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September 03, 2014

Ontario Ministry of Transportation
Traffic Office
301 St. Paul Street, 2nd Floor South
St. Catharines, ON L2R 7R4

Dear Ali Hadayeghi,

RE: Draft Ontario Traffic Manual Book 15 on Pedestrian Crossing Treatments

On behalf of the Ontario Public Health Association (OPHA), I want to thank the Ministry for the opportunity to comment on the draft Ontario Traffic Manual Book 15 on Pedestrian Crossing Treatments.

OPHA is a member-based not-for-profit that has been advancing public health within Ontario for 65 years. As a public health stakeholder, OPHA has a major interest in promoting sustainable and healthy transportation systems because an increased reliance on motor vehicles is negatively associated with health and environmental issues such as poor air quality, obesity, cardiovascular disease and cancer. Furthermore, the promotion of safe walking environments is central to the adoption of healthier modes of transportation and the prevention of injury and chronic disease in Ontario.¹

We would like to highlight the positive aspects of Book 15 that are likely to improve pedestrian safety. These include the following:

- The draft encourages consistency and enables local municipalities to implement pedestrian crossing facilities below the minimum pedestrian volume and pedestrian delay criteria previously described in the Ontario Traffic Manual Book 12.
- The consideration of system connectivity and pedestrian desire lines as criteria for the provision of pedestrian crossings (section 5). This adds opportunities for municipalities to enhance pedestrian connections when contextual and planning considerations are more important than traffic counts.
- From a health equity and accessibility perspective, Book 15 is quite comprehensive by continuously referencing the Accessibility for Ontarians with Disabilities Act (AODA) and containing clear and concise definitions of technological and concrete adaptations for accessible pedestrian crossings (e.g. section 2.3).
- Standard recommendations for treatments such as exclusive pedestrian phase, rectangular rapid flashing beacons and illumination recommendations for controlled crosswalks
- Book 15 also identifies that walkability encourages a healthier lifestyle and increased walking trips as a means of contributing to a more sustainable and healthier community (sections 3.3.2. and 4.3).

Recommendations

Book 15 could be strengthened by incorporating a more explicit discussion of complete streets and traffic calming as ways to influence safety for all road users. While sections 3.3 and 3.4 ("Understanding of Safety" and "Road User Characteristics") do a reasonable job of outlining factors that influence safety both from a driver and walker perspective, the rest of Book 15 needs to incorporate

pedestrian crossing treatments as part of a more comprehensive complete streets approach that takes into consideration the safety of all road users. Evidence suggests that as numbers of walkers and cyclists increase, rates of collisions decrease.² With these points in mind, we make the following recommendations for changes to Book 15 in order to raise the priority of pedestrians in the transportation planning hierarchy.

1. **Consider providing more flexibility for municipalities to install pedestrian crossings treatments when the 8- or 4-hour volume or the minimum distances between traffic signals criteria are not met.** Opportunities to do this below the aforementioned thresholds include:
 - 1.1. Additional system connectivity or pedestrian desire line criteria below the thresholds,
 - 1.2. The possibility of piloting pedestrian treatments in situations that are below the thresholds, and
 - 1.3. Installing pedestrian crossings as the result of community consultation or requests.

The primary principle of Book 15 appears to be to not interrupt motor vehicle flow unless necessary. The main decision making criteria are therefore defined as thresholds of existing pedestrian and traffic volume counts, which if unmet, can become barriers for implementation of pedestrian crossings. The distance between traffic control devices becomes an additional threshold barrier in some scenarios. In section 5, the justification based on connectivity requirements or pedestrian desire lines could allow local municipal staff to consider pedestrian crossings even when some of the other criteria are not met. However, in areas below the 8-hour or 4-hour traffic volume requirements, there is no option to install pedestrian crossings (PXO) when the distance from another traffic control device is less than 200 metres (figure 3 in section 5). Overall, this rationale effectively limits the capacity of local jurisdictions to assess other contextual elements, including public support, to provide safe pedestrian crossings when not fully 'warranted'.

2. **Explore options to enhance and better communicate the role of reduced speed limits and traffic calming to provide a safe environment for all road users, including pedestrians and drivers. This would include the possibility of providing controlled or uncontrolled crossings in combination with traffic calming measures when motor vehicle speeds are equal to or below 40 kilometres per hour (km/h).** Book 15, as illustrated in the decision support tool described in figure 3 (section 5), fails to identify pedestrian crossing options when the traffic volume criteria are not met but motor vehicle speeds can be 40 km/h or lower. This is important because many downtown and residential roads may fall within this category. In the current draft, traffic calming and reduction of speed limits are mentioned only tangentially as safety improvements strategies (see for instance section 6, page 40, or section 7, page 117, where advance markings, warning signs, curb extensions, or speed tables for uncontrolled intersections are mentioned without a full discussion of strategies to reduce motor vehicle speeds to enhance pedestrian safety and connectivity).

