RESEARCH & INNOVATION
CASCON
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Evaluating Walkable Streets with a 3D Stated Preference Survey

A collaboration between University of Toronto Transportation Research Institute (UTTRI),

Esri Canada, OCAD University & Waterfront Toronto

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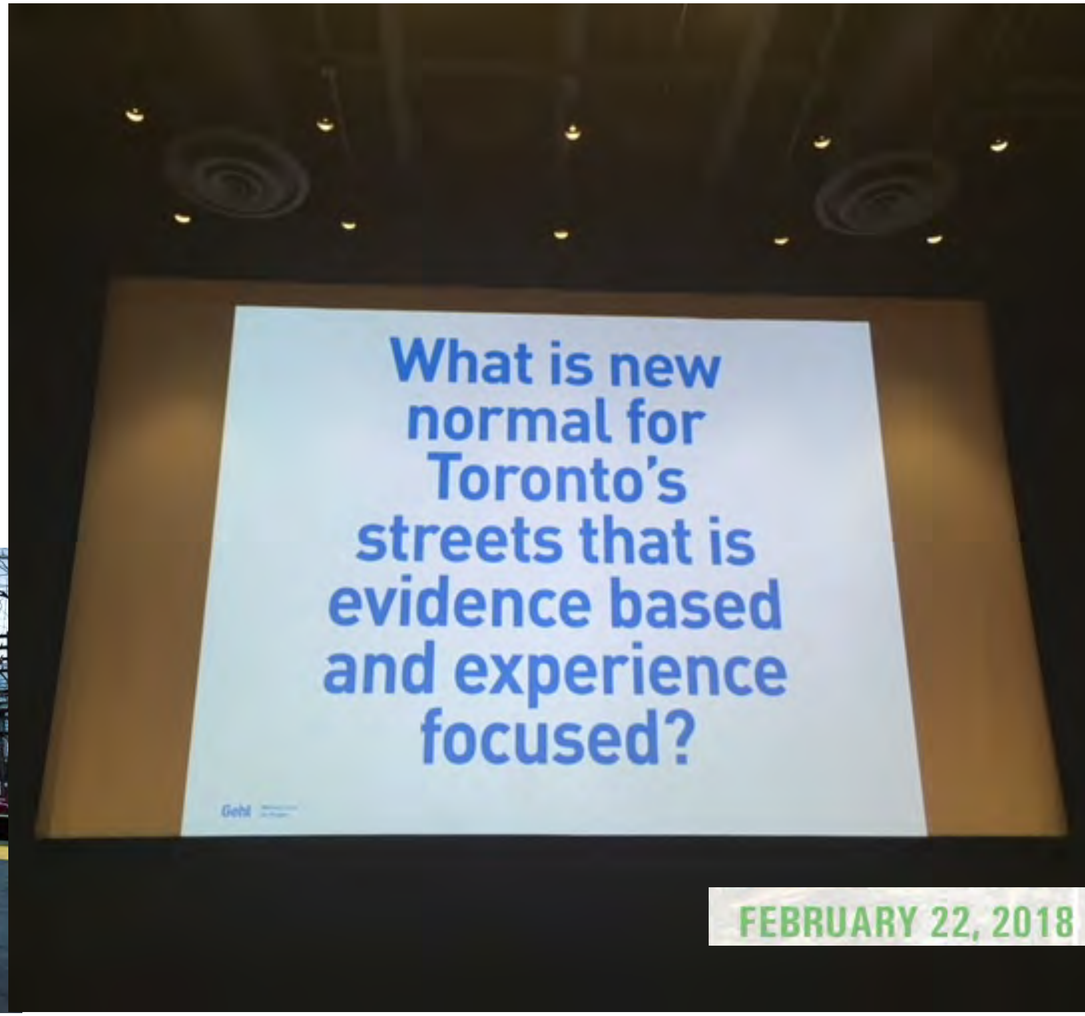
Gaps

- Urban design guidelines for streetscapes are **rarely based on empirical evidence** of their relationship to behaviour or psychology or **user experience**.
- Empirical research on the built-environment correlates of walking and cycling are **dominantly at the neighbourhood scale**.
- Little is known about the **trade-offs** made between various design attributes.


