



Keeping Events Safe: Best Practices for Preventing Vehicle-Borne Threats & Hazards

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Session Overview



- Welcome & introductions
- Setting the Scene – Poll Question
- Terrorism, Lone Threat Actors & Targeted Violence
- Site Design & Planning Considerations
- Vehicle Security Barrier solutions
- 5 Key Takeaways
- Resources & further reading

Poll Question



How concerned are you about a vehicle-borne incident occurring at your concert series venue?

- 1) Very much – it keeps me up at night ! I'm relieved after each concert.
- 2) Somewhat concerned
- 3) Less concerned

Poll 1 (n=13)

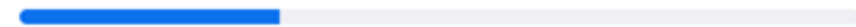
Poll ended | 1 question | 13 of 16 (81%) participated

1. How concerned are you about a vehicle-borne incident occurring at your concert series venue?

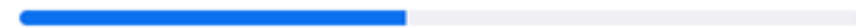
(Single choice)

13/13 (100%) answered

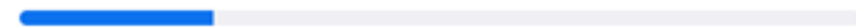
Very much – it keeps me up at night ! I'm relieved after each concert. (4/13) 31%



Somewhat concerned (6/13) 46%



Less concerned (3/13) 23%





New Orleans
January 1, 2025

Today's Uncertain Threat Landscape for Events & Crowded Places

Terrorism, Lone Threat Actors & Targeted Violence

Terrorist and lone actor attacks have moved from 'directed attacks' to inspired and grievance-based attacks which are difficult to detect, may occur with little or no notice and have created a more complex homeland security challenge for event organizers & their public safety / security partners.

Low sophistication, low capability attack vectors and methods to commit violent acts to achieve mass casualties, media attention & or Govt reaction.

Recent attack methods:

- Vehicle as a Weapon
- Firearms & Bladed Weapons
- Drones (UAVs – unmanned aerial vehicles)
- Improvised Explosive Devices (IEDs)
- Fire as a Weapon



US Department of Homeland Security (2025) *Homeland Threat Assessment*. Available at: [Homeland Threat Assessment 2025](#)

ERMS EVENT RISK
MANAGEMENT
SOLUTIONS

Yesterday's Incident is Tomorrow's Risk™

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Vehicle as a Weapon (VAW)

- **What** - deliberately (malicious intent) driving a vehicle into an individual or into crowds of people to cause harm
- **Why** - regarded as an attractive 'attack vector' by terrorists and lone actor threats:
 - likely to cause multiple casualties
 - low complexity, affordable
 - requires little planning and skill (least effort)
 - perceived as less likely to be detected in the planning phase (reduced risk/increased likelihood of success)
 - Frequently the first part of a '*Layered Attack*', commences with vehicle ramming then followed by use of firearms or bladed weapons



Vehicle Borne Incidents: Terrorism vs 'Human' Hazards

One Dead and 22 Injured as Car Rams Into Pedestrians in Times Square



One Dead as Car Hits Pedestrians in Times Square

One person was killed and at least 22 were injured when a car struck pedestrians in New York's Times Square. The driver of the car has been taken into custody.

