



# **COST OF BORDER DELAYS TO ONTARIO**

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**OCC Borders and Trade Development Committee**

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## I. INTRODUCTION

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In November, 2003, the Ontario Chamber of Commerce (OCC) Borders Task Force (BTF) completed a report on six key cross-border issues facing Ontario businesses trading with the United States. The BTF, which has subsequently evolved into the Borders and Trade Development Committee (a permanent standing committee of the OCC), has as its mission statement:

*The efficient, timely and secure movement of goods and people between Canada and the United States is essential for the well-being of Ontario's export-driven economy. As such, businesses in the province must have productive and predictable access from and to the American market through our shared border crossings.*

The BTF Report identified a series of Action Items, including the need for further study quantifying the costs of border delays on the province and its businesses. The result is this report.

The issue of delays at Ontario's border crossings is of major concern, as its effects extend to every business in the province. Over CDN \$1 billion in trade crosses the Canada-US border everyday, of which 60% flows through Ontario. In fact, Ontario is the fourth largest trading partner of the US after Canada, Mexico and China. Trade with our US neighbours comprise 93% of Ontario's total trade, provides the province with over CDN \$200 billion in annual revenue, and supplies hundreds of thousands of jobs. Ontario's businesses and individuals alike rely on the border to be efficient and timely, allowing for the free flow of people and goods between Canada and the US. Any delay at the border has a ripple effect throughout the entire economy, affecting all Ontarians.

The OCC's Borders and Trade Development Committee is dedicated to ensuring that all levels of government, in conjunction with relevant stakeholders, work together to solve the problems contributing to delays at the border in order to maintain the well-being of Ontario's export-driven economy.

The Ontario Chamber of Commerce is a federation of 160 local chambers of commerce and boards of trade in the Province of Ontario, representing 57,000 businesses of all sizes, in all economic sectors and from every area of the province. The OCC's mandate is to advocate strong policies on issues that affect its membership throughout Ontario's business community. The information contained in this report is a compilation of quantifiable data obtained from various research initiatives and consultations with Ontario businesses.

*\*\*All monetary figures used in this report are in Canadian dollars. Conversions from US dollars were done so at a rate of 1.32 Canadian to US dollars.*

## II. KEY HIGHLIGHTS

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### (i) For Ontario's Families

- Ontario's export industry supports 1 out of every 4 jobs in the province
- Approximately 90% of all consumer products and foodstuffs used and consumed in Ontario are shipped by truck at some point in the distribution chain
- Border delays represent a cost of upwards of \$1,100 per year for every Ontario taxpayer
- By the year 2030, delays in the Detroit-Windsor corridor alone will result in direct costs to Canada and the US of more than CDN \$17.8 billion a year and result in over 70,000 jobs lost in Canada

### (ii) For Ontario Businesses

- Trade with the US has grown by 152% since 1989, with similar growth in commercial traffic of 122.5%
- Future trade with the US is expected to grow by 180% by 2015, with corresponding growth in truck traffic
- Over 97% of Canadian automotive exports are shipped to the US
- Uncertainty surrounding delays at the border are requiring automotive manufacturers to increase their inventory at a cost of upwards of CDN \$1 million per hour

### (iii) For Ontario's Economy

- Delays at the border are costing the Canadian and US economies over CDN \$13.6 billion annually
- Ontario alone absorbs approximately \$5.25 billion or 38% of that cost.
- Delays at some of Ontario's border crossings are upwards of four hours
- A four hour delay at the Ambassador Bridge costs the Ontario economy approximately \$7 million in lost production
- The recent decline in US travellers to Ontario has cost the province over \$200 million in annual potential revenue
- The Ambassador bridge is currently operating at 78% capacity for commercial trucks and 95% capacity for passenger cars

### III. THE CONTEXT

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With the largest bi-national trade in the world, Canada and the US must ensure that the borders remain free from any unnecessary congestion. Any border delays have a negative Canada-wide impact on the ability of businesses to compete and attract investment, on the cost of goods and services to consumers, on tourism, as well as on our shared environment and individual health.

Delays at Ontario's borders affect every single individual in the province. The United States accounts for over 93% of Ontario's exports and over 72% of the provinces imports, the majority of which is moved by truck across our shared borders. In addition, Ontario's export industry supports more than 1.6 million, or 1 in every 4, jobs in the province and comprises 52% of Ontario's GDP<sup>1</sup>. With such an unprecedented level of trade, even a slight delay at the border produces a ripple effect of economic loss throughout the Ontario economy.

Delays at the border essentially act as a tariff-like barrier to both exports and imports, thereby making the cost of goods more expensive. However, unlike tariffs, border delays and uncertainties do not produce revenue for the government. With such an unprecedented level of trade between Ontario and its US neighbours, it is imperative that government ensure the efficient, timely and secure movement of goods and people through our shared border crossings.

Since the implementation of the Free Trade Agreement (FTA) in 1989, the total trade between Canada and the US has grown by 152%, with a similar growth in commercial traffic of 122.5%<sup>2</sup>. At the same time, the improvements to the border crossings have been minimal at best.

