

TO: CITY MANAGER 1997 FEBRUARY 19

FROM: CHIEF ENVIRONMENTAL HEALTH OFFICER

SUBJECT: NOISE FROM TRAINS ALONG WINSTON STREET AT BRIGHTON AVENUE, BURNABY.

PURPOSE: TO RESPOND TO RESIDENTS' CONCERNS REGARDING TRAIN NOISE ALONG WINSTON STREET AT BRIGHTON AVENUE, BURNABY.

RECOMMENDATION:

1. **THAT** Council receive this report for information.
2. **THAT** a copy of this report be forwarded to:
 - A) Mr. Tom Kucan, 8240 Burnlake Drive, Burnaby, B.C., V5A 3K9.

REPORT

1.0 INTRODUCTION:

At the regular Council Meeting held on 1996 July 08, Council received a presentation from Mr. Tom Kucan regarding noise from trains along Winston Street west of Brighton Avenue. The speaker advised Council that this route is the main line into Vancouver and the North Shore and carries both freight and passenger traffic of between 30 to 50 trains per day. He stated that each freight train carries upwards of 100 cars pulled by at least 3 locomotives.

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Mr. Kucan requested that the City erect a sound barrier to protect residents along Winston Street from the constant noise. A video tape and petition containing 32 signatures in support of his request was also provided.

Arising from the discussion, Council adopted the following Motion:

"THAT the concerns expressed by the delegation be REFERRED to staff for a report."

The following report responds to the above motion.

2.0 NOISE LEVELS AT 8240 BURNLAKE DRIVE, BURNABY:

In order to determine the outdoor noise levels at Mr. Kucan's residence, a noise analyzer was placed at the back yard of 8240 Burnlake Drive facing Winston Street on 1996 August 23, and 1996 August 31. The analyzer was left at the subject site for a 24 hour period on each of the aforementioned dates.

Noise measurements obtained indicate that the average noise levels over a 24 hour period ranged between 63.8 dBA to 67.5 dBA. The measured noise level was greater than 73.5 dBA 5% of the time and the measured background noise level was 43.5 dBA. The variation in the 24 hour average noise level of 3.7 dBA was likely due to the weather condition in that it was raining on 1996 August 23. The 43.5 dBA is a typical background noise level that would be expected in a residential area in the absence of extraneous noise such as train and traffic noise. The 73.5 dBA would likely be attributable to train noise and other similar noises.

In 1977, Council adopted the noise standard in the Housing and Urban Development Criteria (HUD) for newly developed multi-family dwelling only. The normally acceptable 24 hour average outdoor noise level under the HUD criteria is 62 dBA. In situations where the HUD criteria was exceeded, the developer would be required to incorporate noise mitigative measures within the development. The 24 hour average noise level measured at Mr. Kucan's resident exceeded the HUD criteria.

**3.0 DISCUSSIONS WITH CANADIAN NATIONAL RAIL AND
BURLINGTONNORTHERN SANTA FE:**

Staff have contacted Mr. Ken Ouelette, Manager, Business Projects, B.C., Canadian National Rail (CN) and Mr. Ken Royal, Superintendent Canadian Operations, Burlington Northern Santa Fe (BNR) on the subject matter and have been provided with the following information:

Ownership, Maintenance and Users of Rail Line

The rail line in question is owned, maintained and dispatched by Burlington Northern Santa Fe. While CN has the running rights on this line, and is probably the major user, other railroads such as Burlington Northern, Canadian Pacific Railway, Amtrak, VIA Rail and Great Canadian Railtours Company also operate over this line.

Train Traffic

With respect to the train traffic, Mr. Royal indicated that the train movement figure of 30-50 trains per day stated by Mr. Kucan is correct. In terms of whether there has been an increase in train traffic in recent years, Mr. Ouelette confirmed that their total annual train traffic has increased by 7.69% between 1990 to 1995. However, it is Engineering Department's belief that train traffic in the late 1970's may have been higher than today because of yards and rail related uses that have now been removed from the False Creek area.

