

# East Waterfront LRT – Lower Bay St. Visioning

**Issues Identification** 

Sept. 22, 2021

# East Waterfront LRT Project

Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

#### Scope Areas

Area 1 Underground Link -Union Station Loop expansion, tunnel, Queens Quay Station expansion and East and West Portals. (Managed by TTC)

Area 2A Surface Transit Queens Quay East between Bay St. and the Silos including slip fill at Yonge and Parliament. (Managed by Waterfront Toronto)

Area 2B Surface Transit Queens Quay East extension to New Cherry Street and LRT connection along New Cherry Street, from Queens Quay to the Distillery Loop. (Managed by Waterfront Toronto)



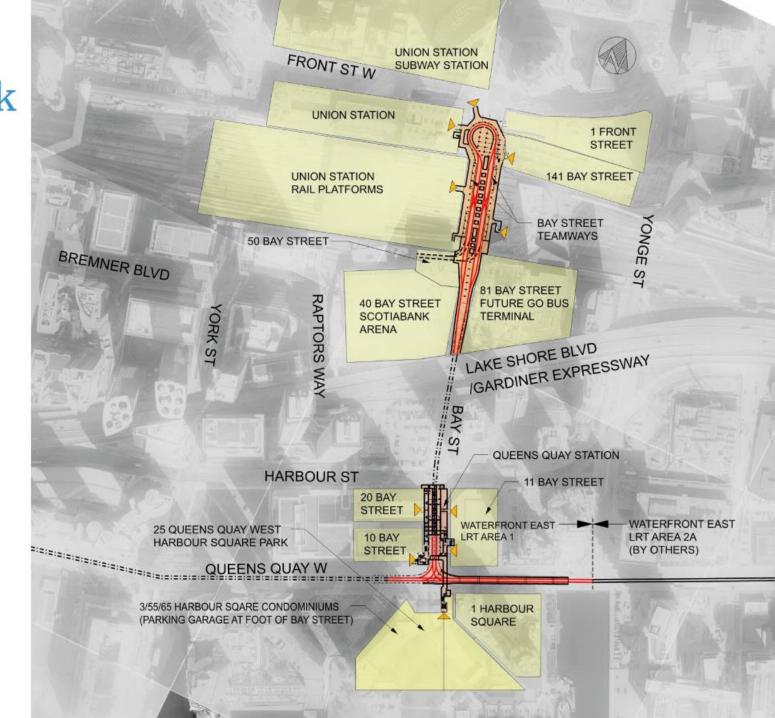
# Area 1 Union to Queens Quay Link

#### Scope of Work

Expansion of underground link between Union and Queens Quay stations under Bay St. with new platforms to serve East LRT extension

Road restoration and public realm enhancement on Bay St. from Front St. to Queens Quay

New portal structure and canopy on Queens Quay East between Bay and Yonge St.



# Bay St. is a key connection from the City to the Waterfront



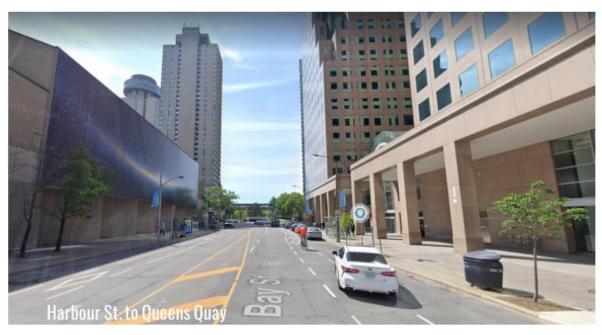
# **Existing conditions**

Lower Bay St. Visioning
Proponent: WT/TTC/CoT
Design Team: West 8/DTAH/Arup
Review Stage: Issues Identification





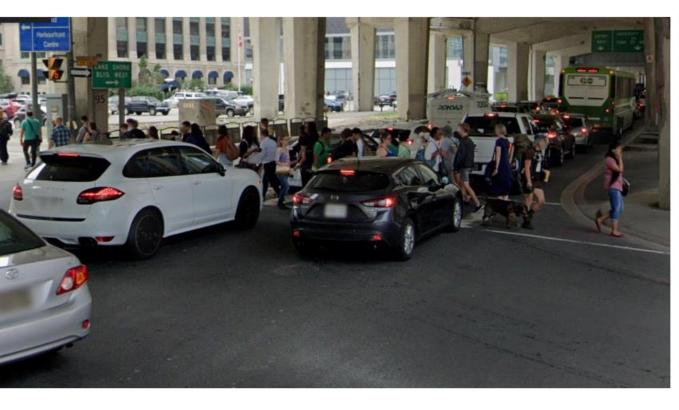




# **Functional Requirements**

## Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification





Rush hour traffic congestion to access the WB Gardiner and Lakeshore

Large volumes of Pedestrians (commuters)

# User Groups & Space Needs

Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

Pedestrians



Bay Street is on of the most important pedestrian connection between the Waterfront and Union Station.

**Bus Drivers and Riders** 





Equity-serving and efficient surface public transit.
Convenient and safe charter bus access in the summer for children's camps.

Cyclists



One of many new planned N-S cycling connections between Downtown and the Waterfront, and important opportunity for Ferry Terminal Access. Emergency Services Providers



Access along Bay Street and to standpipes. Motorists



Re-evaluate the role of Bay Street in Transportation Planning Network for motorists. Consider prioritizing local traffic (along with transit) over through traffic. Curbside Uses



Laybys for taxis, uber, food trucks etc.

