Peel Region

Strategic Plan 2017-2021

March 2017



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Section 1: Peel Region's Goods Movement Program

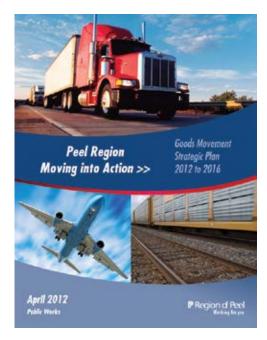
About the Goods Movement Strategic Plan

The Goods Movement Strategic Plan is a five-year blueprint for action for goods movement in Peel Region. It combines initiatives based on current needs and a long-term vision for the goods movement system. The recommendations in this plan are based on data and stakeholder input. This plan serves as an update to the 2012 - 2016 Goods Movement Strategic Plan and was prepared concurrently with the Goods Movement Long Term Plan which will be released following this Plan.

The 2012-2016 Goods Movement Strategic Plan included 23 Action Items to help move goods more efficiently, manage congestion and mitigate effects on health and the environment in Peel Region.

The Action Items were categorized in four strategic directions:

- 1 Infrastructure Improvements
- 2 Partnership, Communication and Advocacy
- 3 Systems Optimization of Existing Infrastructure
- 4 Planning and Forecasting





Overview of Goods Movement in Peel

The Region of Peel is a significant freight hub for Canada and a strategic location for national distribution. An estimated \$1.8 billion¹ worth of commodities travel to, from and through Peel every day making goods movement a pillar of the regional economy. Peel has demonstrated leadership in this area with forward-thinking goods movement planning initiatives. The growth in goods movement-related industries in Peel Region and the importance of these industries to the national economy underscores the need for continued planning in this area.

Figure 1: Goods Movement Definition

Goods movement is the transportation of a product or raw material by various modes and/or combination of modes including road (truck), rail, air, marine, and pipeline, making it available for public consumption.

Goods movement is an industry in itself and a key source of employment in Peel Region.

Goods movement industries include:



Manufacturing



Wholesale Trade



Transportation & Warehousing



Agriculture



Mining



Construction



The Transportation Systems Planning
Team within Peel's Transportation Division
has taken a leadership role in developing
and implementing goods movement
strategies in the Greater Toronto and
Hamilton Area (GTHA) and nationally.
Peel's Goods Movement program was

established in 2003. This was followed by the establishment of the public-private Goods Movement Task Force in 2009. The Task Force's mandate is to improve the efficiency, competitiveness, and sustainability of the goods movement system in the Region. In 2012, the Region released a Goods Movement Strategic Plan that established action items to be implemented over the next five-year period. These actions focused on improvements towards achieving the overall vision for the future goods movement system.

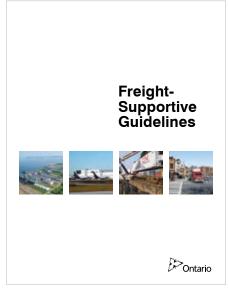
Figure 2: Peel's Goods Movement Program History



Goods Movement Garnering Greater Attention

Since the first Goods Movement Strategic Plan was released in 2012, there has been increasing recognition of both the impact and importance of goods movement by municipalities and other government agencies across Ontario. Significant progress has been made in the goods movement planning and policy context as demonstrated by:

- » Ministry of Transportation (MTO) Freight-Supportive Guidelines
- » MTO Off-Peak Deliveries Pilot
- » Metrolinx Data Collection Framework
- » Metrolinx Urban Goods Movement Technical Paper
- » Inclusion of Goods Movement Policies in the Provincial Policy Statement and Places to Grow: Growth Plan for the Greater Golden Horseshoe.
- » Provincial Long Term Transportation Plan for the Greater Golden Horseshoe



Region of Peel's Overarching Framework

Term of Council Priorities

The importance of addressing the impact of goods movement was highlighted in the Term of Council Priorities established by Peel Regional Council. Improving goods movement will be addressed through various strategies until the end of 2018.

Term of Council Priorities represent what the Region is focused on for the current Council Term. With each new Term of Council, new four-year priorities will be set out that build off our past successes and further our progress towards our 20-year outcomes.

"Improve Goods Movement" was identified as a Term of Council Priority.

The outcome that the Region would like to achieve with this Term of Council Priority is to reduce congestion on high volume truck routes at peak hours.

Figure 3: Peel's Term of Council Priorities 2015 - 2018



Source: www.peelregion.ca/strategicplan

Region of Peel Long Range Transportation Plan

The Region of Peel Long Range Transportation Plan (LRTP) Update is a 25-year plan to build communities for life and guide regional transportation policy through 2041. The LRTP serves as an overarching document for transportation planning in Peel. Its purpose is to make transportation in Peel easier, faster, greener, safer, and healthier. The LRTP Update considers moving goods and delivering services as an aspect of the regional transportation system.

Peel Region's population will continue to grow and it is important for Peel to be prepared to support the delivery of goods and services to a growing population.

The Goods Movement Strategic Plan (2017) works within the LRTP Update to find ways to support the goods movement industry and integrate it with the community.



It is estimated that each person generates 2-3 truck loads per year. In **2041**, this could result in 6 million trucks per year in Peel. **The Goods Movement Long Term Plan** will plan for this.



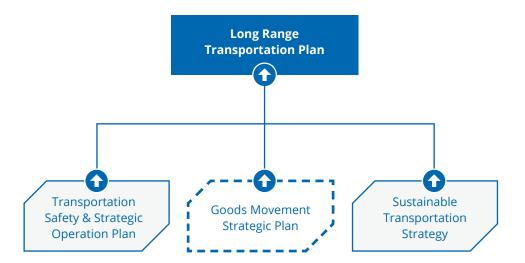


Figure 4: Peel Region's Transportation Planning Framework

Developing the 2017-2021 Strategic Plan

The Goods Movement Strategic Plan update was developed using technical analysis and extensive stakeholder consultation to arrive at relevant, innovative, and effective action items for the next five years:

- » Technical Analysis: Data collection and analysis was completed to determine patterns, trends, and opportunities for the goods movement network. Analysis included review of network data, best practices, trends, risks, and policies. Additionally, a literature review was completed to assess best practices of other jurisdictions.
- » Stakeholder Consultations: The project engaged stakeholders from goals development to vetting final action items. Consultation included stakeholders in all tasks from ongoing stakeholder committee meetings, interviews with industry partners, Goods Movement Task Force workshops, and the development of a public project website and online survey.



Section 2: Mission & Goals

Mission

Our Mission is for Peel to have a safe, convenient, efficient, multi-modal, sustainable and integrated goods movement transportation system that supports a vibrant economy, respects the natural and urban environment, meets the diverse needs of industries and residents and contributes to a higher quality of life.

Goals

Goals identify the strategic direction and outcome of goods movement initiatives in the Region. The goals named below support the Region's goods movement mission, and provide a strategic focus for the action items presented.

Each Action Item presented later in the Plan will show how they relate to the goals.

Figure 5: Goods Movement Strategic Plan Goals



Community & Environmental Sustainability

Manage and mitigate adverse community impacts of goods movement operations and support environmental stewardship.



Safety

Improve the safety and resiliency of the goods movement network and its users.



Economic Competiveness

Sustain and promote investments in the multimodal goods movement system for continued economic efficiency, growth and regional competitiveness.



