

# Union Station – Queens Quay Transit Link Study

Public Information Meeting

4 March 2019



# Agenda

|                     |  |
|---------------------|--|
| <b>6:30 to 6:50</b> | <b>Welcome and Team Introductions</b>              |
| <b>6:50 to 7:30</b> | Project Background                                 |
|                     | Union-Queens Quay Link Alternatives and Evaluation |
| <b>7:30 to 8:30</b> | Open House and Discussion                          |

# Objectives

- Present status of the project
- Record feedback on the work
  - Designs
  - Evaluation criteria & results
  - Construction mitigation

# Study team

- A partnership of:



- In consultation with Metrolinx
- Consultants: Arup, DTAH, Dillon, A.W. Hooker

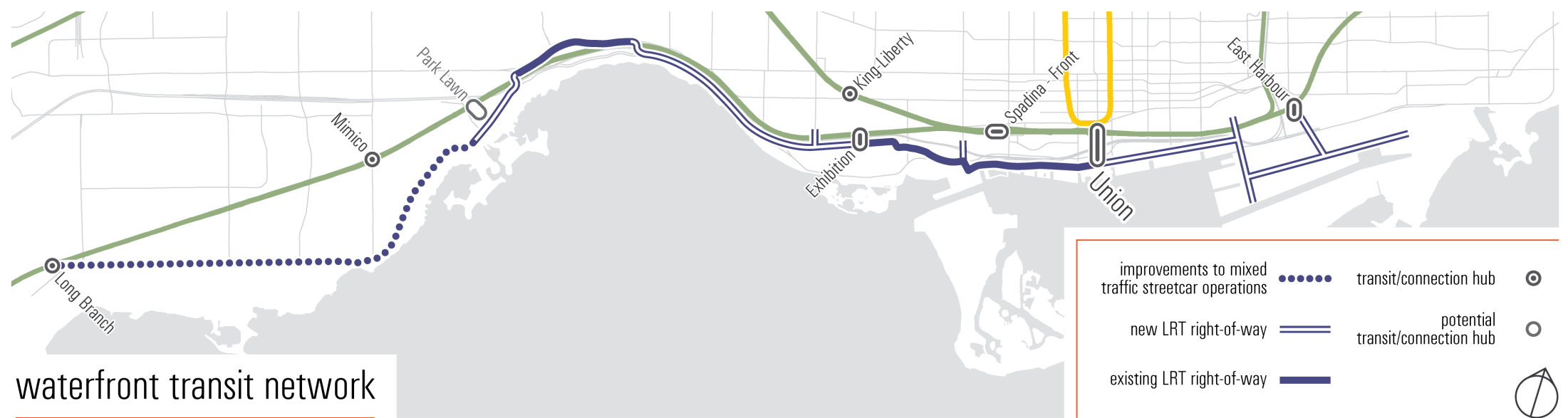


