Reference Committee Staff Report

To	Community Safety Committee
Subject	Grove Street East and Johnson Street Signalization
Date	June 11, 2025
Ward	1
From	M. Banfield, RPP, Executive Director of Development Services
Executive Member Approval	M. Banfield, RPP, Executive Director of Development Services
CAO Approval	M. Prowse, Chief Administrative Officer

Recommendation(s):

1. That the intersection of Grove Street East and Johnson Street be fully signalized.

2. That a capital project be included in the 2026 Budget for the installation of traffic control signals in the amount of $400,000.

3. That Traffic By-Law 2020-107, Schedule '19', "Providing for the Erection of Stop Signs at Intersections" be amended by removing the following:

Johnson Street and Grove Street East	Eastbound, Westbound, Northbound and Southbound on Johnson Street and Grove Street East

Executive Summary:

The purpose of this report is to recommend the installation of traffic control signals at the intersection of Grove Street East and Johnson Street and removal of the existing all-way stop at this location.

Key Findings:

Council Motion 23-G-226 directed staff in the Development Services Department investigate the feasibility of installing a stoplight at the intersection of Johnson Street and Grove Street and report back to the Community Safety Committee. City staff evaluated the intersection of Grove Street East and Johnson Street to determine if the intersection meets the provincial requirements for changing the right of way control from an all-way stop-controlled intersection to a full set of traffic signals. The area around this intersection is primarily residential, with a commercial plaza on the southwest corner and

a high school with a community park located west of the intersection on Grove Street East (see Appendix A).

A traffic signal warrant was conducted using the Ontario Traffic Manual (OTM) Book 12 justifications, with vehicle counts conducted on March 18, 2025. The intersection of Grove Street East and Johnson Street had been evaluated 3 times since 2019 for upgrading to a full set of traffic signals. Each time it did not meet the threshold for warranting a full set of traffic signals, however the traffic counts showed increases each time. The March 18, 2025, warrant review shows the intersection of Grove Street East and Johnson Street does not meet the threshold for a signalized intersection. However, in considering the overall growth within the area and the increase of each subsequent investigation, staff recommend proceeding with the upgrade to a fully signalized intersection.

Financial Implications:

Staff recommend utilizing the $55,000 in existing development contribution funds for the design process of the recommended signalized intersection to commence in 2025. Additional funds required to construct the signalized intersection in the amount of $400,000 be included in the 2026 Budget as an intake form for a capital project.

Alternatives:

The following alternative is available for consideration by General Committee:

Alternative #1 – General Committee could maintain the existing all-way stop right of way control at the intersection of Grove Street East and Johnson Street until such time as the warrants are fully met. This alternative is not recommended as this intersection is expected to experience additional growth in the coming years.

Strategic Plan Alignment:

Affordable Place to Live		
Community Safety	X	Increased intersection safety and accessibility
Thriving Community		
Infrastructure Investments	X	Upgraded right of way control and improved pedestrian controls
Responsible Governance		

Additional Background Information and Analysis:

Staff utilize the Ontario Traffic Manual (OTM) Book 12 – Traffic Signals, to help provide information and guidance for uniformity of traffic control devices across Ontario. The Traffic Signal Justification warrants in OTM Book 12 are used to determine whether Traffic Signals are warranted. The Traffic Signal Justifications require the following criteria to be met for a site to be a candidate for a Traffic Signal.

- Justification 1 – Minimum 8-hour Vehicle Volume
- Justification 2 – Delay to Cross Traffic
- Justification 3 – Combination of Justifications 1 & 2

- Justification 4 – Minimum 4-hour Vehicle Volume
- Justification 5 – Collision Experience
- Justification 6 – Pedestrian Volumes

An 8-hour Turning Movement Count was completed on March 18, 2025, at Grove Street East and Johnson Street for the investigation of upgrading the intersection to a signalized intersection. The results of the investigation are as follows:

Justification		Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicle Volume	A – Total Volume	80 %		×
	B – Crossing Volume	100 %		
2. Delay to Cross Traffic	A – Main Road	44 %		×
	B – Crossing Road	100 %		
3. Combination	A – Justification 1	80 %		×
	B – Justification 2	44 %		
4. 4-hr Volume		68 %		×
5. Collision Experience		73 %		×
6. Pedestrian	A – Volume	Justification not met		×
	B – Delay	Justification not met		

Staff analyzed the 8-hour vehicle volume at the intersection of Grove Street East and Johnson Street. In the total 8-hours, there were 2,531 vehicles travelling along Grove Street East and 2,207 vehicles travelling along Johnson Street. This meets the minimum crossing vehicle volume warrant but does not meet the minimum total volume warrant.

