Sherwood Drive Traffic Calming Study

Kenilworth Street Trial Closure
Traffic Data Analysis

Neighbourhood Traffic Calming Branch

March 2022

Executive Summary

The City of Ottawa has initiated a traffic calming study for Sherwood Drive to address traffic concerns raised by residents. As part of this study, City staff are reviewing potential options for simplifying the 5-leg intersection of Sherwood Drive / Fairmont Avenue / Kenilworth Street. To help with these reviews, a trial closure of Kenilworth Street at this intersection was conducted from June 21, 2021 to November 1, 2021. A designated detour route was not used; drivers re-routed based on their own preference/convenience.

The data collected as part of this trial will assist in assessing what kind of modification to this intersection may be worth pursuing, or not, as part of the complete package of potential recommendations for the Sherwood Drive Traffic Calming Study.

This report does not present recommendations for permanent roadway modifications as its purpose is simply to present the findings from the collected traffic data.

As part of this trial, traffic volume and speed data were collected for streets nearby the trial closure. Data is provided in Appendix B.

Notable traffic volume increases during the trial were found at the following data collection points:

- Barrie (between Sherwood and Kenilworth)
- Reid (between Hutchinson and Kenilworth)
- Reid (between Kenilworth and Orrin)

Notable traffic speed increases during the trial were found at the following data collection points:

- Barrie (between Sherwood and Kenilworth)
- Reid (between Fuller and Sherwood)

Barrie Avenue experienced the most significant changes in traffic volumes and speeds during the trial closure.

Volumes measured on all streets (whether before, during, or after the trial) were within the typical volume ranges for Canadian roadways based on the *Transportation Association of Canada 2017 Geometric Design Guide for Canadian Roads*.

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Background

As part of the Sherwood Drive Traffic Calming Study, an initial online survey was carried out in late 2020 to gain a better understanding of the community's traffic concerns and preferred potential roadway modifications. The results of the survey indicated community concerns over the skewed 5-legged intersection of Sherwood Drive / Fairmont Avenue / Kenilworth Street intersection.

More specifically, residents expressed concerns about confusion and unpredictability at this 5-way intersection, and some reported that they feel unsafe as pedestrians and are particularly concerned for children crossing at this intersection. Several reported that they had experienced or observed "near-misses" at this intersection. The City of Ottawa and the Councillor's office have received safety concerns regarding this intersection from the public prior to the commencement of this study.

City staff are reviewing potential options for simplifying this intersection. Closing one leg of this intersection to make it into a more standard 4-leg intersection was considered. A trial closure of the Kenilworth Street leg was proposed and implemented to further investigate the feasibility of this as a potential permanent modification.

The trial closure of Kenilworth Street at Sherwood Drive / Fairmont Avenue was conducted from June 21, 2021 to November 1, 2021. The closure consisted of three concrete planter boxes and associated traffic signage prohibiting motor vehicle traffic, but still allowing pedestrian and cyclist access. To simulate traffic patterns of a potential permanent closure no designated detour route was used; drivers re-routed based on their own preference/convenience.

Figure 1 – Photo of the trial closure

- provide residents with an opportunity to test out the potential benefits/impacts of a closure, and

- collect traffic data (speeds and volumes).

This information will be used to assist in assessing what kind of modification may be worth pursuing, or not, as part of the complete package of potential recommendations for the Sherwood Drive Traffic Calming Study.

Purpose

The purpose of this report is to summarize the analysis of the traffic data collected during the trial road closure. This report does not present recommendations for permanent roadway modifications.

Data Collection Plan

Traffic data was collected *before* (June 8, 2021), *during* (August 24, 2021 and October 19, 2021), and *after* (November 30, 2021) the trial closure. The colour coding of *before*, *during* and *after* is used throughout this report to assist the reader.

Data was collected for 24 hours at each location (as shown in Table 1) using either an Armadillo Tracker Side Fire Radar Device (which collects speed and volume data at a single mid-block location) or a Miovision Traffic Camera (which collects turning movement and volume data on all legs of an intersection with a single camera).

