

May 27, 2020

File: 2699-19A-R3

ONNI Group
200-1010 Seymour Street
Vancouver, BC
V6B 3M6

Attention: Eric Hughes

Dear Eric:

**Re: Golden Ears Business Park Phase 3 – Alternate Layout, May 2020
Noise Bylaw Assessment**

As requested, we have completed a noise bylaw assessment for the proposed Golden Ears Business Park Phase 3 alternative layout site provided on May 20, 2020, to be located at 19265 Airport Way, Pitt Meadows.

Background

A new business park is to be located on a parcel of existing agricultural land at 19265 Airport Way. The land is bound by Fieldstone Walk single family houses to the north, Harris Road to the west, Airport Way to the south, and Pitt Meadows Athletic Park to the east, as shown in Figure 1.

The business park will consist of three detached warehouse buildings with vehicle access to Airport Way and Harris Road. The northwest of the site will include a landscaped berm to allow for screening of the business park to dwellings on Fieldstone Walk and the southeast section of the development will include a proposed amenity land dedication.

Concern has been raised regarding the noise from activities associated with the business park on existing noise sensitive receptors, including the single-family dwellings on Fieldstone Walk and 193 Street. Sources of noise will include truck movements around the business park, back-up alarms from the trucks, idling from the trucks as they engage and depart the loading bays and noise from rooftop mechanical equipment servicing the business units.

The nearest residential receptors are a group of single-family houses located on Fieldstone Walk and on 193 Street. The Fieldstone Walk and 193 Street residences are approximately 180 metres and 220 metres, respectively, to the first warehouse building to the north of the site (building 3100).

