



MOVEMENT OF GOODS SERIES



Movement of Goods Challenges in Toronto-Waterloo Corridor

Toronto Region Board of Trade

November 29, 2017

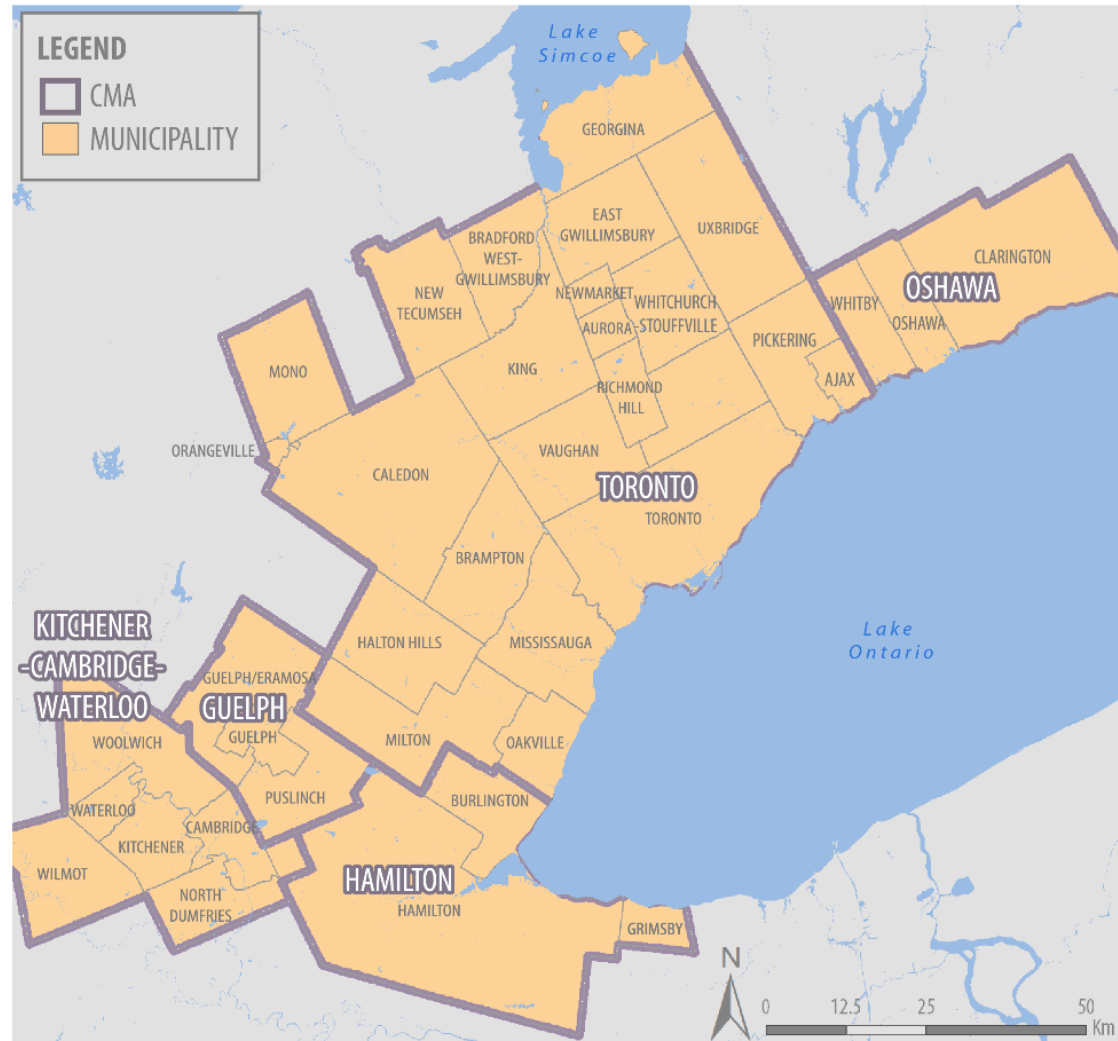
The project focuses on the movement of goods in the Toronto-Waterloo Corridor, “the Region”

