

Staff Report to Council

Engineering Department

FILE: 16-8330-01/21

REPORT DATE: May 12, 2021

MEETING DATE:

May 18, 2021

TO: Mayor and Council

FROM: Justin Hart, Project Manager – Major Projects

SUBJECT: Acoustical Consultant Budget Approval for Peer Review of Road and Rail Improvements Project - Noise and Vibration Study and Additional Assessment along Rail Corridor

CHIEF ADMINISTRATIVE OFFICER REVIEW/APPROVAL:



RECOMMENDATION(S): THAT Council:

- A. Approve a budget of \$75,000 funded by the Operating Reserve to conduct an independent Peer Review of the Road and Rail Improvements Project - Noise and Vibration Study and collect and analyze additional data along the rail corridor in relation to existing operations and associated noise and vibration exceedances; OR
- B. Other.

PURPOSE

To recommend to Council a new project and associated budget to engage an acoustical consultant to review the recently completed Road and Rail Improvements Project - Noise and Vibration Study and further assess the rail corridor and current noise and vibration exceedances.

☐ Information Report

☒ Decision Report

☐ Direction Report

DISCUSSION

Background:

On April 21, 2021, the Vancouver Fraser Port Authority ("port") released a noise and vibration study conducted by BKL Consultants Ltd. ("BKL") titled "Pitt Meadows Road and Rail Improvements Project – Noise and Vibration Assessment Summary". The intention of this study was to establish a baseline that would inform the necessary noise and vibration mitigation for the Road and Rail Improvements Project.

BKL's report identified seven criteria from Health Canada's *Guidance for Evaluating Human Health Impacts in Environmental Assessment* (2018) ("Noise Guidelines") and the US Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* (2018) ("Vibration Guidelines") that should be considered when reviewing the impacts of proposed infrastructure projects. The thresholds for each criterion are also identified within these guidelines. The seven criteria are listed below in Table 1.

Table 1 – Criteria Identified for Noise and Vibration		
Category	Criteria	Threshold
Noise	Speech Interference (L_d)	55 dBA
	Sleep Disturbance – Average Outdoor Level (L_n)	40 dBA
	Sleep Disturbance – Peak Outdoor Level (L_{Fmax})	72 dBA
	Change in %HA between Project and No Project	6.5%
	High Annoyance – Day/Night Equivalent (L_{Dn})	75 dBA
	High Annoyance – Low Level Frequency (L_{LF})	70 dB
Vibration	High Annoyance Vibration ($RMS_{1S, max}$)	103 dB, 3dB increase above baseline

After establishing assumptions regarding current and future railway operations, BKL modeled and detailed the noise and vibration levels along the railway corridor for three different scenarios:

- 2019 Pre-Project (Current Levels)
- 2030 Without Project
- 2030 With Project

The results of BKL's data collection and modeling is shown below in Table 2:

Table 2 – Assessment Criteria Thresholds and Quantity of Receivers Exceeding Currently and in Future				
Assessment Criteria	Threshold	Number of receivers Exceeding Criteria (597 Receivers)		
		2019 Existing	2030 No Project	2030 With Project
Speech Interference (L_d)	55 dBA	371 (62.1%)	454 (76.0%)	457 (76.5%)
Sleep Disturbance – Average (L_n)	40 dBA	591 (99.0%)	591 (99.0%)	591 (99.0%)
Sleep Disturbance – Peak (L_{FMax})	72 dBA	397 (66.5%)	397 (66.5%)	397 (66.5%)
High Annoyance – Day/Night (L_{Dn})	75 dBA	6 (1.0%)	24 (4.0%)	33 (5.5%)
Change in %HA between Project and No Project	$\Delta\%HA > 6.5\%$	N/A	N/A	0 (0.0%)
High Annoyance – Low Frequency (L_{LF})	70 dB	117 (19.6%)	117 (19.6%)	117 (19.6%)
High Annoyance Vibration ($RMS_{1s, max}$)	103 dB, 3dB increase above baseline	N/A	N/A	1 (0.16%)

The column above highlighted in blue shows that based on the data BKL collected and modelled, several of the criteria outlined by Health Canada's Noise Guidelines are already being exceeded by current railway operations. The results of the study were also used to determine the proposed Warranted and Supplementary mitigation scope to be included in the Road and Rail Improvements Project, which totals 610m of noise walls along the rail corridor shown in Figure 1 below.

