



City of Pitt Meadows

OFFICE OF THE MAYOR

May 25, 2022

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The Hon. Omar Alghabra
Minister of Transport
Government of Canada
House of Commons
Ottawa, ON K1A 0A6
Sent via email: omar.alghabra@parl.gc.ca

Jeff Edwards
AVP Market Strategy & Demand Management
Canadian Pacific Railway
7550 Ogden Dale Road SE
Calgary, AB T2C 4X9
Sent via email: Jeff_Edwards@cpr.ca
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Dear Minister Alghabra and Mr. Edwards:

Re: City of Pitt Meadows' Assessment of Canadian Pacific's Notice of Railway Works and Select Technical Documentation

This letter is written on behalf of the City of Pitt Meadows (City), in response to Canadian Pacific Railway's (CP) Notice of Railway Works (NRW) and select technical documentation for their proposed siding & lead tracks through Pitt Meadows, relocation of significant lengths of mainline track, as well as modification to the Harris Road at-grade crossing (railway works). The City received two distinct notices from CP containing varying levels of information regarding the railway works. City feedback pertaining to the NRW documentation received is contained within this response.

It is the City's assessment that CP has not adequately identified or mitigated several adverse impacts associated with the railway works. For this reason and others described below, per S.8(2) of the *Railway Safety Act* (Act), the City hereby submits its objection to the proposed railway works. It is the City's view that the railway works, as currently shown in CP's NRW, will prejudice the safety of the community and residents, as well as, municipal and private property. The City also asserts that CP has not fully complied with the requirements of S.4(c) of the *Notice of Railway Works Regulations* (Regulations) as their NRW contains insufficient information to allow adjacent landowners to fully understand the scope of railway works and assess potential impacts to their personal and property's safety. Furthermore, CP has declined requests to provide additional information pertaining to the railway works, including holding a town hall to share additional information with the impacted community. Per S.10(3)(b)(ii) of the Act, the City requests that the Minister of Transport direct CP to file further particulars relating to the railway works, including adequate mitigation measures for all adverse impacts caused by the railway works during construction and once operational.

The City's objections can be organized into several distinct topics, including, but not limited to, railway proximity, railway geometry, and air quality / human health.

Proximity of Railway Works and Operations Adversely Impacting Safety and Property

CP's claim within their NRW that "the proposed railway work should have no negative impact on adjacent lands" is incorrect and currently unsupported. The City asserts that there will be significant adverse impacts to the safety of both residents and their property due to the proposed railway works, unless mitigation measures are applied.

Although CP fails to provide any proximity dimensions in their NRW and select technical documentation, the City estimates that after implementation of the railway works, the nearest track will be 7.5m away from residential dwellings. Also, associated work such as excavation, soil screws, piping installation, and site grading will occur within 2m of residential dwellings. Refer to Figure 1 below.

