

# *Not In Plain Sight*



## **Dangerous Engineering Flaws in Winnipeg's Design of Pedestrian Corridors**

**By: Christian Sweryda**

## EXECUTIVE SUMMARY

Winnipeg has had several serious pedestrian crashes with many resulting in fatalities. These crashes have largely been occurring in pedestrian corridors (corridors) which consist of overhead lighted signs and flashing yellow beacons activated by a pedestrian push-button. There are two deficiencies inherent in the design of corridors that are largely related to the injuries and fatalities.

The first deficiency is that there are no eye-level flashing beacons located beside the road for drivers that are too close to the corridor to observe the ones located overhead, or for drivers that typically will not be looking up. This is also inconsistent with all other types of traffic control that will have devices placed at eye-level. Examples are flashing red lights above stop signs, railway crossing beacons, and traffic signals placed near the stop line.

The deficiency is specific to corridors and has been identified by the city as a correction needed to the two corridors where an eight- and four-year-old died. The city has known about the problem since at the least 2012 when advocacy began, and it was identified by the city's own traffic signals engineer in 2013. A pilot project done by the city in 2016 found that when the eye-level beacons were added to a corridor, the rate of drivers yielding to pedestrians increased. The cost of the correction is only \$500 per corridor with the total cost to correct the entire city (about \$90,000) being less than the cost of one set of traffic signals.

Rather than implement the correction on a widespread basis, in 2017, the city took out the set it had already installed. In the wake of the most recent pedestrian deaths, the city's engineering response has largely been to convert corridors to traffic signals, which is a much more 'aggressive' treatment, substantially increasing driver and pedestrian delay.

The second deficiency is the immediate activation of the auditory chirping that commences when a pedestrian pushes the corridor's activation button. This encourages the pedestrian to immediately enter the roadway before it is safe to do so. Pedestrians prematurely entering the roadway has been identified as a causal factor of the crashes. Traffic signals, in contrast, do have a delay before the chirping and walk signal are activated.

The deficiencies with pedestrian corridors are only part of a bigger problem of subpar traffic engineering in Winnipeg. To name a few, other problems include inadequate speed limit signage, inadequate construction zone signage, short yellow lights, and missing school zone signs.

Instead of focusing on the engineering problems, Winnipeg's advocates such as police, Manitoba Public Insurance, and city politicians have focussed their efforts on blaming drivers and promoting increased traffic enforcement. These efforts are part of the broader conflict of interest in road safety when those who are in part responsible for the failures of safety can deflect attention from their own responsibilities, while making millions of dollars from blaming the road user. The efforts to blame road users have become such an engrained part of the culture that the talking points are now regurgitated by the public at large whenever crashes occur. This is repeatedly reflected in the media which regularly parrots the narratives of the city and police

without asking the critical questions or drawing attention to the underlying issues. For instance, the city's own studies supporting the safety advantages of adding eye-level beacons have not been made public through any media coverage.

When the city did add eye-level beacons at the corridor where a child died on St. Anne's Road, engineers were praised for their proactive efforts. There was no attention drawn to the fact that it was a problem known about long before the child died, and that the solution was only being implemented at the one location where the crash happened, even though the deficiency was common to all corridors. A feedback loop has thus developed where those who have failed to improve safety are profiting from the peril while evading their own responsibilities. For instance, advocacy for increased traffic enforcement, lowering speed limits and raising fines is largely based on advocates using crashes to point to, even though the 'solutions' are largely disconnected from the actual crash causes.

There is huge potential for safer roads should the focus be redirected towards engineering improvements. This will take a change in culture, and widespread public advocacy if road safety is to ever be taken seriously.

Due to size, this project has been split into six separate pieces:

**PART 1 - THE PROBLEM** - Outlines the design deficiencies involving Winnipeg's pedestrian corridors and shows the comparisons to other forms of traffic control including a case study of Winnipeg's worst corridor.

**PART 2 - THE HISTORY** - Details the city's awareness of the problems back to 2012, a 2016 report, and the 2017 subsequent removal of the already installed improvements. The analyzed records demonstrate awareness of the problems but a pattern of inaction towards the clear solutions.

**PART 3 - THE CITY'S SOLUTION** - Details the current response by the city (installation of more traffic signals) and examines the costs vs. road safety benefits.

**PART 4 - THE POLITICS OF ROAD SAFETY** - Examines why the current unsafe situation continues unopposed and the contradictions involving those responsible for road safety. Media framing and the manufacturing of public sentiment is explored in detail.

**PART 5 - MISPLACED EFFORTS** - An analysis of the misplaced road safety efforts and how the obvious problems are overlooked in the political environment of blaming road users.

**PART 6 - THE UNTAPPED POTENTIAL FOR SAFER ROADS** - A discussion of the potential for safer roads should the awareness and priorities shift from the current politics.

# Not in Plain Sight: Dangerous Engineering Flaws in Winnipeg's Design of Pedestrian Corridors

By Christian Sweryda

Winnipeg has had a string of major automobile crashes, many of which have resulted in serious and critical injuries – even fatalities with about half resulting in the death of a pedestrian.<sup>1</sup> It is time to assess the underlying causes of these incidents, re-evaluate how we understand them, and work towards future prevention.

Many pedestrian-involved crashes occur within a crosswalk. For instance, on April 14, 2011, a 22-year-old woman was killed on Henderson Highway.<sup>2</sup> Several years later, these incidents not only still occur, but are increasing in frequency. On February 13, 2018, an 8-year-old boy was killed on St. Anne's Road.<sup>3</sup> Only nine days later, a 16-year-old high school student was left in critical condition after being struck on Roblin Boulevard in front of his school.<sup>4</sup> Also in 2018, on August 30, a collision on Keewatin Street left a woman in critical condition and a man in unstable condition, both of whom are now experiencing protracted recoveries.<sup>5</sup>

The pattern continued into 2019 when on March 18, a crash on Isabel Street ended a four-year-old girl's life and left her mother with serious lower body injuries.<sup>6</sup> On August 1, a 23-year-old woman died after being struck on Sargent Ave.<sup>7</sup> Most recently, on September 10, a 37-year-old woman was killed on William Ave.<sup>8</sup> In sum – just in the last two years – Winnipeg has had six major crosswalk crashes resulting in four fatalities, two of which were children. On average,

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<sup>1</sup> "Pedestrians make up almost half of Manitoba's 2019 road deaths: MPI", *CTV Winnipeg* (9 May 2019), online: <<https://winnipeg.ctvnews.ca/pedestrians-make-up-almost-half-of-manitoba-s-2019-road-deaths-mpi-1.4415670>>.

<sup>2</sup> "Man charged in death of pedestrian at crosswalk", *Winnipeg Free Press* (14 April 2011), online: <<https://www.winnipegfreepress.com/breakingnews/Hit-at-Henderson-crosswalk-pedestrian-dies-119838169.html>>.

<sup>3</sup> "No charges after 'through investigation' into young Winnipeg pedestrian's death", *National Post* (31 July 2018), online: <<https://nationalpost.com/pmnn/news-pmnn/canada-news-pmnn/no-charges-after-thorough-investigation-into-young-winnipeg-pedestrians-death>>.

<sup>4</sup> "Teen recovering in hospital after being hit by car", *CBC News* (22 February 2018), online: <<https://www.cbc.ca/news/canada/manitoba/crash-roblin-charleswood-1.4546649>>.

<sup>5</sup> "Charge laid after car-pedestrian collision at crosswalk last August", (5 May 2019), online: <<https://winnipeg.sun.com/news/local-news/charge-laid-after-car-pedestrian-collision-at-crosswalk-last-august>>.

<sup>6</sup> "Girl, 4, who died after being hit by car remembered as 'extraordinarily happy' child" *CBC News* (20 March 2019), online: <<https://www.cbc.ca/news/canada/manitoba/fatal-pedestrian-crash-girl-mother-winnipeg-1.5063891>>; Sam Thompson and Kevin Hirschfield "Vigil held, fundraiser launched for family of four-year-old killed by car" *Global News* (22 March 2019), online: <<https://globalnews.ca/news/5086246/prayer-vigil-fundraiser-set-up-for-family-of-four-year-old-killed-by-car/>>.

<sup>7</sup> Jillian Lammatao, "Pedestrian hit by car at crosswalk on Sargent Avenue dies", *CBC News* (7 August 2019), online: <<https://www.cbc.ca/news/canada/manitoba/sargent-avenue-pedestrian-collision-woman-dies-1.5238620>>; "Pedestrian hit in Sargent/Simcoe crosswalk dies of injuries", *City News* (7 August 2019), online: <<https://winnipeg.citynews.ca/video/2019/08/07/pedestrian-hit-in-sargent-simcoe-crosswalk-dies-of-injuries/>>.

<sup>8</sup> "1 dead after vehicle-pedestrian accident near HSC" *CTV News Winnipeg* (11 September 2019), online: <<https://winnipeg.ctvnews.ca/1-dead-after-vehicle-pedestrian-accident-near-hsc-1.4587995>>.

Winnipeg sees a *total* of about fifteen road fatalities per year, and this is on all roadways, in all places, and of every sort.<sup>9</sup>



A vigil was held for the 4-year-old girl killed in the crosswalk at Isabel St. and Alexander Ave.

The tragic end of even one person's life, and especially a child's, cannot be overstated. The time has passed for a pointed discussion about the engineering deficiencies at crosswalks with two of the most serious being: 1) the lack of eye-level side-mounted flashing beacons, and; 2) the lack of a delay in the chirping, which serves as a cue to pedestrians that they should enter the crosswalk. These deficiencies are found at only one of the three types of crosswalks; I will cover these three types now.

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<sup>9</sup> Winnipeg Police Service, *Photo Enforcement Program: 2018 Annual Report*, (Winnipeg: 2018) at 21, online: <[https://www.winnipeg.ca/police/safeststreets/docs/2018\\_photo\\_enforcement\\_ar.pdf](https://www.winnipeg.ca/police/safeststreets/docs/2018_photo_enforcement_ar.pdf)>.

## PART 1 - THE PROBLEM

Crosswalks are *unmarked*, *marked*, or are *pedestrian corridors*.<sup>10</sup> The first type are only a curb indent in alignment with a sidewalk and lack signs or painted lines (most people do not realize that these are crosswalks). Marked crosswalks feature side-mounted signs and two parallel lines, painted across the road. The third type is the most advanced, and developed in the 1970's<sup>11</sup> – being the pedestrian corridors (or simply 'corridor' for short) - they are also referred to as 'lighted crosswalks', 'pedestrian crossovers' (Ontario) or 'special crosswalks'.<sup>12</sup> Corridors have enhancements, such as overhead lighted signs (remaining lit at all times), direct illumination of the crosswalk, and push-button-activated overhead flashing yellow beacons to warn drivers.<sup>13</sup>



The first step to analyzing how to make roads safer should be to determine where crashes occur. Despite the engineering enhancements at corridors, these are the type of crosswalks where *all* of the aforementioned injuries and fatalities occurred. This suggests that preventing crashes should begin with focusing on any deficiencies in corridor design.

### THE LACK OF SIDE MOUNTED FLASHING BEACONS

The most egregious and obvious problem is that the flashing beacons are only located overhead, far from eye-level, so that drivers close to a corridor cannot see them. To maximize visibility, the ideal placement for traffic control devices such as road signs or flashing beacons is at eye-level, directly in front of an approaching driver. With the exception of devices placed at the end of a

<sup>10</sup> City of Winnipeg: Public Works Department, Policy, B-1, "Technical Standards & Practices: Pedestrian Crossing Control" (November 2003) at 1; *The Highway Traffic Act*, SM 1985-86, c H60, s 1(1) "Crosswalk" [*Traffic Act*].

<sup>11</sup> E-Mail from Luis Escobar to Stephan Chapman, and Michael Cantor (5 March 2013) at 3:53 P.M., City of Winnipeg, Public Works Department, *The Freedom of Information and Protection of Privacy Act* Request 19 07 0620.

<sup>12</sup> Transportation Association of Canada, *Manual of Uniform Traffic Control Devices for Canada*, 4th Ed. (Ottawa, ON: The Transportation Association of Canada, September 1998) at A6.6.

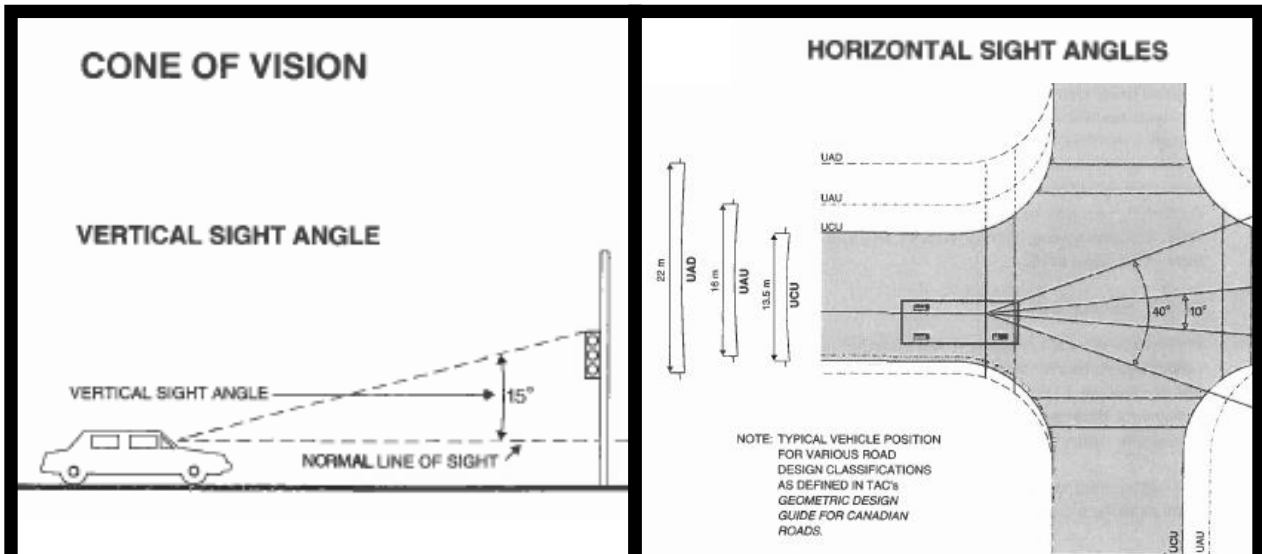
<sup>13</sup> Public Works Department, "Designating a Pedestrian Crossing Control" (30 January 2019), online: *City of Winnipeg* <<https://winnipeg.ca/publicworks/trafficControl/pedestrianSignals/pedestrianCrossingControl.stm>>.

dead-end road, in front of a lane that does not extend through an intersection, or a gate that crosses the road (railway crossings), this type of placement is impractical.



Checkerboard signs (left) and flashing lights on railway crossing gates (middle) are located directly in front of an approaching driver for maximum visibility. Many intersections have dedicated turning lanes that do not extend through an intersection. Hazard markers and turn control signs are commonly placed at the far side of the intersection directly in front of approaching vehicles (right).

The two alternative locations for devices are above or on the side of the road, each with respective advantages. Overhead devices are easily visible from afar, but this benefit diminishes with approaching proximity – they become ineffective once the devices are above the driver's line-of-sight. In contrast, devices placed on the side of the road are visible from a much closer distance because they remain in a driver's line-of-sight as the vehicle approaches.



Diagrams from the national Manual of Uniform Traffic Control Devices (MUTCD) published by the Transportation Association of Canada and used in Manitoba demonstrates the considerations of traffic engineers in relation to placing traffic control devices where they are most easily observable to an approaching driver.

At corridors, the beacons are exclusively placed overhead so while they may be visible to a driver from afar, they are ineffective when the driver is close to the corridor. Another problem is that drivers already stopped will be unable to observe when the flashing ceases. It may be presumed that such a driver will recognize when a pedestrian has cleared the road, but sometimes there is another pedestrian approaching from the opposite side. This second pedestrian may have pushed the button which will reset/lengthen the flashing duration, but a driver stopped at the corridor will not observe this extended flashing.