# Union Station – Queens Quay Transit Link Study

# Why it's important...



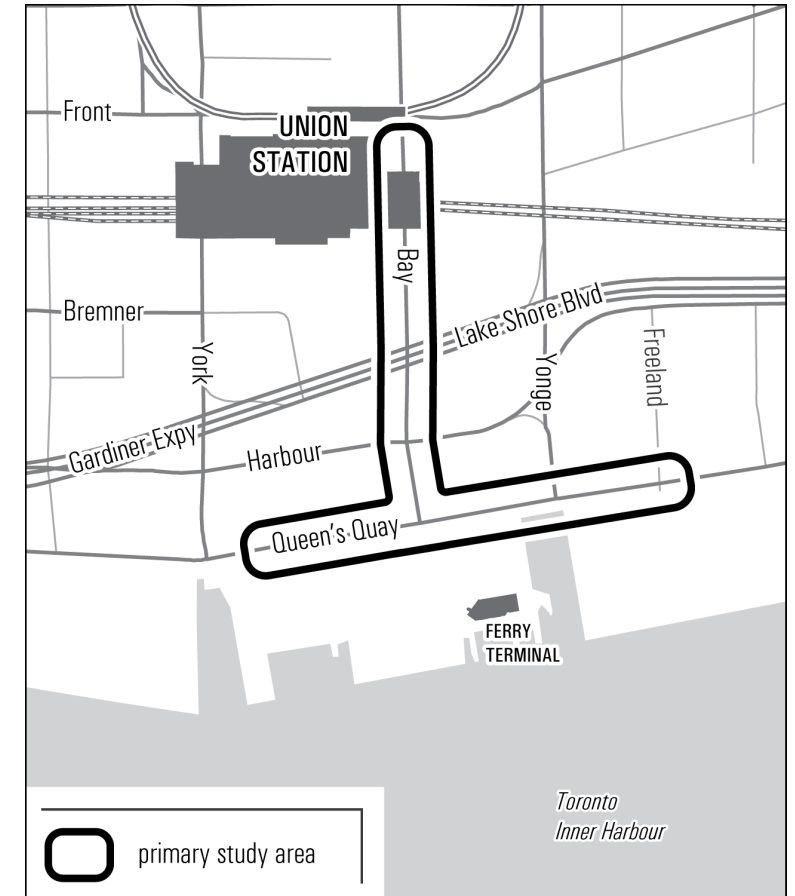
# Council approved network plan





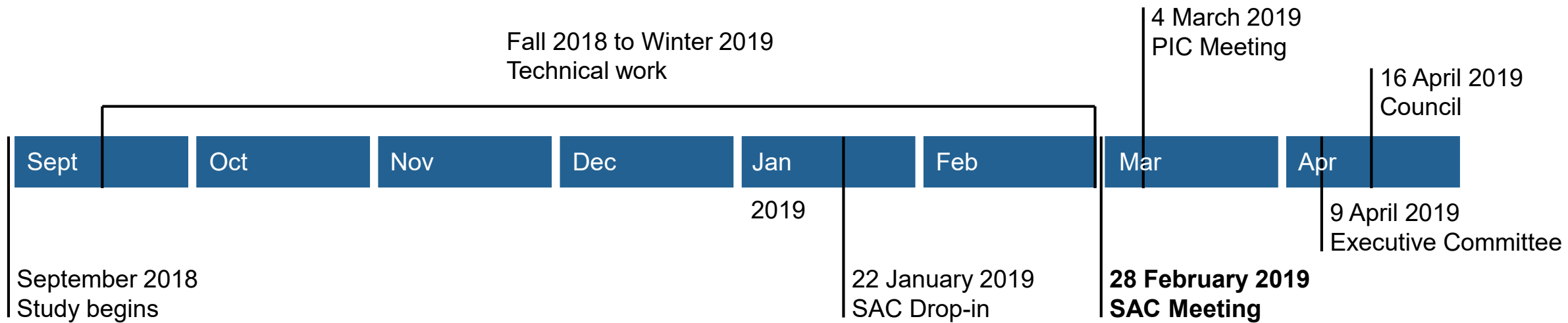
# Project background/timeline

- 1990 Union Station streetcar loop opens
- 2010 East Bayfront Transit EA: The need for the Union-Queens Quay Link and Queens Quay East LRT
- 2018 Waterfront Transit Reset Network Plan
- **2018 to 2019 Union Queens Quay Link Study**





# Study Timeline





# Develop Alternatives

# The technologies

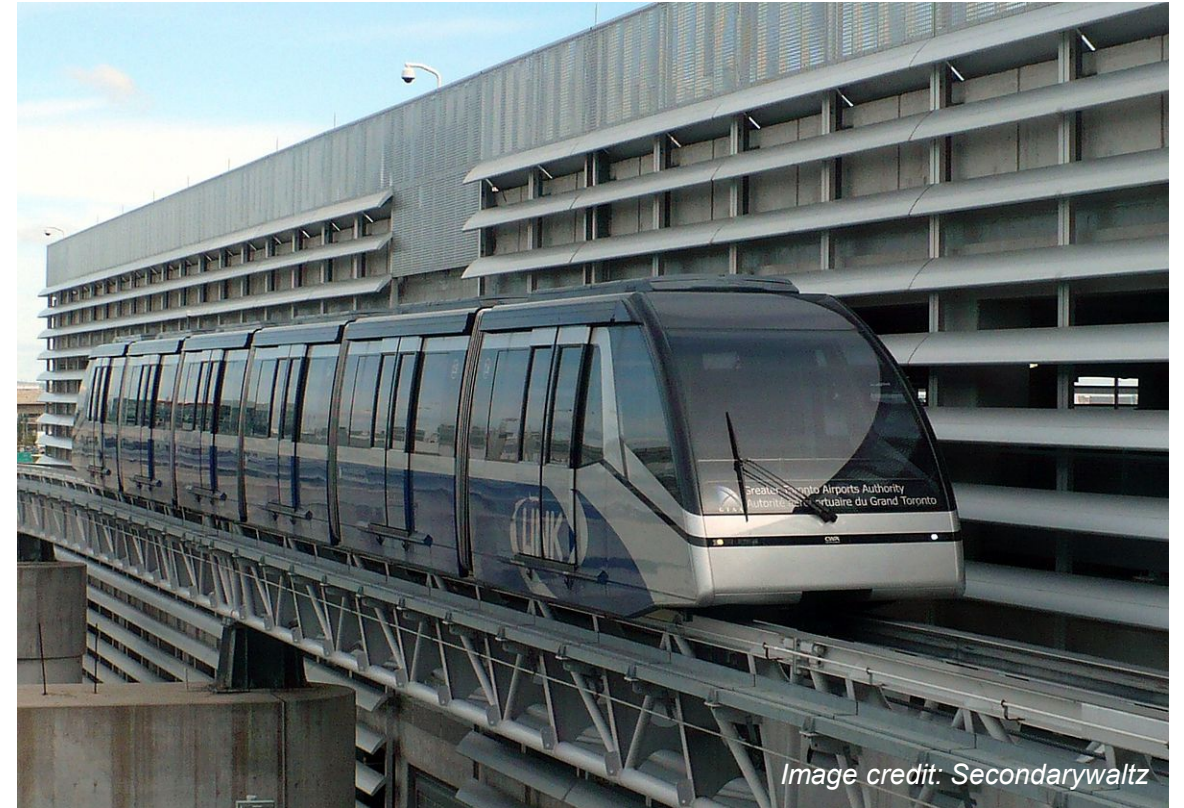
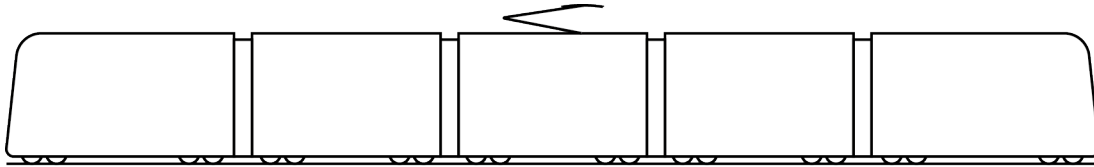


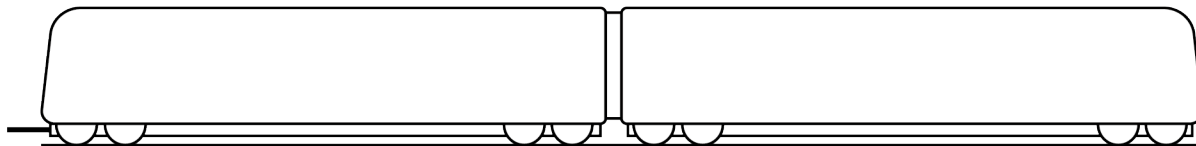
Image credit: Secondarywaltz

# The technologies

- Streetcar



- APM (Automated People Mover)



