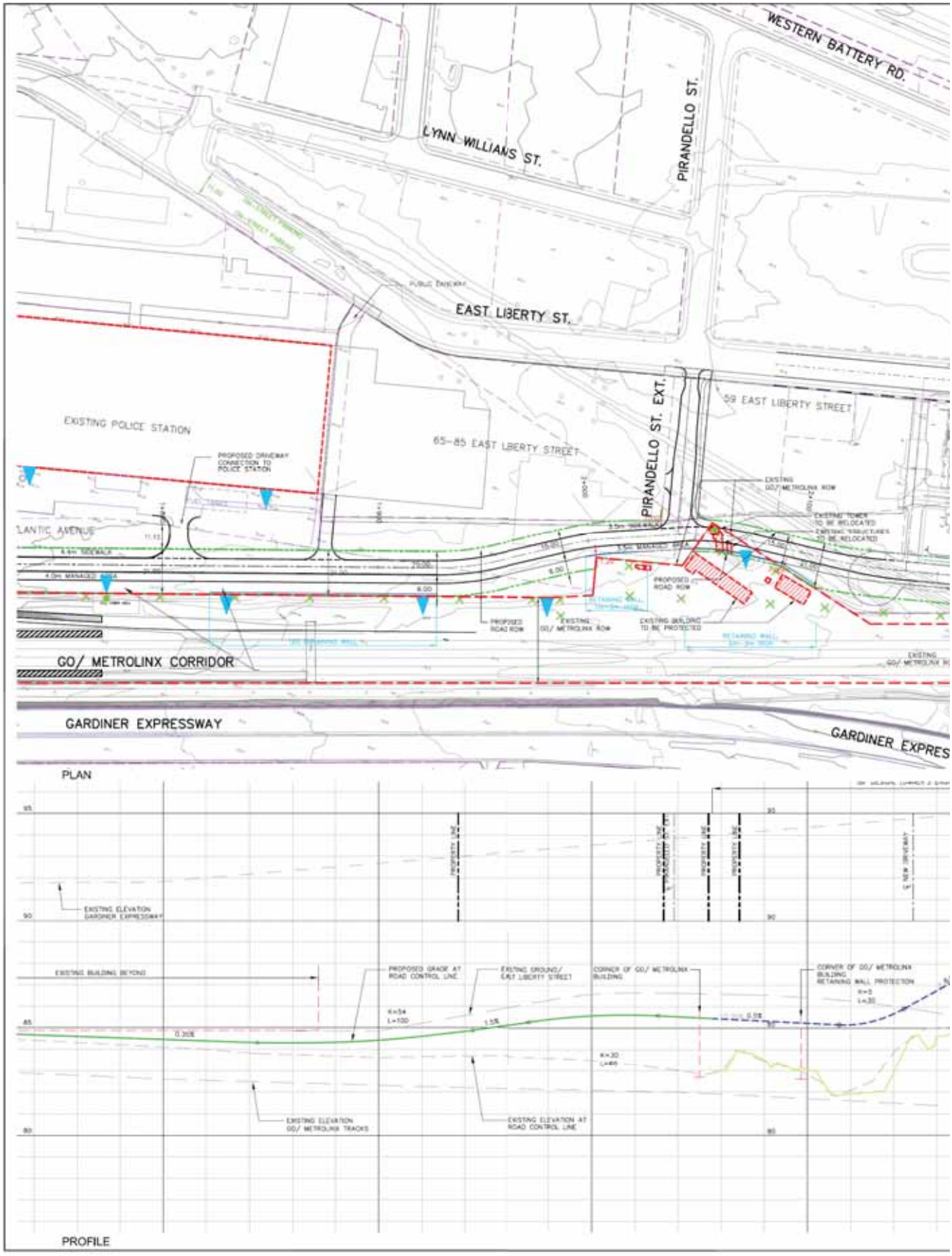
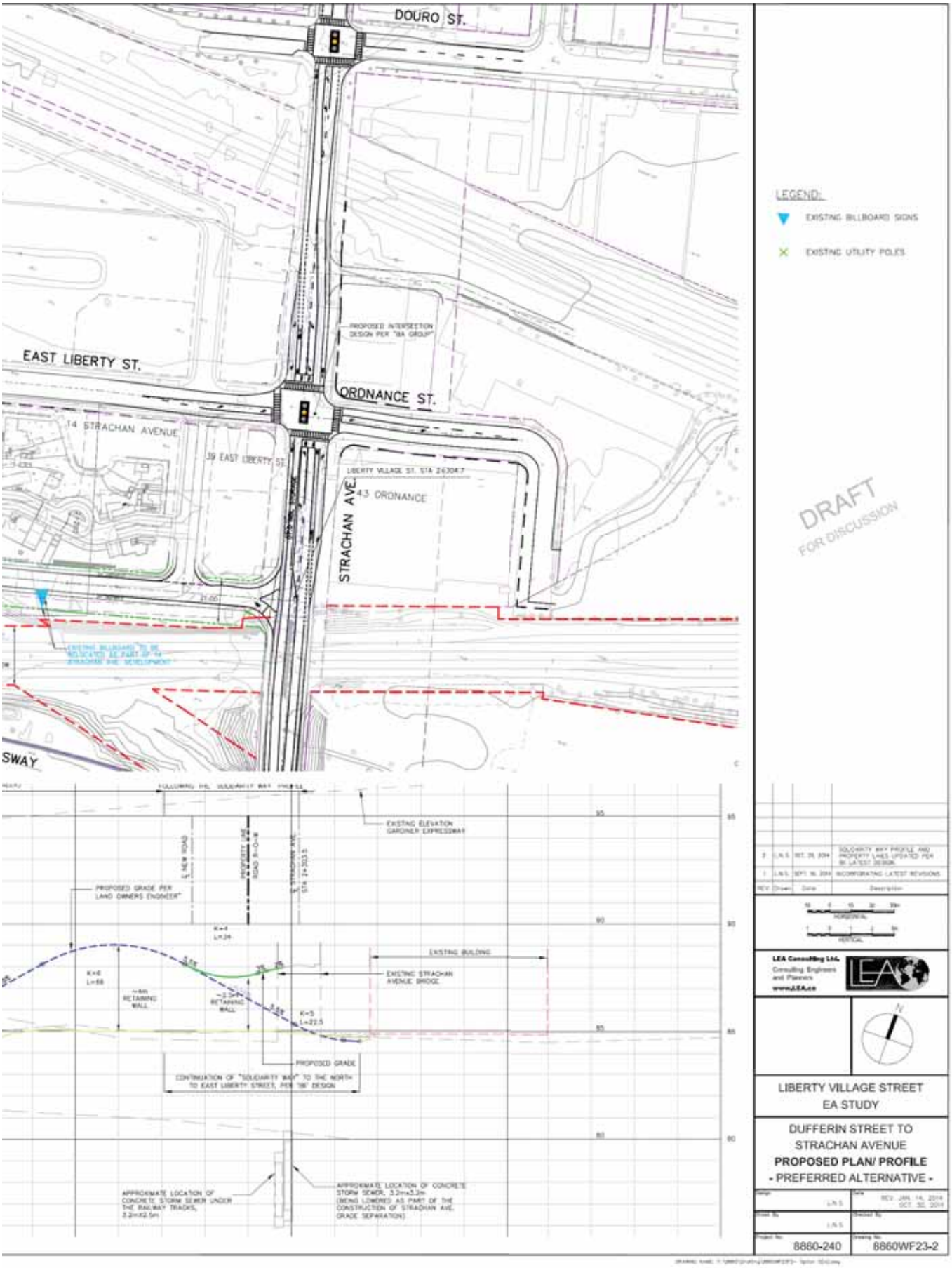
