

# Memorandum

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To Vancouver Fraser Port Authority Page 1

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Subject **Terminal Rail Operating Plan – Centerm Expansion Project (CEP)**

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From Ron Mitchell, P.Eng.

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Date September 19<sup>th</sup>, 2016 Project Number 60476505

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Revised Nov 7, 2016

## Introduction

This Terminal Rail Operating Plan outlines the present day rail operations for providing service to Centerm and the proposed changes required to support CEP through to the full proposed capacity of the expansion project. The incremental changes, the expected results and impacts of CEP are the prime focus. Specific details of this plan may be adjusted, as required by the operator, in order to adapt to changing circumstances as they may arise.

## Rail Service to Centerm

Currently, rail cars move to Centerm along the south shore of the Burrard Inlet from rail yards located in the Coquitlam area to the east. To account for whether a westbound freight train is on mainline track, non-signalized yard track, or lining an approach to a switch (track speeds of 30, 15 and 3 mph, respectively), it is suggested to estimate the average train speed west of the Second Narrows Bridge at 8 mph. Trains can be blocked by other movements; however, if there is a clear path to the terminal and storage areas, the journey from the Second Narrows Bridge to the terminal takes approximately 30 minutes. The subsequent loading of cars into holding tracks requires on average an additional 30 minutes. There is no expectation that this condition would change in order to achieve the full proposed capacity of CEP.

Centerm is currently serviced, on average, by up to two trains a day. The length of trains can vary based on a number of factors; but are in the order of 6,000 ft long. For the terminal to reach the full proposed capacity it does not necessarily require an increase in the number of trains received each day. This is due to the expansion of the intermodal yard, which will allow the terminal to service longer unit trains; in the order of 12,000 ft.

## Centerm Rail Capacity

The existing Centerm intermodal yard consists of 4 rail tracks, each approximately 2,000 ft long, for a total of 8,000 ft of intermodal yard track. The proposed expansion would both extend the 4 existing tracks by 1000 ft each, and add an additional 3000 ft track, to provide a total of 5 rail tracks, each 3,000 ft long, for a total of 15,000 ft of intermodal yard track (refer to the attached proposed terminal layout). In terms of daily operations, when running at sustainable capacity, the intermodal yard would handle, on average, over 25,000 ft of rail each day.

Although the increased capacity within the intermodal yard will be available immediately, it is expected that an increase in the volume of rail cars will occur gradually over a long period of time as container traffic through the terminal grows to its post CEP capacity.

## **Rail Car Delivery and On-Site Handling**

Currently, groups of switching cars (referred to as rakes) of 500 ft to 1,500 ft are pulled from N Yard, east of Granville Square (or other storage areas), and slotted into empty Centerm intermodal yard tracks until filled. Switching time varies but is generally performed in 10 minutes per track fill, plus the time required assembling and positioning rakes for placement, which can take an additional half hour. Centerm currently has 4 intermodal yard tracks that hold a total of 8,000 ft of train. Each track is currently loaded, on average, 1.25 times per day – about 10,000 ft of train per day for the terminal (though this could be up to 13,000 ft of train per day). This is typically achieved in 2-3 switches, but varies depending on a variety of circumstances such as: the availability of yard and mainline track space; the operating schedule of the West Coast Express; the demands of the rail operators' other customers on the south shore; and so on. Loading the intermodal yard takes about 30 minutes per rake, which extends to approximately 2 hours if the operator were to load a full 8,000 ft train.

The major difference in the expanded facility over present day is the frequency and duration of switching. The frequency of switching to service the terminal will increase to at least 3 or 4 times instead of the present 2 or 3 times per day. Once the intermodal yard is expanded, trains would only need to be broken into 3000 ft rakes. The time required to pull and join each rake to the next is approximately 15 minutes; so that a 6,000 ft to 9,000 ft long train could be assembled and brake tested ready to depart eastward in approximately 45 minutes to an hour (excluding any blockage delay).

There is no expectation that rail operating speeds within the yard would change in order to achieve the full proposed capacity of CEP.