Over \$1 billion in trade crosses the Canada-US border every day, of which 70% is moved by truck. In 2001 more than 13 million trucks and 68.3 million personal vehicles crossed the Canada-US border<sup>3</sup>. Bilateral trade in goods and services between the US and Canada has grown faster than GDP, at an annual rate of 11 per cent. Canada's total two way trade with the US averages at over \$600 billion annually, of which approximately 59% is Ontario-US trade<sup>4</sup>. In 2001, the total value of trade which moved by land between Canada and the US reached \$485.2 billion<sup>5</sup>. Of this, over 61% or \$295.9 billion, flowed through Ontario,<sup>6</sup> predominately by truck. Prior to the tragic events of September 11, 2001, significant border delays were increasing due to sheer volume. Since then, heightened security, combined with less than adequate staffing, has led to increased congestion and border delays. In the nine months following September 11, US

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<sup>1</sup> Ontario Ministry of Economic Development and Trade "Ontario Business Report," April 2002.  
[http://www.ontario-canada.com/ontcan/en/PDF\\_HTML/Priority-1/OBR-2002-April.htm](http://www.ontario-canada.com/ontcan/en/PDF_HTML/Priority-1/OBR-2002-April.htm)

<sup>2</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p5.

<sup>3</sup> Ibid. p.5

<sup>4</sup> Ontario Economic Development [www.2ontario.com](http://www.2ontario.com)

<sup>5</sup> Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study ("Bi-National Study").

"Transportation Problems and Opportunities Report," November 2002, pg. 11, Table 2.1. Source of data from the US Department of Transportation, Bureau of Transportation Statistics.

<sup>6</sup> The Ambassador Bridge, Detroit-Windsor Tunnel and the Blue Water Bridge recorded an annual cross border flow of \$147.5B US. The Peace Bridge recorded an annual flow of \$52B US, and the Niagara Falls Bridge Commission recorded a flow of \$26B US, for a total of \$225.5B US. (converted to Canadian at 1.32=297.7 (485.2B/297.7B= 61%) This does not include any other Ontario crossing and therefore the figure may be much higher.

imports of Canadian goods by land, fell 10.8 per cent. This illustrates the effects that uncertainty surrounding the border can have on our bi-lateral trade.

While congestion occurs on both sides of the border, more often it is produced on the US side (traffic entering the US) with wait times ranging from 10 minutes up to four hours. Customs Canada states that the average border delay is approximately 30 minutes, while other sources suggest that 60 minutes is more accurate<sup>7</sup>. In a recent survey of its members, the Ontario Chamber of Commerce found that most respondents experience an average length of delay of one to two hours almost everyday, with Fridays between 3:00pm to 6:00pm being the most congested. With an average of 7,799 personal vehicles and 1,526 commercial vehicles crossing the border per hour in 2001<sup>8</sup>, the impacts are substantial.

The primary cause of backups, according to one study, is the lack of staffing and availability of customs booths<sup>9</sup>. Now, with the US Department of Homeland Security implementing stricter security measures at the border, the delays are expected to rise significantly. Aside from delays incurred by new security measures, the increase in trade between the US and Canada over the next 20 years will create new traffic beyond the capacity of the current crossings. Truck traffic alone is expected to grow by 118% over the next 30 years<sup>10</sup>. Therefore, immediate measures must be taken to alleviate this problem or the economic consequences will undoubtedly prove disastrous.

Not only are the physical border delays of significant concern, but also of major importance is the uncertainty surrounding the amount of time it takes to cross the border. Such uncertainty forces logistics and trucking companies to increase their costs, and manufacturers to retain a higher level of inventory to mitigate the impacts of such delays. Given these very real problems, it is imperative that the US and Canadian governments work together to ensure that the border remain uncongested and efficient.

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<sup>7</sup> David J. Andrea, and Brett C. Smith, *The Canada-US Border: An Automotive Case Study*, Prepared for the Canadian Department of Foreign Affairs and International Trade by the Center for Automotive Research, January 2002.

<sup>8</sup>Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.5

<sup>9</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.14

<sup>10</sup> Canada-U.S.-Ontario-Michigan Border Transportation Partnership, "Second Round of Consultations", June 2003.

#### IV. QUANTIFYING THE COSTS

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It is difficult to determine the scale of economic impact of border delays, due to the fact that shipment of goods across the border affects almost every industry at some point in their business process. It is nearly impossible to determine every instance where a border delay has resulted in an economic loss, but the overall trend is quite clear. From the additional cost of diesel and labour for trucks, to the loss of investment dollars from companies choosing to operate domestically, an hour delay at the border can cause major economic repercussions.

Several organizations and officials have made statements about the effects of border delays on the economy. For instance, former Canadian Prime Minister Brian Mulroney has been quoted as stating that the border adds \$30 billion in costs to American and Canadian businesses, while the Canadian Manufacturers and Exporters Association has stated that the border adds six per cent to the cost of Canadian manufactured goods<sup>11</sup>. A study prepared for the US Department of Transportation indicated that the current costs to the Canadian and US economies attributable to border delays (all Canada-US crossings) is upwards of \$17.4 billion annually (with a most likely cost of \$13.6 billion)<sup>12</sup>. This figure excludes the costs associated with late deliveries, lost investment or the environment, and therefore may potentially be much greater<sup>13</sup>. In a recent survey of its members, the Ontario Chamber of Commerce found that on average, respondents estimated the cost of border delays on their company over the past twelve months to be \$135,000. These were predominately small businesses. Most experienced an increase in costs, as well as a loss of business, due to border delays.

