



BC Marine Terminal Operators Association

**Economic Impact Assessment
Marine Terminal Operations and Capital Programs**

KPMG LLP

October 2018





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Glossary

BC, the Province	Province of British Columbia
BCIOM	BC Input-Output Model
BCMTOA	BC Marine Terminal Operators Association
BCPPTA, the Act	BC Port Property Tax Act
KPMG	KPMG LLP



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Executive Summary

The British Columbia (“BC”) Ports Property Tax Act (“PPTA” or “the Act”) was enacted in 2004 and extended in 2007 to the year 2018. In March 2014, the existing cap on municipal port property tax rates was made permanent for designated ports. The Act caps municipal tax rates on designated port facilities in BC and also mandates compensation to municipalities that were affected at the time of implementation by a loss of tax revenue (i.e.: if tax rates were higher than the capped rate at the time of implementation of the Act).

Over the time in which the Act has been in existence, there have been significant investments made in marine terminals by both port authorities and marine terminal operators, which have focused on maintaining competitiveness of Canada’s west coast gateway ports and keeping up with the growth in the volume of goods moving through west coast Canadian ports.

KPMG was engaged by the BC Marine Terminal Operators Association (“BCMTOA”) to estimate economic impacts over the last 10 years as a result of the operators’ expenditures on operations and capital projects. This study also documents the historical and future investments that have facilitated the economic growth within BC ports, the jobs created as a result of this growth, and the positive economic impacts that these have on the Provincial economy. Ultimately, this study demonstrates how the Act has supported and continues to support these economic benefits through the stability that it provides on property taxes for port operators.

This study assesses the economic impacts of spending by the marine terminal operators, which includes:

- An assessment of the taxes paid by municipality, the historical and future investments in capital projects, and incremental employment
- An assessment of the economic impacts through incremental GDP, employment income and taxes from the increased investment, employment, and activities at the terminals
- An assessment of the economic impacts associated with increased investment by the marine terminals in supporting infrastructure
- An assessment of the community impacts associated with activities by port operators to better engage with the community and address potential concerns (e.g., light and noise pollution, increased traffic, preservation of green spaces)

The data was collected through a survey of terminal operators and also includes information on property taxes paid to each of the 10 municipalities and districts that the 20 marine terminal operators operate in (18 BCMTOA members and 2 non-member).



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Study Highlights

During the period 2008 – 2017, the 19 marine terminal operators handled:

32+ million	789+ million	3+ million
Twenty-foot Equivalent Units (TEUs)	Tonnes of Cargo	Vehicles

The operating and capital expenditures of the 19 terminal operators over this period have generated jobs and supported the building of local communities. A total of **\$11.1 billion** in operating expenditures were incurred and **\$3.2 billion** in capital was invested as a result of the activities at the terminals.

As a result of the marine terminal operations and capital investments in the last decade, the Province of BC accrued an estimated **\$11.7 billion** in Gross Domestic Product (“GDP”) impact. The detailed breakdown of GDP, employment, and tax revenues is presented as below.

Marine Terminal Operators Activity (2008 – 2017)	Gross Domestic Product (British Columbia)	Employment Income (British Columbia)	Employment (Full-time Equivalent in British Columbia)	Tax Revenues (all levels of government)
10-year Operations	\$9.9 billion	\$8.4 billion	106,687	\$2.0 billion
10-year Capital Investment	\$1.8 billion	\$1.3 billion	17,375	\$0.4 billion
Total	\$11.7 billion	\$9.7 billion	124,062	\$2.4 billion

Of these impacts, **more than 90% of the impacts are realized in the respective municipalities and districts in which the marine terminals operate.** This suggests a large portion of the expenditures are funding and supporting economic activities in the local communities that these marine terminals operate within.

Based on the responses received, at least **\$2.0 billion** is budgeted for capital investments over the next five years. The marine terminal operators will invest further in shipping related infrastructure in order to expand capacity to accommodate higher throughput through BC ports. There is also budget earmarked to address and alleviate concerns from neighbours around environmental impacts (e.g., noise, dust, etc.) as a result of the shipping and logistics industry. The operators also have plans to continue building and further strengthening local communities as they continue to support local causes and businesses in their respective municipalities and districts.



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1 Background

The British Columbia Ports Property Tax Act (“PPTA” or “the Act”) was enacted in 2004 and extended in 2007 to the year 2018. In March 2014, the existing cap on municipal port property tax rates was made permanent for designated ports. The Act caps municipal tax rates on designated port facilities in BC and also mandates compensation to municipalities that were affected at the time of implementation by a loss of tax revenue (i.e.: if tax rates were higher than the capped rate at the time of implementation of the Act).

At the time, these measures addressed concerns from port terminal operators that rising or uncertain municipal taxes on industrial land were impacting investment decisions and putting BC marine terminals at a competitive disadvantage with terminals on the US Pacific Coast. The cap on municipal tax rates applies to 37 port properties managed by 20 marine terminal operators, in 10 BC municipalities – 8 in the Greater Vancouver area, as well as Squamish and Prince Rupert.

1.1 About this Study

Over the time in which the Act has been in existence, there have been significant investments made in marine terminals by both port authorities and marine terminal operators, all of which have been focused on maintaining the competitiveness of Canada’s west coast gateway ports and keeping up with the movement of goods through west coast Canadian ports.

Highlighting the impact of these investments has been the growth seen in the Port of Vancouver, where trade has grown by close to 25% (27 million tonnes) or 2.5% per annum since 2008. The Port of Prince Rupert has also experienced significant growth with traffic volumes more than doubling from 11 million to 24 million tonnes over the period of 2008 – 2017. The growth seen across ports in the Province is reflective of the significant investments and jobs created by port operators in BC which were enabled in part by the support provided by the BCPPTA.

The positive economic and community impacts that port operators have created in BC may not have been possible without the support of government in creating an economic environment that encourages investment through initiatives such as the BCPPTA. Through the Act, the provincial government has shown its commitment to supporting the competitiveness of BC’s port industry which has in turn resulted in economic benefits for the province.

KPMG was engaged by the BC Marine Terminal Operators Association (“BCMTOA”) to estimate economic impacts over the last 10 years as a result of the marine terminal operators’ expenditures on operations and capital projects. This study also documents the historical and future investments that have facilitated the economic growth within BC ports, the jobs created as a result of this growth, and the positive impacts that these have on the Provincial economy. Ultimately, this study demonstrates how the Act has supported and continues to support these economic benefits through the stability that it provides on property taxes for port operators.

