

Hostile Vehicle Mitigation Guidelines

**Presentation to Toronto Accessibility Advisory Committee
October 24, 2025**

Transportation Services
Strategic Policy & Initiatives Unit



Photo: Jason Thorne

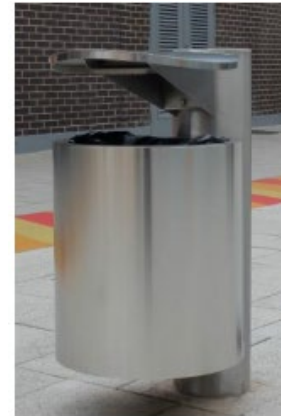
Project Background

Hostile Vehicle Mitigation Definition

Hostile Vehicle Mitigation is a security discipline that uses physical barriers, vehicle speed reduction techniques, and other measures to protect people and infrastructure from vehicle-based attacks.

Decision History

CC24.2 (December 2024) ***Keeping Toronto Safe From Hate Action Plan – Update on Key Actions*** directs Transportation Services to develop guidelines and a kit of parts for HVM interventions on City streets



Project Objectives

Establish HVM Standards

Establish design, placement, and performance standards for permanent HVM proposed by property owners that encroach on the public right-of-way

Develop Application Requirements and Process

Define the HVM encroachment application process, including applicant and City staff roles and responsibilities

Increase Public Awareness

Develop materials to inform property owners about HVM concepts, products, and planning and implementation processes

Deliverables

- 1. Standard Operating Procedure for application review and approval**
- 2. Public-facing HVM Guidelines document**

Project Team

Project Lead

Strategic Policy & Initiatives,
Transportation Services

Consultants

Arup

- Security design and engineering

DTHA

- Urban and landscape design

Level Playing Field

- Accessible urban design



Internal Advisory Group

- City Planning
 - Urban Design
 - Heritage Planning
- Transportation Services
 - Construction Activity
 - Operations & Maintenance
 - Cycling & Pedestrian Projects
 - Traffic Operations
- Environment, Climate & Forestry
- People & Equity, Accessibility
- Corporate Real Estate Management
- Toronto Police Services
- Toronto Paramedic Services
- Toronto Fire Services
- Toronto Emergency Management

