Ontario Traffic Council

Hostile Vehicle Mitigation Measures

January 2023

CIMA+

Ontario Traffic Council

Hostile Vehicle Mitigation Guidelines

Prepared by: Jeffrey Suggett, M. Sc.
Jike Wang, EIT., B. Sc.

Verified by: Soroush Salek, P.Eng., Ph.D., RSP1

Table of Contents

Acknowledgements **1**

Disclaimer **2**

1 Definitions **3**

2 Purpose and Background **4**

2.1 Purpose 4

2.2 Background 4

2.3 Types of HVM measures 5

2.3.1 Temporary Installations 5

2.3.2 Permanent Installations 6

2.3.3 Emergency Installations 8

3 Overview of Process **10**

4 Special Event Planning **12**

4.1 Parties Involved 12

4.1.1 Public Works staff 12

4.1.2 Event organizer 12

4.1.3 Police Services 13

4.1.4 EMS and Fire Department 13

4.2 Responsibility and Liability 13

4.3 Cost Considerations 15

5 Risk Assessment **16**

5.1 Risk Factors 16

5.1.1 Event Risk Factors 16

5.1.2 Individual Vehicular Access Risk Factors 18

5.2 Risk Matrices 18

5.2.1 Event Risk Matrix 19

5.2.2 Individual Vehicular Access Risk Matrix 20

6 HVM Equipment **22**

6.1 Testing Criteria 22
6.2 Types of HVM Equipment 23
7 Installation, Access, and Removal 30
7.1 Establishing a Perimeter 30
7.2 Soft Closures 32
7.3 Hard Closures 32
7.4 HVM Locations 33
7.5 Traffic Management 34
7.6 Pedestrian Management 34
7.7 Speed of Installation/Removal 35
8 Application Process 37
8.1 Process to Develop, Review, and Implement a HVM Plan 37
8.2 Special Event Application Form Example 37

List of Tables

Table 1 – Examples of Permanent Installations 7
Table 2 – Typical Tasks and Parties Typically Involved 14
Table 3 – Event Risk Matrix 19
Table 4 – Individual Vehicular Access Risk Matrix 20
Table 5 – Typical HVMs Used for High-Risk Entry Points 24
Table 6 – Typical HVMs Used for Moderate-Risk Entry Points 28
Table 7 – Ad Hoc HVMs 29

List of Figures

Figure 1 – Supercrawl Festival (City of Hamilton) 6
Figure 2 – Street Closure in front of Rogers Centre, Toronto (August 2022) 9
Figure 3 – Overview of Process 11

Figure 4 – Illustration of crowd density of 5 people per square metre 17

Figure 5 – Perimeter Established for NHL Heritage Classic Hockey Game held in Hamilton in March 2022 31

Figure 6 – Example of a Soft Closure..... 32

Figure 7 – Example of a Hard Closure 33

Figure 8 – Example of a HVM Installation (gate in open position)..... 34

Figure 9 – HVM Measures installed at Byward Market..... 36

List of Appendices

Appendix A: Case Study 1 – 2022 RBC Canadian Open Golf Tournament (Toronto, ON)

Appendix B: Case Study 2 – 2021 Manitock Santa Claus Parade (Ottawa, ON)

Appendix C: Special Event Application Form Example

Acknowledgements

The following Ontario Traffic Council committee members participated in the development of this document guidelines, and provided technical content (i.e., local policies, guidelines, bylaws, etc.) and expertise:

Dennis Lopes, Shannon Noonan	City of Cambridge
Rich Shebib, Joanne Starr, Brian Hollingworth, Julia Davis	City of Hamilton
Ian Semple	City of Kingston
Jordan Lee	City of Mississauga
Michelle McElligott, Laureen DiNardo, Robert Robinson, Joshua Davis	City of Ottawa
Amy Olsen, Adam Pillon, Mike Taylor	City of Windsor
Heide Schlegl	Town of Milton
Christina Tizzard	Town of Oakville
Joe Coleman	Town of Bradford West Gwillimbury
Michael Stewart	CAA (South Central Ontario)
Michael Gazzola	Desjardins Insurance

The following OTC members provided advisory technical and safety product information:

Derek O'Brien	Direct Traffic Management Inc.
Jesus Munoz	Ramudden Inc.
Shaine Moore	Safeguard Perimeter Inc.

Disclaimer

This Guide has been prepared for Ontario Traffic Council (OTC) as part of its effort to promote transportation safety in Ontario by offering technical guidance on hostile vehicle mitigation. This publication is produced as per the best practices and is intended to provide a compendium of knowledge on this topic. These guidelines have been developed for municipal use and are not applicable to any provincial highways.

The Guide was reviewed by a project steering committee and accepted for publication based on procedures established by the OTC. However, the opinions and conclusions expressed or implied in this Guide are those of the consultant who undertook the project and are not necessarily those of the OTC, the Project Steering Committee, or the project sponsors.

The guidelines provided in this document are to assist transportation safety practitioners and individual municipalities in better decision-making and improve their safety planning processes. However, they should not be used as a replacement for sound engineering judgment and technical experience in the public's best interest. Furthermore, no reference can cover all contingencies, or all cases experienced in practice, so the readers should rely on their own skill and judgment to use the provided information in different applications.

1 Definitions

Hostile Act

A hostile act by a driver of a vehicle is any act in which the driver is intending to cause harm to pedestrians or cyclists or cause damage to infrastructure (i.e., buildings and/or utilities accessible from a roadway).[1]

Unintentional Act

An unintentional act occurs when the driver of a vehicle loses control of their vehicle and inadvertently strikes one or more pedestrians or cyclists or causes damage to infrastructure (i.e., buildings and/or utilities accessible from a roadway). The act may be unintentional due to impairment by drugs or alcohol, a medical condition (i.e., a stroke or a heart attack), driver distraction, or driver error (i.e. hitting the gas pedal instead of the brake pedal).

Hostile vehicle mitigation

Hostile vehicle mitigation (or measures) involves the deployment of equipment designed to prevent or lessen the likelihood of a hostile act or unintentional act by a driver of a vehicle. For the remainder of this document, hostile vehicle mitigation is referred to as HVM.

May vs. Should vs. Must

The word “may” is used when a requirement is recommended, but it is up to the discretion of the municipality.

The word “should” is used when a requirement is strongly recommended from a safety and/or accessibility aspect.

The word “must” is used when a requirement is mandatory.

Event Organizer

An event organizer is responsible for coordinating a special event (festival, parade, sporting event) that will take place directly adjacent to or within the road right of way. An event organizer could be a private event owner/operator, a third-party contractor/company, or municipal staff, or a combination of them.

[1] Hostile acts may also include a driver or drivers occupying and/or blocking a roadway as part of a protest (i.e. the Freedom Convoy protests in downtown Ottawa and at the Ambassador Bridge in February 2022), however these types of hostile acts are not covered in these guidelines.

2 Purpose and Background

The following section outlines the purpose of these guidelines, background context and broad types of HVM measures.

2.1 Purpose

The purpose of these guidelines is to provide event organizers with guidelines relating to measures that will mitigate the risk associated with drivers involved in hostile or unintentional acts resulting in injuries to pedestrians or cyclists or resulting in damage to infrastructure. While other parties such as police services may find the content in these guidelines useful, they are not intended to be the primary audience for these guidelines.

These guidelines have been created for the benefit of those event organizers who have not developed their own guidelines and as a supplementary resource to those who have developed their guidelines but are seeking additional guidance on the topics outlined herein.

2.2 Background

Recent events that have occurred worldwide have focussed attention on the need to protect public spaces from hostile acts resulting from drivers striking pedestrians, cyclists and/or valuable infrastructure within or adjacent to the right-of-way of municipal roads. While not all these events could have been mitigated by the measures outlined in these guidelines, recent examples both in Canada and internationally include:

- **July 14, 2016** – The driver of a 19-tonne cargo truck drove into crowds of people celebrating Bastille Day in Nice, France, resulting in the deaths of 86 people and the injury of 458 others
- **April 23, 2018** – The driver of a rented cargo van drove along sidewalks on Yonge Street in the City of Toronto, resulting in the deaths of 11 people and the injury of 15 others
- **June 6, 2021** – The driver of a pick-up truck struck and killed 4 members of a Muslim family in London, Ontario and
- **November 21, 2021** – The driver of an SUV drove directly into a Santa Claus parade in Waukesha, Wisconsin, killing 6 people and injuring 62 others.

Many event organizers in Ontario are proactively assessing the risk associated with their infrastructure and special events to determine the need to provide increased

protection for pedestrians, cyclists and vulnerable infrastructure, both within and directly adjacent to the public right-of-way.

2.3 Types of HVM measures

Types of HVM measures used to protect pedestrians, cyclists and vulnerable infrastructure may be grouped into the following:

- Temporary installations
- Permanent installations and
- Emergency installations.

The type of mitigating measures considered will vary depending on the type of installation.