This study assesses the economic impacts of spending by the marine terminal operators, which includes:

- An assessment of the taxes paid by municipality, the historical and future investments in capital projects, and incremental employment
- An assessment of the broader economic impacts through incremental GDP, employment income and taxes from the increased investment, employment, and activities at the terminals



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- An assessment of the broader economic impacts associated with increased investment by the marine terminal operators in new port infrastructure
- An assessment of the community impacts associated with activities by port operators to better engage with the community and address potential concerns (e.g., light and noise pollution, increased traffic, and preservation of green spaces)

The data was collected through a survey of BCMTOA members and also includes information on property taxes paid to each of the 10 municipalities and districts that the 20 marine terminal operators operate in (18 BCMTOA members and 2 non-members).

Additionally, where available, KPMG has also gathered information from the terminal operators on their future investment plans.

1.2 Structure of this Study

To undertake this Study, data from each marine terminal operator¹ was analysed to quantitatively estimate the economic impact of:

- The operators' operational activities from 2008 – 2017; and
- The operators' capital investments from 2008 – 2017.

The methodology of the analysis is discussed in **Chapter 2: Methodology**.

The impacts for this study are detailed in the following chapters:

- **Chapter 3: Terminal Activities over the Past Decade** paints an overall picture of the economic activities as a result of the terminals operating and investment activities over the past decade (2008 – 2017); and
- **Chapter 4: Economic Impacts** presents the estimated impacts of the marine terminal operators' operating expenditures and capital investments.

In conducting the quantitative analysis, data was collected for the 2008 – 2017 calendar years to ensure consistency of the analysis conducted. Where data was unavailable for any of the calendar year or terminal operator, data from other calendar years or comparable marine terminal operators was used as a proxy and is identified in the appendix where applicable. All inputs and assumptions used to conduct analyses were validated with BCMTOA prior to finalization.

¹ For a comprehensive list of marine terminal operators surveyed, see appendix.

2 Methodology

This chapter lays out the methodology under which this Study was conducted in order to analyze and quantify the impact of the PPTA on the marine terminal operators.

2.1 Study Methodology

This study employs two main methods in measuring the impacts of the BCPPTA and the economic impact of spending of the marine terminal operators on the provincial and local economies:

1) Activity Analysis

The activity analysis is designed to present the key statistics of the 20 marine terminal operations. These include the volume of goods moved, taxes paid within each municipality, the historical and future investments made, and the incremental employment created, all on an annual basis. The purpose of this analysis is to highlight how the level of activity and expenditure has changed over time.

2) Economic Impacts

The BC Input-Output Model (BCIOM) administered by BC Stats, was used to assess the economic impacts (direct, indirect and induced) of marine terminal operations. The BCIOM uses Input-Output multipliers to assess the incremental effects of port activities (and associated costs) on the BC economy. The model also estimates the magnitude of increased tax revenues to all levels of government. The multipliers used in the model reflect average interdependencies between industries and the Province's economy, based on the type of activity under analysis.

Key assumptions used in the above analysis are included in the appendix.

For the purpose of this report, particularly the later chapters detailing the economic impact of the BCMTOA members' expenditures, "local region" is defined as an area comprising the cities of North Vancouver, Port Moody, Vancouver, Surrey, Richmond, Delta, Prince Rupert, and the Districts of North Vancouver, West Vancouver, and Squamish.

2.2 Results of Input-Output Models

Typically, Input-Output ("IO") models measure economic impacts in terms of:

- Economic Output
- GDP (value-add)
- Employment Income
- Employment (jobs or FTEs)
- Tax Revenues

While Economic Output is included in our analysis, it overstates true economic impact and is usually not used in presenting the results of an economic impact assessment.

The BCIOM is an input-output model, which examines the effects of a business operation or project on the economy. It includes an assessment of the direct, indirect, and induced impacts in terms of

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changes to economic output, gross domestic product, employment income, employment, and tax revenues. The usage of this econometric tool allows approximation of three types of impacts:

- **Direct impacts** resulting from direct expenditures on goods, services and employees associated with the capital and operating expenditures of the marine terminal operators.
- **Indirect impacts** resulting from the suppliers to the marine terminal operators purchasing goods and services, and employing workers to meet the demand from the operators.
- **Induced impacts** resulting from employees of the marine terminal operators and their suppliers purchasing goods and services at a household level.

The categories of economic impacts presented in this study represent the broader effects of the activities undertaken at the marine terminals, as well as any capital investment into the local region. Each of the above categories of impact comprises components, including:

Direct Economic Impact	Indirect Economic Impact	Induced Economic Impact
Output – a measure of the total expenditures of the marine terminal operators in British Columbia	<p>Impacts to output, GDP, employment income, employment, and overall tax revenues associated with the suppliers to BC marine terminal operators</p> <p>Associated with the suppliers to the operators’ purchasing goods and services, employing workers and paying taxes that would not occur without the marine terminals’ operations and investments</p>	<p>Impacts to output, GDP, employment income, employment, and overall tax revenues associated with the expenditures by employees of BC marine terminal operators and their suppliers</p> <p>Associated with expenditures by employees of the marine terminal operators and suppliers purchasing goods and services, at a household level</p>
GDP – a measure of the value added to the provincial economy from marine terminal operations and capital investments and is the most commonly used measure of economic impact		
Employment Income – a measure of the wages, salaries, benefits and other income earned by employees of the marine terminal operators		
Employment – a measure of the number of employees and/or full-time equivalent employees employed by the marine terminal operators		
Tax Revenues – a measure of the taxes paid to federal, provincial and municipal governments from the operations of the marine terminals		

