

# Edmonton's Urban Traffic Noise Policy Update

## Recommendation:

That Transportation Committee recommend to City Council:

That the Urban Traffic Noise Policy C506A, as outlined in Attachment 1 of February 27, 2013, Transportation Services report 2013TS7714, be approved.

## Report Summary

**This report provides a revision to the City of Edmonton Urban Traffic Noise Policy C506.**

## Previous Council/Committee Action

At the July 12, 2011, Transportation and Infrastructure Committee meeting, the following motion was passed.

That Administration undertake a broader public consultation on the Urban Traffic Noise Policy C506, and explore the following:

- a. the merits of developing a different noise threshold or policy for LRT corridors
- b. that measurements be provided as averaged of peak noise levels

and provide a report, along with a revised policy, to Transportation and Infrastructure Committee in the spring of 2012.

## Report

### Background

The Urban Traffic Noise Policy seeks to ensure that the negative impacts associated with ongoing exposure to excessive traffic noise are mitigated. The City of Edmonton's Urban Traffic Noise Policy was approved by City Council on June 15, 2004.

Administration has been carrying out a review of the Policy with input from internal stakeholders, City Councillors and their staff, as well as an extensive public consultation exercise held through 2012.

Noise attenuation, where required, typically consists of a solid barrier constructed of a material that meets the minimum density requirement and to a height that effectively reduces noise levels in the adjacent back yard. Where space permits, an earthen berm may be provided to minimize the height of the noise barrier constructed on top of the berm. Again, the height of the berm/barrier combination must be such that noise levels in the adjacent back yard are effectively reduced. Noise barriers are typically constructed out of masonry materials (concrete, brick or stone), although metal and wood barriers can be designed to meet the minimum density requirement.

All new residential development adjacent to an arterial roadway must construct a solid, uniform screen fence. While this type of fence may not represent the same level of attenuation as a noise barrier, noise complaints in areas with screen fencing is less frequent than elsewhere.

In the spring of 2012, Transportation Services engaged Banister Research and Consulting to undertake a public consultation exercise comprised of:

- a statistically valid on-line survey of the general public
- a statistically valid telephone survey where respondents fell into either a “test” group (directly backing onto a significant transportation facility) or a “control” group (not directly backing onto a transportation facility)
- in-depth interviews with thirty individuals who have expressed concerns with traffic and/or LRT-related noise. These individuals were either nominated by a Ward Councillor or had previous interaction with Transportation staff around traffic or LRT noise matters.

Results from the on-line and telephone surveys indicate that over 85 percent of respondents felt their quality of life was good to excellent. A majority of respondents were not aware that the City has an Urban Traffic Noise Policy. Around half of respondents indicated that they have made behaviour changes as a result of traffic noise, most indicating that they keep their windows closed. Interestingly, the top “traffic” noise sources cited (motorcycles, large trucks with engine retarder brakes and emergency vehicles) are governed by the Community Standards Bylaw, not the Urban Traffic Noise Policy. Also of note, about 20 percent of respondents are mistakenly assuming that lowering speed limits and planting trees will reduce traffic noise impacts. When asked about improvements to the Urban Traffic Noise Policy, the most common

suggestion was greater enforcement of “noise bylaws”. Only 6 percent of the on-line survey respondents and less than half of telephone survey respondents feel that the City should construct more berms and/or noise walls.

Twenty-two of the 30 in-depth interviewees indicated that noise has had a high impact on their quality of life. As with the on-line and telephone survey respondents, the noise sources cited most often included: motorcycles, emergency vehicles, trucks with engine retarder brakes, noisy car stereos and construction-related noise. Of the five who commented on LRT-related noise, the issue is centred on the intermittent sources of noise associated with LRT operations: station announcements, tones preceding the closing of the vehicle doors and the bells on the crossing gate arms. The vast majority of the interviewees were aware that the City has an Urban Traffic Noise Policy; however, there was little agreement on what improvements to the Policy could be made.

Based on the feedback received, the focus of the Urban Traffic Noise Policy update is primarily intended to provide greater clarity within the Policy itself to ensure that the Policy can be effectively applied in both existing and developing areas of the city.

### Urban Traffic Noise Policy C506A, 2013 Revision

A draft of the revised City of Edmonton Urban Traffic Noise Policy C506 is included as Attachment 1. Attachment 2 provides a side-by-side comparison with

the 2004 Policy and the revisions recommended for the 2013 Policy.

The 2013 Policy continues to assign responsibility for traffic noise mitigation to developers of new residential land uses adjacent to existing transportation facilities. Developers are required to conduct noise studies and where appropriate, construct noise attenuation in accordance with the Policy.

The responsibility for noise mitigation in conjunction with new or upgraded transportation facilities and the responsibility for the retro-fit noise attenuation program both remain with the City of Edmonton.

The 2013 Policy also clarifies the application of the Urban Traffic Noise Policy to the “back yards” of properties backing onto transportation facilities, including arterial roads and the light rail transit system. Clarity around the 65 dBA  $L_{eq24}$  threshold over which noise attenuation is considered, will enable consistent application of the threshold for both City and developer projects, as per the intent of the 2004 Policy. Through consultation, the language around the threshold in the 2004 Urban Transit Noise Policy was found to be confusing.