1 million tonnes
moved through
Region daily

Equivalent to
\$3 billion of
goods daily

CPCS Solutions for
growing economies

Study Area



The Region is Canada's largest multi-modal goods transportation hub

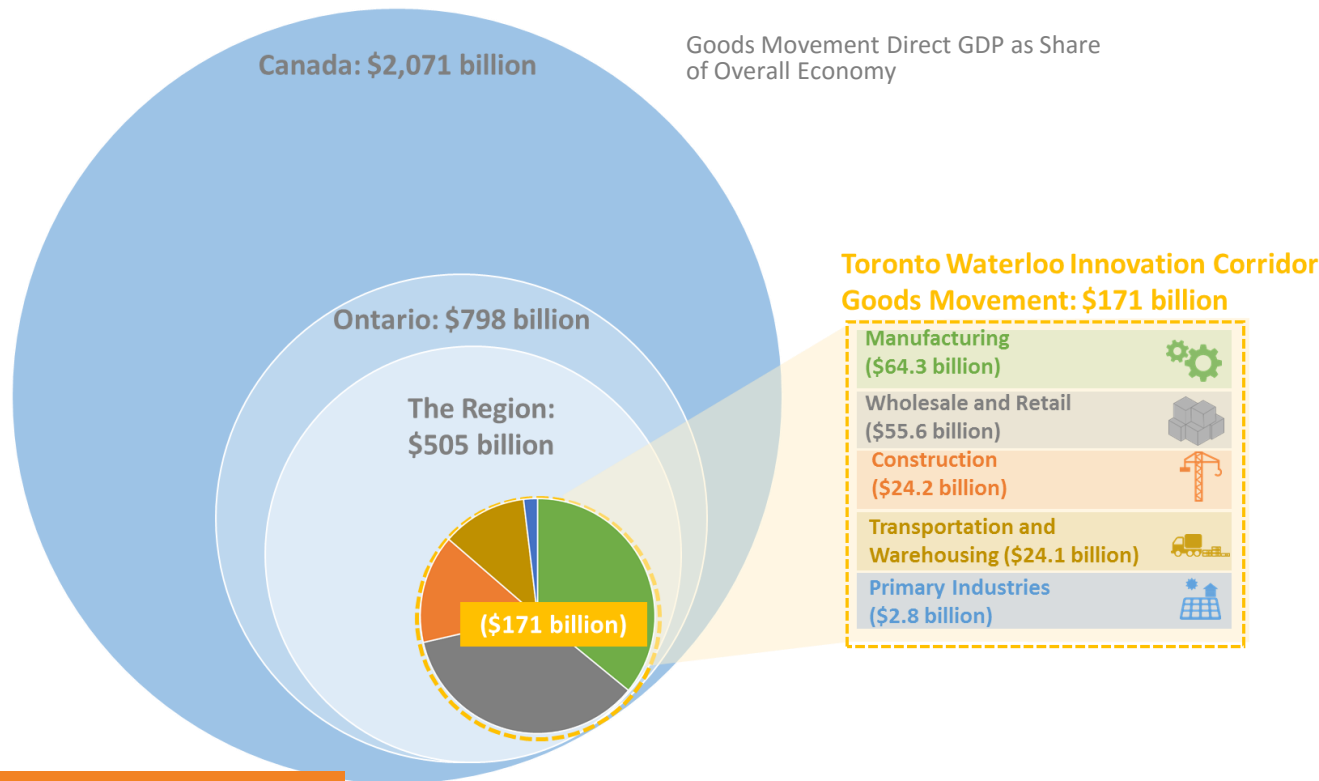


The movement of goods is the backbone of the regional economy

*Without the movement of goods in the Region, Canada's economy would quickly **grind to a halt**.*

The movement of goods represents:

- 34% of Region's GDP
- 8% of Canada's total GDP
- 1.4 m direct jobs



But... there are challenges holding the Region back



- Road congestion
- Land use conflicts
- Last-mile connectivity
- Need for strategic vision
- Application of technology



But... there are challenges holding the Region back: Road

CORRIDOR	GREATEST DELAY INTENSITY*
Highway 401 - East of airport	147
Highway 404 - At 401 interchange	88
Highway 427 - North of 409 interchange	62
Queen Elizabeth Way - At 403 merge	42
Highway 410 - North of 401 interchange	42
Highway 400 - At 401 interchange	37

*measured in hours of daily truck delay per road-km-refers to specific section of corridor where truck delay is greatest (sum of both directions). Labels show CMA names.

Capacity Utilization: The Corridor's road and highway system is well over capacity in many areas and at many times of day. Performance has suffered as a result. There are over 3,000 hours of truck delay per day along Highway 401 through the Corridor. On Highway 401 around the airport, trucks manage an average speed of only 40 km/h on weekdays at 4 pm, while speed limits are 100 km/h.

