

# CANADIAN PACIFIC

## PITT MEADOWS ROAD & RAIL IMPROVEMENTS PROJECT

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TRACK CONFIGURATION UPDATE

APRIL 2021



## PROJECT OVERVIEW

The Pitt Meadows Road and Rail Improvements Project included funding for an underpass at Harris Road, an overpass at Kennedy Road and 16,000 feet (4,877 meters) of track when announced in 2018. The rail scope was narrowed to a siding track, with no additional mainline tracks in the 2020 Memorandum of Understanding between the City of Pitt Meadows, Vancouver Fraser Port Authority, and Canadian Pacific (CP). CP is responsible for delivering the rail component of the project and has further refined the scope of the rail improvements, which would be constructed within CP's existing right-of-way:

- » A 6,000 foot (1,829 meter) extension of the existing lead track accessing the Vancouver Intermodal Facility east across Harris Road on the north side of the existing tracks
- » A 10,000 foot (3,048 meter) siding track on the north side of the existing tracks between Harris Road and Kennedy Road

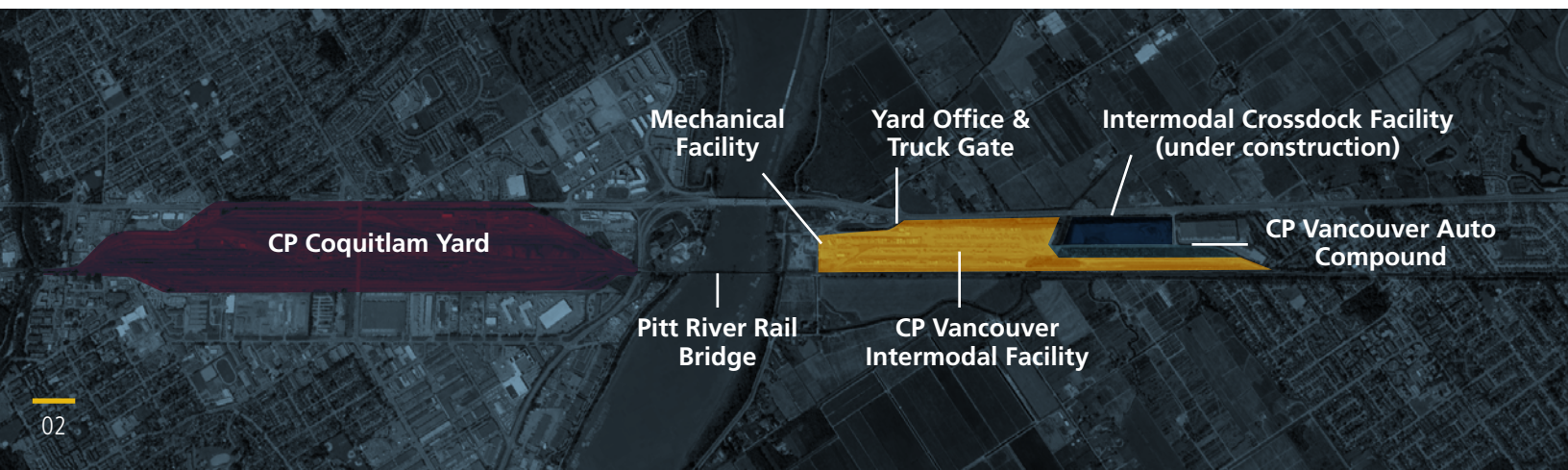
These improvements will enhance CP's mainline track capacity and throughput. The Vancouver Intermodal Facility lead extension, in combination with the Harris Road underpass is functionally more efficient for train operations and for the community who will no longer have to wait for trains to clear the crossing. While the Vancouver Intermodal Facility lead track extension planning has been progressing in advance of the Harris Road underpass process, final design of the lead track extension is dependent on the Harris Road underpass pier and abutment design. The port authority is leading the Harris Road underpass design in collaboration with the City of Pitt Meadows and CP.

