



Town of Newmarket
395 Mulock Drive P.O. Box 328,
Newmarket, Ontario, L3Y 4X7

Email: info@newmarket.ca | Website: newmarket.ca | Phone: 905-895-5193

Bob Gapp Drive and Atkins Drive All-way Stop Review Information Report to Council

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Department(s): Engineering Services

Author(s): M. Kryzanowski, Manager, Transportation Services

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In accordance with the Procedure By-law, any member of Council may make a request to the Town Clerk that this Report be placed on an upcoming Committee of the Whole agenda for discussion.

Purpose

The purpose of this report is to outline the findings of the all-way stop review at the intersection of Bob Gapp Drive and Atkins Drive.

Background

At the regular meeting on March 2, 2020, Town Council adopted the following recommendation:

“7. That Staff provide Council with data regarding All-Way Stop warrants related to Bob Gapp Drive and Atkins Drive, including modelling the anticipated near-term growth”

The near-term growth refers to the subdivision in the Town of Aurora, whose residents would use Bob Gapp Drive as their primary access. The subdivision is under construction, with only a few model homes currently built, but is planned to have slightly over 100 homes.

Discussion

Bob Gapp Drive is a residential collector road with sidewalks on both sides of the street. Atkins Drive is a “split-classification” street, having a residential collector designation west of Bob Gapp Drive (demarcated by the sidewalks on both sides of the street), and a local residential road designation east of Bob Gapp Drive. For the purposes of the all-

way review warrant process, the classification of Atkins Drive is not required since Bob Gapp Drive is the main residential collector road.

The residential subdivision in the Town of Aurora, known as Copper Valley, is currently under construction. It will eventually contain approximately 106 homes. The access to and from this subdivision will be via Bob Gapp Drive in Newmarket. For the purposes of this analysis, today's traffic counts from this subdivision would be very low and not representative of the conditions to be expected after a full build-out; therefore, an estimation of the traffic to be expected from the fully built future subdivision will be applied to the analysis.

This all-way stop review will be undertaken in a similar fashion to a traffic impact study. More specifically, the Bob Gapp/Atkins intersection will be analyzed with the existing count to create the base-case scenario. The future traffic from the Aurora subdivision will be compared to the existing traffic numbers, using two separate scenarios. Finally, the existing traffic volumes, plus the expected subdivision traffic volumes, will be analyzed to create a future traffic scenario.

Base Case Scenario

To start the All-Way Stop review that was directed by Council, a 5-hour traffic count was undertaken at the intersection of Bob Gapp Drive and Atkins Drive in September 2020. The traffic count was performed in conformance with the Town's Transportation Management Policy, which requires that vehicle turning movements and pedestrian activity be collected between 7:00 AM and 9:00 AM and between 3:00 PM and 6:00 PM.

The subject intersection was then analyzed to determine if the All-Way Stop warrants are met. The All-Way Stop warrant consists of three (3) parts. The first part addresses the future signalization of intersections. This part does not apply to this case, since traffic signals are not planned for any of the Bob Gapp Drive intersections.

The second part of the All-Way Stop warrant examines the frequency of recorded vehicle collisions in, or adjacent to, the intersection for the twelve (12) month period prior to the review. A records search indicated that no vehicle collisions were reported within the intersection during that period.

The third part of the warrant deals with both traffic and pedestrian volumes on the major (Bob Gapp Drive) and minor (Atkins Drive) streets of the intersection. Accordingly, staff obtained counts for the total number of vehicles and pedestrians approaching the intersection on an hourly basis and the average volume on the minor street.

The results of the all-way stop warrant analysis confirmed that the all-approach volume reached only 17% of the required minimum warrant volume of 500, and the minor street volume was only 36% of the required minimum warrant volume of 200. Therefore, the intersection under its current conditions, or base case scenario, does not meet the warrants for an All-Way Stop control to be recommended to Council.

Future Case Scenarios

As requested by Town Council, a future scenario was created by adding the anticipated traffic volumes from the Aurora subdivision onto the existing traffic volumes. Peak hour trip generation rates can be extrapolated from the industry-standard ITE Trip Generation Manual, but it is much more accurate to use values generated by our own Town streets. The future anticipated traffic volumes were estimated by looking at values collected recently for several similar subdivisions within Newmarket that have approximately 100 homes and have one single access road.

Two different methods of calculation were used so that the values would be representative of the Bob Gapp Drive and Atkins Drive intersection with a certain level of confidence, even though the area is not fully developed. The first method involved calculating traffic based on the existing turning movements that were measured. The second method was to use only the north-south traffic movements, assuming that all traffic stays on Bob Gapp Drive. The former method is usually the more accurate one, but in this case, the distribution pattern would be low due to the subdivision not being fully built out.

The following table (Table 1) illustrates the results of the future scenarios and compares them to the existing, or base case, scenario.

TABLE 1
**Percent of warrant being met using Base Case
and Future Case using two methods of calculation**

Warrant	Base Case (Existing)	Future Case #1 (Turning movements)	Future Case #2 (All on Bob Gapp Drive)
Warrant 3A (All approaches)	17%	33%	33%
Warrant 3B (Minor approaches)	36%	55%	46%

The calculations show a future doubling of the traffic at the intersection with the addition of traffic expected from a fully developed Aurora subdivision. Traffic is expected to double with both methods of calculation; however, neither of the scenarios warrants an all-way stop to be recommended. Traffic volumes would need to quadruple to come close to warranting an all-way stop. Given the area's road pattern and developable lands, such a large increase in traffic is not anticipated to occur.

Conclusion

An all-way stop control is not warranted at the Bob Gapp/Atkins intersection now or in the future as a result of additional traffic from the Aurora subdivision; however, the intersection will be monitored and reviewed when the Aurora subdivision is completely occupied in the future. A report would be brought back to Town Council if the intersection warrants an all-way stop at that later time.

Business Plan and Strategic Plan Linkages

This review addresses the Council Strategic Pillar entitled “Safe Transportation (Streets)”. More specifically, the project addresses the following priorities under the “Safe Transportation (Streets)” Strategic Pillar:

- ii) Continue to implement the traffic mitigation strategy and Active Transportation Plan and explore/advance an off-road Mulock multi-use path;
- v) Develop a ‘complete street’ design and construction/reconstruction methodology to support ongoing safe street initiatives and continue to explore design options related to speed reduction, where appropriate.

Consultation

No consultation was undertaken in preparation of this report.

Human Resource Considerations

None.

Budget Impact

None.

Attachments

None.

Contact

For more information on this report, please contact Mark Kryzanowski, Manager, Transportation Services, at 905-953-5300, extension. 2508.

Approval

Rachel Prudhomme, M.Sc., P.Eng.,
Director, Engineering Services

Peter Noehammer, P.Eng.,
Commissioner, Development & Infrastructure Services