Mark Engineering

Traffic Impact Study

2473903 Ontario Inc.
8186 King Street
Bolton, Town of Caledon

File: 201538

July 2016
Modified May 2017
Updated June 2018 & March 2020

MARK ENGINEERING

Excellence in Transportation & Traffic Engineering Problem Solving

March 27, 2020

2473903 Ontario Inc. Inc.
8144 King Street
Bolton ON L7E 0T8

Re: Traffic Impact Study
8186 King Street
Bolton, Town of Caledon
File 201538

Mark Engineering has up-dated the traffic impact study for the proposed development of the site at 8186 King Street in Bolton. The preliminary study was completed in July 2016. It did not include turning movements at the existing Banas Stones and Alliance Agri Turf accesses. It did include 2016 counts for the King Street intersections with Emil Kolb Parkway and Humber Station Road. The traffic counts at the King Street/Harvest Moon Drive intersection had been done in 2013, before the roundabout at the King Street/Emil Kolb Parkway was constructed.

Subsequently, the Region had undertaken an environmental assessment of possible improvements to the road-rail crossing of the King Street and the railroad tracks just west of the site. Consequently, the preliminary traffic impact study was modified in May 2017 to accommodate the expected approval of a road/rail grade separation. That study was not approved by Regional council.

Since that time, there have been discussions between the government agencies and the development team on the location and type of access for the proposed development. As a consequence, the Region requested that the traffic counts be redone as they were felt to be out of date. There counts were done on Friday, June 15, 2018 and Saturday, June 16, 2018. The analysis of the counts looked at two scenarios: a] separate accesses for the proposed site and the existing 2473903 Ontario Inc. site and b] a combined access for the two sites.

It was expected that the environmental assessment report would recommend that the existing road-rail crossing be grade separated. If that was the case, then the existing accesses to the Banas Stones. site and the Alliance Agri-Turf site to the south could be restricted due to the difference in elevation between the two sites and King Street, regardless of whether King Street went over or under the tracks. Therefore, the Region would have likely constructed a service road on the west side of King Street that would connect the existing accesses to King Street at a location somewhere north of the existing sites. For the purposes of modified study, it was assumed that the service road access would intersect King Street about half way between the tracks and Harvest Moon Drive.

The analysis done for the preliminary traffic impact study indicated that the Emil Kolb Parkway and Humber Station Road intersections with King Street operated and will operate at acceptable or better levels of service, even with the proposed development in place. Therefore, the modified

250 Bristol Road, Newmarket, Ontario L3Y 7X7 Tel: 905-836-4410
email: general@markeng.com Fax: 905-836-9744 Toll Free: 1-877-MARKENG

study and this study limited the analysis area to the section of King Street from the railroad tracks to the Harvest Moon Drive intersection.

The conclusions drawn from the analysis are:

1. The proposed 2473903 Ontario Inc. development will not generate significant volumes of traffic during the weekday peak periods.

2. The existing and proposed developments that were analysed generate and will generate very low traffic volumes.

3. The left turn volumes are so low that left turn lanes are not warranted at the accesses.

4. The existing and proposed accesses will operated at an acceptable level of service.

5. The proposed development will not have a significant impact on the operations of the King Street intersections.

6. Combining the existing Banas Stones access with the proposed 2473903 Ontario Inc. access will minimize the number of accesses to King Street but will have significant detrimental impacts on the existing and proposed site plans and will potentially have detrimental impacts on the operations of a combined access.

7. While providing a full movement access to the subject site is more desirable than a right-in/right-out, the Region has required that a right-in/right-out be implemented.

8. There are limited traffic demand management measures that can be implemented that will reduce the demand for single occupancy vehicles on King Street.

9. A full movement access for the subject site does not require a left turn lane on King Street.

It is recommended that:

1. Each property have its own access to King Street.

2. The existing Banas Stones access and the proposed 2473903 Ontario Inc. access not be combined.

3. The proposed development be permitted to proceed.

Respectfully submitted

Yours truly

J.M. Mark, P.Eng
Principal

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1. INTRODUCTION

2473903 Ontario Inc. is proposing to develop the site at 8168 King Street to provide for the retailing of stone and related products. The adjacent site at 8144 King Street is the headquarters for the Banas Stones company, which is a major natural stone supplier and exporter and provides wholesale stones and related products. The location of the site is shown in the following figure:

Figure 1.1 – Site Location [Not to scale]

1.1 History

The preliminary study did not include turning movements at the existing Banas Stones and Alliance Agri Turf accesses. It did include 2016 counts for the King Street intersections with Emil Kolb Parkway and Humber Station Road. The traffic counts at the King Street/Harvest Moon Drive intersection had been done in 2013, before the roundabout at the King Street/Emil Kolb Parkway was constructed. This study included turning movement counts at the two existing accesses and at the King Street/Harvest Moon Drive intersection. These counts were done on Friday, June 24, 2016 and Saturday, June 25, 2017. The Saturday counts were done since it was felt that Saturday traffic to the Banas Stones site could be significant. These counts also represent the summer peak period for the existing developments.

The Region had undertaken an environmental assessment of possible improvements to the road-rail crossing of the King Street and the railroad tracks just west of the site. This study was not approved by Regional council. It was expected that the environmental assessment report would recommend that the existing road-rail crossing be grade separated. If that was the case, then the existing accesses to the Banas Stones site and the Alliance Agri-Turf site to the west could be restricted due to the difference in elevation between the two sites and King Street, regardless of whether King Street went over or under the tracks. Therefore, the Region would have likely constructed a service road on the north side of King Street that would connect the existing accesses to King Street at a location somewhere east of the existing sites. For the purposes of modified study, it was assumed that the service road access would intersect King Street about half way between the tracks and Harvest Moon Drive.

1.2 Study Criteria

The analysis done for the preliminary traffic impact study indicated that the Emil Kolb Parkway and Humber Station Road intersections with King Street operated and will operate at acceptable or better levels of service, even with the proposed development in place. Therefore, the study area is limited to the section of King Street from the railroad tracks to the Harvest Moon Drive intersection.

The study time horizons are 2018, which is the year of the counts, and 20225, which is 5 years in the future. The expected peak hour volumes for the sites are relatively low so that a longer time horizon was not assumed for this preliminary study. The study area includes the King Street intersections with Harvest Moon Road and the existing and proposed accesses.

It is expected that this study could be updated using data from the environmental assessment report on the King Street road-rail crossing, whenever the EA report is approved by council.

2 EXISTING CONDITIONS

2.1 Roads

King Street is an arterial road under the jurisdiction of the jurisdiction of Peel Region [PR 9]. It is classified as a suburban connector in the Region's Road Characterization Study. It is currently a two lane road from west of Humber Station Road to Emil Kolb Parkway. It has a rural cross-section with shoulders and ditches. The speed limit west of the railway tracks is 80 kph. The posted speed limit east of the tracks is 60 kph. For the purposes of this study, it was assumed that King Street runs east/west.

Emil Kolb Parkway is an arterial road under the jurisdiction of the jurisdiction of Peel Region [PR 150]. It has a basic four-lane urban cross-section.

Humber Station Road is a major local road under the jurisdiction of the Town of Caledon. It has a two-lane rural cross-section

Harvest Moon Drive is a local road under the jurisdiction of the Town of Caledon. It has a two-lane urban cross-section with a posted speed limit of 40 kph.

2.2 Intersections

The King Street/Emil Kolb Parkway is now a traffic circle with two circulation lanes around the centre island.

The King Street/Harvest Moon Drive T-intersection has a right-turn lane and a left turn lane on King Street and one stop controlled lane on Harvest Moon Drive.

The King Street/Humber Station Road intersection is signalized with one lane on each approach. There are no separate turn phases for the signals.

2.3 Land Uses

The land uses on the south side of King Street are generally residential from the railroad tracks east. The lands on both sides of King Street west of the tracks and on the north side of King Street east of the tracks are industrial.

Alliance Agro-Turf is located on the north side of King Street and on the east side of the tracks. It is location is a strong force in turf sales and to a lesser extent agriculture and the country store provides substantial revenues to their business.

Banas Stones is also located on the north side of King Street at 8144 King Street and is a major natural stones supplier and exporter and is located east of Alliance Agro-Turf. The access is located at the east side of the site. There is a major water course centred on the property line between the existing Banas Stores property and the subject property.

The subject site is located at 8186 King Street east of the existing Banas Stones site on the north side of King Street and is owned by 2473903 Ontario Inc. It will be a manufactured stones supplier and exporter.

The distances between the accesses are shown in Figure 2.1.

Figure 2.1 – Access Separations

2.4 Transit

There is limited GO Transit bus service to Bolton. The service runs on Queen Street and King Street north of Queen Street.

2.5 Traffic

Turning movement traffic counts were counted at the Alliance Agri Turf and Banas Stones accesses and at the King Street/Harvest Moon Drive intersection. The counts were done on Friday, June 15 and Saturday, June 16, 2018. The weekday morning and afternoon and Saturday peak hour volumes were extracted from the data and are shown in Diagram 1.

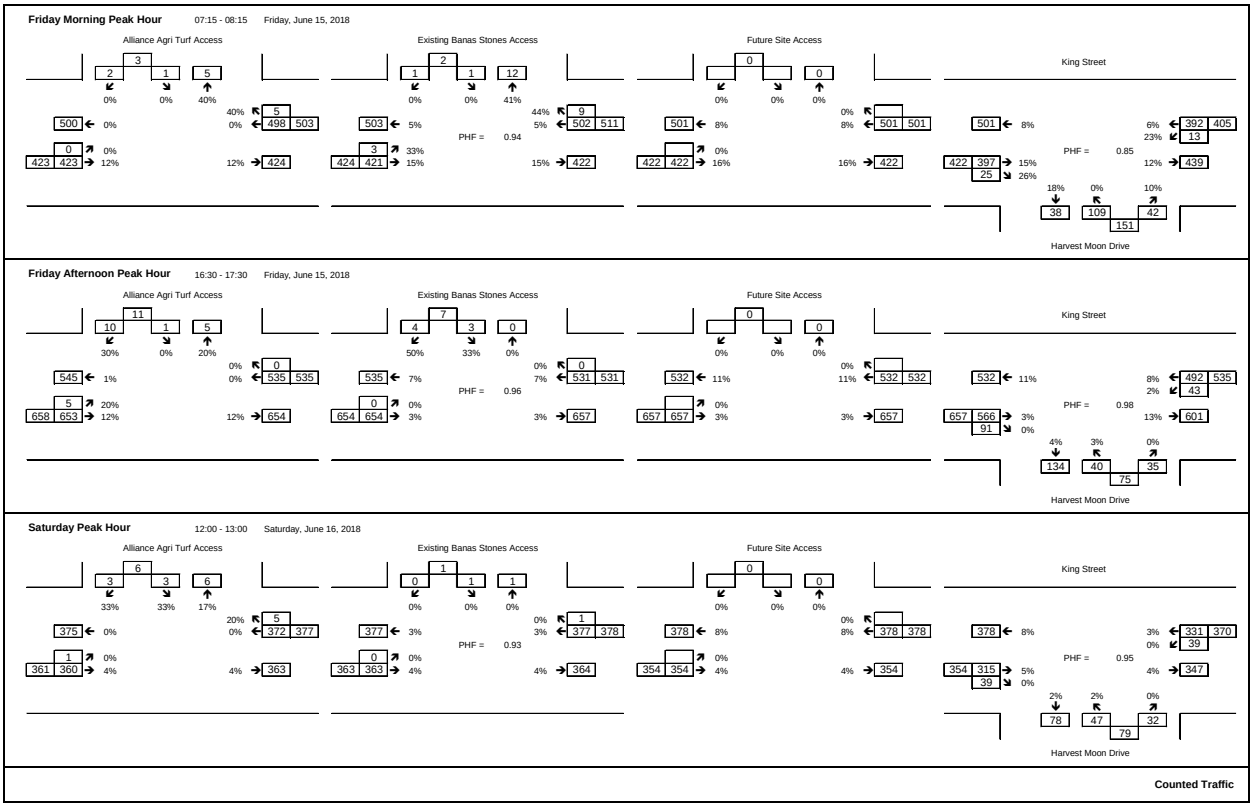


Diagram 1 – Counted Traffic Volumes

The proportion of trucks at the future access is expected to be similar to that at the Banas Stones site. The existing truck percentages are shown in Diagram 1. The existing truck volumes are:

Table 2.1 - Existing Banas Stones Peak Hour Truck Traffic

	Total Traffic			Truck Traffic		
	Friday			Friday		
Peak Hour	Morning	Afternoon	Saturday	Morning	Afternoon	Saturday
Eastbound Left	3	0	0	1	0	0
Eastbound Through	421	654	363	63	19	15
Westbound Through	502	531	377	25	37	11
Westbound Right	9	0	1	4	0	0
Southbound Left	1	3	1	0	1	0
Southbound Right	1	4	0	0	2	0
Total Inbound	12	0	1	5	0	0
Total Outbound	2	7	1	0	3	0
Total Access	14	7	2	5	3	0
Total King Street	935	1185	741	93	56	26
King Street % Trucks				10%	5%	4%

The counts indicate that the maximum peak hour truck traffic into the subject site would be in the order of 5 trucks per hour.

