

ULI-FIG Uptown Brampton TOC Initiative Session 3: Unlock Transit & Mobility Hub

Integrating Terminal,
Humanizing Arterials and
Delivering Complete Streets

MAY 6, 2022





A Cross-sector Collaborative City-building Model

Supported by Urban Land Institute Curtis Infrastructure Initiative Grant for Global Research of Local Actions



The largest network of experts in the world with ULI Toronto as the largest District Council. A nonprofit research and education organization whose mission is to provide leadership in the responsible use of land through facilitating local actions and practices to enable more equitable and resilient investments that enhance long-term community value.



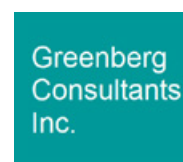
Brings together industry leaders in the sector to provide a positive, coherent voice to help governments across Canada deliver the best value from infrastructure investments.



Canada's largest public research university. Infrastructure Institute is a training, advisory, and applied research hub, aiming to build global expertise in infrastructure planning, decision-making and delivery.



A city of 0.7 million people growing at three times the provincial average, and contributes the second largest annual GDP share to the Greater Toronto Area at \$35 billion. Brampton 2040 Vision directs creating a city of transit-oriented communities, 'Unlock Uptown', and 'City By-design' City Hall led design excellence as a prime factors in decisions for change.



Strategic advisor for the City of Brampton. Four decades of providing consensus-building approaches to restore the vitality, relevance and sustainability of the public realm in urban life globally, with a coordinated planning and a renewed focus on urban design.



A Crown agency that support the Ontario Government's initiative to modernize and maximize the value of public infrastructure and real estate.





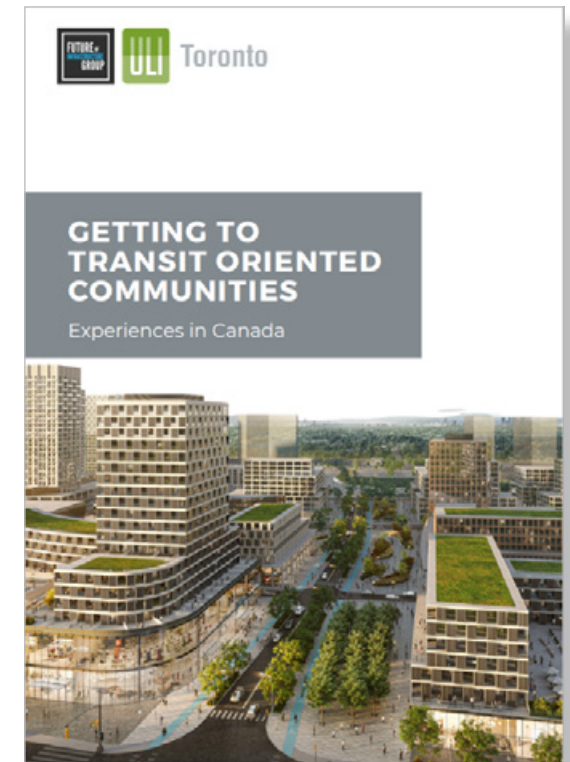
Getting to Transit Oriented Communities Initiative

Established by ULI Toronto District Council's Regional Leadership Initiative and Future of Infrastructure Group (FIG)

Phase 1's Lessons Learned and Future Opportunities

7 cornerstone city building blocks of a greener, more affordable and equitable city region

- Shared vision to deliver effectively
- Clear governance & dedicated resources
- Integration of stations into the community
- Transition from cars to pedestrians
- Building in adaptability
- Capturing value
- Building community





Phase 2: City By-Design Uptown Brampton Transit Oriented Communities Implementation Plan

Eight sessions over 10 months with a report to follow in November 2022

- FEB 4 'Living Plan' Collaborative Model accelerating and enhancing TOC implementation
- MAR 4 Design-in Social Equity delivering urban community hub and walkable mixed-income neighbourhoods
- MAY 6 Unlock Transit and Mobility Hub integrating terminal, humanizing arterials and delivering complete streets
- JUN 3 Climate Ready TOC integrating environmental sustainability and resiliency
- AUG 12 Diversifying Economy leveraging developments to attract investments
- Create Value for Public Good creating innovation and cultural clusters
- SEP 9 Expanding the Public Realm sustaining community with common ground
- OCT 21 Wrap-Up: City By-Design TOC Implementation Plan an integrated 'living' implementation plan to deliver TOC



Program Introduction & Moderator:

Matti Siemiatycki

Director, Infrastructure Institute,
University of Toronto

Chair, ULI-FIG Getting to Transit Oriented Communities Initiative
Leadership Panel



Agenda

- 9:30 Welcome and Program Introduction
- 9:40 Presentations
- 9:55 Roundtable Discussion
- 10:30 Facilitated Open Floor Discussion
- 11:30 Recap of Key Learnings
- 11:45 Thank you and Adjourn

MAY 6, 2022



Phase 2: Goals and Expectations

- Improving the way to deliver transit oriented communities
- Learning from the experience in Uptown Brampton on how to deliver results
- Create leading examples to elevate innovation and synergistic solutions

Today's Focuses: Unlock Transit & Mobility Hub

- Integrating terminal with commercial and mixed-use development
- Humanizing arterials, reprioritizing mobility infrastructure and saving lives
- Delivering complete streets and active mobility network from the outset



Session 3 Participants

Guests

Adam Redish, Assistant Deputy Minister, Infrastructure Program Design & Delivery, Ministry of Infrastructure, Province of Ontario

Gunta Mackars, Vice President of Design, Metrolinx

Becca Bagorsky, Vice President, Stations Planning, Metrolinx

Rebecca Ramsey, Director (A), Development, Heavy Rail, Metrolinx

Monika Stade, Director, Development, Metrolinx

Joe Avsec, Strategist, Transportation Planning and Business Intelligence, Region of Peel

Sean Carrick, Manager of Traffic Engineering, Region of Peel

Tamara Kwast, Principal Transportation Planner, Region of Peel

Michael Bennington, Supervisor, Public Health, Region of Peel

Matthew Aymar, Vision Zero Road Safety Policy Analyst, Public Health, Region of Peel

John Hardcastle, Manager of Development Services, Region of Peel

Sarah Powell, Health Planning Facilitator, Built Environment, Public Health, Region of Peel

Henrik Zbogor, Senior Manager of Transportation Planning, City of Brampton

David Stowe, Manager of Transit Planning, Brampton Transit

David Vanderberg, Manager of Development Services, City of Brampton

Nelson Cadete, Project Manager of Active Transportation, City of Brampton

Doug Rieger, Director of Transit Development, Brampton Transit

Kumar Ranjan, Manager of High Order Transit EA, Brampton Transit

Compton Bobb, Senior Project Engineer, Higher Order Transit EA, Brampton Transit

Mario Goolsarran, Manager of LRT Implementation, Brampton Transit

Claudia LaRota, Supervisor of MTSA Planning, City of Brampton

David Monaghan, Supervisor of Traffic Planning, City of Brampton

Bishnu Parajuli, Manager of Infrastructure Planning

Emily Pelleja, Supervisor, Distribution Design, Customer Capital, Alectra

Stuart Craig, Vice President of Planning and Development, Riocan REIT

Les Klein, Principal, BDP Quadrangle

Alun Lloyd, Principal, BA Group

Anna Madeira, Partner, BDP Quadrangle

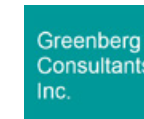
Peter Jenkins, Architect Director, BDP

Lina Al-Dajani, Senior Associate, SVN

Omid Nakhaei, Principal, Arup

Anna-Maria Kaneff, Executive Vice President, Kaneff

Kevin Freeman, Director of Planning and Development, Kaneff



Getting to Transit Oriented Communities Initiative

Matti Siemiatycki, Director, Infrastructure Institute, University of Toronto (Chair, Phase 2)

Yvonne Yeung, Manager of Urban Design, City of Brampton

Ken Greenberg, Principal, Greenberg Consultants

Richard Joy, Executive Director, ULI Toronto

Rowan Mills, Vice President, Infrastructure Advisory, Colliers Project Leaders

John Allen, Vice President, Global Public Affairs

Jess Neilson, Consultant, Global Public Affairs

Alex Rybak, Director, ULI Toronto



Presentation



Ken Greenberg

Principal, Greenberg Consultant
Strategic Advisor, City of Brampton

Member, ULI-FIG Getting to Transit Oriented
Communities Initiative Leadership Panel



Yvonne Yeung

Manager, Urban Design
City of Brampton

Member, ULI-FIG Getting to Transit Oriented
Communities Initiative Leadership Panel

The Challenge

What is being delivered is a new TOC neighbourhood of 9 km² with a fine-grain grid of Complete Streets with generous sidewalk, provisions for cycling, street landscaping, active ground floors, etc. Three interrelated 'tough nuts to crack' are:

