

To: Metrolinx Board of Directors
From: Leslie Woo
Vice President, Policy & Planning
Date: February 18th, 2011
Re: GTHA Urban Freight Study

RECOMMENDATIONS

Be it resolved

THAT subject to minor housekeeping and final formatting of content and document design, the Board approve the GTHA Urban Freight Study report dated February 18th 2011, prepared by the VP Policy and Planning (the “Report”), including the stated Strategic Directions; and

THAT staff proceed to advance the Next Steps contained in the Report in partnership with key stakeholders, including municipalities.

1.0 Purpose

This report provides an overview of the findings of the GTHA Urban Freight Study and outlines next steps and first projects for Metrolinx to begin implementation of key directions.

2.0 Background

Goods Movement was an important issue raised by stakeholders in the development of The Big Move. As part of the development of The Big Move, Metrolinx produced a green paper entitled “Moving Goods and Delivering Services” (February 2008) which provided initial background information on the state of goods movement in the region¹.

On November 28th 2008, the Metrolinx board approved the The Big Move, regional transportation plan and its nine Big Moves. Big Move No. 8 called for the development of a comprehensive strategy for goods movement within and

¹ www.metrolinx.com/mx/docs/1/GreenPapers/GreenPaper5-Moving_Goods_and_Delivering_Services.pdf

between the GTHA and other regions with a focus on urban and regional freight. The Big Move recommends that this strategy identify opportunities and actions to

- improve efficiency;
- increase capacity'
- enhance the region's competitiveness; and
- reduce emissions of GHG's and other pollutants. .

At the same time as adopting The Big Move, the Board resolved:

THAT Report PP 08-017, entitled Goods Movement be received by the Metrolinx Board for information;

THAT the proposed Goods Movement Roundtable described in report PP 08-017 include representation from agricultural community; and

THAT the terms of reference for the proposed Goods Movement strategy, once developed by staff, be circulated to the GTHA municipalities for review

These resolutions have been met, and over the last year staff have been working to further the Goods Movement Strategy in collaboration with the Ontario Ministry of Transportation.

Commercial traffic represents a significant contribution to the economic prosperity of the GTHA. It also, however, contributes to the congestion, noise and air pollution. Congestion in the region drains billions of dollars every year from the region's economy in the form of time delays and unnecessary fuel consumption. Future population and employment growth will only aggravate congestion if opportunities for improvement to the transportation network are not identified and acted upon.

Planning for a regional multi-modal transportation system increasingly requires coordination of the planning for passengers and goods – both of which share the same network. Addressing goods movement as a component of the Metrolinx work plan will not only help us to support the long term economic future of the goods movement industry, but also to preserve the region's quality of life.

3.0 GTHA Urban Freight Study

3.1 Overview

The GTHA Urban Freight Study provides strategic directions and potential actions to improve the efficiency of, and the capacity of the transportation network for, urban goods movement in the GTHA. This work, in conjunction with the Ontario-Quebec Continental Gateway work (Continental Gateway), which is being led by a partnership of the federal government and the provinces of Ontario and Quebec, begins to address the vision for goods movement outlined

in The Big Move and all together will allow Metrolinx to work towards a comprehensive goods movement strategy for the region.

The GTHA Urban Freight Study was undertaken between December 2009 and December 2010. The Study deliverables include *the GTHA Urban Freight Study* (see Appendix A) and a more comprehensive technical backgrounder, *the GTHA Urban Freight Study Technical Backgrounder*. The report and the backgrounder are available on the Metrolinx website².

The Study identifies opportunities to enhance the GTHA's competitiveness by improving the efficiency of, and capacity of the transportation network for, goods movement, in the context of the goals and objectives of *The Big Move*. It focuses primarily on road freight, but also considers intermodal connections to rail, air and marine terminals. Urban freight is defined as freight trips within the GTHA, as well as trips that begin and/or end in the GTHA, primarily trips on major arterial roads.

The Continental Gateway initiative considers the GTHA as part of a wider interprovincial and international freight system that is primarily focussed the provincial highway system, the class one railways, and the air and sea ways. The strategies of the Continental Gateway initiative have not yet been made public.

3.2 Stakeholder Engagement

The GTHA Urban Freight Study was developed through a comprehensive consultation process that included input from the Goods Movement Industry Roundtable (see Appendix B) made up of representatives from private sector industries, transportation associations and the University of Waterloo. A Technical Working Group, made up of government, railway and academic representatives, was also consulted regularly. Their insights and experience informed the development of the report. Additional consultation activities included in depth interviews with Roundtable members and key stakeholders as well as a broader stakeholder workshop in March 2010.

3.3 Components of the Study

The GTHA Urban Freight Study includes the following components:

- Overview of information about the movement of urban freight in the GTHA and the challenges facing industry and other stakeholders
- Review best practices for applicability to the GTHA region

² www.metrolinx.com/mx_goodsmovement

- Development of urban freight objectives for the GTHA that align with The Big Move
- Outline of strategic directions and possible actions to address the urban freight challenges and improve the efficiency and capacity of the urban freight system in the GTHA.

The Technical Backgrounder includes the following components:

- Scan of current conditions and trends within the GTHA freight industry
- Environmental scan and a literature review of worldwide best practices for goods movement and urban freight
- Overview of specific themes and issues identified by stakeholders
- Description of proposed actions including expected impacts, implementation considerations, cost range, timing, difficulty, geographic scope and examples of similar actions taken elsewhere

3.4 Challenges for Goods Movement in the GTHA

As part of the study industry and other stakeholders identified a set of key challenges affecting goods movement in the GTHA:

- There is generally poor understanding of goods movement issues and information about how goods move in the GTHA.
- There is a lack of adequate capacity to accommodate growth in the freight industry.
- There is poor coordination across sectors to improve efficiency of goods movement.
- There are inconsistent planning timelines across sectors; Industry is impacted by changes in global conditions but governments react to local/provincial/national issues.

3.5 Strategic Directions

The findings of the study highlight five (5) strategic directions and seventeen (17) possible actions that together would provide a strong basis for addressing the urban freight challenges in the GTHA.

Strategic Direction 1: Build Collaboration and Support

Collaboration and support for improvements to urban freight transportation will require leadership, partnerships and active participation of all interested parties. Urban freight project selection, funding and implementation will require clear understanding and effective communications among all stakeholders. The place of industry is a critical one, as freight movement is predominantly an activity of the private sector. Businesses must not simply be consulted, but actively and fully engaged in the planning and implementation of future actions.