3. PROPOSED DEVELOPMENT

3.1 Site Plan

The current site plan is shown in Figure 3.1.

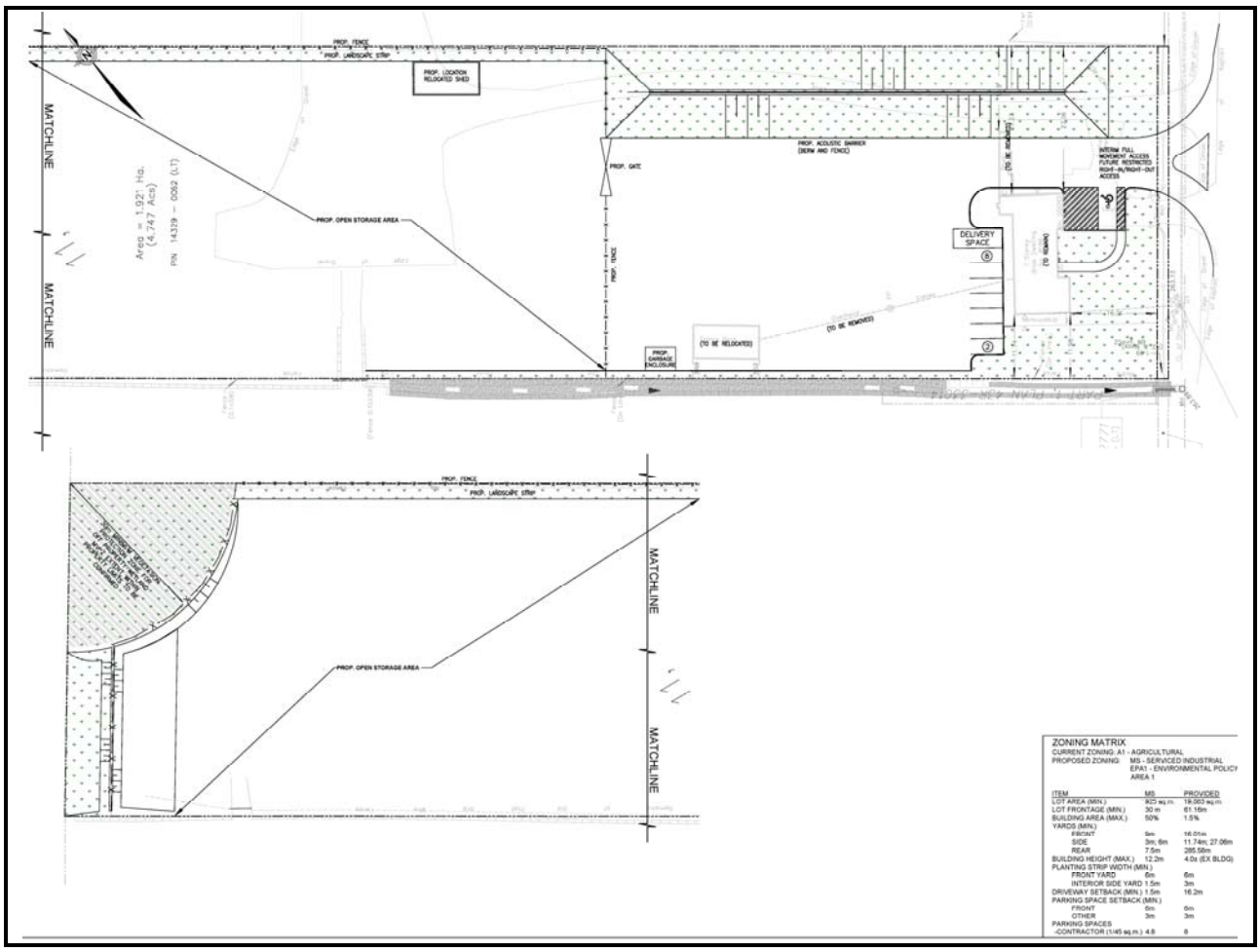


Figure 3.1 – Conceptual Site Plan [Not to scale]

The site is located at 8168 King Street. It has an area of 19.090 Ha. The existing building has a gross floor area of 215± m^2. Ten parking spaces are provided.

It is expected that the site could be occupied later this year once the appropriate planning approvals are in place.

There are only limited traffic demand management measures that could be implemented to reduce the use of single occupancy vehicles. There are no sidewalks on King Street. Bicycle racks could be provided at the site to entice employees to bicycle to work.

The land uses for the two existing and the proposed sites are shown in Table 3.1.

Table 3.1 - Land Uses

Site		Lot Area			Building Area	
Alliance Agri-Turf		24,833 m²	267,295 sf	6.14 acres		
Banas Stones	Existing	17,325 m²	186,485 sf	4.28 acres	493 m²	5.31 ksf
2473903 Ont.	Proposed	19,090 m²	205,483 sf	4.72 acres	210 m²	2.26 ksf
	Subtotal	36,415 m²	391,968 sf	9.00 acres		
Total		61,248 m²	659,263 sf	15.14 acres		

3.2 Access

The site will have one access to King Street. The conceptual site plan shows this access intersecting with the existing pavement on King Street.

The Region's Road Characterization Study shows this section of King Street to be a Suburban Connector. The minimum spacing between median openings from Table 2 are:

- Full movement to full movement - 300 metres
- Full movement to left-in/right-in/right-out movement access - 150 metres
- Left-in/right-in/right-out movement to left-in/right-in/right-out movement access - 150 metres

The minimum spacing between median openings from Table 3 are:

- Full movement to right-in/right-out movement - 75 metres
- Left-in/right-in/right-out movement to right-in/right-out movement access - 75 metres
- Right-in/right-out movement to right-in/right-out movement access - 75 metres

The maximum spacing between the existing Banas Stones access and the proposed access is 60± metres.

The Region of Peel would like to have the existing Banas Stones access combined with the proposed 2473903 Ontario Inc. access so that the spacing between the combined access and the Alliance Agri-Turf access would be 65± metres, which is less than the minimum spacing permitted under the Road Characterization Study.

3.2.1 Shared Access

There are two alternative locations of a shared access. One would be to provide a connection on the common property line between the Banas Stones site and the proposed 2473903 Ontario Inc.site. A second would be to provide an access at the east side of the proposed 2473903

Ontario Inc.site with a new connection to the Banas Stones site through the proposed site. This would permit the existing Banas Stones access to be closed.

In both cases, the two land owners would have to agree to the arrangement.

In either case, it is expected that there will not be sufficient left turns off King Road to fulfill the warrants for a left turn lane.

There are three major problems with providing one shared access to both properties.

a) Security

The first is security. Currently, there is a gate across the Banas Stones driveway located at the front of the building. The gate is locked when the site is not operating.

It is assumed that the proposed site will have to be secured when it is not operating.

Since there may be situations when one site is operating and one is not, then the gates will have to be remote from the road since there is no room in front of the building on the site to permit trucks to turn around the building.

Therefore, the gates will have to be located north of the buildings.

The fence around the cul-de-sac should be 2± metres from the edge of pavement.

The fence should be located immediately adjacent to the sidewalk on the north side of the Banas Stones building.

A gate will be required to secure the parking area in front of the 2473903 Ontario Inc.

b) Operations

There is the potential for a truck to enter the driveway and find that the gate to the site accesses is closed. Consequently, the truck driver may wish to leave. To do so requires enough room to turn around. That is, a cul-de-sac will be necessary at the north end of the driveway.

The design vehicle for the access should be a WB-21 semi trailer unit with three axles on the rear of the trailer. The outside radius to permit a U-turn should be 20 metres. The return radius should be 10 metres.

A potential cul-de-sac design is shown in Figure 3.2. Any cul-de-sac design will require the storm water channel to be piped underneath the cul-de-sac.

c) Environment

The problem with a shared access is that part of the watercourse would have to be piped, which is contrary to the desire of the conservation authority. If there is a simple connection to the site, the length of the culvert would be about 10 metres. If a cul-de-sac is implemented, the culvert would be about 40 metres long.

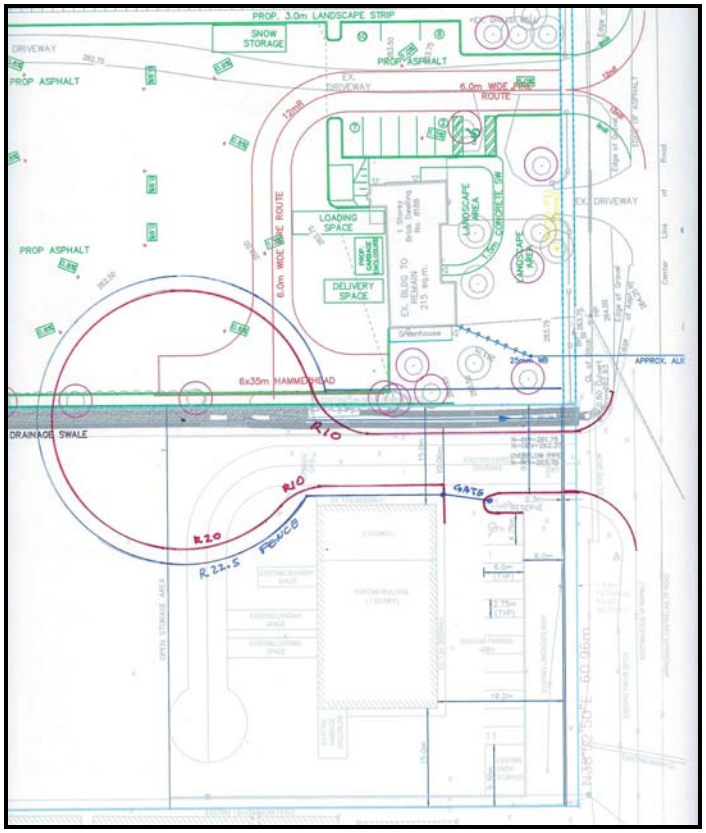


Figure 3.2 – Conceptual Cul-De-Sac Design

3.2.2 Separate Access

Ideally, the site should have its own access. A full movement access would be relatively straight forward. There is not sufficient traffic to warrant a separate left turn lane on King Street. It is also expected that there would not be sufficient traffic to warrant a separate right turn lane on King Street.

The Region has indicated that it would support a right-in/right-out access for the subject site. The conceptual design of such an access is shown in Figure 3.3. This design follows the Region's Standard Drawing Number 5-1-4.

