City of Hamilton

Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton
GOODS MOVEMENT POLICY PAPER

FINAL REPORT
JANUARY 2005
## DOCUMENT CONTROL

<table>
<thead>
<tr>
<th>Client:</th>
<th>City of Hamilton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name:</td>
<td>Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton</td>
</tr>
<tr>
<td>Report Title:</td>
<td></td>
</tr>
<tr>
<td>IBI Reference:</td>
<td>TO-1173</td>
</tr>
<tr>
<td>Version:</td>
<td>4</td>
</tr>
<tr>
<td>Originator:</td>
<td>Mike Kieran</td>
</tr>
<tr>
<td>Reviewers:</td>
<td>Marty Hazel, Bill Janssen, Mary Lou Tanner, Harold Groen, Hélène Ellermeyer, Ed Swintenky</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

1. **INTRODUCTION** .......................................................................................................................... 1  
   1.1 Study Background and Objectives ............................................................................................. 1  
   1.2 Goods Movement Policy Considerations ................................................................................. 1  
   1.3 Key Issues .................................................................................................................................. 2  

2. **REVIEW OF EXISTING CITY OF HAMILTON POLICIES** ................................................................. 5  
   2.1 Current Roles and Responsibilities ........................................................................................... 5  
   2.2 Review of Existing Official Plans ............................................................................................... 5  
   2.3 Regional Transportation Review ............................................................................................... 9  

3. **SUPPORTING INFORMATION AND ANALYSES** ............................................................................. 10  
   3.1 General Facts ............................................................................................................................. 10  
   3.2 Hamilton Transportation and Goods Movement Generators ................................................... 10  
   3.3 Goods Movements Trends ......................................................................................................... 15  
   3.4 Role of Trade by Mode ............................................................................................................... 16  
   3.5 Environmental Changes ............................................................................................................ 18  

4. **REVIEW OF PRACTICES IN OTHER JURISDICTIONS** ......................................................................... 20  
   4.1 Central Ontario Area – Goods Movement Strategy .................................................................... 21  
   4.2 Region of Peel Goods Movement Strategy ............................................................................. 21  

5. **GOODS MOVEMENT POLICY OPTION ISSUES** ............................................................................ 23  
   5.1 Communication and Coordination Issues ................................................................................. 23  
   5.2 Planning Issues ........................................................................................................................... 24  
   5.3 Operational Issues ..................................................................................................................... 24  
   5.4 Regulatory Issues ..................................................................................................................... 25  
   5.5 Infrastructure Issues ................................................................................................................... 25  

6. **RECOMMENDED POLICIES** ........................................................................................................... 27
TABLE OF CONTENTS (CONT’D)

7. IMPACTS OF POLICY OPTIONS................................................................................................. 30

7.1 Assessment Factors .................................................................................................................. 30

7.2 Summary of Assessment.......................................................................................................... 30

Appendix A: Practices to Balance Freight Transportation Facilities and Operations with Community Issues

LIST OF EXHIBITS

Exhibit 3.1: Hamilton Strategic Transportation Network ........................................................................ 12
Exhibit 3.2: The City of Hamilton Truck Routes Map Designated for Use of Heavy Traffic ............... 13
Exhibit 3.3: City of Hamilton Business Parks .................................................................................... 14
Exhibit 3.4: Domestic For-Hire Truck Traffic Trends to/from Hamilton ............................................. 15
Exhibit 3.5: Hamilton Port Authority Traffic ..................................................................................... 17
Exhibit 3.6: Air Cargo Traffic (Tonnes) ............................................................................................ 18
Exhibit 7.2: Impacts of Policy Options ............................................................................................. 31
1. INTRODUCTION

1.1 Study Background and Objectives

The City of Hamilton City-wide Transportation Master Plan will provide inputs to the Growth Related Integrated Development Strategy (GRIDS) and make recommendations to Council on the adoption of a City-wide Transportation Policy that is cognisant of Vision 2020 and other City of Hamilton long-term planning objectives. The project has been divided into three distinct phases. The first phase consisted of the technical calibration of the existing transportation model to reflect current transportation conditions in Hamilton. The second phase, which is the object of this and other policy papers, focused on the development of 22 policy papers in the following areas: Travel Demand, Urban Development, System Performance, Infrastructure Planning and Infrastructure Financing. Following the completion of the Policy Papers, the City will proceed to develop transportation scenarios (Phase 3 of the project) based upon the results of the policy work performed in Phase 2 and the land use scenarios developed through the broader GRIDS study and will test the efficiency and viability of these scenarios by integrating them into the calibrated model.

This policy paper addresses the issue of Goods Movement. The remainder of this introduction provides a description of goods movement policy areas and key issues. Section 2 provides an overview of the existing situation in Hamilton while Section 3 summarized some supporting information on the goods movement system in Hamilton and key trends. Section 4 highlights experience and practices from other jurisdictions. Section 5 discusses potential goods movement policy issues, while Section 6 and 7 summarize the recommended policies and their potential implications.

1.2 Goods Movement Policy Considerations

The demand for freight transportation is currently growing at a faster rate than personal travel in many cities. Changes in industry logistics and consumer purchasing patterns are contributing significantly to the change. Actually, freight activity in Canada is expected to increase by some 60% by 2020. As a result, the significance of urban freight activity is increasing in terms of both its role in the urban economy as well as its impact on quality of life (both positive and negative).

With the population of GTA and City of Hamilton expected to grow at a rapid rate, the auto-dependent nature of most suburban development and the increase in the truck component in roads indicates that congestion will be a significant issue in years to come over some parts of the system. Combined with this is the increased amount of land that will be required for goods movement activities.

Hamilton, like many other urban areas, does not have explicit policies pertaining to the movement of goods and services. While this has not been a serious issue, it will take on increasing importance over the next 20 years. Commercial traffic is contributing more and more to congestion in urban areas, with consequential negative impacts on the environment, the economy and the quality of urban life.

Policy guidelines in this area could provide meaningful direction for future development decisions in respect of the following areas:

---

Ensuring that the requirements for infrastructure and facilities in support of goods distribution are taken into account in formulating land-use policies and in the approval process for major development projects;

Contributing to efficient and competitive logistics facilities as an attractor for commercial and industrial economic development projects;

Establishing guidance to provide balance between environmental, social and economic responsibilities while establishing bylaws and developing policies;

Sending clear signals with respect to relative roles and responsibilities of residential, recreational, industrial, institutional and commercial proponents, both retroactively with respect to established facilities and in the future with respect to new developments;

Promoting modal integration and innovation while capitalizing on the natural advantages of the Port of Hamilton and John C. Munro Airport;

Investing in the most promising infrastructure improvement projects for goods movement, and attracting collateral investment from other participants.

The timing for such initiatives is appropriate because of significant increases in goods movement activities on infrastructure that is often stressed to the limits of its capacity.

1.3 Key Issues

Hamilton is a major transportation centre in Ontario. It is a major port, serves as an air cargo hub for express packages (i.e. courier companies), and it is strategically located for road and rail routes that serve both domestic and trans-border trade. This significance is quantified and discussed in Section 3. These are natural advantages that have developed over time. The key issue for future policy and planning is to preserve and enhance those advantages in an increasingly competitive context.

Some of the key issues to be addressed by Good Movement policies are as follows:

**Competitive Pressures:** The competitive context is both internal and external. Internally, population growth and personal mobility will create pressure on land resources and on transportation infrastructure. Congestion will be a visible outcome of internal competition. Externally, there will be competition from other locations to attract industry/commerce and employment.

**Truck Movements:** It is one thing to be endowed with excellent facilities such as the port, airport and rail lines; however, the network of local roads and streets (and maintenance of adequate truck routes) is vital to sustain the efficient movement of trade in the city. In Hamilton, as in many other cities of Canada and the US, trucks carry a large proportion of the total freight moved in the region.

**Compatibility:** Trucks using residential streets to avoid delays at stop lights; truck-loading and unloading on
avenues and streets; and excess of truck traffic on avenues and streets, are just some of the current specific issues taking place in the City of Hamilton as a consequence of commercial vehicles on the roads.

**Lack of Data:** The City of Hamilton does not have complete information on freight transportation, although data collected for the Hamilton Perimeter Road assessment is a start (this is a general and chronic issue on a national scale). Lack of freight data is a critical issue for transportation planning and for solving traffic congestion problems.