It is clear that the Canadian economy is affected much more by delays at the border than the United States. This is due to many factors, including:

- Canada exports - more in terms of both real revenue and as a percentage of total revenue (93% of Canada's exports and 20% of US exports)
- Canadian manufacturers rely on US components up to seven times as much as US manufacturers rely on Canadian content<sup>14</sup>
- While Canada is hit with a direct cost from lost investment and sourcing, the US actually gains by often being the recipient of Canada's lost investment dollars.

To determine the cost born directly by Ontario, several calculations must be made. First, according to the Canadian Department of Foreign Affairs and International Trade, two way trade in merchandise between Canada and the US totalled \$563.7 billion in 2002. Of this, Canada

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<sup>11</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.8

<sup>12</sup> Ibid. p.2 \*\*These figures were US\$13.2 billion and US\$10.9 billion respectively, converted into Canadian dollars at a rate of 1.32.

<sup>13</sup> Ibid. p.12

<sup>14</sup> David J. Andrea, and Brett C. Smith, *The Canada-US Border: An Automotive Case Study*, Prepared for the Canadian Department of Foreign Affairs and International Trade by the Center for Automotive Research, January 2002. p 13

exported \$345.4 billion to the US, while it imported only \$218.3 billion. This means that of the total two way trade in merchandise between the two countries, Canada represented 61.3% of the exports. The result is that delays at the border impacted Canada’s export industry nearly twice as hard as the US export industry in 2002, with Canada absorbing \$8.34 billion (61.3%) of the estimated \$13.6 billion total cost of border delays that year. Over the past five years, Ontario’s share of Canada’s total two-way trade with the US has averaged 63 per cent<sup>15</sup>. Given that Ontario represents 63% of all of Canada’s surface trade with the US, it is therefore reasonable to estimate that 63% of the total cost of border delays on Canada was directly absorbed by the province of Ontario.

Table 1 illustrates the cost of border delays on Ontario and Canada given three scenarios. The first assumes that Canada absorbs 61.3% of the costs associated with border delays, due to the fact that it represents 61.3% of two way trade in merchandise between Canada and the US. The second scenario assumes that due to other factors such as Canada’s greater reliance on US parts for manufacturing and greater costs associated with carrying inventory, Canada absorbs 70% of the total costs associated with border delays. The third scenario assumes the costs outlined in the second scenario, plus the major loss in investment dollars and de-sourcing, tourism, lost jobs and potential revenue. This would result in Canada absorbing up to 80% of the costs associated with border delays.

**Table 1: The Cost of Border Delays on Ontario and Canada**

	61.3% Absorption of Total Cost by Canada		70% Absorption of Total Cost by Canada		80% Absorption of Total Cost by Canada	
	Per Year	Per Hour	Per year	Per Hour	Per Year	Per Hour
<b>Ontario</b>	\$5.25 billion	\$599,315	\$6.00 billion	\$684,493	\$6.85 billion	\$781,963
<b>Canada</b>	\$8.34 billion	\$952,055	\$9.52 billion	\$1,086,757	\$10.88 billion	\$1,242,009

A conservative estimate of the impact of border delays on Canada is \$8.34 billion a year, or \$952,000 per hour. That means that delays at Ontario’s borders are costing the province \$5.25 billion annually in lost revenue, or over half a million dollars per hour. This would be the equivalent of \$843 per year for every Ontario tax payer. If one assumes Canada absorbs 80% of the costs of border delays due to such things as lost investment etc., then these costs rise to \$10.88 billion for Canada or \$6.85 billion for Ontario. This would be the equivalent of \$1,099 per year for every tax payer. These figures do not include the costs associated with lost tourism

<sup>15</sup> Ontario Economic Development [www.2ontario.com](http://www.2ontario.com)

revenue (estimated at over \$200 million a year), as well as thousands of lost jobs, lost tax revenue, and the environmental and health impacts.

In another study done by the Canada-United States-Ontario-Michigan Border Transportation Partnership Planning on the *Regional and National Economic Impact of Increasing Delay and Delay Related Costs at the Windsor Detroit Crossing*, it has been estimated that by the year 2030, mounting congestion and delay in the Detroit-Windsor corridor alone will cost the US and Canada more than \$17.8 billion a year and result in 70,000 jobs lost in Canada<sup>16</sup>. This is a combined impact from lost productivity and cross-border recreational trips.

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<sup>16</sup> Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study (“Bi-National Study”) *Regional and National Economic Impact of Increasing Delay and Delay Related Costs at the Windsor Detroit*, January 2004.

## V. DETROIT-WINDSOR AREA

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While all of Ontario's borders require a significant amount of attention, perhaps the most significant is the Detroit-Windsor corridor through which more than 42% of all of Canada's trade with the US flows<sup>17</sup>. More trade crosses over this point than takes place between Germany and France, the two largest members of the E.U.<sup>18</sup> Much of this is due to the massive trade in automotive vehicles and parts through this area. In fact, the Ambassador Bridge is the busiest border crossing in the world, with an average of 330 commercial truck crossings per hour (to a maximum of 600-700)<sup>19</sup>. In 2001, there was an average of 1,747 vehicles crossing the bridge and tunnel at Detroit-Windsor border per hour over a 24 hour day<sup>20</sup>. With a bridge system capacity of only 1,700 vehicles per hour, it is reaching a critical level of traffic and with truck traffic expected to increase by over 9% per year<sup>21</sup>, the capacity will be met within the next few years. A recent study showed that the bridge is now operating at 78% capacity for commercial trucks and 95% capacity for passenger cars<sup>22</sup>.

