

EXCLUSION OF OUTDOOR GUN RANGES FROM PARKLAND COUNTY'S RESIDENTIAL DISTRICTS



EXECUTIVE SUMMARY

Why Outdoor Gun Ranges Should Be Excluded From All Residential Districts In Parkland County

**Based on a Case Study of why the SGGC's Permit to Operate an
Outdoor Gun Range was Revoked by Parkland County's SDAB in 2015**

INTRODUCTION AND BACKGROUND

No outdoor gun range has operated in any residential district in Parkland County since the Spruce Grove Gun Club (SGGC) was closed in November 2015 after the County's Subdivision Development Appeal Board (SDAB) rendered its' decision dated October 23, 2015 revoking the Club's permit because:

1. The intense, impulsive noise generated by gunfire at the Club had a disturbing and annoying impact on **more than 100** of its' neighbours and this made the operation of the range **incompatible** with surrounding residential use; and
2. Although the probability of a stray bullet escaping from the range appeared to be low, the impact of that risk was high due to the number of dwellings and the amount of human activity within range of an errant bullet. That too made the operation of the range **incompatible** with surrounding residential use.

COMPLIANCE versus COMPATIBILITY

In its decision to revoke the Club's permit, the SDAB noted the following facts:

1. The gunfire noise coming from the Club's ranges is an "impulse noise", that is intermittent, startling and unpredictable.
2. The levels of 85 dBA $L_{eq} 15_{minutes}$ specified in the County's Community Standards Bylaw **does not address** impulse noise.
3. The noise from the Club has a negative impact on its neighbours, which has reduced residents' use and enjoyment of their property.
4. The Indoor/Outdoor Recreation Services use is **not compatible** with the County Residential uses of the Club's neighbours.

The SDAB also noted that the use of land for an outdoor gun range is not an issue of compliance with a level of sound specified in the Noise Bylaw. It was tasked with determining whether the Indoor/ Outdoor Recreation Services use by the Club was compatible with the country residential uses of its neighbours. The **Court of Appeal of Alberta** later noted that more than 100 residents were opposed to the disturbance and annoyance of the noise coming from the Club.

