

## **Animal Welfare Community Advisory Committee Submission on the Fireworks By-Law Review**

**August 3, 2023**

### RECOMMENDATION:

The Animal Welfare Community Advisory Committee (AWCAC) recommends that City Council adopt Option B as outlined in the June 13, 2023 staff report on Fireworks By-Law Options. Option B would restrict the use of all consumer (backyard) fireworks, restrict the sale of consumer fireworks in London, increase the current fines, and reduce adverse impacts to wildlife and companion animals.

Additionally, to mitigate the disturbances to companion animals and wildlife, the AWCAC recommends:

- (1) Restrict the locations of permitted display fireworks (avoid environmentally sensitive areas, known nesting sites and wildlife habitat), and
- (2) Set a maximum length of time of permitted display fireworks (10 minutes), and
- (3) Require notice of a fireworks display to the surrounding community, and
- (4) Limit the number of holidays and type of events when display fireworks are allowed by permit, and
- (5) Promote alternatives to fireworks, such as light shows and celebratory events/activities, by adopting a strategic plan that provides incentives to event organizers who choose safer alternatives. Examples are reduced permit fees, allocation of funds, or public recognition for their animal and environmentally-friendly choice.

### REASONS FOR RECOMMENDATION:

The city staff report summarized the results of a survey of London residents. In addition to concerns about the environment, noise, safety and enforcement, a substantial majority (65%) of respondents were concerned about the impacts of fireworks on pets and wildlife. This concern is not misplaced. The negative impact of fireworks on animals is well documented.

Other municipalities are looking to ban or restrict the sale of fireworks due to public outcry. The Oshawa Animal Care Advisory Committee's research found that toxic heavy metal chemical traces are left by spent fireworks on ground surfaces and waterways where they can be consumed by both wildlife and domestic animals. That Committee also learned that the City of Brampton's fireworks by-law was flawed and needed to be amended because an officer could not issue a second ticket (fine) within the same 24-hour period and was not authorized to confiscate personal fireworks. Their report is attached at the end of this report.

AWCAC member Dr. Kendra Coulter, Ph.D. has published her research on this issue. *The Devastating Effects of Fireworks on Pets and Wildlife* can be found at <https://thereader.mitpress.mit.edu/the-devastating-effects-of-fireworks-on-pets-and-wildlife/>

Stating that “harm is nothing to celebrate”, she points out that cats and dogs experience sounds at far greater intensity than humans, and horses have an innate fear response that can take over when they hear fireworks. The result is that these animals can bolt and get lost, hit by a car, or suffer injury.

Restricting the sale and use of consumer fireworks is the only way to protect pets and reduce harm to wildlife. Animal welfare organizations routinely advise people to keep dogs and cats indoors during fireworks displays. However, this type of proactive response is only possible when people have notice of a fireworks display. It is impossible to take preventative action when fireworks are set off in a backyard without warning. Further, even inside their home, companion animals continue to suffer intense fear and anxiety regardless of attempts to keep them calm.

Measures to mitigate the impact of permitted fireworks displays must also be taken, and must reflect London’s progressive Humane Urban Wildlife Policy and section 2.4 of the Strategic Plan as it relates to companion animals and wildlife.

Debra Spilar, Director/Custodian at Procyon Wildlife, a rehabilitation and education centre in Ontario, has assisted AWCAC in understanding the impacts of fireworks on wildlife. She provided us with information, including photos of their posters, and noted that their admissions and phone calls consistently go up in the days after a fireworks display. Gail Lenters, Authorized Wildlife Custodian at Shades of Hope, a wildlife refuge in Ontario, has also stated that they experience an increase in intake after fireworks, specifically displaced babies and collision traumas on adult animals.

The sudden noise and flashing lights of fireworks will trigger the fight-or-flight response in wildlife like birds, squirrels, skunks, raccoons, frogs and fish. The result will be terrified animals fleeing from trees and ponds. When this happens, the animals may be injured, killed, or not return, and animal babies in nests and burrows can be abandoned and left to die of dehydration and starvation. Rabbits and deer can die just from the stress and anxiety of the noise. Fish and other animals can perish after ingesting fireworks debris. Particles can fall at the explosion site or be blown by the wind to a distant location.

