



REGIONAL DISTRICT OF NORTH OKANAGAN

COMMITTEE OF THE WHOLE MEETING

Wednesday, October 17, 2012

2:30 p.m.

AGENDA

A. APPROVAL OF AGENDA

1. Committee of the Whole – October 17, 2012

RECOMMENDATION 1

(Unweighted Corporate Vote – Simple Majority)

That the Agenda of the October 17, 2012 regular meeting of the Committee of the Whole be approved as presented.

B. NEW BUSINESS

1. Proposed Regional District of North Okanagan Noise Control Bylaw Information

- Staff report dated September 26, 2012

RECOMMENDATION 2

Page 1

(Unweighted Corporate Vote – Simple Majority)

That the report dated September 26, 2012 regarding the proposed Regional District of North Okanagan Noise Control Bylaw Information be received for information.

C. ADJOURNMENT



**REGIONAL DISTRICT
of
NORTH OKANAGAN**

REPORT

File No.: 4000.10

TO: Committee of the Whole
FROM: John Friesen, Bylaw Enforcement Officer
DATE: September 26, 2012
SUBJECT: Proposed RDNO Noise Control Bylaw Information

RECOMMENDATION:

That the report dated September 26, 2012 regarding Proposed RDNO Noise Control Bylaw Information be received for information.

ISSUE:

During the July 18, 2012 Board of Directors meeting, changes to the current *Noise Control Bylaw No. 908, 1990* were deferred to the Committee of the Whole for more information and further discussion.

DISCUSSION:

Noise Control Bylaw No. 908, 1990 has not been amended since 1990 and applies to all Electoral Areas within the RDNO. During the August 3, 2011 Board of Directors meeting, staff were instructed to bring forward amendments to the current *Noise Control Bylaw No. 908, 1990* to include the use of decibel readers to enforce sound level limits. During the July 5, 2012 Electoral Areas Advisory Committee meeting a report and Draft Noise Control Bylaw were presented that added provisions to establish sound zones; a definition of "point of reception" when measuring sound; permitted sound levels for daytime and nighttime noise; prohibited types of noise; and specific exemptions from the noise bylaw. The Electoral Area Advisory Committee recommended that several changes be made to the draft bylaw. During the July 18, 2012 Board of Directors meeting there was discussion on the impacts on areas of the Regional District that border the City of Vernon and District of Coldstream, the potential overlaps/conflict with the *Motor Vehicle Act* as it relates to loud vehicles, the potential involvement of the RCMP and the use of audible bird scare devices in regards to the *Farm Practices Protection Act*.

CHANGES MADE TO THE PROPOSED RDNO NOISE CONTROL BYLAW

Based on recommendations from the Electoral Areas Advisory Committee the following changes were made to the proposed Noise Control Bylaw:

- chainsaws were added to the equipment listed as "lawn and garden power equipment",
- Rural Zones were moved from the Intermediate Noise Zone to the Quiet Noise Zone, and
- the time for music amplification was reduced from 2 a.m. to 12 a.m. (midnight).

COMPARISON OF MUNICIPAL NOISE AND NUISANCE BYLAWS WITHIN THE RDNO

Impacts on Areas of the RDNO that border Municipalities

Most properties within RDNO that share common boundaries with municipalities are zoned residential or rural and are listed in the Quiet Noise Zone of the proposed Noise Control Bylaw. This indicates consistent zoning between RDNO and municipalities, therefore relatively low impacts are anticipated with the proposed Noise Control Bylaw. Exceptions to this are within Electoral Area “B” and include the following areas:

- The south end of the Swan Lake corridor zoned C.2 and I.1 within RDNO borders A.3 zoning within the City of Vernon;
- The C.1 zoning within RDNO at Pleasant Valley Road and 48th Avenue (Butcher Boys) borders R.5 and R.7 zoning within the City of Vernon; and
- The north end of the Swan Lake corridor zoned C.2 and I.2 within RDNO borders C.4 and I.2 zoning within the Township of Spallumcheen.

Specific Prohibitions

Jurisdiction	Construction Hours	Lawn & Garden
RDNO 2012 - Proposed Electoral Areas B, C, D, E & F	7:00 – 20:00 hrs Sundays & Holidays 10:00 – 18:00 hrs	7:00 – 20:00 hrs Sundays & Holidays 10:00 – 20:00 hrs

Jurisdiction & Year of Bylaw	Construction Hours	Lawn & Garden
Spallumcheen 1992	7:00 – 18:00 hrs	7:00 – 18:00 hrs
Armstrong 2001	7:00 – 21:00 hrs Sundays & Holidays 9:00 – 21:00 hrs	7:00 – 21:00 hrs
Coldstream 2010	7:00 – 21:00 hrs	7:00 – 21:00 hrs
Vernon 2005	7:00 – 21:00 hrs	7:00 – 21:00 hrs
Lumby 2008	7:00 – 22:00 hrs	7:00 – 22:00 hrs
Enderby 2010	7:00 – 22:00 hrs	7:00 – 22:00 hrs

VEHICLE AND MOTORBOAT NOISE

Royal Canadian Mounted Police (RCMP)

The **RCMP** subjectively regulates vehicle noise through *Division 7A – Noise from Motor Vehicles* of the *Motor Vehicle Act Regulations* which states, “No person shall start, drive, turn or stop any motor vehicle, or accelerate the vehicle engine while the vehicle is stationary, in a manner which causes any loud and unnecessary noise in or from the engine, exhaust system or the braking system, or from the contact of the tires with the roadway.” This generally prohibits any loud and unnecessary noise.

In addition, motor vehicles must be equipped with exhaust mufflers that comply with *Section 7.03* of the *Motor Vehicle Act Regulations*. If the inspector determines that the engine and exhaust noise is greater than that made by other vehicles in good condition, the vehicle may be impounded and tested in an inspection station. When tested in an inspection station the vehicle engine and exhaust system must not exceed the standards set in the *Motor Vehicle Act Regulations*. The standards are shown below:

Class of Vehicle	Maximum Allowable Sound Pressure Level dBA
Light duty	83
Gasoline-driven heavy duty	88
Motorcycles	91
Diesel-driven heavy duty	93

The **RCMP** regulates boat noise through the *Canada Shipping Act. Small Vessel Regulations* under the *Canada Shipping Act* are used by the RCMP to regulate noisy boat exhaust systems. The following is an excerpt from the *Small Vessel Regulations*:

"PART 10 - SAFETY PRECAUTIONS AND OPERATIONAL REQUIREMENTS

MUFFLERS

1000.

(1) No person shall operate or permit another person to operate a power-driven vessel unless it is equipped with a muffler that is in good working order.

(2) No person shall operate or permit another person to operate a vessel equipped with a muffler cut-out or by-pass unless the muffler cut-out or by-pass is visibly disconnected in a manner that ensures it cannot be easily reconnected while the vessel is in operation.

(3) Subsections (1) and (2) do not apply in respect of a vessel that

(a) was constructed or manufactured before January 1, 1960;

(b) is engaged in formal training, in an official competition or in final preparation for an official competition;

(c) is propelled by an outboard engine or a stern-drive, if the exhaust gases are directed under water through the propeller hub or below the cavitation plate;

(d) is operated at five or more nautical miles from shore; or

(e) is propelled by gas turbines or by an aircraft-type propeller operating in air."

There has been a significant increase in the number of boats that make excessive noise. To deter this activity, the fines for the following contraventions are:

(a) \$250 for boats that operate without a muffler; and

(b) \$500 for boats equipped with a mechanism to by-pass the muffler and that operate with the muffler by-passed.

Under the *Small Vessel Regulations Part 10 – 1000(3)(e)*, vessels that are propelled by gas turbines or by an aircraft-type propeller operating in air are exempt from muffler requirements. This may be problematic as RDNO has received noise complaints when air boats are operated for an extended period on Swan Lake. The noise from air boats is predominately generated by the propeller and not the muffler system.

The current RDNO Bylaw No. 908, 1990 regulates objectionable sounds from exhaust systems on motorboats on all navigable waters lying within the jurisdiction of the RDNO in Part III of the bylaw. In addition the current bylaw uses subjective criteria to regulate noisy motorboats.

