



# City of Richmond

## Report to Committee

**To:** General Purposes Committee  
**From:** Phyllis L. Carlyle  
 General Manager, Law & Community Safety  
**Re:** Regulation & Mitigation of Noise

**Date:** May 6, 2010  
**File:**

### Staff Recommendation

1. That staff retain the necessary expertise to update and redraft, in consultation with the Richmond Medical Health Officer, the City's Public Health Protection Bylaw No 6989 to address further advances in sound technology; assessment of ambient noise impact; inventory of potential noise conflict boundaries; impact of any changes in objective measurement; successful enforcement models and collaborative neighbourhood impact models.

Phyllis L. Carlyle  
 General Manager, Law & Community Safety  
 (604.276.4104)

Att. 1

FOR ORIGINATING DEPARTMENT USE ONLY					
ROUTED TO:		CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Budgets		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Enterprise Services Unit		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Law		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Development Applications		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
Transportation		Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>
<b>REVIEWED BY TAG</b>		YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
		<b>REVIEWED BY CAO</b>		YES	<input checked="" type="checkbox"/>
				NO	<input type="checkbox"/>

## Staff Report

### Origin

On November 10, 2009 at the Community Safety Committee the following resolution was adopted:

*That staff investigate and assess the Measurable Noise Limits (Section 3.2) of the Public Health Protection Bylaw 6989 in view of the increase in multi-family residences being in close proximity to industrial developments.*

Staff committed to providing a report by June 2010, due to the complexity of the analysis to be completed.

On March 22, 2010 Council passed the following resolution:

- (1) That staff be directed to prepare a report and appropriate amendments to the Public Health Protection Bylaw 6989, Noise Control section to:
  - (a) amend the bylaw to include maximum interior sound levels on both the dBC and dBA scale to address the issue of the bass component of amplified sound originating from commercial and industrial establishments that impact on residential premises;*
  - (b) define the point of reception for sound readings as the property line of a residential dwelling;*
  - (c) revise the allowable dBA and dBC sound levels so that they are based on the recommendations from the World Health Organization;*
  - (d) amend the bylaw to include mitigating measures for low level continuous noise;**
- (2) That the report and bylaw amendments be brought forward to the General Purposes Committee by May 17, 2010.*

*That staff meet with MB Tarr and Associates Consulting Ltd. and True World Foods to assess the effectiveness of the baffling around the compressors on the roof of True World Foods to ascertain if improvements can be made to the baffling to considerably reduce the noise and vibration, and report back.*

### Analysis

#### Background

The City contracts with Richmond Health Services to provide investigative and enforcement services under Subdivision Three – Noise Regulations of the City’s Public Health Protection Bylaw No 6989. Subdivision Three has not been amended since the implementation of the Bylaw in March 2000. Amendments to the Public Health Protection Bylaw require consultation with Richmond Health. Pursuant to the Community Charter Section 9 – Spheres of Concurrent Authority, the City requires concurrence from the Minister of Health to any amendments to the Bylaw.

Neighbourhood issues related to noise are becoming more frequent due to the City’s urbanization. For example, True World Foods Inc. relocated in July 2009 within the commercial, light-industrial

facility on No 2 Road immediately to the north of RiverWind residential strata development and complied with all existing permit and licensing requirements of the City. To date, Richmond Health Services has received 36 noise complaints from 14 separate residences of RiverWind regarding the level of noise coming from the new True World Foods operation. All 36 complaints were investigated and all complainants were contacted and advised as to what action was warranted based on the City's bylaw.

During the investigation of these complaints, a total of 15 site visits were completed resulting in 18 official readings being recorded. Once the readings were confirmed as being in excess of the bylaw limits in August 2009, True World Foods hired an acoustic consultant to design a rooftop baffle system and finally, at their own cost, moved the two noisiest compressors from the rooftop to inside their building. Readings taken by Richmond Health after these changes were within the bylaw limits and True World Foods was in compliance.

During the development phase for the RiverWind residential project, the City registered a covenant in the Land Title office on the strata lots. This was to ensure that all 'prospective purchasers....are aware of the proximity of the lots to land zoned Light Industrial District (I2) and that such sources of activity may pose a potential noise or visual disturbance to occupants'. The covenant also contains a release and indemnity in favour of the City with regard to any claims arising out of any noise or visual disturbance from activities on the adjacent Light Industrial District parcel. Staff also identified, through the rezoning report in February 2003, the following mitigation measures in addition to the covenant:

- site planning to minimize the number of units near the industrial site;
- minimizing the number of windows facing the northern property line (industrial site);
- including a larger setback and significant landscaping along the northern property line; and
- locating the indoor amenity building along the northern edge of the site as a buffer;

At the Development Permit, additional landscaping (trees) was added along the northern property line to buffer the noise and reduce the visual impact from the adjacent industrial buildings. At Building Permit, windows to the bedrooms on the third floor and in the living room on the second floor were deleted for all units along the north side facing the industrial site.