The original data collection plan included eight locations, however based on feedback from the Civic Hospital Neighbourhood Association (CHNA), two additional locations were added. As the trial had already commenced when these two locations were added to the data collection plan, it was determined to use "*after*" data in place of "*before*" data (for comparison purposes) at these two locations. Therefore, each location had data collected either *before* or *after* the trial, as well as twice *during* the trial.

Traffic data was collected at 10 locations:

Table 1 – Summary of data collection plan

Location	Data Collected			
	Type*	*Before*	*During*	*After*
Barrie (between Sherwood & Kenilworth)	Volume & Speed	☒	☒	☐
Gwynne Ave (between Kenilworth & Ruskin)	Volume & Speed	☒	☒	☐
Reid (between Hutchinson & Kenilworth)	Volume	☒	☒	☐
Reid (between Kenilworth & Orrin)	Volume	☒	☒	☐
Kenilworth (between MacFarlane & Reid)	Volume	☒	☒	☐
Kenilworth (between Reid & Barrie)	Volume	☒	☒	☐
Melrose (between Ruskin & Carling)	Volume & Speed	☐	☒	☒
Orrin (between Parkdale & MacFarlane)	Volume & Speed	☐	☒	☒
Reid (between Fuller & Sherwood)	Volume & Speed	☒	☒	☐
Sherwood (between Woodstock & Fairmont)	Volume & Speed	☒	☒	☐

*Surveys for locations with volume & speed data were completed mid-block with an Armadillo Tracker Side Fire Radar Device, while surveys for locations with only volume data were completed at the intersection with a single Miovision Traffic Camera.

The analysis portion of this report focuses on the *during* (end-trial) data. The data collection results (including the *during* (mid-trial) data) are provided in Appendix B. Focusing on one *during* data collection date has the benefit of both brevity and clarity in reporting the traffic data analysis results. The end-trial data was selected over the mid-trial data for several reasons, including that school was held in-person, the trial had been in place for a longer period (allowing traffic patterns time to settle), and there were less Covid-19 related restrictions (such as capacity limits), etc.

Control Point

A control location unlikely to be influenced by the trial closure was used to estimate the extent of traffic volume changes related to other influences including the changing circumstances brought about by the Covid-19 pandemic, and times when school is not in session (e.g., summer break). Bayswater (between Beech and Hickory) was used for this control location.

Figure 2 – Map of data collection points

It is expected that traffic volumes will be lower when school is out or held virtually. Below is a summary of the status of local primary and secondary schools for each of the data collection dates.

Table 2 – School status for each data collection survey

Collection Date		School Status
Before	June 8, 2021	Virtual
During (mid-trial)	August 24, 2021	Summer break
During (end-trial)	October 19, 2021	In-person
After	November 30, 2021	In-person

Traffic speeds are influenced by many factors and relating speed changes over time in one location with another is not expected to provide a reliable comparison. Expected influences outside of the trial closure (restrictions related to the Covid-19 pandemic, whether school is held in-person or not, etc.) are expected to influence traffic volumes, but not directly traffic speeds. Changes in volumes can affect speeds (i.e., congestion tends to slow down traffic), however, volumes within the study area are relatively low and traffic can typically flow freely. Some factors that are expected to influence speeds are the purpose of the trip (commuter trips, cut-through traffic, school traffic), use of on-street parking, proximity to the hospital, etc.

Therefore, the data from the control point is used within this report to estimate changes in volumes due to factors outside of the trial.

Traffic Volume Review

This section summarizes the volume data analysis for the trial closure. Sample calculations are provided in Appendix A.

Volume Adjustment Factor

The data collected at the control point was reviewed to estimate the change in traffic volumes influenced by factors outside of the trial closure (such as summer break from school and changing circumstances of the Covid-19 pandemic), between the *before* surveys, and the *during* (end-trial) survey.