2.3.1 Temporary Installations

Temporary installations should be considered at locations where a significant number of pedestrians and/or cyclists will be congregating in conjunction with a special event occurring within the public right-of-way or directly adjacent to the public right-of-way where is a risk of a hostile or unintentional vehicle act occurring. These types of events are planned; therefore, the event organizer has an opportunity to proactively implement measures to protect those attending the event. Some of these events involve very high numbers of pedestrians concentrated in a relatively small area; a hostile or unintentional vehicle act could result in harm to large numbers of people. An example would be the Supercrawl Festival in the City of Hamilton shown in **Figure 1** in which several blocks of downtown Hamilton were completely occupied by large crowds of pedestrians. The City of Hamilton implemented closures at critical locations within the downtown core to protect those assembled.

Temporary installations may be considered for either a one-time occurrence or recurring events such as:

- Sporting or community events
- Parades and
- Open air markets.

For these types of planned events, HVM treatments should be deployed for the duration of the event as deemed appropriate based on the threat level. Temporary installations, as the result of special events, will be covered in greater detail in later sections of these guidelines.

Figure 1 – Supercrawl Festival (City of Hamilton)

2.3.2 Permanent Installations

Permanent installations should be considered at locations that are identified as being vulnerable to a hostile vehicle act due to:

- An anticipated presence of a high number of pedestrians/cyclists in a public area that will be recurring and
- An asset (i.e., building or infrastructure) that may be the target of a terrorist threat.

Canadian examples of the above include entrances to and pedestrian areas in front of:

- The Rogers Centre or Scotiabank Arena in Toronto
- The United States Embassy in Ottawa and
- The Prosserman Jewish Community Centre in Toronto.

Permanent installations are not considered to be the focus of these guidelines. For further information on permanent installations, refer to the following resources:

- Hostile Vehicle Guidelines for Crowded Places, A Guide for Owners, Operators and Designers, Australia-New Zealand Counter-Terrorism Committee, 2017
- Vehicular Terrorism – The Threat Behind the Wheel, Corporate Risk Services Intelligence Bulletin, 2017

Table 1 shows examples of permanent installations.

Table 1 – Examples of Permanent Installations

Bollards (Rogers Centre)

Perimeter Fences[2]

Sculptures (Scotiabank Arena)

Retractable bollard[3]

[2] Image Copyright - https://www.airport-suppliers.com/supplier/bristorm/
[3] Image Copyright - https://www.directindustry.com/prod/avon-barrier/product-65750-552008.html

Pedestrian Guardrails[4]

Gates[5]

2.3.3 Emergency Installations

Emergency installations are considered for any unplanned event where there is a risk of a hostile or unintentional vehicle act occurring. These may include unplanned public gatherings (protests and/or vigils). Due to the nature of these events, mitigating measures tend to be more ad hoc, i.e., using police and/or municipal vehicles to block access to or protect vulnerable road users.

A recent example of an emergency installation was in response to the Freedom Convoy protests held in Ottawa in February 2022, the follow-up protests held in April 2022 and Canada Day weekend in 2022. In response to the February 2022 protests, police created a vehicle exclusion zone in downtown Ottawa to prevent vehicles from entering the area immediately adjacent to the Parliament Buildings.

While not related to an unplanned event, an example of a specific installation at an entry point restricting access to an exclusion zone is shown in **Figure 2.** In this example, a portion of the street in front of the Roger Centre was temporarily blocked by police vehicles in the lead up to a sporting event anticipated to draw large crowds of people.

[4] Image Copyright - https://www.penguinpr.co.uk/newscentre/2021/4/29/securiscapes-smart-hvm-guardrail-delivers-a-life-saving-solution-for-primary-school-children
[5] Image Copyright - https://issuu.com/bordermanagement/docs/nzsm-2019-june/s/107702

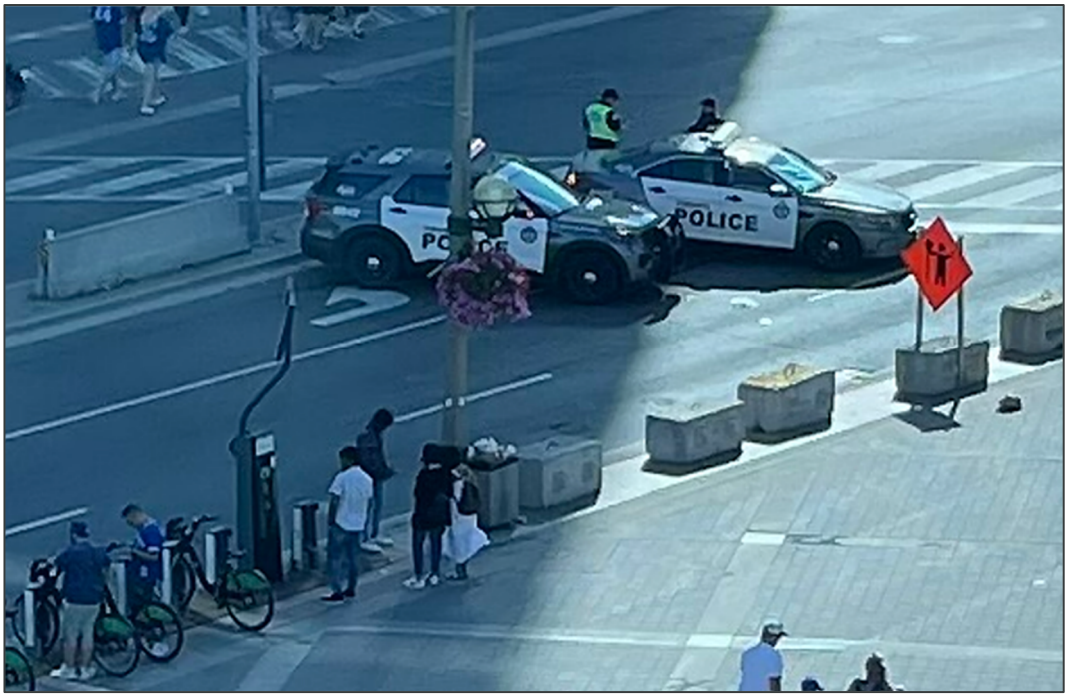


Figure 2 – Street Closure in front of Rogers Centre, Toronto (August 2022)

3 Overview of Process

The remainder of these guidelines discusses implementing HVM measures with respect to special events. **Chapter 4** discusses special event planning, specifically traditional roles for Public Works staff, an event organizer, police services, EMS and fire department staff, and their respective responsibility and liability, cost of HVM measures, and potential cost offsetting measures. **Chapter 5** presents a process by which risk can be assessed for a special event, both overall and with respect to specific access points to the event grounds. **Chapter 6** provides an overview of international standards with regard to HVM measures and presents typical HVM measures that have been implemented in North America. **Chapter 7** discusses the installation of, providing access to and removal of HVM measures at a special event.

The flow chart shown in **Figure 3** provides a general overview of the steps involved in planning and implementing HVM for a special event.