With this increase in volume there will be a corresponding increase in congestion. The current average speed in the Detroit-Windsor corridor is 25kph and is expected to drop to approximately 8.5kph by the year 2040. Truck costs per kilometre are expected to increase from the current rate of \$4.50 per kilometre to over \$15 per kilometre over the same period<sup>23</sup>.

Unexpected delays at the Detroit-Windsor border have an additional impact on shipments flowing between these two locations. Unexpected delays are those delays at the border that is not calculated into the travel time of carriers. Due to their close proximity, carriers often make many trips per day between these points. Uncertainty surrounding the border can significantly reduce the number of shipments that a carrier can make. This is especially problematic for the auto industry (discussed below).

Further, due to the fact that the Detroit-Windsor crossing is piped through the city streets of Windsor, it causes an additional impact on local businesses and families alike. Traffic back-up along major arteries such as Huron-Church road, have prompted some drivers to try to find alternative routes through residential streets. Not only does this pose traffic problems, but it may also endanger the safety of community residents.

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<sup>17</sup> Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study ("Bi-National Study") *Transportation Problems and Opportunities Report*, November 2002, pg. 11, Table 2.1. Source of data from the US Department of Transportation, Bureau of Transportation Statistics.

<sup>18</sup> Canadian Department of Foreign Affairs and International Trade, "NAFTA @ Ten: A Preliminary Report," 2003. p.44

<sup>19</sup> Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study ("Bi-National Study"), "Existing and Future Travel Demand Working Paper." November 2002, Table 2.28 "Daily Variation With Hourly Detail," pg. 44

<sup>20</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.6

<sup>21</sup> Ontario Trucking Association

<sup>22</sup> Michael H. Belzer, *The Jobs Tunnel: The Economic Impact of Adequate Border-Crossing Infrastructure*, Produced for The Jobs Tunnel Detroit River Tunnel Partnership, November 3, 2003. p.8

<sup>23</sup> Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study ("Bi-National Study"), Regional and National Impacts of Increasing Delay and Delay Related Costs at the Windsor-Detroit Crossing," January 2004, pg16 (adjusted to Canadian dollars per kilometer)

## VI. TRUCKING INDUSTRY

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Central to the costs associated with the delays at the border is the trucking industry. As mentioned above, approximately 70% of Canada-US trade travels by truck, and truck traffic is likely to increase by 118% over the next 30 years. Between 1990 and 2000, truck traffic between Canada and the US grew at an annual average rate of 13.3 per cent<sup>24</sup>. The trucking industry provides a crucial link to all businesses that rely on the import or export of goods to and from the US.

Ninety-three percent of Ontario's trade is conducted with the US<sup>25</sup>, of which 80% travels by truck<sup>26</sup>. Therefore, it can be assumed that nearly 80% of Ontario businesses are at some point affected by the disruptions caused by border delays.

A study prepared for the Canadian Department of Foreign Affairs and International Trade reported that an hour delay at the border costs approximately \$40 for the truck and driver alone<sup>27</sup>. With an average delay of 30 minutes, multiplied by the 14 million trucks that cross the Canada-US border each year, that amounts to an annual cost to the trucking industry of \$280 million. Another report published by the National Academy of Sciences found that in 1995, delays cost carriers between \$3.17 and \$4.23 per minute<sup>28</sup>. Taking the low end cost of \$3.17 per minute, using the same methodology as above, that amounts to over \$1.3 billion per year. In addition, many trucking companies must bear the cost of late deliveries.

Table 2 illustrates the costs to the trucking industry attributable to border delays, time uncertainty and customs operations. These costs are based on assumed cost per hour of \$198, which was determined by the US Department of Transportation Federal Highway Administration<sup>29</sup>.

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<sup>24</sup> Canadian Department of Foreign Affairs and International Trade, "NAFTA @ Ten: A Preliminary Report," 2003. p.44

<sup>25</sup> Ontario Economic Development [www.2ontario.com](http://www.2ontario.com)

<sup>26</sup> Ontario Trucking Association, "The Trucking Industry in Ontario: The Lifeblood of Your Community,"

<sup>27</sup> David J. Andrea, and Brett C. Smith, *The Canada-US Border: An Automotive Case Study*, Prepared for the Canadian Department of Foreign Affairs and International Trade by the Center for Automotive Research, January 2002. p.17

<sup>28</sup> Michael H. Belzer, *The Jobs Tunnel: The Economic Impact of Adequate Border-Crossing Infrastructure*, Produced for The Jobs Tunnel Detroit River Tunnel Partnership, November 3, 2003. p.24

<sup>29</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003.