WELCOME
THE CITY WE WANT:
Pushing the Boundaries of City Building for Livability
Presented by
and the John Bousfield Distinguished Visitorship in Planning


SIDE WALK LABS
Reimagining how Queens Quay might look as Quayside explores alternative mobility strategies.
REIMAGINING THE EASTERN WATERFRONT
47


What is new normal for Toronto's streets that is evidence based and experience focused?
FEBRUARY 22, 2018


SPECIAL GUEST
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Method

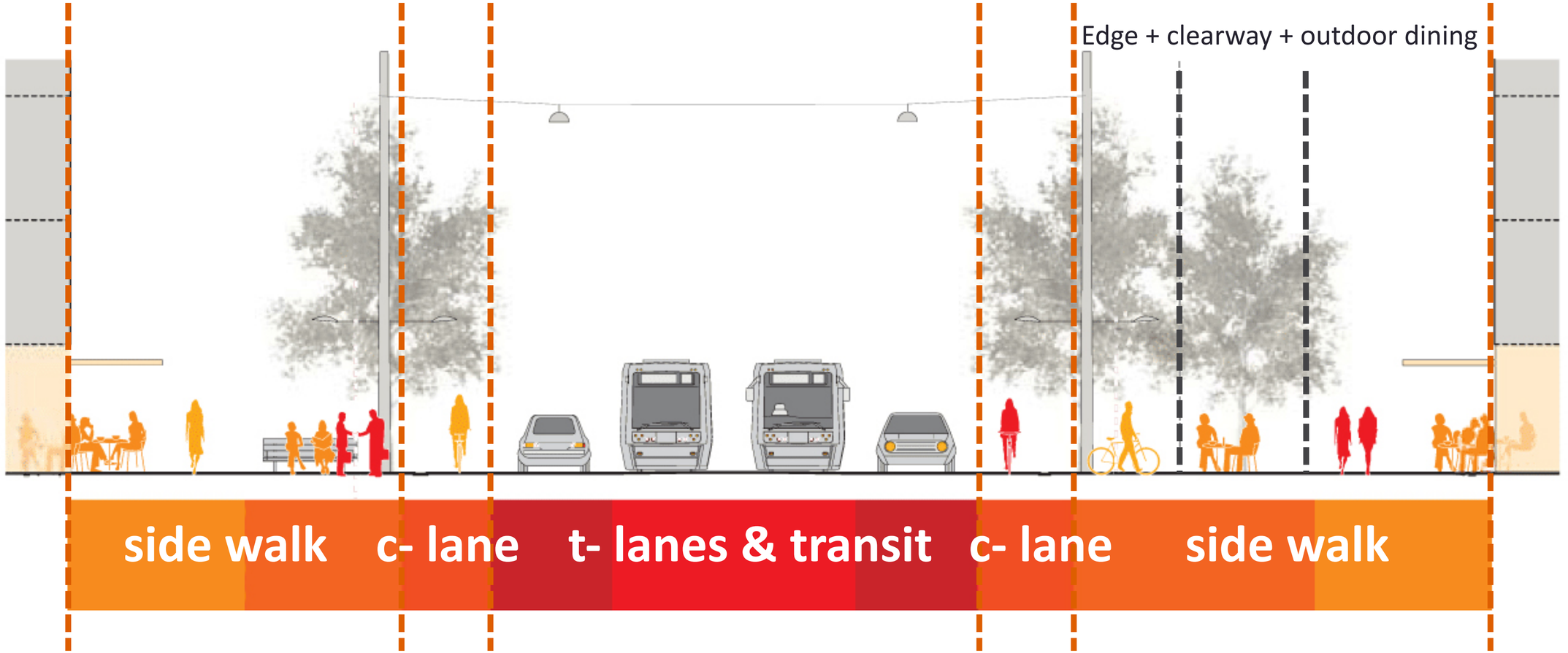
Scope: Attributes at the **street segment level**, for the purpose of **recreational** walking

Web-based survey: rate an existing street (revealed preference) + re-rate systematically manipulated options (stated preference).