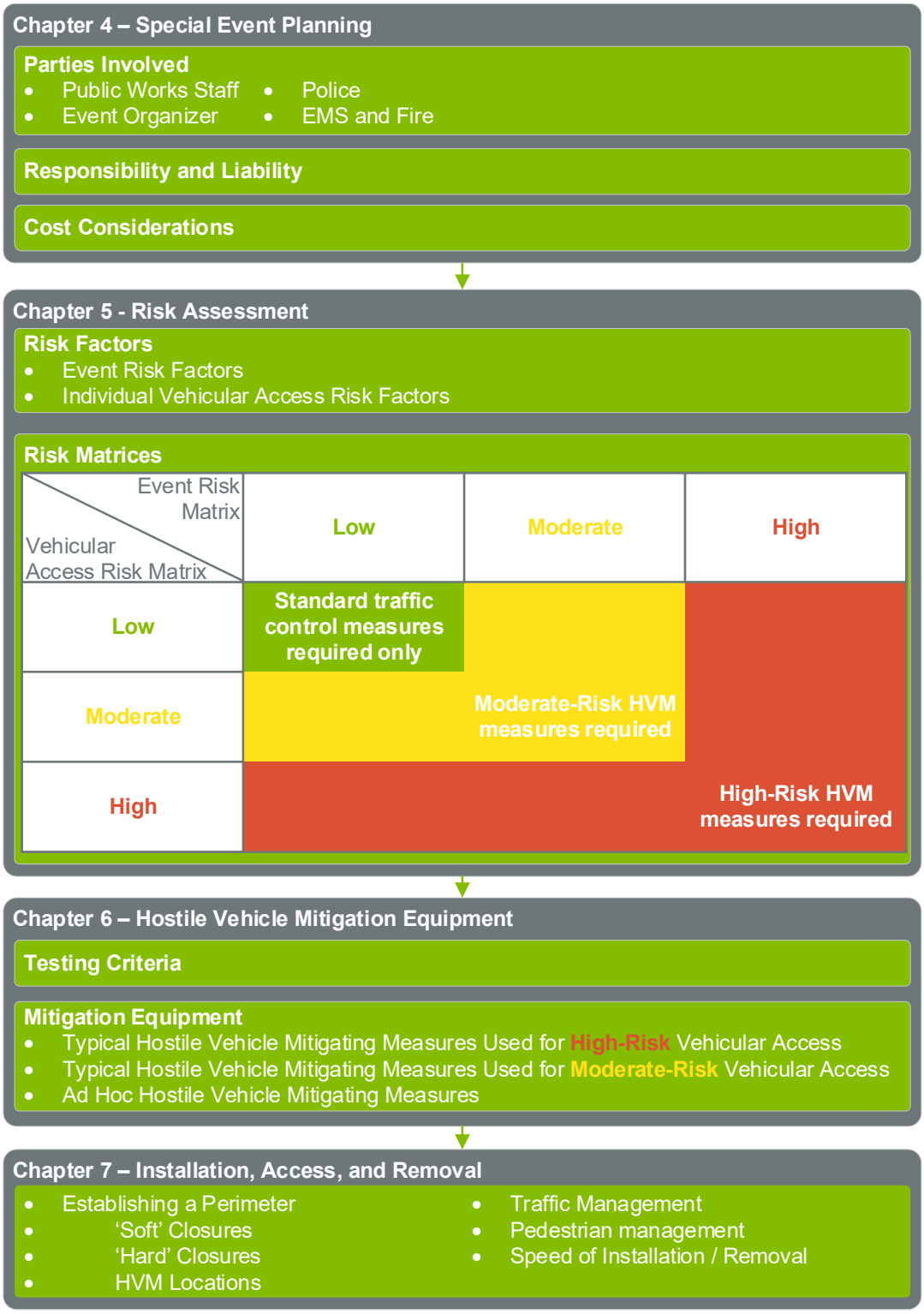


Figure 3 – Overview of Process

4 Special Event Planning

The following section outlines typical roles and responsibilities relating to planning a special event, specifically identifying the need for HVM measures necessary to protect members of the public.

4.1 Parties Involved

Key roles of parties involved in a special event are Public Works staff, event organizer, police services, and EMS and fire department staff.

4.1.1 Public Works staff

The involvement of municipal staff will differ depending on the internal operating procedures of each municipality. In some municipalities, Public Works staff or a separate, distinct position and/or group may be responsible for approving and/or coordinating special events during the planning stage of a special event. In this instance, Public Works staff also take on the role of event organizer.

4.1.2 Event organizer

It should be the event organizer's responsibility to hire certified third-party contractors to plan, supply, set up and remove the required traffic management equipment and HVM measures needed to adequately protect event attendees. In some cases, contractors may also be responsible for an overall traffic management plan directing traffic away from any streets/roads closed because of the special event. The event organizer may also retain police officers and/or a certified private security company who will be stationed at entry points into the event grounds, ensuring that only those drivers with legitimate business are permitted to enter the event grounds depending on the risk level for the event. These individuals may be responsible for moving HVM equipment to permit access over the course of the event.

In cases when a special event is an event run by the municipality itself (i.e., the event organizer role is taken on by Public Works staff), Public Works staff are not only responsible for the tasks identified under Section 4.1.1, but also responsible for the Event Organizer's tasks.

4.1.3 Police Services

Local police services will form an integral part in the planning of special events and in the decision to implement HVM measures, working alongside Public Works and the event organizer. During the planning stage of an event, police may be responsible for assessing the risk and determining the need for HVM and reviewing the HVM plan prepared by the event organizer. During the event itself, based on the risk assessment, police may manage traffic flow and may be stationed at check points into the event grounds and will be directly responsible for screening drivers wishing to enter the event grounds.

4.1.4 EMS and Fire Department

During the planning stage of a special event, EMS and fire department staff will need to review and approve the HVM plan and the traffic control plan to ensure there is available space for their vehicles to enter and respond to emergencies. Fire department staff may wish to conduct a test runs prior to the closure to ensure that any closure points with speed humps, chicanes and/or HVM equipment will be maneuverable by their vehicles in the event that there is a need to quickly access the site as a result of an emergency.

4.2 Responsibility and Liability

Who is responsible and who is liable should be defined in advance of any planned special events as it relates to how event participants are to be adequately protected by HVM measures. **Table 2** summarizes typical arrangements noted in planning special events in Ontario. In all instances, the event organizer and the hired third-party contractors could be held liable for any injuries that occur because of a hostile or unintentional vehicle incident. They should have the necessary liability insurance coverage in place prior to the event being held.

Table 2 – Typical Tasks and Parties Typically Involved

Task	Description	Party Typically Involved
Risk Assessment	Assessing the risk and determining the need for HVM measures	Police services and/or Public Works staff
HVM Plan Development	Develop a HVM plan (as necessary)	Event organizer
HVM Plan Review	Reviewing the HVM plan (as necessary)	Police services, EMS and fire department staff, and/or Public Works staff
HVM Plan Implementation	Notifying affected residents and/or businesses	Public Works staff
	Set up/removal of HVM	Event organizer
	Ensuring that the event organizer implements a HVM plan (as necessary)	Police services and/or Public Works staff
	Security at checkpoints (at special events identified as high risk)	Police services, and/or event organizer (i.e., qualified private security/volunteers)
	Ensuring access to event grounds for police, EMS and fire as required	Police services, and/or event organizer (i.e., qualified private security/volunteers)

4.3 Cost Considerations

Deployment of HVM measures is a new cost of which many event organizers may not be aware. Each municipality needs to consider the trade-off between ensuring that event attendees are protected from hostile or unintentional vehicle incidents while at the same time allowing special events to continue unabated within their municipality. Possible solutions that can reduce costs for event organizers are:

- Beginning discussions on HVM measures for special events well in advance so that cost-cutting measures can be identified.
- Holding the event at a more secure site (with less entry points)
- Purchasing HVM equipment and charging the event organizer a ‘rental fee’ for its installation/removal during the event.
- Use of municipal heavy vehicles (dump trucks) to block entry points to the event grounds (either for a ‘rental fee’ or without cost) instead of using HVM equipment. This would be an ad-hoc measure until such time that equipment specifically designed for HVM can be purchased.
- Holding events at the same location each year so that:
    - There is no additional cost for the development of a new traffic management plan or HVM plan
    - Permanent HVM installations can be deployed

5 Risk Assessment

This section describes how risk should be assessed when evaluating the need for HVM measures. While this section is primarily oriented towards special events, it may be applied to other situations (i.e., permanent installations or emergency situations, as discussed in **Section 2.3**).

The risk assessment is to be conducted in two parts:

- The first part evaluates the overall event risk. The event's overall risk level will govern the minimum HVM measures that need to be implemented at each individual vehicular access to the event grounds (where pedestrians or cyclists will be congregating).
- The second part is the individual vehicular access risk assessment, where each vehicular access to the event grounds is evaluated individually. Based on the event's overall risk level and the access risk level, suitable HVM measures can be selected for individual accesses.

5.1 Risk Factors

This subsection introduces the two groups of risk factors that are used for overall event risk assessment and individual access risk assessment, respectively.

5.1.1 Event Risk Factors

The following factors are identified as being useful in overall risk assessment:

- **Anticipated crowd size/density:** Events involving larger groups of people and/or densely packed crowds pose a higher risk of harm than events involving smaller groups of people and/or dispersed crowds.
- **Event duration:** As the event duration increases, the risk of harm increases.
- **Media attention/stakeholder impact:** Events that are anticipated to garner a high amount of media attention or involving minority groups that have been historically targeted for attacks by individuals and/or groups will have a higher risk of harm than events anticipated to garner little or no media attention or not specifically involving minority groups.

- **Participant vulnerability:** Events involving participants with limited ability to move to respond to approaching danger (e.g., children and/or seniors), and/or to sense approaching danger (e.g., visually and/or hearing impaired[6]).

For crowd size/density, if the size of the event grounds and the anticipated number of attendees is known, it is preferable to use crowd density to determine risk. Crowd density is calculated by dividing by the maximum crowd size by the event grounds (in square metres). A crowd density of 5 people per square metre is considered the maximum comfortable limit for a standing crowd as illustrated in **Figure 4**.