# Coordination with Future Developments

## Lower Bay St. Visioning

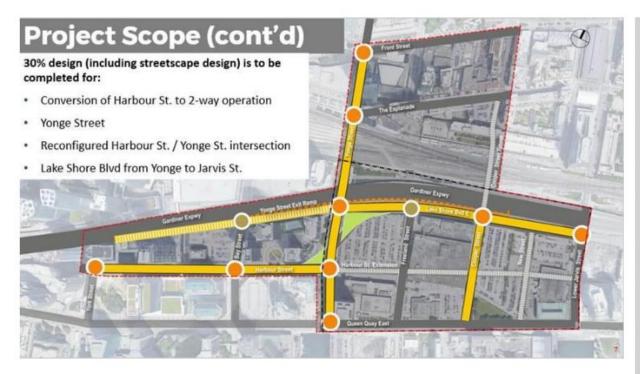
Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification





30 Bay St. 45-141 Bay St.

# Coordination with other Major Projects





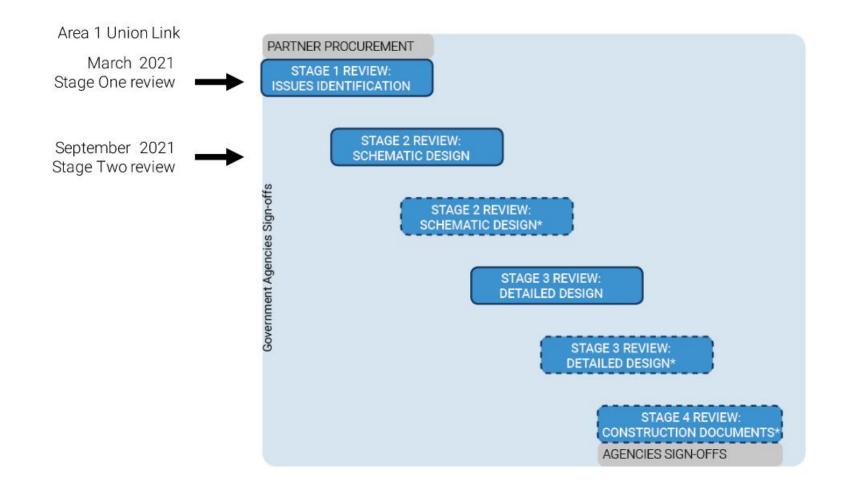
TO Core - Great Streets

### DRP Stream 2: Public land

### Project Approval Stage

Bay St. Visioning

September 2021 Stage One review



Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

### Waterfront DRP Consensus Comments

March 2021: Waterfront LRT Area 1 - Issues Identification

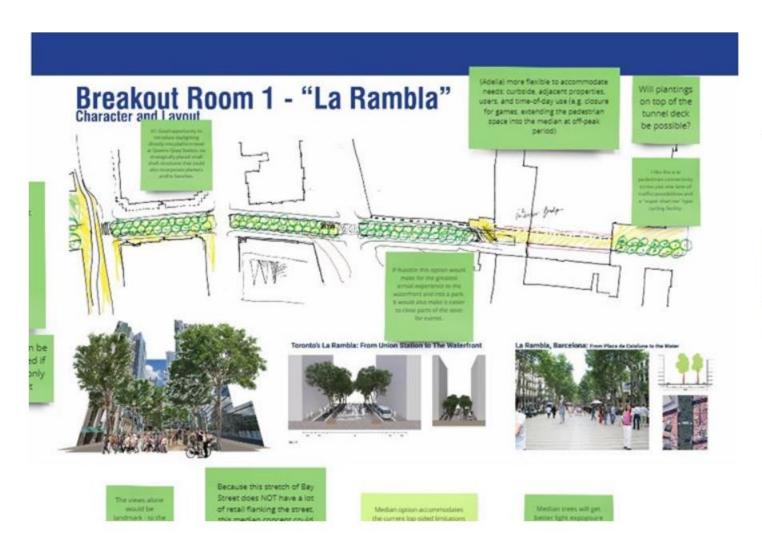
Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

#### Bay Street

- Given the "cut and cover" work required, the project is a once in a hundred-year opportunity for a cohesive re-envisioning of the entire Bay Street. Consider developing a master plan strategy to provide an opportunity to capture all modes of traffic in the area, and connect both existing and future development pieces in a bold design scheme.
- Consider holding a design competition to create a unique vision for Bay Street. With their public realm design experience, Waterfront Toronto can take on this responsibility.
- Consider **permanently reducing Bay to one lane in each direction**. The road reduction will provide widened sidewalk for accommodating at-grade traffic at the intersections and clearance for improved station access experiences, i.e. naturally lit station access points. A permanent reconfiguration to a single lane in each direction on Yonge Street from Gerrard to Queen was recently adopted by City Council.
- Map the infrastructure below grade to ensure landscaping areas are feasible and maximize the improvement to the public realm.
- Provide cross sections of Bay Street at the next review, along the entire length of Bay Street, to demonstrate how the design ties the public realm together.
- Provide wayfinding and signage strategies at the next review.

# Workshop I: Four Conceptual Test Fits for Lower Bay St.





West Side Rambla: Extra Wide West Boulevard, Magnificent Canopy



Toronto's "Champs Elysees": Great Sidewalks



**West Side Bioscape:** Botanic Diversity, Stormwater Corridor with Skyscrapers

# Workshop II: Two Functional Traffic Plans based on La Rambla Concept



# Bay St. Study Status & Next Steps

Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

#### Work done so far:

- Conceptual Visions
- Two workshops & summary of feedback
- Preliminary feasibility analysis (Harbour to Queens Quay)
- Class 5 costing

#### Future Requirements:

- Schematic design and Class 3 costing
- Technical feasibility work (e.g. multi-modal network analysis)
- Coordination with underground work and other infrastructure initiatives in the vicinity (e.g. Lower Yonge)
- Public consultation
- Implementation strategy
- Environmental Approvals

# **Areas for Panel Consideration**

#### Waterfront Toronto

Lower Bay St. Visioning

Proponent: WT/TTC/CoT Design Team: West 8/DTAH/Arup Review Stage: Issues Identification

- How could the reconstruction of Bay Street fulfil its potential as a key connector from the City to the Waterfront and create a continuous experience across different developments and barriers?
- Do the preliminary concepts presented today create a strong arrival experience to the waterfront?
- Do they integrate well with the current and future context?
- Is one of these two concepts more likely to work better to balance the different users and functional demands (large pedestrian volumes, commuters, buses, cyclists, vehicles accessing the Gardiner)? Is there another concept that should be considered?
- Are there additional public realm opportunities and integration with the underground work that the team should consider in visioning future Bay St.?