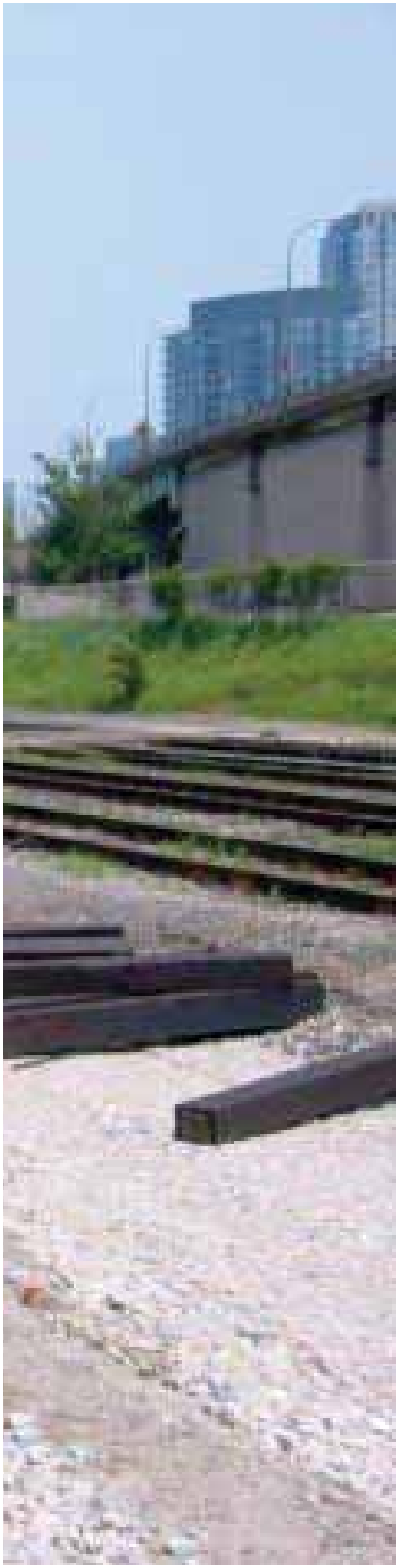