3.3 Company Operations

The company will have similar operations as the existing Banas Stones site. The produce market extends from the beginning of the construction season to the end of the construction season. The company is mainly a wholesale retailer selling to construction companies. As such, it will not attract significant retail traffic.

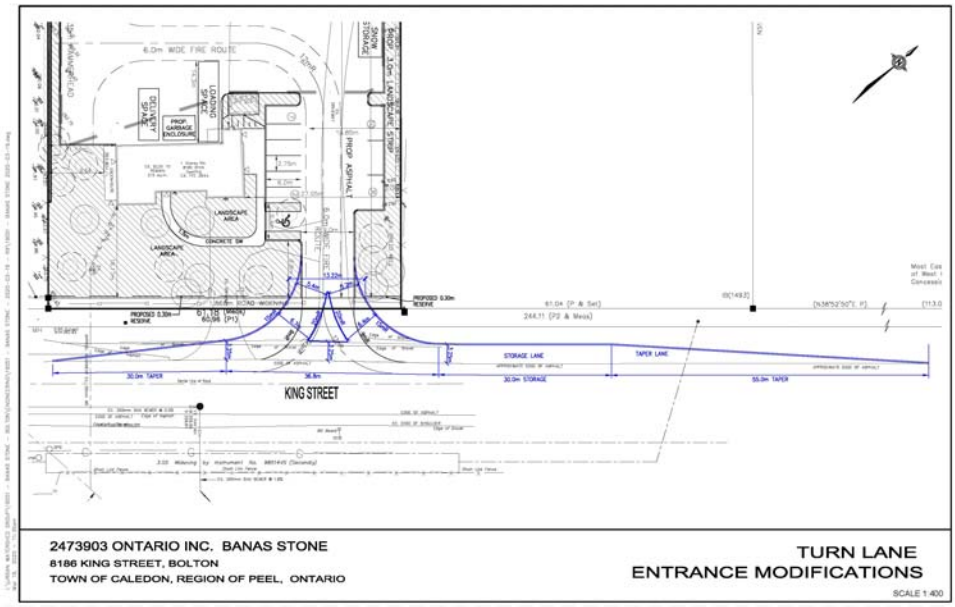


Figure 3.3 – Right-In/Right-Out Access Conceptual Design

4. TRAFFIC FORECASTS

4.1 Future Background Traffic

Data from the Caledon Transportation Needs Study Update[1] for the King Street screenline was used to forecast future growth on King Street. The derivation of the growth factors and rates is shown in Table 4.1 and 4.2. The volumes were taken from Table B.1 Traffic Forecasts and Analyses Summary. The volumes for 2018 and 2025 were interpolated from the 2011 and 2031 volumes and converted into a 2018 to 2025 annual growth rate of 3.6% to 6.0%. The data indicates that the annual growth rate over the next five years will be about 5%.

Table 4.1 - Traffic Forecasts at Study Screenlines

Morning Peak Hour Volumes [vph]		
Screenline	9A Airport Road	10A RR 50
Year	Volume	
2001	1287	1004
2011	2386	1048
2021	3704	1365
2031	4176	2477
Forecasts		
2018	3045	1207
2025	3893	1810
Growth Factor	1.278	1.500
Annual Growth Rate	3.57%	5.96%

9A is from Mayfield Road to Old Baseline Road

10A is from Mayfield Road to King Street

The population and employment data for Caledon was taken from Table 3.1 of the Caledon Transportation Needs Study Update and is shown in Table 4.2.

Table 4.2 - Study Estimates of Caledon Population and Employment

2011 Pop	2011 Emp	2021 Pop	2021 Emp	2031 Pop	2031 Emp
68,919	27,972	87,384	38,213	116,005	51,890
10 Year Growth		18,465	10,241	28,621	13,677
10 Year Growth Factor		1.268	1.366	1.328	1.358
Average Annual Growth		2.40%	3.17%	2.87%	3.11%

The data indicates that the annual growth rate over the next five years will be in the 2% to 3% range.

[1] Phillips Engineering & Paradigm Transportation Solutions Limited, March 2009, King Street Screen Line

An annual growth rate of 5% was used to forecast the 2025 background volumes, as shown in Diagram 2.

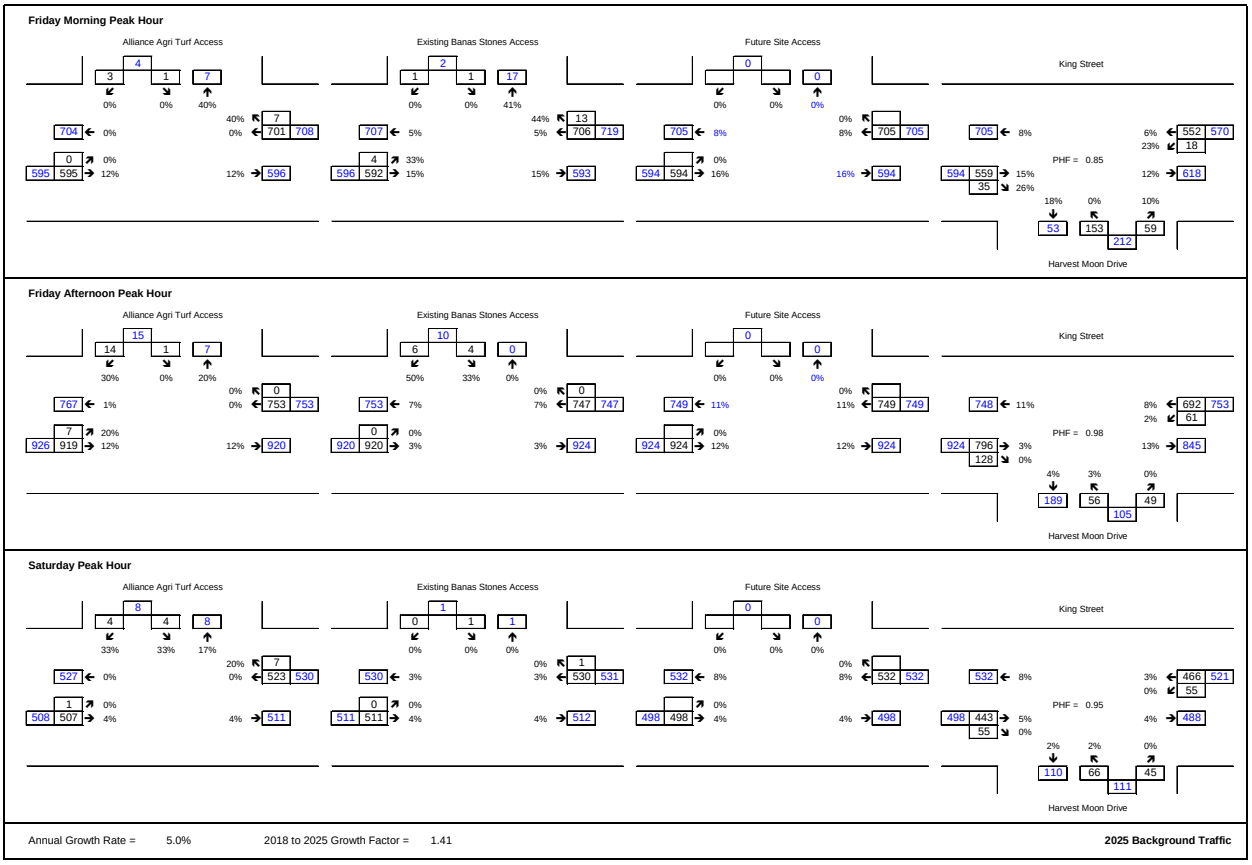


Diagram 2 – 2025 Background Traffic Volumes

4.2 Site Traffic

4.2.1 Trip Generation

The counts at the Banas Stones access were used to derive trip generation rates for the new site. The derivation is shown in Table 4.3.

The land use code descriptions in the 9th Edition of the Institute of Transportation Engineers Trip Generation Manual were reviewed to determine the appropriateness of the actual trip generation rates. The closest land use code appears to be Land use 818 – Wholesale Nursery, whose description is “A wholesale nursery is a free-standing building with a yard of planning or landscape stock. The nurseries primarily serve contractors and suppliers. Some have large greenhouses and offer landscaping services. Most have office, storage and shipping facilities. Nurseries are characterized by seasonal variations in trip characteristics.” Table 4.4 shows the Institute of Transportation Engineers trip generation rates for this land use code.

Table 4.3 - Existing Banas Stones Trip Generation			
Direction	Inbound	Outbound	Total
Trips			
Morning Peak Hour	12	2	14
Afternoon Peak Hour	0	7	7
Saturday Peak Hour	1	1	2
Trip Rates			
Trips per Acre			
Morning Peak Hour	2.80 trips/acre	0.47 trips/acre	3.27 trips/acre
Afternoon Peak Hour	0.00 trips/acre	1.64 trips/acre	1.64 trips/acre
Saturday Peak Hour	0.23 trips/acre	0.23 trips/acre	0.47 trips/acre
Trips per 1000 sf			
Morning Peak Hour	2.26 trips/ksf	0.38 trips/ksf	2.64 trips/ksf
Afternoon Peak Hour	0.00 trips/ksf	1.32 trips/ksf	1.32 trips/ksf
Saturday Peak Hour	0.19 trips/ksf	0.19 trips/ksf	0.38 trips/ksf

Table 4.4 - Trip Generation			
818 Nursery (Wholesale)			
Direction	Inbound	Outbound	Total
Trip Rates [trips/acres]			
Morning Peak Hour	0.11 trips/acre	0.15 trips/acre	0.26 trips/acre
Afternoon Peak Hour	0.26 trips/acre	0.19 trips/acre	0.45 trips/acre
Saturday Peak Hour	0.33 trips/acre	0.25 trips/acre	0.58 trips/acre
Trip Rates [trips/ksf]			
Morning Peak Hour	1.03 trips/ksf	1.37 trips/ksf	2.40 trips/ksf
Afternoon Peak Hour	2.95 trips/ksf	2.22 trips/ksf	5.17 trips/ksf
Saturday Peak Hour	3.15 trips/ksf	2.37 trips/ksf	5.52 trips/ksf

The Institute of Transportation Engineers rates are much different from the counted rates. Therefore, it was decided to use the counted rates for the proposed site. The resulting trip generation is shown in Table 4.5.

4.2.2 Trip Distribution

The trip distribution was based on the trips into and out of the area, as shown in Table 4.6.

Table 4.5 - Proposed Site Trip Generation			
Direction	Inbound	Outbound	Total
Trip Rates			
Morning Peak Hour	2.80 trips/acre	0.47 trips/acre	3.27 trips/acre
Afternoon Peak Hour	0.00 trips/acre	1.64 trips/acre	1.64 trips/acre
Saturday Peak Hour	0.23 trips/acre	0.23 trips/acre	0.47 trips/acre
Trips [acres]			
Morning Peak Hour	13	2	15
Afternoon Peak Hour	0	8	8
Saturday Peak Hour	1	1	2
Trips [ksf]			
Morning Peak Hour	5	1	6
Afternoon Peak Hour	0	3	3
Saturday Peak Hour	0	0	1

Table 4.6 - Trip Distribution						Based on Counted Volumes
	Morning Peak Hour		Afternoon Peak Hour		Saturday Peak Hour	
	Volume	%	Volume	%	Volume	%
From						
East on King Street	392	42%	492	42%	331	45%
South on Harvest Moon Dr.	109	12%	40	3%	47	6%
West on King Street	423	46%	653	55%	360	49%
Total	924		1185		738	
To						
East on King Street	397	43%	566	47%	315	43%
South on Harvest Moon Dr.	25	3%	91	8%	39	5%
West on King Street	498	54%	535	45%	372	51%
Total	920		1192		726	

4.2.3 Trip Assignment

The trip distribution was applied to the trip generation to produce the site traffic volumes shown in Diagrams 3 & 4. Diagram 3 shows the traffic assignment with a full movement access to the subject site. Diagram 4 shows the traffic assignment with a fright-in/right-out access to the subject site.

