

# ATTACHMENT 10 - CN NOISE AND VIBRATION COMMENTS



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February 5, 2021

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Standard Life Centre  
Suite 150, 121 King Street West  
Toronto, Ontario, Canada, M5H 3T9  
Email: [heisey@phmlaw.com](mailto:heisey@phmlaw.com)

**Re: Review of November 2020 Submission  
Bellaria Phase 2  
Jane Street and Rutherford Road  
Vaughan, Ontario  
LPAT File No. 111184  
RWDI Reference No. 1901464**

Dear Mr. Heisey,

RWDI was retained by Canadian National Railway (CN) to examine potential noise and vibration impacts associated with operations at the CN MacMillan Yard on the proposed development of "Bellaria Phase 2", proposed by Solmar Inc., located in Vaughan, Ontario. RWDI completed previous reviews of a different 3-tower site plan proposed for the Bellaria Phase 2 in September 2019, for noise, vibration, air quality, and odour. Additional information was provided in response to questions from Solmar's consultants in January and February 2020.

Subsequently, a revised submission was made by Eastwood Holdings Corp. in November 2020 that outlines a revised site plan for the proposed development. Our current review includes the Valcoustics Canada Ltd. (VCL) reports:

- "Environmental Noise Assessment – Bellaria Phase 2", dated November 23, 2020 and prepared for Eastwood Holdings Corp.
- "Railway Vibration Study – Bellaria Phase 2", dated November 23, 2020 and prepared for Eastwood Holdings Corp.

This review should not be considered an exhaustive assessment of the noted studies.

A revised air quality and odour report has not been provided to our knowledge.

This review also addresses items material to the consideration of land-use planning issues arising between the proposed development and its proximity to the CN MacMillan Yard (i.e., the "Yard").



## FINDINGS

Our review of the current development proposal continues to find that proposed high-density residential development remains incompatible with the CN MacMillan Yard operations based on issues previously identified in 2019:

- Insufficient minimum separation distance to avoid adverse effects in accordance with Guideline D6. Guideline D6 recommends a minimum setback distance of 300m for this type of facility. The proposed setback to CN property is 0m.
- A Class 4 designation cannot apply to the proposed development under NPC-300 since CN, as one party to any agreement, is not a provincially-regulated entity. CN would not enter in to agreements where acoustic feasibility of the proposal is questionable. Class 4 also affords CN no regulatory protection and does not address the risk of complaints or adverse effects.
- A Class 4 designation under NPC-300 would be inconsistent with the City of Vaughan Noise By-Law 062-2018 which specifies Class 4 applies to sensitive land uses adjacent to provincially-regulated facilities that have an Environmental Compliance Approval (ECA). CN is federally regulated and cannot hold an ECA.
- Sound from the MacMillan Yard cannot reasonably meet the applicable NPC-300 Class 1 limits at the proposed development, particularly under predicted future Yard expansion conditions, including **four or five** pull-back tracks. Even if Class 4 limits could be applied, acoustic feasibility under these future scenarios is not realistic.
- Operations in the MacMillan Yard are predicted to produce perceptible vibration levels within the structure of the proposed development. Structural vibration isolation may be necessary.
- Low frequency noise from locomotives is predicted to produce noticeable vibrations and rattles in the proposed building, particularly at night, leading to increased risk of complaints. Mitigation of such low frequency sound is not readily available.

Notably, the current noise and vibration assessments also raise these concerns:

- They do not consider CN's proposed future expansions of their pull-back track operations, which notably include the addition of tracks to a total of four to five in the pull-back corridor that was previously communicated to the developer. These tracks may be located to the north or south of the existing pull-back tracks, subject to ongoing discussions with CN's customers.
- They do not consider the proposed increase in locomotive size for the Yard that was previously communicated to the developer. The current 2200 and 3800 hp locomotives are expected to be replaced in the next decade with 4400 hp locomotives to address longer and heavier trains.
- The underground parking garage structure is proposed to be built with 0 m separation to the property line with CN. This structure does not appear to include any crash wall as part of its design above or below grade.



- It is not clear that the vibration study captured the worst-case trains as measurements were made over only a few days and were not coordinated with CN. Furthermore, we disagree that the direction of maximum measured vibration will not pose a concern for the occupants of the new building.
- The noise assessment acknowledges that Class 1 limits cannot be reasonably achieved for the proposed development, despite the fact that sensitive spaces have been further setback from the existing tracks and the assessment only considers current CN operations.
- Enclosed noise buffers (ENB) are proposed on two entire facades of both towers in order to meet Class 4 limits which cannot apply to CN as noted above. ENBs also cannot attenuate structure-borne noise. This extensive mitigation is necessary considering only CN's current operations and does not allow for its proposed expansion of this facility.

Although an air quality study was not submitted, RWDI considered the revised site plan in the context of our previous assessment conducted in September 2019. That previous assessment predicted odour levels that were 5 to 6 times above the provincial guideline at the proposed buildings. The current November 2020 development proposal moves the sensitive buildings approximately 20m further from the existing pull-back tracks compared to the plan reviewed in 2019. This change in setback is expected to result in a minor change in the predicted odour levels, which remain well above acceptable levels.

The above factors indicate that the proposed residential development would experience a high risk of adverse effects from the MacMillan Yard that may not be readily mitigated without significant modifications and limitations, particularly given the Yard's future expansion plans. Hence, residential development on the proposed Bellaria Phase 2 site still does not appear to be reasonable or feasible despite the revised site plan.