For moving drivers, if they are still a short distance from the corridor, they may be able to look up to observe the beacons, but a driver's focus can only be on one area at a time, so they are then not looking at eye-level for vulnerable road users. Agencies responsible for road safety have encouraged what is called 'eye lead', which involves scanning ahead for any pedestrians<sup>14</sup>, but the current beacon placement discourages this practice.

Speed is also an important factor. Counterintuitively, a surprisingly high proportion of fatal crashes involve cars travelling at *very low speeds*, often involving vehicles turning at intersections, and in some cases, even occur in parking lots.<sup>15</sup> Pedestrian activity is greatest at rush hour (partly because it coincides with the start or end of the school day), and as it happens, rush hour is also when traffic tends to slow down due to congestion. A driver approaching at high speed may be too close to observe the beacons initially activate, but will have a greater chance of being through the corridor before the pedestrian has had time to enter the conflict path. However, when the vehicle is moving slower, there is a greater period of time from when the overhead beacons leave the line-of-sight to when the vehicle crosses the corridor. This furthers the need for beacons to be at eye-level even on roads with lower speeds, and for congested times. For drivers that may be far enough back to observe the overhead beacons, there is still a dependency on the driver looking at them. Additional eye-level beacons double the visibility and are at the height that drivers naturally look.

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<sup>14</sup> "Crosswalks give pedestrians 'false sense of security,' CAA says", *CBC News* (19 March 2018), online: <<https://www.cbc.ca/news/canada/manitoba/crosswalks-pedestrians-caa-1.4582476>>.

<sup>15</sup> Elisha Dacey, "Winnipeg police searching for witnesses after fatal crash in Garden City Shopping Centre parking lot", *Global News* (1 April 2019), online: <<https://globalnews.ca/news/5119479/police-at-the-scene-of-serious-pedestrian-injury-at-garden-city-shopping-centre-parking-lot/>>.





Another factor to consider is that corridors are commonly placed beside an intersection. A driver turning from the cross-street into the corridor will not observe the overhead beacons and have no awareness when they are activated, but eye-level beacons would be observable.

The current deficiency is a serious risk, and based on the city's own report, was an engineering improvement needed at the St. Anne's corridor where the eight-year-old boy was killed in February 2018.<sup>16</sup> This improvement has now been made to that one corridor, which doubled the number of beacons and placed them at eye level.<sup>17</sup>

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<sup>16</sup> Winnipeg, Public Works Department, *Traffic Study – St. Anne's Road from Fermor Avenue to St. Mary's Road* (Administrative Report), By David Patman (26 June 2018) at 1.

<sup>17</sup> "Lights added to crosswalk where young boy was killed", *CTV Winnipeg* (16 August 2018), online, <<https://winnipeg.ctvnews.ca/lights-added-to-crosswalk-where-young-boy-was-killed-1.4055282>>.



## COMPARISON TO TRAFFIC SIGNALS

The need for eye-level beacons is most apparent when considering the fundamental differences between corridors and signalized intersections (those with traffic lights). This comparison may also explain the original source of the engineering oversight.

A driver needs to be able to observe traffic signals before entering an intersection, but does not need to be concerned with them once already in and committed to going through. Since traffic signals are typically at the far side of an intersection, at least one display (the part with the lights) is mounted above the road for long distance visibility. In the current engineering manual (*MUTCD*), this is known as the *primary display* and it must be placed at a minimum of 15 m after the stop line in order to be visible from the stop line.<sup>18</sup> This is in part because, as the *MUTCD* says, "[t]he driver's vertical vision is limited by the top of the windshield."<sup>19</sup> A *secondary display* can optionally be side-mounted, but this is not necessary since visibility from within the intersection is not needed.<sup>20</sup> Many traffic signals will only have overhead displays for through-traffic, such as at the many intersections along Bishop Grandin Blvd.

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<sup>18</sup> *Supra* note 12 at B3.3.1.

<sup>19</sup> *Ibid* at B3.2.2.

<sup>20</sup> *Ibid* at B3.3.2.



Having traffic signals overhead is largely a North American practice – in many other parts of the world, they are located at the near side of an intersection at the stop line.<sup>21</sup> In these jurisdictions, the signals *do* need to be visible to a driver directly in front of them, so they are placed at eye-level (sometimes exclusively). This is considered by some to be superior because it prevents drivers from overshooting the stop line and entering the conflict path or blocking pedestrians.<sup>22</sup>

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<sup>21</sup> Roger Rudick, "Traffic Signal Placement: Are we Doing it Wrong?" (23 March 2017), online: *StreetsBlogSF* <<https://sf.streetsblog.org/2017/03/23/traffic-signal-placement-are-we-doing-it-wrong/>>.

<sup>22</sup> *Ibid*; Steven Vance, "Observations from Europe: Near side traffic signals reduce crosswalk blocking" (2012), online: *Grid Chicago* <<http://gridchicago.com/2012/observations-from-europe-near-side-traffic-signals-reduce-crosswalk-blocking/>>.



Corridors are different than North American traffic signals because a driver stops immediately before the corridor, rather than 100 or more feet back at the opposite side of an intersection. When Winnipeg invented corridors, this should have been considered in their design.

Especially peculiar is that Winnipeg's engineers have followed logical practices when determining whether to use overhead or eye-level traffic signal displays, but have not transferred this logic to corridors. There are many locations where Winnipeg has placed traffic signals at the near side of an intersection near the stop line to supplement the ones at the far side. This placement is known as the *auxiliary display*<sup>23</sup> and when used, they are typically exclusively placed at eye-level. This is a common Winnipeg practice for left turns.

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<sup>23</sup> *Supra* note 12 at B3.3.



Near side auxiliary traffic signal displays are sometimes used at intersections for through traffic (left) and are always used at new intersections for left-turn displays (right). When used, in contrast to those at the far side of the intersection, displays on the near side are almost always mounted exclusively at eye-level.

A comparison that warrants attention is a few select intersections in Winnipeg that are adjacent to railway crossings. At these locations, engineers did not want approaching traffic to be stopping at a red light while blocking the railway, so additional traffic signals were installed in advance of the railway. These signals are unique for not having an intersection between them and the oncoming driver, so in this respect, are most comparable to those in Europe as well as our corridors. At these locations, eye-level side-mounted traffic signal displays are always used, with overhead being the optional ones.



The railway crossing on King Edward north of Saskatchewan (left) is immediately preceded by traffic signals used to prevent vehicles from stopping on the tracks if the signals at the upcoming intersection are red. The displays at this location are placed only at eye-level. A similar set-up can be found for the railway crossing on Shaftesbury Blvd north of Wilkes (right). This location also has two eye-level displays, but included is a supplementary overhead display for drivers that are further back.

## RAILWAY CROSSINGS – AN ANALOGOUS SITUATION

Observation of railway crossing beacons makes the issues patently obvious. Railway crossings are like corridors because a driver will stop immediately in front of the crossing rather than farther back (at the opposite side of an intersection). Railway crossings have side-mounted beacons placed at eye-level that will always be present, while overheads may be used for increased visibility from afar – but only when warranted, such as on high speed and/or high volume roads.



In contrast to corridors, railway crossing beacons are activated well in advance of the train reaching the crossing, giving drivers ample opportunity to come to a stop before the gates (if present) are lowered. A driver is much more likely to be far enough back from the crossing to see overhead beacons operate well before the train arrives at the crossing. At corridors, pedestrians may push the button and enter traffic before it is safe to do so, making observance by a driver close to the beacons all that much more necessary at corridors.

Unlike signalized intersections, but comparable to corridors, turning traffic does need to be aware of the activation of railway beacons, so if there is a nearby cross-street, additional beacons will be oriented to face this traffic. Corridors do not have eye-level beacons let alone additional ones facing cross-street traffic. Vehicles turning from a side-street and hitting an adjacent pedestrian has caused many deaths. As one example, a six-year-old boy was killed in St. Albert when hit by a turning school bus.<sup>24</sup>

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<sup>24</sup> "Child, 6 hit and killed by school bus near Edmonton", *CBC News* (27 September 2013), online: <<https://www.cbc.ca/news/canada/edmonton/child-6-hit-and-killed-by-school-bus-near-edmonton-1.1870959>>.



Whenever a cross-street is in close proximity to a railway crossing, extra beacons are oriented towards turning traffic. This is done for all cross-streets whether they be a paved city street (left) or a small gravel service road (right)

The issue is especially apparent when a corridor is right next to a railway crossing...



A pedestrian corridor on Plessis Road is located immediately before a railway crossing showing the stark contrast between the beacons being placed exclusively overhead for the corridor while the ones for the railway crossing are only at eye-level.

## BROADER COMPARISONS

Other types of right-of-way control such as stop and yield signs are also placed on the near side of the intersection and the pattern is consistent that they will be found mounted at eye-level. Although most often associated to railway crossings and corridors, other devices such as stop signs may also have supplementary beacons, but they are typically at eye-level. With the exception of advance warning flashers (AWF) before traffic signals, which trigger only for an impending signal change,<sup>25</sup> these beacons are continually flashing.<sup>26</sup> This means there is less need for continual visibility for an approaching driver, as unlike a corridor or railway crossing, the driver is not expected to watch for activation. Even despite this difference, the beacons at stop signs, which least require continual observance, are placed at eye-level where they are visible for the entire approach.



<sup>25</sup> *Supra* note 12 at A3.6.5.

<sup>26</sup> *Supra* note 12 at B5.7; City of Winnipeg: Public Works Department, Policy, B-2, "Technical Standards & Practices: Stop Signs" (March 2006) at 2 [*Stop Sign*].



Another comparison is to corridors from other jurisdictions.



Rapid Rectangular Flashing Beacons (RRFB) consist of flashing square LED lights triggered by a pedestrian push button to give warning to an approaching driver.<sup>27</sup> They have been tested and are now widely used in some American and Canadian cities.<sup>28</sup> Whenever used, they are at eye-level, often without any devices over the road. Both the practices in some other jurisdictions with normal flashing beacons and those involving RRFB's demonstrate the need for such devices to be visible at eye-level. Two such jurisdictions are Flin Flon, which has eye-level flashing beacons and Morris, which has eye-level RRFB's at some crosswalks.

<sup>27</sup> "Rectangular Rapid Flash Beacon (RRFB)", Report FHWA SA-09-009 (4 September 2014), online: *Federal Highway Administration* <[https://safety.fhwa.dot.gov/intersection/conventional/unsignalized/tech\\_sum/fhwasa09009/](https://safety.fhwa.dot.gov/intersection/conventional/unsignalized/tech_sum/fhwasa09009/)>.

<sup>28</sup> Robson Fletcher, "It has already saved lives': Calgary looks to add rapid-flash beacons to 450 more crosswalks", *CBC News* (26 March 2019), online: <<https://www.cbc.ca/news/canada/calgary/calgary-rrfb-request-for-proposals-damong-crosswalks-1.5070889>>.



Similar to railway crossings, some crosswalks in Flin Flon (left) have beacons posted exclusively at eye-level rather than overhead. Many cities in North America such as Morris (right) use RRFB's which are posted only at eye-level rather than over the road.

Corridors are unique for being locations where a driver is not able to observe the traffic control device from the point where they are expected to stop. For instance, it would be inappropriate to have stopped drivers being unable see a traffic signal display. There is no consideration of the fact that corridors have the stop line right at the overhead beacons. If eye-level beacons were installed, with the poles being offset on either side of the crosswalk (so that the push button is to the right of the approaching pedestrian), unless a driver stops right on top of the crosswalk, there will be a set of beacons visible to them. This is exactly what can be commonly found at railway crossings and should be done at corridors.

Overall, when a traffic control device needs to be observed from a further distance, it is posted above the road. When observance is needed at a closer distance, eye-level is the proper positioning. In cases where both are needed, overhead and side-mounted/eye-level will be used, such as the case of railway crossings on high speed, high volume roads. Traffic engineers have demonstrated an understanding of these concepts for virtually every other type of traffic control. It is this inconsistency that has created a dangerous situation that is prevalent throughout the city and has been a contributing factor in pedestrian injury and deaths. Unfortunately, it is not the only deficiency in the design of corridors.

#### **A SECOND ISSUE – AUDITORY CHIRPING**

One final consideration is the current programming of the auditory chirping that is triggered with the beacons. When a pedestrian pushes the button, the beacons begin flashing, but also immediate is the chirping sound indicating that a pedestrian should cross. Vehicles cannot stop

immediately, yet the sound is stimulating a conditioned response<sup>29</sup> for the pedestrian to enter the road. This pressure would make the pedestrian realize that the time they have to cross under the protection of the beacons is diminishing as they wait encouraging them to enter the roadway contrary to the *Highway Traffic Act*, which requires them to wait until traffic has had a chance to stop.<sup>30</sup> Especially dangerous and ironic is that this chirping is designed for, and is most often relied upon by blind people.<sup>31</sup>

It is likely the immediate activation of the chirping that has in part contributed to the problem of pedestrians entering the corridor before it is safe to do so. As one road safety expert stated, "there is a problem of pedestrians stepping out too soon into traffic."<sup>32</sup> Manitoba's branch of the Canadian Automobile Association (CAA) has also observed this problem in their studies of behaviour at corridors.<sup>33</sup>

It is most serious to consider the accumulated effects. The dangers from the lack of eye-level beacons is exacerbated by the chirping encouraging the pedestrian to immediately walk into traffic. It is likely this interaction that has played a significant roll in having so many fatal and serious injury crashes at corridors.

Currently, the beacons and simultaneous chirping are timed based on the length of the crosswalk. The solution may be to extend the flashing beacons by up to four seconds (the length of a yellow light) universally at all corridors, creating a similar buffer between conflicting movements that traffic signals already have. The chirping would remain at the current duration but with an activation delay from the time the button is pushed. A pedestrian would push the button immediately triggering the beacons, but only after a pause would the chirping begin from which point both would run simultaneously for the same length currently set based on the width of the crosswalk. This is something not yet studied or discussed, so should be examined further by engineers and others that are part of road safety efforts to find what timing would work best based on human behaviour.

## WINNIPEG'S WORST CORRIDOR

With respect to the discussed deficiencies, the corridor on William Ave at Health Sciences Centre has the highest severity of danger and is the site of the most recent fatality. Like other corridors, the beacons are exclusively overhead but are mounted on the front of a skywalk that passes over the crosswalk. While other corridors have the beacons located directly over the

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<sup>29</sup> Classical conditioning involves forming an association between two stimuli that elicits a learned response. In the case of pedestrian travel, the stimulus of the auditory chirping at the corridor will subconsciously encourage the pedestrian to enter the roadway sometimes before it is safe to do so. see: Kendra Cherry, "Classical Conditioning Overview: A Step-by-Step Guide to How Classical Conditioning Really Works", (5 September 2019), online: *VeryWellMind* <<https://www.verywellmind.com/classical-conditioning-2794859>>.

<sup>30</sup> *Traffic Act*, *supra* note 10, s 139(2).

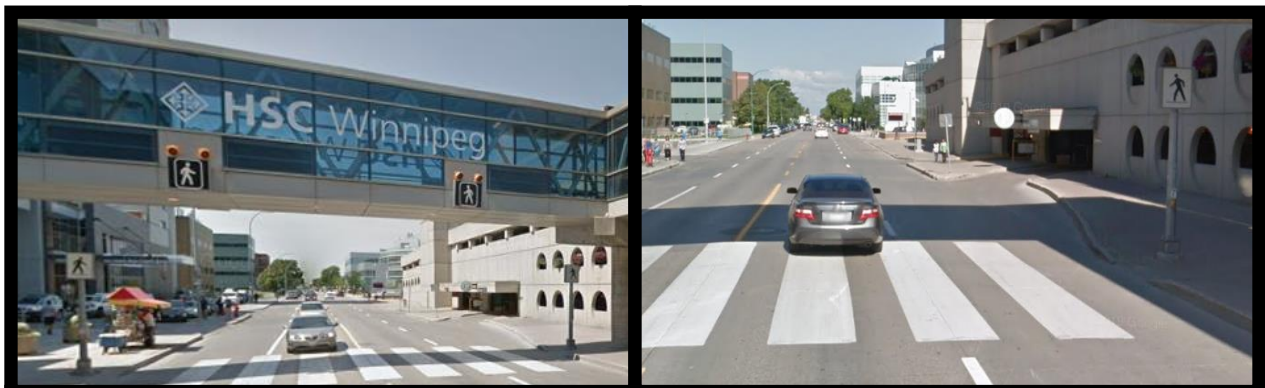
<sup>31</sup> *Supra* note 12 at A6.10.