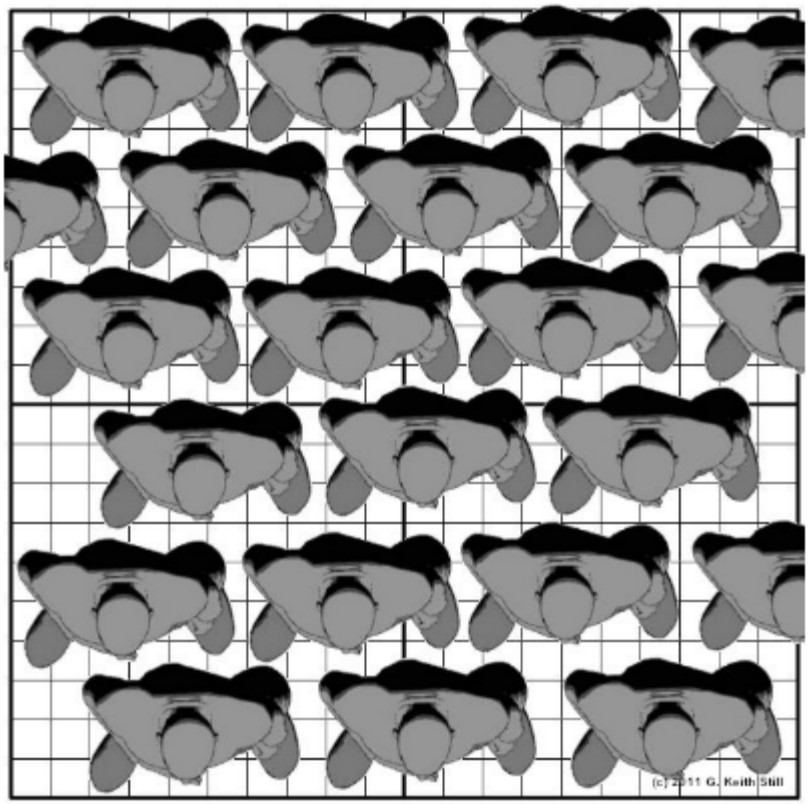


Figure 4 – Illustration of crowd density of 5 people per square metre[7]

[6] Included in this group would be 'Silent DJ' events where participants are wearing noise cancelling headphones.
[7] Image Credit - https://www.gkstill.com/Support/crowd-density/CrowdDensity-1.html

5.1.2 Individual Vehicular Access Risk Factors

The following factors are identified as being useful in assessing risk at individual accesses:

- **Straight length distance into the site:** Lengthy straight approaches into event grounds gives hostile drivers an approach that allows them to accelerate to higher speeds, increasing the likelihood of penetration of barriers. Given this, locations with long straight approaches pose a higher risk of harm than locations with short and/or curvilinear approaches.
- **Roadway width:** The width of the roadway affects the speed of vehicles. It is easier to reach higher speeds on a roadway with a wide cross-section (e.g., a 6-lane arterial road) compared to a roadway with narrow lanes and/or on-street parking along curb lanes.
- **Posted speed limit:** As the posted speed limit of a roadway is often designed based on roadway characteristics such as width, presence of a physical median, surface type, roadside objects, etc., the posted speed limit of a roadway is a good indicator of speeds a hostile driver can achieve on the roadway. Roads with higher posted speed limits will likely permit hostile drivers to travel at higher approach speeds to an entry.
- **Distance to signalized intersection:** Hostile drivers forced to stop at a signalized intersection provide natural barriers that prevent them from accelerating to higher speeds when approaching an access.
- **Stand-off distance:** Stand-off distance is the distance available between the HVM measures (e.g., barriers, gates) and areas where crowds may be congregating (e.g., a stage, sitting area or a line-up). The available stand-off distance will determine the type of measure that needs to be used and the location of the installation.

5.2 Risk Matrices

The overall event risk level and the access risk level of each vehicular access are determined using two matrices:

- Event Risk Matrix and
- Individual Vehicular Access Risk Matrix.

5.2.1 Event Risk Matrix

Table 3 presents the matrix for evaluating overall risk associated with a special event. The event should be scored for each of the four elements individually with a score ranging from 1 to 5 with a score of 1 representing a 'very low' risk and a score of 5 representing a 'very high' risk.

Each element also has a weighting factor. A weighting factor greater than 1.00 means that the element is considered more important than the other factors. Risk elements related to anticipated crowd size/density and media attention/stakeholder impact were weighted slightly higher than event duration and participant vulnerability. However, road jurisdictions are free to adjust the weighting factor (and associated score ranges) based on local experience.

Table 3 – Event Risk Matrix

Scoring	Anticipated Crowd Size/Density	Event Duration	Media Attention/ Stakeholder impact	Participant Vulnerability
Weighting Factor	**1.25**	**1.00**	**1.25**	**1.00**
Very High (5)	>10,000 OR > 5 ppl/sqm	> 3 days	International media coverage. Irreparable stakeholder impact	Extremely vulnerable
High (4)	5001 – 10,000 OR 3 – 5 ppl/sqm	1 day – 2 days	National media coverage. Substantial stakeholder impact.	Very vulnerable
Moderate (3)	2,001 – 5,000 OR 2 – 3 ppl/sqm	12 hrs – 24 hrs	Regional media coverage. Moderate stakeholder impact.	Vulnerable
Low (2)	501 – 2,000 OR 1 – 2 ppl/sqm	4 hrs – 12 hrs	Local media attention. Minor stakeholder impact.	Slightly vulnerable
Very Low (1)	<500 or < 1 ppl/sqm	< 4 hrs	Little or no media attention. Little stakeholder impact.	Not vulnerable
Score				
Grand Total				

The range of possible scores is between 4.5 and 22.5 points. Events with a risk score less than 11 are deemed 'low risk'. Events with a risk score of between 11 and 17 are deemed 'moderate risk'. Events with a risk score of higher than 17 are deemed 'high risk'. It should be noted that the event's risk level sets the minimum requirement for HVM measures at each access, while the actual required HVM measures at each access are determined using the Individual Vehicle Access Risk Matrix discussed in the following section. If the overall event risk level is high, then there is no need to use the Individual Vehicle Access Risk Matrix as all vehicular accesses are required to have HVM measures appropriate for a high-risk event.

5.2.2 Individual Vehicular Access Risk Matrix

Table 4 presents the matrix for evaluating risks associated with each vehicular access for the event. This risk matrix should be applied to all vehicular accesses independently.

Every vehicular access of the event should be scored for each of the four elements individually with a score ranging from 1 to 5, with a score of 1 representing a 'very low' risk and a score of 5 representing a 'very high' risk. No weighting is used in this matrix.

Table 4 – Individual Vehicular Access Risk Matrix

Scoring	Straight Line Distance	Roadway Width	Speed Limit	Stand-off Distance (from Protected Asset)	Nearest Signalized Intersection
Very High (5)	>500 m	>6m	> 60 kph	< 15 m	>500 m
High (4)	151 – 500 m	4.0 - 6m	60 kph	16 m – 50 m	151 – 500 m
Moderate (3)	51 m – 150 m	3.6 - 4.0m	50 kph	51 m – 150 m	51 m – 150 m
Low (2)	16 m – 50 m	3.3 - 3.6m	40 kph	151 – 500 m	16 m – 50 m
Very Low (1)	< 15 m	3.0 - 3.3m	Up to 30 kph	>500 m	< 15 m
Score					
Grand Total					

The range of possible scores is between 5 and 25 points. Events with a risk score less than 12 are deemed ‘low risk’, requiring only standard traffic controls in accordance with Ontario Traffic Manual Book 7. Events with a risk score between 13 and 20 are deemed ‘moderate risk’, requiring moderate-risk vehicle mitigation measures. Events with a risk score higher than 20 require high-risk mitigation measures. It should be noted that, when the overall event risk level is higher than the access risk level, the overall risk level governs. For example, if the overall event risk level is moderate but the access risk level is low, moderate-level HVM measures are required at this given access.

6 HVM Equipment

This section discusses different types of mitigation equipment and products, specifically testing criteria, equipment that permits traffic flow versus equipment that prevents traffic movement and different types of equipment suitable for high-risk entries, moderate-risk entries, and ad hoc applications.

6.1 Testing Criteria

Listed below are some well-recognized vehicle impact standards that are used to measure the effectiveness of a HVM measure:

- The International Workshop Agreement (IWA) 14 Part 1 (the 'IWA 14-1') – Vehicle Security Barriers – Performance Requirement, Vehicle Impact Test Method, and Performance Rating
- American Society for Testing and Materials (ASTM) F 2656 – Standard Test Method for Crash Testing of Vehicle Security Barriers
- CWA 16221 – Vehicle Security Barriers, Performance Requirements, Test Methods, and Guidance on Application
- British Standard Institution Publicly Available Specification (BSI PAS) 68 – Impact Test Specifications for Vehicle Security Barrier Systems
- BSI PAS 69: Guidance for the Selection, Installation and Use of Vehicle Security Barrier Systems

The test methods might vary slightly between each standard, but in general, the test method evaluates a HVM measure based on how the HVM measure performs for a given impact. This given impact is often determined by impact vehicle type (e.g., passenger vehicle vs. heavy vehicle), the weight of the impact vehicle, speed of the impact vehicle, impact angle, and penetration distance (i.e., the distance between the impact point and the point where the vehicle is immobilized).

For further details on the above-noted vehicle impact standards, please reference the *Impact Testing of Vehicle Security Barriers – An Overview of Vehicle Impact Test Standards* prepared by Centre for the Protection of National Infrastructure (CPNI)[8].