#### RECOMMENDED MEASURES TO MITIGATE FIREWORKS IMPACTS INCLUDE:

- restricting the sale and use of consumer (backyard) fireworks,
- keeping permitted firework displays away from natural areas where animals live,
- restricting the amount of time the noise occurs,
- requiring notice of the event,
- limiting the number of holidays and events when a fireworks permit may be issued, and
- promoting safer alternatives.

By implementing these strategies, the City will protect animals’ well-being, shift the focus toward safer, more environmentally-friendly alternatives to fireworks, and promote a responsible and sustainable approach to celebrating holidays.

## CITY POLICIES THAT SUPPORT THE AWCAC RECOMMENDATION:

- Strategic Plan - Wellbeing and Safety 2.4 - London continues its efforts to promote animal welfare including companion pets and wild animals.
- Humane Urban Wildlife Conflict Policy

The City is committed to upholding high standards of animal welfare, including the humane treatment of wildlife. The City will strive to not interfere with wildlife and their natural processes where possible; and will strive to implement proactive and preventative measures in order to promote coexistence, and to prevent potential conflicts where possible.

From time to time, conflict between humans and wild animals arise within the City of London on City owned lands and the City will be compelled to act to protect property, human health and safety. In these circumstances, the City will strive to protect the welfare of wild animals by using humane solutions to resolve conflicts. To achieve this, the City will make all reasonable efforts to avoid displacing, injuring or killing wild animals. Lethal measures will only be used as a last resort and will employ the most humane methods available.

Trapping devices that are known to cause physical injury to animals, such as body or limb gripping traps and snares, will not be used to trap animals.

The City of London has a role in the management of urban wildlife and human/urban wildlife conflicts within the City on City owned lands. The City recognizes that the majority of wildlife management responsibilities and authority rests with the Ontario Ministry of Natural Resources and Forests (OMNRF) specifically under the Fish and Wildlife Conservation Act, 1997 and the Endangered Species Act, 2007. The responsibility for prevention and resolution of wildlife conflict on private property rests with the property owner under the Fish and Wildlife Conservation Act, 1997. City of London owned lands and actions would be subject to this Act.

Cases of public health and safety involving the London Police Service with a wildlife conflict situation are exempt from this Policy. The London Police Service is governed by its own mechanisms and procedures under the Police Services Act (1990). The primary duty of an officer under the Act is to protect the peace 42(1). The London Police Service is obligated to assess a wildlife conflict situation and take whatever actions are necessary to protect public health and safety.

Where the City cannot resolve the conflict through all reasonable conflict resolution options identified by the City of London, such situations and the outcomes will be reported on a quarterly basis to the Community and Protective Services Committee.

Definitions:

- “animal” means a member of the class Aves (birds) and Mammalia (mammals), but does not include a human being; excluding rats and mice “City” means The Corporation of the City of London
- “urban” means within the City of London’s urban growth boundary as delineated on Schedule A of the City of London Official Plan
- “displace” means to physically remove an animal from the location where it resides
- “humane” means that a practice will not reasonably cause physical injury or undue hardship or suffering to an animal
- “wild” means non-domesticated
- “conflict” means wildlife causing damage to property or affecting public health and safety

Photo provided by PROCYON WILDLIFE:

Your dog isn't the only  
one upset by fireworks.



The panic brought on by fireworks can cause wildlife moms to abandon their babies and be too disoriented to find their way home.

Squirrels, small mammals, birds and butterflies have been known to exhibit detrimental, even life threatening behavior as a result of fireworks, while waterbirds and fish perish after ingesting fireworks' debris.

This summer, celebrate in a way that does no harm.

Celebrate without fireworks.