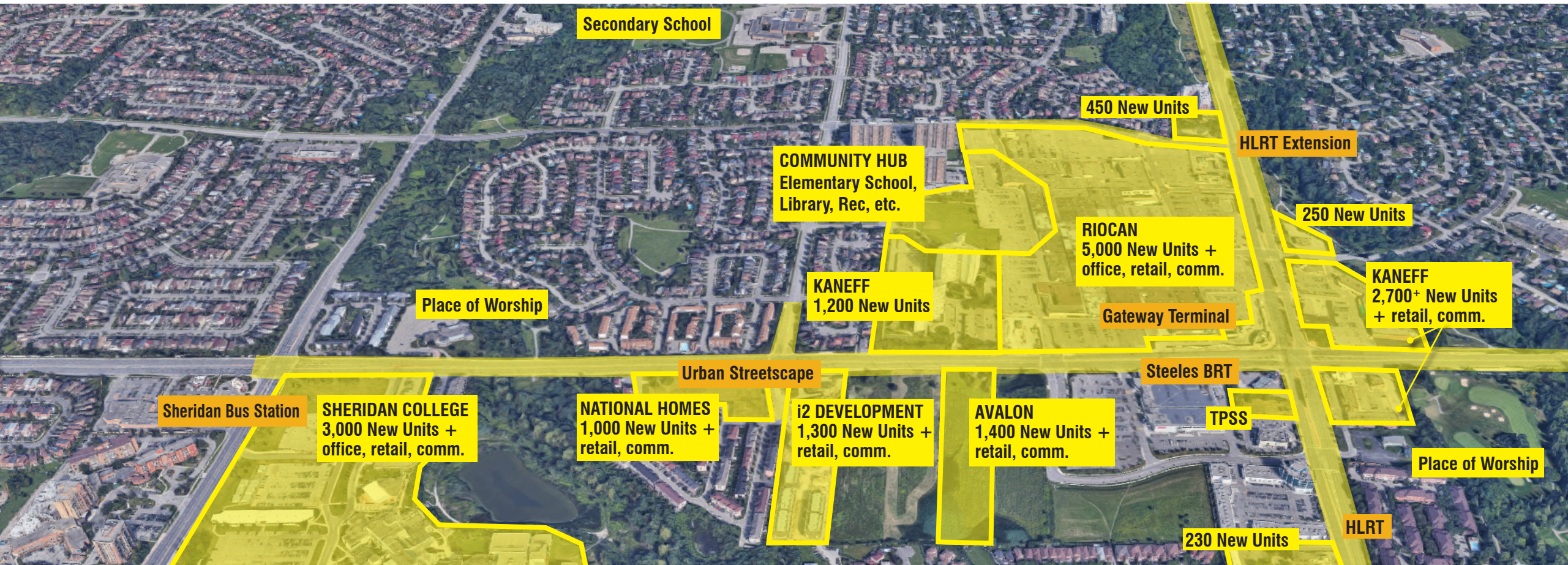
Gateway Terminal - a highly used terminal in an awkward location creating a barrier, and underutilizing valuable land with poor connection to LRT on Hurontario/Main Street.

100% Corner - the intersection of Steeles, Hurontario/Main Street where two major arterials cross and 4 major redevelopment projects will eventually frame all 4 corners, currently an extremely hostile and dangerous environment for pedestrians.

Steeles Arterial - becoming the locus of several kilometers of intensive new urban development and added population with an opportunity for transformation into a street that accommodates urban life and all modes.



A growing TOC with 39,000 daytime population



12,000+
post-secondary
students

4,800+
seniors and
retirees

2,600+
K to grade 8
students

1,400+
high school
students

1,400+
infants and
preschoolers

300+
small
businesses

200+
stores and
services

22 million SF of mixed-use development underway

Long-term (yellow outline)
Short-term 2027* (orange outline)

Urban Community Hub open in 2027

Future Steeles BRT

Holding Provision for Transit Terminal Integration *

Light Rail Transit LRT open in 2024

Sheridan College Institute of Technology and Advance Learning

40,000 People by 2027*	100,000 People at built-out
4,000 Units & mixed-use	21,000 Units & mixed-use

The image features a central aerial map of a large-scale urban development project. The map is overlaid with yellow and orange outlines indicating different development phases: 'Long-term' (yellow) and 'Short-term 2027*' (orange). Key locations and infrastructure are labeled, including the 'Urban Community Hub open in 2027', 'Future Steeles BRT', 'Holding Provision for Transit Terminal Integration *', and 'Light Rail Transit LRT open in 2024'. The 'Sheridan College Institute of Technology and Advance Learning' is also marked. Surrounding the map are several architectural renderings: a modern multi-story building at night, a street-level view of a modern building, a large multi-story building with a glass facade, a street-level view of a modern building with a courtyard, a large multi-story building with a glass facade, a street-level view of a modern building with a courtyard, and a large multi-story building with a glass facade.

Current Condition: Gateway Terminal, 100% Corner & Steeles Arterial



Brampton, Ontario. A City of Transit Oriented Communities growing at 3x the Provincial Average.

0.7 million people is growing to over 1 million

36k new population in 2021

90% of 2016-2021 Peel growth are in Brampton

3.8 persons per household

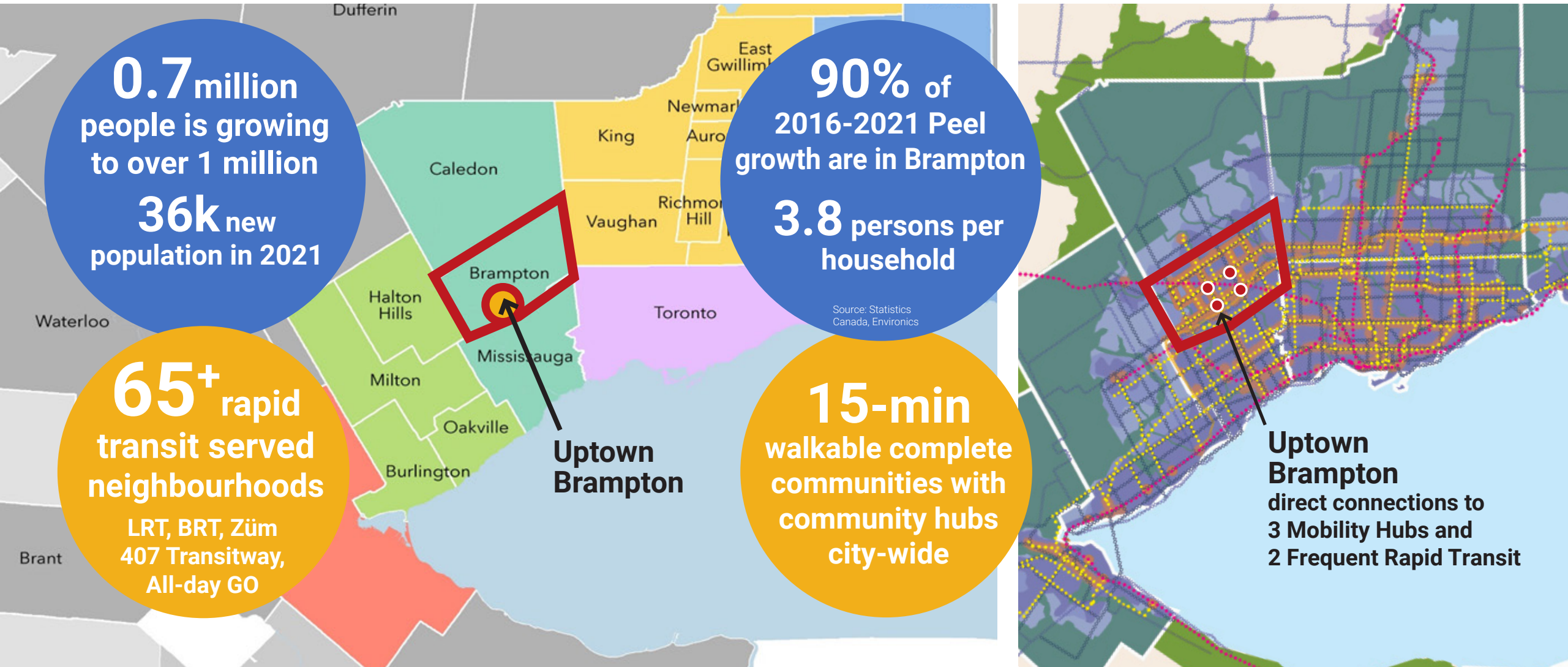
Source: Statistics Canada, Environics

65+ rapid transit served neighbourhoods

LRT, BRT, Züm
407 Transitway,
All-day GO

15-min walkable complete communities with community hubs city-wide

Uptown Brampton direct connections to 3 Mobility Hubs and 2 Frequent Rapid Transit



Uptown Brampton TOC

A Provincial designated 'Mobility Hub' at the convergence of 2 Frequent Rapid Transit Lines

Mobility Hub Objectives

- #1 Vibrant, mixed-use environment with higher land use intensity
- #2 Safe and efficient movement of people with high levels of pedestrian priority
- #3 Effective partnerships and incentives for increased public and private investment
- #4 Well-designed transit station for high quality user experience



Objective #1: Vibrant, mixed-use environment with higher land-use intensity



39,000+
current daytime
population
within 15min
walk

3%
office
vacancy
1.2% Rent Growth
Source: CoStar

1.3%
retail
vacancy
3.8% Rent Growth
Source: CoStar

Objective #1:

Vibrant, mixed-use environment with higher land-use intensity



100,000+
future daytime
population
within 15min
walk

1.2+ km
new 'return
frontage' on
Urban Main
Streets

Objective #2: Safe and efficient movement of people with high levels of pedestrian priority

12,000⁺

post-secondary students

4,800⁺

seniors and retirees

2,600⁺

K to grade 8 students

1,400⁺

high school students

1,400⁺

infants and preschoolers

300⁺

small businesses

200⁺

stores and services

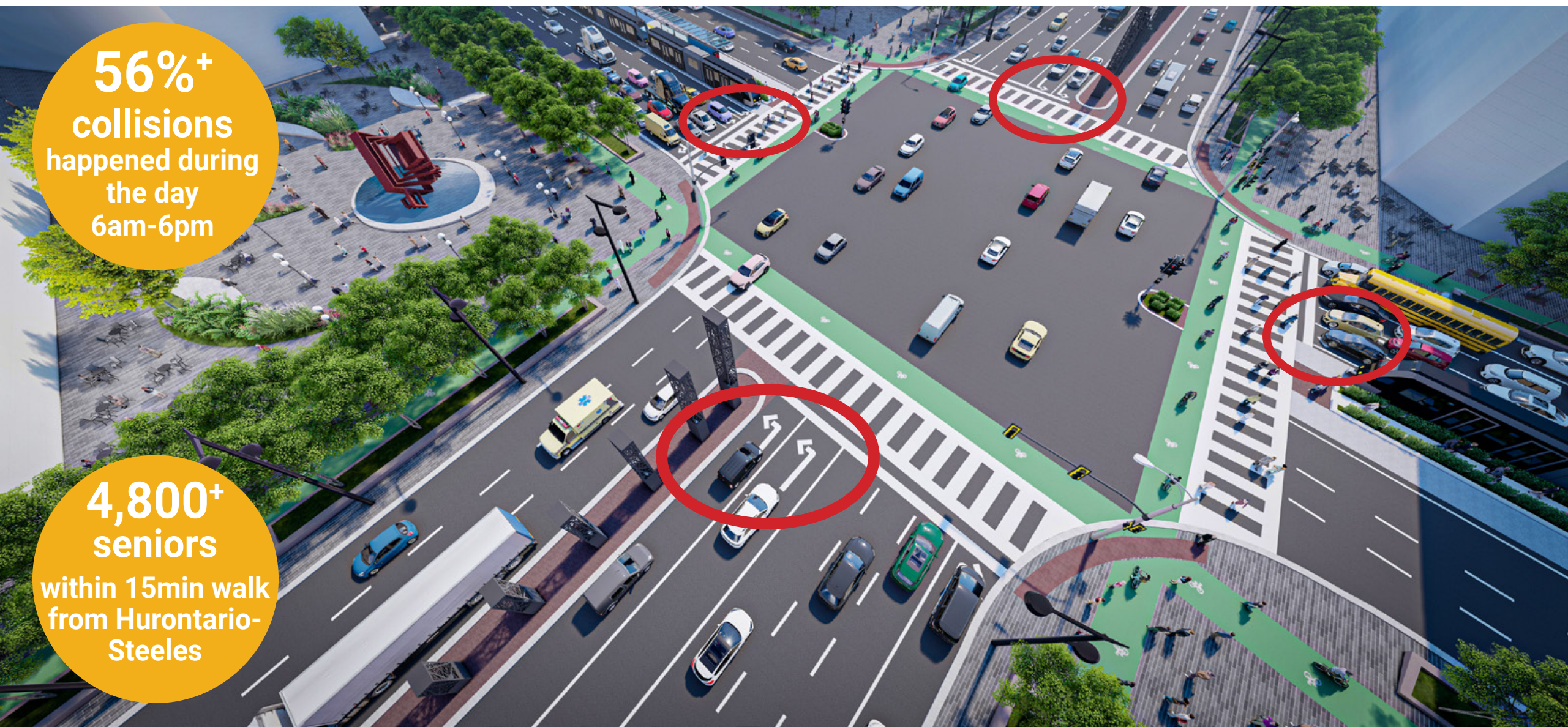
One pedestrian collision per week in avg. in 2019