- ACTION 1 Strengthen and collaborate with multi-stakeholder forums, including the Southern Ontario Gateway Council (SOGC)
- ACTION 2 Establish an inter-governmental freight committee to address harmonization of regulatory and policy matters for urban freight
- ACTION 3 Improve and coordinate public outreach on urban freight

Strategic Direction 2: Improve Urban Freight Information

Good information enables good decisions. A comprehensive set of data about urban freight would provide a strong foundation for government and industry more aptly identify problems, analyze alternative solutions, and measure results. For the GTHA as a whole there is little information about urban freight trips. Most publicly held data about goods movement is focussed on the highway network. Privately held data is not widely available. Municipal information about goods movement on the arterial road network is limited to a few municipalities and not always in a form that can be brought together for a regional perspective.

In the GTHA, both the public and private sectors collect freight information but with different interests and purposes. The private sector is focused on short-term goods movement operations (e.g. where cargo is now, when it will be delivered, how much must be shipped next week), and the public sector has longer-term concerns mainly about road infrastructure.

Better information about the movement of goods throughout the region will provide a foundation from which infrastructure and regulatory solutions to improve efficiency and capacity could be implemented on a region-wide basis.

ACTION 4 Improve data sharing on freight vehicles, routes and activities

ACTION 5 Establish a GTHA urban freight data collection program

Strategic Direction 3: Increase Transportation Network Efficiency

The GTHA's road network supports the movement of both people and freight. In *The Big Move*, Metrolinx highlights the importance of preserving transportation system efficiencies to support business and ensure a competitive regional economy. Expected growth in GTHA population and employment will only increase pressure on the road system and heighten the urgent need for steps to maximize the efficient movement of goods. The following actions focus on ways to make best use of existing infrastructure to provide the most efficient use of the road network for trucks and passenger vehicles.

ACTION 6 Develop a strategic GTHA urban truck network

ACTION 7 Harmonize truck route standards and mapping

ACTION 8 Investigate intelligent lane utilization and truck-only lanes

ACTION 9 Explore opportunities to move freight on transit

Strategic Direction 4: Enhance Planning and Development

Increasingly, GTHA growth and intensification are placing constraints on the urban freight infrastructure. Proactive planning approaches are needed to ensure supportive forms of development, to enable the efficient location and concentration of freight facilities and to improve the accessibility of intermodal facilities. These steps can protect quality of life by buffering sensitive land uses from freight activities, and improve the efficiency of urban freight by reducing the number and length of trips.

ACTION 10 Develop freight-supportive land use guidelines

ACTION 11 Support development of innovative freight hubs

ACTION 12 Improve access to existing intermodal facilities

ACTION 13 Plan and protect complementary land uses near major freight hubs

Strategic Direction 5: Improve operational practices

Opportunities which lead to an improvement in efficiencies – while minimizing the need for new freight infrastructure, such as by enabling better real-time management of truck operations, shifting freight activities outside peak hours, and better managing curbside delivery space should be explored further in the context of our region in a coordinated manner across all jurisdictions.

ACTION 14 Use technology to optimise and manage the movement of goods

ACTION 15 Explore opportunities for flexible freight delivery times

ACTION 16 Enhance incentives to encourage off-peak deliveries

ACTION 17 Implement reserved curbside delivery options

4.0 Next Steps

The findings of the Urban Freight Study provide a solid foundation from which to develop Metrolinx's workplan for goods movement.

In order to do this, Metrolinx will work with other organisations – both private and public – to further define mutual objectives and to collaborative on initiatives for addressing urban freight transportation issues in the GTHA.

As first projects stemming from this study, staff have engaged with partners on the following:

1. **Urban Freight Data Collection:** Metrolinx advance work with the Urban Transportation Research and Advancement Centre (UTRAC) at the University of Toronto and the McMaster Institute for Transportation and Logistics to develop and pilot an urban freight data collection program for the GTHA.
2. **Goods Movement Website:** Metrolinx coordinate updates and improvements to the Metrolinx Goods Movement webpage with the Peel Region Goods Movement Task Force webpage in order to provide coordinated website communications and outreach activities. Other municipalities will be approached to participate.
3. **Freight Supportive Guidelines:** Metrolinx staff will collaborate with MTO in the development of freight supportive guidelines. MTO has initiated a consultant study and Metrolinx staff will participate as a key stakeholder.
4. **Truck Lanes Study:** Collaborate with Transport Canada, MTO and municipal partners on a Transportation Association of Canada (TAC) study examining policies and practices related to truck-only lanes in urban areas.
5. **Big Move 2.0:** The findings of the Urban Freight Study will integrated in to The Big Move as part of the Big Move 2.0 workplan.
6. **Coordinated Construction Information:** Metrolinx is collaboration with MTO and municipal partners to develop a shared database and information tool giving road disruptions due to planned events, construction and other incidents.

5.0 Financial Implications

The cost of undertaking the study was included in the 2010/11 budget. The costs of undertaking Metrolinx's portion of the next steps have been included in the proposed 2011/2012 operating budget.

ATTACHMENTS

GTHA Urban Freight Study – Appendix A

List of Industry Roundtable members – Appendix B

Respectfully submitted,

Leslie Woo
Vice President, Policy & Planning

Direct Dial: 416-874-5943
Direct Fax: 416-869-1794
E-mail: Leslie.woo@metrolinx.com

GTHA Urban Freight Study

FINAL DRAFT

Appendix A
Toronto, Ontario
February 2011



METROLINX

An agency of the Government of Ontario

TABLE OF CONTENTS

1. INTRODUCTION	3
1.1 About Metrolinx	3
1.2 About this Study	3
1.3 About this Report	4
2. URBAN FREIGHT IN THE GTHA	6
2.1 Defining Urban Freight	6
2.2 Current Infrastructure and Activity	6
2.3 Urban Freight and <i>The Big Move</i>	6
2.4 Urban Freight Challenges	6
3. STRATEGIC DIRECTIONS AND POSSIBLE ACTIONS	12
3.1 Build Collaboration and Support	13
3.2 Improve Urban Freight Information	14
3.3 Increase Transportation Network Efficiency	14
3.4 Enhance Planning and Development	15
3.5 Improve Operational Practices	16
4. SUMMARY AND CONCLUSIONS	18

This report is based on technical work conducted by HDR | iTRANS

1. INTRODUCTION

The Greater Toronto and Hamilton Area (GTHA) is a very significant generator of goods movement activities in Canada. The efficient movement of goods and delivery of services in the GTHA are important factors in establishing the regions overall economic competitiveness and prosperity. The effectiveness of our transportation system is critical to building and sustaining economic prosperity locally, regionally, provincially and nationally.

