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Item No. 2
Halifax Regional Council
September 1, 2020

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed
Brad Anguish, P.Eng., Director, Transportation & Public Works

Original Signed by 
Jane Fraser, Acting Chief Administrative Officer

DATE: July 23, 2020

SUBJECT: Restricting Right Turns on Red Lights

INFORMATION REPORT

ORIGIN

Item 12.3.1 raised at the September 26, 2019 session of the Transportation Standing Committee:

MOVED by Councillor Cleary, seconded by Councillor Austin THAT the Transportation Standing Committee request a staff report that assess the potential benefits to vulnerable road users of restricting right turns by all or various vehicles on red lights at either all intersections or intersection at and/or near areas of pedestrian concentration including, but not limited to, pedestrian-oriented main streets, schools, community and recreation centres, libraries, parks, and other significant public spaces.

MOTION PUT AND PASSED.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, subsection 321(8), "The traffic authority for the Municipality has, with respect to highways in the Municipality, excluding those for which the Provincial Traffic Authority has authority, the powers conferred upon a traffic authority by or pursuant to the Motor Vehicle Act."

Nova Scotia Motor Vehicle Act subsections 90(4), 93 (2):

- 90 (4) The traffic authority may erect and maintain signs prohibiting altogether or between specified hours, either left turns or right turns or both at any intersection or prohibiting turning around in any block or specified area of the highway.

93 (2) The drivers of vehicles, pedestrians, and all other traffic approaching or at an intersection or on a part of the highway controlled by any of the traffic signals mentioned in subsection (1) shall act in obedience to the traffic signals in accordance with the following instructions:...

(e) red light – all traffic facing this signal shall stop at the place marked or the nearest side of the crosswalk but not past the signal and shall remain stopped while facing this signal, provided that vehicular traffic may...

(ii) if a stop is first made and the movement can be made in safety and is not prohibited by sign, proceed to make a right turn,....

But, in each case, vehicular traffic shall yield the right of way to pedestrians lawfully in a crosswalk and all other traffic lawfully proceeding through an intersection or on a highway.

BACKGROUND

The Nova Scotia Motor Vehicle Act (MVA) provides for drivers to perform a right turn facing a red signal, provided a stop is first made, the turn can be made safely, and if the movement is not prohibited by a sign. Therefore, this type of movement is similar to right turns at stop-sign controlled intersections.

The MVA provides the ability for the Municipal Traffic Authority to erect and maintain signs prohibiting right turns at any intersection, including prohibitions to right turns on red signals at any or all signalized intersections.

The idea of restricting right turns on a red signal as a means of improving safety for vulnerable road users at all or at a select group of signalized intersections has been put into effect in other North American jurisdictions. There is, however, limited data evidence to support the need for, or to quantify the effectiveness of, such restrictions on a system-wide basis. An informational report by The Institute of Transportation Engineers on the current state of practice is expected late 2020.

Montreal Island is the only area in Canada where a blanket right turn on red prohibition exists. In 2003 the Quebec Ministry of Transportation made the decision to allow right turns on a red signal, unless expressly prohibited by signage. This decision was made after a pilot study allowing right turns on red had shown there was no significant impact to the number of collisions due to right turns facing a red signal. Montreal Island is the only area where the restriction was maintained through signage at all entrances to the Island and at the airport.

DISCUSSION

The Province of Nova Scotia and Halifax Regional Municipality follow guidelines from the Transportation Association of Canada (TAC) Manual of Uniform Traffic Control Devices for Canada on where the Right Turn on Red Traffic Signal Prohibited sign should be considered. These guidelines are based on best practices of Canadian jurisdictions and ensure consistent application of restrictions only where required following engineering review. Following these guidelines, the Right Turn on Red (RTOR) prohibition may be appropriate if any of the following conditions exist:

- a) Inadequate sight distance or restrictive geometrics.
- b) Irregular intersection with more than four approaches and multi-phase control.
- c) Conflicts with an exclusive pedestrian phase.
- d) The existence of unusual movements such as double left turns by opposing traffic or double right turns.
- e) A history of right turn on red collisions on a particular approach.
- f) The proximity of a railroad crossing with signal pre-emption on that approach.

Based on these guidelines, the Municipality has installed RTOR restrictions on one or more approaches at 23 signalized intersections. Most recently, 'No Right Turn on Red' signs had been installed at the signalized intersections along the South Park protected bike lane on the approaches where protected bike boxes had been implemented.