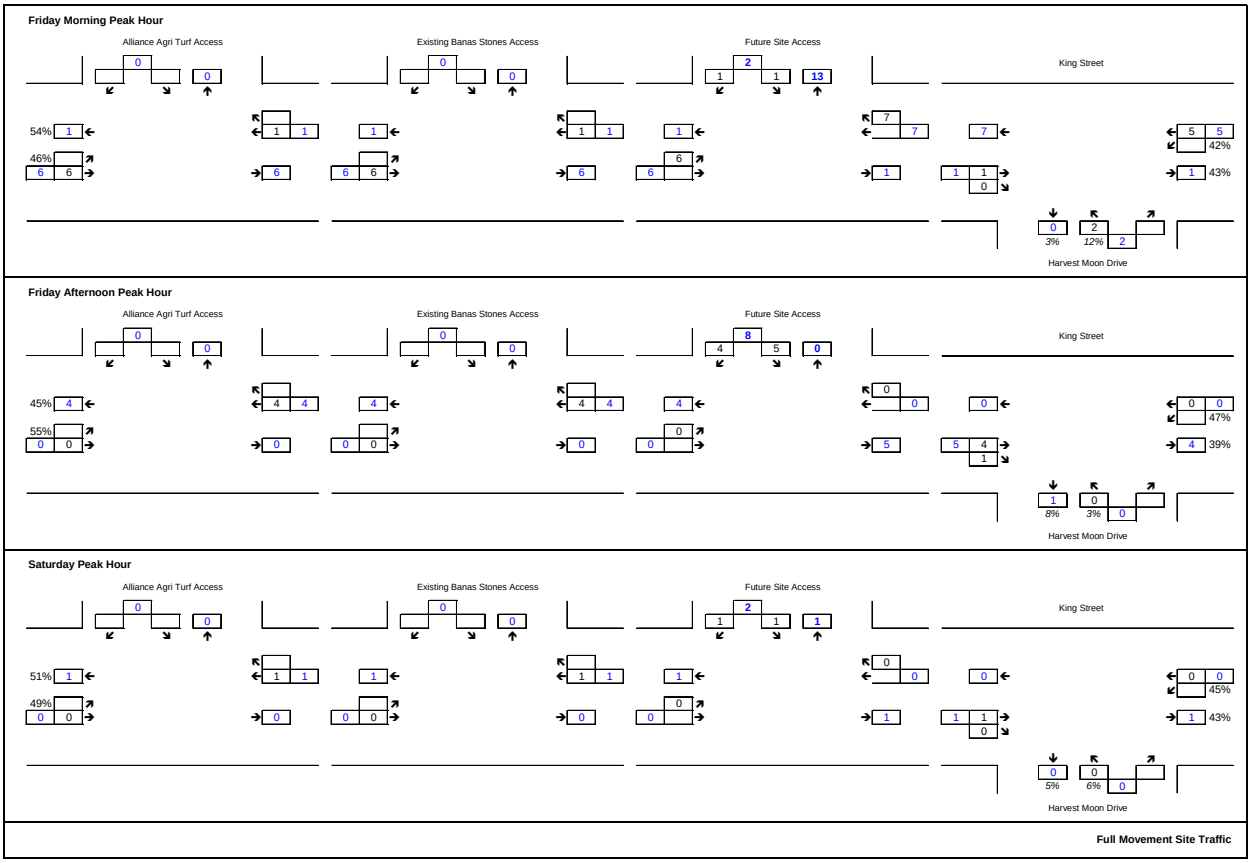


Diagram 3 – Site Traffic Volumes Full Movement Access

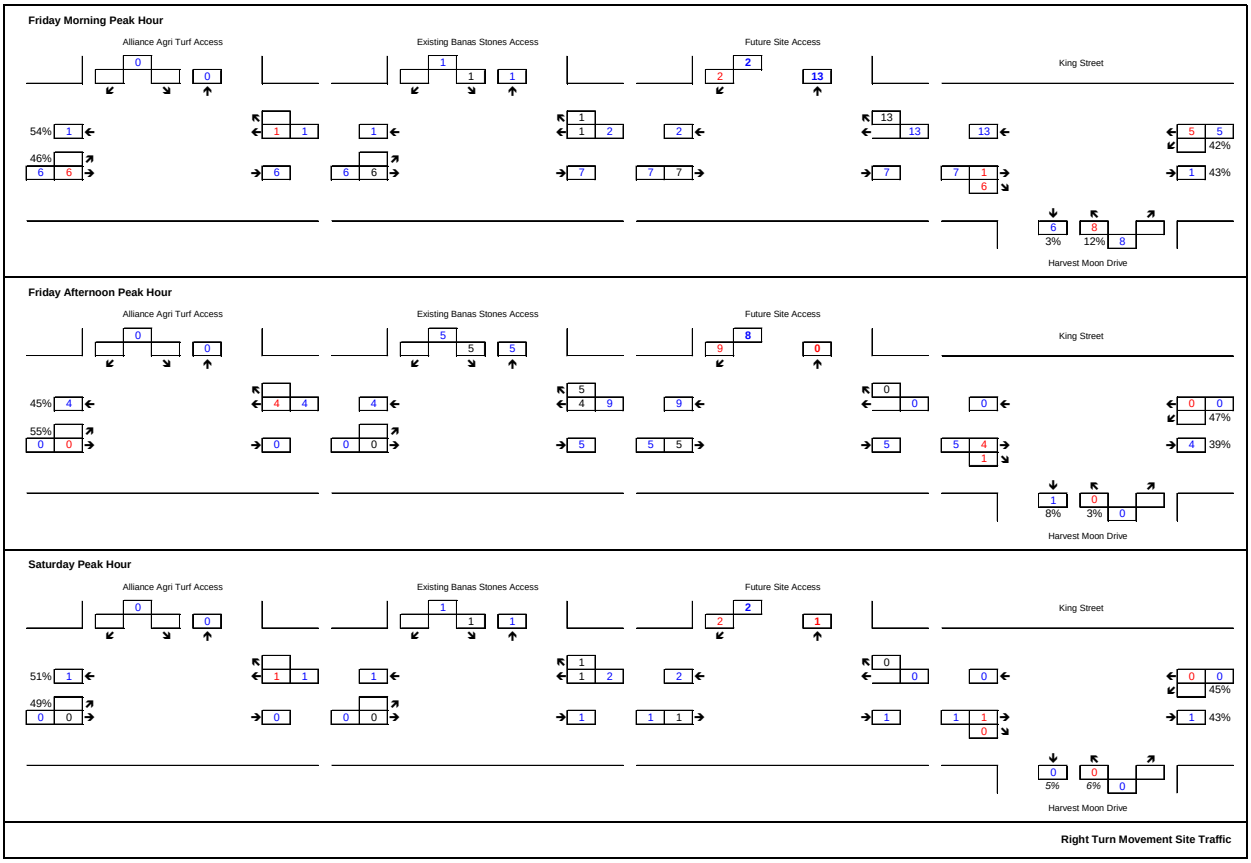


Figure 4 - Site Traffic Volumes Right-In/Right-out Access

4.3 Future Total Traffic

The site traffic was added to the 2025 background traffic to produce the 2025 total traffic shown in Diagram 5 for the full movement access alternative and in Diagram 6 for the right-in/right-out movement access alternative.