**Table 2: Trucking Industry (Canada and US) Costs Attributable to Border Delays, Uncertainty and Operations**

Type of Cost	Minimum Cost (\$CDN millions)	Maximum Cost (\$CDN millions)
Primary Inspection	364	464.4
Secondary Inspection	795.3	1199
Excess Plan Time	150	680.7
Reduced Cycle/Other	86.9	260.6
Driver Documentation/ Customs Administration	308.8	859.2
Cabotage	132	440
<b>Total border transit time and uncertainty costs</b>	<b>1836.4</b>	<b>3909.9</b>

Source: Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. (Converted from \$USD at 1.32 exchange)

Primary inspection refers to delays associated with the primary customs booths. Secondary inspection refers to the 10-40% of trucks that must clear up paperwork with customs staff and the 1% of trucks that have their contents physically inspected. Excess planned time refers to the time that is lost when a carrier assumes a delay, but in fact proceeds unhindered. This figure assumes that in 35-45% of the cases this time is non-recoupable and therefore is associated with a cost. Reduced cycle and other costs refers to the cost associated with carriers not being able to make as many trips because of the border delays, time lost for documentation and faxing paperwork to brokers, as well as general border administration costs. Cabotage costs refer to the restrictions that are placed on Canadian drivers by US immigration and customs rules. It is illegal for a Canadian driver to move a shipment wholly within the US (except under certain conditions) and they also cannot solicit for loads back to Canada while in the US. Often a truck must come back empty when, in the absence of these laws, it could pick up another load. A conservative estimate of the cost to the trucking industry associated with border delays is approximately \$1.83 billion annually.

Currently, many carriers are not transferring these costs onto shippers, but are instead absorbing them. The cost weighs heaviest on the driver who is often not compensated for the extra time spent waiting at the border. More and more drivers are refusing to take cross border shipments. As the delays continue, carriers will be forced to compensate their drivers and thus raise their rates. Some carriers that conduct cross border shipping often charge a cross-border freight rate that is 10-15% higher than domestic rates. This extra cost is to cover the costs of border related administration, and uncertainty about border crossing times. According to some OCC members surveyed, carriers that have increased their rates have done so at an average amount of \$2 per tonne, or as a flat 'border crossing surcharge' of \$50 to \$70. If uncertainty at the border continues to grow, these rates are likely to increase, which may in fact negate the benefit of purchasing supplies and inputs from manufactures on the opposite side of the border. This will have a substantial impact on Canada through the loss of sales to domestic US firms and possibly lost foreign direct investment.

One need only look to the export industry to see the effect that carrier costs will have on business. Depending on the commodity, transportation costs can account for 5% to 40% of the delivered price of a good. Any delay at the border affects the cost of transportation, and thus the ability of Ontario businesses to compete with similar US suppliers for American contracts.

Another area in which the trucking industry greatly affects other businesses is through lost manufacturing time. Due to the significant delays at the border, trucking companies are forced to incorporate the transit time uncertainty into their everyday logistics. Carriers must place an assumption on how long it will take to cross the border in order to have their shipments arrive on time. With mounting delays, the estimated time becomes much larger. If the assumed route time turns out to be more than expected, there are losses pertaining to lost manufacturing time and the need to stockpile inventory. If it turns out to be less than expected, there is loss on the side of the carrier because the truck cannot be effectively redeployed<sup>30</sup>.

Carrier companies generally assume anywhere from one and a half to two hours in border crossing time. Some assume upwards of four to six hours if they are transporting time sensitive materials<sup>31</sup>. It is estimated that these 'planned' delays cost trucking companies \$1.58 to \$3.18 billion a year based on an hourly cost of \$198<sup>32</sup>. Unplanned delay costs are estimated to be upwards of \$490 per hour.

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<sup>30</sup>Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.10

<sup>31</sup> Ibid. p.10

<sup>32</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p. 10

## VII. EFFECTS ON INDUSTRY AND MANUFACTURING

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Presently, about 90% of all consumer products and foodstuffs used and consumed in Ontario are shipped by truck at some point in the distribution chain. Thus the effect of border delays has a substantial impact on all industries. From a restaurant that is unable to obtain vital ingredients, to an automotive manufacturing plant that must forgo production due to missed shipments, the efficient transport of goods across the border is imperative to the entire economy. Indeed, it is difficult to quantify the chain reaction of costs that an hour delay at the border may have, since the effects run so deep.

A report conducted for the Detroit River Tunnel Partnership found that a four hour delay or closure at the Ambassador Bridge would cost the Ontario economy over \$7 million in forgone production<sup>33</sup>. This represents the net decline resulting from loss of production when a supply chain is broken due to the delay of time-sensitive goods at the border. The estimate took into account the availability of existing inventory during delays and the industry's ability to recover some of the costs at a later time.

The impact of such a delay or closure has the most impact on manufacturing industries, such as the automotive industry. Any delay in the shipment of an input to the manufacturing process causes a loss in productivity and profit. Where manufacturers have accounted for the possibility of border delays and late shipments, they must incur the cost of holding a greater amount of inventory.

Border delays produce even more of a problem in less than load (LTL) shipments. These are trucks that take several different shipments to various locations in one trip. An hour delay at the border may mean the difference between the last customer receiving the shipment on time, or not until the next day.

One study estimated that border delays and uncertainty cost manufacturers anywhere from \$1.64 billion to \$3.55 billion annually, with a most likely figure of \$2.63 billion<sup>34</sup>. Perhaps the best way to understand the costs of border delays on manufacturing is to look at the various ways in which the automotive sector is affected.

