

Local Planning for Goods Movement in Ontario

A survey of current municipal practices and
opportunities

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Executive summary

Ontario's population and economy are growing. In the Greater Golden Horseshoe, where much of this growth is occurring, the population is forecast to grow from 9.7 to 13.5 million and employment is forecast to grow from 4.8 to 6.3 million jobs from 2016 to 2041. This rapid growth, along with other trends, is resulting in a major increase in the amount of goods moving on and in our roads, rail, air and waterways. For example, from 1990 to 2014, the volume of road freight activity in Ontario grew by 242%.

Goods movement is a backbone of our local and regional economies (38% of Ontario's economy comes from freight-intensive industries), but increased freight activity, particularly road freight, has environmental and community impacts. For example, heavy-duty trucks alone are now responsible for just under 10% of Ontario's emissions. Canada-wide, overall freight emissions (which include trucks, rail, air and marine) are projected to eclipse passenger emissions by 2030. Moreover, growing road congestion — caused by both passenger and commercial vehicles — is a mounting economic concern, particularly for the goods movement sector.

We need to plan for how goods move to and through our communities in order to support the goods movement sector in becoming more efficient. This in turn saves businesses money and generates a host of co-benefits, ranging from reduced emissions to improved safety and air quality for residents. Municipalities have a pivotal role to play in planning for goods movement given their role in regulating land use, managing road networks, investing in infrastructure, and conducting local climate change planning. In the Greater Golden Horseshoe (GGH), new policies in the *Growth Plan, 2017* make this role even more explicit. Further, the Ontario Ministry of Transportation (MTO)'s *Freight-Supportive Guidelines* show how municipalities, planners, engineers and developers can create freight-supportive communities.

To expand municipal action on freight, it is important to understand the current status of, and barriers to, municipal goods movement planning. This report presents the results of an online survey of 23 upper-, lower- and single-tier municipalities from across Ontario, interviews and a focus group that we conducted to examine these questions. We found that many municipalities are taking deliberate actions to develop more efficient goods movement systems. At the same time, there is an enormous opportunity to expand the practice of municipal goods movement planning in order to achieve economic and environmental outcomes.

We found that freight is not a top transportation concern for most municipalities surveyed. Municipal action on freight is mixed: just over half of municipalities surveyed reported having freight policies in their official plan or transportation master plan (however, this was the case for all upper-tier municipalities surveyed, indicating the importance of regional action). Regardless of whether overarching policies are in place, about three-quarters of municipalities reported having site design and operational measures to address goods movement.

Where policies are in place, we heard from respondents that asset management and economic development are the most important factors motivating adoption. Meanwhile, safety and neighbourhood concerns are influential in bringing about site planning operational measures. Health and environmental factors are not yet significant motivators, but there is an opportunity to raise the profile of these factors to strengthen the case for goods movement planning.

Gathering information is the first step to policymaking, but we found that there is a significant lack of data at the local level. Only 13% of surveyed municipalities had conducted a freight audit or study in the last 10 years, and about one-third have data on goods movement.

No one factor emerged as the key to unlocking more local goods movement planning. When surveyed on what they needed to advance freight planning, respondents ranked factors such as financial resources, access to data, external and internal capacity, and greater stakeholder interest relatively equally. This reflects the wide range of economic, urban and political factors present in each municipality and suggests that tailored solutions will be required.

However, many clear next steps emerged to support expanded municipal goods movement planning. First and foremost, the lack of data on the movement of goods emerged as a key barrier. A coordinated effort to collect, harmonize and make available data from a variety of sources across Ontario, and particularly urban regions, would unlock a great deal of potential for plan-making and action.

In large urban areas like the GGH, we heard that there is a need for region-wide authorities to take a stronger role in coordinating freight action, particularly with respect to data collection, establishing a regional strategic goods movement network, and setting norms and standards. At the municipal level, we heard that there is a need for improved internal collaboration among municipal staff in economic development, planning, transportation, public health and environmental departments, who have a

mutual interest in addressing goods movement. There are significant opportunities for deeper collaboration between local industries (such as logistics, warehousing, retail, etc.) and local governments, but municipalities noted that building relationships and finding productive collaboration opportunities with the private sector is a challenge.

In addition, to inform and support expanded municipal goods movement planning, further research is needed to better understand the content of existing municipal freight policies, specific challenges inside and outside the GGH, data collection priorities, and opportunities for multi-sectoral collaboration. There is also a need to provide more information and resources to municipalities, including building a business case for action and clarifying how new provincial policies and funding programs can be leveraged for action.

For more thinking on goods movement:

For an overview of existing federal and provincial policies and programs in Canada, please see *The State of Freight: Understanding greenhouse gas emissions from goods movement in Canada*, at: www.pembina.org/pub/state-of-freight.

For a global scan of collaborative urban freight approaches, please see *Improving Urban Freight Efficiency: Global best practices in reducing emissions in goods movement*, at: www.pembina.org/pub/improving-urban-freight-efficiency.

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1. Introduction

Municipal governments have long supported and managed goods movement in their communities in order to support local economic activity and manage their assets, while addressing neighbourhood and safety concerns. For example, municipalities plan and regulate land use, establish local truck routes, regulate parking, oversee site design, manage signal timing, invest in local transportation infrastructure, and more.

Moving goods is a backbone of our local and regional economies. 38% of Ontario's economy comes from freight-intensive industries, and trade between Ontario and the United States was worth \$284 billion in 2011.¹

In the Greater Golden Horseshoe, where much of the province's growth is occurring, the population is forecast to grow from 9.7 to 13.5 million and employment is forecast to grow from 4.8 to 6.3 million jobs, from 2016 to 2041. The volume of goods being moved to serve residents, businesses and industry is growing alongside these changes. At the same time, global trends and new technologies (e.g. online shopping, just-in-time delivery) are shifting the nature of goods movement. As a result, there are a growing number of trucks on the road and more shipments by rail, air and marine. In fact, the volume of road freight activity in Ontario grew by 242% from 1990 to 2014.²

While this is a positive sign of economic growth, these changes in the goods movement sector also present challenges. At 33% of total greenhouse gas (GHG) emissions, transportation is the highest-emitting economic sector in Ontario, and goods movement is a major contributor. Emissions from on-road heavy-duty trucks alone are responsible for just under 10% of provincial emissions,³ and this is growing: Canada-wide, overall freight emissions (which include trucks, rail, air and marine) are projected

¹ Ontario Ministry of Transportation, *Freight-Supportive Guidelines*, (2016), Chapter 1.

<http://www.mto.gov.on.ca/english/publications/freight-supportive-guidelines.shtml>. Information from Transport Canada.

² Natural Resources Canada, Comprehensive Energy Use Database, "Table 11: Freight Road Transportation Secondary Energy Use and GHG Emissions by Energy Source."

<http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/showTable.cfm?type=CP§or=tran&juris=on&rn=11&page=4>. Freight activity measured in tonne-kilometres.