Figure 6-7 Sub-Option (c) - Connection to Local Road


DOURO ST.
EAST LIBERTY ST.
ORDNANCE ST.
STRACHAN AVE
14 STRACHAN AVENUE
39 EAST LIBERTY ST.
43 ORDNANCE
PROPOSED INTERSECTION DESIGN PER "BA GROUP"
LIBERTY VILLAGE ST. STA 2+304.7
SWAY
LEGEND:
EXISTING BILLBOARD SIGNS
EXISTING UTILITY POLES
DRAFT
FOR DISCUSSION
EXISTING ELEVATION GARDINER EXPRESSWAY
PROPOSED GRADE PER LAND OWNERS ENGINEER"
EXISTING BUILDING
EXISTING STRACHAN AVENUE BRIDGE
RETAINING WALL
PROPOSED GRADE
CONTINUATION OF "SOLIDARITY WAY" TO THE NORTH TO EAST LIBERTY STREET, PER "BA" DESIGN
APPROXIMATE LOCATION OF CONCRETE STORM SEWER UNDER THE RAILWAY TRACKS, 3.2mH2.5m
APPROXIMATE LOCATION OF CONCRETE STORM SEWER, 3.2mx3.2m (BEING LOWERED AS PART OF THE CONSTRUCTION OF STRACHAN AVE. GRADE SEPARATION)
LEA Consulting Ltd.
Consulting Engineers and Planners
www.LEA.ca
LIBERTY VILLAGE STREET EA STUDY
DUFFERIN STREET TO STRACHAN AVENUE
PROPOSED PLAN/ PROFILE
- PREFERRED ALTERNATIVE -
8860-240
8860WF23-2



6.4 Evaluation of Alternative Designs

Figure 6-8 illustrates the proposed evaluation methodology. A preliminary screening process which involved feasibility discussions with City staff and TAC members was carried out for all alternative options. Based on the preliminary screening process, Option 1A was not carried forward as it was determined that a net loss of existing public parking supply within the neighbourhood would not be a viable option. **Options 1B, 2A**, **2B** and **2C** are carried forward for the comparative evaluation. Each of these options will be evaluated against specific evaluation criteria as outlined in **Table 6-1**.

Within Option 2, sub-options have been developed for various alignment options at Pirandello Street and connection types at Strachan Avenue. These sub-options are common between Options 2A, 2B and 2C as it is assumed that no on-street parking will be provided east of Pirandello Street due to property constraints. Each of the sub-options at Pirandello Street and at Strachan Avenue are independent of each other and therefore, can be evaluated separately. **Figure 6-9** illustrates the evaluation of these sub-options.