Major Pain Points: The Corridor's most important truck corridor – Highway 401 – is the most heavily congested, and many other freight corridors are as well.

Source: MTO ICorridor and Commercial Vehicle Survey data (2016)

"[Trucks] are carrying everything you can possibly imagine from consumer goods to food and agricultural products, manufacturing inputs, finished goods and raw materials into and out of the GTHA every day... It's difficult and only getting worse... Congestion is costly from a productivity standpoint and also from a service standpoint."
 -Jonathan Blackham, Director, Policy & Public Affairs at the Ontario Trucking Association.

But... there are challenges holding the Region back: Air

FIGURE 5: Air Transportation Facilities in the Region

FACILITY	DETAILS
Toronto Pearson International Airport	<ul style="list-style-type: none"> • 379,000 tonnes of loaded/unloaded cargo, in 2016 • Ranked #1 nationally • 43% of national air cargo originating in or destined to international locations
John C. Munro Hamilton International Airport	<ul style="list-style-type: none"> • 123,000 tonnes of loaded/unloaded cargo, in 2016 • Ranked #3 nationally • 14% of national air cargo originating in or destined to Canada

Source: Transport Canada, "Transportation in Canada 2016: Addendum"

Capacity Utilization: With only 50% of capacity used in the short term (based on warehouse space), and considerable potential to expand existing infrastructure in the future, there are no hard constraints on air cargo capacity in the Corridor.

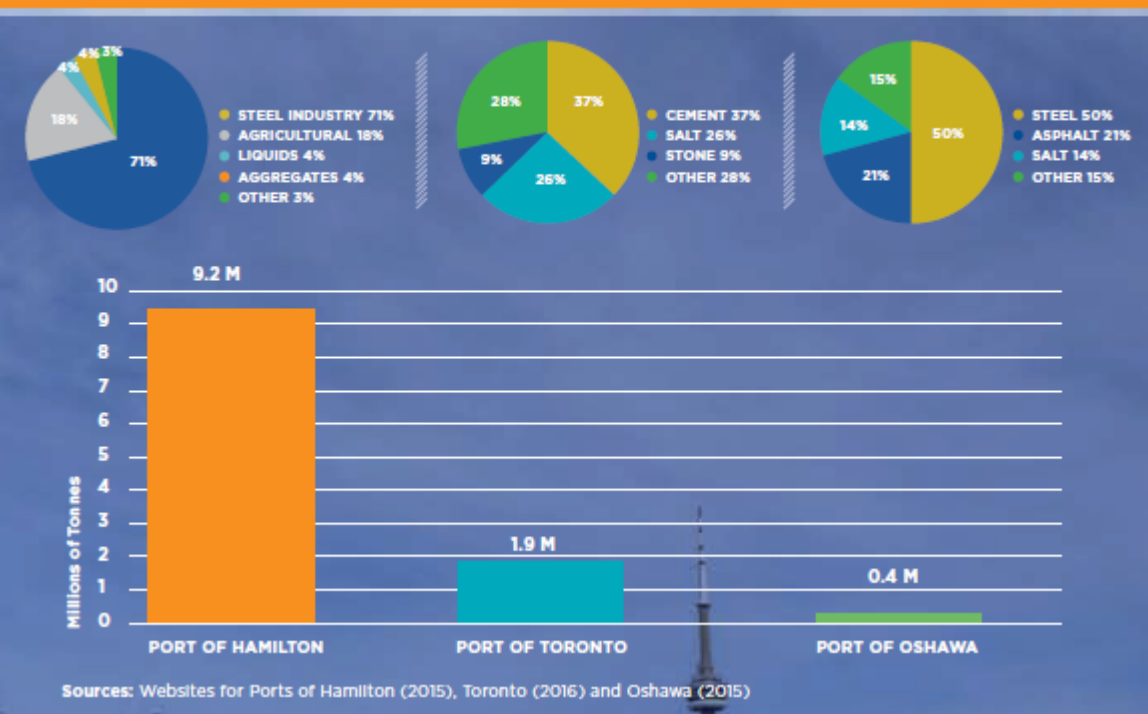
Major Pain Points: Ground transportation. Good road connections are critical to air cargo supply chains—yet the Corridor’s largest airport Pearson International is adjacent to its largest truck bottleneck.

