LABOUR FORCE PROFILE

Port Drayage Drivers in Metro Vancouver

ASIA PACIFIC GATEWAY
SKILLS TABLE

FINAL REPORT

Acknowledgements

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LABOUR FORCE PROFILE OF PORT DRAYAGE DRIVERS IN METRO VANCOUVER

FINAL REPORT

Prepared by Asia Pacific Gateway Skills Table

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EXECUTIVE SUMMARY

The *Labour Force Profile of Port Drayage Drivers in Metro Vancouver* was completed for the Asia Pacific Gateway Skills Table (APGST) by Davies Transportation Consulting Inc. in association with Wave Point Consulting Ltd. and R.A. Malatest and Associates Ltd. APGST undertook this port drayage labour market information project with support from the BC Trucking Association, Port Metro Vancouver, the BC Ministry of Transportation and Infrastructure, and Transport Canada. The goal of the research was to develop a profile of the current port trucking labour force in order to better understand employers' and employees' needs, to enable the industry to respond with appropriate human resource strategies, and to provide insight and recommendations that can inform and guide future initiatives in the drayage sector.

Survey administration and data processing were carried out by R.A. Malatest and Associates (RAM). The survey consisted of 36 closed-ended questions, and collected data on employment history, compensation and expenses, driver attitudes towards employment in the industry, and driver demographics. The survey was available in both English and Punjabi. All respondents were provided with gratuities upon survey completion.

The study methodology consisted of an intercept survey. Surveys were distributed at the four container terminals in the Lower Mainland over a three-week period from February 25 to March 14, 2013. A total of 1,750 surveys were distributed over the period; 639 were completed, exceeding the completion target by 16.2%. The survey completion rate was 36.5%. Most (86.7%) of the surveys were completed on-site at the container terminals during the survey administration period, with a few (11.4%) mailed-in and a smaller number (1.9%) completed online.

All survey responses were entered into the CallWeb platform. Data were extracted, cleaned and verified for accuracy and consistency. For the final analysis, two surveys were removed from the total sample due to a large proportion of invalid responses, and 52 were removed due to the possibility of being duplicates, leaving a total of 585 surveys for analysis. This represents approximately 31% of the current short haul drayage fleet. A sample of this size yields a ± 4.1% margin of error (at the 95% confidence level), indicating that the results can be accepted with a high level of confidence. A detailed survey report is provided in Appendix G.

This project was based on similar drayage driver labour force studies that have been completed over the last decade at U.S. ports. Based on extensive previous research by project team members, the Lower Mainland drayage sector has a number of unique characteristics that set it apart from U.S. port trucking, including the regulation of rates, licensing of port trucks, and partial unionization of the industry. In spite of these differences, the results of this survey indicate that the characteristics of the workforce are almost identical, with similar outcomes in terms of driver compensation.

1.1 DEMOGRAPHICS, EMPLOYMENT STATUS, EDUCATION & EXPERIENCE

—

» The drayage workforce is overwhelmingly male, with an average age of 41 years. This is slightly lower than the average age for the Canadian trucking industry overall (44 years).

» The Lower Mainland has a high percentage of employee drivers. This is attributable to the moratorium on owner-operator permits imposed in the Port Metro Vancouver (formerly Vancouver Port Authority) Truck Licensing System (TLS) in early 2007.

» Survey responses indicate that drivers' perceptions of their employment status is generally consistent with the classification under Port Metro Vancouver's TLS based on the criterion of truck ownership. However, responses to other questions (including receipt of fuel surcharges and hiring of replacement drivers by employees) suggests that some business relationships differ from the traditional employee/employer model.

» 28% of employees and 55% of owner-operators reported that they belong to a union.

» 19% of the workforce did not complete high school; 37% completed high school; 26% reported having some college or vocational education; and 21% said they have completed a college or university degree or vocational training.

» The average years of experience for owner-operators (11.6 years) is approximately twice that of employees (6 years).

» Based on historical fleet data, the number of owner-operators in the drayage fleet has declined by almost 60% since 2005. It appears that the majority have exited the drayage sector.

1.2 COMPENSATION

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» On average owner-operators work significantly longer hours than employees (11.6 vs. 10.9 hours per day), and drivers paid by the trip work significantly longer than drivers paid by the hour (11.5 vs. 10.6 hours per day). Average hours worked for employees paid by the trip and owner-operators paid by the trip do not significantly differ.

» Survey responses indicate that on average employee drivers receive a higher annual income than owner-operators ($39,238 vs. $35,282).

» Hourly compensation for employee drivers paid by the trip is significantly lower than for employee drivers paid by the hour. 45% of employee drivers in the sample indicated they are paid by the trip. Hourly compensation for employee drivers paid by the trip is not significantly different from hourly compensation for owner-operators paid by the trip.

» Hourly income is higher than the sector average for union employees paid either by trip or by hour, and for non-union employees paid by the hour. Hourly income is lower than average for non-union employees and owner-operators paid by the trip.

» The average trip payment reported by owner-operators was $127.36. Observations are highly clustered, with 41% of drivers reporting a rate of $100. Minimum trip rates under the Ready agreement for trips to the port terminals were set at $90 in 2005, rising to $100 on August 1, 2006. Since the surveys were conducted at the port terminal entrances, all of the survey responses (with the possible exception of mail-in and web surveys) refer to trips to the port terminals. 15% of owner-operators reported a rate less than $100 for their current trip.

» Analysis of differentials in trip payments between unionized and non-unionized owner/operators indicates that patterns are similar. Trip rates for unionized owner-operators are set by collective agreements; rates for

non-unionized owner-operators are subject to the Ready rates. Statistical analysis indicates that average trip rates are not significantly different between unionized and non-unionized owner-operators, and the frequency distribution is similar.

- There appears to be no relationship between experience or seniority and compensation levels.
- The average hourly income for all drayage drivers ($15.59 per hour) falls significantly below the median hourly wage level for the BC industry ($23.00 per hour).
- 66% of union owner-operators and 48% of non-union owner-operators receive fuel surcharge revenue.
- Overall, 30% of drivers reported receiving health benefits as part of their compensation. 77% of unionized employees receive health benefits, but only 25% of non-union employees do. 28% of union owner-operators and 6% of non-union owner-operators receive health benefits.
- Overall, 20% of drivers reported receiving pension benefits as part of their compensation. 60% of unionized employees receive pension benefits, but only 20% of non-union employees do. Only 8% of union owner-operators and 6% of non-union owner-operators receive pension benefits.

1.3 EFFICIENCY AND COSTS

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- Based on the survey responses employee drivers make more revenue trips (4.3 vs. 3.9) and fewer non-revenue trips (2.1 vs. 2.6) per day than owner-operators. Statistical analysis indicates that daily revenue trips for employee drivers are not significantly higher than for owner-operators, but employee drivers make fewer non-revenue trips.
- Data on drayage efficiency in 2006 from the BC Ministry of Transportation Container Trucking Forum Container Simulation Project provides the only substantial basis for analysis of trends in drayage efficiency. The data for the 2006 study is subject to sampling bias, because the sample consisted of observations from only 3 firms who volunteered to participate in the study. Consequently the 2006 sample may not have accurately reflected parameters for the entire population, and the methodology differed from the current survey. For this reason, comparisons between the two datasets must be made with caution. However, the 2013 survey data shows total trips per day falling by 8%, revenue trips falling by 21%, and non-revenue trips increasing by 26% compared to the 2006 data.
- A cost model for Lower Mainland drayage operations (the "DTCI Model") was developed as part of the Container Trucking Forum Simulation Study in 2007. Cost estimates from the DTCI model were used in subsequent studies as inputs for policy analysis. Based on the survey results, it appears that the DTCI model overestimates tractor variable costs by approximately 30% relative to survey responses, with an average cost of $1.20 per kilometre compared to the survey average of $0.89. It is recommended that cost estimates for future policy analysis be adjusted to take into account the updated information from the survey results.

1.4 EMERGING ISSUES

Analysis of the survey results and consultations with industry representatives suggest the following issues may pose challenges to the drayage sector in the short and medium terms.

- Based upon a comparison between the 2007 study and this study—and noting that the sample sizes and methodologies were different—there appears to have been a decline in drayage efficiency. In combination with rate competition and other cost pressures, this indicates significant challenges remain in the drayage sector. This may have implications for the long-term stability of the sector.
- The only previous substantial source of data on drayage efficiency was the BC Ministry of Transportation Container Trucking Forum Container Simulation Project (2007). Given the importance of efficiency in maintaining income levels for drivers paid by the trip, it is recommended that data collection be undertaken using a standardized methodology on a more frequent basis in the future to enable tracking of system performance.
- Analysis of drivers' responses regarding their future in the industry suggests that recruitment and retention of drivers may be a major challenge.
- If driver retention and recruitment is a priority, fundamental changes will be required to make the drayage sector attractive relative to other options.
- For drivers paid by the trip, improved efficiency in Lower Mainland drayage operations or increased rates would be required to lessen the gap in driver compensation between the drayage sector and the rest of the trucking industry.
- Improved performance in terminal turn times would also improve working conditions for drivers, allowing them to spend more time doing what they like ("driving a truck") and to avoid what they don't like ("waiting").

INTRODUCTION

The *Labour Force Profile of Port Drayage Drivers in Metro Vancouver* was completed for the Asia Pacific Gateway Skills Table (APGST) by Davies Transportation Consulting Inc. (DTCI) in association with Wave Point Consulting Ltd. and R.A. Malatest and Associates Ltd. APGST undertook this project—with support from the BC Trucking Association, Port Metro Vancouver, the BC Ministry of Transportation and Infrastructure, and Transport Canada—to provide labour market information on port drayage drivers in Metro Vancouver. The goal of the research was to develop a profile of the current port trucking labour force to better understand employers' and employees' needs, to enable the industry to respond with appropriate human resource strategies and to provide insight and recommendations that can inform and guide future initiatives in the drayage sector.

This project was based on similar drayage driver labour force studies that have been completed over the last decade at U.S. ports. The U.S. surveys have been motivated by two major issues:

→ **Drayage drivers' employment status.**
Advocates suggest that the workforce is misclassified and that based on established criteria, drivers should be classified as employees rather than as independent contractors. U.S. survey results indicate that employee drivers experience higher pay and better working conditions than owner-operators. The issue has also been cast as a civil rights issue, because at many ports the workforce consists predominantly of immigrants and visible minorities.

→ **The environmental impact of port trucking.**
Studies have linked diesel particulates from port trucking to a variety of health impacts, including cancer. The disproportionate environmental impact of port trucking has been linked to low driver compensation, which requires drivers to purchase and operate older trucks to reduce costs.[1]

Based on extensive previous research by project team members, the Lower Mainland drayage sector has a number of unique characteristics that set it apart from U.S. port trucking. Many of these are the result of responses to a work stoppage by drivers that disrupted Lower Mainland port operations from June 27 to August 5, 2005. In response to the work stoppage, the federal and provincial governments appointed a Task Force to examine and make recommendations on industrial relations and potential efficiency improvements to port operations. The Task Force recommendations influenced subsequent actions by the federal and provincial governments and by the Port of Vancouver (now Port Metro Vancouver) in a number of areas, including regulation of rates, licensing of port trucks, and unionization of the industry.

1) The Big Rig: Poverty, Pollution, and the Misclassification of Truck Drivers at America's Ports, Rebecca Smith, Dr. David Bensman and Paul Alexander Marvy, p. 7.

Unique characteristics of the Lower Mainland drayage sector include:

→ **Driver compensation:** The work stoppage was resolved following negotiation of increased trip rates (the "Ready rates") for owner-operators which were effectively imposed by a federal Order in Council under Section 47 of the *Canada Transportation Act* when the parties were ultimately unable to reach a final agreement. Two additional Orders-in-Council were passed after the original two year agreement expired, each extending the minimum rates requirements by an additional 90 days. Federal regulations dealing with rates payable to owner-operators were subsequently enacted, including a requirement that rates be no less than the Ready rates paid to non-union owner operators. Rates paid to unionized owner operators were deemed to be covered by their collective agreements.

→ **Licensing of port trucks:** The 2005 Orders in Council also provided for the implementation of a licensing scheme and an exemption from the Competition Act. These provisions strengthened the Port's position in enforcing compliance with the minimum rates and other conditions of entry, including adherence to container terminal reservation system requirements and environmental and safety standards.

→ **Industrial relations:** Following the work stoppage in 2005, a significant portion of the local drayage workforce became organized for collective bargaining. In contrast, owner-operators serving U.S. ports are prohibited from collective bargaining by antitrust laws.

All of these factors have influenced the evolution of the drayage sector since 2005. In addition to developing a profile of the current port trucking labour force, the survey data gathered in the course of this project have been analyzed to explore the effects of these measures over time to guide future initiatives in the drayage sector.

SURVEY METHODOLOGY, DESIGN AND ADMINISTRATION

3.1 SURVEY METHODOLOGY & DESIGN

The project team reviewed previous surveys of port truckers at U.S. ports to identify common data elements that would facilitate comparisons between previous results and the current study. The team also undertook a review of previous Lower Mainland studies to identify unique features that may be of interest in developing future training and development, communications, and policy instruments.

For the purposes of this project, surveys from nine studies carried out at major container ports were reviewed: three from Los Angeles/Long Beach, two from Oakland, and one each from Seattle, New York/New Jersey, Jacksonville, and Houston. Survey characteristics are shown below; summaries and complete references are provided in Appendix B. Information on the survey carried out for this project is included for comparison. Note that the sample size for the Lower Mainland survey is substantially larger as a percentage of the estimated population than those in the U.S. surveys.

Figure 3.1: U.S. and Lower Mainland Surveys

SURVEY	LA/LB Monaco Grobar 2004	LA/LB Monaco 2008	LA/LB CGR Mgmt. Consultants 2007	Seattle 2007	Oakland Ebase 2007	NY/NJ Bensman 2008	Jacksonville Jaffe Rowley 2009	Houston Harrison 2006	Oakland Beacon Economics 2009	Lower Mainland 2013
SURVEY LANGUAGE	English, Spanish	English, Spanish	English	English	English, Spanish, Vietnamese	English, Spanish	English	English, Spanish	English, Spanish, Vietnamese, Punjabi	English, Punjabi
OBSERVATIONS	175	197	209	162	123	299	78	103	298	585
ESTIMATED POPULATION	15,000	15,000			1,500	7,000			1,989	1,875
ESTIMATED SAMPLE	1.2%	1.3%			8.2%	4.3%			15.0%	31.2%
SCREENING CRITERIA	Long Haul excluded		> 4 trips per week		Owner-operators only					

Demographics, Education and Experience: These questions are common to almost all of the U.S. surveys. In the U.S. context, questions on race and/or ethnicity are commonly included due to the U.S. Civil Rights Act and associated policies; these questions were not included in the survey for this project. Questions on language facility and/or preference are useful in the context of designing communications programs, and therefore have been included in this survey.

Employment Status and Labour Relations: Employment status (employee vs. owner-operator) data was collected in the majority of the U.S. studies. In the U.S. context, few drivers are unionized because the majority are owner-operators who are not eligible for collective bargaining under U.S. law. As noted above, a substantial portion of the Lower Mainland workforce became unionized following the 2005 work stoppage.

Driver Income: All of the U.S. surveys included some questions on driver income. This project represents the first large-scale effort to collect data on driver incomes in the Lower Mainland. For owner-operators, data was collected on net income and truck expenses for purposes of comparison with U.S. survey results. Sufficient detail on employment status, and conditions of work (average months, days and hours worked, percentage of work and income attributable to drayage activity, other types and sources of work) were included to assess the determinants of drivers' incomes.

Driver Expenses: Most of the U.S. surveys collected data on owner-operator expenses either implicitly (by collecting data on gross and net income) or explicitly (through questions on specific cost categories). Previous studies on the Lower Mainland have relied partially on cost data provided by the Vancouver Container Truck Association (VCTA) in 2005, particularly for maintenance and repair costs and truck purchase prices. Collecting data on specific cost categories would enable verification of the VCTA estimates for future analysis. It is recognized that cost data will also be obtained in another project currently being undertaken by APGST[2]. For this reason, and for reasons of survey length, detailed questions on drivers' costs were not included in the survey. However, a question on drivers' total annual truck expenses was included.

The project team presented the APGST project steering committee with a number of possible survey methodologies that could be used to achieve the project objectives. The committee selected the intercept method. To facilitate a broader understanding of the North American port trucking drayage sector, comparisons between the current survey results and the results of US surveys have been provided in Appendix C.

3.2 SURVEY ADMINISTRATION

Survey administration and data processing were carried out by R.A. Malatest and Associates (RAM). In consultation with Philip Davies of Davies Transportation Consulting Inc. and Darryl Anderson of Wave Point Consulting Ltd., RAM designed a survey instrument that allowed for the development of a comprehensive labour force profile of port drayage drivers. The survey consisted of 36 closed-ended questions, and collected data on employment history, compensation and expenses, driver attitudes towards employment in the industry, and driver demographics. In order to obtain accurate results and maximize driver participation, the survey was available in both English and Punjabi, and all respondents were provided with gratuities upon completing the survey (a Tim Horton's $10 gift card and entry into a prize draw for a tablet). Driver contact information (name and cellular/home phone number) was collected at the beginning of the survey in order to create a representative sample and provide the drivers with their gratuities.

The survey distribution was conducted at Metro Vancouver's four container terminals—Centerm, Vanterm, Fraser Surrey and Deltaport—over a three-week period from February 25 to March 14, 2013. A senior survey staff member and two surveyors, one fluent in Punjabi, distributed hard copies of the survey packages in either English or Punjabi to all port drayage drivers at or near the entrance gates of the four terminals. The survey packages included a cover letter for port drivers, an information sheet with frequently asked questions (FAQs), a business reply envelope, and the survey, with detailed instructions on completing the survey. Drivers had the option of completing the surveys on-site (if time permitted), online, over the phone, or by mailing or faxing the completed surveys to RAM.

2) Asia Pacific Gateway Skills Table, Identifying Successful Business Practices of Profitable Drayage Owner Operators in Metro Vancouver Project, 2013.

Throughout the survey administration, RAM provided APGST with weekly progress reports on the number of completions and completions by mode. The target number of survey completions was 550 with a ± 5.0% margin of error anticipated (at the 95% confidence level).

A total of 1,750 surveys were distributed over the three week period. A total of 639 surveys were completed, which exceeded the target by 16.2%. The survey completion rate was 36.5%. Although the survey was available in two languages, most drivers requested English survey packages and most of the completed surveys were in English. Most (86.7%) of the surveys were completed on-site at the container terminals during the survey administration period, with a few (11.4%) mailed-in and a smaller number (1.9%) completed online.

All surveys were entered into the CallWeb platform. Data were extracted, cleaned and verified for accuracy and consistency. Cases were flagged for follow-up if the survey was incomplete or if a response was unclear or contradictory. At the conclusion of the survey, RAM reviewed all the data and exported it into SPSS (IBM, SPSS Statistics, Version 19.0) for analysis and the preparation of statistical tables. For the final analysis, two surveys were removed from the total sample due to a large portion of invalid responses, and 52 surveys were removed due to the possibility of being duplicates, leaving a total of 585 surveys for analysis. This represents approximately 31% of the current short-haul drayage fleet. A detailed survey report is provided in Appendix G.

Definition of "Driver"
The term “driver” used in this report refers to truck drivers who were interviewed for this survey. This would include owner-operator, employee and replacement drivers.

WORKFORCE CHARACTERISTICS

4.1 DEMOGRAPHICS

Demographic characteristics of the Lower Mainland drayage workforce are shown below.

Figure 4.1: Demographics

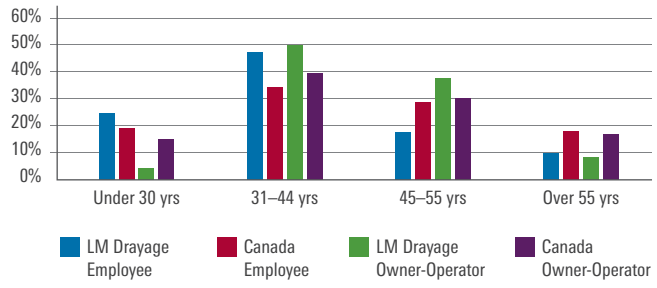
40.6yrs
Average Age

98%
Gender (% Male)

The average age of the Lower Mainland drayage workforce is slightly lower than the average for the Canadian trucking industry as a whole (44 years in 2006).[3]

More recent data on the Canadian trucking labour force are available from a recently completed report by the Canadian Trucking Human Resources Council.[4] The age distribution of the Lower Mainland drayage sector is compared to the Canadian industry average from the CTHRC report below.

Figure 4.2: Labour Force Distribution, Lower Mainland Drayage Sector vs. Canadian Trucking Industry



3) Understanding the Truck Driver Supply and Demand Gap and Its Implications for the Canadian Economy Conference Board of Canada, Vijay Gill and Alicia MacDonald, February 2013, p. 23.
4) Beyond the Wheel Survey Technical Report, Canadian Trucking Human Resources Council, 2012, p. 18.