³ Environment and Climate Change Canada, *National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada* (2017) [NIR 2017] Part 3.

http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/10116.php This number does not include on-road movements by commercial light-duty vehicles.

to eclipse passenger emissions by 2030.⁴ These trends have major implications for the quality of life in neighbourhoods, for cohabitation between different modes of transportation, and for human health, since trucks are a leading source of criteria air contaminants.⁵

Given these trends, planning for how goods move to, through and around our communities — municipally, provincially and federally — is necessary. In Ontario, provincial policies such as the *Provincial Policy Statement, 2014*, the *Growth Plan for the Greater Golden Horseshoe, 2017* require that infrastructure and corridors for goods movement, along with employment lands, be established, protected and enhanced in order to ensure a strong economy. Municipalities have a leading role to play in the implementation of these objectives. In 2016, the Ontario Ministry of Transportation (MTO) published the *Freight-Supportive Guidelines*⁶ to help municipalities, planners, engineers and developers create freight-supportive communities. These guidelines provide a comprehensive overview of the approaches and tools municipalities can use to plan for goods movement.

In the summer of 2017, we conducted research to determine the status of, barriers to, and opportunities for municipal freight planning in Ontario. This report presents the findings of a survey of 23 municipalities, four follow-up interviews, and a focus group discussion with municipal staff. Overall, we found that many Ontario municipalities are taking deliberate actions to develop more efficient goods movement systems and to integrate these actions into broader planning efforts. At the same time, we see an enormous opportunity to expand the practice of municipal goods movement planning in order to achieve joint economic and environmental outcomes. While focused on Ontario, we anticipate that many of the findings will be relevant in other Canadian municipalities.

1.1 Definitions and scope

This research examines municipalities in Ontario. Among our survey participants, there is stronger representation from municipalities in the Greater Golden Horseshoe (GGH)

⁴ Environment and Climate Change Canada, *Canada's Second Biennial Report on Climate Change* (2016), Annex 1. <https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=02D095CB-1#BR-SecAnnex1>

⁵ Environment Canada (2017). "Air pollutants – Criteria Air Contaminants." Accessed July 11, 2017 from <https://www.ec.gc.ca/air/default.asp?lang=En&n=7C43740B-1>.

⁶ *Freight-Supportive Guidelines*.

than from other regions of the province (see Section 3.1 for a description of our outreach approach). The nature of goods movement and the existing policy frameworks are very different across Ontario, and future work could examine local dynamics in greater detail.

The scope of this research is to understand the public policy frameworks under which the sector operates. In this research we focus on policies that can be implemented by regional and local municipal governments. However, planning for goods movement needs to happen at all levels of government,⁷ and leadership from the private sector will also be critical to developing solutions.

We use the terms “freight” and “goods movement” interchangeably in this report. These terms encompass many modes of transport, including road, air, marine, rail and pipelines. However, our primary focus in this report is on-road heavy-duty vehicles (trucking). This is the segment most affected by municipal jurisdiction and it is also the most significant in terms of goods moved and emissions produced.

Upper/lower/single-tier municipalities

In Ontario, municipalities may be upper-, lower- or single-tier. Upper-tier municipalities (e.g. the Region of Peel) are counties or regional municipalities that contain two or more lower-tier municipalities (e.g. the Cities of Mississauga and Brampton and the Town of Caledon). Lower-tier and single-tier municipalities are those communities usually referred to as “cities” or “towns.” Lower-tier municipalities always belong to an upper-tier municipalities, while single-tier municipalities (e.g. The City of Toronto, the City of Kingston) do not.

Provincial legislation delegates different and complementary planning responsibilities to upper- and lower-tier municipalities. Single-tier municipalities assume all delegated responsibilities.⁸

⁷ For an overview of existing federal and provincial policies and programs in Canada, please see: Bora Plumpre, Eli Angen and Dianne Zimmerman, *The State of Freight: Understanding greenhouse gas emissions from goods movement in Canada* (Pembina Foundation, 2017). <http://www.pembina.org/pub/state-of-freight>. For a global scan of collaborative urban freight solutions, please see: Dianne Zimmerman and Lindsay Wiginton, *Improving Urban Freight Efficiency: Global best practices in reducing emissions in goods movement* (Pembina Institute, 2017). <https://www.pembina.org/pub/improving-urban-freight-efficiency>

⁸ Neptis Geoweb, “Upper-Tier/Single-Tier/Lower Municipalities.” <http://www.neptis.org/geoweb/data-catalogue/upper-tiersingle-tierlower-municipalities>

2. Sustainable local freight planning

2.1 Drivers for local action

While municipalities do not control major freight infrastructure like airports, seaports and provincial highways, they have a crucial role to play in goods movement — particularly trucking and protecting access to other major infrastructure — because they regulate land use, oversee development and site design, and manage road design and operations.

A number of factors can encourage or compel municipalities to adopt policies on goods movement, although the presence or importance of each factor varies from one community to the next. We provide a brief overview of five main drivers below: meeting requirements from higher levels of government, ensuring economic competitiveness, protecting quality of life, fostering healthy communities, and reducing carbon pollution. One objective of this research was to determine to what extent these drivers factor into decision-making in Ontario municipalities.

Meeting requirements from higher levels of government

Increasingly, provincial policies in Ontario require municipalities to protect transportation corridors and employment lands, design complete streets, conduct climate change planning, and more — all of which have strong links to goods movement. Table 1 provides an overview of existing provincial requirements in the *Provincial Policy Statement, 2014*, the *Growth Plan for the Greater Golden Horseshoe, 2017*, and the *Growth Plan for Northern Ontario, 2011*.

Importantly, a new policy in the *Growth Plan for the Greater Golden Horseshoe, 2017* says that “municipalities may identify employment areas located adjacent to or near major goods movement facilities and corridors, including major highway interchanges, as *prime employment areas* and plan for their protection for appropriate employment uses over the long term.” Prime employment areas will have a concentration of manufacturing, warehousing, and logistics; as a result they will be low density areas that generate goods movement activity and have specific transportation needs. This new policy, although voluntary, underscores the importance of linking land use and transportation planning with respect to goods movement. Since many of the areas that

could be considered prime employment areas cross regional boundaries,⁹ regional and inter-municipal coordination in this effort will be imperative.

Many other existing and forthcoming provincial strategies or plans affect the context for local freight planning and provide an opportunity for municipalities to participate in regional coordination and data sharing. For example, Metrolinx' *Big Move Transportation Plan (RTP), 2008* led to the development of the *GTHA Urban Freight Study, 2011* which sets out 17 actions for urban freight in the Greater Toronto and Hamilton Area (GTHA) under five strategic directions. Most or all of these actions would directly support local freight planning. The RTP is currently undergoing an update with a final plan due at the end of 2017. In addition, the Ministry of Transportation is conducting long-range multimodal transportation planning for Northern Ontario and the Greater Golden Horseshoe via the *Northern Ontario Multimodal Transportation Strategy to 2041* and the *Greater Golden Horseshoe Multimodal Transportation Plan to 2051*. These strategies/plans are different from the policies presented in Table 1 because they do not constitute binding requirements on municipalities.

