APPENDIX F4
Goods Movement

The Road to Change

Halton Region Transportation Master Plan

Goods Movement

Halton REGION

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1. Purpose

This Technical Reference outlines the key directions for goods movement within and through Halton Region. The Technical Reference will act as a resource for the Region, local municipalities and employers in supporting the efficient movement of goods. It documents the major issues associated with goods movement in the region, building on the Regional Official Plan (2009) (ROP) (which includes approved Regional Official Plan Amendment [ROPA] 38), and forms part of the Transportation Master Plan to 2031. The concept of "sustainability" was used as a base guiding principle of ROPA 38 (Sustainable Halton). Provincial policies and initiatives and the latest principles and best practices regarding goods movement across North America were reviewed and incorporated where appropriate.

2. Introduction and Background

Goods movement is a vital element of the Region's transportation system. Proper planning for goods movement is important to support healthy and economically sustainable communities.

Goods movement is an important part of transportation demand in Halton Region, benefitting consumers, as well as the economy of the Region, the Greater Toronto and Hamilton Area (GTHA) and beyond. The GTHA generates about 30% of Canada's economic activity, and more than 400 million tonnes of goods are transported to, from or through the GTHA each year. In 2001, wholesale trade and transportation logistics industries accounted for some 287,000 jobs in central Ontario, comprising approximately 7% of area employment[1].

Goods are shipped by a variety of transportation modes in the GTHA – road, rail, air and marine, although there are no major air and marine facilities within Halton Region. The road network captures the vast majority of goods movements. Roads generally carry the largest share of goods moved in Ontario (approximately 70% of export value and 85% of import value). For lower value, bulkier goods, rail's role increases: approximately 50% of the total freight tonne-kilometres in

[1] *Goods Movement in Central Ontario: Trends and Issues, Technical Report*, Ministry of Transportation, December 2004

Ontario, as a whole, are assigned to rail[2] . Therefore, much of the focus of goods movement policies and initiatives in Halton Region should be focused on the road network; however other modes are also integral to the goods movement network. As discussed above, the Regional Official Plan includes policies to promote a safe and efficient network for goods movement in Halton and the surrounding region, in collaboration with the Province and local municipalities.

The Region is supported by a significant system of goods movement infrastructure (road, marine, rail and air) either within its boundaries or close by, including:

- Lester B. Pearson International Airport (Mississauga)
- John C. Munro Hamilton International Airport
- Provincial Highways 401, QEW/403 and 407
- Milton and Brampton inter-modal (rail/road) facilities
- CN Halton Subdivision
- CN Guelph Subdivision
- CP Galt Subdivision
- CP Oakville Subdivision
- Port of Hamilton
- Port of Toronto

Goods movement will need to increase in efficiency, as well as in the volume transported, in order to support the population and employment growth planned for the Greater Golden Horseshoe through to 2031, as per the province's *Places to Grow: the Growth Plan for the Greater Golden Horseshoe* (June 2006). An overview of the main transportation modes for goods movement is provided below.

2.1 Road

Trucking is the primary mode for goods movement in Halton Region. Each shipment must use the road network for at least part of its journey from origin to destination. Trucking is typically used for consumer goods and household products, especially for journeys less than 500 km in length and where "just in time" delivery is needed. Provincial freeways (Highways 401, 403, 407 ETR and the QEW) carry much of the longer distance and "pass-through" truck traffic through the central and southern portions of the Region. There is a relatively good distribution of arterial roads in Halton, which provide connections for goods movement throughout the area, including connections to the

2 *Moving Goods and Delivering Services: Development of a Regional Transportation Plan for the Greater Toronto and Hamilton Area.* Green Paper #5, Metrolinx, February 2008

more rural parts of the Region. All Regional roads are classified and designed to accommodate truck traffic.

Trucking is likely to continue to be the predominant mode for goods movement in the GTHA. This contributes to and is affected by growing traffic volumes and congestion on the roadways and highways in Halton. The regional and local road network often provides the initial and final trip components for goods that originate in or are destined for places within the region, therefore, the opportunities to reduce this part of the demand is somewhat limited. Nevertheless, opportunities to enhance mode integration should be explored.

2.2 Rail

The GTHA is served by the main Canadian National (CN) and Canadian Pacific (CP) Railways, as well as shortline railways. Halton Region's rail lines carry both freight and passenger traffic. As the railways are operated by private companies, the availability of data on rail activity is somewhat limited, given the commercial sensitivity of this information. Rail is typically used for transporting long-distance bulk goods, containers and inter-modal shipments. The growth in rail traffic has been steady, with much of it driven by continued growth in the containerized movement of goods. The trend towards continued growth in imports from Asia-Pacific countries suggests that there will be a continued increase in goods movement by rail.

Inter-modal freight is defined as goods movement carried by more than one mode. The CP Expressway inter-modal rail freight terminal, located in Milton, offers national and cross-border truck/rail service. CN also owns land in Milton for which it has a long range plan for an inter-modal facility. It is understood that the current emphasis is on utilizing existing rail infrastructure and facilities; a new facility is considered to be a longer term project. To the east, CN has an inter-modal facility in Brampton. Other facilities in the GTHA include the CP facilities at the Vaughan and Obico intermodal terminals and at Trafalgar Road-Rail Terminal, and the CN MacMillan Yard Road-Rail Terminal. Improved access to inter-modal facilities such as these would also serve to improve the environmental performance of goods movement within Halton Region, facilitating efficient transfer of goods from road to rail.