The most striking difference is the very low percentage of drayage owner-operators relative to the industry average in the under 30 cohort. This can be attributed to the moratorium on new permits for Independent Operators in the Truck Licensing System (TLS). The percentage of drayage drivers between 31 and 44 years of age is higher than the national average. The drayage sector also has a lower percentage of drivers who are over 55 years old.

4.2 EDUCATION

Educational achievement among Lower Mainland drayage drivers is shown below.

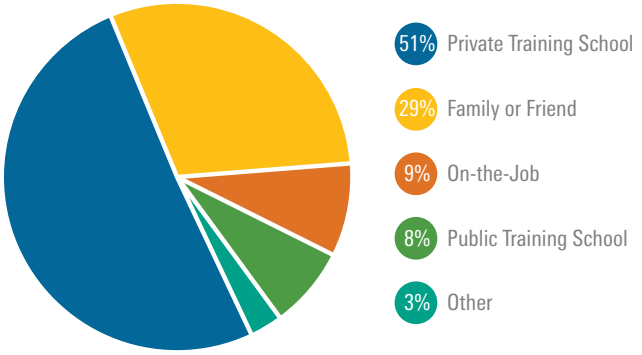
Figure 4.3: Education

Education	Total	Percent
< High School	40	7%
Some High School	58	10%
Completed High School	212	37%
Some Vocational	21	4%
Completed Vocational	19	3%
Some College / University	127	22%
College / University Degree	102	18%
Grand Total	**579**	**100%**

4.3 DRIVER TRAINING

The distribution of responses regarding the training received by drivers prior to acquiring a Class 1 licence is shown below.

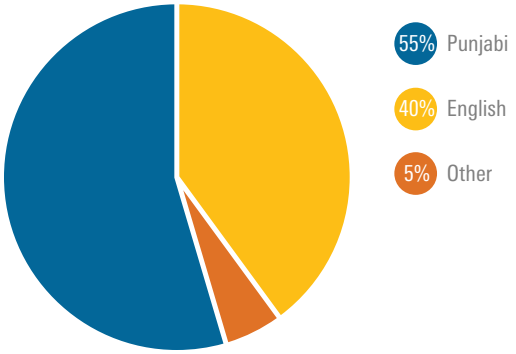
Figure 4.4: Driver Training—Source of Driver Training



4.4 CITIZENSHIP & PRIMARY LANGUAGE

The majority of respondents (81.5%) are Canadian citizens, and 18.2% are landed immigrants. The primary language of the majority of respondents is Punjabi (54.7%), followed by English (39.9%), with other languages accounting for 5.4%.

Figure 4.5: Primary Language



Only 20% of respondents chose to complete the survey in Punjabi.

4.5 EMPLOYMENT STATUS

For the purposes of this survey, drivers have been classified as employees, owner-operators or replacement drivers (i.e., drivers subcontracted by an owner-operator to drive their truck). Survey results are shown below.

Figure 4.6: Employment Status

54%	41%	6%
Employee	Owner-Operator	Replacement Driver

The criterion used to distinguish between employees and owner-operators ("Independent Operators") in the TLS is truck ownership. In order to ensure that drivers' perception of their employment status matches their status under the TLS, the survey included a question on truck ownership. Responses are summarized below.

Figure 4.7: Truck Ownership

Employment Status	Own	Lease	Neither Own Nor Lease
Employee	2%	6%	92%
Owner-Operator	96%	2%	2%
Replacement Driver	6%	6%	88%

The results indicate that respondents' perceptions of their employment status are generally consistent with their classification under the TLS.

In 2005, it was estimated that 85% of Lower Mainland drayage drivers were owner-operators.[5] The increased

5) Final Report of the Task Force on the Transportation and Industrial Relations Issues Related to the Movement of Containers at British Columbia Lower Mainland Ports, Federal Provincial Task Force, October 26, 2005 p. 21.

share of employees in the workforce is attributable to the provisions of various versions of the TLS. The first version of the TLS was developed in 1999; the current version (TLS 4) was implemented on July 7, 2008. TLS-4 introduced a dual system that includes separate licenses for Full Service Operators (FSO's) and permits for Independent Operators (IO's) serving the port.

The major feature of the licensing system that has influenced the balance between employee drivers and owner-operators is a moratorium imposed on January 15, 2007 on the issuance of new TLS licences or permits to independent owner operators who were not operating within the TLS jurisdiction between December 1, 2006 and January 15, 2007. Owner-operators who subsequently became employees surrendered their existing permits, and since the moratorium was implemented owner-operators are required to make at least one call at the port terminals every three months in order to retain an existing permit.

4.6 UNION MEMBERSHIP

Survey responses regarding union membership are classified by employment status below. The "Total" category represents the average for all respondents.

Figure 4.8: Union Membership

Employment Status	Union	Non-union
Employee	28%	72%
Owner-Operator	55%	45%
Replacement Driver	22%	78%
Total	**39%**	**61%**

Based on the survey results, 39% of the Lower Mainland drayage workforce is unionized.

4.7 EXPERIENCE

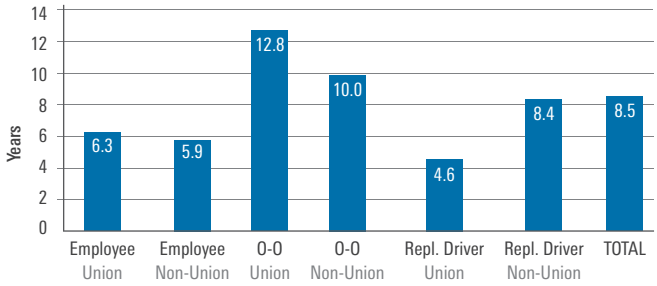
Based on the survey responses, owner-operators' average years of experience is approximately twice that of employees.

Figure 4.9: Experience by Employment Status

Employment Status	Average Years	< a Year (%)
Employee	6.0	14%
Owner-Operator	11.6	3%
Replacement Driver	7.3	22%
Total	**8.5**	**10%**

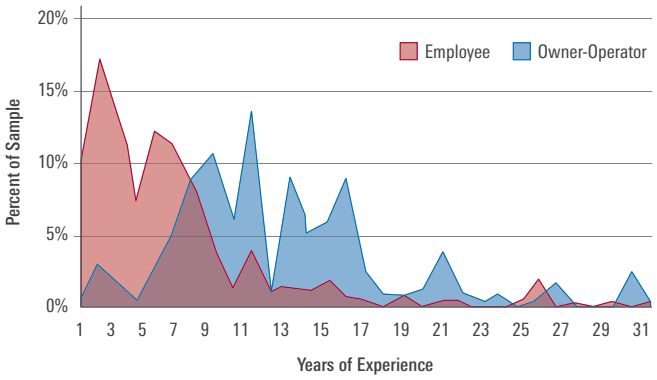
Unionized owner-operators have the longest average experience, at 12.8 years.

Figure 4.10: Experience by Employment Status and Union Membership



A closer look at the data reveals that there is very little overlap in experience between the employee and owner-operator workforce. A frequency analysis of the data is depicted below. The data suggests that most of the employee drivers entered the industry following the 2007 imposition of the moratorium on owner-operator permits.

Figure 4.11: Frequency Analysis, Years of Experience by Employment Status



Based on historical licensing data and estimates of the share of owner-operators, the number of owner-operators in the local drayage fleet has declined by almost 60% since 2005. The table below shows estimates of the change in driver population by employment status, estimated by applying survey results to the total population.

Figure 4.12: Estimated Change in Workforce by Employment Status 2005–2013

Workforce	2005*	2013	% Change
Local Drayage Fleet	2,408	1,875	-22%
% Owner-Operator	85%	46%	–
Owner-Operator	2,047	863	-58%
% Employees	15%	54%	–
Employees	361	1,013	180%
Employees with Experience ≥ 6 yrs.	–	213	–

** Source: Ports Trucking Task Force Report*

6) Local fleet size in 2005 is taken from Review of the Vancouver Container Trucking Regulations—Report to the Minister, Transport Canada 2009 p. 48; the share of owner-operators in 2005 was estimated at 85% by the Ports Trucking Task Force. Local fleet size in 2013

The lack of overlap suggests that the decline in the number of owner-operators is a result of drivers leaving the drayage sector, rather than a change in status from owner-operator to employee. The survey results indicate that only 21% of employee drivers entered the industry prior to 2007. Expanding to the total population, this implies that 213 of the estimated 1013 employees in the current local drayage fleet entered the drayage sector prior to 2007. This is only 18% of the decline in the number of owner-operators since 2005. Consequently the maximum number of owner-operators who could have converted to employee status since 2005 is 213; however this would require that all of the employee drivers in the workforce in 2005 left the drayage sector.

Based on the survey responses, the average years of experience of union drivers is higher than that of non-union drivers.

Figure 4.13: Experience by Union Status

Union Status	Average Years	< a Year (%)
Union	10.1	3%
Non-Union	7.1	15%

Statistical analysis was undertaken to verify that the mean of years of experience of union drivers is greater than for non-union drivers. The results are shown below. They indicate that average years of experience (for drivers with at least one year of experience) for union members are significantly greater than for non-union drivers.

Figure 4.14: Statistical Analysis Experience by Union Status

Hypothesis	Union Experience > Non-Union Experience
Outcome	Accept
Significance Level	0.05
Confidence Level	90%
Range of Difference	1.76–3.64

4.8 YEARS WITH COMPANY

Data on the number of years with their current company reported by respondents are summarized below.

Figure 4.15: Years with Company

Employment Status	Average Years	Less than a year (%)
Employee	4.0	24%
Owner-Operator	7.1	10%
Replacement Driver	4.9	28%
Total	**5.5**	**18%**

4.9 DRAYAGE AS MAIN OCCUPATION AND OTHER WORK

Respondents overwhelmingly indicated that drayage is their main occupation. An average of 16% of respondents indicated that they did other work over the last year. Of these, 58% indicated they did other types of trucking.

Figure 4.16: Drayage and Other Work

Employment Status	Main Occupation	Other Work
Employee	94%	18%
Owner-Operator	94%	13%
Replacement Driver	94%	19%
Total	**94%**	**16%**

4.10 SURVEY FINDINGS: WORKFORCE CHARACTERISTICS

Major findings include:

Demographics

» The drayage workforce is overwhelmingly male, with an average age of 41. This is slightly lower than the average age for the Canadian trucking industry as a whole.

Employment Status

» Based on the survey results, 54% of drivers are employees, 41% are owner-operators, and 6% are Replacement Drivers.

» Survey responses indicate that drivers' perception of their employment status is generally consistent with the classification under Port Metro Vancouver's Truck Licensing System based on the criterion of truck ownership.

» 28% of employees and 55% of owner-operators reported that they belong to a union.

Education

» 19% of the workforce did not complete high school; 37% of the workforce completed high school; 26% reported some college or vocational education and 21% completed a college or university degree or vocational training.

Experience

» The average years of experience for owner-operators (11.6 years) are approximately twice that of employees (6 years).

» Based on historical data, the number of owner-operators in the drayage fleet has declined by almost 60% since 2005. It appears that the majority have exited the drayage sector.

COMPENSATION

The survey included a number of questions related to drivers' working conditions (months, days per week and hours per day of work) and compensation (basis of payment, annual net drayage income, annual income from other sources, fuel surcharge, payment for waiting time, health benefits, and pension benefits).

5.1 DATABASE REFINEMENT

In order to adjust annual income figures to account for differences in time worked, the calculation of hourly income required the project team to further refine the survey database. Average hourly income was calculated for each survey subject based on responses to questions on annual drayage income, and months, days and hours worked. Average hourly income could not be calculated for surveys in which any of these fields showed no response. These surveys were excluded from the sample. Two additional surveys reporting payment by kilometre were also removed on the assumption that these drivers are probably engaged primarily in long-haul trucking.

The resulting dataset still showed extreme variability due to a small number of data "outliers" (i.e. extremely high or low values reported or calculated for annual or hourly income). Approximately 90 observations were identified and submitted to Malatest to be examined for errors in data entry, etc. Of these, 16 were corrected. The data still exhibited high variability (large standard deviation relative to the mean) which hindered its suitability for statistical analysis. The remaining outliers were examined, and the 9 top and 7 bottom observations were removed from the data based on the consultants' judgement that they represented data errors. The removed observations showed reported or imputed annual incomes above $185,000 per year for the top and below $4,000 per year for the bottom. The final database used for income analysis retained 429 of the original 585 observations.

Due to the required refinement described above, the results presented in this chapter may differ from those of the raw data presented in Appendix G.

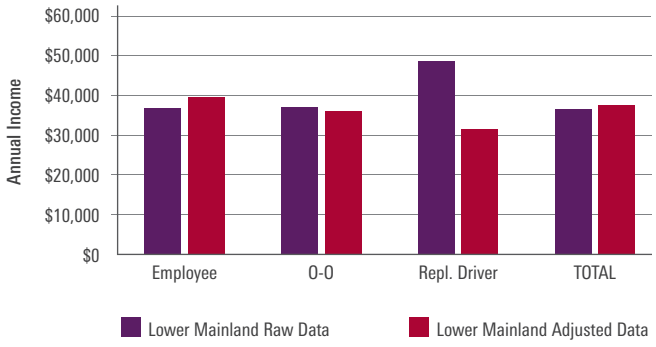
5.2 ANNUAL DRAYAGE INCOME

The averages for reported annual drayage income by employment status for the Lower Mainland are shown below. Note that the adjustments to the database resulted in significant changes to average annual income figures. This is particularly noticeable for replacement drivers, due to the relatively small sample size.

Figure 5.1: Annual Drayage Income

Employment Status	Lower Mainland Raw Data	Lower Mainland Adjusted Data
Employee	$35,903	$39,238
Owner-Operator	$35,821	$35,282
Replacement Driver	$48,446	$32,024
Total	**$36,315**	**$37,016**

Figure 5.2: Annual Drayage Income



5.3 AVERAGE HOURS WORKED PER DAY

Average hours worked per day by employment status are shown below.

Figure 5.3: Average Hours Worked per Day by Employment Status

Employment Status	Payment Basis	Hours per Day
Employee	All	10.9
Owner-Operator	All	11.6
Replacement Driver	All	11.5
Total	**All**	**11.3**
Employee	Hourly	10.7
Employee	Trip	11.2
Owner-Operator	Hourly	10.1
Owner-Operator	Trip	11.7

Statistical analysis was undertaken to verify the differences in daily hours worked for employees and owner-operators paid by the trip and by the hour. The results are shown on the following page. They indicate that owner-operators work significantly longer hours than employees, and that drivers paid by the trip work significantly longer than drivers paid by the hour.[7] The results also indicate that average hours worked for employees paid by the trip and owner-operators paid by the trip do not significantly differ.

7) Statistical tests were conducted through a two series t test using Minitab statistical software.

Figure 5.4: Statistical Analysis Hours Worked per Day

Hypothesis			Outcome	Significance	Confidence Level	Range of Difference
Trip	>	Hourly	Accept	0.05	90%	.58–1.23
Owner-Operator	>	Employee	Accept	0.05	90%	.35–.96
Employee Trip	>	Employee Hourly	Accept	0.05	90%	.20–.97
Owner-Operator Trip	>	Owner-Operator Hourly	Accept	0.05	90%	.57–2.50
Owner-Operator Trip	≠	Employee Trip	Reject	0.05	95%	0.03–0.88

5.4 HOURLY DRAYAGE INCOME BY EMPLOYMENT STATUS

Data on hourly drayage income calculated from survey responses are analyzed below. The figures were calculated based on reported annual income divided by annual hours worked (months worked X 4.33 weeks/month X days worked per week X hours worked per day).

Average hourly drayage income is shown below.

Figure 5.5: Estimated Hourly Drayage Income by Employment Status in the Lower Mainland

$17.28
Employee

$13.86
Owner-Operator

$14.05
Replacement Driver

$15.51
TOTAL

5.5 HOURLY DRAYAGE INCOME BY EMPLOYMENT STATUS AND BASIS OF PAYMENT

Respondents were asked to identify the basis of payment for their services on the current trip: hourly, by the trip, or by the kilometre. Responses by employment status are summarized below.

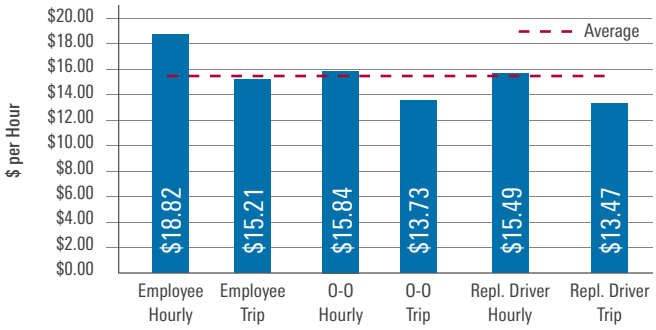
Figure 5.6: Basis of Payment

Employment Status	Hourly	Trip	Kilometre
Employee	54%	45%	1%
Owner-Operator	10%	89%	1%
Replacement Driver	39%	61%	0%
Total	**35%**	**64%**	**1%**

The small percentage of drivers (five responses in the total sample) reporting payment on the basis of kilometres is consistent with the very small percentage of gate moves typically made by long-haul carriers at the container terminals.

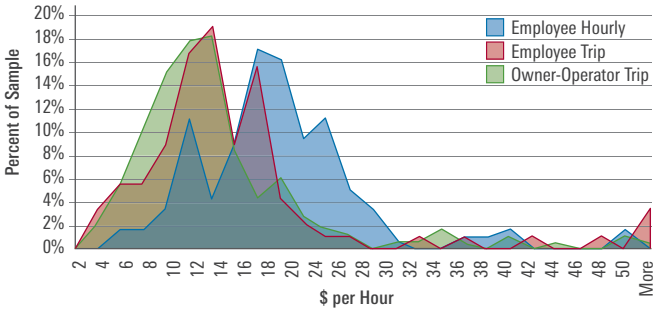
Analysis of hourly compensation by payment basis paints a different picture of the distribution of hourly income. Employees paid on an hourly basis make substantially more than employees paid on a trip basis, and more than owner-operators.

Figure 5.7: Hourly Income by Employment Status and Payment Basis



The distribution of hourly income among these groups is more clearly depicted in a frequency analysis:

Figure 5.8: Frequency Analysis—Hourly Income by Employment Status and Payment Basis



Employee hourly compensation shows two separate distributions—one for employees paid by the hour and one for employees paid by the trip.

Statistical analysis was undertaken to verify the differences between mean hourly compensation for employees paid hourly, employees paid by the trip, and owner-operators paid by the trip. The results are shown below. They indicate that mean hourly compensation for employees paid by the hour is significantly higher than that paid to employees paid by the trip, and higher than that paid to owner-operators paid by the trip.[8] The results also indicate that mean hourly compensation for employees paid by the trip and owner-operators paid by the trip is not significantly different.

Statistical analysis was also undertaken to assess the impact of years of experience and years with the current company (seniority) on compensation. There appears to be no significant correlation between years of experience or seniority and compensation levels.

8) Statistical tests were conducted through a two series t test using Minitab statistical software.

Figure 5.9: Statistical Analysis of Hourly Compensation by Employment Status and Basis of Payment

Hypothesis			Outcome	Significance Level	Confidence Level	Range of Difference
Employee Hourly	>	Employee Trip	Accept	0.05	90%	$0.77–$6.08
Employee Hourly	>	Owner-Operator Trip	Accept	0.01	98%	$2.74–$8.35
Employee Trip	≠	Employee Hourly	Reject	0.01	99%	- $4.94–$4.94

5.6 HOURLY DRAYAGE INCOME BY EMPLOYMENT STATUS, BASIS OF PAYMENT & UNION MEMBERSHIP

As noted in the Introduction, the Lower Mainland drayage sector is distinctive in that almost 40% of the workforce is unionized. The distribution of observations in the adjusted sample by employment status, basis of payment and union membership is shown in Figure 5.10. Estimated average hourly compensation for these categories is shown in Figure 5.11.

Hourly income is higher than average for union employees paid either by trip or by hour, and for non-union employees paid by the hour. Hourly income is lower than average for non-union employees and owner-operators paid by the trip. For these data categories, sample sizes are too small for meaningful statistical analysis.

Industry average hourly wages for 2010–2011 are shown for purposes of comparison.[9] Note that the average hourly income for the highest paid group of drayage drivers (union employees paid by hour at $19.59 per hour) is less than the median wage for the industry in B.C. ($23.00 per hour). The average hourly income for all drayage drivers is $15.57.

5.7 OWNER-OPERATORS AVERAGE TRIP PAYMENTS

A frequency analysis of trip payments reported by owner-operators is shown below. The average trip payment was $127.36. Observations are highly clustered, with 41% of drivers reporting a rate of $100. Minimum trip rates, under the Ready agreement, for trips to the port terminals were set at $90, rising to $100 on August 1, 2006.[10] 15% of owner-operators reported a rate less than $100 for their current trip.

