

# Summary

## **Economic Impact Study** Digitization and Automation of Marine Port Terminal Operations in British Columbia

## **Future uncertain for communities that rely on good middle-class jobs in British Columbia's marine terminal sector**

Automation and digitization are sweeping marine terminal operations world-wide. It's a trend that is well-advanced in Europe, Australia and the Far East. It's only a matter of time before similar disruption occurs in North America.

The Vancouver Fraser Port Authority is planning to build a new fully automated terminal at Roberts Bank. Assuming the project receives regulatory approval, it could be online within about five years. Other BC terminal operators are upgrading their facilities, taking the opportunity to introduce technological change.

In Canada, we are in an enviable position. We can learn from those who have gone before us to assess benefits and costs to ensure changing technology in marine terminal operations brings both commercial and community benefits.

### **The upside**

Increased productivity and profits are held out as the benefits of technological change. But, automation and digitization in this sector come with enormous capital costs. Significant improvements in productivity and profitability are required to justify this level of investment. Industry reports suggest anticipated improvements in productivity and profitability are not always realized. Operational challenges related to automation can be significant. And, while operating expenses may decline following automation, overall productivity has also decline in many cases and return on capital invested may be lower than industry norms.

### **The downside**

If the jury is still out on the benefits, the cost of marine terminal automation to communities are well known. Automation and digitization of terminal operations elsewhere bring steep declines in employment. Semi-automated facilities operate with 50% fewer workers. Up to 90% of employment is lost when marine terminal operations are fully automated.

**The Prism Forecast examines two plausible scenarios.**

**Brownfield Scenario**

The first scenario forecasts that 50% of selected marine terminal occupations are automated out of existence when existing terminal facilities are modified to allow for partial automation of their operations.

**Greenfield Scenario**

The second scenario forecasts that 90% of selected occupations would be automated out of existence when newly built facilities are fully automated.

The analysis considers only employment in container operations (i.e. not break bulk) where automation and digitization are largely concentrated.

In this report, “core” jobs are used to consider the direct effects on ILWU members and “supporting” jobs consider the effects on non-ILWU workers, indirect jobs and jobs derived from induced expenditure. —

PRISM ECONOMICS AND ANALYSIS

## The Prism Forecast: A new study on automation

A just released report by the economic forecasting firm *Prism Economics and Analysis* has found that British Columbians can expect large scale job loss as a result of digitization and automation of its marine terminal operations.

The Prism analysis shows automation and subsequent job loss would have a substantial effect on the local economies and on tax revenue that supports services in those communities.

Full scale automation of marine terminal operations could cost BC more than 9,200 good middle-class jobs and take more than half a billion dollars from the provincial economy every year.

*Automation and subsequent job loss would have a substantial effect on the local economies and on tax revenue that supports services in those communities.*

— PRISM ECONOMICS AND ANALYSIS

### Net Employment and Income Loss

	Brownfield Scenario (50% job loss)		Greenfield Scenario (90% job loss)	
	Jobs	Income	Jobs	Income
BC	-5,196	-\$348.76M	-9,270	-\$627.8M
Delta	-2,137	-\$141.1M	-3,847	-\$254M
Prince Rupert	-654	-\$42M	-1,177	-\$75.5M
Vancouver	-2,068	-\$138M	-3,723	-\$253.3M

## **These outcomes are not inevitable**

It is true that business interests have a responsibility to shareholders to earn as much profit as possible. Given the trend toward automation and digitization it seems inevitable that marine terminal operations in BC will adopt these new technologies, even if the track record of such decisions elsewhere is spotty at best.

It is our view that changes that have such potential to damage communities in which British Columbians work and live must first be negotiated with those most directly affected to mitigate as much as possible the very real negative consequences. Further, we believe these kinds of projects should not be supported with tax dollars in the absence of a commitment to meaningful negotiations and consultation with affected stakeholders. Doing so would be the equivalent of funding the destruction of good, middle-class jobs with public money.

Governments must modernize how we address workforce disruption.

In spite of widespread disruption to many industries in our country, there has not been a single major change in workforce adjustment programs in Canada for 30 years, apart from cuts to the Employment Insurance program. The next federal government needs to quickly establish retraining, job search and other programs to mitigate the economic harm that is done to workers and communities hit by employment loss of this scale.