**Economic Development:** Though specific growth targets depend on a number of factors, the City of Hamilton is expected to experience economic growth in the years to come. In turn, this growth will generate increased demand for all types of freight transportation. Two important players in the future economic growth, and in the future levels of freight transportation, will be the Hamilton Port Authority and the Hamilton International Airport.

**Environment:** Hamilton Port economic impact accounts for over 30% of the GDP of the Greater Hamilton Area. Growth at the Port is expected in all sectors but particularly in liquid cargo and on the agricultural front. As a consequence of the Kyoto protocol it is expected that marine transportation and rail transportation will have an increasingly important role to play as a “green” alternatives for freight movement.

**Role of the Port:** The Hamilton Port Authority strove for a clear vision for its future in creating a Land Use Plan with the objectives of relevance and longevity. The key elements of the vision of this Land Use Plan include promoting Hamilton Harbour as a diverse and dynamic environment that supports a mixture of uses; thinking about business development in terms of the ‘new economy’; and taking full advantage of the location of the Port in the Golden Horseshoe region which extends around the western perimeter of Lake Ontario. Ultimately, application of this plan is intended to bring more business and growth to the Port Authority.

**Role of the Airport:** The John C. Munro Hamilton International Airport is an economic engine for the City of Hamilton and will support the future development of other sectors. Hamilton International Airport is Canada’s largest dedicated courier/cargo airport. Given its strategic location and ability to integrate with other modes, there is a strong potential for the airport to create an industrial and commercial and community around it, provided

---

Completion of the Highway 6 extension to link the airport to the 403, the proposed Mid Peninsula Corridor, and the North-South Red Hill Creek Expressway present opportunities to help expansion of the airport.

**Role of Railways**

Hamilton is served by both major railways (CN and CP) as well as The Southern Ontario Railway (SOR) is a Regional carrier that serves the Port and Nanticoke. A number of rail yards and intermodal facilities are located within the City. While some of these facilities are limited in terms of expansion by adjacent development or other topographical features, there are considerable opportunities to capitalize on Hamilton’s strategic location and increase the use of rail for trips to/from and through Hamilton, particularly given growing concerns about the environment and energy supply.

The City faces the challenge of balancing responses to the local specific issues (i.e. constituents’ issues) versus the longer-term initiatives to remain globally competitive. Policies and guidelines will be needed to clearly maintain a balance between local priorities and the regional requirements for trade and commerce so that employment growth and population growth remain in alignment.
2. REVIEW OF EXISTING CITY OF HAMILTON POLICIES

2.1 Current Roles and Responsibilities

The role and responsibility of the City with respect to commercial transportation of goods and services is primarily jurisdiction of commercial vehicle movements on the local network of roads and streets. The interaction of the city with other modes of transportation (e.g. rail and marine) is generally indirect, through the approval process for some specific changes. For example, land use plans and zoning bylaws govern permissible development and approval of applications by developers (including freight facilities and industrial/commercial projects). The city has no direct jurisdiction over the port, the airport, the rail network or the provincial highway network, except through nominating delegates to advisory boards or governing councils. However the city does have a role in assessing changes to land use within or around these facilities.

Some jurisdictions adopt a passive approach to regulating movement of commercial vehicles on the municipal network, while others adopt a restrictive approach. The passive approach defines the network to serve heavy commercial vehicles and exercises minimal intervention for traffic that is generally compliant with provincial regulations. This is the approach taken in Hamilton, for the most part. The restrictive approach imposes various restrictions, for example by time of day, by weight, by day of the week etc. This approach is prevalent where there are active interest groups or citizens coalitions, and it can be costly to maintain for both carriers and municipalities. The restrictive approach is not generally used in the former City of Hamilton, but is applied in some of the outer lying municipalities.

The choice of approach (passive or restrictive) as a policy is discussed in more detail in Chapter 5.

2.2 Review of Existing Official Plans

Since the City of Hamilton is now an amalgamation of different municipalities, policies currently in place are contained in different municipal Official Plans.

Existing policies impacting Goods Movement in the region primarily refer to:

- Accommodation of truck routes,
- Efficient movement of traffic through off-street parking and loading facilities; and,
- Commercial/Industrial land-use to support economic development.

Each of the existing Official Plans are reviewed below in the context of these categories. While this review focuses on Official Plan policies, other more specific policies are also contained in various Transportation Master Plans, including the 1995 Regional Transportation Review discussed in the next section.

In summary, goods movement topics are covered in existing plans. Statements are generally supportive of goods movement, but lacking in actionable directions and priority guidelines that induce economic development or encourage development projects.
Town of Flamborough Official Plan

Land Use and Economic Development:
- The Official Plan in its schedule A designates “mixed use areas” which shall permit integrated residential, commercial and business uses, institutional and public uses, and transit facilities.

Truck Routes Restrictions:
- Where alternative routes can be found and where the volume of truck traffic is detrimental to the amenity of abutting residential areas, the use of local roads in residential areas by trucks not engaged in making local deliveries to the residences shall be prohibited.

On-Street Restrictions:
- To preserve the capacity of the Regional Road System, and to provide for the safe and efficient movement of traffic, on street parking shall be prohibited on Regional Roads, and on street stopping shall be prohibited on all Regional Roads during periods of peak traffic use.

Town of Ancaster Official Plan

Land Use and Economic Development:
- In its Secondary Plan, the Town of Ancaster sets out detailed land uses, the basic road network, community facility and infrastructure requirements, and development standards to guide the development and / or redevelopment of lands while at the same time protect the natural resources.

Truck Routes Restrictions:
- To preserve capacity of the Arterial Road system, where alternative routes can be found and where the volume of truck traffic is detrimental to the amenity of abutting residential areas, the use of local roads in residential areas by trucks not engaged in making local deliveries to the residences shall be prohibited.

On-Street Restrictions:
- Off-street parking facilities shall be required in all new commercial and industrial development. Such facilities shall be sufficient to ensure that adequate parking is provided on site without necessitating the use of adjacent public road allowances for parking which may be detrimental to the free-flow of traffic (and truck movement) on such road allowances.

Regional Municipality of Hamilton-Wentworth Official Plan

Land Use and Economic Development:
- The goal of the Official Plan is to determine how the transportation system should be changed and developed to support Region’s Vision of sustainable development. One of the main objectives is to support land use and economic development plans for the region.

Truck Routes Restrictions:
- The Region has a designated network of truck routes for use by heavy vehicles. Most, but not all, arterial roads are designated as truck routes.
The recommended long term strategy for meeting the trucking needs of the Region is to develop a “Truck Route Loop” consisting of high standard roads connecting the existing and future major industrial/commercial areas to the Provincial corridors in the most efficient manner to accommodate goods movement.

**On-Street Restrictions:**
- Limited guidance on on-street parking restrictions to facilitate traffic flow.

**City of Hamilton Official Plan**

**Truck Routes Restrictions:**
- Recommended investigation of the most effective means of accommodating pedestrian and vehicular circulation and general accessibility to and within the Area. The investigation was to consider the following: The designation of truck routes, the extension of truck loading facilities below grade, and the sharing common loading facilities for various adjacent developments where loading at street level can be eliminated or limited.

**On-Street Restrictions:**
- Major Institutional Uses may be located in Residential neighbourhoods and will be encouraged to locate where they will function as a focus for the neighbourhood and on sites adjacent to other institutional uses, or neighbourhood commercial use to permit the sharing of parking and other facilities in accordance with the following provisions: Sufficient off-street parking and loading will be required.
- Where necessary and feasible, off-street parking, driveways and/or loading areas adjacent to residential uses will be suitably screened or buffered through the use of fences, berms or other appropriate landscape treatment.

**Others**
- It is the intent of this plan to recognize a Rail Service System that will meet the existing and future requirements of residents, business and industries. Moreover, the system will supplement road transport for commodity movements, and it is also intended to minimize inherent conflicts between rail, vehicular and pedestrian circulation.
- Council will encourage and support the Hamilton Harbour Commissioners (now the Hamilton Port Authority)\(^3\) in the development of land for bona fide shipping and navigation purposes in a manner consistent with the economic and environmental goals of the city.

Council recognizes the importance of the Hamilton Airport to the City and Region and will cooperate with all levels of government and private agencies to provide safe and efficient air service.

\(^3\) The Canada Marine Act, under which the Hamilton Port Authority was created, required a land use plan to be established within 5 years of establishment of the letters patent. Hamilton has met this requirement. The change in legal jurisdiction of the Port from Harbour Commission to Port Authority will require at least a technical modification to the Official Plan.
Town of Glanbrook Official Plan

Truck Routes Restrictions: In considering proposals for Rural Industrial designations and development, Council shall have regard to the following: The accessibility to transportation routes and the adequacy of the road system to handle industrial traffic without directing it through residential areas.