9) Working in Canada, HRDSC. Data source is Statistics Canada Labour Force Survey 2010-11.
10) Ready Agreement, Schedules I and II. See Appendix E.

Figure 5.10: Distribution by Employment Status, Payment Basis & Union Membership

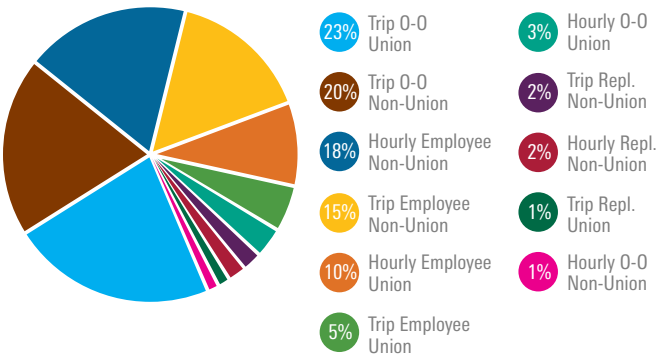


Figure 5.11: Average Hourly Drayage Income by Employment Status, Payment & Union Membership

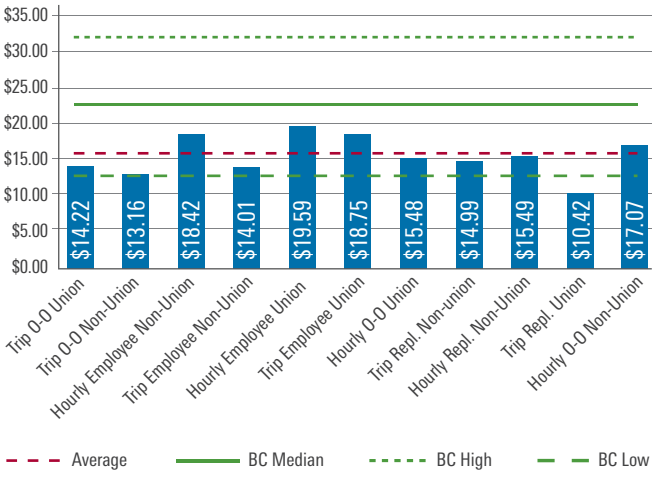
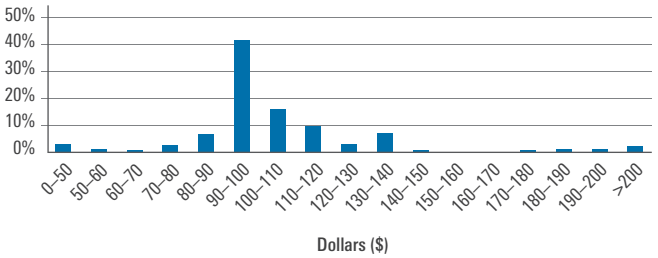


Figure 5.12: Frequency Analysis—Owner-operator Trip Payments



5.8 FUEL SURCHARGE AND WAITING TIME

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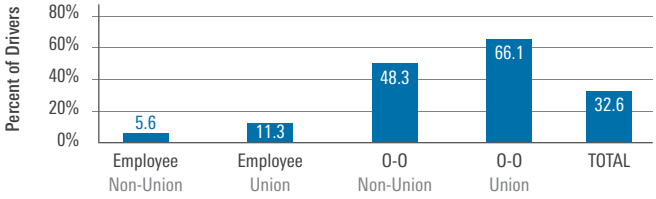
Survey data on the percentage of drivers receiving a fuel surcharge are depicted below.

Figure 5.13: Percent of Drivers Receiving Fuel Surcharge



The percentage of owner-operators receiving a fuel surcharge appears relatively low, considering that payment of fuel surcharges is included in most union contracts and required under the minimum rate regulations for eligible owner-operators. Payment of fuel surcharges showed no significant correlation with income levels for owner-operators. Similarly, the survey responses regarding payment for waiting time showed no significant correlation with income levels. The responses indicating fuel surcharge revenue for employee drivers suggests that their business relationship may differ from the traditional employee/employer relationship.

5.9 HEALTH BENEFITS

—

Survey responses regarding receipt of health benefits are depicted below.

Figure 5.14: Percent of Drivers Receiving Health Benefits

25% Employee Non-Union

77% Employee Union

6% 0-0 Non-Union

28% 0-0 Union

30% TOTAL

Overall, 30% of drivers reported receiving health benefits as part of their compensation. 77% of unionized employees receive health benefits, but only 25% of non-union employees do. 28% of union owner-operators and 6% of non-union owner-operators receive health benefits.

5.10 PENSION BENEFITS

Survey responses regarding pension benefits are depicted below.

Figure 5.15: Percent of Drivers Receiving Pension Benefits

20% Employee Non-Union

60% Employee Union

8% O-O Non-Union

6% O-O Union

20% TOTAL

Overall, 20% of drivers reported receiving pension benefits as part of their compensation. While 60% of unionized employees receive pension benefits, only 20% of non-union employees do so. Only 8% of union owner-operators and 6% of non-union owner-operators receive pension benefits.

5.11 BUSINESS AND FINANCIAL MANAGEMENT

Responses regarding the level of effort required for business and financial management are summarized below.

Figure 5.16: Business and Financial Management, Average Hours per Week

7.8 hr/w Employee

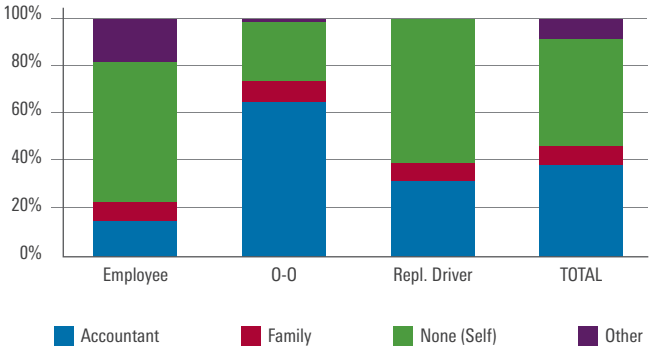
11.5 hr/w Owner-Operator

13.9 hr/w Replacement Driver

9.8 hr/w TOTAL

Respondents were also asked whether or not they receive assistance in managing the finances of their drayage operations. The distribution of responses is shown below.

Figure 5.17: Assistance with Financial Management



5.12 SURVEY FINDINGS: COMPENSATION

Major findings include:

- On average owner-operators work significantly longer hours than employees (11.6 vs. 10.9 hours per day), and drivers paid by the trip work significantly longer than drivers paid by the hour (11.5 vs. 10.6 hours per day). Average hours worked for employees paid by the trip and owner-operators paid by the trip do not significantly differ.
- Hourly compensation for employee drivers paid by the trip is significantly lower than for employee drivers paid by the hour. 45% of employee drivers in the sample indicated they are paid by the trip. Hourly compensation for drivers paid by the trip is not significantly different from hourly compensation for owner-operators paid by the trip.
- There appears to be no relationship between experience or seniority and compensation levels.
- Hourly income is higher than average for union employees paid by either trip or by hour, and for non-union employees paid by the hour. Hourly income is lower than average for non-union employees and owner-operators paid by the trip.
- Average hourly income for all drayage drivers ($15.57 per hour) falls below the median hourly wage level for the British Columbia industry ($23.00 per hour).
- 66% of union owner-operators and 48% of non-union owner-operators receive fuel surcharge revenue.
- Overall, 30% of drivers reported receiving health benefits as part of their compensation. 77% of unionized employees receive health benefits, but only 25% of non-union employees do. 28% of union owner-operators and 6% of non-union owner-operators receive health benefits.
- Overall, 20% of drivers reported receiving pension benefits as part of their compensation. While 60% of unionized employees receive pension benefits, only 20% of non-union employees do so. Only 8% of union owner-operators and 6% of non-union owner-operators receive pension benefits.

EFFICIENCY AND COSTS

6.1 REVENUE AND NON-REVENUE TRIPS PER DAY

The figures for revenue and non-revenue trips per day reported by the survey respondents are shown below. The number of revenue trips is a key indicator of efficiency because it determines the income that can be generated by drivers paid by the trip. The number of non-revenue trips is an important indicator because owner-operators (and trucking companies paying employees by the hour) incur additional costs but no revenue.

Figure 6.1: Revenue and Non-revenue Trips

Employment Status	Revenue	Non-Revenue	Total Trips
Employee	4.3	2.1	6.4
Owner-Operator	3.9	2.6	6.5
Replacement Driver	5.2	2.6	7.8
Total	**4.2**	**2.4**	**6.6**

Based on the survey results, on average employee drivers make approximately 10% more revenue trips per day than owner-operators, and 19% fewer non-revenue trips. Statistical analysis was undertaken to verify the differences between revenue and nonrevenue trips for employees and owner-operators. The results are shown below. There is insufficient evidence to conclude that average daily revenue trips are significantly higher for employees than for owner-operators at the .05 level of significance. The number of non-revenue trips is significantly lower for employee drivers than for owner-operators.[11]

Historical Lower Mainland data on revenue and non-revenue trips are limited. The only substantial data on drayage efficiency was gathered for the BC Ministry of Transportation **Container Trucking Forum Container Simulation Project**[12] in 2006. It included data from 595 daily trip sheets from three companies in the fall of 2006. The methodology differed from that used in the current survey. The data for the 2006 study is subject to sampling bias, because the sample consisted of observations from only three firms who volunteered to participate in the study.[13] Consequently the 2006 sample may not have accurately reflected parameters for the entire population. However, data were verified by trip sheets documents. In contrast, data from the current survey consists of self-reported statistics based on a sample of convenience which was dependent on the number of port drivers at each terminal on the survey date and their willingness to participate in the survey. For this reason, comparisons between the two datasets must be made with caution.

11) Statistical tests were conducted through a two series t test using Minitab statistical software.
12) *BC Ministry Of Transportation Container Trucking Forum Container Simulation Project Final Report,* IBI Group, December 17, 2007 p. 9.
13) Details of the data collection methodology are provided in the report summary in section 12.1 of Appendix D.

Figure 6.2: Statistical Analysis Revenue and Non-Revenue Trips (Trips per Day)

Hypothesis			Outcome	Significance	Confidence Level	Range of Difference
Employee Revenue Trips	>	0-0 Revenue Trips	Reject	0.05	90%	*(.03)–.83
Employee Non-Revenue Trips	>	0-0 Non-Revenue Trips	Accept	0.05	90%	(.81)–(.29)

**) Numbers in brackets are negative*

Figure 6.3: Historical Data Revenue and Non-Revenue Trips (Drayage Driver Average Daily One Way Trips, 2005–2013)

	Container Simulation Study (2006)	Survey Results (2013)
Revenue Trips	5.3	4.2
Non-Revenue Trips	1.9	2.4
Total Trips	**7.2**	**6.6**
Sample Size	595 trip sheets	585 drivers

The 2013 survey data shows total trips falling by 8%, revenue trips falling by 21%, and non-revenue trips increasing by 26% since 2006.

6.2 COSTS

Survey results for owner-operator truck costs are shown below.

Figure 6.4: Truck Expenses

	Average Truck Expense	Average Km Driven	Average Cost / Km
Employee	$3,323	48,185	$0.07
Owner-Operator	$51,428	57,599	$0.89
Replacement Driver	$19,446	44,900	$0.43
Total	**$38,374**	**54,746**	**$0.70**

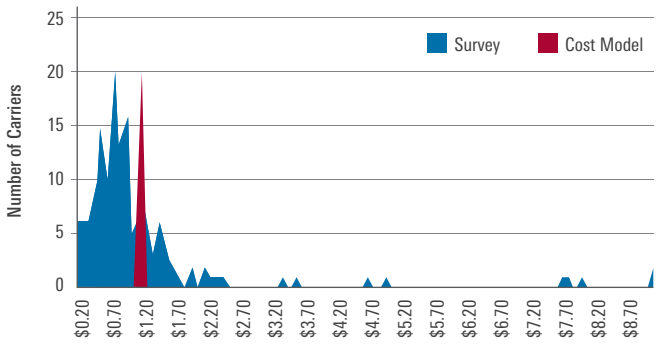
These cost figures are significantly lower than estimates published in previous studies. A cost model for Lower Mainland drayage operations was developed as part of the *Container Trucking Forum Simulation Study* in 2007 (the "DTCI Model").[14] The model was subsequently updated for analysis of drayage sector performance in 2009[15] and 2010.[16] The model was based on the methodology used in *Operating Costs of Trucks in Canada 2005 (OCTC)*.[17] The OTCT approach is based on assumptions regarding operating parameters for the relevant type of service, and estimating overall operating costs based on typical consumption factors (such as mileage per year, fuel consumption per mile, load and unload time, etc.) as well as current unit costs (fuel prices, hourly wages, equipment prices, etc.).

A comparison of updated cost estimates from the DTCI model (see Appendix F for details) compared to the survey responses suggests the model overestimates tractor variable costs by approximately 36%. It is assumed for the purposes of this analysis that drivers' response regarding truck expenses do not include fixed costs (labour burden (including employee benefits), depreciation, administration, financing and overhead). The cost model estimates these costs amount to approximately $43,000 in addition to direct tractor and labour costs. It is probable that these costs are only a fraction of this total for owner-operators; in fact this figure exceeds average owner-operator net income by more than 20%.

14) *Container Trucking Forum Simulation Study*, 2007, Truck Costing Report (unpublished).
15) Results were reported in Report to the Minister, 2009, pp 59-64.
16) *Transport Canada Vancouver Port Container Trucking Annual Overview Final Report*, Davies Transportation Consulting Inc., July 31, 2010 (unpublished).
17) *Operating Costs of Trucks In Canada 2005,* Transport Canada File Number: T8080-05-0242 Logistics Solutions Builders Inc. 2005. Subsequent versions were published as *Operating Costs of Trucks and Surface Intermodal Transportation in Canada*. Ray Barton Associates Ltd. in association with Logistics Solution Builders Inc. and The Research and Traffic Group.

A comparison of costs per kilometre based on survey responses and the model results is shown below.

Figure 6.5: Owner-Operator Tractor Variable Costs per Kilometre: Survey Results vs. DTCI Cost Model



The results of this analysis suggest that previous estimates have substantially underestimated the cost differential between owner-operator and employee driver drayage operations.

The cost estimates from the DTCI model were developed as inputs for policy analysis, including:

- Estimation of benefits from improvements to drayage efficiency in the *Container Trucking Forum Simulation Study* (2007).
- To assess the level of financial stress for owner-operators in the *Report to the Minister* (2009) and *Vancouver Port Container Trucking Annual Overview* (2010).

It is recommended that cost estimates for future policy analysis be adjusted to take into account the updated information from the survey results.

6.3 REPLACEMENT DRIVERS

In total, only 6.6% of survey respondents reported that they employed a replacement driver in the past year. The distribution of responses by employment status is shown below. Note that the responses include almost 5% of employee drivers who indicated they employed a replacement driver; this seems inconsistent with their employment status. 8% of owner-operators and almost 11% of replacement drivers employed a replacement driver. The sample size was too small to allow analysis of costs for replacement drivers.

Figure 6.6: Percent of Drivers Employing a Replacement Driver

4.9%
Employee

8.0%
Owner-Operator

10.7%
Replacement Driver

6.6%
TOTAL

6.4 SURVEY FINDINGS: EFFICIENCY & COSTS

Major findings related to efficiency and costs are summarized below.

Efficiency

- The survey responses suggest that employee drivers make more revenue trips and fewer non-revenue trips per day than owner-operators. Statistical analysis indicates that daily revenue trips for employee drivers are not significantly higher than for owner-operators, but employee drivers make fewer non-revenue trips.
- Data on drayage efficiency in 2006 from the BC Ministry of Transportation *Container Trucking Forum Container Simulation Project* provides the only substantial basis for analysis of trends in drayage efficiency. The data for the 2006 study is subject to sampling bias, because the sample consisted of observations from only three firms who volunteered to participate in the study. Also the methodology differed from the current survey. Consequently the 2006 sample may not have accurately reflected parameters for the entire population. For this reason, comparisons between the two datasets must be made with caution. However, the 2013 survey data shows total trips falling by 8%, revenue trips falling by 21%, and non-revenue trips increasing by 26% compared to the 2006 data.

Costs

- The DTCI model used in previous Lower Mainland drayage studies[18] for estimating owner-operator drayage costs overestimates tractor variable costs by approximately 30% relative to survey responses.
- The results of this analysis suggest that previous estimates have substantially underestimated the cost differential between owner-operator and employee driver drayage operations.
  It is recommended that cost estimates for future policy analysis be adjusted to take into account the updated information from the survey results.

18) *Ports Trucking Task Force* 2005; *Container Trucking Forum Simulation Study* 2007; Report to the Minister 2009.

DRIVER INSIGHTS

7.1 FUTURE PLANS

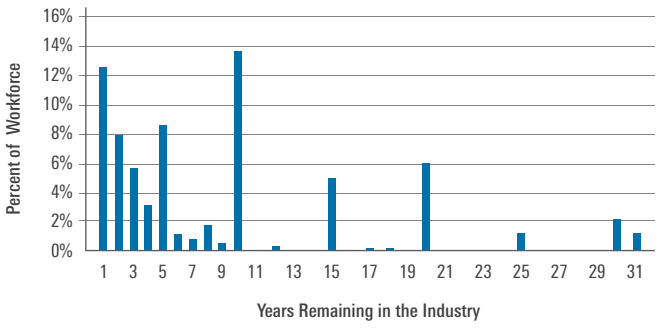
Drivers were asked how many years they intend to remain in the drayage industry. Average responses by employment status are shown below.

Figure 7.1: Future Plans—Years Remaining in Industry

8.7YRS Employee	**9.9YRS** Owner-Operator
9.3YRS Replacement Driver	**9.2YRS** TOTAL

Drivers indicated that on average, they anticipate remaining in the drayage sector for approximately nine years. However, the pattern of responses indicates that a substantial portion of the workforce is planning to leave sooner. As an example, the graph below depicts the distribution of employee survey responses regarding the anticipated duration of their employment in the drayage sector (based on the sample of all drivers).

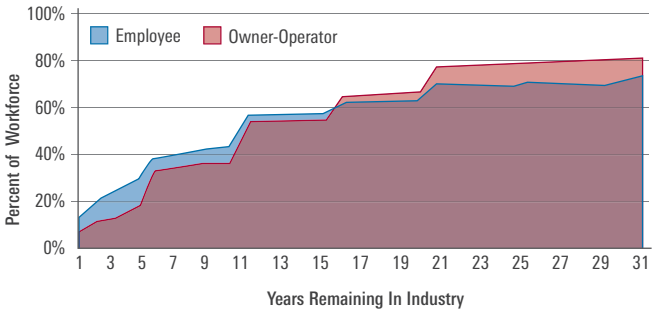
Figure 7.2: Years Remaining in the Industry — Share of Employee Workforce (n=297)



The pattern of responses differs between the short term (one to four years) and the long term (five years and longer). Cumulatively, 29.4% of employees indicate they plan to leave the industry over the next four years. Responses for the longer term are clustered at five year intervals (5, 10, 15 and 20 years), indicating a longer-term attachment to the industry.

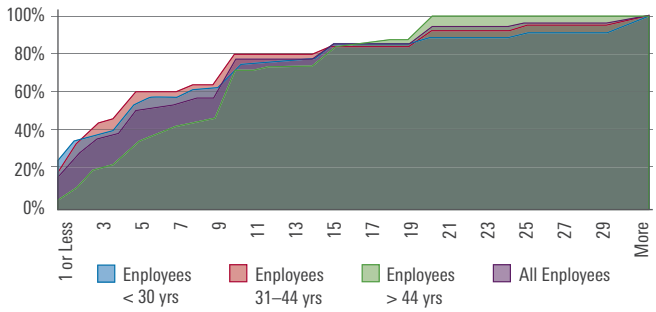
The cumulative distributions of planned departures for employees and owner-operators are shown below. The percentages represent the share of the total sample size for each category.

Figure 7.3: Years Remaining in Industry—Employees and Owner-Operators



The distribution of planned departures appears to be similar for all age cohorts within the employee workforce. The graph below shows the cumulative distribution for all employees and for three age groups (30 and under, 31 to 44, and above 44). The data indicate that a larger percentage of younger drivers (up to 44 years old) plan to leave the industry in the short term. (Note that the sample size (n=230) represents the number of drivers who responded to this question rather than the entire employee sample.) This suggests that retention of the work force may be a significant challenge.

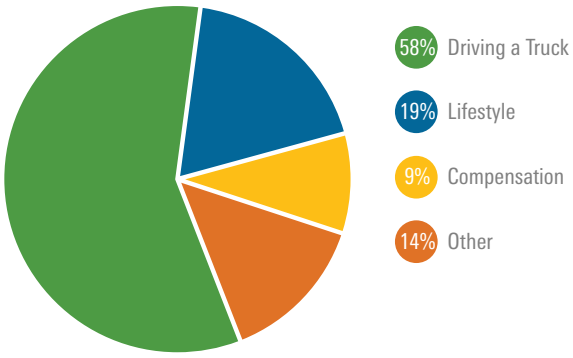
Figure 7.4: Years Remaining in Industry: Drayage Employees by Age Group



7.2 DRIVER ATTITUDES

Drivers were asked to identify the aspects of their jobs that they like most as well as those they like least. The distribution of responses regarding the factors drivers like most is shown below.