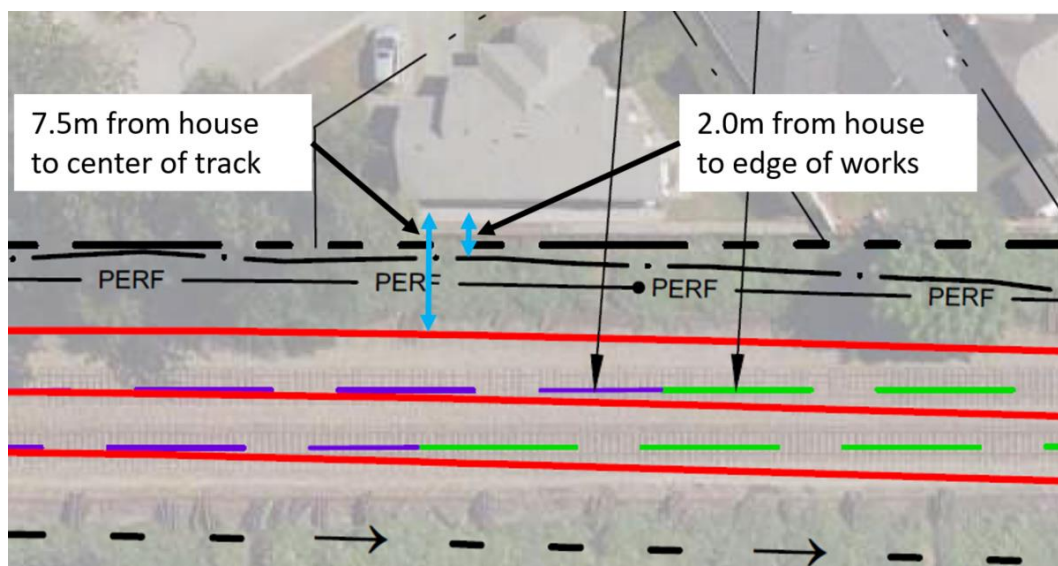


Figure 1 – Proximity of Railway Works to Residential Dwellings, CP, 2023, with City Edits

Potential adverse impacts associated with the immediate proximity of railway works that will prejudice the safety of the community and residents, as well as, municipal and private property includes, but is not limited to:

1. Destabilization of the ground under neighboring properties and potential slope failure

The proximity of the railway works to neighboring properties, in addition to the substantial quantity of excavation and other works shown by CP in their technical documentation, leads to significant concerns pertaining to slope stability both during and after construction. Exacerbating this issue further will be the vibration associated with the

railway works during the construction stage, non-ceasing vibration associated with railway operations during both the construction and post-construction stage, historically poor soil conditions, and a high groundwater table. Refer to Figure 2 below:

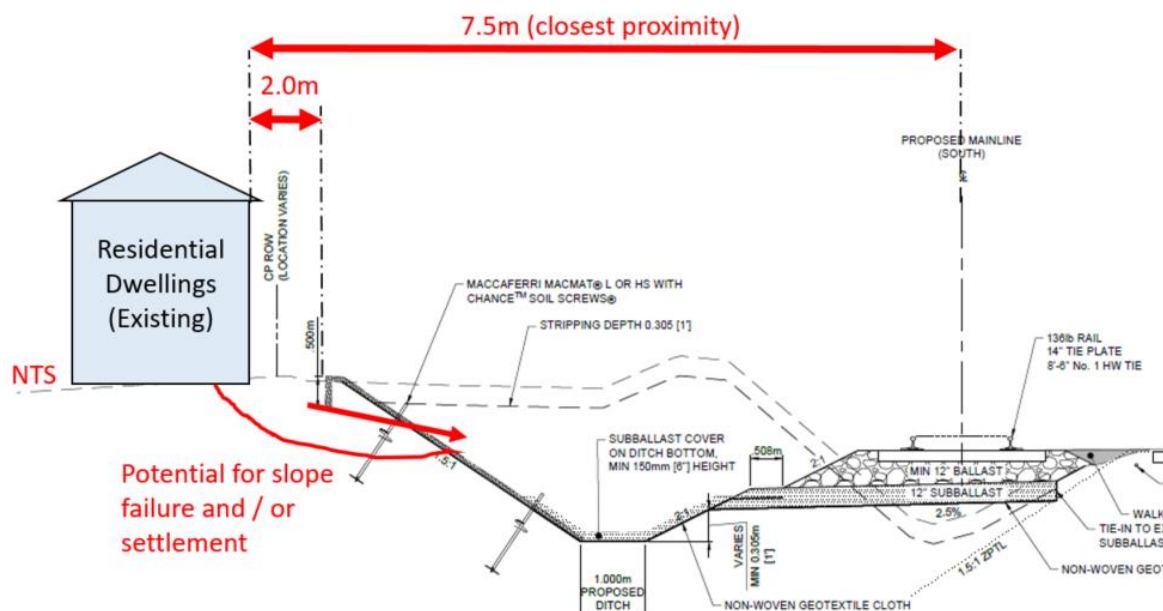


Figure 2 – Ground Destabilization / Potential Slope Failure, CP, 2023, with City Edits