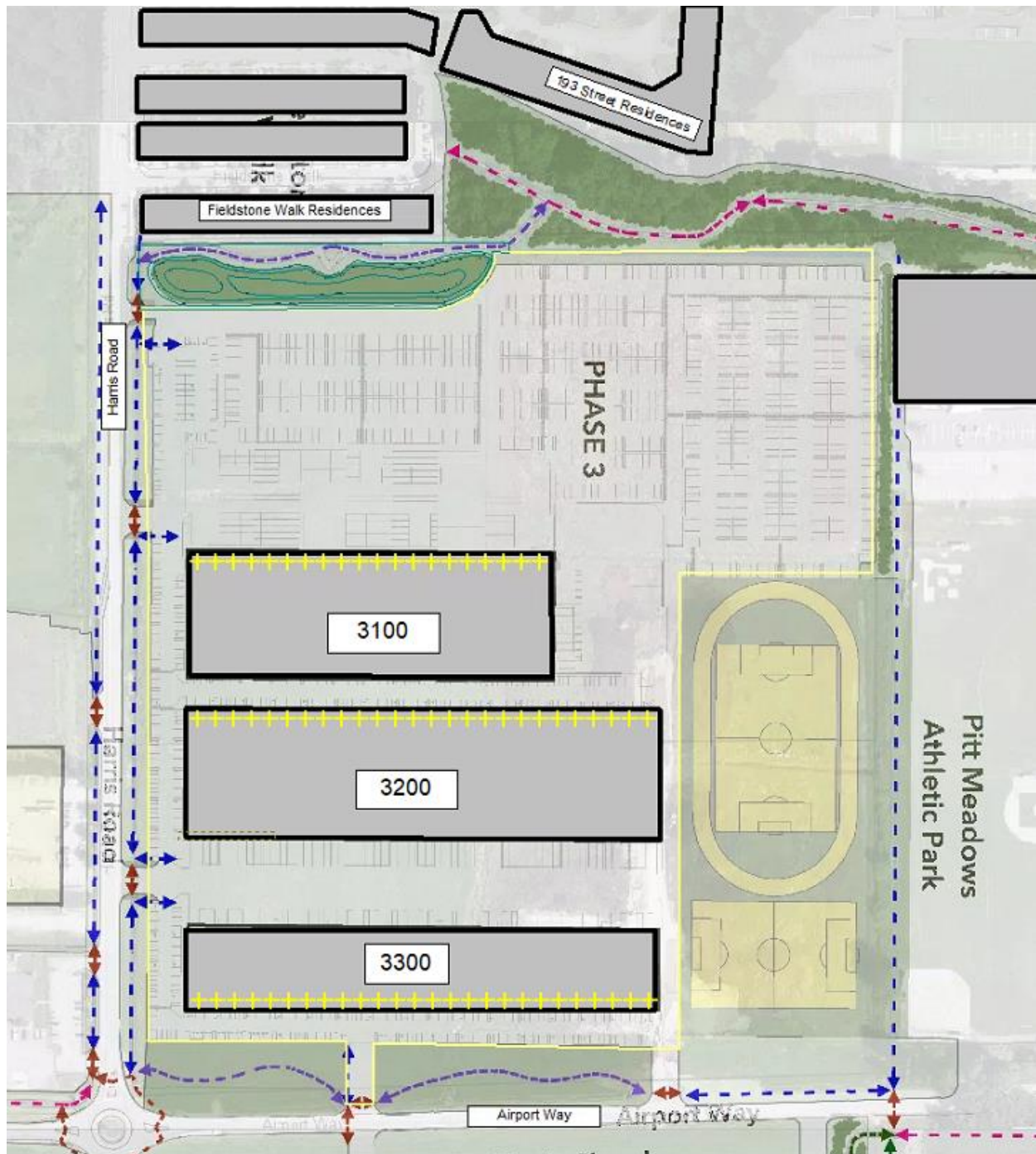


Figure 1: Phase 3 Site Plan and Nearest Residences

Noise Criteria

The Golden Ears Business Park Phase 3 development is located within an I-3 zone. The noise sensitive receptors on Fieldstone Walk and 193 Street (north of the Phase 3 development) are located in A-1 and CD-F zones respectively. As per the Bylaw Schedule B, zoning types A-1, and CD-F are designated as 'Quiet Zones'.

The City of Pitt Meadows Noise Control Bylaw No. 2138 (the Bylaw) provides noise limits regarding the impact associated with continuous and non-continuous noise sources in 'Quiet Zones'. Specifically, the Bylaw states that:

Except as provided herein, sound levels emanating from or impinging upon real property shall not exceed values prescribed by the following [Table 1]:

Table 1: City of Pitt Meadows Noise Criteria

Criteria	Continual Sound (longer than 3 minutes in 15 minute period)	Non-Continual Sound
Daytime (7:00 am to 10:00 pm)	55 dBA	80 dBA
Nighttime (10:00 pm to 7:00 am)	45 dBA	75 dBA

This means that despite the business park being outside a Quiet Zone, any noise from the business park must be below Table 1 values at the property line between this development and its neighbouring residential properties.

Assumptions about Business Park Operations

The main sources of noise likely to impact on the nearby receptors will be from:

- roof top mechanical units to control the heating/cooling of the business units;
- truck movements arriving/departing the business park;
- trucks idling as they engage and depart the loading bays; and
- reversing alarms of trucks moving in and out of the loading bays.

Roof top mechanical units are likely to operate continuously. Details on equipment and locations are not available at this time. Hence, following discussions, we have assumed mechanical units to be placed on the roof of each respective building in a similar configuration to the placement of mechanical units at Golden Ears Business Park Phases 1 and 2. The number of mechanical units has been based on the scale of the building when compared to others on the Phase 1-2 scheme; therefore,

- building 3100 is assumed to have 20 rooftop mechanical units;
- building 3200 is assumed to have 26 rooftop mechanical units; and
- building 3300 is assumed to have 26 rooftop mechanical units.

Operations on the business park are likely to run 24/7; however, it is expected that truck movement volumes would be lower outside of typical daytime hours, but trucks may still enter/exit the business park during night-time hours. Refrigerated trucks (reefers) are not expected to operate within the business park.

We understand that delivery trucks will typically not idle their engines at the loading bays, and that idling would most likely be limited to less than three minutes in any 15 minute period as they arrive and depart the loading bays. Therefore, idling noise is assumed to be non-continuous noise.