*Governments should stop rewarding companies with tax breaks and subsidies when they automate good middle-class jobs out of existence to their exclusive benefit, leaving communities to pick up the pieces.*

— ROB ASHTON, PRESIDENT, ILWU CANADA

## Good middle-class and high-income jobs at stake

*A substantial number of good middle class and high income jobs are at risk in BC.*

— PRISM ECONOMICS AND ANALYSIS

For the people of British Columbia and west coast communities where marine terminal operations are concentrated, the stakes are enormous as a significant portion of existing middle class and high-income jobs are at risk, according to a soon to be release economic forecast by *Prism Economics and Analysis*.

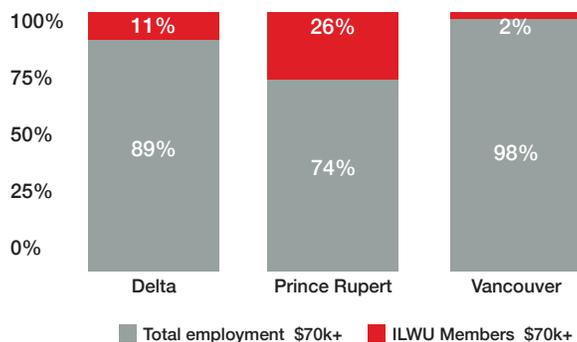
Prince Rupert is particularly vulnerable to job loss as a result of automation. One quarter (26%) of middle-class jobs and a substantial majority (66%) of high-income employment in this northern BC community are longshore jobs.

The community of Delta is also susceptible to significant economic shock from longshore employment loss. This community relies on marine longshore employment for 11% of its middle-class jobs and approximately one quarter (23%) of its high-income employment.

Vancouver's middle-class cohort is less reliant on longshore employment but at 2% of middle-class jobs and 3% of high-income employment, BC's largest city would not be unscathed by significant job loss in this sector.

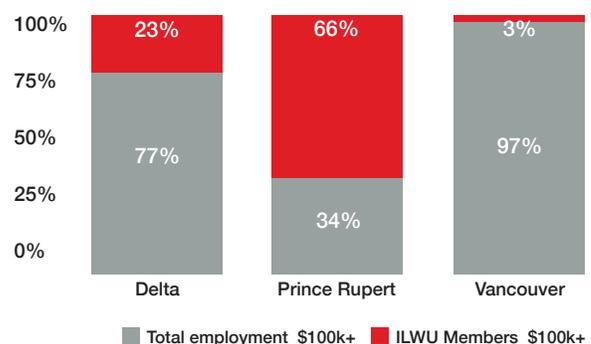
### Middle class employment at risk

ILWU members earning \$70k or more annually as a percentage of the total labour force earning \$70k or more annually



### High income employment at risk

ILWU members earning \$100k or more annually as a percentage of the total labour force earning \$100k or more annually



## The Net Effect of Automation<sup>1</sup>

The Prism analysis finds that some new employment, income and tax revenues will be generated as a result of automation, but the net effect is still negative.

<b>Brownfield Scenario expects 50% employment reduction</b>			
	<b>BC</b>	<b>Selected cities</b>	
<b>Net Jobs<sup>2</sup></b>	<b>-5,196</b>	Delta	-2,137
		Prince Rupert	-654
		Vancouver	-2,068
<b>Net Income<sup>3</sup></b>	<b>-\$348.76M</b>	Delta	-\$141.1M
		Prince Rupert	-\$42.0M
		Vancouver	-\$138.0M
<b>Net Taxes</b>	<b>-\$57.29M</b>	Federal	-\$36.57M
		Provincial	-\$16.01M
		Municipal	-\$4.62M

<b>Greenfield Scenario expects 90% employment reduction</b>			
	<b>BC</b>	<b>Selected cities</b>	
<b>Net Jobs<sup>4</sup></b>	<b>-9,270</b>	Delta	-3,847
		Prince Rupert	-1,177
		Vancouver	-3,723
<b>Net Income<sup>5</sup></b>	<b>-\$627.8M</b>	Delta	-\$254.0M
		Prince Rupert	-\$75.5M
		Vancouver	-\$253.3M
<b>Net Taxes</b>	<b>-\$103.79M</b>	Federal	-\$66.61M
		Provincial	-\$28.91M
		Municipal	-\$8.27M

