

Recommendations regarding revisions to existing municipal bylaws and creation of new bylaws governing residential lighting and noise.

I SUMMARY

North Vancouver District Mayor and Council are requested to create a comprehensive **Residential Light Abatement bylaw** to reduce the harmful light pollution created by excessive artificial lighting development as follows (of course, light abatement lighting legislation is also required for commercial and industrial properties but with considerably different requirements and limitations) :

- Implement a limit on the number of exterior soffit lights, security lights and other decorative or landscaping lights that may be installed on a residential property.
- Require that builders must install and wire all exterior soffit lights such that each quadrant (front, back, and sides plus upper storey and ground storey) is on a separate circuit and can be turned off as needed. Provide clear requirements for when exterior soffit and landscape lighting must be turned off at night or alternately, specify that where such exterior lighting disturbs the owners of adjacent properties, the lights must be turned off at night by 11:00 pm.
- Require that builders must install low luminescent soft light bulbs and where necessary when exterior lights may shine onto adjacent properties add light shields, in an effort to minimize light pooling, reflected light, and light trespass.
- Limit the number of security lights that a builder or owner can install on a residential property and require that security lights be shielded as well as set such that they are not so sensitive as to be triggered at the merest movement and thus disturb residents of adjacent properties.
- Clearly define decorative landscaping lighting. Where an owner chooses to use Christmas lights as decorative lighting outside of the Christmas period, establish a maximum number of strings of lights and type of light he may install and limit the times when these lights may be on (i.e. from dusk until 11 p.m.). Such lighting must not trespass on neighbouring properties.
- Ban the use of Christmas lights that are clear bulbs that produce a bright white light and intense illumination.
- Require that Christmas lights during the Christmas season (November 15-January 15 as already established, which is more than generous) and any other holiday decorative lighting (such as Halloween lighting - and it may be necessary to establish a reasonable period of time that Halloween decorations with lights in them can be put up and removed) must be turned off by 11p.m.

No existing residential home should be exempted from a new light abatement bylaw or grandfathered by previous bylaws.

Following is a detailed rationale for requesting a Light Abatement Bylaw together with supporting research that shows the substantial negative impact of light pollution on human and wildlife health as well as our environment. As well, it is worth noting that jurisdictions both here in Canada and elsewhere in the world that have adopted or that are looking to implement light abatement legislation.

Recommendations regarding revisions to existing municipal bylaws and creation of new bylaws governing residential lighting and noise.

At present, the District of North Vancouver does not have a separate, comprehensive **Light Abatement** bylaw. **All limitations and prohibitions with respect to light issues are covered minimally under the Nuisance Abatement Bylaw 7325 (effective Sept 2002) as follows:**

6d) No person shall allow an Outdoor Light [any light source that is not fully enclosed in a building or structure] to be placed or lit on a parcel such that the Light Source [a light bulb, light tube or flood lamp] is visible from a different parcel in a Residential Zone.

7. Every person who is the owner or occupier of Real Property or their agent shall prevent and abate nuisances on that property.

8. Without limiting the generality of section 7, every person who is the owner or occupier of Real Property or their agent shall

e) **ensure that an Outdoor Light on the Property is shielded** by a Shade [a non-transparent light shade that does not form part of a Light Source] or fixture **such that the Light Source is not visible from another parcel located in a Residential Zone.**

9. The prohibitions in section 6(e) and the requirement in section 8 (e) do not apply to...

a) Christmas or holiday lights between November 15 and January 15.

At the time that this bylaw was written or revised, which is now 16 years ago, residential homes in the District generally were illuminated on the exterior by a porch light, garage light sconces or lights, perhaps a couple of back garden lights and possibly a motion-activated security light. There was sufficient lighting accompanied by the street lights to provide ample security for our neighbourhoods.

More recently, particularly since 2012, much larger new homes have begun to replace older homes in many of our residential communities in the District as elsewhere. Many of these are spec homes built by developers many of whom give little if any consideration to blending in to the existing neighbourhood.