Book 15 would benefit greatly from considering a broader range of pedestrian crossing options when motor vehicle speeds are equal or below 40 km/h and/or traffic calming measures are concurrently implemented. In section 5.1.2, Book 15 quotes research conducted by Zegeer et al.³ to discuss the assessment of pedestrian crossover based on traffic volume, crossing distance and pedestrian system connectivity. While these three factors are very important, there is no acknowledgement that this study assessed very few marked crosswalks with any type of supplemental pedestrian warning signs, traffic calming measures, or special treatments (such as in-pavement flashing lights) and that 93 percent of the study sites had speed limits of 40.2 to 56.3 km/h. This would make the study's conclusions about unmarked crossings only applicable for circumstances with posted speeds of more than 40 km/h and multiple lanes. Zegeer et al. add that in some situations (such as low speed, two-lane streets in downtown areas) installing a marked crosswalk may help consolidate multiple crossing points. Moreover, the study recommended improvements, such as adding traffic signals with pedestrian signals when warranted, providing raised medians, and speed-reducing measures. Book 15 rightly mentions that "[t]he higher the vehicular speed at the time of impact, the higher the probability of fatality of pedestrians." (table 3 in section 3) However, the decision support tools and pedestrian crossing applications do not fully incorporate speed control as a measure to improve safety on roads with two lanes or less.

3. **Consider enhancing the options for the provision of pedestrian crossings in rural areas (section 5 – “Treatment System Selection for Controlled Crossings”).** In Ontario, while the vast majority of fatal pedestrian collisions occur in urban areas, the ratio of fatalities to injuries in rural areas is much higher than in urban areas because of higher speeds on rural roads.⁴ However, in the current selection criteria in section 5, the high weight given to pedestrian and motor vehicle volume is greatly biased against rural settings where there is greater risk of fatal collisions despite lower traffic volumes.

Book 15 recommends a minimum of 100 metres separation from the nearest controlled crossing for uncontrolled crossings (section 7) or 200 metres for controlled crossings (sections 5 and 6). However, in small rural towns, where the main streets are short, maintaining these distances may not be feasible. In some rural downtown areas, the perception of distance can make pedestrians cross before reaching the nearest pedestrian crossing on a street that may be only 200 metres long. Furthermore, many small town downtown roads with speed limits of 40 km/h or lower would be good candidates for a combination of traffic calming and either marked and unmarked crossings placed at shorter intervals.

The Ontario Traffic Manual Book 12, section 5.2.1 (page 34) indicates that Mid-block Pedestrian Signals must be restricted to roadways posted at less than 80 km/h. However, this misses the opportunity to improve safety in rural areas where intersections are not very frequent and speed could be posted at 80km/h. If the volume of vehicles is low enough to assume that pedestrians will find a gap in traffic, it is unlikely that a controlled pedestrian crossing will affect motor vehicle traffic flow.

4. **Book 15 should suggest alternative means of measuring pedestrian demand or safety in either the pedestrian treatment selection or their evaluation.** By relying on current pedestrian counts, the recommendations of Book 15 do not identify crossing options where the potential for walking is deterred by poor and unsafe pedestrian connectivity (i.e. section 5.1.2). People are not going to be crossing a road if facilities are not pedestrian-friendly, the motor vehicle traffic is too high, or pedestrian facilities do not exist. It is unclear if the reference to pedestrian connectivity or desire lines would suffice to overcome this gap. This overreliance on existing pedestrian counts is analogous to assessing the need for a motor vehicle bridge by counting the number of cars that drive over a river; no facility means no activity!

Complementary evaluation measurements should be suggested, for instance diversity of road users, mode of transportation to support surrounding types of land use, relative risk by facility type and transportation mode split. As an example, section 3.3 describes quantifying safety by the comparison of average collision frequency to the statistically estimated collision frequency for a given facility (pages 13 and 14). While this approach is very valuable to identify potential for improvements within a particular facility type, it should be complemented by comparison of collision risks across facilities. Otherwise, the relative risk of a facility will not be identified. Furthermore, if walking is to be considered an integral part of a transportation system that complements public transit, cycling and driving, the transportation mode split should also be included when an area is assessed.