Table 1. Provincial policy framework for municipal action on goods movement

Provincial policy	Selected requirements related to goods movement
<i>Provincial Policy Statement (PPS), 2014</i> [all Ontario municipalities]	<p>1.2.4 Where planning is conducted by an upper-tier municipality, the upper-tier municipality in consultation with lower-tier municipalities shall: b) identify areas where growth or development will be directed, including the identification of nodes and the corridors linking these nodes.</p> <p>1.2.6.1 Major facilities and sensitive land uses should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term viability of major facilities.</p> <p>1.3.2.1 Planning authorities shall plan for, protect and preserve employment areas for current and future uses and ensure that the necessary infrastructure is provided to support current and projected needs.</p> <p>1.3.2.3 Planning authorities shall protect employment areas in proximity to major goods movement facilities and corridors for employment uses that require those locations.</p> <p>1.7.1 Long-term economic prosperity should be supported by: b) optimizing the long-term availability and use of land, resources, infrastructure, electricity generation facilities and transmission and distribution systems, and public</p>

⁹ The Neptis Foundation, "Unlocking the potential of the Airport Megazone." <http://www.neptis.org/publications/unlocking-potential-airport-megazone>.

	<p>service facilities; f) providing for an efficient, cost-effective, reliable multimodal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs to support the movement of goods and people.</p> <p>1.8.1 Planning authorities shall support energy conservation and efficiency, improved air quality, reduced greenhouse gas emissions, and climate change adaptation through land use and development patterns which: d) focus freight-intensive land uses to areas well served by major highways, airports, rail facilities and marine facilities.</p>
<p><i>Growth Plan for the Greater Golden Horseshoe, 2017</i> [municipalities in GGH only]</p>	<p>2.2.5 (8) Municipalities may identify employment areas located adjacent to or near major goods movement facilities and corridors, including major highway interchanges, as prime employment areas and plan for their protection for appropriate employment uses over the long term.</p> <p>3.2.2 (3) In the design, refurbishment, or reconstruction of the existing and planned street network, a complete streets approach will be adopted that ensures the needs and safety of all road users are considered and appropriately accommodated.</p> <p>3.2.2 (4) Municipalities will develop and implement transportation demand management policies in official plans or other planning documents or programs to c) prioritize active transportation, transit, and goods movement over single-occupant automobiles.</p> <p>3.2.4 (1) Linking major goods movement facilities and corridors, international gateways, and employment areas to facilitate efficient goods movement will be the first priority of highway investment.</p> <p>3.2.4 (2) The Province and municipalities will work with agencies and transportation service providers to c) promote and better integrate multimodal goods movement and freight-supportive land use and transportation system planning.</p> <p>3.2.4 (3) Municipalities will provide for the establishment of priority routes for goods movement, where feasible, to facilitate the movement of goods into and out of employment areas, including prime employment areas, and other areas of significant commercial activity and to provide alternate routes connecting to the provincial network.</p> <p>4.2.10 (1) Upper- and single-tier municipalities will develop policies in their official plans to identify actions that will reduce greenhouse gas emissions and address climate change adaptation goals, aligned with the Ontario Climate Change Strategy, 2015 and the Climate Change Action Plan, 2016.</p> <p>4.2.10 (2) In planning to reduce greenhouse gas emissions and address the impacts of climate change, municipalities are encouraged to a) develop greenhouse gas inventories for transportation, b) establish municipal interim and long-term greenhouse gas emission reduction targets.</p>
<p><i>Growth Plan for Northern Ontario, 2011</i> [municipalities in Northern Ontario only]</p>	<p>4.3.2 Economic and service hubs should be designed to c) function as economic hubs linking Northern Ontario with other significant economic regions in Ontario and beyond.</p> <p>4.5.2 The Province will help strengthen the capacity of Northern Ontario communities to plan for economic development by supporting the</p>

	<p>development of strategic regional economic plans.</p> <p>5.3.2 The transportation system within Northern Ontario will be planned and managed with an emphasis on opportunities to b) link major markets, resource development areas, and economic and service hubs; c) meet the needs of the existing and emerging priority economic sectors and help implement regional economic plans; d) enhance connectivity among transportation modes including rail, road, marine and air; f) reduce emissions and other environmental impacts associated with transportation.</p> <p>5.3.4 The Province will work with partners to optimize the freight transportation and tourism development potential of northern waterways and ports in an environmentally responsible way.</p>
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Ensuring economic competitiveness

Congestion is a growing economic concern across the province, particularly in the GGH. Trucking is a major cause of congestion, and at the same time, businesses suffer efficiency and economic losses due to delays in the delivery of goods.¹⁰ The Toronto Region Board of Trade estimated in 2011 that gridlock costs the Toronto region \$6 billion in lost productivity and predicted that this figure would rise to \$15 billion by 2031 without action.¹¹ Therefore, in municipalities with major goods movement infrastructure and related economic activity, a call for municipal goods movement planning and policy often comes from industry itself. These bottom-up demands can create an incentive for private actors to collaborate with governments to share data and implement solutions while also raising the profile of freight among decision-makers.

Protecting quality of life

Residents, too, can generate bottom-up demand for goods movement planning and policy. Shipping and deliveries can produce noise, congestion and other nuisances that reduce quality of life and safety in the places where people live. In urban environments, concerns tend to arise around commercial streets or where residential and industrial areas approach each other, or in zones around construction activity. In rural areas, truck traffic related to resource movement, such as aggregates from quarries and pits (common in several regions of the GGH), can be a source of concern. Local governments respond by enacting policies and regulations to guide or control truck movements and practices on local roads.

¹⁰ Ministry of Municipal Affairs and Housing, *Growth Plan for the Greater Golden Horseshoe* (2017), 2. <http://placestogrow.ca/images/pdfs/ggh2017/en/growth%20plan%20%282017%29.pdf>

¹¹ Toronto Region Board of Trade, *A Green Light to Moving the Toronto Region: Paying for Public Transportation Expansion* (2013), 5. https://www.bot.com/portals/0/unsecure/advocacy/DiscussionPaper_AGreenLight_March18_2013.pdf

Fostering healthy communities

Health concerns may increasingly drive goods movement planning. Transportation is one of the largest sources of air pollution in Canada,¹² and trucks are a leading source of nitrogen oxides (NO_x) and particulate matter (PM)¹³ which cause and aggravate respiratory illness and cardiovascular disease.¹⁴ Research is also revealing links between air pollution exposure and lung cancer,¹⁵ dementia,¹⁶ and adverse birth outcomes.¹⁷

Traffic-related air pollution is a particular health risk in urban areas, and the zone within 300–500 metres from a major road is the most impacted by traffic emissions.¹⁸ Since a larger share of people with lower socio-economic status live in these zones, they are more likely to be exposed to outdoor air pollution and also potentially more vulnerable to the health effects of this exposure, as they are more likely to face other health inequities.¹⁹ Therefore, efforts to support the freight sector in becoming more clean and efficient can lead to healthier communities while also offering economic benefits to industry.

Reducing carbon pollution

In 2015, transportation was the highest-emitting economic sector in Ontario, generating one-third of total GHG emissions. Freight is a significant and growing source of emissions within the sector: emissions from on-road heavy-duty trucks alone were responsible for just under 10% of provincial emissions in 2015.²⁰

¹² Environment Canada, “Pollution sources – Transportation,” 2017. <https://www.ec.gc.ca/air/default.asp?lang=En&n=800CCAF9-1>

¹³ City of Toronto, *Path to Healthier Air: Toronto air pollution burden of illness update* (2014). <https://www1.toronto.ca/City Of Toronto/Toronto Public Health/Healthy Public Policy/Report Library/PDF Reports Repository/2014 Air Pollution Burden of Illness Tech RPT final.pdf>

¹⁴ Environment Canada, “Air pollutants – Criteria Air Contaminants,” 2017. <https://www.ec.gc.ca/air/default.asp?lang=En&n=7C43740B-1>.