2.3 Marine

While there are no major marine transportation facilities within Halton Region, there are four large ports in the GTHA, in Hamilton, Toronto, Mississauga/Clarkson and Oshawa. On a tonnage basis,

these ports handle about 15% of the GTHA's inter-city goods[3]. Marine transportation is generally used to move bulk goods such as coal, iron ore and road salt, as well as containerized goods. The Region's road and rail connections to the ports are an important part of inter-modal goods movement.

Marine freight activity at the Port of Hamilton has increased by more than 10% over the past ten years, while shipping at the remaining GTHA ports has remained relatively stable[4]. There is potential for further increased use of marine transportation supporting goods movement, with the Port of Hamilton's recent short sea shipping initiative moving goods via feeder ferry services through Hwy H_2O between the Ports of Hamilton and Montreal. Such practices also support a reduction in goods movement using the Region's roads. Multi-modal connections to key ports, particularly at Toronto and Hamilton, are important for goods movement, in order to support marine transportation.

2.4 Air

Canada's largest airport is Toronto Pearson International Airport, located east of Halton in the City of Mississauga. This airport handles a high volume of passengers and goods, including over 30% of Canada's air passenger traffic, 47% of the nation's air cargo, and 12% of Canada's aircraft movements. Over 40% of air cargo in Canada (516,000 metric tonnes in 2006) is processed at Toronto Pearson. Demand for air cargo is forecast to grow at an average annual rate of nearly 4% to 2030, largely driven by an increase in international traffic, particularly in emerging Asian and European markets. As such, Toronto Pearson will continue to play a significant role in the movement of goods[5].

The John C. Munro Hamilton International Airport is also significant in that it is the largest integrated courier cargo airport in Canada and it is available for 24-hour operation. Typically, goods moved by air include valuable, time-sensitive products that can absorb high shipping costs. To support goods movement of this nature, improved linkages to the airports will be an important consideration.

As discussed above, all of the transportation modes play important roles in goods movement in Halton Region.

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3 *The Big Move, Transforming Transportation in the Greater Toronto and Hamilton Area*, Metrolinx, November 2008

4 *Moving Goods and Delivering Services – Development of a Regional Transportation Plan for the Greater Toronto and Hamilton Area, for Consultation,, Green Paper #5*, Metrolinx, February 2008

5 *Taking Flight: The Airport Master Plan 2008–2030*, Greater Toronto Airports Authority, February 2008

3. Official Plan Policies

The Regional Official Plan (ROP) provides direction as to how physical development should take place in Halton to meet the current and future needs of its population. It also reflects the collective aims and aspirations regarding the character of the landscape and the quality of life to be preserved within the Region and it guides the delivery of Regional services and responsibilities. The Halton Region Official Plan was updated in 2009, as per the Regional Official Plan Amendment (ROPA) 38.

The Region supports the concept of sustainable development; planning decisions are made based on a balance of protecting the natural environment, enhancing economic competitiveness and fostering a healthy, equitable society and as such, the following principles of sustainability:

- Natural resources are not being over-used;
- Waste generated does not accumulate over time;
- The natural environment is not being degraded; and
- This and future generations' capacity to meet their social and economic needs is not being compromised.

The Plan's Regional Structure identifies Halton's basic position on the use of land and natural resources within its planning area and provides the basis for preparation of Local Official Plans, amendments and by-laws (see Exhibit 1). The Regional Structure also takes into consideration the provisions of Provincial Plans, including the Niagara Escarpment Plan, the Greenbelt Plan and the Growth Plan for the Greater Golden Horseshoe. The Regional Structure is accompanied by a growth strategy for Halton based on the population and employment targets for the planning horizon of year 2031, with Region-wide population and employment targets of 780,000 people (780,000 residents corresponds to 752,357 residents in Halton Region's Best Planning Estimates when the census undercount is taken into consideration) and 390,000 jobs (increases of 71% and 79%, respectively, on 2006 population and employment levels).

The Halton Region Official Plan (2009) includes a greater recognition of goods movement, including new objectives and policies to promote safe and efficient goods movement throughout the Region, working with the Province, Metrolinx, and other municipalities in the GTHA. These policies are as follows:

- 172(14.1) – To promote, in conjunction with the Province and other municipal jurisdictions, a safe and efficient network for goods movement in Halton and the surrounding region; and