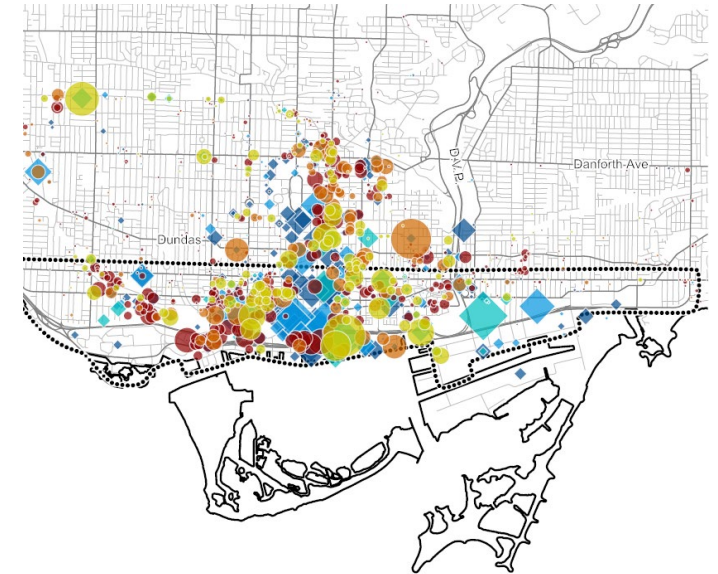
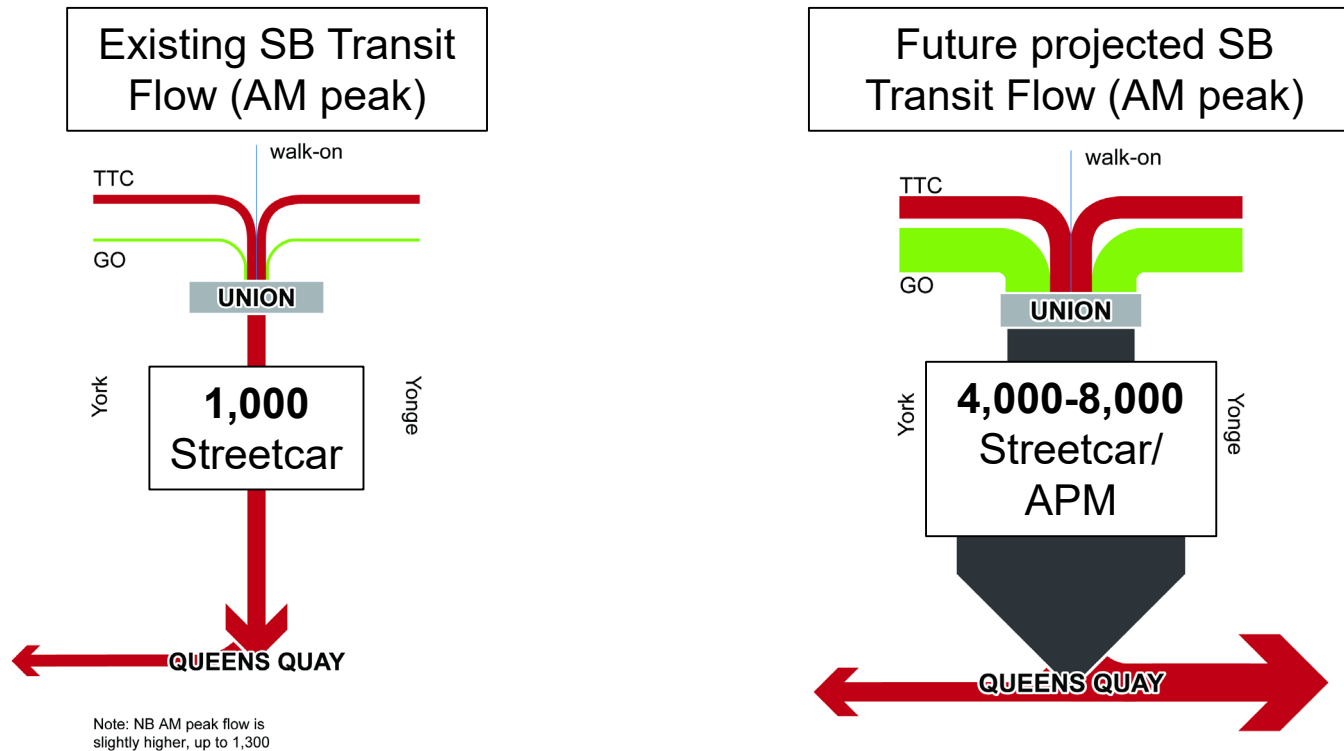
## TTC Streetcar (Flexity)

|                          |                |
|--------------------------|----------------|
| Length                   | 30m            |
| Capacity (standard load) | 130            |
| Propulsion               | Traction power |

## Automated People Mover

|                          |              |
|--------------------------|--------------|
| Length                   | 36m          |
| Capacity (standard load) | 200          |
| Propulsion               | Cable-pulled |

# Need for improvement



- Approximately 40% of AM peak hour trips are destined to QQ/Bay and the remaining 60% of trips are destined to the wider waterfront



# Screening

- 3 Alternatives initially considered:
  - Streetcar loop expansion
  - APM with underground streetcar at Queens Quay and Bay
  - APM with surface streetcar along Queens Quay
- APM with surface streetcar screened out
  - Major transfer volumes increasing potential for conflicts between pedestrians, cyclists, transit, and traffic at grade
  - Insufficient space to fit the platforms and maintain access to Harbour Square
  - Non weather protected passenger transfer (worse than existing)