Further to Council's March 22, 2010 direction, staff met on site with Mike Tarr of MB Tarr & Associates (a resident of RiverWind) and Fumitoshi Yuzawa of True World Foods, on April 16<sup>th</sup>, to discuss potential improvements to the baffling enclosures on the roof of True World Foods. True World Foods was cooperative in providing access to all areas of their operations. Once on site, Mr. Tarr assessed the baffling efforts made by True World Foods and, as of April 27<sup>th</sup>, has provided a report to True World Foods outlining the scope and impact of any potential improvements to the existing baffling.

On April 22nd, staff was invited to discuss the issue with members of the Richmond Economic Advisory Committee. The resulting motion from the Economic Advisory Council states:

*“The Economic Advisory Committee recommends that Council consider other alternatives to deal with industrial noise, other than a change to its Noise Bylaw that would differentiate it from other municipalities (i.e. facilitate discussions between the business and residents).”*

Attached is an analysis of bylaw standards in the Lower Mainland and from larger municipalities in North America (Attachment 1). The bylaws typically contain objective standards for day time and night time for residential and commercial zones. Richmond’s objective requirements are amongst the strictest for the municipalities surveyed.

**Options**

In reviewing the options to address noise regulation and mitigation in Richmond, there are three options that could be considered:

**Option 1**

Maintain the present standards within the City’s Public Health Protection Bylaw No 6989;

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> <li>▪ maintains the present objective standards which are relatively consistent with other comparable neighbouring municipalities and with existing commercial / residential boundaries</li> <li>▪ does not require any further expenses on the part of the City to research potential bylaw revisions or increased enforcement activity</li> </ul>	<ul style="list-style-type: none"> <li>▪ does not address the impact of increased commercial activity and urban growth</li> <li>▪ does not address the neighbourhood changes that have occurred in the City over the past 10 years since the original bylaw regulations were implemented</li> <li>▪ does not address the advances made in the assessment of noise on the health of Richmond residents</li> <li>▪ does not further the City’s reputation as a leader in the implementation of initiatives to improve the overall health of Richmond residents</li> </ul>

***Not recommended***

There is a demonstrated need to update the existing standards implemented 10 years ago to address the changes in sound technology, regulation of various mitigation options and to address any potential health impacts of dBA and dBC levels of sound.

dBA and dBC are a couple of the most commonly used international standards relating to the measurement of sound. The dBA level is used for the measurement of environmental noise and industrial noise. dBA corresponds to people’s natural hearing recognition and is less sensitive to very low and very high frequencies. dBC is used for louder sound levels.

**Option 2**

Amend the City’s Public Health Protection Bylaw No 6989 pursuant to the direction from Council on March 22, 2010;

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> <li>▪ provides a response to weaknesses to the present bylaw</li> <li>▪ may permit additional enforcement and prosecutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ ambiguity exists in the WHO guidelines</li> <li>▪ could provide an unenforceable and ineffective regime for regulating the impact of noise on residential neighbourhoods due to existing ambient noise levels</li> <li>▪ will increase the number of businesses not in compliance</li> <li>▪ will require an amended contract and increased costs for investigation and enforcement with Richmond Health estimated at over \$130,000 per year and additional prosecution costs of \$25,000 per year</li> <li>▪ could create additional costs for Richmond businesses</li> <li>▪ could potentially create unrealistic standards for residential neighbourhoods</li> <li>▪ increase the frequency of disputes between neighbours</li> </ul>

***Not recommended***

There is a demonstrated need to update the existing standards implemented 10 years ago to address the changes in sound technology; regulation of mitigation options and to address any potential health impacts of dBA and dBC levels of sound. However, based on initial input from Dr. James Lu, the City’s Medical Health Officer, it is not a straightforward task to translate the WHO standards published in 2009 into a bylaw amendment. Dr Lu has recommended a more in-depth approach to any changes that might be considered by Council.

**Option 3**

In consultation with the Medical Health Officer, conduct a thorough assessment through independent resources of the noise landscape in Richmond; potential regulatory models for

development and enforcement and the potential application and impact of regulated dBA and dBC noise levels on commercial operations, residential neighbourhoods and overall health in the City.

