

Analysis of BC Ports Container Volume by Origin/Destination

for: .



March 2019



mercator
Trusted. Independent. Experienced.



Global Container Terminal (GCT) engaged Mercator to review the container volumes of the ports of Vancouver and Prince Rupert (these ports will be collectively referred to as “BC Ports” in this report) from 2015 to 2018 in order to develop an estimate of the amount of origin/destination traffic that these ports handle to/from locations in the US, as well as from individual provinces in Canada over that time period. In order to provide GCT with a breakdown of the volume handled by BC Ports by origin/destination area from 2015 to 2018, Mercator reviewed and analyzed the following sources:

- Container volume statistics from both Port Authorities to establish total volume for each year being studied by direction and movement type
- Port Metro Vancouver’s 2016 container volume forecast in order to identify this port’s historical breakdown of container volume by origin/destination area
- Stats Canada 404 - COFC intermodal tonnages between BC and origin/destination areas in the US and Canada

These sources were used in combination with the experience that Mercator’s staff has gained from working on other projects in which analysis of BC Ports’ volumes by origin/destination was carried out.

Mercator’s previous project experience, and knowledge of ocean carriers’ inland logistics practices, was particularly important in estimating the amount of empties being generated by areas outside of these ports’ local markets, as such volumes are not reported by public sources.

Therefore, Mercator had to analyze the imbalance of loaded imports versus exports for each inland origin/destination area to identify the pool of empties available for movement back to BC Ports. The pool of empties for each inland area was then adjusted to allow for empties that were moved to Atlantic Coast ports to movement back to a overseas area.

The results of this analysis can be found on the following pages of this document.



BC Ports' Container Volume by Origin/Destination Area

The table below provides a breakdown of BC Ports' total volume by origin/destination area.

Summary of BC Ports' Total Container Volume by Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
	Imports and Exports							
Total	3,830.8	100.0%	3,666.3	100.0%	4,178.8	100.0%	4,432.5	100.0%
US	906.2	23.7%	887.2	24.2%	1,046.2	25.0%	1,215.7	27.4%
Atlantic	6.3	0.2%	6.2	0.2%	7.4	0.2%	8.0	0.2%
Quebec	463.5	12.1%	399.5	10.9%	473.1	11.3%	481.8	10.9%
Ontario	802.8	21.0%	707.4	19.3%	921.2	22.0%	972.9	21.9%
Manitoba	44.3	1.2%	38.4	1.0%	34.9	0.8%	36.4	0.8%
Saskatchewan	34.8	0.9%	32.5	0.9%	36.2	0.9%	37.8	0.9%
Alberta	285.2	7.4%	226.0	6.2%	256.0	6.1%	251.4	5.7%
BC	1,287.8	33.6%	1,369.1	37.3%	1,403.9	33.6%	1,428.4	32.2%



BC Ports' Container Volume by Direction and Origin/Destination Area

The following table is an estimate of BC Ports' total volume by direction and origin/destination area.

BC Ports' Container Volume by Direction and Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
	Imports							
Total	2,016.8	100.0%	1,991.5	100.0%	2,237.2	100.0%	2,350.1	100.0%
US	671.5	33.3%	664.0	33.3%	760.6	34.0%	807.3	34.4%
Atlantic	1.2	0.1%	1.6	0.1%	1.7	0.1%	1.8	0.1%
Quebec	246.4	12.2%	236.0	11.9%	265.6	11.9%	279.2	11.9%
Ontario	462.6	22.9%	445.1	22.3%	496.4	22.2%	519.5	22.1%
Manitoba	22.1	1.1%	20.5	1.0%	22.6	1.0%	23.5	1.0%
Saskatchewan	12.7	0.6%	11.9	0.6%	13.1	0.6%	13.6	0.6%
Alberta	126.5	6.3%	104.1	5.2%	116.4	5.2%	122.0	5.2%
BC	473.9	23.5%	508.3	25.5%	560.8	25.1%	583.2	24.8%
	Exports							
Total	1,814.1	100.0%	1,674.8	100.0%	1,941.5	100.0%	2,082.3	100.0%
US	234.7	12.9%	223.2	13.3%	285.6	14.7%	408.3	19.6%
Atlantic	5.1	0.3%	4.7	0.3%	5.7	0.3%	6.2	0.3%
Quebec	217.1	12.0%	163.4	9.8%	207.5	10.7%	202.6	9.7%
Ontario	340.2	18.8%	262.3	15.7%	424.8	21.9%	453.4	21.8%
Manitoba	22.1	1.2%	17.9	1.1%	12.3	0.6%	12.9	0.6%
Saskatchewan	22.1	1.2%	20.6	1.2%	23.1	1.2%	24.2	1.2%
Alberta	158.7	8.7%	121.9	7.3%	139.5	7.2%	129.4	6.2%
BC	813.9	44.9%	860.8	51.4%	843.1	43.4%	845.2	40.6%