¹⁵ Public Health Ontario, *Case study: Health effects of traffic-related air pollution in a small community* (2015). https://www.publichealthontario.ca/en/eRepository/Traffic_Pollution_Small_Community_2015.pdf

¹⁶ Lilian Calderón-Garcidueñas et al., “Living close to heavy traffic roads, air pollution, and dementia,” *The Lancet*, 389 (2017). [http://dx.doi.org/10.1016/S0140-6736\(16\)32596-X](http://dx.doi.org/10.1016/S0140-6736(16)32596-X)

¹⁷ *Path to Healthier Air*.

¹⁸ *Case study: Health effects*.

¹⁹ Canadian Population Health Initiative, *Urban Physical Environments and Health Inequities: Summary report* (2011). https://www.cihi.ca/en/cphi_upe_summary_rep_en.pdf

²⁰ *NIR 2017*, Part 3. This number does not include on-road movements by commercial light-duty vehicles.

The volume of road freight activity (measured in tonne-kilometres) in Ontario has increased dramatically (by 242%) over the period from 1990 to 2014.²¹ Although passenger transport still accounts for the majority of emissions within the sector, overall freight emissions (across all modes) are projected to eclipse passenger emissions in Canada by 2030,²² as gains in efficiency²³ are being overshadowed by overall increases in freight activity.

Building a more clean and efficient goods movement sector is therefore crucial to achieving municipal, provincial, and national climate commitments. Freight solutions can reduce fuel use and travel time by reducing congestion and conflicts between modes of transportation, facilitating intermodal operations, shortening trip lengths, or shifting the last mile of trips to smaller vehicles. Such interventions save businesses money while also reducing GHG emissions per unit of goods transported.

2.2 What can municipalities do?

Many municipal actions directly or indirectly influence the efficiency and sustainability of the movement of goods in their communities. The MTO *Freight-Supportive Guidelines* present municipal goods movement actions under three main categories:

1. **Land use and transportation planning:** Municipalities plan local transportation networks and the distribution of land uses, which determine the connectivity of logistics, manufacturing and commercial areas to each other and to broader transportation networks. Municipalities are also responsible for protecting access to major infrastructure like airports, seaports and intermodal hubs.
2. **Site design:** Municipalities regulate development on private land, which means they control design elements such as site entrances, exits, and loading docks to facilitate the movement of goods on and off the site.
3. **Transportation systems and operations:** Traffic signal timing, intersection design on local roads, and parking regulations are examples of operational

²¹ Natural Resources Canada, Comprehensive Energy Use Database, “Table 11: Freight Road Transportation Secondary Energy Use and GHG Emissions by Energy Source”
<http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/showTable.cfm?type=CP§or=tran&juris=on&rn=11&page=4>

²² *The State of Freight*, 8.

²³ NRCan Comprehensive Energy Use Database, Table 11.

aspects managed by municipalities that affect the flow of traffic, including trucks, across their community. Municipalities are also responsible for managing the interactions between different modes of transportation on their roadways.

To support actions across these three categories, municipalities can also play a role in:

4. **Data collection:** collecting (or partnering with other entities to collect) data on traffic and truck movements, air pollution, fuel use, etc. to inform the development and evaluation of policies and programs.
5. **Stakeholder collaboration:** leading or participating in multi-sectoral and multi-jurisdictional working groups to coordinate freight action.
6. **Pilot projects:** working with industry to test possible freight solutions in their territory.
7. **Capital investment:** making decisions about where to invest municipal revenue and influencing the allocation of grants from other levels of government.

Of course, the type and scale of action required will vary across communities, depending on their size, the nature of their local economy, and their location within the province.

Local vs. regional interventions

Where two levels of municipal government are in place (in Ontario, lower- and upper-tier municipalities), these levels will play a different and complementary role on freight. For example, upper-tier municipalities will play a stronger role in land use and transportation planning (since lower-tier plans must conform to their upper-tier), whereas lower-tier municipalities will continue to regulate site design and control operational aspects. Data collection and stakeholder collaboration may be more effective at a regional scale. The balance of responsibility may vary from one region to the next.

3. Survey results

3.1 Research approach

We developed an online survey to be distributed to staff at Ontario municipalities with the goal of developing a baseline of local freight planning actions and a preliminary understanding of barriers and opportunities. Staff at the Ontario Ministry of Transportation and Transport Canada reviewed a draft of the survey. The survey was distributed over the month of July 2017 with the support of the Clean Air Partnership²⁴ and the regional Municipal Services Offices of the Ontario Ministry of Municipal Affairs and Ministry of Housing.

To reach out to municipalities where significant goods movement is likely to occur, we targeted lower/single tier Ontario municipalities with a 2016 census population greater than 45,000. We were able to directly contact 40 of these municipalities and all of the lower/single-tier municipalities with a population greater than 150,000. In addition, we directly contacted seven upper-tier municipalities, for a total of 47 Ontario municipalities directly contacted. We received 23 complete responses (response rate of 49%). The list of municipalities that responded is presented in Appendix 1. The survey questions and the summary results are presented in Appendix 2.

Table 2 shows the distribution of respondent municipalities in the Growth Plan policy regions (GGH, Northern) as well as the share of upper-, lower- and single-tier municipalities. As there is stronger representation from municipalities within the GGH, the results are more representative of the realities in these urban areas.²⁵ It is also possible that municipalities taking action on freight were more likely to respond to the survey, so this should be considered when interpreting the statistical results.

Table 2. Distribution of municipalities surveyed

Policy region	Upper-tier	Lower-tier	Single-tier	Total
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²⁴ The Clean Air Partnership (CAP) is a charitable environmental organization whose mission is to help municipalities become sustainable, resilient, vibrant communities. The CAP facilitates the Clean Air Council.

²⁵ The GGH contains the GTHA, which is the plan area for the *Regional Transportation Plan, 2008* and the *GTHA Urban Freight Strategy, 2011*.

GGH	5	13	1	19
Northern	0	0	1	1
Other	0	0	3	3
Total	5	13	5	23

Following the survey, we conducted follow-up phone calls with four survey participants who expressed an interest in discussing their responses. In addition, we presented preliminary findings to, and hosted a discussion with, the participants at the September 22, 2017 meeting of the Clean Air Council to gather additional feedback and insights. The Clean Air Council is a network of 26 Ontario municipalities working together to develop sustainability and resilience actions; members include municipal staff responsible for climate change and health files.

3.2 Infrastructure present

All respondent municipalities have provincial highways and rail, and 50% or more have municipal highways, alternative fuel charging stations (such as electric chargers) and airports (see Figure 1). We surveyed Ontario’s highest populated municipalities, so it is unsurprising that they have a higher prevalence of goods movement infrastructure.