SGGC's Outdoor Gun Ranges

A thorn in the side of its many Residential Neighbours for years



**We're all fed up
with the noise
and can't take it
anymore!**



**100+ residents
negatively impacted
by gunfire noise**



RESIDENTS OPPOSED TO THE SGGC

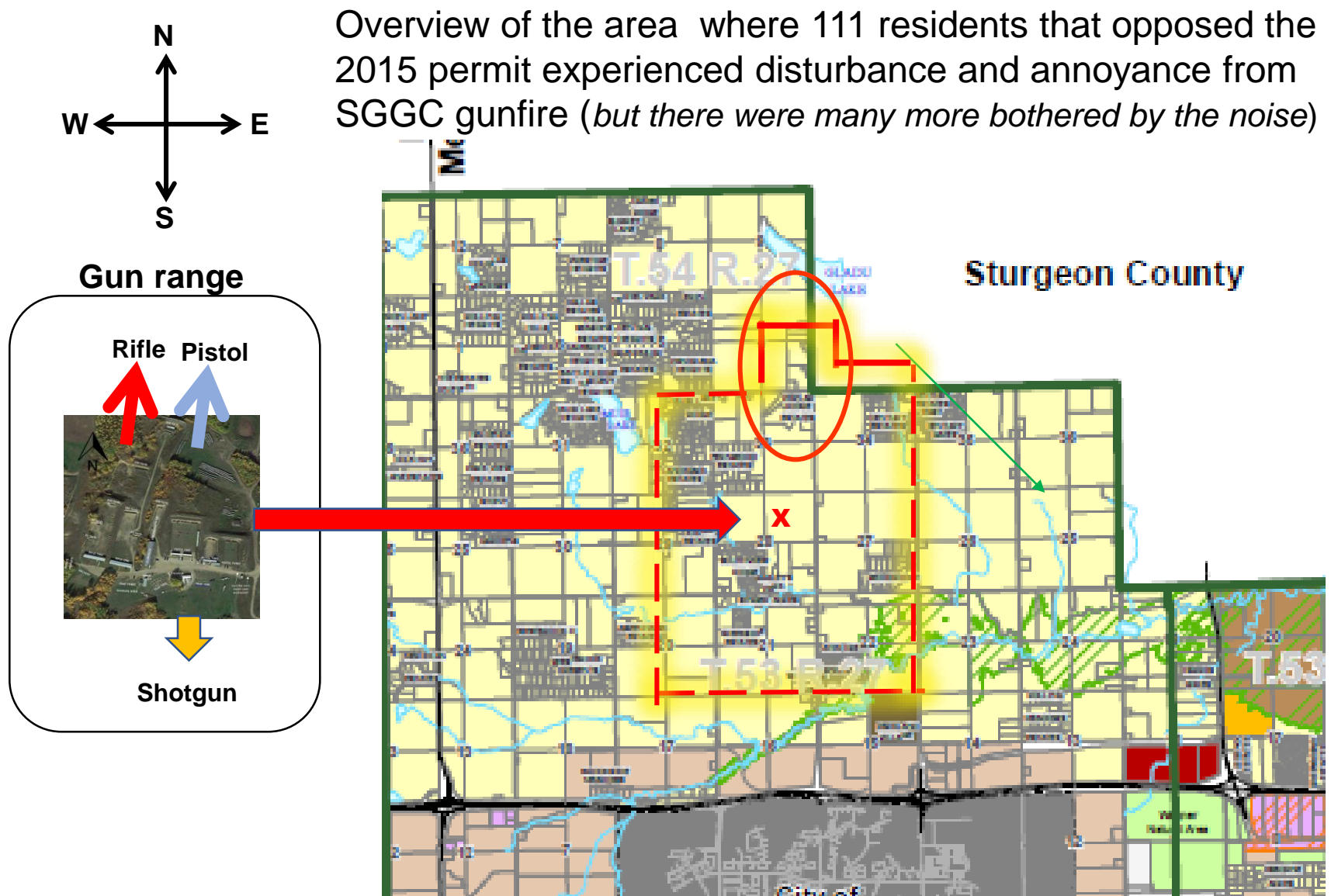
- ❖ Composition of the total of **111 residents opposed to the 2015 permit** for the Club's outdoor gun range.
 - **4** long-time residents who lived in the area before the range first opened;
 - **13** other residential property owners (5 couples and 3 individual appellants); and
 - **94** individuals united in a community group consisting of residents from the following twelve subdivisions and Sturgeon County.:

⇒ Atim Creek Springs
⇒ Bailey's Park
⇒ Creekside Estate
⇒ Fernwood Estates
⇒ Kolba Estates
⇒ Landmark Estates
⇒ Muir Lake Estates

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⇒ Poplar Ridge Estates
⇒ Singer Acres
⇒ Southview Ridge
⇒ Stonewood Terrace
⇒ **Sturgeon County**
⇒ Woodridge

Acreage homes within the same general area around the range.



The highlighted rectangular area around the range indicates the area where residents have diminished use and enjoyment of their property. The oval shaped overlay at the top shows the area north of the gun range where residents are most concerned for their safety

POPULATION & RESIDENTIAL GROWTH

1975

- Parkland County rural population - **15,862**
- When the SGGC began in the early 1970's there were about a **dozen** residential neighbours living in the vicinity of the range which was then situated in a primarily agricultural zone. Some of the families from back then are still living there now.

2015

- Parkland County rural population – almost **30,000**
- A dozen subdivisions had been developed around the site of the outdoor gun range
- About 400 homes in subdivisions and on acreages had been built around the SGGC

2017

Since the closure of the range in 2015, three or four new houses have been completed in a highly noise sensitive subdivision very close to the range and two more homes are now under construction there. A new home downrange in Poplar Ridge has recently been sold and another is under construction

NOISE NOISE NOISE



Extract from a paper presented to the **Acoustical Society of America** in 2010
regarding exposure to recreational shooting range noise

**The most severe recreational noise comes from the high intensity
impulsive noise of gunfire that occurs at a shooting range.**

A gunshot is an "acoustic event" (i.e., a non-continuous "impulsive sound") that has more than one component such as the muzzle blast (the explosion or loud bang that propels the bullet forward) which is followed by a ballistic shock wave i.e., the crack as the bullet zips through the air, traveling faster than the speed of sound. It's basically a supersonic boom.

Community Standards Bylaw No. 03-2012

The purpose of the Community Standards Bylaw is to make the community safe, healthy and enjoyable for everyone. The bylaw encourages residents and property owners to be responsible and respectful of their neighbours.