# Lower Bay Street Visioning Design Review Panel - Issues ID

**September 22, 2021** 

**WEST 8** + dtah

## Agenda

- 1/ The Opportunity of Lower Bay Street Existing Conditions
- 2/ Workshop Process & Design Principles as Outcome
  - Reference Projects
  - 5 Preliminary Design Vision Principles
  - Site Analysis, Opportunities, and Functional Demands
- 3/ Two Potential Concept Design Visions

The Opportunity of Lower Bay Street: how do we rebuild after Queens Quay-Union Link, 11 Bay and 30 Bay?



# From Landfill Harbour Extension to Golden Carpet of Toronto







1922

Brown, garbage filled lakefront

1970's

Vast parking lot context, ambition for Green Boulevard

Steamship Terminal

Today

Potential for Golden Carpet
Old City Hall to the Waterfront

**Union Station to the Ferry Terminal** 

# **Lower Bay Street:** from Towering Welcome into Downtown Toronto to Lively Green Blue Waterfront









# **Queens Quay, JLFT**









Source: BlogTO, Toronto Star

# **Harbour Street**





## **Lake Shore Boulevard**









### **Union Station District / Front Street**

250,000 passengers per day, \$824 million renovation







**Source:** various YouTube videos of Bay Street and Union Station District During Rush Hour

# **Union Station Rail Underpass - Heritage Structure**







## **Brookfield Place Galleria, Toronto Financial District**

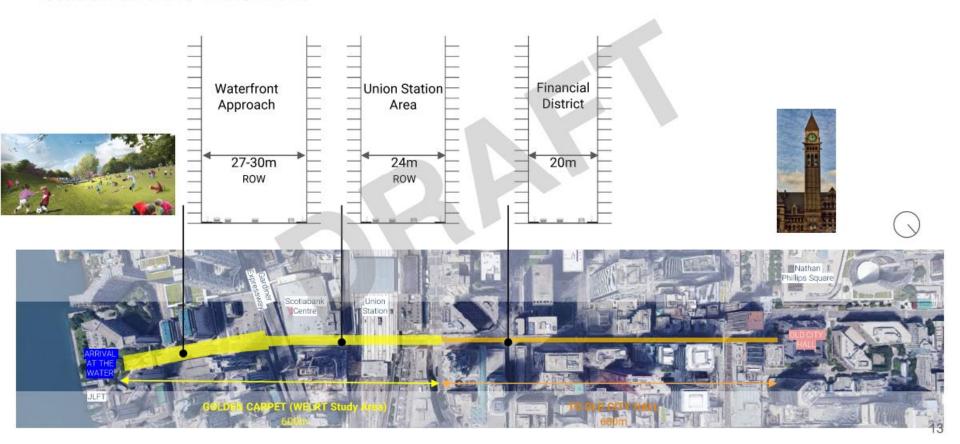


# Old City Hall, Romanesque Glory, Clock Tower as Anchor





# **Corridor Context:** Opportunity for a Golden Carpet Experience Between Union Station and the Waterfront



# **Toronto Winter: Wind, Ice, and Darkness**



# Ambition for an Improved, Unobstructed Public Realm between Downtown and the Waterfront







ACCESSIBLE

- **✓ COMFORTABLE**
- **✓ MICROCLIMATE**
- SOPHISTICATED

How do we humanize the asphalt-dominant, car-centric experience, skyscraper scale context?

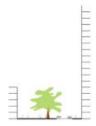


## Four Great Urban Streets as Sources of Inspiration









La Rambla, Barcelona: from Placa de Catalunya to the Water







Bioscape, New York: Biodiverse Linear Park Surrounded by Skyscrapers, Impactful Planting

Champs Elysees, Paris: Great Sidewalks

## **Workshop Outcomes - Lower Bay Street Vision**



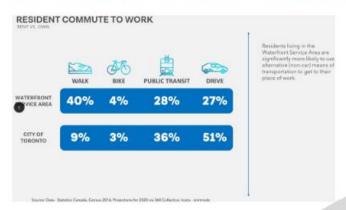
## **Workshop Outcomes: Preliminary Design Vision Principles**

Seeking DRP Feedback

- 1. A World Class Pedestrian Priority Street
- 2. Equitable, Efficient, and Memorable Transit Experience
- 3. BRAT (Bio-Retention Above Transit)
- 4. Light = Arrival, Winter Activation, Identity
- 5. Block and Context Sensitive



## 1. A World Class Pedestrian Priority Street



Waterfront BIA Research shows 40% of residents walk to work.

Traditional engineering network approach has emphasis on vehicular network. Lower Bay Street could prioritize a high functioning pedestrian network.



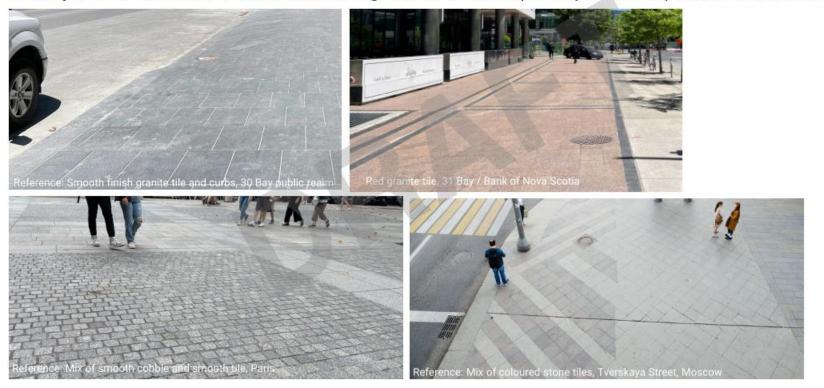
Very high pedestrian volumes expected in the area from Union Station Queens Quay Transit Link Study. Peak Times include AM/PM rush hour, and summer months.

"The ratio of pedestrians to cars is 10:1 during busy commuting times and expected to more than double."

Union Station District Plan, 2006

## 1. A World Class Pedestrian Priority Street: High Quality Materials

Concept: Chic, Timeless, Durable Canadian granite tiles with special pattern on pedestrian boulevard



## 2. Equitable, Efficient, and Memorable Transit Experience





- Bus (surface)
- Streetcar (underground)
- Subway Connection (underground)

- Bus (surface)
- Train Connection (above ground)
- ALL transit users are pedestrians at some point in their travel experience.
- Lower Bay Street has a high level of transit service.
- Lower Bay Street is a space of movement and transition between modes of travel.
- Separated bike lanes and integration of bus stops are key design details.