Project Timeline



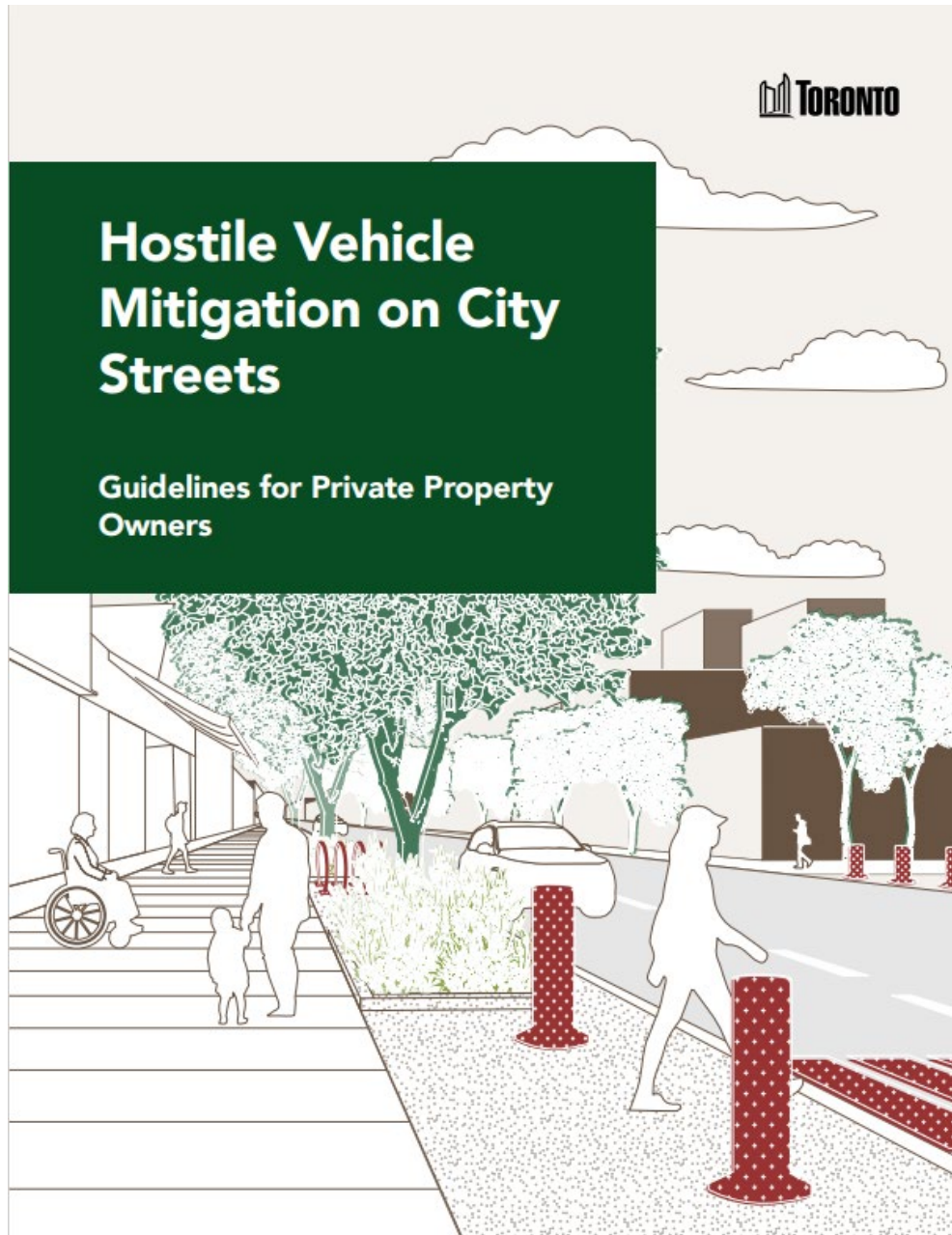


Table of Contents

1. Understanding HVM in the Public Realm

- Defines key concepts
- City and property owner responsibilities
- Overview of the HVM encroachment process
- Post-permit requirements

2. Design Requirements for HVM

- Minimum technical requirements
- Application requirements
- Referenced policies and standards

3. Design Guidance and Precedents

- HVM placement
- Types of HVM
- Context-sensitive solutions

4. Additional Resources

- Cost estimations
- Frequently asked questions
- Glossary

Key Principles for HVM Encroachments in the Public Right-of-Way

Use of public right-of-way as last resort

- Where feasible, HVM elements must be located on private property

Risk-based, multidisciplinary approach to HVM

- Threat, Vulnerability & Risk Assessment (TVRA) must be completed
- Input required from security consultants, landscape architects, and other qualified professionals such as engineers and accessibility specialists as needed

Context-sensitive solutions

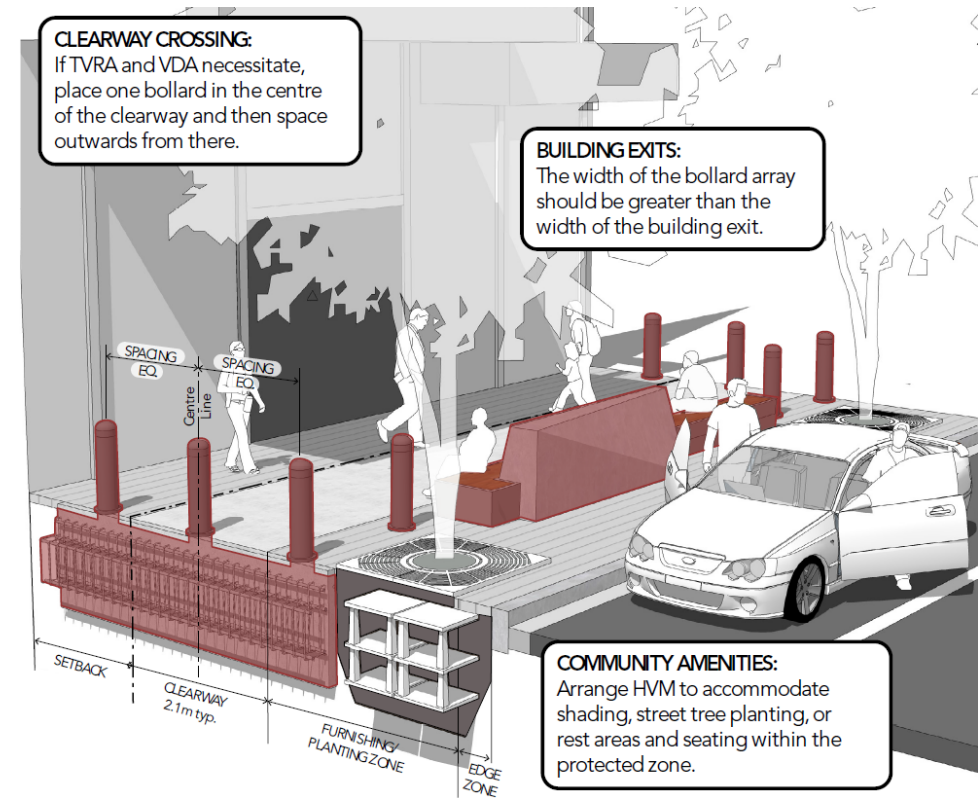
- HVM in the public ROW should respond to the surrounding urban context
- Prioritize protection at high-pedestrian areas and minimize disruption to movement patterns
- Combine certified HVM products with physical deterrents to support streetscape integration