Objective #2: Safe and efficient movement of people with high levels of pedestrian priority

56%+ collisions happened during the day 6am-6pm

4,800+ seniors within 15min walk from Hurontario-Steeles



Objective #2: Safe and efficient movement of people with high levels of pedestrian priority

50 km/h
Main-Hurontario
Local Road
current speed limit

est. **20%**
pedestrian survival
source: BMC Public Health, WHO

70 km/h
Steeles
Regional Road
current speed limit

est. **0%**
pedestrian survival
source: worldhighways.com, RACE

TRAFFIC

Man in his 60s dead after being struck by vehicle in Brampton: police

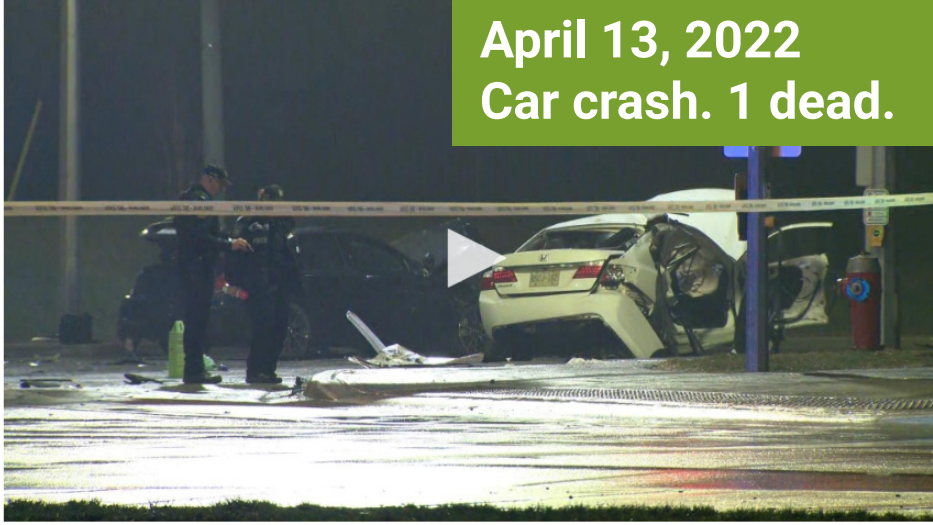
By Hannah Jackson · Global News
Posted April 21, 2022 7:38 pm · Updated April 22, 2022 6:03 am



April 21, 2022
Car crash. 1 dead.

TORONTO | News

Woman killed in Brampton collision




April 13, 2022
Car crash. 1 dead.

A woman is dead after two vehicles collided in Brampton Wednesday night.

TORONTO | News

Two males in hospital after Brampton crash



April 6, 2022
Car crash. 2 injured.



April 23, 2022
Car crash. 2 injured.

CP 24 TWO PEOPLE RUSHED TO HOSPITAL AFTER CRASH IN BRAMPTON

Objective #3: Effective partnerships and incentives for increased public and private investments

\$0.4 billion for Road Reconst. & Resurfacing

2022-2032 Budget
Source: Peel Region

6 through lanes +
2 left-turn lanes +
1 right-turn lane

\$1.2 billion for New Roads & Road Widening

2022-2032 Budget
Source: Peel Region

1,555 lane-km Ex. Regional Road
\$260k/lane-km to maintain

Source: Peel Region

\$0.1 billion for Active Transportation*

2022-2032 Budget
Source: Peel Region

*Includes spending for goods movement and safety initiatives for Vision Zero

Objective #3: Effective partnerships and incentives for increased public and private investments



6 through lanes +
2 left-turn lanes +
1 right-turn lane

\$12M/km
New Auto
Infrastructure
6-lanes
Source: Altus

\$1.5M/km
New Cycling
Infrastructure
2-way cycletrack
both sides
Source: WSP

Objective #3: Effective partnerships and incentives for increased public and private investments

Car-free living as an affordable way of life Deliver child-friendly 'Main Walk' from the outset

Zero minimum parking in TOC

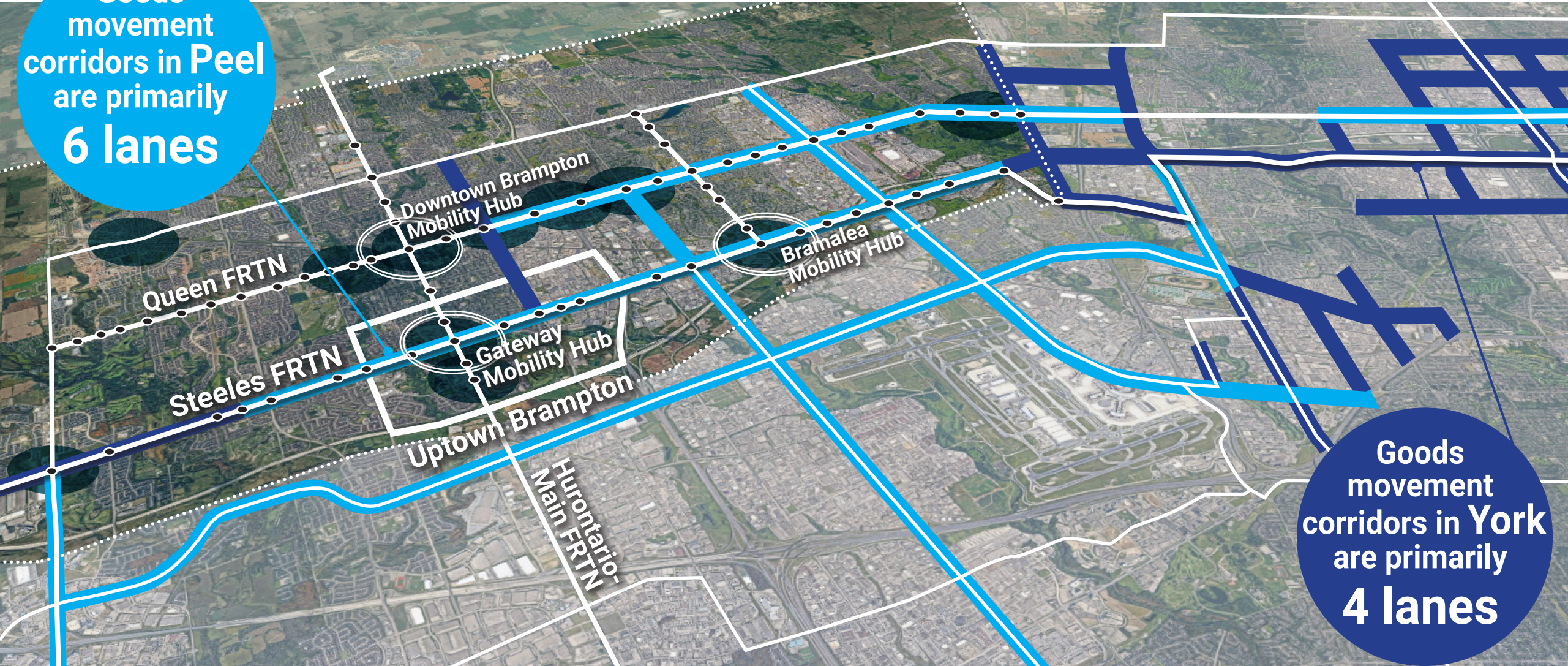


1/3 of GHG emission is from transportation
source: Government of Canada

2.5M

Objective #3: Effective partnerships and incentives for increased public and private investments

Goods movement corridors in Peel are primarily 6 lanes



Goods movement corridors in York are primarily 4 lanes

Objective #3: Effective partnerships and incentives for increased public and private investments

Goods movement corridors in Brampton as 4 lanes



Goods movement corridors in York are primarily 4 lanes

Reduce 135 lane/km of road, lower maintenance cost by \$35M.