# Screening





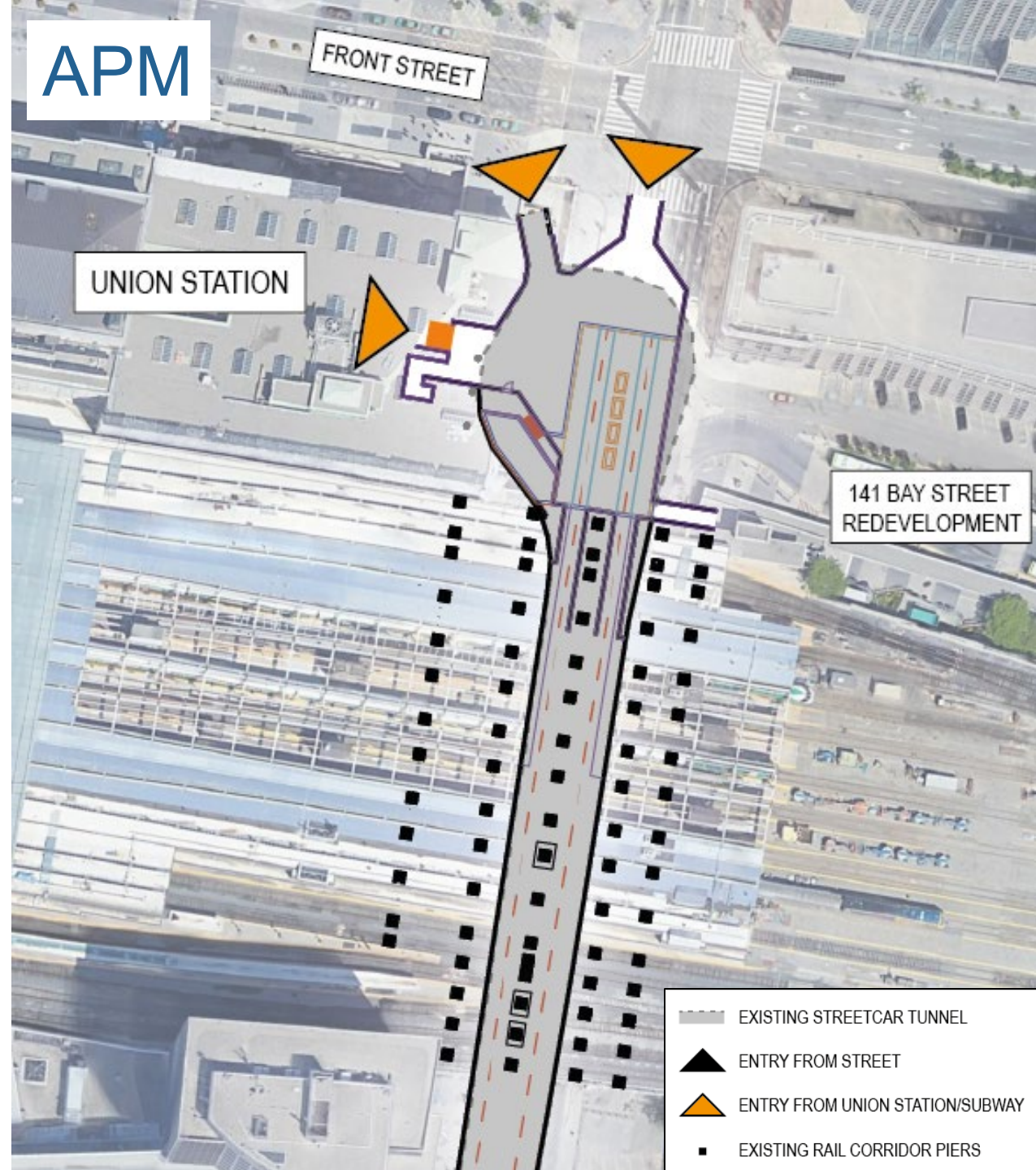
# Guiding design principles

- Ontario Building Code (OBC)
- Accessibility for Ontarians with Disabilities Act (AODA)
- National Fire Protection Association (NFPA) 130
- City of Toronto PATH guidelines
- No level crossings of streetcar tracks underground
- Underground connection to Jack Layton Ferry Terminal