Photo provided by PROCYON WILDLIFE:

**Fireworks**  
*explode like magnified gunfire in the exquisitely sensitive ears of all creatures.*

-  **Bees** become so disoriented they don't go back to their hives
-  **Birds** have panic attacks at night, causing mass deaths
-  **Wild animals** raising babies abandon their dens in fear
-  **Fish & other animals** perish after ingesting firework debris
-  **Companion animals** have anxiety & panic attacks
-  **Humans** have PTSD

**#SilentFireworks**

THE FOREVER DOG



## **Recommendation**

### **Oshawa Animal Care Advisory Committee Review and Recommendation to Council to Further Regulate the City of Oshawa Fireworks By-law**

#### **Purpose**

To regulate the Sale, Purchase, Possession and Discharge of consumer grade fireworks while also regulating both the number of permitted licensed events and locations of professionally organized firework displays and to increase the MLE fines schedule.

#### **City of Oshawa (Fireworks By-law)**

As amended by By-law 96-2019; By-law 36-201; By-law 59-2014; By-law 49-2021

[https://www.oshawa.ca/en/Document-Feeds/General-By-Laws/Fireworks\\_By-law\\_59-2014.pdf](https://www.oshawa.ca/en/Document-Feeds/General-By-Laws/Fireworks_By-law_59-2014.pdf)

#### **People, Animals, the Environment and Fireworks....**

Much to their credit and vision, the Town of Caledon and the City of Brampton banned the sale, purchase, possession, and discharge of fireworks last year (2022). As with the recent recommendation contained in the Town of Whitby staff report (FES 04-23), the recommended exception is a professionally organized event where the hosts will continue to apply for a license to host such an event.

The City of Brampton further designates specific locations where such professionally hosted events may be shown.

However, the City of Brampton discovered a flaw in their recent personal firework regulation provisions. As such it was discovered that an attending by-law officer could ticket (fine) an individual for possession of fireworks or discharge of, however, that same individual could then discharge to remaining fireworks in his/her possession.

Two factors that were identified:

- a) The by-law officer could not issue a second ticket (fine) within the same twenty-four-hour period.
- b) The lack of a provision that authorized the by-law officer to confiscate the personal fireworks.

Subsequently, an amendment was added to permit the confiscation of personal fireworks.

As such, this amendment now denies the individual from subsequently discharging personal consumer fireworks.

Public surveys conducted for both the Town of Caledon and City of Brampton revealed a considerable concern for animal wellness and the negative effects that fireworks cause for them and their owners.

1. Fireworks greatly disrupt the social fabric by interfering with the right of a property owner or tenant to enjoy his or her property without interference. Disruption of quiet enjoyment may constitute a legal nuisance.

2. The discharge of fireworks is documented to negatively effect autistic children and adults and those experiencing PTS. They can also negatively affect and scare domestic animals, livestock, and wildlife, notably birds during nesting season, where terrified birds can abandon their nests.

3. There is also the toxic heavy metal chemical traces left by spent fireworks where they lay polluting our ground surfaces and waterways and that can be consumed by both wildlife and domestic animals before being detected (if located) and removed. Chemical components in any variation and amount are as follows, aluminum, barium, copper, strontium, antimony, lead, magnesium, and potassium. SO<sub>2</sub>, nitrogen dioxide (NO<sub>2</sub>), nitric oxide, PM<sub>10</sub>, total suspended particulate (TSP) matter, PM<sub>1</sub>, PM<sub>2</sub>, PM<sub>2.5</sub>, benzene, toluene, ethylbenzene, and xylene-volatile aromatic compounds (BTEX), perchlorate, and chloride. As children regularly attend firework shows it must be noted that they are particularly susceptible due to a higher respiratory rate and correspondingly are likely to inhale greater quantities of these toxic pollutants. While we have always been accustomed to the use of fireworks as a celebratory medium, we have nonetheless experienced great strides in the science and resulting understanding of our environment that have enabled changing attitudes for the better and the enactment of progressive regulatory provisions.

