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# **Situational Analysis of the Container Trucking Sector at the Port of Halifax**

**for Transport Canada**

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# Situational Analysis of the Container Trucking Sector at the Port of Halifax

## Executive Summary

Transport Canada recently launched a federal contribution funding program, the *Clean Transportation Initiative on Port-Related Trucking*, with the objective of providing up to \$7.5 million in funding over fiscal years 2012-13 to 2015-16, in support of trucking efficiency improvements through technological innovation.

The purpose of this project is to document and identify for Transport Canada the critical issues in container port trucking at the Port of Halifax. Furthermore, through consultations with stakeholders, the project identifies barriers and incentives to the development of potential projects that support clean transportation priorities, and addresses the needs of port authorities, terminal operators, trucking operators and other supply chain participants that have an interest in port-related trucking. Our role was to facilitate the consultation process, to identify the challenges faced by local stakeholders and to provide a more in-depth understanding of the container trucking sector in Halifax. All three tasks have been completed and this report presents the results of that work.

## ***Background on existing port truck traffic***

A very noticeable aspect of Halifax's container traffic is the increasing importance of truck-based volumes versus rail-based container traffic. We were provided with data on Halifax's **import** rail : truck split for the period 2006-2012. Historically, the truck-based share of Halifax's container traffic was 20-25%. In the past five to six years, the proportion handled by truck has grown significantly and in 2012 was approaching 40%. Water-based volumes are likely those handled by the now-defunct American Feeder Line and other feeder services that have served the New England market. As the data exclude Oceanex shipments, its role is not discernible.

## ***Halifax's changing hinterland***

Halifax's hinterland has changed in the past decade, with the Atlantic region remaining constant in terms of overall volume, but becoming proportionally more important to the port than it was five or six years ago.

In 2006, Atlantic Canada accounted for 37% of the port's traffic volume, and this grew to almost 50% in 2011.

## ***Key findings from the port trucking literature review***

Many ports and terminals experienced increased cargo throughput as a result of growth in international trade in the last few decades (Giuliano and O'Brien, 2007). One of the consequences is that truck traffic to and from port facilities has also risen substantially (Chen, Govindan and Yang, 2013; Karafa *et al.*, 2013). Since many terminals are located

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near or in urban centres, the growth in truck traffic has resulted in more impacts on residents in those areas, such as increased health risks and air and noise pollution (Hartman and Clott, 2012). Consequently, many terminal operators are facing a array of frustrated stakeholder and community groups that threaten future growth of the terminals (Le-Griffin, Mai and Griffin, 2011). As a response, ports and terminals are implementing strategies to reduce the effect of the terminals' truck-related traffic. Reducing environmental impacts and making more efficient use of existing transportation infrastructure is seen as a better path for accommodating growing demand than further infrastructure investment (Maguire *et al.*, 2010). The literature review examined a wide variety of sources and contributed many suggestions for improvements to port-related trucking, most of which were discussed in the focus groups.

### ***Key findings from the consultations and follow-up***

Using a Chatham House Rule, two focus groups were held. A number of issues were identified in the consultations. These included:

- The location of Halterm and traffic congestion in the downtown core of the city en route to the terminal
- Gate congestion, turnaround time, union work hours and off-peak access, an issue that has been largely resolved through gate management in the last year.
- Truck drivers idling when in the queue at the gate
- Some shipping lines charging a fee for a street turn
- GHG emissions resulting from the management of reefer containers (an issue where a closer look at cold chain integrity maintenance might prove to identify alternate process or technological solutions)
- Container yard equipment as a source of GHG emissions

Against each of these, solutions were discussed and opportunities are detailed in the report. They vary from changing traffic lane arrangements to reduce idling/congestion in the downtown core to extended gate hours and the ability to move empty containers off-peak. While there were a number of opportunities discussed, including further use of GPS and existing MacPass® transponder capabilities or the introduction of outside-the-gate plug-in facilities for trucks, many of these need further proof-of-concept development. A number of starting points for discussion were noted in section 5 of the report.

Other input was received in the form of general comments, and specific follow-up was undertaken using an Internet survey, to clarify the general sentiment within the Halifax port-related trucking community.

### ***What projects attracted interest?***

We discussed the potential use of GPS (Global Positioning Systems), which most trucking companies already have installed on their vehicles. The view was that making better use of the technology would only send every company's truck to the terminal at the same time—when slots are available. As this may be too simplistic, it merits closer examination. There is a technology company in Halifax that has done similar work in other ports and which could be engaged in this project.

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The data currently being collected from one trucking company by Transport Canada are not being shared with the trucking company. Perhaps the project could start with these data to ascertain the incidence of congestion and nature of the challenge for Halifax. Furthermore, it would be useful to extend the pilot project to other trucking companies.

A pilot study focused specifically on the maintenance of cold chain integrity received some interest, particularly as the technologies to explore the issue exist. A study of cold chain processes through the May to September period of 2013 could be well-timed, and as the majority of reefers on trucks are diesel-powered, the impact on GHG (greenhouse gas) emissions from the cold chain moves would be better understood.

There was also interest in assessing alternative processes for the handling of empties to reduce the number of empty moves and therefore the GHG emissions impact as well.

Also raised was the suggestion that the Port of Halifax consider “cold ironing for trucks” that arrive late evening for the next morning, or are in line on cold days before the gates open. There must be technology available to address this. The trucking firms need to see the benefit of making the vehicle ready for such a ‘plug-in’, the port and terminal operator should consider providing such equipment, and the funding of such technology would need to be discussed.

There was one focus group participant and one person providing follow-up information who mentioned using the rail cut to address trucks moving through downtown and the congestion and GHGs they produce. While the focus of some study, the option to move containers from Halterm on rail shuttle to Burnside Industrial Park has not been costed thoroughly, nor the societal benefits assessed.

### ***What needs further study in support of funding proposals?***

Transport Canada could consider studying a SynchroMet-type system/virtual container yard concept. Could the supply of containers in off-docks be better managed with such a system? Halifax has four off-dock container yards (three of which are new in the last five years), five if the near-dock facility close to Ceres is counted.

One of the most interesting suggestions was to use hybrid electric or alternative-fuel yard equipment. This technology has been introduced on Canada’s west coast and has resulted in both fuel savings and reductions in GHG emissions. The payback time can be quite short.

Finally, there was considerable discussion about the use of MacPass® technology to track a pre-weighed container and tractor, and use of that information in conjunction with the weigh-in-motion scales to reduce gate times. This could also be an interesting pilot study.

### ***Ideas that did not resonate with the industry stakeholders***

The workshop participants displayed no enthusiasm for GIS and RFID monitoring except as they relate to either cold chain integrity or congestion within HRM, in particular downtown Halifax en route to Halterm. There could be an opportunity to examine both issues.

The workshop participants were not in favour of a gate appointment system; they only saw potential for abuse.

There was no support for a PierPASS® style off-peak system given current capacity availability at the terminals, leaving the door open for future consideration should the situation change. The issue seems to boil down to: what is the added cost, who pays for the additional hours of access, and is it worth that added cost?

### ***Summary***

This situation analysis examined the current state of port-related trucking in Halifax. It explored many ideas found in the literature with focus group participants and clarified local sentiment via follow-up contact.

Most participants in this situational analysis thought that the greatest GHG reductions would be from investments in newer container yard equipment.

One participant indicated that interesting CN in short line moves from Moncton to Halifax would also reduce GHGs.

Those interested in further developments were identified and their contact information supplied to Transport Canada separately.