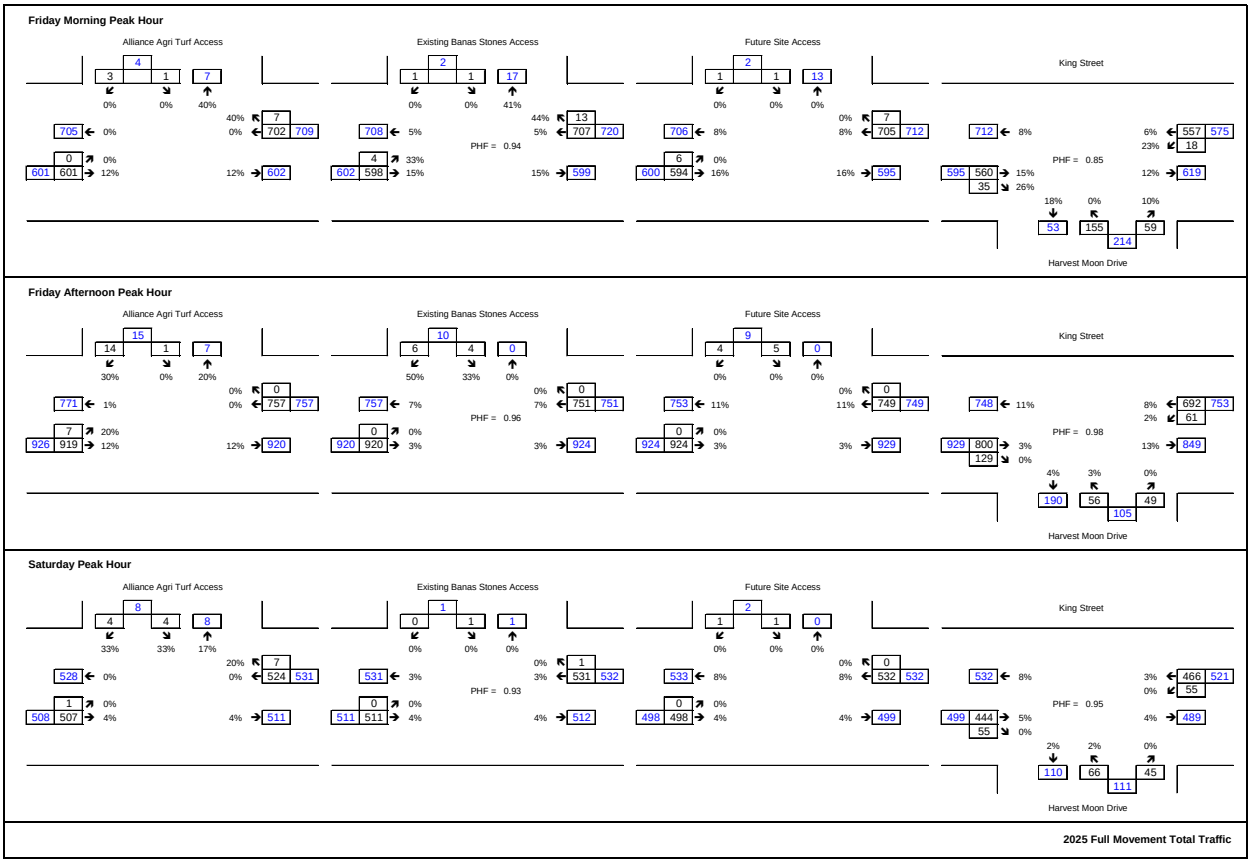


Figure 5 – 2025 Full Movement Total Traffic

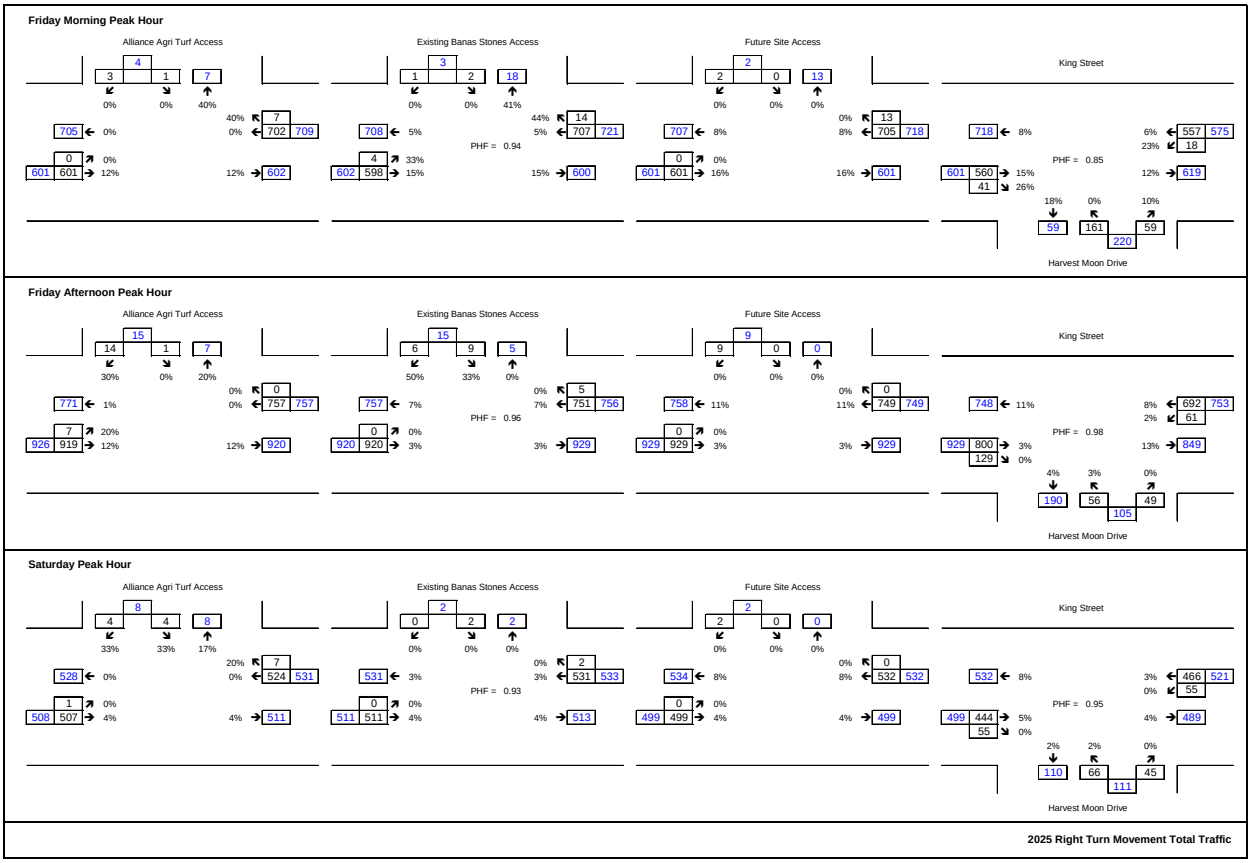


Figure 6 – 2025 Right-In/Right-out Movement Total Traffic

5. TRAFFIC ANALYSIS

The analysis of the intersections and accesses was done using the Version 7 of the highway capacity software. The summary tables are attached. The details of the signal timings and phasing are shown in the summary reports that are included in the appendices.

5.1 King Street & Alliance Agri Turf Access

The results of the analysis of this stop controlled unsignalized intersection are:

Table 5.1 - King Street & Alliance Agri Turf Access

		Friday Morning Peak Hour			Friday Afternoon Peak Hour			Saturday Peak Hour		
Scenario	Movements	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio
Existing Traffic	Eastbound	8.4	A	0.00	9.3	A	0.01	8.1	A	0.00
	Southbound	11.5	B	0.01	15.8	C	0.04	13.5	B	0.02
Future Background Traffic	Eastbound	9.1	A	0.00	10.5	B	0.01	8.6	A	0.00
	Southbound	16.9	C	0.01	22.7	C	0.08	18.2	C	0.03
Future Total Traffic Full Movement Access	Eastbound	9.1	A	0.00	10.6	B	0.01	8.6	A	0.00
	Southbound	17.0	C	0.01	22.8	C	0.09	18.2	C	0.03
Future Total Traffic RIRO Movement	Eastbound	9.1	A	0.00	10.6	B	0.01	8.6	A	0.00
	Southbound	17.0	C	0.00	22.8	C	0.09	18.2	C	0.03

The results indicate that the access operates and will operate at a good or better level of service. They also indicate that the proposed development will not have a significant impact on the operation of the access.

5.2 King Street & Banas Stones Access

The results of the analysis of this unsignalized intersection are shown in Table 5.2. The results indicate that the access operates and will operate at a good or better level of service. They also indicate that the proposed development will not have a significant impact on the operation of the access.

Table 5.2 - King Street & Banas Stones Access

		Friday Morning Peak Hour			Friday Afternoon Peak Hour			Saturday Peak Hour		
Scenario	Movements	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio
Existing Traffic	Eastbound	9.0	A	0.00	8.5	A	0.00	8.1	A	0.00
	Southbound	14.7	B	0.01	19.1	C	0.03	15.1	C	0.00
Future Background Traffic	Eastbound	9.0	A	0.01	9.2	A	0.00	8.6	A	0.00
	Southbound	20.5	C	0.01	31.3	D	0.07	20.7	C	0.00
Future Total Traffic Full Movement Access	Eastbound	9.9	A	0.01	9.3	A	0.00	8.6	A	0.00
	Southbound	20.7	C	0.01	31.5	D	0.07	20.7	C	0.00
Future Total Traffic RIRO Movement	Eastbound	9.9	A	0.01	9.3	A	0.00	8.6	A	0.00
	Southbound	23.1	C	0.02	41.5	E	0.14	20.8	C	0.01
Future Total Traffic Combined Access	Eastbound	10.0	A	0.01	9.3	A	0.00	8.6	A	0.00
	Southbound	21.2	C	0.02	36.7	E	0.15	20.7	C	0.00

The results indicate that the intersection operates and will operate at a good or better level of service. They also indicate that the proposed development will not have a significant impact on the operation of the access.

5.3 King Street & Harvest Moon Drive

The results of the analysis of this unsignalized intersection are:

Table 5.3 - King Street & Harvest Moon Drive Intersection

		Friday Morning Peak Hour			Friday Afternoon Peak Hour			Saturday Peak Hour		
Scenario	Movements	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio	Aver Delay	Level of Service	V/C Ratio
Existing Traffic	Westbound	8.8	A	0.02	9.8	A	0.07	8.1	A	0.03
	Northbound	28.6	D	0.54	37.2	E	0.46	14.8	B	0.18
Future Background Traffic	Westbound	9.6	A	0.03	10.4	B	0.09	8.7	A	0.06
	Northbound	85.5	F	0.93	71.2	F	0.70	23.4	C	0.38
Future Total Traffic Full Movement Access	Westbound	9.3	A	0.02	10.4	B	0.09	8.7	A	0.06
	Northbound	90.2	F	0.95	72.1	F	0.71	23.8	C	0.38
Future Total Traffic RIRO Movement	Westbound	9.3	A	0.02	10.4	B	0.09	8.7	A	0.06
	Northbound	98.3	F	0.98	72.1	F	0.71	23.8	C	0.38

The results indicate that the traffic on King Street operates and will operate at a good or better level of service. The combined traffic turning onto King Street will experience significant delays. The volume-to-capacity ratios indicated that there will be sufficient gaps in the traffic to serve the demand. However, drivers will have to wait for those gaps to occur. They also indicate that the proposed development will not have a significant impact on the operation of the intersection.

5.4 King Street & Proposed Site Access

The results of the analysis of this unsignalized intersection are:

Table 5.4 - King Street & Proposed Site Access

Time Period	Turns	Friday Morning Peak Hour	Friday Afternoon Peak Hour	Saturday Peak Hour
Future Total Traffic	Eastbound Combined	8.9, A, 0.01	9.0, A, 0.00	7.6, A, 0.00
	Southbound Combined	18.3, C, 0.01	26.3, D, 0.05	11.4, B, 0.00

The results indicate that the intersection operates and will operate at good or better level of service. Applying the future volumes for this access to the Ministry of Transportation Ontario's warrants for the installation of left turn lanes indicates that a left turn lane on King Street at the access is not warranted since the left turn volumes are so low.

5.5 King Street & Combined Existing Banas Stones & New Site Access

The future volumes for this location were applied to the Ministry of Transportation Ontario's warrants for the installation of left turn lanes. The turning movements are so low that a separate left turn lane is not warranted.

The results of the operational analysis of this unsignalized intersection are shown in Table 5.2.

The results indicate that the intersection will operate at a good or better level of service, except during the weekday afternoon peak hour when drivers turning onto King Street will experience some delays. The volume-to-capacity ratios indicated that there will be sufficient gaps in the traffic to serve the demand. However, drivers will have to wait for those gaps to occur.

6. TRANSPORTATION DEMAND MANAGEMENT

6.1 Objectives

The objectives of a traffic demand management plan are:

- To create an active transportation system and programs that encourages walking, cycling and the use of public transit.
- To provide transit service that is convenient and accessible to all residents and workers of York Region.
- To ensure streets support all modes of transportation including walking, cycling, transit, automobile use, and the efficient movement of goods.
- To plan and protect future urban and rural streets to accommodate transportation demands.
- To promote a linked and efficient network for goods movement that supports economic vitality and minimizes conflicts with sensitive land uses.
- To support strong airport infrastructure within the Greater Toronto and Hamilton Area, while minimizing conflicts between airport operations and surrounding lands.

All but the last of these apply to the proposed retail development.

6.2 Outcomes

The expected outcomes include:

1. Reduced total traffic
2. Reduced peak period traffic
3. Reduced number of person trips
4. Reduced number of private vehicle trips
5. Increased transit ridership
6. Increased walking
7. Increased bicycling
8. Reduced requirements for parking
9. Increased automobile occupancy levels

6.3 Measures

There are a number of traffic demand management measures that can be effective. Table 6.1 outlines such measures. The ones applicable to this development are:

a) Car Pooling/Van Pooling

Car pooling and van pooling are essentially the same measure, but differ in the size of vehicle. In either case, spaces close to the doors to the buildings should be reserved for these vehicles. Since it is relatively easy to change the designations for parking spaces, the number of spaces can be changed over time. The major cost would be the purchasing and installation of the signs, which should be in the order of $150 to $200 each.

The organization 'erideshare.com' provides a car pooling service that is free to use and will assist in establishing car pools. This can be done by individuals or employers.

Smart Commute is a program of Metrolinx and the municipalities in the Greater Toronto and Hamilton Area. It operates carpoolzone.ca that is a car pooling service. It helps local employers and commuters explore different commute choices like carpooling, cycling and transit. Smart Commute also has a program where employees of selected companies can receive discounted transit passes.

b) Ride Sharing

Ride sharing tends to be done on an individual basis. It is not a regularly organized event, but occurs on an ad hoc basis.

c) Preferred Parking for High Occupancy Vehicles

These are parking spaces designated for high occupancy vehicles located close to entry points of buildings. It encourages people to use car and van pools and high occupancy vehicles since they can have a short walk between the vehicle and the building.

d) Flexible Work Hours/Staggered Work Hours/Compressed Work Week

These measures are typically implemented by the occupants. It can be effective in spreading out the transportation demand over a number of hours, therefore reducing the demand during the peak hours.

e) Bicycle Parking

Bicycle parking is not generally required in industrial areas, unless there is a demand by employees for secured bicycle racks.