Summary of Vancouver's Container Volume by Origin/Destination Area

The table below provides a breakdown of Vancouver's total volume by origin/destination area.

Vancouver's Container Volume by Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
	Imports and Exports							
Total	3,054.5	100.0%	2,929.6	100.0%	3,252.2	100.0%	3,396.5	100.0%
US	453.2	14.8%	448.0	15.3%	495.2	15.2%	591.4	17.4%
Atlantic	4.1	0.1%	4.3	0.1%	4.8	0.1%	5.0	0.1%
Quebec	379.4	12.4%	319.1	10.9%	373.2	11.5%	371.0	10.9%
Ontario	698.3	22.9%	610.9	20.9%	800.3	24.6%	838.0	24.7%
Manitoba	44.3	1.4%	38.4	1.3%	34.9	1.1%	36.4	1.1%
Saskatchewan	34.8	1.1%	32.5	1.1%	36.2	1.1%	37.8	1.1%
Alberta	227.6	7.5%	173.4	5.9%	187.7	5.8%	173.8	5.1%
BC	1,212.8	39.7%	1,303.1	44.5%	1,319.8	40.6%	1,343.0	39.5%



Vancouver's Container Volume by Direction and Origin/Destination Area

An estimate of Vancouver's total volume by direction and origin/destination area is shown in the table below:

Vancouver's Container Volume by Direction and Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
Imports								
Total	1,580.8	100.0%	1,554.1	100.0%	1,713.3	100.0%	1,781.1	100.0%
US	375.1	23.7%	365.5	23.5%	402.9	23.5%	418.9	23.5%
Atlantic	1.2	0.1%	1.6	0.1%	1.7	0.1%	1.8	0.1%
Quebec	189.7	12.0%	179.8	11.6%	198.2	11.6%	206.1	11.6%
Ontario	401.5	25.4%	384.5	24.7%	423.9	24.7%	440.7	24.7%
Manitoba	22.1	1.4%	20.5	1.3%	22.6	1.3%	23.5	1.3%
Saskatche	12.7	0.8%	11.9	0.8%	13.1	0.8%	13.6	0.8%
Alberta	109.1	6.9%	86.8	5.6%	95.7	5.6%	99.5	5.6%
BC	469.5	29.7%	503.6	32.4%	555.2	32.4%	577.2	32.4%
Exports								
Total	1,473.6	100.0%	1,375.4	100.0%	1,539.0	100.0%	1,615.4	100.0%
US	78.1	5.3%	82.5	6.0%	92.3	6.0%	172.5	10.7%
Atlantic	2.9	0.2%	2.8	0.2%	3.1	0.2%	3.2	0.2%
Quebec	189.7	12.9%	139.3	10.1%	175.0	11.4%	164.9	10.2%
Ontario	296.8	20.1%	226.4	16.5%	376.4	24.5%	397.4	24.6%
Manitoba	22.1	1.5%	17.9	1.3%	12.3	0.8%	12.9	0.8%
Saskatche	22.1	1.5%	20.6	1.5%	23.1	1.5%	24.2	1.5%
Alberta	118.5	8.0%	86.6	6.3%	92.1	6.0%	74.3	4.6%
BC	743.3	50.4%	799.5	58.1%	764.6	49.7%	765.8	47.4%