There is a pressing need to improve the way in which goods and services move throughout the GTHA and to coordinate the relationship with the movement of people in order to maintain the competitiveness of the regional economy. This study was undertaken by Metrolinx as a first step to explore urban freight transportation (urban freight in this report) in the region.

This study addresses all aspects of urban freight in the region, and is built on collaboration with stakeholders—local government, academic and industry representatives—who offer a deep understanding of urban freight issues from a variety of perspectives. It presents an overview of current freight infrastructure and activity in the GTHA, and identifies challenges that face efforts to strengthen urban freight in the region. It then summarizes possible actions to boost urban freight capacity and efficiency, and ends with some conclusions on urban freight in the GTHA.

1.1 ABOUT METROLINX

Metrolinx is an agency of the Government of Ontario focussed on transportation in the Greater Toronto and Hamilton Area (GTHA). The Metrolinx Act identifies a number of organizational objectives, including “To provide leadership in the co-ordination, planning, financing, development and implementation of an integrated, multi-modal regional transportation network.” The Act defines “multi-modal” as including automobiles, walking, cycling, buses, rapid transit (including subways and transitways), rail (including commuter and freight rail), and trucks.

Metrolinx responsibility for improving goods movement in the GTHA was one of nine transformative actions identified in *The Big Move*², the Regional Transportation Plan (RTP). Section 2.3 of this report addresses this subject in more detail.

1.2 ABOUT THIS STUDY

This study identifies opportunities to enhance the GTHA’s competitiveness by improving freight efficiency and capacity, in the context of the goals and objectives of *The Big Move*. It focuses primarily on road freight, but also considers intermodal connections to rail, air and marine freight. Geographically, it focuses on freight trips that begin and/or end in the GTHA. It complements the ongoing Continental Gateway and Trade Corridor initiative of the Federal, Ontario and Québec governments, which deals with the GTHA as part of a broader inter-urban freight system.

¹ Government of Ontario, Metrolinx Act, 2006 (available at www.e-laws.gov.on.ca)
² Metrolinx, *The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area*, 2008 (available at www.metrolinx.com)

The core of the study was the development of possible actions to increase the capacity for and efficiency of freight movement within the GTHA. A comprehensive consultation process has contributed to the development of these actions and featured two important groups established by Metrolinx for this study (see the membership lists, next page). One was the Goods Movement Industry Roundtable (GMIR), which included representatives of leading GTHA private sector industries and carriers, their associations, and marine port and airport authorities. The other was the Technical Working Group (TWG), which included representatives of local and regional governments within the GTHA, as well as the Provincial and Federal governments. These agencies set policy, and have regulatory authority over freight infrastructure. Two Class 1 railways also were included in the TWG because they own and operate key parts of the GTHA freight infrastructure. Representatives from the University of Waterloo and the McMaster Institute for Transportation and Logistics were also included in the two groups for their expertise.

Both groups held several independent and joint meetings, where they provided detailed input to the project feedback on work to date. In addition to regular meetings, a full-day workshop was held in March 2010 with a larger stakeholder group, and GMIR members were interviewed to ensure a full understanding of the challenges they face in their business and possible solutions to some of those challenges.

To complement the consultation activities the study also included a scan of current conditions in the GTHA, and by a literature review of worldwide best practices.

1.3 ABOUT THIS REPORT

This report presents the key findings of the GTHA Urban Freight Study. It is intended to guide future work by government to develop new policies and initiatives, to support the formation of productive partnerships between government and industry, and to inform the objectives and actions of those partnerships. Three chapters follow this introduction:

- **Chapter 2—Urban Freight in the GTHA** discusses the nature of urban freight, related facilities and activity levels in the GTHA, study objectives and identified challenges to meeting them.
- **Chapter 3—Strategic Directions and Possible Actions** presents a concise summary of the recommended five strategic directions and 17 possible actions.
- **Chapter 4—Conclusions** offers a concise summary of results and future directions.

This report is accompanied by a *GTHA Urban Freight Study: Technical Backgrounder* by HDR|iTRANS, which offers additional detail on the 17 possible actions presented in Chapter 3 and other work summarized in this Study. The table of contents from the Technical Backgrounder is included in Appendix 1.

GTHA URBAN FREIGHT STUDY STAKEHOLDER GROUPS

Goods Movement Roundtable

Bob Armstrong (Chair)—Armstrong Trade and Logistics Advisory Services
Brian Zeiler-Kligman (Vice-Chair)—Toronto Board of Trade
John Best—Southern Ontario Gateway Council
Perry Cloete—Greater Toronto Airports Authority
Sabrina Como—Wheels Group
Brian Crow—Ontario Motor Coach Association
Steve Dineen—Canada Post
Bill Fitzgerald—Hamilton Port Authority
Mark Hayward—Canadian Union of Postal Workers—Messenger Services
Victoria Matthews—Transcore Link Logistics Ltd. & Nu Phi Mu
Bruce Richards—Private Motor Truck Council of Canada
Doug Switzer—Ontario Trucking Association
David Turnbull—Canadian Courier & Logistics Association
Ginnie Venslovaitis—Hudson’s Bay Company
Clarence Woudsma—University of Waterloo

Technical Working Group

Tracey Curtis—Region of Durham Economic Development and Tourism
Jeff Brooks—Region of Durham Planning
Andrew Head—Halton Region Transportation Services
Jeffrey Reid—Halton Region Engineering and Public Works
Sylvia Renshaw—City of Hamilton Economic Development and Real Estate
Trevor Horzelenberg—City of Hamilton Rapid Transit
Tom AppaRao—Peel Region Transportation Planning
David Kuperman—City of Brampton Long Range Transportation Planning
Paul Sabo—City of Toronto Transportation Services
Greg Stewart—City of Toronto Transportation Planning
Loy Cheah—York Region Infrastructure Planning
Richard Hui—York Region Transportation Planning
James Perttula—MTO Goods Movement Policy/Continental Gateway
Rob Tardif—MTO Systems Analysis and Forecasting
Justin Terry—Transport Canada Regional Coordination and Policy Advice
John Higham—Transport Canada Regional Coordination and Policy Advice
Pavlos Kanaroglou—McMaster Institute for Transportation and Logistics
Gordon Graham—Canadian National Intermodal
Josee Santagata—Canadian National Business Development
Paul Kerry—Canadian Pacific Corporate Business Development

2. URBAN FREIGHT IN THE GTHA

2.1 DEFINING URBAN FREIGHT

Freight transportation (also referred to as goods movement) includes all shipments and services that move on the transportation network. Shipments include auto parts heading to an assembly plant, paper destined to an office, apples on their way to a grocery store, or postal mail en route to a home. Services include movements by people who travel as part of their job—plumbers, realtors, surveyors—and others who rely on the transportation network to serve clients.

