

STRATHCONA COUNTY
ENFORCEMENT SERVICES
2020 Excessive Vehicle Noise Review



STRATHCONA COUNTY

People Are The Most Important Part Of Our Community
Together We Thrive





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EXECUTIVE SUMMARY

Strathcona County Enforcement Services
Strathcona County Detachment
Sherwood Park, Alberta, Canada

This document is an analysis of methods and means to address the complaints Strathcona County RCMP and Enforcement Services have received regarding vehicle noise in Strathcona County, along with addressing Council requests originating from the citizens of Strathcona County. This report will show how neighboring communities are reacting to similar issues, what standards and laws are in place to currently deal with the issues, what has been done in the past, and what Strathcona County can expect from us moving forward.

As we move through this, it is important to note our department's focus and goal is to ensure Strathcona County is Canada's most livable community. Set in the centre of Alberta's energy and agricultural heartland, Strathcona County is a thriving, successful, and vibrant community of over 98,000 residents. Strathcona County is made up of the urban area of Sherwood Park and a large adjacent rural area of farms, acreages and smaller hamlets. It is home to 75 per cent of refining in Western Canada. With a focus on economic, governance, social, cultural and environmental sustainability, Strathcona County is committed to balancing the unique needs of its diverse community.

With this in mind, Strathcona County RCMP and Enforcement Services is committed to working diligently to efficiently and amicably resolve issues affecting our citizens, in this case, the repose, health, peace, and safety of persons within Strathcona County.

Noise, according to the World Health Organization (WHO), is second only to air pollution in the impact it has on health. It is a major cause, not only of hearing loss, but also of heart disease, learning problems in children, and sleep disturbance.



CAUSES OF NOISE

SPEED:

Traffic noise is affected significantly by vehicle speeds, since sound energy roughly doubles for each increment of 16kms in vehicle velocity; an exception to this rule occurs at very low speeds where braking and acceleration noise dominate over aerodynamic noise.

VEHICLES:

Trucks contribute a disproportionate amount of noise, not only because of their large engines, but also the height of the diesel stack and the aerodynamic drag.

SURFACES:

Roadway surface types contribute to different noise levels. Of the common types of surfaces in modern cities, there is a 4dB difference between the loudest and the softest: chip seal and grooved roads being the loudest, concrete surfaces without spacers being the quietest, and asphaltic surfaces being about average.

TIRES:

Tire types can cause 10 dB variations in noise, based on a 2001 sample of 100 commercially available tires. Tire labelling for noise, grip, and rolling resistance have been widely introduced in Europe with noisy tires being taxed.

GEOMETRY:

Roadway geometrics and surrounding terrain are interrelated, since the propagation of sound is sensitive to the overall geometry and must consider diffraction (bending of sound waves around obstacles), reflection, ground wave attenuation, spreading loss and refraction. Simply put, sound will be diminished when the path of sound is blocked by terrain, or can be enhanced if the roadway is elevated which results in the noise being broadcast. There are, however, many variables and exceptions to this case.

WIND:

Sound waves can be refracted by wind, at times dismissing the effect of barriers or terrain variances.

TRAFFIC INTERSECTIONS:

It is well known that the specific deceleration and acceleration dynamics of traffic at intersections can cause different noise levels than free flow traffic on open road segments. In addition, each intersection type has uniquely distributed and different traffic flow speed, stop and go, deceleration, and acceleration. As the county has grown and traffic volume increased, additional intersections and areas of acceleration and deceleration have also increased.

OBSTACLES:

The geometry of area structures may be an important cause of noise. The presence of buildings or walls can block sound under certain circumstances; however, reflective properties can also augment sound at other locations.

Taking all of these factors into consideration, it is clear there are strong individual economic and political pressures for quieter vehicles. Many owners see quieter vehicles as more luxurious and less stressful. On the other hand, we have recently seen many individual owners of motorcycles, cars with very loud music systems, modified exhaust systems, and muscle cars, prefer their vehicles to be louder. These appear to be only controlled by on-going inspections and sanctions. A point of interest is the fact car manufacturers also deliver vehicles from the factory with very loud exhaust systems. Exotic cars such as Lamborghinis and Ferraris deliver a high level of sound from their factory exhaust system. Several domestic cars also have very loud factory direct exhaust systems currently in production and in use on our streets.