2. Changing run-off and drainage paths on neighboring properties

Publicly available documentation for another proposed CP project outlines that in certain locations along the railway corridor, surface water drainage travels from adjacent properties onto the railway corridor. This drainage path is likely prevalent at many locations throughout the rail corridor. Therefore, the City has significant concerns that excavation, fill, preload, and other activities conducted as part of the railway works will cause temporary and/or permanent drainage changes to adjacent properties, potentially leading to flooding, property damage, and other impacts. Refer to Figure 3 below:



Figure 3 – Existing drainage paths of select properties adjacent to tracks, CP/Hatch, 2021 with City Edits

3. *Damage, destabilization, or removal of existing barriers located on, or near, the property line between adjacent properties and CP's Right-of-way (ROW)*

Currently, along the Pitt Meadows rail corridor, there are various wood and concrete barriers located between adjacent dwellings and CP's tracks. Although ownership of these barriers is unknown by CP and the City, they serve a certain level of benefit to both CP and adjacent property owners by providing some visual and noise attenuation. The immediate proximity of railway works to adjacent properties leads to significant concerns that these works may damage, destabilize, or result in the removal of these barriers, with no commitment provided from CP to repair and/or replace. Refer to Figure 4 below for an example of an existing barrier:



Figure 4 – Existing Barrier Located between Adjacent Properties and CP's ROW

4. *Encroachment onto City & adjacent landowner property*

CP's NRW documentation indicates that it is likely that several components of the at-grade railway works will trespass on City and private property. With respect to City property, CP's technical documentation shows their relocated flashing lights, bells, and gates system (FLBG) and cantilever encroaching over the City's road right-of-way. In addition, although CP doesn't specify the length of the soil screws associated with the railway works, it is conceivable that the soil screws could encroach onto adjacent properties due to the immediate proximity of the railway works and the required length of screws. This encroachment is likely to have adverse impacts to the future use of adjacent properties.

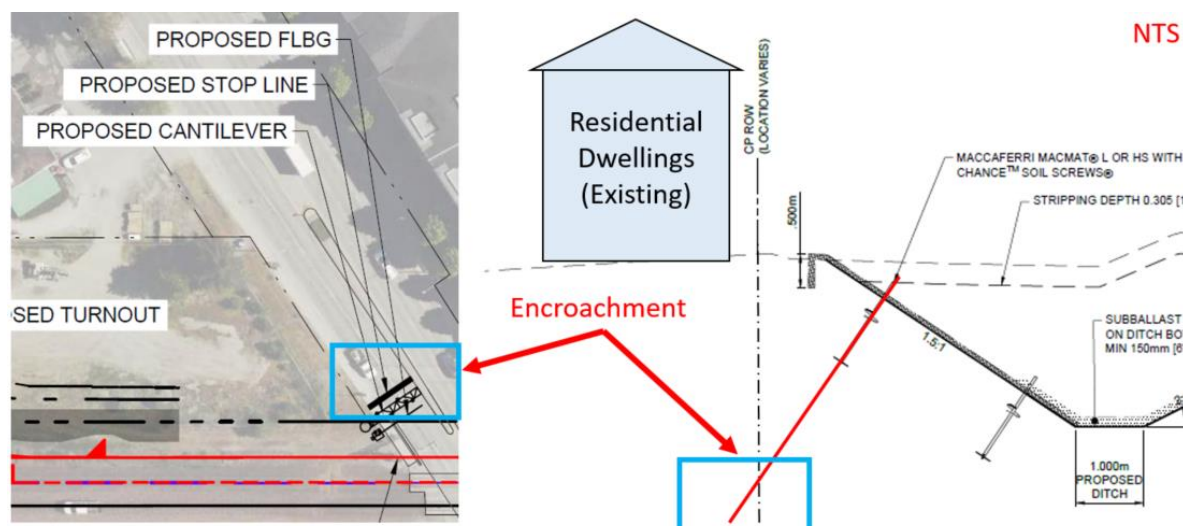


Figure 5 – Examples of Encroachment onto City and Private Property, CP, 2023, with City Edits

5. Noise and vibration

The Government of Canada's 2018 review of the *Railway Safety Act* states that "it is also important to mention that rail safety cannot be isolated from the problem of noise and vibrations"¹. Due to the immediate proximity of railway works (2m) and railway operations (7.5m), the City has concerns regarding the noise and vibration associated with both the construction and operation of the railway works.