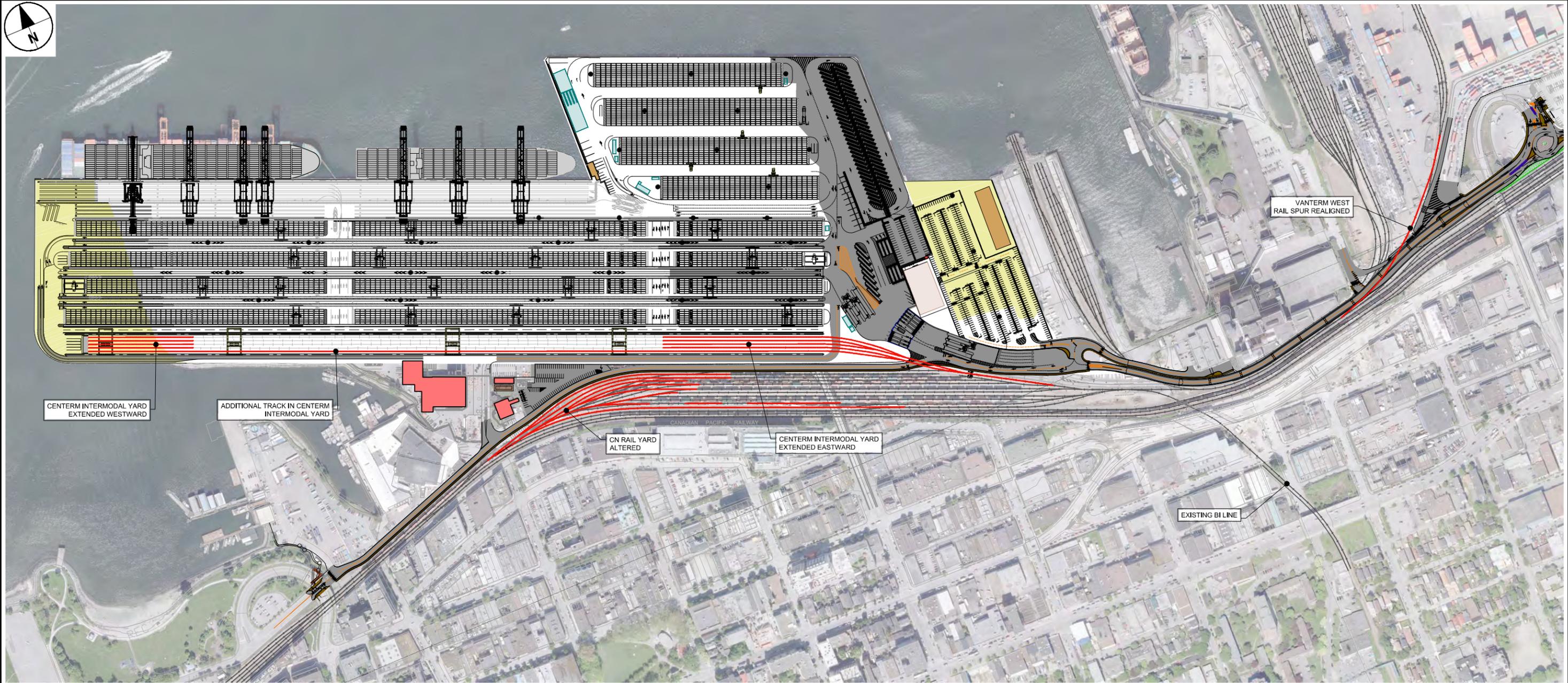
Presently the Centerm intermodal yard is operated by two Rubber-Tired Gantry (RTG) cranes, which have a productivity of up to 20 container moves per hour. Once CEP is complete, the intermodal yard will be serviced by up to five Rail-Mounted Gantry (RMG) cranes which have a higher productivity (in excess of 20 container moves per hour).

## **Conclusion**

The Centerm Expansion Project provides for increased rail-based container traffic through the Port of Vancouver's south shore. The rail capacity increase will be achieved through the addition of an intermodal yard track and the lengthening of the existing tracks to 3000 ft; as well as other terminal improvements. To fulfill the capacity, the length of trains feeding the terminal will increase, which will correspond to an increase in the number of switching movements to fill each of the intermodal yard tracks. There is no requirement within the project to adjust current rail operating speeds.

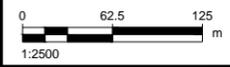


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**PLAN**

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