4. Pose a significant fire hazard to land and buildings that can pose a corresponding risk to both humans and animals especially during periods of heat and dry weather that add to municipal emergency services callouts and associated costs.

5. As noted in the Town of Whitby report, effective enforcement invariably poses a significant challenge for any municipality whereas by the time By-law officers respond to a complaint the discharge of fireworks is over. The City of Toronto has also recognized effective enforcement as a perennial problem.

6 Past commentary from a few stakeholders has defended the current status quo by supporting the merchants need to 'make a little money' or the need for 'families to have a little fun' by setting of fireworks from their respective backyards. However, when the full consequences of such activities to humans and animals alike are examined more closely it becomes clear that there are broad social concerns relating to health and well-being to permit the continuance of using personal fireworks or any grade of fireworks whatsoever, anywhere.

7. On a positive note, there are alternatives to such harm and disruption such as public light and laser shows, and multi-synchronized illuminated drone shows at approved locations that can be as visually entertaining. Event organizers, including municipalities, would be in good stead to investigate such alternatives.

## **Listing of Municipal Public Surveys, Staff Reports, Meeting Minutes & Public Notices**

### **City of Brampton**

#### **Fireworks By-law 243-2022**

<https://www.brampton.ca/en/City-Hall/Bylaws/All%20Bylaws/Fireworks.PDF>

#### **City Council – Special Meeting –Minutes November 28, 2022**

**Pages 40-41**

<https://www.brampton.ca/EN/City-Hall/meetings-agendas/Documents/2022-2026%20Term%20of%20Council%20Minutes.pdf>

#### **Committee of Council – Minutes Wednesday, November 23, 2022**

<https://www.brampton.ca/EN/City-Hall/meetings-agendas/Documents/2022-2026%20Committee%20of%20Council%20Minutes.pdf>

#### **Public Notice: Enforcement and By-law Services – Fireworks**

<https://www.brampton.ca/EN/residents/By-Law-Enforcement/Pages/Fireworks.aspx>

## **THE CORPORATION OF THE TOWN OF CALEDON**

### **BY-LAW NO. 2022-022**

A by-law to regulate and prohibit the sale and discharge of fireworks, to provide for the issuance of permits for the sale and discharge of fireworks and to repeal By-law 2009-097

[https://www.caledon.ca/uploads/14/Doc\\_634952249309064446.pdf](https://www.caledon.ca/uploads/14/Doc_634952249309064446.pdf)

### **Town Council Meeting Minutes**

Tuesday, April 26, 2022. 6:00 p.m.

Pages 2-5

<https://pub-caledon.escribemeetings.com/FileStream.ashx?DocumentId=23317>

### **Staff Report 2022-0182**

Meeting Date: April 19, 2022

Subject: Fireworks By-law Update and Proposed Fee for Consumer Fireworks Display for Community Events.

Submitted By: Dave Pelayo, Deputy Fire Chief, Fire Prevention, Training and Environmental Monitoring, Fire and Emergency Services

<https://pub-caledon.escribemeetings.com/filestream.ashx?DocumentId=21139>

### **Town of Caledon Public Notice**

<https://www.caledon.ca/en/news/fireworks-by-law-helps-ease-complaints.aspx>

## **Town of Whitby Firework By-law Review and Staff Recommendations**

**Report FES 04-23** recommends Council rescind By-law #6339-10 and prohibit the possession, sale and/or discharge of all consumer fireworks in the Town of Whitby.

<https://pub-whitby.escribemeetings.com/filestream.ashx?DocumentId=15576>



## Public Survey Results

<https://pub-whitby.escribemeetings.com/filestream.ashx?DocumentId=15577>

## City of Toronto Public Notice, Extract

### IMPACTS OF FIREWORKS ON BIRDS

Victoria Day and Canada Day both fall during nesting season. Fireworks can have negative consequences for Toronto's birds and their babies. Fireworks can:

- Drown out a bird's ability to communicate and cause birds to abandon nests and fledglings for their own perceived safety
- Start fires, especially in meadow habitats, which can destroy ground bird nests and deplete food sources.
- Contain toxic heavy metals that mix with water and create hazardous drinking water for birds.