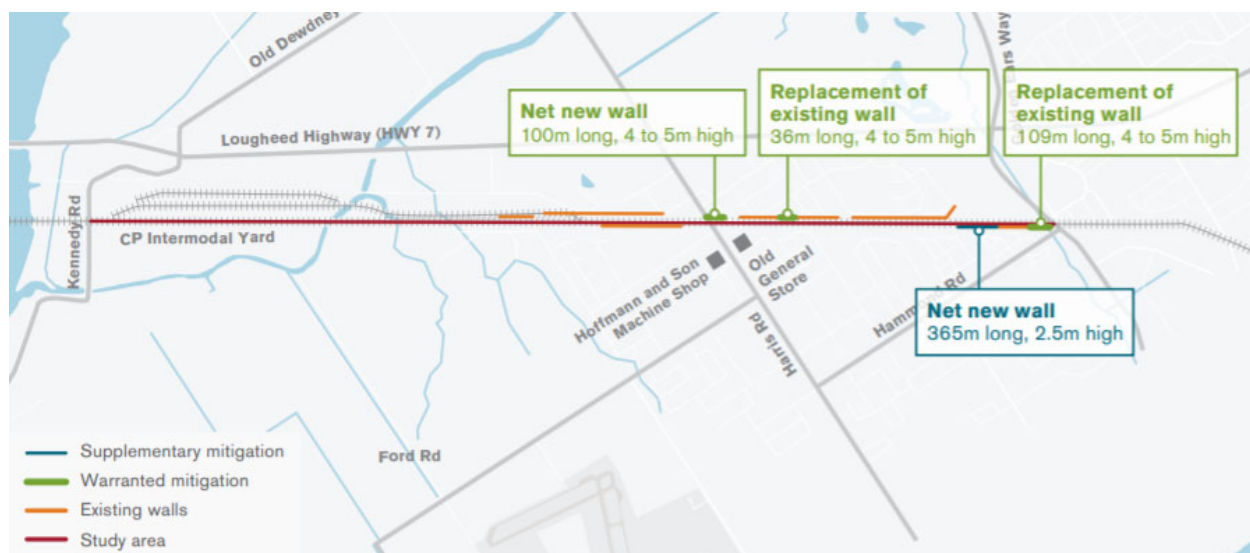


Figure 1 – Road and Rail Improvements Project Proposed Mitigation Scope (Port, 2021)

Analysis:

Health Canada's Noise Guidelines apply to new infrastructure projects and not existing operations and the focus of BKL's report was project-specific. For these reasons and to ensure due diligence, staff are recommending an independent acoustical consultant be engaged by the City to conduct the following scope of work:

- Conduct a peer review of the Road and Rail Improvements Project – Noise and Vibration Assessment Summary and proposed mitigation
- Collect additional noise and vibration data along the rail corridor to supplement the data already collected and assess the conditions with a focus on the existing railway operations

An independent peer review will verify the assumptions and approach that formed the basis of the results/recommendation and will ensure the analysis of the information is complete. It will also provide critical context and clarity for staff and Council to ensure the interests of the community are protected and represented. This will allow for more informed decisions related to the Road and Rail Improvements Project.

The additional data collection and assessment relating to existing operations is completely separate from the Road and Rail Improvement Project and would take longer to complete. This information will help the City better understand the current impacts of the railway operations and inform future discussions.

After preliminary discussions with several acoustical consultants, staff have determined that the above-mentioned scope of work could cost approximately \$75,000, including contingency. Depending on the detailed scope of work, it could take four months to complete the work and the initial priority would be the peer review related to the Road and Rail Improvements Project. Once a consultant is selected, the detailed scope of work would be established with the consultant to ensure the necessary aspects are included.

Relevant Policy, Bylaw or Legislation:

Council Policy C012 – Purchasing and Procurement outlines the process for procuring goods and services. Typically, for a project over \$25,000, a competitive process (RFP, tender, bid) would be implemented. Time is of the essence with this project and staff have already reached out to multiple local, qualified, independent acoustical consultants to gauge order of magnitude costs, capacity, timeline and high-level scope. Staff intend to use this information to determine the best overall value for the City. As this is outside the typical competitive process, it would be classified as a single source as per the policy and the Chief Administrative Officer has the authority to approve award up to \$200,000, which will be exercised in this situation.

COUNCIL STRATEGIC PLAN ALIGNMENT

- ☒ Principled Governance ☐ Balanced Economic Prosperity ☒ Corporate Excellence
☒ Community Spirit & Wellbeing ☐ Transportation & Infrastructure Initiatives
☐ Not Applicable
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FINANCIAL IMPLICATIONS

- ☐ None ☐ Budget Previously Approved ☐ Referral to Business Planning
☒ Other

If acceptable to Council, the \$75,000 required to fund the scope of work described above would be funded from the Operating Reserve.

PUBLIC PARTICIPATION

- ☒ Inform ☐ Consult ☐ Involve ☐ Collaborate ☐ Empower
-

KATZIE FIRST NATION CONSIDERATIONS

Referral ☐ Yes ☒ No

SIGN-OFFS

Written by:

Justin Hart,
Project Manager – Major Projects

Reviewed by:

Samantha Maki,
Director of Engineering & Operations

ATTACHMENT(S)

None.