Without the Harris Road underpass, the rail infrastructure could still be built, but much of the operational efficiency and capacity would not be realized. The rail scope and its capacity benefits are dependent upon the grade separation.

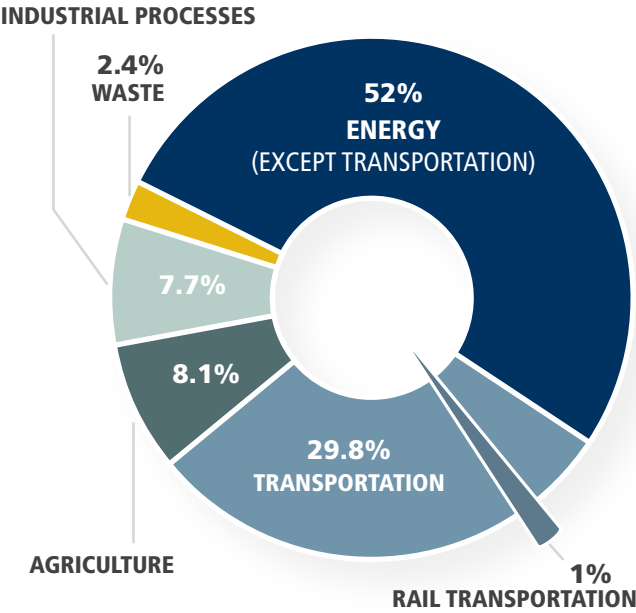
## ABOUT CP & PITT MEADOWS FACILITIES

Incorporated in 1881, Canadian Pacific Railway was formed to physically unite Canada and Canadians from coast to coast. Today, CP delivers rail transportation and transload solutions that connect North America and the world. By doing this safely and efficiently, CP creates long-term sustainable value for our shareholders and the broader economy. CP is an operating company with a team of 12,000 dedicated, professional, community-minded railroaders that provide superior service to customers across North America.

CP has operated in Pitt Meadows since 1886. Today, CP facilities in the community include two mainline tracks spanning the width of the city, the Vancouver Intermodal Facility, the CP Auto Compound, and mechanical and operational support facilities. A new intermodal cross-dock facility is under construction. Inside the Vancouver Intermodal Facility, two bridges span Katzie Slough.



Today, existing rail infrastructure in the community includes two mainline tracks, the Pitt River Rail Bridge, a single span mainline rail bridge over Katzie Slough, yard tracks inside the Vancouver Intermodal Facility and Vancouver Auto Compound, and lead tracks at the east and west ends of the Vancouver Intermodal Facility connecting the yard to the north mainline track.



**RAIL ENVIRONMENTAL BENEFITS**

CP’s active locomotive fleet operates across our North American network. CP carefully maintains and regularly tests all locomotives to meet the emissions regulations set by Environment and Climate Change Canada and the U.S. Environmental Protection Agency to allow for fluid movement across the Canada-U.S. border. CP’s train crews also receive regular training on operating practices and technologies designed to improve fuel economy.

Transportation-by-rail is one of the most economical and environmentally responsible methods of moving freight long distances. The transportation sector is responsible for 29.8 percent of Canada’s annual greenhouse gas (GHG) emissions<sup>1</sup>, with the rail industry contributing only 1 percent to the country’s total annual GHG emissions.

A single unit train, such as the intermodal trains that depart the Vancouver Intermodal Facility in Pitt Meadows twice each day, keeps more than 300 trucks off publicly funded roads. A unit train is four times more fuel-efficient than trucking, and emits 75 percent less GHG emissions<sup>2</sup>.

Since 1990, CP’s locomotive fuel efficiency has improved 44 percent representing 33.5 million metric tons of avoided carbon emissions. In 2020, CP’s fuel efficiency rate was 12 percent lower than the North American Class 1 freight railway average<sup>3</sup>. While CP regularly outperforms industry averages for fuel efficiency, CP recognizes the need to further reduce the carbon footprint of their locomotives and operations.