Objective #3: Effective partnerships and incentives for increased public and private investments

Reduce Crossing Distance

Repurpose Lanes for Rapid Transit

Remove Double Left-Turns

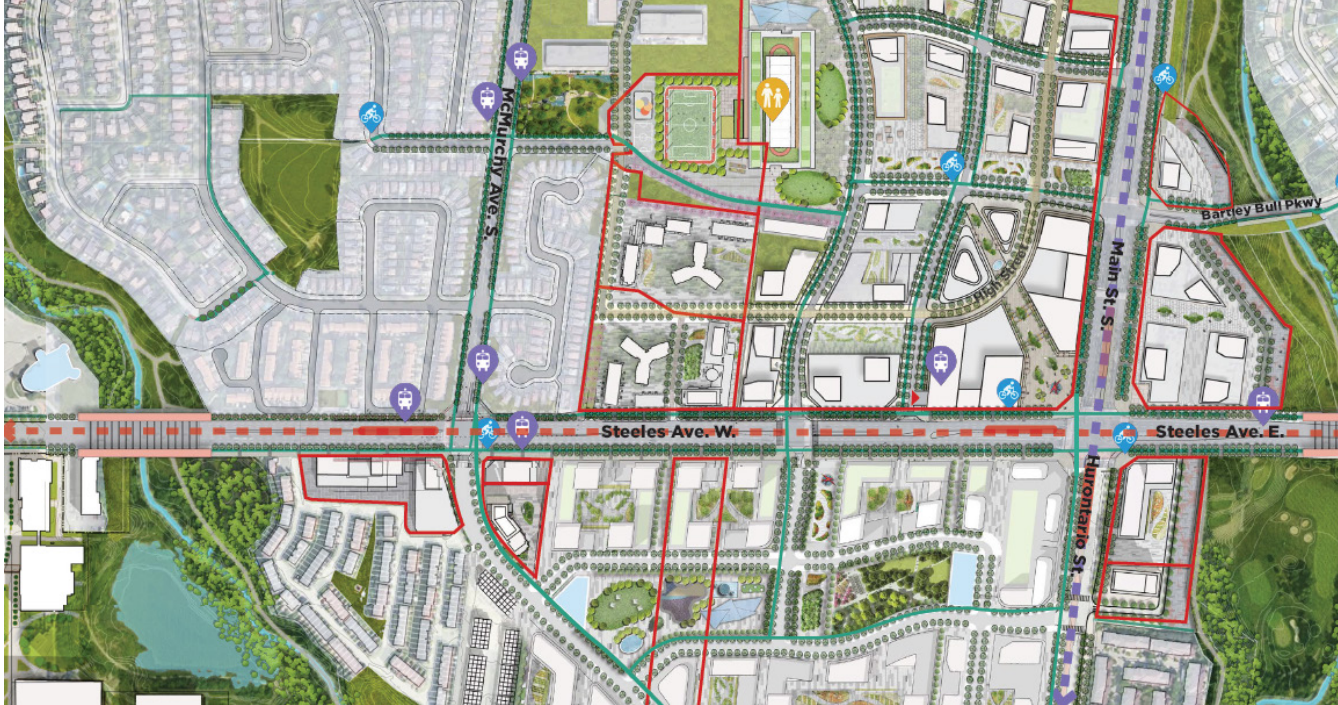
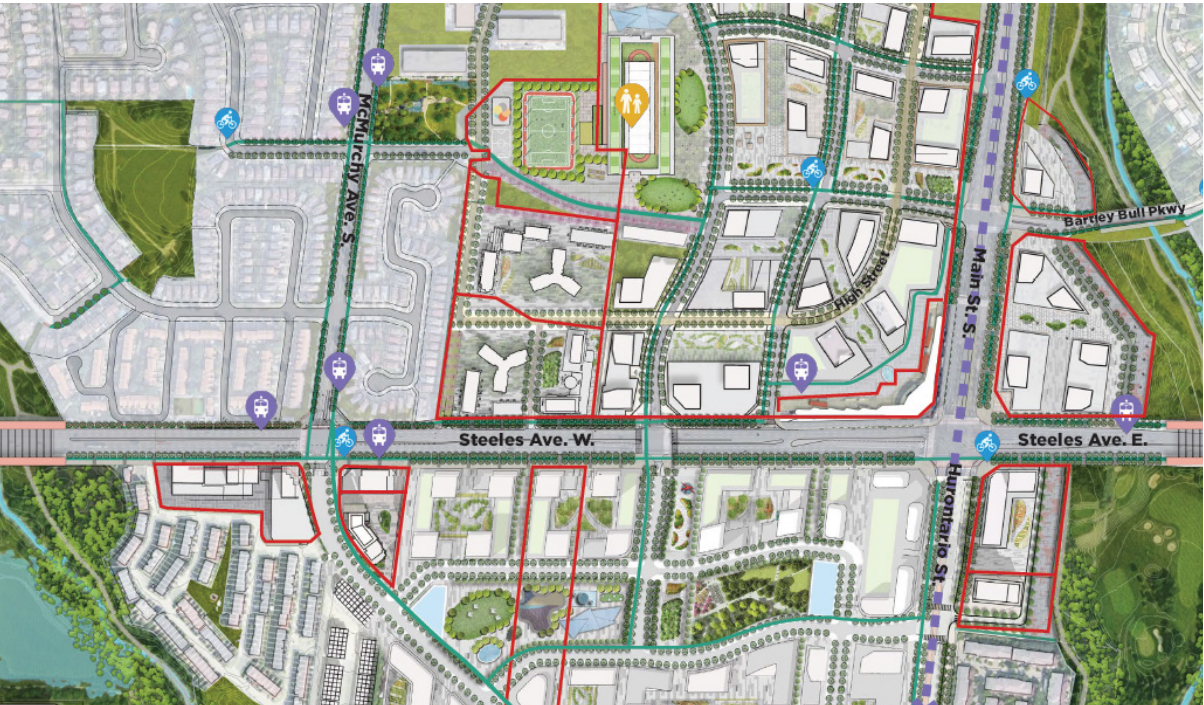
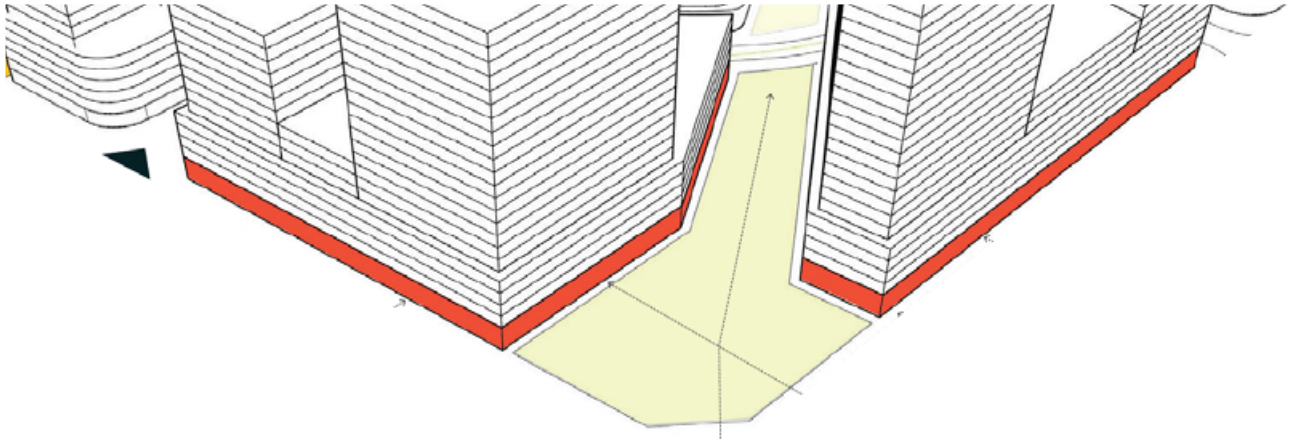
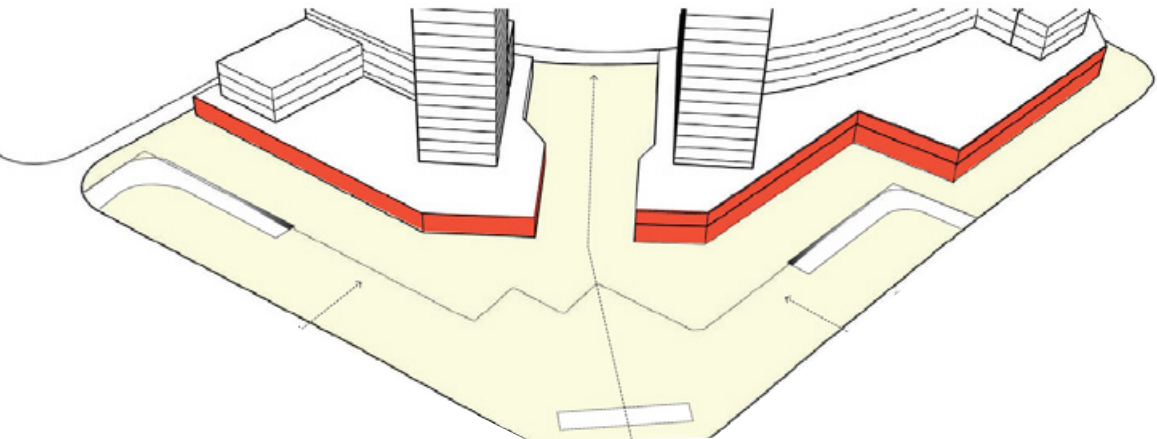


Delivering BRT on Steeles

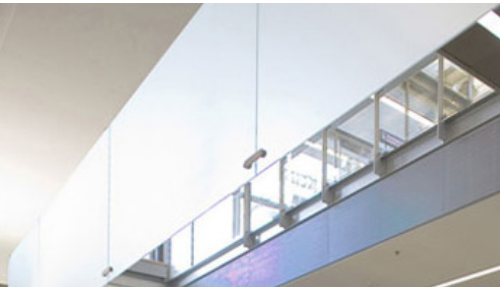
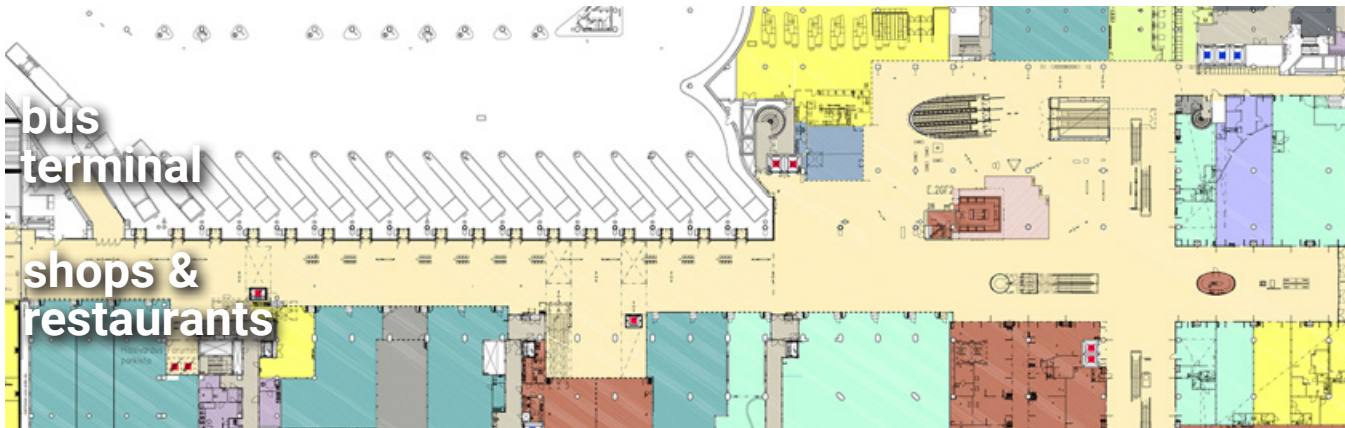
Objective #3: Effective partnerships and incentives for increased public and private investments