Urban freight, as considered in this study, is freight transportation that has its origin and/or destination inside the GTHA, and that impacts facilities and infrastructure under local and regional jurisdictions. This includes road and rail freight (the latter where it involves level crossings with roadways, or track sharing by commuter rail services) and intermodal freight transfers between road and other (rail, air or marine) modes.

Urban freight is the part of freight transportation most visible to the public. It is sometimes described as “the last kilometre” because it represents the final delivery of goods to retailers or consumers. However, it also includes the movement of raw materials and unfinished goods between factories and warehouses, and the movement of finished goods from producers to distribution centres.

2.2 CURRENT INFRASTRUCTURE AND ACTIVITY

The GTHA’s four major modes of freight transportation comprise air, marine, rail and road. These modes have significant differences in infrastructure and activity, as described in the following paragraphs. Figure 1, right, shows the GTHA freight system.

Road

Trucking is the GTHA’s most prominent urban freight mode for both short- and long-distance hauling. Almost everything sold to the public relies on a truck for part of its journey. The region’s network of freeways, secondary highways, arterials and other roads offer trucks accessibility throughout the region and connect rail, port and air terminals.

Despite trucking’s importance in the GTHA, not nearly enough is known about it. There is no single source for comprehensive truck data including volumes, routes, origins and



destinations. Despite several data collection efforts, only a partial view of the industry is available. Reasons include the wide dispersion of trucking origins and destinations, and the fact that many goods are re-shipped several times within the GTHA—for example, products may have a multiple-stop manufacturing process, or may be shipped from the manufacturer to a distribution centre and then to a store.

A major source of data on trucking activity is the National Roadside Survey, which was last conducted in 2005-2007. A Commercial Vehicle Survey was simultaneously conducted in Ontario, which gathered information at 106 sites on Ontario highways and at border crossings. The survey collected information about the trip, commodity, vehicle, company and driver for vehicles with a gross vehicle weight of at least 4.5 tonnes; however, it under-represented commercial vehicle movements that did not use highways or were less than 200 kilometres, and did not collect information on smaller commercial vehicles that represent a significant proportion of urban freight trips. Bearing in mind these limitations, 42.1 percent of Ontario highway commercial vehicle trips in 2006 had both their origin and destination within the Greater Golden Horseshoe, while 57.9 percent of trips had either their origin or destination in that area (5.4 percent to or from the north, 17.3 percent to or from the east, 26.3 percent to or from the west, and 8.9 percent to or from the south).

Another data source is the Cordon Count Data Retrieval System, a cooperative repository of data collected by various governments in the Greater Toronto Area. It provides a good snapshot of urban travel patterns on roads that cross major boundaries in the GTA, including non-highway facilities. It illuminates the limitations of the provincial Commercial Vehicle Survey, which only captures highway trips - e.g. 67 percent of the truck trips between Peel Region and either York Region or the City of Toronto are not on highways, thus are not captured by the Commercial Vehicle Survey.

Rail

Rail plays a significant role in moving goods in the GTHA. A vast rail network connects all parts of the region, but operates well below capacity. While there are no precise data describing rail freight tonnage in the GTHA, Ontario's total outbound rail freight was estimated to be 35.6 million tonnes in 2007. At the provincial level, commodities carried by rail included bulk raw and semi-finished materials (e.g. wheat, iron and steel, liquid petroleum gas, wood pulp, nickel ores), finished goods (e.g. cars and minivans) and other unidentified cargo. Destinations were identified as 16.1 percent in Ontario, 41.1 percent elsewhere in Canada, 41.6 percent in the United States, and 1.3 percent in Mexico.

The GTHA has several major intermodal facilities for the transfer of freight between road and rail. No current data on intermodal activity are available, although the Ontario Ministry of Transportation's Commercial Vehicle Survey collected data at intermodal access points in 1999. Some basic information is available for the CPR Vaughan Intermodal terminal, which has handled 350,000 to 400,000 containers annually in recent years, with eight daily trains arriving and departing with 100 to 120 cars each.

Air

Air cargo is particularly sensitive to fuel costs and is subject to other fees, making it most suitable for high-value and/or time-sensitive cargo such as courier shipments, electronics and perishables. Most air cargo starts and ends its journey on a truck, so road connections and trucking facilities at airports are important.

Two major airports in the GTHA support significant cargo services. Lester B. Pearson International Airport is the busiest airport by tonnage in Canada (with more than double the activity of second-place Vancouver International Airport), and John C. Munro Hamilton International Airport ranks third. In 2008, the two GTHA airports handled 212,000 inbound tonnes and 190,000 outbound tonnes of freight.

Comprehensive air cargo data are not currently collected. The regional and local scheduled carriers do not file cargo data on their airport activity survey. The major charter survey does not collect data on domestic courier cargo or domestic entity cargo.

Marine

Marine freight has a low cost per tonne and is slow compared to other modes. It is best-suited to bulk goods and other large-quantity shipments. Marine ports also rely on good intermodal connections to road and/or rail transportation. Major constraints for marine shipping in the GTHA include the vessel restrictions and the limited navigation season of the St. Lawrence Seaway.

The three principal marine ports in the GTHA are Hamilton (the twelfth-busiest Canadian port by tonnage in 2007), Toronto (ranked fortieth) and Oshawa (unranked). Together, these three ports received about 13 million tonnes of inbound freight in 2005, which is far more freight than they sent out. In 2007, outbound freight represented only 0.6 percent of all freight handled in Toronto's port, and 11.8 percent in Hamilton's.