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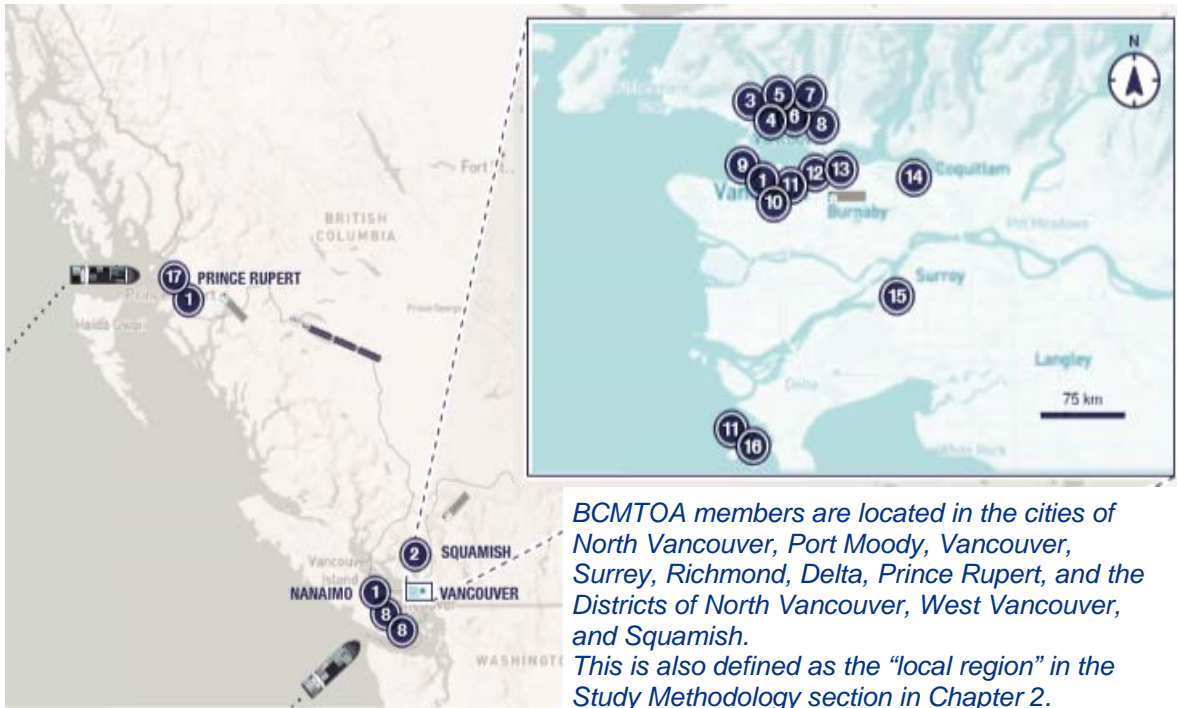
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3 Profile of Marine Terminals

This chapter provides a profile of the marine terminal sector in British Columbia in terms of the operators, traffic volumes, operating expenditures, employment and property taxes paid.

3.1 About BC Marine Terminal Operators

The BC Marine Terminal Operators Association’s (BCMTOA) mandate is to ensure the economic and environmental viability at BC’s marine terminals. Its members are located in ten municipalities and districts in BC’s coastal areas as illustrated below.



Source: BCMTOA

Marine terminal operators are key businesses in their local communities as they are typically a major employer in the region and purchase a variety of goods and services from local businesses. Additionally, they also actively seek opportunities to contribute to the local municipalities they operate in, in order to reduce and manage nuisances to neighbouring communities. Most importantly, they play a key role in the safe and effective movement of goods and people and also constantly invest in order to maintain BC’s competitiveness in the international shipping and logistics market.

Over the last 10 years (2008 to 2017), marine terminals in BC have facilitated the movement of goods through its ports to nearly 200 trading economies. The 10-year cumulative volume of goods moved through these terminals includes:



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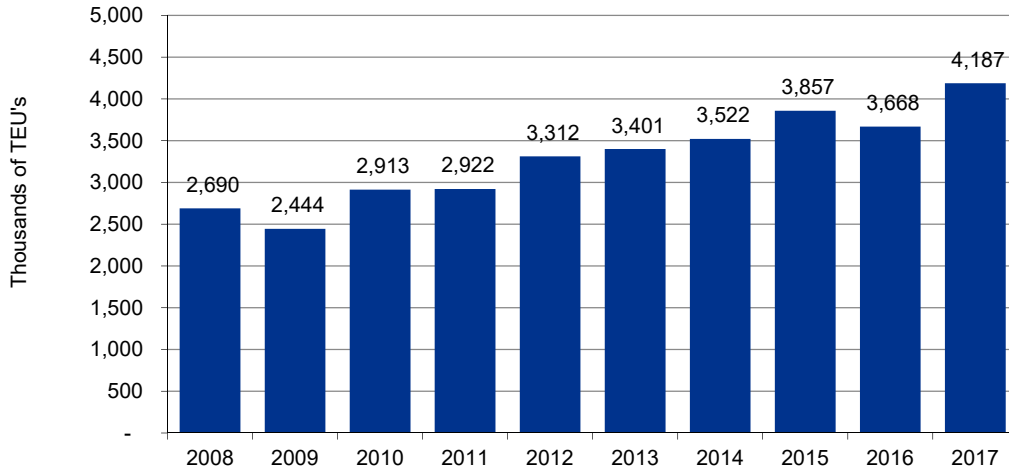
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32+ million	789+ million	3+ million
Twenty-foot Equivalent Units (TEUs)	Tonnes of Cargo	Vehicles

In the 10 years between 2008 and 2017, the compound annual growth rate (“CAGR”) of BC’s Gross Domestic Product (“GDP”) was 2.87%. In comparison, the growth in volume of goods moved has outgrown the Province’s GDP CAGR by 1.5 to 2 times over the same timeframe.

Container volume growth

Container Throughput



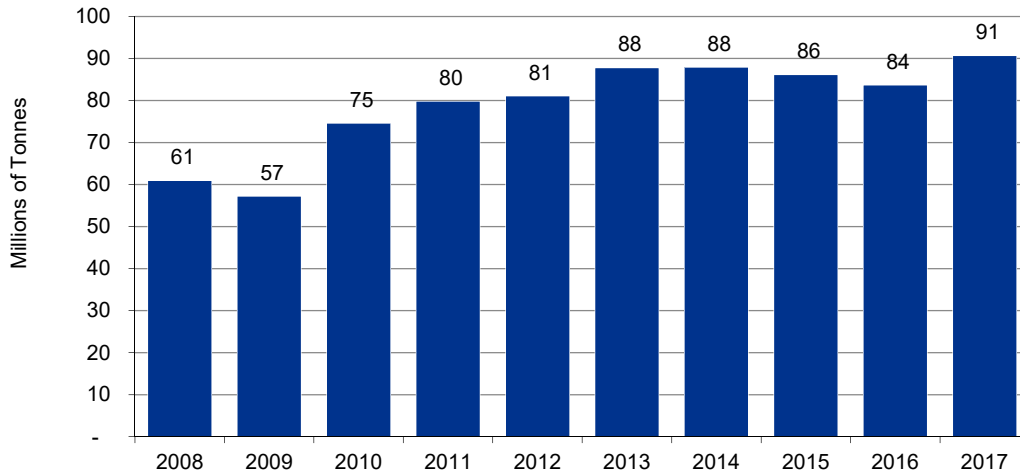
Container throughput has increased approximately 55% since 2008. The CAGR of 5.0% for container traffic is about 75% higher than the CAGR for BC GDP of 2.87% over the same time period.

