Infrastructure and Land Use Exchange: Mobility and Access

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Today’s Format!
Join chat and turn on your camera and speak following initial remarks—let’s have fun!
ULI Curtis Infrastructure Initiative

Promotes locally driven infrastructure solutions that are equitable and resilient, and that enhance long-term community value.

- Brings together global networks of ULI members focused on infrastructure to enable strategic partnerships and local action.
  - ULI Spring/Fall Infrastructure Forum
  - District Council Infrastructure Grant Cohort
  - Infrastructure and Land Use Exchange

- Provides capacity building and technical assistance intended to result in shifts in policy practice, change in community/industry prioritization, change in design/planning, and/or new infrastructure investments.

- Conducts primary research, develops case studies, and curates resources with significant infrastructure focus to provide replicable, sustainable, and model solutions.
We need **restorative infrastructure investment** that increases equity and sustainability.

We need to invest in **public transportation and mobility**.

We need infrastructure that helps us **combat the global threat of climate change**.

We need to connect everyone to **affordable and high-quality internet**.

We need supportive infrastructure investment that increases housing affordability and attainability.

ULI Curtis Infrastructure Initiative

Promotes locally driven infrastructure solutions that are equitable and resilient, and that enhance long-term community value.
Invest in Public Transit and Mobility
Prioritizing Effective Infrastructure-Led Development

- Infrastructure and transportation are of great importance for real estate and development issues.
- Public transportation provides the regional framework for compact, people-centric urban development. It should be multimodal and integrated with land use.
- Need frequent and reliable service that is flexible to adapt to changing commuter and usage patterns.
- Enables public realm reallocation without reducing total roadway capacity.
- Generates tremendous real estate value while reducing greenhouse gas emissions and pollution.
Today’s Speakers

Brandon A. Palanker
President, 3BL Strategies

Harriet Tregoning
Director, NUMO

Yvonne Yeung
CEO, SDG Strategies
Mobility hubs: what they are and why they make sense

Harriet Tregoning
Director, NUMO
The big picture
Most Trips are Short

Most US car-based trips are short

Source: Deloitte analysis based on 2017 National Household Transportation Survey.
Next generation TOD: Mobility hubs

New mobility options and technology set the stage for new types of transit-oriented development.

What if obsolete shopping centers like this re-imagined Walmart parking lot, become part of a network of centers of mobility, that help connect people to premium transit, especially when more than a short walk away?

Walmart launched Walmart Reimagined
Next generation TOD: Mobility hubs

What makes a mobility hub?

Two or more of the following:

- **Carshare**: Carshare can either be an open membership model or an amenity fleet exclusively for patrons of the building.
- **Pick up and drop off zones**: This area allows a variety of vehicles (ride-hailing, deliveries, micro-transit) to safely move out of travel lanes.
- **Shared Bikes**
- **Shared E-scooters**
- **Modular, flexible infrastructure**: The retractable pylons can be raised or lowered throughout the day depending on curbside demand.
- **Relative development density**, some community accessible services

Illustration by Lisa Nisenson, WGI
Considerations for a mobility hub network

- Concentration (and intensity) of locations
- Relevant destinations
- Transportation services and variety
- Placemaking real estate development
- Things are happening and we can get there by different modes because they’re close together
Flexibility and trip distance

- Taxi
- Car-Sharing
- Car Rental
- Bike-Sharing
- Private Car
- Personal Bicycle
- Public Transportation

Axes:
- NECESSARY FLEXIBILITY
- TRIP DISTANCE
Coverage

Total coverage by mode of transport

- 0.3 mi.
- 1 mi.
- 2 mi.
- 3 mi.
- 3.5 mi.
- 0.6 mi.
- 2 mi.
- 4 mi.
- 6 mi.
- 7 mi. +
Integrating into urban elements and policies
Transit Oriented Development

The neighborhood

- 1.5 -3x denser than surrounding area
- Mix of land uses
  - Housing one block off
  - Corridor with passenger, freight hubs and other services
An example network

Mobility hub (tier Z)
Mass transit station
Mass transit corridors
Freight hub
Housing

Mobility hub (tier 2)
Mobility hub (tier 1)
(Other) services
Examples
Minneapolis Smart Mobility Hubs