REGULATING NOISE - No Person shall cause or permit to be caused a non-continuous sound that:

1. Exceeds eighty five (85) decibels (dBA) Leq measured over a period of fifteen (15) minutes during the Day-Time at **ANY Point of Reception within a Residential District**; and
2. **Disturbs or annoys their residential neighbours.**

SDAB finding of fact – the current *Noise Bylaw* **does not address** the non-continuous sound levels of “**impulse noise**” in residential districts.

Ontario Ministry of Environment and International Standards Organization (ISO) maximum noise level for outdoor shooting ranges (*RCMP Shooting Ranges and Sound.*)

<u>Time of Day</u>	<u>Ontario</u>	<u>ISO</u>
Day	45 dBA	40 dBA
Evenings	40 dBA	35 dBA

GUNSHOT NOISE

Firearms Measured at **10 meters** from the Muzzle (Downrange)
Source - RCMP Shooting Ranges and Sound document

<u>Name, Calibre and Ammunition of Weapon</u>	<u>Sound Level dBA(I)</u>
Rifle M/96, 6.5 mm, SK PTR M/94 PRJ M/41	126
Hunting rifle, 7.62 mm, 30-60 Norma Jaktmatch	127
Hunting rifle II, 5.7 mm, 222 Remington N. Jaktmatch	124
Pistol m/40, 9 mm, SK PTR M/39 B	126
Shotgun, Cal. 12, NIKE Skeet, 70 mm, 32 g, 2 mm	127

Gunshot noise from the firing line of an outdoor shooting range is unpredictable, explosive, startling, disruptive and distressing. It has an impulsive character that increases **disturbance** and **annoyance** and triggers a “fight or flight” reaction among residential neighbours over a wide area. This is why residents nearby curtail outdoor activities on their property or scurry indoors when the shooting starts.

CONFLICTING MEASUREMENTS OF SGGC's GUNFIRE NOISE



At Nearby Residence Reception Point

Worst case noise level received

- Loudest noise received and recorded - **over 100 dBA**

Shots fired over one 5-minute period

- 29 shots fired, noise received and recorded at a **residential point of reception within 700 m of the range** and converted to a computer printout showing a sound level **over 90 decibels (90+ dBA)**



Gun Range Computer Model

Worst case scenario ($L_{eq}1_{second}$)

- Loudest noise recorded – 97 dBA
- Averaged noise level - 72.2 dBA
- Averaged noise level adjusted to reflect impulse noise = **80 dBA(I)**

Computer modelling (15 min. avg)

- 97 neighbouring residential properties “**could expect to experience a noise level of 57.3 decibels (57.3 dBA $L_{eq}15_{minutes}$)**”

Negative Impact of “IMPULSE NOISE” on SGGC’s Neighbours

The noise that emanates from the SGGC’s south to north pistol and rifle ranges and north to south shotgun ranges prevents or disrupts the sleep of young children whose bedtime is in the early evenings. It can be so disturbing and annoying that it often compels residents to:

- vacate their decks, patios and backyards to seek refuge from the noise;
- close the windows of their homes in order to muffle the noise;
- turn up the volume of TV’s or sound systems to drown out the noise of gunfire;
- leave their property to seek peace and quiet elsewhere;
- Limit, cancel or prematurely end the use of their property for the purpose of outdoor entertainment (friends, family, relatives, neighbours).

All 111 residents that opposed the outdoor shooting range in 2015 indicated that the noise of gunfire coming from the Club was not trivial or fleeting and that the level of **disturbance** and **annoyance** caused by the impulsive sound emanating from the range diminished their quality of life and deprived them of the full use and enjoyment of their property.

SUMMARY

- ❑ Uncontroverted evidence before the SDAB in October 2015 was that many of the Club's residential neighbours were restricted in the use of their properties due to the noise emanating from the outdoor gun range and the impact of that noise had deprived them of full use and enjoyment of their property.
- ❑ Even though the noise levels may be lower than the *Noise Bylaw* levels, that did not change the fact that **more than 100 residents** were experiencing an annoyance and disturbance arising from the impulsive sound of gunfire coming from the Club's outdoor shooting ranges.
- ❑ The Indoor/Outdoor Recreation Services use of the Club's leased site is not compatible with the County Residential uses of its many neighbours.
- ❑ The SDAB found that the impact on the Club's residential neighbours due to the noise emanating from the range **was a sufficient reason on its own to deny the permit in 2015.**

AN ECONOMIC PERSPECTIVE

- ❑ The Club's acoustical expert identified and included **97** residences in the computer model used to determine the level of noise that residents ***could expect to experience at these properties.***
- ❑ Most of the **111** residents who opposed the operation of an outdoor shooting range because of the disturbance and annoyance of gunfire lived in or near the 97 residences modelled by the Club's acoustical expert.
- ❑ Today there are at least three additional homes in close proximity to the closed gun range bringing the total number of residences that would be included in a revised computer modelling process up to an even 100 homes.