NOISE CHART
COMPARITIVE EXAMPLES OF NOISE LEVELS

<u>Noise Source</u>	<u>Decibel Level</u>	<u>Decibel Effect</u>
Jet take off (at 25 meters)	150	Eardrum rupture
Aircraft carrier deck	140	
Military jet aircraft take off from aircraft carrier with afterburner at 15 meters	130	
Thunderclap, chain saw	120	Painful. 32 times as loud as 70 dB
Steel mill, live rock music	110	Average human pain threshold. 16 times as 70 dB.
Jet take off at 305 meters, power lawn mower, 100 garbage truck, Bell J-2A helicopter at 31 m		8 times as loud as 70dB Serious damage possible 8hr exposure
Boeing 737 or DC-9 aircraft at one nautical mile (1853 m) before landing, motorcycle at 8 m	90	4 times as loud as 70 dB Likely damage in 8hr exposure
Garbage disposal, freight train at 15 meters, average factory	80	2 times as loud as 70dB Possible damage in 8 hour exposure
Passenger car at 104kph at 8 m , vacuum cleaner, radio or TV audio	70	Arbitrary base of comparison. Upper 70's are annoyingly loud to some people.
Conversation in restaurant, office, background music	60	Half as loud as 70dB. Fairly quiet.

Quiet suburb, conversation at home	50	One-fourth as loud as 70 dB.
Library, lowest limit of urban ambient sound	40	One-eighth as loud as 70 dB.
Quiet rural area	30	One-sixteenth as loud as 70 dB.
Whisper, rustling leaves	20	
Breathing	10	Barely audible

Exotic Automobiles
Decibel Reading

Ferrari F50	102 dB
Mosler MT900S	100 dB
Ferrari F40	99 dB
Saleen S7 Twin Turbo	96 dB
Ferrari 360 Challenge Stradale	93 dB
Saleen S7	92 dB
Ferrari Enzo	91 dB
Lotus Elise S2	91 dB
Porsche Carrera GT	90 dB

MOTORCYCLE NOISE LIMITS BY PROVINCE

AAA Digest of Motor Laws

Alberta

- No provincial motorcycle noise limits

British Columbia

- A motorcycle must have a properly functioning muffler.

Manitoba

- No province-wide noise restriction

New Brunswick

- The city of Bathurst has a law limiting motorcycle exhaust noise to 92 decibels.

Newfoundland and Labrador

- No province-wide motorcycle noise limit restriction.

Northwest Territories

The following applies to motorcycles.

- No person may operate a vehicle unless the muffler on the exhaust system is designed to prevent unnecessary engine noise.

Nova Scotia

The following applies to motorcycles.

- A person may not start, drive, turn, or stop any motor vehicle in a manner which causes any loud and unnecessary noise from the engine, exhaust, or braking system or from the contact of tires with the roadway.

Nunavut

The following applies to motorcycles.

- No person shall operate a motor vehicle on highway in any manner that causes a loud or unnecessary noise from the exhaust or braking system of the vehicle or from the contact of the tires of the vehicle with the highway. Local municipal councils may set local noise limits.

Ontario

The following applies to motorcycles.

- Every motor vehicle or motor assisted bicycle must be equipped with a muffler in good working order and in constant operation to prevent excessive or unusual noise and excessive smoke. No person may use a muffler cut-out, straight exhaust, gutted muffler, Hollywood muffler, by-pass, or similar device on a motor vehicle or motor-assisted bicycle.

Prince Edward Island

- There is no province-wide motorcycle noise limit law.

Quebec

- No province-wide motorcycle noise limits restriction. Motorcyclists may be ticketed by a peace officer if the noise from a motorcycle is deemed excessive.

Saskatchewan

- A motorcycle must have 1 or more mufflers that ensure exhaust gases are cooled, and that effectively reduce combustion noise.

Yukon

The following applies to motorcycles.

- No person may create or cause the emission of any loud and unnecessary noise from the motor vehicle, any part thereof, or anything or substance that the motor vehicle or part of the motor vehicle comes into contact with.
- No person may operate a vehicle on a residential street within a municipality between the hours of 10p.m. and 7a.m. so as to disturb residents of that street unduly.
- Every motor vehicle propelled by an internal combustion engine must be equipped with a properly functioning muffler.

RECENT REPORTING HISTORY TO COUNCIL

2015 Strathcona County Council Communication

On July 1, 2015 our office provided the following report to Councillor Delainey, E Team, and Legislative Officer.

Strathcona County RCMP and Enforcement Services continue to take a proactive role in the enforcement of excessive vehicle noise. This enforcement is not limited to motorcycles, but also encompasses cars, small trucks, and large commercial carriers. In the majority of cases, the charges are ancillary to other violations detected by our officers and noisy vehicles continue to be a major focus of all vehicle equipment checks. In 2015, Strathcona County RCMP and Enforcement Services laid in excess of 80 charges under the Traffic Safety Act, which pertained to faulty or modified exhaust causing excessive noise.

