

WEST PANORAMA RIDGE RATEPAYERS ASSOCIATION

RESPONSE AND COMMENTS ON :

APPLICATION TO EAO UNDER THE BC ENVIRONMENTAL ASSESSMENT ACT (ACT)

DELTAPORT THIRD BERTH PROJECT (DP3 PROJECT REVIEW)
ENVIRONMENTAL ASSESSMENT APPLICATION

MARCH 15, 2005

Prepared by: Bob Campbell PEng

Summary

We would like to thank the Port of Vancouver for including the City of Surrey, and specifically the residential areas of North Delta, and West and East Panorama Ridge in the impact study. This document is the response of our community association to the results and analysis of the sound study performed at 12726 Southridge Drive by BKL Consultants.

We are encouraged by the recommendation to form a Roberts Bank Noise Management Committee. This Committee would have a broad mandate that would include the issue of noise generated from the rail lines below Panorama Ridge. The committee would invite representatives of the City of Surrey and residents from affected neighborhoods to participate. In addition, it is stated that this committee would:

- Investigate and, if possible, eliminate the cause of the audible impact noise that occurs as rail cars pass over the switch where the Burlington Northern Santa Fe (BNSF) line joins the BC Rail line
- Investigate the feasibility of constructing localized noise barriers at such locations that would reduce noise emission to residential communities
- Determine whether there are operational procedures that could be defined and enforced more stringently to eliminate the highest level impacts (e.g. train speeds)
- Develop a 24-hour environmental helpline for residents for noise events

We support the establishment of this committee and the recommendations indicated above. The establishment of a Noise Management Committee as detailed above and the list of potential issues it will discuss is a positive development.

We would have preferred a more definitive set of objectives in the form of specific sound level targets based on sleep disturbance, and a firm commitment to achieve these levels through one or more strategies developed by the Noise Committee. The establishment of the Committee and the discussion of the above issues do not appear in any way to ensure that a solution will be found and implemented, only that it will be discussed. It is a very real possibility that the result of these deliberations will be the residents of Panorama Ridge living with not only the unacceptable situation they currently find themselves in, but one made worse by the Third Berth Expansion.

As discussed below, we believe the BLK analysis minimizes the impact of the measured train noise, and the predicted noise levels, especially as it relates to sleep disturbance. That being said, their analysis still indicates the Ridge has a serious noise problem that will become worse with the Third Berth Expansion. The BKL data shows that other than 41B Street, a relatively isolated area with few homes, Panorama Ridge suffers the highest level of existing Leq. Of the four tested areas, Panorama Ridge will suffer the greatest predicted impact from the Third Berth Expansion, stated as 2 dBA or “minimal”. The actual calculated number is 2.4 dBA, close to the next category, “modest impact” which starts at 3 dBA. Panorama Ridge is the only area listed as having “certain” and “continual” impact from the projected expansion. BKL predicts a “high annoyance” level of 14% (14% of 1,500 is 210 homes), and concedes that this implies an even larger percentage of the population will have annoyance levels, although somewhat lower than “high”.

We would like to take this opportunity to comment on other conclusions of this report that we find inaccurate, misleading or inappropriate. They include three basic areas:

- We believe the sound level measurements recorded illustrate the severity of the train noise problem in Panorama Ridge/North Delta, but the analysis of these measurements put the best possible face on a serious problem. The analysis understates both the magnitude of the existing problem, and the predicted impact of future sound levels, especially as they relate to appropriate sleep levels
- We fundamentally disagree with the approach of using existing sound levels as a baseline and only considering the impact of potential increases to this level. The reality is that the majority of the sound disturbance Panorama Ridge residents now experience is caused by the rail operations servicing the Port
- We believe the Port Corporation should actively assist the Community Association in the elimination of train whistles.

1. Measurement Methodology

The noise study concludes that for the Panorama Ridge area, with a modeled increase from 18 to 23 train movements per day, the 24 hour Leq would increase by 1.1 dB. The

expected increase in wheel/rail noise would be 1.3 dB. The total increase is then rounded down to 2 dB (it should be 2.4 dB), and a 2 dB increase is then declared to present a “minimal” impact to “residential receiver locations”. The study further states that “increases of 1 dBA and 2 dBA are not normally perceptible to the human ear”. From this analysis and conclusion, it would appear that the residents of Panorama Ridge have no cause for concern.