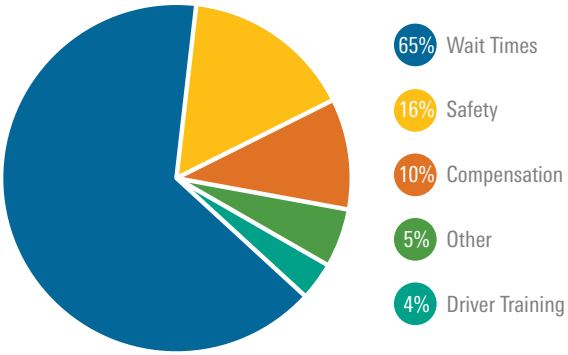
Figure 7.5: Driver Responses, Like Most About the Job



Rather than identifying positive aspects of the job, approximately 8% of respondents (primarily in the "Other" category) expressed negative comments ("nothing" or "don't like the job").

The distribution of responses regarding the job features that drivers like least is shown below.

Figure 7.6: Driver Responses, Like Least About the Job

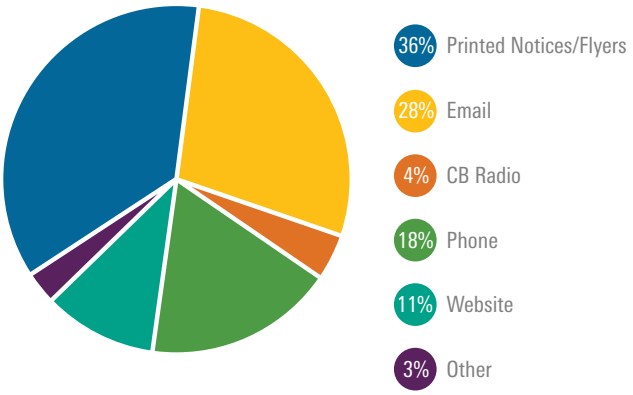


Among the "Other" responses, there were several complaints about treatment by longshore workers and by other drivers.

7.3 COMMUNICATIONS

Drivers were asked how they would like to be kept informed about Port activities and other issues that affect their work. The distribution of responses is summarized below.

Figure 7.7: Driver Communications Preferences



EMERGING ISSUES

8.1 EFFICIENCY AND COSTS

The 2013 survey data shows total trips falling by 8%, revenue trips falling by 21%, and non-revenue trips increasing by 26% compared to data gathered for the Container Trucking Forum Simulation Study in 2006.

The survey results indicate that a large portion of the driver workforce is still vulnerable to reductions in revenue due to rate competition and to increases in costs due to unit cost increases (fuel, etc.) and reduced efficiency in the container logistics system. Based on the survey results, 89% of owner-operators and 45% of employees are paid on a trip basis. Only 58% of owner-operators report that they are receiving fuel surcharge revenue.

Based on the survey results and on consultations with the industry, it appears that significant challenges remain in the drayage sector. This may have implications for the long-term stability of the drayage sector.

The only previous substantial source of data on drayage efficiency was the BC Ministry of Transportation *Container Trucking Forum Container Simulation Project* [19] in 2006. Given the importance of efficiency in maintaining income levels for drivers paid by the trip, it is recommended that data collection be undertaken using a standardized methodology on a more frequent basis in the future to enable tracking of system performance.

Figure 8.1: Industry Conditions 2005 and 2013

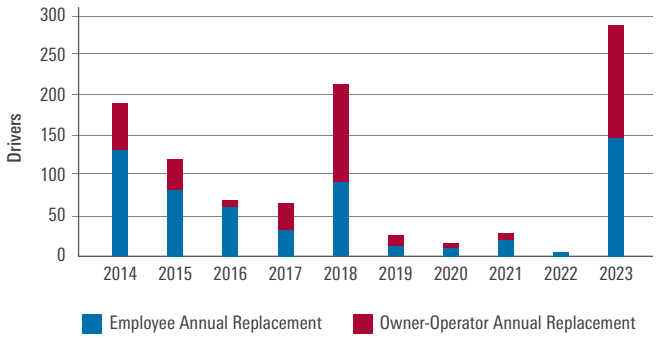
	2005	2013
Revenue Pressures	Intense Rate Competition	Intense Rate Competition
Cost Pressures	High Fuel Prices	High Fuel Prices
		Truck Replacement Costs *PMV Environmental Regualtions*
		Financial Penalties *Reservation System*
		Port Licensing Fee
Efficiency Factors	Reduced Revenue Trips *Long Turn Times*	Reduced Revenue Trips *Long Turn Times*
	Construction Delays *Centerm*	Construction Delays *PMV South Shore*
	Increased Non-Revenue Trips *Off Dock Storage*	Longer Trip Times *Closure of Clark Street entrance*

19) *BC Ministry Of Transportation Container Trucking Forum Container Simulation Project Final Report,* IBI Group, December 17, 2007 p. 9.

8.2 DRIVER RETENTION AND RECRUITMENT

The survey results suggest that driver retention and recruitment may become a significant issue for the drayage sector. A significant number of both employees and owner-operators indicated an intention to exit the industry in the short term. The data suggest that in the short term a larger percentage of younger drivers than older ones plan to leave the industry. Expanding the survey results to the full population (1,875 drivers) shows the number of drivers who will need to be recruited over the next 10 years if drivers' intentions are fulfilled.

Figure 8.2: Annual Driver Replacement Requirements



Recruitment and retention may be difficult due to low compensation and difficult working conditions (long hours). In addition, driver turnover will require significant efforts in training for new drivers on terminal procedures, safety protocols, and other sector-specific requirements.

If driver retention and recruitment is a priority, fundamental changes will be required to make the drayage sector attractive relative to other options. For drivers paid by the trip, improved efficiency in Lower Mainland drayage operations or increased rates would be required to lessen the gap in driver compensation between the drayage sector and the rest of the trucking industry. Improved performance in terminal turn times would also improve working conditions for drivers, allowing them to spend more time doing what they like ("driving a truck") and to avoid what they don't like ("waiting").

APPENDICES

APPENDIX A SUBGROUP PROFILES

A summary of key indicators across major subgroups in the survey population is shown below. The data consists of key variables extracted from the database developed for calculation of hourly compensation estimates (see section 5.1 for details). The total sample for the data shown below is 403 observations.

Figure 9.1: Summary Profiles of Major Subgroups

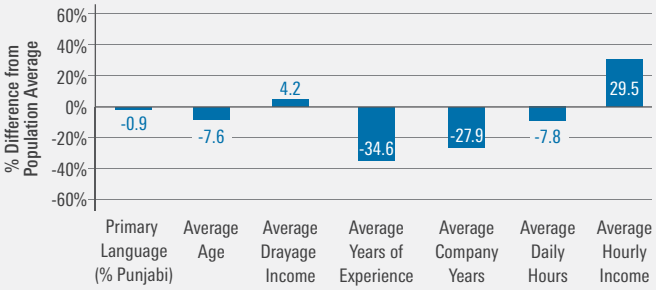
Employment Status	Union Status	Payment basis	% of Selected Sample	Primary Language (% Punjabi)	Average Age	Average Drayage Income	Average Years Exp	Average Company Years	Average Daily Hours	Average Hourly Income
Employee	Non-union	hour	19%	51%	38	$38,878	6	4	10.4	$18.42
Employee	Non-union	trip	16%	55%	37	$31,537	5	3	11.5	$14.01
Employee	Union	hour	10%	10%	46	$51,375	8	5	10.9	$19.59
Employee	Union	trip	5%	68%	38	$41,183	5	3	11.3	$18.75
Owner-Operator	Non-union	hour	1%	50%	44	$30,500	15	10	9.4	$17.07
Owner-Operator	Non-union	trip	21%	57%	41	$33,868	10	5	12.0	$13.16
Owner-Operator	Union	hour	3%	21%	45	$31,071	15	7	10.0	$15.48
Owner-Operator	Union	trip	24%	61%	45	$37,395	13	9	11.4	$14.22
Grand Total	–	–	**100%**	**51%**	**41**	**$37,313**	**9**	**6**	**11.2**	**$15.62**

Highlights for selected major subgroups are presented below. The graphs show the relationship of numerical responses relative to the sample averages. Note that due to small sample sizes, union and non-union owner-operators paid by hour have not identified and highlighted as a major subgroup.

9.1 NON-UNION EMPLOYEES PAID BY HOUR

Non-union employee drivers—paid by the hour—account for 19% of the sample observations. Based on the survey results these drivers work on average 10.4 hours a day and earn $38,878 per year. These drivers are on average 38 years old and have 6 years drayage experience, typically spending the last 4 years with their current company.

Figure 9.2: Non-Union Employees Paid by Hour



Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- The percentage of non-union employees paid by the hour reporting Punjabi as their primary language (51%) is similar to the sample average (51%).
- Annual drayage income is slightly above average; however these drivers work approximately 8% fewer hours per day.
- Their average hourly income is $18.42 which is almost 18% higher than the sample average ($15.62).
- These drivers have fewer years of experience (3 years less) and years with their current company (2 years less) than the sample averages.

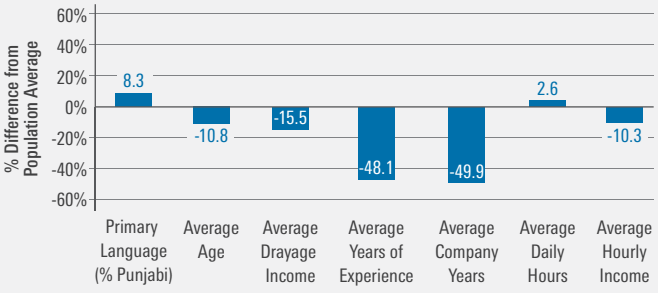
9.2 NON-UNION EMPLOYEES PAID BY TRIP

Non-union employee drivers—paid by the trip—account for 16% of the sample observations. Based on the survey results these drivers work on average 11.5 hours a day and earn $31,537 per year. These drivers are on average 37 years old and have 5 years drayage experience, typically spending the last 3 years with their current company.

Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- The percentage of non-union employees paid by the trip reporting Punjabi as their primary language (55%) is similar to the workforce (51%).
- Annual drayage income for these drivers is almost 16% lower than the sample average.
- These drivers work approximately 3% more hours per day then the sample average and have an average hourly income of $14.01, which is 10% lower than the sample average ($15.62).
- These drivers have significantly fewer years of experience (4 years less) and years with their current company (3 years less) than the sample averages.

Figure 9.3: Non-Union Employee Paid by Trip



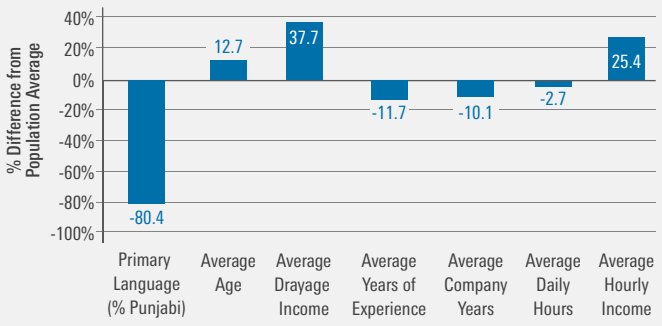
9.3 UNION EMPLOYEES PAID BY HOUR

Unionized employee drivers—paid by the hour—account for 10% of the sample observations. Based on the survey results these drivers work on average 10.9 hours a day and earn $51,375 per year. These drivers are on average 46 years old and have 8 years drayage experience, typically spending the last 5 years with their current company. Given that their years of experience and years with their current company are similar to the sample averages, their higher compensation does not appear to be directly linked to their experience or seniority in the industry.

Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- Only 10% of unionized employees paid by hour reported Punjabi as their primary language, which is significantly less than the sample averages (51%).
- Their annual drayage income ($51,375) is almost 40% higher than the sample average ($37,313).
- These drivers work approximately 3% fewer hours per day and have an average hourly income of $19.59 which is the highest among all of the subgroups profiled.
- Average annual drayage income is almost 40% higher than the sample average.

Figure 9.4: Union Employee Paid by Hour



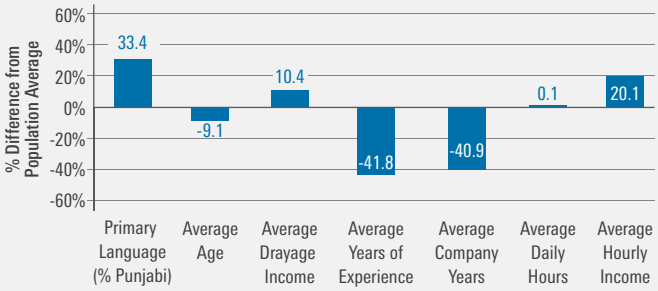
9.4 UNION EMPLOYEES PAID BY TRIP

Unionized employee drivers—paid by the trip—account for 5% of the sample observations. Based on the survey results these drivers work on average 11.3 hours a day and earn $41,183 per year. These drivers are on average 38 years old and have 5 years drayage experience, typically spending the last 3 years with their current company.

Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- Almost 70% of unionized employees paid by trip reported Punjabi as their primary language.
- Annual drayage income ($41,183) is 10% higher than the sample average ($37,313). Although not greater than their counterparts being paid by the hour, this subgroup has the second highest average annual income among the subgroups profiled.
- These drivers have an average hourly income of $18.75 which is 20% higher than the sample average ($15.62).
- These drivers have significantly fewer years of experience (4 years less) and years with their current company (3 years less) than the sample averages.

Figure 9.5: Union Employee Paid by Trip



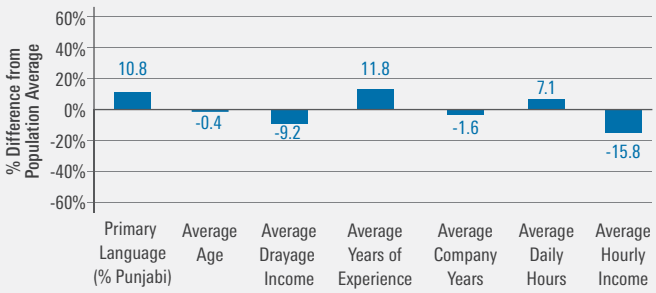
9.5 NON-UNION OWNER-OPERATORS PAID BY TRIP

Non-union owner-operators—paid by the trip—account for 21% of the sample observations. Based on the survey results these drivers work on average 12.0 hours a day and earn $33,868 per year. The combination of long working hours and lower pay results in the lowest hourly compensation of all the subgroups in the industry. These drivers are on average 41 years old and have 10 years drayage experience, typically spending the last 5 years with their current company.

Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- Approximately 57% of non-union owner-operators paid by trip reported Punjabi as their primary language. This is slightly more than the sample average of 51%.
- Annual drayage income ($33,868) is 9% lower than the sample average ($37,313).
- These drivers work 7% more hours per day and have an average hourly income of $13.16, the lowest among the subgroups profiled and almost 16% lower than the sample average ($15.62).
- These drivers have slightly more years of experience and fewer years with their current company than the sample averages.

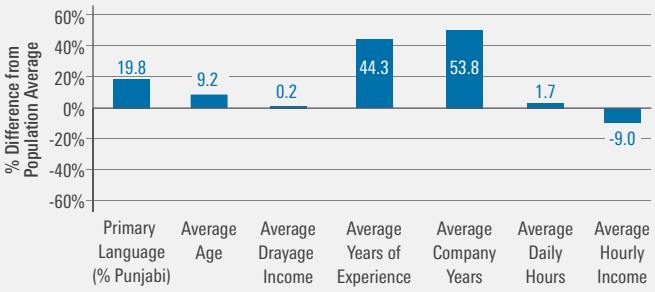
Figure 9.6: Non-Union Owner-Operator Paid by Trip



9.6 UNION OWNER-OPERATOR PAID BY TRIP

Union owner-operators—paid by the trip—constitute the largest among the subgroups profiled, accounting for 24% of observations from the selected sample. Based on the survey results these drivers work on average 11.4 hours a day and earn $37,395 per year. These drivers are on average 45 years old and have 13 years drayage experience, typically spending the last 9 years with their current company.

Figure 9.7: Union Owner-Operator Paid by Trip



Compared to the sample averages for drayage truck drivers in Metro Vancouver:

- Approximately 61% of drivers in this subgroup reported Punjabi as their primary language, almost 20% more than sample average.
- These drivers work 2% more hours per day and have an average hourly income of $14.22, 9% lower than the sample average.
- These drivers have the highest years of experience (13 years) and years with their current company (9 years) among the subgroups profiled.

APPENDIX B PREVIOUS SURVEYS: U.S. PORTS

10.1 PREVIOUS SURVEYS: U.S. PORTS

Over the last decade, a number of surveys of port truckers have been carried out at U.S. ports. These have been primarily motivated by truck drivers' employment status and the environmental impact of trucking. These issues are further explained below.

→ **Truck drivers' employment status**

Owner-operators account for the largest share of the drayage workforce, accounting for an estimated 82.2% of workers surveyed in the course of 10 surveys at various ports from 2004 to 2009.[20] In general owner-operators are responsible for all trucking costs, and are paid on the basis of trip rates. Under U.S. labour law, these workers are classified as independent contractors and are ineligible for workers' compensation, unemployment insurance, and collective bargaining. The results of these surveys indicate that port truckers work long hours, have relatively low income levels and rarely have access to health insurance or retirement plans. Advocates suggest that the workforce is misclassified and that based on established criteria drivers should be classified as employees rather than as independent contractors. The issue has also been cast as a civil rights one, because at many ports the workforce predominantly consists of immigrants and visible minorities.

→ **The environmental impact of port trucking**

Studies have linked diesel particulates from port trucking to a variety of health impacts, including cancer. The Mobile Air Toxic Emissions II (MATES II) study carried out by the Southern California Air Quality Management District[21] estimated that diesel particulate emissions accounted for 70% of the cancer risk to the population due to mobile source emissions in the Los Angeles basin. Port trucking accounted for a significant portion of regional diesel particulate matter (PM) emissions. The disproportionate environmental impact of port trucking was linked to low driver compensation, which forces drivers to purchase and operate older trucks to reduce costs. Low owner-operator income has also been linked to safety risks due to the inadequate maintenance of port trucks.

Surveys from nine studies carried out at major container ports are reviewed here: three from Los Angeles / Long Beach, two from Oakland, and one each from Seattle, New York/New Jersey, Jacksonville, and Houston. A summary of survey characteristics is shown below.

20) *The Big Rig: Poverty, Pollution, and the Misclassification of Truck Drivers at America's Ports A Survey and Research Report*, Rebecca Smith, Dr. David Bensman, and Paul Alexander Marvy p. 16.
21) *Mobile Air Toxic Emissions Study II*, Southern California Air Quality Management District, March 2000.

Figure 10.1: U.S. Port Surveys

Survey	LA/LB Monaco Grobar 2004	LA/LB Monaco 2008	LA/LB CGR Mgmt. Consultants 2007	Seattle 2007	Oakland EBASE 2007	NY/NJ Bensman 2008	Jacksonville Jaffe Rowley 2009	Houston Harrison 2006	Oakland Beacon Economics 2009
Survey Language	English, Spanish	English, Spanish	English	English	English, Spanish, Vietnamese	English, Spanish	English	English, Spanish	English, Spanish, Vietnamese, Punjabi
Observations	175	197	209	162	123	299	78	103	298
Estimated Population	15,000	15,000	–	–	1,500	7,000	–	–	1,989
Estimated Sample	1.2%	1.3%	–	–	8.2%	4.3%	–	–	15.0%
Screening Criteria	Long Haul excluded	–	> 4 trips per week	–	O-O only	–	–	–	–

10.2 SURVEY QUESTIONS

In keeping with the issues motivating the research, U.S. surveys focused on two major areas of interest: workforce demographics (age, marital status, ethnicity, experience, etc.) and income and expenses.