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Bulk and break-bulk volume growth

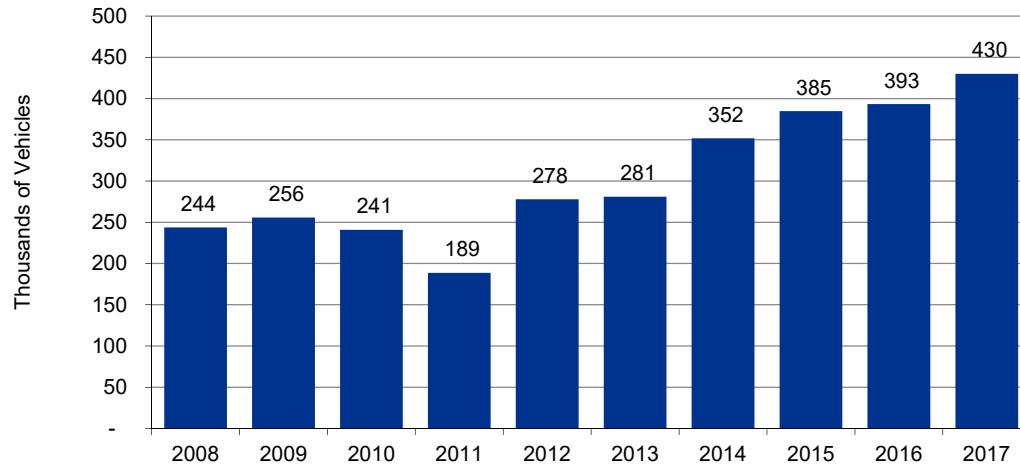
Bulk & Breakbulk Throughput



The CAGR of 4.6% for bulk and break-bulk traffic is about 60% higher than the CAGR for BC GDP of 2.87% over the same time period.

Automobile volume growth

Automobile Throughput

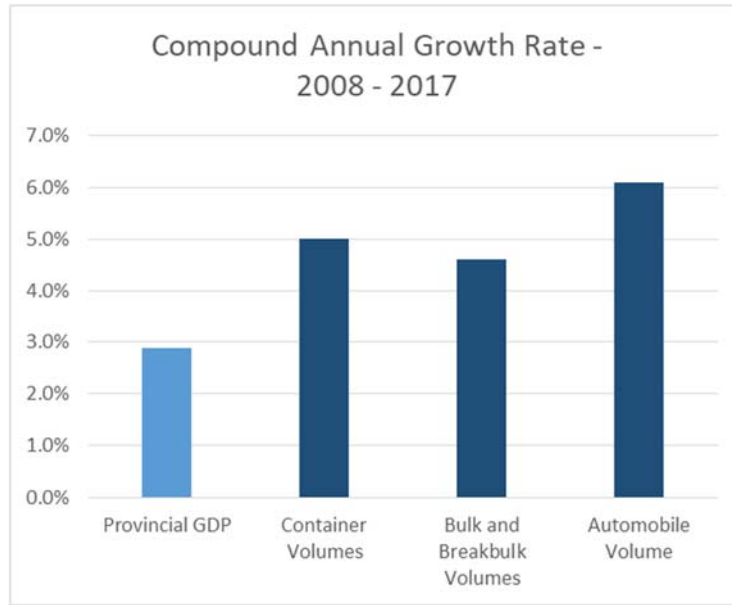


Automobile throughput has increased by about 75% since 2008. The CAGR of 6.1% for automobile traffic is more than double the CAGR for BC GDP of 2.87% over the same time period.

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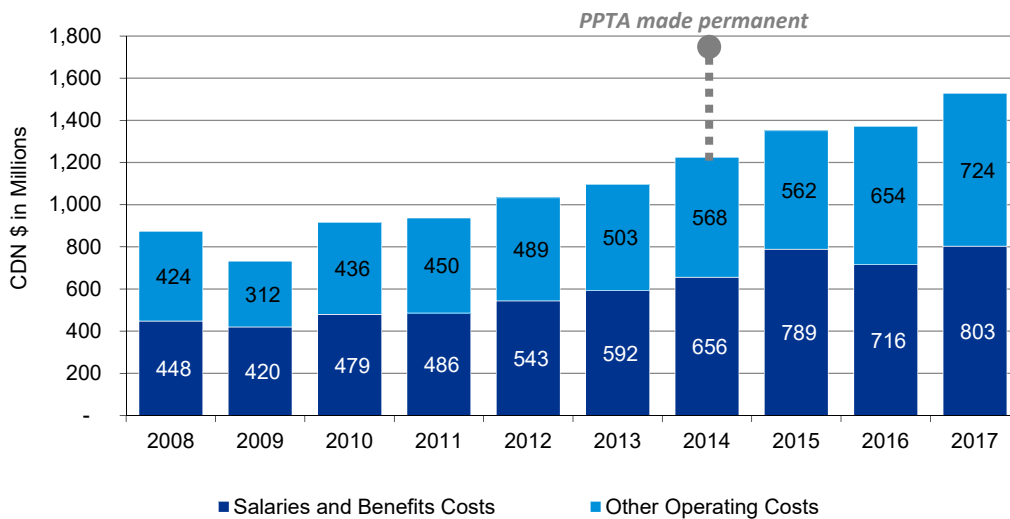
The following chart summarizes the comparable growth rates of port traffic versus provincial GDP and highlights the growing importance of ports to a healthy provincial economy.



3.2 Employment Created from Operations

The operating expenditures incurred by the terminal operators generates jobs and business for local suppliers. The following chart highlights operating costs at the terminals over the study period.