Table 6.1 - TDM Strategies Applicable to Site Developments

	Intent				Applicability			Initial Responsibility						On-going Responsibility				
Strategy	Encourage Alternate Travel Modes	Increase Vehicle Occupancy	Shift Travel to Off-Peak Periods	Reduce Automobile Travel	Planning Stage	Building Operations/ Management	Individual Occupant	Region/County	Local Municipality	Transit Operator	Developer/Builder	Building Operations/ Management	Individual Occupant	Region/County	Local Municipality	Transit Operator	Building Operations/ Management	Individual Occupant
Carpools and/or vanpools		✓					✱					✱	✱				✱	✱
Carpool drop-off areas		✓			✱						✱						✱	
Ridesharing		✓				✱	✱					✱	✱				✱	✱
Carsharing	✓	✓			✱	✱					✱	✱					✱	
Shuttle Buses	✓			✓	✱	✱	✱					✱	✱				✱	✱
Guaranteed ride home	✓	✓					✱						✱					✱
Preferred parking for HOV's		✓				✱						✱					✱	
Restrict parking supply	✓	✓			✱	✱		✱	✱		✱	✱					✱	
Shared parking	✓		✓	✓	✱	✱					✱	✱					✱	
Pricing to encourage short term parking	✓		✓	✓		✱						✱					✱	
Parking pricing to encourage off-peak trips			✓			✱						✱					✱	
Elimination of free employee parking	✓	✓					✱						✱					✱
Flexible work hours	✓	✓	✓				✱						✱					✱
Staggered work hours		✓	✓				✱						✱					✱
Compressed workweek			✓	✓			✱						✱					✱
Teleworking			✓	✓			✱						✱					✱
Bicycle parking	✓				✱						✱						✱	
Bicycle sharing	✓				✱	✱					✱	✱					✱	
Change rooms and showers for cyclists	✓				✱						✱						✱	
Bicycle Repair Facility	✓				✱	✱					✱						✱	
On-site taxi stand	✓				✱						✱						✱	
Subsidized transit fares	✓				✱	✱	✱	✱	✱	✱				✱	✱	✱		
Weather-protected connection to transit	✓			✓	✱						✱						✱	
Proximity to transit	✓			✓	✱						✱			✱	✱	✱		
Transit shelters, benches, etc.	✓				✱	✱					✱			✱	✱	✱	✱	
On-site sale of transit fares	✓					✱					✱					✱	✱	
On-site transportation information	✓			✓	✱	✱					✱					✱	✱	
Way Finding signage	✓				✱	✱		✱	✱	✱	✱	✱		✱	✱	✱		
Special events to promote alternative modes	✓			✓		✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱
Lighting, sidewalks, etc. for pedestrians	✓				✱	✱					✱						✱	

Source: TDM in City Centres & Beyond, TDM & New Developments Workshop, June 1, 2011

Strategy selected

6.4 Impacts

There is not yet sufficient data available in the GTA to accurately determine the impacts of the various traffic demand management measures. Generally, it is expected that implementing the measures can reduce single occupancy vehicles usage by 10 to 15%.

Most of the measures suggested above should be instigated by the employees at the site.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The conclusions drawn from the above are:

1. The proposed 2473903 Ontario Inc. development will not generate significant volumes of traffic during the weekday peak periods.
2. The existing and proposed developments that were analysed generate and will generate very low traffic volumes.
3. The left turn volumes are so low that left turn lanes are not warranted at the accesses.
4. The existing and proposed accesses will operated at an acceptable level of service.
5. The proposed development will not have a significant impact on the operations of the King Street intersections.
6. Combining the existing Banas Stones access with the proposed 2473903 Ontario Inc. access will minimize the number of accesses to King Street but will have significant detrimental impacts on the existing and proposed site plans and will potentially have detrimental impacts on the operations of a combined access.
7. While providing a full movement access to the subject site is more desirable than a right-in/right-out, the Region has required that a right-in/right-out be implemented.
8. There are limited traffic demand management measures that can be implemented that will reduce the demand for single occupancy vehicles on King Street.
9. A full movement access for the subject site does not require a left turn lane on King Street.

7.2 Recommendations

It is recommended that:

4. Each property have its own access to King Street.
5. The existing Banas Stones access and the proposed 2473903 Ontario Inc. access not be combined.
6. The proposed development be permitted to proceed.

Respectfully submitted

Mark Engineering

Traffic Analysis Outputs

HCS7 Two-Way Stop-Control Report

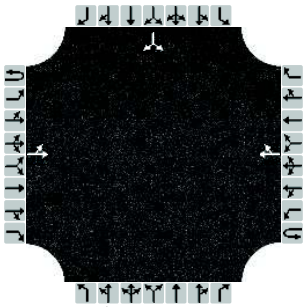
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2018
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing A16EA

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	423				498	5						1		2
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													3	
Capacity, c (veh/h)		1053													424	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.4													13.5	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		0.0												13.5		
Approach LOS														B		

HCS7 Two-Way Stop-Control Report

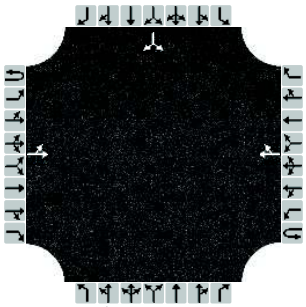
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2018
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing A16EP

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	653				535	0						1		10
Percent Heavy Vehicles (%)		20												0		30
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.30												6.40		6.50
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.38												3.50		3.57

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													14	
Capacity, c (veh/h)		842													347	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		9.3													15.8	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												15.8			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

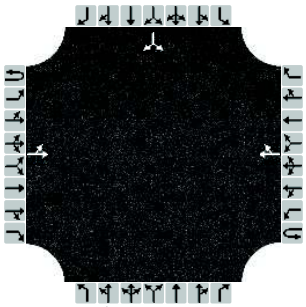
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2018
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing A16ES

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	360				372	5						3		4
Percent Heavy Vehicles (%)		0												33		33
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.53
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													8	
Capacity, c (veh/h)		1164													430	
v/c Ratio		0.00													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.1													13.5	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		0.0												13.5		
Approach LOS														B		

HCS7 Two-Way Stop-Control Report

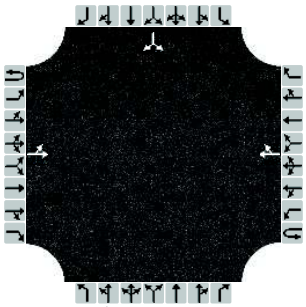
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Background A25BA

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	595				701	7						1		3
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													4	
Capacity, c (veh/h)		878													306	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.1													16.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												16.9		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

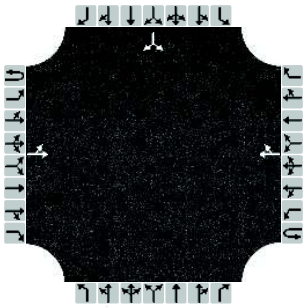
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Background A25BP

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		7	919				753	0						1		14
Percent Heavy Vehicles (%)		20												0		30
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.30												6.40		6.50
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.38												3.50		3.57

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9													19	
Capacity, c (veh/h)		660													222	
v/c Ratio		0.01													0.08	
95% Queue Length, Q_{95} (veh)		0.0													0.3	
Control Delay (s/veh)		10.5													22.7	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.5												22.7			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

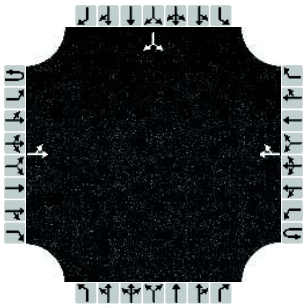
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing A25ES

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	507				523	7						4		4
Percent Heavy Vehicles (%)		0												33		33
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.53
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													9	
Capacity, c (veh/h)		1013													281	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.6													18.2	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												18.2		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

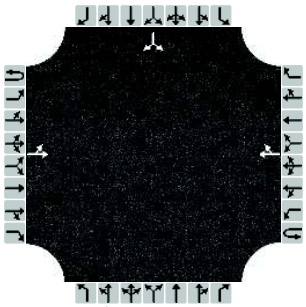
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Total Full Move AF25TA

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	601				702	7						1		3
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													4	
Capacity, c (veh/h)		877													304	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.1													17.0	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.0												17.0			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

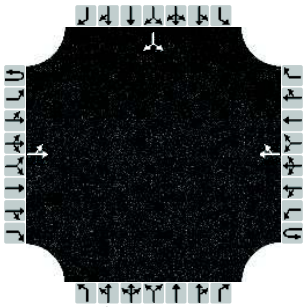
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Full Movcement AF25TP

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		7	919				757	0						1		14
Percent Heavy Vehicles (%)		20												0		30
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.30												6.40		6.50
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.38												3.50		3.57

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9													19	
Capacity, c (veh/h)		657													220	
v/c Ratio		0.01													0.09	
95% Queue Length, Q_{95} (veh)		0.0													0.3	
Control Delay (s/veh)		10.6													22.8	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.5												22.8			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

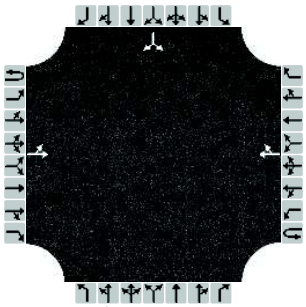
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Full Movement AF25TS

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	507				524	7						4		4
Percent Heavy Vehicles (%)		0												33		33
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.53
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													9	
Capacity, c (veh/h)		1012													281	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.6													18.2	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												18.2		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

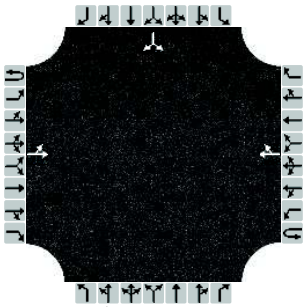
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Only AR25TA

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	601				702	7						1		3
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													4	
Capacity, c (veh/h)		877													304	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.1													17.0	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.0												17.0			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

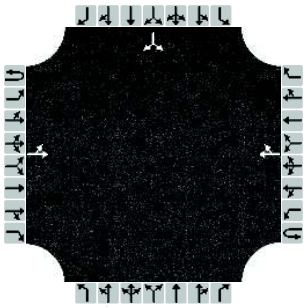
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Only AR25TP

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		7	919				757	0						1		14
Percent Heavy Vehicles (%)		20												0		30
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.30												6.40		6.50
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.38												3.50		3.57

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9													19	
Capacity, c (veh/h)		657													220	
v/c Ratio		0.01													0.09	
95% Queue Length, Q_{95} (veh)		0.0													0.3	
Control Delay (s/veh)		10.6													22.8	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)		0.5												22.8		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

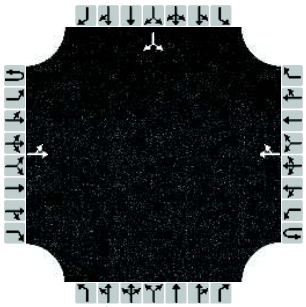
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Only AR25TS

Site Information

Intersection	Aliance Agri Turf Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Aliance Agri Turf Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	507				524	7						4		4
Percent Heavy Vehicles (%)		0												33		33
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.53
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													9	
Capacity, c (veh/h)		1012													281	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.6													18.2	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												18.2		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

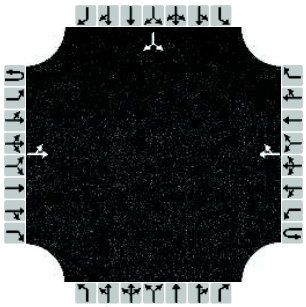
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2018
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing B16EA

Site Information

Intersection	Banas Stores Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stores Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		3	421				502	9						1		1
Percent Heavy Vehicles (%)		33												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.43												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.50												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3													2	
Capacity, c (veh/h)		895													373	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.0													14.7	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		0.1												14.7		
Approach LOS														B		

HCS7 Two-Way Stop-Control Report

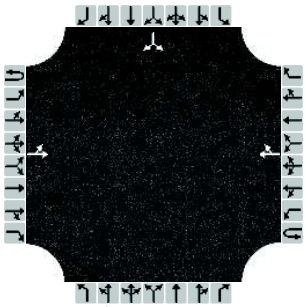
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2018
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing B16EP

