



SUBJECT: Fireworks and drones for festivals and events – Canada Day

TO: Committee of the Whole

FROM: Recreation, Community and Culture

Report Number: RCC-02-24

Wards Affected: all

Date to Committee: March 4, 2024

Date to Council: March 19, 2024

Recommendation:

Direct the Director of Recreation, Community and Culture, as outlined in recreation, community and culture report RCC-02-24 to proceed with option two by partially removing fireworks from the July 1 event, and supplement with a drone display in 2025 and report back following the event by Q3 2025; and

Direct the Director of Recreation, Community and Culture to proceed with the same decision making process regarding air quality and fireworks as decided in 2023 and outlined in recreation, community and culture report RCC-02-24 in consultation with internal and external stakeholders for Canada Day Celebrations in 2024.

PURPOSE:

Provide a detailed overview of the pros and cons of using fireworks, including air quality impacts during Festivals and Events, specifically Canada Day and provide information on drones as potential alternate entertainment option. Establish a threshold of acceptable air quality for fireworks to be permitted on the event day.

Vision to Focus Alignment:

- Building more citizen engagement, community health and culture
 - Support sustainable infrastructure and a resilient environment
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Background and Discussion:

Currently, the City has an existing three-year agreement with Blue Star Pyro to provide a twelve-minute fireworks show for Canada Day, with the last year of the agreement being 2024, and the possibility of a two-year extension until 2026. With growing air quality and climate concerns, staff are proactively bringing forward this report before Committee to consider alternate options to the fireworks display.

Fireworks have been used for many decades and by many cultures to celebrate important events throughout history. Many nations use fireworks displays to bring people together to mark important dates to their countries, Canada Day being one of them. As fireworks symbolize celebration and joy, it has been a significant component to the City of Burlington's Canada Day event for many years. As years have progressed, Canada Day fireworks have varied in length and intensity, however, have remained consistent in entertainment and budget over the past few years.

In 2023, discussions were had among City of Burlington staff to determine if the Canada Day fireworks were going to move forward, as there was significantly poor air quality due to the wildfires in the surrounding area. The decision was made that if the air quality health index reached, or was anticipated to reach 10+ (very-high risk) for an extended period, around the time of the scheduled fireworks, the Canada Day fireworks would be reduced or cancelled to protect the health and safety of staff, residents, volunteers, vendors and entertainers. The air quality health index improved as the event approached, and the fireworks were able to continue.

Strategy/process/risk

There are alternate options we can provide the residents of Burlington while taking into consideration the effects of air quality, climate, noise, anxiety, fears, and safety, which align with Burlington's strategic vision.

Based on staff's knowledge of the resident experience, best practices around fireworks with large-scale events, and information available on environmental and psychological impacts; staff are recommending option 2 for the 2025 event. This would allow ample notification of the events modifications, adherence to contractual obligations (current contract expiring in 2024), and overall ability to gather valuable input on the change.

Currently, the fireworks display for Canada Day costs \$22,261 including HST. The cost analysis is outlined below for each option.

Option 1: Remove the fireworks display from Canada Day and replace with a drone display.

Canada Day packages for drone shows range from \$30,000-\$60,000 using 100-300 drones. An additional request for \$20,000 would be required from Council or obtained through sponsorship.

Option 2: Remove the fireworks display partially from Canada Day and supplement with a drone display.

Use existing budget provided and cut fireworks cost and use the remaining funds for a drone show using 70 drones. Existing allocated funding would be used.

Option 3: Continue existing state and provide fireworks display for Canada Day.

- a. Existing allocated funding would be used.

In the event we continue with existing state, the following needs to be considered moving forward in the event of poor air quality on event day:

- If air quality health index reaches, or is anticipated to reach 10+ (very-high risk) for an extended period, around the time of the scheduled fireworks, the Canada Day fireworks would be reduced or cancelled to protect the health and safety of staff, residents, volunteers, vendors and entertainers.
- This decision would be made in collaboration with multiple departments (Recreation, Community, and Culture, Human Resources – Health and Safety, Burlington Fire Department, Corporate Communications, etc.).

Some best practice research has demonstrated that a number of events and festivals are opting into drone displays in tandem with fireworks or replacing them completely. Last year, the City of Waterloo had a drone show for Canada Day using 200 drones. The Niagara Parks Commission is looking into having both fireworks and drones for their displays over the falls, and the Town of Wakefield, Quebec has opted to use drones instead of fireworks for their Canada Day event using 70 drones.

Last year, Ottawa and Toronto decided to continue with their fireworks displays leading up to Canada Day with the growing air quality concerns, similar to the City of Burlington. Interestingly, the City of Niagara Falls cancelled their June 30 display at the falls, the City of Pembroke postponed, and both Huntsville and Bracebridge cancelled as fire bans were prominent throughout the region and air quality was poor. Moving forward with option two outlined in this report would allow for fireworks, but also would align with Burlington's strategic vision with a focus on the environment. In the event the City of Burlington would have to cancel fireworks due to poor air quality, drones would continue to proceed providing entertainment to residents at the event.