Of serious concern is the latest designer/architectural trend of installing an excessive number of soffit lights, landscaping lights, in addition to deck and other exterior lights as well as motion-activated security lights. The majority of these are purely an architectural or rather designer element, serving no other purpose than **to broadly illuminate the house;** the lights in such numbers are causing major intrusions onto neighbouring properties in the form of light pooling, light trespass and light pollution. [With the two homes built during the past three years at 2705 Edgemont Blvd and 2646 Newmarket Drive, adjacent and beside our home, each home has between 50-70 exterior soffit and other outdoor lights, and that does not include the motion-activated security lights, in-ground landscaping lights and other illumination such as Christmas/holiday lights. At the back of one of these houses the builder installed a large fountain water feature with a **pulsating coloured light that reflected off the back of the house at night** - this feature has fortunately since been removed]

In a good number of instances the soffit lighting, besides being very bright, is installed such that they are all wired on a single or just two circuits rather than the front, back and sides and upper and lower level lights being wired on separate circuits. This prevents the property owner from programming the exterior soffits (as now these homes are run on computer programs that can also be controlled remotely) on individual sides of the house so that they can be switched off. As a consequence where the soffit lighting is creating a substantial light trespass onto neighbouring properties, the property owner must either turn off all the lights or at best only the upper or lower lights. (it is possible, and well worth noting, however, to have these on separate circuits as the developer of 2705 Edgemont has done).

Therefore, **our light abatement bylaw should require that home builders install such exterior lighting such that each side and upper and lower storeys be on separate circuits.** There should also be a limit with respect to the number of soffit lights that can be installed on a home: **at present there is no limit and so we have some homes sporting 70-80 with twelve to each side on upper and lower levels which is grossly excessive.**

Some exterior soffit lighting is muted or dimmed and thus provides the desired security and architectural illumination at night, while significantly reducing light trespass beyond the immediate vicinity of the owner's property (for example see 2815 Newmarket). Where exterior lighting including soffit lighting illuminates and trespasses onto neighbouring properties, either a dimming feature or lower luminescent bulbs should be required. Another option is having the builders install shades or partial covers on the individual light sources; however, **a major problem is the spill light or reflected light bouncing off the eaves and walls that create as much light trespass or light pooling as the actual light bulbs,** so such shades or covers do not mitigate the problem.

In addition to requiring residential homebuilders in the District to adhere to installation and wiring regulations, our light abatement bylaw needs to address the hours during which such superfluous exterior lights may be turned on and off, especially at night, as well as the matter of leaving Christmas lights (which are now being used as "Holiday" lights or "Landscaping Lights" all year round) on beyond the designated and quite generous Christmas period covered in the existing District bylaw. We must be clear in defining what night-time lighting is reasonable for security purposes in order to prevent excessive abuse of exterior lighting. [Our neighbours beside us since moving into the new house in late November 2018 have been leaving all of their exterior lights including Christmas lights on all the perimeter hedging and landscaping trees all night despite repeated efforts of politely requesting, both face-to-face and through email, that they turn off the lights directly beside our home through the night; the light trespass into our home and over all our property is substantial and has considerably disturbed our sleep, our health and quality of living and enjoyment of our home]

It is reasonable for exterior soffit lights and in-ground landscaping lighting on residential homes to be permitted to be on from dusk until 10:30 or 11:00 pm. and to remain off for the duration of night-time (which means that in winter-time the lights may not be turned back on in the morning prior to 8:00 a.m.) Other lights such as front and back porch fixtures, garage sconces, and motion-activated lights should be able to ensure sufficient security through the night if indeed necessary, providing these do not unnecessarily direct light towards and disturb neighbouring properties.

With respect to holiday decorative lighting, our current bylaws permit Christmas lights, [which are defined as a string of clear or coloured electric lights] between November 15 and January 15. However, **some people are now using Christmas lights as decorative "landscaping lights" all year round.** There is no problem with this when it involves a couple of strings of Christmas lights on a small shrub or two provided the lights are not bright and do not shine directly onto neighbouring properties, but there needs to be a clear limit on this type of use. We also require specific guidelines on the use of other holiday lighting and illuminated decorations such as those that are being used at Halloween. It is surely reasonable that resi-

dents **be required to turn off all decorative holiday lights at night.** The highly intense and very bright clear white exterior LED lights should be banned as they are tremendously intrusive.