The SGGC leases the land it uses for its outdoor gun range ranges.

The 97-100 homeowners included in the noise assessment analysis in 2015 paid in excess of **\$500,000 in property taxes to Parkland County that year. The Club paid \$0 - their landlord paid less than \$5,500**



RCMP - Safety Area Definition and Purpose

- ❖ The safety area for an outdoor range is defined as the downrange area that is intended to contain bullets that pass over, or beyond, the backstop that is intended to stop them from leaving the range. Safety areas should not overlap onto residential areas with regular human activity outdoors so that overshoots can land without causing harm.
- ❖ Mr. Alan Voth, a forensic firearms consultant investigated a number of stray bullets that hit the south elevations of structures north of the range's firing line between 2011 and 2014. He noted that there should be **a downrange safety zone extending four miles from the firing line** of an outdoor range. There are several homes and regular human activity within a four mile (6.4 km) corridor downrange causing residents to fear for their safety when the SGGC range was active.

Maximum Nominal Range of Some Common Calibre Firearms
Source – *Al Voth + RCMP Range Design & Construction Guidelines*

<u>Name, Calibre and Ammunition of Weapon</u>	<u>Maximum Range</u>
300 Winchester Magnum, 180gr SP BT	3.52 miles (5.66 km)
308 Winchester, 150gr SP BT; and Russian SKS, 7.62X39, FMJ steel-core	2.73 miles (4.4 km)
223 Remington, 55gr SP BT	2.16 miles (3.48 km)
9mm Luger, 125 gr FMJ	1.31 miles (2.11 km)
22 Long Rifle, High Velocity	0.91 miles (1,461 m)

Note that these are maximum ranges and to achieve them requires elevating a muzzle to approximately 30° to 40° above horizontal. The list shows projectiles from some centre-fire firearms that have the greatest potential to travel long distances.

A Brief History of Residents' Safety Concerns

2006 – Some long-time residents who lived north of the site of the gun range before it opened, first learned that their property was situated within a safety zone that appears to have been unknown to many residents (old and new).

2010 – A resident of Poplar Ridge was outdoors with his three young children when a bullet whizzed by his head and hit the south side of a tree nearby.

2010 - posting on the Alberta Outdoorsman Forum indicating that enforcement of SGGC's safety rules "*are lax*" and highlighting multiple safety infractions that occurred during a two hour period on the same day,

July 2011 – A resident of Poplar Ridge reported a bullet strike on the southern elevation of a combination shop and storage facility on his property.

November 2012 – A bullet hole is found on the southern elevation of a shop located on a property at Range Road 273 (southeast of Poplar Ridge Estates). A forensic analysis indicated that the bullet strike may have been caused by .355 - .356 (9mm) cartridge from a variety of popular pistols.

A Brief History of Residents' Safety Concerns (continued)

2013 – SGGC Spring Newsletter noting the Club's executive continue to implement measures to improve range safety and highlighting some safety concerns that necessitated the installation of security cameras on the ranges and the introduction of Range Safety Officers (RSO's) on the range **at random times.**

March 2013 – The south side of a residence in Poplar Ridge Estates was struck by a stray bullet identified by Alan Voth, a forensic firearms consultant. as characteristic of the type found in 7.62X39mm steel-core ammunition. This bullet type is often used with several semi-automatic firearms, such as the SKS (a Soviet semi-automatic carbine), a popular type of rifle used for informal or casual target shooting at gun ranges.