All Option 2 sub-options that contain a connection east of Pirandello Street will require property taking from the rail corridor and impacts to existing infrastructure within the rail corridor. The sub-options which provides a connection east of Pirandello Street is technically preferred over the option which terminates at Pirandello Street.

For the sub-options concerning a roadway connection east of Pirandello Street, **sub-option (a)** at-grade connection and **sub-option (c)** connect to a local road are preferred over **sub-option (b)**. However, providing a roadway connection to Strachan is the most preferred as it provides an additional external access point for the neighbourhood.

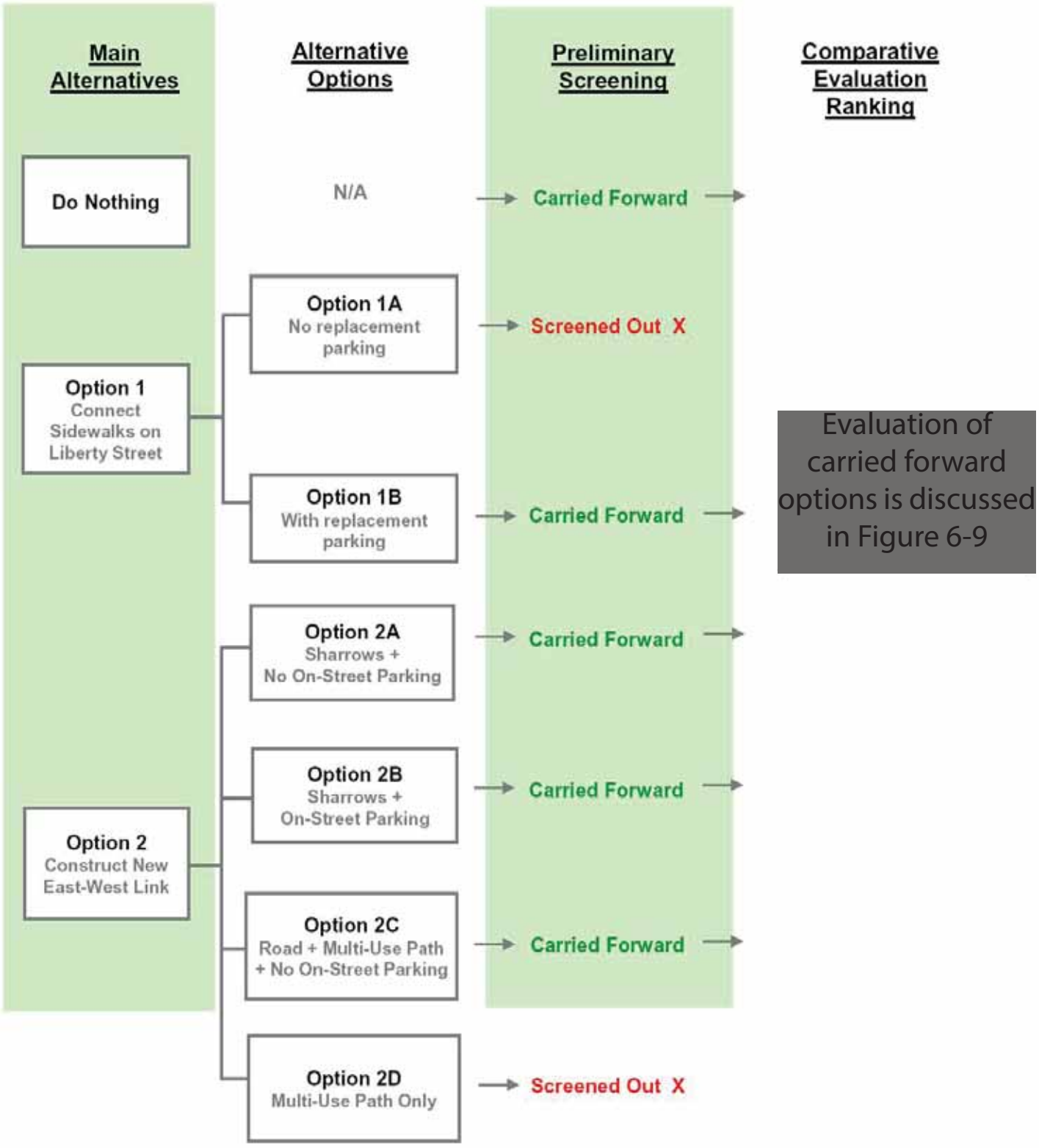


Figure 6-8 Proposed Evaluation Methodology and Preliminary Screening Results

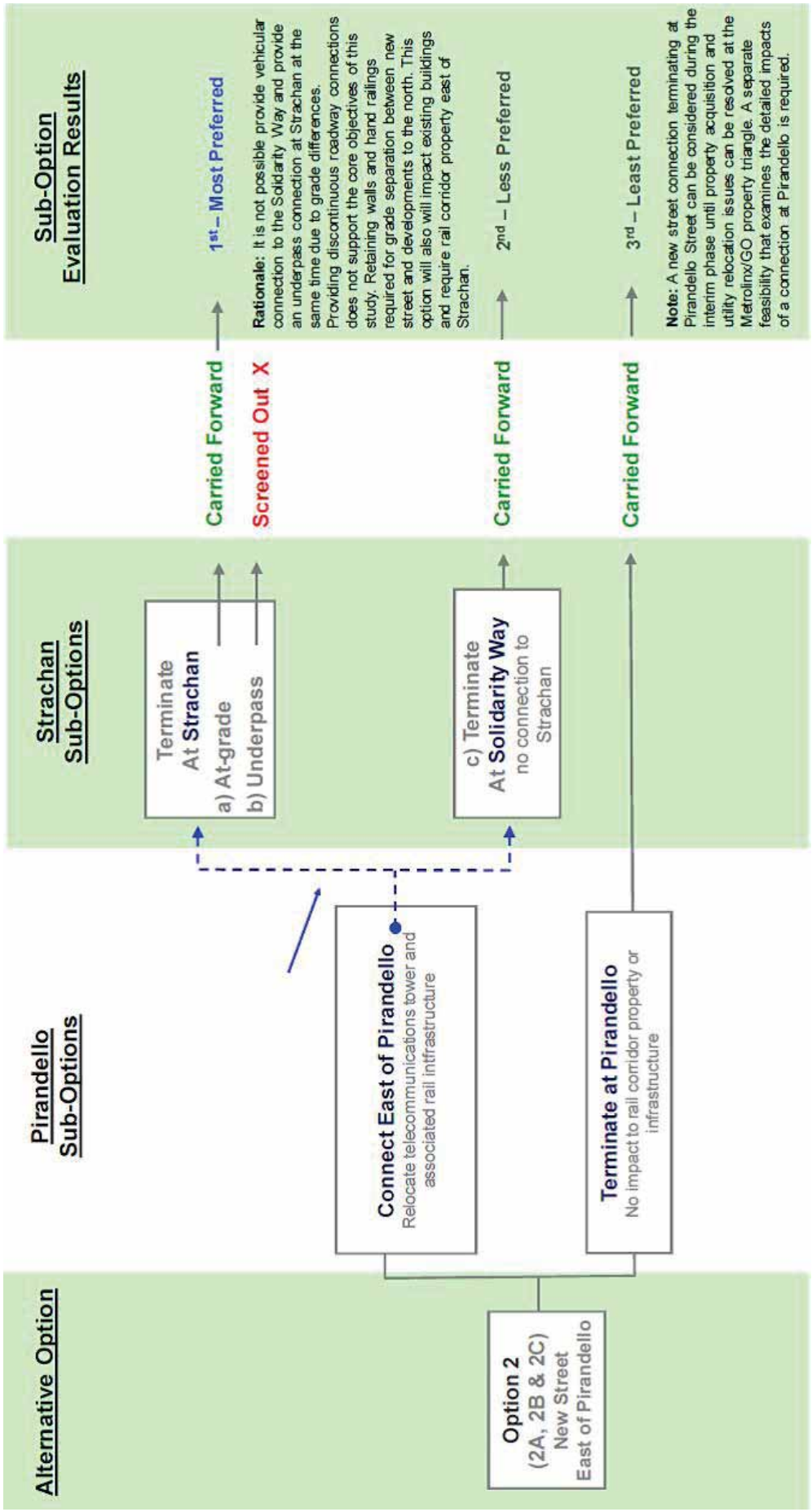


Figure 6-9 Proposed Evaluation Methodology for Sub-options within Option 2

A set of evaluation criteria has been developed to assess the proposed alternative options carried forward past the preliminary screening process. A draft set of evaluation criteria was circulated to TAC members for review and comment. **Table 6-1** illustrates the proposed evaluation criteria and evaluation indicators.