Shared Cycle Track Stop (NACTO) Sherbourne St, Toronto (credit: Payton Chung)

## 3. BRAT (Bio Retention Above Transit)



- Integrate bio retention, soil volume below the pedestrian promenade.
- Create impactful, 2-3m wide open planters, to reinforce each individual block character.
- Green Infrastructure route can takes priority over other pipes and utility placement. Be opportunistic about utility relocation and the need to rebuild Bay Street for the below grade works.

## 4. Light = Arrival, Winter Activation, Identity

The Four Sirens Bring Delight from Union Station to the Ferry Terminal



## **References: Light Elements**

#### Wayfinding, placemaking, warmth

Tunnel / Siren



Tverskaya Street, Moscow



W2 Tunnel, Tilburg, Caroline Prisse (Van Tetterode Glass Studio)

Skylight in a Station



Pedestrian footsteps visible above in Rotterdam Central Station

#### **Ornamental Lighting**



Iconic ornamental design, Passieg de Gracia, Barcelona

#### **Banners and Seasonal Lighting**

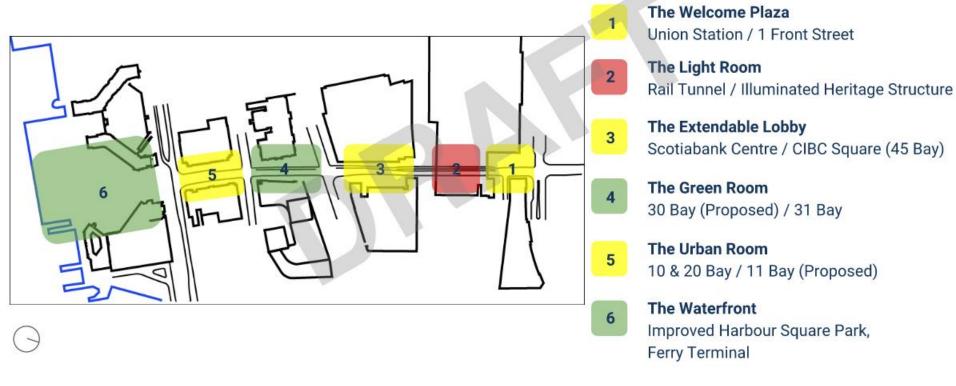


Banners, The Mall, London



Seasonal Programmable Lighting, Paseo del Prado, Madrid

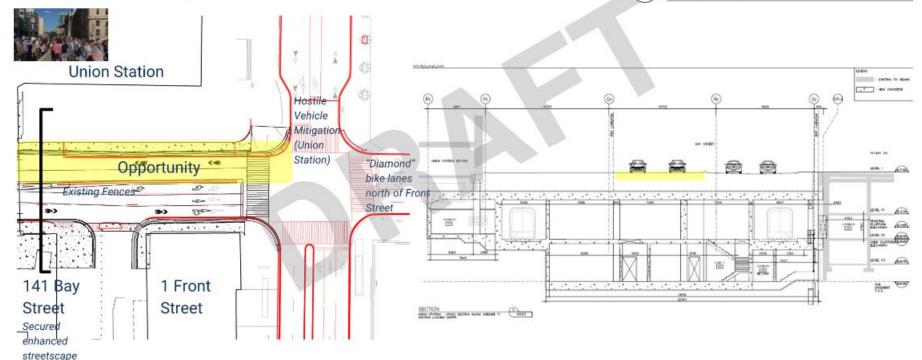
#### 5. Block and Context Sensitive - Six Zones



## Site Analysis & Context: The Welcome Plaza

**Opportunity:** Expanded Union Station Arrival on west side of Bay Street to support high volumes of pedestrians





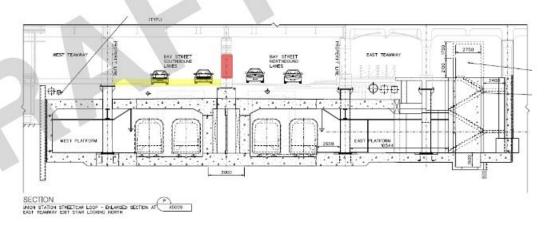
## 2 Site Analysis & Context: The Light Room

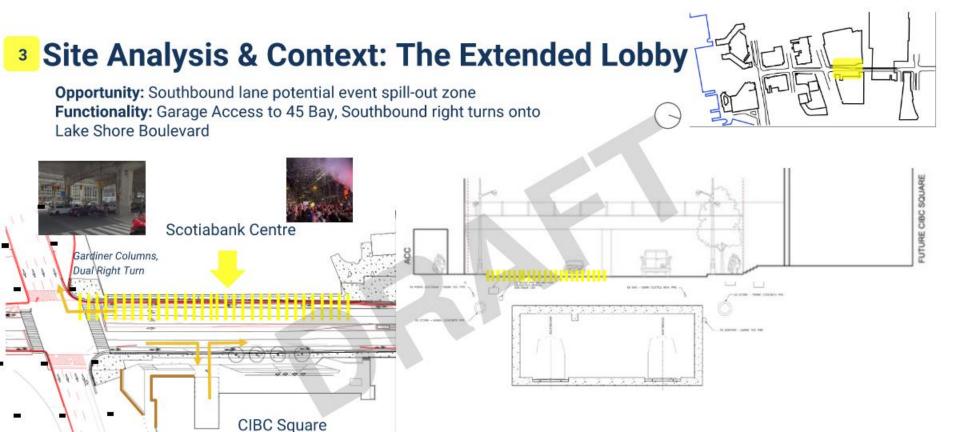
Opportunity: Light, Acoustic Protection, Comfort, Safety. Expanded sidewalk to support high levels of pedestrians.