The firearms expert also specified in his report that in 2013 steel-core bullets of this design (7.62X39mm) **were illegal for hunting big game in Alberta.**

A Brief History of Residents' Safety Concerns (continued)

2013 – The Club implemented a ban on the use of steel-core ammunition at the gun range

2013 – SGGC Spring Newsletter – contained the Club President's **Warning Message to Club Members on Range Safety** which stated:

*"The sad part is that some members continue to act as if we are in the middle of nowhere and pay little attention to safety. These people will close down the range for the rest of us. One of the disappointing examples of this is the brand new (and expensive) overhead baffles on the indoor range. **These cannot be used for penetration tests or other stupid shooting practices.** If you are aware of anyone shooting or damaging range property contact us so that we can remove them and preserve YOUR range."*

March 2013 – Welcome to the SGGC letter, New Announcements for Club members. *The Directors of SGGC are working with the Chief Firearms Officer (CFO) to find a solution to the concerns of the public that our range is unsafe.*

A Brief History of Residents' Safety Concerns (continued)

October 2013 – The south side of a shed on Range Road 273 located to the north, northwest of the gun range was struck by a bullet leaving a hole in the door. Al Voth, forensic firearms consultant was able to create a straight line trajectory that passed just west of the SGGC situated about 1,353 m (1,480 yds.) to the south, southwest of the shed.

2014 – SGGC raises rifle range backstop from 12 meters (about 40 feet) to 24 meters (about 80 feet) and adds flax bales on top. SGGC also added the requirement that a RSO **must** be present before anyone can use the range.

October 23, 2015 – SDAB decision noted that there is **no guarantee** that a bullet might not escape from the Site and while the probability of a stray bullet appears to be low, the impact of that risk is high.

Between 2011 and 2014 two other residents located in Poplar Ridge Estates had bullets whiz by them when they were outside their homes while the range was active.

A Brief History of Residents' Safety Concerns (continued)