Criteria	Evaluation Indicators
A) Transportation Planning	
A1) Opportunities to improve on network connectivity	• Length and density of new connections created for all travel modes (auto, pedestrian, cycling) • Number of new connection points or nodes created for each travel mode
A2) Ability to enhance external access points	• Number of new external access points created for all travel modes (auto, pedestrian, cycling)
A3) Ability to link and/or upgrade dead-end streets	• Number of dead-ends streets/laneways upgraded or connected to facilitate emergency, service and delivery vehicles
A4) Ability to accommodate future traffic demand	• Level of traffic operating capacity (e.g. volume-to-capacity ratios)
A5) Ability to accommodate future parking demand	• Number of new parking spaces created
A6) Ability to accommodate future pedestrian and cyclist demand	• Level of added pedestrian and cyclist capacity for the neighbourhood
A7) Compatibility with planned background transportation initiatives	• Integration with proposed Dufferin Street bridges • Integration with GO Station expansion plans • Integration with Strachan Grade Separation Project
B) Transportation Operations / Engineering / Constructability	
B1) Potential impact on existing transportation operations during construction	• Disruption to existing roadways • Disruption to railway operations during construction
B2) Potential impact on existing utilities and infrastructure	• Magnitude of utility relocations required (e.g. Length of conduits, sewers and watermains or number of poles, etc.) • Potential encroachments over sewers and watermains (e.g. proposed trees)
B3) Potential impact on drainage	• Impact on existing downstream drainage (e.g. overland flow and sewer capacity) • Ability to provide an adequate overflow route(s) to minimize ponding or flooding
B4) Potential impact on stormwater management facilities	• Impact to existing stormwater management facilities; change in paved area

Table 6-1 Proposed Comparative Evaluation Criteria

Criteria	Evaluation Indicators
C) Socio-Economic	
C1) Supports policies within the Toronto Official Plan	• Does the alternative support the vision and policies stated within the Toronto Official Plan (OP)
C2) Supports policies within the Garrison Common North Secondary Plan	• Does the alternative support the vision and policies stated within the Garrison Common North Secondary Plan
C3) Potential impacts on approved/proposed land uses and developments	• Does the alternative support future land use and developments (e.g. provide frontage development opportunities, increased site access points)
C4) Supports goals and objectives of local interest groups and Business Improvement Associations (LVBIA)	• Does the alternative support LVBIA projects (e.g. King-Atlantic Gateway Project) • Is the alternative consistent with the vision outlined in the 2000 Liberty Village Capital Improvement Plan
C5) Potential short-term impacts on existing uses due to construction	• Magnitude of construction required (e.g. size/area of construction, duration of construction, number of existing uses impacted by noise/dust/ vibration caused by construction)
D) Urban Design	
D1) Supports public realm improvements within Liberty neighbourhood	• Area of new open space/civic amenities created • Number of new view corridors / vistas created • Area of new landscape provided • Supported by Official Plan (OP) and King-Liberty Urban Design Guidelines
D2) Supports designs that encourage increase non-auto modal split, walking, cycling	• Is multimodal design encouraged?
D3) Supports accessible designs and designs for the visually impaired	• Is the design accessible and accommodates movements for the visually impaired?
D4) Supports guidelines identified in the City Streets: Guide to Standard Planting Options and City of Toronto Urban Design Streetscape Manual	• Does the design accommodate street trees and conform to the recommendations for dimensions for street trees?
D5) Supports guidelines in the Vibrant Streets: Toronto's Coordinated Street Furniture Program Design & Policy Streetscape Manual	• Does the design accommodate for new street furniture and public space opportunity as outlined in the Vibrant Streets Document
D6) Supports the development of sustainable sites, the protection and/or restoration of habitat and the maximization of open space	• Does the design take into consideration sustainable criteria for sites that may be suggested by LEED or Toronto's Green Standards