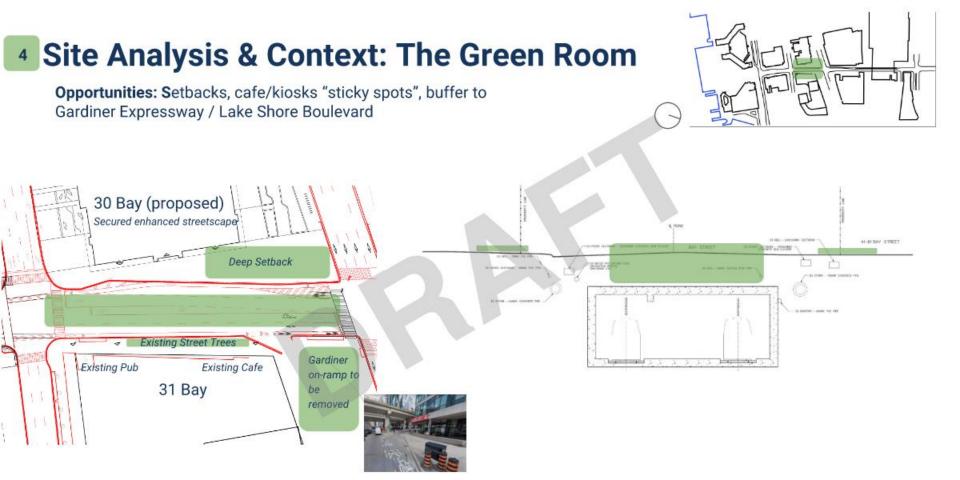








(45 Bay)

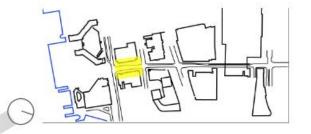


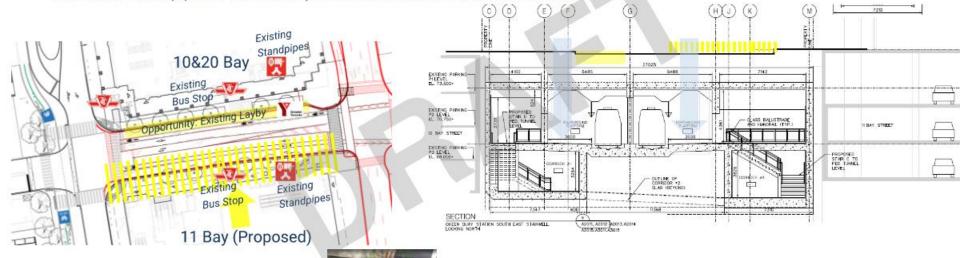
## Site Analysis & Context: The Urban Room

**Opportunities:** Northboundlane potential event spill-out zone, daylight to Queens Quay Station below, flexible bus layby with high quality finish.

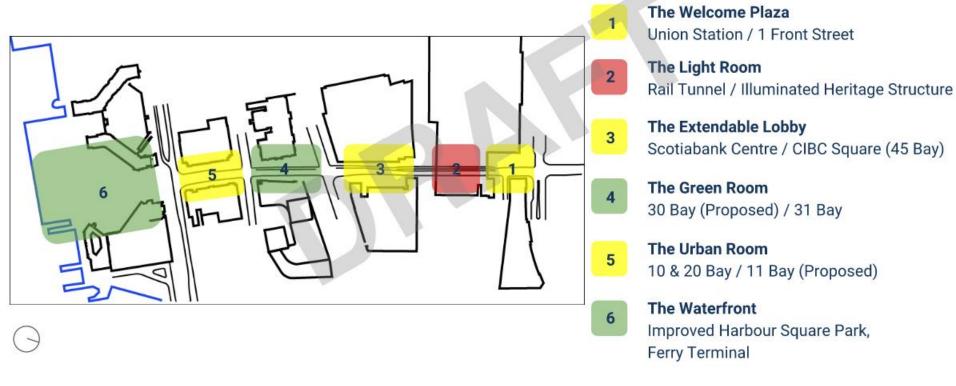
Functionality: Preserve charter bus layby, minimize distance to JLFT. Fire Truck

Access to Standpipes. TTC Bus stops in both directions. QQ Station Entrances.





#### 5. Block and Context Sensitive - Six Zones



## Potential Concept Design Visions for Bay Street Reconstruction

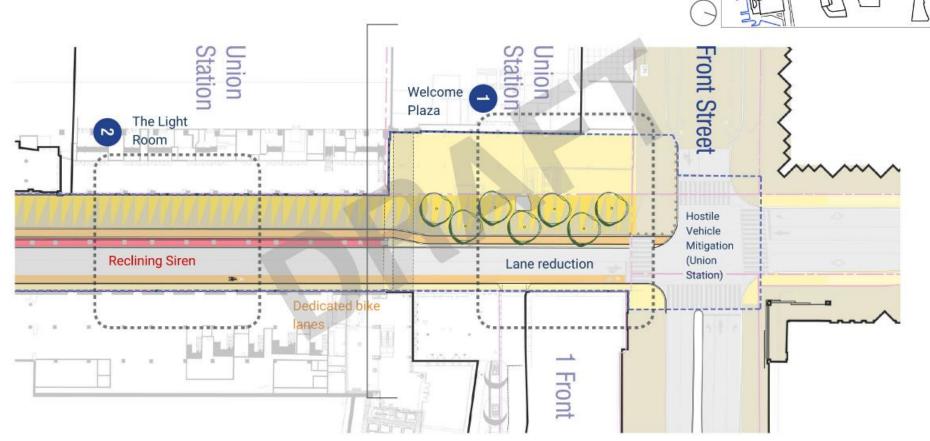




Other Design Developed through Future Study



## Zone 1 & 2 - Welcome Plaza & The Light Room



Zone 1 - Welcome Plaza (same for both options)



## Zone 2 - The Light Room (same for both options)

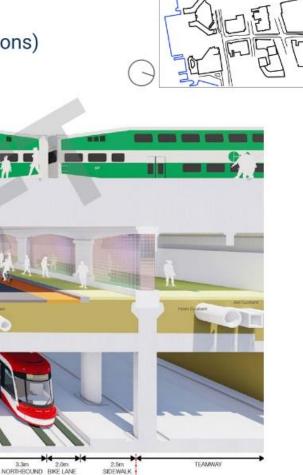
BAY STREET

2.0m 1.5m BIKE LANE "SIREN"