<sup>1</sup> Environment and Climate Change Canada (2020). National Inventory Report 1990 – 2018: Greenhouse Gas Sources and Sinks in Canada. Retrieved from: <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/sources-sinks-executive-summary-2020.html>

<sup>2</sup> Association of American Railroads (2020). The Positive Environmental Effects of Increased Freight by Rail Movements in America. Retrieved from: <https://www.aar.org/wp-content/uploads/2020/06/AAR-Positive-Environmental-Effects-of-Freight-Rail-White-Paper-62020.pdf>.

<sup>3</sup> This calculation is derived from publicly reported 2020 fuel efficiency of North American Class 1 freight railways compared to CP’s fuel efficiency performance for the same period. This calculation does not reflect the fuel efficiency of BNSF as publicly reported data is not available as of Feb 2, 2021.

CP is committed to protecting the environment, promoting the well-being of workers and communities, minimizing our environmental footprint and ensuring compliance with legal and regulatory requirements while providing efficient and reliable transportation solutions for our customers.

Please visit [www.sustainability.cpr.ca](http://www.sustainability.cpr.ca) to learn more about CP’s comprehensive sustainability initiatives, policies, procedures, and reporting.

## REGULATORY OVERSIGHT

With 48,000 kilometres of track, Canada has one of the largest rail networks in the world. Transport Canada regulations and standards make the national railway system safe, secure, accessible, competitive, and more environmentally responsible.

The rail industry in Canada is highly regulated. CP meets or exceeds standards set by the Government of Canada through legislation and regulation. Federal legislation and regulation supersede provincial legislation and municipal zoning and regulation across the country.

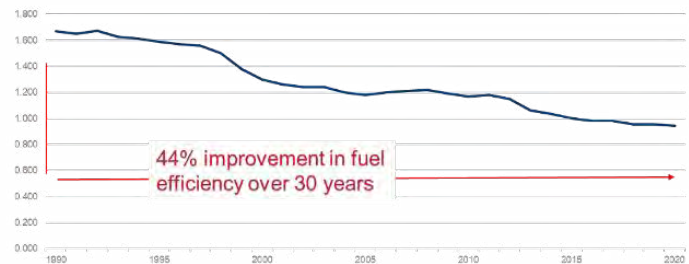
Under the *Canada Transportation Act*, railways are required to transport any commodity that our customers ask us to move. The *Canada Transportation Act* also governs the amount of noise railways generate from operations.

The *Rail Safety Act* and associated regulations govern engineering standards and tolerances. The *Rail Safety Act* also governs locomotive emissions to protect air quality under the Locomotive Emission Regulations. Further, the *Rail Safety Act* also specifies when and to whom railways must give notice of planned projects through the Notice of Railway Works Regulations.

It is through the hard work of CP's diligent team of railroaders meeting or exceeding these requirements every day that CP has remained the safest railway in North America for 15 straight years.

### CP locomotive fuel efficiency

U.S. gallons of locomotive fuel consumed/1,000 GTMs



CP locomotive fuel efficiency (U.S. gallons of locomotive fuel consumed/1,000 GTMs)

## REGULATORY SNAPSHOT

Transport Canada sets national transportation policy through legislation and regulations. Federally regulated railroads such as CP must meet or exceed federal standards. For example:

### Service

Section 113 to 115 of the *Canada Transportation Act* outlines obligations for railways to provide service, build infrastructure and conduct operations in support of accommodating all traffic offered to them including receiving, loading, carrying, unloading and delivering goods by rail to support the needs of Canadian businesses and consumers.

### Noise

Health Canada establishes the guidelines and criteria for noise caused by proposed major resource and infrastructure projects (such as mines, dams, pipelines and other projects). The Canadian Transportation Agency creates and enforces the regulations and resolves disputes related to noise and vibration caused by rail operations.