At present, violators are charged under Section 61 of the Vehicle Equipment Regulations of the Traffic Safety Act. The evidentiary grounds for conviction are based on subjective observance and experience of the investigator to conclude the noise exceeds proper levels and thus, the current rate of conviction in court varies. Conversely, municipalities that have implemented bylaws that utilize technological equipment to measure excessive volume have experienced challenges in court pertaining to equipment certifications and up to date officer training as well as road-side equipment failure.

A decibel specific bylaw implemented by Strathcona County is not favourable when factoring in training, equipment purchases, maintenance, and certifications. The detriments posed by initial cost, long term maintenance, and on-going training if such a bylaw were enacted could certainly outweigh the benefits to the citizens of Strathcona County. In the long term, such a bylaw may or may not deter motorists from driving vehicles with excessive noise caused by equipment failure or equipment modifications, particularly when the violator is not from our community.

Research conducted and presented to Mayor and Council originally in 2012 and again November 26, 2013, by then Officer in Charge Supt. Gary Steinke, included a review of Edmonton Police Services Excessive Noise Bylaw.

Source: Response to Councillor Budget Request 2011 – Edmonton had to purchase special equipment to enforce their bylaw. The equipment scientifically measures excessive noise in decibels and requires frequent calibration. A similar bylaw could be passed in Strathcona County, similar equipment purchased and members could be trained. Each kit costs \$2100. We would be charged \$14,000 for training from the United States that does not include costs of yearly re-certification. As of mid-August 2010, EPS has only charged 60 persons under the provisions of their bylaw. Administration recommends that a year-end review of the Edmonton program be completed to determine if this program and this initiative was successful and effective.

Strathcona County has a “noise bylaw” with a first offence of causing excessive noise being a fine of \$200. We can also rely on the provisions of the Alberta Traffic Safety Act that can be used as

enforcement legislation against noisy vehicles. Our Enforcement Unit can schedule shifts to enforce noisy motorcycle complaints in 2011.

Source: Response to Councillor Request July 10, 2012 - Meeting with EPS subject matter expert and RCMP members confirmed in 2011 their bylaw was seriously challenged in court and was not overly successful. They had less than a 40% conviction rate. However, improvements in training and how to present evidence combined with acceptance by the courts of the bylaw/equipment has resulted in an 80% conviction rate in 2012. In 2012 approximately 70 tickets were written in Edmonton. The bylaw is not being used by anyone but traffic members who carry noisy muffler kits in their trunks. Edmonton bylaw is sound but only deals with motorcycle noise. Council may wish to pursue a similar bylaw but the province has shown interest in passing provincial legislation regarding vehicles.

2017 Strathcona County Council Communication

In January of 2017 Strathcona County RCMP and Enforcement Services presented four options to county administration and council regarding vehicle noise in the county.

One option being status quo and utilizing the municipal bylaw and provincial legislation that are currently in place. It was explained this is what our officers have been and currently do to tackle the vehicle noise issue. When an officer encounters a loud vehicle they are able to apply the provincial legislation and / or the county noise bylaw. This is a practice that is being utilized in many jurisdictions in the area.

The second option is to apply the status quo along with an education and prevention program. This would include doing what we are doing now along with adding an educational opportunity and prevention by establishing a noise level base line and communicate this to drivers.

The third involves a three-phase approach that would have our officers set up clinics where we would test vehicle sound levels using digital decibel readers. The equipment would allow us to educate, inform, and also enhance enforcement strategies, as well as enhance evidence and testimony for the members should it be required in court challenges.

The last would involve adopting Edmonton's approach, which would require Strathcona County to restructure our noise bylaw and set defined decibel tolerances, as well as involve a cost of \$25,000 for equipment and training.

Councilor Andersen made a motion for Strathcona County to adopt the three-phased enhanced approach in regards to vehicle noise. The motion was approved with councilors Anderson, Linton Delainey, Howatt, Vic Bidzinski and Fiona Beland-Quest voting in favour, while councilors Paul Smith, Botterill and Bonnie Riddell voted against. County Mayor Roxanne Carr was absent from the meeting.

This report represents what had been indicated in the 2018 report in addition to developments that have taken place since that time. The request to provide a report to council on area municipalities and their approach, costs, and education pieces was made in June of 2020.

SURROUNDING COMMUNITIES

GRANDE PRAIRIE

The city of Grande Prairie has a bylaw cited as the “Noise, Nuisance and Public Disturbances Bylaw”. They communicate residents should expect not to be disturbed by noise and also have a responsibility not to make unreasonable noise that disturbs their neighbours. Noise includes but is not limited to yelling, loud music, revving a vehicles engine etc. They ask residents to be considerate of neighbours and avoid the operation of construction equipment and power tools, such as lawn mowers, or snow clearing devices, in residential areas during their quiet hours of 10 PM to 7 AM.