GTHA ports tend to handle different types of goods for domestic and international shipments. Domestically, Hamilton ships out agricultural and manufactured goods and receives minerals, coal, fuel and chemicals; internationally, it ships out agricultural products and slag and ash, and receives iron ore, coal and processed steel. Toronto receives minerals and machinery from domestic sources, and sugar and salt from international sources. Oshawa receives fuel from within Canada, and chemicals, salt, asphalt and refined steel materials from the United States and overseas.

2.3 URBAN FREIGHT AND THE BIG MOVE

The Big Move sets out a vision for the GTHA's future that rests on three pillars of sustainability (see the figure below). The 25-year plan includes nine "Big Moves"—those actions that were identified as the most transformative. The eighth Big Move directly addresses goods movement, calling for the development of a comprehensive strategy for goods movement in the GTHA, identifying opportunities and actions to improve efficiency, increase capacity, enhance the region's competitiveness and reduce emissions of GHGs and other pollutants.

THREE PILLARS OF THE BIG MOVE'S VISION

A high quality of life

Our communities will support healthy and active lifestyles, with many options for getting around quickly, reliably, conveniently, comfortably and safely.

A thriving, sustainable and protected environment

Our transportation system will have a low carbon footprint, conserve resources, and contribute to a legacy of a healthy and clean environment for future generations.

A strong, prosperous and competitive economy

Our region will be competitive with the world's strongest regions. Businesses will be supported by a transportation system that moves goods and delivers services quickly and efficiently.

The stakeholders and the project team worked within the context of The Big Move to develop objectives for urban freight in the GTHA. Together, they recognized that a healthy, efficient urban freight sector contributes directly to the three pillars identified above.

The stakeholders examined the goals and objectives outlined in the big move through the urban freight lens and derived ten key objectives for urban freight as shown in the following figure. These objectives have been used to frame the development of the study’s strategic objectives and identify the list of actions that are proposed below. Going forward they provide guidance for the development of action plans for freight transportation in the GTHA.

TEN OBJECTIVES FOR URBAN FREIGHT IN THE GTHA
Increase availability of options for freight transport to improve competition and the robustness of the system and remove barriers.
Improve service by providing more information to support shippers’ and operators’ decision making to reduce travel time variability; provide information on easily accessible and well publicized routes.
Reduce conflicts between modes
Promote active modes where practical.
Engage public and private sectors in data collection and the planning process to ensure coordinated efforts in addressing challenges in Urban Freight.
Provide better information on energy and emissions options to allow improved efficiency.
Better manage demand and capacity to ease peaking, reduce bottlenecks and spread traffic more efficiently.
Better integrate land use planning and freight transport so that freight needs are built into development and development is connected to the right networks.
Encourage use of best mode at each stage.
Integrate freight transport investment with overall transport investment planning, and better reflect the costs of transport to the users so investment decisions can be more effective.

2.4 FREIGHT TRANSPORTATION CHALLENGES

Study stakeholders identified a wide range of issues. These have been consolidated into 13 key challenges that face efforts to reach the objectives identified in the preceding section. These challenges reach across the GTHA and are not specific to a particular locale or stakeholder. They are grouped into four themes: understanding demand, urban freight infrastructure, urban freight operations and implementation.

Understanding Demand

Stakeholders have an inadequate understanding of urban freight demands and how they are changing. What economic sectors are generating this demand, and what forces are at play in those sectors? What other factors influence urban freight demand, such as labour force, logistics, manufacturing trends and consumer purchasing habits? What else is unknown or poorly understood, and how can those gaps be addressed?

CHALLENGE 1 Data sharing by industry

Historically, there has been very little sharing of critical data among industry stakeholders and with governments. For their part, governments have generally not demonstrated to value to industry of sharing this information. They have not coordinated their data requests and have not adequately explained why the data is needed and how it will be used. From an industry perspective, companies that compete with each other are often reluctant to share information for competitive reasons and/or competition laws.

CHALLENGE 2 Industry feedback on issues and challenges

No medium exists for industry stakeholders to regularly and effectively express concerns to the decision-makers that can address them. This lack of communication only adds to government's poor understanding of industry needs.

Urban Freight Infrastructure

The GTHA freight system includes internal routes and terminals as well as links to the external freight system. It is critical that these components provide an integrated, seamless system that meets the needs of the industry.

CHALLENGE 3 Roadway capacity

Economic and population growth and the resultant growth in truck and automobile use in the GTHA have outpaced growth in roadway capacity. As a result, increased traffic congestion is placing too much pressure on the area's roads and highways, and is leading to increased truck travel times, reduced reliability and additional costs.

CHALLENGE 4 Alternative truck routes

The GTHA road network lacks redundancy. Traffic disruptions cause major delays and require a long time for operations to return to normal.

CHALLENGE 5 Multi-modal connectivity

Inadequate road connection to air, rail and marine terminals have led to a reliance on trucks for both short and long urban freight trips. As a result, trucks have become an essential component in delivering rail-based traffic in the region as well as in gathering traffic for dispatch beyond the region.

Urban Freight Operations

The movement of goods around the GTHA could be more efficient. How can urban freight demands be better managed? How can circulation be improved on public roads and at private sites and terminals?

How can loading be accommodated where demands exceed limited facilities? The immediacy of these operational needs gives this theme a short-term focus.

CHALLENGE 6 Governance and regulatory restrictions

Restrictions that limit the way goods can be delivered also limit opportunities for creative solutions. For example, restrictions that prohibit night-time activity and prevent the creation of loading zones exacerbate the competition for road capacity between freight and passenger vehicles.

CHALLENGE 7 Land use conflicts between freight and residential activities

Planning for new residential growth often overlooks the needs and impacts of existing freight-related development. Over time, these practices can lead to incompatibilities between established land uses and between adjacent land uses and the transportation system.

CHALLENGE 8 Conflicting commuter and freight schedules

Urban freight and commuter traffic demands typically coincide, compounding peak period congestion. Off-peak traffic conditions have also deteriorated over the last two decades. Urban freight traffic is left with virtually no window to operate in without delays.

CHALLENGE 9 Cost pressures

The urban freight industry, in particular couriers and local trucking, are very competitive. Unforeseen delays, cancellations and toll roads can impede freight companies' ability to operate economically. In developing areas, rising land values make land-intensive freight facilities very costly.

CHALLENGE 10 High volumes of through freight traffic

High volumes of trucks cross the GTHA without stopping, providing little economic benefit to the region. While this demonstrates the importance of the region as a critical role in providing linkages to broader freight networks beyond the GTHA, it also exacerbates the region's congestion.