### Emissions

The *Rail Safety Act* also governs locomotive emissions to protect air quality under the Locomotive Emission Regulations. Locomotive emission regulations are administered by Transport Canada under the *Rail Safety Act*. To comply with the regulations, railway companies must:

- ⊕ Meet the emission standards set out for new locomotives
- ⊕ Carry out emissions testing
- ⊕ Follow labelling and anti-idling requirements
- ⊕ Keep records
- ⊕ File reports with Transport Canada





CP

VANCOUVER  
INTERMODAL  
FACILITY

17900 Kennedy Road  
Pitt Meadows BC

-  Video surveillance in use
-  Private Property No Trespassing
-  Personal Protective Equipment required



## WHY ARE THE RAIL IMPROVEMENTS NEEDED?

CP has a federally legislated mandate to move the goods and products produced and consumed in North America. Providing this critical service is a core value to CP.

CP's facilities across Metro Vancouver are their busiest in Canada. Currently, up to 28 freight trains operate through Pitt Meadows each day. On weekdays, the West Coast Express also operates through the city 10 times per day. CP coordinates each of these trains with a finite amount of mainline track capacity.

Freight trains are configured in a variety of ways:

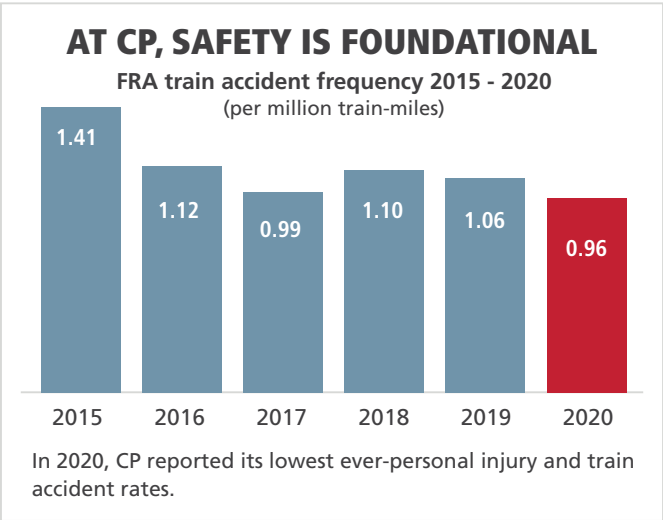
- » Intermodal trains move manufactured goods, consumer goods, food and perishables in containers that can transfer from ship to rail to truck.
- » Bulk trains move a single type of commodity, such as grain, potash, or metallurgical coal.
- » Manifest trains move a variety of commodities in different types of rail cars, all within the same train.

Over 50 percent of all Canadian grain products are destined for Asia and travel through the Port of Vancouver. Canadian grain is CP's largest market segment. CP has seen a continuous increase in demand for the shipping of agricultural products in recent years. In 2019-2020, CP moved more Canadian grain than any crop year in its history.

Over the next decade, the Gateway Transportation Collaboration Forum projects a significant increase in all railway-handled freight traffic. Some of that traffic will be handled through the Vancouver Intermodal Facility directly, and some of that traffic will be handled through other freight terminals across Metro Vancouver. CP must ensure sufficient capacity on our existing two mainline tracks to handle future freight projections and sufficient capacity at the Vancouver Intermodal Facility in Pitt Meadows.

The rail improvements associated with the Pitt Meadows Road and Rail Improvements Project will increase CP's mainline capacity by shifting certain operational processes off the north main track onto the new siding or lead extension.

At the Vancouver Intermodal Facility, existing daily train operations include launching and receiving two transcontinental intermodal trains and one shuttle train. To build a transcontinental intermodal freight train, each rail car is first loaded with one or two containers on yard tracks inside the Vancouver Intermodal Facility. The rail cars in separate yard tracks are then pulled from adjacent tracks in a process known as switching, and put together to build the train.