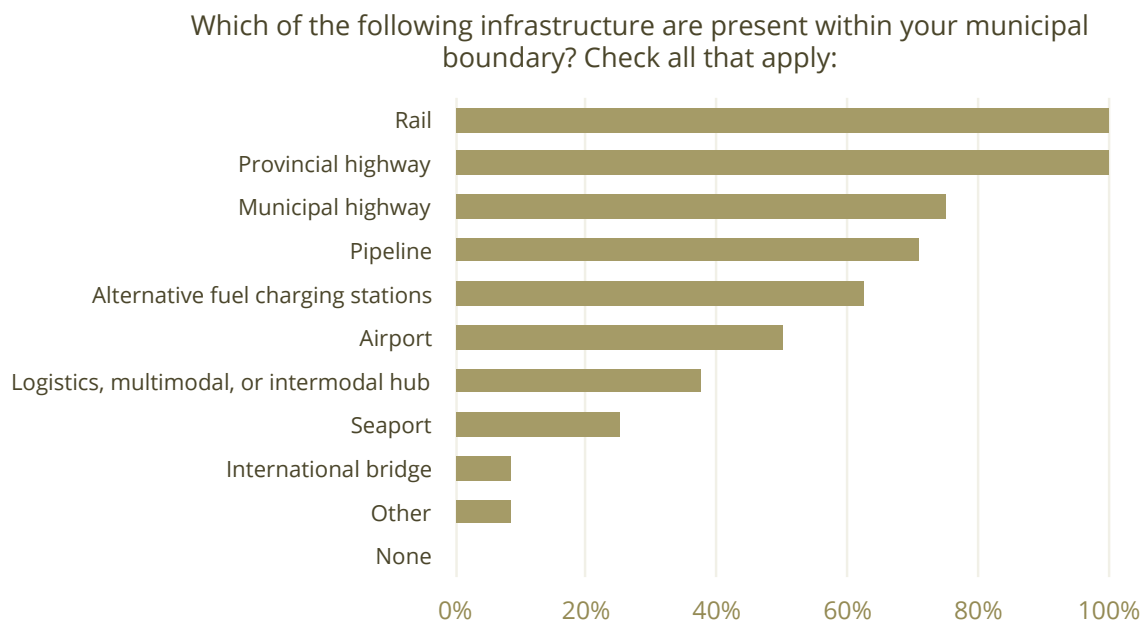


Figure 1. Goods movement-related infrastructure in respondent municipalities

3.3 Policies, programs and planning

Land use and transportation policy

While only one respondent municipality reported having a standalone goods movement plan in place, over half of municipalities reported having goods movement policies in their official plan and/or transportation master plan (some also mentioned that other plans or strategies are currently under development). Some lower-tier municipalities highlighted that they participate in their upper-tier's freight planning work. One-quarter of respondents said they have no goods movement policies in place (Table 3).

Table 3. Rate of adoption of goods movement policies

Existing goods movement policies	Upper-tier	Lower-tier	Single-tier	Total
In standalone goods movement plan	20%	0%	0%	4%
In official plan	100%	54%	40%	61%
In transportation master plan	100%	54%	0%	52%
None	0%	23%	60%	26%

Knowing that over half of municipalities surveyed have goods movement policies in their official plans and transportation master plans is informative, but does not provide a complete picture of the extent of local policy. The type of directions embedded in these plans can vary widely according to local context, need and resources. While a thorough scan of existing municipal policy was outside of the scope of this research report, a rapid review of the policy documents identified by respondent municipalities confirmed that there is variation in their content. Many of the reviewed municipal plans offer protections for employment lands and goods movement facilities as required by provincial policy. Some plans go further to call for the exploration of demand management tools for goods movement including intelligent transportation systems, off-peak deliveries or even congestion pricing. Some plans establish a strategic goods movement network (SGMN)²⁶, while many call for the establishment of an SGMN in the

²⁶ A strategic goods movement network is a system of corridors that form the backbone of a transportation system and make up the top of a hierarchy of truck routes. For a more thorough definition, see: Region of

future and/or confirm their willingness to participate in the establishment of a GTHA-wide network.²⁷ Many plans call for further study of various aspects of the goods movement system and for collaboration with other levels of government and stakeholders.

Example policies from existing municipal plans

The Region of Peel's goods movement program and the York Region Transportation Master Plan each set out a strategic goods movement network for their region.

The Region of Durham created a Goods Movement Strategy as part of its Long Term Transit Strategy. The Goods Movement Strategy involved an inventory of existing goods movement activity, an assessment of business needs, and a best practices review.

The City of London Official Plan sets out a classification of streets including which street types will accommodate and facilitate freight movements, and which will not.

The Town of Halton Hills is currently developing a Trucking Strategy to support economic and employment activities, while balancing the needs of the community, including developing solutions that will help direct truck traffic away from downtowns and urban areas.

Site design, transportation systems and operations

Regardless of whether overarching freight policies have been adopted, all respondent municipalities have practices and programs to manage truck movements. For example, over three-quarters of municipalities have truck restrictions on local roads and operational measures to accommodate trucks (see Figure 2). In the “other” category, one municipality mentioned having designated truck routes specifically for long combination vehicles, while another mentioned the use of weight restrictions related to asset management reviews as well as pavement and geometric design within capital projects.

Similarly, nearly three-quarters (74%) of respondent municipalities indicated that they have site design guidelines or requirements to accommodate truck deliveries and the

Peel, *Strategic Goods Movement Network Study* (2013), 5.

<https://www.peelregion.ca/pw/transportation/goodsmovement/pdf/peel-final-technical-report.pdf>

²⁷ The establishment of a GTHA-wide strategic goods movement network was one of 17 actions identified in Metrolinx' *GTHA Urban Freight Study, 2011*. It has not yet been completed.

same number indicated in a separate question that they consider goods movement in their review of development proposals. When asked to describe in what way goods movement is considered, respondents most often referred to site planning considerations such as reviewing truck access to the site of proposed development and associated loading areas. Looking beyond the site itself, some respondents also mentioned:

- Requiring a traffic impact study by project proponents to consider impacts of new development on the wider transportation network.
- Reviewing proposals for conformity with the local or regional official plan, which may include goods movement policies.
- Considering the impact of new developments on truck movements to key employment areas.