<sup>32</sup> Darren Bernhardt, "Crosswalk where boy died could use 'aggressive treatment' with half-signal, says traffic expert", *CBC News* (23 June 2018), online: <<https://www.cbc.ca/news/canada/manitoba/crosswalk-half-signal-light-winnipeg-1.4716792>>.

<sup>33</sup> Diana Foxall, "Crosswalks not so clear-cut for Winnipeg drivers and pedestrians", *Global News* (2018 March 19), online: <<https://globalnews.ca/news/4091720/crosswalks-not-so-clear-cut-for-winnipeg-drivers-and-pedestrians/>>.

crosswalk, this one has them offset by the width of the skywalk putting them not only above, but also slightly behind the driver.

Compounding the problem is the congestion in the area and subsequent slower driving speed that is well below the 50 km/h limit. The lower speed means that an approaching driver will take much longer to enter the crosswalk following the point from which the overhead beacons are no longer within their line-of-sight. This provides ample opportunity for a pedestrian to have pushed the button and proceeded into the conflict path before being hit by a driver that never had the opportunity to see the beacons activate. The slow speeds and congestion also results in obstructed sightlines so that it is easy for a pedestrian to step out from behind a vehicle without being seen. This corridor is also immediately in front of the Health Sciences Emergency entrance so the sightlines are often obstructed by police cruisers parked in the no stopping zone.



The corridor on William Ave at Health Sciences Centre has the flashing beacons on a skywalk putting them above and slightly behind the crosswalk (left). A driver in close proximity to the crosswalk has no line-of-sight to the beacons but would easily be able to observe beacons placed at eye-level on the poles currently holding the pedestrian push buttons (right).

The William corridor already has short poles (standards) located on opposite sides of the crosswalk to hold the pedestrian push buttons. It would have been extremely easy for these poles to each have been outfitted with eye-level beacons.

## PART 2 - THE HISTORY

Of the three crosswalk types, corridors are the most advanced, with unmarked being the least. As such, one would expect unmarked crosswalks to be the most crash prone, yet all of the discussed injuries and fatalities occurred in corridors. It is counterintuitive that the locations with the most advanced and expensive engineering measures would be where crashes are occurring. The disparity is in part reconciled by considering the false sense of security which CAA has pointed out exists at corridors<sup>34</sup> and it appears to affect both drivers and pedestrians.

### THE FALSE SENSE OF SECURITY

Pedestrians feel safe to cross with less care when assuming that the driver will see the flashing beacons. The false sense of security would be exacerbated by the auditory chirping encouraging them to immediately enter the road. Meanwhile, a driver that did not see the beacons activate will have the false sense that it is safe to proceed and subsequently not be expecting pedestrians to be present. This is supported by recent articles suggesting that a pedestrian was visible but the driver still did not stop.<sup>35</sup> Perhaps this was because they did not see the flashing beacons and were not looking for a pedestrian due to the false sense of security. Further supporting this point is the fact that many crashes have happened during rush hour when the roads are most congested and subsequently when speeds are the lowest, which as outlined, prolongs the amount of time from when the beacons leave a driver's line-of-sight to when the driver enters the path of conflict with the pedestrian.

Another consideration is that many corridors are on wide high speed roads which one would expect to be the locations most likely to have crashes, but that is also not the pattern. Many of the crashes have occurred on 50 km/h roads with lower lane counts such as Isabel, William, Corydon, and Sargent. The William crash occurred at Health Sciences Centre and the Corydon crash was in the built up congested commercial area near Pembina Highway which are the portions of these roads where the speed limit can rarely be reached. The crashes that have happened in 60 km/h zones are on roads with low lane counts such as St. Anne's and Roblin where there are only two lanes in each direction. One would expect crashes to be happening on wide roads (three or more lanes) and especially when combined with higher speeds such as North Main, Notre Dame, and Pembina Highway. Only the 2011 Henderson Highway crash occurred on a road of this type.

Most peculiar is that these wide high speed roads are also littered with unmarked crosswalks, yet if there have been any crashes in them, it has been so few that they are not part of the discussion. It is likely that pedestrians are not getting hit in unmarked crosswalks because the normal behaviour is to wait for a break in traffic rather than to expect cars to stop since these locations are typically not understood as being crosswalks. All of these considerations add up to the likely cause being the false sense of security associated to corridors. A possible reason crashes are not prevalent on the wide high speed roads is because even with the presence of a corridor,

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<sup>34</sup> *Supra* note 14.

<sup>35</sup> Ahmar Khan, "Video shows impatience, inattention, aggression a dangerous mix at Winnipeg crosswalk: experts", *CBC News* (2 October 2019), online: <<https://www.cbc.ca/news/canada/manitoba/crosswalk-tape-review-1.5305118>>.

pedestrians will have the impression that drivers would be less likely to see them and stop (especially drivers in the middle lane), so the false sense of security is much less pronounced. This point is well supported in the engineering literature which has often demonstrated the false sense of security as being a road hazard. As one example, an Edmonton engineering report supported not reducing speed limits in school zones because, "they [reduced speed limits] provided children and parents with a false sense of security."<sup>36</sup> Edmonton, which did not have reduced speeds in school zones, compared its crash rate to Calgary which did, and found that Edmonton's rate involving elementary aged pedestrians was 15% lower.<sup>37</sup>

The current hazard created by the false sense of security could support a premise that crashes would be reduced if corridors were eliminated and downgraded to unmarked crosswalks. The solution needed is to correct the flaws in the design of corridors. What has become apparent is that the current design has created the full detriment of a false sense of security that increases and encourages less diligence on the part of road users, but with flaws that eliminate much of the presumed protections. If the design of corridors were corrected, the false sense of security would not be increased, rather its effects would be mitigated by engineering providing more of the protection that is expected. In the meantime, corridors have apparently in themselves become a road hazard.

## **HISTORICAL RESPONSES**

The premature activation of the auditory chirping has never been identified as a problem by engineers or advocates. This is not the case with the lack of eye-level beacons, which is an issue that the city administration has been well aware of for several years, through both advocacy and their own realisation.

Initial advocacy for these beacons and other road safety issues dates back to 2011. Following the fatality at a corridor on Henderson Highway in April of 2011<sup>38</sup>, I began pondering the dangers at corridors. At the time, I was studying missing school zone signs and speed limits, among many other issues. It was May of 2011, a month after the fatal crash, when I was waiting at a railway crossing, that I noticed the eye-level beacons and had an epiphany as to what the key issue was at corridors.

I was already studying many other road safety issues, the amount of which was overwhelming. Throughout 2011, I continually made meeting requests to city officials including the Winnipeg Police Service (WPS) traffic unit, and engineers. These requests were not responded to until Councillor Harvey Smith hosted my presentation at City Hall on November 22, 2012 and insisted that the traffic engineers attend. It was at this point that there was certainly awareness of the problems. At this presentation, a paper copy of the 73 page list of school zone signs was provided indicating the 206 missing signs. It was also sent the next day in a follow-up e-mail.<sup>39</sup>

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<sup>36</sup> Edmonton, Transportation and Streets Department, *Assessment of City's Current Practice Regarding School Zones* (Report 2005TS9531), By L.M. McCormick and Gord Cebryk (June 2005) at 1.

<sup>37</sup> Edmonton, Transportation and Streets Department, *School Zone Evaluation 2005: Graphical Summary of Collision Data* (Report 2005TS9531-Attachment 4), By L.M. McCormick and Gord Cebryk (June 2005).

<sup>38</sup> *Supra* note 2.

<sup>39</sup> E-Mail from Christian Sweryda to Brad Sacher, Luis Escobar, Stephan Chapman, and Harvey Smith (23 November 2012) at 12:41 A.M.

To date, there has been no action on any of the issues discussed in that presentation. School zone signage and pedestrian crosswalk safety are only a small part of the broader presentation and research.

In addition to my efforts that began in 2011 and through 2012, one city official independently recognized the need for eye-level beacons at corridors. Only three months after my presentation, the internal email discussion took place on March 5, 2013, when traffic signals engineer Michael Cantor wrote an e-mail to his bosses explaining that his department had been reviewing issues surrounding corridors and were considering "adding lower flashing beacons for vehicle[s] that are already close to the crosswalk."<sup>40</sup> He proposed a test site to be installed at the Notre Dame/McGee Street corridor.<sup>41</sup> It is logical that if any engineer were to notice the deficiency at corridors, it would be a traffic signals engineer, since the city has followed the practice of using eye-level traffic signal displays whenever observation is needed by a driver close to the signal.

Immediately after making the proposal, Mr. Cantor began facing resistance. Traffic Management Engineer Stephen Chapman wrote that he was not supportive of making improvements since they are "inconsistent" with the traffic manual used by the city.<sup>42</sup> In this case, Mr. Chapman was misconstruing *not required* with *inconsistent*-there was nothing in the manual suggesting the city should not have the eye-level beacons. In consideration of Mr. Chapman's past statements, a contradiction has emerged. When defending against an allegation that the city's speed limit signage practices were subpar, in relation to this exact same manual, Mr. Chapman claimed through his lawyer that Manitoba's laws do not regulate "the application, placement, positioning or any other aspect [emphasis original]" of traffic control devices (such as signs or flashing lights).<sup>43</sup> In other words, the city can use traffic control devices however it pleases.

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<sup>40</sup> *Supra* note 11 at 11:01 A.M.

<sup>41</sup> *Ibid.*

<sup>42</sup> *Ibid* at 1:58 P.M.

<sup>43</sup> Letter from Michael Jack to Grant Koropatnick (20 June 2014) Response to Complaint by Chris Sweryda filed with the Association of Professional Engineers and Geoscientists of Manitoba, at 2.



Winnipeg does not place speed limit signs on both sides of divided roads but does place other signs (such as curve) on both sides (top). This is despite the engineering manual that the city claims to follow saying that it is 'advisable' for all types of signs to be on both sides which prevents sign shadowing (bottom).

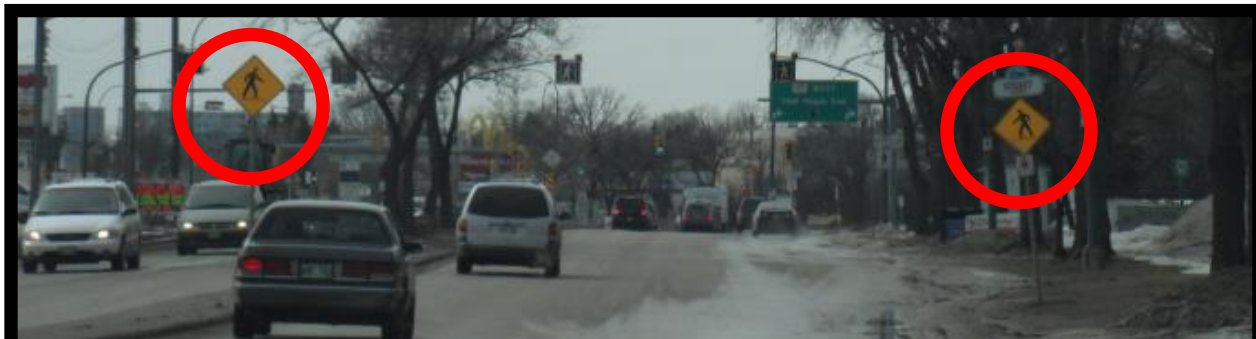


The pattern of not following minimum standards in the manual can be repeatedly observed. Another example involves the city's decision to not place warning signs before corridors in 50 km/h zones despite this same manual stating that they "must be installed."<sup>44</sup>

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<sup>44</sup> *Supra* note 12 at A6.6.





Despite the engineering manual that Winnipeg claims to follow saying that advance warning signs "must be installed" before all corridors, these signs are only used on roads with a 60 km/h+ speed limit such as Henderson (Top), Pembina, and Notre Dame. Roads with a 50 km/h speed limit such as Isabel, Corydon (Bottom), William, and Sargent (all have had serious pedestrian crashes) do not have warning signs.



With respect to eye-level beacons, Mr. Chapman was arguing against an improvement stating that it was inconsistent with the manual only because it was not required. Firstly, it is not inconsistent with an engineering standard to employ a practice *better* than the minimum. Secondly, in the context of speed limit signage, Mr. Chapman was justifying practices that were inadequate compared to those in this same manual, arguing that the laws do *not* require adherence to the manual. So, even if the beacons *were* inconsistent with the manual, which they were not, it is a manual that the city has already argued that it does not have to follow. The result is that claimed adherence to the manual is being used selectively when convenient. The fact that there was nothing preventing the city from installing the eye-level beacons was confirmed by the Highway Traffic Board which informed the engineers that, "approval would not be required" for installing eye-level beacons.<sup>45</sup>

Mr. Cantor responded to Mr. Chapman by stating that "many types of installations/enhancement were not in the...'Books' until someone tested them and they were recommended to be inserted to the 'Books'." He also noted that "[t]he impetus was our own experience as drivers being surprised

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<sup>45</sup> E-Mail from Tanner Janula to Michael Cantor, Colleen Flather, David Patman, and Rebecca Peterniak (2 August 2018) at 2:51 P.M., City of Winnipeg, Public Works Department, *The Freedom of Information and Protection of Privacy Act* Request 19 07 0620.

by pedestrians, especially in wide crosswalks" and that similar applications are currently recommended for use by the US Federal Highway Administration.<sup>46</sup>

Mr. Chapman replied that other jurisdictions were already researching improvements to pedestrian crosswalks, therefore implying that Winnipeg should not be a part of that progress. He also noted that with respect to wide roadways, current guidelines say that those roads should have traffic signals instead of corridors.<sup>47</sup> This last comment was illogical since the locations in question had corridors and not traffic signals. Mr. Chapman never advocated immediate action to change all the referenced corridors to traffic signals or to convert them on a go forward basis. Saying that a different type of treatment (traffic signals instead of corridors) should be at certain locations is not a reason to disregard a need to correct the treatment that is currently present (corridors). Consider an analogous situation with an electrician being told not to improve subpar wiring because that type of wiring should not be there, yet it is there and is not being removed. Also, Mr. Chapman's claim only applied to locations that those particular guidelines said should have traffic signals instead of corridors, but his comment also implied that any deficiencies should remain at all corridors, including those at locations that do not meet the criteria to have traffic signals. The corridors discussed in the original 2013 e-mails are still present with many more having been added.

In a final rebuttal, Mr. Cantor stated that since Winnipeg currently has corridors, "we can increase safety [...] with a cheap and effective solution that is already getting some support in other jurisdictions. We can be the leaders instead of the followers...(and in the same time provide an enhanced service to the public)."<sup>48</sup> Luis Escobar, the Manager of Transportation then interceded saying that there is no reason why current corridor design could not be improved upon – especially since Winnipeg created corridors in the 1970's.<sup>49</sup> It is noteworthy that since Winnipeg created corridors, it would therefore also be the source of the original oversights in the design – although other cities do have eye-level beacons already at their corridors. At this point, the earliest e-mail stream terminates, but subsequent actions can be observed from Google Street View.

Following the initial conversation/advocacy, Mr. Cantor's requested eye-level beacons were installed at the Notre Dame/McGee Street corridor. These beacons also had a faster flash rate than the ones that were overhead. The city has no record of the installation which, as shown on Google, was sometime between the March 2013 e-mails and May of 2014. However, they were covered and remained inactive following their installation until September 2016 when they were activated and the pilot study was completed during one eight hour period.