# Streetcar

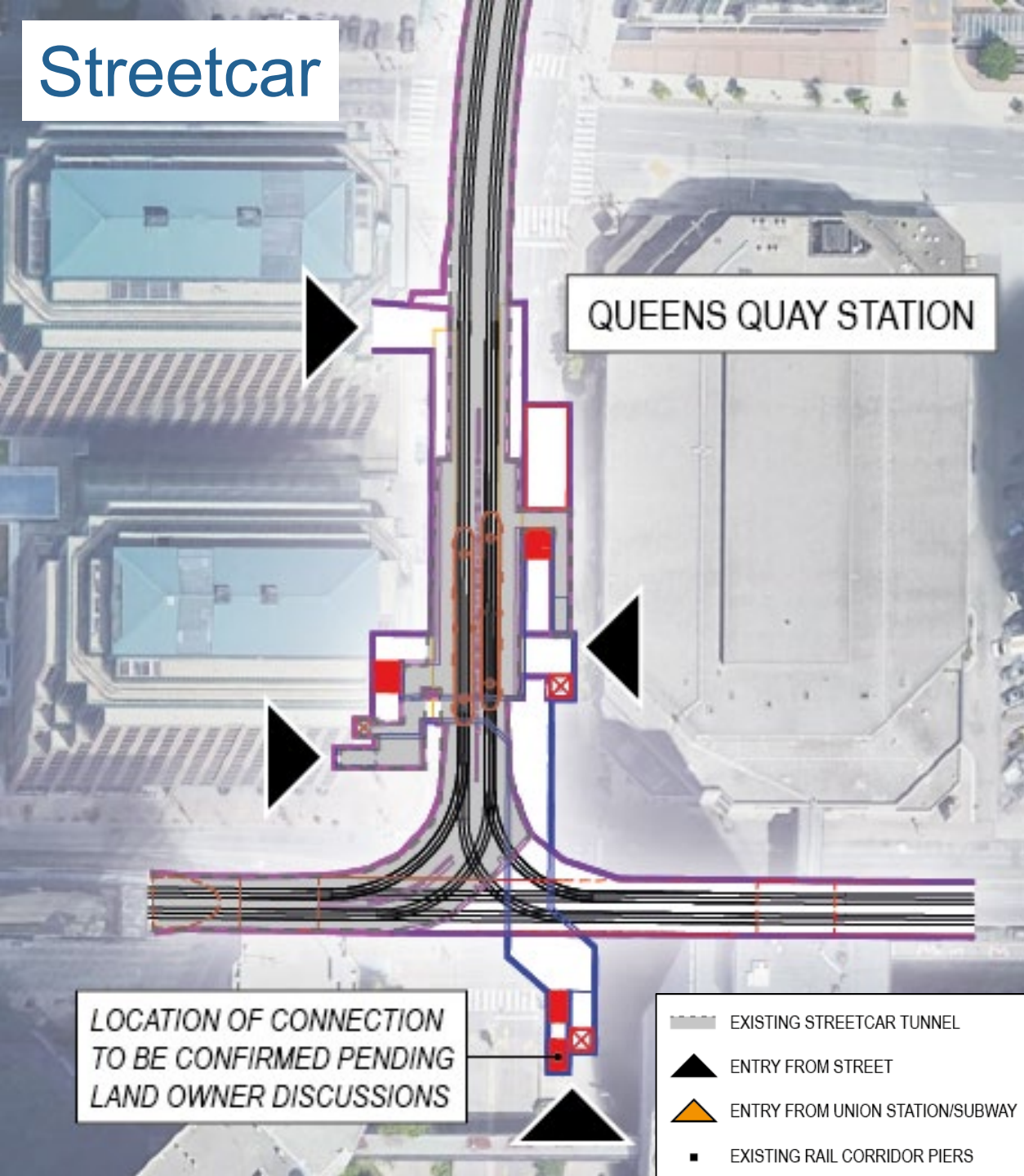


# APM

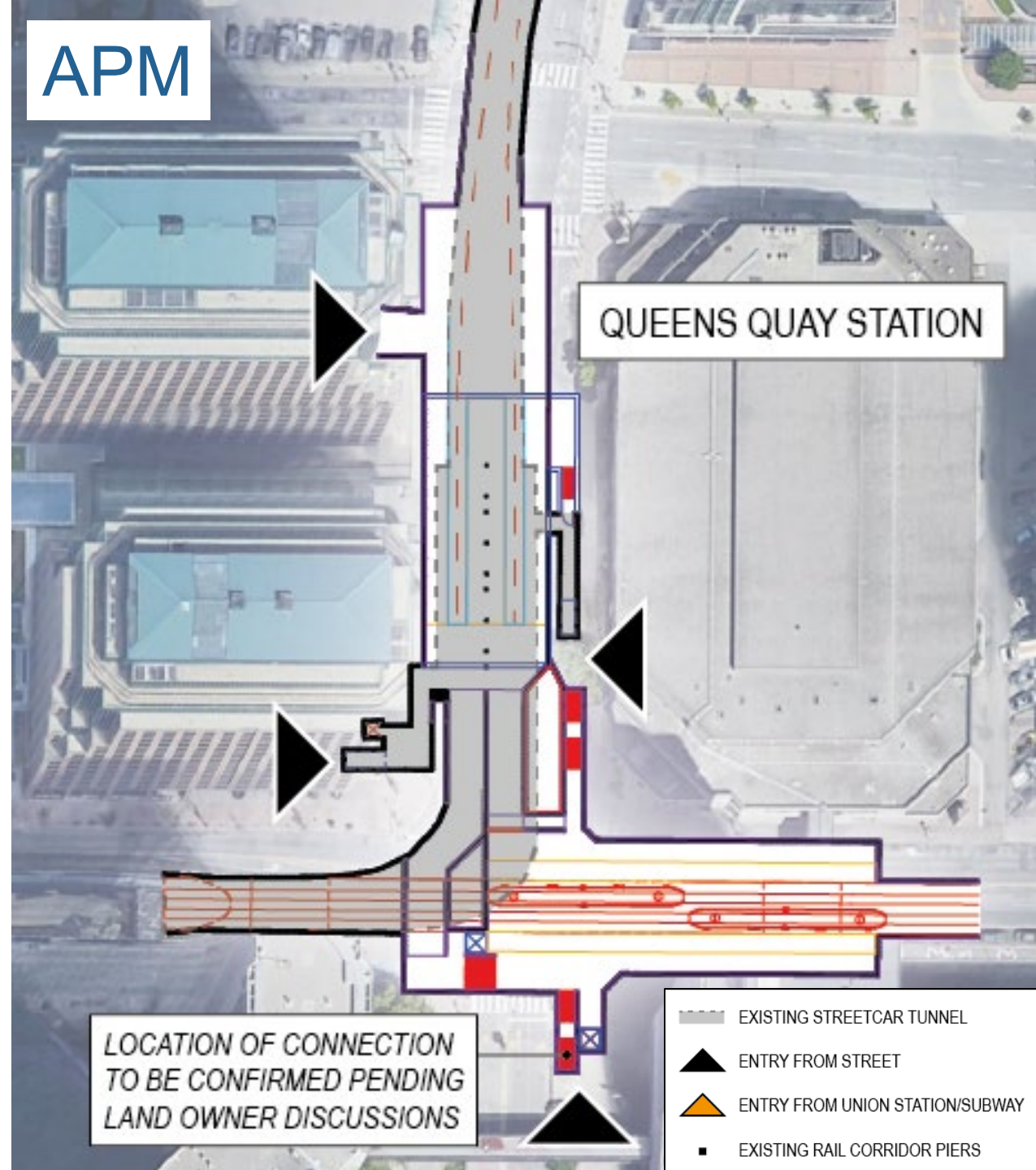




# Streetcar



# APM





# Streetcar at Union Station







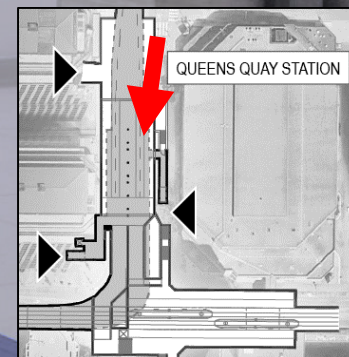


# APM Terminal at Union Station





# APM Terminal at Queens Quay Station







# Evaluate Alternatives

## Key criteria

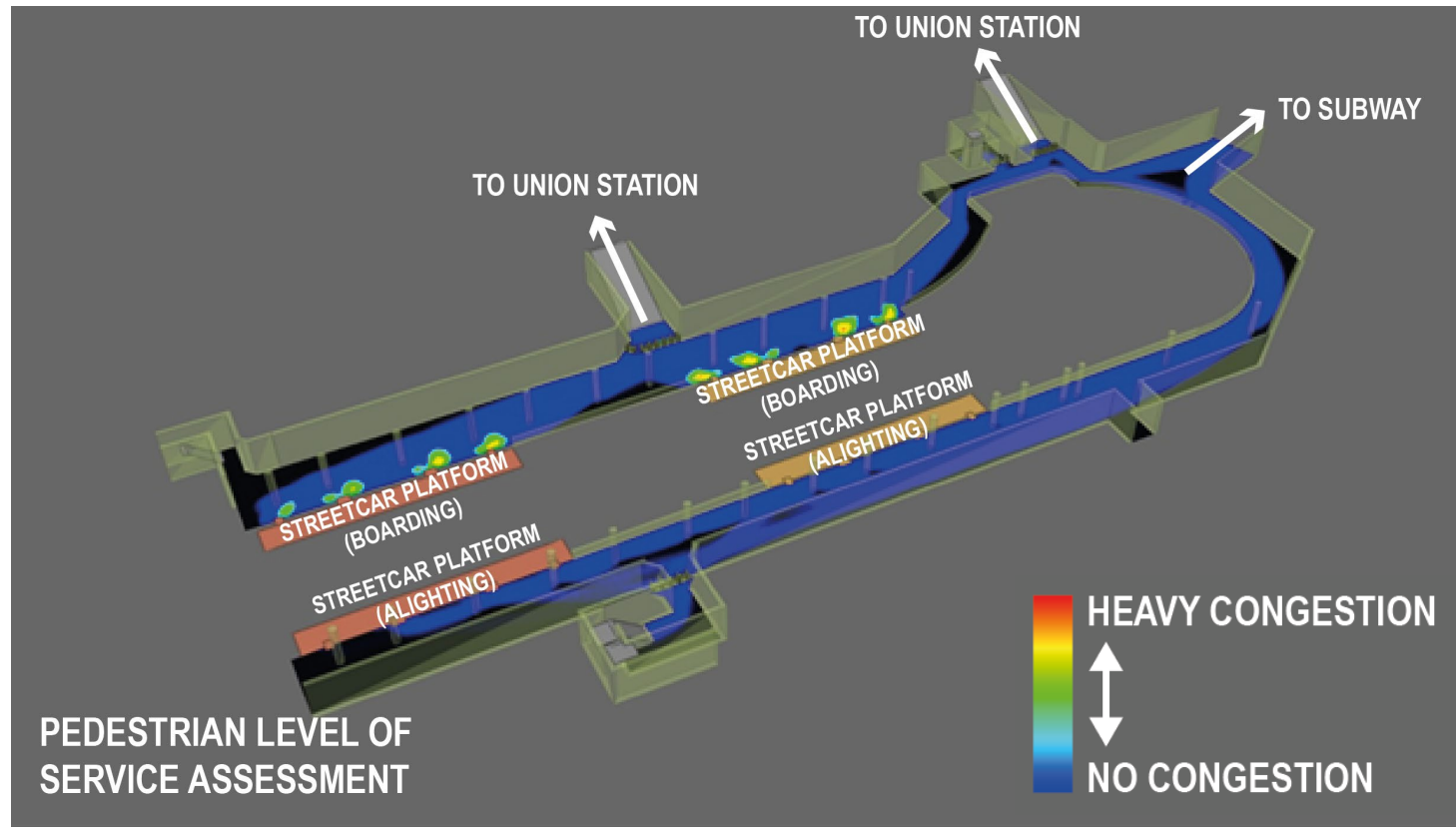
- User experience
- Transportation
- Costs
- Constructability

# User experience assessment

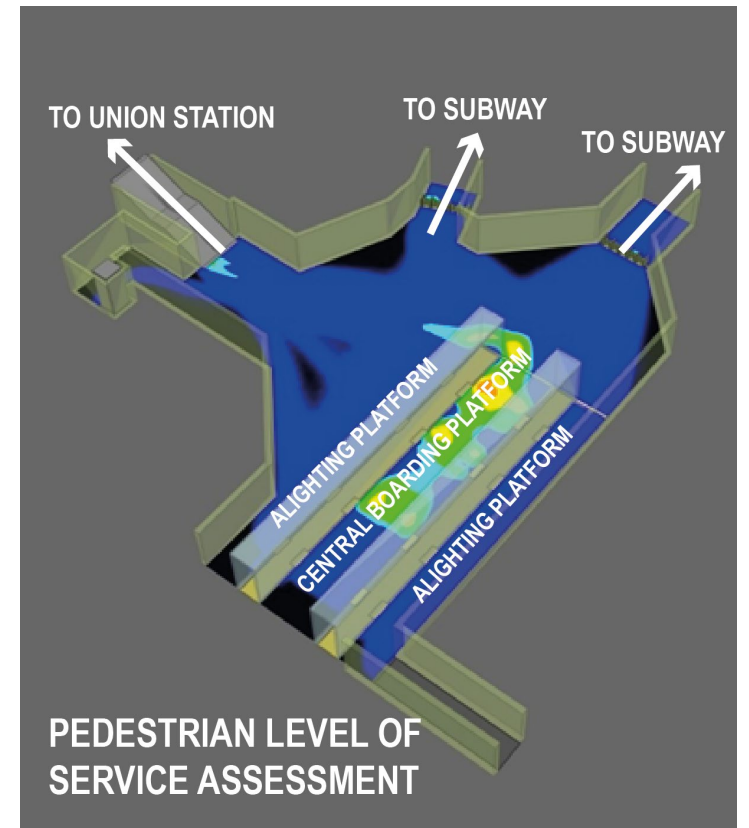
| Criterion                         | Streetcar  | APM   |
|-----------------------------------|--|---|
| Travel time assessment            | Medium/longer trips (QQ) faster                  | Short trips (Bay) faster                        |
| Service reliability               | Union Loop subject to potential on-street delays | Higher headway reliability for Bay Street trips |
| Comfort/convenience/accessibility | Single ride to/from Union                        | Additional transfer to/from Union               |
| Conclusion                        | Preliminary preferred                            | -   |