Maintain accessible public right-of-way

- Where feasible installations must maintain 2.1m pedestrian clearway as per Toronto Accessibility Design Guidelines
- Maintenance responsibilities and standards must be clearly defined

Potential Impact to Accessibility in the Public Right-of-Way

Many certified HVM products require spacing of 1.2 m to achieve the certified safety rating. This conflicts with AODA and TADG requirements when bollards are placed across the pedestrian clearway.



Mitigating Accessibility Impacts

Pedestrian Clearway Widths

- HVM installations that conflict with TADG will be considered only where necessary and clearly justified through a site-specific TVRA
- In these cases, property owners are encouraged to:
 - Hire accessibility and/or wayfinding specialists to advise on the HVM system design
 - Select elements with the smallest possible diameter and widest certified spacing

Mitigating Accessibility Impacts

HVM Placement and Alignment

- Place HVM perpendicular to path of travel
- Ensure sufficient clearance to deploy accessibility ramps at transit stops and at designated accessible loading zones
- Maintain 1.5 m clearance between HVM elements at vehicle loading areas unless narrow spacing is justified by a TVRA

Mitigating Accessibility Impacts

Cane Detectability

- Ensure elements are cane detectable at 680 mm from the ground
- Protrusions must not exceed 100 mm without detectable base support
- Avoid elements with large under-clearance unless a base or detectable surface is provided



Mitigating Accessibility Impacts

Tactile Walking Surface Indicators (TWSIs)

- Must not be blocked by HVM elements
- Ensure tactile surfaces are centered between elements
- Guidance TWSIs are appropriate at transit stops, large open spaces, and at entrances to expansive open areas

Surface Transition

- Elevation changes must not exceed 13 mm and must be beveled to a maximum slope of 1:2
- Avoid trip hazards at joints or transitions between materials

Mitigating Accessibility Impacts

Colour Contrast

- Ensure colour and brightness contrast of key elements is at least 50%
- Ensure visibility of HVM elements in snow (avoid white finishes)
- Apply high-contrast band at the base and near top of bollards

Recommended Colour Combinations		Colours to Avoid - Low Contrast		Colours to Avoid - Colour Blindness
Blue/White 	Brown/White 	Red/Black 	Violet/Black 	Red/Green 
Red/White 	Orange/Black 	White/Grey 	Yellow/Grey 	Blue/Green 
Dark Purple/White 	Yellow/Black 	White/Light Blue 	Yellow/White 	
Dark Green/White 	White/Black 			



Mitigating Accessibility Impacts

City Review Process

- Transportation Services will review applications for conflicts with accessibility, pedestrian clearway, and maintenance operations requirements
- Comprehensive review of proposed HVM encroachments includes circulation to TTC, Police Services, Fire Services, Paramedic Services, City Planning, and Urban Forestry as needed



Questions?