The RCMP does not require Local Government Bylaws to regulate excessive noise from vehicles and motorboats. RCMP has the ability to regulate excessive noise from vehicles and motorboats through provincial and federal regulations. RDNO staff is of the opinion that excessive noise from vehicles and motorboats is currently regulated by the RCMP and therefore overarching regulation is not required.

If it is desirable to regulate sound level limits of motorboats within RDNO, a list of navigable waters within RDNO could be added to the “Intermediate Zone” indicated in Schedule A of the proposed Bylaw. The list would include Mara Lake, Rosemond Lake, Shuswap River, Swan Lake, Kalamalka Lake, Echo Lake, Mabel Lake and Sugar Lake. Sound level limits for noisy motorboats would then be consistent with sound level limits within Commercial Zones.

Regional District of North Okanagan (Electoral Areas)

The proposed Noise Control Bylaw subjectively regulates excessive noise from vehicles and motorboats in the following sections:

“PROHIBITED TYPES OF NOISE

4.1 Noise Disturbing Neighbourhood

4.1.1 Subject to other provision of this Bylaw:

(a) a person must not make or cause a sound in a street, park, plaza or similar public place which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of persons in the neighbourhood or vicinity;

4.2 Prohibited Types of Noise

4.2.1 The following sounds are prohibited because they are objectionable, or liable to disturb the quiet, peace, rest, enjoyment and comfort of individuals or the public notwithstanding that such sounds may not constitute a violation of any other provision of this Bylaw:

(d) the sound made by a combustion engine that is operated without using an effective exhaust muffling system in good working order;

(e) the sound made by a vehicle or a vehicle with a trailer resulting in banging, clanking, squealing or other like sounds due to an improperly secured load or improperly secured equipment, or due to inadequate maintenance;

(f) the sound made by a vehicle horn or other warning device used except under circumstances required or authorized by law;”

Spallumcheen

Spallumcheen subjectively regulates vehicle and motor cycle noises through the “Township of Spallumcheen Noise Prevention Bylaw No. 1269, 1992” as shown in Appendix 1.

Armstrong

Armstrong subjectively regulates vehicle noises through the “*City of Armstrong Noise Control Bylaw No. 1421, 2001*” as shown in Appendix 1.

Coldstream

Coldstream subjectively regulates vehicle and motor boat noises through the “*District of Coldstream Noise Control Bylaw No. 1570, 2010*” as shown in Appendix 1.

Vernon

Vernon regulates vehicle and motor boat noises through “*Good Neighbour Bylaw No. 4980*” as shown in Appendix 1.

Lumby

Lumby subjectively regulates vehicle noise through the “*Anti-Noise Bylaw No. 689, 2008*” as shown in Appendix 1.

Enderby

Enderby subjectively regulates vehicle noise through the “*City of Enderby Good Neighbour Bylaw No. 1478, 2010*” as shown in Appendix 1.

USE OF AUDIBLE BIRD SCARE DEVICES ON AGRICULTURAL LANDS

Wildlife damage control is recognized as a farm practice in the Interior of BC. Farm activities and operations include scare tactics to scare wildlife away from crop land. The most common methods are audible devices including, but not limited to:

- propane-fired cannons or exploders;
- broadcasting general sounds designed to unsettle birds;
- broadcasting bird calls such as distress, alarm, and predator calls;
- shell launcher;
- motor cycles or vehicles; and
- people clapping hands, banging pails, blowing air horns etc.

The Ministry of Agriculture has established guidelines for the use of *Audible Bird Scare Devices – Interior BC Only*. Audible bird scare devices are divided into two main categories. Category ‘A’ bird scare devices create an impulse sound from impacts or explosions. Category ‘B’ bird scare devices are any other stationary device which generate sounds to scare or disturb birds and are generally devices that broadcast birdcalls or other sounds through loudspeakers. A concern with the provincial farm practices guidelines for the use of audible bird scare devices is the word “should” is used instead of “must”, which makes enforcement difficult.

Local governments have several options available to manage audible bird scare devices. The following are possibilities in order of increasing regulation:

- Provide bylaw enforcement using existing noise bylaw when growers are not following the Wildlife Damage Control guidelines published by the Ministry of Agriculture (MOA),
- Incorporate the Wildlife Damage Control guidelines into their noise bylaw and provide bylaw enforcement when growers are not following the Wildlife Damage Control guidelines published by the MOA, or

- Adopt a “farm bylaw” under *Section 917* of the *Local Government Act* with the option of including more restrictions than are contained in the Wildlife Damage Control guidelines subject to ministerial approval (*Section 918* of the *Local Government Act*). Farmers are expected to follow the “farm bylaw” as part of land use regulation under the *Farm Practices Protection (Right to Farm) Act* (FPPA). Regulated local governments may use edge planning tools on both sides of the urban/ALR edge to promote land use compatibility.

RDNO bylaw enforcement can enforce elements of the Wildlife Damage Control guidelines which includes guidelines for audible bird scare devices. Specific guidelines for audible bird scare devices include objective measurements such as:

- Dates and hours of use of devices,
- Density of devices, and
- Firing frequency of devices.

When growers are not following the Wildlife Damage Control guidelines published by the MOA, the RDNO can implement the subjective criteria in the proposed Noise Control Bylaw which states “*a person who is the owner or occupier of, or is in possession or control of, real property must not make, suffer, or permit any other person to make, a sound, on that real property, which can be easily heard by a person not on the same premises and which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of persons in the neighbourhood or vicinity*”.

By having the Wildlife Damage Control guidelines written into the noise bylaw, it makes it clearer to the farmer that non-compliance is subject to bylaw enforcement. By including the criteria in a “farm bylaw” the bylaw becomes part of land use regulation and must be followed as part of “normal farm practice” under the FPPA.

The more subjective elements of the Wildlife Damage Control guidelines are more difficult for local government bylaw enforcement to interpret and may be more suited to be submitted to resolution through a formal complaint. The British Columbia Farm Industry Review Board’s (BCFIRB) process can investigate and determine whether these practices are considered “normal farm practice” under the FPPA. BCFIRB decisions can effectively address the more subjective measures by removing the “Right to Farm” defence where farmers are using the devices improperly.

Orchards located on the hillsides above Swan Lake use audible bird scare devices to scare wildlife away from crop land. The use of audible bird scare devices is seasonal and the majority of people living near farms are not disturbed by their use as they understand this is a farming practice and only a nuisance for a short period.

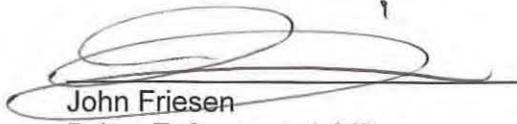
The RDNO receives several inquires and complaints annually about audible bird scare devices used to protect orchards on the hillsides east of Pleasant Valley Road. Complaints are from several nearby property owners and the owners of Silver Star Mobile Home Park. The complaints from Silver Star Mobile Home Park are the result of customers demanding refunds and leaving the campground after being disturbed or annoyed by the audible bird scare devices.

The municipalities of Delta, Langley, Abbotsford and Kelowna have a “farm bylaw” and the municipalities of Pitt Meadows and Surrey have written the Wildlife Damage Control guidelines into their noise bylaws.

SUMMARY:

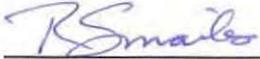
This information on the proposed Noise Control Bylaw is provided in addition to the information provided in the staff report dated February 29, 2012 circulated on the July 18, 2012 Board of Directors agenda.

Submitted by:



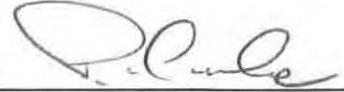
John Friesen
Bylaw Enforcement Officer

Endorsed by:



Rob Smailes, MCIP
General Manager, Planning and Building

Endorsed by:



Pat Luscombe
Chief Building Inspector

Approved For Inclusion:



Trafford Hall
Administrator

Appendix 1 – Summary of Noise Bylaws from other Jurisdictions

Spallumcheen

Spallumcheen subjectively regulates vehicle and motor cycle noises through the “Township of Spallumcheen Noise Prevention Bylaw No. 1269, 1992”

“3. General Regulations

a. No person shall on any day before seven (7) o'clock in the forenoon or after six (6) o'clock in the afternoon make or cause, or permit to be made or caused, any noise in or on a public or private place which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of any person or persons in the neighbourhood or vicinity.