Historical Salaries & Operating Expenses

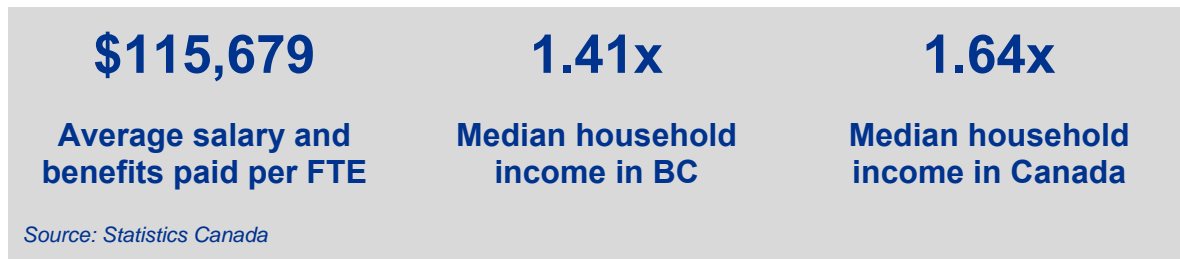


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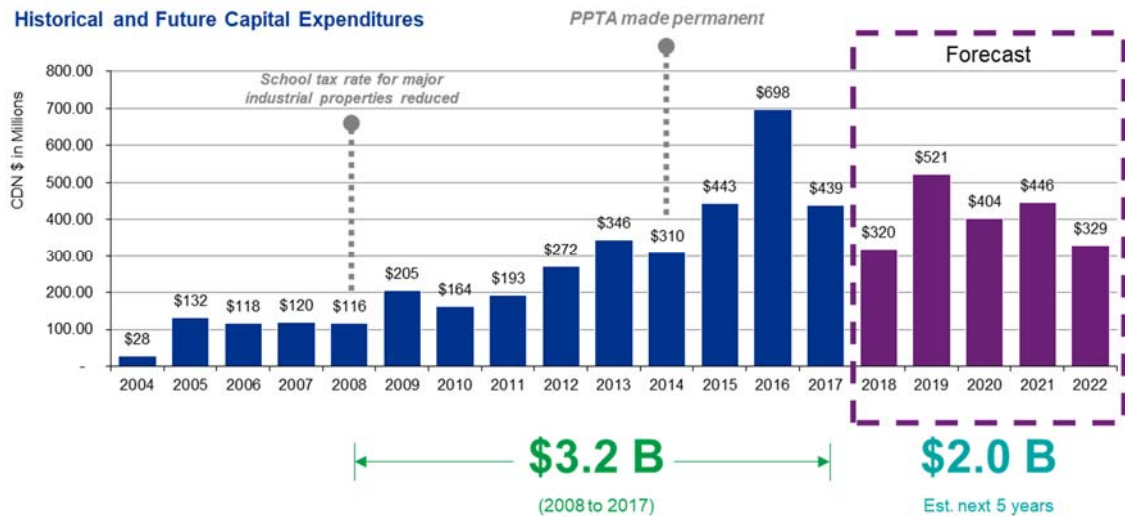
Over the past decade, operating expenditures (including salaries), have generally increased steadily. 2017 recorded 71% higher expenditures than in 2008, translating into a CAGR of 5.8%, which is double the growth rate of the CAGR of the Provincial GDP over the same timeframe.

Salaries and benefits have generally accounted for half of the total operating costs, which covers the remuneration for an average of 5,400 full-time equivalent (“FTE”) jobs annually over the past 10 years. Employees at the terminals are also paid more than BC’s median household income. In 2016, the operators’ employees were paid on average of \$116,000 annually per FTE. This represents an estimated 41% to 64% higher total compensation compared to the provincial and national median household income.



3.3 Historical and Future Investments

Since 2008, capital expenditures made by marine terminal operators have generally continued on an upwards trajectory. Capital expenditures over the past ten years total \$3.2 billion; these investments have notably increased since the PPTA was made permanent in 2014 as illustrated below.



This investment pattern is expected to be sustained into the future. Currently, operators are expected to invest an annual average of \$400M in capital over the next 5 years.

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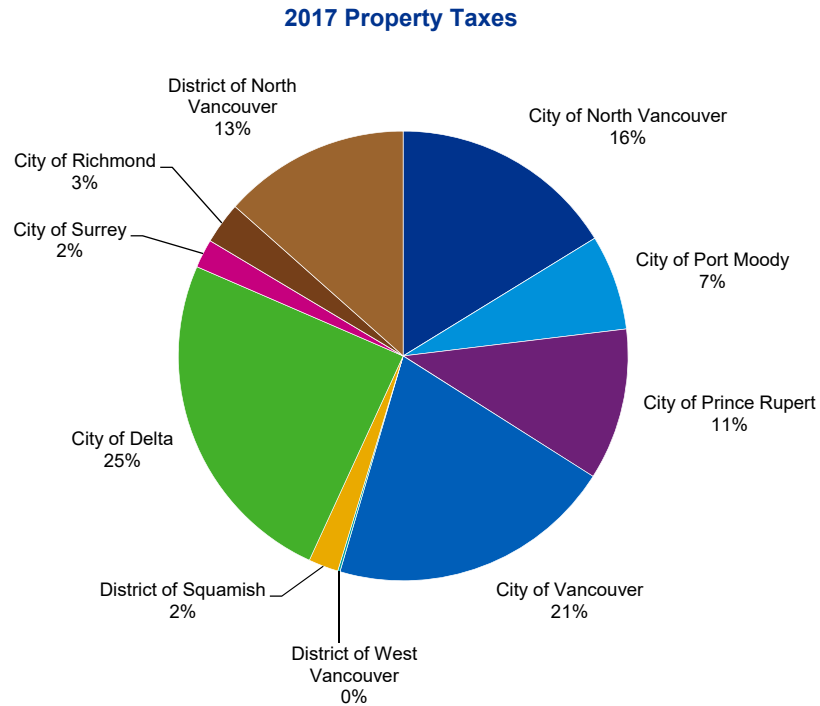
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Operators further note that the estimated future capital investments are based on budgeted figures only. As additional, not yet budgeted capital investments have not been captured in the figures above, further incremental economic impacts can be expected.

Not only have the operators invested in capital upgrades for their respective terminals, but they have also been involved in a number of community initiatives such as environmental stewardship and community building. This is discussed further in Chapter 4.

3.4 Taxes Paid to Each Municipality

In 2017, the majority of the property taxes paid by marine terminal operators accrued to four municipalities and districts: the District of North Vancouver, the City of North Vancouver, the City of Vancouver and the City of Delta. These four municipalities make up approximately 78% of all the property taxes paid by the marine terminal operators in this study. The remaining 22% accrue to the remaining six municipalities in the local region.