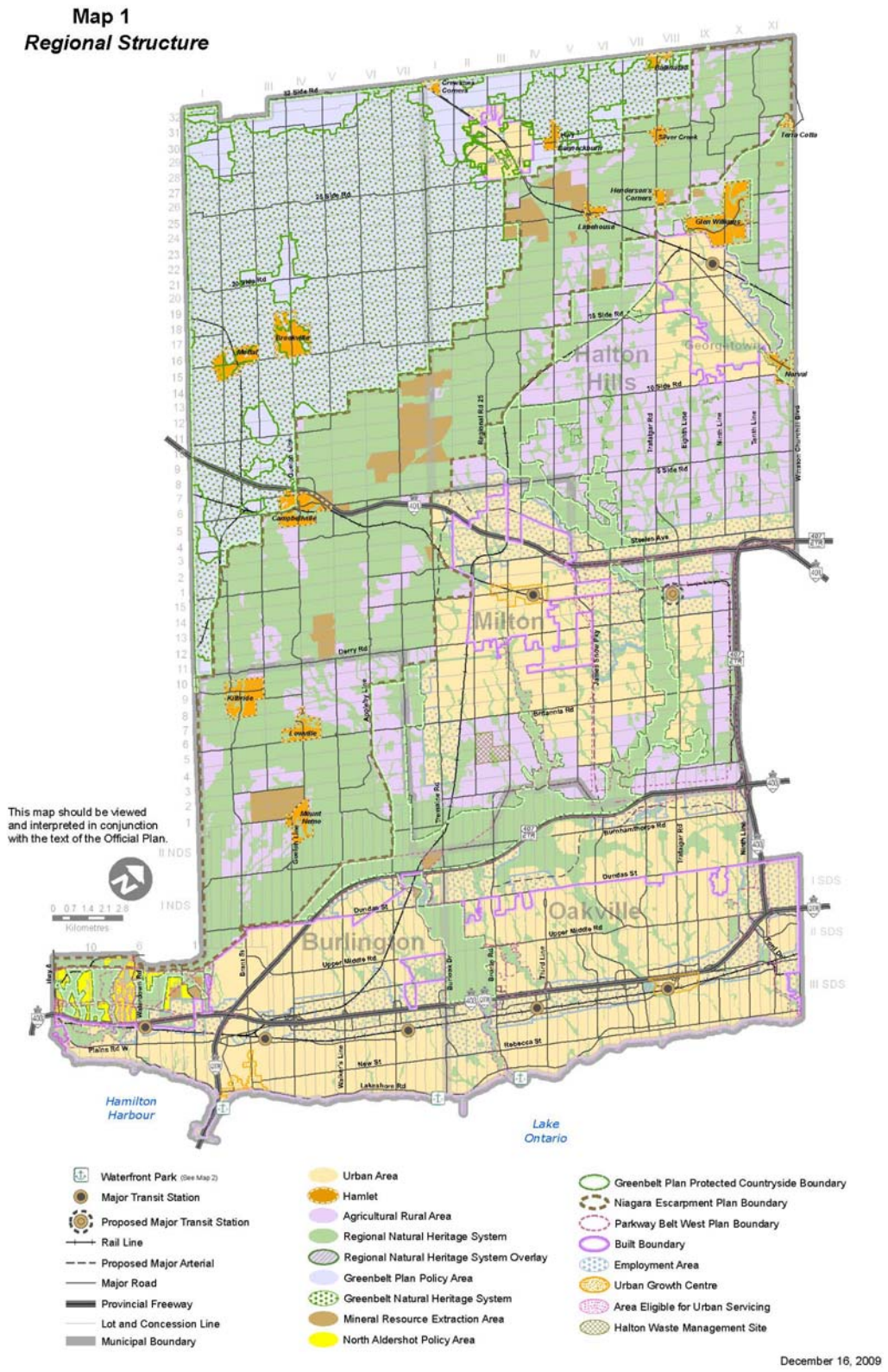
- 173(30.1) – In conjunction with the Province, Metrolinx and other municipalities in the Greater Toronto and Hamilton Area, plan and implement an efficient, safe and integrated transportation network for goods movement by rail, road, water and air.

Halton Region does not have a specifically designated truck route network as the purpose of a major arterial is to carry truck traffic. ROPA 38 (2009) outlines the function of the Region's major transportation facilities; including the provincial freeways and highways, major arterials, multi-purpose arterials and minor arterials (see Exhibit 2).

Based on ROPA 38, the Plan designates Future Strategic Employment Areas (see Exhibit 3), with a purpose to protect lands that are strategically located with respect to major provincial and regional transportation facilities. This includes protection from incompatible uses.

In addition to the Regional Official Plan, goods movement in Halton is affected by a range of policies, including the *Provincial Policy Statement* (March 2005), *Growth Plan for the Greater Golden Horseshoe* (June 2006), *Greenbelt Act* and *Plan* (February 2005) and the *Niagara Escarpment Plan* (June 2005). While the individual municipal Official Plans for Oakville, Burlington, Milton and Halton Hills must conform to the Region's Official Plan, the local municipalities can also affect goods movement throughout the Region through planning practices and implementation tools, such as local zoning by-laws.

Exhibit 1 – Regional Structure



Source: ROPA 38

Exhibit 2 – Functional Plan of Major Transportation Facilities in Halton Region

Exhibit 3 – Future Strategic Employment Areas

December 16, 2009
Source: ROPA 38

4. Legislative Context

Metrolinx is a provincial Crown agency established by the Government of Ontario in 2006, tasked to develop and implement an integrated multi-modal transportation plan for the GTHA. In November 2008, it published the Regional Transportation Plan (RTP). One of the RTP's nine strategies is to "Improve Goods Movement Within the GTHA and With Adjacent Regions". This strategy recognizes the importance of goods movement throughout the GTHA, as well as issues such as air pollution associated with freight movement by truck. The RTP calls for a strategy to improve goods movement which includes the following components:

- Mapping goods movement flows by mode and identifying bottlenecks in the system;
- Identifying infrastructure needs (e.g., new freight rail capacity, inter-modal facilities, and strategic bypasses around highway and rail bottlenecks); and
- A freight corridor optimization strategy, optimizing the use of rail infrastructure and its allocation between freight and passenger trains.

As noted above, the Regional Official Plan (2009) recognizes goods movement. It includes a new policy that the Region, in conjunction with the province, Metrolinx and the GTHA municipalities, will plan and implement an integrated transportation network for goods movement by rail, road, water and air.