May 18, 2017 • Image by Mary Altaffer/Associated Press

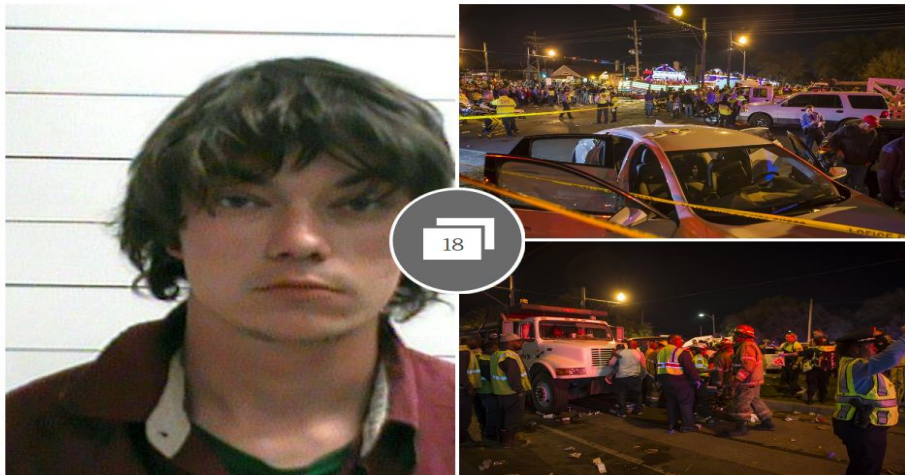


Santa Monica Farmers Market, CA (16 July 2003)
10 fatalities + 63 injured
\$21 million civil lawsuit settlements

More Likely Scenario: Impaired & Distracted Drivers

21 hospitalized after vehicle plows into Endymion parade crowd in New Orleans

Updated Feb 27, 2017; Posted Feb 25, 2017



Gallery: Truck plows into Endymion parade crowd in New Orleans

CBS/AP / June 11, 2016, 8:46 PM

2 killed when car crashes into crowd at Tenn. festival



Authorities said two people were killed when a vehicle drove into a crowd at a music festival and car show Saturday, June 11, 2016 in Selmer, Tenn. / WBBJ

Car crashes into crowd at Oklahoma homecoming parade, killing 4

Driver taken into custody on an impaired-driving charge

The Associated Press | Posted: Oct 24, 2015 2:29 PM ET | Last Updated: Oct 24, 2015 8:31 PM ET

Man who plowed car into crowd at SXSW charged with capital murder

By Josh Rubin and Faith Karimi, CNN

Updated 1:13 AM ET, Sat March 15, 2014



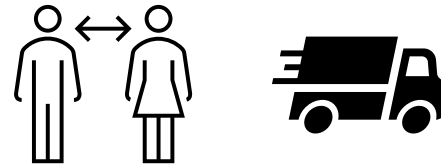
Secure by Design: Guidelines for Protecting Crowded Places



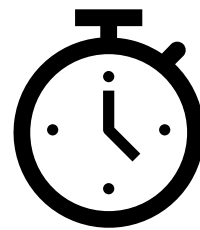
People & Process



'Security in Depth'

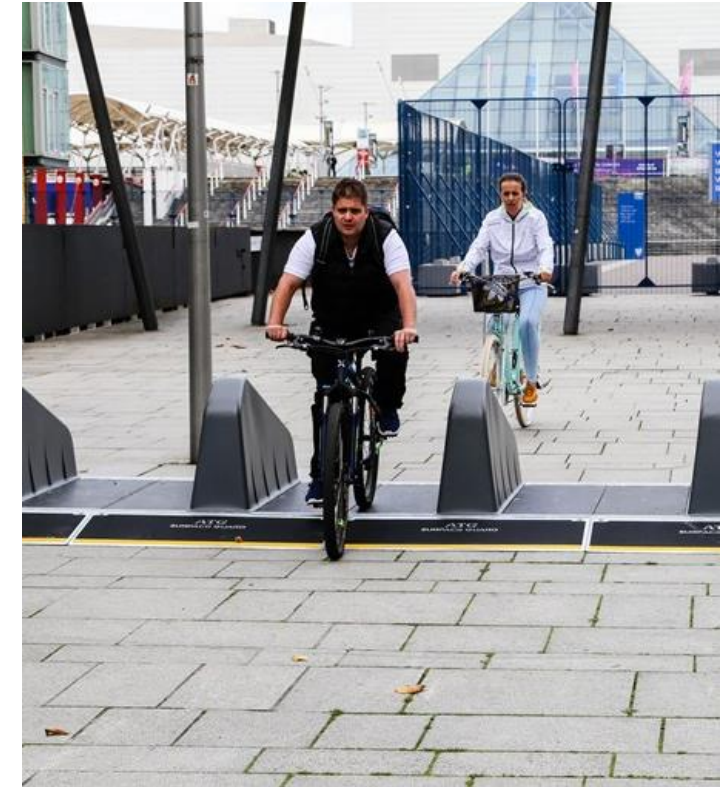


Stand-off / Buffer Zones



Time

'Technology'