Visualization: ESRI's CityEngine + Unity

Locations: A number of streets at Toronto waterfront & down town

side walk + curb lane + through lanes & transit + curb lane + side walk ☑



Adjacent buildings and land uses ☒

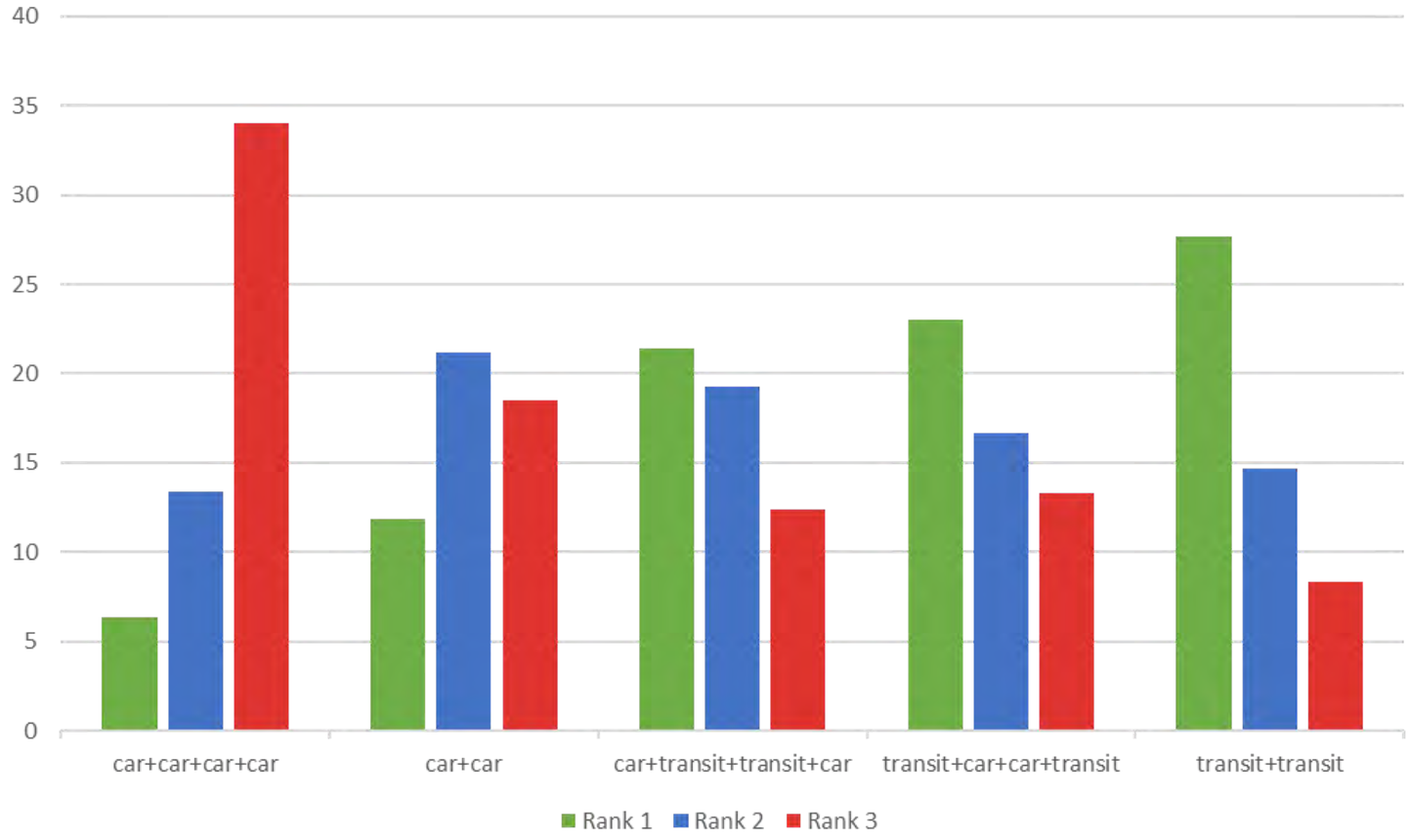
- Are pedestrians willing to trade sidewalk width for trees/outdoor dining/lateral separation from the moving traffic?
- What design features are likely to make broader streets with more lanes more favourable for pedestrians?
- Which are preferred by the pedestrians for the curb-side use: on street parking, one or two-way bicycle lanes or transit?