Highly reputable academic and scientific studies have shown that artificial light pollution and light trespass is harmful not only to human health but also to the health of wildlife, notably nocturnal animals and birds, as well as trees and other aspects of our natural environment. Exposure to such inescapable artificial light during the night interrupts or suppresses the human body's production of melatonin necessary for a healthy immune system and is linked to serious health effect and risks such as increased or chronic headaches, fatigue, stress, anxiety as well as longer-term illnesses.

It has frequently been reported that exposure to artificial light at night (ALAN) may cause negative health effects, such as breast cancer, circadian phase disruption and sleep disorders. Here, we reviewed the literature assessing the effects of human exposure to ALAN in order to list the health effects of various aspects of ALAN. Several electronic databases were searched for articles, published through August 2014, related to assessing the effects of exposure to ALAN on human health; these also included the details of experiments on such exposure. A total of 85 articles were included in the review. Several observational studies showed that outdoor ALAN levels are a risk factor for breast cancer and reported that indoor light intensity and individual lighting habits were relevant to this risk. Exposure to artificial bright light during the nighttime suppresses melatonin secretion, increases sleep onset latency (SOL) and increases alertness. Circadian misalignment caused by chronic ALAN exposure may have negative effects on the psychological, cardiovascular and/or metabolic functions. ALAN also causes circadian phase disruption, which increases with longer duration of exposure and with exposure later in the evening. It has also been reported that shorter wavelengths of light preferentially disturb melatonin secretion and cause circadian phase shifts, even if the light is not bright. This literature review may be helpful to understand the health effects of ALAN exposure and suggests that it is necessary to consider various characteristics of artificial light, beyond mere intensity. (Abstract from the US National Library of Medicine/ National Institutes of Health)

According to a Harvard study “Even dim light can interfere with a person's circadian rhythm and melatonin secretion. A mere eight lux—a level of brightness exceeded by most table lamps and about twice that of a night light—has an effect, notes Stephen Lockley, a Harvard sleep researcher. Light at night is part of the reason so many people don't get enough sleep, says Lockley, and researchers have linked short sleep to increased risk for depression, as well as diabetes and cardiovascular problems.

While one can install blackout window coverings to block out some artificial light, it is surely not reasonable to expect people to have to resort to doing so for all windows just because a neighbour insists on leaving an excessive of exterior lights on all night and day.

Some residents may cite a concern for security and prevention of break-ins for their desire to leave their lights on all night. While our sense of security is of course very important, it is worth noting that excessive lighting during the night is quite unnecessary and can in fact result in the opposite of what one wants to achieve. The Royal Astronomical Society of Canada (Dark Sky org) points out in their “Responsible Lighting” brochure that Crime studies show that “*there is no relationship between lighting and crime - lighting only reduces our **fear** of crime. Alarms, signs of occupancy among other indications that people are at home are deterrents and in fact police data both here and in the United States show that most break-ins occur when the occupants are away (house break-ins during the day and business break-ins during the night) .*” Furthermore, our District is distinguished as one of the safest in the Lower Mainland. One can also add that the majority of these new homes have fairly sophisticated video surveillance cameras and security alarm systems.

Yet another very clear reason to enact a Light Abatement Bylaw is for the conservation of energy and reduction of carbon emissions. Excessive lighting is a tremendous waste of energy even with high effi-

ciency light bulbs. We need to work towards reducing energy consumption and light pollution, not allow it to increase exponentially as is happening now with the construction of so many of these new designer homes.