Goals: *Increase convenient access to low- or no-carbon transportation options, especially first mile/last mile options, which could cut down on automobile trips.*

Hubs include
- bus stop
- bench
- designated bike-share and e-scooter parking and
- way-finding signage with travel times to points of interest (depending on each tier in the typology)


http://www2.minneapolismn.gov/publicworks/trans/mobilityhubs
Pittsburgh’s Mobility Hubs

→ Installed on or adjacent to the street (like Healthy Ride, their bike-share system)

→ Most co-located with transit stops

→ Docking bays for six scooters

→ Digital screens with relevant transportation information

→ Supports information found in Transit app
Pittsburgh

- **56%** of Pittsburgh commuters drive alone

- Need for enhancing existing transit services by providing an integrated suite of mobility options

- First-of-its-kind consortium - **Pittsburgh Mobility Collective** - comprised of Spin, Waze, Zipcar, Ford Smart Mobility, Transit app, and Masabi

- Five action-oriented working groups:
  - Data and Measurement
  - Outreach and Marketing
  - Mobility as a Service (MaaS)
  - Parking and Curbside Coordination
  - Partnership and Contracting
Move 412 helps Pittsburghers select the right mode for their trip.

Plan and pay for your trip in the Transit app, or visit a Mobility Hub! 

https://www.move412.com/mobilityhub
An initial exercise in San Antonio (with ULI!)
Utrecht Station (Netherlands)

- In Main station
- Largest bike parking station in the world
- Inaugurated August 2019
- 12,500 places
- Reducing “bicycle pollution” of nearby city center
- Managed by municipality, prorail and Dutch rail
- Integrated to public transport fare!

https://www.utrecht.nl/city-of-utrecht/mobility/cycling/bicycle-parking/bicycle-parking-stationsplein/

Photo by Carlos F Pardo
https://twitter.com/carlosfpardo/status/117033479518854145?ref_src=twsrc%5Etfw
Mobility Hub in Munich (Germany)

- 2 pedelecs with 4 pedelec* stands
- 3 parking spaces for car sharing station-independent
- 1 charging column for e-car sharing
- 4 parking spaces for car sharing
- 2 parking spaces for e-vehicles
- 1 charging station for citizen charging

Nearby: cargobike station

Munich Hubs are not always with public transport access

* pedal assist e-bike
Leipzig’s (Germany) mobil (26 stations)

“The station equipment is the same everywhere:

- a blue and yellow column with a control terminal,
- parking bar for five bicycles
- five rental bicycles
- two parking spaces for car sharing vehicles
- two parking spaces for electric vehicles including a charging column.

And app with info, booking, billing
GTHA, Ontario. The fastest growing city-region in North America shifting to a transit-oriented future.

- 45,000+ Acre of Land within Mass Transit Station Areas MTSAs
- 9.5 million population in 2046
  7.2 million in 2021
- $62 Billion in Transit Infrastructure
- 10% Travel to work by public transit

Source: Province of Ontario
The need to implement region-wide cycling infrastructure with transit. Reduce 60% of GHG emissions.
Transform auto-arterials into walkable amenities. Make 75% of short-trips possible by walking and cycling.

Car-free living as an affordable way of life

Deliver child-friendly ‘Main Walk’ from the outset

75% of short-trips are by walking and cycling (potential target)

Zero minimum parking in TOC
Shift auto-infrastructure spending to AT active transportation infrastructure. Create new public resource.

$0.4 \text{ billion for Road Reconst. \\ & Resurfacing}

2022-2032 Budget

Source: Peel Region

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

$1.2 \text{ billion for New Roads & Road Widening}

2022-2032 Budget

Source: Peel Region

1,555 \text{ lane-km Ex. Regional Road}

$260k/lane-km to maintain

Source: Peel Region

$0.1 \text{ billion for Active Transportation*}

2022-2032 Budget

Source: Peel Region

*Includes spending for goods movement \\
and safety initiatives for Vision Zero
Accommodate growth by new AT infrastructure. Reduce new transportation infrastructure spending by 87%.

- 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
Repurpose traffic lanes as transit lanes. Redefine goods movement corridors. Connect mobility hubs.