[8] Centre for the Protection of National Infrastructure, *Impact Testing of Vehicle Security Barriers,* August 2020 - https://www.cpni.gov.uk/resources/impact-testing-vehicle-security-barriers

6.2 Types of HVM Equipment

Table 5 and **Table 6** present HVM equipment that are commonly used in Canada during special events to mitigate risk at high-risk and moderate-risk entry points, respectively. These tables provide information on each equipment's key features, vehicle stopping capability (if available), and information on installation and removal.

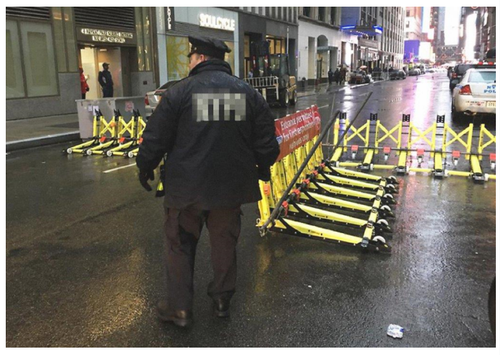
As noted earlier, where an entry point is considered low risk, there is no need for any HVM measures. Standard traffic controls in accordance with Ontario Traffic Manual Book 7 need only be deployed.

Table 7 presents a list of ad hoc applications that may be used for HVM for unplanned emergency situations or in smaller municipalities as an interim measure until such time that they have access to equipment specifically used for HVM.

Table 5 – Typical HVMs Used for High-Risk Entry Points

Equipment		Key Features	Vehicle Stopping Capability					Information on Installation /Removal
			Type	Weight	Speed	Impact Angle	Penetration	
Anti-Vehicle Archer[9]	 	• Unanchored and re-deployable • Multiple barriers can be connected to protect customizable lengths • Barriers can be easily moved using tools (without heavy machinery) to provide access for emergency vehicles • Archer beam gate is also available	Car	1,500 kg	48 km/h	90-degree	~5m	Single person installation Tools required 1 minute per Archer unit

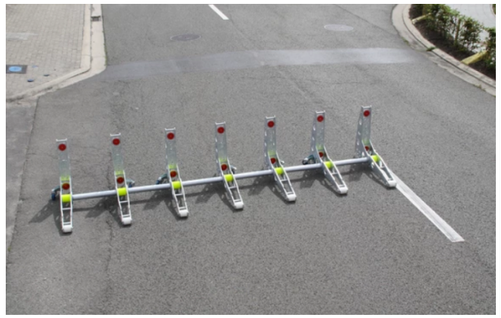
[9] Image Copyright: City of Hamilton Police

Equipment		Key Features	Vehicle Stopping Capability					Information on Installation /Removal
			Type	Weight	Speed	Impact Angle	Penetration	
Portable bollards[10]		• Unanchored and re-deployable • Multiple barriers can be connected to protect customizable lengths • There is an option to install a gate to provide access to emergency vehicle	N/A	2,270 kg	48 km/h	90-degree	N/A	Forklift required 2 minutes per section
The Claw[11]		• Advertising or information boards can be attached • Can be accessorised with refuse bins, cycle racks etc.	Car Car Truck Truck	1,500 kg 1,500 kg 3,500 kg 7,200 kg	64 km/h 80 km/h 64 km/h 32 km/h	90-degree	4.7m 7.8m 8.2m 1.2m (2 units)	No expertise is required to install to a pre-determined location.
Modular Vehicle		• Lightweight: 24 kg per unit • Complete modular system – Systems can be as short or as long as required	Heavy truck	7,500 kg	32 km/h	90-degree	~10m	Can be deployed by 1 person No tools required 1 minute installation for each unit

[10] Image Copyright: https://omnistopbollards.com/case-studies/frankston-christmas-festival-of-lights
[11] Image Copyright: https://www.highwaycare.com/security/claw-mobile-hvm-barrier

Equipment		Key Features	Vehicle Stopping Capability					Information on Installation /Removal
			Type	Weight	Speed	Impact Angle	Penetration	
Barrier 3X[12]								
Robust Mobile Barrier[13]		• Complete modular system - Systems can be as short or as long as required • Surface mounted	Heavy truck & semi-trailer	40,000 kg	80 km/h	90-degree	N/A	Assembled by forklift (no other tools required)
Surface Guard Barrier[14]		• Surface mounted • Pedestrian and bicycle permeable • An additional vehicle access point can be added to allow authorised emergency service vehicles access in an emergency	Pickup truck Heavy truck	2,500 kg 7,200 kg	48 km/h 32 km/h	90-degree	~4.5m ~4.8m	4 people with tools Approximately 40 minutes to install on a 2-lane roadway

[12] Image Copyright: https://barriers.miframsecurity.com/products/mvb-3x/
[13] Image Copyright: https://barriers.miframsecurity.com/products/rmb/
[14] Image Copyright: https://www.atgaccess.com/temporary-security/surface-guard

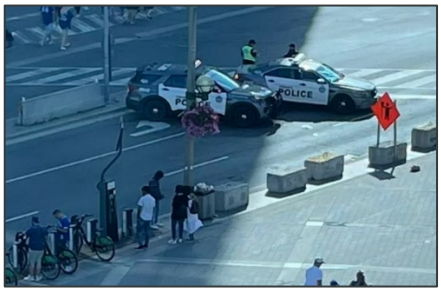
Equipment		Key Features	Vehicle Stopping Capability					Information on Installation /Removal
			Type	Weight	Speed	Impact Angle	Penetration	
RB50 Moveable Vehicle Barrier		• Modular approach allows flexible lengths to adapt the RB50 road barrier to any situation • Cannot be disassembled without a specific tool, may be left unattended • Optional roller kit allows a single person to easily deploy and move the units	Truck	3,500 kg	48 km/h	90-degree	~13m	One person installation in less than 5 minutes, no tools required
Impakt Defender [15]		• Made up of individual robust rubber units weighing just 49kg each, connected by steel rods	N/A					With no special tools or lifting equipment required, four people can manually install a barrier across the width of a road in less than five minutes

[15] Image Copyright: https://mobilegatesecurity.com/products/rapid-defender-impakt-defender/

Table 6 – Typical HVMs Used for Moderate-Risk Entry Points

Equipment		Key Features	Vehicle Stopping Capability					Requirements for Installation /Removal
			Type	Weight	Speed	Impact Angle	Penetration	
Urban barrier		• Multiple barriers can be connected to protect customizable lengths; • The barrier is a self-standing solution	Car	1,100 kg	50 km/h	25-degree	N/A	Machinery required or specific custom lifting device
Water-cable barrier		• Widely available • Heavy when filled (up to 900 kg per barrier) • Multiple barriers can be connected to protect customizable lengths	Car	1,100 kg	50 km/h	25-degree	N/A	Require access to water source
Jersey barrier		• Widely available • Can be doubled to strengthen the protection	N/A					Machinery required Costly to move

Table 7 – Ad Hoc HVMs

Equipment		Key Features
Police Vehicles		• Widely available • Can be easily moved to allow emergency vehicle to pass • Police presence provides a stronger visual deterrent • Recommended for high-risk events
Pedestrian barricades [16]		• Widely available • Low cost
Concrete planter[17]		• May be available near the site • Heavy when filled • Heavy machinery required for moving
Heavy vehicles (vehicles that weigh over 4,500 kg)[18]		• Widely available • Can be easily moved to allow emergency vehicles to pass • Can provide dynamic protection to moving crowds (i.e., parades)

[16] Impact Copyright: City of Hamilton Police
[17] Image Copyright: https://www.archiexpo.com/prod/encho-enchev-ete/product-156013-2120127.html
[18] Image Copyright: City of Toronto

7 Installation, Access, and Removal

This chapter describes the process by which a HVM may be set up for a special event. Consideration should be given to whether the individual entry points into the event grounds were considered low, moderate or high risk for a hostile vehicle incursion as outlined in **Chapter 5**.

Where an individual entry point is considered high risk, in addition to standard traffic controls in accordance with Ontario Traffic Manual Book 7, high-risk HVM measures should be set up at individual entry points into the event grounds as outlined in **Section 6.2** (refer to **Table 5**). In addition to the HVM measures, paid-duty police officers should be present.

Where an individual entry point is considered moderate risk, in addition to standard traffic controls in accordance with Ontario Traffic Manual Book 7, additional mitigation measures should be set up at the entry point into the event grounds with the installation of 'moderate' risk HVM equipment as outlined in **Section 6.2** (refer to **Table 6**). Instead of police, private security firms and/or volunteers may be stationed at entry points into the event grounds deemed to be moderate risk.

Where an individual entry point is considered low risk, standard traffic controls in accordance with Ontario Traffic Manual Book 7 need only be deployed.

This section describes typical elements required to establish a safe perimeter for a special event, discussing the following features:

- Establishing the perimeter
- 'Soft' closures or checkpoints
- 'Hard' closures
- HVM locations
- Traffic management and
- Pedestrian management.