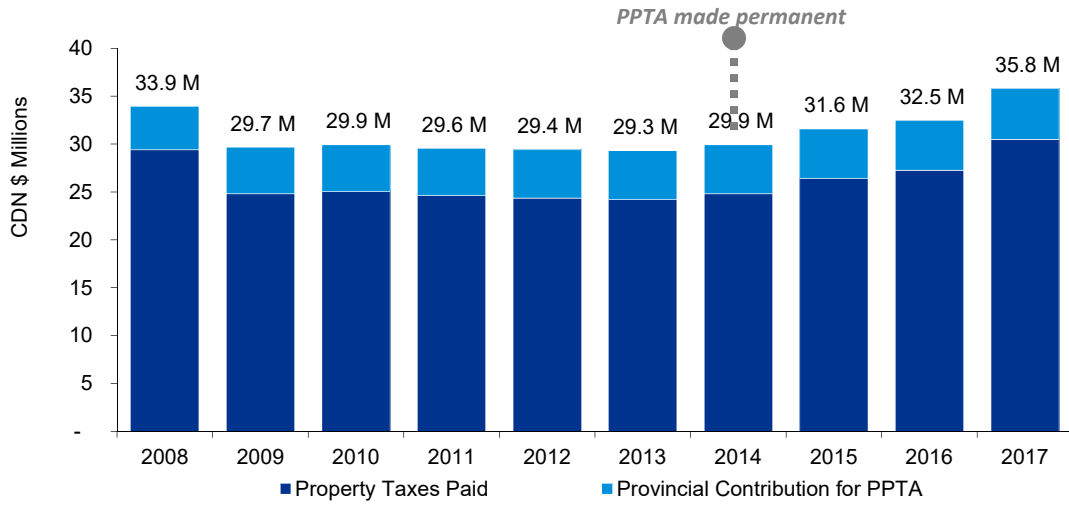


As illustrated below, since the PPTA was made permanent in 2014, the total taxes paid to the local municipalities have increased by about 20%. This translates into an average of more than a 6% increase year-over-year in property tax revenue to municipalities.



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Total Property Taxes Received by Municipalities



4 Economic Impacts

The previous chapter presented estimates of the operating and capital expenditures resulting from the terminal activities. This Chapter quantifies the estimated direct, indirect, and induced economic impacts based on these expenditures:

- Aggregate operating expenditures incurred by the terminal operators for the past 10 years; and
- Aggregate capital expenditures incurred by the terminal operators for the past 10 years.

4.1 Economic Impacts from Operations

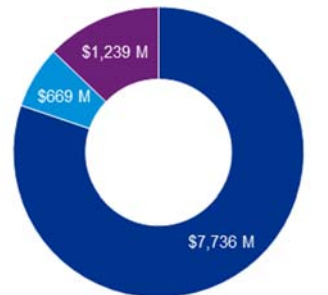
Over the past decade, operating expenditures of \$11.1 billion were incurred by the 19 terminal operators who participated in this study. This includes \$5.9 billion paid in salaries and benefits from 2008 – 2017 to full-time, seasonal, and contract employees. These incomes have further downstream, indirect impacts on local businesses as a result of household expenditures of these employees.

The operators' \$11.1 billion of expenditures generated **\$9.9 billion** in GDP to the provincial economy and **over 106,000 FTEs** over the 10-year horizon. These expenditures generate economic impacts at all levels of the economy, however, only provincial and regional (as defined earlier) impacts are presented for this report.

	GDP	Jobs	Taxes
British Columbia	\$9,910 M	Employment - 106,687 FTE years Wages - \$8,390 M	\$2,037 M
Local Regions	\$9,609 M	Employment - 103,327 FTE years Wages - \$8,217 M	\$416 M

Most of the GDP impact is as a result of the direct operations and employment at the marine terminals.

Employees of marine terminal operators can also be generally assumed to reside directly in, or in a nearby municipality of where the marine terminal operator is situated. As such, it is assumed that a large portion of these employees' incomes are spent on goods and services provided by businesses in the local area. This is also



■ Direct ■ Indirect ■ Induced
Total GDP Impact Breakdown



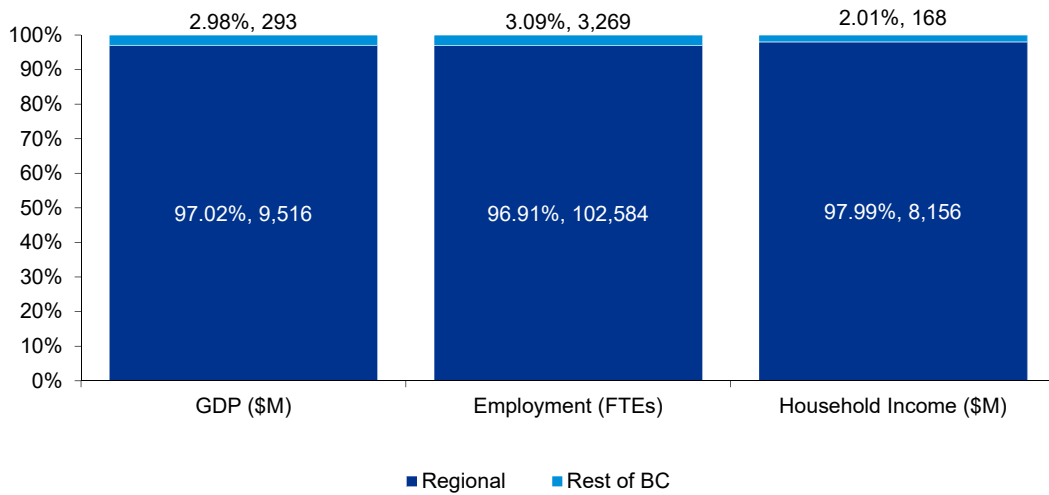
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demonstrated in the spread of the impact within the local region as compared to the total impact generated.

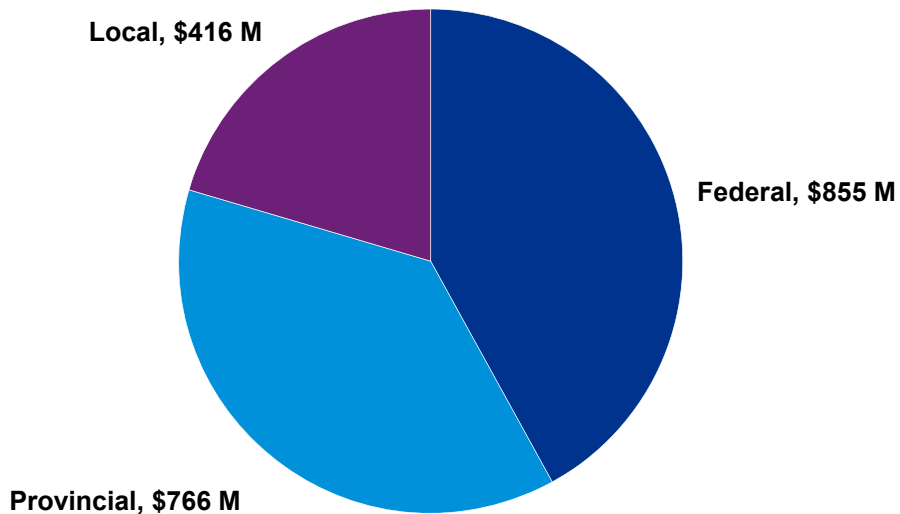
As seen in the chart below, the majority of the economic impacts from operating expenditures are at the local economy level. It is estimated that less than 5% of total economic impacts are generated outside of the local region in BC.