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<sup>33</sup> Michael H. Belzer, *The Jobs Tunnel: The Economic Impact of Adequate Border-Crossing Infrastructure*, Produced for The Jobs Tunnel Detroit River Tunnel Partnership, November 3, 2003. p.53

<sup>34</sup> Dr. John C. Taylor, Dr. Douglas Robideaux, and Dr. George C. Jackson, *The U.S.-Canada Border: Cost Impacts, Causes, and Short to Long Term Management Options*. Prepared for the U.S. Department of Transportation, Michigan Department of Transportation, and New York State Department of Transportation, May 21, 2003. p.15

## VIII. AUTOMOTIVE INDUSTRY

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There is no other industry in Ontario that is more affected by delays at the border than the automotive industry. The automotive industry provides Ontario with approximately \$110 billion per year or 23% of Ontario's GDP<sup>35</sup>. It also provides Ontarians with over 140,000 jobs. Canada is ranked eighth in the world for light vehicle production, all of which comes from Ontario. In fact, one in every six vehicles built in North America is built in Ontario. In 2003, that amounted to 2.3 million assembled vehicles, 85% of which were exported (mainly to the US)<sup>36</sup>.

In 2002, cross border flows of automotive parts and vehicles totalled over \$153 billion, with Canada maintaining an overall automotive trade surplus of \$8.4 billion<sup>37</sup>. The automotive industry is by far Canada's largest industry in terms of exports and imports. Automotive imports and exports account for nearly 20% of all of Canada's trade with the United States. Over 97% of Canadian automotive exports (both parts and assembled vehicles) are shipped to the US, and approximately 80% of all of Canada's automotive imports originate in the US. The level of integration between the US and Canadian automotive industries is unprecedented. That being said, any disruption in the process causes a ripple effect of economic loss. The impact is greatest on the Canadian side, where alternative sources for input parts are extremely limited and thus reliance on cross border parts shipments is critical. Given this, it is imperative for Canadian assembly plants that the border crossings be efficient and dependable.

The issue of the efficient movements of goods across the Canada-US border is of critical importance to Ontario, as most of our bi-national trade is between Michigan and New York at three main connecting points; the Ambassador Bridge; the Blue Water Bridge; and the Peace Bridge. Figure 1 and figure 2 illustrate this point whereby exports and imports of automotive parts from these areas account for greater than US\$2 billion.

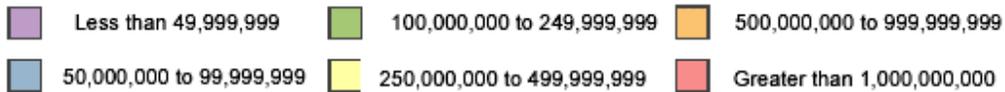
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<sup>35</sup> Ontario Economic Development, [www.2ontario.com](http://www.2ontario.com)

<sup>36</sup> Ibid.

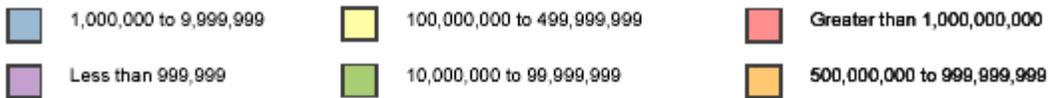
<sup>37</sup> Industry Canada, [strategis.ic.gc.ca](http://strategis.ic.gc.ca)

FIG. 1 – 2000 CANADIAN AUTOMOTIVE PARTS IMPORTS BY STATE (U.S. DOLLARS)



Source: Strategis.gc.ca

FIG. 2 – 2000 CANADIAN AUTOMOTIVE PARTS EXPORTS BY STATE (U.S. DOLLARS)



Source: Strategis.gc.ca

**(i) Just in Time Logistics and Inventory Costs**

One of the reasons why border delays result in substantial economic loss in the automotive industry, is that it relies heavily on the ‘just in time’ (JIT) logistics system. JIT has proven to be an excellent way to reduce on site inventory, and thereby minimize costs. This system depends upon the efficient and timely delivery of components into an assembly plant as needed, rather than stockpiling them in inventory. By knowing that necessary inputs will arrive on schedule, a manufacturer need not hold a large inventory. For the automotive industry, where parts can be quite large, the keeping of such inventories is very costly. According to the Center for Automotive Research, the cost to a US assembly plant requiring input from Canada of carrying an additional hour of inventory (the inventory needed for one hour of production) is approximately \$570,000. For a Canadian assembly plant relying on US components, the carrying cost for one hour of inventory is approximately \$1,056,000<sup>38</sup>. Companies rely on parts arriving within the JIT system to avert these additional costs. With the mounting border delays, the JIT system is being disrupted and many assembly plants are having to revert to keeping a larger inventory. On the US side of the border, some companies have opted to obtain their

<sup>38</sup> David J. Andrea, and Brett C. Smith, *The Canada-US Border: An Automotive Case Study*, Prepared for the Canadian Department of Foreign Affairs and International Trade by the Center for Automotive Research, January 2002.

components from domestic producers to avoid the cost of border delays. This is the worst case scenario for Ontario as not only is immediate revenue lost, but future investment as well.

Not only do delays at the border disrupt the JIT logistics system, but where parts are in short supply, they can have severe economic costs. For example, an assembly plant generates revenue of approximately \$2 million per hour with an average return on sales of 4 percent. This means that one hour of lost assembly output costs approximately \$80,000<sup>39</sup>. This scenario is similar for component manufacturers. Table 3 illustrates lost revenue per hour of several different automotive components.

<b>Table 3: Estimated Revenue Generation Per Hour of Production Canadian Dollars</b>			
	<b>Lost Revenue Per Hour</b>		<b>Lost Revenue Per Hour</b>
Engine	\$198,000	Body Structure	\$184,000
Transmission	\$132,000	Chassis Electrical	\$60,000
Steering/Suspension	\$132,000	Heating, A/C	\$53,000

Source: Center for Automotive Research, January 2002.