# User experience assessment

Streetcar loop expansion – Union Station

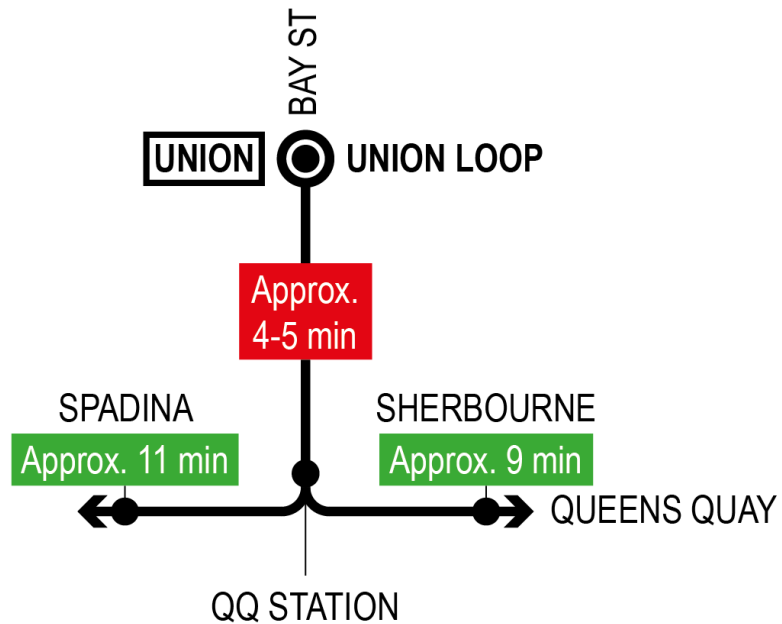


APM terminal – Union Station

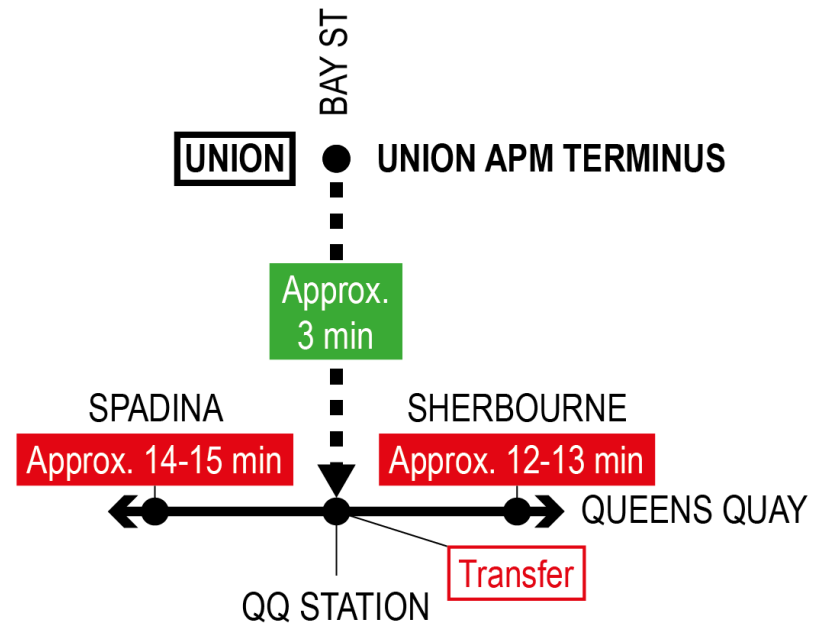


# User experience assessment

TRAVEL TIME FROM UNION STATION  
SUBWAY VIA STREETCAR



TRAVEL TIME FROM UNION STATION  
SUBWAY VIA APM

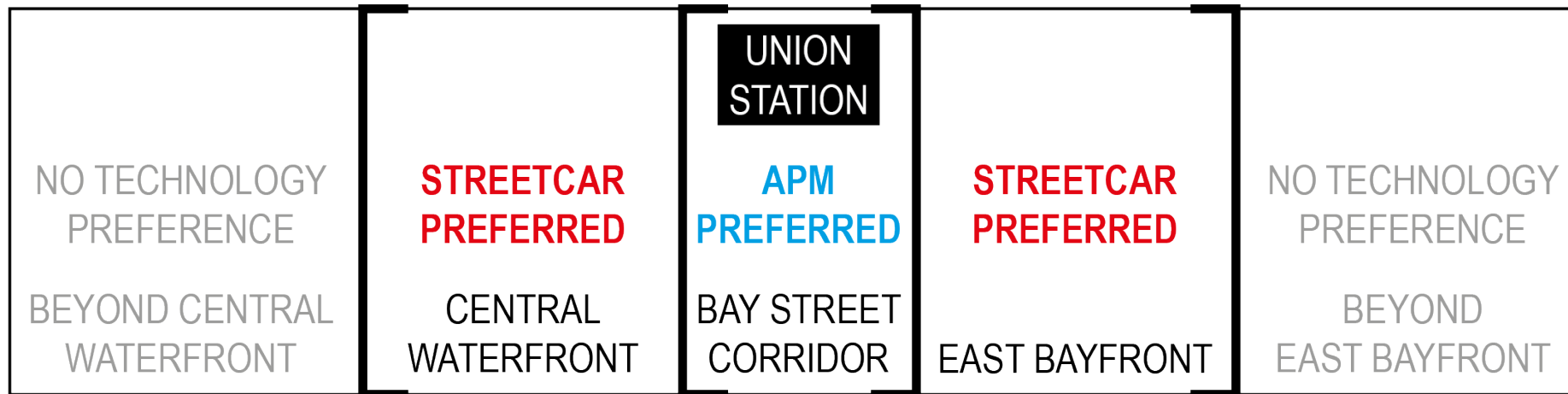


# Transportation assessment

| Criterion                       | Streetcar                       | APM                            |
|---------------------------------|---------------------------------|--------------------------------|
| Local (QQ & Bay) transit riders | Higher along QQ east and west   | Higher for Bay Street          |
| Network (GTA) transit riders    | Small increase in TTC ridership | Small increase in GO ridership |
| Streetcar network               | Expanded terminal at Union      | No terminal at Union           |
| Overall                         | <b>Preliminary preferred</b>    | -                              |