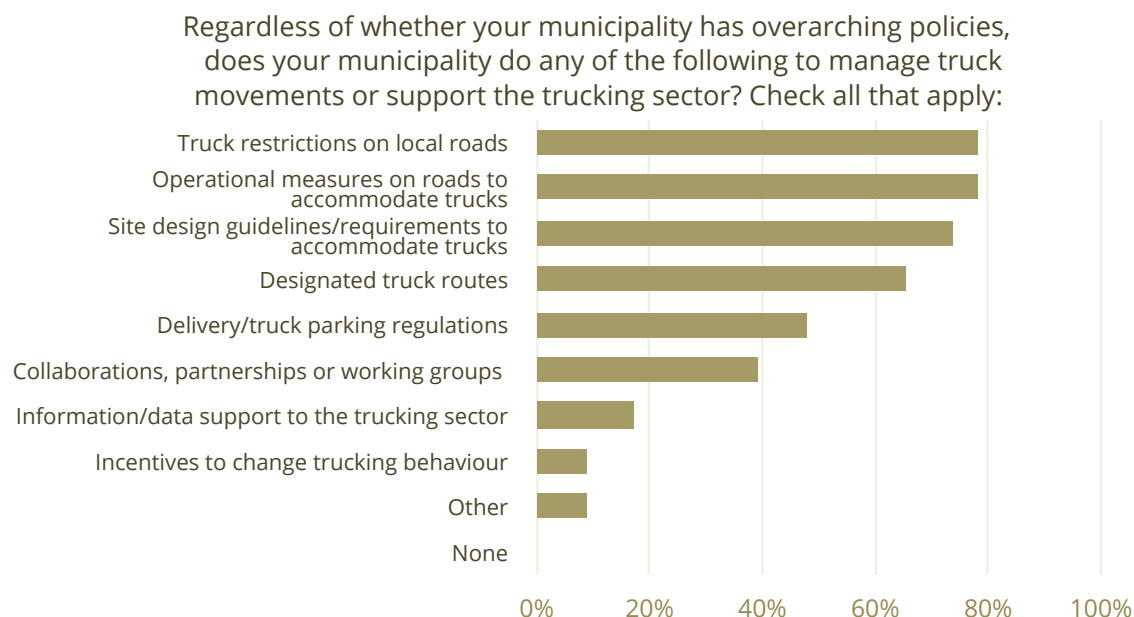


Figure 2. Rate of adoption of road freight management practices

3.4 Drivers for action

Regarding adoption of high-level land use and transportation policies on freight, “infrastructure management and planning” and “economic development/support” overwhelmingly emerged as the most prevalent drivers, at 94% and 89% of respondents, respectively (see Figure 3).

Anecdotally, our discussions with municipal staff indicated that pressure from local industry to improve goods movement could elevate the priority among municipal decision-makers. Conversely, a lack of coordinated pressure from industry can lead to freight opportunities being overlooked. One respondent stated that given the importance of economic development as a motivator, presenting the business case for freight action can help decision-makers turn their attention to the issue and justify allocating resources to the file.

Regarding road freight management practices such as site design, transportation systems and operations, “infrastructure management and planning” remains the most important motivation, identified by 77% of respondents. However, “neighbourhood” and “safety concerns” also emerged as significant drivers, at 73% and 59% of respondents, respectively (see Figure 4), since operational and site design measures can help trucks move safely and direct them to routes away from sensitive areas. In some rural areas of the GGH, the transportation by truck of aggregates (e.g., sand, gravel, clay, bedrock) from local pits and quarries generated neighbourhood and safety concerns and has been an important motivator for action.

“Health” and “sustainability/environment concerns” did not rank highly as motivators for policy or management practices.

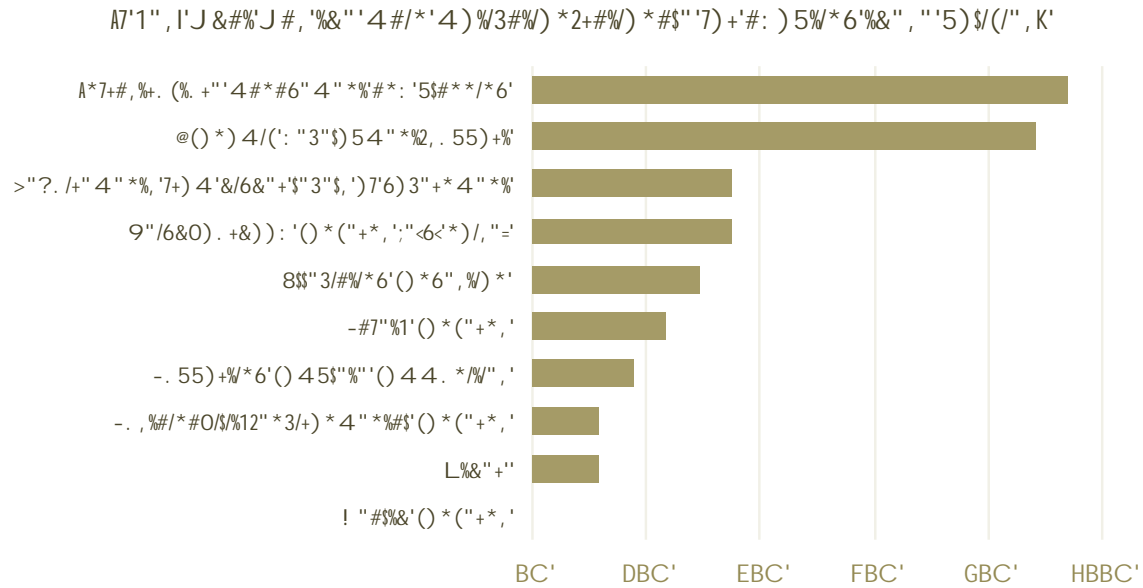


Figure 3. Motivations for the adoption of local freight policies²⁸

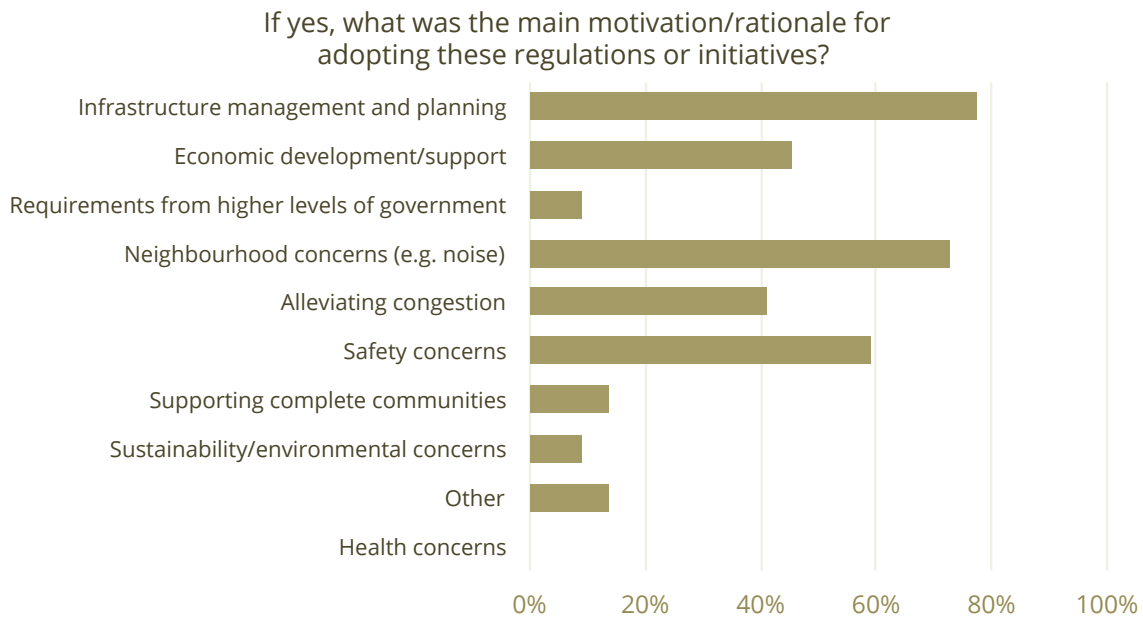


Figure 4. Motivation for the adoption of truck management practices²⁹

²⁸ Respondents were asked to choose three options but some respondents chose more than three.

²⁹ Respondents were asked to choose three options but some respondents chose more than three.