To calculate this adjustment factor, the following equation was used:

$$Adjustment\ Factor = \frac{\text{During Volume}}{\text{Before Volume}}$$

Table 3 – Volume Adjustment Factor

Before **Volume at Control Point** June 8, 2021	***During*** **(End-Trial) Volume at Control Point** Oct 19, 2021	**Adjustment Factor**
1435 *vehicles/24hr*	2222 *vehicles/24hr*	1.55

As outlined in the table above, volume at the control point increased by 55% between the *before* and *during* (end-trial) survey due to factors outside of the trial.

Change in Traffic Volumes

For each of the 10 data collection points, the change in traffic volumes due to the trial closure was calculated by comparing either the *before* or *after* surveys with the *during* (end-trial) survey.

Adjusted Before Volume

For the 8 locations with *before* data, an "*adjusted before*" volume was calculated that considered changes to traffic patterns related to influences outside of the trial closure via the above-mentioned Adjustment Factor. This was done to create a level comparison ground between the *before* and *during* volumes. The calculation for the "*adjusted before*" volume is shown below.

$$\text{Adjusted Before Volume} = \text{Before Volume} * \text{Adjustment Factor}$$

This "*adjusted before*" volume is assumed to be a reasonably accurate representation of what the *before* data would have looked like under the same societal circumstances as the *during* data (but without the trial closure in place).

Change between Adjusted Before and During volumes

The calculation for the traffic volume change between "*adjusted before*" volumes and *during* volumes is shown below.

$$Volume\ Change = \left(\frac{\text{During Volume}}{\text{Adjusted Before Volume}} - 1\right) * 100\%$$

Change between During and After volumes

The Adjustment Factor was not considered when reviewing the change between traffic volumes *during* and *after* the trial as the dates were closer together and there were limited local social changes between those sets of surveys. The calculation for the traffic volume change between *during* and *after* data points is shown below.

$$Volume\ Change = \left(\frac{\text{During Volume}}{\text{After Volume}} - 1\right) * 100\%$$

Results

The change between *during* (end-trial) volumes and *"adjusted before"*/*after* volumes are presented below, in Table 4 and Figure 3. Additional data can be found in Appendix B, such as the un-adjusted *before* and *during* (mid-trial) data.

Table 4 – Summary of volume analysis

Location	*During* Volume	Change	
	(vehicles/24hr)	Δ*	%**
Barrie (between Sherwood & Kenilworth)	439	+355	+423%
Reid (between Hutchinson & Kenilworth)	430	+43	+11%
Reid (between Kenilworth & Orrin)	298	+56	+23%
Sherwood (between Woodstock & Fairmont)	2657	+88	+3%
Melrose (between Ruskin & Carling)	1823	+51	+3%
Orrin (between Parkdale & MacFarlane)	223	0	0%
Reid (between Fuller & Sherwood)	922	-95	-9%
Kenilworth (between MacFarlane & Reid)	228	-171	-43%
Kenilworth (between Reid & Barrie)	162	-186	-54%
Gwynne Ave (between Kenilworth & Ruskin)	272	-764	-74%

**change in number of vehicles/24hr*

***Results are colour coded as follows: red for increases greater than +3%, orange for changes between (and including) +3% to -3%, and green for decreases in volume of more than 3%. Rationale for these thresholds is included in the following Discussion section.*

Discussion

A small degree of change in traffic volumes related to daily variation is expected for each location. It is difficult to quantify this amount, however the range of ±3% to ±5%

was considered to be reasonable. The roadways that experienced a volume increase of more than 3% are the locations more clearly affected by the trial closure. For the roadways with an increase of 3% or less, it is expected that a large proportion of the increase could be related to daily variations in traffic volumes and these changes are thus considered not as strongly linked to the trial closure as those roadways with larger increases.

Barrie Avenue saw the greatest increase in traffic volume at 423% of "*adjusted before*" volumes. The maximum volume measured on Barrie Avenue was 439 vehicles/24 hr. According to the *Transportation Association of Canada (TAC) 2017 Geometric Design Guide for Canadian Roads* (which is discussed further in the following section), the volumes measured on Barrie Avenue are within typical volumes for a local residential road and are also similar to volumes of other streets in the area. Regardless of the TAC yardsticks, an increase of traffic volume of this magnitude would represent a considerable change to existing conditions for local residents.