We are not acoustic engineers, but we believe that the use of Leq, Ldn and LRdn understate the magnitude of the problem faced by residents of North Delta and West and East Panorama Ridge. These units measure cumulative sound levels over a given time period. For Leq (1 hour), this number calculates the cumulative sound energy received during an hour. For sounds that occur frequently over a reasonably large percentage of the hour, this method of calculation would seem appropriate; e.g. using Leq to measure noise generated by Port operations or idling locomotives. For noise, especially very loud noise that occurs infrequently and/or has a very short duration, this method of assessing the impact of that noise over a long period minimizes the impact of that noise, even if nighttime and tonal penalties are added.

Panorama Ridge experiences an average of about one train per hour. It takes that train about three minutes (or 5% of an hour) to pass by our location. We have used the BKL data to plot a couple of examples of the 3-5 minute period it takes a train to pass. These plots are shown as Figures 1 and 2 and are included at the end of this document. These plots show that each train generates up to 12 whistles over 80 dBA and some that are nearly 90 dBA. It also shows that when the train passes, rail, wheel and locomotive noises raise the sound level about 20 – 25 dBA over ambient noise levels, reaching levels of up to 65 dBA. The trailing locomotive often generates sound that approaches 70 dBA. Clearly, as a train passes our area it generates very loud noise levels. The problem is that these very loud noises represent only a small fraction of the total time and the total sound energy in the hour period. The result is their impact is highly discounted through the calculation of Leq.

An example of how misleading this calculation can be is contained within the report. At this time there are four uncontrolled crossings below Panorama Ridge/North Delta. With 18 train movements a day, and each train obligated to whistle 4 times at each uncontrolled crossing, residents now listen to 288 whistles per day at sound levels up to 90+ dBA. That’s a lot of very disturbing noise. On page 536, the report estimates that if all whistles were eliminated, “the LRdn value would only drop by 1.5 dBA”. Remember, the report indicates that “increases of 1 dBA and 2 dBA are not normally perceptible to the human ear”. You would have to assume that decreases of 1 to 2 dBA are also not perceptible to the human ear. Obviously, no one living in our area would consider eliminating 288 90dBA whistles as not perceptible! If this is a true measure of what an LRdn drop of 1.5 dBA is showing us, we have real reason to worry about the projected increase of 2.4 dBA!!

Finally, the BKL report indicates that people require noise levels at or below 40 dBA to sleep (Health and Welfare Canada (1989)). It also states that a modern, recently

constructed home can attenuate noise by 20 dBA or more (up to 25 dBA), IF all the windows are closed. We have applied these guidelines to the level of sound generated as a train passes. Clearly, all whistles are loud enough to wake anyone up no matter if their home is new or not and the windows are closed. Now, eliminate the whistles. Looking at just the noise of the train passing, (60 – 65 dBA), and especially the trailing locomotive, (65 - 70 dBA), these levels are still marginally louder than the minimum sleep levels, again regardless of the age of your home and whether the windows are closed or not. If your home is not new (we’ve used a 15 dBA attenuation level for older homes), and if you should choose to open your windows, there is very little chance you will sleep through a passing train. We have include the following table, Figure 3, to illustrate that the target noise levels prescribed for good sleeping conditions will rarely be met in most cases. The shaded areas represent the conditions where the 40 dBA sleeping target is not met.

Finally, it should be noted that Panorama Ridge and North Delta represent homes of varying ages, most built in the last 50 years. It is unlikely that the majority of homes meet the “modern home” standard for noise attenuation, for example double or triple pane windows. In addition, most homes in our area have master bedrooms that face south to catch the sun and to enjoy the ocean views. This orientation directly exposes these bedrooms to the train noise. Open windows would allow the noise to directly enter the bedrooms of these homes with little attenuation.

Figure 3, Projected Noise Levels For New and Old Homes as a Train Passes

	New home, Windows closed (20 dBA atten)	New home, Windows open (10 dBA atten)	Older home, Windows closed (15 dBA atten)	Older home, Windows open (5 dBA atten)
Whistles 80-90 dBA	60-70 dBA	70-80 dBA	65-75 dBA	75-85 dBA
Wheel, rail Locomotive 60-65 dBA	40-45 dBA	50-55 dBA	45-50 dBA	55-60 dBA
Trailing Locomotive 65-70 dBA	45-50 dBA	55-60 dBA	50-55 dBA	60-65 dBA

We have discussed this topic at length with BKL who we must note have been very helpful in responding to our comments and providing us with detailed data and additional reference information. BKL does admit that although Leq and its derivatives are industry standards for evaluating noise, the analysis of noise impacts has a subjective aspect to it. In reading the reference material supplied by BKL, there is debate over using averaging techniques like Leq versus looking at sound maximum levels generated by loud but short duration noise, especially as this noise relates to disturbance of sleep. We should also note that of all the reference material we reviewed, Leq was calculated for events that

take up a much larger percentage of the measurement period than the 5% for trains below the Ridge.