On-Street Restrictions: Adequate off-street parking areas shall be provided and access points to such areas shall be limited in number, and designed in a manner that will minimize adverse impacts to vehicular and pedestrian traffic in the immediate area.

Others: This Official Plan encourages the expansion of the Hamilton Airport and ancillary industrial and commercial development on the lands adjacent to the Airport.

Town of Dundas Official Plan

Land Use and Economic Development: Council shall work with other levels of government to ensure that essential infrastructure is available to meet the needs of local business and the economic development objectives of the Town.

Truck Routes Restrictions: Where alternatives routes can be found and where the volume of truck traffic is detrimental to the amenity of abutting residential areas, the use of Local Roads in residential areas by trucks not engaged in making local deliveries to the residences shall be prohibited. Accordingly, the Town will request the Region to designate appropriate truck routes along arterial roads when warranted.

On-Street Restrictions: Development through the expansion of existing firms and the establishment of new firm in the employment area will be in accordance with the following provisions: ingress and egress will be limited to and not to interfere with through auto and truck traffic or rail traffic, and sufficient off-street parking and loading facilities will be provided.

City of Stoney Creek Official Plan

Land Use and Economic Development: Identifies need to work with region to maintain, monitor and improve truck routes. Identifies need to examine impact of development on existing highway system.

Truck Routes Restrictions: In its Industrial and Business Park Section, this plan stipulates that traffic generated by industrial uses will be prohibited from penetrating designated residential areas.

On-Street Restrictions: Discourages on-street parking on arterials where it impacts traffic flow; promotes off-street parking and loading
2.3 Regional Transportation Review

As part of the 1995 Regional Transportation Review for the former Region of Hamilton-Wentworth, a background report on Trucking Strategies was undertaken. The main thrust of this report was to recognize the importance of the truck route system and to promote its continuity. The report and associated Transportation Master Plan, proposed a "Truck Route Loop", which consisted of the following:

- The East-West Red Hill Creek Expressway (now completed as the Linc);
- The North-South Red Hill Creek Expressway (now under construction); and,
- The Hamilton Perimeter Road, initially to Bay Street and ultimately to Highway 403 (subsequently deleted from long range in the proposed form by "Setting Sail" – transportation master plan for the West Harbour).

The Regional Transportation Review – Trucking Strategies also proposed several supporting actions, including improved cooperation with the trucking industry and promotion of the use of the truck route loop as a means of diverting trucks from other local routes.
3. SUPPORTING INFORMATION AND ANALYSES

3.1 General Facts

With a population of close to half a million people, Hamilton's population is the fourth largest of all Ontario cities, and is the ninth largest population of all Canadian cities. Between 1996 and 2001, Hamilton’s population increased 4.8%. The fastest growing areas of the City are Waterdown and Ancaster. They grew 28.9% and 17.4% respectively between 1996 and 2001. Preliminary growth scenarios suggest that in year 2021 the City of Hamilton’s population will be about 575,000 representing a growth of approximately 15%.

In 2001 Hamilton’s total labour force was 269,000. From this total labour force, approximately 21.2% work in “manufacturing” which includes production of steel; 15.7% work in “trade”; and 0.9% work in agriculture. All of the industries in the City of Hamilton region depend one way or another on the transportation industry; and transportation in industry in the City of Hamilton accounts for 3.3% of Hamilton’s work force.

It is well known that the Canadian population is aging. By 2030, natural population increase is expected to reach zero, and immigration will be the sole source of population growth. Over 5 million workers (34% of the workforce) are currently 45 years of age and older. Given a median retirement age of 60.7 years, it means that some 2.6 million workers will likely be retiring over the next 15 years. Demographic pressures arising from an aging workforce and proportionately shrinking pool of younger workers will generate unprecedented pressures on employers recruiting skilled workers.

In Hamilton the number of people in the most senior age groups is growing. There were 21% more people aged 75 years and over in 2001 than in 1996. The greatest population decrease was among the 25-34-age cohort, declining by 11.1% since 1996. However, the number of immigrants settling in Hamilton between 1991 and 2001 grew by almost 60% over the previous decade. In 2001, almost one quarter (119,805 people) of Hamilton's population was immigrants. The fact that Hamilton has accepted an important number of immigrants might help the city to avoid future high job vacancies rates, including transportation and warehousing.

3.2 Hamilton Transportation and Goods Movement Generators

The City of Hamilton located at the hub of the Golden Horseshoe's industrial corridor is linked to an excellent transportation network. (See Exhibit 3.1: Hamilton Strategic Transportation Network)

Air Transportation: The City of Hamilton is serviced by the John C. Munro International Airport, which is Canada’s Canada's largest dedicated courier/cargo airport and one of Canada's ten largest passenger airports, with significant potential for growth.

Railway Transportation: CPR and CN pass through the City of Hamilton. The Southern Ontario Railway (SOR) is a Regional carrier that serves the Port and Nanticoke. Both CPR and CN have connections in all directions including links to Windsor, Detroit, and Chicago to the west, and Montreal and Halifax to the east. Hamilton is also regularly served by Amtrak (at Grimsby) and GO Transit.

---

4 City of Hamilton Facts and Figures- 2003
5 ibid.
6 Statistics Canada “Employment by Industry and Sex”
7 City of Hamilton Website: (www.hamilton.ca)
Marine Transportation: Marine shipping from Hamilton Harbour, one of the busiest ports on the Great Lakes, connects Hamilton through the St. Lawrence Seaway to international shipping lanes and the Upper Great Lakes.

Road Transportation: The City of Hamilton transportation network of major highways and arterial roads promotes easy access for trucks within the City area and beyond. Direct travel to Toronto and the USA via Buffalo is facilitated by toll-free highways. (See Exhibit 3.2: The City of Hamilton Truck Routes Map Designated for Use of Heavy Traffic).

- Provincial Highways: QEW (Toronto to Buffalo), Highway 403 (Toronto to London), and Highway #6 (Hamilton to 401).

- Regional Highways: #2 (Eastern Ontario to Windsor); #5 (Toronto to Brantford); #8 (Niagara Peninsula to Lake Huron); #20 (QEW to Hwy. #53); #53 (Hwy. #20 to Hwy. #2).

- Planned Regional Expressways: The Red Hill Creek Extension (QEW to the Lincoln M. Alexander Parkway); and proposed Mid Peninsula Corridor - a four lane controlled access roadway that will link Niagara Region to the GTA, along the top of the escarpment.

Some of the key goods movements generators in the City of Hamilton area are: Stoney Creek Industrial Area, Hamilton International Airport, Hamilton Harbour, Downtown Hamilton (major concentration of retail and office development), Hamilton freight center, Ancaster Freight Center, and the Landfill located in Glanbrook. Exhibit 3.3 shows the location of the major business parks in Hamilton in relation to existing and future transportation infrastructure.

Population growth, international trade growth, and current business practice trends such as improvements in transportation systems, just in time delivery, pull inventory systems, electronic commerce, and others, are making the GTA and City of Hamilton more dependent on goods movement.

Statistics reflect that truck travel on highways across the province will more than double by 2021, to 37.9 million vehicle-kilometres traveled. The fastest growth in travel is expected in southwestern Ontario and the GTA and City of Hamilton area, where it is projected to increase by 113%. As with truck, high growth is also expected in the air cargo sector. A survey of carriers conducted in 1996 found that 97% of carriers surveyed indicated congestion was a problem on Highway 401 and 100% indicated that congestion was a problem on the QEW / Highway 403.

---

8 City of Hamilton Website: [http://www.city.hamilton.on.ca/public-works/Roads-And-Traffic/traffic.asp](http://www.city.hamilton.on.ca/public-works/Roads-And-Traffic/traffic.asp)
9 GTSB Goods & Services Movement Strategy: Phase 1, January, 2001
Exhibit 3.1: Hamilton Strategic Transportation Network
Exhibit 3.2: The City of Hamilton Truck Routes Map Designated for Use of Heavy Traffic
Exhibit 3.3: City of Hamilton Business Parks

3.3 Goods Movements Trends

Urban freight systems are now experiencing many problems due to higher levels of service and lower costs being demanded by shippers, with carriers having to operate in increasingly congested road conditions. At the same time, economic, environmental and demographic changes along with new business practices keep impacting freight transportation in urban areas. In addition to this, the transportation industry will soon face skills shortages since it is expected that 40% of the existing workers could retire in the next 5 to 10 years.