Delays at the major commercial Ontario-Michigan and Ontario-New York crossings of 60 to 90 minutes are occurring at an increasing level. A delay of 60 minutes will likely cause an assembly line to be disrupted either by having to adjust schedules or stop production of various parts.

While losses are felt on both sides of the border, the situation is more onerous for Canadian manufacturers who do not have the same domestic resource base for inputs as the US. An average US-made vehicle contains approximately \$1,320 of Canadian content, while an average Canadian-made vehicle contains approximately US\$9,730 of US content<sup>40</sup>. Therefore the effect of any border delays on the automotive industry hits Canada seven times as hard as the US.

<sup>39</sup>David J. Andrea, and Brett C. Smith, *The Canada-US Border: An Automotive Case Study*, Prepared for the Canadian Department of Foreign Affairs and International Trade by the Center for Automotive Research, January 2002. p.12

<sup>40</sup> Ibid. p.13

## IX. LOST INVESTMENT AND DE-SOURCING

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Perhaps the area where delays and uncertainty surrounding the border will hit the Ontario economy the hardest, is its effects on investment. This includes not only foreign direct investment (FDI) but also domestic investment. Delays at Ontario's borders hinder the province's ability to attract new investment, as well as maintain its existing investments.

Since the uncertainty surrounding the border effectively acts as a tariff-like barrier to the import and export of goods, it reduces the incentive for companies to locate on the Canadian side. In addition, Canada is doubly affected by American companies de-sourcing Canadian components manufacturers in favour of domestic sources that are not affected by such border delays. The delays at the border, coupled with the recent increase in the value of the Canadian dollar, have produced a major disincentive for investment in Canada.

Indeed, this has been the trend over the past several years. Since the implementation of the Free Trade Agreement in 1989, the US share of Canada's inward FDI stock fell from 65.6% to 64.2% in 2002<sup>41</sup>. Not only have US manufacturers shifted to domestic suppliers, but companies are also choosing not to set up new assembly plants in Canada. Of the eight auto assembly plants that were built or announced over the past decade by Honda, Mercedes, BMW, Nissan, Hyundai and DaimlerChrysler, only one was built in Canada. Many assembly plants are locating in the southern US, which is even outside the competitive range for Canadian parts suppliers. This decline in investment causes a chain reaction of decline for the Canadian economy and individual welfare. Lost investment dollars equate to lost jobs, lost government revenue and an overall loss to the welfare of Canadians. Investors look to the future and with the border becoming increasingly unreliable, it is no wonder that many manufacturers are choosing to locate in the United States. Although factors such as incentive offerings have contributed to this trend, concern over the border remains a deterrent in automotive investment decisions.

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<sup>41</sup> [NAFTA@Ten: A Preliminary Report](#), Canadian Department of Foreign Affairs and International Trade, 2003.

## X. TOURISM

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In the wake of SARS and the blackout, the significance of tourism to the Ontario economy has become increasingly evident. Ontario businesses were visibly affected as many American tourists chose not to travel north of the border. Canada ranks ninth in the world for tourist destinations and Ontario receives the bulk of those travelers. In 2001, tourism in Ontario generated \$1.9 billion in revenue, for a total of 4.4% of the provincial GDP<sup>42</sup>. Much of this can be attributed to US travelers who cross our border for recreational purposes. It is estimated that over 28 million US tourists come to Ontario annually<sup>43</sup>. Unfortunately, that number has been steadily decreasing. This not only hurts our economy through lost sales revenue, but also in production and jobs. It is difficult to determine to what extent external impacts, such as SARS, have added to this decline, but anything that can be done to encourage visitors to travel to Canada, such as reducing delays at the border, will be helpful in reversing this trend.

In November 2003, total US passenger border crossings into Ontario were 16.5% less than the total crossings in November 2002. Similarly, same day crossings dropped by 14.3% and overnight crossings dropped by 13.9%<sup>44</sup>. The decline is even more striking when current border crossings are compared to pre-September 11<sup>th</sup> levels, which averaged an increase of approximately 3% per month. Considering that Ontario generated \$1.9 billion in revenue from tourism in 2001, and the subsequent decline of an average of 14% in US tourism, Ontario has lost \$266 million annually in potential tourism revenue.

Each year, over 20 million passenger cars cross the Ontario-Michigan border. Of these, 10 million are recreational or shopping trips and 2 million are vacations. Businesses are noticing a substantial decrease in cross border consumers due to the uncertainty of the border. A bi-national study indicated that by 2020, delays at the border will likely cost Canada over \$450 million a year in production losses related to tourism (rising to \$2.4 billion by 2030). Of this loss, 72% will be from Ontario. The economic impact to the province of Ontario is illustrated in Table 4.