5. Other

d. No person shall operate a snow vehicle, motor cycle, all terrain vehicle or dirt bike which makes or causes excess said undue noise.”

Armstrong

Armstrong subjectively regulates vehicle noises through the “City of Armstrong Noise Control Bylaw No. 1421, 2001”

“GENERAL REGULATIONS

3. Except as hereunder provided in this bylaw

a. No person shall make or cause to be made any noise in or on a highway or elsewhere in the City;

b. No person, being the owner or occupier of being in possession or control of property, shall suffer or permit any person to make or cause to be made any noise therein or thereon; which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of the neighborhood or of persons in the vicinity thereof.

4. Council hereby considers that the acts listed below cause noise and/or continuous noise that is objectionable or liable to disturb the quiet, peace, rest, enjoyment, comfort or convenience of individuals or the public, therefore no person shall

7. idle or continuously run a diesel engine, a truck or bus for more than 15 minutes at the same location, except, where the truck or bus is located within a garage or depot intended to be used for the long term parking of that vehicle;’

“Noise is any sound that is loud, harsh or undesirable that is caused by things like animal, clamour, shouting, construction, motors, equipment, or amplified voices or music, which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of the neighborhood or of persons in the vicinity thereof.”

Coldstream

Coldstream subjectively regulates vehicle and motor boat noises through the *“District of Coldstream Noise Control Bylaw No. 1570, 2010”*

“5. OTHER

*B. “No person shall operate a snow vehicle, motorboat or motorcycle which makes or causes noise.”
“Noise includes any loud outcry, clamour, shouting or movement, or any sound that is loud or harsh or undesirable;”*

Vernon

Vernon regulates vehicle and motor boat noises through *“Good Neighbour Bylaw No. 4980”*

“Part IV – Noise Regulation

4.4 General Prohibitions

(a) No person shall make or cause, or permit to be made or caused, any noise in or on a highway or other public place in the City which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of any person or persons in the neighbourhood or vicinity of that place;

4.6 Boat Noise:

(a) No person shall launch a motor boat from any lands in the City if that motor boat is equipped with an exhaust system that permits the exhaust gases from the engine to be expelled directly into the air without first passing through the water unless the boat motor is equipped with a muffling device that ensures the exhaust gases from the engine are cooled and expelled without excessive noise;

(b) No person shall operate a motor boat in the City if that motor boat is equipped with an exhaust system that permits the exhaust gases from the engine to be expelled directly into the air without first passing through the water unless the boat motor is equipped with a muffling device that ensures the exhaust gases from the engine are cooled and expelled without excessive noise;

(c) No person shall operate a motor boat powered by an engine equipped with the exhausting devices commonly described as dry stacks or dry headers;

(d) No person shall operate a motor boat powered by an engine equipped with all exhausting devices commonly described as water injected headers unless a properly operating muffler is installed thereto;

(e) No person shall operate a motor boat powered by an engine equipped with exhausting devices commonly described as overtransom water cooled exhaust unless a properly operating muffler is installed thereto; and

(f) No person shall operate a motor boat so as to cause noise which disturbs the peace, rest, enjoyment, comfort or convenience of the neighbourhood or of persons in the vicinity.”

Lumby

Lumby subjectively regulates vehicle noise through the “*Anti-Noise Bylaw No. 689, 2008*”

“3. SPECIFIC PROHIBITIONS:

C. No person shall operate a motor vehicle on a highway in the municipality in a manner which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of individuals or the public in the neighborhood or vicinity of that highway.”

Note that an exemption is provided for vehicles used for improvements to lands provided that all equipment that has an internal combustion engine has an exhaust muffler that complies with the *Motor Vehicle Act* Regulations, as well as a maximum allowable sound pressure level of 88 dBA for gasoline-driven engines, and 93 dBA for diesel-driven engines.

Enderby

Enderby subjectively regulates vehicle noise through the “*City of Enderby Good Neighbour Bylaw No. 1478, 2010*”

“Part III – Noise Regulations

3.4 General Prohibitions

(a) No person shall make or cause, or permit to be made or caused, any noise in or on a highway or other public place in the City which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of any person or persons in the neighbourhood or vicinity of that place;”

REGIONAL DISTRICT OF NORTH OKANAGAN

BYLAW No. XXXX

A bylaw to regulate and prohibit the making or causing of noises and sounds within the Regional District of North Okanagan

WHEREAS by Section 724 (a) of the *Local Government Act* and Supplementary Letters Patent, the Regional Board, may by bylaw, regulate or prohibit the making or causing of noises or sounds in or on a highway or elsewhere in the Regional District which disturb or tend to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of the neighbourhood, or of any persons in the vicinity, or which in the opinion of the Regional Board are objectionable or liable to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of individuals or the public, and may make different regulations or prohibitions for different areas of the Regional District;

AND WHEREAS it is the opinion of the Regional Board that regulations and prohibitions must be instituted to control objectionable sounds or sounds liable to disturb the quiet, peace, rest, enjoyment, comfort or convenience of individuals or the public;

NOW THEREFORE the Regional Board of the Regional District of North Okanagan in open meeting assembled, enacts as follows:

CITATION

1. This Bylaw may be cited as "**Noise Regulation Bylaw No. XXXX, 2012**".

DEFINITIONS

2. In this Bylaw,

"Activity Zone" means those areas so described in this Bylaw and so indicated in Schedule A, attached to and forming part of this Bylaw;

"approved sound meter" means an acoustic instrumentation system which:

- (a) is comprised of a microphone, wind screen and recorder which conforms to class 1 or class 2 requirements for an integrating sound level meter as defined by IEC 61672-1 [2002];
- (b) has been field calibrated before and after each sound measurement using a class 1 or class 2 field calibrator as defined by IEC 60942 [2003]; and
- (c) has been calibrated, along with the field calibrator, within the past two years by an accredited lab to a traceable national institute standard;

"Board" means the Board of Directors of the Regional District of North Okanagan;

"Chief Building Inspector" means the Chief Building Inspector for the Regional District of North Okanagan or his or her designate;

“**construction**” includes

- (a) the erection, alteration, repair, relocation, dismantling, demolition and removal of a building or structure;
- (b) structural maintenance, power-washing, painting, land clearing, earth moving, grading, excavating, the laying of pipe and conduit (whether above or below ground), street or road building and repair, concrete placement, and the installation, or removal of **construction** equipment, components and materials in any form or for any purpose; or
- (c) any work or activities being done or conducted in connection with any of the work listed in paragraphs (a) or (b);

“**daytime**” means

- (a) from 7:00 a.m. to 10:00 p.m. Monday through Saturday;
- (b) from 10:00 a.m. to 10:00 p.m. on a Sunday or **holiday**;

“**Db_A**”, or **A-weighted decibel**, means the unit used to measure the sound pressure level using the “A” weighting network setting on an **approved sound meter**;

“**d_BC**”, or **C-weighted decibel**, means the unit used to measure the sound pressure level using the “**e_C**” weighting network setting on an **approved sound meter**;

“**General Manager**” means the General Manager, Planning and Building for the Regional District of North Okanagan or his or her designate;

“**holiday**” means

- (a) New Years Day, Good Friday, Easter Monday, Victoria Day, Canada Day, British Columbia Day, Labour Day, Thanksgiving Day, Remembrance Day, Christmas Day and Boxing Day or any other statutory holiday that may be declared by the Province of British Columbia; and
- (b) the day named in lieu of a day that is named in paragraph (a) and that falls on a Saturday, Sunday or the following Monday;

“**IEC**” means the International Electro-Technical Commission;

“**impulsive sound**” means **specific sound** that is characterized by brief bursts of **sound** pressure, with the duration of each impulse usually less than 1 second, including without limitation **specific sound** containing “bangs”, “clicks”, “clatters” or “thumps” from hammering, banging of doors and metal impacts;