Innovation & Technology

Use advanced technology, innovation, and accountability in the operation and maintenance of the goods movement transportation system.



Performance Management

Ensure timely, accountable and transparent plan implementation and performance evaluation.



System Performance

Enhance goods movement mobility through reduced delay, increased reliability and efficiency.

Figure 6: Goods Movement Strategic Plan Process

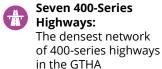
Our mission is for Peel to have a safe, convenient, efficient, multi-modal, sustainable, and integrated goods movement transportation system that supports a vibrant **Mission** economy, respects the natural and urban environment, meets the diverse needs of industries and residents and contributes to a higher quality of life. Community and Innovation and Technology **Environmental Sustainability** Goals Performance Management Safety **Economic Competitiveness** System Performance Goods Movement and Logistics Planning Coordination Foster Industry Innovation Through a Connected and Automated Vehicles (CAV) Corridor Pilot Project Increase Capacity with Convenient and Feasible Off-Peak Delivery (OPD) Adapt to Advancements in the E-Commerce Shift **Action Items** Expand and Encourage the Use of Long Combination Vehicle (LCVs) (new) Understand and Manage Aggregate Movements and its Impact on Communities Mainstream Goods Movement Transportation through Education and Outreach Pursue Alternative Fuels and Fuel Efficiency Initiatives Demonstrate and Advance Peel's National Role and Importance in Freight Fluidity • Guide land use planning on employment land sites to support the goods movement sector. • Facilitate planning to integrate and support the goods movement sector. • Improving travel time by shifting peak deliveries to off-peak, where feasible. • Tools and resources to better plan and adapt to the shifting retail landscape. • Improved efficiency and productivity through the increased use of LCVs. **Outcomes** • Increased understanding and awareness of the impact of aggregate movements on Peel Region's communities and infrastructure. • Increase regional goods movement knowledge through education and outreach. • Increase usage and awareness of alternative fuels and fuel efficiency initiatives. • Increase the profile of Peel's goods movement industry across Canada.

Section 3: Peel is a Goods Movement Hub

Peel Region is situated at the junction of some of North America's most important east-west and north-south trade routes. In the past 20 years, Peel's location on major trade corridors, the availability of appropriately zoned and priced land, access to a skilled workforce, and proximity to major markets in the GTHA and beyond have led to strong growth in the number of manufacturing, warehousing and goods-movement-related businesses locating in the region. This growth can also be attributed in part to the well-developed multi-modal transportation infrastructure found in Peel. Important elements of the goods movement network are shown in **Figure 7**.

Figure 7: Peel's Transportation Infrastructure





Canada's Largest International Airport



Social & Economic Benefits of Goods Movement

Goods movement is a backbone of the lifestyle we enjoy in North America, providing consumers with access to a wide range of diverse and affordable goods from around the world to consumers. Consumption and commerce are the ultimate drivers of goods movement, which underpins widespread economic benefits to Peel Region, the province, and the country.

The economic benefits of goods movement in Peel Region include:

Goods-movementrelated industries **contributed \$49 billion of GDP** to Peel Region's economy.² Goods movement-related industries account for **43% of jobs in Peel Region**. These jobs create roughly \$29 billion in labour income.

Toronto Pearson
International Airport
handles more air
cargo than the
Vancouver and
Montreal airports
combined.

Approximately \$1.8 billion worth of goods move through Peel every day on the eastwest highways.³

CN Brampton Intermodal Terminal is Canada's largest and handles **60% of CN's intermodal traffic.**⁴ Goods moving industries contributed **48%** of all industrial/commercial taxes in Peel.²

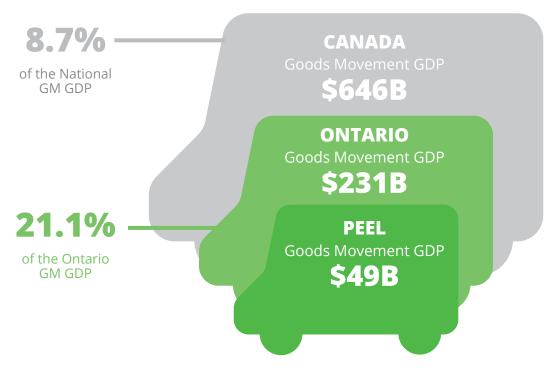


Region of Peel, Goods Movement Economic Impact Analysis, 2015

³ Ministry of Transportation, Commercial Vehicle Survey, 2012-2014

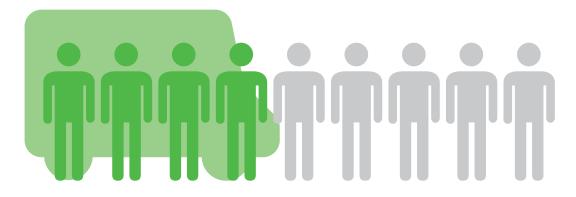
⁴ Metrolinx, Region Transportation Plan Legislative Review Backgrounder: Urban Goods Movement, 2016

Figure 8: Goods Movement Economic Contribution, 2014



Source: Region of Peel, Goods Movement Economic Impact Analysis, 2015

Figure 9: Goods Movement Labour Force in Peel



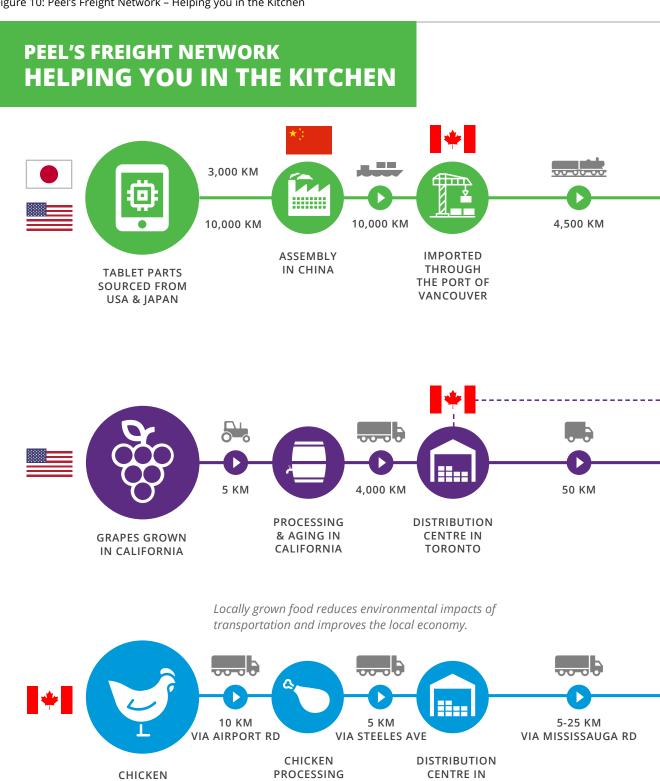
Goods movement-dependent industries

represent 4 out of every 9 jobs in Peel.