Source: Greater Toronto Airports Association (GTAA) for Transport Canada, "Needs Assessment Study: Pickering Lands," 2010. Toronto Pearson International Airport, "Toronto Pearson Fast Facts" (2017)

“Clogged roads complicate the movement of goods to and from [Pearson] airport. For air cargo, which is selected for its speed, the time spent on the ground moving to and from the airport is a key factor in an airport’s successful support of supply chains.” Howard Eng, President & CEO, Greater Toronto Airports Authority (GTAA)

But... there are challenges holding the Region back: Marine

FIGURE 6: Marine Transportation Facilities in the Region



Capacity Utilization: The St. Lawrence Seaway, connecting the Corridor's ports with Montreal and the Atlantic as well as with Lake Erie and the Upper Great Lakes, only operates at around 50% capacity.

Major Pain Points: The Ports, The Corridor's Ports are diversifying and expanding import and export opportunities for businesses in the Corridor. However, ports are running out of land for development as growing cities crowd in around them.

Source: Source: Consultations with GTAA, CN and Port of Hamilton (2017)



“The St. Lawrence Seaway is only running at half its capacity... Marine is a critical mode of transportation that’s not being maximized today.”
- Ian Hamilton, President & CEO of the Hamilton

But... there are challenges holding the Region back: Rail


FIGURE 8: Rail Transportation Facilities in the Region

OPERATOR	DETAILS
Canadian National	<ul style="list-style-type: none"> • Mainline north of Steeles connects Eastern Canada to Southwest Ontario and the US • Mainline north from Richmond Hill connects Eastern Canada to Western Canada • Intermodal terminal in Brampton handles 40% of CN's intermodal traffic • MacMillan Yard in Vaughan is one of the largest freight classification yards in Canada
Canadian Pacific	<ul style="list-style-type: none"> • Mainline north of Dupont connects Eastern Canada to Western Canada and the US • Intermodal terminal in Vaughan is CP's largest in Canada • CP Expressway in Milton offers short-haul trailer-on-flatcar service between Toronto and Montreal • Classification yard in northeast Toronto <p>Sources: Railway Association of Canada, "Canadian Rail Atlas" (online tool)</p>

Capacity Utilization:
 With traffic up more than 50% since 2009 to 949,000 container units in 2016, CN's Brampton Intermodal Terminal is nearing capacity, and CN is planning to expand to a new intermodal terminal in Milton.

Major Pain Points:
 Intermodal rail is important for both imports and exports- but terminal capacity is being squeezed. Development is also encroaching on some of the Corridor's most important rail lines.

Source: Source: Canadian International Freight Forwarders Association (CIFFA), letter to the Milton Hub Panel, 2017.



"BIT is nearing capacity and CN has stated that its ability to expand or further increase capacity of the terminal to meet the growing demand for container goods in the region is constrained...[CN] needs another terminal in the GTA." - Canadian International Freight Forwarders Association

What can be done? Four action-oriented policy areas:

- 1) Smarter Use of Existing Infrastructure
- 2) Targeted Investments in New Infrastructure
- 3) Improved Coordination of Transportation and Land Use
- 4) Addressing Urban Conflicts

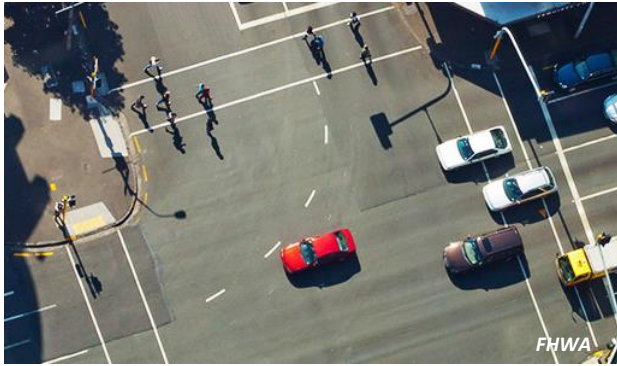
1) Smarter Use of Existing Infrastructure

*Making **smarter use** of what we already have is much less costly and faster than building new infrastructure*



