



City of
Peterborough

To: Members of the General Committee

From: Michael Papadacos, Commissioner, Infrastructure and Planning Services (Acting)

Meeting Date: October 2, 2023

Subject: Woodglade Boulevard Traffic Operational Review -Sherbrooke Street to Kawartha Heights Boulevard, Report IPSENG23-020

Subject

A report to present the findings of the Woodglade Boulevard Traffic Operational Review and approve changes to Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard to improve traffic and pedestrian safety.

Recommendations

That Council approve the recommendations outlined in Report IPSENG23-020, dated October 2, 2023, of the Commissioner, Infrastructure and Planning Services (Acting) as follows:

- a) That the following recommended traffic operational initiatives be approved:
 - i. The implementation a 40km/h maximum speed limit and Community Safety Zone (CSZ) on Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard.
 - ii. Crosswalk, stop bar and centerline pavement markings be installed on Woodglade Boulevard and intersecting side streets (Ridgewood Road, Lynhaven Road, and Oakwood Crescent).
- b) That By-Law Number 23-075, being a By-law to Regulate Speed Limits on certain streets in the City of Peterborough, be amended by adding Woodglade Boulevard, Sherbrooke Street to Kawartha Heights Boulevard, to Section 1 b) "No person shall drive a motor vehicle at a rate of speed greater than forty (40) kilometers per hour", as set out in Appendix A attached to this report.

- c) That By-law 13-098, being a By-law to Designate a Part of the Highway in the City of Peterborough as a Community Safety Zone, be amended by adding Woodglade Boulevard, Sherbrooke Street to Kawartha Heights Boulevard, to Schedule A, as set out in Appendix B attached to this report.

Executive Summary

- The traffic operational review was conducted on Council's direction to assess the existing traffic conditions on Woodglade Boulevard between Kawartha Heights Boulevard and Sherbrooke Street. The technical assessment included a review of vehicle speed and volume, collision history, intersection sightlines, and pedestrian activity.
- Results of the technical assessment showed that vehicle speed and vehicle volume are comparable to other high-capacity collector roadways within the City of Peterborough. A total of three collisions have been reported in the past six years. Two collisions involved drivers colliding with vehicles parked on-street, and one collision involved a driver reversing from their driveway into the path of an oncoming vehicle.
- The Intersection sightline review revealed sightlines for vehicles entering Woodglade Boulevard from Lynhaven Road failed to meet current Transportation Association of Canada (TAC) guidelines based on the current operating speed. The recommended engineering approach to reduce the required sightline distance is to reduce the posted speed limit or provide advance warning signs for northbound drivers.
- The review of pedestrian activity identified a significant number of school children using Woodglade Boulevard when walking to and from local elementary schools located north of Sherbrooke Street.
- A Traffic Calming Screening Assessment was completed. Woodglade Boulevard failed to meet the criteria necessary for physical traffic calming measures, however, this does not restrict the implementation of nonphysical measures such as driver education and enforcement.
- Based on a traffic operational review of Woodglade Boulevard between Kawartha Heights Boulevard and Sherbrooke Street, staff recommend reducing of the maximum speed limit from 50 km/h to 40 km/h to improve left turn sightlines from Lynhaven Road and extend the Community Safety Zone from Sherbrooke Street to Kawartha Heights Boulevard to increase driver awareness of the presence of school children.

Background

In light of a tragic collision on Woodglade Boulevard at Oakwood Crescent, Council at its meeting on March 27, 2023, passed a motion directing staff to conduct an immediate operational review of the intersection of Woodglade Boulevard and Oakwood Crescent and report back on suitable traffic safety and control measures, including measures identifying Woodglade Boulevard as a priority area for traffic calming measures.

Site Details

Woodglade Boulevard is a two-lane high-capacity collector road running north-south between Kawartha Heights Boulevard and Glenforest Boulevard. This traffic operational review focuses on the section of Woodglade Boulevard between Kawartha Heights Boulevard and Sherbrooke Street. The intersection of Woodglade Boulevard and Sherbrooke Street operates under traffic signal control, and the intersection of Woodglade Boulevard and Kawartha Height Boulevard operates under all-way stop control. Intersecting roads Ridgewood Road, Lynhaven Road, and Oakwood Crescent are all under stop control with Woodglade Boulevard being the through street. Existing signage on Woodglade Boulevard is shown in Figure 1.