“**impulsive sound adjustment**” means a 5 **dB_A** increase applied to **specific sound** classified as **impulsive sound** and a 0 **dB_A** increase applied to **specific sound** that is not classified as **impulsive sound**;

“**inspector**” includes the **Medical Health Officer**, the Health Protection Manager, the **General Manager**, a Bylaw Enforcement Officer employed by the Regional District of North Okanagan, a Peace Officer, and any employee acting under the supervision of any of them;

“**Intermediate Zone**” means those areas so described in this Bylaw and so indicated in Schedule A, attached to and forming part of this Bylaw;

“**ISO**” means the International Organization for Standardization;

“**Leq**”, or equivalent continuous sound pressure level, means that constant or steady **sound** level, rounded to the nearest decibel, which, in a specified time period, conveys the same **sound** energy as does the actual time-varying sound level;

“**lawn and garden power equipment**” means any equipment or machinery used in lawn and garden care, including leaf blowers, edge trimmers, rototillers, ~~and~~ lawn mowers and chainsaws;

“**measurement time interval**” means the total time over which **sound** measurements are taken, and:

- (a) is chosen to best represent the situation causing disturbance;
- (b) is between 1 minute and 30 minutes;
- (c) is chosen to avoid influence from the **residual sound** where possible; and
- (d) may consist of a number of non-contiguous, short term measurement time intervals that add up to 1 to 30 minutes;

“**Medical Health Officer**” means the Medical Health Officer appointed under the *Public Health Act*, SBC 2008, c. 28 or his/her designate, to act within the limits of the jurisdiction of any local board, or within any health district;

“**nighttime**” means any period of any day not specifically defined as **daytime**;

“**point of reception**” means a position within the property line of the real property occupied by the recipient of a **sound** that best represents the location at which that **specific sound**, emanating from another property, is received and the resulting disturbance experienced and is:

- (a) at least 1.2 m from the surface of the ground and any other **sound** reflecting surface; and
- (b) outdoors, unless there is no **point of reception** outdoors because the **specific sound** is within the same building or the wall of one **premises** is flush against another, in which case the **point of reception** shall be within the building where the **specific sound** is received and the resulting disturbance experienced;

“**premises**” means

- (a) the area contained within the boundaries of a legal parcel of land and any building situated within those boundaries; and
- (b) each unit, the common areas of the building, and the land within the apparent boundaries of the legal parcel of land are each separate **premises** where a building contains more than one unit of commercial, industrial or **residential occupancy**;

“**Quiet Zone**” means those areas so described in this Bylaw and so indicated in Schedule A, attached to and forming part of this Bylaw;

“**rating level**” means the **specific sound level** plus the **impulsive sound adjustment** and **tonal sound adjustment**;

“**residential occupancy**” in respect of **premises**, means a dwelling unit located within a building, and includes a room for rent in a hotel or motel;

“**residual sound**” means the sound remaining at a given location in a given situation when the **specific sound** source is suppressed to a degree such that it does not contribute to the **total sound**;

“**sound**” means an oscillation in pressure in air which can produce the sensation of hearing when incident upon the ear;

“**specific sound**” means the **sound** under investigation;

“**specific sound level**” means the equivalent continuous **sound** pressure level or Leq at the point of reception produced by the **specific sound** over the **measurement time interval**;

“**tonal sound**” means **specific sound** which contains one or more distinguishable, discrete, continuous tones or notes including, without limitation:

- (a) **specific sound** characterized by a "whine", "hiss", "screech" or "hum"; and
- (b) music;

“**tonal sound adjustment**” means a 0 - 6 dBA increase applied to **specific sound** classified as **tonal sound** as determined using the approach described in ISO 1996-2 [2007] Annex C and a 0 dBA increase applied to **specific sound** that is not classified as **tonal sound**;

“**total sound**” means the totally encompassing **sound** in a given situation at a given time, usually composed of **sound** from many sources near and far;

“**total sound level**” means the equivalent continuous **sound** pressure level or Leq at the point of reception produced by the **total sound** over the **measurement time interval**; and

“**vehicle**” means a device in, on or by which a person or thing is or may be transported or drawn along a highway, but does not include a device designed to be moved by human power or device used exclusively on stationary rails or tracks.

SOUND LEVELS

3.1 Quiet Zone Permitted Sound Levels

3.1.1 In a **Quiet Zone** a person must not make, cause or permit to be made or caused, any **sound** that has a **rating level** which:

- (a) during the **daytime** exceeds:
 - (i) 55 **dBA** or 65 **dBC** when received at a **point of reception** in a **Quiet Zone**;
 - (ii) 60 **dBA** or 70 **dBC** when received at a **point of reception** in an **Intermediate Zone**;
 - (iii) 70 **dBA** or 80 **dBC** when received at a **point of reception** in an **Activity Zone**;or

(b) during the **nighttime** exceeds:

- (i) 45 **dBA** or 55 **dB**C when received at a point of reception in a **Quiet Zone**;
- (ii) 50 **dBA** or 60 **dB**C when received at a **point of reception** in an **Intermediate Zone**;
- (iii) 70 **dBA** or 80 **dB**C when received at a **point of reception** in an **Activity Zone**.

3.2 Intermediate Zone Permitted Sound Levels

3.2.1 In an **Intermediate Zone** a person must not make, cause or permit to be made or caused, any **sound** that has a **rating level** which:

(a) during the **daytime** exceeds:

- (i) 60 **dBA** or 70 **dB**C when received at a **point of reception** in a **Quiet Zone**;
- (ii) 60 **dBA** or 70 **dB**C when received at a **point of reception** in an **Intermediate Zone**;
- (iii) 70 **dBA** or 80 **dB**C when received at a **point of reception** in an **Activity Zone**;
or

(b) during the **nighttime** exceeds:

- (i) 50 **dBA** or 60 **dB**C when received at a point of reception in a **Quiet Zone**;
- (ii) 50 **dBA** or 60 **dB**C when the prescribed point of reception is outdoors or 55 **dB**C when the prescribed point of reception is indoors in an **Intermediate Zone**;
- (iii) 70 **dBA** or 80 **dB**C when received at a point of reception in an **Activity Zone**.

3.3 Activity Zone Permitted Sound levels

3.3.1 In an **Activity Zone** a person must not make, cause or permit to be made or caused, any **sound** that has a **rating level** which:

(a) during the **daytime** exceeds:

- (i) 60 **dBA** or 70 **dB**C when received at a point of reception in a **Quiet Zone**;
- (ii) 65 **dBA** or 75 **dB**C when received at a point of reception in an **Intermediate Zone**;
- (iii) 70 **dBA** or 80 **dB**C when received at a point of reception in an **Activity Zone**; or

(b) during the **nighttime** exceeds:

- (i) 50 **dBA** or 60 **dB**C when received at a point of reception in a **Quiet Zone**;
- (ii) 55 **dBA** or 65 **dB**C when received at a point of reception in an **Intermediate Zone**;
- (iii) 70 **dBA** or 80 **dB**C when received at a point of reception in an **Activity Zone**.

3.4 Summary of Permitted Sound Levels by Zone

3.4.1 For convenience, the outdoor **sound** level limits set out in sections 3.1 to 3.3 are summarized in the table in Schedule B, attached to and forming part of this Bylaw.

3.5 Properties Where Specific Modifications or Exceptions to Rating Levels Apply

3.5.1 Properties listed in Schedule **CB** of this Bylaw are subject to the rating levels set-out in Schedule B. Except as modified or excepted in Schedule **BC**, the rating levels in sections 3.1 - 3.3 of this Bylaw apply to such properties.

3.6 Assessment at Locations Affected by Residual Sound

3.6.1 Where the **total sound level** exceeds all of the prescribed **sound** limits identified in sections 3.1 to 3.3 and is influenced by the **residual sound** at the **point of reception** such that the **specific sound** cannot be accurately measured, the **specific sound** should be measured at distances close to the source and then predicted at the **point of reception** using an internationally accepted calculation standard such as ISO 9613-2.