7.1 Establishing a Perimeter

When assessing the location of the event, the Event Organizer should evaluate the area that will be closed to vehicular access. The size of the perimeter represents a trade-off between minimizing impacts to residents living / businesses operating within the perimeter and ensuring that there is a sufficient buffer between locations where crowds

may be assembling, the location of ‘soft’ and ‘hard’ closures, and the stand-off distance between the HVM measures and areas where crowds may be assembling. As the perimeter increases in size, the number of required road closures will typically increase, resulting in additional costs and/or staff and police resources. An example of the perimeter closed for a recent special event in the City of Hamilton is shown in **Figure 5,** the Heritage Classic NHL hockey game held in Hamilton, Ontario in March 2022.

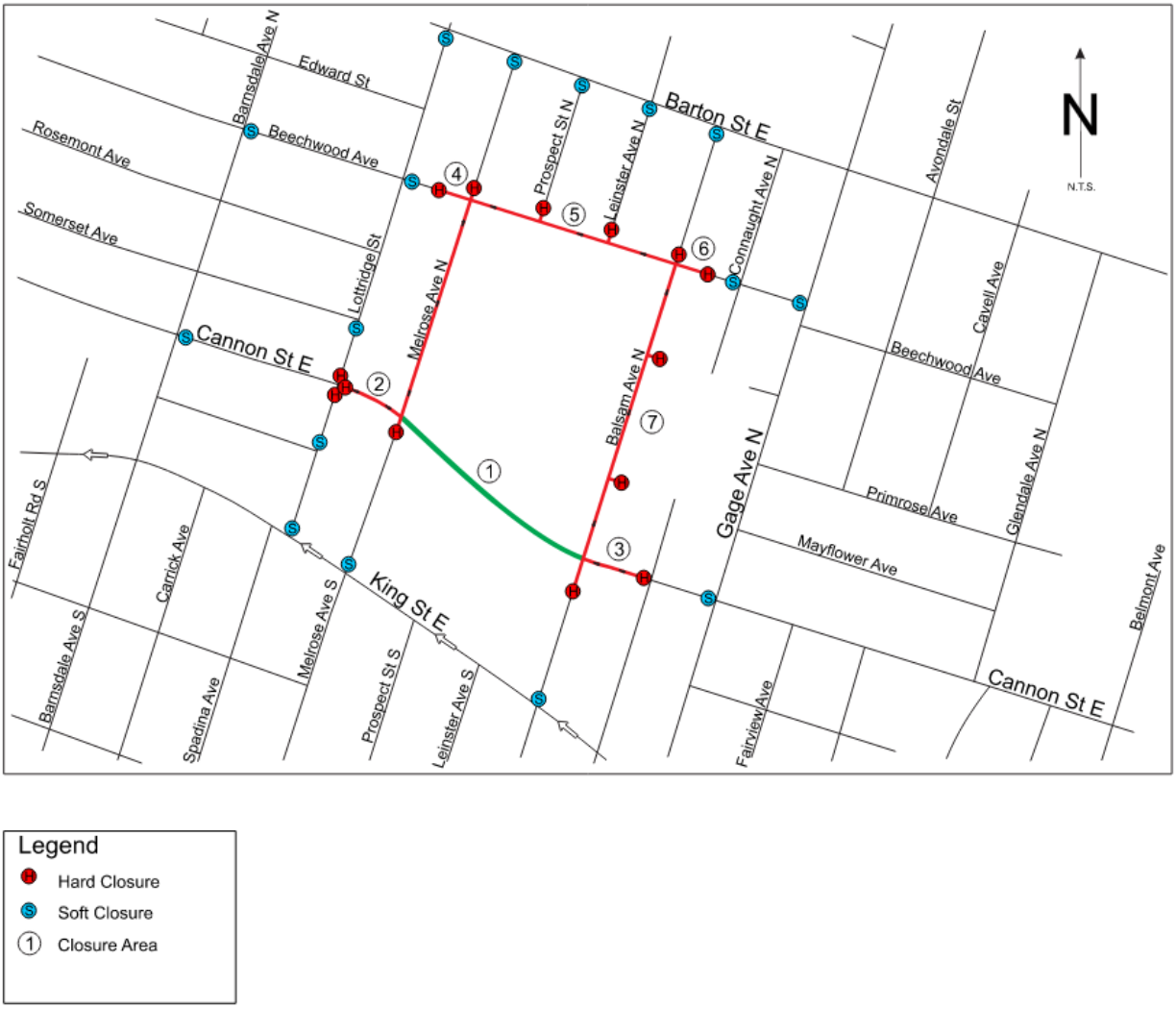


Figure 5 – Perimeter Established for NHL Heritage Classic Hockey Game held in Hamilton in March 2022

7.2 Soft Closures

A soft closure is essentially a checkpoint that is used to control traffic entering the event grounds. A typical soft closure is shown in **Figure 6** below. Individuals (either police or a security firm) are stationed at the entry point and are responsible for controlling the movement of all vehicles into the event grounds. A soft closure typically consists of:

- Closure of one lane of traffic to control entry and
- Corresponding Ontario Traffic Manual Book 7 signage directing other traffic away from the area.

Soft closures may be used on their own for an entry deemed to be a moderate risk or they may be placed in advance of a hard closure as discussed below.

Figure 6 – Example of a Soft Closure

7.3 Hard Closures

A hard closure is the point where no vehicles are legally allowed to pass, but the devices used would not cause any harm to a vehicle entering the area. The products

used in hard closures can be moved by hand or easily removed if needed. A typical hard closure is shown in **Figure 7** below.

Figure 7 – Example of a Hard Closure

7.4 HVM Locations

A HVM location physically restricts vehicular access to the event grounds through the installation of HVM as outlined in **Section 6.2**. A hard closure typically consists of the following elements:

- Full closure of all lanes of traffic
- Blockage of adjacent boulevards and/or sidewalks, typically taking advantage of fixed objects such as large trees or other immovable objects
- A gating system by which one lane of traffic can be temporarily opened for emergency access (police services, EMS or fire) or event organizers
- Speed reduction measures on the final approach to the HVM location consisting of speed humps and/or chicanes and
- Placement well enough in advance of areas where crowds are anticipated to be congregating (stand off distance), in consideration of the anticipated deflection of the HVM equipment as a result of a vehicle impact.

With all HVM locations, the physical layout should be reviewed by EMS and the local fire department to ensure that emergency access is still maintained to the event grounds. An example of a HVM installation is shown in **Figure 8** below.

Figure 8 – Example of a HVM Installation (gate in open position)

7.5 Traffic Management

Accompanying the HVM plan, a traffic control plan (TCP) directing motorists around the perimeter needs to be prepared in accordance with Ontario Traffic Manual Book 7 guidelines. The TCP should be reviewed to ensure that it is not in conflict with the HVM plan and should include adequate signage (advance and turn-off) notifying motorists of lane or street closures. The TCP should be implemented based on each municipality's standard procedures / requirements.

7.6 Pedestrian Management

In contrast to vehicles, pedestrians are still permitted to freely move into and out of the event grounds whether soft or hard closures are being used or HVM equipment has been installed. Public Works and/or Special Event Planning staff should ensure that access to the event grounds meets applicable AODA requirements, ensuring that areas are well lit and can accommodate pedestrians of all abilities.

Appendix A presents a case study for a recent special event held in Toronto (2022 Canadian Open Golf Tournament).

7.7 Speed of Installation/Removal

For events that are relatively long in duration and/or are stationary, HVM may be installed at a location using heavy equipment. In contrast, for daily or recurring weekly events (i.e. open air markets) or events that are mobile (i.e. parades), the Event Organizers need to consider HVM measures that may be easily installed and removed without the use of heavy equipment when they are no longer required. This may include:

- Portable HVM systems (i.e. Archer 1200)
- Use of heavy vehicles (that may be easily deployed and removed)

An example of a set up that requires minimal time to install is shown in **Figure 9** below. This set-up is installed at Byward Market in the City of Ottawa every weekend in the spring, summer and fall months when the open-air market is in operation.

Figure 9 – HVM Measures installed at Byward Market

Another example of an event that required rapid deployment and removal was the Manitock Santa Claus Parade held in Ottawa in 2022. This is presented in **Appendix B**.

8 Application Process

The following section presents typical guidelines for a special event application process.

8.1 Process to Develop, Review, and Implement a HVM Plan

The typical process to develop, review, and implement a HVM plan is listed below. However, it should be noted that this process might vary between municipalities:

1) The event organizer to provide details of the event to the police department and/or Public Works staff, including:
   i) Event location
   ii) Event access location
   iii) Event duration
   iv) Anticipated amount of participants
   v) Participant vulnerability
   vi) Potential media attention/stakeholder impact
2) The police department or the Public Work Staff to assess the risk and determine the need for HVM measures. If so, the police department or the Public Works Staff to inform the Event Organizer on the specific requirements of a HVM plan
3) The Event Organizer to prepare a HVM plan if required, and submit to the police department or the Public Work Staffs, and EMS for review
4) The police department or the Public Work Staff and EMS to review the HVM plan, and approve the plan if it meets the requirements and
5) The Event Organizer to implement the HVM plan (i.e., install HVM measures prior to the event, maintaining and operating the HVM measures during the event, and remove the HVM measures after the event)

8.2 Special Event Application Form Example

An example of special event application form used by the City of Ottawa is provided in **Appendix C**.