Site Design & Planning Considerations

- Risk based planning: engage with your local with security partners (Police & DHS)
- Hostile vehicle mitigation measures should be proportionate to the risk threat
- Consider your concert crowd movement & flows - ingress, egress & evacuation
- If possible, design & orientate your concert site to utilize existing features/reduce avenues of high-speed approach
- Integrate & layer 'soft measures' (road closures, vehicle control access points etc) with 'hard measures' (vehicle security barriers – 'last line of defense')
- Accessible & inclusive environment requirements





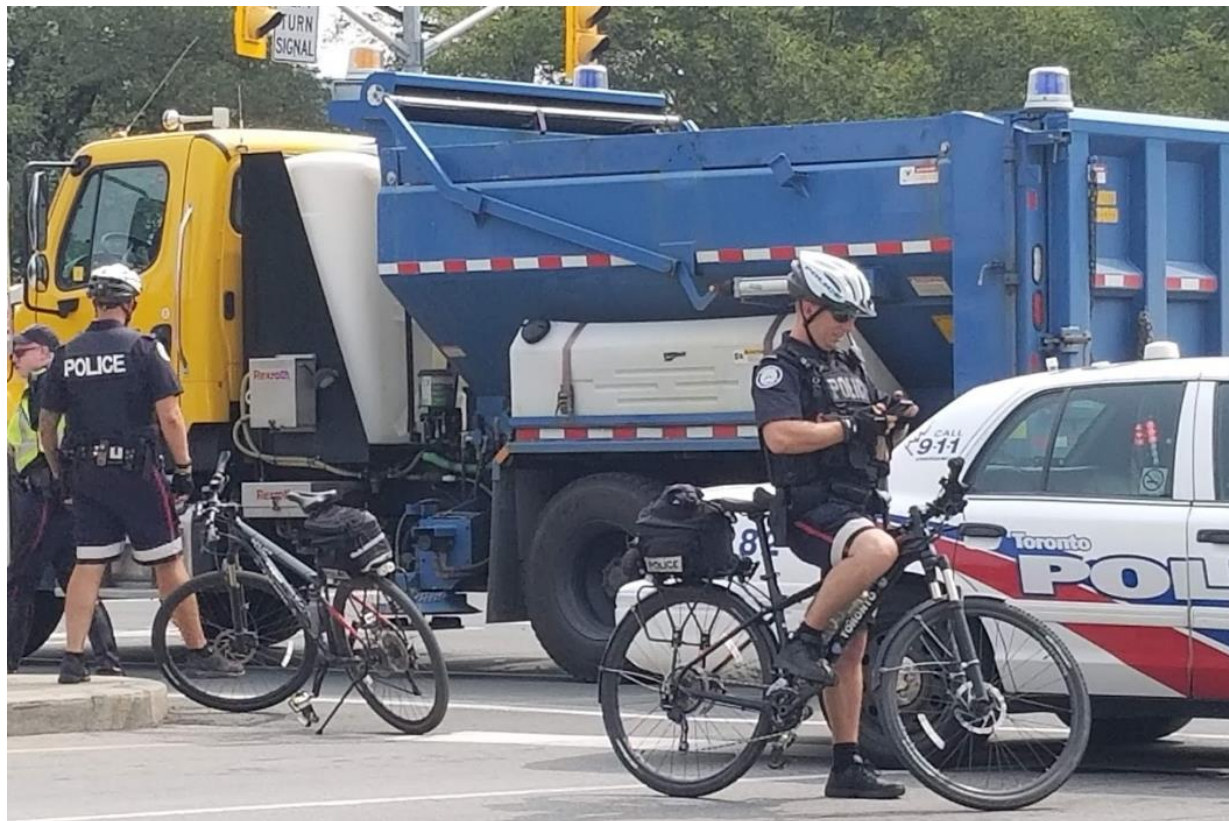
Vehicle Security Barrier (VSB) Solutions