Objective #4: Well-designed transit station for high quality user experience



Objective #4: Well-designed transit station for high quality user experience



Roundtable Discussion

Foundations to Unlock Transit in TOCs



Kumar Ranjan

Manager of Higher Order Transit EA
Brampton Transit



Nelson Cadete

Active Transportation Project Manager,
City of Brampton



Joe Avsec

Strategist, Transportation Planning and
Business Intelligence, Region of Peel



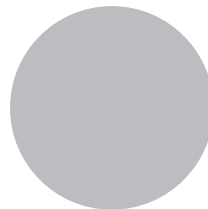
Michael Bennington

Supervisor, IMS Communications,
Built Environment, Chronic Disease and Injury
Prevention, Region of Peel



Stuart Craig

Vice President, Development
RioCan REIT



Kevin Freeman

Director of Planning and Development
Kaneff Group of Companies



Peter Jenkins

Head of Transport, Architect Director
BDP (Building Design Partnership Ltd)



Omid Nakhaei

Principal
Arup Canada

RIOCAN SHOPPERS WORLD BRAMPTON

ULI/FIG Uptown Brampton TOC Initiative
Session 3: Unlock Transit

May 2022



RIOCAN – LOCATED IN CANADA’S MOST IN-DEMAND MARKETS

Prime, high density, transit-oriented areas where Canadians shop, live and work

Dense Population

203,000 ⁽¹⁾ People

Strong Household Incomes

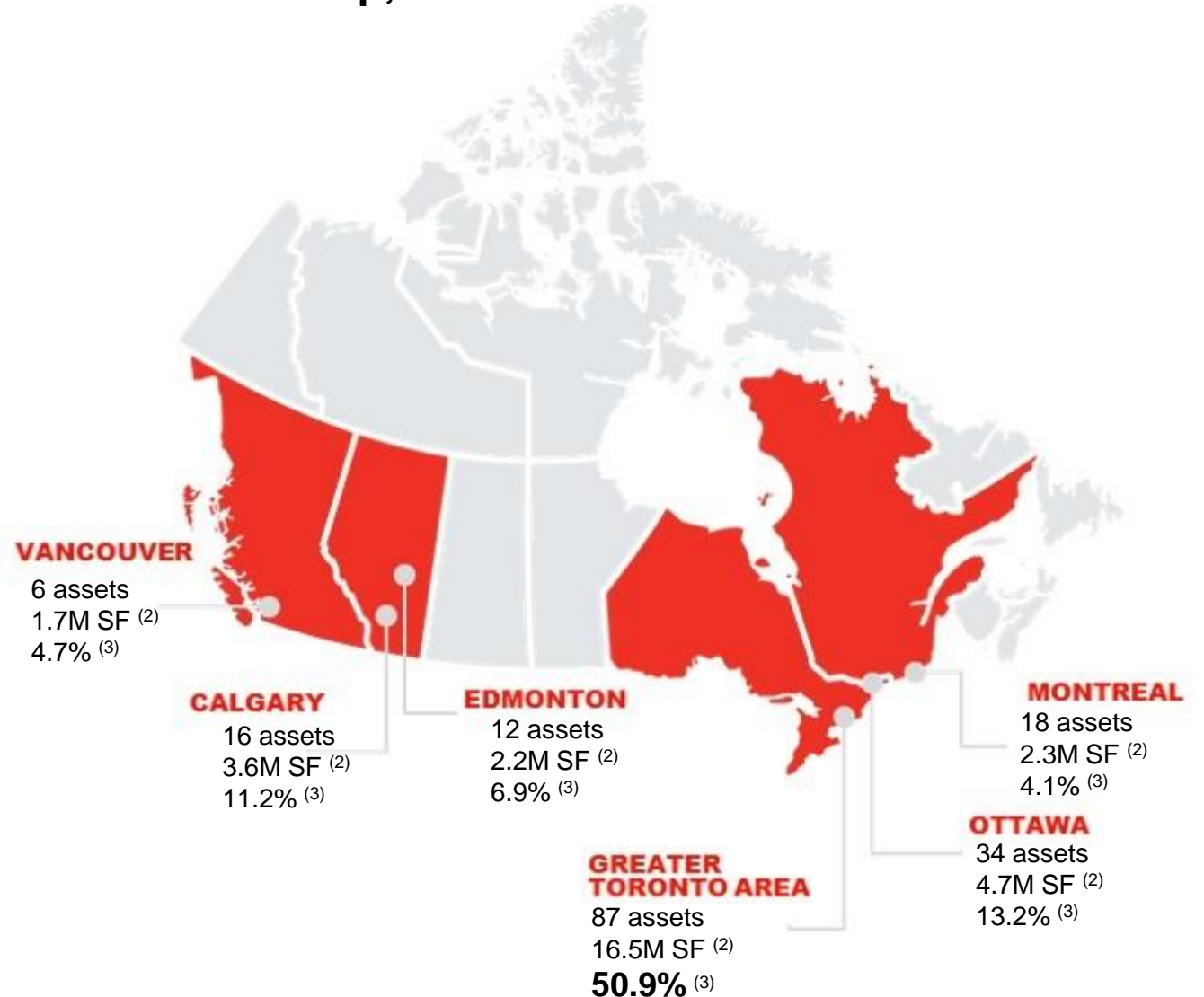
\$124,000 ⁽¹⁾

Last Mile Hub

Facilitating all consumer shopping patterns

Residential Development Potential

Highest and best use redevelopment addressing rental supply gap



1) Population and average household income within 5km of RioCan centres, respectively;

Source: *DemoStats - 2021 - Trends*, @2021 Environics Analytics

2) Income producing properties at RioCan’s interest

3) Percentage of annualized contractual gross rent as at December 31, 2021

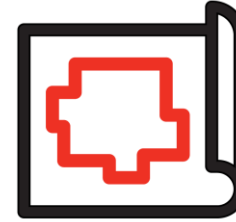
RIOCAN – BY THE NUMBERS



207
properties across
Canada ⁽¹⁾



36M Sq. Ft.
aggregate
net leasable area



~14M Sq. Ft.
of zoned density
surfacing value from
~43M Sq. Ft. pipeline



96.8%
Committed
occupancy



of revenue from
strong and
stable tenants ⁽²⁾



~\$14B
total enterprise value

1) Includes 13 properties under development

2) Based on annualized contractual gross rent as at December 31, 2021

ADVANCED PIPELINE WITH CONSISTENT STREAM OF DEVELOPMENT ACTIVITY

Delivering completed projects in the near-term and beyond

~43.1M Sq. Ft.
embedded development pipeline

~13.8M Sq. Ft.
zoning approved and in various stages of development⁽¹⁾

~2.1M Sq. Ft.
currently underway^{(2),(3)}

~1.7M Sq. Ft.
to be delivered within 24 months⁽³⁾

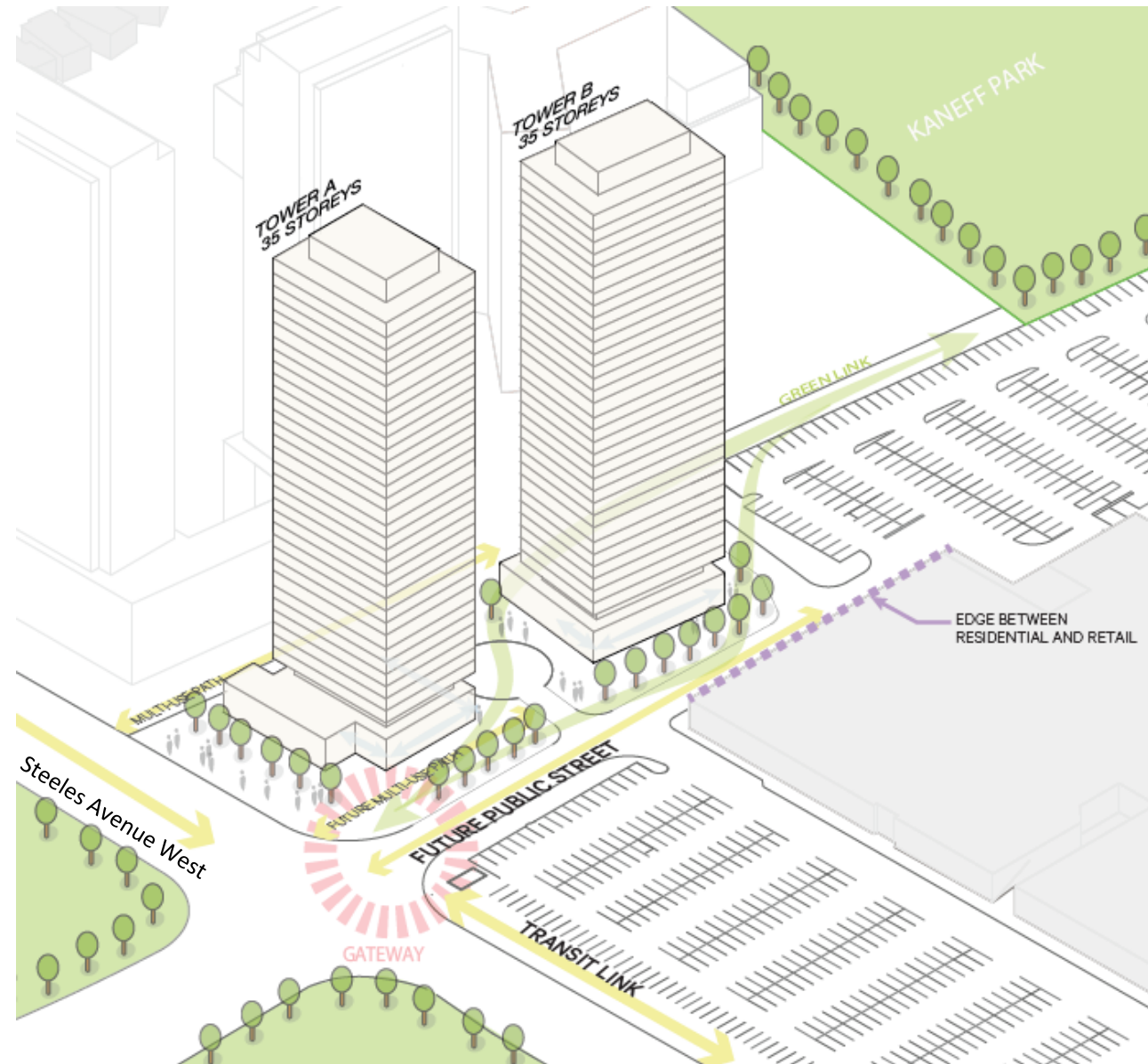


- 1) Projects are zoning approved.
- 2) Excludes a total of 1.5 million square feet of completed phases and air rights sold
- 3) Includes 3 residential inventory projects.