Criteria	Evaluation Indicators
E) Archaeology/Built Heritage	
E1) Potential impact on archaeological features	• Total area of archaeological features affected
E2) Potential impact on listed heritage properties	• Number and area of designated heritage properties affected
E3) Potential impact on designated and/or identified built cultural heritage features	• Number of built cultural heritage features affected
E4) Supports and enhances identified archaeological and cultural heritage resources	• Number and size of "opportunity areas" that can incorporate archaeological/built cultural heritage features with alternative design
F) Natural Environment & Noise/Air Quality	
F1) Potential noise impacts on existing trees and vegetation	• Total net loss of trees removed • Area of vegetation communities affected
F2) Potential impacts on wildlife and habitat	• Number of wildlife species affected
F3) Potential noise impacts on sensitive receptors	• Magnitude of noise impact at sensitive receptors compared to future base case scenario
F4) Potential impacts on air quality	• Magnitude of air quality impact at sensitive receptors compared to future base case scenario
G) Financial Cost	
G1) Potential Construction Costs	• Cost of construction
G2) Potential Private Property Acquisition Costs	• Cost of property acquisition
G3) Potential Utility Relocation Costs	• Cost of utility relocation
G4) Risk / Uncertainty	• Risk of additional cost due to soil conditions, impact on adjacent structures/operations, unexpected utility costs, timing constraints

The Do Nothing and four (4) alternative options (Option 1B, 2A, 2B and 2C) will be evaluated against several evaluation categories weighted under a scoring scheme (**Table 6-2**). The evaluation criteria can be classified under six (6) main categories of which each would carry a different weighting (out of a total score of 100) towards the overall evaluation scheme. Each criterion is also weighed against other criteria within the same category. Based on a total quantitative score calculated out of 100, an overall ranking can be determined for each option. A detailed evaluation scheme can be found in **Appendix K.**

Key Categories (each 20% Weight)	Supportive Categories (each 10% Weight)
A) Transportation Planning	B) Transportation Operations / Engineering /Constructability
D) Urban Design	C) Socio-Economic
E) Archaeology/Built Heritage	F) Noise/Air Quality
	G) Financial Cost
Rationale: Categories A, D & E are directly related to and supportive of the needs and objectives of the study. Categories B, C, F and G are additional factors that help distinguish between the alternatives.	

Table 6-2 Evaluation Category Weighting

Evaluation Category (Unweighted score out of 100 for each category)	Do Nothing	Alternatives			
		Option 1B: Connect Sidewalks on Liberty Street and Provide Replacement Parking	Option 2: Construct New East-West Local Link		
			2A Sharrows + No On-Street Parking	2B Sharrows + On-Street Parking	2C Road + Multi-Use Path
A) Transportation Planning	17	27	85	93	88
B) Transportation Operations / Engineering / Constructability	100	75	43	43	43
C) Socio-Economic	80	86	85	85	88
D) Urban Design	8	90	95	79	97
E) Archaeology/ Built Heritage	80	70	78	75	80
F) Natural Heritage & Noise/Air Quality	100	78	53	53	53
G) Financial Cost / Risk	100	75	25	25	25
Overall Weighted Score Out of 100	59	69	72	70	74

Table 6-3 Overall Evaluation Scoring

6.5 Evaluation Summary

The technically preferred alternative is **Option 2C** road + multi-use path connecting **east of Pirandello** to an **at-grade connection at Strachan Avenue**. It can be noted that **Option 1B** can possibly be implemented in combination with any of the more preferred Option 2 alternatives but will be dependent on replacement parking opportunities provided as redevelopment occurs within the neighbourhood. **Table 6-3** and **Figure 6-10** summarize the preliminary evaluation results. Details of the recommended design associated with **Option 2C** is discussed in **Section 7.0** of this report.