Changes in the business environment have altered production, distribution and logistics requirements. Merger of modern communication technologies and physical distribution systems has transformed the shipping industry including aspects of inventory control and physical locations. New practices like just-in-time production and, more recently, demand-side inventory management and customer orders placed on the web are contributing to a new business model in which storage plays a lesser role and mobile inventories are the norm. All of these factors have given rise to new types of transhipment points better known as distribution centres, which are larger than traditional warehouses, built on extensive suburban areas. Distribution Centres' high volume and precise inventory management require more frequent movements of smaller loads, thus increasing truck, parcel van, and airplane traffic.

The City of Hamilton has not escaped this reality. Exhibit 3.4 shows the traffic trends in movements originated in and destined for Hamilton. In both cases, the chart shows significant increases in movements since 1990\(^{10}\).

Exhibit 3.4: Domestic For-Hire Truck Traffic Trends to/from Hamilton

Metropolitan regions, naturally, are important places for distribution, reflecting the volume of urban markets and the advantage of fast and flexible response to requirements at the point of sale (80% of Canadians now live in urban areas). Just-in-time deliveries and lower inventories have led to more frequent deliveries of goods and services, markedly increasing congestion in urban markets.

\(^{10}\) Data Source Statistics Canada – Trucking in Canada 2001
Local delivery inside urbanized areas is much more costly than long-distance shipments, in part because it must use small vehicles with their low productivity (with increasing presence of parcel deliveries and less-than-truck load shipments), and in part because it must operate on congested streets.

3.4 Role of Trade by Mode

3.4.1 TRUCK

Ontario is by far the largest intra-Provincial, inter-Provincial, and international trader within Canada in terms of value and volume, and the volume of Ontario's trade is more than all other provinces combined. In 1994, trucks transported 61% of Ontario's export value and 83% of the province's import value in 1994.

In terms of tonnes of intercity goods serving the GTA and the city of Hamilton area, trucking dominates with 70% of the total tonnes. The next most common mode is marine with 15%, rail with 14% and air with 1%. This translates into more than 250 million truck movements annually in the region.

The commercial vehicle survey (CVS) suggests that more than $2.5 billion worth of goods are moved on provincial highways and the majority of those movements occur in the province's southwestern and central regions. 8% of all truck trips that use Ontario highways originate or terminate in the City of Hamilton.

The current major road network serving goods movements consists of freeways and expressways. Highway 401 and the QEW handle 63% of the Canada's commercial vehicle trips to and from the US. In certain sections, both highways carry in excess of 30,000 trucks per day. Truck volumes on selected points of the 400 series highways, municipal expressways and other streets exceed 10,000 per day.

3.4.2 MARINE

Vessels visiting the Port of Hamilton carry cargoes ranging from raw materials such as coal and iron ore for use in the production of steel, salt and sand, grains and soybeans, liquid fertilizer and jet fuel. Inbound traffic is mainly Coal, Iron Ores and Petrochemical Bulk; outbound traffic is mainly Steel products, general cargo and agricultural products.

Exhibit 3.5 shows Port of Hamilton total tonnage of cargo moved from 1998 to 2002: In general, traffic volume has remained stable.

---

12 Statistics Canada 1998
13 Source Port of Hamilton Authority website.


Exhibit 3.5: Hamilton Port Authority Traffic

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas</td>
<td>1,727,737</td>
<td>1,126,351</td>
<td>1,493,849</td>
<td>1,208,116</td>
<td>1,627,333</td>
</tr>
<tr>
<td>Domestic &amp; USA</td>
<td>10,576,543</td>
<td>10,400,270</td>
<td>10,573,762</td>
<td>9,525,010</td>
<td>10,432,580</td>
</tr>
<tr>
<td>Total Tonnage</td>
<td>12,304,280</td>
<td>11,526,621</td>
<td>12,067,611</td>
<td>10,733,126</td>
<td>12,059,913</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas Vessels</td>
<td>165</td>
<td>147</td>
<td>192</td>
<td>167</td>
<td>165</td>
</tr>
<tr>
<td>Domestic &amp; USA Vessels</td>
<td>520</td>
<td>512</td>
<td>509</td>
<td>410</td>
<td>592</td>
</tr>
<tr>
<td>Total Vessels</td>
<td>685</td>
<td>659</td>
<td>701</td>
<td>577</td>
<td>757</td>
</tr>
</tbody>
</table>

3.4.3 RAIL

The rail mode is primarily used for long distance bulk goods, the opportunity for expansion of short-haul rail services in the GTA and the City of Hamilton area is limited. In fact, it is estimated that two-thirds to three quarters of the truck traffic movements in the GTA and Hamilton are captive markets since they cannot be served by rail. The biggest opportunities for rail are probably in the intermodal sector, moving goods manufactured and assembled in the GTA and City of Hamilton area and surrounding areas to and from other locations across Canada.

The closest intermodal (i.e. rail/road) freight facilities are located in Brampton and Milton. There is a rail facility in the Stoney Creek Industrial Area; it includes a variety of warehouses and an industrial rail yard that serves downtown Hamilton directly by CN Grimsby Subdivision. There is also considerable rail activity in the port with a transload facility at Parkdale, served by Ontario Southern Railway. CPR operates rail service to a transload facility for Steel in the Aberdeen area. Transload refers to transfers between rail and truck either directly, or over a specialized dock or ramp. Intermodal terminals represent a type of transload facility in the broadest sense, but the term is generally reserved for trailers and containers exchanged between modes.

3.4.4 AIR

In air cargo, the US is by far the largest market for Ontario’s trade by air (approximately 12% of all tonnage moved in 2000). Lester B. Pearson International airport is the busiest airport in Canada and is the centre of air cargo traffic in the GTA and City of Hamilton area, handling about 350,000 – 375,000 tonnes of air cargo annually. Munro Airport in Hamilton is an emerging air courier and cargo destination, handling about 20,000 tonnes of air cargo in the year 2000 with a ratio of 60%-70% couriers and 40%-30% cargo. According to the airports website, this grew to 91,000 tonnes in 2002. Hamilton airport operates as a hub and is primarily linked to other hub airports in the US. The largest overnight package delivery companies that operate in Canada (UPS, FedEx, Purolator and Cargojet Canada) use Munro Airport, and it is Canada’s largest integrated courier cargo airport, partly owing to unrestricted night time flight operations.

Exhibit 3.6 shows cargo volume moved at John Munro airport in the last ten years: Growth has been dramatic, from a small (almost negligible base) to second rank in Ontario in 2002. John Munro International Airport appears to have found a niche market with courier companies and that niche is one of the most dynamic sectors of the market.

Although growth of the airport is considered to be positive in terms of economic development, there are concerns that must be addressed by such rapid growth. For example, air traffic is a significant...
generator of noise and air emissions. The impacts of significant expansion of industrial lands around the airport have not yet been assessed fully and are not contemplated in existing growth plans. These issues are explored further in this paper and the Economic Development Relationship Paper.

It is also noted that at the time of this report, the airport was in the process of finalizing a major update to the Airport Master Plan.

### Exhibit 3.6: Air Cargo Traffic (Tonnes)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toronto (LB Pearson Intl)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded</td>
<td>165,841.1</td>
<td>177,169.3</td>
<td>169,909.7</td>
<td>173,545.9</td>
<td>156,349.7</td>
</tr>
<tr>
<td>Unloaded</td>
<td>170,812.9</td>
<td>191,132.7</td>
<td>188,802.1</td>
<td>201,548.0</td>
<td>188,124.0</td>
</tr>
<tr>
<td>Total</td>
<td>336,654.0</td>
<td>368,302.0</td>
<td>358,711.8</td>
<td>375,093.9</td>
<td>344,473.7</td>
</tr>
<tr>
<td><strong>Hamilton (John Munro Intl)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded</td>
<td>75.9</td>
<td>716.4</td>
<td>1,977.0</td>
<td>10,167.2</td>
<td>8,059.2</td>
</tr>
<tr>
<td>Unloaded</td>
<td>183.9</td>
<td>344.4</td>
<td>2,869.5</td>
<td>15,057.3</td>
<td>12,027.1</td>
</tr>
<tr>
<td>Total</td>
<td>259.8</td>
<td>1,060.8</td>
<td>4,846.5</td>
<td>25,224.5</td>
<td>20,086.3 **</td>
</tr>
<tr>
<td><strong>Ottawa (MacDonald-Cartier Intl)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded</td>
<td>2,234.0</td>
<td>2,214.9</td>
<td>2,998.1</td>
<td>3,182.4</td>
<td>2,960.8</td>
</tr>
<tr>
<td>Unloaded</td>
<td>2,656.1</td>
<td>2,985.4</td>
<td>3,744.0</td>
<td>4,251.9</td>
<td>4,088.7</td>
</tr>
<tr>
<td>Total</td>
<td>4,890.1</td>
<td>5,200.3</td>
<td>6,742.1</td>
<td>7,434.3</td>
<td>7,049.5</td>
</tr>
<tr>
<td><strong>London</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loaded</td>
<td>68.3</td>
<td>3,226.3</td>
<td>3,792.5</td>
<td>3,424.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Unloaded</td>
<td>99.1</td>
<td>4,336.7</td>
<td>4,444.5</td>
<td>4,503.3</td>
<td>5.1</td>
</tr>
<tr>
<td>Total</td>
<td>167.4</td>
<td>7,563.0</td>
<td>8,237.0</td>
<td>7,927.4</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, Air Carrier Traffic at Canadian Airports, 2000