Source: Region of Peel, Goods Movement Economic Impact Analysis, 2015

Figure 10: Peel's Freight Network - Helping you in the Kitchen

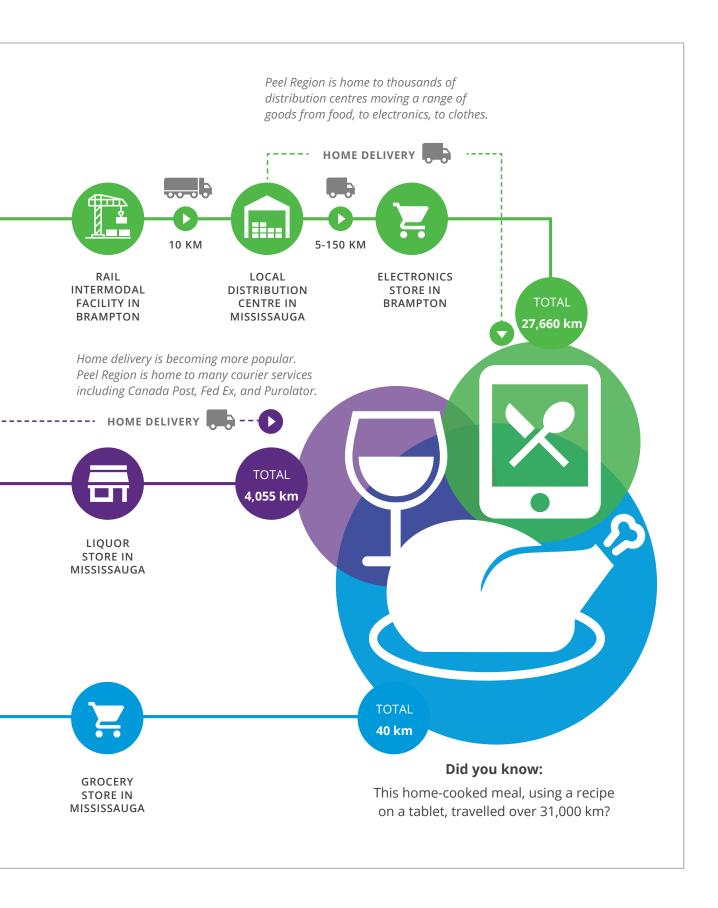
RAISED IN **CALEDON**



FACILITY IN

BRAMPTON

BRAMPTON



Section 4: A Diverse Goods Movement Transportation System

The GTHA is a world-class metropolis, a large market for consumer goods and a manufacturing and distribution hub for Canada. A large proportion of the goods movement activities in the GTHA occur in the Region of Peel, with 39% of the transportation and logistics labour force in the GTHA.⁵ Peel has exceptional access to different freight transportation modes, which give the Region a strategic advantage as Canada's distribution hub.

Roads

The backbone of Peel's freight transportation system is the network of highways and arterials that traverse the region. These roads are used by various types of trucks to connect producers and consumers, and provide access to intermodal infrastructure throughout the Region. They carry a wide range of goods and commodities including mixed freight (e.g. grocery store items, hardware, office supplies), electronics, automobile parts, pharmaceuticals, and machinery. Everything that is consumed or produced in Peel must be transported on these roads, potentially involving several truck trips. Peel's trucking industry serves almost all of Canada and the United States.

The roadway network in Peel is classified into:

- » Provincial roads
- » Regional roads
- » Local municipal roads

To help improve efficiency in truck movements, Peel released the Strategic Goods Movement Network Study in 2013 (**Figure 12**). This network identifies primary and connector truck routes for safe and effective routing through the Region. In addition, Peel has a large share of the MTO-approved long combination vehicle routes in Ontario. A large portion of Peel's roads can facilitate the safe movement of these vehicles on regional and local roads.

There were an estimated 16.3 million truck trips that had either an origin or destination in Peel⁶

Trucks carried over \$312 billion in cargo to, from, and within Peel Region⁶

Metrolinx, Region Transportation Plan Legislation Review Backgrounder: Urban Goods Movement, 2016

⁶ Ministry of Transportation, Commercial Vehicle Survey, 2012-2014

Table 1: Truck Freight Volumes, 2012

Annual Truck Freight Volumes in Peel (Rounded Figures)				
	Tonnes	Value	Trips	KMs in Peel
Total	154,862,000	\$502,218,000	24,238,000	435,200,000

Source: Ministry of Transportation, Commercial Vehicle Survey, 2012-2014

Figure 11: Top 5 Commodities by Weight and Value Moved by Truck in Peel

	Veight
Gravel	13,862 (9.0%)
Mixed Freight	12,470 (8.1%)
Other Food Stuff	12,451 (8.0%)
Waste/Scrap	12,292 (7.9%)
Base Metals	9,571 (6.2%)

	By Value (Millions CAD)
Motorized Vehicle	\$64,178 (12.8%) s
Mixed Freight	\$54,671 (10.9%)
Electronics	\$49,347 (9.8%)
Pharmaceuticals	\$45,880 (9.1%)
Machinery	\$29,356 (5.9%)

Source: Ministry of Transportation, Commercial Vehicle Survey, 2012-2014

OF DURFERIN Note: This map reflects the current recommended SGMN. This study and map will be updated on a regular basis (approx. every 5 years) TOWNSHIP OF to reflect evolving land uses that affect both the needs of goods movement and Municipal priorities. OFSINCOE COUNTY 10 O.F. WORK REGION OF HALTON Intermodal Facility Local Road _____ Regional Road _____ Provincial Highway Provincial Expressway County/Regional Boundary _..__ Town/Township/City Boundary ■■ Future Proposed/Conceptual Roadway Major Business Clusters Brampton Quarry - Bedrock (consolidated material) Pit - Sand & Gravel (unconsolidated material) Truck Network Provincial Network (400-series, QEW) 17 LAKESHORE RD W Primary Truck Route Connector Truck Route

Figure 12: Region of Peel Strategic Goods Movement Network (SGMN), 2013

Rail

Rail is the commonly used mode for long-distance transportation of bulk commodities such as petroleum, coal, and wheat as well as intermodal and speciality cargo such as automobiles. Canada's rail network connects Peel Region to the east and west coasts for goods travelling to and from Asian and European markets through the ports of Vancouver, Prince Rupert, Halifax, and Montreal.

Peel Region is connected to the rest of North America by the Canadian National Railway (CN) and the Canadian Pacific Railway (CP), Canada's two Class-1 railroads. Class-1 railroads see higher freight volumes and their networks span a larger geographic region, encompassing the U.S. and Canada. The Region is also home to the Orangeville Brampton Railway (OBRY), a short-line railway that connects several shippers to the broader CP network. Passenger rail service is provided by GO Transit, an operating division of Metrolinx. GO Transit owns two lines, primarily in the City of Mississauga. Both lines lead to or operate on track owned by CP and CN. Over the years, greater emphasis has been placed on transit and passenger rail resulting in present day operational conflicts.



At-Grade Crossings

There are currently 12 at-grade rail crossing in Peel. A study completed in 2014 as an action item from the 2012-2016 Strategic Plan identified two at-grade crossings on the CP network at Coleraine Dr. and King St. to be considered for grade separation.



Rail Intermodal

Standardized intermodal containers are transferred from rail cars to trucks, or vice versa at rail intermodal terminals, providing competitive travel times, reliability, and costs, particularly between large metropolitan centres and key ports. Two main intermodal terminals – CN in Brampton and CP in Vaughan – serve the GTHA. A third intermodal terminal is being proposed by CN in Milton. The project is currently progressing through the federal Environmental Assessment process.