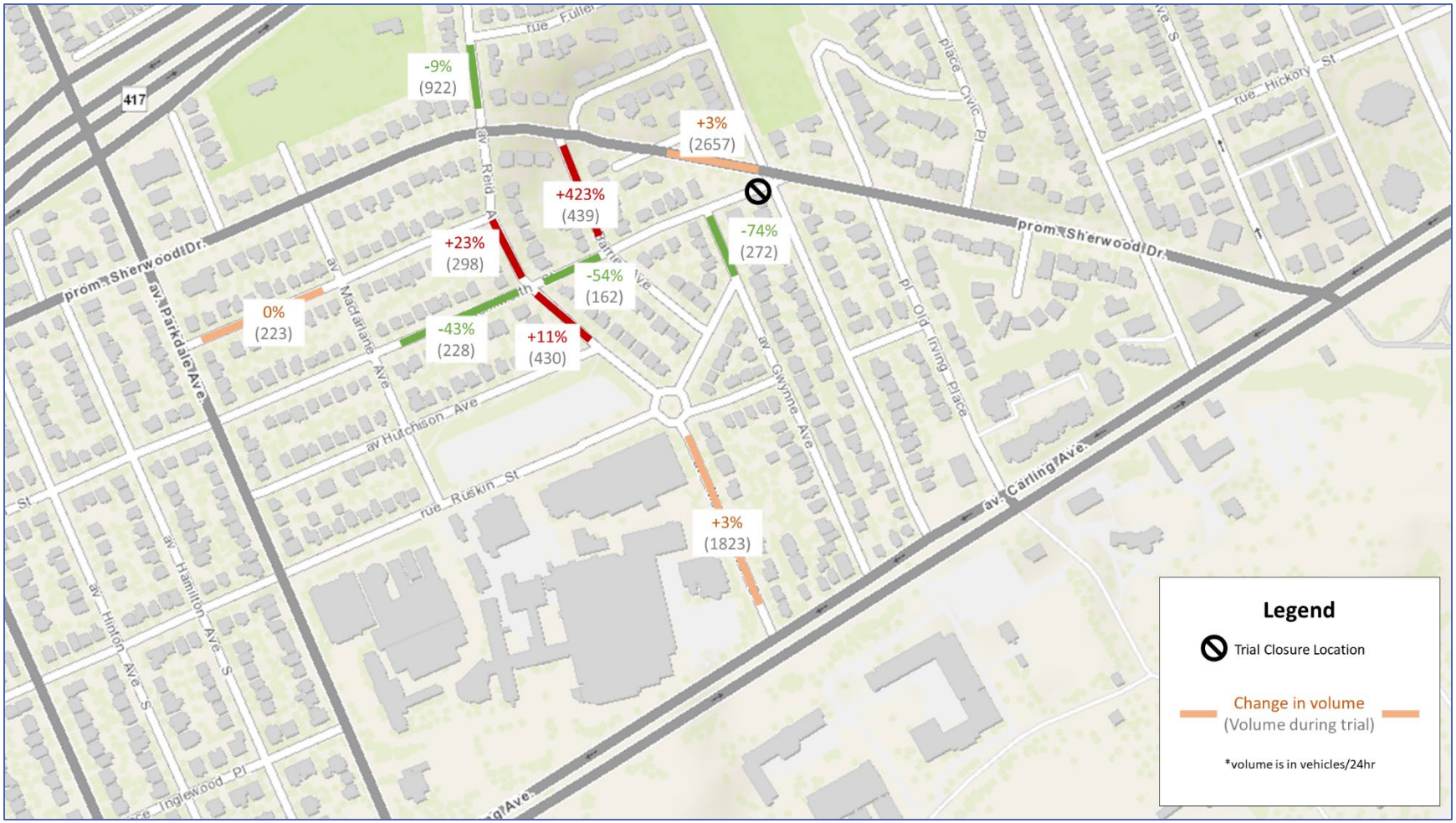

Figure 3 – Traffic volume changes between "adjusted before"/after and during (end-trial) surveys