Noise from Rail Activities and Noise Mitigation Measures

According to Mr. Royal, the southbound trains in the subject area which are usually emptied are required to slow down from 30 mph due to an order by Transport Canada. When the trains slow down, slack action which is the process where individual rail cars dump onto each other when slowing down occurs and is usually louder with empty cars. BNR is in the process of making adjustments to prevent slack action and expects the process to complete in one year.

In addition, Mr. Royal indicated that there have been many track changes in this area over the past several years which in his opinion should have resulted in reducing the level of noise generated by train operations rather than increasing it. For instance, the industrial spur on the north track was taken out of service as it was not being utilized and the switch and frog associated with this spur was removed. The rail through this area has also been changed from jointed rail sections every 39 feet to CWR (continuous welded rail with 1/4 mile sections) which should have reduced the noise as the clickty-clack noise will now be produced every 1/4 miles instead of every 39 feet.

Future Rail Operations in the Subject Area

According to Mr. Royal, the passenger train traffic on this line may see some increases over the next several years, but these trains are usually short, faster and quieter than freight train operations. Other than that, Mr. Royal does not foresee any future changes in operation that would alter the current situation as it now exists.

Mr. Royal indicated that he has spoken to Mr. Kucan regarding rail activities in the subject area.

4.0 INSTALLATION OF A SOUND BARRIER ALONG WINSTON STREET:

Based on the noise measurements, it is recognized that the train noise could be disturbing to Mr. Kucan at his residence. However, it is equally important to note that according to the City Solicitor the operation of railways falls under federal jurisdiction. The Canada Railway Act specifically gives the National Transportation Commission power to make orders for the accommodation and comfort of the public in the running of trains.

Engineering Department staff have undertaken a review of the technical issues associated with the sound barrier proposed by the residents. It is noted that the intrusive elements of rail noise are locomotive-engine noise, the movement of wheels over track, and train whistling. In this case, routine train whistling has been addressed through long standing anti-whistling requirements on this line. As previously discussed, train wheel noise has been extensively mitigated through deployment of continuous

welded rail and the low speed of rail traffic on this stretch of track. The mitigation of engine noise, the most intrusive element of rail traffic in this case, is more problematic. Locomotive noise can be modelled as a sound source 15' (4.5m) above the top of the rail.

Preliminary estimates suggest that a noise barrier approximately 23' (7m) high would be required to attenuate 6 db of locomotive noise at the rear second storey level of the residential development. If this barrier was along the south side of Winston adjacent the rail right-of-way as suggested by the residents, it would further exacerbate road traffic noise by reflecting it back. However, a barrier along the rear residential property line (on the north rather than south side of the road right-of-way) would have to be somewhat higher than one adjacent to the railway but would effectively shield both road and rail sources (see Attachment #1). This barrier would have to be at least 820' (250m) long. A 23' - 26' (7-8m) high noise fence this long would be a significant structure.

Alternate noise attenuation may be achieved through acoustical improvements such as acoustic wall and ceiling insulation, multi-pane windows and the like.

5.0 CONCLUSION:

The railway and road (Winston Street) predate the Burnlake Drive residential development. Although intrusive elements of rail noise such as the movement of wheels over track and train whistling have been extensively addressed through the use of continuous welded rail and anti-whistling requirements on this line, locomotive noise could still be disturbing to neighbouring residents. As such, some residents are looking to a noise fence to reduce the intrusive train noise.


Individual residents could not construct the requisite noise fence because of the requirements that the fence be continuous and the Zoning Bylaw limit on fence height. The City could facilitate the construction of the fence on the north edge of the road right-of-way through Local Improvement Program whereby the total cost would be shared amongst benefiting property owners. Staff do not, however,

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believe this would be a palatable solution because of the high cost and the inherent loss of back yard amenity that the fence would impose - in most cases the whole rear yard would be in perpetual shadow throughout winter.

Instead, there are noise attenuation measures that may be retrofitted into existing homes to reduce the noise level. It is not known whether the construction of the existing homes incorporated any specific noise attenuation features, staff would be prepared to assist individual homeowners in researching the potentially most effective measures.



T. Shum
CHIEF ENVIRONMENTAL HEALTH OFFICER

TS/gl

Attachment

- cc: () Director Engineering
- () Director Planning & Building
- () Medical Health officer
- () City Solicitor