A further major reason to create a comprehensive light bylaw is that artificial light at night has a substantial negative impact on our natural environment. Just like humans, natural darkness is essential to animals for their survival, regulating their natural cycles as it does ours. Scientific studies are showing that light pollution is significantly affecting birds, insects, bats and other nocturnal animals: artificial light can interfere with their migration, feeding, and courtship patterns, as well as their immune systems. Artificial light weakens other elements of our ecosystem. Trees for example exposed to unrelenting artificial light may become diseased and die; at best vegetation exposed to excessive light will be weaker and subject to producing blooms or new growth unnaturally.

And of course, another reason to reduce our light pollution is that we would like to be able to enjoy our night skies and be able to see the stars and planets, the meteor showers, lunar eclipses, and Aurora Borealis, that with artificial light pollution at night are sadly diminished.

Increasingly, municipal jurisdictions around the world are recognizing the serious consequences of light pollution and implementing light abatement laws to restrict the overuse of artificial lighting. Many European cities have had such laws for years, while in North America 18 states in the USA have enacted light pollution abatement laws and other have "Dark Skies" legislation or are also drafting comprehensive laws. Here in Canada, according to a 2013 report by Nicole Mortillaro of Global News, several communities across the country already have lighting bylaws. "Richmond Hill, Ont. was the first to put one in place, largely due to the location of the David Dunlap Observatory. But many other communities have followed suit, including Mississippi Mills, Ont., Banff, Alta., Hanwell, N.B., and Saanich, B.C. Calgary has recently moved ahead with its own plans to curb light pollution. There are also roughly 14 dark-sky preserves across the country, including Torrance Barrens, Ont., the first of its kind in Canada and Jasper National Park, Alta., Grasslands National Park, Sask., Kejimikujik National Park, N.S., as well as Fundy National Park, N.B."

Therefore, we must not wait to implement comparable light abatement laws in our community. At present, an older home in our District is bulldozed to make way for a new house almost every day and as long as there are no clear rules for developers, builders, and residents - especially of these new homes - with respect to lighting, increasingly we will be placing the citizens of our community, our wildlife, and our environment in jeopardy not to mention depriving neighbours of their right to not be disturbed by lighting excesses. We must also clearly not permit existing homes to be exempt from our bylaws.

When I initially raised my concern about lighting issues with Mayor Walton nearly three years ago, I was given very little satisfaction that our District was addressing this as a very real and legitimate problem. There are a couple of councillors who have been very supportive and many other neighbours, community associations, friends and family who are appalled by the fact that we have almost nothing to prevent light abuse or where we do, have no one among our District staff willing to apply the appropriate laws. With only a rare exception (that being the offending neighbours!) everyone I have spoken to are therefore in complete agreement that we need to enact a light abatement policy/bylaw.

I have done my research that supports light abatement legislation and shows that many other jurisdictions have such legislation. And I have written to our provincial government premier and several MLAs and the Minister for Municipal Affairs and Housing, all of whom acknowledged my

concern and agreed with me. The latter responded stating that it was the responsibility of the municipality to establish the appropriate bylaws, that such issues did not fall under the responsibility of the provincial Building Standards or any other office as our own District staff had claimed. It is therefore time to act quickly in developing a District Light Abatement bylaw.

SUMMARY

Mayor and Council are requested to create a comprehensive Residential Light Abatement bylaw to reduce the harmful light pollution created by excessive artificial lighting development as follows (of course, light abatement lighting legislation is also required for commercial and industrial properties but with considerably different requirements and limitations) :

- Implement a limit on the number of exterior soffit lights, security lights and other decorative or landscaping lights that may be installed on a residential property.
- Require that builders must install and wire all exterior lights such that each quadrant (front, back, and sides plus upper storey and ground storey) is on a separate circuit and can be turned off as needed. Provide clear requirements for when exterior soffit and landscape lighting must be turned off at night or alternately, specify that where such exterior lighting disturbs the owners of adjacent properties, the lights must be turned off at night by 11:00 pm.
- Require that builders must install low luminescent soft light bulbs and where necessary when exterior lights may shine onto adjacent properties add light shields, in an effort to minimize light pooling, reflected light, and light trespass.
- Limit the number of security lights that a builder or owner can install on a residential property and require that security lights be shielded as well as set such that they are not so sensitive as to be triggered at the merest movement and thus disturb residents of adjacent properties.
- Clearly define decorative landscaping lighting. Where an owner chooses to use Christmas lights as decorative lighting outside of the Christmas period, establish a maximum number of strings of lights and type of light he may install and limit the times when these lights may be on (i.e. from dusk until 11 p.m.). Such lighting must not trespass on neighbouring properties.
- Ban the use of Christmas lights that are clear bulbs that produce a bright white light and intense illumination.
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Huntsville's light pollution abatement bylaw January 2016