Guidelines developed by the Railway Association of Canada (RAC) and the Federation of Canadian Municipalities (FCM) states that "noise can also have impacts on physical and mental health", and that "studies have found that sleep disturbance induced by adverse levels of noise can affect cardiovascular, physiological, and mental health, and physical performance"². The City acknowledges that there are existing noise and vibration exceedances along the railway and that there are other avenues to address those concerns; however, the proposed works would introduce new and additional noise and vibration concerns. Considering this, adequate mitigation for both construction and operation of the railway works should be implemented.

To mitigate the above five listed impacts to the safety of the community and residents, as well as municipal and private property, the City requests conditions be imposed on CP by the Minister.

Prior to commencing railway works, conditions should include:

- Conducting geotechnical site investigations and testing along the entire rail corridor where the railway works are to occur;

¹ [Enhancing Rail Safety in Canada: Working Together for Safer Communities](#), Transport Canada, Page 72

² [Guidelines for New Development in Proximity to Railway Operations](#), RAC & FCM, Pages 19 and 28

- Developing a settlement monitoring plan, for both CP and adjacent properties;
- Conducting comprehensive quantitative noise & vibration assessments for both the railway works construction and operation periods. This should evaluate speech interference (L_d), sleep disturbance (L_n , L_{Fmax}), high annoyance noise (L_{dn} , L_{LF}), and high annoyance vibration ($RMS_{1S, max}$) on adjacent dwellings;
- Developing a stormwater management report that assesses pre-development and post-development conditions, including a detailed assessment of impacts to the drainage paths on adjacent properties;
- Conduct a detailed field survey of the existing barriers located between CP's tracks and residential dwellings to ensure no conflicts between the existing barriers and the railway works. No existing barriers are to be removed as part of the railway works, unless replaced with new barriers of similar benefit or better;
- Comprehensive surveys of all structures located on or near all properties directly adjacent to the railway works to document existing conditions; and
- Developing a communication protocol for receiving and responding to complaints related to noise and vibration during the railway works. These protocols should outline a responsibility for CP to acknowledge any complaint within 48 hours of receipt and to implement corrective action, if required, to reduce exposure to noise and vibration, in a timely manner. Consultation with the City and any other relevant authorities should be included.

A monitoring and follow up program should include:

- Weekly settlement monitoring during and after completion of the railway works;
- Conducting noise and vibration monitoring monthly during the railway works and every 5 years after completion of the railway works, with data collection to occur for a minimum of 14 days;
- Conducting drainage studies every 5 years after the railway works;
- Conducting a comprehensive pre- and post-construction surveys of all structures located on or near all properties directly adjacent to the railway works to identify any structural damage caused by the railway works, and repair of such impacts. The results of the surveys are to be shared with each respective property owner; and
- Developing and implementing additional mitigation measures if any review at any time demonstrates that additional mitigation measures are required and/or CP's non-compliance with any of the above listed conditions.

Proximity of Railway Works and Operations – Railway Works Contrary to Guidelines

CP's proposed railway works is contrary to previous commentary provided by the Railway Association of Canada (RAC), the Federation of Canadian Municipalities (FCM), the Government of Canada, and CP, all of which have encouraged greater proximity between residences and railways. Instead of following these recommendations and guidelines, CP is proposing to conduct railway works as close as 2m to residential dwellings, and install rail tracks as close to 7.5m, which

will adversely impact personal and property safety. A brief summary of various documentation is provided below:

- Guidelines developed by RAC and FCM, acknowledges that “safety is a concern which has been expressed by residents living in proximity to railways”. In addition, it states that “Railway operations can generate concerns, such as...impacts on the quality of life of nearby residents due to the effects of inherent noise, vibration, and railway incidents” and recommends at least 30 meters distance between a principle main line and residential dwellings, and 15 meters distance for branch and spur lines³;
- In 2015, the Government of Canada conducted a review of the *Canada Transportation Act*. One of the recommendations contained within this review was that “in order to support the long-term health of Canadian urban municipalities and reduce the risks associated with public and freight rail interactions, the federal government... support the relocation of rail infrastructure outside of dense urban centres.” In addition, the review recommended “the implementation of technologies or infrastructure aimed at improving the safety of the rail/urban interface, with safer alternatives including road/rail grade separations, tunnels, and robust noise/visual barriers”⁴; and
- In CP’s response submission to the Government of Canada’s 2018 review of the *Railway Safety Act*, CP stated that “Grave concerns continue to exist about the prevalence of developments near railway yards and corridors”⁵. Given such a resolute statement regarding the proximity of residential dwellings and development to railway lines, it is a reasonable expectation for CP to show similar concerns regarding the expansion of their railway lines towards existing residential dwellings.

The City acknowledges that the railway was constructed first, is a vital trade corridor and over time development has been implemented around it; however, adequate mitigation should be included to minimize the impacts of this proposed railway works expansion.

Railway Geometry

The City has been aware of the railway works for years prior to CP issuing their NRW; however, previous documentation has always shown that the siding and lead tracks would be installed parallel to the straight mainline tracks, with no relocation of the mainline tracks required. Refer to Figure 6 below:

³ [Guidelines for New Development in Proximity to Railway Operations](#), RAC & FCM, Pages 16, 18, and 27

⁴ [Pathways: Connecting Canada’s Transportation System to the World, Volume 1](#), Government of Canada, Page 143

⁵ [Submission to the Railway Safety Act Review](#), CP, Page 34

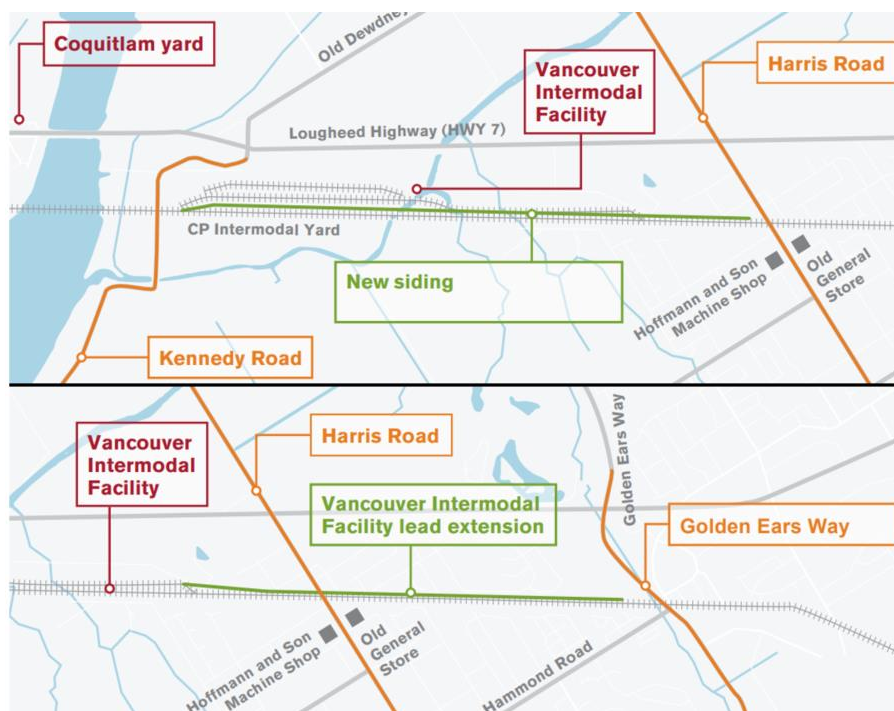


Figure 6 – Proposed Siding and Lead Track Configuration, CP, 2021

CP's sudden introduction of 4 distinct bends to the mainline tracks, as well as 2 bends to each of the lead and siding tracks, while not proposing any decrease to the mainline design speed of 60MPH, is of great concern to the City. Compared to rail tracks without bends, the combination of high rates of rail velocity plus the introduction of several sharp bends is likely to pose a higher risk of derailment, risking public safety and the safety to adjacent properties. This coupled with the fact that the Harris Road at-grade crossing is already within the top 3% of riskiest rail crossings in the country creates significant concerns.