Economic Impact - Operating Expenses



As a result of the marine terminal operations in the region, a total of \$2.0 billion in tax revenues were generated. Local governments' tax impacts made up about one-fifth of total tax impacts estimated from operations.

Operating Expenditure Tax Revenue



4.2 Economic Impacts from Capital Investments

In the course of implementing capital programs between 2008 and 2017, marine terminal operators made direct purchases from businesses operating in their local region. The operators' \$3.2 billion of capital investment generated **\$1,838 billion** in GDP to the provincial economy and **17,375 FTEs** over the 10-year horizon.

The breakdown of economic impacts between 2008 and 2017 between the province as a whole and the local region (defined as the collective municipalities that marine terminal operators are active in) are summarized in the following table.

	GDP	Jobs	Taxes
British Columbia	\$1,838 M	Employment -17,375 FTE years Wages - \$1,327 M	\$418 M
Local Regions	\$1,700 M	Employment - 15,946 FTE years Wages - \$1,243 M	\$45 M

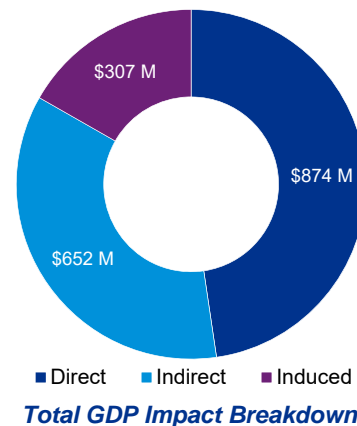
Since 2008, examples of capital investments made by marine terminal operators include:

- Implementation of automation systems;
- Expansion of facility capacities to handle growing volumes of cargos;
- Environmental upgrades such as noise and nuisance reduction mechanisms; and
- Maintenance equipment upgrades.

These capital projects not only create job opportunities, but also contribute to the greater context of retaining skilled labour in the region.

Direct impacts constituted close to 50 percent of GDP growth, while indirect impacts accounted for an additional 35%.

There is \$2.0 billion currently budgeted for future expansion and investments in the next five years, including an expansion of throughput capacity, which will generate further GDP growth, employment and tax revenues.



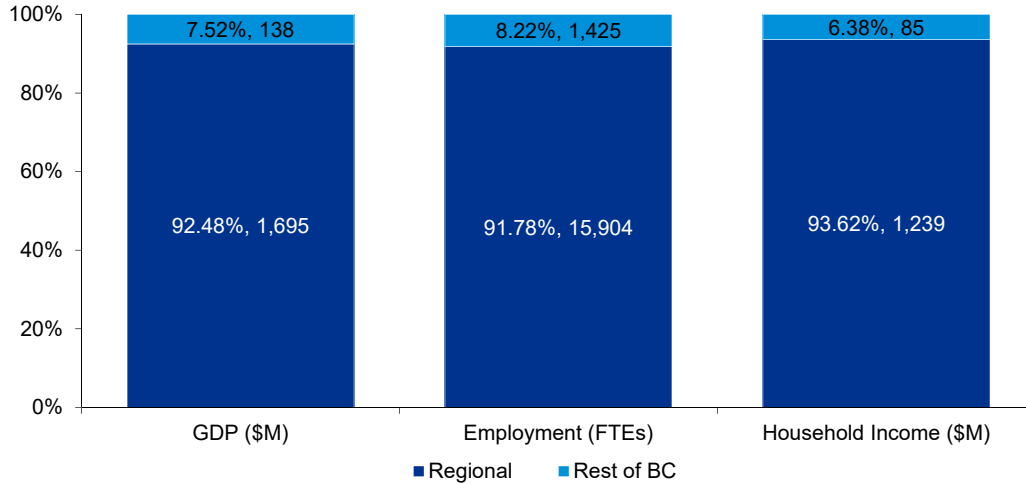


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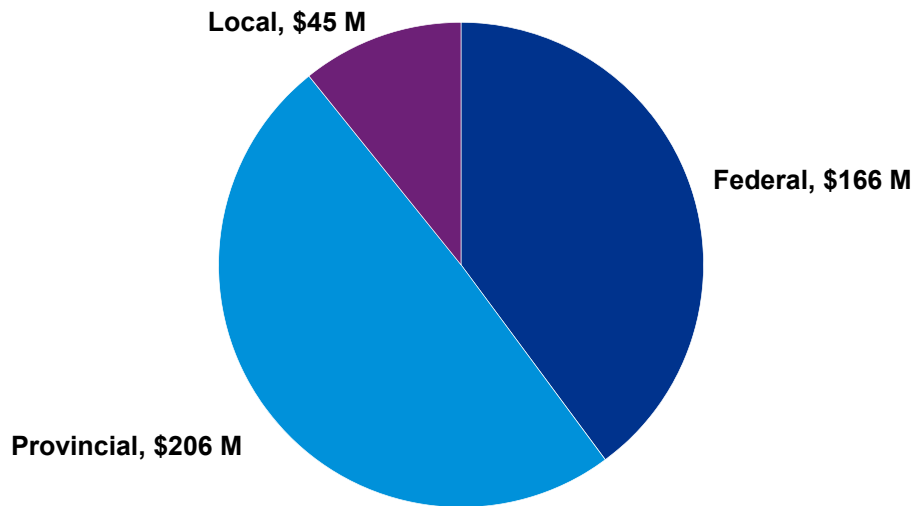
Similarly to the economic impacts of the operating expenditures, the majority of the economic impacts from capital expenditures accrue to the local economy. Approximately 7% of total economic impacts were outside of the local region in BC.

Economic Impact - Capital Expenses



As a result of capital expenditures by the marine terminal operators, it is estimated that a total of \$418 million in tax revenues were generated. Approximately half of these impacts accrued to the provincial government, and 11% to local governments.