5. **Consider adopting ladder crosswalks as the standard default option for all pedestrian crosswalks. Section 6.2.4.4 refers to parallel crosswalk lines as standard crosswalk markings.** Figures 14, 15, 16, 17, 18, 19, 20 and 21 also show parallel lines as default examples (as opposed to ladder crosswalks). There is a growing body of literature indicating that ladder crosswalks provide higher visibility and can improve safety. Furthermore, there is little clarity on the research basis for the affirmation in section 6.2.4.5 (ladder crosswalk markings, on page 51) that “[c]are should be taken to avoid excessive use of ladder crosswalks in order to retain their effectiveness in gaining the particular attention of motorist to the potential presence of pedestrians.” By contrast, there is research suggesting the advantages of standardizing ladder crosswalks in controlled intersections.⁵ The above statement from page 51 also contradicts the Book 15 intent of providing uniformity of approaches across Ontario.

6. **Complementing the suggestions above, the general language of Book 15 can also be improved to clearly reflect that all road users have the same rights, as opposed to traditional approaches that favour motor vehicle transportation.** Some examples of areas in which this can be done are:
 - 6.1. The Foreword section currently reads “The objective is safe driving behaviour, achieved by predictable roadway environment.....” (Page I, Pg. I 6th line down). It could read “The objective is safe behaviour for all road users....”
 - 6.2. In Table 4 (“Walkability Considerations”), under perceived safety and security of the route (page 4), the lack of crossing facilities at a convenient distance is a missing factor that could be added to the bullet point list of issues.
 - 6.3. In section 3.4 (“Road User Characteristics”, page 17), there is a bullet point indicating that driver response to unanticipated pedestrian movements is a contributing factor to collisions. This phrase labels pedestrian behaviour as ‘unexpected’ and suggests it triggers collision events. This does not take into account the fact that in Ontario, while 33% of fatally injured pedestrians acted in a manner which caused or contributed to the crash, the same percentage (33%) of fatally injured pedestrians were struck by a driver who had committed a traffic infraction prior to the crash.²

7. **The updates to Book 15 should be consistent with amendments proposed to the Highway Traffic Act (HTA) in the Highway Traffic Amendment Act that was originally tabled by Minister Glen Murray.** We trust that this act will be reintroduced in the legislature. Currently, the HTA specifies offenses involving failing to yield the right of way, and does not require motorists to stop for pedestrians at crosswalks marked only with white lines and/or signage. In 2012, the Chief Coroner’s Pedestrian Death Review recommended amendments to the HTA to promote the adoption of lower speed limits and additional pedestrian crossing options.⁴

We thank the Ministry for the opportunity to provide input and we would welcome further consultation to continue to advance road safety in Ontario. Our Built Environment Workgroup (BEWG) can be reached through Sue Shikaze, co-chair of the BEWG at 705-457-1391 ext 3249 or sshikaze@hkpr.on.ca.

Yours Sincerely,



Pegeen Walsh
Executive Director
Ontario Public Health Association

¹WHO. Pedestrian Safety: a Road Safety Manual for Decision-Makers and Practitioners [Internet]. Geneva: World Health Organization; 2013.

²Jacobsen PL. Safety in numbers: more walkers and bicyclists, safer walking and bicycling. *Injury Prevention*. 2003 Sep 1;9(3):205–9.

³Campbell, B J, Zegeer, CV, Huang, H H, Cynecki, M J. A Review of Pedestrian Safety Research in the United States and Abroad, November 2003 - FHWA-RD-03-042 [Internet]. Federal Highway Administration; 2004. Report No.: FHWA-RD-03-042. And, Zegeer CV, Carol Tan Esse, Stewart JR, Huang HF, Lagerwey P. Safety Analysis of Marked Versus Unmarked Crosswalks in 30 Cities. *Institute of Transportation Engineers ITE Journal*. 2004 Jan;74(1):34–41

⁴Office of the Chief Coroner for Ontario. Pedestrian Death Review [Internet]. 2012 Sep. Available from: <http://news.ontario.ca/mcscs/en/2012/09/chief-coroner-releases-pedestrian-death-review.html>

⁵Fitzpatrick, K., S. Chrysler, V. Iragavarapu, and E.S. Park. Detection Distances to Crosswalk Markings : Transverse Lines, Continental Markings, and Bar Pairs. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2250 . Transportation Research Board of the National Academies, Washington, DC, 2011