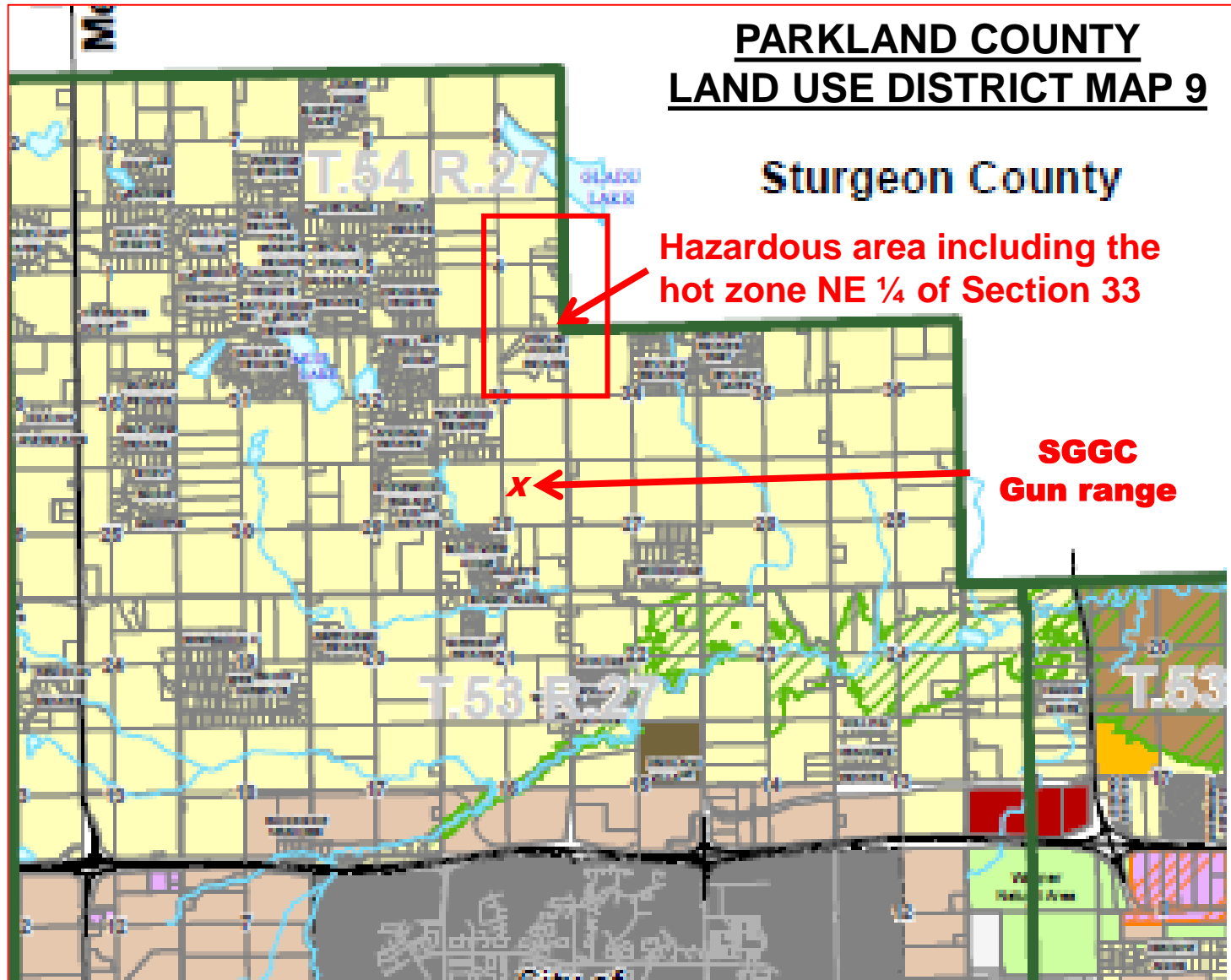
October 31, 2015 – A Final Stray Bullet

The range had very high levels of shooting activity before its Permit expired November 9th. It was on the last Saturday of October when a property owner on Range Road 273 was walking in their horse corral in the area then referred to by residents as the “**hazard zone**” when a stray bullet from the south struck, frightening the resident and spooking the horses. Fortunately neither the owner nor the animals were hit. This was the second stray bullet strike at this same residential property in a two year period.

By this date the range had already increased the height of the backstop on the rifle range to 24 m+ (about 85-86 feet or so as the berm had also been topped up with flax bales), This and other improvements supported the Club's claim that it had not only met but had exceeded all of the safety requirements of the Canada Firearms Act and received commendation from the CFO.

NB - Neither an on-duty RSO nor a surveillance camera can stop a bullet once it has left the gun barrel

Several residential properties north of the gun range located within 1,300 m to 5,500 m (and beyond) of the Club's firing line were at risk (within range) in 2015, including families in Sturgeon County.