## VOLUME GROWTH EXAMPLE: GRAIN

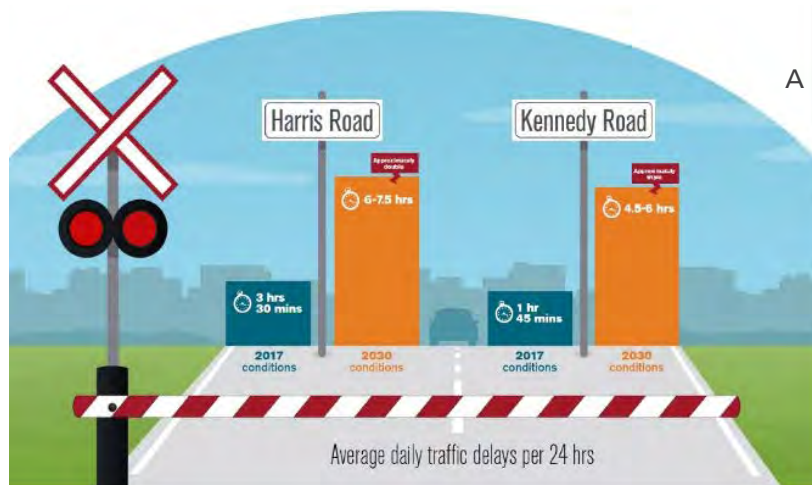
CP moved 31.32 million metric tonnes (MMT) of Canadian grain and grain products in 2020, an all-time record for the company. Crop year to date in 2021, CP volumes are currently more than 14 percent higher than last year. Over 50 percent of all Canadian grain products are destined for Asia and travel through the Port of Vancouver. Canadian grain is CP's largest market segment. CP has seen a continuous increase in demand for the shipping of agricultural products in recent years. Within the Port of Vancouver, one new export grain terminal opened in 2020, another is nearing completion, and the existing export terminals have all increased their capacity. The vast majority of CP-shipped grain destined to export terminals in the Port of Vancouver moves through Pitt Meadows on CP's mainline tracks.



In the final switch that completes the train build, Pitt Meadows residents typically see the front end of the train pull onto the north main track west of Harris Road and pull east over the Harris Road crossing before stopping, and reversing back into the Vancouver Intermodal Facility, clearing the crossing. The completed train will then depart the Vancouver Intermodal Facility eastbound, occupying the Harris Road crossing for a second time as it begins its journey.

There are two impacts each time this occurs:

- » For the community, at a minimum it doubles the number of times the Harris Road crossing is active.
- » For CP, it limits the capacity of our north mainline track for other freight or commuter trains.



A lead track is a track that connects mainline tracks to yard tracks, serving a function similar to a roadway on ramp or off ramp. The Vancouver Intermodal Facility lead track extension will shift existing train building processes north by 14 feet within CP's existing right-of-way, and off CP's north mainline track to the extended lead track. The Harris Road underpass will eliminate existing roadway delays at the Harris Road crossing and additional delays as freight volume grows.

A siding is a section of track that allows one train to pass another train, serving a function similar to a passing lane on a roadway. As freight volumes grow, capacity must match this growth. Existing crossings in Pitt Meadows and adjacent communities create pinch points in mainline track operations given, the proximity to CP's Vancouver Intermodal Facility in Pitt Meadows, Coquitlam Yard in Port Coquitlam, and the Pitt River Rail Bridge across the Pitt River. Train traffic on the mainline, for example, must be stopped each time the Pitt River Rail Bridge is opened for marine traffic on the Pitt River. The impact of these pinch points on mainline freight and commuter operations will increase as freight volume increases.