Implementation

Poorly coordinated public and private decision-making processes could impede the implementation of solutions. Government and industry stakeholders frequently speak different languages and do not understand how the other plans and makes investment decisions. In addition, the public is not fully aware of the importance of efficient freight transportation to the GTHA's economic health and quality of life.

CHALLENGE 11 Insufficient consideration of urban freight in planning

Strong urban freight planning guidelines are currently lacking. Provincially, some aspects of urban freight are considered in Provincial Policy Statements and the Growth Plan for the Greater Golden Horseshoe. However, land suitable for freight or industrial uses (i.e. centrally located with good access to the freight network) may also be zoned for new residential or commercial development, and transportation plans may not fully consider freight industry needs. These factors make it difficult to locate new freight hubs, and lead to existing hubs growing less and less efficient over time.

CHALLENGE 12 Governance conflicts

Inconsistencies in freight-related policies, regulations, knowledge and approaches among different levels of government and neighbouring municipalities create challenges in areas such as truck route regulations and network consistency.

CHALLENGE 13 Weak relationships with decision-makers and the public

Insufficient awareness and understanding of freight industry needs has impeded the development of support for necessary improvements. Communication gaps have led to ambivalence and even resistance on the part of government and the public.

3. STRATEGIC DIRECTIONS AND POSSIBLE ACTIONS

In order to address the challenges raised by stakeholders, a number of possible actions were identified through both the review of international best practices in urban freight and consultation with stakeholders. The actions, grouped into five major strategic directions, were designed to address the study’s objectives and overcome the identified challenges. They are summarized in the following figure, and discussed further in this chapter. The GTHA Urban Freight Study: Technical Backgrounder presents considerably more information on each possible action including key stakeholders, expected impacts, implementation considerations, cost range, timing, difficulty, geographic scope and examples of similar actions taken elsewhere.

SUMMARY: STRATEGIC DIRECTIONS AND POSSIBLE ACTIONS	
STRATEGIC DIRECTION	BUILD COLLABORATION AND SUPPORT
ACTION 1	Strengthen and collaborate with multi-sectoral forums, including the Southern Ontario Gateway Council (SOGC)
ACTION 2	Establish an inter-governmental freight committee
ACTION 3	Improve and coordinate public outreach on urban freight
STRATEGIC DIRECTION	IMPROVE URBAN FREIGHT INFORMATION
ACTION 4	Improve data sharing on freight vehicles, routes and activities
ACTION 5	Establish a GTHA urban freight data collection program
STRATEGIC DIRECTION	INCREASE TRANSPORTATION NETWORK EFFICIENCY
ACTION 6	Develop and protect a strategic GTHA truck network
ACTION 7	Harmonize truck route standards and mapping
ACTION 8	Investigate intelligent lane utilization and truck-only lanes
ACTION 9	Explore opportunities to move freight on transit
STRATEGIC DIRECTION	ENHANCE PLANNING AND DEVELOPMENT
ACTION 10	Develop freight-supportive land use guidelines
ACTION 11	Support development of innovative freight hubs
ACTION 12	Improve access to existing intermodal facilities
ACTION 13	Plan and protect complementary land uses near major freight hubs
STRATEGIC DIRECTION	IMPROVE OPERATIONAL PRACTICES
ACTION 14	Use technology to optimise and manage the movement of goods
ACTION 15	Explore opportunities for flexible freight delivery times
ACTION 16	Enhance incentives to encourage off-peak deliveries
ACTION 17	Implement reserved curbside delivery options

3.1 BUILD COLLABORATION AND SUPPORT

Virtually all the actions in this chapter lie outside the exclusive mandate and capabilities of Metrolinx, and require either the leadership or partnership of other parties. Implementation and all of its considerations including project definition and funding will require will require collaboration and communications among all players. The place of industry is a critical one, as goods movement is basically an activity of the private sector (with exceptions such as municipal waste collection and postal services); business must be not simply consulted, but actively and fully engaged in planning and implementing future actions.

ACTION 1 Strengthen and collaborate with multi-stakeholder forums, including the Southern Ontario Gateway Council (SOGC)

Collaboration across sectors begins with the sharing of perspectives. Multi-stakeholders forums create the opportunity for partnerships to emerge and for issues to be analysed and addressed in a coordinated manner.

The SOGC is a transportation and economic development forum, whose members include most of the major transportation providers in southern Ontario in the rail, trucking, marine transport and aviation modes. Their vision is to achieve excellence in an integrated transportation system for the prosperity of Southern Ontario. The Council allows private-sector representatives to discuss freight issues, share data, propose solutions for operational issues, and discuss project funding.

ACTION 2 Establish an inter-governmental freight committee including Federal, Provincial and Municipal representatives

A committee of representatives from GTHA governments responsible for freight-related decisions would facilitate the implementation of actions to improve urban freight, such as harmonization of varied freight approaches and regulations across municipalities in the region. The committee would oversee the best interests of the GTHA and ensure due consideration in the municipal planning process. This idea emulates some concepts embodied by Metropolitan Planning Organizations (MPOs) in the United States. The committee should connect regularly with the Southern Ontario Gateway Council.

ACTION 3 Improve and coordinate public outreach on urban freight

A public that is better informed on urban freight issues could support public-sector action to relieve some key constraints and invest in solutions. Areas for building awareness and understanding include the benefits of urban freight for quality of life, the challenges faced by industry, and safety and security issues.

3.2 IMPROVE URBAN FREIGHT INFORMATION

Good information enables good decisions. Freight data can play an important role by demonstrating the existence of problems, aiding analysis to identify alternative solutions, and measuring results against established objectives. The need for good baseline information is heightened for larger projects where participants are seeking support from outside investors and require a solid business case. In the GTHA, both the public and private sectors collect freight information, but with different interests and purposes. The private sector is focused on short-term goods movement operations (e.g. where cargo is now, when it will be delivered, how much must be shipped next week), and the public sector has longer-term concerns about road infrastructure. More comprehensive, high-quality data is needed to advance the planning and implementation of urban freight solutions.

ACTION 4 Improve data sharing on freight vehicles, routes and activities

Better sharing of GTHA freight data is fundamental to virtually every other action discussed in this report. Public and private stakeholders could benefit by sharing planning information (e.g. facility schedules, truck routes, freight restrictions) and real-time information (e.g. traffic disruptions, construction detours). This action could be facilitated by the Southern Ontario Gateway Council suggested in Action 1, and by the inter-governmental freight committee suggested in Action 2. This action must also address the challenges of competition laws and the reluctance of firms to share information with each other.