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> <li>▪ would provide an analytical approach to amending the City’s standards for regulating noise</li> <li>▪ would develop a more comprehensive regulation of potential noise sources based on dBA and dBC levels</li> <li>▪ would result in a thorough analysis of the impact of any proposed amendments on commercial / residential boundaries and fully residential neighbourhoods</li> <li>▪ could provide a more formal process, mediating any resulting impacts between neighbours</li> </ul>	<ul style="list-style-type: none"> <li>▪ would involve the costs of hiring a consultant to provide background and recommendations on sound measurement standards; existing ambient noise landscape in Richmond; inventory of potential noise conflict boundaries; successful enforcement models and collaborative neighbourhood impact models</li> <li>▪ cost of consultants to prepare a final product</li> </ul>

***Recommended***

There is a demonstrated need to review the existing standards implemented 10 years ago to address the changes in sound technology; regulation of mitigation options and to potentially address any potential health impacts of dBA and dBC levels of sound. Independent expertise is required to assist with assessment of prevailing standards in comparable municipalities; with interpretation of the standards set by the World Health Organization, and with a comprehensive review of Subdivision Three - Noise Regulations of the City’s Public Health Protection Bylaw No 6989.

**Financial Impact**

Independent expertise in noise acoustics and bylaw drafting will require \$17,000 from within the existing budget.

**Conclusion**

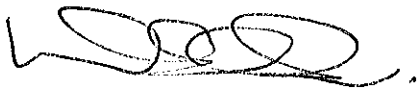
Based on considerable research by City staff and advice from the City’s Medical Health Officer, direct translation of the general WHO standards is not possible without a significant level of further study and expertise.

Staff recommends retaining the necessary expertise to update the City’s existing Public Health Protection Bylaw No 6989 to address further advances in sound technology; assessment of ambient noise impact; inventory of potential noise conflict boundaries, impact of any changes in

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objective measurement, successful enforcement models and collaborative neighbourhood impact models.

A handwritten signature in black ink, appearing to read 'WGM', with a horizontal line underneath.

Wayne G. Mercer  
Manager, Community Bylaws  
(604.247.4601)

WGM:wgm

Summary Table of Noise Bylaws from Various Cities in Reference to Continuous Noise, Weekdays

City (Year)	Has dBC?	Daytime dBC level	Daytime period	Daytime dBA (Residential)	Daytime dBA (Commercial/ Industrial)	Night time period	Night time dBA (Residential)	Night time dBA (Commercial/ Industrial)	If dBA exceed Ambient
Burnaby (1979)	No	-	7am-10pm	55	65 (within 6 m) 60 (any point)	10 pm-7am	45	60 (within 6 m) 55 (any point)	≤ 3 dBA no measurement taken
New Westminster (1999)	No	-	7am-10pm	55 (quiet zone)	60 (activity zone)	10 pm-7am	45	55	-
Vancouver (2010)	* Yes	Commercial - daytime 70, night time 65 Residential & Commercial share same building - 55 Liquor area - day 80, night 75	7am-10pm	55 (quiet) 50 (Residential & Commercial same building) - noise & music etc.	70 (activity, intermediate) 60 (quiet zone)	10 pm-7am	45 (quiet) 45 (Residential & Commercial same building) - noise & music etc.	65 (activity, intermediate) 55/50 (quiet)	> 3 dBA (radio, music etc.)
Central Kootenay (2009)	**Yes	Residential - day 60, night 50 Commercial - day 65, night 55 Industrial - day 70, night 60	7am-10pm	60	65 (commercial) 70 (industrial)	10 pm-7am	50	55 (commercial) 60 (industrial)	-
Calgary (2004)	No	-	7am-10pm	65 75 downtown	85	10 pm-7am	50 60 downtown	85	> 5 dBA
Edmonton (2008)	No	-	7am-10pm	70 for < 2 hr 75 for < 1 hr 80 for < 30 m 85 for < 15 m	80 for < 2 hr 85 for < 1 hr	10 pm-7am	50	60	-
Toronto (2002)	No	-	♦ varies with place & act 7am-10pm	50	Varies with time, place and type of act	Varies with place & act	47 - 45	Varies with time, place and type of act Minus 5 dB	-
Seattle (2009)	No	-	7am-10pm	55/57/60 varies with source & receiving property	57/60/65 (commercial) 60/65/70 (Industrial) varies with source & receiving property	10 pm-7am	Minus 10 dB (i.e. 45/47/50) varies with source	Minus 5 dB (for sound with pure tone)	-
New York (2005)	Yes	6 dBC above 62 ambient (Commercial area - music)	7am-10pm	10 dBA above ambient	specified dBA limit to types	10 pm-7am	42 or 7 dBA above ambient	specified dBA limit to types	Varies with types
Richmond (2000)	No	-	7am-8pm	55 (quiet)	65 (activity)	8 pm- 7am	45 (quiet)	60 (activity)	-

\* dBC specific to continuous or non-continuous bass noise or sound of a radio, television, player or other playback device, public address system, or any other music or voice amplification equipment, musical instrument, whether recorded or live, amplified or not.  
 \*\* dBC specific to Zones  
 ♦ No time restrictions if sound level is lower than minimum values (dBA).  
 C - Commercial  
 R - Residential  
 I - Industrial  
 Liquor - extended liquor hour establishment located in a specified area