Comparison of measured volumes with Canadian guidelines

There are many factors used when assessing roadway classifications and traffic volumes, including local context, service function, nature of adjacent land uses including presence of sensitive land uses (e.g., schools, parks, retirement homes), roadway geometry, active transportation infrastructure, etc. The *Transportation Association of Canada (TAC) 2017 Geometric Design Guide for Canadian Roads* (*TAC Geometric Design Guide*) is one tool used to aid in these assessments. This resource is a helpful guide to assess typical volumes for roadways based on their classification; however, it is not a warrant or a prescriptive method for assessing traffic volumes.

The maximum 24-hour traffic volumes collected for each location (whether *before*, *during*, or *after* the trial) were compared to the typical volumes based on roadway classification from the *TAC Geometric Design Guide.* This was done to gain insight on the measured volumes based on roadway classification alone. The TAC typical volumes for roads are:

- <1000 vehicles per day for residential local roads,
- <3000 vehicles per day for industrial/commercial local roads, and
- <8000 vehicles per day for residential collector roads.

All data collection points were on local residential roads, except for Melrose Avenue, which is considered a local industrial/commercial road due to the presence of the Civic Hospital, and Sherwood Drive, which is a residential collector road.

Table 5 – Comparison of 24-hour traffic volumes and TAC Guidelines

Location	Highest Recorded 24-hour Volume*	TAC Typical Volume	% of TAC Volume
Barrie (between Sherwood & Kenilworth)	439	<1000	44%
Gwynne Ave (between Kenilworth & Ruskin)	669	<1000	67%
Reid (between Hutchinson & Kenilworth)	430	<1000	43%
Reid (between Kenilworth & Orrin)	298	<1000	30%
Kenilworth (between MacFarlane & Reid)	258	<1000	26%
Kenilworth (between Reid & Barrie)	225	<1000	23%
Melrose (between Ruskin & Carling)	1823	<3000	61%
Orrin (between Parkdale & MacFarlane)	228	<1000	23%
Reid (between Fuller & Sherwood)	922	<1000	92%
Sherwood (between Woodstock & Fairmont)	2657	<8000	33%

*The volumes shown in this table are the highest 24-hour volumes collected as part of this trial, whether *before*, *during*, or *after* the trial.

This review demonstrated that all measured 24-hour traffic volumes were within the *TAC Geometric Design Guide* typical volumes for Canadian roadways.

Traffic Speed Review

This section summarizes the speed data analysis for the trial closure. Speed data was collected at six of the ten data collection points. Sample calculations are provided in Appendix A.

This area is part of a 30 km/hr Gateway Zone, thus the speed limit of all streets discussed within this report is 30 km/hr.

85th Percentile Speeds

All speeds referenced within this report are 85th percentile speeds. The 85th percentile speed is the speed at which 85% of vehicles travel at or below (and therefore, 15% of vehicles travel above this speed). This is the typical speed value used to represent the operating speed of a roadway under prevailing conditions.

Change in Traffic Speeds

For each of the 6 speed data collection points, the change in traffic speed was calculated from either the *before* or *after* survey and the *during* (end-trial) survey.

As discussed in the Control Point section of this report, an Adjustment Factor is not used to adjust the *before* speed data. A more realistic comparison in the effect of the trial closure on speeds is the direct changes measured on each individual street.

The calculation for the "Speed Change" in traffic speeds between *during* and *before* or *after* surveys is shown below.

$$\text{Speed Change} = \left(\frac{\text{During Speed}}{\text{Before or After Speed}} - 1\right) * 100\%$$

Results

The change between *during* (end-trial) speeds and *before*/*after* speeds are presented below, in Table 6 and Figure 4. Additional data can be found in Appendix B, such as the *during* (mid-trial) data.

