November 11, 2024

Regional Council, Region of Waterloo, Ontario

Re: Improving pedestrian safety on Regional roads and intersections

Members of Regional Council,

A spate of collisions last winter led to an open letter of concern[1] to mayors, police, and the Regional Chair in January. CBC reported[2] that in a little over 2 months, there were 38 pedestrians struck by vehicles. Most were on Regional roads, and an alarming fraction were at designated crossings and intersections. They say admitting you have a problem is the first step.

We already know from here[3] and elsewhere in Canada that intersections are hazardous for pedestrians:

- York Region found[4] "More than 80% of collisions involving pedestrians occur at signalized intersections" due to "a high rate of conflict points between vehicles and pedestrians."
- Toronto found[5] that in 2022 and 2023, 53% of fatal and serious injury crashes for pedestrians occurred at signalized intersections – an increase from their 2019 analysis.

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[1] Shellnutt, D. (2024, January 8). Waterloo Region: Pedestrians in Peril. https://www.thebikinglawyer.ca/post/copy-of-kitchener-waterloo-cyclists-vulnerable-road-users-in-peril

[2] Chaarani, J. (2024, January 11). Amid a string of pedestrian traffic collisions, some activists call for change in Waterloo region. *CBC News*. https://www.cbc.ca/news/canada/kitchener-waterloo/cyclewr-pedestrians-hit-by-drivers-waterloo-region-1.7080703

[3] Regional Municipality of Waterloo. (2020). 2020 Collision Report. Transportation Division, Transportation & Environmental Services Department. https://www.regionofwaterloo.ca/en/living-here/resources/Documents/Future-Construction/2020-Annual-Collision-Report.pdf

[4] York Region. (2022). Traveller Safety Report, 2022. Transportation, Public Works. https://www.york.ca/media/116506/download

[5] City of Toronto. (2019). Vision Zero 2.0 - Road Safety Plan Update, Attachment 9: Killed or Serious Injury Collisions Trends by Emphasis Area. https://www.toronto.ca/legdocs/mmis/2019/ie/bgrd/backgroundfile-134993.pdf

- Halifax found[6] that 34% of crashes involving pedestrians occurred at signalized intersections in 2022.
- Ottawa, Vancouver, Hamilton, Durham – it's the same story everywhere: pedestrians are not safe at intersections.

Many of these reports also identify the same solutions, such as traffic control improvements (disallowing right turns on red lights, dedicated left-only signals, red light cameras, etc). In addition to those, I want to highlight a key physical design change we need.

Multiscale Analysis of Pedestrian Crossing Distance (2024)[7] highlights a critical gap in pedestrian safety at intersections – literally. This study analyzed over 49,000 crossings across multiple cities, discovering a clear and dangerous link between long pedestrian crossing distances and the likelihood of collisions causing severe injury or death. In Irvine, California, for example, pedestrian crossings averaged 58 feet – twice as long as those in Paris – and collisions occurred 43% more often at these longer crossings. Crossing distance isn't just about inconvenience – it can be a matter of life or death.

These findings shouldn't be that surprising – it should be obvious in retrospect that long pedestrian crossings expose people to greater risks. The more time a person spends crossing, the greater their exposure to vehicles, increasing their chances of being struck.

The Region of Waterloo already has many large, dangerous intersections, and the collisions to prove it. We must stop adding any more overly-large intersections, and start fixing the ones we already have. Shortening crossing distances is one of the most immediate, cost-effective measures to improve safety. Every additional foot of crossing distance escalates the likelihood of a collision, and the escalation increases with crossing distance. The added risk from the 50th foot is more than the added risk from the 20th foot. This means that shrinking the largest crossing distances should have an outsized impact on reducing risk for pedestrians.

Multiscale Analysis of Pedestrian Crossing Distance provides a methodology for identifying high-risk intersections. "Quantifying pedestrian crossing distance at the scale of entire municipalities empowers transportation planners to identify pedestrian-hostile crossings

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[6] Halifax Regional Council. (2023). Strategic Road Safety Plan, 2023 Annual Report. Road Safety & Transportation. https://cdn.halifax.ca/sites/default/files/documents/city-hall/standing-committees/230727tscinfoitem2revised2.pdf

[7] Moran, M. E., & Laefer, D. F. (2024). Multiscale Analysis of Pedestrian Crossing Distance. Journal of the American Planning Association, 1–15. https://doi.org/10.1080/01944363.2024.2394610

(individuals and clusters), add context to collision trends, and geographically target locations for traffic calming." Regional Council should direct the Region's traffic engineers to apply these data analysis techniques to identify hazardous intersections, and provide them with funding to implement immediate mitigations.

Long pedestrian crossings are a result of road designs that prioritize vehicle speed and volume over safety. This is certainly true for Regional roads, which are deliberately engineered this way. Narrowing lanes, reducing speed limits (and traffic calming to actually slow drivers down), eliminating right turn on red lights, and using raised crosswalks are all proven methods to protect pedestrians, and make our streets more welcoming, and safer, for everyone. The Region's new Advanced Traffic Management System should be able to implement conflict-free signaling. Or go further, and support two-stage pedestrian crossings, which allow traffic to continue moving while pedestrians cross the first half to a bollard-protected refuge island. Then, when traffic in the second half of their crossing is halted, pedestrians receive a signal to complete the second half of their crossing. Breaking the crossing into shorter sections is safer and better for everyone.

In Waterloo Region, we have an opportunity to become a leader in road safety, protecting not just pedestrians, but cyclists, drivers, and everyone who uses our roads. Kitchener is leading the way, but the most dangerous roads and intersections in the city are in Regional jurisdiction. Please give your traffic engineering department the direction and resources to adopt solutions that prioritize safety, particularly reducing pedestrian crossing distance.

Thank you.

Mike Doherty <mike@mikedoherty.ca>

Enclosures