3.5 Data collection

Data on goods movement, including basic information such as truck volumes, origins and destinations, is very limited. Among survey respondents, 13% reported having conducted a freight audit³⁰ or a baseline study on goods movement in the last 10 years. That being said, some lower-tier municipalities mentioned they have collaborated with their upper-tier municipality in data collection as part of a freight audit or study. Anecdotally, our discussions with municipal staff suggested that goods movement studies are more often initiated in response to specific projects or nuisances rather than as comprehensive, municipality-wide studies. We also heard that many companies are, understandably, wary of sharing their data for competitiveness reasons.

30% of municipalities reported having data related to goods movement. Truck, turning movement and/or mid-block counts were most often cited, while one respondent mentioned having permanent count stations in areas with high levels of goods movement. Other respondents mentioned collaborating with the Ministry of Transportation on its commercial vehicle survey and interception study.

In our discussions with municipal staff, a lack of data emerged consistently as a barrier to planning for, or raising awareness about, freight. Even when data is acquired, there is no standard methodology to interpret and use the information from an emissions perspective. For example, municipal staff responsible for climate change planning highlighted the lack of a standard methodology for setting the scope of freight GHG emissions attributable to a municipality. A shared definition of freight is also needed; for example, determining whether taxis, service vehicles and other non-passenger vehicles should be considered within scope.

Only one municipality affirmed that it is considering the impact of e-commerce on its transportation system.³¹

³⁰ A freight audit is defined as “a planning and economic development tool used to assist municipalities, planners and engineers in making informed decisions to enable the safe and efficient movement of freight.” (*Freight-Supportive Guidelines*, Section 2.1).

³¹ The Region of Peel plans to conduct a study on the impact of e-commerce in 2018.

3.6 Priorities, resources and barriers

Planning for freight does not appear to be the most important transportation issue among respondent municipalities. On average, respondents ranked goods movement planning as a five on a scale of one to ten among transportation priorities.

Respondents were asked to identify what their municipality would need in order to do further planning for goods movement, from among five areas of support: financial resources, external support/guidance, internal knowledge, access to data and for goods movement to be a higher priority among stakeholders and elected officials. Financial resources emerged most often as the number one factor, at 27% of respondents. Each of the factors had an average score of 3, indicating the needs of local governments and stakeholders are different from one municipality to the next (Figure 5).

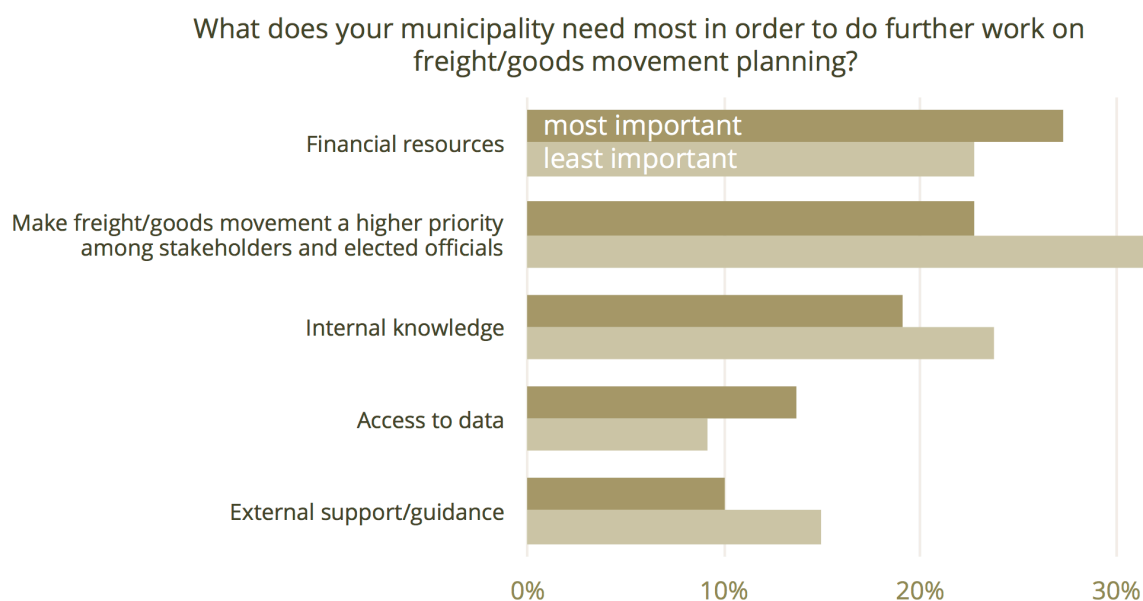


Figure 5. What municipalities need in order to do more work on local freight planning

When asked to identify other factors that would support future work around goods movement planning, respondents had a variety of responses, including:

- Support, investment, or guidance from higher levels of government.
- Establishment of a comprehensive goods movement network by the province.
- Guidance on how to accommodate commercial long combination vehicles.
- Involvement in, or leverage of, external research and/or collaboration with universities.

- Production of data highlighting impacts of local freight on greenhouse gas emissions.
- Development of a standard methodology for measuring freight emissions attributable to a municipality.
- Building internal staff capacity dedicated to goods movement.
- Development of case studies of successful freight-supportive design criteria.
- Building stronger partnerships between municipalities and major freight companies, particularly rail and other major players.
- Advance the topic in the public consciousness and among government/elected officials.
- Support for pilot projects to test solutions.

3.7 Coordination

Goods movement does not follow municipal boundaries. Certain aspects of freight planning are stronger when a regional approach is taken, including data collection and harmonization, establishment of a strategic goods movement network, identification of regionally significant employment zones, and standardizing approaches and norms. A wide variation in regulatory frameworks (e.g. zoning and other bylaws) and approaches from one community to the next will result in suboptimal outcomes and may lead to inter-municipal competition to attract industry. Notwithstanding the important role of municipalities, in our discussions with municipal staff, we heard that regional coordination is a crucial area for improvement.

As goods movement is a cross-cutting issue, municipal staff in economic development, planning, transportation, public health and environment all have a role to play in freight planning. This dynamic has the potential to lead to fruitful internal collaboration, but can also mean that the freight file has no “owner.” In our discussions with municipal staff, we heard that there is little coordination among transportation teams working on freight, health departments and climate change planning within municipal organizations, despite the fact that freight is a major contributor to local emissions and reduced air quality. We also heard that in some cases, additional staff or in-house expertise is needed to be able to address freight. Some participants suggested that a “business case” to help promote the importance of goods movement planning within municipalities and among elected officials would be a useful tool.

Relatedly, staff in planning departments could be missing opportunities to apply a goods movement lens to other planning efforts, for example when developing complete streets guidelines or transit priority projects. One respondent highlighted that freight can be a blind spot for planning professionals since planning programs do not usually address this topic.

Finally, we heard that municipalities need support in their outreach efforts to industry. Municipal staff may not know how to locate or reach major logistics players operating in their communities. Further, municipal staff recognize that the process of building trust with industry takes time and care, since their actions may be perceived as trying to regulate the goods movement sector rather than support it.