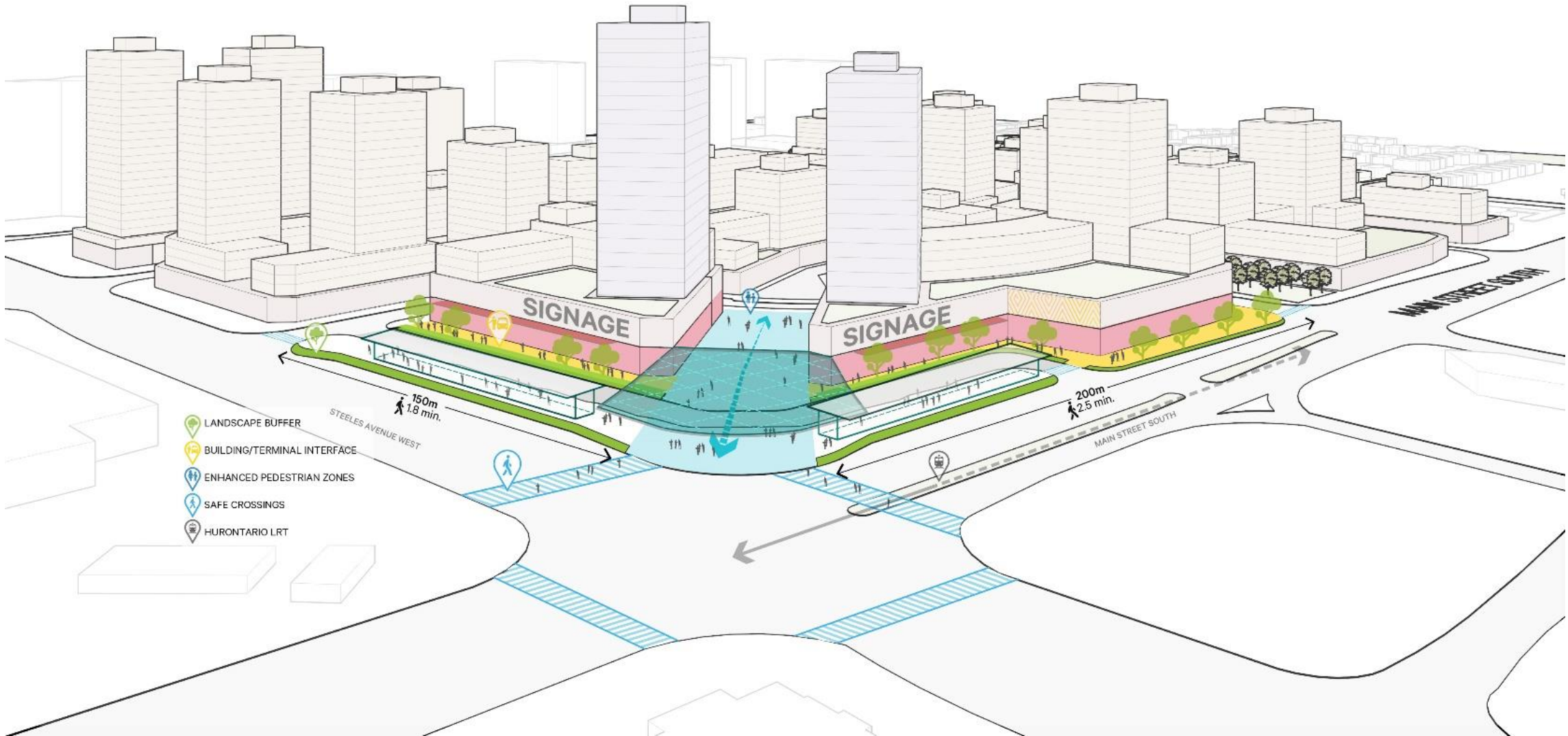
SHOPPERS WORLD BRAMPTON: Site Context



SHOPPERS WORLD BRAMPTON: Phase 1A



SHOPPERS WORLD BRAMPTON: Transit Integration



SHOPPERS WORLD BRAMPTON: Key Considerations Regarding Transit Integration

4 Ingredients:

- Delivery mechanism
- Funding and incentives
- Coordination with existing site needs and conditions
- Design integration and transit visibility



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2300 Yonge Street. P.O. Box 2386. Toronto, ON. M4P 1E4

**ULI / FIG Uptown
Brampton TOC Initiative
Session 3: Unlock Transit**

BDP Quadrangle

Typologies

vertical separation

Shared Levels



The most common arrangement is to have all the station facilities, as well as the bus stands collocated on the same level.

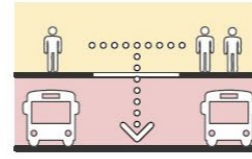
Pros

- does not require introduction of another level into the design
- no vehicle clearance requirements for upper levels
- most cost-efficient

Cons

- may require passengers and buses to share parts of their circulation spaces
- requires more effort to ensure safety on site

Access from Above



Arrangement where the passenger facilities are located above the bus stands.

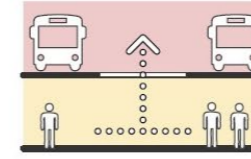
Pros

- segregates bus and passenger circulation spaces
- easier monitoring of safety on site
- easy access to light on the concourse

Cons

- introduction of vertical circulation facilities required
- potential to be more costly
- bus stand perception - 'underground space'
- if the bus stands are at street level they act as long, inactive facades
- if the concourse is at street level the bus stands are in a basement, which is difficult to access, costly to build and ventilate.

Access from Below



Arrangement where the passenger facilities are located below the bus stands.

Pros

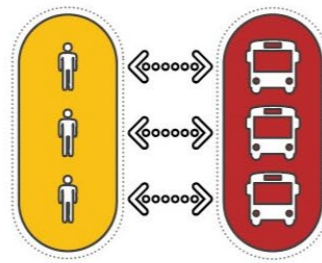
- segregates bus and passenger circulation spaces
- easier monitoring of safety on site

Cons

- introduction of vertical circulation facilities required
- potential to be more costly
- concourse perception - 'underground space/ tunnels'
- exposes bus circulation spaces
- unless the surrounding topography assists this requires ramps, etc. to get the buses up to their elevated location.

horizontal separation

Linear Station



'Side to Side' relationship between the station building and bus stands; usually paired with 'drive in & reverse out' (DIRO) stands for efficiency.

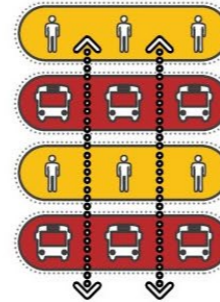
Pros:

- simple organisation
- easy wayfinding and orientation
- ability to form a positive relationship with surrounding cityscape through the front facade
- space efficient layout on sites with a rectilinear form of approximately 50 to 60 metres width
- clear split between the space for people and buses

Cons:

- requires 'driven in & reverse out' stand typology
- can result in inefficient layout on non-rectilinear sites
- dominant presence of the buses on one side

Island Stands



Island platforms - this typology works with and without a designated 'station' building; usually paired with 'drive in & drive out' (DIDO) stands for efficiency.

Pros

- can result in an efficient layout
- easier circulation for bus drivers
- works well on sites with a fluid shape

Cons

- additional canopies required to shelter the waiting spaces
- passengers required to cross the road to get to the desired stand (unless other levels are introduced) - potential impact on health and safety
- more complicated circulation for passengers
- the majority of the site is a large bus-oriented environment

Central Station



Central station space surrounded by bus stands.

Pros

- simple wayfinding
- short walking distance to all stands
- flexible bus circulation, as well as, entry and exit point
- compact and efficient building
- clear split between space for people and buses
- can work with both DIDO and DIRO stand typologies

Cons

- minimal active frontage facade
- inability to offer positive frontage to the city
- very strong presence of buses within the city

Perimeter Station



Elongated station space surrounding the bus stands and bus circulation space.