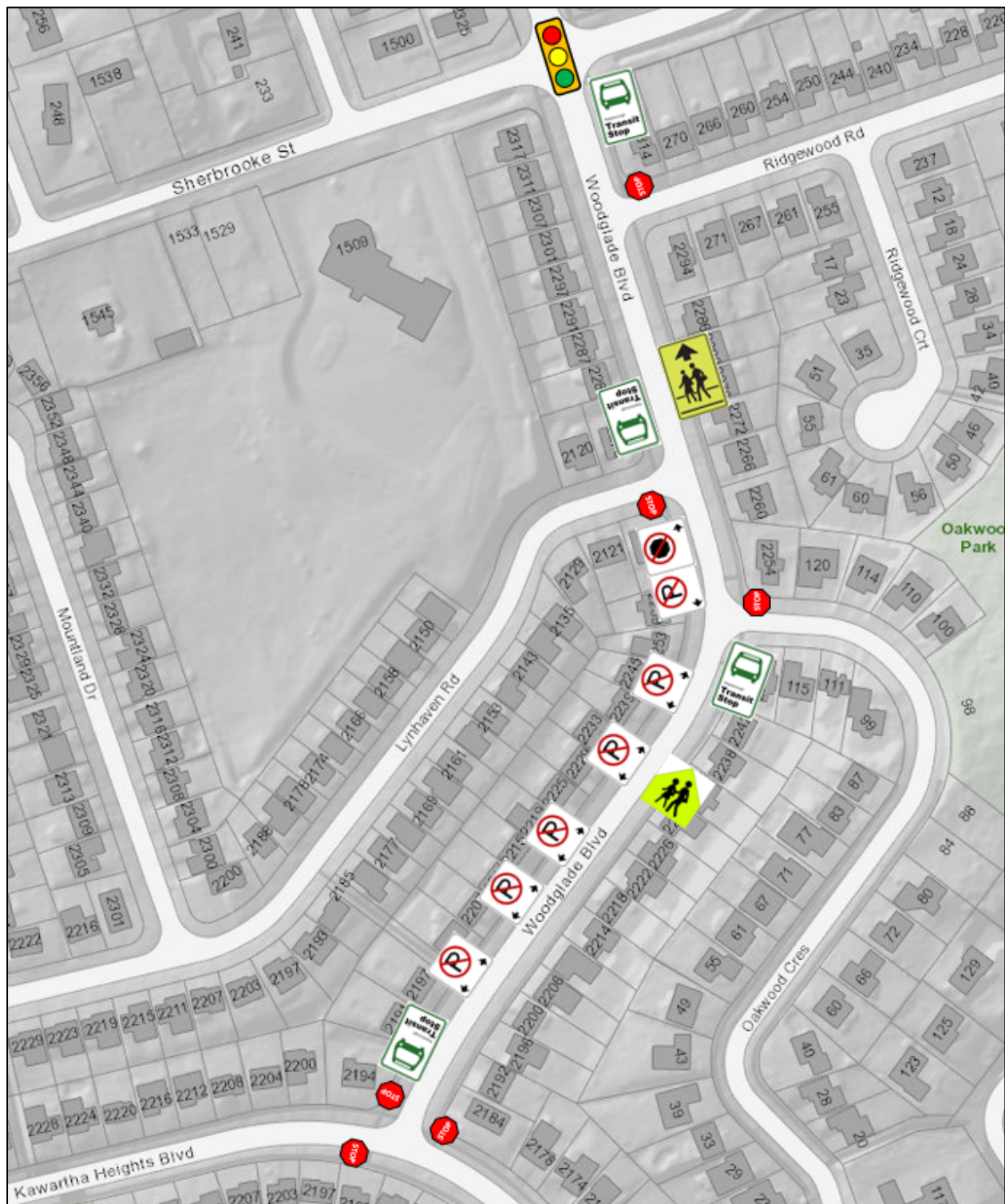


Figure 1 – Existing signs on Woodglade Boulevard

There are two southbound transit stops on Woodglade Boulevard, one located north of Lynhaven Road, and the other north of Kawartha Heights Boulevard. The northbound transit stops are located south of Oakwood Crescent and on the south leg of the

Woodglade Boulevard / Sherbrooke Street intersection. There are sidewalks on both sides of the road, and parking restrictions on the west side of Woodglade Boulevard between Lynhaven Road and Kawartha Heights Boulevard. There is a yellow centreline between the south leg of Lynhaven Road to a point approximately 65m south of Oakwood Crescent. The intersecting streets being Ridgewood Road, Lynhaven Road, and Oakwood Crescent do not currently have stop bar or crosswalk pavement markings which is typical of many neighbourhoods in Peterborough.