Figure 13: Peel's Rail Profile



Peel Region is home to Toronto Pearson International Airport, the largest airport in the country by passenger and cargo volumes.

Air

Air freight is a critical component of many shippers' supply-chains serving two primary functions. The first is to act as a fail-safe for the low-inventory operations widely used in manufacturing and distribution. The second is the transport of expensive, perishable or otherwise time-critical goods. The value of air's fast and reliable delivery offsets the higher cost of transportation. Electronics are an example of high-value goods, and flowers are an example of goods that are perishable.

Peel Region is home to Toronto Pearson International Airport, the largest airport in the country by passenger and cargo volumes. Toronto Pearson International is strategically located in the area intersected by Highways 407, 427, 401, and 410. The airport boasts three dedicated cargo facilities: the Cargo West Facilities, the VISTA Cargo area, and the FedEx cargo area. Shippers serving national or international markets from Canada benefit from locating in Peel or adjacent areas because of ready access to Pearson.

The John C. Munro Hamilton International Airport is not located in Peel, but provides a valuable air cargo service for many companies in Peel. The airport is the third largest in Canada in terms of cargo tonnage handled. Hamilton International is located roughly 60 kilometers southwest from Mississauga, and is connected to Peel by Highways 403 and 407 which serve as vital links for shippers in Peel relying on air cargo service in Hamilton.



Table 2: Cargo Volume for Toronto Pearson and Hamilton International

Loaded and Unloaded Tonnes of Cargo, 2015			
	Tonnes	%	
Toronto Pearson	367,993	31.4%	
Hamilton International	110,797	9.4%	
Canada Total	1,172,622		

Source: Statistics Canada, Table 401-0045.

Table 3: Toronto Pearson Projected Long Term Cargo Volume Targets

Projected Long Term Targets				
	2015	2027	2034	Avg Annual Growth Rate
Toronto Pearson Cargo Volume (Tonnes)	434,600	-	990,000	4.4%

Source: GTAA 2015 Annual Report

Table 4: Hamilton International Long Term Aircraft Movements Targets

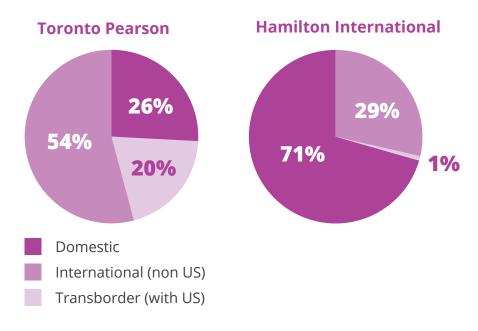
Projected Long Term Targets				
	2015	2027	2034	Avg Annual Growth Rate
Hamilton International Aircraft Movements	15,900	19,200	-	1.6%

Source: John C. Munro Hamilton International Airport Air Traffic Forecast

Both Toronto Pearson International and Hamilton International airports serve a diverse set of markets. Only 20% of cargo handled at Toronto Pearson comes from or goes to domestic destinations.⁷ The majority involve international trade with the U.S. and other countries.

⁷ Statistics Canada, Table 401-0045, 2014.

Figure 14: Markets Served by GTHA's Airports



Source: Statistics Canada, Table 401-0045.



Pipeline & Marine

Pipeline infrastructure transports natural gas, crude oil, and petroleum products across Canada, important for energy production for both consumers and trade. Peel has both natural gas and petroleum pipelines running through the Region. A refinery in Mississauga produces oil lubricants, but the major refineries serving the petroleum needs of the GTHA are located in Sarnia, Montreal, and Levis QC.

Marine plays only a small role in the movement of goods to and from Peel. Peel has two private port facilities: at the refinery in Mississauga and the cement plant in Clarkson for petrochemicals and limestone respectively.



Section 5: Changes in the Goods Movement Landscape

Since the Goods Movement Strategic Plan was released in 2012, the goods movement industry has evolved rapidly. This evolution has been driven in part by the industry actively determining its needs as it grows, and in part by drivers such as climate change, population, and employment growth, which continue to shape the industry's directions and objectives.

The updated Goods Movement Strategic Plan (2017) responds to these changes and external pressures by including action items such as offpeak delivery, e-commerce, freight land use planning, and connected and automated vehicles (CAV). By implementing these action items, Peel will continue to be at the forefront of goods movement planning in Ontario.





Customers' growing expectations

of shorter delivery times and the availability of delivery membership programs have pushed the limits of e-commerce. This has led to courier and logistics companies having to re-evaluate their operations to meet e-commerce demands.





Increasing concern of the effects of congestion

on the transportation costs of delivering goods has initiated off-peak delivery and coordinated local delivery plan (e.g. neighbourhood freight forums) considerations in some municipalities.





The decreasing labour force availability and growing industry expectations

of particular skill sets have led to educational and apprenticeship partnerships between industry and institutional partners.





Emissions from the transportation sector

have also led to increasing interest and integration of clean technologies in freight to meet industry's sustainability objectives.





Automation, technological changes, and robotics

have caused a rethinking of the use of space in warehouse and distribution centres, as well as the resources available to logistics companies as they meet their scheduling demands.





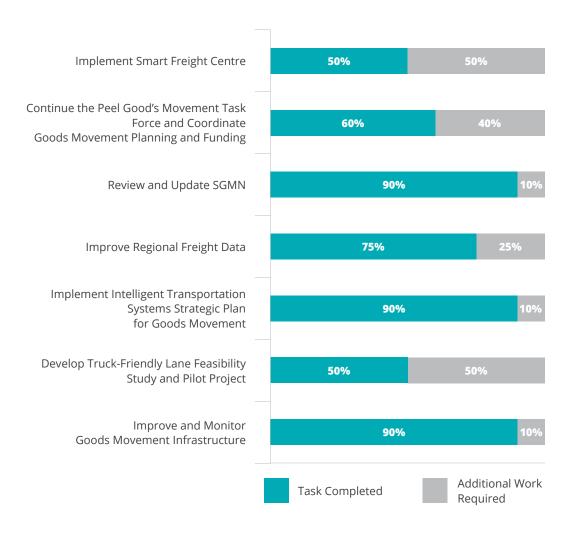
Strategies to address population and employment growth pressures

along with the demands for land and increasing land values in the province have challenged existing and future locations of the industry, as well as its transportation needs, over the years.

Section 6: Report Card – What Have We Done?

The 2012-2016 Peel Goods Movement Strategic Plan "Moving into Action" contained 23 Action Items which were prioritized over the five-year period of the Plan (See Appendix I). While all 23 Actions are complete, additional work on certain actions will continue into the 2017-2021 Plan update.

Figure 15: 2012-2016 Action Items with Additional Tasks to be Worked on in 2017-2021



Highlights of completed work from 2012-2016:

- » 11 Task Force Meetings.
- » 4 Goods Movement Conferences to advance partnerships, advocacy for improvements and collaboration.
- » 20 Signal timing changes on Goods Movement Corridors adjusted for improved travel time and traffic flow.
- » Developed a Data Sharing Partnership with Ministry of Transportation for Commercial Vehicle Surveys and iCorridor.
- » Analyzed all at-grade rail crossings for goods movement and safety. One Environmental Assessment is being undertaken for the separation of the grade crossing at Coleraine Drive in Bolton as a result.
- » Developed a discussion paper on Truck Only Lanes with the Transportation Association of Canada.
- » Developed the Goods Movement Economic Impact Analysis Report to provide messaging about goods movement in Peel.
- » Developed a Strategic Goods Movement Network (SGMN) (Figure 16).
- » Create a Peel truckers map that employs GPS and includes routes and by-law references (Figure 17).
- » A process was developed to assess infrastructure improvements for goods movement. The intersection of Steeles Avenue and Torbram Road was advanced from 2026 to 2015 and has now been constructed. The process is now integrated within capital budget processes.