<https://www.toronto.ca/city-government/public-notices-bylaws/bylaw-enforcement/fireworks/use-disposal-of-fireworks/>

## Academic Studies, Research & Other Materials

The press release below precedes the following study under the title, **Toxicity of particles emitted by fireworks**

### NYU Langone Health RESEARCH, PRESS RELEASES | JULY 2, 2020

#### Common Fireworks Release Lead, Copper & Other Toxic Metals into the Air

#### Metals Used to Give Fireworks Color Damage Human Cells & Animal Lungs

<https://nyulangone.org/news/common-fireworks-release-lead-copper-other-toxic-metals-air#:~:text=Along%20with%20lead%2C%20titanium%2C%20strontium,Gordon.>

### Toxicity of particles emitted by fireworks

Christina Hickey, Christopher Gordon, Karen Galdanes, Martin Blaustein, Lori Horton, Steven Chillrud, James Ross, Lital Yinon, Lung Chi Chen & Terry Gordon

Terry Gordon, PhD, a professor in the Department of Medicine and a member of the Division of Environmental Medicine and his team also analyzed 14 years' worth of air quality samples taken at dozens of sites across the United States by the Environmental Protection Agency (EPA) throughout each year. They found that levels of toxic metals were higher in samples taken near Independence Day and New Year's Eve celebrations than at any other time of the year. Along with lead, titanium, strontium, and copper are commonly found in fireworks.

"Although people are only exposed to these substances for a short time each year, they are much more toxic than the pollutants we breathe every day," added Dr. Gordon.

Extracts -

## **Background**

Throughout the year, numerous types of celebratory fireworks or pyrotechnic displays are set off across the world. Often, the only limit on the size and number of the displays is cost. In the past, while U.S. pyrotechnics traditionally were reserved for special occasions such as July 4th and Chinese New Year, pyrotechnic displays are now prevalent at rock concerts, opening ceremonies of the Olympics, amusement parks, and sports venues. Amusement parks are the largest consumers of fireworks in the U.S., whereas the single largest fireworks show is the July 4th display sponsored by Macy's [1]. In addition to these large public fireworks displays, small, and often illegal, fireworks are often ignited locally within residential neighborhoods. According to the American Pyrotechnics Association, the amount of consumer fireworks (258.4 million pounds) intended for use by the general public (i.e., 1.4G explosives) and purchased in the U.S. is more than 10-fold greater than that used for large celebratory fireworks (19.1 million pounds) displayed by pyrotechnic professionals (i.e., 1.3G explosives) [2] and, thus, are a significant concern for adverse health effects.

To date, the greatest health concern regarding fireworks has been the potential for injury to life and limb due to the explosive force of fireworks. Each year, approximately 10,000 to 25,000 people (predominantly male teenagers) in the U.S. suffer physical and burn injuries, due to fireworks, which include the loss of fingers, limbs, eyesight, and sometimes, life [3,4,5]. The environmental effects are also a concern as evidenced by numerous publications that describe the release and contamination of air and waterways with perchlorates and other toxicants [6, 7].

## **Discussion**

Because the 10 fireworks chosen for this study were all pyrotechnic displays that can be purchased by individuals and used at home, the potential for exposure of children to significant amounts of Pb and other toxic metals from such products is unwarranted yet preventable.

The results of this study suggest that in addition to organic pollutants [6], significant amounts of toxic metals are released into the ambient environment from both home pyrotechnic displays and larger commercial fireworks. These releases, as demonstrated by exposure assessment air pollution studies [16, 25], are episodic in nature but can potentially be significant emission sources of metals. We have confirmed this time-dependent increase in airborne metal concentrations throughout the U.S. by using a 10-year period of data from EPA's speciation network [27].

In addition, although primarily for reasons of cost, some fireworks exhibitions have been replaced by light shows that encompass laser and LED displays accompanied by music and explosive sounds.

