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Item No. 1
North West Community Council
February 08, 2016

TO: Chair and Members of North West Community Council

Original Signed

SUBMITTED BY:

Bruce Zvaniga, P.Eng., Director, Transportation and Public Works

DATE: January 5, 2016

SUBJECT: Signalization at the Intersection of Windgate Drive and Beaver Bank Road

INFORMATION REPORT

ORIGIN

During the November 16, 2015 meeting of the North West Community Council, Councillor Johns requested:

THAT North West Community Council waive the rules with respect to notice of motion and request a staff report for the consideration of Halifax Regional Council to include the installation of traffic signalization at the intersection of Windgate and Beaver Bank Roads as part the 2016/17 Capital Budget.

LEGISLATIVE AUTHORITY

Part I, Section 21, "Standing, Special and Advisory Committees";

Part XII, Section 321 (8), "Traffic Authority" of the HRM Charter: "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*"; and

Part XII, Section 322 (1), "Street Related Powers" of the HRM Charter: "The Council may design, layout, open, expand, construct, maintain, improve, alter, repair, light, water, clean, and clear streets in the Municipality".

BACKGROUND

Beaver Bank Road is a two-lane, arterial roadway running in a general north/south direction providing the communities of Beaver Bank and Kinsac with connections to the community of Lower Sackville, Sackville Drive and Highway 101. The roadway has separate left-turn lanes at major intersections, concrete curb and sidewalk along one side and gravel shoulder on the other, with the treatment switching sides between major intersections. Direct access for residential and commercial properties is provided along the entire length of the road and the posted speed limit is 50 km/h from Sackville Drive to just north of Woodbine Drive where it changes to 70 km/h. Traffic volume on Beaver Bank Road is in the range of 14,000 – 15,000 vehicles per day (vpd).

Windgate Drive is a two-lane, major collector roadway running in a general east/west direction providing a connection to the communities of Beaver Bank, Kinsac, Lower Sackville, Windsor Junction and Fall River. The roadway has a rural cross-section with gravel shoulders and direct access to residential and commercial properties is provided along its length. The posted speed limit is 70 km/h and there is a railway running parallel to the road on the south side. Traffic volume on Windgate Drive is in the range of 3,000 – 4,000 vpd.

The intersection of Beaver Bank Road and Windgate Drive is a skewed T intersection (does not meet at a right angle) with stop control on Windgate Drive. There is a southbound left-turn holding lane on Beaver Bank Road and a single exit lane on Windgate Drive shared by left and right turning vehicles. The railway running parallel to Windgate Drive crosses Beaver Bank Road diagonally through the intersection and there are railway crossing signals installed on all three intersection approaches.

DISCUSSION

Traffic Management staff has been contacted regarding delays experienced by drivers turning left from Windgate Drive onto Beaver Bank Road and the queuing that results. Typically, these concerns are accompanied by a request to have traffic signals installed in order to reduce the delay experienced by drivers on Windgate Drive. In response to the concerns and requests received, Traffic Management staff has carried out several traffic signal warrants as well as undertaken assessments of left-turn delay and visibility.

HRM uses the Canadian Matrix Traffic Signal Warrant Analysis developed by the Transportation Association of Canada (TAC) when determining whether traffic signals are warranted at an intersection. The national guideline requires that a location generate 100 points in the warrant matrix before traffic signals are considered for installation. These points depend on characteristics such as traffic and pedestrian volumes and movements, number of travel lanes, speed and proximity to adjacent traffic signals. The following table provides a summary of the last five signal warrant assessments conducted at this intersection.

Year	Warrant
2005	68
2006	60
2007	59
2010	68
2015	60

As the table illustrates, the warrant has remained quite consistent over the period identified which would indicate that conditions have also not changed. Further to this, the following table outlines historic traffic volume in this area which confirms that conditions have remained fairly stable.