** According to the airport website, 91,000 metric tonnes of cargo passed through the airport in 2002.

### 3.5 Environmental Changes

Traffic congestion in urban areas is leading to severe environmental problems and international communities are now targeting it specifically. In Canada, transportation is the largest source of Greenhouse Gas Emissions (GHG) emissions contributing about a quarter of Canada’s total emissions in 1999. Of the transportation emissions, 76% was generated by road transportation, with freight transportation counting for 32% of road transportation emissions. Two thirds of the GHG emissions produced by road transportation occur in urban areas where population density is higher. Without further action Canadian transportation emissions could reach 32% above 1990 levels by 2010.

Overall, transport GHG emissions rose by more than 20% between 1990 and 2000, in part attributed to the restructuring of trade. Almost 63% of this increase is attributable to road freight, particularly heavy-duty trucking. In year 2000, Canadian trucks carried 34% of the total surface tonne-kilometres and produced 32% of the transportation GHGs; meanwhile rail carried 66% of tonne-kilometres generating only 4% of the total transportation emissions. Beside GHG emissions,
trucks operating in urban areas also produce other negative impacts for society such as crashes, noise, and vibration. Freight activity is expected to increase by 60% by 2020, so fuel efficiency within the freight modes and modal integration has to be improved.

Aging transportation infrastructure in urban areas has been another reason for congestion. Considerable regional growth and development during the 1980s and 1990s contributed to increasing demand for the use of transportation systems. However, while demand for transportation increased, public revenues for transportation purposes did not keep pace with costs, leaving an aging transportation infrastructure system and with a backlog of unsatisfied transportation improvements.

In support of Canada’s international commitment to reduce GHGs, the government of Canada has committed $1.1 billion over the next five years. This amount includes $500 million through Action Plan 2000, and $625 million announced in Budget 2000. The Canadian government’s goal is to reduce GHG emissions by 65 megatonnes per year during the 2008-2012 period. In the freight transportation arena, Action Plan 2000 encourages efficiencies and adoption of new technologies in aviation, rail, marine, and trucking industries. However, important elements of effective solutions are directly in the hands of travellers, freight shippers, and commercial carriers, in how they choose to travel, to ship or to operate, including choice of modes, vehicles, destinations, times, speed and distribution strategies.

The freight, goods and services transport system is vital to regional mobility and productivity, and ultimately economic development. However, it is also critical to achieving environmental, economic and social goals. An efficient reliable and cost effective transport system is vital to the competitive position of business and industries competing in a world market. Without a well-conceived strategic plan and the commitment of cities, shippers and freight carriers, this growth will intensify present challenges such as traffic congestion, GHG emissions, transportation cost and level of service, and deterioration of transportation infrastructure.

One of the challenges to achieving environmental goals is that in the existing context, the rules that determine goods movement choices are heavily weighted to short-term commercial justification criteria. Goods movement dependent firms are locating themselves where they are able to minimize their labour and logistics cost, because the more time commercial vehicles spend in congestion, the less productive and efficient they become. In general, environmental costs such as consumption of new land for facilities and roadways and emissions generated from more rather than fewer trips, are not always considered in goods movement decisions.
4. REVIEW OF PRACTICES IN OTHER JURISDICTIONS

Integrating freight transportation facilities and operations with community goals can be complex. There is no “one size fits all” solution. Instead, a wide range of practices has been implemented to balance or mitigate the presence of facilities and operations. Some of the practices have been initiated by individual freight organizations; however, more commonly, the practices have evolved through discussions and negotiations among public agencies, private freight companies, and communities.

Listed below are some of the most often applied practices for balancing goods movement issues with community goals. Appendix A provides a more extensive list, including actual examples, drawn from a recent TRB Research Report.

- Traffic flow and congestion—replacing at-grade rail crossings with grade separations, motivating customers to switch from truck use to rail use, and scheduling truck appointments to pick up or deliver shipments.

- Safety and security—undertaking public education programs such as Operation Lifesaver and the No-Zone, creating highway watch programs to leverage the presence of trucks into an added security net for all motorists, and strengthening cargo inspections.

- Economic development—combining economic and transportation system development, retaining existing industrial areas, redeveloping brown fields, and hiring locally for freight transportation project construction and ongoing operations.

- Air quality—implementing Green Ports practices, such as electrifying gantry cranes and using alternatively fuelled equipment; reducing the need to idle trucks and locomotives; and promoting beneficial reuse of dredged materials.

- Noise and vibrations—modifying the hours of freight operations to when residents are not home, installing sound walls, limiting the hours of loading dock operations, installing hush kits on cargo aircraft, and creating whistle-free quiet zones.

- Land use and value—creating buffer zones to transition between freight/industrial uses and residential uses, creating neighbourhood investment funds, and requiring developers to make the necessary highway access improvements for trucks.

Based on the list of practices elsewhere, some general themes emerge with respect to the initiatives that are being undertaken to address/facilitate goods movement in urban areas:

- Establishment of advisory committees is a frequently applied balancing practice. One of the main advantages of this practice is that it includes stakeholders from different transportation areas, helping to adopt solutions that take into consideration aspects of different freight modes.

- Replacing at-grade rail line with below grade rail lines is one of the most common initiatives and addresses a number of issues related to transportation planning including traffic flow, safety and security, economy development, and land use and value.
The practice of undertaking integrated freight / economic development programs produced positive benefits in many areas.

A large majority of practices are aimed at impacting traffic flow and air quality, and to a lesser but significant extent, safety and security.

In general, balancing practices are more oriented to solve rail and truck freight related problems. The air cargo freight is the least impacted by these practices.

4.1 Central Ontario Area – Goods Movement Strategy

Congestion is a major issue on arterial and collector roads serving major goods movement generators and attractors, and on carriers that pass through the Central Ontario Region, which includes the City of Hamilton.

The need for a multi-modal perspective and goods movement strategy was identified through the Ministry of Transportation’s work on developing Regional Transportation Directions, its support to the Central Ontario Smart Growth Panel and the perceived impact on economic competitiveness because of gridlock and projected levels of growth. The Smart Growth Panel\textsuperscript{14} recommended that all levels of government and the private sector work toward the following strategies specifically pertaining to goods movement growth management, to address the gridlock issue:

- Coordinating land-use and transportation planning so that goods and people move effectively;
- Investing in highways that facilitate international trade and contribute to economic success, ensuring that all trade corridors (road, rail, air and marine) are used for the movement of goods and do not encourage sprawl;
- Creating a strategy for moving goods – one that identifies how to reduce the length of these trips, lessen their environmental impact and increase their efficiency.

At the time of this report, the Ministry was finalizing two studies on Goods Movement in Central Ontario:

- Freight Supportive Land Use Planning Guidelines; and,

4.2 Region of Peel Goods Movement Strategy

The Region of Peel has just completed its Goods Movement Strategy. The goals of this study are to:

- Provide an overview of the nature of goods movement, existing major freight flows and related issues in Peel Region today, and anticipated future directions and challenges
- Develop goods movement policy options that address current issues and future challenges, while recognizing the critical role of goods movement to Peel's economic health.