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<sup>42</sup> Ontario Ministry of Tourism and Recreation

<sup>43</sup> Ontario Ministry of Tourism and Recreation, "Ontario's US Travel Markets—2001"

<sup>44</sup> Ontario Ministry of Tourism and Recreation, "Facts and Figures, Winter 2003-2004"

**Table 4:  
Economic Impact of Reduced Tourism Due to Border Delays in the Province of Ontario  
(2000 \$CDN)**

Year	Impact	Lost Trips	Direct	Indirect	Total
2020	Output	Recreation & Shopping	(\$92.7)	(\$25.5)	(\$118.2)
		Vacation	(\$157.4)	(\$53.4)	(\$210.9)
		Total	(\$250.1)	(\$78.9)	(\$329.1)
	Earnings	Recreation & Shopping	(\$62.3)	(\$14.7)	(\$77.0)
		Vacation	(\$94.4)	(\$31.3)	(\$125.6)
		Total	(\$156.6)	(\$46.0)	(\$202.6)
	Employment (changes in the number of Full Time Equivalent jobs)	Recreation & Shopping	-2,065	-302	-2,367
		Vacation	-3,145	-581	-3,726
		Total	-5,210	-882	-6,092
2030	Output	Recreation & Shopping	(\$483.0)	(\$132.7)	(\$615.7)
		Vacation	(\$819.9)	(\$278.4)	(\$1,098.3)
		Total	(\$1,303.0)	(\$411.1)	(\$1,714.1)
	Earnings	Recreation & Shopping	(\$324.3)	(\$76.8)	(\$401.1)
		Vacation	(\$491.5)	(\$163.0)	(\$654.5)
		Total	(\$815.8)	(\$239.8)	(\$1,055.5)
	Employment (changes in the number of Full Time Equivalent jobs)	Recreation & Shopping	-10,756	-1,571	-12,327
		Vacation	-16,381	-3,025	-19,046
		Total	-27,136	-4,596	-31,732

Source: Canada-US-Ontario-Michigan Border Transport Planning/Need Feasibility Study (“Bi-National Study”), Regional and National Impacts of Increasing Delay and Delay Related Costs at the Windsor-Detroit Crossing,” January 2004, pg 40, Table 26.

According to this study, by the year 2020, Ontario will lose nearly \$330 million in output, \$202 million in earnings and more than 6,000 jobs from the impact of border delays on tourism. By the year 2030, this will have increased to over \$1.7 billion in lost output, \$1 billion in lost income and over 30,000 lost jobs.

These numbers associated with the loss of tourism due to border delays are daunting. As the evidence indicates, this is a pressing matter that can no longer be ignored.

## XI. ENVIRONMENTAL COSTS

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In addition to the significant monetary costs that delays at the border produce, there is arguably a cost to the environment and individual health.

Environment Canada reports that a quarter of greenhouse gas emissions and nearly half of carbon dioxide emissions produced in Canada, can be attributed to the transportation sector. An idling car also increases engine wear, not to mention the fact that it gets zero kilometres per litre. When the average speed of a vehicle slows, fuel consumption increases per kilometre. Currently, the average speed across the Ambassador Bridge is 25 kph, but is expected to drop to 5.5 kph by the year 2040 if no infrastructural changes are made. This would essentially quadruple the amount of emissions entering the atmosphere from vehicles crossing the border. This increase in the use of fuel is both inefficient and produces environmental and individual health costs.

With the projected growth in traffic, multiplied by the fact that a reduction in speed causes a vehicle to use more fuel and thus produce more GHG emissions, any future delay at the border will substantially contribute to the deadly greenhouse gases in our environment. If infrastructural changes at the border were to cut the delay by half, it would result in a reduction of 0.2 to 0.6 metric tons of CO emission per day at each crossing, or 1.5 to 2.4% of trade-related truck emissions<sup>45</sup>.

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<sup>45</sup> IFC Consulting, *North American Trade and Transportation Corridors: Environmental Impacts and Mitigation Strategies*. Prepared for The North American Commission for Environmental Cooperation, August 2001. p.ii

## **XII. CONCLUSION**

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With the largest bi-national trade in the world and the major dependence of Ontario's economy on exports to US markets, the issue of the Canadian-US border cannot be ignored. Over \$600 million in trade crosses the Ontario-US borders everyday, comprising 93% of Ontario's total trade. Ontario's export industry alone accounts for one of every four jobs in the province.

The imperative nature of mounting border delays is extremely dire. Delays are currently costing Ontario's economy approximately \$5.25 billion a year in lost production, revenue, investment, and tourism. Added to this are the social costs associated with the effects of greenhouse gas emissions on our environment. These costs are no longer sustainable and without serious attention, they will become out of control.

Depending on the commodity, transportation costs currently account for 5% to 40% of the delivered price of a good. While most trucking companies are absorbing the costs of border delays, they cannot afford to do so for much longer. Border delay costs will eventually be passed onto consumers through an increase in the retail price of end products.

The manufacturing industry, especially the automotive industry, is particularly affected by delays at the border. A delay of 60 minutes can result in over \$100,000 in lost revenue. Similarly, many companies that rely on just-in-time logistics have had to increase their inventories at a cost of upwards of \$1 million for every additional hour of stock. Not only does this affect the manufacturers, but also the average Ontarian, as rising inventory costs can impact jobs and consumer prices.

In order for Ontario to remain competitive, as well as attract and retain investment, its borders with the US must remain free from delays. Though the reasons for the recent decline in investment are hard to pinpoint, there is little doubt that delays at the border work as a disincentive to investment.

In a similar sense, delays at the border also serve to discourage American tourists from travelling by land to Ontario. One study estimated that by 2020, delays at the border will cost Ontario \$325 million per year in revenue related to tourism. In addition, there is arguably a real cost to the environment caused by the increase in vehicle traffic.

Many of Ontario's US border crossings are operating at near capacity. With future Canada – US trade expected to grow by 180% by 2015, there is no doubt that without the needed investment to improve surface cross-border trade, Ontario will suffer tremendous economic and social costs.