There is a school crossing guard located at the intersection of Woodglade Boulevard and Sherbrooke Street during school admission and dismissal times. The current maximum speed limit on Woodglade Boulevard is 50 km/h.

Traffic Operational Review

The traffic operational review was conducted to assess the existing traffic conditions on Woodglade Boulevard between Kawartha Heights Boulevard and Sherbrooke Street. The technical assessment consisted of the following data collection and analysis:

- Vehicle volume and speed
- Pedestrian activity
- Collision history
- Sight line review

Vehicle Volume and Speed

Vehicle volume and speed data was collected on Woodglade Boulevard for a two-week period in April 2023. The data collected is summarized in Table 2.

Table 2: Volume and Speed Data on Woodglade Boulevard

Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard	
Average Weekday Volume	4,465 veh/day
AM Peak hour Volume (8 A.M. to 9 A.M.)	394 veh/h
PM Peak hour Volume (3 P.M. to 4 P.M.)	412 veh/h
85 th Percentile Speed (Operating Speed)	53 km/h NB 54 km/h SB

The City of Peterborough Official Plan describes high-capacity collector roadways as serving intra-municipal traffic for medium distances between arterial roads and local streets, with access to adjacent properties. High-Capacity Collectors can be expected to accommodate up to 500 vehicles per hour per lane with a potential cross-section of up to 4 travel lanes in a 26 metre right of way. Private driveways, on-street parking and bikeways may be accommodated along such streets, and sidewalks shall be included on both sides of the road. The data shows Woodglade Boulevard has vehicle volumes typical of a high-capacity collector roadway and is comparable to other high-capacity collector roadways in the City of Peterborough, as shown in Table 3.

Table 3: Volume and Speed Comparison to Similar Roadways

Location	Year	Classification	Daily Volume (Veh/day)	Operating Speed (km/h)
Spillsbury Drive	2019	High-Capacity Collector	7007	45.0
Wolsely Street	2022	High-Capacity Collector	6988	56.2
Towerhill Drive	2019	High-Capacity Collector	6247	54.9
Weller Street	2019	High-Capacity Collector	4542	53.2
Woodglade Boulevard	2019	High-Capacity Collector	4982	52.2

Woodglade Boulevard	2022	High-Capacity Collector	4658	53.4
Woodglade Boulevard	2023	High-Capacity Collector	4507	54.0
Cameron Street	2022	High-Capacity Collector	3427	57.7
Royal Drive	2022	High-Capacity Collector	2157	54.1

The operating speed (85th percentile speed) is the speed at which 85% of vehicles are observed driving at or below as defined by the Transportation Association of Canada (TAC) Design Standards. On Woodglade Boulevard 85% of vehicles were recorded driving at or below 54 km/h. This is typical of a high-capacity collector roadway in the City of Peterborough based on previous data collected. Vehicle speeds and volumes collected in 2023 on Woodglade Boulevard are consistent with previous data collected in 2022 and 2019.

Pedestrian Activity

A review of pedestrian activity was conducted to determine typical pedestrian behaviour on Woodglade Boulevard. Pedestrians were monitored during school admission and dismissal times over a two-day period. Over 20 students were observed each day heading towards Ecole Catholique Monseigneur-Jamot and St. Catherine Catholic Elementary School from Ridgewood Road, Lynhaven Road, Oakwood Crescent, and from further down on Kawartha Heights Boulevard. On both days most students were observed travelling alone or with other students, however some were accompanied by a parent. Only one or two students in each study period were observed crossing Woodglade Boulevard mid-block, instead of travelling up the east and west sidewalk to cross with the crossing guard at Sherbrooke Street.

Collision History

A review of collision history between 2017 and 2022 was conducted on Woodglade Boulevard from Sherbrooke Street to Kawartha Heights Boulevard. The intersections of Woodglade Boulevard and Sherbrooke Street, and Woodglade Boulevard and Kawartha Heights Boulevard were not included in the collision review. A total of three collisions have been reported between 2017 and 2022. Two collisions involved drivers colliding with vehicles parked on-street, and one collision involved a driver reversing from their driveway into the path of an oncoming vehicle.