The Noise section of the Community Standards Bylaw was developed to support the health and safety of their community while remaining reasonable. The specific quiet hours were developed based on the experience of Regional Enforcement Services in conjunction with what has worked in other comparable municipalities.

City of Grande Prairie Bylaw C-1103 Noise, Nuisance and Public Disturbances Bylaw

MOTOR VEHICLES

17. No person shall use or engage in the use of engine retarder brakes within the City.

18. Deleted by Bylaw C-1103D - May 13, 2013

19. The failure of a person to comply with the provisions of the Traffic Safety Act or any regulations thereunder regarding:

(a) the prohibition against the use of signaling devices on motor vehicles so as to make more noise than is reasonably necessary; (b) the restrictions in the type or use of mufflers and similar equipment;

(c) the prohibition against creating or causing the emission of any loud and unnecessary noise from a motor vehicle; or

(d) the operation of a vehicle on a highway in a residential district between the hours of 10:00 p.m. and 7:00 a.m. in a manner that unduly disturbs the residents of that area; is an offence under this Bylaw in addition to and not in substitution for any offence of which a person may be guilty under the provisions of such Act or the regulations there under.

PARKLAND COUNTY

The information gathered from Parkland County suggests a low volume of vehicle noise complaints from the general public to law enforcement. Law enforcement in the area theorize the design of roadways and thoroughfares through Spruce Grove and Stony Plain are such that noise is often not an issue.

In July of 2020, Parkland County advised the group's tendency is to use the Traffic Safety Act more often than the bylaw when addressing vehicle noise. It was also noted that very few Traffic Safety Act tickets have been written in their area.

Parkland County addresses noise complaints in residential areas using Section 8 of their Community Standards Bylaw. Noise caused by traffic on roadways is excluded from this section. This section is enacted on a complaint-based system. Officer follow up includes using a decibel reader on the property in question to measure violations of noise thresholds.

The information from Parkland County advised there are not many complaints from the public regarding vehicle noise. Section 8(5) of their bylaw was intended as an all-encompassing area of charge possibilities. Upon challenge in court we were informed prosecution failed when using this section of the bylaw for vehicle noise charges.

Section 8(5) states: *Whether any sound annoys or disturbs a Person, or otherwise constitutes objectionable noise, is a question of fact to be determined by a Court hearing a prosecution pursuant to this section of the Bylaw.*

RED DEER COUNTY

The communication gathered from Red Deer County informs us there is no bylaw in place at this time dealing specifically with vehicle noise. Red Deer Enforcement revert to the Traffic Safety Act when required to act upon vehicle noise complaints. Our information tells us speeding and vehicle noise are often viewed together in the area with speeding violations being the preferred method of enforcement. Law Enforcement in the Red Deer area find the two are often related and the speeding issue seems to move through the court system much more efficiently and without much difficulty.

Red Deer County Enforcement Services advised they receive minimal complaints regarding vehicle noise and have issued very few violation tickets directly related to noisy vehicles over the last few years.

In the summer of 2017 the City of Red Deer along with the Red Deer RCMP and Community Peace Officers took it upon themselves to cut down on the amount of excessive vehicle noise in their city. In July and August of that year, RCMP Members and Peace Officers on patrol issued 20 tickets to drivers for excessive levels of vehicle noise. In addition, officers handed out 12 Traffic Vehicle Notices requiring drivers modify their vehicle, either to repair a faulty muffler or to remove after factory modifications that increase the noise of the vehicle. These fines were issued based on existing traffic laws, and City of Red Deer bylaws.

The initiative again was based on Traffic Safety Act offences and local bylaws. The Red Deer Community Standards Bylaw states, “No person shall cause or permit any noise that annoys or disturbs the peace of any other person”.

ST. ALBERT

The St Albert’s 2018 Traffic Noise Study conclusions and recommendations of the study’s 1st phase showed the following:

- The existing road traffic noise impact was measured to be less than 65dBA for all locations.
- The measured road traffic noise impact for 27 locations was measured to be greater than 55dBA. These locations are unlikely to have any immediate risk for exceedances of the 65dBA limit but may be contacting the City with noise related nuisance complaints.
- Three locations were found to be greater than 60dBA (24hour LEQ. The equivalent steady-state noise level in a state period of time; 1hr or 24 hr)
- The maximum 1-hour LEQ for 8 locations were measured to be greater than 65 dBA.
- Since 24-hour noise levels were below the 65 dBA target established in the City’s Municipal Engineering Standards, no noise abatement solutions were required.