Figure 10.2: Survey Questions U.S. Port Surveys—Labour Force, Income and Expenses

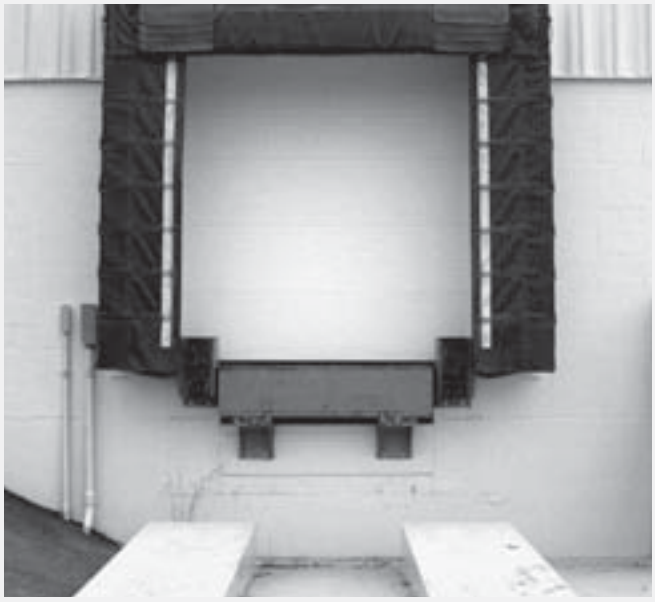
DEMOGRAPHICS, EDUCATION AND EXPERIENCE			
Driver Survey Questions	**% of Studies**	**Driver Survey Questions**	**% of Studies**
Age	78%	Truck driving school	11%
Gender	67%	Household income	11%
Employment status (employee/OO)	67%	Preferred language	11%
Marital status	56%	Method of communication	11%
Dependent children	56%	Unionized	11%
Ethnicity	56%	Months worked last year	11%
Years in trucking	56%	Work type (full time, seasonal, erratic)	11%
US born	44%	Income from other work last year	11%
Education	44%	Other trucking (type - TL, LTL, etc.)	11%
Years with current company	44%	Annual vacation time	11%
Area of residence	33%	Future career plans	11%
Work for multiple companies?	33%	Preference Employee vs OO	11%
Year round full time?	33%	TWIC application	11%
Other work last year?	33%		
US Citizen	22%		
Prior occupation?	22%		
Willingness to join a union	22%		
Work-related illness	22%		

INCOME AND EXPENSES			
Driver Survey Questions	**% of Studies**	**Driver Survey Questions**	**% of Studies**
Hours of work per day	100%	Own more than one truck?	22%
Truck ownership (own/lease/neither)	67%	Fuel surcharge (yes/no)	22%
Annual income net of expenses last year	67%	Operation type (local, long haul, etc.)	22%
Health insurance	67%	Parking location	22%
Annual income (Gross earnings)	56%	Annual / monthly major repairs costs	22%
Average days worked/week	56%	Tire costs	22%
Time waiting in last trip	56%	Licences, permits, etc. costs	22%
Annual miles driven	56%	Percent of income from container hauling	11%
Truck age	56%	Weekly gross earnings	11%
Company size (Number of drivers)	44%	Standby pay (i.e. waiting) (yes/no)	11%
Pension plan	44%	Dispatch (by day or by task)	11%
Average trips per day	44%	Deadlines (Yes/no)	11%
Chassis roadworthiness	44%	Deadlines – Penalties	11%
Weekly / monthly fuel expenses	44%	Deadlines – Incentives	11%
Annual / monthly maintenance costs	44%	Sleep in truck (frequency)	11%
Monthly truck payments	44%	Employ other driver?	11%
Compensation method (trip, hour, etc)	33%	Truck mileage	11%
Last pay check $	33%	Interest rate	11%
Last pay period (number of days)	33%	Loan term	11%
Monthly insurance costs	33%		
Truck years owned	33%		
Truck purchase price	33%		
Truck finance method	33%		

In addition, a smaller number of surveys included questions regarding operational indicators, typically based on the driver's last trip.

Figure 10.3: Survey Questions, U.S. Port Surveys —Operational Indicators

OPERATIONAL INDICATORS	
Driver Survey Questions	**% of Studies**
Duration of last trip (hours)	33%
Origin of last trip	33%
Destination of last trip	33%
Terminal queuing time	22%
Average length of haul	11%
Start time	11%
Distance of last trip	11%
Status of next trip (empty/loaded)	11%
Bobtail distance	11%
Revenue for last trip	11%
Moving violations in last year	11%
Traffic bottlenecks	11%



10.3 DEMOGRAPHICS, EDUCATION AND EXPERIENCE

Key indicators related to labour force demographics and education are summarized below.

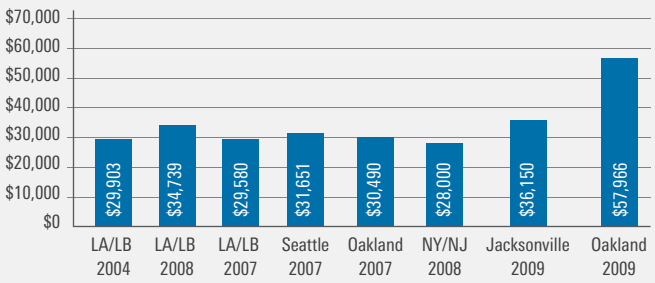
Figure 10.4: U.S. Survey Responses—Demographics, Education and Experience

Demographics, Education and Experience	Average of responses
Age	40.8
Gender (% Male)	99%
Marital status (% married)	82%
Dependent children	2.4
Education % High School	37%
Education < High school	22%
Education > High school	42%
Employment status (% Owner-Operator)	73%
Years in trucking	9.4

10.4 INCOME AND HOURS OF WORK

Almost all of the studies collected data on income and hours of work. Average income net of expenses for owner-operators from the survey results is shown below.

Figure 10.5: U.S. Surveys—Annual Income Net of Expenses



With the exception of the 2009 study by Beacon Economics for the Port of Oakland in 2009, the results from all surveys are relatively consistent. The Beacon study actually reported two estimates of driver income. The "preferred" estimate of $57,966 is 85% higher than the average from the other surveys. However Beacon provided alternative estimates of $33,353 (based on driver responses) and $40,024 (based on driver responses and revised cost estimates). The results of the 2007 survey at Oakland by the East Bay Alliance for a Sustainable Economy indicated an average annual net income for owner-operators of $30,490.

For purposes of comparison, the average income reported by the Bureau of Labour Statistics for Truck Drivers (heavy and tractor-trailer) in the Los Angeles-Long Beach-Santa Ana, CA Metropolitan Area in 2008 was $40,650.[22]

Survey results on average daily hours of work were consistent among all of the studies, with an average of 10.9 hours per day; the lowest was 10.2 hours per day in Houston, and the highest was 11.6 hours per day in the 2008 LA/Long Beach survey.

Based on these hours of work, average hourly wages ranged from $10.00 to $13.21 per hour (excluding the 2009 Oakland study). The 2009 Oakland study estimated hourly wages at $20.80. A number of studies also gathered data on employee drivers' gross incomes; on average (excluding the 2009 Oakland study), employee earnings were 7% higher than owner-operator earnings, although results varied among the surveys. BLS estimated the average hourly rate for the Los Angeles-Long Beach-Santa Ana, CA Metropolitan Area in 2008 at $19.54 per hour based on 2,080 hours per year (40 hours per week).

In the U.S., health care benefits are an important element of overall worker compensation. From the surveys that gathered data on health insurance benefits, on average only 33% of drivers had health coverage and only 8% had a pension plan.

10.5 OPERATIONAL AND COST DATA

Data coverage of operational and cost indicators varied substantially among the US surveys. A summary of data for some of the more common questions is shown below.

Figure 10.6: U.S. Surveys—Operational & Cost Data

Operational and Cost Data	Average of Responses
Truck Age (Years)	11.5
Annual miles driven	56,304
Truck purchase price	$22,836

These survey results highlight the factors that underlie concerns over the environmental performance of the industry. Port truck owner-operators typically purchase used highway tractors that have been retired from long-haul service. Emissions from these trucks are much higher than those from newer vehicles:

» Drayage trucks tend to be older vehicles with little or no emission controls. These vehicles tend to congregate near ports and rail yards and emit large amounts of smog forming oxides of nitrogen (NOx), and toxic soot (Particulate Matter / PM). Nearby communities are more heavily impacted by these emissions which contribute to many adverse health effects, including asthma, cancer, and premature deaths.[23] «

22) Bureau of Labour Statistics May 2008 Average Wages Occupational Code 53-3032 Truck drivers, heavy and tractor-trailer May 2008.

23) *Overview of the Statewide Drayage Truck Regulation*, California Environmental Protection Agency Air Resources Board Revised, Nov. 16, 2012 *www.arb.ca.gov/msprog/onroad/porttruck/regfactsheet.pdf*

More stringent emissions regulations for heavy trucks were implemented for the 2007 model year. The Port of Long Beach estimates that emissions due to port trucking have been reduced by 90% by enforcement of the requirement for trucks to meet 2007 emissions standards under their Clean Air Action Program.[24] Ports outside of California have adopted more gradual programs to phase out older trucks from drayage fleets.

10.6 REFERENCES

A list of studies involving drayage operations in other North American cities is shown below.

Ports of LA/Long Beach. Kristen Monaco et al. A Study of Drayage at the Ports of Los Angeles and Long Beach (2004); Incentivizing Truck Retrofitting in Port Drayage: A Study of Drivers at the Ports of Los Angeles and Long Beach (2008).

Ports of LA/Long Beach. CGR Management. A Survey of Drayage Drivers Serving the San Pedro Bay Ports 2007.

Port of Seattle. Port Jobs Big rig, short haul: A study of port truckers in Seattle (2007).

Port of Oakland. East Bay Alliance for a Sustainable Economy. Taking the Low Road: How Independent Contracting at the Port of Oakland Endangers Public Health, Drivers & Economic Growth (2007).

Beacon Economics. Comprehensive Truck Management Program: Economic Impact Analysis (2009).

Port of New York/New Jersey. Bensman et al. Report on Port Truckers' Survey at the New Jersey Ports (2009).

Port of Houston. Harrison et al. Characteristics of Drayage Operations at the Port of Houston (2008).

Port of Jacksonville. Jaffee & Rowley. Report on Port Truckers Survey at Jacksonville Port Authority (2009).

24) *Port Reduces Truck Pollution by 90%*, Port of Long Beach *www.polb.com/environment/cleantrucks/default.asp*

APPENDIX C COMPARISONS TO OTHER NORTH AMERICAN PORTS

11.1 DEMOGRAPHICS

Based on the survey, the demographic characteristics of the Lower Mainland drayage workforce are similar to those of drivers at U.S. ports.

Figure 11.1: U.S. and Lower Mainland Demographics

Characteristic	Lower Mainland	U.S. Ports
Average Age	40.6	40.8
Gender (% Male)	98%	99%

11.2 EDUCATION

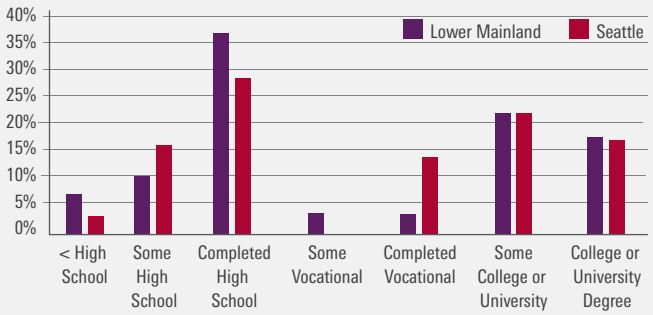
Educational achievement among Lower Mainland drayage drivers is similar to that reported in U.S. surveys.

Figure 11.2: U.S. and Lower Mainland Education

Characteristic	Lower Mainland	U.S. Ports
Education % High School	37%	37%
Education < High school	17%	22%
Education > High school	46%	42%

Among the U.S. surveys, the one conducted by the Port of Seattle used similar classifications for educational achievement. A more detailed comparison of educational achievement relative to drayage drivers serving the Ports of Seattle and Tacoma is shown below.

Figure 11.3: Educational Achievement, Lower Mainland vs. Seattle



11.3 EMPLOYMENT STATUS

For purposes of this survey, drivers have been classified as employees, owner-operators or replacement drivers (i.e. drivers subcontracted by an owner-operator to drive their truck). These categories are similar to those used in U.S. surveys. Lower Mainland and U.S. survey results[25] are shown below.

Figure 11.4: U.S. and Lower Mainland Employment Status

Employment Status	Lower Mainland	U.S. Ports
Employee	54%	18%
Owner-Operator	41%	70%
Replacement Driver	6%	12%

25) U.S. figures are averages from U.S. surveys reported in *The Big Rig: Poverty, Pollution, and the Misclassification of Truck Drivers at America's Ports*, Rebecca Smith, Dr. David Bensman and Paul Alexander Marvy, p. 14.

The Lower Mainland figures differ from those for U.S. ports substantially in that the largest percentage consists of employee drivers. This is attributable to the provisions of various versions of Port Metro Vancouver's Truck Licensing System (TLS). The first version of the TLS was developed in 1999; the current version (TLS 4) was implemented on July 7, 2008. TLS-4 introduced a dual system that includes separate licenses for Full Service Operators (FSO's) and permits for Independent Operators (IO's) serving the port.

The major feature of the licensing system that has influenced the balance between employee drivers and owner-operators is a moratorium imposed on January 15, 2007 on the issuance of new TLS licences or permits to independent owner operators who were not operating within the TLS jurisdiction between December 1, 2006 and January 15, 2007. Owner-operators who subsequently became employees surrendered their existing permits, and since the moratorium was implemented owner-operators are required make at least one call at the port terminals every three months in order to retain an existing permit. Before these measures were implemented, the balance between employees and owner-operators was similar to that at U.S. ports: in 2005, it was estimated that 85% of Lower Mainland drayage drivers were owner-operators.[26]

26) *Final Report of the Task Force on the Transportation and Industrial Relations Issues Related to the Movement of Containers at British Columbia Lower Mainland Ports*, Federal Provincial Task Force, October 26, 2005 p. 21.

11.4 ANNUAL DRAYAGE INCOME

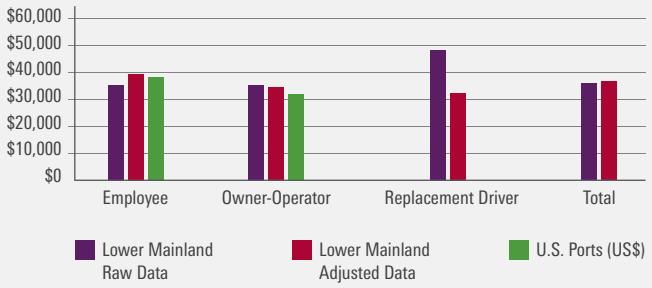
The averages for reported annual drayage income by employment status for the Lower Mainland are shown below.[27] Note that the adjustments to the database resulted in significant changes to average annual income figures. This is particularly noticeable for replacement drivers, due to the relatively small sample size.

Figure 11.5: U.S. and Lower Mainland Annual Drayage Income—Table

Employment Status	Lower Mainland Raw Data	Lower Mainland Adjusted Data	U.S. Ports (US$)
Employee	$35,903	$39,238	$38,000
Owner-Operator	$35,821	$35,282	$33,081
Replacement Driver	$48,446	$32,024	–
Average	**$36,315**	**$37,016**	–

The figures for the adjusted data are consistent with U.S. results, which suggest that employee drivers receive higher compensation than owner-operators. Assuming that the value of the U.S. and Canadian dollar is at par, the adjusted data show that driver income for the Lower Mainland is approximately 3% higher for employees and 7% higher for owner-operators than the U.S. survey results.

Figure 11.6: U.S. and Lower Mainland Annual Drayage Income—Graph



27) US figures are taken from *The Big Rig: Poverty, Pollution, and the Misclassification of Truck Drivers at America's Ports,* p. 14. Figures are not adjusted for inflation; drayage rates are not typically subject to annual increases.

11.5 HOURLY DRAYAGE INCOME BY EMPLOYMENT STATUS

Data on hourly drayage income calculated from survey responses are analyzed below. The figures were calculated based on reported annual income divided by annual hours worked (months worked X 4.33 weeks/month X days worked per week X hours worked per day).

Average hours worked per day by employment status are shown below.

Figure 11.7: U.S. and Lower Mainland Average Hours Worked per Day by Employment Status

Employment Status	Lower Mainland	U.S. Ports
Employee	10.9	–
Owner-Operator	11.6	–
Replacement Driver	11.5	–
Total	**11.3**	**11.7**

Average hourly drayage income is shown below.

Figure 11.8: U.S. and Lower Mainland Estimated Hourly Drayage Income by Employment Status

Employment Status	Lower Mainland	U.S. Ports
Employee	$17.28	$14.71
Owner-Operator	$13.86	$11.91
Replacement Driver	$14.05	–
Total	**$15.51**	–

11.6 HOURLY DRAYAGE INCOME BY EMPLOYMENT STATUS AND BASIS OF PAYMENT

Respondents were asked to identify the basis of payment for their services on the current trip: hourly, by the trip, or by the kilometre. Responses by employment status are summarized below.

Figure 11.9: Basis of Payment

Employment Status	Hourly	Trip	Kilometre
Employee	54%	45%	1%
Owner-Operator	10%	89%	1%
Replacement Driver	39%	61%	0%
Total	**35%**	**64%**	**1%**

The small percentage of drivers (five responses in the total sample) reporting payment on the basis of kilometres is consistent with the very small percentage of gate moves typically made by long haul carriers at the container terminals.

Only two of the U.S. surveys gathered data on the basis of payment. Results of a 2007 survey in Seattle indicated that 3% of drivers were paid on an hourly basis, 85% were paid by the trip, and 15% were paid by the mile.[28] Results of a 2009 survey in Jacksonville indicated that 96% of drivers were paid by the trip.[29]

28) *Port Jobs Big rig, short haul: A study of port truckers in Seattle,* Port of Seattle 2007.
29) Report on Port Truckers Survey at Jacksonville Port Authority, Jaffee & Rowley 2009.

11.7 COMPARISON TO OTHER NORTH AMERICAN PORTS

This project builds on similar drayage driver labour force studies that have been completed over the last decade at U.S. ports. Based on extensive previous research by the project team and the results of a literature review, the Lower Mainland drayage sector has a number of unique characteristics that set it apart from U.S. port trucking, including regulated rates, licensing of port trucks, and partial unionization of the industry. In spite of these differences, the data from this survey indicate that workforce characteristics are almost identical, and the outcomes in terms of driver compensation are similar.

- → The Lower Mainland drayage workforce has similar demographic and educational characteristics to those in other North American ports.
- → The Lower Mainland has a much higher percentage of employee drivers than other North American ports. This is attributable to the moratorium on owner-operator permits imposed in the Truck Licensing System in early 2007.
- → 28% of employees and 55% of owner-operators in the Lower Mainland survey reported that they belong to a union. Union membership is relatively rare among U.S. port drayage drivers.
- → 19% of the workforce did not complete high school; 37% completed high school; 26% reported having some college or vocational education; and 21% completed a college or university degree or vocational training. The distribution is similar to the results from the Port of Seattle drayage survey, except that a larger proportion of drivers in Seattle did not finish high school.
- → Survey results for the Lower Mainland are consistent with U.S. results, which suggest that employee drivers receive higher compensation than owner-operators. Assuming that the value of the U.S. and Canadian dollar is at par, the adjusted data shows that annual driver income for the Lower Mainland is approximately 3% higher for employees and 7% higher for owner-operators than the U.S. survey results.

APPENDIX D PREVIOUS REPORTS: LOWER MAINLAND

12.1 PORTS TRUCKING TASK FORCE (2005)

On August 4, 2005 the federal Minister of Transport, in collaboration with the federal Minister of Labour, the BC Minister of Labour and Citizens' Services, and the BC Minister of Transportation established a three-person Task Force to make recommendations on industrial relations and efficiency of the Lower Mainland port trucking. The Task Force was created to respond to concerns raised by a work stoppage organized by the Vancouver Container Truck Association representing truck drivers (primarily owner-operators but also employee drivers) in the local drayage market serving container terminals at the Vancouver Port Authority and the Fraser River Port Authority. The work stoppage, which began on June 27, and ended on August 4, 2005 disrupted port operations and had a significant negative impact on both the regional and national economies. The Task Force submitted its recommendations on October 25, 2005.[30]

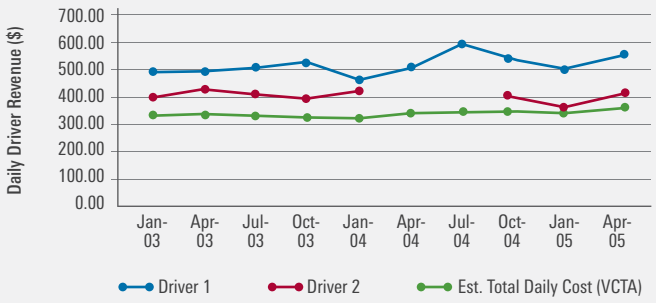
Research conducted for the Task Force identified the following characteristics of the drayage sector:

- Based on fleet size, the industry is very fragmented. In 2005 there were approximately 180 local drayage firms accounting for 2500 trucks registered under the Vancouver Port Authority licensing system. The largest firm had only a 5% share of the truck fleet, and the top 10 firms accounted for only 30% of the truck fleet.
- There appears to be high level of entry and exit of firms. The Vancouver Port Authority imposed a licensing system following the trucking dispute in 1999. There was little change in the number of trucks or firms licensed at the ports between 1999 and 2005. Initial registrations in 1999 totalled 202 firms and 2,600 trucks, slightly higher than the 2005 level. Of the 202 firms licensed in 1999, only around 50 were still licensed under the same business name in 2005. Six of the top 20 firms in 1999 remained in the top 20 in 2005.
- In 2005 approximately 85% of the truck fleet was owned by owner-operators.
- The cost of entry for owner-operators is very low. Trucks in the drayage sector are typically used high-mileage highway tractors. According to stakeholder interviews, in 2005 the cost of a truck suitable for drayage service ranged from approximately $25,000 to $40,000.
- Skill requirements to enter the industry are also low, with the major requirement being a Class 1 provincial driver's licence.
- There is limited potential for scale economies among trucking firms. The transfer of risks of delay and cost increases to owner-operators limits the incentive for investments in technology, such as computer-aided dispatch systems, to improve the efficiency of operations.
- There are no scale economies at the owner-operator level and the ratio of capital to labour is essentially fixed (i.e. one driver per truck). There is little opportunity for more intensive use of the capital stock (i.e. the truck) due to the limited operating hours of the container terminals (eight hours), off-dock facilities and ware-houses. Provincial safety regulations limit drivers' hours of service to 13 hours per day.
- The Vancouver Container Truck Association estimated total variable and fixed costs for each tractor in the order of $360 per day or around $87,000 per year. Fuel accounted for approximately 50% of costs.