The 2013 Policy also includes a policy statement referencing the desire to minimize the noise associated with LRT operations.

The following noise sources are not considered to be in-scope of the Urban Traffic Noise Policy:

(a) noise associated with federally-regulated transportation modes such as heavy rail and air

(b) noise associated with transportation facilities under provincial jurisdiction such as Anthony Henday Drive  
(c) nuisance noise covered by the Community Standards Bylaw

### Noise Measurement and Thresholds

The City of Edmonton has historically measured and reported traffic noise levels as a daily (24-hour) average sound energy level.

At this time, noise measurements have not identified any existing locations within the city where the 65 dBA  $L_{eq24}$  threshold is exceeded (with the exception of one location in Quesnell Heights adjacent to Whitemud Drive where noise mitigation is not technically feasible). Over 20 locations have measured noise levels potentially between 60 and 65 dBA  $L_{eq24}$ ; lowering the noise threshold to 60 dBA  $L_{eq24}$  would suggest that retro-fit noise attenuation should be considered for all of these locations.

Transportation Services has the capability of averaging noise measurements over time frames other than 24 hours. For example, the results of recent noise measurements have been reported as daytime (7 a.m. to 11 p.m.) and night-time (11 p.m. to 7 a.m.) average noise levels, as well as the daily average noise level. A comparison of these measurements shows that, as expected, daytime average noise levels are slightly above the daily average while night-time average noise levels are slightly below the daily average.

Regardless of how the noise measurement is reported, the number of

locations to be considered for retrofit noise attenuation remains relatively the same. For example, there are no locations where the daytime noise level exceeds the threshold of 65 dBA  $L_{eqday}$ . If a daytime noise threshold of 60 dBA  $L_{eqday}$  were to be established, approximately 35 locations could potentially exceed the threshold and thus be considered for noise attenuation. If a night-time noise threshold of 55 dBA  $L_{eqnight}$  were to be established, approximately 45 locations could potentially exceed the threshold and thus be considered for noise attenuation. If a peak hour noise threshold were to be established at 65 dBA  $L_{eqpeak}$ , then almost all locations where homes back onto arterial roadways would require noise attenuation.

It should be noted that those in the group that participated in the personal interviews can reasonably be assumed to be the most concerned with traffic and/or LRT noise, and even of this group, only six of the thirty interviewees suggested that noise measurements be reported by peak hour or daytime/nighttime (five respondents and one respondent, respectively) and that only one interviewee suggested that the noise threshold of 65 dBA  $L_{eq24}$  be lowered.

### Noise Associated With LRT

Nationally, there is very little experience with noise associated with surface LRT; a review of practices across Canada revealed that only Calgary considers LRT as a transportation noise source in its Surface Transportation Noise Policy (1988). As is done in Edmonton, background noise associated with LRT

adjacent to residential areas is measured or forecasted as a daily average noise level (dBA  $L_{eq24}$ ). Typically, the noise associated with at-grade LRT adjacent to an arterial roadway is overshadowed by the background vehicle noise generated by the roadway traffic.

Concerns about the intermittent noise associated with LRT operations include the sounds of the gate arms at intersections as well as station announcements and the "tone" which sounds prior to the closing of the doors on the light rail vehicles. Obviously, the number of citizens impacted by these sources of noise is minimal, with only 2 percent of respondents to the on-line survey suggesting that LRT-related noise be incorporated into the Urban Traffic Noise Policy and only one of the 30 people participating in the one-on-one interviews suggesting that the Urban Traffic Noise Policy consider LRT noise.

That being said, to respond to ongoing concerns regarding noise associated with LRT operations, the Urban Traffic Noise Policy now includes a statement requiring that: "The City of Edmonton will seek to minimize the impact of operational noise associated with the Light Rail Transit system on adjacent noise-sensitive land uses while balancing the need for safety and security of road users and patrons at stations, including pedestrians at intersecting roadways." This Policy statement ensures that best practices and emerging technologies that can minimize the impact of LRT-associated noise on adjacent residential areas will be employed whenever possible,

without compromising the safety of LRT or road users, including pedestrians.

### **Policy**

Urban Traffic Noise Policy C506 (2004)

### **Corporate Outcomes**

The transportation system is integrated, safe and gives citizens choice to their mode of movement.

### **Public Consultation**

Banister Research and Consulting was engaged through March and April of 2012, to undertake public consultation consisting of thirty personal interviews, an on-line survey (264 responses) and a telephone survey (801 responses). The Urban Development Institute was also consulted in the revision of the Policy.

### **Justification of Recommendation**

The Urban Traffic Noise Policy seeks to ensure that the negative impacts associated with ongoing exposure to excessive traffic noise are mitigated. The City of Edmonton's Urban Traffic Noise Policy was approved by City Council on June 15, 2004. The 2013 revision reflects input from internal stakeholders, the public, City Councillors, as well as Administration's expert advisor (aci Acoustical Consulting Inc.).

### **Attachments**

1. Urban Traffic Noise Policy C506A
2. Comparison Between the 2004 and 2013 Urban Traffic Noise Policies