1) Smarter Use of Existing Infrastructure

- Making our roads and highways work better with technology



Adaptive signal control

Traffic lights that respond to conditions to improve traffic flow

Highway corridor improvements

such as hard shoulder running, ramp metering and variable speed limits



- Managed roadways

HOT-HOV lanes to improve overall traffic flow



Dedicated truck usage of the Highway 401 express lanes

Rebates or tax credits to shift trucks to Highway 407



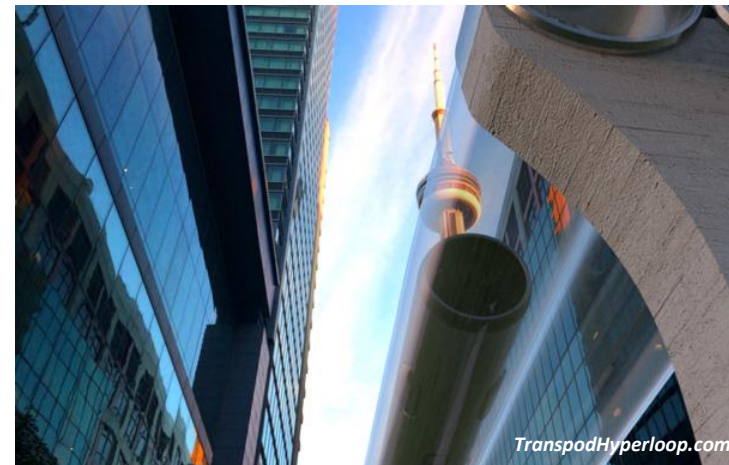
1) Smarter Use of Existing Infrastructure

- Pushing the frontier on “game-changing” technologies



Connected and autonomous vehicles including autonomous trucks and truck platooning

Hyperloop technologies for the movement of people and goods



“We're not talking about adding a parking lot or more lanes to our freeways. We're talking about the reinvention of mobility”

- Andrew Ginther, Mayor of Columbus, OH

2) Targeted Investments in New Infrastructure

*In some cases, just using what we have more efficiently is not enough and we need to build the **projects with the strongest business cases** quickly and efficiently*



2) Targeted Investments in New Infrastructure

- Rigorous business cases
- Bringing the movement of goods into the business case



- Leveraging available federal funding for goods movement projects



3) Improved Transportation-Land Use Coordination

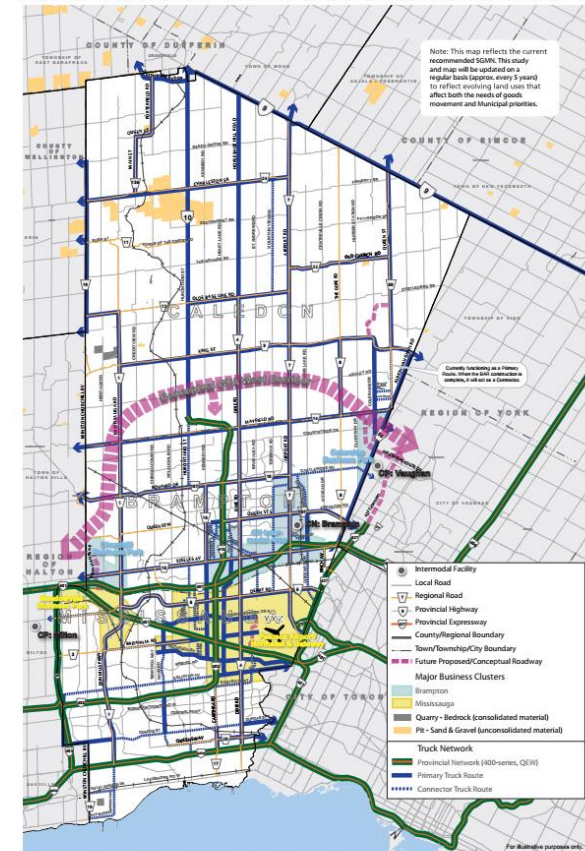
Protecting the Region's industrial land and mitigating land use conflicts