5. Current Issues

Multiple current issues affect goods movement, including the following:

- Road network congestion
- Land use planning
- Impacts on residential areas
- Wear and tear on the road system
- Environmental considerations
- Modal integration
- Goods movement data
- National and provincial policy framework

This section describes how each of these issues affects goods movement. The directions presented later in this document work to address the current issues.

5.1 Road Network Congestion

Goods movement is critical to the economy of the GTHA, and the efficient movement of goods to, from and through Halton Region is of significant importance. Road congestion is identified as an issue throughout the GTHA and increasing congestion has been identified along key Regional corridors. Highways 401, 403 and the QEW also experience major congestion during peak periods and increasingly throughout the day.

High levels of congestion increase travel times and the unpredictability of travel, and therefore can impact goods movement delivery times and scheduling. This is a particular issue for businesses employing "just in time" delivery systems because it can result in diversion of truck traffic from higher order corridors to local routes, with associated noise, safety and environmental concerns. Congestion and travel times are expected to increase further with the substantial population and employment growth planned for Halton Region and throughout the Greater Golden Horseshoe.

In 2006, the economic cost of congestion in the GTHA amounted to approximately $3.3 billion for commuters and $2.7 billion in lost opportunities for economic expansion. Transportation and logistics costs include added fuel expenses, labour costs and vehicle maintenance, as well as indirect costs, such as the need to maintain higher inventory levels to buffer delivery time unreliability, higher frequencies of missed deliveries, etc. The impact of congestion on travel times can also be significant. The 2006 Travel Time Index for Halton Region (the ratio of peak period travel time to free flow travel time) was 1.44, indicating that a 30-minute trip during free flowing conditions would take roughly 43 minutes during peak periods – representing a 44% time penalty. Halton generally experiences less severe levels of congestion than some other areas within the GTHA, as Halton's Travel Time Index is still below the GTHA average of 1.63. Further, although congested travel speeds are faster on average than other parts of the GTHA, at just over 60km/h in the AM Peak, peak period travel speeds in Halton Region were approximately 25% less than optimal travel speeds in 2006. The total annual cost of excess congestion experienced by commuters in Halton is approximately $249 million, while the average commuter spends an additional eight minutes every day stuck in traffic on Halton's roads[6]. Road network congestion puts a strain on all roadway users; the complexity of the issues will require creative solutions.

[6] *The Cost of Road Congestion in the Greater Toronto and Hamilton Area; Impact and Cost-Benefit Analysis of the Draft Metrolinx Regional Transportation Master Plan*. HDR Corporation Decision Economics for Metrolinx. December 2008

5.2 Land Use Planning

Potential issues of compatibility exist between freight/logistics facilities and other land uses, particularly residential communities. Improved planning of warehousing, logistics and inter-modal facilities, in conjunction with residential planning, are necessary as freight and transportation land uses are critical to the day-to-day function and economic competitiveness of Halton Region. While ROPA 38 has identified lands that are best suited for employment uses, resolution of potential local land use conflicts will likely still need to be addressed as population and employment growth continues in the Region.

As both goods movement and people movement rely on common elements of the transportation network, some of the issues and measures to address them will be similar. Roadway congestion is related to the substantial demand for limited road space, and measures to change overall travel patterns would benefit efficient goods movement. Current land use planning has evolved, as demonstrated in the Provincial Growth Plan, including the concept of higher density, transit-oriented development that could increase the mode share of transit and active transportation. An emphasis on transit and active transportation would help to improve the efficiency of people movement, and thus indirectly benefiting goods movement throughout the Region, particularly for those shipments that are most efficiently transported by the road network. It remains important to also support opportunities for alternatives to road in seeking a more efficient distribution of goods through the transportation network.

The importance of addressing goods movement as a consideration in transportation planning is recognized in the Regional Official Plan (2009), as updated by ROPA 38. The Official Plan policies reflect an increased recognition of goods movement and more focus on transit and active transportation use for people movement. The Plan's Future Strategic Employment Areas (see Exhibit 3) will assist in protecting lands that are strategically located with respect to major transportation facilities for employment uses and which rely on an efficient goods movement network in the Region.

5.3 Impacts on Residential Areas

One of the effects of a congested provincial and regional arterial road network is the potential for heavy commercial vehicles to use local roads that are not designed nor intended for such types and volumes of traffic. Trucks make such diversions to avoid overall congested conditions and the

intermittent congestion due to non-recurring incidents such as collisions, road maintenance and inclement weather. Diversion of trucks to local roads results in localized impacts, such as air pollution from vehicle emissions, noise pollution and safety concerns. Within the local municipalities in Halton Region, trucks are often prohibited from using non-arterial streets in residential neighbourhoods. Drivers of heavy vehicles are exempt from this restriction if their destination cannot be reached via unrestricted streets, which can be of concern to local residents.

5.4 Agricultural Goods Movement

The farm community is an important part of Halton's rural fabric. It is Halton Region's goal to promote a diverse, innovative and economically strong agricultural industry by tailoring its products and marketing to meet local and regional needs and demands.

Currently, goods are transported by truck to the major freeway system or to the Port of Hamilton which ships out agricultural and manufactured goods.

Rural issues in Halton have been identified by the community with regards to "sharing the road" with general traffic. Currently, many of the roads used by farming vehicles are 2 lane rural roads with limited opportunities for traffic to pass farming vehicles.