It should be noted that CP's NRW did not contain any quantitative information pertaining to the radii of the bends, track spacing, and other items relevant to this topic. Omission of this information prevents the City from the opportunity to conduct, at its sole discretion, a more detailed assessment of the geometry of CP's railway works. The City has previously requested this information in writing; however, to date CP has not provided quantitative values.

Transport Canada has stated that "to facilitate the Minister's assessment of whether a proposed railway work would be consistent with safe railway operations, it is strongly recommended that the proponent provide" a "Risk Assessment", as well as an "Environmental Assessment"⁶. This risk assessment should include quantitative values pertaining to the track bends, as well as, assess the risk to safety associated with their implementation.

⁶ [Guideline on Requesting Approval to Undertake Certain Railway Works](#), Transport Canada, Page 6

Air Quality

The City has concerns that construction of the railway works, as well as railway operations, will have significant adverse impacts to safety with respect to air quality and human health. In 2022, a consultant retained by the City conducted a preliminary [Air Quality and Human Health Risk Assessment of Railway-source Diesel Emissions](#) (HHRA). This HHRA evaluated several different scenarios, including a scenario where CP implements the railway works and, per CP predictions, doubles the quantity of freight trains passing through Pitt Meadows from 28 currently to 59 in 2030. These results show that the railway works will notably increase the potential for significant and detrimental impacts to human health, including increasing the risk for developing several chronic and acute health conditions. This may include cancer, respiratory, cardiovascular, neurological, reproductive impacts and other conditions. The City acknowledges that there are no current enforceable standards governing the impact on local air quality by train emissions and will continue to strongly advocate for the creation and implementation of regulations.

To mitigate the above listed air quality impacts, which will prejudice the safety of the community and residents, the City requests conditions be imposed on CP by the Minister.

Prior to commencing railway works, conditions should include:

- Conducting an air quality baseline report, reviewing ambient air quality at the area of railway works, and all adjacent properties. This report, at minimum, should include a review of diesel particulate matter, fine particulate matter (PM_{2.5}), nitrogen dioxide, nickel, acrolein, arsenic, and formaldehyde;
- Conducting comprehensive quantitative air quality and human health risk assessments for both the railway works construction and operation periods and comparing to the baseline report; and
- Developing and implementing additional mitigation measures if any review at any time demonstrates that additional mitigation measures are required and/or CP non-compliance with any of the above listed conditions.

It is requested that all of the above referenced studies, reports, surveys and monitoring results be shared with the City, Transport Canada, as well as any other relevant authorities.

Conclusion

In closing, the City urges the Minister of Transport to direct CP to file additional documentation, including adequate mitigation measures for all adverse impacts caused by the railway works. The at-grade railway works, as shown in CP's NRW documentation, will prejudice the safety of the community and residents, as well as, municipal and private property.

The City looks forward to continuing conversations with both the Minister of Transport and CP on this topic, and would welcome the opportunity to be involved in the Minister of Transport's assessment period to further detail our concerns.

Yours Truly,



Mayor Nicole MacDonald



Mark Roberts, Chief Administrative Officer

cc: City of Pitt Meadows Council
Chief Grace George, q̓ícəy̓ (Katzie) First Nation
James Horbay, Regional Engineering Manager, Transport Canada
Hon. Marc Dalton, MP, Pitt Meadows/Maple Ridge
Hon. Lisa Beare, MLA, Pitt Meadows/Maple Ridge
Hon. Rob Fleming, BC Minister of Transportation and Infrastructure
Hon. George Heyman, BC Minister of Environment and Climate Change Strategy
Mike LoVecchio, Director, Indigenous Relations and Government Affairs, CP
Samantha Maki, Director of Engineering & Operations, City of Pitt Meadows