Figure 16: Peel's Strategic Goods Movement Network

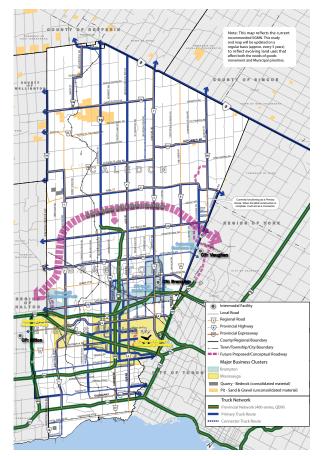
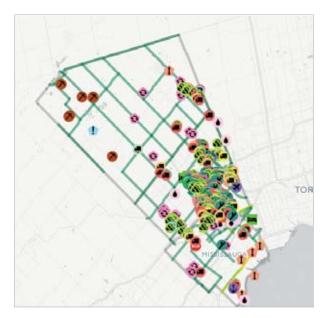


Figure 17: Peel's Trucker's Map



Source: http://www.peelregion.ca/planning-maps/freight/

Section 7: Looking Ahead - Where Are We Going?

Action Plan 2017-2021

Building upon the work completed in 2012-2016, the Strategic Plan is being updated to move the yardstick even further.

After thorough stakeholder consultation and analysis, new short-term actions and strategies have been identified for implementation over the next five years – 2017 to 2021. This Strategic Plan outlines a series of nine Action Item Strategies. Each Action Item presented below includes related tasks that will drive towards Peel's vision and goals for goods movement.

To maintain consistency with the 2012-2016 Strategic Plan, these Action Items are categorized into the same four strategic directions:

- 1. Infrastructure Improvements
- 2. Partnership, Communication and Advocacy
- 3. Systems Optimization of Existing Infrastructure
- 4. Planning and Forecasting



The actions are not presented in any order or priority; however, some actions need to be achieved before others can be initiated and this will be identified in the work plan process.

Each Action Item will show how much they relate to a goal using the symbols below.

Alignment with Goals	Goals
H High	Community & Environmental Sustainability
MH Medium-High	Safety
M Medium	Economic Competitiveness
ML Medium-Low	Innovation & Technology
L Low	System Performance
	Performance Management



Rationale

Land use in Peel Region impacts and is impacted by goods movement. Current infrastructure and financial considerations in the Region make certain lands attractive to freight development. There is a need for Peel to take a coordination role for goods movement that takes into account the opportunities within the Region and beyond.

There is a need to develop coordinated freight and logistics planning.

The work to complete this action item would include:

- Assess the Feasibility of Alternative Economic Districts: Economic districts are strategic initiatives to attract and concentrate similar uses and activities and have positive benefits for the transportation network. The applicability of economic districts such as foreign trade zones would be reviewed. This would entail a review of best practices and a feasibility assessment.
- » Cross-Municipal Economic Development Partnerships: Freight development and transportation impacts are not limited to Peel Region, making a coordinated approach to land use and transportation planning necessary.
- » Identify Strategic Locations for Goods Movement: A coordinated approach would be used to identify existing or planned strategic goods movement locations in coordination with the Strategic Goods Movement Network. This would entail an identification of future accommodation of goods movement related uses in coordination with local municipal official plans.
- Develop a Freight Planning Guide: MTO has released freight-supportive guidelines for municipal planning that cover a range of municipal applications. It is recommended that a local guidebook be created to provide a context-specific framework for Regional development and Environmental Assessment planning to consider in the review processes.

Desired Outcome

Facilitate planning to integrate and support the goods movement sector.

Performance Measure

- » Incorporation of MTO's freight-supportive guidelines
- » Number of development projects that consider goods movement principles
- » Official Plan policy development that supports and encourages freight land use planning

Commencement

2020



Action Item Foster Industry Innovation Through a CAV Corridor Pilot Project Goals Goals H H H MH H MM M

Rationale

Connected Automated Vehicles (CAV) technology will have a significant impact on the transportation industry, offering the potential for greater productivity, safety, and efficiency. As the nation's primary freight centre, Peel Region needs to understand how best to integrate CAV into the activities and operations of its businesses. It is also in the interests of the federal and provincial governments to engage with this technology. For freight applications, Peel is a critical place to do so.

This action item is for the implementation of a CAV pilot corridor. The specific tasks to complete this action are modeled on Florida Department of Transportation's AV pilot projects and include:

- » Identify a Pilot Corridor: A pilot is most likely to succeed in the place that would benefit the most. A well-travelled drayage route, for example, may yield the best results. An analysis would be completed to identify the best corridor location for this pilot. A number of drayage operators would be identified as project partners for application on their fleet. A private road would serve as an ideal testing ground.
- » CAV Technology Deployment: An analysis of freight operations data is required to advance CAV technology. As a first step, better freight data would be collected. Based on this data, CAV technologies would be identified and deployed to allow operators and Peel to better understand vehicle performance on highly used freight routes.
- Install CV Infrastructure: The next phase of this project is to connect freight vehicles to traffic signals using Connected Vehicle (CV) equipment from the deployment phase. This may require releasing an RFP for the procurement of a ITS/CV signal infrastructure that is compatible with the CV technologies of the pilot fleet. A review of infrastructure capabilities in the Region will be considered.

Desired Outcome

Implementation of the CAV Corridor Pilot Project, policies to support it and installation of CV infrastructure.

Performance Measure

- » Number of CAV Corridor Pilot participants
- » Regional Official Plan policies to support CAV corridor considerations

Commencement

2021



Strategic Direction: Network Improvements Goals Action Item Increase Capacity with Convenient and Feasible Off-Peak Deliveries Goals H M H ML MH M

Rationale

Off-peak delivery (OPD) is a strategy to alleviate congestion during peak periods, and to increase utilization of existing infrastructure capacity. This win-win solution reduces the number of trucks on the roads during periods of congestion and offers greater efficiency to delivery companies. There are challenges to OPD. Inconsistent bylaws across municipalities make it difficult for business to coordinate their deliveries. Greater intensification and the increase in sustainable transportation have made corridors less conducive to trucks, particularly for deliveries in urban areas. Residential noise complaints due to a lack of buffering between loading docks and housing units inhibit the full potential of OPD. Finally, OPD may work for some businesses, but may be incompatible with the needs of others without adequate resources for its implementation.

This action item is for the development of an OPD pilot district. OPD is intrinsically constricted by land use and urban design. Considerations for a first OPD pilot district include: The Hurontario Corridor that is being planned for Light Rail Transit in 2018 and the Airport Operating Area due to the significant number of goods movement related businesses. OPDs present opportunities to improve efficiency while reducing congestion and community impacts. Specific tasks include:

- » Identify the OPD District: Using a district-based approach, define an area that would encompass the OPD pilot. Through a best practices case study review, identify features and requirements of OPD that impacts policies, land use, design, and by-laws. Determine businesses located in the district to participate in the pilot.
- » Measure Market Interests: Conduct a survey to gauge interest among businesses and carriers in participating in the pilot. Identify early obstacles in rolling out the pilot program and use this to help design the program for success.

