

MEMORANDUM

July 10, 2012

TO: Mayor Robertson and Councillors

COPY TO: P. Ballem, City Manager
S.A. Johnston, Deputy City Manager
D. McLellan, Deputy City Manager
M. Coulson, City Clerk
M. Welman, Director of Communications
W. Stewart, Assistant Director, Corporate Communications
B. Proskan, Acting General Manager of Community Services
F. Connell, Director of Legal Services
P. Judd, General Manager of Engineering Services

FROM: K. McNaney, Assistant Director, Central Area Planning

SUBJECT: CD-1 Rezoning - 800 Griffiths Way (Rogers Arena)

This memorandum responds to Council questions related to event noise and recommends an additional condition to require the installation of a permanent noise measuring system at Rogers Arena as a condition of enactment.

RECOMMENDATION

- A. THAT the Conditions of Bylaw Enactment as presented in Appendix B of the Policy Report be amended by adding the following condition:
- "23. Execution of an agreement providing permanent monitoring of the noise levels from events at Rogers Arena ensuring the noise levels within the residential units (excluding enclosed and unenclosed balconies) do not exceed an average of 50 dBC when measured using an approved sound meter for a continuous period of fifteen (15) minutes. The agreement shall be to the satisfaction of the General Manager of Community Services and the Director of Legal Services and shall include the following:
- a) the provision, operation, and maintenance of a permanent monitoring system installed on the roof of Rogers Arena and the outside wall of each residential building with noise receptor locations determined by the City of Vancouver; system selection, design specifications, reporting and inspection requirements and software/hardware satisfactory to the General Manager of Community Services.

- b) The obligation of the applicant at its cost to provide initial reporting of noise levels generated from Rogers Arena prior to enactment of the by-law. This initial reporting shall be for a period of three months to demonstrate the actual dBC levels generated by all events at the Arena.
 - c) The obligation of the applicant at its cost to provide ongoing reporting, monitoring and inspecting on noise levels generated from Rogers Arena post-enactment for the life of the residential buildings, based on records maintained by the applicant (including input from the operator of the monitoring system) and provided to the City upon request.”
- B. That Appendix C be amended by amending Section 14B of the Noise By-law No. 6665 to add a new subsection (d) as follows:

“d) emanates from Rogers Arena during a concert or sporting event, provided that the sound level does not exceed an average of 82 dBC (leq) when measured using an approved sound meter at the point of reception for a continuous period of fifteen (15) minutes”

DISCUSSION

In 2009, Council approved the Northeast False Creek: Directions for the Future (NEFC Directions) which contemplates the addition of 4 million sq. ft. of new residential floor space immediately surrounding the existing sports and event venues in NEFC, subject to successfully addressing the compatibility of residential use and events. The November 2010 report to Council on Event Noise (RTS No. 8830) noted that the most significant proven health issues resulting from excessive noise are sleep deprivation and stress, according to the World Health Organization (WHO). Because of the established relationship between excessive noise exposure and health, staff recommended that buildings in NEFC be designed to mitigate event noise and that operators of the venues be required to establish protocols to monitor and manage event noise. These recommendations were approved by Council.

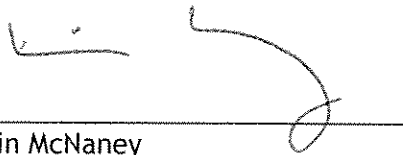
To follow up on Council’s recent query regarding event noise and health, staff contacted both Vancouver Coastal Health and the University of British Columbia’s School of Population and Public Health. While neither organization has commented officially on the relationship between event noise exposure and health, staff were provided with two recent UBC Publications related to noise and health in Metro Vancouver. The studies cite World Health Organization findings (1999, 2009 and 2011) that long-term exposure to excessive community noise including road traffic noise, aircraft noise and railway noise has been associated with annoyance, sleep disturbance, psychological stress and cardiovascular disease. One study explored ways to model population exposure to community noise and air pollution in the Metro Vancouver area. The other explored the association between exposure to community noise and traffic-related air pollution and the increased risk of coronary heart disease.

Almost all neighbourhoods are exposed to some level of traffic noise, depending on location (the Zoning and Development Bylaw requires developers to provide acoustic studies to assess traffic noise exposure and recommend ways to mitigate traffic noise through construction). However, at present, only a few residential buildings downtown are exposed to the frequent and loud event noise experienced in NEFC. While not yet proven through studies, it would make sense, that there may be health effects related to chronic event-related noise. Until detailed studies on event noise exposure and health are completed, staff believe that the City’s policy to require developers in NEFC to mitigate event noise (in addition to traffic

noise) through building design, to achieve a performance target of 40-50 dBC within the units, is an appropriate, risk-managed approach.

The addition of residential towers immediately adjacent to event venues in NEFC is a considerable challenge – there are no case studies elsewhere that are reflective of the NEFC situation and no best practices to follow. Rogers Arena has proposed a design solution that allows the new buildings to meet the City’s performance target of 40 -50 dBC within the units provided that concert noise levels do not exceed an average of 82 dBC during the loudest 15 minutes measured at the point of reception (the outside wall of the residential buildings). The rezoning report requires that Noise Management Protocols be developed as a condition of zoning enactment. Council is concerned about the relationship between noise exposure and health. Staff have concerns related to the accuracy of concert noise readings and enforcement given current staff resources, tools and technology. To address concerns about annoyance, health and enforcement, staff recommend that, rather than relying on future protocol agreements to manage noise, the City explicitly require the installation of a permanent noise measuring system at Rogers Arena. The system could:

- monitor and record noise continuously at events at Rogers Arena;
- verify that 82 dBC is the correct upper limit for concert noise measured at Rogers Arena;
- provide greater certainty that units have been designed appropriately to mitigate concert noise levels; and
- allow Rogers Arena to self-regulate noise levels



Kevin McNaney
Assistant Director, Central Area Planning

KM/DD/ss