24.0m

3.3m SOUTHBOUND

9.4 PEDESTRIAN BOULEVARD



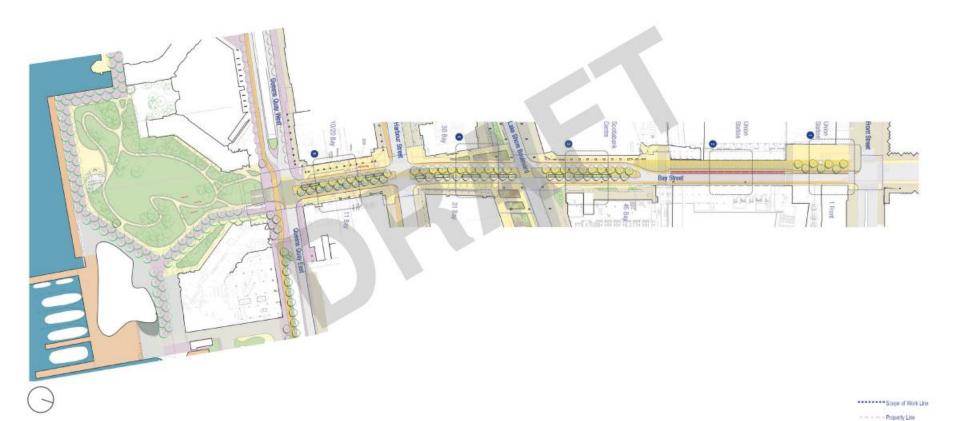
Reclining Siren

Dedicated Pedestrian and Cyclist tunnel protects from noise and pollution

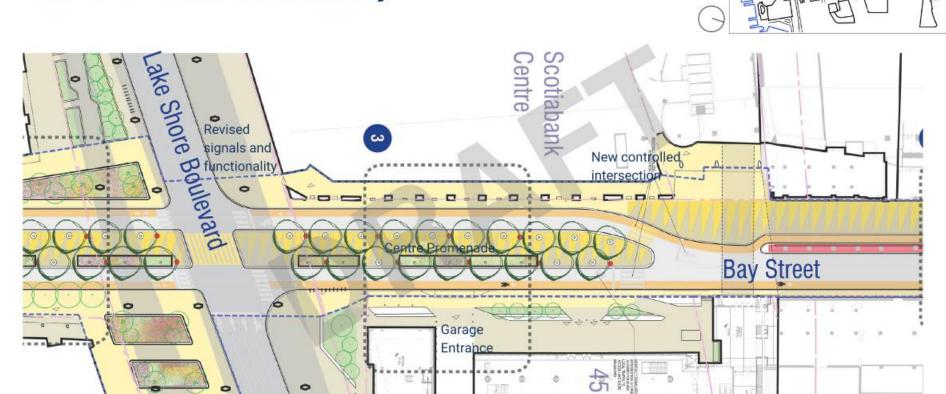
TEAMWAY

Note: Proposed relocated utilities 36 shown

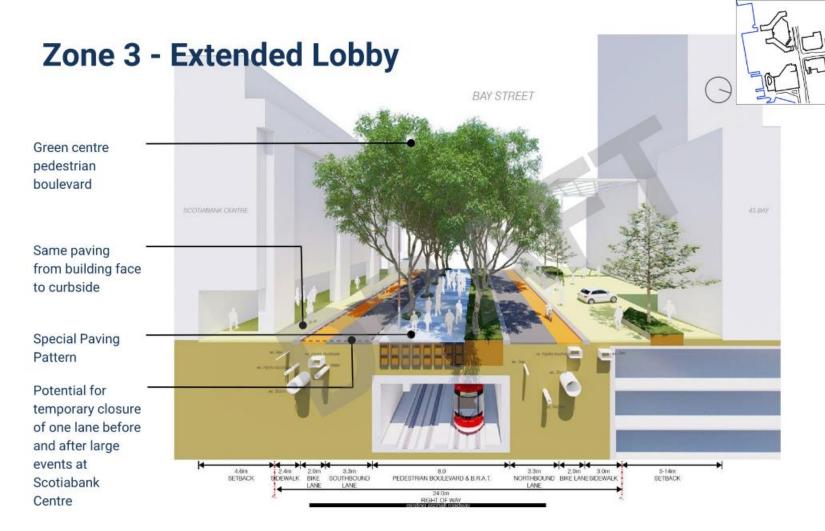
## Centre Promenade "La Rambla"



## **Zone 3 - Extended Lobby**

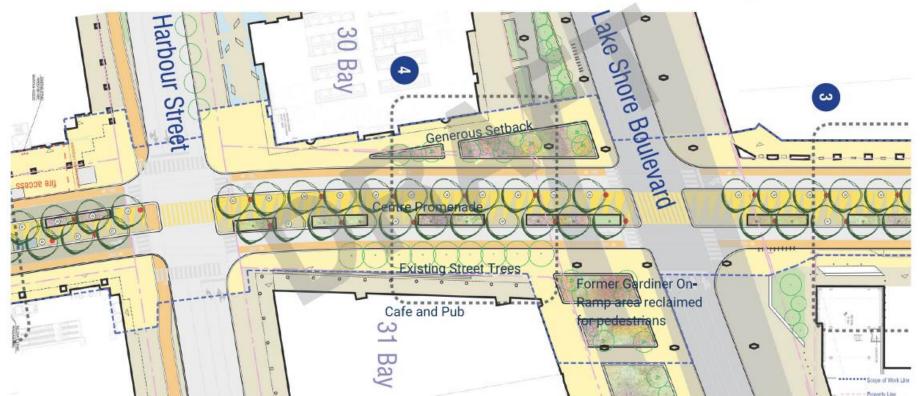


----- Scope of Work Line



## **Zone 4 - The Green Room**





### **Zone 4 - The Green Room**

Green centre pedestrian boulevard

Opportunity for pocket planting on private property

**Existing Street** Trees, Cafe spill out



Note: Existing utilities shown. 41

## **Zone 5 - The Urban Room**

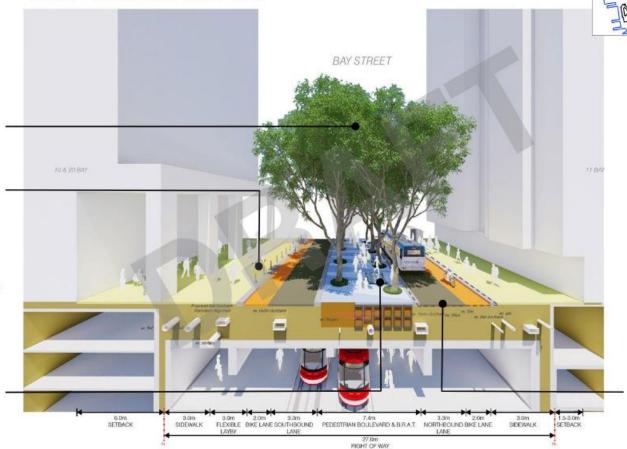


## **Zone 5 - The Urban Room**

Green centre pedestrian boulevard

Flexible layby for charter buses can be transformed into pedestrian space with use of moveable bollards