Capital Expenditure Tax Revenues



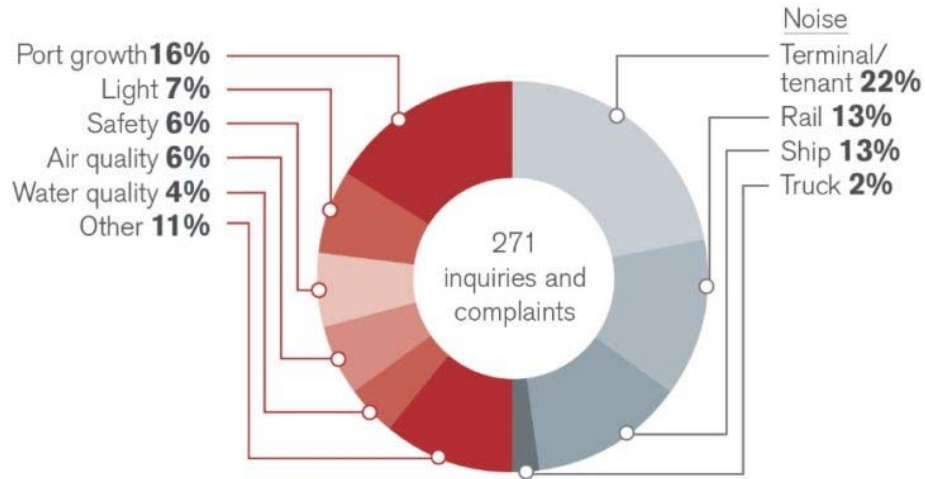
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As discussed previously, marine terminal operators are not only capital investors but also community builders. A portion of the capital expenditures is dedicated to developing the local communities where the terminals are operating.

Community feedback received in 2016 through community feedback line

☑ Independently assured



Source: Port of Vancouver

As illustrated above, according to community feedback gathered through the community feedback line by the Port of Vancouver in 2016, noise pollution from terminal activities was identified as a top concern in the community, accounting for 22% of the community feedback. These concerns are likely also similarly shared by other neighbours of marine terminal operators in BC.

To proactively address these concerns, marine terminal operators reported a variety of planned projects and capital expenditures dedicated to address and mitigate pollution and other nuisances as a result of general port activities. Partnerships are being actively formed between BCMTOA members and other public and private sector organizations in order to alleviate community concerns.



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5 Conclusion

Over the past decade, marine terminals have become a growing economic force in the Province through their operations and capital investments. This is demonstrated by traffic volume, expenditures and employment growth that exceeds the Provincial GDP growth in the same timeframe. These activities generated the following economic impacts:

- As a result of operating expenditures from 2008 to 2017, the marine terminal operators generated \$9.9 billion in GDP and more than 106,000 FTEs of employment across BC.
- Capital investments in upgrades and community building initiatives generated \$1.8 billion in GDP and more than 17,000 FTEs in employment across BC.

Local economic impacts as a result of the expenditures made locally in the respective municipalities and districts are estimated at \$9.6 billion, which accounts for 97% of the total provincial GDP impact. This is reflective of the local suppliers and vendors' role in the operations of marine terminals. Similarly in the capital investments made by the operators, 92% of the total provincial GDP impact was incurred locally in the respective municipalities and districts. This suggests activities conducted are largely local and economic benefits stay in the region of operations.

Marine terminal operators are also key players in the local community. Many of these operators support local initiatives such as contributing through donations and are involved in local community groups and events. They also invest in peripheral infrastructure to address vital community concerns such as noise pollution as a result of the terminal activities.

With traffic volumes continuing to increase and a \$2.0 billion budget for capital investment in the next five years, economic benefits should continue to increase at a similar pace to that experienced over the past 10 years.



6 Appendix

6.1 Data Collection Template

The below table was circulated to BCMTOA members for their input. The data collected from the table was used as a basis for the economic impact assessment.

Port Property Tax Act – Impact Assessment
Data Collection Form

Company:
Marine Terminal:

Data Element	2004	2005	2006	2007	2008	2009	2010
Throughput (tonnes, TEU or vehicles)							
Employment - FTE							
Employment - Hours							
Capital Expenditures							
Property Taxes Paid - Total							
- Municipality #1 City of Vancouver							
Terminal Revenues							
Terminal Operating Costs (including salaries and benefits)							
Salaries and Benefits Costs							

Data Element	2011	2012	2013	2014	2015	2016	2017
Throughput (tonnes, TEU or vehicles)							
Employment - FTE							
Employment - Hours							
Capital Expenditures							
Property Taxes Paid - Total							
- Municipality #1 City of Vancouver							
Terminal Revenues							
Terminal Operating Costs (including salaries and benefits)							
Salaries and Benefits Costs							

Data Element	2018	2019	2020	2021	2022
Future Capital Expenditures					

6.2 Interview Questions

The below list of questions were posed to the respondents.

Economic and Community Impact

1. What are the principal benefits that your company has generated for the municipality in which you primarily operate and/or for the Province of British Columbia?

Please think about impact in terms of both economic wealth creation and community improvement. Economic impacts may include job creation, support of local businesses, and local investments. Social impacts may include the company's community involvement, environmental initiatives, and educational/community awareness programs.

2. Are you involved in any unique projects, partnerships, initiatives or policies that have a positive economic impact on your principal municipality or neighbouring municipalities?

Investments

3. Since 2004, what types of investments have your company made?



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Note: this may include investments that directly enhance your operations, or improve conditions for neighbours or the environment, or remain/increase competitive advantage.

4. What types of future investments are you looking to pursue to both improve your business and remain current within the industry? How will these investments impact your community?

6.3 List of Respondents

The below list of marine terminal operators responded to the request for data and interview questions.

Respondents	BCMTOA Membership
Alliance Grain Terminal Ltd.	BCMTOA member
Cargill	BCMTOA member
Cascadia Port Management Corporation	BCMTOA member
Ceres Corporation	BCMTOA member
DP World Canada	BCMTOA member
Fibreco Export Inc.	BCMTOA member
Fraser Surrey Docks	BCMTOA member
GCT Canada	BCMTOA member
James Richardson International Ltd.	BCMTOA member
Kinder Morgan Vancouver Wharves	BCMTOA member
Neptune Bulk Terminals Canada	BCMTOA member
Pacific Coast Terminals	BCMTOA member
Prince Rupert Grain Terminal	Not a BCMTOA member
Ridley Terminals	BCMTOA member
Squamish Terminals Ltd.	BCMTOA member
Univar	Not a BCMTOA member
Viterra	BCMTOA member
Western Stevedoring Company Limited	BCMTOA member
Westshore	BCMTOA member
WWL Vehicle Services Canada Ltd.	BCMTOA member



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6.4 Assumptions Used

Operating cost data was unavailable for Squamish Terminals, Western Stevedoring, and WWL Vehicle Services, as such, 80% of the revenue was used as a proxy for operating costs.

Data prior to 2014 was unavailable for Cargill, as such, year over year growth of Richardson and Cascadia was used as a proxy for operating costs and 2014 – 2017 average proportion of operating expenditures that is salaries was used as a proxy for salaries.