30) *Final Report of the Task Force on the Transportation and Industrial Relations Issues Related to the Movement of Containers at British Columbia Lower Mainland Ports,* Federal Provincial Task Force, October 26, 2005.

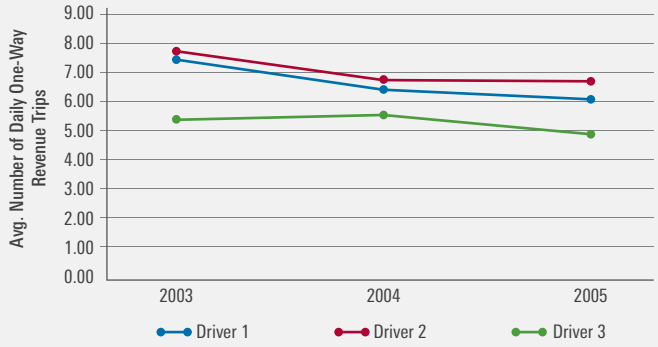
As part of the Task Force research, revenue data were obtained for a small sample of drivers (three drivers). Average daily revenue for two drivers is depicted below; the data indicate that revenue for the unionized driver (Driver 1) averaged around 25% higher than for the non-union driver (Driver 2) from 2003 to 2005.

Figure 12.1: Task Force Sample Daily Driver Revenue, 2003–2005



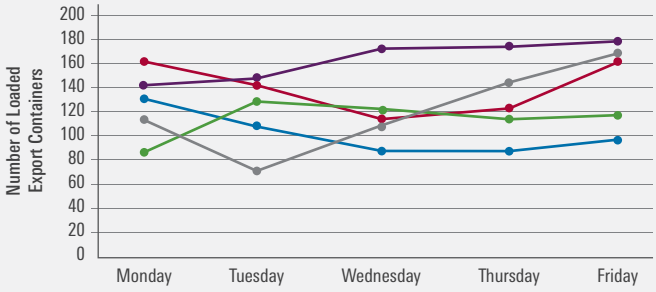
Data on drivers' average number of loaded trips are shown below. The "loaded" category includes trips with either a loaded or empty container; "empty" trips include trips hauling a bare chassis or bobtail (no chassis). The number of revenue trips decreased for all drivers between 2003 and 2005.

Figure 12.2: Task Force Sample Daily Revenue Trips, 2003–2005



The volume of business was found to vary significantly week to week and day to day. The index of loaded export containers handled at the four container terminals by day of the week over a five-week period in 2005 is shown below. Traffic on the peak day was 2.25 times the traffic recorded on the lowest day. The variability was attributed to the impact of Earliest Receiving Dates (ERD's) for delivery of containers to the terminals, and US Freight Remaining on Board regulations on advance declaration of cargo.

Figure 12.3: Task Force Traffic Variability, Index of Loaded Export Containers by Day of Week, 5-Week Sample 2004



12.2 LOWER MAINLAND CONTAINER LOGISTICS STAKEHOLDERS FORUM CONTAINER SIMULATION PROJECT (2007)

In 2007, the BC Ministry of Transportation engaged IBI Group to analyze and model container truck movements in the Lower Mainland.[31] The project included integration and analysis of data on Lower Mainland container truck movements gathered through trip surveys, global positioning systems (GPS) tracking devices, radio frequency identification (RFID), and security access records. A simulation model was designed to estimate the impact of changes to basic system parameters including turn and travel times and trip distribution patterns.

31) *BC Ministry of Transportation Container Trucking Forum Container Simulation Project Final Report*, IBI Group December 17, 2007.

Data for the study were obtained from three separate sources:

- Electronic data generated by GPS devices temporarily installed on a sample of container trucks, and associated driver trip diaries. GPS devices were installed on 20 trucks belonging to two different trucking companies, and trip diaries were recorded between November 20 and December 18, 2006. The GPS data include observations on truck identification and location at five second intervals throughout the work day. The associated trip diaries include 251 daily trip sheets encompassing 1531 origin-destination trips. The trip diaries included information on dates, trip origins and destinations, chassis and container numbers, queuing delays, time of entry through terminal gates, check boxes for container status—i.e., carrying a full container, carrying an empty container, no container (but pulling chassis), and bobtail (no chassis)—and optional check boxes indicating additional trip parameters, such as coffee breaks, fuelling, maintenance or other.
- Container Driver Trip Survey forms designed by BC Ministry of Transportation. These were issued to drivers who filled them out between November 14 and December 8, 2006. This generated 177 trip sheets encompassing 1,218 origin—destination trips.
- Samples of company daily trip sheets used for billing purposes by one trucking company. The sheets in the sample were recorded between October 6 and November 24, 2006. These were provided to the BC Ministry of Transportation by the company, and include information on dates, trip origin and destinations, trip start and end times, and container numbers. This source generated 167 daily trip sheets encompassing 1,117 origin—destination trips.

Data were also obtained from the Vancouver Port Authority's Vehicle Access Control System (VACS) and Radio Frequency Identification (RFID) pilot project.

Analysis of the data generated the following findings:

- Drivers were achieving an average of seven one-way trips per day, but the trucks were loaded with a container for only five of these on average.
- Drivers averaged approximately 9.7 hours on duty per day.
- More than half of drivers' trip time is spent waiting or being processed at terminals.
- Turn times (including queuing delays) are longest at the on-dock container terminals, followed by rail intermodal and off-dock terminals. All terminals have a high level of variation in their turn times.
- Turn times at on-dock container terminals averaged 52 minutes, and were almost identical among the three large terminals (Vanterm, Deltaport and Centerm). On average, these terminals processed 80% of trucks within 80 minutes.
- Turn times at off-dock terminals averaged 41 minutes, but there were significant differences in performance between them, with the fastest exhibiting average turn times 20 minutes.
- Travel times between origins and destinations exhibited less variation relative to the average than terminal turn times.

12.3 REVIEW OF THE VANCOUVER CONTAINER TRUCKING REGULATIONS (2009)

In 2009, Transport Canada conducted a review of federal regulations regarding the drayage sector.[32] The regulations were passed in 2007 and essentially extended the requirements for payment of minimum rates based on the Memorandum of Agreement (MOA) negotiated with the assistance of Vince Ready to end the disruption of port operations caused by the withdrawal of service by port truckers in 2005.

Research conducted in support of the review included the following findings:

- The number of trucks licensed in the Port Metro Vancouver Truck Licensing System declined from around 2,400 trucks in 2007 to 2,000 in 2009.
- The number of licensed companies increased by over 50% by 2007 in spite of the fact that the total number of trucks in the local drayage fleet was relatively unchanged.
- With the introduction of Port Metro Vancouver's two-tiered licensing system in 2008, the number of companies ("Full Service Operators") fell to a level close to that of 1999 and 2005.
- Analysis of data gate entries by individual trucks indicates that container movements at the port terminal are concentrated among a small portion of the licensed fleet. Out of approximately 3,200 truck visits recorded entering the container terminal gates over a three-month period in 2006, 60% made fewer than 10 visits, and almost 30% visited only once. Fewer than 25% of trucks accounted for 80%of gate entries in 2006. This appears to indicate that in 2006 a relatively small portion of the available local drayage fleet was intensively engaged in drayage activity at the port.
- The data on container terminal gate entries by company suggested that the larger firms lost market share to smaller firms from 2006 to 2008. In 2006, the top 21 firms accounted for 80% of gate entries; by 2008, there were 106 firms accounting for the same share.

32) *Review Of The Vancouver Container Trucking Regulations (Regulations Amending The Port Authorities Operations Regulations, July 31, 2007)*, Report To The Minister Of Transport, Infrastructure And Communities , Transport Canada, July 2009.

12.4 BUSINESS PROCESS MAPPING PROJECT (2009)

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In 2009 a project was undertaken for the Container Trucking Forum to analyze the management of container movements at the truck—inland terminal interface, and truck—ocean terminal interface, as well as truck logistics between these interfaces.[33] The project included mapping of business processes to identify bottlenecks in the system as well as recommendations for pilot projects to improve efficiency.

The study identified five sources of uncertainty that were affecting the efficiency of trucking operations:

- **Vessel Arrival.** When ships are delayed, terminals may adjust their ERD's and cancel existing reservations. This can increase the number of required truck trips to deliver the export loads to the terminal. In some cases trucks arriving at the terminal within their reservation window —with a reservation that was valid when his or her day began—are turned away because the reservation has been cancelled.
- **Export Cargo Booking.** Truckers book reservations based on the exporter's plans, but when final confirmation of space commitments is made at the last minute, cargo may be redirected to another carrier or to a future ship sailing, and unneeded reservations are cancelled or transferred at the last minute.
- **Reservations.** With respect to container movements on the day of the reservation, uncertainties arise because terminals may not be able to adhere to their operating plans due to unforeseen factors such as labour shortages, weather conditions or unanticipated vessel loading and unloading delays, which can result in the closure of lanes serving trucks. While terminal operators may try to notify truckers of terminal problems in advance, truckers may arrive at the terminal and find they cannot be served. On some occasions, the terminal may work with the trucking company to accommodate them with delayed loading or unloading. Often, however, no accommodation is made and the trucker is responsible for cancelling the reservation and attempting to make another reservation at a later time.
- **Terminal Service Time.** Trucking operations are significantly affected by variability in terminal service times (including queuing and in-terminal processing). Terminal operators manage key parameters of trucking operations. They manage when trucks arrive at the terminal through the reservation system and also determine the truck handling capacity with the labour and equipment resources dedicated to the task. The only variable not controlled by the terminal operators is the actual number of reservations booked and completed by the trucking sector. It is difficult for trucking companies to manage their fleet so that they arrive within the reservation windows and in sufficient time before lunch to avoid the break because trucks spend approximately 50% of their day in the terminals, where the variability in service times is double that of the travel times, and reservations may not be available at times which facilitate efficient trucking operations.
- **Container Location.** Ocean carriers provide exporters with the location of empty containers when they issue their bookings. Problems arise when truckers arrive at a location that has insufficient empties of a particular type or standard to meet the exporter's needs. When these problems arise, extra truck trips to another location may be necessary; truckers and owner operators are rarely compensated for these trips.

All of these sources of uncertainty have the potential to reduce owner-operator drivers' efficiency and revenue.

33) *Business Process Mapping Project Final Report,* Culham Business Solutions for Transport Canada, BC Ministry of Transportation & Infrastructure, and the Lower Mainland Container Stakeholder Forum November, 2009.

APPENDIX E READY RATE SCHEDULES

Schedule 1: Rates in Effect from Date of Return to Work

FROM / TO	VANTERM / CENTERM	DELTAPORT	FSD	CP	CN
Vancouver Docks	$90	$120	$110	$120	$120
North Vancouver	$95	$125	$120	$130	$130
West Vancouver	$100	$130	$125	$135	$135
Burnaby North	$95	$120	$100	$110	$110
Burnaby South (South of Highway 1)	$100	$120	$95	$110	$115
Richmond North	$95	$110	$95	$120	$120
Richmond South (South of Westminster)	$100	$100	$95	$125	$120
Annacis Island	$110	$110	$90	$115	$115
New Westminster	$105	$120	$95	$110	$115
Coquitlam	$105	$120	$100	$100	$105
Port Moody / Port Coquitlam	$110	$130	$105	$95	$110
Pitt Meadows	$120	$135	$110	$90	$115
Haney / Maple Ridge	$125	$145	$120	$95	$120
Surrey North (North of 72, West of 152, FSD)	$110	$110	$90	$110	$100
Delta North (Tillbury)	$120	$90	$90	$120	$115
Surrey South (includes White Rock)	$120	$110	$110	$135	$110
Cloverdale	$120	$120	$105	$115	$90
Port Kells (North of Highway, West of 208)	$120	$130	$100	$115	$90
Langley City	$130	$120	$110	$120	$95
Langley South (South of 40)	$150	$110	$110	$130	$100
Pacific Highway	$150	$110	$110	$130	$100
Fort Langley / Aldergrove	$140	$150	$120	$140	$110
Abbotsford / Clearbrook	$160	$160	$145	$150	$120
Mission	$160	$170	$150	$130	$130
Chilliwack / Sardis	$185	$185	$170	$170	$160

Schedule 2: Rates in Effect from August 1, 2006

FROM / TO	VANTERM / CENTERM	DELTAPORT	FSD	CP	CN
Vancouver Docks	$100	$135	$120	$135	$135
North Vancouver	$105	$140	$135	$145	$145
West Vancouver	$110	$145	$140	$150	$150
Burnaby North	$105	$135	$110	$120	$120
Burnaby South (South of Highway 1)	$110	$135	$105	$120	$130
Richmond North	$105	$120	$105	$135	$135
Richmond South (South of Westminster)	$110	$110	$105	$140	$135
Annacis Island	$120	$120	$100	$130	$130
New Westminster	$115	$135	$105	$120	$130
Coquitlam	$115	$135	$110	$110	$115
Port Moody / Port Coquitlam	$120	$145	$115	$105	$120
Pitt Meadows	$135	$150	$120	$100	$130
Haney / Maple Ridge	$140	$160	$135	$105	$135
Surrey North (North of 72, West of 152, FSD)	$120	$120	$100	$120	$110
Delta North (Tillbury)	$135	$100	$100	$135	$130
Surrey South (includes White Rock)	$135	$120	$120	$150	$120
Cloverdale	$135	$135	$115	$130	$100
Port Kells (North of Highway, West of 208)	$135	$145	$110	$130	$100
Langley City	$145	$135	$120	$135	$105
Langley South (South of 40)	$165	$120	$120	$145	$110
Pacific Highway	$165	$120	$120	$145	$110
Fort Langley / Aldergrove	$155	$165	$135	$155	$120
Abbotsford / Clearbrook	$175	$175	$160	$165	$135
Mission	$175	$185	$165	$145	$145
Chilliwack / Sardis	$200	$200	$185	$185	$175

APPENDIX F DTCI COST MODEL VERSUS SURVEY RESULTS

A cost model for Lower Mainland drayage operations was developed as part of the *Container Trucking Forum Simulation Study* in 2007 (the "DTCI Model").[34] The model was subsequently updated for analysis of drayage sector performance in 2009[35] and 2010.[36] The model was based on the methodology used in *Operating Costs of Trucks in Canada 2005* (OCTC).[37] The OTCT approach is based on assumptions regarding operating parameters for the relevant type of service, and estimating overall operating costs based on typical consumption factors (such as mileage per year, fuel consumption per mile, load and unload time, etc.) and current unit costs (fuel prices, hourly wages, equipment prices, etc.). For the DTCI model, costs specific to Lower Mainland local drayage operations were estimated through adjusting unit costs to values specific to the sector (where available) and through manipulation of the activity parameters to more closely match actual drayage operations. Drayage unit costs were estimated based on data provided by the Vancouver Container Truck Association to the Ports Trucking Task Force in 2005. Activity parameters (loading and unloading times, etc.) were estimated based on the data collected for the *Container Trucking Forum Simulation Study*. The DTCI model estimates for large companies with employee drivers were based on the purchase of new vehicles, while the owner-operator estimates were based on the use of older vehicles with a lower initial purchase price. The most recent update of the DTCI cost estimates was done in 2010. A comparison of operating parameters from the OCTC and DTCI models and data from the survey responses is shown below.

Figure 13.1: Operating Parameter Comparison Cost Model vs. Survey Data

5 Axle Semi Unit	Commodity: Dry Freight (Barton)	Port Drayage 2010 (DTCI Model)	Port Drayage 2013 (Survey Responses)
Annual Distance (km):	80,000	47,400	57,599
Average Payload (kg)	19,155	n/a	–
% Travel Time	73%	48%	–
% Turn Time	27%	52%	–
Trip Running Time	5.7	3.8	–
Load/Unload Time	2.1	4.1	–
Hours/Day	7.8	7.9	11.6
Days/Year	250	250	256
Annual Running Hours	1425	948	–
Total Annual Hours	**1,952**	**1,975**	**2,812**
Average Speed (km/hr)	56	50	–

34) *Container Trucking Forum Simulation Study,* 2007 Truck Costing Report (unpublished).
35) Results were reported in *Report to the Minister*, 2009, pp 59-64.
36) *Transport Canada Vancouver Port Container Trucking Annual Overview Final Report,* Davies Transportation Consulting Inc., July 31, 2010 (unpublished).
37) *Operating Costs of Trucks In Canada 2005*, Transport Canada File Number: T8080-05-0242 Logistics Solutions Builders Inc. 2005. Subsequent versions were published as Operating Costs of Trucks and Surface Intermodal Transportation in Canada. Ray Barton Associates Ltd. in association with Logistics Solution Builders Inc. and The Research and Traffic Group.

The survey data indicate that actual kilometres driven is approximately 22% higher, and hours of operation 42% higher due to the substantial difference in the hours worked per day between the DTCI model and the survey data (7.9 hours and 11.6 hours respectively).

Differences in unit costs from the 2010 model estimates and 2013 survey data are highlighted below. The 2013 DTCI model uses unit cost data for the wage rate based on the survey data (average hourly compensation for owner-operators). The fuel cost is based on the average diesel price in the Lower Mainland from the Kent Group monthly petroleum pricing reports for 2012.[38]

A comparison of the model results to survey data is shown below.

Figure 13.3: Owner-Operator Costs DTCI Model Results vs. Survey Data

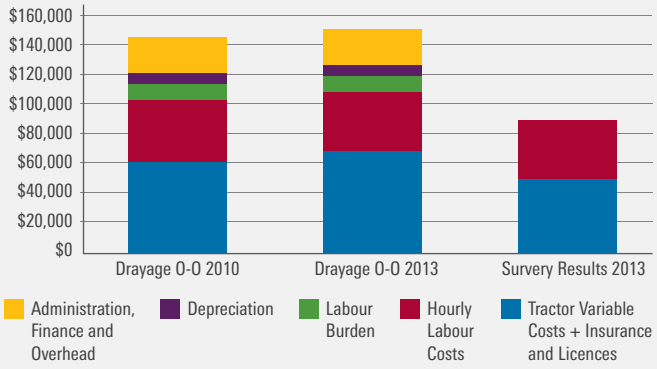

Figure 13.2: Unit Cost Estimates 2010 vs. Survey Data

	2010 Drayage Company Employee (DTCI Model)	2010 Drayage O-O (DTCI Model)	2013 Drayage O-O (DTCI Model)	2013 Drayage O-O Survey
Wage Rate ($/Hour)	$20.60	$20.60	$13.92	$13.92
Labour Burden	27%	27%	27%	–
Fuel ($/litre)	$1.13	$1.13	$1.39	$1.39
Repairs	$7,756	$19,454	$19,454	–
Cleaning	$199	$1,440	$1,440	–
Transport	$945	$2,808	$2,808	–
Tires	$2,337	$2,733	$2,733	–

The comparison indicates that the model overestimates tractor variable costs by approximately 36%. The increase in costs from the 2010 model estimate to the 2013 model estimate is due to higher fuel prices ($1.39 in 2013 compared to $1.13 in 2010) and higher annual kilometres driven based on the survey data. Labour costs are essentially the same, with a lower labour rate and much higher hours based on the survey data.

38) *www.kentmarketingservices.com/dnn/Default.aspx?tabid=145*

APPENDIX G R.A. MALATEST SURVEY REPORT

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LABOUR FORCE PROFILE OF PORT DRAYAGE DRIVERS IN METRO VANCOUVER

Prepared for Asia Pacific Gateway Skills Table
Prepared by R.A. Malatest & Associates Ltd. / March 22, 2013

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SECTION 1

BACKGROUND

The Asia Pacific Gateway Skills Table has commissioned R.A. Malatest and Associates Ltd. (RAM), in cooperation with Wave Point Consulting Ltd. and Davies Transportation Consulting Inc. to conduct a labour force study of port drayage drivers in Metro Vancouver. The information gathered in this study is intended to provide accurate and timely information on who works in the port trucking industry, and will help guide future human resource activities that support drayage truck drivers.