# Transportation assessment

- Within Bay Street corridor, APM is preferred
- Within East Bayfront, streetcar is preferred
- Beyond East Bayfront, both technologies are relatively similar



# Construction impacts

| Criterion               | Streetcar  | APM                                  |
|-------------------------|--|--------------------------------------|
| Risk profile            | Rail viaduct risks   | No rail viaduct risks                |
| Pedestrian teamways     | Teamways closed and pedestrians rerouted due to construction | Teamways not closed for construction |
| Property impacts        | 141 Bay basement impacts and teamways                        | No significant impacts               |
| Bay Street lane impacts | South of rail viaduct impacts                                | No significant impacts               |
| Duration estimation     | 4-5 years  | 3-4 years                            |
| <b>Overall</b>          | -  | <b>Preliminary preferred</b>         |



# Construction management

- Streetcar service along Bay suspended for duration of construction for both options
- Replacement bus service required
- Phasing to mitigate impacts to transit to be evaluated in next phases

# Construction management

- Pedestrian access in the corridor will be maintained and may require significant temporary improvements to accommodate anticipated flows
- One lane of traffic in each direction will also be maintained
- Significant concurrent projects to be coordinated
  - Numerous Metrolinx projects
  - Future developments under construction and planned/proposed
    - E.g. CIBC Square: 141 and 81/45 Bay Street
  - Gardiner ramp changes (e.g. removal of Bay Street on-ramp)



# Class 4 capital cost estimates

- Designs brought to current code (NFPA 130)

| Criterion                    | Streetcar                | APM                    |
|------------------------------|--------------------------|------------------------|
| Capital costs (to Small St.) | \$650 - \$700 million*   | \$650 - \$700 million* |
| Overall                      | No preliminary preferred |                        |

\*subject to refinement

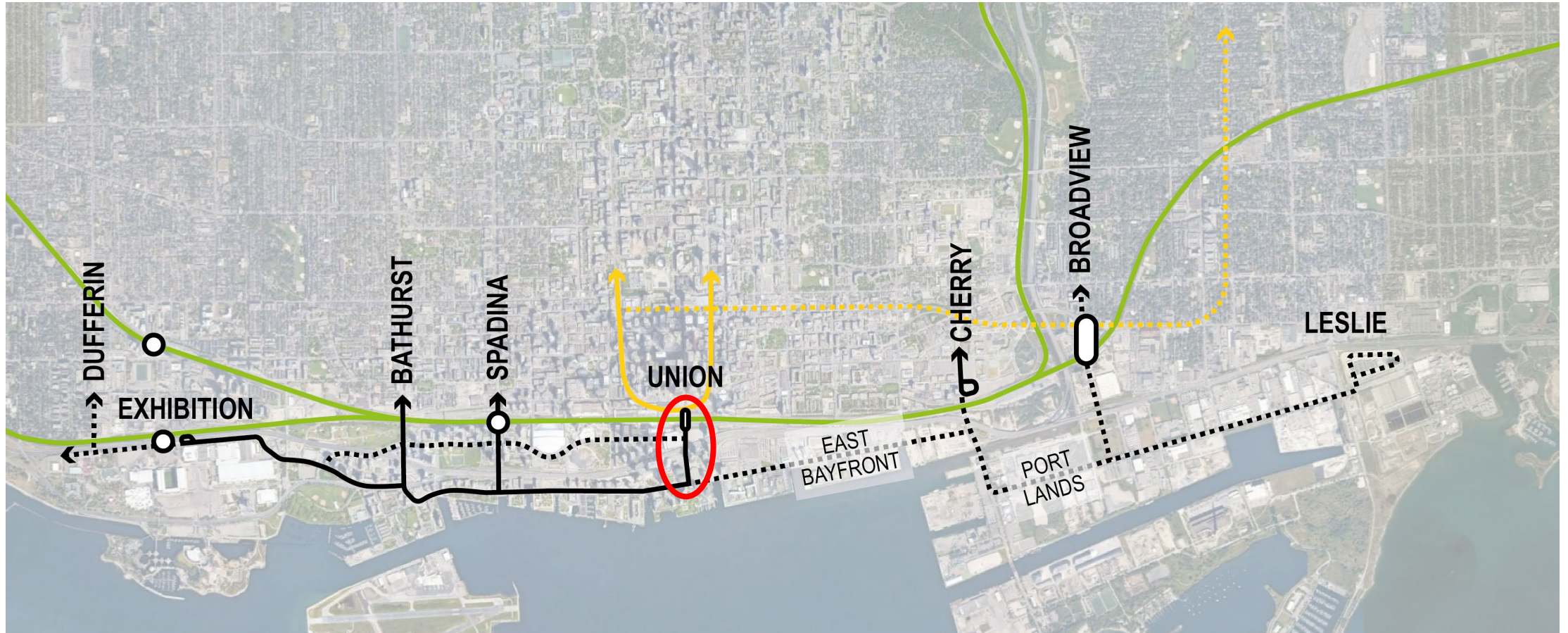
- Operating costs forthcoming

# Overall evaluation summary

| Criterion           | Streetcar                    | APM                   |
|---------------------|------------------------------|-----------------------|
| User experience     | Preliminary preferred        | -                     |
| Transportation      | Preliminary preferred        | -                     |
| Construction impact | -                            | Preliminary preferred |
| Capital costs       | No preliminary preferred     |                       |
| <b>Overall</b>      | <b>Preliminary preferred</b> | <b>-</b>              |



# Streetcar preferred



# Benefits to overall network

- Both options are viable
- Both options offer significant improvements to moving people
- Construction of both options is feasible
- Streetcar preferred for the overall TTC network

# Next steps

- Finalize technical analysis and consider public feedback
- Executive Committee April 9<sup>th</sup>
- City Council April 16<sup>th</sup>





# Facilitated Open House

Direct questions to any member of the team, or submit questions to:  
[toronto.ca/waterfronttransit](https://toronto.ca/waterfronttransit) or [waterfronttransit@toronto.ca](mailto:waterfronttransit@toronto.ca)