Demonstration of the Walkable Street 3D Survey

http://ecce.esri.ca/icitysurvey/

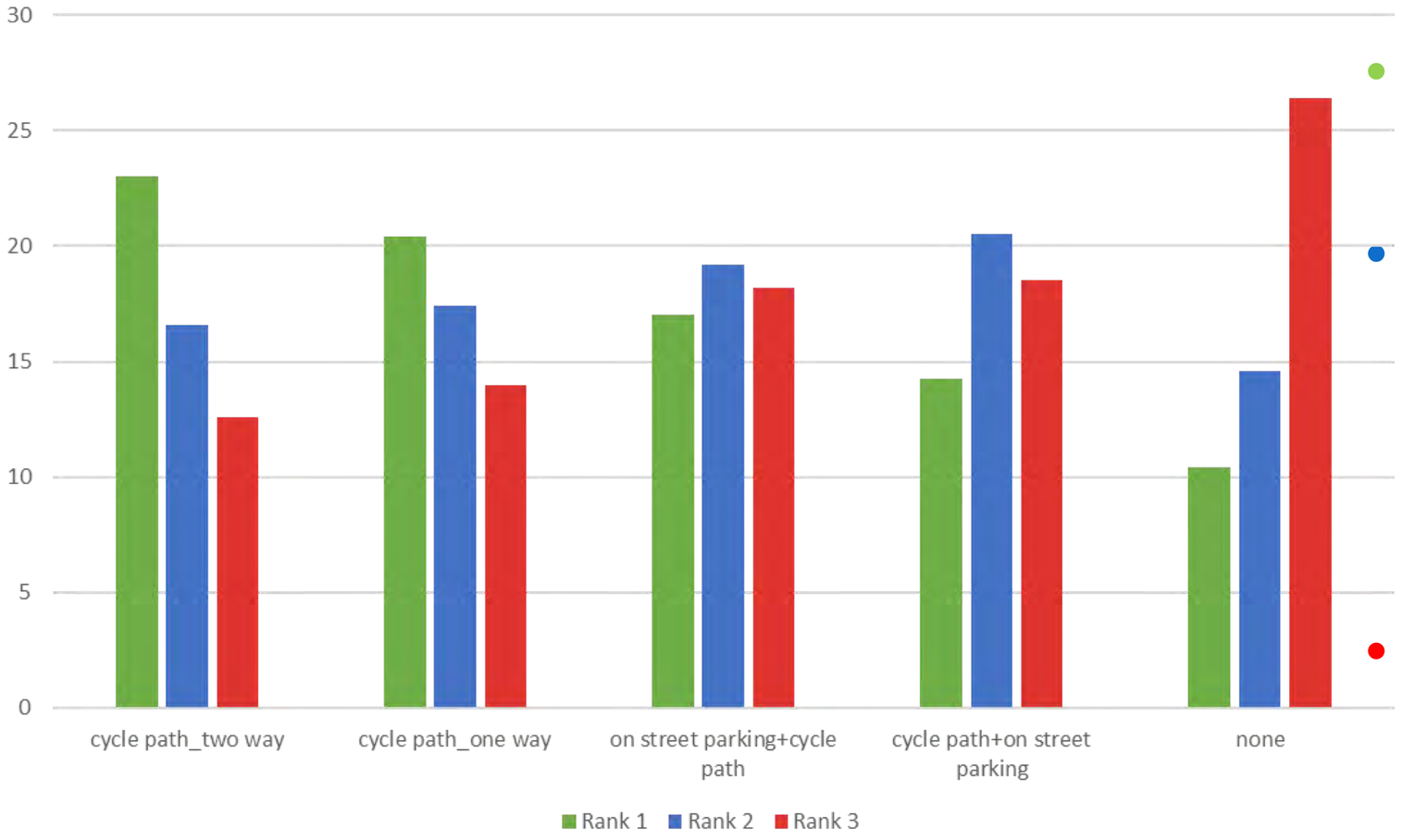
Preliminary analysis

Through lane preferences



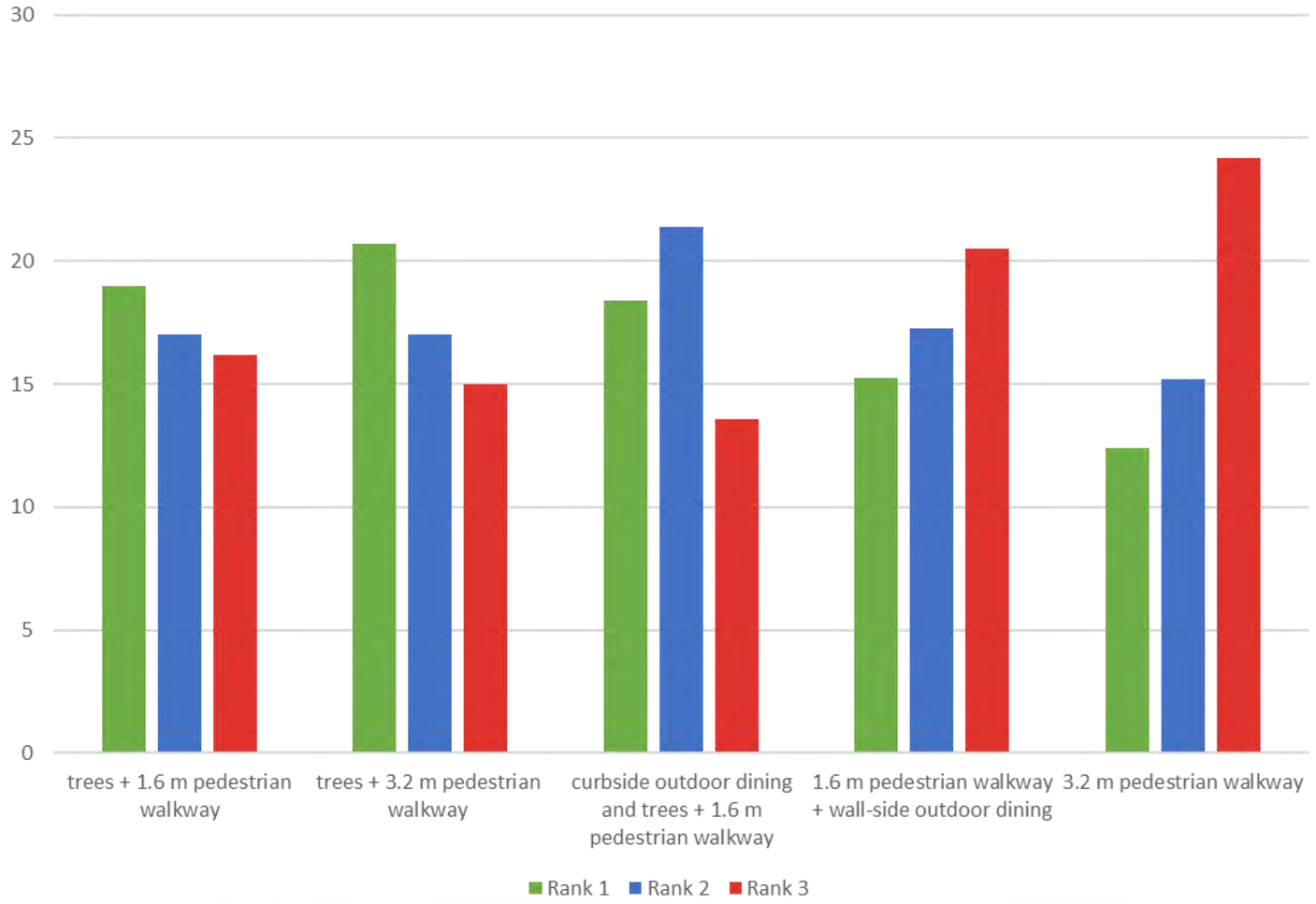
- Rank 1: most preferred
  - transit or mix of transit and car
- Rank 2:
  - Fairly even split
- Rank 3: least preferred
  - four lanes for cars

Curb lane preferences



- Rank 1: most preferred
  - One-way or two-way cycle lane
- Rank 2:
  - Even split (some difference in parking and cycle path arrangement – curbside vs roadside)
- Rank 3: least preferred
  - Having nothing on the curb lane (sidewalk adjacent to through traffic)