At the time of the writing of this report, Peterborough Police Services has yet to complete and release the investigation into the fatal collision that occurred on March 23, 2023.

Stopping Sight Distance and Sightline Review

Staff conducted a stopping sight distance study on Woodglade Boulevard between Lynhaven Road and Oakwood Crescent and reviewed driver sightlines from the stop signs on Lynhaven Road and Oakwood Crescent. Results from those studies are shown in Table 4.

Table 4: Sightline and Stopping Sight Distance Measurements

	TAC Design Guidelines (Operating Speed of 54 km/h)	Woodglade/ Lynhaven	Woodglade/ Oakwood
		Measured Distance	
Stopping Sight Distance	75 m	SB = 100 m NB = 100 m	
Sightline (Left-Turn)	115 m	95 m	200+ m
Sightline (Right-Turn)	101 m	200+ m	200+ m

Transportation Association of Canada (TAC) Geometric Design Guide recommend clear stopping sight distances of 65-85 m for a road with operating speeds between 50 km/h and 60 km/h. Stopping sight distance is identified as the distance required for a driver to identify an object in the roadway, apply the brakes, and come to a complete stop before encountering the object. At an operating speed (85th percentile speed) of 54 km/h, the recommended stopping sight distance on Woodglade Boulevard is 75 m. The measured stopping sight distance on Woodglade Boulevard around the curve in the roadway between Lynhaven Road and Oakwood Crescent is 100 m in both the northbound and southbound directions. This exceeds the current TAC Design Guide recommended stopping sight distance.

The TAC design Guide recommends that, drivers entering a collector roadway such as Woodglade Boulevards from a side street should be able to see approaching vehicles at 101-115 m with a main street operating speed of 54 km/h. A sightline study was conducted to determine if adequate sightlines are available on the intersecting side streets (Lynhaven Road and Oakwood Crescent). The sightline distance measured for right-turns at both Lynhaven Road and Oakwood Crescent both met the current TAC

guideline of 101 m for an operating speed of 54 km/h. While the sightline for vehicles turning left from Oakwood Crescent met TAC guidelines, the sightline for vehicles turning left from Lynhaven Road onto Woodglade Boulevard was measured at 95m, which is less than the recommended distance with a main street operating speed of 54 km/h (115 m for left- turns).

The recommended engineering approach to reduce the required sightline distance is to reduce the posted speed limit or provide advance warning signs for northbound drivers.

Traffic Calming Initial Screening

The City of Peterborough Neighbourhood Traffic Calming Policy is intended to improve safety, particularly for more vulnerable roads users like pedestrians and cyclists, and reduce aggressive driving behaviour in local neighbourhoods to improve liveability. The policy provides a methodology and evaluation criteria to determine if traffic calming is appropriate for a given street and prioritize locations being considered for measures.

The traffic data collected, as part of this study, was entered into the Initial Screening Tool used in determining whether a road is a suitable candidate for traffic calming. The Initial Screening Tool considers such things as Road Classification, Location (Transit, hospital, or primary Fire Route), Posted Speed Limit, Road Grade, Road Segment Length, Operating Speed (85th percentile speed greater than 10km/h above posted speed), and Shortcutting Traffic.

The initial screening criteria for the subject segment of Woodglade Boulevard was not met for the following reasons:

1. Woodglade Boulevard has an active bus route.
2. The operating (85th percentile) speed recorded was 54 km/h. The operating speed to meet the initial screening for a high-capacity collector road is 60 km/h.

The results of the initial screening tool determined that this section of Woodglade Boulevard is not suitable for physical traffic calming measures, however, this does not restrict the implementation of non-physical measures such as driver education and enforcement. A full breakdown of the initial screening study is shown in Appendix C.

Discussion

The Council resolution was to report back with “suitable traffic safety and control measures, including measures identifying Woodglade Boulevard as a priority area for traffic calming measures”. The traffic operational review revealed vehicle speed and vehicle volume to be typical of a high-capacity collector roadway in the City of Peterborough. There were only three reported collisions from 2017 to 2022, two of which were single vehicle collisions. There is no identifiable pattern of collisions, and

none of the collisions indicated road geometry or condition that contributed to these collisions.