One study forwarded to us analyzes the impact of military flight training on sleep. In one paragraph it states:

Some studies have shown that the single event energy dose of a noise event (EPNL or SEL) and not the maximum level (e.g. ALM) is the best predictor of sleep interference (Lukas 1977 and Horonjeff et al. 1982) Others (Ohrstrom and Rylander 1982), however, suggest that the maximum level of intermittent noise is most important for describing physical movement, and presumably awakening, in response to noise. Nevertheless, even if the single event energy dose correlates better with sleep interference than does the maximum level, studies that relied upon maximum levels remain important because of their prevalence, and because maximum levels also correlate reasonably well with sleep interference.

The discussion above is in regard to using the maximum energy generated by a noise event or the single event energy dose as a predictor of sleep disturbance. These are both indicators of the noise contained within the disruptive event (e.g. a train passing), not longer term averages like Leq (1 hour)

We also note that the Ontario Ministry of the Environment, in setting standards for the analysis of rail noise, noted: “information concerning the number of cars, locomotives, whistle action, speed, and pass-by frequency is a requirement”. Outside of the calculation of Leq, these factors were not considered in the BKL study. This same study set acceptable levels of Leq for living areas and sleeping quarters of residents at 40 dBA and 35 dBA respectively.

2. Existing Sound Levels

We object to any evaluation of projected Third Berth Expansion sound increases that ignores existing sound levels. The majority of the disruptive transient noise Panorama Ridge residents now endure is caused by the effects of 18 train movements a day to and from the Port of Vancouver Roberts Bank facility. This noise wakes us up at night, forces us to leave our windows closed during the summer, degrades our quality of life, and has had a major impact on the value of our properties. Our homes sell for about 30% less than equivalents in other areas. There is about \$650M worth of residential property in our area, and a 30% devaluation in this property represents a huge loss for residents. **Despite our financial and quality of life losses, to date the Port of Vancouver has not spent a single cent towards any form of remediation of the problem they have created in our community.**

Even before the BC Rail line was constructed, our community had opposed the rail line and its associated noise and requested remediation. We have copies of petitions dated August 1969 expressing the community’s opposition to the proposed rail line. We have a

written record over the past 35 years of the community expressing its concern over the impact of the rail operations and asking for remediation. We have been especially active over the last ten years as the Port expanded yet again regarding these issues. Yet despite a consistent history of community opposition, the rail line was installed, and the port at Roberts Bank was expanded again and again, each time with a respective increase in rail traffic and associated noise. Each time the community raised its voice and it was ignored. To now say that the Port of Vancouver only has an obligation to address incremental noise not only ignores the thirty-five years of effort by our community to mitigate this serious problem and the stressful environment in which we now find ourselves, but also the moral, civic and, some say, legal responsibility to resolve an intolerable situation which they have created and now intend to make worse.

3. Whistles

Over the last fifteen years, the West Panorama Ridge Ratepayers Association (WPRRA) has worked diligently to eliminate train whistles. This effort has involved thousands of hours of volunteer effort by dedicated individuals. We have realized amazing success considering we are a nonprofit organization with no financial means and marginal political power. We have reduced the number of active, uncontrolled crossings to four, a huge drop from the thirteen or so in existence when we started. Going forward we have a plan that we believe will take us to one or two remaining crossings where whistling might occur.

Remember, we are expending this effort to try to solve a problem that we did not create but impacts our home values and quality of life immensely. Our success to date has been accomplished through the cooperation and financial generosity of the City of Surrey, the B.C. Government, B.C. Rail and the GVRD. Contribution towards this effort by the Port of Vancouver has involved the writing of one letter indicating support for our efforts to eliminate whistles. It is ironic that a volunteer organization is left to solve a problem caused by a large corporate entity like the Port. We believe the Port of Vancouver should take a much more active role in supporting our efforts, especially as we now get down to closing the last few crossings. The Port can bring significant political, and perhaps some financial resources to bear to solve a problem that is ultimately caused by trains serving a Port of Vancouver facility.

We have noted that whistles are not included in the list of rail operational issues to be addressed by the Roberts Bank Noise Management Committee, despite the fact that they are the major cause of annoyance in our community.