## **Conclusions**

Our research has demonstrated that fireworks particulate emissions are more toxic in vitro than typical urban particulate matter. This in vitro toxicity was dependent on the composition of the particulate emissions as shown by the large range in toxicity among the fireworks types examined in this study. The in vivo studies in mice validated the in vitro findings for a subset of particles and suggest that the in vitro results are translatable to the mammalian lung. Surprisingly, highly toxic metals, such as Pb, were present at exceedingly high levels in the emissions of some of the tested fireworks. Our temporal survey of the metal species present in the air across the U.S. demonstrated that the metals associated with increased toxicity in our ground-based pyrotechnic displays are elevated in samples taken around the holiday celebrations of July 4 and New Years. These findings bring up the obvious question of whether adverse cardiopulmonary effects are associated with exposure to fireworks-linked metals during these

holiday periods. Responsible manufacturing can have a major impact on reducing toxic metals in both commercial and residential pyrotechnics displays and their potential for producing adverse health effects.

<https://particleandfibretoxicology.biomedcentral.com/articles/10.1186/s12989-020-00360-4>

### **The Hidden Harms Of Fireworks On Wildlife And People**

<https://raog.ca/the-harmful-effects-of-fireworks/>

### **World Animal Protection**

#### **Fireworks: A Distressful Celebration**

<https://www.worldanimalprotection.org.in/blogs/fireworks-distressful-celebration>

### **Marion County Wellfield Education Corporation**

#### **Groundwater and Drinking Water Protection for Indianapolis and Marion County Indiana**

#### **How Fireworks Pollute Our Drinking Water**

<https://mcwec.org/2022/06/how-fireworks-pollute-our-drinking-water/>

### **Government of Canada**

#### **Fireworks-related injuries Published:(2019-06-27)**

The Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) is an injury and poisoning sentinel surveillance system currently operating in the emergency departments of 11 paediatric and 8 general hospitals across Canada. Since its inception in 1990, this database has collected over 3.2 million records, making it an important resource for information on injuries and moving forward programs and policies that aim at reducing and preventing injuries among Canadians.

<https://health-infobase.canada.ca/datalab/firework-blog.html>

**Unfortunately, not a lot of information exists for Canada therefore U.S information is included whereby it may be possible, in certain circumstances, to extrapolate the information and apply this to Canada.**

### **U.S. Consumer Product Safety Commission: 2019 Fireworks Annual Report June 2020**

Fireworks-Related Deaths, Emergency Department-Treated Injuries, and Enforcement Activities During 2019

<https://www.cpsc.gov/s3fs-public/2019-Fireworks-Annual-Report.pdf>

### **National Fire Protection Association (USA)**

Fireworks fires and injuries

Report: NFPA's "Fireworks Fires and Injuries" Author: Marty Ahrens. Issued: June 2020

<https://www.nfpa.org/News-and-Research/Data-research-and-tools/US-Fire-Problem/Fireworks-fires-and-injures>

### **Public Notices**

#### **24/7 ANIMAL POISON CONTROL CENTER: Household Items – Fireworks**

#### **Toxicity to pets**

<https://www.petpoisonhelpline.com/poison/fireworks/>

**Media Press Articles**

**Audubon: Illegal Fireworks Likely Cause of Massive Arkansas Blackbird Deaths. January 04, 2011**

<https://www.audubon.org/news/illegal-fireworks-likely-cause-massive-arkansas-blackbird-deaths#:~:text=Professional%2Dgrade%20fireworks%20probably%20caused,to%20crash%20to%20their%20deaths.>

**Forbes: How do Fireworks Harm Wild Birds. Dec 30, 2017**

<https://www.forbes.com/sites/grrlscientist/2017/12/30/how-do-fireworks-harm-wild-birds/?sh=56263a8118cc>

**Bird Guides, First for Bird News. 09/01/2021**

**New Year's Eve fireworks 'scared birds to death'**

<https://www.birdguides.com/news/new-years-eve-fireworks-scared-birds-to-death/>