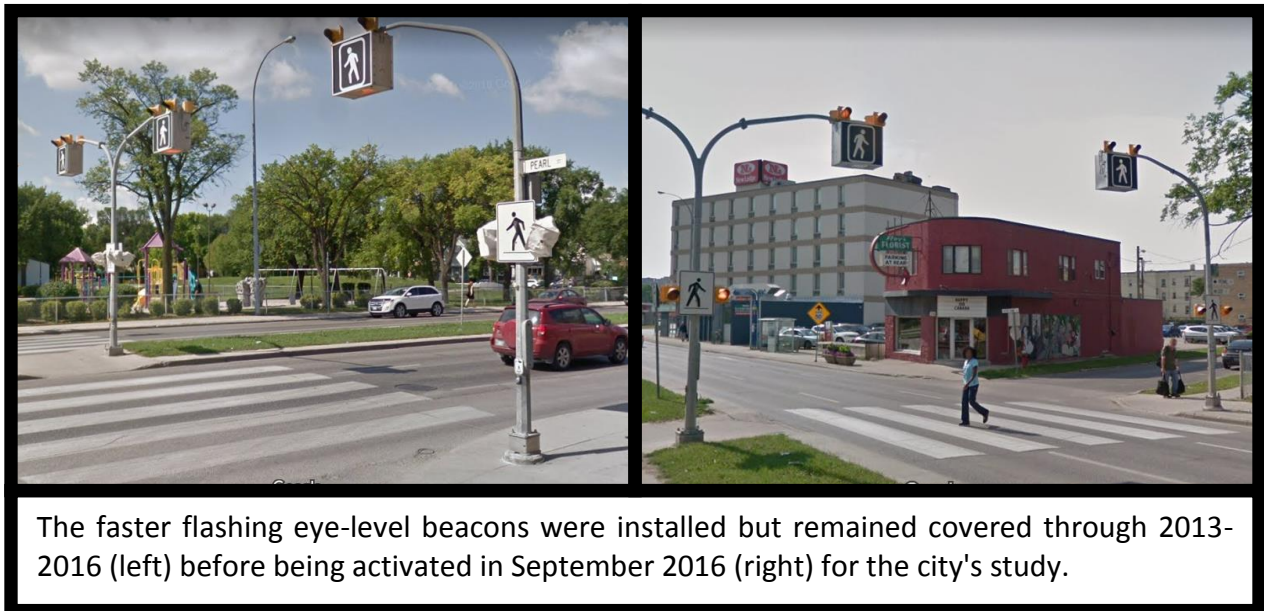
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<sup>46</sup> *Supra* note 11 at 3:09 P.M.

<sup>47</sup> *Ibid* at 3:24 P.M.

<sup>48</sup> *Ibid* at 3:32 P.M.

<sup>49</sup> *Ibid* at 3:53 P.M.



The city's study found that for drivers more than twenty meters before the corridor at the time the beacons were activated, yielding compliance increased. For drivers furthest from the corridor, compliance went from 88%-100%. For drivers that were within ten meters of the corridor, compliance went from 10%-5%.<sup>50</sup> This latter statistic, while counterintuitive, can easily be explained by the small sample size. In the before study, only ten vehicles were observed, out of which one yielded, giving a 10% compliance rate, while in the after period, twenty vehicles were observed, out of which there was also one that complied, giving a rate of 5%. Consider what would have happened had the one vehicle in the before period not complied. In that case, the compliance rate would have gone from 0%-5%, which instead of a 50% decrease would have been an increase of infinity. It is impossible for anything to be learned about driver behaviour and the effects of a traffic control device when the actions of only one driver can have such a profound effect on the final conclusion.

In addition to sample size, the study's results for drivers within ten meters of the corridor can be further explained by physics. At the 60 km/h (17 m/s) speed limit, a vehicle would take 0.6 seconds to travel 10 meters. This time is less than the one second perception/reaction time (the time used when calculating yellow traffic signal intervals)<sup>51</sup> that occurs before a driver can hit the breaks. Stopping over a distance of ten meters is all but impossible unless the vehicle is extremely slow moving (the study did not record the speeds of the vehicles observed). The one vehicle that stopped in each of the before and the after periods was likely very slow, or one that had turned from a side-street. The study's results for vehicles so close to the intersection therefore cannot be seen as having any relevance to the effectiveness of the eye-level beacons.

<sup>50</sup> Winnipeg, Public Works Department-Traffic Signals, *Rapid Flashing Beacon Crosswalk Yielding Preliminary Study* (Draft Report), (August 2016) at 3.

<sup>51</sup> National Cooperative Highway Research Program (NCHRP), *Guidelines for Timing Yellow and All-Red Intervals at Signalized Intersections*, Report 731, (Transportation Research Board of the National Academics: 2012) at 2.

Surprisingly, in the final section of the study which discussed its limitations, sample size was not referenced as a factor, even though any researcher should be able to immediately note the sample size as the most important limiting factor. Considering that compliance for vehicles in all the other distance ranges increased, the city's own signals timing engineer concluded that the results suggested that the **added beacons "increases the yield compliance rate for drivers."**<sup>52</sup>

Despite the study's promising results providing evidence for something that should have been obvious, no other corridors were upgraded. Instead, the **beacons were removed** at some point shortly following July of 2017. Under the *Freedom of Information and Protection of Privacy Act (FIPPA)*,<sup>53</sup> all records related to the removal were requested, but the city claimed that the removal was coordinated through word of mouth, so there are no records of when, why or who ordered their removal.<sup>54</sup>



These beacons are clearly a safety feature, and more should have been installed rather than removing the only set in the city. Any claims of cost limitations are countered by the fact that after investing in correcting one corridor, money was spent to remove the set that was already present and had demonstrated a safety benefit. It is also critically important to note that by this time, the engineering manuals had been updated (before 2017) to refer to eye-level beacons as a desirable component to a corridor – a fact noted in the engineers' own e-mails.<sup>55</sup> As shown earlier, they are also found in other cities across the country.

Shortly after the removal of the beacons at the Notre Dame/McGee corridor, in February 2018, an eight-year-old was killed in a corridor on St. Anne's Road.<sup>56</sup> Following the death, the city

<sup>52</sup> Shelly Smith, City of Winnipeg, Public Works Department, *Freedom of Information and Protection of Privacy Act* Request 19 07 0620 (12 August 2019).

<sup>53</sup> *The Freedom of Information and Protection of Privacy Act*, SM 1997, F175.

<sup>54</sup> Manitoba, City of Winnipeg, Public Works Department, *Freedom of Information and Protection of Privacy Act* Request 19 07 0620 (12 August 2019).

<sup>55</sup> E-Mail from Tanner Janula to Colleen Flather, Michael Cantor, and David Patman (28 June 2018) at 11:10 A.M., City of Winnipeg, Public Works Department, *The Freedom of Information and Protection of Privacy Act* Request 19 07 0620.

<sup>56</sup> *Supra* note 3.

completed an engineering report which recommended installation of eye-level beacons. No reference was made to the earlier study or the beacons removed from Notre Dame. In response to this tragedy, and their engineering recommendations, in August 2018, the city installed eye-level beacons at this corridor. Like the Notre Dame corridor before it, this corridor was for over a year, the only location in the city that had been corrected.

The city then claimed to be doing a third study/trial in the fall of 2018,<sup>57</sup> but there have been no further records or evidence that this study was ever done. According to the city's own documents, the cost to make the corrections at the St. Anne's corridor was only \$500, and is negligible considering that a corridor otherwise costs tens of thousands of dollars to install, as the underground wiring, overhead lights, and poles constitute the greatest expense. As Mr. Cantor originally pointed out in 2013, adding extra beacons to already existing wired poles "is a relatively cheap upgrade that uses existing infrastructure." Additionally, the engineers noted that their budget could accommodate a more extensive improvement at a cost of \$40,000 per corridor, so a \$500 cost for eye-level beacons would be well within the budget. Since Winnipeg has about 177 corridors,<sup>58</sup> after considering that some are on one-way streets that need half as many beacons, the cost to correct the whole city would be less than \$90,000.

After the four-year-old girl was killed on Isabel Street, the city decided to complete yet another engineering study (now at that specific corridor), even though the general problem of needing eye-level beacons had been identified. The Isabel study unsurprisingly came back in June 2019 making the same recommendations for eye-level beacons,<sup>59</sup> but to date (October 2019), that corridor has not been improved. At this point, there seems to be no further discussion or efforts to implement the corrections on a larger scale.

To summarize, there are inherent flaws in the design of corridors dating from their initial creation in the 1970's, with advocacy for corrections dating back at least six years. Engineers also independently became aware of one of the flaws through their own observations. A study was done showing safety improvements when one of the problems was corrected, but instead of expanding the cheap solution, it was removed from the one corridor that had been fixed. Shortly after, an eight-year-old was killed, and the same engineering improvement was recommended as a correction and implemented at only the corridor where the child was killed. Following the next child that was killed the following year, another report was done suggesting the exact same improvement but there has yet to be any follow through, meaning that so far, only one corridor in the entire city has these beacons. We cannot be correcting a universal engineering defect on a case-by-case basis as a child dies. However, considering that the second corridor is still not corrected, case-by-case improvements as fatalities occur would be better than the current situation.

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<sup>57</sup> "Low-mounted lights, but no speed limit change, recommended at St. Vital crosswalk where boy was killed", *CBC News* (20 June 2018), online: <<https://www.cbc.ca/news/canada/manitoba/st-vital-crosswalk-report-fatal-accident-1.4714804>>.

<sup>58</sup> "Failure to brake on time could cost a life: Winnipeg driving experts", *Global News* (14 February 2018), online: <<https://globalnews.ca/news/4026550/failure-to-brake-on-time-could-cost-a-life-winnipeg-driving-experts/>>.

<sup>59</sup> Laura Glowacki, "Safety upgrade recommended for Isabel Street crosswalk where girl, 4, died", *CBC News* (20 June 2019), online: <<https://www.cbc.ca/news/canada/manitoba/safety-upgrades-crosswalks-isabel-1.5183056>>.

## PART 3 - THE CITY'S SOLUTION - MORE HALF SIGNALS

For several years, Winnipeg has been slowly converting corridors to traffic signals (colloquially known as traffic lights) on roads with higher speed limits and lane counts. Often a half signal<sup>60</sup> is installed, which only has traffic signals on one road in order to accommodate a pedestrian crosswalk. Half signals will normally sit on green (resting green), only changing when a pedestrian pushes the button (pedestrian actuated). They also have the same pedestrian displays as normal signals containing walk and don't walk cycles controlling the crosswalk. When a pedestrian pushes the button, the signals will change from green-yellow-red at which point the pedestrian will receive a walk signal followed by the flashing hand/countdown before returning to green for traffic. These are known as half signals due to the lack of a cross-street, or if present, the cross-street will not have signalized control, and instead have a stop or yield sign.



The city's response to the pedestrian deaths has been to increase the number of half signals at a cost of hundreds of thousands of dollars. Based on the city's own engineering report, the cost of converting a corridor at one location to a traffic signal would be \$254,500.<sup>61</sup> The cost seems to have gone up substantially considering that a half signal installed in 2010 cost \$105,000.<sup>62</sup> Either cost is well above that of fixing the basic flaw at every corridor in the entire city. In the long history of crashes in Winnipeg's corridors, if any engineering changes are made, it has typically been the installation of a half signal. For instance, in 2010, the city installed a half signal on Osborne Street at a crash-prone corridor in response to there having been 11 crashes from 1998-2008.<sup>63</sup> In 2019, the pattern has not changed, with the city slowly installing more half signals at immense cost. The corridors at Pembina Hwy/Mariam and Main Street/Assiniboine have been the most recent, with calls from advocates for more locations to be converted.<sup>64</sup>

<sup>60</sup> *Supra* note 32.

<sup>61</sup> *Supra* note 59.

<sup>62</sup> "'Half-signal' planned for crash-prone Osborne Village intersection", *Winnipeg Free Press* (15 July 2010), online: <<https://www.winnipegfreepress.com/breakingnews/Half-signal-planned-for-crash-prone-Osborne-Village-intersection-98548284.html>>.

<sup>63</sup> *Supra* note 32.

<sup>64</sup> *Ibid.*

## THE SHORTCOMINGS OF HALF SIGNALS

Half signals are described as a more aggressive treatment than corridors<sup>65</sup> because of increased restrictions placed on both pedestrians and drivers. This comes with both advantages and new disadvantages. Half signals are coordinated with other traffic signals in an area so they will only cycle at set times, which could involve up to a two minute wait for the pedestrian, a delay that does not occur at corridors. Once a pedestrian receives the walk signal, the time allotted for crossing is based on the crosswalk length, measured as the entire width of the road including the median. This increases the delay for vehicles which will be required to wait for a pedestrian that, 50% of the time, will be on the other side of the boulevard (if there at all). At a corridor, drivers on the opposite side of the boulevard are allowed to proceed.

In contrast to half signals, corridors typically treat each side of a divided road as two separate crosswalks that only employ flashing beacons on the respective side in use. The pedestrian pushes the button on the boulevard to activate the other half of the corridor. This gives much more flexibility when considering the different walking speeds of a pedestrian. At a half signal, a pedestrian that is slower than the assumed speed may only be able to cross one side of the road before the signals go back to green. Not only did vehicles on the opposite side of the road have to stop and wait unnecessarily, the pedestrian will then have to push the button on the boulevard and wait up to two minutes for the signals to cycle again, rather than being able to push the corridor button and continue crossing immediately. The shortness of the walk cycle was a complaint recently made by seniors living near a half signal recently installed on Grant Ave.<sup>66</sup>

A dangerous situation can occur with a slow pedestrian that is still in the crosswalk when the half signal cycles back to green. It is more dangerous for cars to receive a green signal rather than the ceasing of the beacons flashing. A corridor is also less likely to have this problem because each half of the corridor is activated when the pedestrian begins to enter it. A half signal treats both sides of the road as one crosswalk, so a slow pedestrian will be much more disadvantaged. As such, the time the pedestrian takes to cross the median is part of the time allotted in half signals but not in corridors.

Corridors are also more able to accommodate slow or multiple pedestrians because the flashing duration can be reengaged by pushing the button again to reset the timing. This can be done by a crossing guard or second pedestrian that approaches a corridor while another is already crossing. The walk cycle at a half signal is preset, so pushing the button again will not lengthen the time given to cross, and instead only cause the half signal to cycle again much later after having gone through a green period for vehicles. In areas with a high volume of slower pedestrians (such as near senior homes), corridors can also be set to have longer flashing periods. This will not be an inconvenience to drivers, as vehicles are allowed to proceed once a pedestrian clears, even if the beacons are still flashing. Half signals however, do not have as much flexibility because if they are timed to accommodate slower pedestrians, vehicles will have to wait that long each time including when a pedestrian of faster or average speed crosses. Overall, at half signals, drivers

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<sup>65</sup> *Ibid.*

<sup>66</sup> Tessa Vanderhart, "Concerns remain as Charleswood pedestrian crossing opens", *Winnipeg Free Press* (20 August 2019), online: <<https://www.winnipegfreepress.com/local/concerns-remain-as-charleswood-pedestrian-crossing-opens-557109452.html>>.

will experience a much longer delay due to waiting both when the pedestrian is on the opposite side of the boulevard, and also long after a faster pedestrian has cleared the road.

Half signals also rely on the presumption that road users will comply with a traffic control device. The reality is quite different, which will create a false sense of security. In the case of half signals, many pedestrians will not be willing to wait up to two minutes for the signals to cycle, so instead will attempt to run across the road during a break in traffic. The presumption behind half signals is that when a pedestrian is in front of an approaching vehicle, it is safer for the vehicle to be facing a red light versus a flashing beacon, but the reality may be that the vehicle is actually facing a green light. Not only is this behaviour commonly observable on the roads, it can be logically expected when considering that one of the common complaints involving corridors is that pedestrians push the button and immediately enter the road. When that behaviour is occurring, it should not be surprising that many pedestrians are not willing to wait for the much longer time for a half signal to cycle. The St. Anne's crash involved a student that was late for school and tried to cross after the crossing guards had left. If this student did not wait for the traffic to stop at the corridor, there is little reason to assume the student would wait much longer for a traffic signal to cycle. Also, when a pedestrian pushes the button and then runs across the road during a traffic break, the half signal will still cycle at a later time, unnecessarily delaying traffic for a non-existent pedestrian. Below is a series of pictures representing this reality on the roads.