Table 6 – Summary of speed analysis

Location	*During* Speed	Change	
	(km/hr)	Δ*	%**
Barrie (between Sherwood & Kenilworth)	50	+15	+43%
Reid (between Fuller & Sherwood)	46	+3	+7%
Gwynne Ave (between Kenilworth & Ruskin)	37	+1	+3%
Sherwood (between Woodstock & Fairmont)	48	+1	+2%
Melrose (between Ruskin & Carling)	44	+1	+2%
Orrin (between Parkdale & MacFarlane)	42	-1	-2%

**change in speed, measured in km/hr*

***Results are colour coded as follows: red for increases greater than +3%, orange for changes between (and including) +3% to -3%, and green for decreases in speed of more than 3%. Rationale for these thresholds is included in the following Discussion section.*

Discussion

A small degree of change in traffic speeds related to daily variation is expected for each location. It is difficult to quantify this amount, however the range of ±3% to ±5% was considered to be reasonable. The roadways that experienced a speed increase of more than 3% are the locations most clearly affected by the trial closure. For the roadways with an increase of 3% or less, it is expected that a large proportion of the increase could be related to daily variations in traffic speeds and these changes are thus considered not as strongly linked to the trial closure as those roadways with larger increases.

Speeds on Barrie Avenue increased the most of all data points, with an increase from 35 km/hr *before* the trial to 50 km/hr *during* the trial (end-trial survey). This represents an increase of 43%.

The *adjusted before* volume (84 vehicles/24hr) and *during* (end-trial) volume (439 vehicles/24hr) of Barrie Avenue is expected to indicate a change in the typical trip purpose for this roadway. The number of trips prior to the trial closure was very low, and it is likely that most trip origins/destinations were on or near Barrie Avenue, while during the trial closure, a much higher percent of vehicles likely used Barrie as a through-street. Given that the other streets studied had lower changes in volumes and speeds, it is likely that the typical purpose of those trips was more consistent between *before* and *during* trial surveys than Barrie Avenue experienced.

It is also possible that, when drivers couldn't take their typical route due to the Kenilworth trial closure, they may have tried to make up for lost time by speeding along Barrie Avenue.

Given the speed change on Barrie Avenue, the results of spot speed surveys completed during the trial were also reviewed. These results are summarized below:

- Tuesday, June 29, 2021, 3:38pm to 4:08pm – 37 km/hr
- Tuesday, July 13, 2021, 4:04pm to 4:34pm – 45 km/hr
- Monday, September 13, 2021, 3:54pm to 4:24pm – 37 km/hr

The speeds collected at the *during* (mid-trial) survey in August 2021 were consistent with these findings at 41 km/hr. The increase to a speed to 50 km/hr for the *during* (end-trial) survey in October 2021 is significant and it is difficult to explain this increase taking place only near the end of the trial, especially when comparing with the September spot speed survey which measured an 85th percentile speed of only 37 km/hr, given that prevailing conditions (including school being held in-person) were similar on both of these dates.

Figure 4 – Traffic speed changes between before/after and during (end-trial) surveys

Conclusion

A trial closure of Kenilworth Street at the intersection of Sherwood Drive / Fairmont Avenue / Kenilworth Street was carried out from June 21, 2021 to November 1, 2021.

The purpose of the trial was to investigate potential solutions to address concerns surrounding this 5-legged intersection.

As part of this trial, traffic volume and speed data were collected for nearby streets. Notable traffic volume increases during the trial were found at the following data collection points:

- Barrie (between Sherwood and Kenilworth)
- Reid (between Hutchinson and Kenilworth)
- Reid (between Kenilworth and Orrin)

Notable traffic speed increases during the trial were found at the following data collection points:

- Barrie (between Sherwood and Kenilworth)
- Reid (between Fuller and Sherwood)

The greatest increase in traffic volume and speed was measured on Barrie Avenue, indicating that the trial closure had the greatest impact on Barrie Avenue. Traffic volumes and speeds were impacted on some of the other streets, however to a lesser degree.

