

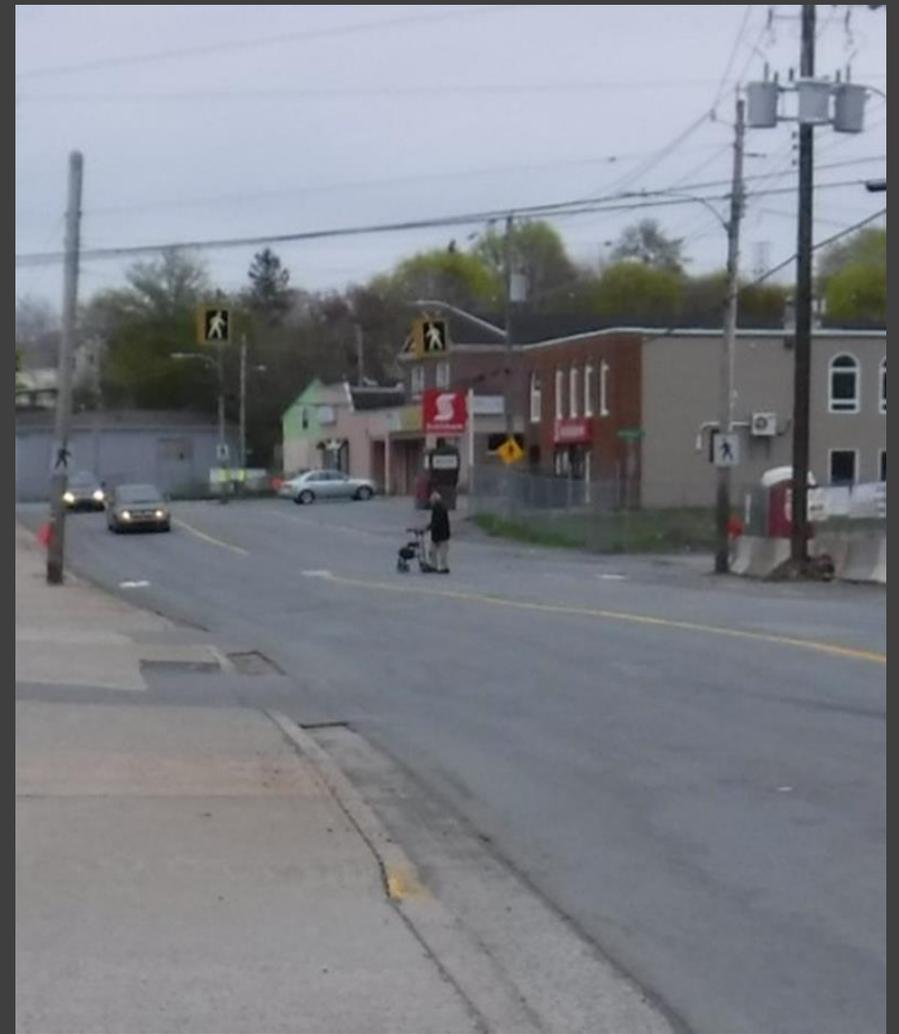


Road Safety in HRM

Moving on from the blame game

Barely  
visible  
mid block  
crosswalks





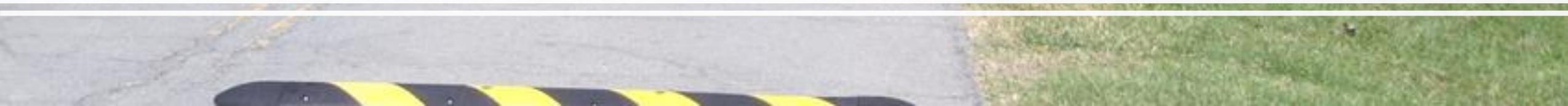
Is this fit for purpose, for all ages and abilities?

Adding basic  
safety to  
crosswalks –  
visibility for  
drivers





What are our priorities – safety or speed?

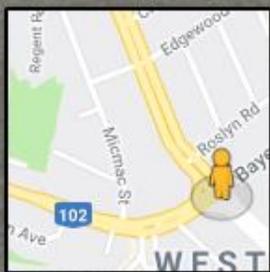


Connaught Ave  
Halifax, Nova Scotia

Google

Street View

Vulnerability  
at signalised  
intersections



Google



HRM SAFE Streets for EVERYONE Threats from all directions

Can pedestrians look in all directions and avoid constant traffic?