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	654				531	0						3		4
Percent Heavy Vehicles (%)		0												33		50
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.70
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													7	
Capacity, c (veh/h)		1027													263	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.5													19.1	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												19.1		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

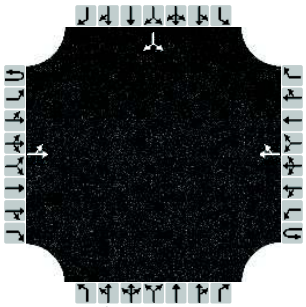
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2018
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing B16ES

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	363				377	1						1		0
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													1	
Capacity, c (veh/h)		1163													359	
v/c Ratio		0.00													0.00	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.1													15.1	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												15.1		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

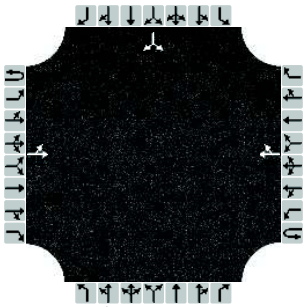
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Background B25BA

Site Information

Intersection	Banas Stores Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stores Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	592				706	13						1		1
Percent Heavy Vehicles (%)		33												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.43												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.50												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4													2	
Capacity, c (veh/h)		735													234	
v/c Ratio		0.01													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.9													20.5	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.2												20.5		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

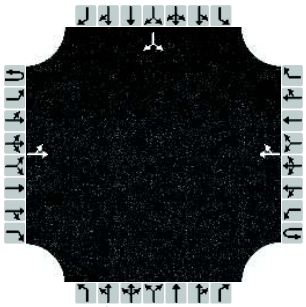
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Background B25BP

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	920				747	0						4		6
Percent Heavy Vehicles (%)		0												33		50
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.70
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													10	
Capacity, c (veh/h)		848													147	
v/c Ratio		0.00													0.07	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		9.2													31.3	
Level of Service (LOS)		A													D	
Approach Delay (s/veh)		0.0												31.3		
Approach LOS														D		

HCS7 Two-Way Stop-Control Report

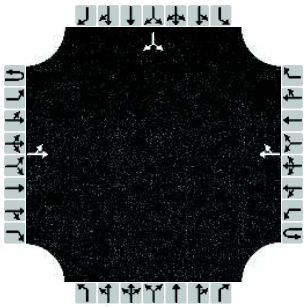
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Background B25BS

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	511				530	1						1		0
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													1	
Capacity, c (veh/h)		1012													231	
v/c Ratio		0.00													0.00	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.6													20.7	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												20.7		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

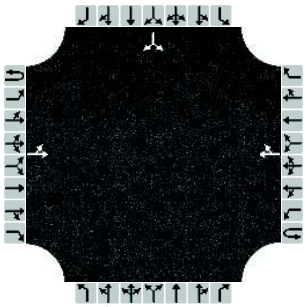
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Combined Access BC25TA

Site Information

Intersection	Banas Stores Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stores Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	598				705	20						2		2
Percent Heavy Vehicles (%)		33												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.43												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.50												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													4	
Capacity, c (veh/h)		731													226	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		10.0													21.2	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.4												21.2		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

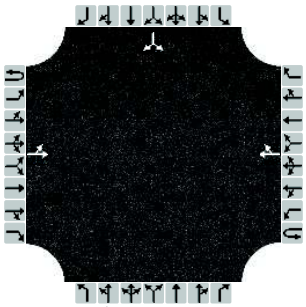
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Combined Access BC25BP

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	920				749	0						9		10
Percent Heavy Vehicles (%)		0												33		50
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.70
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.75

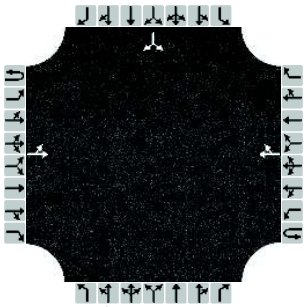
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													20	
Capacity, c (veh/h)		846													133	
v/c Ratio		0.00													0.15	
95% Queue Length, Q_{95} (veh)		0.0													0.5	
Control Delay (s/veh)		9.3													36.7	
Level of Service (LOS)		A													E	
Approach Delay (s/veh)		0.0												36.7		
Approach LOS														E		

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Banas Stones Access
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	22/03/25	East/West Street	King Street
Analysis Year	2025	North/South Street	Banas Stones Access
Time Analyzed	Saturday Peak Hour	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Total Combine Access BC25TS		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	511				532	1						1		0
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													1	
Capacity, c (veh/h)		1010													230	
v/c Ratio		0.00													0.00	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.6													20.7	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												20.7		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

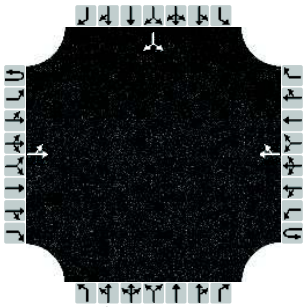
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Full Movement BF25TA

Site Information

Intersection	Banas Stores Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stores Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	598				707	13						1		1
Percent Heavy Vehicles (%)		33												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.43												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.50												3.50		3.30

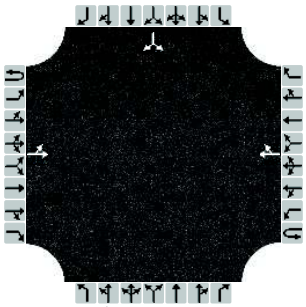
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4													2	
Capacity, c (veh/h)		734													232	
v/c Ratio		0.01													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.9													20.7	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.2												20.7		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Banas Stones Access
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	22/03/25	East/West Street	King Street
Analysis Year	2025	North/South Street	Banas Stones Access
Time Analyzed	Weekday Afternoon P H	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Total Full Movement BF25BP		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	920				751	0						4		6
Percent Heavy Vehicles (%)		0												33		50
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.70
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.75

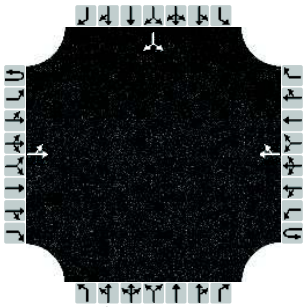
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													10	
Capacity, c (veh/h)		845													146	
v/c Ratio		0.00													0.07	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		9.3													31.5	
Level of Service (LOS)		A													D	
Approach Delay (s/veh)		0.0												31.5		
Approach LOS														D		

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Banas Stones Access
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	22/03/25	East/West Street	King Street
Analysis Year	2025	North/South Street	Banas Stones Access
Time Analyzed	Saturday Peak Hour	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Total Full Movement BT25TS		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	511				531	1						1		0
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													1	
Capacity, c (veh/h)		1011													230	
v/c Ratio		0.00													0.00	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.6													20.7	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												20.7		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

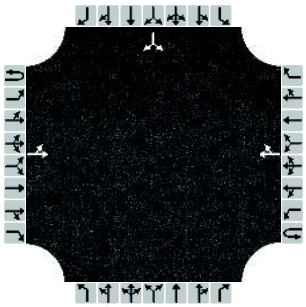
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Turn BR25TA

Site Information

Intersection	Banas Stores Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stores Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	598				707	14						2		1
Percent Heavy Vehicles (%)		33												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.43												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.50												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4													3	
Capacity, c (veh/h)		733													202	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.9													23.1	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												23.1			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

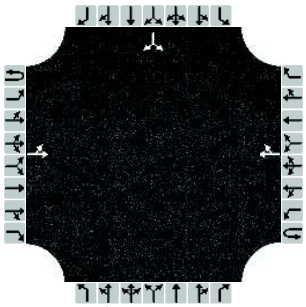
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Turn BR25TP

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	920				751	5						9		6
Percent Heavy Vehicles (%)		0												33		50
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.70
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													16	
Capacity, c (veh/h)		841													114	
v/c Ratio		0.00													0.14	
95% Queue Length, Q_{95} (veh)		0.0													0.5	
Control Delay (s/veh)		9.3													41.5	
Level of Service (LOS)		A													E	
Approach Delay (s/veh)	0.0												41.5			
Approach LOS													E			

HCS7 Two-Way Stop-Control Report

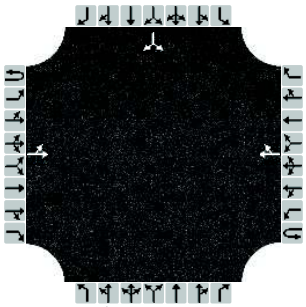
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	22/03/25
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Turn BR25TS

Site Information

Intersection	Banas Stones Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Banas Stones Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	511				531	2						2		0
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

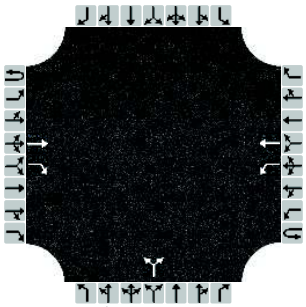
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													2	
Capacity, c (veh/h)		1010													230	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.6													20.8	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												20.8		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Harvest Moon Dr & King St
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	23/03/2020	East/West Street	King Street
Analysis Year	2018	North/South Street	Harvest Moon Drive
Time Analyzed	Weekday Morning Peak Hour	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2018 Existing Traffic H16EA		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			397	25		13	392			109		42				
Percent Heavy Vehicles (%)						23				10		10				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.33				6.50		6.30				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.41				3.59		3.39				

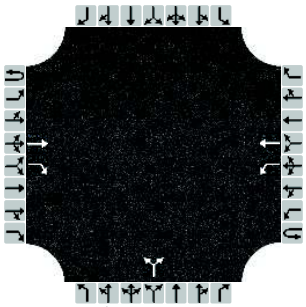
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15					176					
Capacity, c (veh/h)						971					323					
v/c Ratio						0.02					0.54					
95% Queue Length, Q_{95} (veh)						0.0					3.1					
Control Delay (s/veh)						8.8					28.6					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					0.3				28.6							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Harvest Moon Dr & King St
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	23/03/2020	East/West Street	King Street
Analysis Year	2018	North/South Street	Harvest Moon Drive
Time Analyzed	Weekday Afternoon P H	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2018 Existing Traffic H16EP		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			566	91		43	492			40		35				
Percent Heavy Vehicles (%)						2				3		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.43		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.53		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54					94					
Capacity, c (veh/h)						807					202					
v/c Ratio						0.07					0.46					
95% Queue Length, Q_{95} (veh)						0.2					2.2					
Control Delay (s/veh)						9.8					37.2					
Level of Service (LOS)						A					E					
Approach Delay (s/veh)					0.8				37.2							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

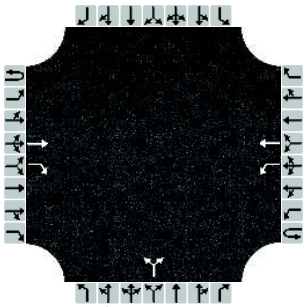
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2018
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2018 Existing Traffic H16ES

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			315	39		39	331			47		32				
Percent Heavy Vehicles (%)						0				2		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.42		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.52		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					83					
Capacity, c (veh/h)						1197					450					
v/c Ratio						0.03					0.18					
95% Queue Length, Q_{95} (veh)						0.1					0.7					
Control Delay (s/veh)						8.1					14.8					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.9				14.8						
Approach LOS										B						

HCS7 Two-Way Stop-Control Report

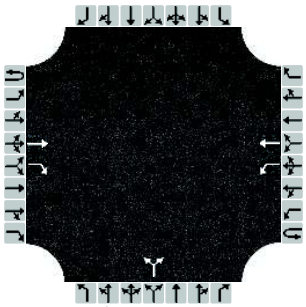
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Background Traffic H25BA

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			559	35		18	552			153		59				
Percent Heavy Vehicles (%)						23				0		10				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.33				6.40		6.30				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.41				3.50		3.39				