Background

St Albert’s 2018 Traffic Noise Study was conducted along arterial and collector roads, throughout the city. The study monitored existing noise levels and gathered background data to assess traffic noise impacts, and the possible need to change noise policies or engineering standards.

GHD Limited was hired as a consultant to conduct noise monitoring city wide and prepare a report with the study results. The next steps include an expansion of investigation at the specific sites that were reported as experiencing higher levels of noise, Information obtained from this second phase will be used to inform on necessary funding requirements and development that may be considered within the city’s 10-Year Capital Plan.

NOTE: Phase 2 monitoring has been postponed due to variation in typical traffic volumes. Phase 2 will be re-evaluated in 2021 to determine if noise monitoring can proceed.

As per the 2018 report, the St. Albert Noise Bylaw is as follows

Unreasonably Loud, Raucous or Unusual Sounds

3. (1) Except to the extent permitted by this Bylaw, no Person shall make, continue, cause or permit to be made or continued any unreasonably loud, raucous or unusual sound which annoys, disturbs, injures, endangers or detracts from the comfort, repose, health, peace or safety of any other person of ordinary sensitivity.

(2) Factors for determining, under Subsection (1), if a sound is unreasonably loud, raucous or unusual include the following:

(a) proximity of the sound to sleeping facilities or accommodations, whether residential or commercial;

(b) the time of day or night the sound occurs;

(c) the duration and volume of the sound; and (d) whether the sound is recurrent, intermittent or constant.

(3) A Court may enter a conviction against a Person who violates Subsection (1) notwithstanding that the Person has not exceeded a maximum dBA level specified in Part 3 of this Bylaw. PART 3 SPECIFIC PROHIBITIONS Daytime Restriction

4. (1) No Person shall cause, or permit to be caused, sounds that may be heard in a Residential District during Daytime Hours at a level greater than 65 dBA unless such sounds are of a temporary or intermittent nature and:

(a) where such sounds measure from 66 to 70 dBA, last for no more than 2 hours (of elapsed time during a calendar day's Daytime Hours);

(b) where such sounds measure from 71 to 75 dBA, last for no more than 1 hour (of elapsed time during a calendar day's Daytime Hours);

(c) where such sounds measure from 76 to 80 dBA, last for no more than 30 minutes (of elapsed time during a calendar day's Daytime Hours); and

(d) where such sounds measure from 81 to 85 dBA, last for no more than 15 minutes (of elapsed time during a calendar day's Daytime Hours). (2) No Person shall cause, or permit to be caused, sounds that may be heard in a Residential District during Daytime Hours at a level in excess of 85 dBA.

Quiet Hours (General)

5. No Person shall cause, or permit to be caused, sounds that may be heard in a Residential District during Quiet Hours at a level in excess of 50 dBA.

EDMONTON

Edmonton Police Service (EPS) continues to be aware of the City of Edmonton's Office of Traffic Safety Automated Noise Enforcement Project pilot project. This project is currently gathering data and evaluating equipment with an ultimate goal of planning a regional approach to the issue of vehicle noise. The pilot project is ongoing and continues to develop, however, may become a major contributor in resolution.

In 2020, EPS communicated they have noticed an increase in speeding and noisy vehicles on the streets as a result of the lower traffic volumes with the arrival of the pandemic in March. They launched Project

TENSOR (Traffic Enforcement Noise / Speed Offence Reduction) in May during the initial stages of the pandemic beginning around when COVID-19 shutdowns began to address the noisy vehicle concerns.

From May to July EPS have levied 312 charges and notices related to vehicle noise issues. These included motorcycle noise bylaw infractions, vehicles with modified exhausts, and notices to repair vehicles. A media report recently stated that over 1200 tickets and warnings were handed out from May to July, although many of those charges were other than noise related infractions. Non-noise related charges included in the number of 1200 are comprised of, window tint, speeding, seatbelt violations, and general equipment violations.

EPS communicated Project TENSOR will continue until September and is focusing on hot spots around Edmonton. Officers will continue to monitor and charge for additional offences including the aforementioned speeding, window tint, seat belt violations, and document offences among others.

The feedback received from the Traffic Services Branch of the Edmonton Police Service explained Project TENSOR is the first of its kind. EPS has centralized traffic resources to coordinate efforts on the problem of traffic noise associated to speed and altered equipment on vehicles. The entire EPS Traffic Services Branch is part of the project in collaboration with the City of Edmonton to tackle the issue. The project will be evaluated after the summer season to see if the active steps have been effective in minimizing the problem. All enforcement is pursuant to the Traffic Safety Act. Issuing members gain the Crown's office support by effectively communicating the noise generated by the offending vehicles.