ACTION 5 Establish a GTHA urban freight data collection program

A recurring survey of the nature, value and weight of goods carried by GTHA businesses, and of their delivery times, frequencies, routes and vehicles used, would help build a comprehensive understanding of urban freight movements to, from, within and through the region. It would provide a consistent data source for freight planning and monitoring of trends as well as feeding into the development of transportation models used to forecast and assess network and policy options. To be successful, it would require a high level of involvement and cooperation from GTHA municipalities, the Province of Ontario and other levels of government together with input from the private sector.

3.3 INCREASE TRANSPORTATION NETWORK EFFICIENCY

The GTHA's road network supports the movement of both people and freight. In *The Big Move*, Metrolinx highlighted the importance of preserving transportation system efficiency to support business and ensure a competitive regional economy. Expected growth in GTHA population and employment will only increase pressure on the road system and heighten the urgent need for steps to maximize the efficient movement of goods.

ACTION 6 Develop and protect a strategic inter-regional GTHA truck network

The GTHA requires a long-term plan for the evolution and growth of its truck network, to ensure consistent, reliable access across the region. Key considerations include the wide range of industries, operators and customers, and the need for seamless operations. The creation of a GTHA truck network plan would enable testing and evaluation of different infrastructure and operational measures to serve growth and improve efficiency, and would also allow policy measures intended to protect opportunities that are vital to future expansion. These opportunities would complement and be coordinated with *The Big Move* as well as multipartite efforts to develop the Ontario-Quebec Continental Gateway and Trade Corridor.

ACTION 7 Harmonize truck route standards and mapping

Minimizing or eliminating inconsistencies in truck routes and regulations among GTHA municipalities would help operators know with certainty where and when they are permitted to travel. This could reduce shipper costs, vehicle conflicts, driver errors, inappropriate use of minor streets by heavy vehicles, and the potential for collisions. A comprehensive map for truck drivers could include truck routes, restricted areas, parking/loading locations, dangerous goods routes, and other features. Offering a central electronic interface would offer convenient access to the information for staff, industry and the public, and could be a marketing tool to show industry that the GTHA is freight-friendly. Implementation of this project could be done through the inter-governmental freight committee identified in Action 2.

ACTION 8 Investigate intelligent lane utilization and truck-only lanes

The efficiency of freight movements could be improved by increasing the availability of routes that give trucks some degree of priority over other vehicles. One approach is through intelligent lane utilization—for example, reserving high-occupancy vehicle lanes for trucks outside peak periods, or implementing a reversible lane on arterial roads. Another approach is through the creation of truck-only lanes by redesignating existing travel lanes or building new facilities in the right-of-way. This concept would alleviate competition for road space and offer an improved level of service for trucks, but requires additional analysis of its feasibility and benefits.

ACTION 9 Explore opportunities to move freight on transit

This action envisions the potential to make use of appropriate public transit facilities for moving goods. It could allow for creative solutions where smaller, higher quality goods need to be moved in urban centres. This action would require alignment of freight demands and transit routes, and other constraints may limit the practical opportunities—but the planning stage of new transit routes is the best time to consider options proactively, and the GTHA has many planning projects in progress. Implementation ideas include the night-time use of rail or bus rapid transit lines for freight, the addition of freight cars to subways or commuter rail trains, or the use of rapid transit rail lines by freight-specific vehicles at regular, scheduled times during the day.

3.4 ENHANCE PLANNING AND DEVELOPMENT

Increasingly, GTHA growth and intensification are placing constraints on the urban freight industry. Proactive planning approaches are needed to ensure supportive forms of development, to enable the efficient location and concentration of freight facilities, and to improve the accessibility of intermodal facilities. These steps can protect quality of life by buffering sensitive land uses from freight activities, and improve the efficiency of urban freight by reducing the number and length of trips.

ACTION 10 Develop freight-supportive land use guidelines

The Province of Ontario's 2006 *Growth Plan for the Greater Golden Horseshoe* contains a policy supporting the integration of land use and multi-modal goods movement planning. Actions to support this policy are required to ensure harmonious efforts by GTHA municipalities. The development of and adherence to a common set of guidelines could lead to plans, zoning by-laws and development approval processes that promote the clustering of freight uses and the creation of buffers between freight uses and other developments. MTO is currently developing Freight Supportive Land Use Guidelines and some perceived benefits would include reductions in freight trip distances, conflicts between freight and other traffic, and disruptions to non-freight land uses.

ACTION 11 Support the development of innovative freight hubs

There are a number of ways to improve freight efficiency by developing innovative handling and transfer facilities. One possibility is to add freight consolidation centres in locations that are relatively accessible and offer inexpensive storage space, thereby reducing traffic demands and land needs in higher-density locations; such centres allow delivery trucks to be more fully loaded, serve multiple customers in a single trip, and provide just-in-time service. A second approach is to develop “freight villages” that include intermodal facilities, consolidation centres, logistics-intensive manufacturing and support services; they can help to contain freight activities. A third option is to replicate within large organizations and institutions the off-site reception and consolidation of shipments practiced by some hospitals; this minimizes on-site deliveries and storage requirements. A final approach is to establish localized package drop-off stations (e.g. in business parks, shopping centres or neighbourhoods) that serve inbound and outbound courier activities for small businesses and consumers; this would allow couriers to consolidate trips, extend operations outside peak periods, and eliminate repeat visits to unattended destinations.

ACTION 12 Improve access to existing intermodal facilities

The development of improved connections from air, rail and marine intermodal facilities to the GTHA freeway network would reduce modal transfer delays, making intermodal shipping more competitive and reducing industry’s reliance on long-distance trucking. Better freeway connections could also be complemented by co-locating intermodal terminals and consolidation facilities, which would reduce the need for trucks to travel on public roads between these facilities.

ACTION 13 Plan and protect complementary land uses near major freight hubs

Steps to preserve lands for industrial and freight uses around major intermodal transfer facilities such as ports, airports and rail yards can reduce the impact of goods movement by keeping major freight origins and destinations close together. Expanded freight facilities at the GTHA’s major airports would improve transfer efficiencies and reduce truck trips to and from the airports. While this may mean reducing lands available for residential or other commercial development near the freight hub, it can maximize the industry’s ability to effectively serve existing development concentrations. Some aspects of this action are demonstrated within Provincial Policy Statements and the Growth Plan for Greater Golden Horseshoe, whereas land use conflicts for industrial uses are currently addressed through the Ministry of the Environment’s D-Series Guidelines.