3.7 Role of Inspector

3.7.1 Any **inspector** may measure **sound** levels with an **approved sound meter**, and may enter at all reasonable times upon any real property, to determine compliance with the provisions of Part Two of this Bylaw.

PROHIBITED TYPES OF NOISE

4.1 Noise Disturbing Neighbourhood

4.1.1 Subject to other provisions of this Bylaw:

- (a) a person must not make or cause a **sound** in a street, park, plaza or similar public place which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of persons in the neighbourhood or vicinity;
- (b) a person who is the owner or occupier of, or is in possession or control of, real property must not make, suffer, or permit any other person to make, a **sound**, on that real property, which can be easily heard by a person not on the same **premises** and which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort or convenience of persons in the neighbourhood or vicinity.

4.1.2 Subsection 4.1.1 does not apply if a **sound** level may practically be measured and the **sound** level is in compliance with Part Three of this Bylaw.

4.2 Prohibited Types of Noise

4.2.1 The following sounds are prohibited because they are objectionable, or liable to disturb the quiet, peace, rest, enjoyment and comfort of individuals or the public notwithstanding that such sounds may not constitute a violation of any other provision of this Bylaw:

- (a) the **sound** made by shouting, using a megaphone or sound amplification device, or making other **sound** in, at or on streets, parks, wharves, docks, boat landings, railway or bus stations or other public places;

- (b) the **sound** made by a dog barking, howling or creating any kind of **sound** continually or sporadically or erratically for any period in excess of one-half hour of time;
- (c) the **sound** made by any bird or other animal, which emits cries or other noises in a persistent manner;
- (d) the **sound** made by a combustion engine that is operated without using an effective exhaust muffling system in good working order;
- (e) the **sound** made by a **vehicle** or a **vehicle** with a trailer resulting in banging, clanking, squealing or other like **sounds** due to an improperly secured load or improperly secured equipment, or due to inadequate maintenance;
- (f) the **sound** made by a **vehicle** horn or other warning device used except under circumstances required or authorized by law;
- (g) the **sound** made by amplified music, whether pre-recorded or live, after 12:00 a.m. (midnight) and before 8:00 a.m. on any day; and
- (h) **sound** produced by audio advertising which:
 - (i) is directed at pedestrians or motorists on any street or sidewalk; or
 - (ii) can be heard on any street or sidewalk.

EXEMPTIONS

5.1 Specific Exemptions

5.1.1 This Bylaw does not apply to **sound** made:

- (a) by a police, fire, ambulance or other emergency vehicle;
- (b) by a horn or other signaling device on any **vehicle**, boat or train where such sounding is properly and necessarily used as a danger or warning signal;
- (c) by the use, in a reasonable manner, of an apparatus or mechanism for the amplification of the human voice or music in a public park, public facility or square in connection with a public meeting, public celebration, athletic or sports event or other public gathering, if:
 - (i) that gathering is held under a Regional District of North Okanagan issued permit or license or similar agreement; or
 - (ii) that gathering has received prior approval under section 5.2.1;
- (d) by bells, gongs or chimes by religious institutions, or the use of carillons, where such bells, gongs, chimes or carillons have been lawfully erected;
- (e) by works and activities authorized by the British Columbia School Board 22 & 83 and conducted by its employees, agents and contractors on property owned or operated by British Columbia School Board 22 & 83;

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- (f) by a parade, procession, performance, concert, ceremony, event, gathering or meeting in or on a street or public space, provided that a permit, licence or similar agreement has been granted by the Regional District of North Okanagan for the event;
- (g) by outdoor athletic activity that takes place between 8:00 a.m. and 10:30 p.m.;
- (h) by the use, in a reasonable manner, of the **premises** of a Community Care Facility duly licensed under the *Community Care and Assisted Living Act*, SBC, 2002, Chapter. 75, or from the use of a similar institution;
- (i) by works and activities authorized by the Regional District of North Okanagan and conducted by its employees, agents and contractors on property owned or operated by the Regional District of North Okanagan;
- (j) by a garbage collection service during the **daytime**;
- (k) by public works including, but not limited to, the construction and repair of streets, sewers and other underground services;
- (l) by emergency repairs to buildings which can not reasonably be delayed until normal working hours;
- (m) by **lawn and garden power equipment**, provided that the use of the **lawn and garden power equipment** takes place:
 - (i) between 7:00 a.m. and 8:00 p.m. Monday through Saturday that is not a holiday;
and
 - (ii) between 10:00 a.m. and 8:00 p.m. on a Sunday or **holiday**;
- (n) by **construction**, provided that it has a **rating level** which does not exceed 85 **dBa** when measured at a distance of 15.2m (50 feet) from that source of **sound**, and only:
 - (i) between 7:00 a.m. and 8:00 p.m. Monday through Saturday that is not a **holiday**;
and
 - (ii) between 10:00 a.m. and 6:00 p.m. on a Sunday or **holiday**;
- (o) by the nightly cleaning of streets and sidewalks and the collection of garbage from sidewalk refuse bins by or on behalf of the Regional District of North Okanagan;
- (p) by public transit or aeronautics;
- (q) by normal farm practices on a farm operation as defined by and protected by the *Farm Practices Protection (Right to Farm) Act*;
- (r) by normal logging operations if they occur greater than 500 metres from a residence,
or
- (s) by an occupant of a strata lot or rental unit used for **residential occupancy** where the source of the sound and the **point of reception** is within the same building.

5.2 Exemptions and Relaxations by Approval

- 5.2.1 A person may submit an application for an exemption or relaxation from the provisions of this Bylaw to the **General Manager**, in a form and with content satisfactory to the **General Manager** who may allow the exemption or relaxation with or without terms and conditions or refuse the exemption or relaxation provided that the exemption or relaxation is limited to a period of not more than forty-eight (48) hours.
- 5.2.2 With respect to exemptions or relaxations from the limitations imposed by section 5.1.1(n) of this Bylaw for construction projects, the **Chief Building Inspector** may grant the exemption if satisfied that:
- (a) the volume of traffic in the area of the proposed construction is such as to cause danger to the workers on the job, or to cause traffic congestion;
 - (b) the impact and inconvenience to residents in the area of the proposed construction can be minimized;
 - (c) the construction cannot be undertaken efficiently or safely during the normal working day; or
 - (d) interruption of any service during normal working day would cause any person undue hardship.
- 5.2.3 If an exemption or relaxation is granted by the **General Manager** or **Chief Building Inspector** the applicant must, at least forty-eight (48) hours before the start of the exemption period, distribute a notice, in a form and with content satisfactory to the **General Manager** or **Chief Building Inspector**, to all residences within a one hundred (100) metre radius. Such a notice is to include, but will not be limited to, all times and dates, the specific location and general description of the activity.
- 5.2.4 An applicant who has been refused an exemption or relaxation by a decision of the **General Manager** or **Chief Building Inspector** may apply to have the **Board** reconsider that decision in accordance with the following procedures:
- (a) the applicant may apply by notice to the Administrator of the Regional District of North Okanagan within 14 days of any refusal by the **General Manager** or **Chief Building Inspector** to grant an exemption or relaxation;
 - (b) the applicant may address the **Board** in writing or in person concerning the specific exemption or any future exemptions; and
 - (c) the **Board** may allow or revise the exemption or relaxation with or without terms and conditions or refuse the exemption or relaxation.

5.3 Modification of Exception of Rating Levels by Bylaw Amendment

- 5.3.1 A person may, in respect to a specific property or specific properties, submit an application for a modification of this Bylaw in respect to a rating level set out in section 3.1 - 3.3 of this Bylaw to the **General Manager** in a form and with a content satisfactory to the **General Manager** who shall refer the application to the **Board** for consideration with recommendations.