The intersection sightline analysis revealed that the sightline distance for vehicles turning left from Lynhaven Road onto Woodglade Boulevard failed meet current TAC guidelines. However, there have been no reported collisions at Lynhaven Road and Woodglade Boulevard to suggest there is a sightline concern. Sightline measurements are based on the operating speed of vehicles approaching the intersection on the main street. Faster operating speeds require greater sightline distance for side street vehicles to enter the main street and get up to the operating speed without disrupting the flow of traffic. In the case of the Lynhaven/Woodglade intersection, the sightline distance to the south is physically limited to 95 metres due the curve in the road. Therefore, to achieve current TAC guideline for the left-turn movement from Lynhaven Road, the operating speed on Woodglade Boulevard would need to be reduced to approximately 45km/h.

The review of pedestrian activity on Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard identified a significant number of school age children walking to and from school. This section of Woodglade Boulevard is the most direct route to school for area students attending Ecole Catholique Monseigneur-Jamot and St. Catherine Catholic Elementary School and is supported by a school crossing guard at the intersection of Woodglade Boulevard and Sherbrooke Street.

On June 26, 2023, Council approved report IPSENG23-014 for a City-Wide Speed Limit Reduction in School Areas and the Implementation of Community Safety Zones, The purpose of reduced speed limits in school areas is to improve pedestrian safety and comfort. Children walking to and from school are considered as one of the more vulnerable road users since they are smaller therefore harder to see, have the tendency to make unpredictable movements and often have difficulty judging the speed and distance of vehicles on the road. Studies have shown that the severity of injuries from collisions involving pedestrians is directly related to the speed of the vehicle at impact. Higher speeds decrease driver reaction time and increase vehicle stopping distance. Included in report IPSENG23-014, the approved maximum speed limit on both Sherbrooke Street and Woodglade Boulevard north of Sherbrooke Street will be reduced to 40km/h. In support of the new reduced speed limits, a Community Safety Zone (CSZ) will be implemented on Woodglade Boulevard fronting Ecole Catholique Monseigneur-Jamot to emphasize to drivers that they are entering a special area where public safety is a concern and that fines for Highway Traffic Act (HTA) offences, such as speeding, may be double. Furthermore, the recommendation to reduce speed limits in this corridor will serve as a pilot of the recommendation from the Transportation Master Plan to consider broader based speed limit reductions in neighbourhoods outside of school zones.

The Woodglade Boulevard operations review has shown that Woodglade Boulevard from Sherbrooke Street to Kawartha Heights Boulevard is an active high-capacity collector road, serving both vehicular and pedestrian traffic through a residential neighbourhood. A pedestrian study identified a significant number of school age

children utilizing this roadway daily to go to and from school. Staff are of the opinion that the new 40km/h school zone and CSZ fronting Ecole Catholique Monseigneur-Jamot be extended south on Woodglade Boulevard from Sherbrooke Street to Kawartha Heights Boulevard. This speed limit reduction will also serve to improve the sightline for vehicles turning left from Lynhaven Road onto Woodglade Boulevard.

Strategic Plan

The implementation of a 40km/h maximum speed limit and Community Safety Zone (CSZ) on Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard aligns with the strategic pillar for Community and Well-being by promoting and enforcing traffic safety in a residential neighbourhood.

Budget and Financial Implications

The cost of implementing a speed limit reduction and a CSZ on Woodglade Boulevard will cost approximately \$5,000, funds for which are available in the uncommitted balance of the approved 2023 Capital Budget for Traffic Improvements (project ref 5-18.07).

Table1: Breakdown of Estimated Costs

Items	Cost Estimate
Supply and Install Sign Infrastructure	\$3,000
Installation of Pavement Markings	\$2,000
Total Estimated Cost	\$5,000

Conclusion

Staff conducted a traffic operational review of Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard as directed by Council during the meeting of March 27, 2023.

A review of the collision history did not reveal a pattern of collisions. Vehicle volume and speed data was collected over a two-week period and showed values within the expected range for a high-capacity collector roadway in the City of Peterborough. Reduced sightlines were identified at the intersection of Lynhaven Road due to the existing road geometry. Staff recommend reducing of the maximum speed limit from 50 km/h to 40 km/h to improve left turn sightlines from Lynhaven Road within the range recommended by the TAC Design Guide. This can be achieved by extending the school

area speed reduction and CSZ for Monseigneur Jamot and St Catherine schools approved by Council in June of 2023 through report IPSENG23-014. In addition, painting crosswalks, stop bars, and yellow centrelines would provide drivers with added guidance and improve awareness of pedestrians crossing at the side street.