Recommendations regarding revisions to existing municipal bylaws and creation of new bylaws governing residential lighting and noise.

II SUMMARY

The District of North Vancouver Mayor and Council are requested to amend existing Residential **Noise and Nuisance bylaws** to address the growing nuisance of installations of noise-producing fans, air-conditioning units, backup generators, water and spa facilities, fountains, and outdoor entertainment units, particularly in new residential development. Clear guidelines limiting and specifying the location and placement of these devices are required as well as the hours permitted for the operation of such devices.

- No appliances or fan units that include HVAC, heat-coil units for air-conditioning or heating, DWDI fans, Axial fans, wok-kitchen fans should be permitted to be installed in the corridors between houses. All such units should require baffle blankets and some structural means of buffering or absorbing the noise they produce when in operation.
- No backup generators should be permitted to be installed in the corridors between houses. Notwithstanding the noise these produce, particularly if there is a prolonged power outage, backup diesel generators produce toxic carbon monoxide gas. Testing of generators should be restricted to weekday hours, not evenings, early mornings, weekends or stat holidays.
- Spas, hot tubs and swimming pools and their pump houses or sheds should not be permitted to be built abutting a property boundary. Placement and installation should take into consideration the property boundaries and proximity of neighbours and where possible, installed where it will have the least impact on neighbouring residents.
- Waterfall features and fountains should be permitted to operate only until 9 pm.
- Outdoor entertainment including televisions, radios, music devices, and speakers should be prohibited. This form of noise is merely amplified outdoors and is extremely invasive for surrounding neighbours.

Following is a detailed rationale for requesting amendments to our existing Noise and Nuisance Bylaws together with supporting research that shows the substantial negative impact of noise pollution on human and wildlife health as well as our environment.

II: NOISE ABATEMENT

A large proportion of new designer spec homes being constructed have installations of various fan units that produce unreasonable noise, especially when these units are in operation simultaneously. These fan units include HVAC, heat-coil units for air-conditioning or heating, DWDI fans, Axial fans, wok-kitchen fans, and others. Where these units are located in corridors between homes the sound is amplified. As well, even if the noise they produce individually may fall within the guidelines for acceptable noise, together they do not. Furthermore, many produce a low frequency hum that has been shown to affect human health. Builders should be required to locate such units where they will have the least impact on neighbouring properties and then should be fitted with sound-blocking devices. Certainly where these fan units do disturb other residents, particularly at night, clear limits as to the hours these units may operate should be incorporated into our bylaws.

At present the noise bylaw for the District of North Vancouver, Noise Regulation Bylaw 7188 effective 2000, includes the following:

3. No person, including an owner or occupier of real property, shall make or cause, or permit to be made or caused, any noise or sound which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of the neighbourhood or of persons in the vicinity or which exceeds the Sound Level.

5. (b) any of the following noises or sounds during the Night, where such noise or sound is audible from Premises other than the Premises from which the noise or sound originates:

(8163)

(i) a Construction Noise, except where an exemption has been issued pursuant to section 8 of this bylaw;

(8163)

(ii) a power lawn mower, power garden tool, or other power tools; or (7215, 8163)

(iii) noise or sound from mechanical equipment, including heat pumps, ventilation equipment, air conditioning systems, vents or pool or hot tub pumps, compactors or other ancillary equipment or vehicles;

(7334, 8163)

5. (d) any noises or sounds, where audible from a Premise other than the Premises from which such noise or sound originates, the occurrence of which extends continuously or discontinuously for 15 minutes or more, created by the following: (8163)