Supporting farm-to-market travel across a wide area like Halton presents special transportation challenges that must be considered when planning for a balanced, interconnected system.

5.5 Wear and Tear on the Road System

Heavy trucks and commercial vehicles can impact the condition of the arterial road network, due in part to heavier vehicle weights. These vehicle weights, along with southern Ontario's winter climate, can cause deterioration of road surfaces. Halton Region's *2007 State of the Regional Road System Report* (published in August 2008), considered all of these elements in its review of the Region's road network. In terms of the quality of the pavement condition throughout the Regional road system, the report considers approximately 72% of the system to be in adequate condition, with approximately 40% of the system in good condition. Annually, approximately $1.5 million of capital funding is allocated towards resurfacing projects on Regional roads. This is in addition to resurfacing that is undertaken as part of other Regional capital projects, as well as resurfacing projects undertaken by

local municipalities. Increased truck movements in the future may warrant additional Regional funding for road maintenance and rehabilitation.

5.6 Environmental Considerations

The need to reduce and mitigate the environmental impacts of human actions, particularly regarding greenhouse gases, is a priority for all levels of government. Transportation is a major contributor to greenhouse gas emissions in Canada and freight transportation accounts for approximately 43% of Canada's transportation energy use[7]. Measures will therefore be needed to improve the environmental performance of the movement of people and goods.

Initiatives to stabilize and reduce overall levels of greenhouse gas emissions, such as the Kyoto Protocol, are expected to result in changes to goods movement systems. Many factors affect mode choice for goods movement, including type and character of goods, cost of moving freight, travel distance, availability of transportation connections and urgency of delivery. There may also be opportunities to reduce environmental impacts through increased use of less fuel- and energy-intense modes of shipping, such as rail and marine. Halton Region benefits from a range of transportation modes, including the major CN and CP rail lines, and marine facilities at the Ports of Toronto and Hamilton.

There are opportunities to improve the environmental performance of goods movement, through increased use of rail and marine modes and more efficient trucking. Measures to improve congestion will reduce air emissions, as will developments in fuel efficiency and technology and more efficient use of the road network.

5.7 Modal Integration

Inter-modal transportation is becoming increasingly important in goods movement, for reasons of efficiency, best use of the transportation network and the environmental impacts of transportation. The use of multiple modes for goods movement requires efficient and accessible inter-modal facilities. In most instances, development of inter-modal facilities requires the cooperation of the public and private sectors, as well as consideration of complex land use, traffic and funding issues. Efficient road access is an important element of existing, as well as future inter-modal facilities.

[7] Natural Resources Canada, Office of Energy Efficiency - Comprehensive Energy Use Database Tables

5.8 Goods Movement Data

Some goods movement data sources are available from the Ontario Ministry of Transportation (MTO). Typically, however, goods movement data, including commodity flows, origin and destination information and mode shares, are somewhat limited and this can result in less effective planning. Some goods movement information is available through individual studies, but historically there has been limited data on goods movement in the wider Halton Region and GTHA. Metrolinx, the Southern Ontario Gateway Council and the Ontario-Quebec Continental Gateway and Trade Corridor Study are among the organizations that have recognized this gap and are working toward addressing it.

5.9 National and Provincial Policy Framework

Much of the policy framework relating to goods movement by a variety of modes is managed at the provincial, national and sometimes international levels. For example, goods movement by rail is influenced by national level policies regarding rail corridor protection, rail grade separation and adjacent land uses. Similarly, goods movement by air is influenced by national policy regarding rules for international aviation markets, the national transshipment program for international in-transit cargo, and national and international aviation security policies. Marine shipment of goods is influenced by national and international policies, including the United States (U.S.) Harbor Maintenance Tax on ships' cargo, Canada-U.S. border security procedures, national cabotage restrictions and duties on marine vessels built outside of Canada (regarding the right to trade or transport in coastal waters or between two points in a country), and international ballast water and other environmental regulations. All of these can impact the viability of goods movement by non-road modes; however, all are controlled at the national and international level. While there are municipal level policies and programs that can benefit goods movement by all modes, it is important to recognize the framework within which goods movement occurs throughout the Region.

6. Relevant Experience

Goods movement actions and policies from other parts of Canada, including Montréal, Edmonton, Region of Peel and Hamilton are reviewed in this section. A summary of each jurisdiction's experience is provided, along with how this experience could benefit Halton Region.

6.1 Montréal, Québec

The Comité Interrégional pour le Transport des Marchandises (CITM - Inter-regional Goods Transportation Committee) was formed in 1999, and is comprised of industry and government representatives, local administrators and representatives from various socio-economic circles. The objective of the CITM is to shape the future of a strategic industry in the interest of the economic development of the five regions of Greater Montréal. Its mission is to carry out the 2001-2006 strategic action plan for goods transportation. In 2000, the 2001-2006 plan of action was adopted and the five regional development councils of Greater Montréal agreed to pursue the plan's implementation. Representatives of the Québec and Federal governments, major carriers and the socio-economic community also agreed to actively take part in implementing the strategic action plan.

The CITM's actions include the following:

- Promote the transportation of goods in the Greater Montréal area;
- Heighten public awareness of the importance of the transportation of goods;
- Make the authorities aware of specific problem areas;
- Recognize the requirements of regulators and inform the key logistics officials;
- Notify the members of issues regarding transportation and other spheres of activity (politics, regulations, new projects, new infrastructure etc.);
- Act as a leader for national transportation issues where Montréal could play a significant role;
- Continue with the observation of goods transportation in the Greater Montréal area as a priority project;
- Support the development initiatives of the industry;
- Suggest a prioritization of projects related to the transportation of goods; and
- Secure the support of the members.