The majority of the costs associated to the project have been absorbed in day to day duties, however, the branch also has dedicated overtime funding to achieve desired results. Accurate costs associated will again be determined at the conclusion of the time period.

The general public has been quite supportive of the project however, EPS feels they are just scratching the surface of the problem. Negatively, the program has generated some controversy amongst motorcycle clubs and car enthusiasts as they feel they are being unfairly targeted.

This is EPS's first coordinated attempt in addressing the excessive vehicle noise issue. They feel this program is addressing the issue to a degree however, it remains to be seen how effective it will be over time.

Another facet of the program includes the EPS Traffic Complaints Coordinator who addresses complaints received by email. They contact suspected registered owners to make them aware of complaints made about their excessively noisy vehicles. Many of these are received through their office from neighbours or neighbourhood contacts. Success here is measured by whether or not the complainant contacts the office again.

Separate from Project TENSOR, the City of Edmonton has a noise specific bylaw dedicated to motorcycles that has been in effect for the last few years. Edmonton Police Service will charge violators at three benchmark noise levels tested when a motorcycle is stationary:

- Violators in excess of 92 dbA at idle for all motorcycles

- Violations in excess of 96 dbA at 2000 rpm for motorcycles having less than 3 cylinders or more than 4 cylinders
- Violators in excess of 100 dbA at 500 rpm for motorcycles with 3 or 4 cylinders

These separate and unique motorcycle bylaw noise operations have been in place for the last few years and it appears the exercise has been encapsulated by Project TENSOR this year.

ALBERTA TRANSPORTATION

The following information was received from the Vehicle Standards Engineer of the Safety & Compliance Services Branch, of Alberta Transportation Government of Alberta.

The noise produced by a motor vehicle can vary with engine RPM, vehicle speed, and load on the vehicle. A person driving a vehicle can reduce the amount of noise their vehicle produces just by changing the way they drive. In addition, the noise produced by a motor vehicle can change with environmental conditions and geographic features like walls and grass fields. Alberta Transportation is not aware of any noise test level, or noise measurement procedure, that works for determining an objectionable noise for all motor vehicles, at all engine RPM, vehicle speeds, or vehicle loadings.

The motor vehicle noise levels established by Transport Canada cannot be used for roadside enforcement. Vehicle manufacturers need to use a large testing site, with specific rules for how the test is to be conducted, which cannot be reproduced at roadside to issue tickets.

Some municipalities have adopted an industry developed standard for motorcycle noise. Motorcycle manufacturers worked with the SAE for years to verify their original products met the test criteria and tested aftermarket products to establish a test in line with Transport Canada standards. The SAE J2825 standard has been demonstrated to be effective in determining noise from motorcycle exhaust systems. Alberta Transportation endorses the use of this test if municipalities are looking for motorcycle specific requirements.

The SAE J2825 recommended practice establishes test procedures, test conditions, environment, and instrumentation for determining the exhaust pressure levels of stationary motorcycles. These are based on a comprehensive study of a wide variety of on-highway motorcycles, and therefore is intended to be applied to on-highway motorcycles.

SAE International, initially established as the Society of Automotive Engineers, is a U.S. -based, globally active professional association and standards developing organization for engineering professionals.

STRATHCONA COUNTY
NOISE CONTROL BYLAW 66-99

Section 2.17 defines “noise” as:

2.17 “Noise” means any sound which in the opinion of a County Bylaw Enforcement Officer, having regard for all circumstances, including the time of day and the nature of the activity generating the sound, is likely to unreasonably annoy or disturb persons or to injure, endanger or detract from the comfort repose health, peace, or safety of persons within the boundary of the county.

3.3 A County Bylaw Enforcement Officer may direct a Person who has caused or made a noise, or any Person who owns property from which Noise has originated, to abate or eliminate the Noise. Such a direction may be either verbal or written.

Strathcona County Noise Bylaw 66-99

3.1(b) Motor vehicle cause a noise	\$200
3.1(c) Off highway vehicle cause a noise	\$200
3.2 Owner allow noise	\$200
Subsequent offence	\$500

PROVINCE OF ALBERTA

Office Consolidation Alberta Regulation 122/2009 With amendments up to and including Alberta
Regulation 49/2018

TRAFFIC SAFETY ACT
VEHICLE EQUIPMENT REGULATION

Mufflers

61(1) A motor vehicle propelled by an internal combustion engine must have an exhaust muffler that cools and expels the exhaust gases from the engine without excessive noise and without producing flames or sparks.

(2) A person shall not drive or operate a motor vehicle propelled by an internal combustion engine if the exhaust outlet of the muffler has been widened.