4. Miscellaneous

The WPRRA membership boundaries include an area of about 1,000 homes. For issues regarding train operations, the WPRRA has become the lead “agency” dealing with this problem and we have actively represented the residents of North Delta and East

Panorama Ridge on this issue. It is our estimate that in this regard we represent about 1,500 homes, and the largest concentrated residential community in close proximity to the rail line. In the impact study, it is stated that we represent about 1,000 homes.

Conclusion and Recommendations

The citizens of Panorama Ridge and North Delta now suffer serious noise problems due to rail operations that support the Port of Vancouver Roberts Bank terminal. The proposed Third Berth Expansion will exacerbate the existing problem. To date, despite their protestations, these citizens have been left to their own devices to resolve the situation they now find themselves in.

We ask the Port of Vancouver to direct the Noise Committee to establish a plan that sets definitive targets for noise levels in the Panorama Ridge area, and commits to a remediation plan to achieve these targets within a reasonable time frame. We believe these noise levels should be based on the established levels required to maintain sleep, not on averages that tend to minimize short duration, but high intensity disruptions. Existing sound levels generated by existing rail operations must be considered in this plan. We further ask that the Port of Vancouver become actively involved in supporting the WPRRA in their efforts to eliminate whistles.

The WPRRA supports the economic development of British Columbia and recognizes the role the port at Roberts Bank plays. We ask the Port of Vancouver to consider the severe price in the form of quality of life and home values we the residents of Panorama Ridge and North Delta currently pay for on-going Port activities. We ask that the Port be a “good neighbour” and a responsible corporate citizen by implementing our recommendations.