Following the completion of the 2001-2006 strategic action plan, a 2008-2011 CITM action plan was developed. This plan targets the main issues pertaining to the industry, as identified by transport service representatives. It focuses on a shorter period of time in order to reflect the current context in the industry.

This type of committee could serve as a template for stakeholder involvement and information sharing that would benefit goods movement within and through Halton Region.

6.2 City of Edmonton, Alberta

The City of Edmonton's Transportation Master Plan (September 2009) is an update to the 1999 Plan. It responds to the rapid growth, changes and challenges the City has experienced over the last decade. One of the plan's key policy directions is the following: *the City will work with other jurisdictions, the Province and external service providers to ensure that Edmonton has a safe and efficient goods and services movement network that connects and interchanges well with other transportation modes and facilities.* The following objectives have been identified:

- Maintaining a comprehensive network of truck routes, including Dangerous Goods Routes that rely primarily on highways and arterial roadways;
- Developing a plan to address efficient goods movement on the Inner Ring Road;
- Protecting the integrity of major goods movement corridors through the encouragement of appropriate land use planning and control of direct access;
- Giving priority to road construction projects that enhance goods and services movement and that facilitate access to developing and established business and industrial areas;
- Working with rail companies and regulatory agencies to address operational issues and selectively upgrade rail crossings within the city;
- Recognizing the importance of rail transportation to the economic health of the Capital Region and the importance of incorporating the impact of railways on future land development, roadway planning and traffic growth;
- Recognizing the importance of air transportation (for passenger travel and goods and service movements) and multimodal facilities;
- Working with agencies planning rail and air facilities to participate in facilitating the effective interchange of goods and services;
- Conducting surveys of goods and services movements to understand the travel patterns within the city and region to adequately plan for the needs of the community;
- Consulting with industry and the public to resolve goods and services movement issues; and
- Working with the Province to recognize facilities of regional importance within Edmonton and secure funding for their improvement (such as Yellowhead Trail).

Key industrial areas in Edmonton that require an efficient goods movement network have been identified. Although much of this transportation network is under the control of the Province, the Plan states that the City will endeavor to provide supporting infrastructure to encourage development of these industrial areas. Key goods movement corridors have been identified for

external vehicle movements (passing through) and internal vehicle movements (moving within the city limits).

The clear identification of key goods movement corridors, for external and internal goods movements, could be of benefit to goods movement in Halton Region.

6.3 Region of Peel, Ontario

The Region of Peel conducted an in-depth Goods Movement Study (November 2004) in cooperation with area municipalities. The study includes an overview of goods movement by truck, rail and air, with the following specific goals:

- Develop a current perspective on goods movement and its role in and impact on Peel Region's economy and transportation system;
- Develop a future context for goods movement in Peel Region, including global goods movement trends and consultation with the goods movement industry on issues, perspectives, future challenges, solutions and actions;
- Develop relationships with industry and goods movement companies in Peel;
- Develop strategic policy options, including long range planning, goods movements policies, and partnerships between the public and private sectors; and
- Identify on-going goods movement planning needs, including data needs and performance indicators and monitoring.

The study involved stakeholder consultation, including a survey of shippers and carriers (e.g. courier companies, auto manufacturers, communication producers, etc.) that identified issues of concern and specific problem locations. A Regional Councillor Workshop was convened to discuss key goods movement issues, including: freight corridors, freight funding policies, coordination of truck policies, travel demand management, land use planning, early action initiatives, multimodal planning, truck/ auto separation and freight stakeholder involvement. A goods movement public forum was also held to better understand and respond to transportation planning issues involving goods movement.

A number of recommendations were developed at the conclusion of the study, including the following:

- Partnerships with goods movement stakeholders;
- Provision of an appropriate goods movement network;

- Acquisition of additional freight needs data;
- Integration of multi-modal goods movement planning into overall transportation planning and prioritization;
- Coordination of goods movement funding policies and municipal truck restrictions; and
- Consideration of sustainable goods movement transportation in planning processes.

Given common themes with issues and stakeholders, Peel Region's experience provides an example of particular relevance. In depth consultation with stakeholders to understand their concerns and key issues in goods movement, could also benefit goods movement in Halton Region.

6.4 City of Hamilton, Ontario

As part of Hamilton's *Growth Related Integrated Development Strategy* (GRIDS), a goods movement policy paper was developed in January 2005. It identified a number of key issues to be addressed by goods movement policies, including competitive pressures, truck movements, lack of data, the environment, the role of Hamilton's port and airport and the role of the railways.

The paper recommended four policies, as follows:

- Improve dialogue with the goods movement industry and other stakeholders;
- Maintain, protect and enhance the existing goods movement network;
- Clearly define land uses adjacent to transportation corridors to facilitate location of transportation dependent industry and commerce enterprises close to network access points with minimum intrusion on other uses; and
- Maximize the efficiency of goods movement by regulating on-street and off-street loading.

Implementation actions were recommended in support of these policies.

In April 2009, the McMaster Institute for Transportation and Logistics (MITL) published *A Sustainable Strategy for Developing Hamilton as a Gateway*. The strategy identifies some of the key principles for successful goods movement gateways, including placing an emphasis on addressing congestion, developing transport-focused organizations and building consensus, partnerships and alliances involving public and private sectors.