Staff analyzed the delay to crossing traffic using the peak 8-hour vehicle volumes on Grove Street East, and the total crossing vehicle and pedestrian volumes on Johnson Street. The side street crossing volume warrant has been met, but the main street volume warrant has not been met.

Staff analyzed the peak 4-hour volume for the 4 heaviest volume hours at the intersection of Grove Street East and Johnson Street. The volume on the side street does not reach the warrant threshold in any of the 4 hours.

Staff analyzed the collision history at this intersection, specifically looking at collisions that could be reduced by the installation of traffic control signals. In the last 3 years, there have been a total of 11 collisions that could have been avoided with implementing a traffic control signal. The warrant threshold is 15 collisions in 3 years, or 5 per year. The collision warrant, therefore, has not been met but is close to the threshold value.

Staff analyzed the total 8-hour pedestrian volume crossing Grove Street East to determine the delay for pedestrians. The pedestrian volume is not high enough to warrant a signal due to pedestrian delay when accounting for the vehicle traffic on Grove Street East

Consultation and Engagement:

There was no public consultation required in relation to this staff report.

Environmental and Climate Change Impact Matters:

There are no environmental and/or climate change impact matters related to the recommendation.

Appendix:

Appendix A – Site Map

Report Author:

N. Booth, Transportation Systems Technologist, Development Services Department

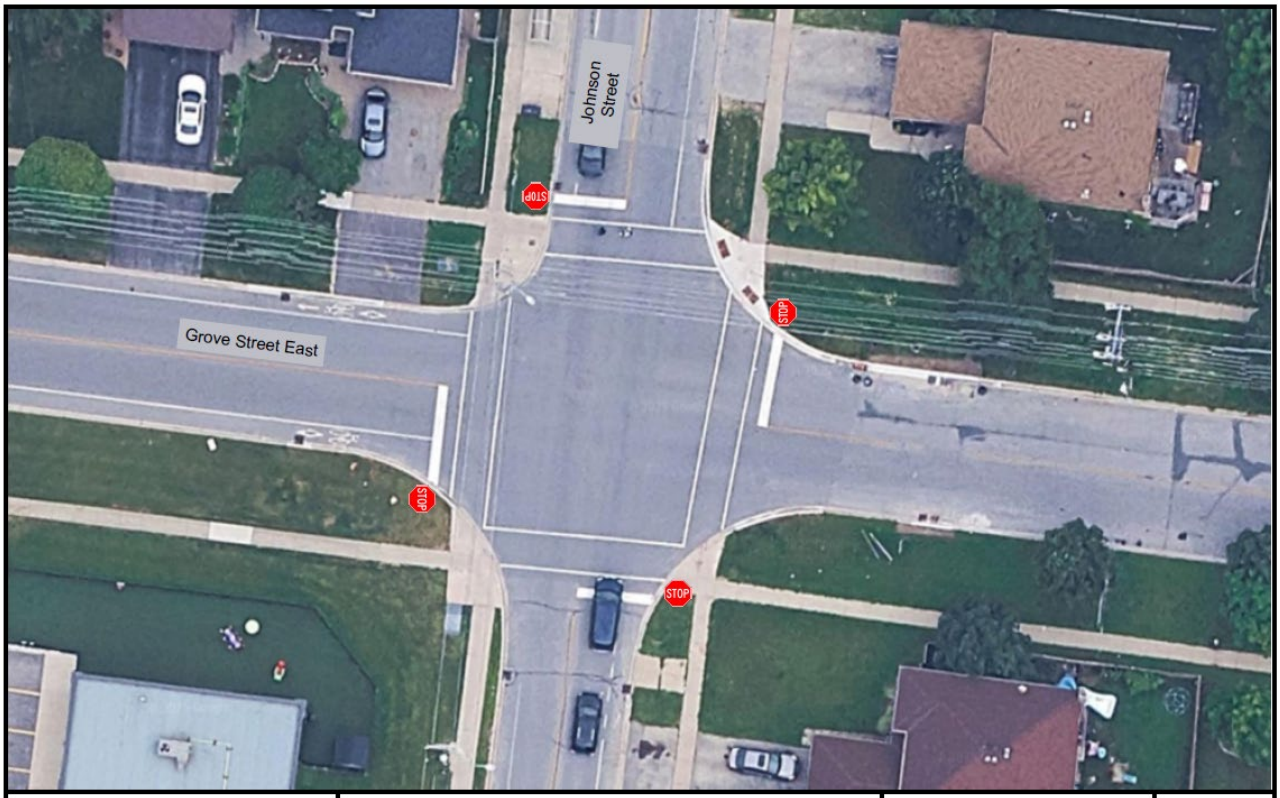
File #:

C11

Pending #:

P27/23

Appendix A - Site Map



Barrie	Traffic Signal Investigations	Ward: 1	N
	Grove Street East & Johnson Street	Design: NB	
		Date: April 2025	