Engineering Design & Installation & Challenges - Underground Utilities & Services

Industry solution - shallow mount (8" deep), 12" diameter bollard with PAS 68 (UK)/ K4 (US Dept. of State) rating – 15,000lb vehicle @ 30mph, 2' vehicle penetration

Temporary/Improvised HVM Solutions



Use of salt trucks & police vehicles
"The Ex" Canadian National Exhibition 2018,
Toronto



Deployable "Pop Up Vehicle Blocker" & Police vehicle
Bohemian Nights Festival
Fort Collins, CO

Vehicle Concrete Barriers (VCB)

- Effective for delineating space to separate people & vehicles
- Does not provide crash rated protection from hostile vehicle attacks
- Consider requirement / impacts to pedestrian movement during HVM design integration



Pedestrian permeable HVM design solution integrated with vehicle & traffic control checkpoint at a local festival
Montreal, QC



Softening the look of VCB through branding
Calgary Stampede,



Permeable Solutions: Pedestrian & Vehicle



[Calpipe Internal Locking Removable Bollard](#)

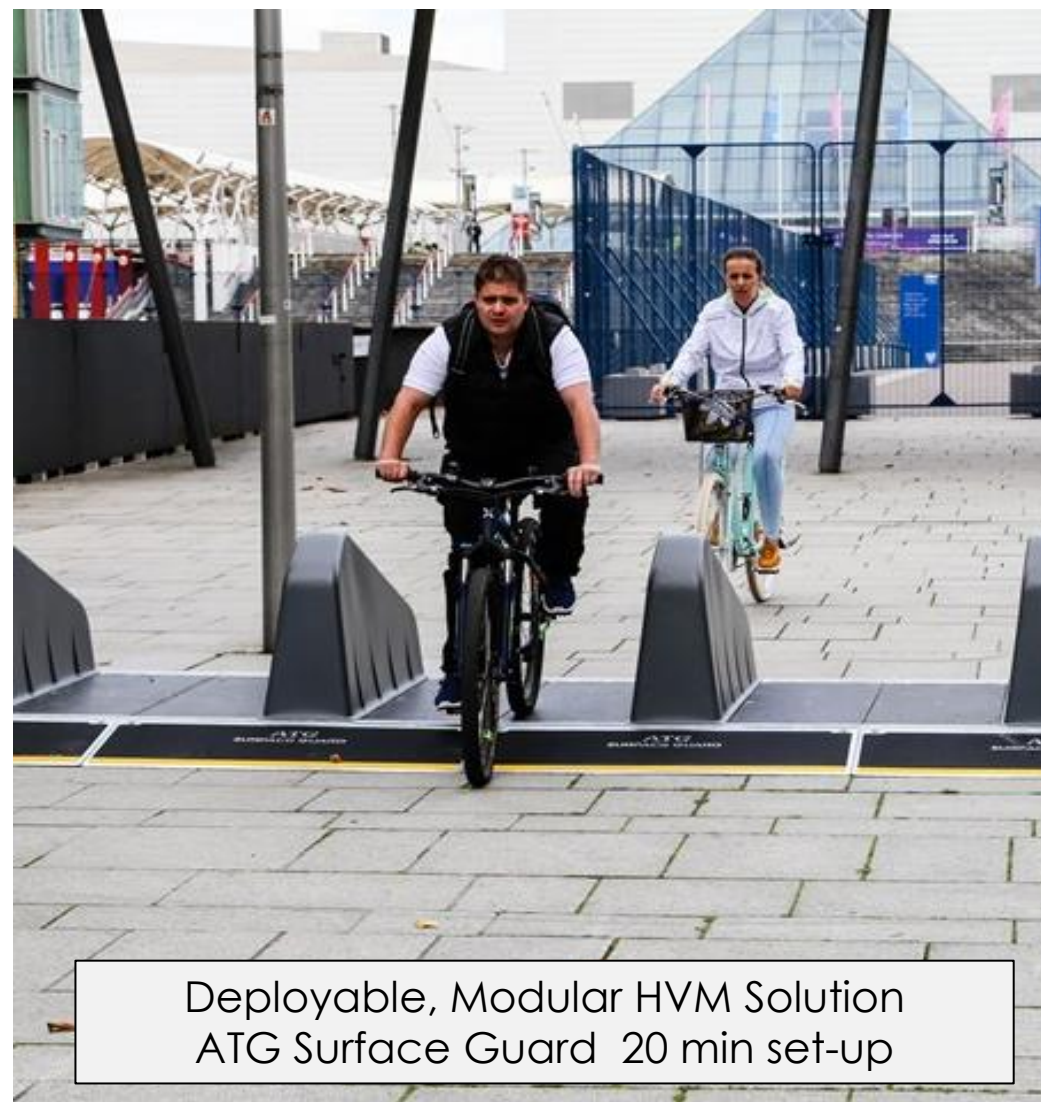


Matador Surface Mount Automated Bollard System
Pedestrian & vehicle permeability – 2 middle bollards move on sliding tracks (manual). Permanent installation.

Deployable HVM Solutions for Outdoor Events



Meridian Rapid Defense Systems
Archer 1200 Anti-Vehicle Barrier



Deployable, Modular HVM Solution
ATG Surface Guard 20 min set-up

Down Stream 'effects': Pedestrian Movements

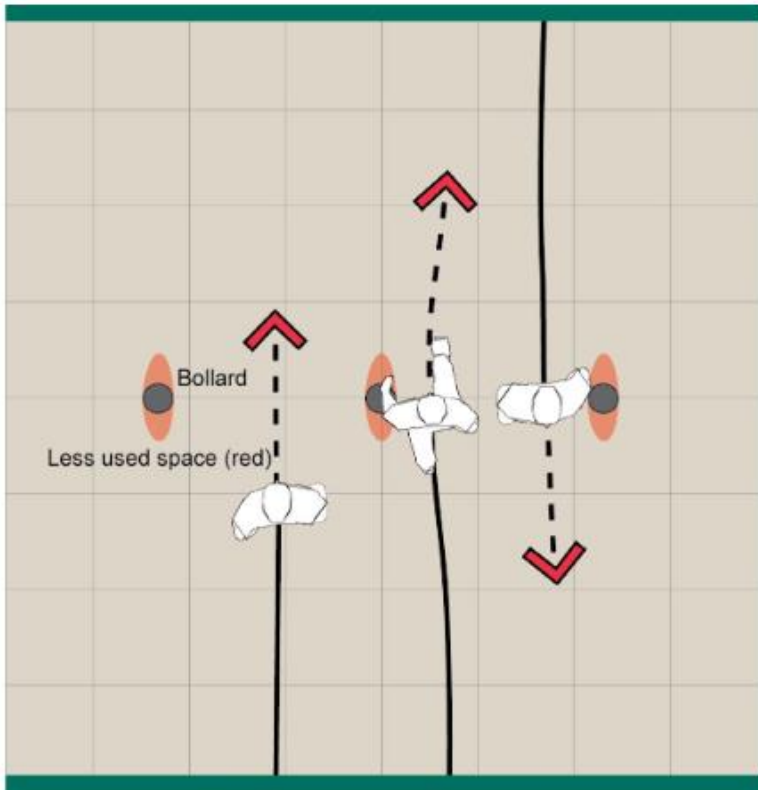


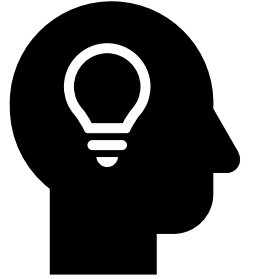
Figure 1: Pedestrians were observed to make tiny adjustments (such as reaching over a bollard) when moving through bollard lines positioned perpendicular to movement.