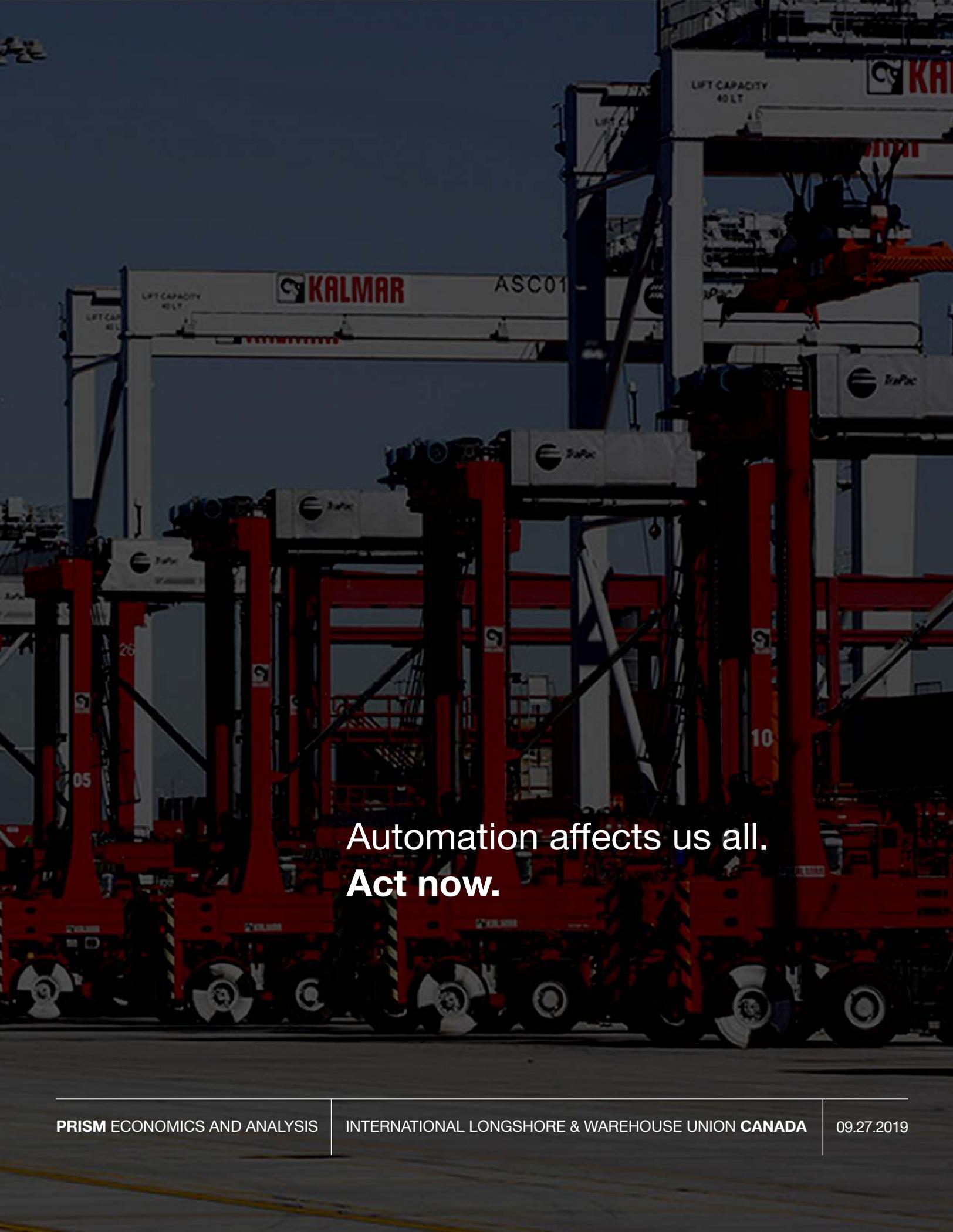
<sup>1</sup> Net figures in these two tables include new jobs, income and taxes arising from automation and digitization.

<sup>2</sup> Includes only selected occupations that have been or are at risk of being eliminated in automated container port facilities.

<sup>3</sup> Includes wages and salaries, employer contribution to pension and benefits and labour income from the unincorporated sector.

<sup>4</sup> Includes only selected occupations that have been or are at risk of being replaced in automated container port facilities.

<sup>5</sup> Includes wages and salaries, employer contribution to pension and benefits and labour income from the unincorporated sector.



Automation affects us all.  
**Act now.**