- » Communication Plans: Develop a communications plan that would coincide with the program roll out. Identify actions that can help ensure the success of the OPD program.
- » **Implementation:** Develop an OPD pilot plan and implement with business participants.
- » Data Collection/Analysis: Measure performance to determine program success. Determine evaluation methods and specific performance metrics, including setting baseline data and metrics to assess program results. Identify ways to scale the program pilot for wider program implementation.

Desired Outcome

Improving travel time by shifting peak deliveries to off-peak, where feasible.

Performance Measure

- » Number of business participants
- » Percentage of participants' routes switched to OPD
- » No increase to noise complaints
- » No increase to accidents

Commencement



Rationale

There has been an industry-wide shift in the retail landscape with omni-channel strategies offering multiple opportunities for customers to shop, including in-store and online. The upward trend of e-commerce has resulted in increasing numbers of home deliveries with more delivery trucks in residential communities on ever-tighter schedules. The competitive retail landscape and the need to serve customers faster and better has put great pressure on road networks. There has also been a change in how companies position and operate distribution centers and their inventory, and in the delivery function of stores.

This action item is for a study of e-commerce will help Peel adapt to this retail shift and its impact on the road networks. The study will examine:

- Changes to Freight Demand: A review of the drivers and trends of e-commerce is necessary to understand the impact e-commerce on demand. This review should show how e-commerce fits within other omni-channel strategies. Impacts to the transportation network would also be studied under this task.
- Distribution Concepts: A review of the impact e-commerce will have on goods distribution is required. E-commerce doesn't necessarily lead to increased traffic to fulfill home deliveries. Ongoing logistics and advancements may reveal new ways to consolidate trips in urban areas that could lead to more efficient delivery and reduction of traffic. There is a need to understand the characteristics, location and requirements of delivery staging facilities under the new demands presented by e-commerce. This would include the number, location, and types of distributions centres being used. This task would understand the impacts to land-use patterns and how they may need to change over the longer term.

- Community Impacts: An assessment of the potential community impacts should be completed. Demand for goods will change and have greater impact on residential areas as home deliveries rise. For example the availability and challenges of on-street parking will be impacted. This task would also examine the safety challenges and required regulations from different distribution concepts. Infrastructure capabilities to all residents to have access to this market will be considered.
- Future Outlook: This task would examine the continuing trends of e-commerce and using Peel's location near Canada's largest markets to position the Region as an e-commerce hub. This task would also review innovations and technologies expected to take hold. Concept designs, such as drone delivery, could have a dramatic impact on freight and logistics, and their impact on policy, regulations, and network design needs to be assessed.

Desired Outcome

Tools and resources to better plan and adapt to the shifting retail landscape.

Performance Measure

» Citation and/or use of tools and resources in guiding land use planning.

Commencement



Strategic Direction: Planning & Forecasting Action Item Expand and Encourage the Use of Long Combination Vehicles M M H M H M

Rationale

Increasing efficiency of the goods movement industry is a win-win situation for companies as they redirect productivity by taking vehicles off the congested road network. Long combination vehicles (LCVs) can be a safe, efficient and environmentally sound way to move more goods across supply chains more economically. There are a number of requirements and restrictions on LCVs in Ontario, including permit limitations, licencing, approved routing and proximity to highway interchanges. These restrictions allow MTO to track, monitor and ensure the safe operation of LCVs. As a major origin and destination for freight movements, Peel Region's advocacy for an enhanced LCV program will benefit business operations and improve safety. Support for the LCV program will also better position Peel and the Province of Ontario for the advancements and piloting of future truck platooning.

This action item is to conduct research and advocate for the expansion for the LCV program and its use. Specific tasks for this outcome include:

- Support Participation in the LCV Program: MTO regulations allow LCV vehicles to travel only on assessed and approved routes. This task would entail examining the SGMN and identify key locations for LCV use, obtaining feedback from industry representatives on locations and major barriers to LCV in their operations, and identifying alternative major routes that would better facilitate the movement of LCVs. The task will also determine all the businesses within the radius from the MTO Primary Network as a first step in reaching out to existing businesses to understand if they can utilize LCV permits. Peel Region can also promote existing connections from Peel roads to the LCV primary network as a means for increasing permits.
- » Drop Yard Review: Drop yards are terminals for short-term storage of truck trailers. They can facilitate LCV operations with off-site transfer/ consolidation points and expand the reach of LCVs when they are placed in strategic locations on the LCV network. This task would investigate the feasibility of drop yards to facilitate the expanded use of LCVs.

It would include research into best practices, identification of strategic locations across the GTHA for drop yards, and implementation, including administration, governance structure, and bylaws.

- » Future Outlook: Explore the influence CAV technology will have on the future of LCV vehicles and operations including advances in platooning and the impact on goods movement in the Region and on national supply chains.
- » Stakeholder Outreach: Engage goods movement stakeholders to identify additional challenges and impediments to LCV use in their operations including identifying how these can be mitigated and the resulting operational improvements.

Desired Outcome

Improved efficiency and productivity through the increased use of LCVs.

Performance Measure

- » New Peel Region businesses participating in MTO's LCV program
- » Increase # of Peel Region LCV trips

Commencement



Strategic Direction: Network Improvements Goals Action Item Understand and Manage Aggregate Movements and its Impact on Communities Goals H H H ML L H M

Rationale

Quarries and concrete manufacturing companies in Peel Region serve an active construction industry across the GTHA. Aggregate is an important and time sensitive commodity with impacts on the roads and communities in the Region due to truck configuration, weight, noise, dust, and debris. The volume, weight and frequency of aggregate trips require a separate study to understand the industry and implement strategies if required.

A study on aggregate movements would include the following tasks:

- » Commodity Analysis: Aggregates are a unique commodity in goods movement as a high volume/low value good. This task would clearly define the ways aggregate materials are moved differently than other goods, identify what industries use and move aggregates, and at what volumes.
- » Network: The purpose of this task is to understand the major routes used for aggregate movement. This task would analyze the origins and destinations of aggregates, how they move, where, and what time. An important component of this task will be to assess the routes aggregate trucks use. This task will be important to assess their impacts in the next task.
- » Impact Analysis: As a high-volume good, aggregates have a unique impact on transportation infrastructure wear and tear and on local communities. This task should identify and measure what impacts there are to communities from aggregates movement and recommend potential strategies for working with the industry and community.
- » Regulations and Partnerships: Aggregates are a heavy weight good. This task would entail the review of oversize/overweight permitting to ensure it aligns with practice. This task would explore partnership opportunities with businesses, police and MTO for proper enforcement activities on the Region's roads.

» Performance Management: This task would establish a performance measure and management system for the ongoing monitoring of aggregates movement in the Region. Performance would focus on safety, infrastructure maintenance, and community impacts.

Desired Outcome

Increased understanding and awareness of the impact of aggregate movements on Peel Region's communities and infrastructure.