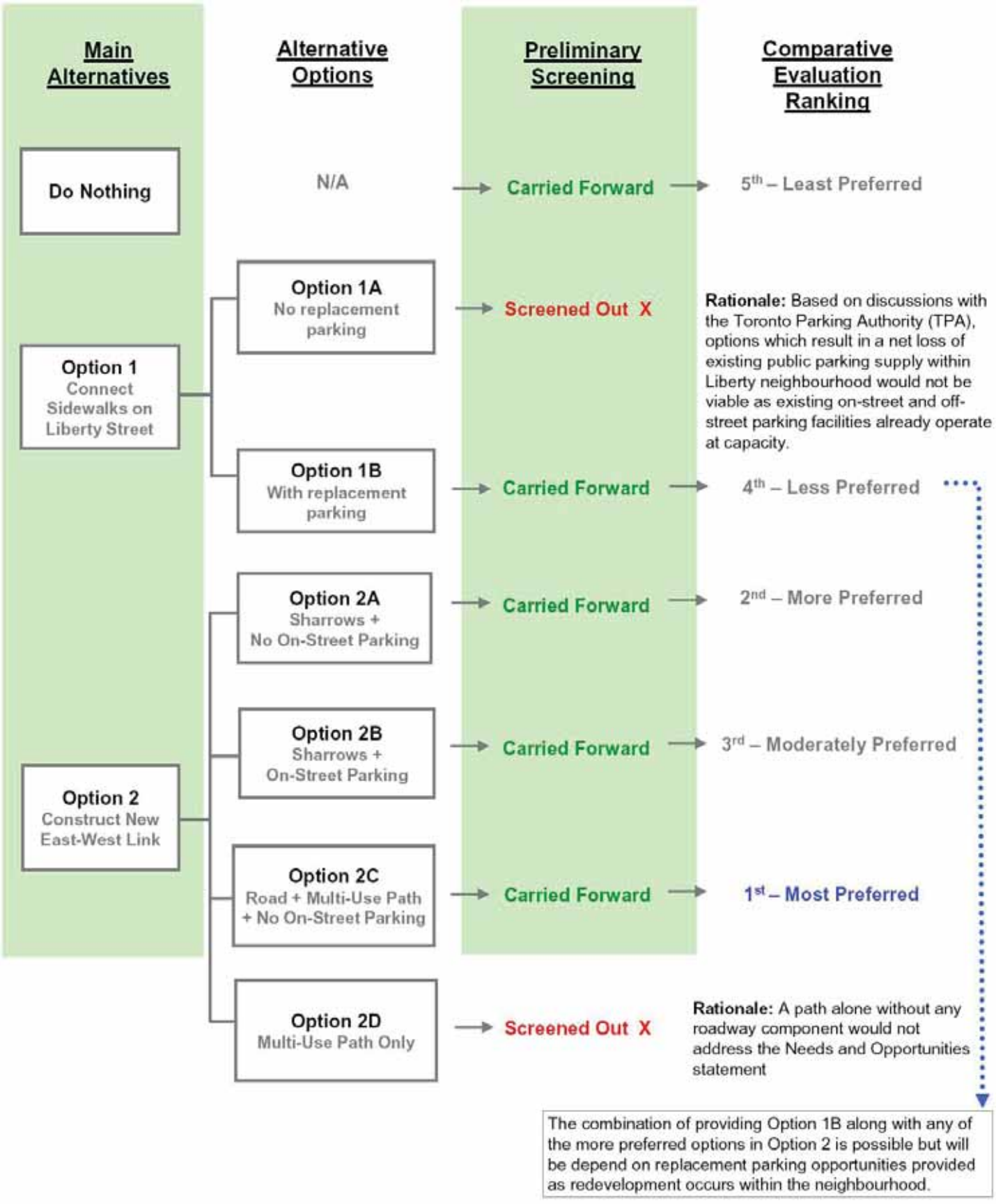


Figure 6-10 Preliminary Evaluation Results

6.6 Hanna Avenue Connection

In December 2014, an additional alternative to extend Hanna Avenue was identified. While the initial alternative would involve widening and extending the current laneway south of the recently constructed 5 Hanna Avenue building, providing an angled laneway connection to the New Street, the additional alternative would involve the extension of Hanna Avenue as a local road connection to the New Street.

The evaluation of the Hanna Avenue extension was identified to provide improved traffic operations, however it was determined to be infeasible because of the additional property requirements (7,190m^2). The full evaluation of the Hanna Avenue Connection alternatives is available in **Appendix K**.