(3) A person shall not drive or operate a motor vehicle propelled by an internal combustion engine if a device is attached to the exhaust system or the muffler that increases the noise made by the expulsion of gases from the engine or allows a flame to be ignited from the exhaust system.

USE OF HIGHWAY AND RULES OF THE ROAD REGULATION

82 Create / Cause unnecessary noise from any part of/MV/thing/substance that MV/part of MV comes into contact with.

Alberta Traffic Safety Act

Vehicle Equipment Regulations

Section 61(1)

Exhaust muffler produce excessive noise/sparks \$155

Section 61(2)

Drive / operate motor vehicle if exhaust outlet of muffler widened \$155

Section 61(3)

Drive / operate motor vehicle if device attached to exhaust \$155
system / muffler increases noise / allows flame to ignite

Use of Highway and Rules of the Road Regulation

Section 82

Create/ cause unnecessary noise from any part of MV \$15

SHERWOOD PARK
OBSERVATIONAL RESEARCH

In 2018, the following field study was conducted to show a broad based and general understanding of traffic noise patterns in a naturalistic environment. This may be used for the advancement of possible future scientific knowledge; however it describes situations, and as such, does not make accurate predictions and does not determine cause and effect. The natural relationships between factors and outcomes were observed.

OBSERVATION # 1

DATE / START TIME	END TIME	LOCATION	NOISE VEHICLE
18/06/04	0910	09:20	Baseline/ Brower/Glenbrook
			1 half ton pickup truck - Moving from red light - Modified exhaust/ not speeding
			1 small car - Modified exhaust/ stopped, started.
			1 stock newer Mustang - Slow acceleration
			1 BMW - Perhaps modified exhaust. - Cruising speed

Note: Approx. 200 vehicles passed through the intersection with 4 vehicles that may have been louder than the norm, however, were being driven in a manner that would not classify them as too loud by a reasonable standard. The 4 vehicles in question drew the attention of this researcher as a result of the distinguished sound that separated them from the other vehicles.

If they were driven in an aggressive fashion they would more than likely fall into the category of excessive noise with some vehicles possibly above the current reasonable threshold. A possible noise rate of 2% at this location during this time period was observed. Noise rate is calculated by dividing the number of potentially noisy vehicles into the total number observed. Total vehicles observed are approximate.

OBSERVATION # 2

DATE / START TIME	END TIME	LOCATION	NOISE VEHICLE
18/06/04 09:40	09:50	Wye / Brentwood	1 stock Mustang - Cruising speed 7 dump trucks - Moving from a standstill from red light. Noisy 1 Harley Davidson motorcycle - Seemed stock but loud departing from red light

Note: Approx. 250 vehicles passed through intersection during the recorded time period. This area is a construction zone and many heavy, large vehicles working in the area. The 9 vehicles in question drew the attention of this researcher as a result of the distinguished sound that separated them from the other vehicles.

If they were driven in an aggressive fashion they would more than likely fall into the category of excessive noise with some vehicles possibly above the current reasonable threshold. A possible noise rate of approx. 3.5% at this location during this time period. Noise rate is calculated by dividing the number of potentially noisy vehicles into the total number observed. Total vehicles observed is approximate.

OBSERVATION # 3

DATE / START TIME	END TIME	LOCATION	NOISE VEHICLE
18/06/04 10:00	10:10	Sherwood / Granada	1 county bus - Accelerating from a red light 1 pickup truck - W/modified exhaust, slow acceleration 1 one ton truck - Cruising speed 1 water truck - Accelerating from red light.

Note: Approx. 250 vehicles passed through intersection. The 4 vehicles in question drew the attention of this researcher as a result of the distinguished sound that separated them from the other vehicles.

If they were driven in an aggressive fashion they would more than likely fall into the category of excessive noise with some vehicles possibly above the current reasonable threshold. A possible noise rate of approx. 1.5% was recorded at this location during this time period. Noise rate is calculated by dividing the number of potentially noisy vehicles into the total number observed.

OBSERVATION # 4

DATE / START TIME	END TIME	LOCATION	NOISE VEHICLE
18/06/04 15:00	15:10	Sherwood / Cimmaron	2 commercial vehicle pumpers - Cruising speed 2 county buses - Cruising speed 1 half ton pickup truck - Cruising speed 1 one ton diesel commercial vehicle - Cruising speed

Note: Approx. 300 vehicles passed through intersection at the recorded time. The 6 vehicles in question drew the attention of this officer as a result of the distinguished sound that separated them from the other vehicles.