Sidewalk preferences



- Rank 1: most preferred
  - Presence of trees
- Rank 2:
  - Fairly even split
- Rank 3: least preferred
  - Absence of trees and outdoor dining despite wider pedestrian walkway

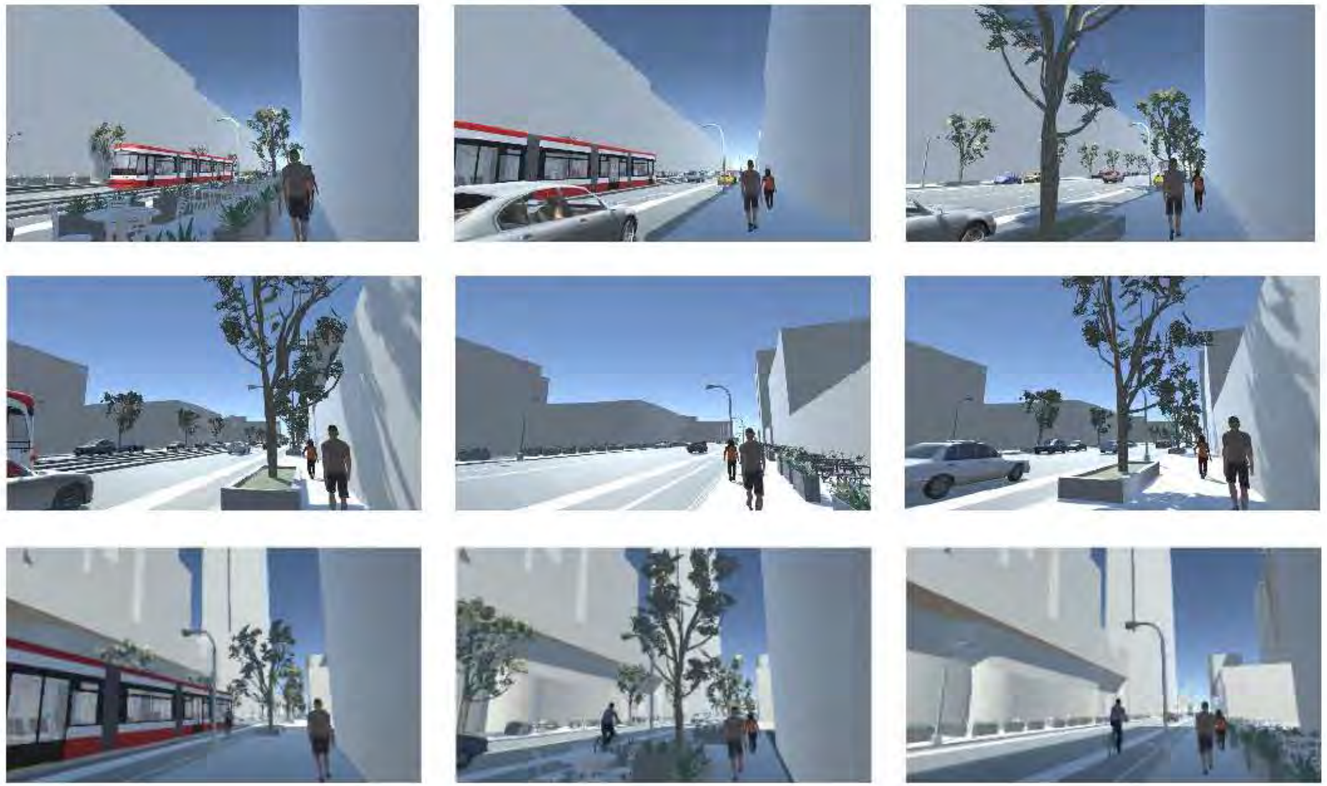
Next steps

- Application of choice modelling to the survey responses to measure:

- i) the importance of street attributes + ii) the trade offs +
iii) their relationship to socio-demographics and travel habits

- ‘Dashboard’ platform to visualize and assess various street designs→Policy-support - commercializable product

Thank you!
Questions?



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