An example of the shortcomings of traffic signals was observable at the newly installed set replacing a corridor on Main Street. The pictures were all taken south of the signals facing north. A pedestrian pushed the button, but was unwilling to wait for the traffic signal to cycle and instead, ran across the road during traffic breaks (left). Just after the pedestrian finished crossing (right), the signals cycled. Due to the traffic signals treating the entire road as one crosswalk, combined with the number of lanes and very wide median, the walk cycle at this location is lengthy.



The pedestrian was well away from the crosswalk when northbound traffic began arriving at the red signal while southbound traffic was still a block away (top). Over the next several seconds, the southbound line of cars arrived and had to wait (middle). While more vehicles arrived, traffic continued to be stopped for a pedestrian that was now well over a block away from the crosswalk and out of the picture (bottom).

Impatience due to the wait at traffic signals is a common occurrence. In the case of a pedestrian that comes to the traffic signal when the walk period is already expiring, they will often attempt to run across the road in too short of a period rather than to wait for the next signal cycle. This is especially likely with children and other young people. Anybody who has ever driven down Bishop Grandin past Dakota Collegiate during dismissal times can attest to the fact that pedestrians commonly do not wait for traffic signals to change. In one tragic case, an elementary aged girl was critically injured at a traffic signal on Portage Ave.<sup>67</sup> The child attempted to cross the street in too short a period and the signal went green before she was completely across. She was hit by an approaching vehicle that received the fresh green. Another factor to consider is that flashing beacons at a corridor are associated to pedestrian presence making a driver expect pedestrian traffic, but traffic signals do not necessarily have this strong of an association, as they commonly change solely for vehicle traffic.

Overall, there have been many crashes at traffic signals demonstrating that they are not a failsafe method of traffic control. Several crashes have involved pedestrians trying to cross the road in front of vehicles that had a green light, such as a crash that happened in 2019 on Regent Ave that killed two pedestrians in the middle of the night.<sup>68</sup> This illustrates the point that when a pedestrian is not going to wait, it is safer for them to be crossing in front of a vehicle facing flashing beacons than a green light, especially in the middle of the night. A similar incident occurred on Bishop Grandin in 2018 when a pedestrian was struck while also crossing in the dark in front of a vehicle with a green light.<sup>69</sup> Five years earlier at this same intersection, two elementary aged girls were left in critical condition after being struck due to "pedestrian error."<sup>70</sup>

Drivers frustrated with unnecessary delays from overly restrictive traffic control will also develop disrespect for traffic control devices. Non-compliance may not be limited to blatantly disrespecting the red, but could also manifest as an increased urge to run the yellow rather than be subjected to what is perceived as a lengthy and unnecessary wait, or immediately accelerate on a fresh green. In a media story involving two pedestrians hit at a traffic signal, one parent said, "It's only like 30 seconds, so you press the button and when it goes and then you're halfway through, not even, and it's done and then you're like, 'Uh, I have to wait here again.' And people don't care as soon as it goes [green] — they're just zooming by",<sup>71</sup> further showing the problem. Necessary restrictions will be respected by drivers, while those perceived as overly restrictive will result in increased risk-taking behaviour due to a subconscious desire to make up for the lost time. This is why, counter intuitively, the overuse of stop signs can increase driving speed.<sup>72</sup>

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<sup>67</sup> Alexander Paul, "Crash on Portage critically injures pedestrian", *Winnipeg Free Press* (11 July 2012), online: <<https://www.winnipegfreepress.com/local/Crash-on-Portage-injures-pedestrian-177744671.html>>.

<sup>68</sup> Elisha Dacey, "Witnesses describe body flying through air, another being run over in crash that killed two", *Global News* (14 May 2019), online: <<https://globalnews.ca/news/5274056/serious-collision-causes-road-closures-in-st-boniface-tuesday-morning/>>.

<sup>69</sup> Alexander Paul, "Pedestrian hit on Bishop Grandin Boulevard reported headed to surgery", *Winnipeg Free Press* (21 February 2018), online: <<https://www.winnipegfreepress.com/local/pedestrian-hit-on-bishop-grandin-boulevard-reported-headed-to-surgery-474731783.html>>.

<sup>70</sup> "No charges laid in crash that seriously injured two 11-year-old girls", *CTV Winnipeg* (30 October 2013), online: <<https://winnipeg.ctvnews.ca/no-charges-laid-in-crash-that-seriously-injured-two-11-year-old-girls-1.1520316>>.

<sup>71</sup> "2 girls seriously injured in St. Vital crash", *CBC News* (29 October 2013), online: <<https://www.cbc.ca/news/canada/manitoba/2-girls-seriously-injured-in-st-vital-crash-1.2287193>>.

<sup>72</sup> Iowa Department of Transportation, "Traffic and Safety Information Series", Federal Highway Administration, online:

It is not being argued that corridors should be universally used rather than half signals. The point is that traffic signals are a more aggressive treatment and need to be used only when warranted, as they are a form of traffic management that come with their own limitations, hazards, risks, and safety failures. Many roads such as Portage Ave are too large and congested for corridors, but it should not be a solution to overuse traffic signals at other locations due only to the perception of increased safety that comes with increased restriction. The efforts to convert corridors to half signals are part of a theme of increasing road restrictions while ignoring measures that can increase safety without imposing new restrictions. The current political environment and perceptions underlying road safety account for how responses can be largely misguided to favour increased restriction, while ignoring engineering improvements that make the environment safer without imposing restrictions.

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<[https://safety.fhwa.dot.gov/intersection/other\\_topics/fhwasa09027/resources/Iowa%20Traffic%20and%20Safety%20FS-%20Unsignalized%20Intersections.pdf](https://safety.fhwa.dot.gov/intersection/other_topics/fhwasa09027/resources/Iowa%20Traffic%20and%20Safety%20FS-%20Unsignalized%20Intersections.pdf)>; *Stop Sign*, *supra* note 26 at 1.

## PART 4 - THE POLITICS OF ROAD SAFETY

Traffic engineers are only one party involved in the issues. Institutions such as police, Manitoba Public Insurance (MPI) and CAA as well as many political leaders such as the mayor and some councillors are on media and at public forums professing their road safety priorities, but the assertions do not align with the actions.

Claimed commitments to safety are contradicted when considering the pattern of apathy and avoidance towards correcting engineering. The same road safety presentation that I first did in 2012, and have been giving ever since at both universities has been repeatedly offered to WPS, MPI, and CAA. Information has been provided with meeting requests that are either declined or ignored, showing an unwillingness to discuss the problems. As one example, following the death of the four-year-old at the Isabel Street corridor, Mayor Brian Bowman stated that "he's committed to discussing ways to improve safety for pedestrians, cyclists and drivers in the city."<sup>73</sup> Despite this claim, he has to date refused all requests to meet and discuss the aforementioned and other engineering issues. In contrast, during the mayoral election campaign, other candidates did engage the concerns, watched the offered presentation, and subsequently made public announcements supporting the correcting of engineering.<sup>74</sup>

Ironically, attempts to dismiss and undermine progress often come from those who claim to most care about road safety. When the issue of missing school zone signs was in the Winnipeg Metro (which only mirrored earlier coverage by multiple news agencies dating back to 2012),<sup>75</sup> Councillor Janice Lukes, who has been avidly professing her commitments to road safety,<sup>76</sup> undermined the awareness by stating that she "totally" does not believe it.<sup>77</sup> This was despite having seen the presentation showing the issues<sup>78</sup> (which occurred following media pressure),<sup>79</sup> seeing the list of missing signs, and the reporter having uploaded it with the article. The ignoring of facts cannot get more brazen with the result being that the signs are still missing to this day. When responding to a Free Press reporter respecting the content of the presentation, Councillor Lukes would only say that, "I found it interesting" and that they (road safety discussions) are

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<sup>73</sup> "Pedestrian death, injuries put renewed focus on road design and safety", *CBC News* (20 March 2019), online: <<https://www.cbc.ca/news/canada/manitoba/pedestrian-safety-vision-zero-1.5065388>>.

<sup>74</sup> Bartley Kives, "Steeves would boost speed limit signage, takes aim at photo-radar", *Winnipeg Free Press* (17 September 2014), online: <<https://www.winnipegfreepress.com/special/civicelection2014/Steeves-would-boost-speed-limit-signage-takes-aim-at-photo-radar-275464831.html>>.

<sup>75</sup> Tristin Hopper, "Winnipeg is hiding school zone signs so it can raise more cash with speeding tickets: activist", *National Post* (31 October 2012), online: <<https://nationalpost.com/news/canada/winnipeg-is-hiding-school-zone-signs-so-it-can-bring-in-more-cash-from-speeding-tickets-activist>>.

<sup>76</sup> Samantha Samson, "Vision Zero: Winnipeg councillor pushes city to adopt no-deaths traffic plan", *CBC News* (16 November 2016), online: <<https://www.cbc.ca/news/canada/manitoba/traffic-safety-vision-zero-winnipeg-1.3852502>>.

<sup>77</sup> Braeden Jones, "Wise Up Winnipeg says 173 school zone signs missing", *Winnipeg Metro News* (13 April 2016), online: <<http://www.metronews.ca/news/winnipeg/2016/04/13/wise-up-winnipeg-says-173-school-zone-signs-missing.html>>.

<sup>78</sup> Gordon Sinclair Jr., "Traffic-ticket fighters hit city roadblock", *Winnipeg Free Press* (9 June 2016), online: <<https://www.winnipegfreepress.com/local/traffic-ticket-fighters-hit-city-roadblock-382322551.html>>.

<sup>79</sup> Gordon Sinclair Jr., "Traffic-ticket watchdogs get ear of city hall on Tuesday", *Winnipeg Free Press* (30 May 2016), online: <<https://www.winnipegfreepress.com/local/traffic-ticket-watchdogs-get-ear-of-city-hall-on-tuesday-381315231.html>>.

"great stories." When asked to discuss further respecting taking action, she refused to comment, claiming she is not an engineer. The reporter described the response as a "city roadblock."<sup>80</sup>

The contradictions further emerge when, rather than just finding it 'interesting', 'a great story', and reminding us that she's not a traffic engineer, Councillor Lukes has argued for lower speed limits.<sup>81</sup> Lowering speed limits is as much or more of an engineering issue than the common sense assertion that speed limit signs should be in compliance with established standards and best practices. Somebody who believes that speed limits should be lowered for safety should especially be an advocate for correcting signage.

These individuals and institutions cannot claim to be advocates for road safety when they have demonstrated an unwillingness to learn about, discuss, or advance solutions to real safety issues. A remaining consideration is the possible motive for the wilful blindness which can be explained by the conflicts of interest involving the traffic ticket industry. The province, city, police, and MPI each make millions of dollars from traffic tickets and the subsequent increasing of insurance rates which undeniably incentivises certain actions. Other institutions such as CAA typically operate closely with police and government in general, and have gone so far as to call each other their safety partners.<sup>82</sup>

## **CONTROLLING PERCEPTIONS**

The public is paying the costs of crashes with individuals paying the ultimate price of injury or in some cases, death, and as such, it is an enigma that there is tolerance of such a patently dangerous situation. The explanation lies in the conditioning of perceptions and framing that allow institutions to evade their own responsibilities by building an understanding that fault lies with individuals. Under this mantra, when crashes occur, those that have failed to respond to real safety concerns will universally blame the road user with speeding commonly cited. Meanwhile, there is either no, or a misdirected conversation about the role of engineering.

An example is that following the Isabel Street crash, CAA and WPS partnered to examine safety at corridors, but the news only reported that there were 359 observed violations and that "pedestrians and drivers all need to take better care when it comes to safety."<sup>83</sup> In addition to blaming drivers, pedestrians were blamed for "hitting the button, not skipping a beat, not looking and continuing to cross [...] putting their lives in the hands of the car."<sup>84</sup> The article continued to quote CAA and WPS instilling blame for actions such as stopping partway into the crosswalk, or crossing the street while talking on a cell phone. Ironically, while complaining about pedestrians prematurely entering the road, nothing was noted about the auditory chirping encouraging this behaviour. Equally absent was any mention of the lack of eye-level beacons. Instead, there were complaints about drivers not stopping right away or stopping part way into the crosswalk. When

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<sup>80</sup> *Supra* note 78.

<sup>81</sup> "Calls for speed limit reductions among suggestions at traffic safety event", *CTV Winnipeg* (2 October 2019), online: <<https://winnipeg.ctvnews.ca/calls-for-speed-limit-reductions-among-suggestions-at-traffic-safety-event-1.4620048>>.

<sup>82</sup> "Manitoba Public Insurance and partners raising awareness about high-collision intersections", *Manitoba Public Insurance* (14 January 2016), online: <<https://www.mpi.mb.ca/Pages/nr2016jan14.aspx>>.

<sup>83</sup> *Supra* note 33.

<sup>84</sup> *Ibid.*

complaining about drivers not yielding, it would have been most imperative to reference that the city's own study found that eye-level beacons increased driver yield compliance. Also relevant, was that instead of expanding the measure, the city reversed the correction that had already been made. This was left out of the dialogue.

In another representative article, Inspector Spado of the WPS stated, "We all have a part to play in road safety, so whether we're travelling by car, bike or walking, we should all strive to be respectful and practice proper road safety",<sup>85</sup> and then turned the conversation to distracted driving. This statement is part of the pattern of deflecting the discussion from engineering to only complaining about the behaviour of individuals while ironically saying 'all' of us have a part to play.

Media portrayals of engineering are the opposite, as whenever improvements are made, the conversation turns from criticism of road users to praising the engineers' proactive efforts. For instance, when the eye-level beacons were added on St. Anne's Road following the death of an eight-year-old, it was portrayed in a positive light as the city making the corridor safer, with a side note about a call for reduced speed limits.<sup>86</sup> Media framing also referred to the city's review as if it were the first study being done in response to the death,<sup>87</sup> while ignoring the existence of the earlier 2016 findings and Mr. Cantor's identification of the exact same problem in 2013, which predated the first of the recent child fatalities by five years.<sup>88</sup> A proper approach would have been for media to ask the obvious questions such as:

- 1 - Why was the engineering deficient in the first place?
- 2 - Why have our institutions ignored all advocacy efforts since they began in 2012 including refusing to have meetings or discuss the problems?
- 3 - Why did the deficiency continue after one of the city's own engineers brought it to light in 2013?
- 4 - Once ignoring the issue in 2013, why was it further ignored in 2016 after the city's own pilot project/study revealed safety benefits?
- 5 - After realising the safety benefits with the first set of beacons, why did the city then remove them?
- 6 - Why was the set on St. Anne's Road installed only after an eight-year-old child was killed?
- 7 - Once the benefits are realised following multiple deaths and studies, why was the safety improvement only made at the one location where a child died?
- 8 - Why are we still dealing with, discussing, and studying a problem that does not exist in other jurisdictions such as Toronto as opposed to just fixing it?

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<sup>85</sup> *Supra* note 14.

<sup>86</sup> *Supra* note 17.

<sup>87</sup> *Supra* note 32.

<sup>88</sup> *Supra* note 57.

The pattern of not holding the city accountable continued eight months later when in April 2019, the city announced that it would do a safety study on Isabel Street where a four-year-old was killed. This was portrayed in media as the city's "prelude to the introduction of traffic safety-enhancement measures."<sup>89</sup> While there was some discussion about the city having delayed its traffic studies, there was no criticism of the fact that the Isabel study was the *fourth one* ordered to examine the exact same problem (lack of eye-level beacons). There was also no mention that the third study that had been ordered in the fall of 2018 never did come back, so the results of it remain elusive. Also absent was any mention that the eye-level beacons had been added at the St. Anne's corridor in August 2018 - a full 7.5 months before the four-year-old was killed. Even at that late of a stage, there had been well over half a year during which the city could have universally corrected a known problem before the next child pedestrian fatality occurred.

Media reporting should have criticised the city's continuous inaction and completing of studies destined to reach the same conclusion that is common sense and been an advocated issue since 2012. As was predictable, the report for Isabel came back in June 2019 recommending that eye-level beacons be installed at that corridor.<sup>90</sup> As of October 2019, there has been no criticism of the city's failure to implement its own recommendations.