Volumes measured on all streets were within typical volume ranges for Canadian roadways based on the *TAC Geometric Design Guide*.

The data collected as part of this trial will assist in assessing what kind of modifications may be worth pursuing, or not, as part of the complete package of potential recommendations for the Sherwood Drive Traffic Calming Study.

Appendix A – Sample Calculations

Volume Calculations

Adjustment Factor

Data Collection Point: Control Point – Bayswater (between Beech and Hickory)

$$Adjustment\ Factor = \frac{\text{During Volume (end-trial)}}{\text{Before Volume}}$$
$$= \frac{2222\ \text{vehicles/24hr}}{1435\ \text{vehicles/24hr}}$$
$$= 1.55$$

∴ the 24-hour volume at the Control Point increased 55% between the *before* and *during* (end-trial) data points

Adjusted Before Volume

Data Collection Point: Barrie Avenue (between Sherwood and Kenilworth)

$$Adjusted\ Before\ Volume = \text{Before Volume} * \text{Adjustment Factor}$$
$$= 54\ \text{vehicles/24hr} * 1.55$$
$$= 84\ \text{vehicles/24hr}$$

∴ the *adjusted before* volume is 84 vehicles/24hr. This represents what the approximate volume would have been before the trial with prevailing conditions more similar to that of the *during* (end-trial) survey.

Change between Adjusted Before and After volumes

Data Collection Point: Barrie Avenue (between Sherwood and Kenilworth)

$$Volume\ Change = \left(\frac{\text{During Volume (end-trial)}}{\text{Adjusted Before Volume}} - 1\right) * 100\%$$
$$= \left(\frac{439\ \text{vehicles/24hr}}{84\ \text{vehicles/24hr}} - 1\right) * 100\%$$
$$= 423\%$$

∴ the adjusted change in 24-hour volumes between *before* and *during* (end-trial) data points was +423%.

Change between During and After volumes

Data Collection Point: Melrose Avenue (between Ruskin & Carling)

$$Volume\ Change = \left(\frac{\text{During Volume}}{\text{After Volume}} - 1\right) * 100\%$$
$$= \left(\frac{1823\ \text{vehicles/24hr}}{1772\ \text{vehicles/24hr}} - 1\right) * 100\%$$
$$= 3\%$$

∴ the change in 24-hour volumes between *during* (end-trial) and *after* data points was +3%.

Speed Calculations

Adjusted Change between Before and During Data Points

Data Collection Point: Barrie Avenue (between Sherwood and Kenilworth)

$$Speed\ Change = \left(\frac{\text{During Speed (end-trial)}}{\text{Before Speed}} - 1\right) * 100\%$$
$$= \left(\frac{50\ \text{km/hr}}{35\ \text{km/hr}} - 1\right) * 100\%$$
$$= 43\%$$

∴ the change in 85th percentile speed between *during* (end-trial) and *after* data points was +43%.

Change between During and After Data Points

Data Collection Point: Melrose Avenue (between Ruskin & Carling)

$$Speed\ Change = \left(\frac{\text{During Speed (end-trial)}}{\text{After Speed}} - 1\right) * 100\%$$
$$= \left(\frac{44\ \text{km/hr}}{43\ \text{km/hr}} - 1\right) * 100\%$$
$$= 2\%$$

∴ the change in 85th percentile speed between *during* (end-trial) and *after* data points was +2%.