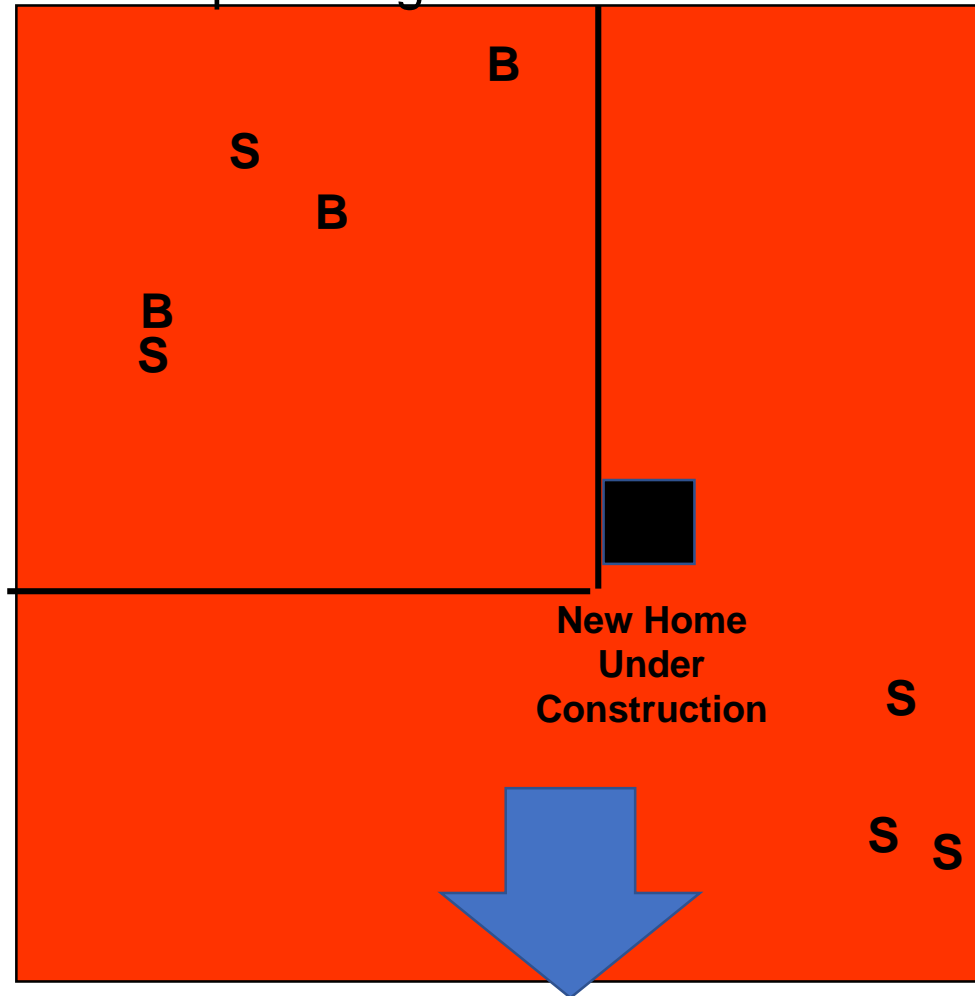


Hits on southern sides of residential properties + Misses

NE ¼ 33-53-27 (Hot Zone)

Poplar Ridge

Sturgeon County line



Legend

S= property strike
B= Bullet pass-by

South

A Brief History of Residents' Safety Concerns (continued)

- ❖ During the many years of its operation, thousands of bullets have been fired at the Club's outdoor pistol and rifle ranges **annually** and with that volume of activity comes an increased probability of an errant shot. Human error, firearm malfunction, accidental discharge or a split second of carelessness can be the cause of an overshoot. No absolute proof has been found to confirm whether the errant bullet did or did not come from the range
- ❖ Indications are the margin of error in the angle of an inadvertent discharge of a firearm necessary to clear a 90 foot high backstop is less than 6° above horizontal from a firing line 300 yards away.
- ❖ Typically, the club suggests that the errant bullet might have come from the firearm of a reckless and dangerous loose cannon who has taken pot-shots at street signs around various areas of the district on random occasions. **Given the thousands of rounds of ammunition fired at the gun range in a year, the chances that stray bullet strikes on properties north of the Club came from a dangerous person (*such as a stop sign shooter*), rather than from the active outdoor shooting range to the south are questionable.**

Negative Impact of Residential Safety Concerns (the Fear Factor)

The SDAB noted that the SGGC had made a number of improvements to address the safety concerns of its many residential neighbours and yet there was **no guarantee** that a bullet might not escape from the outdoor range. As a result, the SDAB revoked the SGGC's permit for an additional reason, specifically:

Although the probability of a stray bullet appears to be low, the impact of that risk is high.

Several residents had limited the use of their property because of this concern so they took a number of precautionary steps such as:

- not allowing their children to play outdoors when the range was active;
- vacating their decks, patios and backyards to seek safety from the possibility of an errant bullet strike;
- restricting outdoor work and leisure activities to periods when there was no shooting at the range;
- Limiting, canceling or prematurely ending the use of their property for the purpose of outdoor entertainment (friends, family, relatives, neighbours).

SPRUCE GROVE GUN CLUB



Permit revoked October 2015 due to NOISE and SAFETY concerns
Outdoor pistol, rifle and shotgun ranges closed November 2015
Site has been shut down from November 2015 through August 2017

Country Residential life without the disturbance and annoyance of the impulsive noise from gunfire from a neighbouring shooting range during 2016 & 2017

Family reunions & Bar-B-Q's



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Gardening in solitude



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Just chilling out



Reading in peace and quiet



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Entertaining friends outdoors



SGGC APPEALS

Soon after the SDAB's October 23, 2015 decision the Club exercised its legal right and filed an application to APPEAL this decision to the Court of Appeal of Alberta. They also applied for a STAY of the SDAB's decision.

- ❖ **December 08, 2015** - The Court of Appeal of Alberta dismissed the SGGC's application for a STAY of the decision of the Parkland County SDAB noting that - "***Residents of the area have real, substantiated concerns about ongoing noise and safety for themselves and their children arising from the continued operation of the Gun Club.***"
- ❖ **February 03, 2016** - The Court of Appeal of Alberta dismissed the Club's Application for Permission to **APPEAL** the Parkland County SDAB's decision to deny the gun range a discretionary development permit.