NOISE ZONES

QUIET ZONE	INTERMEDIATE ZONE	ACTIVITY ZONE
<p>Residential Zones Commencing with:</p> <ul style="list-style-type: none"> • R.1 • R.2 • R.3 • R.4 • R.5 • R.6 <p><u>Rural Zones</u> <u>Commencing with:</u></p> <ul style="list-style-type: none"> • <u>S.H.</u> • <u>C.R.</u> • <u>N.U.</u> • <u>L.H.</u> 	<p>Rural Zones Commencing with:</p> <ul style="list-style-type: none"> • S.H. • C.R. • N.U. • L.H. <p>Commercial Zones Commencing with:</p> <ul style="list-style-type: none"> • C.1 • C.2 • C.3 • C.4 • C.5 <p>Special Zones Commencing with:</p> <ul style="list-style-type: none"> • S.1 • S.2 • S.3 <p>Comprehensive Development Zones Commencing with:</p> <ul style="list-style-type: none"> • CD.1 • CD.2 • CD.3 • CD.4 • CD.5 • CD.6 	<p>Industrial Zones Commencing with:</p> <ul style="list-style-type: none"> • I.1 • I.2 • I.3 • I.4 • I.5

SUMMARY OF PERMITTED OUTDOOR SOUND LEVELS BY ZONE

		Sound Receiver Zone					
		Quiet		Intermediate		Activity	
		Day	Night	Day	Night	Day	Night
Sound Source Zone	Quiet	55 dBA 65 dBC	45 dBA 55 dBA _C	60 dBA 70 dBA _C	50 dBA 60 dBA _C	70 dBA 80 dBC	70 dBA 80 dBC
	Intermediate	60 dBA 70 dBA _C	50 dBA 60 dBA _C	60 dBA 70 dBA _C	50 dBA 60 dBA _C	70 dBA 80 dBC	70 dBA 80 dBC
	Activity	60 dBA 70 dBA _C	50 dBA 60 dBA _C	65 dBA 75 dBC	55 dBA 65 dBC	70 dBA 80 dBC	70 dBA 80 dBC

Note: the permitted outdoor **dBC** sound level is 10 dB higher than the permitted **dBA** sound level.

SPECIFIC MODIFICATIONS/EXCEPTIONS TO PART TWO: SOUND LEVELS

Property specific modifications / exemptions to the rating levels in Part Two: "Sound Levels" of the Bylaw are set-out below. Except as modified or excepted below, the rating levels in Part Three – "Sound Levels" apply.

Civic Address of Sound Source	Civic Address of Point of Reception	Permitted Sound Level

draft



**REGIONAL DISTRICT
of
NORTH OKANAGAN**

REPORT

File No.: 4000.10

TO: Electoral Area Advisory Committee
FROM: John Friesen, Bylaw Enforcement Officer
DATE: February 29, 2012
SUBJECT: Noise Control Bylaw No. 908, 1990

RECOMMENDATION:

That it be recommended to the Board of Directors that staff be directed to bring forward changes to *Noise Control Bylaw No. 908, 1990* as described in the report from the Bylaw Enforcement Officer dated February 29, 2012 and specifically, that new provisions be added to establish:

- sound zones;
- a definition of “point of reception” when measuring sound;
- permitted sound levels for daytime and nighttime noise;
- prohibited types of noise; and
- specific exemptions from the noise bylaw.

ISSUE:

During the August 3, 2011 Board of Directors meeting, staff were instructed to bring forward amendments to the current *Noise Control Bylaw No. 908, 1990* to include the use of decibel readers to enforce sound level limits.

It is desirable to enact changes to the current *Noise Control Bylaw No. 908, 1990* to give the RDNO enhanced control over noise that disturbs the peace, rest, enjoyment, comfort, or convenience of any person or persons in the neighbourhood or vicinity. The current bylaw uses purely subjective criteria in the prohibition sections. This type of criteria has been the subject of numerous legal challenges in the courts, with the most common argument that the provisions are vague and uncertain.

The current bylaw presents problems for both the courts and bylaw enforcement officers. It is difficult to determine if the complainant is overly sensitive, having expectations with respect to noise levels that are perhaps unreasonable in a vibrant community. Throughout the Province and Canada, bylaws that contain objective criteria that set standards to address the realities of the urban environment while at the same time respecting the health and lifestyle concerns of the community, have been introduced where access to the technology and educational opportunities to implement this criteria exist.

This report will present a recommendation for action to deal with the issue of excessive noise in the RDNO as requested by EAAC. The plan is to develop a bylaw to identify acceptable noise levels and a method of measuring those levels. The identified decibel levels are consistent with other jurisdictions and the equipment and procedures for testing must be consistent with International Electro-Technical Commission (IEC) Standards.

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Report dated February 29, 2012
Subject: Noise Control Bylaw No. 908, 1990

Noise Control Bylaw No. 908, 1990 has not been amended since 1990 and applies to all Electoral Areas within the RDNO. Since that time significant changes have occurred in sound measurement technology, methodology and standards.

DISCUSSION:

Noise can be defined as unwanted sound, however one person's noise may be another person's music. Noise complaints are typically related to annoyance, activity interference or health effects which are all relevant concerns that a noise control bylaw should address.

The current bylaw contains only subjective criteria that may establish an infraction due to personal sensitivity resulting in enforcement challenges. A new bylaw will provide an objective limit that will be easier to enforce as well as subjective criteria. Subjective criteria should be included for scenarios in which it is impractical to take a sound measurement. Taking a sound measurement would be impractical if, for example, the responder to the complaint was a police officer (who typically would not have an approved sound meter) or because of the type of disturbance (parties, loud exhaust on vehicles etc.).

This report addresses the very complex technical and legal issues surrounding the types of noise, the various methods of sound measurement and the production of an effective regulatory bylaw and enforcement strategy.

A new bylaw will increase operational cost impacts on enforcement including new equipment, training and increased complaint levels.

Existing Policy

Section 724 (1) of the *Local Government Act* provides Regional Districts the authority to regulate or prohibit the making or causing of noise in the Regional District. Section 266.1 (1) provides Regional Districts the authority to make bylaws for the purposes of enforcing bylaws and imposing fines, penalties and costs.

Noise Control Bylaw No. 908, 1990 regulates or prohibits the making of noise within the RDNO that may disturb the peace, rest, enjoyment, comfort, or convenience of any person or persons in the neighbourhood or vicinity. The bylaw is enforced on a complaint basis; and in most cases a third party needs to be disturbed by a noise before enforcement action may begin. The bylaw may be enforced by RDNO Bylaw Enforcement Officers or by members of the RCMP.

If voluntary compliance cannot be achieved, then compliance may be obtained through either Municipal Ticket Information (\$100.00 fine) or Long Form Information (court process, maximum \$2,000.00 fine).

Types of Sound

The most common types of noise are:

- construction noise
- fixed mechanical equipment noise (heat pumps, roof-top units, etc.)
- human generated noise (parties, daycares, etc.)
- entertainment noise

Older noise control bylaws use "continuous" and "non-continuous" sound levels as objective criteria to determine if noise was excessive. Continuous means any sound occurring for a duration of more than

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three minutes, or occurring continually, sporadically or erratically, but totaling more than three minutes in any fifteen minute period. Continuous sound cannot be measured directly by sound level meters and is therefore difficult to assess and defend.

More recent noise control bylaws contain objective criteria that use the L_{eq} as the sound level metric. Combined level and duration of sound are referred to as energy. For constant sound levels it is easier to provide an energy measurement. However, for varying sound levels it is possible to calculate a single value known as the "Equivalent continuous sound level" or L_{eq} which has the same energy content and the same hearing damage potential as the varying sound. Usually the signal that is measured varies in amplitude. Sound pressure (noise) level of an imaginary continuous signal can be calculated within a given time interval, that would produce the same energy as the fluctuating sound level that you are measuring. L_{eq} is the most common metric used globally to assess human annoyance and health effects with sound and can be measured directly using an "Integrating Sound Level Meter" and therefore eases enforcement.

Noise control bylaws that contain objective criteria that use the L_{eq} as the sound level as well as subjective criteria should make sound measurement more accurate and enforcement easier. Subjective criteria would only be used when it is impractical or impossible to measure the sound.