Available pedestrian collision data from 2015 to 2019 indicates that right turn vehicle maneuvers account for approximately 9.4% of all pedestrian-related collisions at signalized intersections. This includes right turns on a red signal as well as right turns on a green signal totalling 79 collisions. The attributes of the collision data do not easily provide for analysis of only right turn on red collisions. Conducting a statistically sound study to quantify the safety risk would be difficult without the ability to fully separate collisions with right turning vehicles under RTOR or under green display, and without the ability to distinguish the pedestrian (or cyclist) movements preceding a collision. This level of analysis relies on the amount of detail responding officers include in the collision reports.

Collision reports containing enough information to determine whether the collision was related to a right turn on red were available for only 39 of the right turn pedestrian collisions at signalized intersections over the five-year period. Nineteen of these were confirmed as RTOR related. Collision reports were not available for 35 of the right turn collisions given restrictions to access to the hard copies due to Covid-19 office closures. Five collisions had collision reports available with insufficient detail to determine the nature of the collision.

In the current permissive RTOR scenario, the potential for conflict exists between pedestrians approaching from the right in the crosswalk perpendicular to the vehicular approach and the driver monitoring for a gap in traffic approaching from the left. On a multi-lane approach, these drivers may often encroach into the perpendicular crosswalk to look for a gap in approaching traffic. The speeds of vehicles are very low, however, given the requirement for vehicles to stop before proceeding. For this reason, potential severity is low.

Restricting right turns to only occur on the green signal shifts a greater risk of conflict to the parallel crosswalk, where vehicles are accelerating through the turn, and the attention of the driver is potentially shared between opposing left turning traffic and pedestrians in the crosswalk.

Where leading pedestrian intervals (LPI) are implemented at select signalized locations, there could be potential for conflict between pedestrians crossing the parallel crosswalk on the leading walk phase and the driver turning right on a red phase, not anticipating pedestrians crossing on a red phase at the same time. Static or dynamic No Right Turns on Red signs are often considered to control right turns on red so that pedestrians get the full advantage of an LPI, though it is not required in all cases and should be considered on a case by case basis where this conflict is identified.

There are several things to consider when it comes to an overall restriction of right turns on red:

- 1) Given the current legislation allowing right turns on a red signal following a stop, additional signage would be required on all approaches at every signalized location. There are currently 274 signalized intersections.
- 2) There are an additional 30 signalized intersections which are under provincial jurisdiction. A consistent system-wide restriction to right turn on red would require approval from the Provincial Traffic Authority for those locations with applicable pedestrian crossings.
- 3) Allowing right turns only on the green signal, along with the corresponding through and left turn movements, and at the same time as the pedestrian walk phase puts all the conflicting movements competing for green time. This increases the risk of collisions by right turning vehicles. Whereas, currently they need to stop and only proceed when safe to do so.
- 4) With right turns permitted only on a green signal the increased conflict at the parallel crosswalk during the green and corresponding walk phase is coupled with an increased risk of severity due

to vehicles accelerating through the crosswalk. Whereas in the RTOR scenario the potential conflict in the perpendicular crosswalk occurs from a stop position.

- 5) Additional analysis and signal timing modifications would be required to account for the reduced capacity for right turns. This is of greatest concern where there are heavy pedestrian volumes and heavy right turning volumes.
- 6) Undue delay at signalized intersections without significant pedestrian volumes to justify RTOR restrictions may lead to driver frustration and non-compliance.

The intended approach of Traffic Management staff and the Traffic Authority moving forward involves:

- 1) Strategic placement of RTOR restrictions where the need exists; where a safety issue is noted and where the delays to right turning vehicles would not create additional safety concerns.
- 2) Monitoring of RTOR operation where an LPI exists to develop guidelines detailing when/where it should be prohibited.
 - i) the ten (10) signalized locations with existing LPI operation will be assessed first to determine whether RTOR restrictions should be considered as an additional safety requirement.
- 3) Identify opportunities for targeted enforcement through analysis of collision data. This could include increased enforcement of the need to stop before entering the intersection on a red light.
- 4) Review the current state of practice documented in the ITE informational report when it is available later this year.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report. Funding for the installation of traffic signs at locations deemed appropriate by the Traffic Authority is included in the approved operating budget.

COMMUNITY ENGAGEMENT

Community engagement is not deemed necessary. This report is related to internal policy.

ATTACHMENTS

None.

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

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