Pros

- simple wayfinding
- flexible bus circulation
- large opportunity to create active frontages
- clear split between space for people and buses

Cons

- longer walking time to the more distant stands
- limited connections with the surrounding road network
- very large amount of frontage (may result in oversized 'back of house' areas or inactive frontages)
- results in larger less efficient buildings

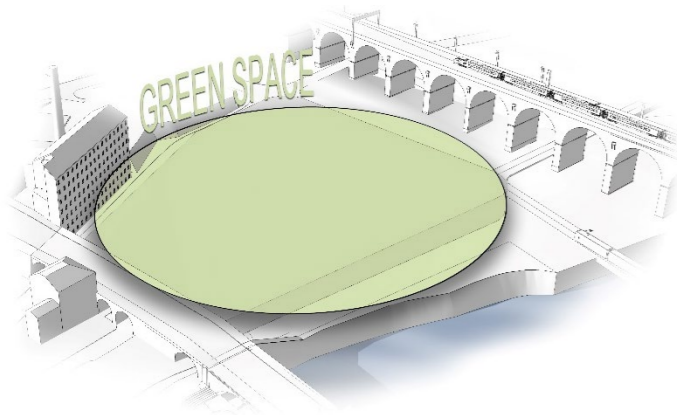
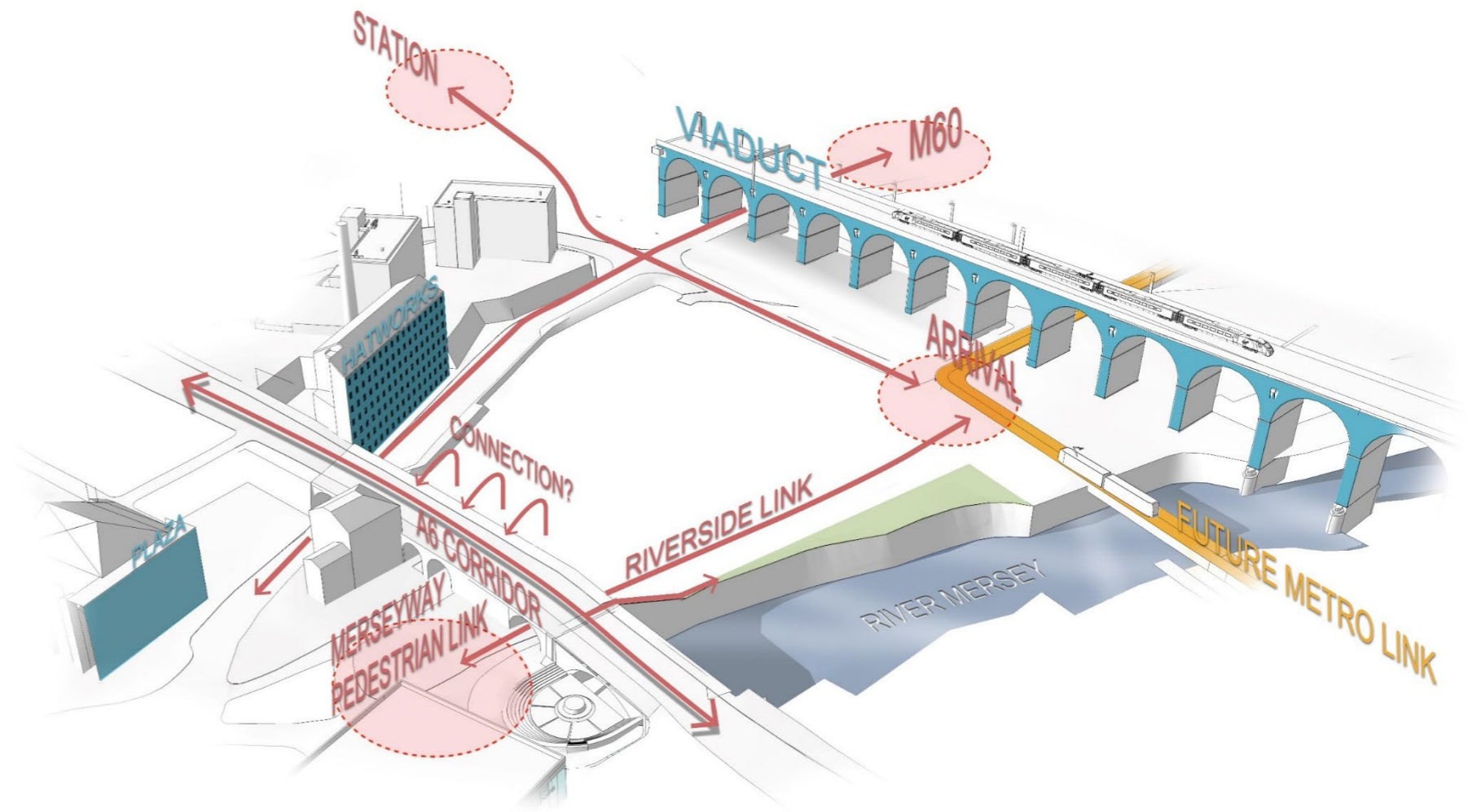
Stockport Bus Interchange, UK

CIRCULATION TYPOLOGY

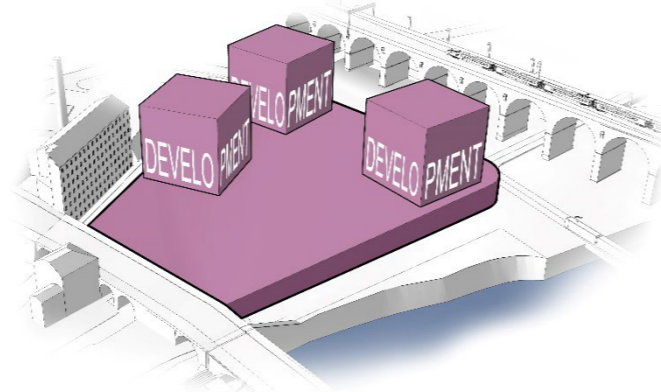


KEY FACTS

Location:	Greater Manchester, UK
Completion:	TBC
Budget:	£25M (station + park)
Building Area:	5 500 m ² (station) / 17 000 m ² (tower)
Site Area:	15 700 m ²
Bus Stands:	16
Stand Typology:	Drive-In & Reverse-Out



Elevated Park



Over-Site Development



Holistic Development

BDP Quadrangle

Integrated Bus Terminal- Brampton

Few ideas

Design Principles

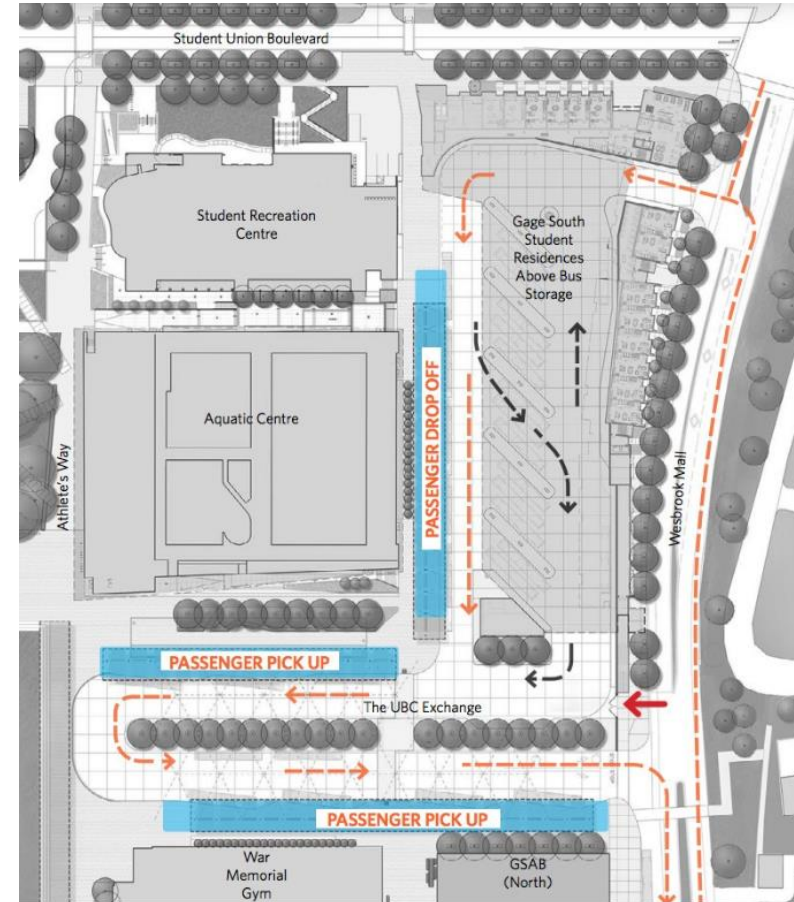
- Enhanced User Experience
- Urban Integration
- Transit as a placemaking catalyst
- Unleashing TOD opportunities
- Sustainability and resilience