4. Conclusions

The nature of goods movement, the composition of the local economy, and the applicable provincial policy framework vary widely across Ontario municipalities. The level of priority of goods movement, and the appropriate solutions, vary accordingly. However, many key conclusions can be drawn from the research presented in this report:

- The level of priority for freight planning relative to other transportation concerns is average overall. The case should be made for considering moving people and goods as complementary areas for intervention: with freight volumes growing rapidly and emissions from freight set to eclipse passenger emissions in Canada by 2030, freight action is crucial.
- Policy action at the municipal level is mixed: just over half of surveyed municipalities reported having freight-related policies in their official plans and/or transportation master plans and one has a standalone freight plan at this time. Site design and operational measures to address goods movement are more common, at about three-quarters of municipalities surveyed. Municipalities should be supported and encouraged to adopt freight policies and practices.
- Data on goods movement at the local level is limited. About 13% of surveyed municipalities had conducted a freight audit or study in the last 10 years, and about one-third have or collect data on goods movement. This presents a significant barrier to freight planning. Robust local and regional freight data is essential if municipalities are to generate evidence-based policy and measure the impact of interventions, particularly on GHG emissions reductions.
- Asset management and economic development were identified as the most important factors motivating freight policy adoption. Coordinated pressure from local industry appears to be a key factor in raising the profile of freight concerns among elected officials. Meanwhile, safety and neighbourhood concerns are important drivers for bringing about freight management practices, such as truck routes and restrictions and site planning. Health and environmental concerns were not identified by staff as the most important factors, perhaps because these areas can be a blind spot for transportation planning departments in general. There is an opportunity to link economic, health and sustainability narratives to further build the case for action on freight and to help to build public awareness.

- Financial resources, access to data, external support/guidance, internal knowledge and elevating freight as a priority among stakeholders and elected officials were all considered important factors to support expanded municipal freight planning. Needs vary widely across municipalities, so blanket solutions are not the best course of action.
- Internal coordination on freight planning appears to be limited among municipalities. There is an opportunity to facilitate collaboration among economic development, planning, transportation, public health and environmental departments for stronger outcomes. In addition, since economic development will remain a principal motivator for freight planning, supplying the business case for action can help to support municipal staff in elevating the priority within their organizations and toward decision-makers.
- Where two levels of municipal government exist, upper-tier municipalities have so far taken the lead in freight planning. This appears to be a logical sharing of responsibility given that many efforts are more effective at the regional scale.
- There is appetite and need for cross-jurisdictional coordination on freight planning to address cross-boundary dynamics. Certain aspects of freight planning are stronger when a regional approach is taken, including data collection and harmonization, establishment of a strategic goods movement network, identification of regionally significant employment zones, and standardizing approaches and norms. While this effort should be led by government, the involvement of regionally significant industry players and universities is also critical.

5. Next steps

There is significant opportunity to conduct further research and action to support Ontario municipalities in planning for goods movement. Building off the conclusions noted in the previous section, the next steps for governments, research organizations and other partners could include:

Research

- Conduct a comprehensive scan of existing Ontario municipal policies, starting with upper-tier municipalities, to identify best practices as well as opportunities to strengthen these policies in future reviews/updates. The MTO *Freight-Supportive Guidelines* could be used to categorize existing policy.
- Conduct a comprehensive scan of existing complete streets guidelines to examine the extent to which they address urban freight deliveries and cohabitation with other modes.
- Conduct interviews with municipalities outside of the GGH, particularly those with international border crossings and in the north, to understand localized needs in more detail.
- Conduct a survey of municipalities to determine (a) what freight datasets they hold, (b) whether it has or could be made publicly available, (c) what data is priority to collect from their perspective.
- Work with Ontario-based industry to (a) identify existing innovations for efficiency that can be leveraged/replicated, (b) understand industry's priorities for municipal policy and collaboration, and (c) explore barriers to data sharing.
- Supply more case studies and best practices, particularly on local freight plans that have a strong sustainability orientation, so that municipalities don't have to "reinvent the wheel" on freight planning.
- Replicate this research in other provinces.

Supporting municipalities

- Coordinate freight data collection and the development of employment inventories at the regional level and make this available to municipalities to support policymaking. In the GTHA, a plan for goods movement data³² has been developed by Metrolinx but not implemented.
- Reach out to municipalities to inform them of the MTO *Freight-Supportive Guidelines* and to gather feedback on how the guidelines are being used.
- Consider creating new provincial or federal funding programs to support municipalities in conducting municipal freight studies and developing freight plans. In Ontario, consider allocating revenue from the cap and trade program to fund these programs.
- Clarify how existing and new funding programs can be applied to freight planning, for example: provincial programs that support municipal community energy plans and climate action plans, the federal National Trade Corridors Fund.
- Provide guidance on how municipalities can conform to, or leverage, new policies in the *Growth Plan for the GGH, 2017* particularly with respect to the protection of prime employment lands (policy 2.2.5 (8)).
- Provide guidance on scoping and definitions and develop a standard methodology for freight GHG emissions quantification at the municipal level.
- Confirm a regional strategic goods movement network in the GGH that can be translated into municipal plans and strategies. (Metrolinx has presented a proposed network in the draft Regional Transportation Plan³³ but the implications of this network for municipalities need to be clarified.)
- Provide support to municipalities to help them identify and reach out to the goods movement industry including major fleet operators, logistics hubs and major retailers.
- Accelerate the implementation of the 17 actions³⁴ from the *GTHA Urban Freight Strategy, 2011*.

³² Metrolinx, *A Plan for Urban Goods Movement Data in the GTHA* (2013).

http://www.metrolinx.com/en/regionalplanning/goodsmovement/A_Plan_for_Urban_Goods_Movement.pdf.

³³ Metrolinx, *Draft 2041 Regional Transportation Plan for The Greater Toronto And Hamilton Area* (2017), 81. https://www.metrolinxengage.com/sites/default/files/draft_rtp.pdf

³⁴ Metrolinx. “GTHA Urban Freight Study & Status Update.”

http://www.metrolinx.com/en/regionalplanning/goodsmovement/urban_freight_study.aspx

Coordination

- Clarify the responsibilities of provincial entities, particularly the MTO and Metrolinx, on coordinating regional freight action and supporting municipalities.
- Create, enhance or restore regional working groups. One example is the GTHA Urban Freight Forum, initially established by Metrolinx under the *GTHA Urban Freight Strategy, 2011*. As well, the Smart Freight Centre proposes to facilitate collaboration across universities, all levels of government and industry to undertake evidence-based research and decision-making to coordinate freight-related activities.
- Identify priority areas for cross-boundary collaboration among municipalities and facilitate the necessary conversations.
- Involve key regional industry players in freight planning work.

Appendix A. List of participating municipalities

Name of municipality	Upper-tier	Lower-tier	Single-tier	GGH	GTHA	Northern
County of Simcoe	•			•		
Region of Peel	•			•	•	
Regional Municipality of Durham	•			•	•	
Regional Municipality of Waterloo	•			•		
Regional Municipality of York	•			•	•	
City of Brampton		•		•	•	
City of Belleville			•			
City of Burlington		•		•	•	
City of Kingston			•			
City of Kitchener		•		•		
City of London			•			
City of Mississauga		•		•	•	
City of Oshawa		•		•	•	
City of Pickering		•		•	•	
City of Sault Ste. Marie			•			•
City of Toronto			•	•	•	
Municipality of Clarington		•		•	•	
Town of Ajax		•		•	•	
Town of Aurora		•		•	•	

Town of Caledon		•		•	•	
Town of Halton Hills		•		•	•	
Town of Richmond Hill		•		•	•	
Town of Whitby		•		•	•	
Total (23)	5	13	5	19	16	1

Appendix B. Municipal Freight Planning Survey Questions