\textsuperscript{14} Central Ontario Smart Growth Panel, Shape the Future – Discussion Paper, February-March 2003
This study focused on identifying problem areas in the existing transportation network, based on a review of traffic counts and discussions with the goods movement industry, and potential infrastructure-based solutions to these problems.
5. GOODS MOVEMENT POLICY OPTION ISSUES

Goods movement issues tend to be over-looked or under-represented in long-range transportation plans, yet efficient goods movement is critical for the economic success of an urban area. This section discusses potential policy directions, grouped under five broad issue themes:

- Communication and Coordination Issues;
- Land Use Planning Issues
- Operational Issues
- Regulatory Issues
- Infrastructure Issues

5.1 Communication and Coordination Issues

As mentioned previously, freight transportation is largely carried out by the private sector. The private sector has played an important role in the evolution of the freight transportation system to its current state, particularly the rail, marine and air facilities, but also commercial trucking facilities and intermodal facilities. The steel industry, the petrochemical industry, the agricultural industry and the transportation industry have all made substantial investments and commitments over time. This level of commitment is important for the future.

Continuing dialogue between social, environmental and economic proponents should be a top priority to appropriately identify and address critical issues in the years ahead. The City of Hamilton needs to be aware of initiatives being undertaken by the goods movement industry. Likewise, the goods movement industry needs to be kept apprised of the long-term planning and transportation objectives of the City.

Government-industry advisory groups, councils, consultation boards etc. are becoming a common feature of regional governments’ programs oriented to goods movement. There is not yet such an advisory group in Hamilton. Establishing a freight advisory council is a significant initial action to be considered to provide for meaningful consultation on policy plans.

Ongoing consultation and coordination with private stakeholders, agencies and departments of governments, and special interest groups with respect to freight transportation supportive policy proposals will need to occur on several levels. Some of the avenues through which on-time or standing arrangement advisory councils could participate include:

- Environmental Assessment processes to mitigate the risk and uncertainty of development projects,
- Acquisition of timely and useful data on goods movement trends in the city,
- Harmony between highway, railway, air and marine regulation and municipal policies.
- Improvement of mutual understanding of high freight service levels (i.e. the widespread use of just-in-time delivery) which increase use of roads, versus consolidation of shipments.
In addition to basic communication, there is also a need to improve data collection in order to better inform decision-making processes. At present, there is very little data collected on goods movement patterns in Hamilton; which is not unlike other urban areas. This becomes an issue when the City goes to make important decisions on the need for infrastructure or when policies are considered to divert trucks from the downtown core.

5.2 Planning Issues

Compatibility issues regularly arise between freight transportation facilities and residential communities. These issues arise from the fact that urban development and goods movement have evolved in different directions over time. For example, most parts of Hamilton were developed long before the relatively recent phenomenon of long distance trucking. There are several actions that can be undertaken to prevent future compatibility issues, while also enhancing the attractiveness of Hamilton as a goods movement hub.

A critical starting point is the establishment of a “Strategic Goods Movement Network for the City.” This is essential a map inventory of all existing and future significant goods movement corridors and facilities. Exhibits 3.1 and 3.2 shown previously would be the basis for a more formalized strategic goods movement network.

Designation of a strategic network would have the primary policy objective of ensuring that adequate provision is made for efficient and safe goods handling and movement. At a more detailed level, examples of such policies would include:

- Designating specific areas of the waterfront as berthage.
- Designating specific uses for flight paths and road access to the airport.
- Designating rail corridors for commercial transportation and others.
- Prescribing safety and efficiency measures for multi-vocational installations (e.g. roadways shared by trucks, transit and autos; rail right-of-way shared by freight rail and commuters; waterways and harbours shared by commercial and recreational users).

Once the strategic goods movement network has been established, and all existing and potential corridors are known, it is then possible to define adjacent land uses to ensure compatibility. This may include zoning and land-use policies for buffer zones adjacent to transportation corridors and incentives (regulatory flexibility and/or financial relief) for intensive users of transportation and warehousing, to locate in such zones. At a more detailed level, it could entail incentives for co-location of marine/rail/road intermodal terminals.

5.3 Operational Issues

Within the context of a transportation master plan, operational issues related to goods movement are centred on commercial vehicle loading, specifically the conditions and requirements for on-street and off-street loading facilities.

In general, it is desirable to have all commercial loading occur off-street so as to minimize traffic disruptions and maximize pedestrian and vehicle safety. However, this is not always possible in built up urban areas. Policy directions should therefore focus on establishing criteria for off-street loading for new commercial and industrial facilities, including performance guidelines for provision of off-street loading and commercial vehicle parking depending upon the nature and extent of
anticipated shipments; such criteria could also include site-specific access and egress requirements in the case of intensive usage, such as freight terminals. Location factors could also be included among the criteria, for example, for establishments close to residential neighbourhoods, schools and hospitals.

In some cases, particularly downtown retail and commercial establishments, off-street loading is not a near-term viable solution. In these cases, policies should focus on maintaining on-street loading with due regard to efficiency and safety of other traffic, pedestrians and transit users. The policies should consider the conditions acceptable for on-street loading while also defining the process for permits and fees for exceptional situations. Enforcement measures should also be included such that effective observance of rules can be assured, and penalties administered, within existing administrative structures and resources.

5.4 Regulatory Issues

Given that there will always be issues relating to moving freight in an urban environment, there is a need to support operational and planning policies with regulatory policies. Two areas where regulatory policies are warranted are:

- truck route designations; and,

- timing of deliveries.

The former City of Hamilton established a network of full-time and part-time truck routes and otherwise refrained from imposing restrictions on truck movement. As pointed out previously in this text, slight variations in this approach were employed in the other constituent cities. The passive approach to truck routes seems to be working well in Hamilton and there are many advantages in keeping with this approach. Advantages include reduced costs for signage, ease of understanding by trucking industry, reduced enforcement burden and reduced legislative (e.g. by-law) requirements. Possible disadvantages are that trucks may disobey the signed routes and also people may attach a negative stigma with residential areas that are on adjacent to truck routes. One of the emerging challenges with maintaining the truck route network is that there has recently been a number of requests to take out individual links due to local concerns. This has the impact of fragmenting the truck route network and undermining its effectiveness. Therefore, an important policy area is to maintain, protect and, if possible, enhance the existing system of designated truck routes.

The second area where regulatory polices are relevant is in the timing of deliveries. Transportation facilities generally operate on a schedule of 24-hours/day -7 days/week. Shippers and receivers, however, often restrict their operations to the normal workday (5 or 6 days, 9 to 5); this requires goods movements to occur during peak periods of traffic. In most cases, the incremental cost of extending hours for shipping and receiving would either incur high labour costs for a perceptibly minor activity, or would require capital investment to permit carriers secure access to their facilities for loading or unloading. The latter case would also involve the risk of reengineering some operations. Financial incentives, such as tax credits, could help make the difference; the role for the city might be to provide such incentives or it might also be to work with other cities to encourage provincial or federal programs tied to environmental benefits.

5.5 Infrastructure Issues

Efficient goods movement requires adequate infrastructure. The costs of not having adequate infrastructure are ultimately borne by the public in terms of increased commodity prices and
reduced economic performance. While network congestion is not yet as critical in Hamilton as in other areas of the GTA, it could be in the future with continued economic growth and limited infrastructure investment.

In cases where internal financial returns are in adequate to support an investment, but external social, environmental and economic development benefits are significant, public investment by the City could make the difference in the viability of some projects. Many new initiatives involving innovation and modal integration could be high-risk and fall into this category. Railway grade separations, roadway access to freight terminals or other distribution-intensive industries in transportation corridors are possible examples. It is therefore important to establish criteria for public investment that are based on anticipated net social, economic and environmental benefits, rather than direct public expenditures.

It is also recognized that funds to invest in goods movement infrastructure are limited and expansion objectives must compete with basic restorative maintenance on existing urban infrastructure. Therefore, priorities for allocation of funds that may become available could be established based on performance criteria that take into account the nature, type and volume of commercial traffic, strategic importance (such as links to the port, airport and rail terminals), and technical criteria such as weight and size of vehicles to be accommodated and levels of service desired. Priorities could then be established based on gaps between actual performance and such standards. In setting such performance standards it would also be prudent to consider the potential contribution from all modes of transportation to the competitive trade position of the City.

Without question, most options related to improving goods movement all involve an extensive commitment of resources. At the same time other policy areas are generating demands on present and future financial resources. The options that are actually carried forward will ultimately depend on ability to fund either through current account expenditures, tax expenditures, special financing or partnership commitments. This issue of funding is addressed in a separate policy paper.
6. RECOMMENDED POLICIES

Overall, goods movement in Hamilton is currently functioning well in that all modes of transportation are well served including road, air, rail and marine transportation. The challenge for future policy development will be to nurture the attractiveness of Hamilton as an industrial hub. External competitive forces will continue to drive the need for improvements in efficiency and safety. Also, internal forces from urbanization and population growth (that accompany employment generation) will be increasing the pressure on land use priorities to displace industrial and commercial areas by residential, recreational and conservation areas. All this needs to be accomplished while minimizing impacts in residential areas.