If they were driven in an aggressive fashion they would more than likely fall into the category of excessive noise with some vehicles possibly above the current reasonable threshold. A possible noise rate of approximately 2% at this location during this time period. Noise rate is calculated by dividing the number of potentially noisy vehicles into the total number observed.

OBSERVATION STUDY CONCLUSION:

This study was conducted to show a broad based and general understanding of traffic noise patterns in our community. This information was independent of any concerns raised by the citizens of our community. Based on this non-scientific small sample observational study, the following information is available:

The vehicles observed and identified were classified as possible noisy or noisy vehicles. The vehicles drew the attention of the researcher by being somewhat louder than the majority of traffic, however, were generally being driven such that they would not have broken any reasonable decibel thresholds. Some vehicles may have been close to or over reasonable decibel standards if established.

Of the approximately 1000 vehicles observed at the 4 observation locations for a total time of 40 minutes:

- 23 or 2.3% may have been considered noisy or above the normal noise level of traffic.

Of the 23 vehicles:

- 12 were construction or large commercial vehicles.
- 3 were county buses.
- 1 was a Harley Davidson motorcycle.
- 7 vehicles would be considered regular passenger vehicles. Slightly less than 1% of all passenger vehicles observed may have been considered loud or potentially loud.

Important to note, if the observed vehicles were being driven in a normal, non-forceful fashion, the noise level may not have broken any noise threshold. If however, these vehicles were to be driven in an aggressive manner with heavy acceleration, the increase in decibel levels would be substantial and noticeable.

Several noted vehicles appeared to have modified exhaust or in some cases factory stock systems that do produce a high noise level when hard-pressed, thus drawing the attention of the researcher. This stands to reason that a noticeably loud vehicle is normally being driven in an aggressive manner, and as such, may be violating other traffic laws such as roadway speed limits. It is safe to conclude the noise level of the noted vehicles would increase as speed and aggressive driving patterns increase.

If we were to estimate this over 8 hours, the numbers would show approximately 12,000 vehicles moving through these locations and approximately 276 vehicles possibly being noisy and above the regular street traffic level observed. It stands to reason that several variables will affect the numbers.

Variables that contribute to roadway noise are as follows:

- Hourly volumes of cars
- Hourly volumes of trucks
- Number of travel lanes
- Average operating speeds of vehicles
- Projected traffic volumes
- Vehicle features such as tire type, brakes, mufflers, etc.
- Pavement surface texture
- Elevation of roadway relative to noise recipients

- Positive and negative gradients of roadway
- Distance from edge of roadway to noise recipient
- Noise attenuation devices between vehicle noise source and noise recipient (i.e. berms, walls, vegetation, etc.)
- Building construction
- Intersections

CONCLUSION / RECCOMENDATIONS

Role of Law Enforcement

The role of Law Enforcement in this instance in Strathcona County is to enforce the motor vehicle noise and muffler laws, and the applicable bylaws in the municipality. To accomplish this end, we must expend energy and time by following these steps.

1. Observe the audible excessive noise emitted by the vehicle.
2. Stop the vehicle.
3. Issue the appropriate violation ticket.
4. Attend and testify in court communicating what was observed and which law was violated.

Decibel Threshold

Employing a decibel level-based approach for establishing “allowed” noise levels may give the impression that the noise one is allowed to make must be assessed by performing decibel level noise measurements. This may be inherently enforcement inhibiting and may put a damper on having such noise pollution policies enforced. It is more efficient to establish what a noisemaker cannot do rather than what a noisemaker can do.

Having proper decibel reading equipment along with training, maintenance and supplies would come at a cost of approximately \$25,000 as mentioned in the 2018 report.

Communication

A media and communication plan aimed at motorists emphasizing education, regulations, and community buy-in to would contribute to making our municipality the most livable community in Canada. We have not included or tapped the expertise of our communication team at this point regarding this issue and the possibility of having community engagement. Education must be part of a

broad communication plan that involves the whole community, including law enforcement rather than strictly law enforcement.

Current Status

Noise enforcement within Strathcona County is complaint driven. Traffic operations involving noise are added to the existing roles and requests on our unit while enabling our current noise bylaw and the Traffic Safety Act. The pandemic of 2020 has had an affect on our entire society and in many different respects including our departmental focus on the need for health and safety. Our department's reaction to the pandemic may be a contributing factor in the rise in noise complaints with less than optimal resources available from April to June.

At current status, Enforcement Services is of the belief that it stands to reason speed management is a key ingredient in the noisy vehicle issue. Speeding has been found to be an often-contributing factor to vehicle noise. We are pleased to report our traffic operations and duties have since returned to prime levels and we are actively working to address the issues brought forth by our community. Our teams will work with our citizens and council to effectively play a part in making our municipality the most livable community in Canada.