Performance Measure

- » Development of an aggregates study
- » Relationships formed with aggregate companies in Peel Region

Commencement



Education and Outreach

Strategic Direction: Partnership/ Communication/ Advocacy Goals Action Item Mainstream Goods Movement Transportation Through M H M M M

Rationale

Goods movement and its associated activities is a huge economic driver across the Region, yet it doesn't always get appropriate recognition. More needs to be done to improve understanding of the industry, its importance and requirements. Public education campaigns can improve road safety, ensure labour force availability, and generate appropriate infrastructure investments.

Mainstreaming goods movement is a package of strategies that provide constant and reinforced information related to goods movement including:

- Education and Training: Through peer-to-peer programs (e.g. Smart Freight Centre), establish a freight professional development program. The program would have various elements to reach different target audiences. The U.S. Federal Highway Administration's program is centred on five areas: education, institution building, a peer-to-peer program, talking freight, and training. This program will achieve broader goals of meeting the goods movement challenges of the future through workforce planning, technical training, information sharing. Peel should establish tools and resources to ensure a sustainable labour force. Additionally, a truck driver and bicycle awareness scheme, as presented in the MTO Freight-Support Guidelines would be considered.
- Outreach: In addition to formal training and education, outreach activities are used to educate transportation system users and impacted communities. Touch points with the community would be identified, capitalizing on other regional and municipal outreach efforts, and community events such as farmer's markets, and sporting and holiday events. Marketing materials would be prepared to raise awareness of freight and increase safety on shared roads. Consumer home delivery associated with e-commerce would be highlighted to make the benefits of freight tangible to citizens.

Promote Peel as a Goods Movement Hub: Leveraging stakeholder relationships from the Peel Goods Movement Task Force, Peel would continue to be promoted as an important hub for agglomeration, competitiveness, and prosperity. This would entail leveraging the benefits of online platforms for increased sharing of industry news and activity. It may also include participation on social media and the distribution of an annual report and/or newsletters to provide a central source of industry information, and updates on recent initiatives and advancements.

Each of these areas of education and outreach would involve:

- » Evaluation of current needs by examining current efforts and level of knowledge.
- » Identification of opportunities based on established needs, outreach to industry and best practices.
- » Participation in training and outreach activities. Once identified, Peel should implement these activities on a regular and ongoing basis for reinforced knowledge.

Desired Outcome

Increase regional goods movement knowledge through education and outreach.

Performance Measure

- » Establish education and outreach program
- » Number of relationships formed and activities with industry and educational partners, and Peel residents.

Commencement

Strategic Direction: Partnership/ Communication/ Advocacy

Action Item Pursue Alte

Pursue Alternative Fuels and Fuel Efficiency Initiatives



Rationale

Transportation is one of the leading contributors to greenhouse gas emissions (GHGs) in Canada. Peel Region, along with municipalities across the province, is focused on building sustainable communities that are resilient to the perils of climate change. Because of its importance as a centre for goods movement, risks of disruption to Peel supply chains also are provincial and national risks. Goods movement also has a responsibility to address climate change concerns. Many companies are realizing the environmental, fiscal and economic benefits from investments towards this end. The intent of this action item is to determine initiatives that can be pursued and assist business with obtaining funding for alternative fuel solutions to reduce transportation GHG impacts.

This action item involves pursuing alternative fuels initiatives to contribute to climate change initiatives and assist goods movement corporations in initiating strategies for alternative fuels. Activities include:

- » Alignment with the Ontario Climate Change Action Plan: All sustainable freight efforts would be reviewed and aligned with Ontario's Climate Change Action Plan and other programs in the Region and province.
- Promote Innovation and Technologies: Existing relationships with industry would be leveraged to help develop, demonstrate, and market technologies that reduce GHG emissions. Reducing fuel use in freight transportation helps businesses reduce costs and has wider social and environmental benefits. This task would review operational best practices and lessons learned to help industries make informed decisions. Peel would work with businesses to determine how best to apply for funding in new technologies.

» Acknowledge Companies: A public recognition program could be established that acknowledges businesses that are making changes to mitigate climate change impacts. This increases green program visibility and incentivizes more companies to participate. This can be done through the existing Task Force channel or new channels such as the Smart Freight Centre. The first task would be a survey of green programs/technologies currently implemented at Peel goods moving companies.

Desired Outcome

Increase usage and awareness of alternative fuels and fuel efficiency initiatives.

Performance Measure

- » Number of Task Force businesses to receive funding such as the Ontario Climate Change Action Plan
- » Development of company recognition program

Commencement



Strategic Direction: Partnership/ Communication/ Advocacy Goals Action Item Demonstrate and Advance Peel's National Role and Importance in Freight Fluidity Goals L L H M H H

Rationale

Supply chain fluidity and competitiveness is an end-to-end process. Current fluidity models lack data on the last-mile connections resulting in an incomplete picture of supply chains. Peel is not just a local freight centre; the freight activities in Peel have national importance and have an impact on attracting businesses in Canada. Insufficient data impedes the development of full end-to-end fluidity measures, even though the first, last and transfer miles prevalent in Peel are commonly the higher-risk stages in supply chain performance. Data, in particular probe data, is needed for in-depth analysis of buffer time indices, bottle necks, and ultimately the travel times in and out of Peel and the surrounding metro area.

This action item demonstrates Peel Region's national role in freight fluidity, requiring the collection and analysis of truck data. The work to complete this task would include:

- Collect GPS Probe Data: GPS probe data would be collected for a sample of trucks travelling into, out of and through Peel. GPS probe data requires vehicles equipped with GPS receivers and provides real-time collection of information on the position of probe vehicles. The Region should advocate for a national probe data program with Peel as a pilot region. Ultimately, the federal government could roll out the program to other municipalities to create a full picture of national freight performance.
- » Analyze GPS Probe Data: Using the GPS probe data collected for trucks travelling to, from and through Peel, valuable vehicle travel information such as: travel times, delay, queuing, reliability indices, etc. would be analyzed. GPS probe data would be used to assess performance by time of day, roadway segment and route including on Peel's SGMN.

- » Assess Key Supply Chain Performance: Analyzed data would be used to assess the performance of key supply chain fluidity measures from intermodal terminals to retail centres. This end-to-end supply chain analysis using real-world GPS probe data would include the drayage to distribution centre, transload, and outbound product to retail markets in the GTHA and rest of Canada.
- » Advocate for Peel Infrastructure Funding: The data and its analysis would be leveraged to attract investments for systematic improvements by showcasing the importance of Peel roadways and how they bear a disproportionate cost due to trucking activity which services the nation.
- » Work with Industry: In tandem, an industry working group would be used to identify and guide investments that make the most difference to their supply chains, leveraging industry capabilities in the evaluation of operational improvements.

Desired Outcome

Increase the profile of Peel's goods movement industry across Canada.

Performance Measure

- » Collection and analysis of GPS probe data
- » Proportion of provincial and federal infrastructure funding dedicated to Peel Region's transportation infrastructure

Commencement



Below is a snapshot of how the proposed new action items are influenced and supported by the ongoing work being done within the Region. This draws attention to the interrelated ways these actions work to support to overall mission and goals for goods movement in the region.