Based on a review of the current situation in Hamilton, anticipated future trends, and a review of what is being done in other jurisdictions, a number of goods movement policies are recommended for inclusion in the Transportation Master Plan.

As it was stated previously, goods movement policies are a unique challenge because they are an emerging area of interest and represent a new focus in the Official Plan of Hamilton. Since this new ground for policy development, application of policies will need to be carried out in a phased approach starting with improved consultation with the Goods Movement Industry, followed by the formalization of land use policies and on-street and off-street loading policies. While these initiatives will enhance the efficiency of the existing network, there will also be a need to support existing and new employment lands with new infrastructure.

**Recommended Policy**

Improve dialogue with the goods movement industry and other stakeholders to elevate the issue of goods movement in Hamilton.

**Implementation**

- Establish a regular forum or communication process between the City of Hamilton and major shippers, carriers, including Hamilton Port Authority, Tradeport International (Hamilton International Airport), CN, CP and others.

- Ensure Hamilton is an integral part of the Provincial Goods Movement Advisory Council

- Undertake cooperative data sharing with the goods movement industry and other private sector partners, focusing on goods movement flows as well as origin destination patterns.

- Work with the rail, truck and marine industry to identify opportunities for new intermodal facilities.

**Recommended Policy**

Maintain, protect and enhance the existing goods movement network in Hamilton to support the economic development strategy.

**Implementation**

- Refine the Strategic Goods Movement Network by identifying future infrastructure requirements in Phase 3 of the Transportation Master Plan and ensuring it compatibility with growth policies in the Official Plan.
Investigate ways to enhance the network to improve opportunities for modal integration.

Continue to adopt a passive approach to truck route designations and consider truck route restrictions on local streets only in special circumstances.

Undertake a review of the truck route network to identify “missing links” and locations where road geometry presents problems for trucks and develop routing and/or infrastructure options to address these issues.

Through appropriate planning process including Environmental Assessments and Area Transportation Master Plans, ensure that goods movement issues are fully considered in the evaluation of transportation network decisions including routing options for new facilities, roadway geometric standards, and on-street parking and loading regulations.

Refine and expand the traffic count program to include more detailed truck classifications.

**Recommended Policy**

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.

**Implementation**

- In the Official Plan and subsequent secondary plans and zoning by-laws, ensure that zoning adjacent to key goods movement corridors allows for distribution intensive facilities. Consider the potential for expansion of these facilities.

- Be pro-active in identifying employment lands that would facilitate economic growth of major goods movement facilities, which in turn increases job opportunities.

- Support the recommendations of the “2003 Industrial Business Park Review” which are to resist pressure for non-employment development within the North Glanbrook Business Park and Flamborough Business Park, which are strategically located next to existing and future transportation infrastructure.

- Through the requirement of studies, ensure that the impacts of adjacent goods movement facilities (existing or future) are explicitly accounted for in the planning and design of new developments. This includes impacts related to noise, odours, emissions and visual impacts. (See Air Quality and Noise Policy Papers)

**Recommended Policy**

Maximize the efficiency of the existing goods movement network by regulating on-street and off-street loading.
### Implementation

- Require all new commercial and industrial developments greater than a certain size (typically 450 m² non-residential or 30 units residential) to have off-street loading facilities (number of spaces to be established through zoning by-laws).

- Increase enforcement of on-street loading zones to ensure appropriate use.
7. IMPACTS OF POLICY OPTIONS

7.1 Assessment Factors

Evaluation of policy options is based on criteria for achieving sustainable growth and development across all of the policy papers developed in this project. They fall under the three major categories of social, economic and environmental impacts, and they are described briefly below.

<table>
<thead>
<tr>
<th>Impact</th>
<th>Acts on</th>
<th>Description (or examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Residential communities</td>
<td>Improves quality of life in neighbourhoods</td>
</tr>
<tr>
<td></td>
<td>Safety and security</td>
<td>Reduces collisions; improves personal safety and security</td>
</tr>
<tr>
<td></td>
<td>Ease of implementation &amp; governance</td>
<td>Provides clarity, measurability, accountability</td>
</tr>
<tr>
<td>Economic</td>
<td>Development</td>
<td>Attracts employment, capital, optimal use of transportation infrastructure capacity, and future land use</td>
</tr>
<tr>
<td></td>
<td>Land value</td>
<td>Increases land value, or does not decrease land values</td>
</tr>
<tr>
<td></td>
<td>Operating and capital costs</td>
<td>Reduces or defers public and private costs of transportation capital (construction or acquisition of fixed infrastructure and rolling stock) and operations (maintenance, enforcement, delay, fuel, etc.)</td>
</tr>
<tr>
<td></td>
<td>Congestion</td>
<td>Maintains traffic flow at acceptable level</td>
</tr>
<tr>
<td>Environmental</td>
<td>Air quality</td>
<td>Reduction of Criteria Air Contaminants</td>
</tr>
<tr>
<td></td>
<td>Noise and vibration</td>
<td>Minimizes noise impacts</td>
</tr>
<tr>
<td></td>
<td>Natural environment</td>
<td>Improves water quality, green spaces, flora and fauna etc.</td>
</tr>
</tbody>
</table>

The rating system that will be used to apply these criteria is a visual five-point scale, to reflect a range from strong positive impact to strong negative impact. (+, +, o, --, --)

+ Represents the strong positive impact, o represents absence of significant impact either way, and -- represents strong negative impact.

7.2 Summary of Assessment

The criteria described in Section 7.1 are applied to the policy options described in Section 6. The results of a preliminary qualitative assessment using the rating scheme described previously are provided in Exhibit 7.2.

All the policy options have some merit, yet in some cases there could be adverse impacts as well. Exhibit 7.2 does not reflect relative importance of criteria in the evaluation; it is primarily for illustrative purposes to indicate options that could be carried forward for more detailed evaluation in subsequent stages.
## Exhibit 7.2: Impacts of Policy Options

<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Social</th>
<th>Economic</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential Communities</td>
<td>Safety and Security</td>
<td>Ease of Implementation and Governance</td>
</tr>
<tr>
<td>Improve dialogue with the goods movement industry and other stakeholders to</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>elevate the issue of goods movement in Hamilton.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain, protect and enhance the existing goods movement network in Hamilton</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Clearly define land uses adjacent to transportation corridors to facilitate</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>location of transportation dependent industry and commerce enterprises close</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to network access points with minimum intrusion on other uses.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximize the efficiency of the existing goods movement network by regulating</td>
<td>+</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>on-street and off-street loading.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A: Practices to Balance Freight Transportation Facilities and Operations with Community Issues

### Practice Examples

<table>
<thead>
<tr>
<th>Practice</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace at-grade rail crossings with grade separated crossings</td>
<td>1. - Phase I of the Fast Corridor - Freight Action Strategy for Seattle-Tacoma-Everett in Washington State. 2. - Express Rail overpass at Port Newark/Elizabeth. Previously, train traffic to the Express Rail yard crossed over main truck road in the port terminal complex causing significant delay.</td>
</tr>
<tr>
<td>Replace at-grade rail line with below grade rail line</td>
<td>1. - The Alameda corridor, which included a 10-mi railway trench. The project eliminated conflicts at 200 at grade intersections with surface streets. 2. - The Re-TRAC Project in Reno, Nevada, consists of building a 33-ft-deep train trench below the existing tracks to isolate train traffic from vehicular traffic in downtown Reno.</td>
</tr>
<tr>
<td>Require developers to make necessary highway access improvements for trucks</td>
<td>Examples not Provided</td>
</tr>
<tr>
<td>Participate in interstate corridor analyses</td>
<td>1. - The I-95 Corridor Coalition serving the northeastern portion of the United States from Maine to Virginia seeks to improve freight and passenger movements throughout their geographical area.</td>
</tr>
<tr>
<td>Motivate mode shift-truck to rail</td>
<td>1. - The IKEA Express - IKEA, the Swedish furniture manufacturer and retailer has a policy of using trains wherever possible. (In Europe, IKEA has become a rail operator). 2. - Morse Brothers and the Portland &amp; Western Railroad joined forces to eliminate approximately 30,000 truck hauls per year in the congested I-% Corridor.</td>
</tr>
<tr>
<td>Undertake integrated freight/economic development program</td>
<td>1. - The United Parcel Service (UPS) Chicago Area Consolidation Hub, the largest package sort facility in the world, was developed on an existing industrial site concurrent with the rail freight and trucking infrastructure needed to serve the facility.</td>
</tr>
<tr>
<td>Close at-grade rail crossing</td>
<td>Example not Available</td>
</tr>
<tr>
<td>Designate routes for heavy weight trucks</td>
<td>1. - Illinois has designated routes for 80,000-pound trucks. Similarly, many other states have designated routes for heavier trucks.</td>
</tr>
<tr>
<td>Undertake spot improvements to transportation infrastructure</td>
<td>Examples not Provided</td>
</tr>
<tr>
<td>Create incident management program or truck safety hotline</td>
<td>1. - The Oregon Truck Safety Hotline, which records reports from motorists who see some kind of truck safety problem while travelling Oregon’s highways (truck speeding, tailgating, changing lanes unsafely, loading spilling, etc)</td>
</tr>
<tr>
<td>Use intelligent transportation system technologies</td>
<td>1. - Phase I of the Fast Corridor - Freight Action Strategy is developing ITS technologies as part of its Phase II program to improve freight flows in the Seattle-Tacoma area.</td>
</tr>
</tbody>
</table>