3) Improved Transportation-Land Use Coordination



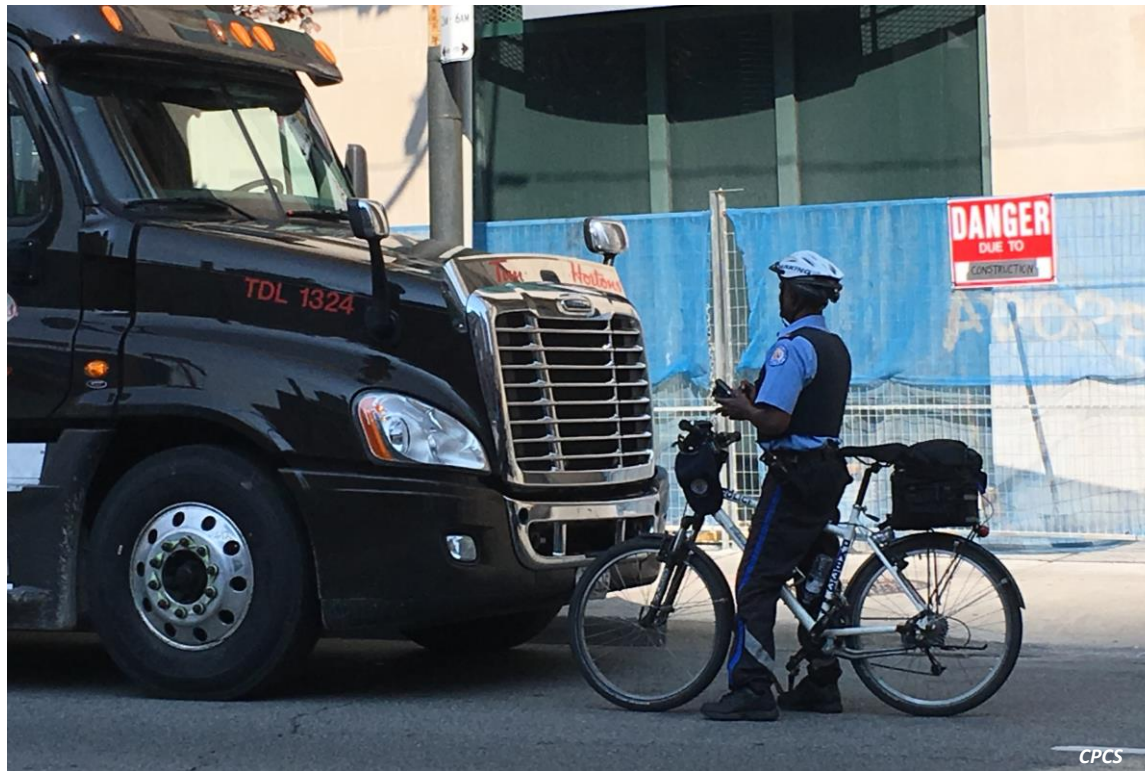
- Applying the MTO Freight-Supportive Guidelines
- Applying the RAC/FCM Proximity Guidelines
- Multimodal Strategic Goods Movement Networks



Source: Transport Canada Assessment of Access to Intermodal Terminals and Distribution/Transload Facilities in the Province of Ontario: Identification of the Clusters and Facilities

4) Addressing Urban Conflicts

Solving the *last mile* for goods movement



4) Addressing Urban Conflicts

- Encouraging off-peak deliveries
- Dedicated delivery areas and design solutions for truck unloading areas
- Creative solutions to last-mile issues



CPCS



TFL.gov.uk



Business Insider

Where does the Toronto Region Board of Trade fit in?

*Given the Board's experience in incubating and supporting regional cluster strategies (e.g. Food & Beverage, Human Health Sciences and Advanced Manufacturing Supercluster Bid), it is anticipated that the Board **will continue to advocate on behalf of the Goods Movement industries** to all levels of government going forward, similar to the Transportation & Logistics cluster organization for the Greater Montreal Area CargoM.*

Bringing It All Together

Smarter Use of Existing Infrastructure

- *Adaptive Signal Control*
- *“Smart” highway improvements*
- *Managed lanes*
- *Dedicated truck usage of 401 express*
- *Rebates or tax credits for 407 use*
- *Connected & autonomous vehicles*
- *Hyperloop technology*

Targeted Investments in New Infrastructure

- *Rigorous adherence to a business case framework*
- *Bringing the movement of goods into the business case*
- *Leveraging available federal funding*
- *Strategic co-operation across the Region to solicit funding*

Improved Transportation-Land Use Coordination

- *MTO Freight-Supportive Guidelines*
- *RAC-FCM Rail Proximity Guidelines*
- *Multimodal strategic goods movement networks*

Addressing Urban Conflicts

- *Off-peak deliveries*
- *Dedicated delivery areas and design solutions for truck unloading*
- *Urban consolidation centres*
- *Zone-based congestion charges*
- *Delivery drones and robots*

Next Steps

Movement of Goods Series of Four Reports:

- ✓ **Economic Impact Report (Aug, 2017)**
- ✓ **Bottlenecks & Challenges (Nov 20, 2017)**
- ✓ **Costs and Benefits for Businesses & Consumers (Nov 20, 2017)**
- ✓ **Potential Policies to Improve Bottlenecks & Challenges (Jan, 2018)**

Thank you!

Contact Information

Natasha Apollonova

Assistant Vice President, Policy, Toronto Region Board of Trade

T: 416 862 4541 | napollonova@bot.com



RESEARCH
SUPPORT



SPONSORED BY