## ADDITIONAL BACKGROUND

As mentioned in our September 30, 2019 report, MacMillan Yard is a critical part of CN's infrastructure, serving rail car movements throughout Canada and North America. It is the second largest classification rail facility in Canada and one of the largest in North America. This yard currently handles approximately one million cars each year and this number is increasing as demand for rail service in the Toronto area continues to grow. Operations at MacMillan yard are 24/7 and it is mandatory to retain full flexibility in order to respond to variations in traffic demand and serve the Canadian economy. It plays an integral role to CN's business throughout North America and is the link between eastern and western Canada and U.S. markets. The facility operates by sorting incoming rail cars into trains bound for other destinations. To accomplish this task, incoming trains are drawn along a "pull-back track" at the north end of the Yard by remote-control locomotives. The pull-back track is part of MacMillan Yard and extends northward, passing under Rutherford Road and Melville Avenue, before turning west and terminating near Jane Street.

The locomotives then push the trains back to the Yard and over a "hump" which is an elevated portion of the track approximately 1900 m southeast from the end of the pull-back track. There is approximately 2400 m of track between the hump and the end of the pull-back track. At the hump the individual rail cars are released by a CN operator, continuing under their own momentum from the



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hump through a series of switches to be sorted onto the appropriate sidings, and ultimately their destination train. The pull-back tracks are an integral part of the yard, which cannot function without them. CN's ability to process rail cars through this facility cannot be relocated or restricted in any way, nor can its ability to expand as required in the future. CN wishes to be clear that no constraints on its operations (such as curfews, etc.) are an option. The MacMillan Yard was designed and planned to accommodate significant future growth when it was built in the early 1960's and CN intends to take full advantage of this future demand.

Future modifications are expected to more than double the processing of rail cars, from approximately one million per annum to over two million per annum.

- Technology changes that CN is currently evaluating to accommodate this expansion have been previously communicated to the developer in January and February 2020.
- The Yard was originally developed with 2 pull-back tracks, but was sized to allow another 2-3 tracks in that location, with space for ultimately 5 tracks in the future. CN has current plans to expand to four pull-back tracks. A proposed illustrative layout that has been part of CN's financial plans is included as Attachment 1; however, the ultimate track layout has not been finalised and may have new tracks to the north or south of the existing tracks.
- The current 2200 and 3800 hp locomotives are expected to be replaced in the next decade with 4400 hp locomotives. Also, with heavier and longer trains, more locomotives per train are expected to ensure high processing efficiency.

As noted previously in 2019, the original RWDI assessment considered a representative future CN operating scenario. CN that indicates multiple tracks could be in use for pushing and pulling simultaneously, particularly once additional pull-back tracks are in place. As a result, the scenario used in our September 30, 2019 report may not produce the loudest results or highest odour levels that may be expected in the future.

## CLOSING

We trust that this information is what you require at this time. If you require anything further, please do not hesitate to contact us.

Yours truly,

**RWDI**

A handwritten signature in black ink that reads 'Ben Coulson'.

Benjamin Coulson, P.Eng., M.A.Sc.  
Senior Consultant

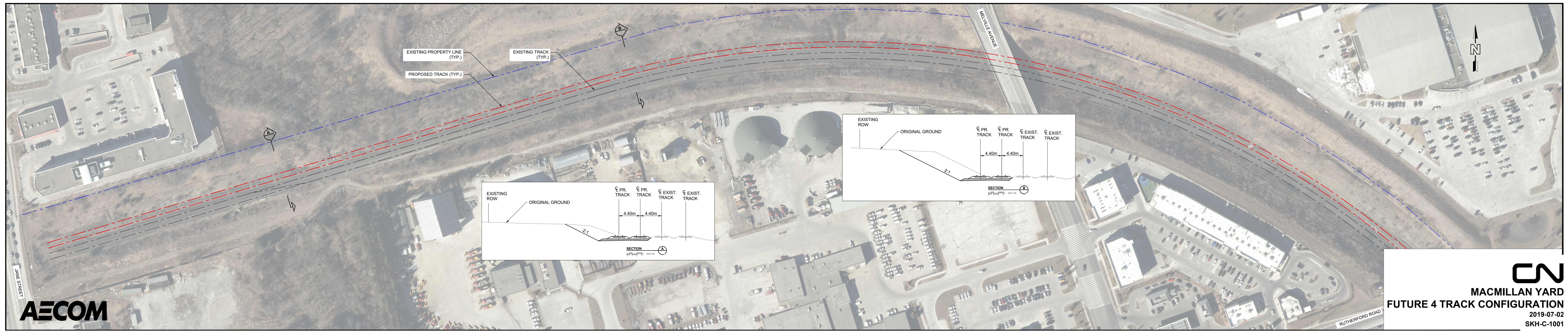
**CC:** Sean Madigan ([sean.madigan@cn.ca](mailto:sean.madigan@cn.ca))  
Monika Pezdek ([monika.pezdek@cn.ca](mailto:monika.pezdek@cn.ca))

**Attach.:** Potential CN 4-Track Design

A large decorative graphic on the left side of the page. It features a blue triangular shape in the top-left corner, a white curved line separating it from a large light-grey circular area, and a thin white curved line separating the grey area from the rest of the page.

# ATTACHMENT 1





**AECOM**



**MACMILLAN YARD  
FUTURE 4 TRACK CONFIGURATION**

2019-07-02  
SKH-C-1001