FIG 1 SOUND LEVELS AS TRAIN PASSES PAUORAMA RIDGE- EXAMPLE #1

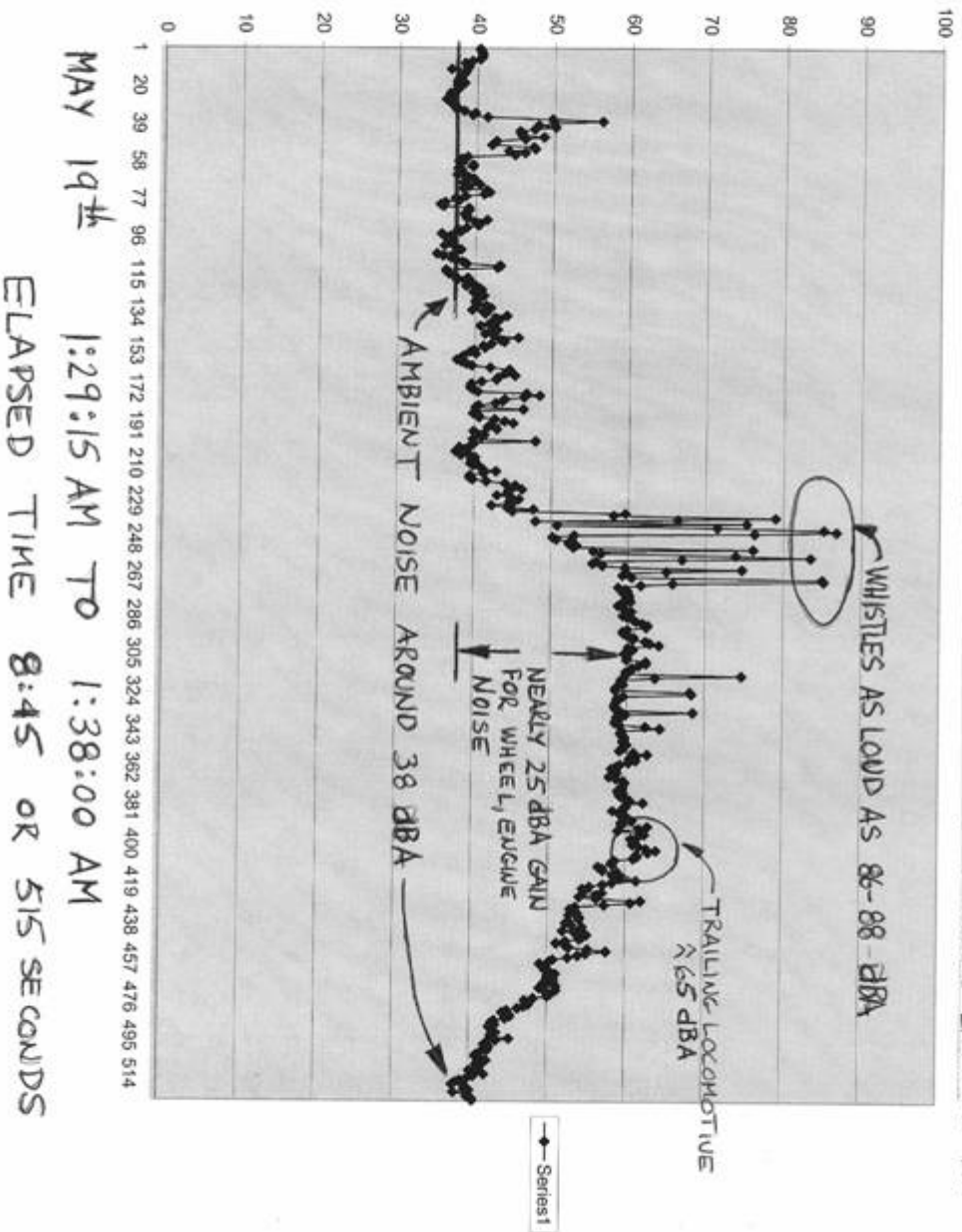
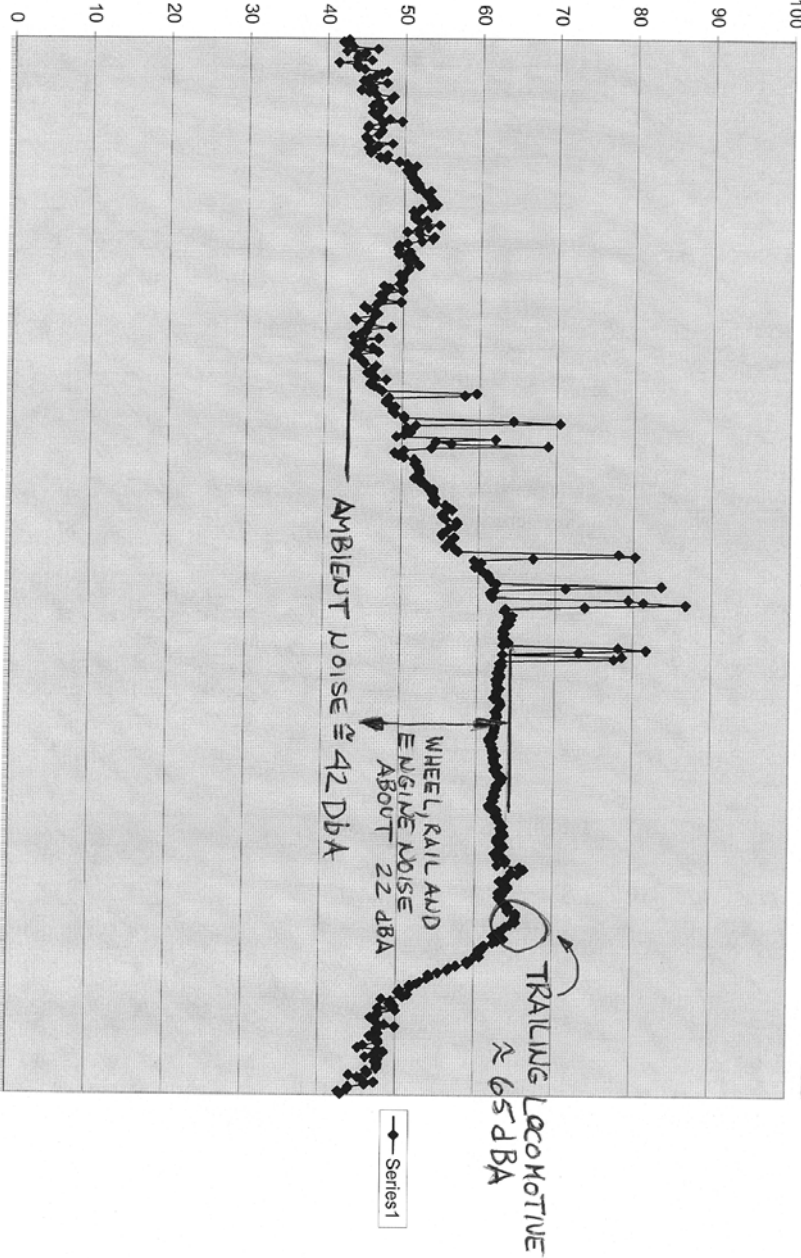


FIG 2 SOUND LEVELS AS TRAIN PASSES PANORAMA RIDGE - EXAMPLE #2



1 17 33 49 65 81 97 113 129 145 161 177 193 209 225 241 257 273 289 305 321 337 353 369 385 401 417 433 449
 MAY 20th 5:10:10AM TO 5:17:32AM

ELAPSED TIME = 7MIN. 22 SEC