Skylight to station platform below



Potential for temporary closure of one lane for events at 11 Bay Conference Centre

Note: Existing utilities shown. 43

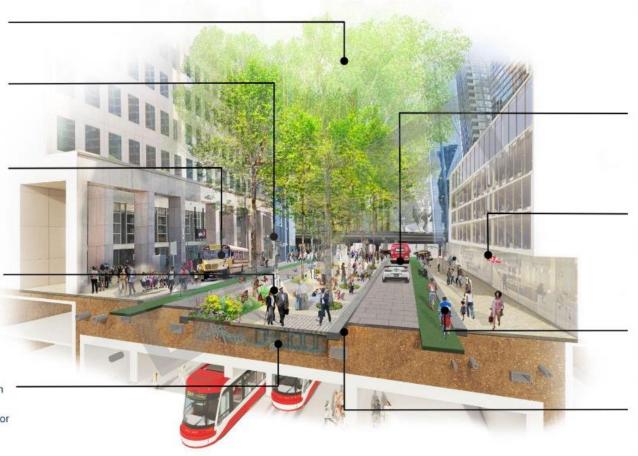
Continuous canopy for microclimate

Special lighting elements can be programmed with banners or seasonal ornament

Flexible layby for charter buses and pedestrians

Generous pedestrian boulevard for movement, rest, and programming with special paving pattern, skylights to below

B.R.A.T. (BioRetention Above Transit) with some open planters for stormwater management, biodiversity



Single lanes of traffic in each direction introduce high pedestrian flexibility, permeability

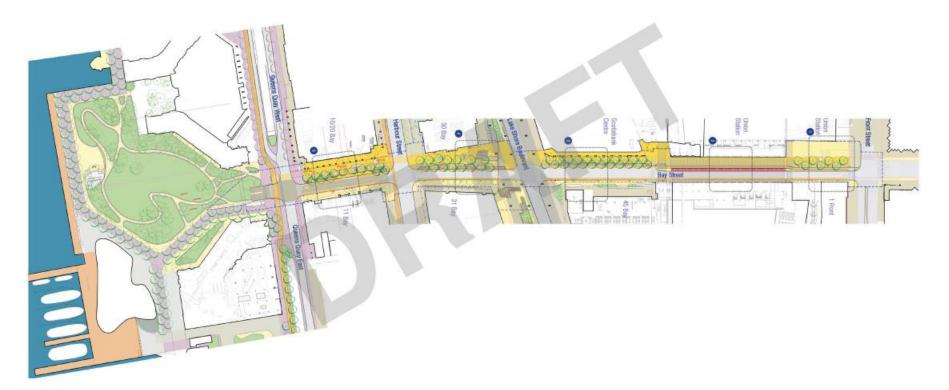
Intuitive and seamless access to TTC services

Separated bike lanes connect downtown and Union Station to the Ferry Terminal

Stone curbs and paving, potential for unit pavers in roadway

Note: Existing utilities show44

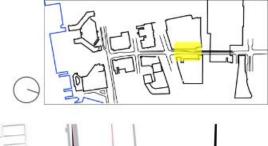
## **West Side Bioscape Concept**

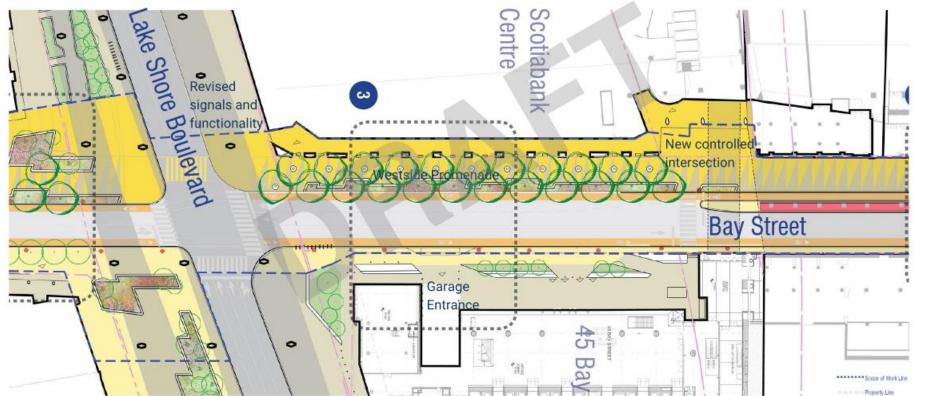






## **Zone 3 - Extended Lobby**





**Zone 3 - Extended Lobby** 

Green wide pedestrian boulevard doubles as spill out area before/after events

Special paving pattern

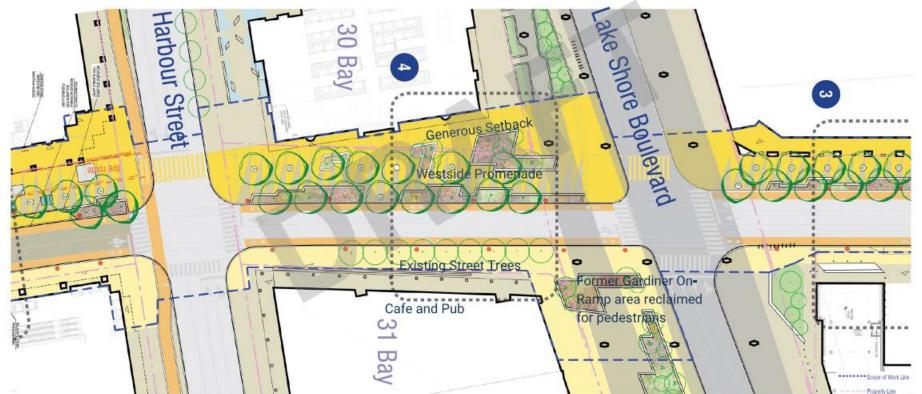
Continuous open planter with raised edges for seating