Consider the impact of HVM design solutions on pedestrian crowd movement – ingress, egress & during an evacuation

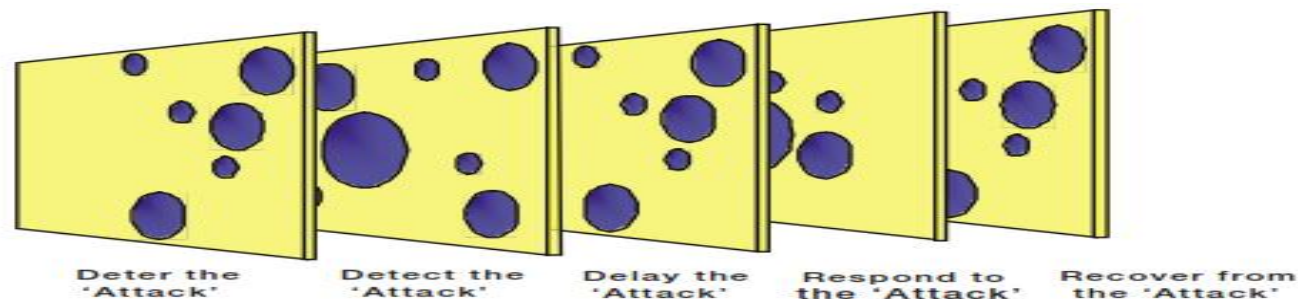


UK Government, Center for the Protection of National Infrastructure (2017) Bollards & Pedestrian Movement. Available at: <https://assets.publishing.service.gov.uk/media/5a750d98ed915d60d3b90be1/ta1-2-13-bollards-pedestrian-movement.pdf>

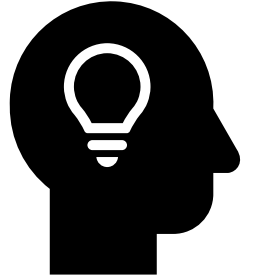
5 Key Take-ways



- Consider vehicle borne risks during your concert series planning
- Incorporate 'secure by design' principles for hostile vehicle mitigation, where possible, particularly, time and space
- Seek specialist security advice from local Law Enforcement & your assigned CISA Protective Security Advisor [Protective Security Advisor Program](#) , contact [CISA Regions | CISA](#)
- Funding & grant opportunities: 'Nonprofit Security Grant Program' [Nonprofit Security Grant Program | FEMA.gov](#)
- Prepare & train your team on responding to a medical incident, coordinate & liaise with your local EMS & public health officials



Resources & Further Reading



US: DHS & CISA (Cybersecurity & Infrastructure Security Agency)

Vehicle Incident Prevention & Mitigation Security Guide (April 2024) [Vehicle Incident Prevention and Mitigation Security Guide](#)

UK

National Counter Terrorism Security Office (NaCTSO) and the National Protection Security Authority (NPSA) guidance to support local authorities, event organizers, and similar end user groups to using temporary Vehicle Security Barriers (VSBs) as part of a Hostile Vehicle Mitigation (HVM) scheme. For further guidance access the links below:

<https://matomo.protectuk.police.uk/cec4cf>

[Hostile Vehicle Mitigation \(HVM\) | NPSA](#)

Australia-NZ Counter Terrorism Committee Hostile Vehicle Guidelines for Crowded Places 2017

[Hostile Vehicle Guidelines for Crowded Places.pdf](#)



Questions

...resilience is the capacity to survive, adapt
and flourish in the face of turbulent change
and uncertainty...

John Fiksel





**Thank you for
joining us!**