### Traffic Flow

<table>
<thead>
<tr>
<th>Issue Area</th>
<th>Freight Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Security</td>
<td>Economy Development</td>
</tr>
<tr>
<td>Rail</td>
<td>Trucking</td>
</tr>
</tbody>
</table>

### Freight Types

- Rail
- Trucking
- Air Cargo
- Water

### Action Strategies

- Replace at-grade rail crossings with grade separated crossings
- Replace at-grade rail line with below grade rail line
- Require developers to make necessary highway access improvements for trucks
- Participate in interstate corridor analyses
- Motivate mode shift-truck to rail
- Undertake integrated freight/economic development program
- Close at-grade rail crossing
- Designate routes for heavy weight trucks
- Undertake spot improvements to transportation infrastructure
- Create incident management program or truck safety hotline
- Use intelligent transportation system technologies
<table>
<thead>
<tr>
<th>Practice</th>
<th>Examples</th>
<th>Traffic Flow</th>
<th>Safety &amp; Security</th>
<th>Economy Development</th>
<th>Air Quality / Environment</th>
<th>Noise &amp; Vibrations</th>
<th>Land Use &amp; Value</th>
<th>Communications</th>
<th>Freight Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop rail spur</td>
<td>1.- The Port Authority of New York and New Jersey is constructing the “Chemical Coast” rail connection, which will link the Staten Island Rail Road and the Howland Hook Marine Terminal. It will allow anticipated growth in rail traffic from marine terminal to travel avoiding a route that has several at-grade crossings.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Relocate rail yard</td>
<td>1.- Rail Yard in the centre of Las Vegas was viewed as an impediment to redevelopment. Through a cooperative effort between The Union Pacific Railroad and the city of Las Vegas, the yard was moved to the edge of the city.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Encourage reuse of brownfields</td>
<td>1.- The New Jersey Transportation Planning Authority’s Brownfields Planning Project is an effort to redevelop these properties to create both economic value and freight use.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Retain existing industrial areas</td>
<td>Portland, Oregon, has establish the Guild’s Lake Industrial Sanctuary Project. This project is intended to preserve and enhance industrial land in an area where many investments in transportation infrastructure has been made.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Require staging areas for trucks at buildings</td>
<td>1.- The city of Las Vegas is requiring that hotels have “backing areas” for the 18-wheel trucks making deliveries. Similarly, the city is requiring the convention center, which has little staging area and inadequate weighing equipment for the trucks serving it, to provide a specific staging area.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Schedule truck appointments</td>
<td>1.- Gate appointment programs are being developed or are in place at several major ports throughout the United States. Emoyal’s Scheduler system, for example, is being used in the ports of Charleston, Jacksonville, Long Beach, Los Angeles, New York–New Jersey, Oakland, the Everglades, Miami, Savannah, Seattle, Tacoma, and Norfolk.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Reduce number of empty truck movements</td>
<td>1.- General Mills has teamed with other manufacturers to use a new form of logistics software to find loads for empty trucks. 2.- Independent truckers, who can use Internet-based services such as Getloade.com or Truck-Realm.com to fill empty trailers.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Undertake public education</td>
<td>1.- The NoZone campaign is a highway safety initiative designed to educate motorists about the blind spots around large trucks and buses. Working with the American Trucking Associations, the NoZone campaign developed the “How to Drive” program. This program is designed to teach the public the skills needed to drive safely around trucks and large commercial vehicles. 2.- Operation Lifesaver is a program intended to end collisions, fatalities, and injuries at highway at-grade rail crossings through education, enforcement, and engineering. This program was initiated in Idaho in 1972.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Install upgraded rail crossing gates / barriers</td>
<td>Examples not Provided</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Create walls / pedestrian path to reduce trespassing</td>
<td>1.- The Salem (Oregon) Walkway Project is one example of a cooperative effort to create a physical separation. Almost 150 freight and passenger trains pass through Salem weekly, and more than 20 people were killed by trains between 1993 and 2000. The completed project provides a safe and attractive pedestrian walkway and barrier linking public schools, state offices, the university, the rail station, and numerous businesses and residences</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Practice</td>
<td>Examples</td>
<td>Freight Types</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>---------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitate meetings between community and freight providers</td>
<td>1. - The Port of Los Angeles has a Port Community Advisory Committee, with members from neighbourhood councils, community organizations, business and industry groups, organized labour, and local colleges. The Advisory Committee has as one of its purposes to “Assess the impacts of Port developments on the harbour area communities and to recommend suitable mitigation measures to the Board for such impacts. 2. - The Regional Freight Mobility Roundtable and Fast Corridor Initiative from Seattle-Puget Sound Region is a national recognized public-private forum to define and recommend actions serving freight mobility needs in and through central Puget Sound.</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage / use alternatively fueled vehicles</td>
<td>Truck-Stop Electrification (TSE) can be used as an alternative to idling the vehicles. 1. - The New York State Thruway became the first highway in the United States to offer TSEs, providing 44 at the DeWitt Travel Plaza near Syracuse in August 2001. 2. - In November 2001, the South Coast Air Quality Management District in California adopted Rule 1624. The rule created the Pilot Credit Generation Program for Truck Stops, which allows companies that provide electricity to trucks at truck stops to earn nitrogen oxide Mobile Source Emission Reduction Credits.</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop cleaner fuels</td>
<td>1. - From 1992 to 1994, FedEx participated in the Clean Fleet experimental program in which 111 vehicles traveled more than three million miles testing alternative fuel sources. 2. - In Europe, The Body Shop and its logistics contractor, the Lane Group, use a very low sulphur diesel fuel for their rail freight locomotives, using lower-emission engines and reducing the amount of time that locomotives idle.</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create 800 number bad website for community inquiries</td>
<td>1. - In Canada, the Federation of Canadian Municipalities and the CPR have developed a Community Connect Line telephone system. This system allows Canadian residents to advise CPR of their concerns or ideas for improvement.</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish advisory committees</td>
<td>1. - Montreal par Quatre Chemins is the byline of a strategic action plan for goods movement 2001-2006, developed by the Inter-regional Committee for goods transportation. The committee comprises 70 representatives from all sectors. 2. - Metropolitan Orlando established the Freight Mobility Working Group to facilitate effective planning for freight in the region. 3. - The Regional Freight Planning Program and Goods Movement task Force of the Philadelphia Metropolitan Region is a committee open to all freight practitioners and experts. 4. - In Houston Metropolitan region, the Strategic Freight Project Quick Response Team (QRT) identify freight congestion problems that could be solved in a relative short time frame.</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create channels for information provision to the public</td>
<td>1. - One of the most powerful new ways of conveying information is through websites. Newsletters and kiosks are additional means of providing information to communities.</td>
<td>X X X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undertake sound-proofing program</td>
<td>1. - The Alameda Corridor Transportation Authority constructed a sound wall at the Ritter Elementary School that insulates students and teachers from traffic on Alameda Street and railroad cars on tracks adjacent to the Alameda Corridor rail cargo expressway. 2. - The Seattle–Tacoma International Airport is spending $100 million to insulate schools affected by aircraft noise, and has spent more than $350 million in noise insulation for single-family homes and public buildings around the airport.</td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>