Delivery trucks entering and exiting the development would also be considered as non-continuous noise. As would the back-up alarms which would only be used for a short period when entering and exiting the loading bays.

Noise Model

The mechanical unit selections are assumed to be similar to roof top units installed on buildings within the Golden Ears Business Park Phase 1 and 2. We assume that a unit similar to the Daikin DSG036 will be used and was therefore chosen as a basis for the calculations.

The sound levels of delivery trucks idling in the loading bay were estimated based on past measurements taken from the loading bays of a Home Depot store in Surrey.

The sound levels of delivery trucks entering and exiting the loading area were estimated based on a heavy-duty truck moving at 15 km/hr.

The sound levels of truck reversing alarms were taken from measured noise levels presented in the Alarm Back Up Electric Laboratory Performance Testing document SAE J994 OCT03 Type C.

The sound levels (estimated at a distance of 15 m) of the noise sources are summarised in Table 2. The assumed location of noise sources are shown in Figure 2.

Table 2: Representative Sound Levels Used for Noise Modelling

Noise Source	Sound Level at 15 metres (dBA)
Rooftop HVAC Unit	46
Delivery truck idling	79
Delivery trucks entering and exiting the loading area	75
Truck reversing alarms	77

Noise propagation from the business park to the Fieldstone Walk and 193 Street residences was modelled using the software Cadna/A according to the ISO 9613 standard. The ground contours, site plans and cross sections were provided to us by ONNI Group. The model accounts for terrain, attenuation and reflections from buildings, etc. including the bermed greenspace at then northern edge of the property.

Noise levels from the identified continuous and non-continuous noise sources were predicted at the facades of the Fieldstone Walk and 193 Street residential properties.