A

Appendix A: Case Study 1 – 2022 RBC Canadian Open Golf Tournament (Toronto, ON)

2022 RBC Canadian Open Golf Tournament

The RBC Canadian Open Golf Tournament was held in Etobicoke, Ontario in between June 6th and June 12th, 2022 at the St. George's Golf and Country Club located on Islington Avenue. Due to the length of the event, its popularity, the anticipated crowd size and international media attention, it was decided that HVM measures appropriate for a high-risk event would be installed on roads leading to the event venue. A contractor was retained to develop a HVM plan and supply and install HVM measures in the days leading up to the event. The event organizers retained a private security firm to control vehicle movements into the event grounds prior to the event with Toronto Police managing vehicle movements into and out of the event grounds during the actual event. As the event required the closure of City of Toronto roads, City staff were actively involved in the planning of the event and agreed to the traffic management and closure of the roads proposed by the contractor.

Exhibit A-1 shows an overview of the roads impacted by the HVM plan. A set of hard closures were implemented on Islington Avenue south of Eglinton Avenue and north of The Kingsway in addition to a set of local residential streets. These hard closures were placed a sufficient distance away from areas where crowds were anticipated to be congregating, specifically a stage that was set up on Islington Avenue. A set of soft closures were set up a considerable distance away from the hard closures. Residents living within the perimeter of the soft closures were given passes that permitted them to access their homes during the event.

The soft and hard closures consisted of road closure signs in accordance with Ontario Traffic Manual Book 7 and construction barrels. A private security firm controlled movements into the event grounds prior to the event. Toronto Police Services controlled movements into the event grounds once the event was underway. An example location is shown below in **Exhibit A-2**.

The HVM installation consisted of an Omni-Stop portable bollard and gate placed across each entry point into the event grounds. Event staff were stationed at the location to open the gate as required by event staff and/or police, EMS and the fire department. An example location is shown below in **Exhibit A-3**

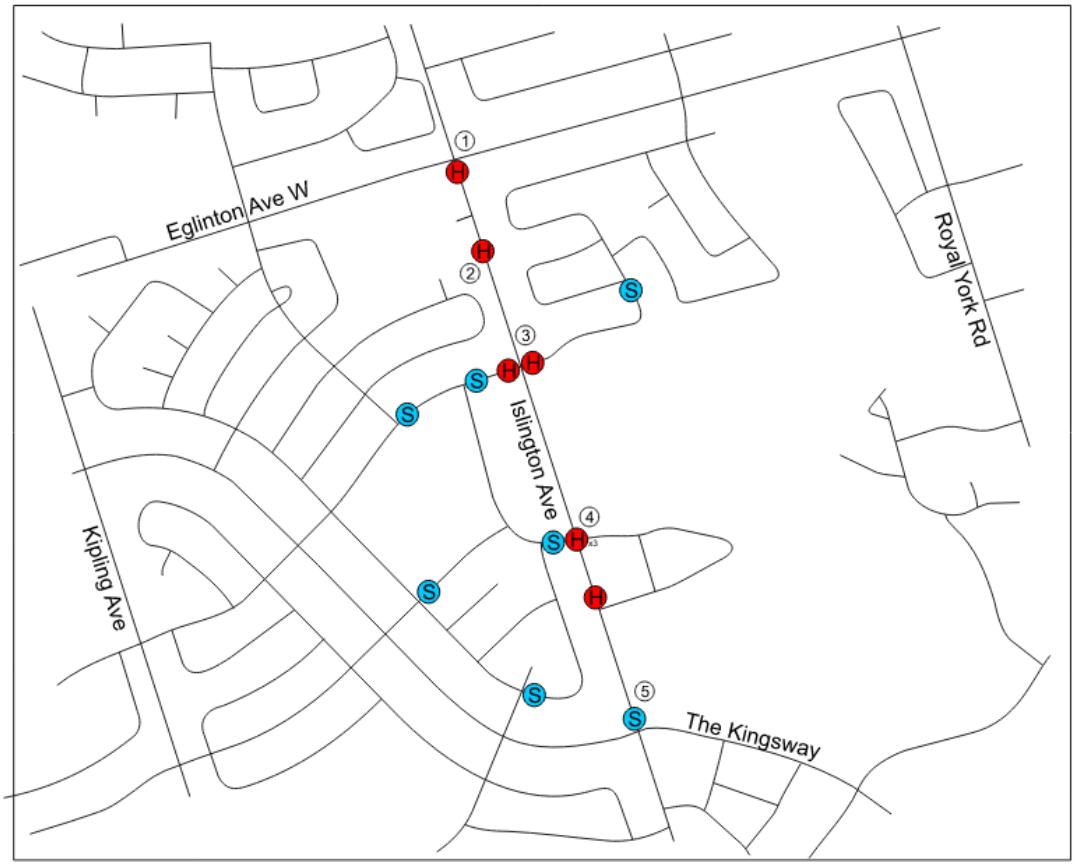


Exhibit A-1 - Road closure plan for 2022 RBC Canadian Open Golf Tournament

Exhibit A-2 - Typical hard closure at 2022 RBC Canadian Open Golf Tournament

Exhibit A-3 - Typical HVM Location at 2022 RBC Canadian Open Golf Tournament

B

Appendix B: Case Study 2 – 2022 Manitock Santa Claus Parade (Ottawa, ON)

2021 Santa Claus Parade in Manitock, Ontario

The Santa Claus parade is held every November in the Community of Manitock within the City of Ottawa. In view of recent events that occurred in 2021, the City of Ottawa's Special Events Team chose to implement HVM to protect crowds attending and participants involved in the Santa Claus parade. Other considerations were the crowd size, presence of children, duration of the event and media attention. **Exhibit B-1** on the following page outlines the HVM plan put in place for the event.

All temporary road closures and traffic control at intersections performed according to Ontario Traffic Manual Book 7 (deployment, setup, and removal) with site hardening devices placed within the perimeter of the closures.

Notable HVM were:

- Traffic management directing traffic away from the parade route (portable message signs and temporary signage in accordance with Ontario Traffic Manual Book 7)
- HVM installations consisting of
    - City dump trucks and/or Archer systems on main entry roads blocking access to the parade route
    - City pick-up trucks and sawhorses on internal roads blocking access to the parade route (deemed to be lower risk due to the small number of residents on these roads) and
- Soft and hard closures manned by Ottawa Police cruisers (parked across the road)

The use of City vehicles (dump trucks, pick up trucks, sawhorses), Ottawa Police cruisers in combination of Archer systems gave the City flexibility to quickly implement and remove the HVM in advance of and immediately following the parade.

Note: Event road closure requirements as per City of Ottawa By-Law 2001-260 "Special Events on City Streets.

Exhibit B-1 - 2022 Manotick Santa Claus Parade HVM Plan

C

Appendix C: Special Event Application Form Example

Event Application

Required fields are marked with an asterisk (*).

Event Name *

Type of event *

Select

Description of event *

Event website

Location of event (include municipal address and sub-locations) *

Does the event take place entirely or partially on Federal property? *

For example, land owned by the National Capital Commission, Parks Canada or a Federal museum

- No
- Yes
- Unknown

Expected attendance on site at any one time *

Select

Total expected attendance over course of event *

Select

Primary event demographics (check all that apply) *

- [ ] **Families with young children**
- [ ] **Youth (12 to 17 years old)**
- [ ] **Young adults (18 to 35 years old)**
- [ ] **Middle age adults (36 to 55 years old)**
- [ ] **Older adults (55+)**

Is the event operated by an organization or an individual resident? *

- ◯ Organization
- ◯ Individual

Is this an annual event? *

- ◯ Yes
- ◯ No

Is there an entrance fee to the event? *

- ◯ Yes
- ◯ No

Do you engage volunteers? *

- ◯ Yes
- ◯ No

Event Dates

Set-up start date (MM/DD/YYYY) *

Set-up start time

Set-up end time

Event date(s) and times

Take-down completion date

Take-down start time

Take-down end time

Applicant Details

Organization name

Organization email

Organization phone number

Organization phone extension

Organization Address

Organization registration number

Business Type *

Select

Charitable registration number

Primary event contact *

Main point of contact with the city for event approvals

First name

Last name

Email

Phone number

Extension

On-site phone

Address

Secondary contact

First name

Last name

Email

Phone number

Extension

On-site phone

Address

Permit holder name (if different that the primary event contact)

Accessibility

If your festival/event organization has one or more employees, your organization has legal requirements to meet on accessibility. The Accessibility for Ontarians with Disabilities Act (AODA) makes it possible for people of all disabilities to be a part of their communities every day. The City of Ottawa encourages all event organizers to make their events as accessible as possible to all members of the public

- [ ] **I understand the requirements under the AODA / have incorporated accessibility into my event**
- [ ] **I would like assistance understanding AODA requirements / how to improve accessibility at my event**

Alcohol Service/ Consumption

Will alcohol be sold or consumed? *

- ( ) Yes
- ( ) No

Type of alcohol permit (check all that apply)

Permits are issued by the Alcohol and Gaming Commission of Ontario (AGCO). Visit **www.agco.ca (http://www.agco.ca)** to apply

- [ ] **Special occasion permit (SOP)**
- [ ] **Catering endorsement**
- [ ] **Temporary extension of liquor licence for premise**
- [ ] **Tailgating permit**
- [ ] **Industry promotional permit**

Capacity of licensed area _____

To calculate capacity: available area (meters or feet) / 1.1 square meters or 12 square feet per person

Number of points of sale _____

Number of servers _____

Will alcohol be sold or consumed on the right of way?