Comparative Examples of Noise Sources, Decibels & Their Effects

Decibel Level	NOISE SOURCE	Decibel Effect
150	Jet take-off (at 25 meters)	Eardrum rupture
140	Aircraft carrier deck	
130	Military jet aircraft take-off from aircraft carrier with afterburner at 50 ft (130 dB).	
120	Thunderclap, chain saw. Oxygen torch (121 dB).	Painful. 32 times as loud as 70 dB.
110	Steel mill, auto horn at 1 meter. Turbo-fan aircraft at takeoff power at 200 ft (118 dB). Riveting machine (110 dB); live rock music (108 - 114 dB).	Average human pain threshold. 16 times as loud as 70 dB.
100	Jet take-off (at 305 meters), use of outboard motor, power lawn mower, motorcycle, farm tractor, jackhammer, garbage truck. Boeing 707 or DC-8 aircraft at one nautical mile (6080 ft) before landing (106 dB); jet flyover at 1000 feet (103 dB); Bell J-2A helicopter at 100 ft (100 dB).	8 times as loud as 70 dB. Serious damage possible in 8 hr exposure
90	Boeing 737 or DC-9 aircraft at one nautical mile (6080 ft) before landing (97 dB); power mower (96 dB); motorcycle at 25 ft (90 dB). Newspaper press (97 dB).	4 times as loud as 70 dB. Likely damage 8 hr exp
80	Garbage disposal, dishwasher, average factory, freight train (at 15 meters). Car wash at 20 ft (89 dB); propeller plane flyover at 1000 ft (88 dB); diesel truck 40 mph at 50 ft (84 dB); diesel train at 45 mph at 100 ft (83 dB). Food blender (88 dB); milling machine (85 dB); garbage disposal (80 dB).	2 times as loud as 70 dB. Possible damage in 8 hr exposure.
70	Passenger car at 65 mph at 25 ft (77 dB); freeway at 50 ft from pavement edge 10 a.m. (76 dB). Living room music (76 dB); radio or TV-audio, vacuum cleaner (70 dB).	Arbitrary base of comparison. Upper 70s are annoyingly loud to some people.
60	Conversation in restaurant, office, background music, Air conditioning unit at 100 ft	Half as loud as 70 dB. Fairly quiet
50	Quiet suburb, conversation at home. Large electrical transformers at 100 ft	One-fourth as loud as 70 dB.
40	Library, bird calls (44 dB); lowest limit of urban ambient sound	One-eighth as loud as 70 dB.
30	Quiet rural area	One-sixteenth as loud as 70 dB. Very Quiet
20	Whisper, rustling leaves	
10	Breathing	Barely audible

Methods of Sound Measurement

The measurement of sound is a complex operation that is best carried out by trained personnel. Sound level meters are designed to respond to sound in approximately the same manner as the human ear and to give objective, reproducible measurements of sound pressure level. Meters generally consist of a microphone, a processing section and a read-out.

The microphone converts the sound signal to an equivalent electrical signal. The correct microphone for the application should be used and the microphone must be protected from wind, vibration and other environmental factors. The direction the microphone is pointed can also impact readings.

The signal from the microphone can be processed in different ways to account for a variety of factors. Weighting networks may be applied to mimic how the human ear hears noises at different frequencies.

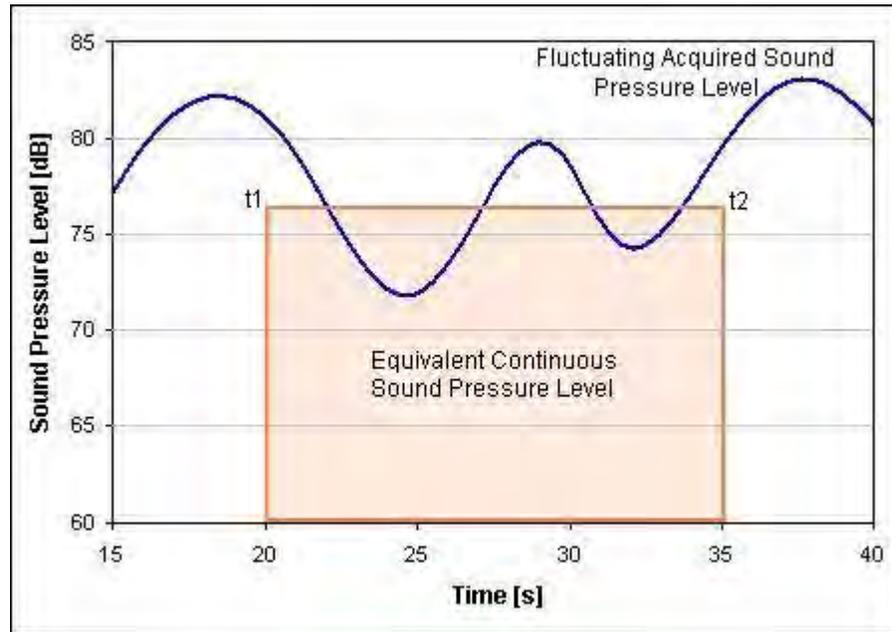
The most common types of sound measurement are:

- “dBA” - most commonly used measurement of sound. dBA means the unit used to measure the sound pressure level using the “A” weighting network setting on an approved sound meter.
- “dBC” - measurement of sound more sensitive at lower decibels than dBA for low frequency/bass sound. dBC means the unit used to measure the sound pressure level using the “C” weighting network setting on an approved sound meter.
- “L_{eq}” - in measuring sound, replaces the concept of “continuous sound” and “non-continuous sound” in some older noise Bylaws. L_{eq} means that constant or steady sound level, rounded to the nearest decibel, which, in a specified time period, conveys the same sound energy as does the actual time-varying sound level.

The most widely used is the “A” weighting and sound levels are indicated in dBA. Often sound levels vary so the signals are reported as Root Mean Square (RMS) values which are a special kind of mathematical average. Hearing damage potential of a sound depends not only on the level but also the duration of the sound. Equivalent continuous A-weighted sound pressure level is widely used around the world as an index for noise. It is defined as “the A-weighted sound pressure level of a sound fluctuating over a period of time, expressed as the amount of average energy.” Many bylaws use the continuous sound metric which means the sound level is exceeded for 3 minutes in a 15 minute period. This cannot be measured directly by sound level meters and is therefore difficult to assess and defend. The operator must estimate the level, or must log sound levels and analyze them in the office to determine the level exceeded for 3 minutes in any 15 minute time period. The result is expressed in dBA, which gives a reasonable approximation of the human perception of loudness.

A different weighting scale, the C-weighting, is often used as opposed to the generally used A-weighting scale so that low frequency noise becomes more prominent in the sound measurement. The dBC limits are 10 decibels greater than the dBA levels because typical sound sources which are better measured on the dBC scale typically have a dBC to dBA difference of approximately 10 decibels. Typical sound sources which are better measured on the dBC scale include human voices, hammering, air conditioners, heat pumps, bass music, etc.

The L_{eq} is best described as the Average Sound Level over the period of the measurement. Usually measured A-weighted but there is no time constant applied. As it is an average, it will settle to a steady value, making it much easier to read accurately than with a simple instantaneous Sound Level. Being an average, it is also showing the total energy of the noise being measured, so it is a better indicator of potential hearing damage or the likelihood that the noise will generate complaints. A sound level meter that measures the L_{eq} should meet the standards IEC60804, IEC 61672 or ANSI S1.4.



The L_{eq} noise or equivalent continuous noise level meter follows all the fluctuations, stores them in its memory and at the end of the measurement calculates an 'average energy' or L_{eq} value. This is not a simple arithmetic average because measurements are in decibels with logarithmic values. The meter converts the dB values to 'real numbers', adds them all up then divides by the number of samples and then converts this true energy average back to dBs.

Outdoor measurement of sound is preferred and more precise even though the point of reception is often indoors.

Where objective sound measurements are introduced into evidence, instrumentation is one of the first items challenged when the case goes to court. Evidence of field and lab calibrations must be provided to meet potential instrumentation accuracy challenges.

Instrumentation must meet current International Electro-Technical Commission (IEC) standards and must meet field and lab calibration requirements.