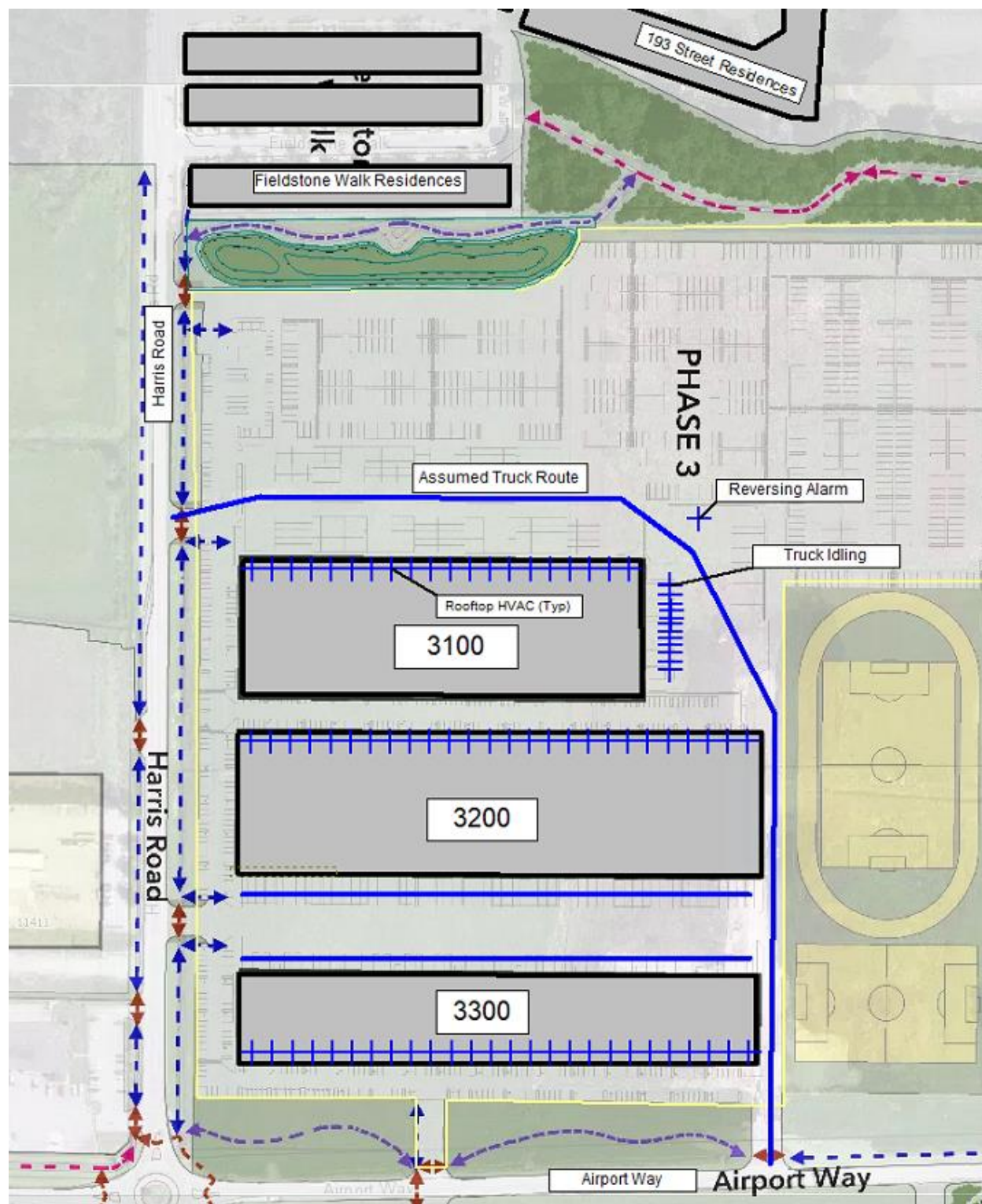


Figure 2: Assumed Noise Source Locations (Blue lines and crosses)

Noise Bylaw Assessment

Figure 3 shows the predicted noise levels at the residences from the assumed continuous noise sources which include all rooftop mechanical units operating simultaneously.

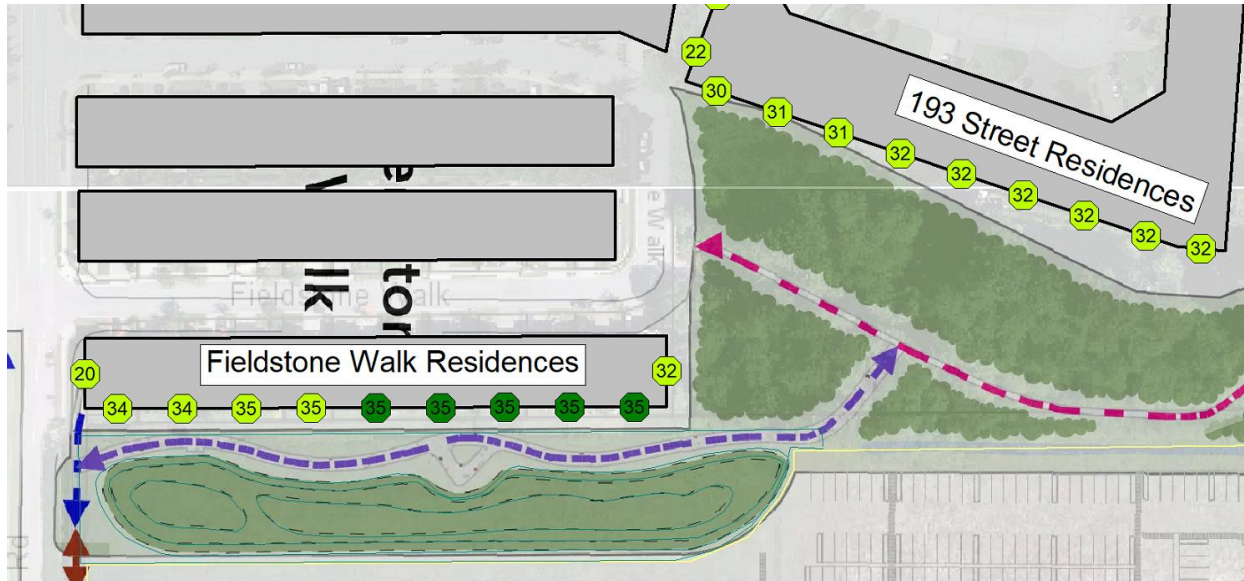


Figure 4 shows the predicted noise levels at the residences from a worst case non-continuous noise source scenario, where all loading bays at Building 3100 have trucks idling for no more than three minutes in a 15 minute period. While this may be a rare and potentially unrealistic scenario, the prediction shows that this worst case is still within night time noise bylaw limits.