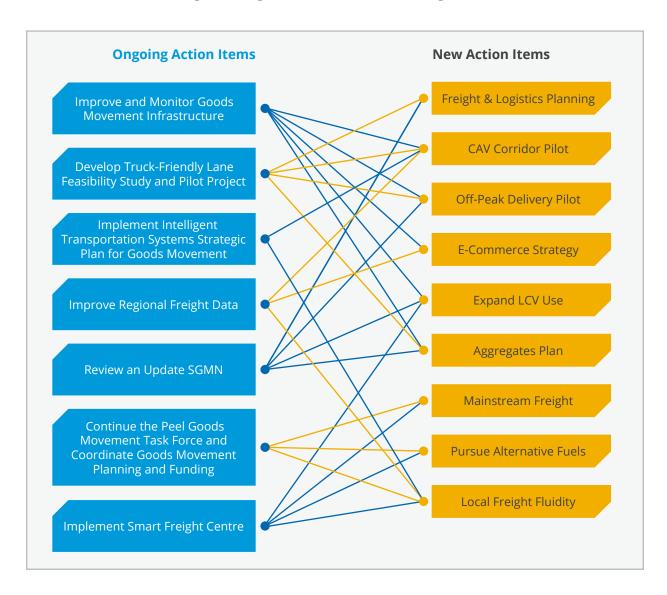


Figure 18 summarizes the implementation timeline of all the action items over the next five years.

Figure 18: Implementation Timeline

	2017	2018	2019	2020	2021
New Action Item	 Off-Peak Delivery Pilot Expand LCV Use 	 E-commerce Strategy Fuel Efficiency Strategies Mainstream Freight Education 	Aggregates PlanLocal Freight Fluidity	 Goods Movement & Logistics Planning Coordination 	• CAV Corridor Pilot
Ongoing Action Items	 Improve and Monitor Goods Movement Infrastructure Implement Smart Freight Centre 	 Review and Update SGMN Improve Regional Freight Data 	• Implement Intelligent Traffic Systems Strategic Plan for Goods Movement	Continue the Peel Goods Movement Task Force and Coordinate Goods Movement Planning and Funding	Develop Truck- Friendly Lane Feasibility Study and Pilot Project

Appendix I

Goods Movement Strategic Plan 2012 to 2016 – Action Plan

Strategic Direction	Appendix	Action Item	
URE	Action 1	 Prioritize intersection improvements to increase truck traffic flow on key corridors. 	
ME	Action 2	• Identify and implement access improvements to Toronto Pearson Airport.	
INFRASTRUCTURE IMPROVEMENTS	Action 3	 Identify and implement access improvements to CN Brampton and CP Vaughan Intermodal facilities. 	
M P	Action 4	Prioritize improvement to at-grade rail crossings.	
=	Action 5	Research truck-only lanes and implement a pilot project.	
ਰ. ਕ ∑	Action 6	Advocate for improvements to border crossings.	
PARTNERSHIP, COMMUNICATION & ADVOCACY	Action 7	 Advocate for changes to the employment density targets that support the freight industry. 	
PARTNERSH AUNICATION ADVOCA	Action 8	 Advocate for improved provincial and federal goods movement planning and greater inter-regional co-operation. 	
OMM	Action 9	 Identify additional federal and provincial funding sources for the 400-series highway with 401 as a high priority corridor. 	
U	Action 10	 Advocate for streamlining and expediting the Environmental Assessment process. 	
	Action 11	 Identify opportunities to strengthen connections between government and private-sector industry. 	
	Action 12	Develop a data sharing program between the government and industry.	
SYSTEMS	Action 13	 Enhance traffic signals to accommodate and increase better traffic flow along goods movement corridors. 	
YST ZAT	Action 14	• Develop and implement a backhaul freight matching program and pilot project.	
SYSTEMS	Action 15	 Create a Peel truckers' map that employs GPS and includes routes and by-law references. 	
0	Action 16	Develop and implement a Regional ITS Strategic Plan and Network.	
	Action 17	Develop an enforcement mechanism for road construction projects.	
	Action 18	Improve incident management.	
& U	Action 19	Advance Freight Transport Management recommendations.	
STING	Action 20	Develop and implement a Strategic Goods Movement Network.	
PLANNING & FORECASTING	Action 21	Develop an economic case for a freight village.	
PLA	Action 22	Quantify economic benefits of freight to Peel's economy.	
	Action 23	Support the establishment of a goods movement Centre of Excellence.	

Appendix II

Terms of Reference: Peel Goods Movement Task Force

Mandate:

The mandate of the Peel Goods Movement Task Force is as follows:

- » To develop a common vision for goods movement in the Peel area;
- » To provide a forum to bring together key public and private sector stakeholders to guide future improvements to the goods movement system, to facilitate the exchange of information and to develop common messages on issues affecting goods movement;
- » To monitor, review and provide input and feedback to regional, provincial and federal initiatives related to goods movement; and
- » To develop an action plan, and the required partnerships, for the implementation of short, medium and long-term improvements to the goods movement network in Peel.

Membership:

The Peel Goods Movement Task Force functions as a partnership, with members acting through consultation, communication and consensus-building. Membership of the Task Force includes representatives from private and public sector organizations involved in goods movement in Peel.

The Peel Regional Chair is an ex-officio member of the Task Force. Three Peel Regional Councillors (one each from the City of Mississauga, the City of Brampton and the Town of Caledon) have been appointed to the Task Force.

In accordance with the Region of Peel Procedural By-law, members of the Task Force may designate an alternate to attend on their behalf. Alternate members are afforded all Task Force privileges.

Chair and Vice-Chair:

Under Regional Council Resolution 2014-880, Regional Chair Dale (ex-officio) and Regional Councilors Crombie, Medeiros, and Thompson have been appointed to the Task Force for a term ending November 30, 2018, or until their successors are appointed by Regional Council.

Quorum:

To be determined by the Task Force.

Meeting Frequency:

The Peel Goods Movement Task Force meets quarterly or as required at the call of the Task Force Chair.

Staff Resources:

A Technical Working Group, consisting of senior staff from the Region of Peel and the area municipalities, has been formed to support the Peel Goods Movement Task Force. The Technical Working Group may be augmented by representatives from other Task Force member organizations as necessary.

Appendix III

Peel Goods Movement Task Force Membership

As of March 2017

Task Force Members

407 ETR

Brampton Board of Trade

Caledon Chamber of Commerce

Canadian Courier & Logistics Association

Canadian Manufacturers and Exporters

Canadian National Railway Canadian Pacific Railway Canadian Tire Corporation

Cavalier Transportation Services Inc.

City of Brampton City of Mississauga Government of Ontario

Greater Toronto Airports Authority

Lynch Group

Maritime-Ontario Freight Lines Ltd.

Metrolinx

Mississauga Board of Trade

MRK Innovations

Nestle

Ontario Chamber of Commerce

Ontario Ministry of Economic Development

and Innovation

Ontario Ministry of Transportation

Ontario Provincial Police Ontario Trucking Association

Parmalat

Peel Regional Police

Purolator Inc. Region of Peel

Supply Chain Management Association

Town of Caledon Transport Canada Walmart Stores Inc.

Technical Working Group Members

Region of Peel Transportation Planning

Region of Peel Office of Strategic Innovation and Policy

City of Brampton Planning, Design and Development Department

City of Brampton Economic Development and Communications Department

City of Mississauga Transportation and Infrastructure Planning Department

City of Mississauga Economic Development Office

Town of Caledon Planning and Development Department

Town of Caledon Economic Development Department