Note: Existing utilities shown. 47

## **Zone 4 - The Green Room**





**Zone 4 - The Green Room** 

Green wide pedestrian boulevard

Opportunity for pocket planting on private property

Existing Street Trees, Cafe spill out



Note: Existing utilities shown. 49

## **Zone 5 - The Urban Room**



**Zone 5 - The Urban Room** 

Wide green pedestrian boulevard

Flexible layby for charter buses can be transformed into pedestrian space with use of moveable bollards

Skylight to station platform below



Potential for temporary closure of one lane for events at 11 Bay Conference Centre

Note: Existing utilities shown. 51

Continuous canopy for microclimate

Flexible layby for charter buses and pedestrians

Generous pedestrian boulevard for movement, rest, and programming with special paving pattern, skylights to below, and special lighting

B.R.A.T. (BioRetention Above Transit) with some open planters for stormwater management, biodiversity



Special lighting elements can be programmed with banners or seasonal ornament

Intuitive and seamless access to TTC services

Roadway with separated bike lanes

Stone curbs and paving,
potential for unit pavers
in roadway Note: Existing
utilities showfi2

## **Summary of Preliminary Design Vision Concept Components**







	Bay Street Today	Preliminary Design Visions for Lower Bay Street
Materiality of hardscape	City of Toronto Standards: CIP Concrete, granite paving "strip"	High quality public realm and placemaking elements: Stone paving and curbs, special pattern, signature lighting concepts
Rail Tunnel Conditions	Minimal sidewalks, no bike lanes, dark, noise and traffic pollution, traffic barriers separate cars and pedestrians.	Dedicated pedestrian and SB cyclist tunnel with improved lighting, public art, protection from noise and pollution, sense of arrival and metropolitanism on west side.
Dedication of Space by User Group	48% motorists and buses, 43% pedestrians, 5% dedicated bus layby, 4% cyclists	25% motorists and buses, 59% pedestrians, 2% dedicated bus layby, 11% cyclists, 4% open planters
	Limited views of the water and Old City Hall	Improved views of water and Old City Hall, better perspective on high rises surrounding.
Bicycle Lanes	1.2-1.5m wide dedicated on street bicycle lanes Connect into "diamond lanes" at Front St	2.0m wide dedicated wide dedicated on street bicycle lanes     SB bike lane has physical separation from motorists through tunnel and outside Union Station
Charter Bus Laybys	4 dedicated spaces in total: 2 on west side outside 10/20 Bay, and 2 on east side outside 11 Bay.	2 dedicated spaces on west side outside 10/20 Bay.  Bus queuing on Harbour Street – further study required with respect to Bus Management Strategy
TTC Bus Stops	SB Bus stop with shelter outside 10/20 Bay NB Bus stop with shelter outside 11 Bay	SB Bus stop same NB Bus stop shelter to be coordinated with a setback on 11 Bay
Lanes of Vehicular / Bus Traffic	1 travel lane in each direction Dedicated turning lanes (right turn or left turn vary by block)	1 travel lane in each direction  No dedicated turning lanes except potential southbound right turn at Lake Shore Boulevard
Controlled Intersection South of Rall Tunnel	No	Yes
Skylights to TTC Stations Below	No	Yes
B.R.A.T.	No	Yes
Character of Planting	20 street trees	50+ street trees, some opportunities for open planters

### Potential Concept Design Visions for Bay Street Reconstruction

#### Centre Promenade "La Rambla"



#### **Key Differences**

- Character: High pedestrian permeability and flexibility where pedestrians only have to cross single direction of traffic.
- Vehicular Left Turns: No left turns permitted due to geometry and placement of centre median pedestrian crosswalks.
- Utility Impacts: B.R.A.T. most compatible with existing utility placements and planned relocations associated with Union Station and Queens Quay Station.

#### West Side Bioscape



#### **Key Differences**

- Character: Moderate pedestrian permeability, more typical arrangement of vehicular travel lanes.
- Vehicular Left Turns: Some shared through/right/lefts included. This design is more amenable/at risk to the addition of dedicated turning lanes due to geometry (at direct expense of the wide pedestrian boulevard).
- Utility Impacts: B.R.A.T. has number of conflicts with existing utility placements; additional cost and effort in zones 3 and 4 where no station work is planned. To be evaluated with planned utility works at time of Bay Street's actual construction.

## Implementation Strategy to be developed by WT, City, and TTC

References: Implementation Pilots in Toronto





Quay to the City, Queens Quay Boulevard

King Street Pilot



# Slides after this for WT presentation



Workshop I: Four Conceptual Test Fits for Lower Bay Street





West Side Rambla: Extra Wide West Boulevard, Magnificent Canopy



Toronto's "Champs Elysees": Great Sidewalks



West Side Bioscape: Botanic Diversity, Stormwater Corridor with Skyscrapers

## Workshop II: Two Functional Traffic Plans based on La Rambla Concept



## **Functional Demands by User Group**

Pedestrians



Lower Bay Street is the most important pedestrian connection between the Waterfront and the Ferry Terminal, and Union Station.

Key Dimensions
3m sidewalk at building face
7m min. Median width to
qualify as pedestrian
refuge/throughfare.

**Bus Drivers and Riders** 





Equity-serving and efficient surface public transit.
Convenient and safe charter bus access in the summer for children's camps.

Key Dimensions 3.3m wide travel lane 3.0m wide bus layby Cyclists



One of many new planned N-S cycling connections between Downtown and the Waterfront, and important opportunity for Ferry Terminal Access.

Key Dimensions
1.5m min. wide single direction lane

**Emergency Services Providers** 



Access along the street and to standpipes at buildings.

Key Dimensions 5.3m min. travel lane (vehicular lane + bike lane) Motorists



Re-evaluate the role of Lower Bay Street in Transportation Planning Network for motorists. Consider prioritizing local traffic (along with transit) over through traffic.

Key Dimensions 3.3m wide travel lane 3.0m wide turning lane