Brampton 2040 Vision



Precedents

UBC Student Residence- Exchange



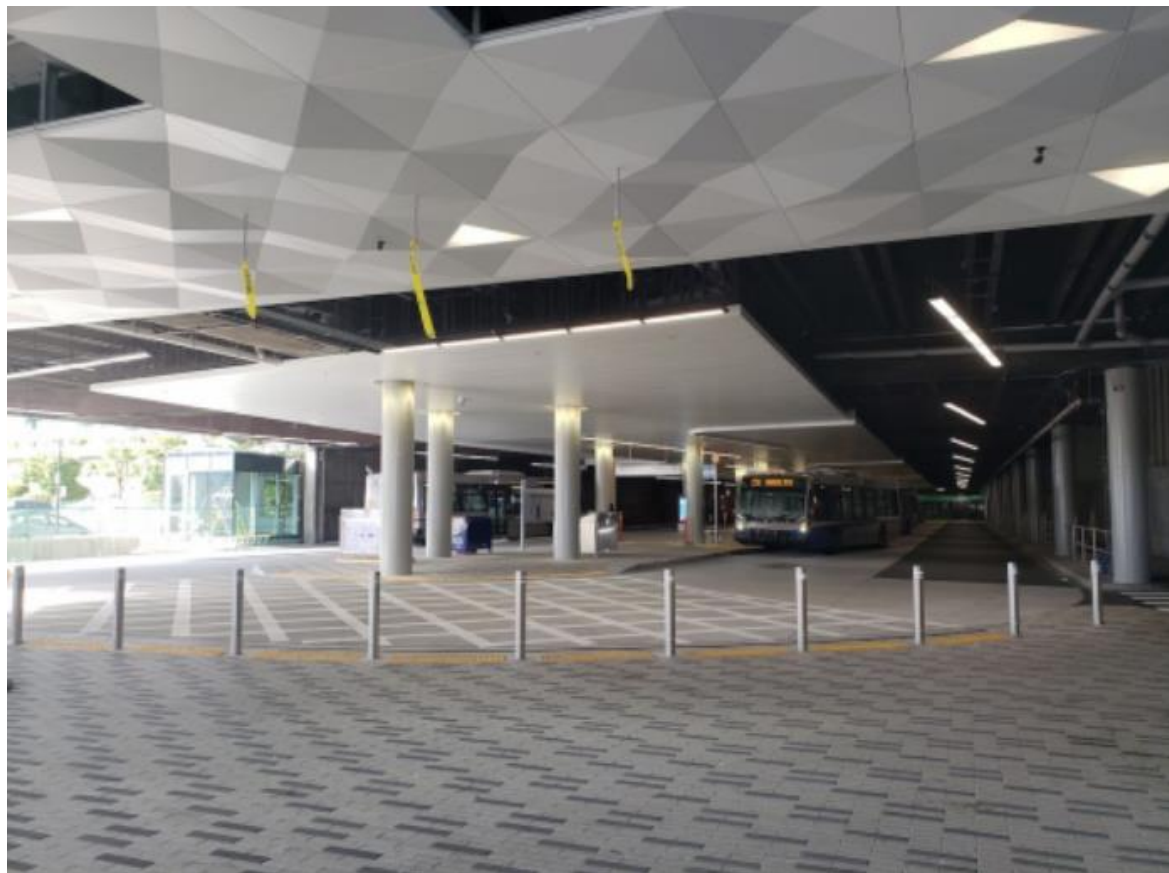
Precedents

UBC Student Residence- Exchange



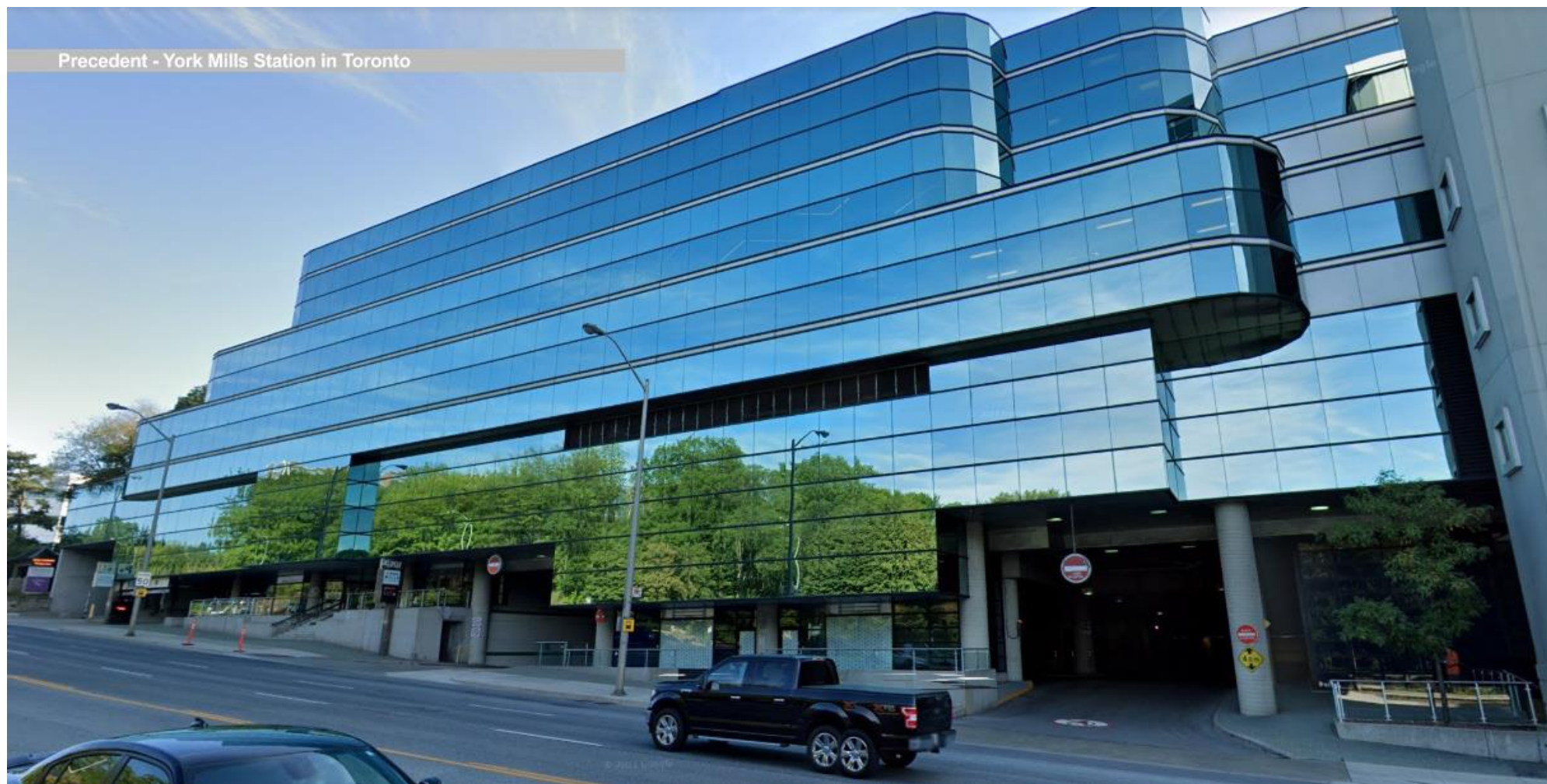
Precedents

Vancouver Lonsdale Quay Exchange



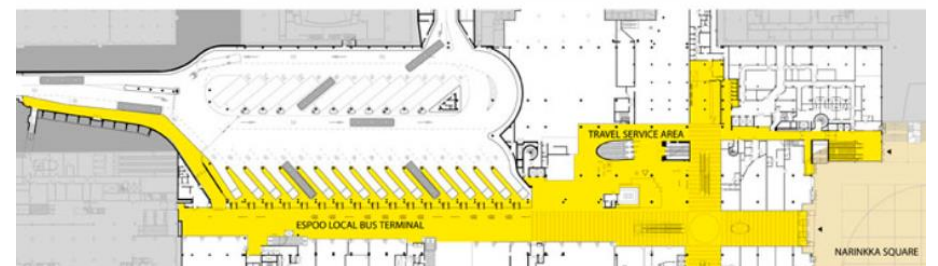
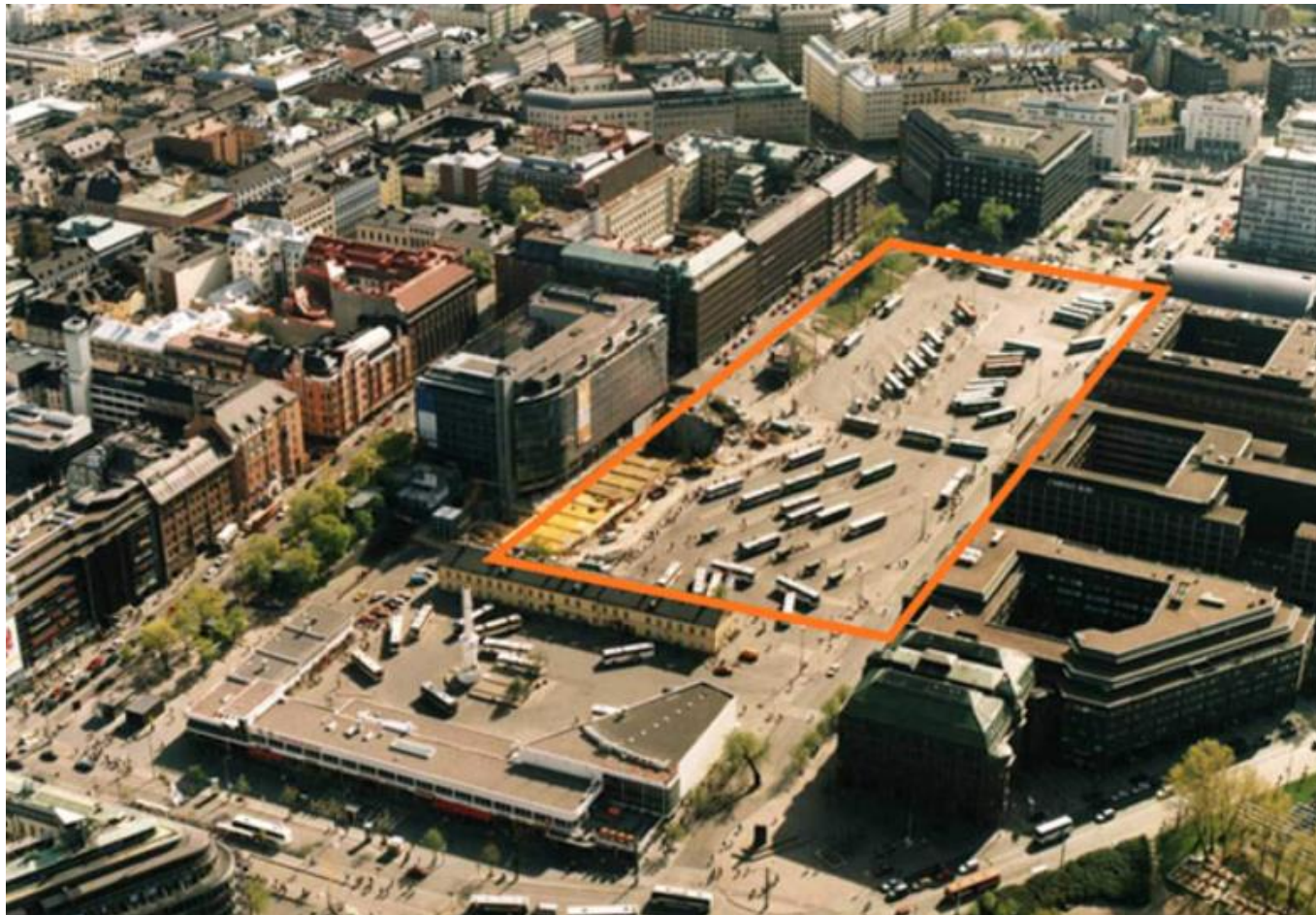
Precedents

York Mills Bus Station



Precedents

Underground complex in Kamppi centre- Helsinki



Possible approach

- Retail frontage on 3 sides
- Covered bus terminal @ grade
- Access through N/S street
- TOD above
- ~ 10,000 m² for Bus terminal



Possible approach



ARUP



Facilitated Open Floor Discussion

Introduce yourself and share how you see your contributions to the larger transit-oriented communities active mobility effort.



Next Session: Climate Ready TOC

Integrating environmental sustainability
and resiliency

Friday, June 3 9:30am - 12pm

Thank you!

<https://toronto.uli.org/resources/getting-to-transit-oriented-communities-initiative/>