A number of key recommendations were identified, including the following:

- Plan the city as compactly as possible;

- Form a transportation-focused gateway organization;
- Pursue greenfield industrial development near the airport and avoid residential development in its vicinity; and
- Pursue the themes of urban intensification and connectivity.

Recommendations of these detailed studies of goods movement include improved dialogue with goods movement partners, compact development, clearly defined land uses adjacent to transportation corridors, and maximized efficiency of on- and off-street loading, all of which would also have relevance to issues in Halton Region and would benefit goods movement.

7. Directions

A series of goods movement directions have been developed for incorporation into the Halton Transportation Master Plan that address the goods movement legislative mandates, current issues affecting goods movement and relevant experience ascertained from other jurisdictions in Canada. These directions, described below, include:

- Assist Metrolinx and the Province in developing a GTHA Strategic Goods Movement Network;
- Collaborative working relationships with stakeholders;
- Review efficiency of on-street and off-street loading;
- Integration of transportation planning for a multi modal network;
- Planning for local goods movement; and
- Use of technology for goods movement in Halton.

7.1 Develop Strategic Goods Movement Network

A strategic goods movement network would facilitate the increasing demand for goods movement throughout Halton Region and the wider GTHA, corresponding to the planned population and employment growth. Through assessment of the Region's critical road and rail goods movement corridors, as well as assessment of existing and future economic activity centres, a key goods movement network can be identified and priorities developed for protection and maintenance. Such a network could reduce the impact of goods movement on local communities and the environment,

including noise, air emissions and safety, and could improve the efficiency of goods movement in Halton.

The function of the Regional road system is to provide arterial linkages between the Provincial higher order facilities and multi modal nodes that provide for longer distance goods movement. Regional roads (major arterials) serve inter-regional and regional travel demands, connecting urban areas in different municipalities. These roads accommodate most truck traffic, higher order transit services and high occupancy vehicle (HOV) lanes, with a high degree of access control and right-of-way requirements up to 50 metres. The location of Halton's major arterial Regional roads is shown in Exhibit 2. Some Regional roads, including Tremaine Road and Britannia Road, have been identified as inappropriate for heavy loads under today's conditions. However, as these roads are upgraded they will be designed to accommodate trucks.

Past studies, including the Metrolinx RTP, have acknowledged that an integrated, multi-modal strategic goods movement network is needed throughout the GTHA, providing for goods movement by road, as well as by rail, water and air modes, and using inter-modal facilities. Halton Region should support and assist Metrolinx and/or the Province in developing this strategic network, to ensure that it meets the needs of goods movement throughout the Region, including identifying priority corridors and areas for protection and improvement. Dangerous goods should also be given consideration in developing goods movement strategies for the GTHA.

Halton Region plays an important part in the GTHA network, providing rail and road links in the GTA and westward, including towards the Canada-US border. Major airports, ports and rail inter-modal facilities lie within and in close proximity to Halton.

7.2 Collaborative Working Relationships with Stakeholders

Goods movement within and through the Region would benefit from ongoing relationships between stakeholders, including local, regional, provincial and federal levels of government, area transportation service providers, and representatives from the logistics/warehousing and industrial/manufacturing sectors. A means of information exchange to share data, upcoming and planned initiatives and issues is being co-ordinated by Metrolinx.

Alongside road network issues and opportunities, Halton Region should support ways to improve integration of the road and rail networks. The Region should pursue ongoing involvement in a

regional transportation plan for goods movement. Ongoing data collection and exchange between relevant partners and stakeholders will be needed to inform policies, programs and future works.

Metrolinx identified the need for a roundtable to steer development of a GTHA goods movement strategy, which is to include representatives from the goods movement industry, including shippers, the Ontario Chamber of Commerce, Ontario Trucking Association, Southern Ontario Gateway Council, CN and CP Railways, logistics companies, freight forwarders, manufacturers and exporters, the agricultural community, environmental groups, municipalities, port authorities and the province. As this roundtable progresses, the Region should take an active role in exchanging information and issues with public and private sector partners.

7.3 Review Efficiency of On-Street and Off-Street Loading

An initial step with regard to this direction is to review existing loading practices with municipalities and identify what is working well, or alternatively, not working well, including consultation with shippers and businesses to understand their requirements. Measures to improve the efficiency of on- and off-street loading of goods, including regulatory and enforcement measures, would benefit the Region, in partnership with the City of Burlington, Town of Halton Hills, Town of Milton and the Town of Oakville. A review and update of regulations for loading/unloading local deliveries would improve goods movement efficiency. Such initiatives should be integrated with Regional and local land use planning, with clear requirements for loading facilities in new developments. Enforcement of on-street loading zones should be reviewed and made a priority. Information about on- and off-street loading, including regulation and enforcement, should be readily accessible to the public.

7.4 Integration of Transportation Planning for a Multi-modal Network

Halton Region already considers the integration of transportation and land use planning at a broad level. This is supported in ROPA 38, with the addition of the following policies:

- 172 (9.1) – To ensure development is designed to support active transportation and public transit; and
- 172 (9.2) – To integrate transportation planning, land use planning and investment in infrastructure.