Appendix B – Data

Volume Data

Location	Baseline Volume		During (Mid-Trial) Volume	During (End-Trial) Volume
Barrie Avenue (between Sherwood & Kenilworth)	*Before*	54	366	439
Gwynne Avenue (between Kenilworth & Ruskin)	*Before*	669	278	272
Reid Avenue (between Hutchinson & Kenilworth)	*Before*	250	349	430
Reid Avenue (between Kenilworth & Orrin)	*Before*	156	259	298
Kenilworth Street (between MacFarlane & Reid)	*Before*	258	237	228
Kenilworth Street (between Reid & Barrie)	*Before*	225	134	162
Melrose Avenue (between Ruskin & Carling)	*After*	1772	1580	1823
Orrin Avenue (between Parkdale & MacFarlane)	*After*	228	210	228
Reid Avenue (between Fuller & Sherwood)	*Before*	657	509	922
Sherwood Drive (between Woodstock & Fairmont)	*Before*	1659	2247	2657
Bayswater Avenue *(Control Point)* (between Beech & Hickory)	*Before*	1435	1637	2222

**All volumes in the table above represent vehicles/24hr.*

***Traffic data collection dates are as follows: Before (June 8, 2021), during mid-trial (August 24, 2021), during end-trial (October 19, 2021), and after (November 30, 2021).*

Change in Volumes

Location	Baseline Volume		Adjusted *Before* Volume**	*During* (End-Trial) Volume	Change (veh/24hr)	Change (%)
Barrie Avenue (between Sherwood & Kenilworth)	*Before*	54	84	439	+355	+423%
Gwynne Avenue (between Kenilworth & Ruskin)	*Before*	669	1036	272	-764	-74%
Reid Avenue (between Hutchinson & Kenilworth)	*Before*	250	387	430	+43	+11%
Reid Avenue (between Kenilworth & Orrin)	*Before*	156	242	298	+56	+23%
Kenilworth Street (between MacFarlane & Reid)	*Before*	258	399	228	-171	-43%
Kenilworth Street (between Reid & Barrie)	*Before*	225	348	162	-186	-54%
Melrose Avenue (between Ruskin & Carling)	*After*	1772	n/a	1823	+51	+3%
Orrin Avenue (between Parkdale & MacFarlane)	*After*	228	n/a	228	0	No change
Reid Avenue (between Fuller & Sherwood)	*Before*	657	1017	922	-95	-9%
Sherwood Drive (between Woodstock & Fairmont)	*Before*	1659	2569	2657	+88	+3%

**All volumes in the table above represent vehicles/24hr.*

***The approximate volume that the respective street would have had before the trial with prevailing conditions more similar to that of the during (end-trial) survey. Calculated with the control point Adjustment Factor (sample calculation in Appendix A).*

Speed Data

Location	Baseline Speed		During (Mid-Trial) Speed	During (End-Trial) Speed
Barrie Avenue (between Sherwood & Kenilworth)	*Before*	35	41	50
Gwynne Avenue (between Kenilworth & Ruskin)	*Before*	36	36	37
Melrose Avenue (between Ruskin & Carling)	*After*	43	43	44
Orrin Avenue (between Parkdale & MacFarlane)	*After*	43	41	42
Reid Avenue (between Fuller & Sherwood)	*Before*	43	39	46
Sherwood Drive (between Woodstock & Fairmont)	*Before*	48	41	49
Bayswater Avenue *(Control Point)* (between Beech & Hickory)	*Before*	37	39	39

**Traffic data collection dates are as follows: Before (June 8, 2021), during mid-trial (August 24, 2021), during end-trial (October 19, 2021), and after (November 30, 2021).*

***All speeds in the table above are in km/hr and represent 85th percentile speeds.*

Change in Speeds

Location	Baseline Speed		During (End-Trial) Speed	Change (km/hr)	Change (%)
Barrie Avenue (between Sherwood & Kenilworth)	*Before*	35	50	+15	+43%
Gwynne Avenue (between Kenilworth & Ruskin)	*Before*	36	37	+1	+3%
Melrose Avenue (between Ruskin & Carling)	*After*	43	44	+1	+2%
Orrin Avenue (between Parkdale & MacFarlane)	*After*	43	42	-1	-2%
Reid Avenue (between Fuller & Sherwood)	*Before*	43	46	+3	+7%
Sherwood Drive (between Woodstock & Fairmont)	*Before*	48	49	+1	+2%

**All speeds in the table above are in km/hr and represent 85th percentile speeds.*