Following the most recent crashes, those blaming road users have only doubled down their efforts. An article by CBC referenced that by October, 2019 had already been particularly deadly for pedestrians as the number killed was already triple that from 2018, putting 2019 on track to be the deadliest in decades, according to MPI.<sup>91</sup> The article then referenced a video taken at a corridor on Osborne Street over the course of an hour which supposedly recorded fourteen dangerous behaviours. It was shown to three 'experts' being a driving instructor, retired traffic cop turned ticket fighter, and an urban planner - all of which expressed disgust at the behaviour of road users.

It is however under the subtitle, 'The Law', where the article deviated from pointing blame to misrepresentation. Under this heading, the retired traffic cop discussed cars that began to proceed through the crosswalk after the pedestrian had left their side of the road but had not yet reached the opposite curb. He then stated that, "If a pedestrian is crossing and there is a median in the road, the driver is clear to proceed once the pedestrian reaches the median. Otherwise, you're supposed to wait until they've fully crossed the street."<sup>92</sup> What the law actually says is that the driver is required to yield the right-of-way to a pedestrian that is in the same or about to be in the same **half of the roadway** as the driver,<sup>93</sup> which is the opposite of what was stated. This is reflected in more than one section of the *Highway Traffic Act*.<sup>94</sup> The law is thus being misrepresented in a way that creates a false perception that what the drivers were doing was illegal, and then builds on the presumption that illegal is dangerous. A retired traffic cop turned ticket fighter should know the law, especially when he calls his firm 'Traffic Ticket Experts'. It is

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<sup>89</sup> Aldo Santon, "City to zero in on crosswalk where girl killed, others in traffic safety audit", *Winnipeg Free Press* (2 April 2019), online: <<https://www.winnipegfreepress.com/local/city-to-zero-in-on-crosswalk-where-girl-killed-others-in-traffic-safety-audit-508019262.html>>.

<sup>90</sup> *Supra* note 59.

<sup>91</sup> *Supra* note 35.

<sup>92</sup> *Ibid.*

<sup>93</sup> *Traffic Act*, *supra* note 10, s 139.

<sup>94</sup> *Ibid.*, s 141(2).

ironic is that this individual later references his dismay that there may not be enough education for road users to know the law.

It is illogical to argue that a driver who proceeds through a crosswalk once the pedestrians are well out of the conflict path, (in many cases pedestrians may be multiple lanes away), is somehow driving dangerously. This is common practice and a necessary part of traffic operations. Consider the same behaviour in a slightly different context; Many of Winnipeg's wide and congested intersections (commonly found in the downtown area) have prohibitions on turning during red, limiting drivers to turning during the green, which is also when pedestrians are active in the adjacent crosswalk. It is routine and legal for drivers turning on green<sup>95</sup> or red<sup>96</sup> to wait for a pedestrian break wide enough to safely make the turn, with the law only requiring the driver to yield. It would not only be overly restrictive to require such a driver to wait until there are no pedestrians in any part of the crosswalk, but also impossible to move traffic during busy times.

The article further talked about drivers who did not stop despite the approaching pedestrian being visible. While this is problematic, another consideration should have been that some of these instances may be examples of the earlier discussed false sense of security. Without eye-level beacons, the driver may not have seen the overhead beacons and with the reliance on the existence of the corridor, may not have been watching as avidly for pedestrians. The conclusion by the driving instructor and the retired traffic officer was that more enforcement is needed. It should not be surprising that the solution advocated by the person who's company fights traffic tickets is that we need more enforcement (tickets to fight). The urban planner quickly passed over any discussion of engineering, ending with the concluding cliché statement that, "the solution may simply be for everyone to slow down."<sup>97</sup> This ignores the obvious flaws and also the fact that the crashes have often involved lower speeds.

The most recent article is only representative of the pattern. There is still the same bashing of drivers combined with general lines about speeding and calls for enforcement. The only originality was the addition of a misrepresentation of the law and then a statement that others do not know the law. The obvious engineering flaws that were in plain sight of everyone involved remained elusive. Organizations such as CAA, WPS, MPI and many others have failed to even reference the possibility that engineering could be the commonality underlying our crashes. One article about the eight-year-old killed on St. Anne's Road opened with the promising titled that, "We Failed", but then only talked about speeding.<sup>98</sup> Overall, the net result is a conditioning of public sentiment to blame road users, and accept the highly profitable enforcement industry while entirely overlooking the responsibilities and failures of those who are supposed to protect us. Whenever agencies make even a minor improvement, it is seen as being proactive rather than correcting something that should never have been a problem, and in most cases, still exists to what may be a slightly lesser, but still unacceptable degree.

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<sup>95</sup> *Ibid*, s 88(3).

<sup>96</sup> *Ibid*, s 88(19).

<sup>97</sup> *Supra* note 35.

<sup>98</sup> "'We failed': St. Vital community members raise concerns about crosswalk after boy, 8, killed", *CBC News* (14 February 2018), online: <<https://www.cbc.ca/news/canada/manitoba/memorial-crosswalk-fatal-crash-boy-1.4534737>>.



## PERCEPTUAL FEEDBACK LOOPS

Those that support and often profit directly from traffic ticketing will constantly repeat their claims, and through the fallacy of appealing to authority,<sup>99</sup> ingrain it in the public perception to the point that the sentiment becomes understood and self reinforcing through the fallacy of appealing to popular opinion.<sup>100</sup> The result is a conditioning where the claims no longer have to be made and instead are regurgitated without prompting from those who have no ties to the ticket interests. This can expand to involve institutions such as Safety Services Manitoba, which has advocated that it is up to drivers and pedestrians to improve road safety without the slightest mention of roadway design as having any relevance.<sup>101</sup>

When the speed limit was being lowered in school zones, it was stated as being done to improve safety, with one resident pointing to a crash involving a ten-year-old pedestrian as evidence that the change was long overdue.<sup>102</sup> What was not referenced was that this crash occurred at a stop sign and there was no evidence that speed was a factor.<sup>103</sup> In articles about that crash, residents blamed speed immediately before police had cited any causes<sup>104</sup> even though the need to replace the 206 missing school zone signs<sup>105</sup> would have been the more relevant talking point. In another case, when a five-year-old was killed also at a stop sign, the family immediately put out calls for drivers to slow down.<sup>106</sup> Out of a desire to keep kids safe, the family of the child killed in the corridor on St. Anne's Road also said they wanted the speed limit lowered without mentioning any of the obvious engineering issues.<sup>107</sup> When two girls were hit on Bishop Grandin, the media reported that parents found the intersection to be dangerous because people drive too fast, with one resident stating that, "It's always just people racing around."<sup>108</sup> The driver was later found

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<sup>99</sup> The appeal to authority fallacy occurs when "an improper appeal is made to alleged expert advice." In the case of traffic ticketing, those that profit from it are improperly seen as experts without any consideration of the arguments and positions. This is the case of road user fault and the understandings of crash causes being assumed because it is professed by institutions and individuals despite there being no foundational basis. see: Ronald C Pine, *Essential Logic: Basic Reasoning Skills for the Twenty-First Century* (New York: Oxford University Press, 1996) at 124-129.

<sup>100</sup> The appeal to popular opinion fallacy occurs which a premise is accepted as true only because it is the opinion of the majority which can evolve into group think. Public sentiment towards traffic enforcement can be fostered through repetition of certain claims through media so that opposing views are drowned out making the views appear unchallenged and therefore accepted as true because they appear to be the widely held belief. see: *Ibid* at 120-124.

<sup>101</sup> "Walking the Walk' for Pedestrian Safety", *Safety Services Manitoba* (17 July 2018), online:

<<https://www.safetyservicesmanitoba.ca/walking-the-walk-for-pedestrian-safety/>>.

<sup>102</sup> "Change lets Manitoba communities drop speed limits in school zones", *CTV Winnipeg* (16 September 2013), online: <<https://winnipeg.ctvnews.ca/change-lets-manitoba-communities-drop-speed-limits-in-school-zones-1.1456864>>.

<sup>103</sup> Lara Schroeder, "Boy hit on way to school still in hospital", *Global News* (12 September 2013), online:

<<https://globalnews.ca/news/836260/boy-hit-on-way-to-school-still-in-hospital/>>.

<sup>104</sup> "Boy, 10, in critical condition after being hit by van", *CBC News* (11 September 2013), online:

<<https://www.cbc.ca/news/canada/manitoba/boy-10-in-critical-condition-after-being-hit-by-van-1.1705859>>.

<sup>105</sup> *Supra* note 75.

<sup>106</sup> "5-year-old boy's death prompts safety pleas", *CBC News* (27 June 2010), online:

<<https://www.cbc.ca/news/canada/manitoba/5-year-old-boy-s-death-prompts-safety-pleas-1.951002>>.

<sup>107</sup> Austin Grabish, "St. Vital crosswalk where 8-year-old boy was killed given honorary name", *CBC News* (18 June 2019), online: <<http://www.msn.com/en-ca/news/canada/st-vital-crosswalk-where-8-year-old-boy-was-killed-given-honorary-name/ar-AAD4LRy?ocid=UE12DHP>>.

<sup>108</sup> *Supra* note 71.

not to have been speeding, and the crash was shown to be the result of pedestrian error,<sup>109</sup> demonstrating that it is in fact not always a matter of people "racing."

The current milieu is such that whenever crashes happen, blaming drivers in general and speed in particular is the knee jerk reaction before any of the facts are known. This creates an association between crashes and speed serving as a confirmation bias subtly reinforcing the perceptions. In one example, a driver was arrested for entering the intersection before it was safe and hitting a pedestrian.<sup>110</sup> While police did find the driver at fault, there was no evidence cited that speed had a role, yet CTV's insert links under the heading 'Related Stories' provided a link to an article about "calls for speed reductions"<sup>111</sup> affirming an association that had not been made.

The current sentiment has become so ingrained that it survives even glaring contradiction. For instance, a paradox has developed where those that have the sincerest intentions of wanting safer roads will automatically assume speed is the cause of crashes, but only in the context of blaming the driver. The city's chief operating officer defended against the complaint that speed limit signage was inadequate by stating that, "speeding is not considered a major safety concern"<sup>112</sup> and that, "[i]f speed were the reason motorists are involved in collisions, then there would be no roadways with high speed limits."<sup>113</sup> These claims should have stoked outrage at the city's lack of fulfilling its engineering responsibilities, especially from individuals who continually claim to care about road safety. To be consistent, these same parties and individuals should have been part of an outcry when CBC reported the city's removal of speed limit signage.<sup>114</sup>

In one case, a pedestrian that was hit and seriously injured in a corridor on Corydon acknowledged that the vehicle that hit her was travelling 40 km/h in a 50 km/h zone, but still blamed speed.<sup>115</sup> Especially ironic is that Corydon was one of the roads specifically referenced in the engineering complaint<sup>116</sup> that the city was defending against when stating that speed is not a major safety concern. In light of those revelations, if speed is the complaint, signage should have been the first thing attacked. A response more in line with the problem would have been to complain about the absence of eye-level beacons and advance warning signs. Excessive speed and other actions of road users certainly are a factor in some crashes, but the presumptions and blame are disproportionately in favour of those who have the power to control the framing and portrayals. How issues are represented and understood will have a direct effect in constructing public perceptions, and will subsequently define which (often misguided) 'solutions' will be advocated and supported, in response to a very real problem.

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<sup>109</sup> *Supra* note 70.

<sup>110</sup> "Woman, 18, facing charge over fatal pedestrian crash at Morley and Osborne", *CTV Winnipeg* (2 October 2019), online: <<https://winnipeg.ctvnews.ca/woman-18-facing-charge-over-fatal-pedestrian-crash-at-morley-and-osborne-1.4621196>>.

<sup>111</sup> *Ibid.*

<sup>112</sup> Letter from Michael Jack to Michael Gregoire (15 June 2015), Response to Complaint by Chris Sweryda filed with the Association of Professional Engineers and Geoscientists of Manitoba, at 2.

<sup>113</sup> *Ibid* at 8.

<sup>114</sup> "Speed limit signs disappear from Winnipeg streets", *CBC News* (13 February 2013), online: <<https://www.cbc.ca/news/canada/manitoba/speed-limit-signs-disappear-from-winnipeg-streets-1.1334847>>.

<sup>115</sup> Rachel Bergen, "Winnipeg pedestrian calls for greater safety after being hit by car", *CBC News* (30 September 2019), online: <<https://www.cbc.ca/news/canada/manitoba/pedestrian-hit-winnipeg-corydon-1.5302007>>.

<sup>116</sup> Christian Sweryda, *Complaint Against Luis Escobar, Brad Sacher & Stephen Chapman*, Complaint filed to the Association of Professional Engineers and Geoscientists of Manitoba (8 April 2014) at 11.

## PART 5 - MISPLACED EFFORTS

Responses that are either not going to correct the causes, or will address a cause that only plays a relatively minor role, can at best produce a minor safety improvement. Instead of dealing with the obvious – such as missing school zone signs, improper speed limit signage, and eye-level beacons – in line with the culture of driver blaming, the solutions that are advocated and then subsequently implemented are enforcement, and more awareness for drivers.<sup>117</sup> The default reaction to crashes becomes calls to write more traffic tickets.<sup>118</sup> This approach is extremely profitable but does nothing to address underlying causes.

Speed certainly is a factor in some cases,<sup>119</sup> but when the driver is not to blame, attacking drivers is not going to increase safety. For instance, the St. Anne's fatality involving the eight-year-old resulted in no charges against the driver.<sup>120</sup> Although police were silent on the issue, a witness to a crash that killed two pedestrians noted that, "I don't think he was speeding."<sup>121</sup> Pedestrian fatalities often involve very low speeds such as crashes involving backing up in parking lots<sup>122</sup> or turning vehicles hitting a pedestrian in an adjacent crosswalk.<sup>123</sup> Despite these facts, one perceived solution commonly advocated is that photo enforcement cameras should be placed at corridors, and has been the solution suggested by a pedestrian that was hit in one.<sup>124</sup>

One suggestion that failed to consider the problem was to convert the flashing yellow lights at the St. Anne's corridor (where the eight-year-old was killed) to red, requiring drivers to stop rather than just yield.<sup>125</sup> This was also advocated by a local architectural firm.<sup>126</sup> Changing the flashing beacons from yellow to red would not correct the problem, as drivers not observing the yellow beacons are not going to be able to observe beacons of a different colour. When there is a failure of traffic yielding for pedestrians under the current rules, the solution **is not to** add increased restriction that **only serves to** strengthen the false sense of security.

Most importantly, changing the colour would be contrary to traffic engineering policy, as there would be no way for a visually impaired (colour blind) driver to observe the colour of the beacons. Traffic signals account for this problem by standardizing where the lenses are in relation to their colour (red is always to the top or left if the display is mounted horizontally).<sup>127</sup> A red flashing beacon at a corridor is also illegal under the Manitoba *Highway Traffic Act*

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<sup>117</sup> *Supra* note 82.

<sup>118</sup> "Police Ramp Up Traffic Enforcement in South Winnipeg", *ChrisD.ca* (13 January 2011), online: <<https://www.chrisd.ca/2011/01/13/winnipeg-police-bishop-grandin-waverley-st-annes-traffic-enforcement-impaired-speeding-drivers/#.XXSvVjNYbml>>.

<sup>119</sup> *Supra* note 5.

<sup>120</sup> *Supra* note 3.

<sup>121</sup> *Supra* note 68.

<sup>122</sup> *Supra* note 15.

<sup>123</sup> "Pedestrians & Drivers Turning Left", *DriveSmartBC* (14 April 2019), online:

<<https://www.drivesmartbc.ca/case-law/pedestrians-drivers-turning-left>>.

<sup>124</sup> *Supra* note 115.

<sup>125</sup> *Supra* note 57.

<sup>126</sup> Wins Bridgman and Rae St. Clair Bridgman, "Planners call for safety overhaul of Winnipeg crosswalks", *CBC News* (3 October 2019), online: <[https://www.cbc.ca/news/canada/manitoba/opinion-winnipeg-crosswalk-safety-1.5304169?utm\\_source=share&utm\\_medium=ios\\_app](https://www.cbc.ca/news/canada/manitoba/opinion-winnipeg-crosswalk-safety-1.5304169?utm_source=share&utm_medium=ios_app)>.