3.5 IMPROVE OPERATIONAL PRACTICES

This group of actions deals with a variety of opportunities to improve efficiency without adding new freight infrastructure, such as by enabling better real-time management of truck operations, shifting freight activities outside peak hours, and better managing curbside delivery space.

ACTION 14 Use technology to optimize and manage the movement of goods

Technology continues to provide opportunities to build efficiency into business processes. Some companies use technology to monitor the location of goods and to manage the way they process them through their supply chains. Technology provides access to information about traffic conditions and route delays. There is an opportunity to better promote technology that would increase the efficiency of goods

movement by providing better real-time travel information to optimize routing or find ways to manage where and when goods are moved. More consolidated information at the GTHA level would also provide benefits in routing and managing goods. In future, new developments for increasing efficiency should be explored and marketed to both public and private-sector stakeholders.

ACTION 15 Explore opportunities for flexible freight delivery times

There may be opportunities to relax the constraints around truck operating hours to diffuse freight demands over time and reduce competition for travel and delivery space in peak periods. Those constraints are related to noise impacts on residential land uses, timing requirements at the other end of the freight trip (which could be local or on another continent), and regulations on operating hours for drivers that vary by ultimate origin and destination. Because these constraints can conflict, optimization is inevitably case-specific; in fact, international express services have little ability to vary their timing due to external constraints. However, any opportunities to relax current municipal regulations on night-time and holiday operating hours can give shippers more flexibility and improve their ability to find efficiencies.

ACTION 16 Enhance incentives to encourage off-peak deliveries

The previous action could expand the ability of shippers and their customers to schedule off-peak deliveries, but would not give them any extra motivation to do so. Tax incentives could encourage freight operators and their customers to actually adopt off-peak delivery practices. Provincial, regional and municipal governments may be willing to consider options and contribute to their analysis, implementation and monitoring.

ACTION 17 Implement reserved curbside delivery options

This action would mitigate the lack of space for deliveries and pick-ups in congested urban areas that have insufficient off-street loading facilities. It could include the designation of reserved delivery parking in locations and at times that minimize interference with other road users, the designation of delivery areas on side-streets to avoid blocking arterials, or the designation of entire lanes for deliveries. The reserved lane concept could apply to limited timeframes on two-way streets (e.g. mid-day, off-peak periods only), or full-time on one-way streets that have been converted from two-way operations for this purpose. These options are an alternative to increased enforcement while also serving the legitimate needs of local businesses and would streamline the use of valuable road space for deliveries.

4. SUMMARY AND CONCLUSIONS

This study considered the challenges and opportunities for improving urban freight effectiveness and efficiency in the GTHA, and incorporated the results of stakeholder consultation and international research. The actions identified in Chapter 3 are a menu of tools that can be applied through collaboration with partners in the public sector and private industry.

It is clear that the challenges to moving goods in the GTHA are complex and that there are no easy answers. The solutions involve coordinated action at a variety of levels of government with support from the private sector. It is important that the stakeholders involved in urban freight remain connected and that they develop meaningful partnerships. It is anticipated that stakeholders will work to identify promising projects, define their own roles and responsibilities, coordinate the adoption of proven solutions, and test those that are more innovative.

Governments need to coordinate their work and ensure that they make use of the valuable industry input given to them through studies like this and groups like the Peel Goods Movement Task Force. And government needs to act to show that they value what industry has told them and that they are willing to do their part in addressing the issues brought to them.

This study's collaborative nature was pivotal to its success, and offers a sound footing for future implementation. Many government agencies, businesses and industry bodies have demonstrated their motivation and goodwill. Together, they will join forces to put the wheels in motion and secure a competitive and prosperous future for the GTHA.

APPENDIX 1: TECHNICAL BACKGROUNDER-TABLE OF CONTENTS

- 1. Introduction and Background**
 - 1.1 Defining Urban Freight
 - 1.2 Study Framework
 - 1.2.1 Summary of Consultation
- 2. Freight Planning Initiatives**
 - 2.1 National
 - 2.2 Provincial
 - 2.3 Local / Regional Planning
 - 2.4 Financing Alternatives
- 3. GTHA Freight Context**
 - 3.1 Supply Chain
 - 3.2 The Data
 - 3.3 The Modes
 - 3.4 Intermodal
 - 3.5 The Economy
 - 3.6 Demographics & Land Use
 - 3.7 Society and Natural Environment
- 4. Industry Trends and Challenges**
 - 4.1 Industry Trends
 - 4.2 Industry Challenges
- 5. Study Goals and Objectives**
- 6. Best Practices – A Global Scan**
 - 6.1 Urban Freight Solutions
 - 6.2 Synopsis of Approaches
 - 6.3 Themes from the U.S.
 - 6.4 Improving Downtown Circulation
- 7. Issues and Actions**
 - 7.1 Issues Identified in the GTHA
 - 7.3 Menu of Actions
- 8. Findings and Conclusions**
- 9. Bibliography**

APPENDIX B

Goods Movement Industry Roundtable Members

Bob Armstrong	President, Armstrong Trade and Logistics Advisory Services Inc. (ATLAS)
Brian Zeiler-Kligman	Director, Policy, Toronto Board of Trade
John Best	Executive Director, Southern Ontario Gateway Council
Perry Cloete	Manager, Air Service Business Development, Greater Toronto Airports Authority
Sabrina Como	Director, Solutions Development, Supply Chain Services, Wheels Group
Brian Crow	President, Ontario Motor Coach Association
Steve Dineen	Director, Customer Transition, Postal Transformation Project, Canada Post
Bill Fitzgerald	Vice-President, Operations, Hamilton Port Authority
Mark Hayward	Organizing Campaign Coordinator, Canadian Union of Postal Workers Messenger Services
Victoria Matthews	Product Manager, Transcore Link Logistics Ltd.
Bruce Richards	President, Private Motor Truck Council of Canada
Doug Switzer	Vice-President, Public Affairs, Ontario Trucking Association
David Turnbull	President, and CEO, Canadian Courier & Logistics Association
Ginnie Venslovaitis	Director, Transportation Operations, Hudson's Bay Company
Clarence Woudsma	Director, School of Planning, University of Waterloo