Reduce 135 lane/km of road, lower maintenance cost by $35M.
Establish 'people-first' driven design from the outset. Shift culture and remove redundant infrastructure.

Reduce Crossing Distance  Repurpose Lanes for Rapid Transit  Remove Double Left-Turns

Delivering BRT
Bridge the gap between the timing of transit infrastructure and other infrastructure.

Development Requires:

**Hard Infrastructure**
- Water
- Wastewater
- Roads

**10+ Years**

**Soft Infrastructure**
- Education & Library
- Social & Health
- Parks & Recreation

**10+ Years**

**Transit Infrastructure**
- LRT, BRT, All-day GO
- Active Transportation
- First and Last Mile

**10+ Years**

% of Change in Household Size

Canada Census 2021

- 71% of Housing are Apartments & Rows 2011-2021
- 45,000+ Acre of Land within Mass Transit Station Areas MTSAs
- 9.5 million population in 2046
- 7.2 million in 2021

Source: Province of Ontario
Bundle walkable neighbourhood with social infrastructure. Position community hub as a nucleus.

280,000 SF
Community Hub
+
13 Acre
Hub Campus

21,000^†
New Units
+
2m^† SF
Commercial

27,200^†
Ex. Population
+
72,800^†
New Population
Adaptable Model of a 24-hour Community Facility

Health & Social Hub
- Health Clinics
- Agency Spaces
- Exhibition Venue
- Meeting Rooms

Library & Education Hub
- Elementary School
- Daycare
- Library
- Study Space

Recreation & Food Hub
- Community Kitchen
- Culinary & Pop-ups
- Gymnasium
- Dance Studios
- Lounge & Event

Arts, Culture & Design Hub
- Performance Space
- Exhibition Venue
- City Design Centre
- Cultural Workshop
- Agencies Showroom

Technology & Innovation Hub
- Lecture Hall & Event
- Co-work Space
- Start-ups and Accelerators
- Mentoring Space

Green & Ecology Hub
- Urban Agriculture
- Eco-learning Garden
- Outdoor fitness
- Green energy connections
**Lifelong Learning Model for Global Competency**

**Technology & Innovation**
- **$26B GDP** in Ontario
- 6.5% growth
- Digital Solutions of Automation
- Relevance: Ministry of Economic Development, Job Creation and Trade, Ministry of Infrastructure, Ministry of Education

**Arts, Culture & Design**
- **$28B GDP** in Ontario
- 19% growth
- Diversity and Mosaic of Identities*
- Relevance: Ministry of Heritage, Sport, Tourism & Culture Industries, Ministry of Education

**Health, Social & Food**
- **$38B GDP** in Ontario
- 10% growth
- Authentic Learning, Life Skills & Teacher Training
- Relevance: Ministry of Children, Community & Social Services, Ministry of Health and Long-Term Care, Ministry of Infrastructure, Ministry of Education

**Recreation, Green & Ecology**
- **$64B GDP** in Ontario
- 20% growth
- Global Phenomenon & Community Leadership

**Age Friendly & Active Mobility**
- **$8B GDP** in Ontario
- 70% growth
- Green Infrastructure
- Walk and Roll to School
- Relevance: Ministry of Transportation, Ministry of Seniors & Accessibility, Ministry of Education

- **6,500+** innovation and tech companies in Brampton
- **18,000+** youth arts prog. participants in Brampton
- **2,300+** health & life sciences companies in Brampton
- **Teacher Training** ECE program in Brampton
- **80% GHG reduction by 2050 in Brampton**
Getting to Transit Oriented Communities Initiative

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

Align Timing of Infrastructure with Development

Phase 1’s Lessons Learned and Future Opportunities

- 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

Accurately Quantify On-the-ground Needs

Create New Value through Accelerating Delivery
Getting to Transit Oriented Communities Initiative
Phase 2:
Create a Living Model of Transit Oriented Communities

‘Living Plan’ Collaborative Model
Design-in Social Equity
Unlock Transit and Mobility Hub
Climate Ready TOC

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

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Next Session August 18th: Addressing Climate Change
Thank You!

uli.org/infrastructure