This could be further enhanced with explicit consideration of how changes to future land use or transportation infrastructure affects goods movement considerations. Goods movement would benefit from improved integration of planning for all modes of transportation, working toward an efficient, multi-modal integrated network for moving people and goods. Planning should be undertaken to optimize the use of each transportation mode for people and goods movement, including planning for inter-modal facilities and multi-modal connections. A holistic planning approach should be promoted by the Region, to improve the integration of goods movement and people movement, making the best use of the road and rail transportation networks throughout the day.

Benefits to goods movement can be gained through changes to goods movement modes and times of delivery/transportation, as well as mode changes for people movement. Mode shift (for people and goods movement) would help to alleviate some road capacity constraints, and improved use of inter-modal facilities could enable increased use of non-road modes. Shifting goods movement times of travel during the day, to avoid peak periods (with the exception of some shipments including just-in-time delivery and certain perishable or high value goods) would benefit the efficiency of goods movements and roadway operations. However, it is recognized that increasingly throughout the GTHA the peak periods are spreading into early morning, midday and late evening periods, increasing the importance of optimizing the efficiency of the existing network.

7.5 Planning for Local Goods Movements

In addition to the inter-regional, long distance goods movements originating, terminating or passing through Halton Region, there are significant numbers of more localized goods movement trips. The majority of these trips are made by road, due to shorter travel distances and lower volumes of cargo, with vehicles typically comprised of smaller trucks, taxis, and cycling couriers. Better understanding of these shorter goods movement trips is needed to understand what types of policy or infrastructure measures would provide the best benefit to efficiency and enable some mode shift.

Support for alternative local goods movement options (such as bicycle couriers, postal deliveries by foot and centralized lock boxes for end-consumer deliveries) would also encourage some mode shift. The Region should support linking warehousing/distribution centre opportunities for small deliveries, greater linkages between small and large deliveries, and improved efficiency and coordination through technology (see below).

7.6 Use of Technology for Goods Movement in Halton

There are a variety of technologies that can benefit goods movement within and through the Region; goods movement would benefit from greater investigation and use of technological advances. ITS is an acronym for "Intelligent Transportation Systems", representing the application of advanced and emerging technologies in transportation (e.g. computers, sensors, control, communications, and electronic devices) to save lives, time, money, energy and the environment. Transport Canada recognizes ITS as an important element for goods movement in general, which could have an increasing role in improving the efficiency of urban goods movement.

ITS can benefit goods movement through improved efficiencies, improved linkages between modes and services, route and load optimization, inventory and information control, advanced traveller information (e.g., weather information), support for efficient and integrated passenger and goods movements and support for information and coordination for smaller urban goods movements.

Some ITS applications that could benefit goods movement in the Region include the following:

- Telematics – the integrated use of telecommunications and information technology: sending, receiving and storing information via telecommunication devices. It includes GPS technology integrated with computers and mobile communications technology in automotive navigation systems;
- GPS/satellite positioning and real time traffic data;
- Transponders – minimizes stops for tolls, weigh stations, border crossings, etc.; and
- Commercial fleet management – communication between drivers, dispatchers, and inter-modal clearance centres to improve reliability and efficiency.

8. Future Steps

To move forward with the directions recommended previously, a number of immediate actions can be taken by the Region.

In developing a Strategic Goods Movement Network, the Region should continue to foster joint working relationships with Metrolinx and the GTHA municipalities regarding the Metrolinx Urban Freight Study.

Similarly, in improving collaborative working relationships with stakeholders, the Region should take an active role in supporting Metrolinx in continuing to provide a forum to improve collaboration between the Region's municipalities and provide an opportunity to identify and engage key stakeholders in local and regional goods movement including manufacturing, resource and agricultural businesses.

The Region should also collaborate with the municipalities of Oakville, Burlington, Milton and Halton Hills in identifying key stakeholders within the Region.

The Region should work with the local municipalities to optimize the efficiency of on-street and off-street loading, identifying inconsistencies, as well as best practices. This could be a first step in unifying and improving loading policies and practices across the Region.

To improve integration of transportation planning for a multi-modal network, the Region should work with stakeholders to better understand non-road goods movement needs, and investigate the potential options for and implications of time of day shifts and mode changes, as well as changes in people movement patterns that may benefit goods movement (e.g., by reducing peak period road congestion). To maximize success, time of day shifts should be investigated for both goods and people movement.

Finally, to move forward on improving the use of technology for goods movement in Halton, the Region should gain a better understanding of stakeholders' views and issues, explore opportunities that may be created with more widespread use of emerging ITS technologies (e.g. Telematics, real time traffic data, transponders, commercial fleet management) and work closely with Metrolinx and the GTHA municipalities to benefit from GTHA-wide practices and a large information base.

9. Conclusion

The importance of goods movement is increasingly recognized and is highlighted in the Metrolinx Regional Transportation Plan and the Halton Regional Official Plan (2009). A number of policy directions to improve goods movement throughout the Region are identified in this paper.

The proposed improvements to the Halton network will focus vehicular travel on the key regional corridors and away from the more commonly used roadways by farm vehicles. Therefore, by attracting traffic to the key regional corridors, other roadways (rural) throughout the region are more available for movement of agricultural vehicles (including over-sized and slower-moving equipment critical to harvest) and farm workers thus supporting more efficient and safe agricultural operations.

A common element in moving forward is the need to foster joint working relationships with Metrolinx, the GTHA municipalities and industry, taking a proactive role in the development of a GTHA-wide goods movement strategy and network. Similarly, a Regional goods movement forum would improve collaboration between the Region's municipalities, and would provide an opportunity to identify and engage key stakeholders in local and regional goods movement.

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