Sound Zones

The residual or background sound level varies throughout the Regional District mainly due to residential use, transportation corridors, outdoor activities, commercial activity and industrial noise. Three sound zones are typically used to approximate these variances and strike a balance between accuracy, practicality and the impact of adjacencies between different uses and may be described as:

- **“Activity Zone”** - predominantly industrial use. Greatest amount of sound is permitted.
- **“Intermediate Zone”** - predominantly commercial and rural use. Moderate amount of sound permitted.
- **“Quiet Zone”** - predominantly residential use. Least amount of sound permitted.

Noise control bylaws tend to regulate noise taking into account adjacencies, i.e. they allow for more noise in the case of an industrial zone next to a residential zone, than two adjacent residential zones. Noise control bylaws also include guidelines for both daytime and nighttime noise.

To: EAAC
Report dated February 29, 2012
Subject: Noise Control Bylaw No. 908, 1990

Point of Reception (PoR)

Point of reception (PoR) means a position within the property line of the real property occupied by the recipient of a sound that best represents the location at which that specific sound, emanating from another property, is received. The PoR should be at least 1.2 meters from the surface of the ground and any other sound reflecting surface and outdoors, unless there is no PoR outdoors because the specific sound is within the same building or the wall of one premises is flush against another, in which case the PoR should be within the building where the specific sound is received.

Daytime Hours

Many noise control bylaws set different sound level limits for daytime and nighttime. It is recommended that daytime means from 7:00 am to 10:00 pm Monday through Saturday and from 10:00 am to 10:00 pm on a Sunday or holiday. Nighttime means any period of any day not specifically defined as daytime.

Permitted Sound Levels

The following permitted sound levels are based on limits set by several other jurisdictions in BC (refer to Appendix I):

In a Quiet Zone.

During the daytime the sound level must not exceed:

- 55 dBA or 65 dBC when received at a PoR in a Quiet Zone;
- 60 dBA or 70 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

During the nighttime the sound level must not exceed:

- 45 dBA or 55 dBC when received at a PoR in a Quiet Zone;
- 50 dBA or 60 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

In an Intermediate Zone.

During the daytime the sound level must not exceed:

- 60 dBA or 70 dBC when received at a PoR in a Quiet Zone;
- 60 dBA or 70 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

During the nighttime the sound level must not exceed:

- 50 dBA or 60 dBC when received at a PoR in a Quiet Zone;
- 50 dBA or 60 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

In an Activity Zone.

During the daytime the sound level must not exceed:

- 60 dBA or 70 dBC when received at a PoR in a Quiet Zone;
- 65 dBA or 75 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

During the nighttime the sound level must not exceed:

- 50 dBA or 60 dBC when received at a PoR in a Quiet Zone;
- 55 dBA or 65 dBC when received at a PoR in an Intermediate Zone; or
- 70 dBA or 80 dBC when received at a PoR in an Activity Zone.

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Exemptions

The current bylaw only allows exemptions for a person to perform works of an emergency nature or for agricultural purposes. The new bylaw may provide exemptions for the following:

- police, fire, ambulance and other emergency vehicles;
- horns or other signaling devices when used as a danger or warning signal;
- events where a person has received an exemption from the provision of the bylaw;
- bells, gongs or chimes by religious institutions;
- works and activities authorized by a School Board;
- parade, procession, performance, concert, ceremony providing an exemption has been granted;
- outdoor athletic activity that takes place between 8:00 am and 10:00 pm;
- works and activities authorized by the RDNO and conducted by its employees;
- garbage collection;
- lawn and garden equipment provided the use takes place between 7:00 am and 8:00 pm Monday through Saturday or between 10:00 am and 6:00 pm on a Sunday or holiday;
- construction provided that it does not exceed 85 dBA between the hours of 7:00 am and 8:00 pm Monday through Saturday and between 10:00 am and 6:00 pm on a Sunday or holiday;
- logging if it occurs greater than 500 metres from a residence, and
- normal farm practices as defined by and protected by the *Farm Practices Protection (Right to Farm) Act*.

A person may submit an application for an exemption or relaxation from the provisions of the bylaw in a form and with content satisfactory to the RDNO. The application should be received at least 60 days before the start of the exemption period.

FINANCIAL/BUDGETARY CONSIDERATIONS:

Implementation of the new approach would require the purchase of new equipment in the form of sound level meters designed to take L_{eq} measurements using both dBA and dBC weightings. It will also require lab calibration of equipment, training and documentation.

The estimated cost of each sound level meter is approximately \$2,000.00 to \$3,000.00. Accessories, such as field calibrators, tripods and cases, could increase the cost of each sound level meter by up to \$1,000.00, mostly due to the cost of a field calibrator. Each sound level meter should have a field calibrator so that field calibration can be performed immediately before and after each measurement.

Lab calibration can be conducted once every two years at a cost of approximately \$500.00 per sound level meter.

A one or two day training course for bylaw enforcement officers and RCMP will also be required. Ongoing training every few years and equipment maintenance will also add to the costs.

Another cost may be a reference manual that officers can refer to for guidance and increased prosecutions.

Fees could be collected for exemption or relaxation applications. Currently the fine for excessive noise is \$100.00. Fines could be increased to \$200.00 which is consistent with many other jurisdictions.

To: EAAC
Report dated February 29, 2012
Subject: Noise Control Bylaw No. 908, 1990

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Conclusion

As a result of this report, the age of the current bylaw, changes in sound, technology, measurement standards and methodology and the increase in noise related complaints, staff are of the view that significant changes are required to the current bylaw. A Draft Noise Bylaw is included in Appendix II. It is expected that the clear objective measurements will provide clear limitation for all parties involved and the subjective option, when the objective approach is not viable, will address many other noise complaints.

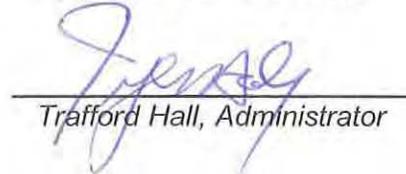
A new noise control bylaw may eliminate the requirement that two (2) or more complaints must be received prior to responding to complaints of excessive noise.

Submitted by:



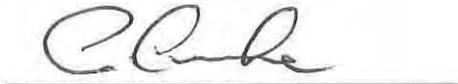
John Friesen
Bylaw Enforcement Officer

Approved For Inclusion:



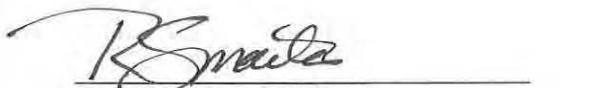
Trafford Hall, Administrator

Endorsed by:



Pat Luscombe, Manager
Building, Bylaw Enforcement

Endorsed by:



Rob Smailes, MCIP
General Manager, Planning and Building

Appendix I

Summary Table of Noise Bylaws from other Jurisdictions

City	Daytime Period	Daytime dBA (Quiet Zone)	Daytime dBA (Intermediate Zone)	Daytime dBA (ActivityZone)	Nighttime Period	Nighttime dBA (Quiet Zone)	Nighttime dBA (Intermediate Zone)	Nighttime dBA (ActivityZone)
Township of Langley	7:00 am to 10:00 pm	55 dBA		65 dBA	10:00 pm to 7:00 am	45 dBA		60 dBA
New Westminster	7:00 am to 10:00 pm	55 dBA		60 dBA	10:00 pm to 7:00 am	45 dBA		55 dBA
Burnaby	7:00 am to 10:00 pm	55 dBA		65 dBA	10:00 pm to 7:00 am	45 dBA		60 dBA
Victoria	7:00 am to 10:00 pm	55 dBA	60 dBA	70 dBA	10:00 pm to 7:00 am	45 dBA	55 dBA	70 dBA
Esquimalt	7:00 am to 10:00 pm	55 dBA	60 dBA	70 dBA	10:00 pm to 7:00 am	45 dBA	55 dBA	70 dBA
Richmond	7:00 am to 8:00 pm	55 dBA	60 dBA	70dBA	8:00 pm to 7:00 am	45 dBA	50 dBA	70 dBA
Central Kootenay RD	7:00 am to 10:00 pm	60 dBA	65 dBA	70 dBA	10:00 pm to 7:00 am	50 dBA	55 dBA	60 dBA