- ( ) Yes
- ( ) No

Smoking, Vaping, Water Pipes and Cannabis

The federal, provincial and municipal governments have established regulations that control the distribution, consumption and promotion of tobacco and cannabis products. Refer to the event guide for more information on how regulations apply to special events in Ottawa

- [ ] **I have read and understand how regulations apply to my event**
- [ ] **I would like additional information on how regulations apply to my event**

Music

Live or recorded music *

- ( ) Yes
- ( ) No

Identify entertainment style and performer

Sound

Sound amplification *

Includes PA announcements and use of megaphones

- ( ) Yes
- ( ) No

Noise Exemption

Application for exemption to the Noise By-Law *

By clicking yes, you are submitting an application for a noise exemption to By-law and Regulatory Services. You are not required to fill out and submit a separate form

- ( ) Yes
- ( ) No

Source of sound

Provide a detailed rationale for granting the exemption

Noise exemption date(s) and times

Right of way

Temporary use of the public right of way *

- ◯ Yes
- ◯ No

Indicate portions of the public right of way being requested (check all that apply)

- ☐ **Exclusive use of a sidewalk**
- ☐ **Non-exclusive use of a sidewalk**
- ☐ **Non-exclusive use of a recreational pathway**
- ☐ **Use of a roadway (following rules of the road)**
- ☐ **Street closure (partial)**
- ☐ **Street closure (full)**
- ☐ **Curb lane**

List the sidewalks / pathways / roadways for which a road use permit is being requested

If the purpose is for a parade, run, walk, or cycling event, indicate the route

Right of way dates and times

Street Parking

Does the event require the removal of on-street parking to facilitate the event? *

- ◯ Yes
- ◯ No

Location(s) and date(s) of requested parking removal

Attendee Parking

Parking provided for attendees? *

- ◯ Yes
- ◯ No

Location(s) of available parking and number of spaces per location

Is a fee charged or donation requested for parking?

- ◯ Yes
- ◯ No

Shuttle service

Shuttle service provided? *

- ◯ Yes
- ◯ No

Shuttle service provider

Pick-up location(s), drop-off location(s) and route

☐ **I understand that my organization cannot charge a fee or request donations for shuttle service**

Food

Food Service *

- ◯ Yes
- ◯ No

Indicate the type of food service available (check all that apply)

- ☐ **Community barbeque**
- ☐ **Food trucks**
- ☐ **Food carts**
- ☐ **Food stands (site-built operations)**
- ☐ **Pre-packaged foods**
- ☐ **Service for volunteers and staff**
- ☐ **Other**

Describe "Other" ☐

Hydro and water connections

- ◯ Site is unserviced - connection not available to all vendors
- ◯ Site is serviced - connection available to all vendors
- ◯ Uknown

Will the event offer hydration / water refill stations?

- ◯ Yes
- ◯ No

Vendors

Merchandise or craft vendors *

- ◯ Yes
- ◯ No

Indicate the type of merchandise being sold (check all that apply)

- ☐ **Manufactured goods**
- ☐ **Handmade craft products**
- ☐ **Artworks**
- ☐ **Other**

Describe "Other"

How many vendors are participating?

- ◯ One to four
- ◯ Five or more

Animals

Will animals be present as part of the event? *

- ◯ Yes
- ◯ No

Indicate the type of animal interactions present (check all that apply)

- ☐ **Petting zoo**
- ☐ **Pony rides**
- ☐ **Exotic animal show**
- ☐ **Other**

Describe "Other"

Animal provider details

Provider name

Contact (phone, email, etc.)

Amusement

Amusement activities *

- ◯ Yes
- ◯ No

Indicate the types of activities present (check all that apply)

- ☐ **Amusement rides**
- ☐ **Inflatables**
- ☐ **Midway games**
- ☐ **Other**

Describe "Other"

Amusement Provider Details

Name

Contact (phone, email, etc.)

Aircraft & watercraft

Will there be aircraft, watercraft or helicopters present? *

- ◯ Yes
- ◯ No

Description of activities

Drone filming or photography *

- ◯ Yes
- ◯ No

Temporary Structures

Temporary structures / installations *

- ◯ Yes
- ◯ No

Indicate the type of structures present (check all that apply)

- ☐ **Tent(s)**
- ☐ **Stage(s)**
- ☐ **Site-built bleachers**
- ☐ **Pop-up bleachers**
- ☐ **Viewing tower(s)**
- ☐ **Other**

Describe "Other"

Tent Details

Tent number and dimensions

Tent supplier name

Tent supplier contact

Stage Details

Stage number and dimensions

Stage supplier name

Stage supplier contact

Bleacher Details

Bleacher dimensions

Bleacher supplier name

Bleacher supplier contact

Pyrotechnics

Fireworks and pyrotechnics *

- ◯ Yes
- ◯ No

Indicate the type used (check all that apply)

- ☐ **Display fireworks**
- ☐ **Consumer fireworks**
- ☐ **Pyrotechnics**

Do you have prior permission from the land owner?

- ◯ Yes
- ◯ No

Pyrotechnics firing location

Pyrotechnician name

Pyrotechnician contact

Open Air Fires

Will there be open air fires? *

- ◯ Yes
- ◯ No

Do you have prior permission from the land owner?

- ◯ Yes
- ◯ No

Does the event have an affiliation with a charitable group?

If the applicant has indicated that they are not a registered non-profit or charity

- ◯ Yes
- ◯ No

Affiliated charitable group

Fire Performers

Will there be fire performers? *

- ◯ Yes
- ◯ No

Type of activity

Fire performer location

Fire performer name / company

Fire performer contact

Waste Management

Will there be waste management in place? *

Note that waste collection is the responsibility and the expense of the event organizer

- ◯ Yes
- ◯ No

☐ **I understand that if using municipal bins it is my responsibility to empty them at closing each day**

Collection company

Number of garbage roll-off bins

Grey water disposal

Recycling

Recycling and green initiatives *

Note that waste diversion is strongly encouraged for all events

- ◯ Yes
- ◯ No

Outline the strategy for greening the event

Refer to the Event Guide for more information on greening your event

Public Health Measures

Harassment policy *

Does the event have a harassment policy that is posted publicly?

- ◯ Yes
- ◯ No
- ☐ **I would like assistance developing a harassment policy**

Safer spaces *

Has the event implemented any safer spaces infrastructure or procedures?

- ◯ Yes
- ◯ No
- ☐ **I would like assistance incorporating safer spaces**

Party safe messaging *

Does the event post Party Safe messaging in advance of and/or at the event?

- ◯ Yes
- ◯ No
- ☐ **I would like assistance developing party safe messaging**

Security

Will there be a security presence at the event? *

- ◯ Yes
- ◯ No

Security company

Security company contact

Security company registration number

Security deployment details

Police paid duty officers *

- ◯ Yes
- ◯ No

Medical

Medical coverage *

- ◯ Yes
- ◯ No

Medical provider type (check all that apply)

- ☐ **Event volunteers**
- ☐ **Accredited volunteer service**
- ☐ **Paid third party provider**
- ☐ **Ottawa Paramedic Service paid duty**
- ☐ **Other**

Describe "Other

First aid provider name

First aid provider contact

Medical deployment details

Consent

Please check below to provide your consent.

☐ The undersigned acknowledges having read and understood the regulations outlined herein, and agrees to indemnify and save harmless the City of Ottawa from any and all claims, demands, causes of actions, losses, costs or damages that the City of Ottawa may suffer, incur or be liable for resulting from the special event as set out in the by-law whether with or without negligence on the part of the applicant, the applicant's employees, directors, contractors or agents and to maintain insurance for the event to the satisfaction of the City.

Personal information collected on this form will be used for the purposes of administering the Special Event application in accordance with the Special Event By-law 2013-232. Questions about the collection and use of information for sharing information with other city departments may be addressed to eventcentral@ottawa.ca, 613-580-2424 ext. 14613.