(i) gathering of two or more persons, where at least one human voice is raised beyond the level of ordinary conversation;

(ii) a dog or any other animal or bird;

(iii) a radio, music/audio player, television, sound playback device, musical instrument or any other instrument or apparatus for the production or amplification of sound;

5. (f) any noise that exceeds the Sound Levels set out below: (7334, 8163)

(i) any Continuous Sound that exceeds the following Sound Levels at the Point of Reception:

Document: 198056

Sound Level

a. in a Quiet Zone during the Day 55

- b. in a Quiet Zone during the Night 45
- c. in an Activity Zone during the Day 60
- d. in an Activity Zone during the Night 55;
- (ii) any Non-Continuous Sound that exceeds the following Sound Levels at the Point of Reception:
 - a. during the Day 80
 - b. during the Night 75;

IMPORTANT: While measurements of noise being produced by just one appliance such as an HVAC system or by a backup generator may in fact fall within what is deemed an acceptable level of noise, the reality now is that where there are several appliances - fans, pumps, generators - in operation at the same time, the cumulative noise is in excess of what is regarded as acceptable. For example, with an extended power outage, there could be the backup generator coupled with the HVAC system (or indeed even more appliances) running simultaneously. Regularly our neighbour has his HVAC/air con fans going at the same time as the dryer, the wok kitchen fan and the hot tub pump and jets, the cumulative effect of which is an unbearable level of continuous noise. If at the same time he has his outdoor entertainment system going and is entertaining, we are driven out of our property! This is NOT acceptable.

We need to have an update bylaw in place that spec home builders will have to adhere to in designing and constructing new homes that takes into consideration the impact of all these extra appliances on neighbouring properties.

Backup Generators

As well as fan units, developers of many new homes as well as residents of older homes are installing back-up diesel generators. Given that a majority of our power lines in the District are above ground, they are much more vulnerable during storms during which falling trees often take out the power. While power outages may be temporary and last an hour or two, longer outages have occurred on quite a number of occasions when the power has been off for as much as 24-36 hours. It is therefore not surprising that people wish to have back-up generators. There are certainly very reasonable and valid reasons for backup generators. There are people who must have electric power to run medical equipment for example. During very to weather, the elderly and young children may require a generator to run air-conditioning. Some homes in our District may require a generator to run necessary sump pumps. Then there are those who depend on power to maintain their home businesses. There are our fridges and freezers, our furnaces and so on that run on electrical power; generally though, a refrigerator will keep food cold for about 4 hours if it is unopened. A full freezer will keep the temperature for approximately 48 hours (24 hours if it is half full) if the door remains closed. Some people may cite security as a reason for having a generator, especially now that many new homes rely on power to run computer-programmed systems. Generally speaking though, most of us can put up with the inconvenience of a brief power outage, notably if it is a scheduled one and/or occurs during the day.

These generators operate at continuous noise levels of 55-70 decibels (our neighbour's generator was reading a steady 65decibels from indoors at the opposite side of our home from the generator and a full-on 80 decibels before it was tuned and then tested by District bylaw personnel).

*“Most generators are labeled with a decibel rating. For every increase in **10 decibels**, the noise level is 10 times more powerful. A generator that runs at 70 decibels is ten times as loud as a generator that runs at 60 decibels.”*

However, again as with the other fan units, these generators should not be permitted to be placed in the corridors between houses not only because of the noise they produce but also because of the harmful exhaust they emanate.

(following is from Norwall Power Systems)

The exhaust gases produced by a generator contain deadly carbon monoxide and that is yet another consideration for location.

Some general guidelines include placing your standby generator where prevailing winds will blow the exhaust away from the home. Keep the generator away from bedrooms, living areas, and where the noise won't bother your neighbors. All locations must be at least five feet away from openings such as windows, soffit vents, and doorways.

Never locate the generator under an overhang, in a breezeway, or in recesses blocked by trees, shrubs or other vegetation. Avoid areas subject to snow drifts and protect the generator from pets, animals, people, and traffic.