Attachments

- Appendix A – Amending By-Law to Regulate Speed on certain Streets in the City of Peterborough
- Appendix B – By-Law to Designate a Part of a Highway in the City of Peterborough as a Community Safety Zone
- Appendix C – Traffic Calming Initial Screening for Woodglade Boulevard

Submitted by,

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Appendix A



The Corporation of the City of Peterborough

By-Law Number 23-[Clerk's Office will assign the number]

Being a By-law to Amend By-Law 23-075 being a By-Law to Regulate Speed Limits on Certain Streets in the City of Peterborough

Now Therefore, The Corporation of the City of Peterborough by the Council thereof hereby enacts as follows:

1. That Section 1 b) of By-law 23-075 be amended by removing the following:

Highway	Between
Woodglade Boulevard	Sherbrooke Street to Glenforest Boulevard

2. That Section 1 b) of By-law 23-075 be amended by adding the following:

Highway	Between
Woodglade Boulevard	Kawartha Heights Boulevard to Glenforest Boulevard

By-law passed this 31st day of August, 2023.

Jeff Leal, Mayor

John Kennedy, City Clerk

Appendix B



The Corporation of the City of Peterborough

By-Law Number 23-[Clerk's Office will assign the number]

Being a By-law to Amend By-Law 13-098 being a By-Law to Designate a Part of a Highway in the City of Peterborough as a Community Safety Zone.

Now Therefore, The Corporation of the City of Peterborough by the Council thereof hereby enacts as follows:

1. That Schedule A of By-law 13-098 be amended by removing the following:

Highway	Between
Woodglade Boulevard	Ridgewood Road to Glenforest Boulevard

2. That Schedule A of By-law 13-098 be amended by adding the following:

Highway	Between
Woodglade Boulevard	Kawartha Heights Boulevard to Glenforest Boulevard

By-law passed this 31st day of August, 2023.

Jeff Leal, Mayor

John Kennedy, City Clerk

Appendix C – Woodglade Boulevard - Traffic Calming Initial Screening Study

Traffic Calming Request Location: Woodglade Boulevard between Sherbrooke Street and Kawartha Heights Boulevard				
Date:				
Criteria	Threshold	A Traffic Calming Study may be considered if:	Criteria Met (Y/N)	Justification/ Notes
All Criteria Must be Met				
Previously Requested	Within Last Three Years	A prior request for traffic calming has not been denied within the last three years.	Y	No previous traffic calming requests in the last 3 years.
Measures Removed	Within Last Five Years	Traffic calming measures have not been removed within the last five years.	Y	No traffic calming measures removed in the last 5 years.
Roadway Classification	Local Street, Low Capacity Collector, or High Capacity Collector	The subject street is designated a Local Street, Low Capacity Collector or High Capacity Collector in the City of Peterborough Official Plan (Schedule B – Roadway Network).	Y	High-Capacity Collector
Location	Transit Routes, Signed Hospital Routes, or Primary Fire Route	The subject street does not serve as a transit route, signed hospital route, and/or primary fire route in the City.	N	Transit route
Speed Limit	≤ 50 km/h	The posted speed limit on the subject street is 50 km/h or less.	Y	50 km/h speed limit
Road Grade	< 8%	The grade of the subject street is less than 8%.	Y	Maximum slope of <3%
Segment Length	≥ 150 metres	The distance between stop-controlled intersections along the subject street is 150 metres or more.	Y	Distance between stop controls is ~500m
At Least One Criteria Must be Met for <u>Local Streets and Low Capacity Collectors</u>				
Operating Speed	≥ 5 km/h above posted speed limit	The 85 th percentile speed is 5 km/h or more above the posted speed limit.		

Shortcutting Traffic	> 30%	The percentage of non-local traffic is more than 30%.		
At Least One Criteria Must be Met for <u>High Capacity Collectors</u>				
Operating Speed	≥ 10 km/h above posted speed limit	The 85 th percentile speed is 10 km/h or more above the posted speed limit.	N	85 th percentile speed 54 km/h
Shortcutting Traffic	> 60%	The percentage of non-local traffic is more than 60%.		This High Capacity Collector roadway is expected to serve traffic from a large area bounded by Lansdowne St., Brealey Dr. and Sherbrooke St. All vehicles within this boundary maybe considered local Traffic. N/A

Initial Screening
Criteria Met (if Yes

proceed to Technical Assessment):

Yes: _____

No: X