**EMERGENCY**  
Watch for  
vehicles

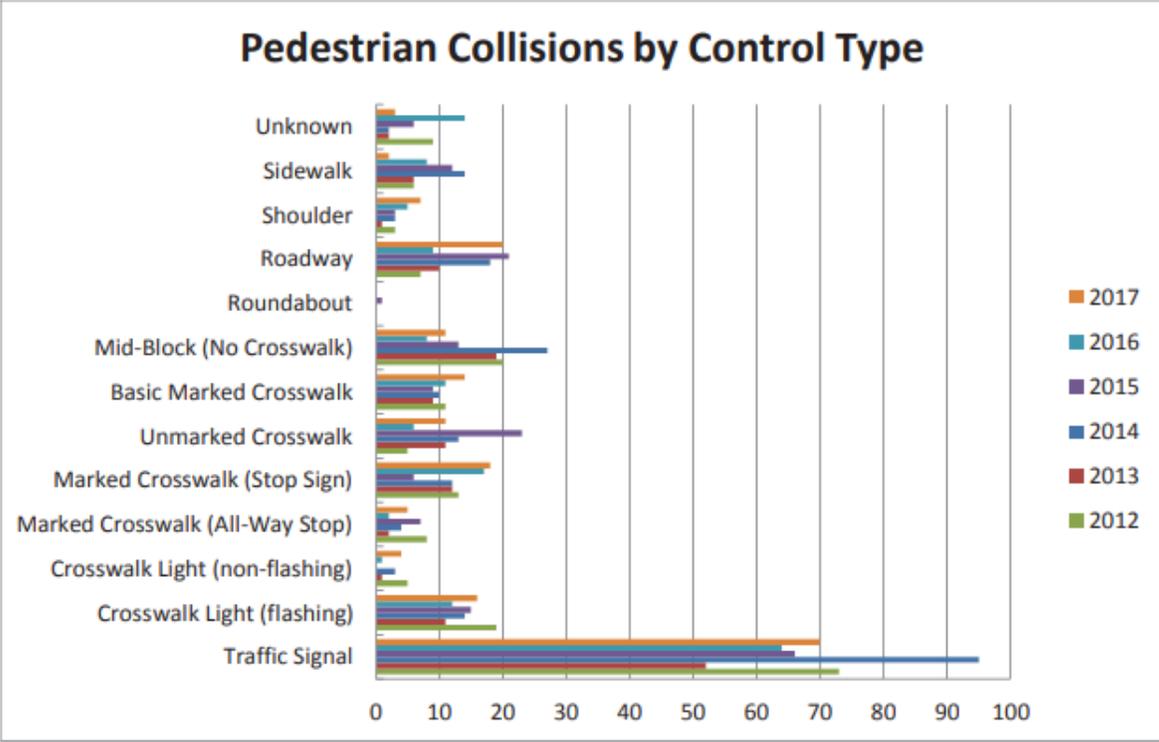
**DO NOT CROSS**  
Push Crossing  
# Button

**DO NOT CROSS**

**TO CROSS**  
← PUSH BUTTON



J Fe Sept O Nov Dec



remaining for a pedestrian to complete the crossing. The timer starts counting at the beginning of the pedestrian flashing “DON’T WALK” display and finishes counting (i.e., a “zero” display is shown) until the end of the pedestrian flashing “DON’T WALK” display. There is no countdown display during the pedestrian “WALK” or solid “DON’T WALK” displays. The practice of starting the countdown at the beginning of the FDW (Flashing Don’t Walk) is recommended by the Transportation Association of Canada (TAC). (More information is available at [City of Toronto](#)<sup>(6)</sup>)

The initial countdown display value is dependent on the length of the crosswalk. Consequently, the display value can vary depending on the crossing and intersection type. In Canada, countdown timers are governed by the provincial/territorial jurisdictions and may vary accordingly.

### ISSUES / EVIDENCE

Nearly half (47%) of pedestrian fatalities and severe injuries occurred at signalized intersections; surprisingly, most (57%) of these crashes occurred while the pedestrian was crossing with the signal. Crossing-against-the-signal, pedestrian KSI (killed or severely injured) crashes are 56% more deadly than crossing-with-the-signal crashes.<sup>(15)</sup>

months leading up to the installation of nine pilot countdown signals and for the twenty-one months following the installation of the signals. They compared treatment location statistics with those for 1,266 intersections, about half of which were scheduled to receive countdown timers in the future, while half were not. Analysis of the results showed that the number of pedestrian collisions declined by a statistically significant 52% following the introduction of these signals. However, the authors caution that some of the effect may have been due to regression to the mean, given that the pilot intersections were selected based on pedestrian safety-related criteria.<sup>(45)</sup>

A large study in Toronto compared the rate of pedestrian-motor vehicle collisions at 1,965 Toronto intersections before and after the installation of pedestrian countdown signals. A total of 9,262 pedestrian-vehicle collisions took place during the ten-year study period. Analysis of the results indicated that the pedestrian countdown signals had no statistically significant effect on the number of pedestrian-motor vehicle collisions at the intersections where they were installed. The authors concluded that pedestrian countdown signals should not be considered to offer significant safety benefits when used in the absence of other safety measures, such as education about how they work.<sup>(46)</sup> Therefore, the evidence on the effectiveness of these countdown signals is mixed.