Options Considered

	Option One - Drones	Option Two - Drones/Fireworks	Option Three - Fireworks
Quality of Display	100-300 drones 12-15 minutes (no dark spots) Approx. 12+ images, large scale, more detailed and customized	70 drones supplemented with fireworks 12-15 minutes (no dark spots) Approx. 10-12 small, basic images	12-15 minutes (no dark spots) No images
Pollution	No emissions, battery powered drones.	Half of existing firework emission (similar to a car driving 307km), no emissions, battery powered drones	Emissions similar to a car driving 614km (Burlington to Montreal, one-way)
Price	\$40,000-\$60,000	\$22,261	\$22,261
Risk	Injury caused by failure, cyber threat (hacked).	Pollutants being released into the environment, loud noise, contributes to poor air quality, injury to director or participants, injury caused by failure, cyber threat (hacked).	Pollutants being released into the environment, loud noise, contributes to poor air quality, injury to director or participants.

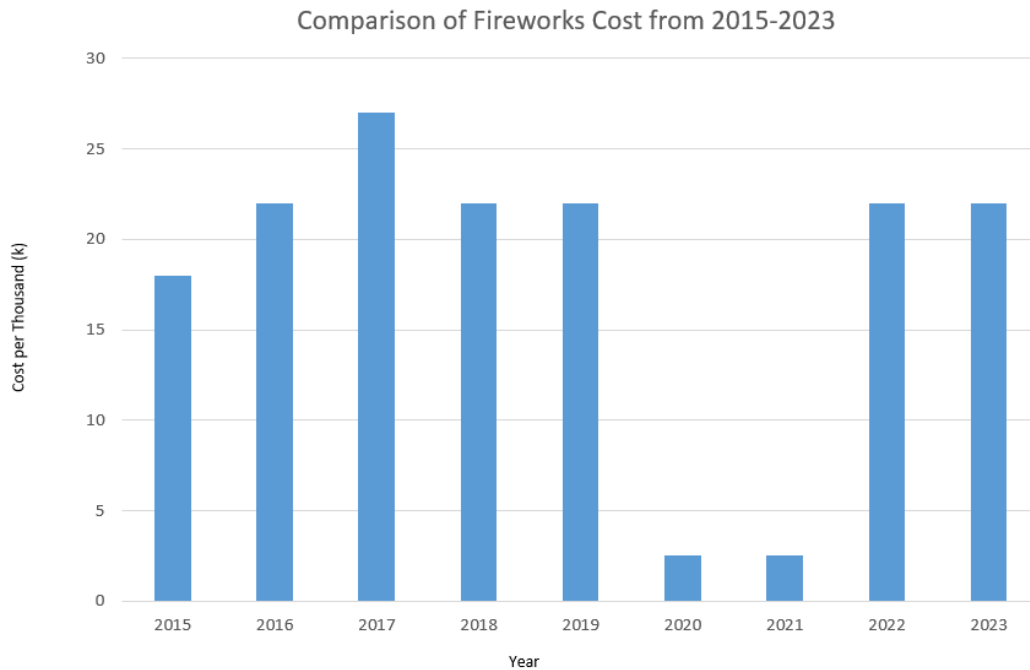
Financial Matters:

In 2024, we are proposing to move forward with option three, existing state, and no additional funding would be requested. In 2025, we are proposing to move forward with option two, with no additional funding requested. After piloting option two, and in consultation with the community, we would reassess option two and move towards option three with the potential for additional funding request in 2026.

Total Financial Impact

Depending on the option chosen, there may be a financial impact.

1. Option 1 - \$20,000 increase to existing budget.
2. Option 2 – no financial impact.
3. Option 3 – no financial impact.



There has been no additional funding allocated to the fireworks budget since 2016 (2017 was an extenuating circumstance due to Canada 150).

Climate Implications:

Fireworks can be damaging to the environment as they release a variety of pollutants into the atmosphere and water. These pollutants contribute to climate change, harm wildlife, and affect human health. Fireworks also contribute to poor air quality. Many studies in the United States have shown that on July 4th, air pollution increases by over 40% with pollutants lingering in the air for days after the event.

Interestingly, Blue Star Pyro works with an independent explosive consultant who uses an environmental calculator for firework display to calculate emissions exerted. The quantity of carbon dioxide and carbon monoxide produced by the Canada Day firework

display is equivalent to the emissions produced by an average car travelling 614km, the approximate distance from Burlington to Montreal. Blue Star Pyro plants trees to offset their emissions, which would be 0.3 trees planted for Burlington to compensate for the firework emissions.

Other Implications

Although not climate implications, it is also important to note that fireworks are loud and have the potential to cause distress in animals and humans. Fireworks displays can trigger panic and feelings of fear and anxiety in those with pre-existing conditions as well as those who are sensitive to noise.

Drones are reusable technology that can be used as an alternate to fireworks. Drones produce no air pollutants when used and create relatively minimal noise. Drones however can be hacked and potentially could fall out of the sky and injure someone or something.

Engagement Matters:

As a part of the special event process, community consultation is required for any new or existing event with significant changes. To follow our own process, we would conduct community consultation and allow time for the community to provide feedback on this subject matter.

After the event has occurred in 2025, the festivals and events team will conduct a post-event survey to obtain feedback from residents, SET (Special Events Team) members, and Council. Findings will be reported back to Council in Q3.

Conclusion:

As outlined through this report, there are benefits and risks to both firework and drone displays on Canada Day. We are looking to Committee and the community to help guide our decision making on what changes or options they would prefer for the event moving forward that align with Burlington's strategic direction.

Respectfully submitted,

Kristina Clint

Manager of Festivals and Events

Report Approval:

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Counsel.