NB - In her decision the **Honourable Madam Justice Barbara Lea Veldhuis** duly noted that after the Club was granted the 2015 permit on conditions substantially the same as those in the 2014 permit - **then, over 100 residents appealed that decision** to the SDAB, mainly on the basis of **NOISE** and **SAFETY** concerns (see Paragraph [10] of the decision). **NB** - *The total number of residents opposed to the range was 111.*

COMPLIANCE versus COMPATIBILITY

The Court of Appeal of Alberta's February 3, 2016 decision also noted that:

- Even though the noise levels from the gun range may be lower than the levels specified in the *Noise Bylaw*, that does not change the fact that residents are suffering a disturbance and an annoyance arising from the noise coming from the Club. The evidence is that the annoyance and disturbance is not trivial or fleeting.
- As a result the SDAB concluded that the impact of the noise emanating from the Club on its neighbours made operation of the Club incompatible with surrounding residential use.

During the course of the proceedings at the Court of Appeal of Alberta when the Club was seeking permission to appeal the SDAB's decision the Honorable Justice had to remind the participating parties (on more than one occasion) that the hearing was not about **compliance** with the *Noise Bylaw*, it was about **the impact of the noise emanating from the Club on its neighbours which made operation of the gun range incompatible with surrounding residential use.**

COMPLIANCE versus COMPATIBILITY

On Tuesday June 27, 2017 - Parkland County council heard a presentation by three officials of the SGGC. It was a:

- revised version of the information provided to the SDAB in 2015; and
- reiteration of the same compliance arguments that were refuted by the evidence of audio recordings submitted by residents to the SDAB in 2015 and dismissed by the Court of Appeal of Alberta. It was summarized in THE GROVE EXAMINER as follows:

The SGGC's acoustic consultants' analysis "*was that (neighbours of the Club) **could expect to experience** a noise level of 57.3 decibels which is exponentially below the County bylaw.*" The referenced bylaw **does not address the impulsive noise** of gunfire and exceeds the noise level of other jurisdictions that have established a maximum noise level of **45 decibels** for outdoor gun ranges).

The level of the noise coming from the Club in 2015 was disruptive, disturbing and annoying to more than 100 residents. It was the negative impact of that impulsive noise on its own that made the range incompatible with residential use.

THAT WAS THEN THIS IS NOW

- ❖ In 2015 the Community Group consisted of 94 residents from the following twelve subdivisions and Sturgeon County.:

⇒ Atim Creek Springs
⇒ Bailey's Park
⇒ Creekside Estate
⇒ Fernwood Estates
⇒ Kolba Estates
⇒ Landmark Estates
⇒ Muir Lake Estates

+

⇒ Poplar Ridge Estates
⇒ Singer Acres
⇒ Southview Ridge
⇒ Stonewood Terrace
⇒ **Sturgeon County**
⇒ Woodridge

Acreage homes within the same general area around the range.

- ❖ Today the Community Group is aware of residents in the **Century Estates** subdivision that were opposed to the operation of the gun range in 2015.
- ❖ **Combined the number homeowners surrounding the closed site of the range today contribute more than \$2 million a year in property taxes to the County.**

Proposed Bylaw Amendment to Exclude Outdoor Gun Ranges From all Residential Districts In Parkland County

The Land Use Bylaw amendment was introduced in response to the SDAB's decision to revoke the SGGC's development permit in October 2015. The decision was based on the widespread opposition expressed by a total of 111 residents who had been deprived of the full use and enjoyment of their homes.

For years residents have stressed that the SGGC should never ever have been allowed to operate a gun range at the closed site. In contrast, members of the Club have opined that residents should have known better than to build homes next to an outdoor shooting range but **that was then and this is now.**

The closed gun range is currently situated in the heart of a residential zone where the disturbance and annoyance of its operations once inflicted a negative impact on so many of its neighbours, many more than the 111 residents who opposed the Club in 2015. In a nutshell, the closed range is a classical case study of why outdoor gun ranges should be excluded from all residential districts in Parkland County.

THE GROVE EXAMINER included an article on page 24 (“**Gun Club provides info to council**”) quoting the following statement made by a director of the SGGC while addressing Parkland County council at its meeting on Tuesday June 27, 2017 :

“In Canada, no one outside of a gun range has ever been injured or killed by a stray bullet from a gun range.”

There are about 20 families residing north of the SGGC well within range of an stray bullet. None have been concerned about their safety since the gun range closed. None want to have the distinction of being the first person in Canada to be injured or killed by a stray bullet from a gun range!