**2018 Pedestrian Safety Semi-Annual Reporting**  
**Transportation Standing Committee**

- 2 -

February 25, 2019

**DISCUSSION**

***Evaluation***

Police and Traffic Management staff work together to share vehicle-pedestrian collision information. Data shared and reviewed includes factors such as time of day, gender and age of driver and pedestrian, collision location, etc.

Statistics compiled from police reports from January to June 2018 indicate a decrease in the number of pedestrian-vehicle collisions within the public Right of Way (ROW) compared to last year. Table No. 1 provides a summary of the findings in comparison to previous years.

**Table No. 1: Pedestrian Collision History (Months of January to June)**

	2012	2013	2014	2015	2016	2017	2018
Total Pedestrian Collisions Occurring within ROW	89	56	89	70	65	87	72

As with previous trends, the most common pedestrian-vehicle collisions are occurring at traffic signals, with left turns being the predominant vehicle movement. A total of 30 pedestrian-vehicle collisions occurred at a traffic signal in the first half of 2018. Of those, 12 were related to a left turn movement.

It is common for a higher number of collisions to occur at signalized intersections, due to an increased volume in vehicles and pedestrians. Collision rates can help identify locations of greatest concern as they consider road user volumes, rather than just a total number of collision frequencies. For example, 5 collisions occurring over a 5-year time frame is more concerning at a location with 1000 vehicles per day, than a location with 10,000 vehicles per day.

As part of the Strategic Road Safety Framework, a detailed review will be conducted of all pedestrian-vehicle collisions to identify further patterns and high collision rate locations.

***Engineering***

HRM Traffic Management is currently involved with multiple crosswalk and pedestrian safety initiatives.



## PROTECTED LEFT-TURN PHASING

### Groups Affected

- Pedestrians
- Drivers

### Jurisdictions Studied

- U.S.

**Category:** Infrastructure

## DESCRIPTION

Protected left-turn phasing is a traffic signal sequence that holds the pedestrian at the curb by a "DO NOT WALK" phase while through traffic is held by a red light. The driver is able to make a left turn without conflicting with pedestrians. Some jurisdictions have increased the number of intersections with protected left-turn phasing and where drivers are prohibited from turning right on a red light.<sup>(14)</sup> (See Section 3.3 [Advanced Green for Pedestrians](#) and Section 3.5 [No Right Turn-on-Red \(RTOR\)](#))

## ISSUES / EVIDENCE

Most intersections make it difficult for drivers to make safe turning choices.<sup>(14)</sup>

In New York City, left-turn only phases for vehicles were introduced at 95 intersections, which resulted in a 45% decrease in vehicle/pedestrian crashes compared to an 11% decrease where there were no left-turn only phases.<sup>(48)</sup>

A study in Austin, Texas found that the best phasing measure was a split phase where the left-turning drivers had a green phase holding the pedestrians and then the pedestrians would have a green phase while the left-turning vehicles were held by the light. The vehicle/pedestrian conflict rate was reduced from .25 to .01 using the split phases, which was statistically significant.<sup>(95)</sup>

## BARRIERS / CONSIDERATIONS

**Relevance to heavy vehicles.** This countermeasure separates the movement of vulnerable road users and heavy vehicles (and other motor vehicles) at intersections. However, it can result in longer waiting times for both vehicles and pedestrians.

- Drivers
- Cyclists

- Canada
- Netherlands

**Category:** Policy/Legislation/Regulation; Infrastructure

## DESCRIPTION

One of the conditions leading to motor vehicles hitting pedestrians is created when vehicles turn right at an intersection, especially when their traffic light is red and pedestrians have the right of way. The right turn on a red light manoeuvre is a major source of concern for pedestrian safety. Drivers are supposed to stop and yield to crossing pedestrians in this situation but often fail to do so.<sup>(14)</sup> (See Section 3.3 [Auditory Messages at Intersections, Pedestrian Scramble Operations, Protected Left-Turn Phasing, Warning Signs / Pavement Markings at Intersections](#) and Section 3.8 [Increased Conspicuity and Visibility of Pedestrians / Cyclists](#))

## ISSUES / EVIDENCE

Right-turn collisions between large trucks and cyclists were identified as particularly severe in the Netherlands, where an estimated 30 to 40 fatalities and 100 serious injuries took place per year.