The new siding between Harris Road and Kennedy Road will provide additional capacity to accommodate freight volume growth. For example, a train that might have stopped east of Pitt Meadows to allow the Pitt River Rail Bridge to open for marine traffic, can instead advance to the siding track near the bridge. The capacity is gained as a train waiting to exit CP's Coquitlam Yard on the west side of the bridge could clear out of the yard and on to the north mainline track, passing the train on the siding while proceeding east. The freight train waiting on the siding could then resume its journey off the siding, onto the mainline track, across the bridge and to its destination.

Shifting the Vancouver Intermodal Facility lead connection to the mainline east of Harris Road creates enough room west of Harris Road to construct the east end of the siding. At 10,000 feet (3,048 meters), the new siding could accommodate most freight train lengths. The new siding would also serve as a mechanical and safety inspection location in direct proximity to the Vancouver Intermodal Facility.

## RAIL IMPROVEMENTS

The following rail improvements form the scope of the Pitt Meadows Road and Rail Improvements Project:

### VANCOUVER INTERMODAL FACILITY LEAD EXTENSION

- » Extend the existing lead track accessing the Vancouver Intermodal Facility by 6,000 feet (1,829 meters) east across Harris Road on the north side of the mainline tracks
- » Connect the lead to the north main track, west of Maple Meadows Way
- » Construct a protection wall for the existing overhead pedestrian bridge near Bonson Road

A lead is the track that connects a train yard to the mainline. It functions like a roadway on ramp or off ramp.



#### The improvements will allow:

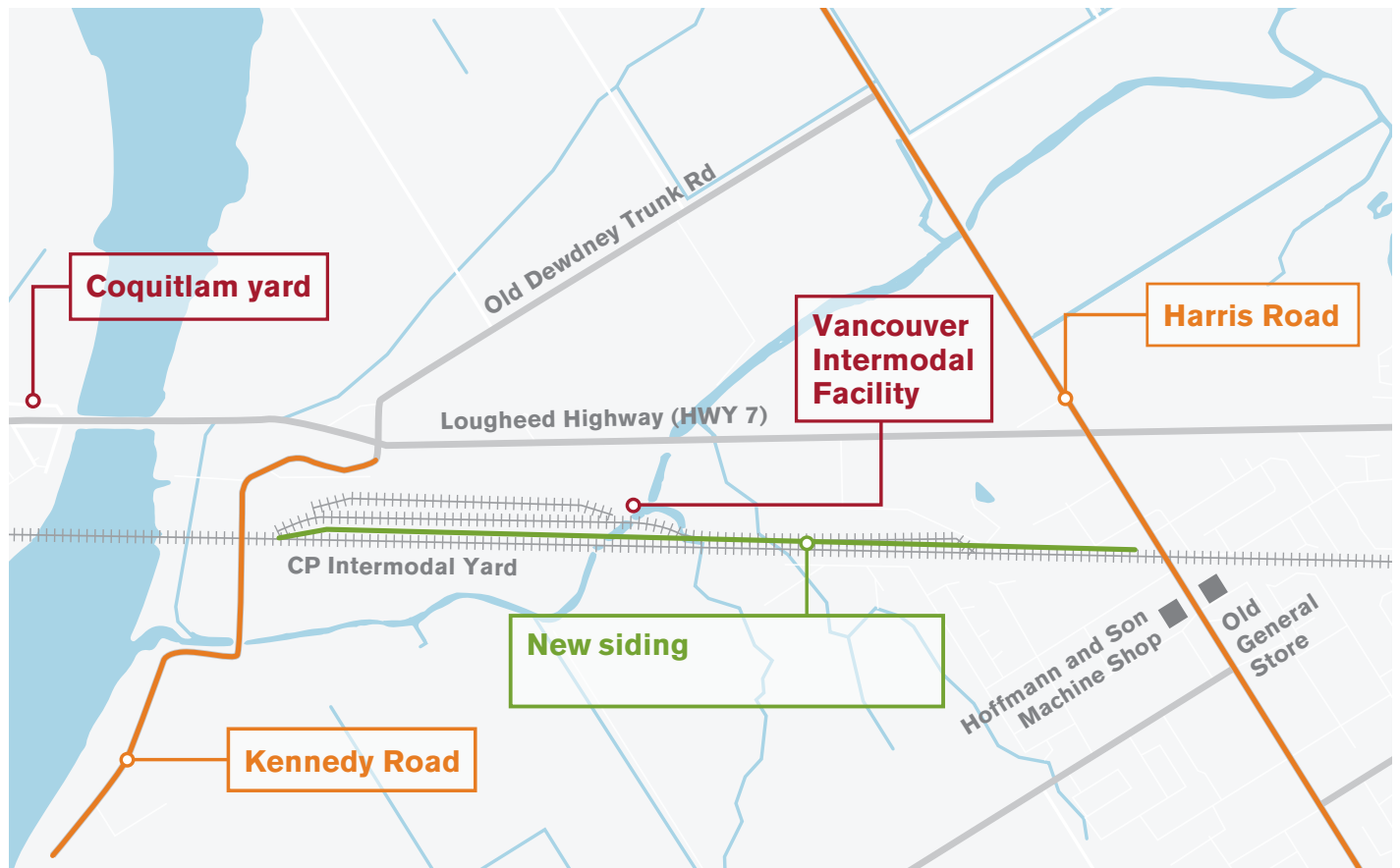
- ⊕ Intermodal trains to arrive and depart the Vancouver Intermodal Facility clear of the north mainline, reducing the need for other freight trains to sit and idle to the east of the facility and reducing potential delays to commuter trains moving through the City.
- ⊕ Arriving intermodal trains to clear the north mainline track without restricting access to parts of the Vancouver Intermodal Facility yard.