Summary of Prince Rupert's Container Volume by Origin/Destination Area

An estimate of Prince Rupert's total volume by origin/destination area is contained in the table below:

Prince Rupert's Container Volume by Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
	Imports and Exports							
Total	776.4	100.0%	736.7	100.0%	926.5	100.0%	1,036.0	100.0%
US	453.1	58.4%	439.2	59.6%	550.9	59.5%	624.3	60.3%
Atlantic	2.2	0.3%	1.9	0.3%	2.6	0.3%	3.0	0.3%
Quebec	84.1	10.8%	80.4	10.9%	99.8	10.8%	110.8	10.7%
Ontario	104.5	13.5%	96.5	13.1%	120.9	13.0%	134.8	13.0%
Manitoba	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Saskatchewan	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Alberta	57.6	7.4%	52.6	7.1%	68.2	7.4%	77.6	7.5%
BC	74.9	9.7%	66.1	9.0%	84.1	9.1%	85.5	8.2%



Prince Rupert's Container Volume by Direction and Origin/Destination Area

Prince Rupert's volume broken down by direction and origin/destination area is provided in the table below:

Prince Rupert's Container Volume by Direction and Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	2015		2016		2017		2018	
	TEU-000	Share	TEU-000	Share	TEU-000	Share	TEU-000	Share
Imports								
Total	435.9	100.0%	437.3	100.0%	524.0	100.0%	569.1	100.0%
US	296.4	68.0%	298.5	68.3%	357.7	68.3%	388.5	68.3%
Atlantic	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Quebec	56.7	13.0%	56.2	12.9%	67.4	12.9%	73.2	12.9%
Ontario	61.0	14.0%	60.6	13.8%	72.6	13.9%	78.8	13.9%
Manitoba	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Saskatche	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Alberta	17.4	4.0%	17.3	4.0%	20.7	4.0%	22.5	4.0%
BC	4.4	1.0%	4.7	1.1%	5.6	1.1%	6.1	1.1%
Exports								
Total	340.4	100.0%	299.3	100.0%	402.6	100.0%	466.9	100.0%
US	156.6	46.0%	140.7	47.0%	193.2	48.0%	235.8	50.5%
Atlantic	2.2	0.6%	1.9	0.6%	2.6	0.6%	3.0	0.6%
Quebec	27.4	8.1%	24.1	8.1%	32.4	8.1%	37.6	8.1%
Ontario	43.4	12.8%	35.9	12.0%	48.3	12.0%	56.0	12.0%
Manitoba	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Saskatche	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Alberta	40.2	11.8%	35.3	11.8%	47.5	11.8%	55.1	11.8%
BC	70.6	20.7%	61.4	20.5%	78.5	19.5%	79.4	17.0%



Overview of Volume by Direction and Origin/Destination Area for 2018

The table below shows BC Ports' volume shares broken down by direction and origin/destination area:

2018 Volume Shares by Direction and Origin/Destination Area (Volumes includes Loaded and Empty Moves)

	Vancouver - 18'			P.Rupert - 18'			Total - 18'		
	Imports	Exports	Total	Imports	Exports	Total	Imports	Exports	Total
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
US	23.5%	10.7%	17.4%	68.3%	50.5%	60.3%	34.4%	19.6%	27.4%
BC	32.4%	47.4%	39.5%	1.1%	17.0%	8.2%	24.8%	40.6%	32.2%
Ontario	24.7%	24.6%	24.7%	13.9%	12.0%	13.0%	22.1%	21.8%	21.9%
Quebec	11.6%	10.2%	10.9%	12.9%	8.1%	10.7%	11.9%	9.7%	10.9%
Other	7.8%	7.1%	7.5%	4.0%	12%	7.8%	6.8%	8.3%	7.5%



Overview of Volume by Direction and Origin/Destination Area and Mode of Transport for 2018

The table below shows BC Ports' volume shares broken down by direction, origin/destination area and Transport mode:

2018 Volume by Mode

TEUS (000)			2018									% of TOT TEUS
			VCR			PR			VCR + PR			
MODE	LDS	MTY	TOT	LDS	MTY	TOT	LDS	MTY	TOT			
Imports All	Total	1,743.4	37.7	1,781.1	569.0	0.1	569.1	2,312.4	37.7	2,350.1	100.0%	
US	Rail	418.9	0.0	418.9	388.5	0.0	388.5	807.3	0.0	807.3	34.4%	
Atlantic	Rail	1.8	0.0	1.8	0.0	0.0	0.0	1.8	0.0	1.8	0.1%	
Quebec	Rail	206.1	0.0	206.1	73.2	0.0	73.2	279.2	0.0	279.2	11.9%	
Ontario	Rail	440.7	0.0	440.7	78.8	0.0	78.8	519.5	0.0	519.5	22.1%	
Manitoba	Rail	23.5	0.0	23.5	0.0	0.0	0.0	23.5	0.0	23.5	1.0%	
Saskatchewan	Rail	13.6	0.0	13.6	0.0	0.0	0.0	13.6	0.0	13.6	0.6%	
Alberta	Rail	99.5	0.0	99.5	22.5	0.0	22.5	122.0	0.0	122.0	5.2%	
BC	Rail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	
BC	Truck	539.5	37.7	577.2	6.0	0.1	6.1	545.5	37.7	583.2	24.8%	
Exports All	Total	1,119.6	495.8	1,615.4	204.2	262.8	466.9	1,323.8	758.5	2,082.3	100.0%	
US	Rail	96.9	75.6	172.5	34.7	201.1	235.8	131.6	276.7	408.3	19.6%	
Atlantic	Rail	3.2	0.0	3.2	3.0	0.0	3.0	6.2	0.0	6.2	0.3%	
Quebec	Rail	40.4	124.6	164.9	8.7	28.9	37.6	49.1	153.4	202.6	9.7%	
Ontario	Rail	101.8	295.6	397.4	23.3	32.8	56.0	125.0	328.4	453.4	21.8%	
Manitoba	Rail	12.9	0.0	12.9	0.0	0.0	0.0	12.9	0.0	12.9	0.6%	
Saskatchewan	Rail	24.2	0.0	24.2	0.0	0.0	0.0	24.2	0.0	24.2	1.2%	
Alberta	Rail	74.3	0.0	74.3	55.1	0.0	55.1	129.4	0.0	129.4	6.2%	
BC	Rail	0.0	0.0	0.0	73.4	0.0	73.3	73.4	0.0	73.3	3.5%	
BC	Truck	765.8	0.0	765.8	6.1	0.0	6.1	771.9	0.0	771.9	37.1%	
TOT EXP+HMP	Total	2,863.0	533.5	3,396.5	773.2	262.8	1,036.0	3,636.2	796.3	4,432.5	100.0%	
US	Rail	515.8	75.6	591.4	423.2	201.1	624.3	939.0	276.7	1,215.7	27.4%	
Atlantic	Rail	5.0	0.0	5.0	3.0	0.0	3.0	8.0	0.0	8.0	0.2%	
Quebec	Rail	246.4	124.6	371.0	81.9	28.9	110.8	328.4	153.4	481.8	10.9%	
Ontario	Rail	542.4	295.6	838.0	102.1	32.8	134.8	644.5	328.4	972.9	21.9%	
Manitoba	Rail	36.4	0.0	36.4	0.0	0.0	0.0	36.4	0.0	36.4	0.8%	
Saskatchewan	Rail	37.8	0.0	37.8	0.0	0.0	0.0	37.8	0.0	37.8	0.9%	
Alberta	Rail	173.8	0.0	173.8	77.6	0.0	77.6	251.4	0.0	251.4	5.7%	
BC	Rail	0.0	0.0	0.0	73.4	0.0	73.3	73.4	0.0	73.3	1.7%	
BC	Truck	1,305.3	37.7	1,343.0	12.1	0.1	12.2	1,317.4	37.7	1,355.1	30.6%	