<sup>127</sup> *Supra* note 12 at B3.5.

regulations.<sup>128</sup> Both the legality and impracticality of this solution demonstrates in part how efforts to address a problem can digress. Since it came from a city councillor, this suggestion had to be considered and dismissed by engineers using resources and further distracting the focus of the discussion.<sup>129</sup>

The current pattern of adding more half signals to multi-lane high speed roads is also divorced from rationally considering the causes of the crashes. While the normal response following a crash is to attack speed, consider that so many crashes in corridors have occurred during rush hour and in congested areas when and where speeds are typically low. Also consider the lack of correlation between speed and fatalities/injuries as most of the corridor fatalities in recent years have occurred in 50 km/h zones.<sup>130</sup> Any benefits of half signals will be misplaced when realizing that they are largely being used to replace corridors that have not been the types of locations that have had crashes. This is clear from the city having reviewed the corridors that have had deaths and determining that they did not meet the minimum criteria for considering upgrading to half signals, and instead needed eye-level beacons.<sup>131</sup>

The architectural firm that supported converting corridors to having red beacons contrary to established engineering and the law also had other 'solutions'. It advocated converting all crosswalks to 30 km/h zones like school zones with photo enforcement cameras.<sup>132</sup>

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<sup>128</sup> Man Reg 13/2019, Schedule, at 16-17.

<sup>129</sup> City of Winnipeg Public Works Department, *Traffic Study - St. Anne's Road from Fermor Avenue to St. Mary's Road*, by David Patman, File No R-04, R-08, R-09, and R-12 (Winnipeg: City of Winnipeg, 12 June 2018) (As the city's head traffic engineer noted in this administrative report, "It should be noted that there are no pedestrian crossing control devices approved by TAC [Transportation Association of Canada] for use in Canada that use a flashing red beacon" at 10).

<sup>130</sup> With the exception of the crash on St. Anne's Road that killed the eight year old, all of the recent deaths have occurred on roads with a 50 km/h speed limit.

<sup>131</sup> Scott Billeck, "Intersection where young girl killed to get safety improvements", *Winnipeg Sun* (19 June 2019), online: <<https://winnipeg.sun.com/news/news/intersection-where-young-girl-killed-to-get-safety-improvements>>; City of Winnipeg Public Works Department, *Traffic Study - St. Anne's Road from Fermor Avenue to St. Mary's Road*, by David Patman, File No R-04, R-08, R-09, and R-12 (Winnipeg: City of Winnipeg, 12 June 2018) (The city's head traffic engineer wrote the administrative report studying possible engineering responses at the corridor on St. Anne's Road where the eight-year-old boy was killed. In the consideration of whether half signals would be appropriate, it was stated that not only was the warrant criteria not met, but that the traffic volumes were well below even the minimum criteria for consideration under current engineering standards, at 9).

<sup>132</sup> *Supra* note 126.

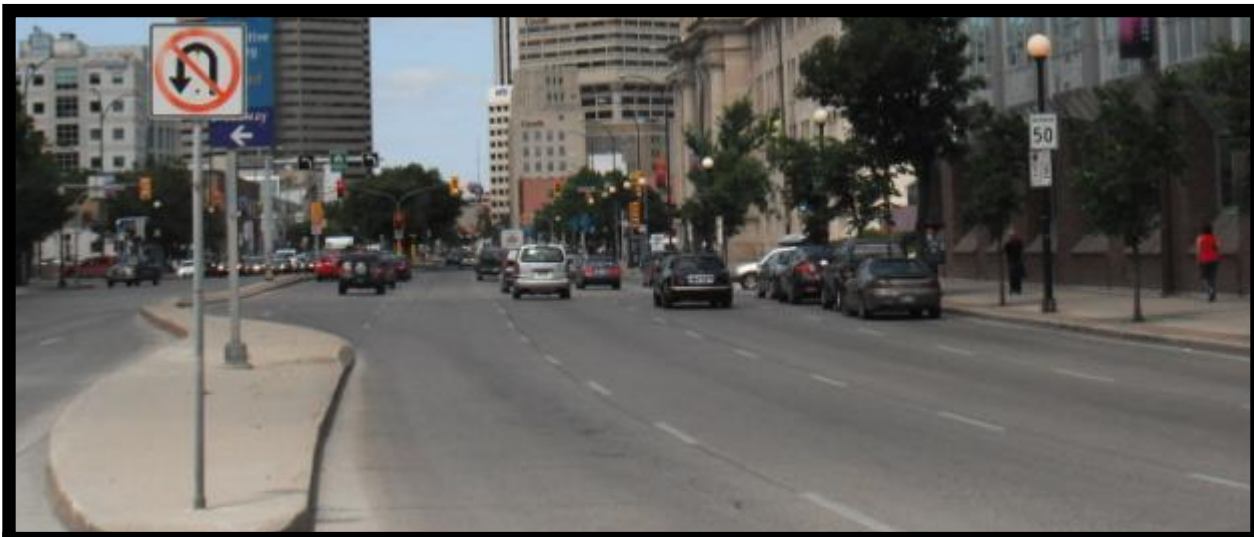


The plan ignores the false sense of security associated with low speed limits, and that speed has largely not been a factor in recent deaths. More importantly, the example corridor chosen is just north of Logan Ave, which is the location of the city's highest producing intersection speed camera.<sup>133</sup> The most glaring oversight is the assumption that drivers would comply with a 30 km/h limit despite thousands already being ticketed for exceeding the current 50 km/h limit.

Also ironic is that the drawings included dual 30 km/h signs on both sides of the road. Dual signage is the practice that Winnipeg justified not doing because "speeding is not considered a major safety concern."<sup>134</sup> Not only does Main Street at Logan have the worst documented speeding problem (by ticket stats), but it also does not have a single speed limit sign from Assiniboine Ave to and past the corridor and camera (a distance of over 1.5 km). At Assiniboine Ave, the speed limit drops from 60-50 km/h with no median sign.

<sup>133</sup> City of Winnipeg Police Service, "About the Service - Photo Enforcement", *City of Winnipeg* (7 November 2019), online: <[https://www.winnipeg.ca/police/safeststreets/18\\_4/offences.stm](https://www.winnipeg.ca/police/safeststreets/18_4/offences.stm)> (According to police statistics, this camera produced 4,134 tickets in the 2018 year (the most recent full year for which data is available). In comparison, the second highest producing camera recorded 2,715 violations).

<sup>134</sup> *Supra* note 112 at 2.



The speed limit on Main Street at Assiniboine Ave reduces from 60-50 km/h and is signed only on the right side of the road despite there being four lanes of traffic and a median wide enough to accommodate signs. This is the speed reduction with the highest lane count in Winnipeg and there is no other speed limit sign on this road before the highest producing intersection speed camera at Logan Ave.

This architectural firm seems to be well aware of the need for dual signage since they put it in their drawings, but yet failed to even reference that the current limit is not signed to those standards. Before advocating to lower the limit, the first step would be to argue that the current limit should be adequately signed.

Another suggestion by this firm was that there could be large pendulums placed above the road that would move in a wave similar to Newton's Cradle. Here is how it was described in the CBC article:

Large balls hang above the crosswalk. The movement (swing) of the first ball is activated by the crosswalk button, along with lights and sound. The energy — like the pedestrian — crosses the street, releasing the last ball on the other side of the street into motion. The motion reverses until all pedestrians safely cross the street.<sup>135</sup>

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<sup>135</sup> *Supra* note 126.



A drawing made by BridgmandCollaborative Architectures showing the suggested corridor design changes.

The proposed design was for the pendulums to swing until the last pedestrian has crossed, but it was not explained how the crosswalk would sense when this occurs. More importantly is that this design overlooks the current problem, being that corridors have nothing at eye-level that activates with the push-button. This design builds on the current problem of the beacons being exclusively above the road. Adding such artwork would likely further contribute to encouraging drivers to look up rather than in front of them where pedestrians are located.

Another solution disconnected from the problems also appeared in a CBC article. An urban planner suggested that the city should install more crosswalks so there is one every 130 meters along each road.<sup>136</sup> While advocating engineering solutions is laudable, the suggestions need to consider the actual problem. It is nonsensical to argue that the solution to crashes in crosswalks is to install more when they are clearly not working. More crosswalks would be the solution to a problem of jaywalkers being hit, not people being hit in the ones that already exist.

## THE UNDERUSE OF PASSIVE ENGINEERING

Passive engineering can be described as improvements to a road's design that make it more accommodating to users without requiring increased awareness or compliance. This would involve improving corridor design as well as many other measures such as fixing speed limit signage, putting flashing lights in school zones, and placing advance warning flashers before traffic signals, to name a few. In contrast, aggressive measures impose new restrictions that

<sup>136</sup> *Supra* note 35.

require compliance, decrease efficiency, and create a false sense of security (due to non-compliance or human error). Lowering speed limits, changing corridors to traffic signals, and yield signs to stop signs can all be described as aggressive measures. In relation to enforcement, aggressive measures increase opportunity for ticketing when the increased restrictions are not obeyed. In contrast, passive measures will improve safety, but also decrease ticket opportunities when driver awareness is increased such as by improved signage or flashing lights.

When passive engineering measures *are* implemented, they are illogically limited in scope. This is the case with the eye-level beacons being placed only on St. Anne's Road. Factors that cause crashes can be divided into individual causes unique to an isolated case, versus universal causes that have to be addressed on a larger scale. When an engineering assessment is done at a location following a crash, factors unique to the location can be corrected on an individual basis. For instance, if there was a problem with trees blocking the signs, the problem would be addressed by cutting the trees at that location, which was also done at the St. Anne's corridor.<sup>137</sup>

What is not a proper response is to identify a problem that is universal but only correct it at the isolated location. The lack of eye-level beacons is a deficiency inherent in the design of all corridors so it is not a correction that can be made on an isolated basis. In respect to randomly occurring events, the basis of the gambler's (Monte Carlo) fallacy is the false believe that past events can be used to predict the future. This fallacy is exactly the type of reasoning being employed when limiting the correcting of a universal deficiency to the one location where a crash happened. Although a crash occurred at the corridor on St. Anne's Road, when the problem is general to all corridors, the next crash is equally as likely to happen at any other location. The pattern continued with the engineering report from the crash on Isabel Street recommending eye-level beacons as if that location also has an isolated problem.

Although engineering is not being addressed universally (if at all), widespread change in traffic management *does occur* when revenue can be generated. In the case of construction zones, following the death of one worker, universally across the entire province, speeding fines were doubled without workers present.<sup>138</sup> This legislation did nothing to address engineering despite the Workplace Safety and Health (WSH) report finding that the crash was related to engineering and the actions of the worker. As WSH stated, "[t]he signage in place [...] did not appear sufficient to warn approaching traffic" and the signage "did not describe the conditions [that] approaching motorists would face."<sup>139</sup> It was also pointed out that the construction company had safety concerns but the highways department did not allow upgraded signage. This was not reported in media and instead, the only response was the raising of fines which has generated millions of dollars in revenue. In just a six week period in the summer of 2019, one construction zone on Brookside Blvd generated 6,951 tickets averaging about \$500-\$600 apiece.<sup>140</sup> When millions of dollars could be made, it only took the death of one worker for the government to capitalize by doubling fines and ignoring their own responsibilities for adequate signage. In

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<sup>137</sup> *Supra* note 32.

<sup>138</sup> Ashley Carter, "Manitoba drivers face tougher fines for speeding in construction zones", *Global News* (15 May 2014), online: <<https://globalnews.ca/news/1334194/manitoba-drivers-face-tougher-fines-for-speeding-in-construction-zones/>>.

<sup>139</sup> Deborah Sealey, Investigation of the Death of Brittany Murray, *Manitoba Workplace Health and Safety Report*.

<sup>140</sup> Manitoba, City of Winnipeg, *Freedom of Information and Protection of Privacy Act* request.



contrast, when only lives rather than revenue are on the line, there is a constant chain of apathy and inaction.

In the environment of underused passive measures, advocates continue to support aggressive responses. Jeanette Montufar was identified by CBC as a pedestrian safety expert who runs an engineering firm and was a professor of civil engineering at the University of Manitoba (she is also married to the city's former head traffic engineer that was part of the initial correspondence over the issue of eye-level beacons in 2013). She applauded the city for deciding to add the beacons following the death of the child on St. Anne's Road, but then advocated converting the corridor to traffic signals,<sup>141</sup> which is a much more aggressive/restrictive measure. Meanwhile, nothing was said about the absurdity of correcting a universal deficiency only at the location where a fatality occurred. Further in line with the gambler's fallacy, it is illogical to change a corridor to a half signal because a fatality occurred at that one location. As pointed out, when the problems are universal, the next fatality is equally as likely to occur at any other location. Ms. Montufar continued to reference the danger of pedestrians stepping off the curb too soon as justification for the advocated changes, but failed to acknowledge that the problem may just as easily be due to the lack of a delay in the auditory chirping or that traffic signals actually require pedestrians to wait even longer.<sup>142</sup>

In a separate news piece, Ms. Montufar further discussed that we need to consider how children use crosswalks, but again said nothing about the chirping that conditions pedestrians to immediately enter the roadway. She digressed further from the obvious solutions when stating that we should be examining how children behave instead of how to improve crosswalks that children use.<sup>143</sup> It is a mystery how this could be the perspective of an expert that as the article states, is helping cities across the country implement pedestrian safety measures.

Also consider the CBC piece where the former traffic officer complained about drivers beginning to move before the pedestrian was completely across the road and falsely referenced it as illegal. The problem at corridors has been related to both drivers not stopping and pedestrians prematurely entering the corridor, yet this 'expert' has the problem backwards. He is complaining about drivers supposedly prematurely starting, which has not been identified as a cause of the pedestrian deaths. A thought-out response needs to consider the factors that underlie the crashes.

## **MISPLACED PRIORITIES**

It is only due to the culture of blaming road users and a safety deficiency that there can be support for more restrictions and penalization. In May 2019, MPI made many heartfelt statements about the pedestrian fatalities such as:

Behind these numbers are real lives lost and families left to deal with the senseless and often unnecessary loss of a loved one [...] As a community we need to start thinking

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<sup>141</sup> *Supra* note 32.

<sup>142</sup> *Ibid.*

<sup>143</sup> "Kids' understanding of traffic vital in preventing fatal crosswalk accidents: expert", *CBC News* (15 February 2018), online: <<https://www.cbc.ca/news/canada/manitoba/traffic-study-crosswalk-safety-1.4537133>>.

differently about road safety. We need to change the conversation and create a culture where even one motor vehicle fatality is considered one too many.<sup>144</sup>

Statements such as these need to be considered in the context that MPI has generally refused to discuss or advocate for engineering solutions. Instead, the advocated solution was to "target risky driving behaviours like distracted or impaired driving, not using seatbelts, speeding and 'incidents involving vulnerable road users'."<sup>145</sup> These kinds of responses align with the financial incentives when considering the millions of dollars MPI generates from raising insurance rates when drivers get tickets. Also consider that the premise of the article was addressing the pedestrian deaths but the conversation was commandeered to garner support for enforcement efforts, many of which have nothing to do with the fatalities, as the things referenced for targeted enforcement were not generally factors underlying the deaths. For instance, the pedestrians were not killed by people not wearing seatbelts, but those things are being brought into the conversation to create a false association. In these instances, even though children have died, the conversation has turned from real solutions to advocating a certain profitable response – and this process is not unique to MPI. Police will regularly do interviews talking about the experience of notifying loved ones that someone has died in a crash.<sup>146</sup> One would think that at the least, those who talk to the grieving loved ones of victims would want to engage in a discussion about the problems - but that is not the case.