## NEW SIDING

- » A new 10,000 foot (3,048 meter) siding on the north side of the existing two mainline tracks east of Kennedy Road and west of Harris Road.
- » A new bridge over Katzie Slough with abutments outside of the high water mark, similar to the existing mainline bridge over Katzie Slough.

A siding is a track segment that allows one train to pass another train. It functions like a passing lane on a roadway.



### Benefits of the new siding track include:

- ⊕ A new mechanical and safety inspection location in direct proximity to the Vancouver Intermodal Facility
- ⊕ Reduce congestion on CP's mainline track for more efficient operations
- ⊕ Improved access to and utilization of the Pitt River Rail Bridge



CP

## TIMELINE

In 2020, CP started design and engineering work on the rail components of the Pitt Meadows Road and Rail Improvements Project.

### Late 2020

Design and engineering underway

### Ongoing

Engagement with the City of Pitt Meadows and port authority on the Harris Road underpass design

### Early June 2021

File regulatory applications (*Fisheries Act*, *Canadian Navigable Waters Act*, Notice of Railway Works)

### Ongoing

Engagement with Indigenous groups on design and mitigation

### Late Fall 2021

Anticipated regulatory approval and start of construction works

NOV  
2020

DEC  
2020

JAN  
2021

FEB  
2021

MAR  
2021

APR  
2021

MAY  
2021

JUN  
2021

JUL  
2021

AUG  
2021

SEP  
2021

OCT  
2021

NOV  
2021

## LEARN MORE

For questions, comments or further information about the Pitt Meadows Road and Rail Improvements Project, please visit <https://www.portvancouver.com/projects/road-and-rail/pitt-meadows-road-and-rail-improvements/> or contact the project team at [pittmeadowsroadandrail@portvancouver.com](mailto:pittmeadowsroadandrail@portvancouver.com)

## CONTACT US

For questions about CP operations more generally, please visit [www.cpr.ca](http://www.cpr.ca) or contact CP Community Connect at [Community\\_Connect@cpr.ca](mailto:Community_Connect@cpr.ca).





# **PITT MEADOWS ROAD & RAIL IMPROVEMENTS PROJECT**

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**TRACK CONFIGURATION UPDATE**