Standard required clearances include five feet from any house opening and three feet from flammable materials. NFPA code, house siding materials, and manufacturer certifications govern the minimum distance between the home and the back of the generator. 18 inches is the new standard, but local code authorities have the final say.

Never locate the generator anyplace that might allow exhaust gases to accumulate, under a roof of any kind, or inside any kind of building.

Even if your generator is quiet, turning it off at night is polite and friendly.

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(Calgary Noise Bylaw 5M2004/52M2014, 2014 September 22)

No Person shall operate or permit to be operated an air conditioner, fan, central vacuum system or generator that causes a Continuous Sound that exceeds the greater of the following Sound Levels:

- (a) 70 decibels (dBC) Leq measured over a one (1) hour period during the Day-time; or*
- (b) 60 decibels (dBC) Leq measured over a one (1) hour period during the Night-time; at any Point of Reception within a Residential Development.*

In addition, there should be limitations on the hours a backup generator can operate continuously; essential power backup requirements could be met with special permitting (as for example

for medical reasons). Where the generators produce excessive noise that will seriously disturb other neighbours during the night, our bylaws should require that the appliances be turned off between 11:00 pm and 6:00 or 7:00 am. Our recent experience with the neighbours whose backup generator kicked in during a scheduled daytime summer power outage operated continuously for about 6-7 hours and necessitated that we had to leave our property to escape the extremely loud noise - as I stated in an email to the District "through the six and a half hours, we measured the unremitting noise at between 65-70 decibels indoors and in excess of 80 decibels outdoors. Our neighbour behind us was also disturbed and while talking to a couple of the neighbours on the other side of us, four houses up the street we could hear the generator going. We would have to leave our home to sleep if this were to happen during the night. Indeed, there was a more recent power outage that started at 3:30 a.m. The backup generator next door kicked in immediately and continued through until power was restored around 6:30 a.m. Despite best efforts to put in ear plugs, pull pillows over our heads, in an attempt to return to sleep, we finally just got up and took our dog for a walk at 4:45 a.m.. The entire neighbourhood was quiet and dark except for our neighbour's house that was as usual lit up to excess and noisy with the generator running for no other reason than to keep all the lights and electronics going, not for any serious need.

While it may be recommended that generators be regularly tested, we need to establish what periods of time are reasonable and necessary. Currently our neighbour is testing his generator weekly on a Sunday morning beginning a couple minutes after 9:00 a.m. which is neither necessary nor reasonable especially given that it disturbs everyone in the neighbourhood on a weekend morning when some may have chosen to sleep in. A time mid-day during the week would be far more appropriate - just not evenings, early mornings or on weekends.

Air conditioning/Heat Exchange pumps/Wok kitchen fans and other ventilation and heating appliances

These days many of the new homes being built have ventilation, heating and cooling systems dependent on exterior installations that are far noisier than conventional indoor furnaces. In our west coast climate, we generally have only a few days a year that warrant operating an air-conditioner and most often here in North Vancouver, temperatures cool off at night anyway. Most people can manage quite well without any form of air-conditioning; electric fans usually are a worthwhile substitute.

Granted that these newer systems may be more efficient, but builders/developers are not giving the necessary consideration with respect to placement of the vents, pumps and other equipment installed outside the home and no effort is made to provide any sound protection or barrier to reduce noise. The design/floor plan configuration of a new house may need to be changed dependent on the proximity of adjacent homes to minimize impact on surrounding neighbours. In the building approval process, the location of these appliances should be carefully assessed. We need clear and specific guidelines that will insure placement is where these will least affect or disturb surrounding neighbours, particularly through the night. The appliances should not be allowed in the narrow corridors between homes or beneath overhangs where sound will be amplified. Exhaust fans such as Wok fans that emit unpleasant odors as well as noise should be located where odors and noise will least affect adjacent properties.