Most of the current information about the drayage labour force comes from data collected from a sample of industry stakeholders, such as trucking companies, terminal operators and government. This project will be one of the first studies to provide information on the drayage labour force and the working environment that is collected directly from port truck drivers themselves.

This report includes a description of the survey methodology used and presents data in terms of frequencies and selected cross tabulations of the survey questions.

SECTION 2

METHODOLOGY

THIS SECTION OUTLINES THE METHODOLOGICAL APPROACH USED TO DEVELOP AND ADMINISTER THE LABOUR FORCE PROFILE OF PORT DRAYAGE DRIVERS IN METRO VANCOUVER SURVEY.

2.1 SURVEY INSTRUMENT DEVELOPMENT

In consultation with Mr. Davies and Mr. Anderson, and based on similar drayage driver labour force studies at United States ports,[39] RAM designed a survey instrument that allowed for the development of a comprehensive labour force profile of port drayage drivers. The survey consisted of 36 closed-ended questions and collected data on employment history, compensation and expenses, driver attitudes towards employment in the industry and driver demographics. In order to obtain accurate results and maximize driver participation, the survey was available in both English and Punjabi (Appendices A and B) and all respondents were provided with gratuities upon survey completion (Tim Horton's $10 gift card and entry into a prize draw for a tablet). Driver contact information was collected (name and cellular/home phone number) at the beginning of the survey in order to create a representative sample and to provide the drivers with their gratuities.

2.2 INTRODUCTORY MATERIAL PREPARATION

RAM prepared introductory materials including a cover letter for port drivers and a frequently asked questions (FAQ) brochure explaining the purpose of the survey, completion modes available, the privacy and security of data supplied for research purposes and the intended research plan. These materials were provided to client for comment and all suggested changes were incorporated. These documents were included in the survey packages distributed to the port drivers.

39) Similar drayage driver labour force studies include: Haveman, J., & Monaco, K. (2009). Comprehensive Truck Management Program: Economic Impact Analysis. Beacon Economics. Retrieved on December 7, 2012 from *www.portofoakland.com/pdf/CTMP_Beacon_Final.pdf. ;* Jaffe, D., & Rowley, A. (2009). Hauling Containers: Port Drayage Drivers in the Logistics Supply Chain. Retrieved on December 7, 2012 from *www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CE0QFjAC&url=http%3A%2F%2Fwww.unf.edu%2F~djaffee%2Fhauling%2520containers-SSS.doc&ei=Shs1UcTOE8WZqgH2rIDwBA&usg=AFQjCNE_E7H5fzZ2bZaCBmyBLUN4zp50hA&bvm=bv.43148975,d.aWM.;* Port Jobs (2007). Big Rig, Short Haul: A Study of Port Truckers in Seattle. Retrieved on December 7, 2012 from *www.portjobs.org/storage/documents/bigrig_shorthaul.pdf;* Monaco, K., & Grobar, L. (2004). A Study of Drayage at the Ports of Los Angeles and Long Beach. Retrieved on December 7, 2012 from *www.metrans.org/research/final/AR%2004-01_final_draft.pdf.*

2.3 TERMINAL SITE VISITS

In early January, RAM completed site visits to the container terminals in order to determine the most appropriate method to conduct the intercept survey administration based on a sample of convenience. These visits included meetings with directors of terminal operations, safety and security officers and terminal forepersons. From these site visits, numerous challenges to employing only intercept survey administration were noted.

These challenges included:

- → Inability for the drivers to complete the surveys while in queues due to short queue times;
- → Safety concerns for drivers completing surveys within the terminals; and
- → Driver literacy issues.
- → Based on these challenges and in order to ensure the maximum number of survey completions, RAM with client approval, altered the survey administration from intercept only to mixed mode completion, which allowed for intercept, telephone, online, mail and fax completions.

2.4 SURVEY PILOT

The survey instrument was piloted for one day on February 25, 2013 at Deltaport container terminal. A senior survey staff member and two surveyors, one fluent in Punjabi, conducted the pilot testing from 06:00 until 14:00 outside the terminal entrance gates. Traffic management services were required to conduct the pilot at this terminal, as the surveyors were required to stop trucks on the overpass prior to the terminal entrance gates. A total of 401 surveys (301 in English and 100 in Punjabi) were distributed at the terminal and 61 surveys were completed on-site.

Testing the survey instrument and administration is critical to determining how well it will perform in the field. RAM specifically tested for the following:

- » Sufficient time for survey distribution;
- » Feasibility of on-site survey completions;
- » Appropriateness of the introductory materials;
- » Clarity of wording and order of questions;
- » Length of the survey; and
- » Preliminary indication of the range and type of open-ended comments that will be provided by respondents.

A brief field test report was prepared by RAM and submitted to the Client on February 26, 2013. This report flagged one survey issue of concern and provided a recommendation for correction/improvement (i.e., inclusion of additional instructions for one question). Once the recommendation was approved by the Client, RAM incorporated the modification into the survey instrument.

2.5 SURVEY ADMINISTRATION

The survey distribution was conducted on-site at the four terminals over a three week period (February 25 to March 14, 2013). A senior survey staff member and two surveyors, one fluent in Punjabi, distributed hard copies of the survey packages in either English or Punjabi to all port drayage drivers at or near the entrance gates of the four container terminals (Centerm, Vanterm, Fraser Surrey and Deltaport). The survey packages included the cover letter for port drivers, the FAQ, a business reply envelope and the survey with detailed instructions on completing the survey by telephone (toll-free), online, mail or fax. Drivers had the option of completing the survey on-site (if time permitted), mailing or faxing the completed surveys to RAM, or completing the surveys over the telephone or online.

Throughout survey administration, RAM provided the Client with weekly progress reports on the number of completions and completions by mode. The target number of survey completions was 550 with a ± 5.0% margin of error anticipated (at the 95% confidence level).

2.6 FINAL SURVEY RESPONSE DISTRIBUTION

A total of 1,750 surveys were distributed over the three week period, with a total of 639 surveys completed, which exceeded the target by 16.2%. The survey completion rate was 36.5%. The surveys were available in both English and Punjabi; most drivers requested English surveys packages and most of the completed surveys were in English.

Table 2.1: Final Survey Distribution

Survey Distribution	English	Punjabi	Total
Distributed	80.0%	20.0%	**100.0%**
	(1400)	(350)	**(1750)**
Completed	79.2%	20.8%	**100.0%**
	(506)	(133)	**(639)**

Source: Surveyor Data Entry Forms & Port Drayage Driver Survey

Most (86.7%) of the surveys were completed on-site at the container terminals during the survey administration period, with a few (11.4%) mail-in and a small number (1.9%) of online completions.

Table 2.2: Final Survey Completion by Mode

Survey Completions	Number	Percent
On-site	554	86.7
Mail-in	73	11.4
Online	12	1.9
Telephone	0	0.0
Fax-in	0	0.0
Total	**639**	**100.0**

Source: Port Drayage Driver Survey

Close to half (43.7%) of the total on-site survey completions were collected at Vanterm terminal, more than one-quarter (26.7%) were collected at Deltaport and the remainder were relatively evenly distributed between Centerm (16.6%) and Fraser Surrey (13.0%).

Table 2.3: On-site Survey Completions by Terminal

Terminal	Number	Percent
Vanterm	242	43.7
Deltaport	148	26.7
Centerm	92	16.6
Fraser Surrey	72	13.0
Total	**554**	**100.0**

Source: Surveyor Data Entry Forms

It should be noted that since the survey allowed for mixed-mode completions, (including online, telephone and mail-in) and since port drayage drivers often frequent more than one container terminal, on-site surveys were not coded by container terminal, and hence survey results were not analyzed by container terminal.

2.7 DATA ANALYSIS

All surveys were entered into the CallWeb platform. Data was extracted, cleaned and verified for accuracy and consistency. Cases were flagged for follow-up if the survey was incomplete or if a response(s) was unclear or contradictory. At the conclusion of the survey, RAM reviewed all the data and exported it into SPSS (IBM, SPSS Statistics, Version 19.0) for data analysis and the preparation of statistical tables.

For the final analysis, two surveys were removed from the total sample due to a large portion of invalid responses and 52 surveys were removed due to the possibility of being a duplicate survey. Table 2.4 displays the final survey completion distribution used in the final analysis.

Table 2.4: Final Survey Completion Distribution Used in Final Analysis

Terminal	Number	Percent
On-site	516	88.2
Telephone	0	0.0
Online	11	1.9
Mail-in	58	9.9
Fax-in	0	0.0
Total	**585**	**100.0**

Source: Port Drayage Driver Survey

In order to analyse the survey findings, RAM generated frequency tables for each question and cross tabulations by employment type. In addition, where appropriate RAM developed a code list for "Other", a category included in seven survey questions, based on the information provided by respondents. Open-ended responses were coded in this list for quantitative analysis. Whenever possible, a question was coded in its entirety by a single researcher in order to ensure consistency in coding.

2.8 METHODOLOGICAL CONSIDERATIONS

RAM faced some methodological challenges during the completion of this survey. These challenges included survey design as well as survey administration. This section summarizes these issues and their resolutions.

Number of Survey Completions

As this survey used a sample of convenience as the sampling method, the number of survey completions was dependent on the number of port drivers at each terminal on the survey date and their willingness to participate in the survey. In order to maximize survey participation, RAM developed effective driver communication materials, provided the survey packages in both English and Punjabi, selected survey dates based on traffic patterns by day of the week and vessel schedules for each terminal and used gratuities to thank respondents for their time.

A high number of survey completions is generally associated with lower levels of non-response bias (i.e., as individuals who do participate in the sample may systematically differ from individuals who do not participate) and greater statistical confidence in drawing conclusions. The initial target of 550 survey completions was achieved and exceeded by 16.6%. This high number of survey completions indicates that the conclusions derived from this analysis can be made with a high level of confidence.

Unrepresentative Survey Sample

Due to the voluntary and self-selecting nature of the survey research, it should be recognized that the survey results may not be representative of the range of perspectives and opinions of within the port drayage driver community. For example, individuals with strong positive or negative views on the current conditions within the industry may be more likely to complete the survey, as opposed to those with more moderate views. Caution should be taken when interpreting the survey results and generalization to all port drayage drivers should not be assumed.

Open Access to Online Survey

Since this survey used an intercept distribution, access to survey was required to be open, meaning that there was no unique identifier for each respondent. Given this, it should be noted that there was the possibility that the survey was accessed by the same individual more than once or by an individual outside the sample eligibility criteria. However, as respondents were encouraged to provide their contact information in the survey, RAM completed data verification to ensure that each completed survey had unique contact information and removed any duplicate surveys.

SECTION 3

FREQUENCY TABLES OF SURVEY RESULTS

THIS SECTION PRESENTS THE SURVEY RESULTS FROM THE LABOUR FORCE PROFILE OF PORT DRAYAGE DRIVERS IN METRO VANCOUVER.

FREQUENCY TABLES WERE GENERATED FOR EACH SURVEY QUESTION AND WHERE APPROPRIATE MEANS, STANDARD DEVIATIONS AND MEDIANS WERE CALCULATED.

3.1 CHARACTERISTICS OF THE SURVEY SAMPLE

The survey sample was predominantly male (98.3%) with a mean age of 41 years. Most (81.5%) of the respondents were Canadian Citizens, a small portion (18.2%) were landed immigrants. More than half (54.7%) of respondents spoke Punjabi and more than one-third (39.9%) spoke English as their primarily language. Most (83.0%) of the sample completed high school and more than one-third (39.5%) reported that they had some college/university or a college/university diploma or degree (Table 3.1).

More than half (55.7%) of the sample learned their driving skills from a private training school and almost one-third (32.1%) from a family member or friend prior to getting their Class 1 license. Few (10.3%) respondents received on-the-job driving skills training prior to getting their Class 1 license.

Table 3.2: Driving Skills

How did you learn your driving skills before getting your Class 1 license? (n=579)	Number	Percent
Private training school	326	56.3
Family or friend	188	32.5
On-the-job (e.g., employer)	60	10.4
Public training school (e.g., college, etc.)	48	8.3
Other	18	3.1
No response	6	–

Source: Port Drayage Driver Survey. Totals do not add to 100% due to multiple responses.

Table 3.1: Sample Characteristics

Sample Characteristics	Number	Percent
Gender (n=582)		
Male	572	98.3
Female	10	1.7
No response	3	–
Age (n=571)		
Mean	40.6 (10.0)	–
No response	14	–
Citizenship (n=583)		
Canadian Citizen	475	81.5
Landed Immigrant	106	18.2
Neither	2	0.3
No response	2	–
Primary Language (n=576)		
Punjabi	315	54.7
English	230	39.9
French	2	0.3
Other	29	5.1
No response	9	–
Highest Level of Education (n=579)		
Less than high school	40	6.9
Some high school	58	10.0
Completed high school	212	36.6
Some vocational/trades/apprenticeship	21	3.6
Completed vocational/trades/apprenticeship	19	3.2
Some college/university	127	21.9
College/university diploma or degree	102	17.6
No response	6	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation

3.2 WORK HISTORY

Table 3.3: Work History

Work History	Number	Percent
Are you a/an? (n=584)		
Employee	313	53.6
Owner-Operator	239	40.9
Replacement Driver	32	5.5
No response	1	–
Are you the owner of your truck? (n=581)		
No, I neither own nor lease my truck	317	54.5
Yes, I own my truck	238	41.0
No, I lease my truck	26	4.5
No response	4	–
How many years have you worked as a port drayage driver? (n=576)		
Numeric response	518	89.9
– Mean	8.5 (6.4)	–
– Median	7.0	–
Less than one year	58	10.1
No response	9	–
Is drayage driving your main occupation? (n=579)		
Yes	544	94.0
No	35	6.0
No response	6	–
Did you do any other kind of work last year? (including other types of driving) (n=584)		
No	493	84.4
Yes—what kind? (Open-ended comments see Table 3.4)	91	15.6
No response	1	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 3.4: Top Open-ended Comments

Did you do any other kind of work last year? (including other types of driving) Yes—what kind? (n=87)		
Other types of trucking	50	57.5
Other types of driving	8	9.2
Other	29	33.3
No response	4	–
Total Number of Participants	**91**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 3.5: Work History

Work History	Number	Percent
How long have you worked for your current company? (n=583)		
Numeric response	478	82.0
– Mean years	5.5 (4.4)	–
– Median	4.5	–
Less than one year	105	18.0
No response	2	–
How many months did you work as a drayage driver last year? (n=571)		
Mean	10.2 (3.2)	–
Median	12.0	–
No response	14	–
How many days do you work as a drayage driver in a typical week? (n=577)		
Mean	4.9 (0.6)	–
Median	5.0	–
No response	8	–
Is drayage driving your main occupation? (n=579)		
Yes	544	94.0
No	35	6.0
No response	6	–

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3.3 COMPENSATION AND EXPENSES

Table 3.5: Work History *continued*

Work History	Number	Percent
How many hours do you work as a drayage driver in a typical day? (including waiting and non-driving time) (n=577)		
Mean	11.2 (2.1)	–
Median	11.5	–
No response	8	–
About how many kilometres (km) did you drive your truck for drayage last year? t (n=534)		
Numeric response	504	94.4
– Mean	59,200.7 (242,052.2)*	–
– Median	48000	–
Don't know	30	5.6
No response	51	–
About how many non-revenue drayage trips to you make in a typical day? (with a bare-chassis or bobtail) (n=562)		
Numeric response	550	97.9
– Mean	2.4 (1.8)	–
– Median	2.0	–
Don't know	12	2.1
No response	23	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.
**) Large variability in the data.*

Table 3.6: Compensation

Compensation	Number	Percent
To the nearest thousand dollars, how much did you earn last year as a drayage driver after all your truck expenses were paid? (n=515)		
Numeric response	507	94.4
– Mean	$36,284.4 (30,710.1)	–
– Median	$35,000.0	–
Don't know	8	1.6
No response	70	–
To the nearest thousand dollars, how much did you earn last year from other types of work after all your truck expenses were paid? (including other types of trucking)[t] (n=494)		
Numeric response	483	97.8
– Mean	$7,245.6 (17,108.8)*	–
– Median	$0.0	–
Don't know	11	2.2
No response	91	–
How much are you being paid for the current trip? (n=557)		
Trip[t]	358	64.3
– Mean	$96.3 (165.3)*	–
– Median	$100.0	–
Hour	194	34.8
– Mean	$27.6 (56.6)*	–
– Median	$20.0	–
Km[t]	5	0.9
– Mean	$32.5 (41.0)*	–
– Median	$20.0	–
No response	28	–
Are you being paid a fuel surcharge for the current trip? (n=560)		
No	390	69.6
Yes	170	30.4
No response	25	–

**) Large variability in the data.*
[t]) Skewed distribution.

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Table 3.6: Compensation *continued*

Compensation	Number	Percent
Are you a member of a union? (n=580)		
No	355	61.2
Yes	225	38.8
No response	5	–
Do you receive health benefits as part of your compensation package? (n=581)		
No	415	71.4
Yes	166	28.6
No response	4	–
Do you have a pension/retirement plan as part of your compensation package? (n=577)		
No	457	79.2
Yes	120	20.8
No response	8	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 3.7: Expenses

Expenses	Number	Percent
About how much did you spend on truck expenses last year?[t] (n=496)		
Numeric response	477	96.2
– Mean (n=477)	$26,128.8 (41,514.4)*	–
– Median (n=477)	$10,000.0	–
Don't know	19	3.8
No response	89	-
Did you employ a replacement driver last year (n=549)		
No	513	93.4
Yes	36	6.6
No response	36	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.
**) Large variability in the data. t) Skewed distribution.*

Table 3.8: Expenses for Replacement Driver

Expenses	Number	Percent
What were your total expenses for a replacement drayage driver last year?		
Numerical responses	13	–
– Mean	$19,343.1 (23,211.1)*	–
– Median	$12,000.0	–
No response	23	–
Total Number of Participants	**36**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.
**) Large variability in the data.*

Table 3.9: Financial Management Related to Drayage Operation

Financial Management related to Drayage Operation	Number	Percent
About how many hours per week do you spend managing the business and finances related to your drayage operations? (e.g. maintaining records and paperwork, paying bills, etc.)[t] (n=518)		
Numeric response	508	98.1
– Mean (n=508)	9.9 (16.8)*	–
– Median (n=508)	4.0	–
Don't know	10	1.9
No response	67	–
Do you get help managing the finances related to your drayage operations? (n=525)		
No, I do it myself	231	44.0
Yes, I pay an external bookkeeper/accountant	201	38.3
Yes, I have my family or friend help me	43	8.2
Other (open-ended comments see Table 3-8)	50	9.5
No response	60	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.
**) Large variability in the data.*
[t]) Skewed distribution.

Table 3.10: Help with Managing Finances Related to Drayage Operation

Other Responses		
Company manages finances	34	68.0
I don't manage finances	13	26.0
Other	3	6.0
Total Number of Participants	**50**	**100.0%**

Source: Port Drayage Driver Survey.

3.4 DRIVER INSIGHT

Table 3.11: Driver Insight

Driver Insight	Number	Percent
How many more years are you planning to work as a drayage driver? (n=546)		
Numeric response	474	86.8
– Mean (n=474)	9.3 (7.9)	–
– Median (n=474)	9.3	–
Don't know	72	13.2
No response	39	6.7
What do you plan to do afterwards? (n=564)		
Retire	252	44.7
Leave the drayage industry for a different type of occupation (non-driving)	153	27.1
Leave the drayage industry for a different driving career	116	20.6
Other	28	5.0
Don't know	15	2.6
No response	21	–
Are you being paid a fuel surcharge for the current trip? (n=560)		
What do you like most about being a drayage driver? (n=560)	390	69.6
Driving a truck	326	58.2
Lifestyle	104	18.6
Compensation	52	9.3
Other (open-ended comments see Table 3-12)	78	13.9
No response	25	–
What do you like most about being a drayage driver? (n=560)		
Driving a truck	326	58.2
Lifestyle	104	18.6
Compensation	52	9.3
Other (open-ended comments see Table 3-12)	78	13.9
No response	25	–

()=Number in brackets is standard deviation.

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Table 3.11: Driver Insight *continued*

Driver Insight	Number	Percent
What do you like least about being a drayage driver? (n=568)		
Wait times	367	64.6
Safety	92	16.2
Compensation	58	10.2
Driver training	20	3.5
Other (open-ended comments see Table 3-13)	31	5.5
No response	17	–
Total Number of Participants	**585**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 3.12: What do you like most about being a drayage driver?

Other Responses		
Nothing	50	64.1
Employment	7	9.0
Social Interaction	2	2.5
Other	19	24.4
Total Number of Participants	**78**	**100.0%**

Source: Port Drayage Driver Survey.

Table 3.13: What do you like least about being a drayage driver?

Other Responses		
Interaction with Port employees	17	54.8
Interaction with other drivers	6	19.4
Other	8	25.8
Total Number of Participants	**31**	**100.0%**

Source: Port Drayage Driver Survey.