Figure 3: Predicted Facade Noise Level from Continuous Noise Sources (dBA)

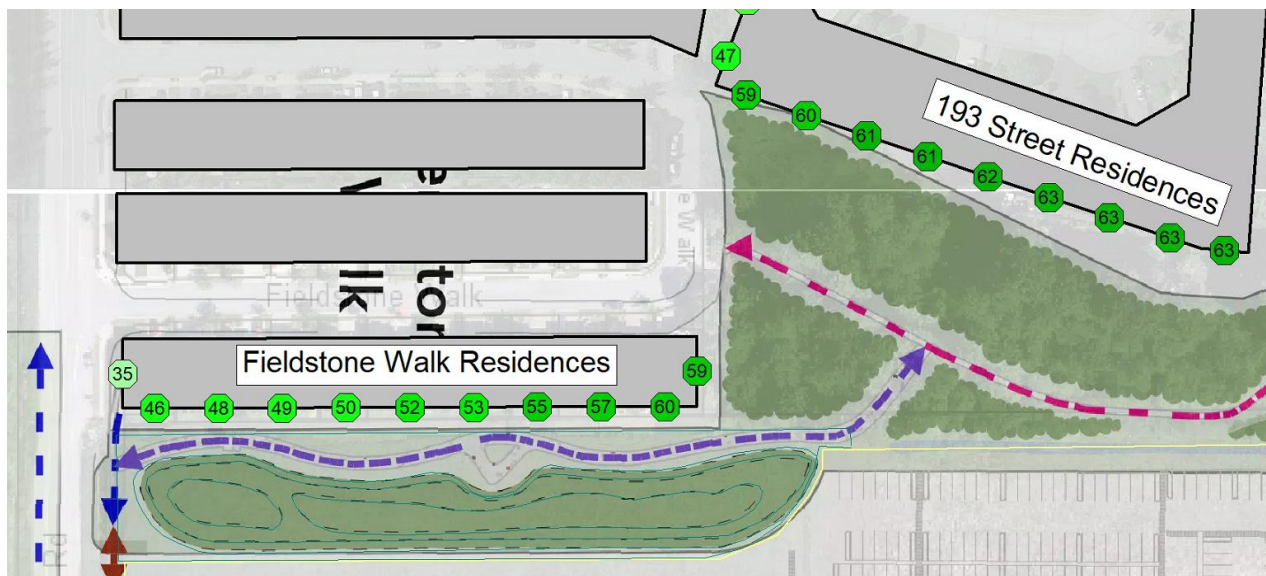


Figure 4: Predicted Facade Noise Level from Worst Case Non-continuous Noise Source (Idling in All Bays) (dBA)

Table 3 summarises the predicted highest noise level from each noise source, against the respective noise criterion:

Table 3: Predicted Highest Noise Level from Noise Sources

Noise Source	Highest Predicted Noise Level (dBA)	Noise Criterion (dBA)	Compliant?
Rooftop mechanical units	35	45	Yes
Delivery truck idling (in all bays)	63	75	Yes
Delivery truck idling (in nearest bay)	52	75	Yes
Delivery trucks entering and exiting the loading area	55	75	Yes
Truck reversing alarms	55	75	Yes

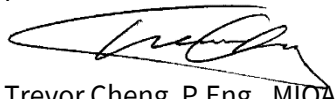
Conclusion

Results from our assessment are summarized in Table 3. Based on the assumptions and predictions described in this letter, the studied noise sources are within the applicable City of Pitt Meadows noise bylaw limits. This report completes our scope of work. Should you have any questions or require further assistance, please feel free to contact us.

Sincerely,

BKL Consultants Ltd.

per:



Trevor Cheng, P.Eng., MIOA
Project Consultant
cheng@bkl.ca