Another issue with heat exchange and air-conditioning units is that when they run all night, while perhaps not in excess of the acceptable noise level, they can produce a continuous low frequency noise that can be physical irritating to people who have sensitive hearing. Such low frequencies can be actually felt as well as heard and noise cancelling earphone or earplugs do not sufficiently eliminate the disturbing sound.

Imagine what it is like living right beside a house with five or six noise producing appliances lined up along the side of the house in the narrow corridor between the houses! When more

than one of these is in operation the cumulative noise is unacceptable. Then add in the hot tub pump, jets, music, human noise of voices talking or shouting, and it is unbearable such that we cannot remain outside on our deck to enjoy a summer evening.

Hot Tub, Spa and Swimming Pool Furnaces, Pumps and Operation

Another source of noise is from swimming pool, spa and hot tub furnaces and pumps, jets and so on. There are good quality pumps that are very quiet and there are poor quality pumps that are extremely noisy. Of course placement or location of these appliances is crucial; where they are installed albeit in sheds or cabanas along property boundaries with other neighbours, they can be yet another source of nuisance noise, especially if the pumps and jets are left on for prolonged periods (and then of course there is the noise from the individuals in the pools or hot tubs!). Fences tend to act as sound boards that amplify noise. Therefore our bylaws should require that recreational pool and hot tub pumps and furnaces be contained in a shed structure that is constructed to minimize sound and located several feet/meters away from property boundaries.

Outdoor Entertainment and Water Features

Besides all the aforementioned appliances that new home builders are installing, they are also putting in outdoor entertainment systems and noisy water features.

Outdoor entertainment systems are for the most part installed in covered deck areas. These include stereo equipment as well as outdoor televisions, and in some instances all can be activated remotely with a phone or computer app. as we discovered when our neighbour's music came on very loudly a couple of times one night around 11:00 and 11:45 p.m. on a weekday. He claimed it was the fault of his Iphone.

Televisions and music when operated outdoors at the same volume that one might use indoors can be unnecessarily loud, the sound carrying more. Within the confines of a covered deck the sound is also amplified. Should we ask: why is it necessary to have outdoor entertainment systems at all?

Quite a number of new homes being built by developers are incorporating water features (in addition to pools and hot tub spas) such as waterfalls and fountains that may serve more than an aesthetic purpose; for example, the flow of water may cloak the sound of traffic at certain times of the day. However the sound of the water can also be yet another source of perpetual noise that contributes to a pervasive and irritating sound level that detracts from the natural sounds of our environment, such as birdsong, or even near silence. Again such features should be placed such that the sound does not disturb neighbours, most especially at night.

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SUMMARY

The District of North Vancouver Mayor and Council are requested to amend existing Residential Noise and Nuisance bylaws to address the growing nuisance of installations of noise-producing fans, air-conditioning units, backup generators, water and spa facilities, fountains, and outdoor entertainment units, particularly in new residential development. Clear guidelines limiting and specifying the location and placement of these devices are required as well as the hours permitted for the operation of such devices.

- No appliances or fan units that include HVAC, heat-coil units for air-conditioning or heating, DWDI fans, Axial fans, wok-kitchen fans should be permitted to be installed in the corridors between houses. All such units should require baffle blankets and some structural means of buffering or absorbing the noise they produce when in operation.
- No backup generators should be permitted to be installed in the corridors between houses. Notwithstanding the noise these produce, particularly if there is a prolonged power outage, backup diesel generators produce toxic carbon monoxide gas. Testing of generators should be restricted to weekday hours, not evenings, early mornings, weekends or stat holidays.
- Spas, hot tubs and swimming pools and their pump houses or sheds should not be permitted to be built abutting a property boundary. Placement and installation should take into consideration the property boundaries and proximity of neighbours and where possible, installed where it will have the least impact on neighbouring residents.
- Waterfall features and fountains should be permitted to operate only until 9 pm.
- Outdoor entertainment including televisions, radios, music devices, and speakers should be prohibited. This form of noise is merely amplified outdoors and is extremely invasive for surrounding neighbours.

Perhaps we should consider a Good-Neighbour Bylaw or policy similar to the one developed for builders, developers, contractors and construction workers??