Table 3.14: Port Communication

How would you like to be kept informed about Port activities and other issues that affect your work? (n=573)	Number	Percent
Printed notices/flyers	236	41.2
Email	185	32.3
Phone	118	20.6
Website	70	12.2
CB Radio	29	5.1
Other	18	3.1
No response	12	–

Source: Port Drayage Driver Survey. Totals do not add to 100% due to multiple responses.

SECTION 4

CROSS TABULATIONS OF SURVEY RESULTS

THIS SECTION PRESENTS FURTHER ANALYSIS OF SURVEY RESULTS FROM THE LABOUR FORCE PROFILE OF PORT DRAYAGE DRIVERS IN METRO VANCOUVER.

CROSS TABULATIONS WERE CONDUCTED TO EXAMINE SURVEY RESPONSES BASED ON EMPLOYMENT TYPE. NOTE THAT NO RESPONSES WERE EXCLUDED FROM THESE ANALYSES, THEREFORE CROSS TABULATION TOTALS MAY NOT EQUAL FREQUENCY TOTALS FROM THE PREVIOUS SECTION. DRIVERS IN METRO VANCOUVER SURVEY.

4.1 WORK HISTORY

Table 4.1: Are You The Owner of Your Truck? *By Employment Type*

			Employee	O-O	Replacement Driver for O-O	Total
Are you the owner of your truck?	Yes, I own my truck	Number #	6	230	2	238
		Column %	1.9%	96.2%	6.3%	41.0%
	No, I lease my truck	Number #	19	5	2	26
		Column %	6.1%	2.1%	6.3%	4.5%
	No, I neither own nor lease my truck	Number #	285	4	28	317
		Column %	91.9%	1.7%	87.5%	54.6%
Total		**Number #**	**310**	**239**	**32**	**581**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.2: How Many Years Have You Worked as a Port Drayage Driver? *By Employment Type*

			Employee	O-O	Replacement Driver for O-O	Total
How many years have you worked as a port drayage driver?	Numeric response	Number #	261	231	25	517
		Column %	85.6%	97.1%	78.1%	89.9%
		Mean	6.0 (5.6)	11.6 (5.8)	7.3 (7.3)	–
		Median	5.0	10.0	4.0	–
	Less than a year	Number #	44	7	7	58
		Column %	14.4%	2.9%	21.9%	10
Total		**Number #**	**305**	**238**	**32**	**575**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.3: Is Drayage Driving Your Main Occupation? *By Employment Type*

			Employee	O-O	Replacement Driver for O-O	Total
Is drayage driving your main occupation?	Yes	Number #	291	223	30	544
		Column %	93.9%	94.1%	93.8%	94.0%
	Total	Number #	19	14	2	35
		Column %	6.1%	5.9%	6.3%	6.0%
Total		**Number #**	**310**	**237**	**32**	**579**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.4: Did You Do Any Other Kind of Work Last Year? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Did you do any other kind of work last year? (including other types of trucking)	No	Number #	257	209	26	492
		Column %	82.4%	87.4%	81.3%	84.4%
	Yes	Number #	55	30	6	91
		Column %	17.6%	12.6%	18.8%	15.6%
Total		**Number #**	**312**	**239**	**32**	**583**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.5: How Long Have You Worked For Your Current Company? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
How long have you worked for your current company?	Numeric response	Number #	238	216	23	477
		Column %	76.5%	90.4%	71.9%	82.0%
		Mean	4.0 (3.6)	7.1 (4.8)	4.9 (3.0)	–
		Median	3.0	6.0	5.0	–
	Less than a year	Number #	73	23	9	105
		Column %	23.5%	9.6%	28.1%	18.0%
Total		**Number #**	**311**	**239**	**32**	**582**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.6: How Many Months Did You Work as a Drayage Driver Last Year? *By Employment Type*

		Employee n=304	Owner-Operator n=235	Replacement Driver for O-O n=31
How many months did you work as a drayage driver last year?	Mean	7 (3.6)	11.0 (2.3)	9.2 (4.2)
	Median	12.0	12.0	12.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.7: How Many Days Do You Work as a Drayage Driver in a Typical Week? *By Employment Type*

		Employee n=310	Owner-Operator n=234	Replacement Driver for O-O n=32
How many days do you work as a drayage driver in a typical week?	Mean	4.9 (0.5)	4.9 (.7)	4.8 (0.8)
	Median	5.0	5.0	5.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.8: How Many Hours Do You Work as a Drayage Driver in a Typical Day? *By Employment Type*

		Employee n=309	Owner-Operator n=235	Replacement Driver for O-O n=32
How many hours do you work as a drayage driver in a typical day?	Mean	10.9 (2.0)	11.6 (2.2)	11.5 (2.5)
	Median	11.0	12.0	11.5

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.9: About How Many Kilometers (Km) Did You Drive Your Truck For Drayage Last Year? *By Employment Type*

		Employee n=255	Owner-Operator n=219	Replacement Driver for O-O n=29
About how many kilometers (km) did you drive your truck for drayage last year?	Mean	61,783.6 (330,683.4)	59,020.2 (74,247.7)	38,643.5 (38,805.3)
	Median	40,000.0	50,000.0	48,000.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.10: About How Many Revenue Drayage Trips Do You Make in a Typical Day? *By Employment Type*

		Employee n=289	Owner-Operator n=220	Replacement Driver for O-O n=32
About how many revenue drayage trips do you make in a typical day?	Mean	4.3 (4.0)	3.9 (1.6)	5.2 (6.7)
	Median	4.0	4.0	4.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.11: About How Many Non-Revenue Drayage Trips Do You Make in a Typical Day? *By Employment Type*

		Employee n=291	Owner-Operator n=227	Replacement Driver for O-O n=31
About how many non-revenue drayage trips do you make in a typical day?	Mean	2.1 (1.7)	2.6 (1.9)	2.6 (2.2)
	Median	2.0	2.5	2.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

4.2 COMPENSATION

Table 4.12: To the Nearest Thousand Dollars, How Much Did You Earn Last Year as a Drayage Driver After All Your Truck Expenses were Paid? *By Employment Type*

		Employee n=248	Owner-Operator n=230	Replacement Driver for O-O n=28
To the nearest thousand dollars, how much did you earn last year as a drayage driver after all your truck expenses were paid?	Mean	$35,902.5 (18,287.1)	$35,282.1 (23,556.1)	$48,446.3 (98,676.1)
	Median	$36,000.0	$30,100.0	$35,000.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.13: To the Nearest Thousand Dollars, How Much Did You Earn Last Year From other Types of Work After all Your Truck Expenses were Paid? *By Employment Type*

		Employee n=244	Owner-Operator n=212	Replacement Driver for O-O n=26
To the nearest thousand dollars, how much did you earn last year from other types of work after all your truck expenses were paid?	Mean	$6,280.2 (15,089.1)	$8,058.9 (47,347.6)	$9,952.0 (22,867.8)
	Median	0.0	0.0	0.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.14: How Much are You Being Paid for the Current Trip? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
How much are you being paid for the current trip?	Trip	Number #	133	205	19	357
		Column %	45.1%	89.1%	61.3%	64.2%
		Mean	$52.3 (55.3)	$127.4 (208)	$71.8 (56.2)	–
		Median	$40.0	$100.0	$40.0	–
	Km*	Number #	2	3	0	5
		Column %	0.7%	1.3%	0.0%	0.9%
	Hour	Number #	160	22	12	194
		Column %	54.2%	9.6%	38.7%	34.9%
		Mean	$25.4 (61.7)	$46.7 (13.5)	$21.1 (6.3)	–
		Median	$20.0	$48.0	$20.0	–
Total		**Number #**	**295**	**230**	**31**	**556**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.
**) Totals too small to calculate mean and median*

Table 4.15: Are You Being Paid a Fuel Surcharge for the Current Trip? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Are you being paid a fuel surcharge for the current trip?	Yes	Number #	24	138	8	170
		Column %	8.2%	58.2%	26.7%	30.4%
	No	Number #	268	99	22	389
		Column %	91.8%	41.8%	73.3%	69.6%
Total		**Number #**	**292**	**237**	**30**	**559**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.16: Are You a Member of a Union? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Are you a member of a union?	Yes	Number #	87	131	7	225
		Column %	28.2%	54.8%	21.9%	38.9%
	No	Number #	221	108	25	354
		Column %	71.8%	45.2%	78.1%	61.1%
Total		**Number #**	**308**	**239**	**32**	**579**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.17: Do You Receive Health Benefits as Part of Your Compensation Package? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Do you receive health benefits as part of your compensation package?	Yes	Number #	115	42	9	166
		Column %	37.2%	17.6%	28.1%	28.6%
	No	Number #	194	197	23	414
		Column %	62.8%	82.4%	71.9%	71.4%
Total		**Number #**	**309**	**239**	**32**	**580**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.18: Do You Have a Pension/Retirement Plan as Part of Your Compensation Package? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Do you have a pension / retirement plan as part of your compensation package?	Yes	Number #	99	17	4	120
		Column %	32.2%	7.1%	12.9%	20.8%
	No	Number #	208	221	27	456
		Column %	67.8%	92.9%	87.1%	79.2%
Total		**Number #**	**307**	**238**	**31**	**576**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

4.3 EXPENSES

Table 4.19: About How Much Did You Spend on Truck Expenses Last Year? *By Employment Type*

		Employee n=220	Owner-Operator n=235	Replacement Driver for O-O n=21
About how much did you spend on truck expenses last year?	Mean	$24,55.6 (9,235.4)	$49,761.2 (47,347.5)	$10,919.5 (29,176.0)
	Median	$0.0	$50,000.0	$10.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.20: Did You Employ a Replacement Drayage Driver Last Year? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Did you employ a replacement drayage driver last year?	Yes	Number #	14	19	3	36
		Column %	4.9%	8.0%	10.7%	6.6%
	No	Number #	269	218	25	512
		Column %	95.1%	92.0%	89.3%	93.4%
Total		**Number #**	**283**	**237**	**28**	**548**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Note: Unable to analyze "What were your total expenses for a replacement driver last year? By employment type" as totals are too small.

Table 4.21: About How Many Hours Per Week Do You Spend Managing the Business and Finances Related to Your Drayage Operations? *By Employment Type*

		Employee n=253	Owner-Operator n=227	Replacement Driver for O-O n=27
About how many hours per week do you spend managing the business and finances related to your drayage operations?	Mean	7.8 (16.3)	11.5 (16.6)	13.9 (19.6)
	Median	2.0	6.0	5.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.22: Do You Get Help Managing the Finances Related to Your Drayage Operations? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
Do you get help managing the finances related to your drayage operations?	Yes, I pay an external bookkeeper/accountant	Number #	40	152	9	201
		Column %	15.4%	64.1%	32.1%	38.4%
	Yes, I have my family or friend help me	Number #	19	22	2	43
		Column %	7.3%	9.3%	7.1%	8.2%
	No, I do it myself	Number #	151	62	17	230
		Column %	58.3%	26.2%	60.7%	43.9%
	Other	Number #	49	1	0	50
		Column %	18.9%	.4%	.0%	9.5%
Total		**Number #**	**259**	**237**	**28**	**524**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

4.4 DRIVER INSIGHT

Table 4.23: About How Many More Years are You Planning to Work as a Drayage Driver? *By Employment Type*

		Employee n=248	Owner-Operator n=197	Replacement Driver for O-O n=28
About how many more years are you planning to work as a drayage driver?	Mean	8.7 (8.8)	9.9 (6.8)	9.3 (6.5)
	Median	5.0	10.0	8.0

Source: Port Drayage Driver Survey. ()=Number in brackets is standard deviation.

Table 4.24: What Do You Plan to Do Afterwards? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
What do you plan to do afterwards?	Retire	Number #	121	112	18	251
		Column %	40.7%	47.7%	58.1%	44.6%
	Leave the drayage industry for a different driving career	Number #	71	37	8	116
		Column %	23.9%	15.7%	25.8%	20.6%
	Leave the drayage industry for a different type of occupation	Number #	79	71	3	153
		Column %	26.6%	30.2%	9.7%	27.2%
	Other	Number #	16	10	2	28
		Column %	5.4%	4.3%	6.5%	5.0%
	Don't know	Number #	10	5	0	15
		Column %	3.4%	2.1%	.0%	2.7%
Total		**Number #**	**297**	**235**	**31**	**563**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.25: What Do You Like the Most About Being Drayage Driver? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
What do you like the most about being drayage driver?	Driving a truck	Number #	183	121	21	325
		Column %	62.0%	52.2%	65.6%	58.1%
	Lifestyle	Number #	53	47	4	104
		Column %	18.0%	20.3%	12.5%	18.6%
	Compensation	Number #	25	23	4	52
		Column %	8.5%	9.9%	12.5%	9.3%
	Other (describe)	Number #	34	41	3	78
		Column %	11.5%	17.7%	9.4%	14.0%
Total		**Number #**	**295**	**232**	**32**	**559**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.26: What Do You Least Like About Being a Drayage Driver? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
What do you least like about being a drayage driver?	Wait times	Number #	184	160	23	367
		Column %	60.9%	68.4%	74.2%	64.7%
	Safety	Number #	48	37	6	91
		Column %	15.9%	15.8%	19.4%	16.0%
	Driver training	Number #	9	9	2	20
		Column %	3.0%	3.8%	6.5%	3.5%
	Compensation	Number #	37	21	0	58
		Column %	12.3%	9.0%	.0%	10.2%
	Other	Number #	24	7	0	31
		Column %	7.9%	3.0%	.0%	5.5%
Total		**Number #**	**302**	**234**	**31**	**567**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

Table 4.27: How Would You Like To Be Kept Informed About Port Activities And Other Issues That Affect Your Work? *By Employment Type*

			Employee	Owner-Operator	Replacement Driver for O-O	Total
How would you like to be kept informed about Port activities and other issues that affect your work?	Printed notices/flyers	Number #	122	98	16	236
		Column %	35.0%	41.0%	47.1%	36.1%
	Email	Number #	85	97	3	185
		Column %	24.4%	40.6%	8.8%	28.3%
	CB Radio	Number #	15	8	6	29
		Column %	4.3%	3.3%	17.7%	4.4%
	Phone	Number #	68	38	9	115
		Column %	19.5%	15.9%	26.4%	17.6%
	Website	Number #	47	22	0	69
		Column %	13.5%	9.2%	.0%	10.6%
	Other (describe):	Number #	12	7	0	19
		Column %	3.4%	2.9%	.0%	2.9%
Total		**Number #**	**349**	**270**	**34**	**653**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Port Drayage Driver Survey.

APPENDIX H SURVEY QUESTIONNAIRE

SURVEY OF PORT DRAYAGE DRIVERS

We would like your input for a study on Port Drayage Drivers in Metro Vancouver.

WHAT IS THE SURVEY FOR?	Your responses will help provide an accurate and timely snapshot of who works in the port trucking industry, and your insights and opinions will help guide future human resource activities that support drayage truck drivers.
ARE MY ANSWERS CONFIDENTIAL?	The survey is confidential. Your information will **not** be shared with your employer or with Port Metro Vancouver. This information will **only** be used for this study and no individual information will be shared or reported.
WHO IS CONDUCTING THIS SURVEY?	The survey is conducted by the Asia Pacific Skills Gateway Table ("Skills Table"), and supported by the BC Trucking Association, Port Metro Vancouver, the BC Ministry of Transportation and Infrastructure, and Transport Canada.
WHAT IF I HAVE QUESTIONS?	If you have any questions about this survey, please contact: Sarah Mathewson, R.A. Malatest & Associates Ltd. Email: s.mathewson@malatest.com / Phone: 1-800-665-5848

PRIZES

To thank you for completing the survey, we would like to offer you a $10 coffee gift card and your name will be entered into a draw to win an **iPad**. To qualify for the draw, please enter your name and contact information in the space provided below. The winner's name will be drawn on or before March 28, 2013.

If you would like to receive your gift card and be entered into the draw, please complete:

Name _____ **Surname** _____

Street _____ **City** _____ **Postal Code** _____

Phone _____ **E-Mail** _____

THANK YOU FOR PARTICIPATING IN THIS SURVEY!

SECTION A | WORK HISTORY

1. Are you a/an?

○ Employee ○ Owner-operator ○ Replacement driver for owner-operator

2. Are you the owner of your truck?

○ Yes, I own my truck ○ No, I lease my truck ○ No, I neither own nor lease my truck

3. How many years have you worked as a port drayage driver? _____ years ○ less than one year

4. Is drayage driving your main occupation? ○ Yes ○ No

5. Did you do any other kind of work last year? (including other types of trucking)

○ No ○ Yes—What kind? _____

6. How long have you worked for your current company? _____ years ○ less than one year

7. How many months did you work as a *drayage driver* last year? _____ months

8. How many days do you work as a *drayage driver* in a typical week? _____ days

9. How many hours do you work as a *drayage driver* in a typical day?

(incl. waiting & non-driving time) _____ total hours

10. About how many kilometres (km) did you drive your truck for *drayage* last year? _____ km

11. About how many *revenue* drayage trips do you make in a typical day?

(with loaded or empty container) _____ one-way trips

12. About how many *non-revenue* drayage trips do you make in a typical day?

(with a bare-chassis or bobtail) _____ one-way trips

SECTION B | COMPENSATION & EXPENSES

13. **To the nearest thousand dollars, how much did you earn last year as a *drayage driver* after all your truck expenses were paid?** _____ dollars

14. **To the nearest thousand dollars, how much did you earn last year from *other types of work* after all your truck expenses were paid?** *(incl. other types of trucking)* _____ dollars

15. **How much are you being paid for the current trip?** *(check one)* $_____ per ○ trip ○ km ○ hour

16. **Are you being paid a fuel surcharge for the current trip?** ○ Yes ○ No

17. **Are you paid for waiting time for the current trip?** ○ Yes ○ No

18. **About how much did you spend on truck expenses last year?** *(e.g. fuel, repairs, insurance,etc.)* _____ dollars

19. **Did you employ a replacement drayage driver last year?** ○ Yes ○ No *» skip question 20*

20. **What were your total expenses for a replacement drayage driver last year?** _____ dollars

21. **Are you a member of a union?** ○ Yes ○ No

22. **Do you receive health benefits as part of your compensation package?** ○ Yes ○ No

23. **Do you have a pension/retirement plan as part of your compensation package?** ○ Yes ○ No

24. **About how many hours per week do you spend managing the business and finances related to your drayage operations?** *(e.g. maintaining records and paperwork, paying bills, etc)* _____ hours per week

25. **Do you get help managing the finances related to your drayage operations?**

○ Yes, I pay an external bookkeeper/accountant ○ No, I do it myself

○ Yes, I have my family or friend help me ○ Other (specify): _____

SECTION C | DRIVER INSIGHTS

26. How many more years are you planning to work as a drayage driver? _____ years

27. What do you plan to do afterwards?

- ○ Retire
- ○ Leave the drayage industry for different type of occupation (non-driving)
- ○ Leave the drayage industry for a different driving career
- ○ Other (identify): _____

28. What do you like the *most* about being a drayage driver? *(Check one only)*

- ○ Driving a truck
- ○ Lifestyle
- ○ Compensation
- ○ Other (specify): _____

29. What do you *least* like about being a drayage driver? *(Check one only)*

- ○ Wait times
- ○ Safety
- ○ Driver training
- ○ Compensation
- ○ Other (describe): _____

30. How would you like to be kept informed about Port activities and other issues that affect your work?

- ○ Printed notices/flyers
- ○ Email
- ○ CB Radio
- ○ Phone
- ○ Website
- ○ Other (describe): _____

SECTION D | DRIVER CHARACTERISTICS

31. What is your gender?

○ Female ○ Male

32. How old are you? _____ years

33. Are you a ?

○ Canadian citizen ○ Landed immigrant ○ Neither

34. What is your primary language? *(Check one only)*

○ English ○ French ○ Punjabi ○ Other (specify): _____

35. What is the highest level of education that you have completed? *(Check one only)*

○ Less than high school ○ Some vocational/trades/apprenticeship ○ College/University diploma or degree
○ Some high school ○ Completed vocational/trades/apprenticeship
○ Completed high school ○ Some college/university

36. How did you learn your driving skills before getting your Class 1 license? *(Check all that apply)*

○ Family or friend ○ Private training school ○ Other (specify): _____
○ On-the-job *(e.g., employer)* ○ Public training school *(e.g., college, etc.)* _____

THANK YOU
FOR COMPLETING THIS
IMPORTANT SURVEY!

Please return completed survey to:

On site To the R.A. Malatest & Associates Ltd. Surveyor
Online www.portdrivers.malatest.net
By Mail R.A. Malatest & Associates Ltd.
858 Pandora Avenue, Victoria BC V8W 1P4
By Fax 1-888-233-3810

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www.hrwire.ca

Labour Force Profile of Port Drayage Drivers in Metro Vancouver

Final Report

Prepared by
Asia Pacific Gateway Skills Table

HR WIRE.ca | Managing Your Most Important Resource