	Average Weekday Traffic Volume by Year				
	2009	2010	2011	2012	2013
Beaver Bank Road	14,172	13,707	14,834	15,318	14,716
Windgate Drive	3,496	4,299	3,603	3,586	3,046

In addition to the traffic signal warrants, staff assessed the delay to left-turning vehicles exiting Windgate Drive. The assessment looked at a 30 minute period in both the am and pm peaks that had the highest number of vehicles turning left from Windgate Drive, which also coincided with high volumes on Beaverbank Road. Delay to left-turning vehicles was found to average approximately 15 seconds for both the am and pm periods, with the majority of vehicles experiencing delay of 20 seconds or less. Considering the left-turn volume from Windgate Drive is less than 100 vehicles during the busiest peak hour, this level of delay would not be considered excessive and would be fairly typical for a stop controlled intersection at a major roadway.

Although the intersection is skewed there is good visibility to the intersection for vehicles travelling on Beaver Bank Road and a clear view of Beaver Bank Road can be achieved by drivers on Windgate Drive as they are able to pull forward past the stop bar without encroaching on the travel lanes on Beaver Bank Road.

Notwithstanding the signal warrant results indicated above, another factor that would require consideration at this intersection would be the railway and associated warning system. The track runs diagonal across the intersection with warning lights present on all three intersection approaches. Because of the configuration of the crossing, the railway warning signals on Beaver Bank Road are installed on overhead arms. The location of this infrastructure makes placement of traffic signals at this location difficult. Properly placed traffic signal heads would either block, or be blocked by, the railway signals creating visibility issues with both the signal systems. Staff contacted a representative from the Windsor-Hantsport Railway with an inquiry regarding the status of the rail corridor in order to determine if it would be appropriate to pursue removal of the crossing and associated warning system. Based on information provided by the railway operator, they are investigating opportunities to resume operations on the corridor and so the crossing and warning system will need to remain in place.

Several measures have been taken over the years in an attempt to alleviate concerns received regarding this intersection. A southbound left-turn lane was added on Beaver Bank Road to address concerns related to delay and sideswipe collisions due to vehicles passing on the shoulder, trees and bushes along Beaver Bank Road were cut back to improve sight lines for vehicles exiting Windgate Drive and the speed limit on Beaver Bank Road was reduced from 70 km/h to 50 km/h in the area around the intersection.

A review of the collision history for the previous five years has shown that although the number of collisions in 2011 was high (nine (9) collisions, one of which was related to distracted driving), collisions have decreased every year since with there being only three (3) collisions in 2015 (one of which was related to distracted driving).

Regardless of the signal warrant analysis results, installation of traffic signals at this intersection is not currently included in the capital budget and given the time of year and time lines required to undertake the detailed traffic signal design and tender, it is unlikely such a project could be undertaken during the 2016 construction season.

Next Steps

Given repeated concerns related to this intersection staff feel it would be beneficial to have an in-service safety audit conducted at this location in order to determine if there are any specific factors that may not be obvious to staff and are contributing to the concerns at this intersection. This approach would help to

identify what, if any, modifications may be appropriate to be considered at this location. This audit should also consider assessment of the railway crossing warning system to identify if the current configuration is still appropriate given the level of activity on the rail line.

Staff will engage a consultant to carry out an in-service safety audit at this intersection in 2016/2017 with the results being reported back to the North West Community Council at the earliest opportunity. Based on a similar safety audit that was recently undertaken for another intersection within HRM, it is anticipated that the study cost would be in the range of \$5,000 - \$10,000.

FINANCIAL IMPLICATIONS

Based on a recent in-service safety audit undertaken for the Larry Uteck Boulevard / Kearney Lake Road intersection, it is estimated that the cost associated with conducting a similar assessment at the Beaver Bank Road / Windgate Drive intersection would be approximately \$8,500 (excluding HST).

Funding is available in the 2015/2016 Approved Operating Budget under account number R170 6303 – Consulting Fees.

COMMUNITY ENGAGEMENT

Community engagement was not deemed necessary as this request originated from Community Council as a result of resident input through the area Councillor.

ENVIRONMENTAL IMPLICATIONS

None identified.

ATTACHMENTS

None

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/index.php> then choose the North West Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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