Another issue arises involving the Isabel Street corridor where the four-year-old was killed. The city's June 2019 report recommended installing eye-level beacons at the corridor, but attached the beacon's \$500 price-tag to the cost of putting in traffic signals at an unrelated intersection increasing the price to \$255,000 and then claiming that the improvements "are subject to the approval of additional gas tax funding from Ottawa."<sup>147</sup> Adding a new set of traffic signals is 509 times the cost and is not related to adding eye-level beacons at the already existing corridor. These unrelated projects should not be tied together, and when considering the eye-level beacons in isolation, there is no reason why the city should be dependent on additional revenue from Ottawa for a \$500 project - a cost that many traffic ticket fines match or exceed. Also, it should be considered that when the city took out the eye-level beacons on Notre Dame Ave, the work was so insignificant that no record was kept-not even an e-mail. Something that minor by the city's own actions should not hinge on Ottawa providing funding for an unrelated project. As of October 2019, we are now at four months after that study was released and there has been no action on implementing any improvements. In the wake of more deaths, there has been no media criticism of the city's inaction.

## **ADVOCATING 'SOLUTIONS' THROUGH FAILURE**

Overall, the already discussed conflict of interest emerges in another way: when crashes become a PR tool to advance certain responses that otherwise would suffer from a lack of support, there is no financial incentive in preventing them. As outlined, aggressive measures are supported by

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<sup>144</sup> *Supra* note 1.

<sup>145</sup> *Ibid.*

<sup>146</sup> Sam Thompson, "Senior killed in McPhillips Street vehicle-pedestrian crash", *Global News* (29 August 2019), online: <<https://globalnews.ca/news/5830869/senior-killed-in-mcphillips-street-vehicle-pedestrian-crash/>>.

<sup>147</sup> *Supra* note 59.

many that have no interest in the ticket industry simply because of an acceptance of what the institutions construct as the problem and therefore the appropriate responses. It puts those who genuinely care about safety in a position of not seeing the forest for the trees. As one final example, consider those who rail against distracted driving to the point that there is universal acceptance for even the strictest of enforcement. This is at a level where we charge a massive fine, take five years of points away, and immediately suspend a person's driver's license for plugging in a turned off cell phone at a red light, just having the phone in a cup holder,<sup>148</sup> or using a phone while in a turned off car at a railway crossing with a broken down train. None of this is questioned because it is argued that it might save one life, yet there are generally no arguments made against our roads being littered with billboards. The premise of their very existence is to command attention, taking it from the road – and those targeted are not stopped, but are actually moving at full speed.

Consider that as justification for the apathy towards fixing speed limit signage, the city's position has been that exceeding the current speed limits is not a major safety concern because they are politically set. Simultaneously, there has been strong advocacy for more enforcement and lowering of those limits for safety—the logic is not there. This shows that the ironies are working unilaterally and can only be explained by the conflict of interest. Also ironic is the complaining about drivers speeding coinciding with calls to lower the limits that already are not being obeyed. There is widespread support for reducing the speed limits in school zones yet little traction gained by the efforts to replace missing signs or implement flashing lights<sup>149</sup> - a measure documented to lower speeds.<sup>150</sup> As stated by the owner of one company that offered to pay for the flashing lights (an offer that has been refused by the city): "it makes no sense."<sup>151</sup> If safety is the assumed priority, the city's actions make no sense, but in the context of the conflict of interest, they make perfect financial sense. Only this could explain such a blatant disregard of logical engineering corrections. Yet, there are such harsh penalties and enforcement against drivers for offences that very often have little connection to crashes. In the case of corridors, the issue is not one life, but many – and still counting.

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<sup>148</sup> Emily Lazatin, "B.C. senior slapped with \$368 distracted driving fine for cellphone in cup holder", *Global News* (1 October 2019), online: <<https://globalnews.ca/news/5977523/bc-senior-distracted-driving-phone-cup-holder/>>.

<sup>149</sup> Will Reimer, "Winnipeg dawdles on offer of free amber school zone lights: 'It makes no sense at all'", *Global News* (10 January 2020), online: <<https://globalnews.ca/news/6373533/winnipeg-free-amber-school-zone-lights/>>.

<sup>150</sup> "School zone flashing lights - FAQ", *Transport for NSW (New South Wales) - Centre for Road Safety* (29 December 2019), online: <<https://roadsafety.transport.nsw.gov.au/stayingsafe/schools/flashinglights/faqs.html>>.

<sup>151</sup> *Supra* note 149.

## PART 6 - THE UNTAPPED POTENTIAL FOR SAFER ROADS

There is hope hinging on the culture shifting towards recognizing traffic engineering as a constant that underlies crashes, with huge potential to be realized. A study done by the Pacific Institute for Research and Evaluation found that 52.7% of fatal crashes were related to roadway conditions which "greatly exceeds the cost and severity of crashes where alcohol or speeding was involved, or the cost of non-use of seatbelts." In the past, when engineering has been improved, major benefits have been achieved. For instance, when the state of Georgia decided to work closely with railroads to address engineering at railway crossings, in one year, the number of fatalities at those crossings went from 105 to 58.<sup>152</sup> As another example, the Texas Transport Institute (TTI) studied the effects of increasing and decreasing yellow lights by one second from the minimum accepted in engineering. It was found that a one second increase reduced crashes by 35-40% and a one second reduction from this minimum created a crash increase of 125-225%.<sup>153</sup> Winnipeg's yellow lights at 80 km/h intersections are currently set at 0.7 seconds below the baseline studied by TTI, demonstrating another potential area for vast crash reductions should Winnipeg road safety advocacy turn its attention to engineering.

Returning to the discussion about corridors, the cost of installing eye-level beacons at each corridor is about \$500 (the same as an average construction zone ticket). This means that the construction zone already discussed produced enough revenue in *six weeks* for every one of Winnipeg's 177 corridors to have been corrected 39X over. While bringing in millions from tickets, the city is claiming that a \$500 improvement needed for children's safety hinges on getting Ottawa to give a bigger share of the gas tax.

Not only are the financial resources clearly there (just from tickets in one construction zone), but so are the advocacy resources, which if redirected, could be much more effective at improving safety. It is an immense cost for institutions like CAA, WPS and MPI to advocate so aggressively in favour of the ticket industry. If a fraction of those efforts went to advocating engineering corrections, from a safety perspective, much more could be gained. For example, it would take a fraction of the already used resources to successfully lobby for the fixing of the short yellow lights or to fix school zone and speed limit signage. If CAA can stand on the side of the road counting supposed violations for their unscientific study about their opinions of driver misbehaviour,<sup>154</sup> they could find an hour to see a power point presentation on the engineering deficiencies that plague the city.

All of the misplaced advocacy can become a road hazard when it leads to attention being redirected that would otherwise have been placed on the need for engineering improvements. Those advocating real solutions could be much more effective without having to navigate so much misinformation.

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<sup>152</sup> Hugh Kendall, "History and Review of Railway-Highway Grade Crossing Warning Systems and the Genesis of Standard Specification", *Purdue Road School* (3 August 1977), online: <<https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=3472&context=roadschool>> at 138.

<sup>153</sup> James Bonneson and Karl Zimmerman, "Development of Guidelines for Identifying and Treating Locations With a Red-Light-Running Problem", *Texas Transport Institute*, Report FHWA/TX-05/0-4196-2 (September 2004) at 6-2.

<sup>154</sup> *Supra* note 14.

To the extent that driver behaviour contributes to crashes, which it certainly does, Drs. Ted R. Miller and Eduard Zaloshnja of the Pacific Institute for Research conclude: "The large share of crash costs related to road conditions underlies the importance of these factors in highway safety. Road conditions are largely controllable. Road maintenance and upgrading, and the installation of traffic safety features can prevent crashes and reduce injury severity."<sup>155</sup> They go on to say that, "[a]voiding [...] crashes through driver improvement requires reaching millions of individuals and getting them to sustain best safety practices. That is not a fail-safe. It is far more practical to make the environment more forgiving and protective."<sup>156</sup> Engineering is fully within the government's power to fix and does not rely on subsequent cooperation of road users. Also, if the police and other bodies believe drivers act so dangerously, as the current messaging claims, why would they not want to make engineering the best it can reasonably be to mitigate the effects of flawed human behaviour? When there is driver fault such as the Keewatin crash,<sup>157</sup> that does not mean that better engineering could not have mitigated the effects of the driver's actions and have prevented the crash. It is undeniable that some of the efforts properly directed towards actual dangerous driver behaviour can be beneficial for road safety, but even then, efforts are fruitless if much less could have achieved much more. As one traffic engineer put it, if resources are put into saving one life when the same amount of effort elsewhere could have saved 50, "all that we have achieved is to kill 49 people."<sup>158</sup>

## THE CURRENT SITUATION

In recent years, driving has only gotten more punitive. The police enforcement is the most aggressive it has ever been with a continuous adding of new laws to enforce. Fines and other penalties have exponentially increased and especially since the 2002 introduction of photo enforcement which also greatly increased ticket volume. Despite all of these efforts, the bodies keep piling up with more crashes than there have ever been.<sup>159</sup> The only explanation is that we have not been attacking the actual problem.

With such a strong foundation of misdirection, the current situation is showing no signs of changing. The Keewatin Street crash<sup>160</sup> was at a new corridor that was less than a year old. Considering the city's 2013 e-mails and its own study done in 2016, at the very least, eye-level beacons should have been used going forward for all new installations. Had this been done, the Keewatin corridor which was constructed in 2017, would have had these beacons and that crash may not have happened.

Nothing appears to have been learned because after all of the studies, awareness and deaths, even in 2019, eye-level beacons were still not a part of new installations. In August 2019, the city rebuilt a downtown section of road that contained a corridor (Colony Street south of Portage

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<sup>155</sup> Dr. Ted R. Miller & Dr. Eduard Zaloshnja, "On a Crash Course: The Dangers and Health Costs of Deficient Roadways", *The Pacific Institute for Research & Evaluation* (May 2009) at 8.

<sup>156</sup> *Ibid.*

<sup>157</sup> *Supra* note 5.

<sup>158</sup> Miranda Devine, "Knee-jerk reaction to a non-problem of speed", *The Daily Telegraph* (10 October 2012), online: <<https://www.dailytelegraph.com.au/news/opinion/knee-jerk-reaction-to-a-non-problem-of-speed/news-story/97c5531822ba260d9c278e5d748e4046?sv=d4f7ac06ff9e73393b5a8d81ddc4d864>>.

<sup>159</sup> *Supra* note 35.

<sup>160</sup> *Supra* note 5.

Ave). The roadway and sidewalk were refurbished along with the corridor which had the poles (standards) changed and moved, but eye-level beacons were not part of the redesign.

The city continues to convert more corridors to traffic signals. Most recently, the northernmost parts of Main Street have had the corridors removed and replaced with traffic signals, which substantially increases delays. Meanwhile, the road is littered with unmarked crosswalks creating a polarity of traffic control. The false choice fallacy has developed between having unmarked crosswalks at one extreme or traffic signals at the other now that the corridors, being the intermediate form of traffic control, are removed.

Most of the new traffic signals being installed have eye-level displays mounted near the stop line. This furthers the perceived need for more traffic signals when the improvement may actually be having traffic control devices placed at eye-level. It should not require such an aggressive treatment for this to be done. Also, the traffic signals have a delay between the signal changing and the pedestrian signal displaying the walk cycle with the auditory chirping. If this chirping can be delayed for traffic signals, it could just as easily be delayed at the corridors. In this way, the safety improvements that are perceived to come with traffic signals may actually in part be measures that should have been included, but were neglected in corridor design.

## **THE NEED FOR IMMEDIATE CHANGE**

Stalin stated that one death is a tragedy while one million is a statistic to represent the predisposition humans have to be able to look the other way in the face of many deaths. Each death is a tragedy and devastates the loved ones left behind. One father that lost his son in a crash stated, "Our lives will never be the same, and it will take love, faith and time to come to grips with not being able to hold him in our arms anymore."<sup>161</sup> When crashes have become so commonplace, it can become easy to briefly feel the pain and move on with our lives until the next one, but it is critical that we do not become desensitised or defeated. This cannot become accepted as normal. We must remember that one preventable death or injury is too many.

Basic traffic engineering is not something the general public should have to be concerned with, but the current situation is unacceptable and the only way action will occur is through public advocacy. It should be apparent by this point that those we blindly trust to protect us are failing. As one article stated, "the same message has been echoed each time from the loved ones of the victims — change is needed."<sup>162</sup> Ironically, that article followed the others before it by focusing on attacking road users while deflecting from the responsibilities of engineers, which is exactly the thing that needs to change. Things will only get better once we stop seeing police, engineers, politicians, and other institutions as purely advocates for road safety rather than parties that can be just as much at fault as anyone else, and often in a conflict of interest.

One of the hindrances to progress has been that Winnipeg has such a plethora of deficient engineering that advocacy efforts become easily fragmented. It has gotten so bad that basic

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<sup>161</sup> Caley Ramsay, "Memorial to be held for young boy struck and killed by school bus", *Global News* (28 September 2013), online: <<https://globalnews.ca/news/869944/memorial-to-be-held-for-young-boy-struck-and-killed-by-school-bus/>>.

<sup>162</sup> *Supra* note 35.

issues have taken so much attention and yet remain uncorrected. This article has taken a great amount of work to prepare and time for the reader to digest which could have been spent advocating other issues. Instead, it has become so overwhelming that it becomes easy for each issue to take attention from the others to the point that nothing gets accomplished when having to debate basic points.

Until we have proper awareness and advocacy, there will be no incentive for change. The current milieu allows those responsible to remain entirely unaccountable as the culture deflects the blame. This is just part of the pattern that has and continues to occur with construction zones where inadequate engineering was a causal factor in a crash, but only the driver was blamed. Meanwhile, governing bodies continue to make millions from ticket revenue from a problem they are in part to blame for. To date, there has been no addressing of the inadequate signage that is continually being complained about,<sup>163</sup> with the most recent construction zone crash again involving police only making references about driver behaviour.<sup>164</sup>

The time for talking and studies has ended; it is time for action. Our own mayor claims to be committed to discussing ways to improve safety following the Isabel crash,<sup>165</sup> but even these discussions would be too little too late. The response needed is to follow through with spending \$500 to have Public Works implement the improvements that their own report calls for on Isabel Street, and then immediately apply the corrections universally to all corridors. If corridors are ever fixed, it would only be the correcting of one of several issues plaguing Winnipeg's traffic engineering. Raising fines, more enforcement, and more blaming of road users has all been done for decades. It is good politics and a major revenue generator, but from a safety perspective, something else is needed. Institutions like MPI which raise rates, and police who profit directly from traffic tickets, need to rethink their priorities.

It was a nice gesture by the city to put up honorary signs naming the St. Anne's corridor after the child that was killed.<sup>166</sup> That child could much better be honoured by correcting the engineering deficiencies across the city so that the next time, there may not be a child killed to honour. The remaining question is how many more people will have to die before road safety is taken seriously?

*"These are the kind of thoughts that kept me out of the really good schools." -George Carlin*

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<sup>163</sup> Michael Czuboka, "Road Rage", *Winnipeg Free Press - Letters to the Editor* (24 September 2016), online: <[https://www.winnipegfreepress.com/opinion/letters\\_to\\_the\\_editor/letters-and-comments-sept-24-394662611.html](https://www.winnipegfreepress.com/opinion/letters_to_the_editor/letters-and-comments-sept-24-394662611.html)>.

<sup>164</sup> "Construction worker in Winnipeg hospital after being struck by car, police say", *CBC News* (28 September 2019), online: <<https://www.cbc.ca/news/canada/manitoba/pedestrian-struck-car-winnipeg-1.5301503>>.

<sup>165</sup> *Supra* note 73.

<sup>166</sup> *Supra* note 107.

**\*\*NOTES\*\***

An earlier version of PART 1 of this work was put online in October 2019 and was shared through social media. Within two days of that release, eye-level beacons were installed at the Isabel Street corridor. Other corridors have also gotten eye-level beacons in and since October 2019, including the one on Colony Street that is pictured in PART 1 and discussed in more detail in PART 6. Others are two on Corydon Ave, one on Ellice Ave, one on Sherbrook Street, one on Roblin Blvd, and another one on St. Anne's Road. There may be more, but these are the ones I am aware of as of January 2020 at which time 9 out of 177 corridors have eye-level beacons installed. This work was not updated to reflect those changes as there is no way of knowing how much of it was in response to PART 1's early release.