A Canadian study found that after the implementation of RTOR at signalized intersections, there was a significant increase in pedestrian and cyclist trauma. These increases of pedestrian collisions in four

of police reports suggested that drivers stop for a red light, look left for a gap in the traffic and fail to see pedestrians and cyclists coming from their right as they turn.<sup>(14)</sup>

Prohibiting right turns on red effectively removes a potential for conflict between drivers and pedestrians, as long as drivers comply with the rule.<sup>(14)</sup> Turning right on a red light is already prohibited on the island of Montreal.<sup>(62)</sup>

Review is currently underway to assess how the no RTOR has affected collisions with pedestrians and cyclists.

## BARRIERS / CONSIDERATIONS

**Relevance to heavy vehicles.** A prohibition of right-on-red may mitigate the risks to pedestrians in intersections when heavy vehicles are turning and fail to see vulnerable road users in their blind spots.

Collisions continue to exist when trucks turn on a green light and pedestrians do not observe the "DO NOT WALK" indicator or when the pedestrian is in the truck's blind spot zone. (See Section 3.3 [Warning Signs / Pavement Markings at Intersections](#) and Section 3.8 [Increased Conspicuity and Visibility of Pedestrians / Cyclists](#))

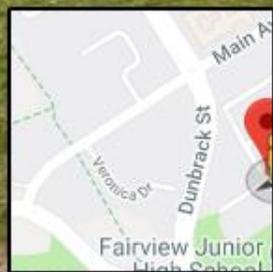


207 Coronation Ave  
Halifax, Nova Scotia

Google

Street View

Vulnerability  
on unmarked  
crosswalks at  
intersections



Google

5410 Spring Garden Rd

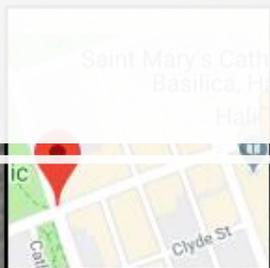
Halifax, Nova Scotia

Google

Street View - Aug 2018



Vulnerability on wide intersection crosswalks



Google

Romans Ave

Halifax, Nova Scotia

Google, Inc.

Streets View

Vulnerability  
on unmarked  
crosswalks at  
intersections



Google

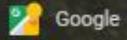
Inexpensive  
but visible  
bumpouts



Inexpensive  
but visible  
bumpouts



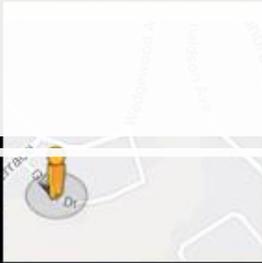
23 Glenn Dr  
Halifax, Nova Scotia



Street View - Jun 2015



No sidewalks + parked cars



Google

Potential solutions?





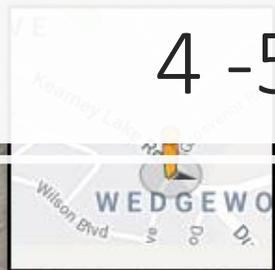
1 Wedgewood Ave  
Halifax, Nova Scotia

Google

Street View - Jun 2015



4 -5 lane crosswalks – no protection from speeding traffic



Google

Quick Fix?

Adding  
visibility within  
driver  
sightlines



Adding  
refuge island  
& visibility,  
reducing  
road width



# Offset refuge island



20mph roads &  
quick fixes =  
Seattle reduces  
traffic fatalities by  
37% to 5, versus  
our 14.



# Conclusion

Vul. rd user safety won't improve unless very basic and often inexpensive improvements are made, HRM wide.

We need to develop and identify a toolkit of safety countermeasures that can be applied/deployed everywhere.

Learn from our crosswalk flag programme – small things can make a big difference!

This isn't an issue which can wait years for gradual single site rebuild/redesign processes.

Visible crosswalk paint is a very basic, essential & urgent need: <https://www.tranbc.ca/2017/04/04/pavement-paint-promising-for-lasting-brightness/>

# Sources

Canadian Gvt: Safety measures for pedestrians around heavy vehicles, summary report.  
[http://publications.gc.ca/collections/collection\\_2019/tc/T86-51-2018-eng.pdf](http://publications.gc.ca/collections/collection_2019/tc/T86-51-2018-eng.pdf)

HRM 2018 pedestrian safety semi-annual report

HRM 2017 pedestrian safety semi-annual report

<https://www.khon2.com/news/local-news/pedestrian-safety-changes-in-the-works-for-some-of-oahus-busiest-roads/1520640797>

[https://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/ped\\_scdproj/sys\\_impact\\_rpt/chap\\_2.cfm](https://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_scdproj/sys_impact_rpt/chap_2.cfm)

<https://usa.streetsblog.org/2018/02/01/a-quick-and-dirty-fix-for-sidewalkless-streets/>

<https://streetsillustrated.seattle.gov/urban-design/adaptive-design/intersection-treatments/>

[https://twitter.com/dongho\\_chang/status/1131995463815557121](https://twitter.com/dongho_chang/status/1131995463815557121)