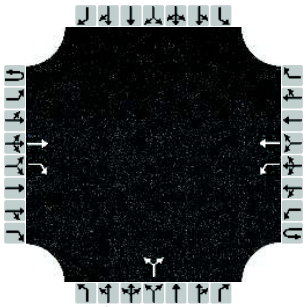
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						19					223					
Capacity, c (veh/h)						862					240					
v/c Ratio						0.02					0.93					
95% Queue Length, Q_{95} (veh)						0.1					8.2					
Control Delay (s/veh)						9.3					85.5					
Level of Service (LOS)						A					F					
Approach Delay (s/veh)					0.3				85.5							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Harvest Moon Dr & King St
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	23/03/2020	East/West Street	King Street
Analysis Year	2025	North/South Street	Harvest Moon Drive
Time Analyzed	Weekday Afternoon P H	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Background Traffic H25BP		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			796	128		61	692			56		49				
Percent Heavy Vehicles (%)						2				3		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.43		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.53		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						62					107					
Capacity, c (veh/h)						727					152					
v/c Ratio						0.09					0.70					
95% Queue Length, Q_{95} (veh)						0.3					4.1					
Control Delay (s/veh)						10.4					71.2					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.8				71.2							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

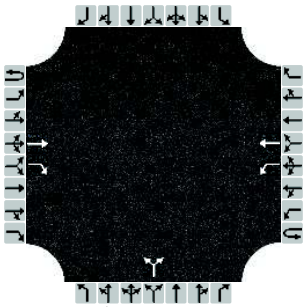
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Background Traffic H25BS

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			443	55		55	456			66		45				
Percent Heavy Vehicles (%)						5				2		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.42		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.24				3.52		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						58					117					
Capacity, c (veh/h)						1029					310					
v/c Ratio						0.06					0.38					
95% Queue Length, Q_{95} (veh)						0.2					1.7					
Control Delay (s/veh)						8.7					23.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.9				23.4							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

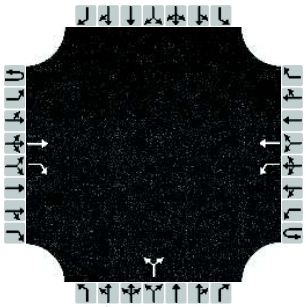
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Full Move HF25TA

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			560	35		18	557			155		59				
Percent Heavy Vehicles (%)						23				0		10				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.33				6.40		6.30				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.41				3.50		3.39				

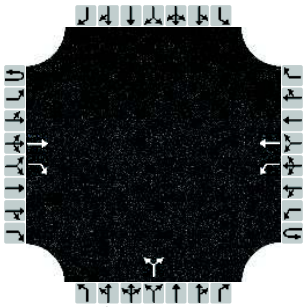
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						19					225					
Capacity, c (veh/h)						861					237					
v/c Ratio						0.02					0.95					
95% Queue Length, Q_{95} (veh)						0.1					8.5					
Control Delay (s/veh)						9.3					90.2					
Level of Service (LOS)						A					F					
Approach Delay (s/veh)					0.3				90.2							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Harvest Moon Dr & King St
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	23/03/2020	East/West Street	King Street
Analysis Year	2025	North/South Street	Harvest Moon Drive
Time Analyzed	Weekday Afternoon P H	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Total Full Move HF25TP		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			800	129		61	692			56		49				
Percent Heavy Vehicles (%)						2				3		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.43		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.53		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						62					107					
Capacity, c (veh/h)						724					151					
v/c Ratio						0.09					0.71					
95% Queue Length, Q_{95} (veh)						0.3					4.2					
Control Delay (s/veh)						10.4					72.1					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.8				72.1							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

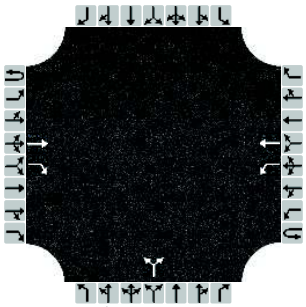
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Full Move HF25TS

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			444	55		55	466			66		45				
Percent Heavy Vehicles (%)						5				2		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.42		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.24				3.52		3.30				

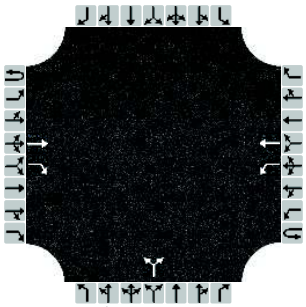
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						58					117					
Capacity, c (veh/h)						1028					306					
v/c Ratio						0.06					0.38					
95% Queue Length, Q_{95} (veh)						0.2					1.7					
Control Delay (s/veh)						8.7					23.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.9				23.8							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	J.M. Mark	Intersection	Harvest Moon Dr & King St
Agency/Co.	Mark Engineering	Jurisdiction	Region
Date Performed	23/03/2020	East/West Street	King Street
Analysis Year	2025	North/South Street	Harvest Moon Drive
Time Analyzed	Weekday Morning Peak Hour	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Banas Stones 2025 Total Right Only HR25TA		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			560	41		18	557			161		59				
Percent Heavy Vehicles (%)						23				0		10				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.33				6.40		6.30				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.41				3.50		3.39				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						19					232					
Capacity, c (veh/h)						856					236					
v/c Ratio						0.02					0.98					
95% Queue Length, Q_{95} (veh)						0.1					9.1					
Control Delay (s/veh)						9.3					98.3					
Level of Service (LOS)						A					F					
Approach Delay (s/veh)					0.3				98.3							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

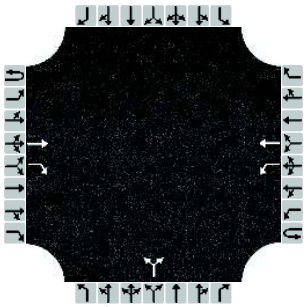
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Ony HR25TP

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			800	129		61	692			56		49				
Percent Heavy Vehicles (%)						2				3		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.43		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.53		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						62					107					
Capacity, c (veh/h)						724					151					
v/c Ratio						0.09					0.71					
95% Queue Length, Q_{95} (veh)						0.3					4.2					
Control Delay (s/veh)						10.4					72.1					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.8				72.1							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

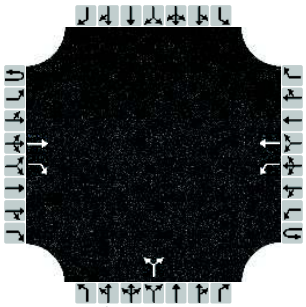
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	23/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Total Right Only HR25TS

Site Information

Intersection	Harvest Moon Dr & King St
Jurisdiction	Region
East/West Street	King Street
North/South Street	Harvest Moon Drive
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			444	55		55	466			66		45				
Percent Heavy Vehicles (%)						5				2		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.42		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.24				3.52		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						58					117					
Capacity, c (veh/h)						1028					306					
v/c Ratio						0.06					0.38					
95% Queue Length, Q_{95} (veh)						0.2					1.7					
Control Delay (s/veh)						8.7					23.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.9				23.8						
Approach LOS										C						

HCS7 Two-Way Stop-Control Report

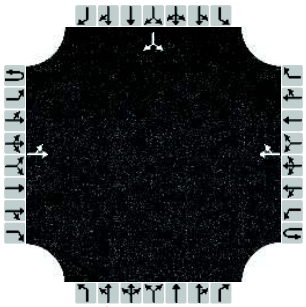
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Full Movement CF25TA

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Full Movement Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		6	594				705	7						1		1
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6													2	
Capacity, c (veh/h)		874													233	
v/c Ratio		0.01													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		9.1													20.6	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.2												20.6		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

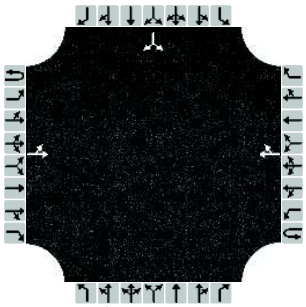
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Full Movement CF25TP

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Full Movement Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	924				749	0						5		4
Percent Heavy Vehicles (%)		0												28		15
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.68		6.35
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.75		3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													9	
Capacity, c (veh/h)		846													126	
v/c Ratio		0.00													0.07	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		9.3													35.9	
Level of Service (LOS)		A													E	
Approach Delay (s/veh)		0.0												35.9		
Approach LOS														E		

HCS7 Two-Way Stop-Control Report

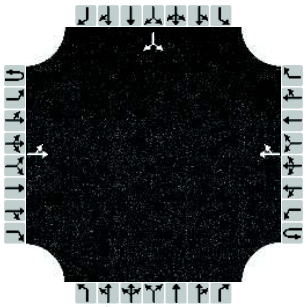
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 205 Full Movement CF21TS

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Full Movement Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	498				532	1						1		1
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													2	
Capacity, c (veh/h)		1010													324	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.6													16.2	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												16.2		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

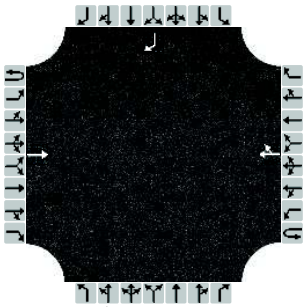
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Weekday Morning Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 RIght Only CR25TA

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Right-in/right-out Access
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	1
Configuration			T					TR								R
Volume (veh/h)			601				705	13								2
Percent Heavy Vehicles (%)																0
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.2
Critical Headway (sec)																6.20
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																2
Capacity, c (veh/h)																419
v/c Ratio																0.00
95% Queue Length, Q_{95} (veh)																0.0
Control Delay (s/veh)																13.6
Level of Service (LOS)																B
Approach Delay (s/veh)													13.6			
Approach LOS													B			

HCS7 Two-Way Stop-Control Report

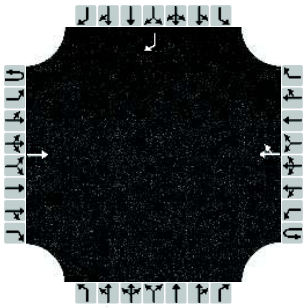
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Weekday Afternoon P H
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Right Only CR25TP

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	Right-in/Right-outAccess
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	1
Configuration			T					TR								R
Volume (veh/h)			929				749	0								9
Percent Heavy Vehicles (%)																15
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.2
Critical Headway (sec)																6.35
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																9
Capacity, c (veh/h)																376
v/c Ratio																0.02
95% Queue Length, Q_{95} (veh)																0.1
Control Delay (s/veh)																14.8
Level of Service (LOS)																B
Approach Delay (s/veh)													14.8			
Approach LOS													B			

HCS7 Two-Way Stop-Control Report

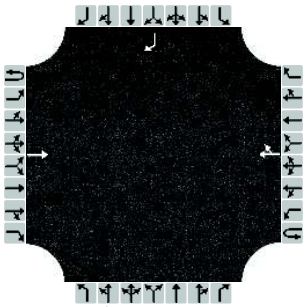
General Information

Analyst	J.M. Mark
Agency/Co.	Mark Engineering
Date Performed	25/03/2020
Analysis Year	2025
Time Analyzed	Saturday Peak Hour
Intersection Orientation	East-West
Project Description	Banas Stones 2025 Right Only CR21TS

Site Information

Intersection	New Access
Jurisdiction	Region
East/West Street	King Street
North/South Street	RIght-in/Right-out Access
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	1
Configuration			T					TR								R
Volume (veh/h)			499				532	1								2
Percent Heavy Vehicles (%)																0
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																6.2
Critical Headway (sec)																6.20
Base Follow-Up Headway (sec)																3.3
Follow-Up Headway (sec)																3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																2
Capacity, c (veh/h)																523
v/c Ratio																0.00
95% Queue Length, Q_{95} (veh)																0.0
Control Delay (s/veh)																11.9
Level of Service (LOS)																B
Approach Delay (s/veh)													11.9			
Approach LOS													B			

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Banas Stones
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

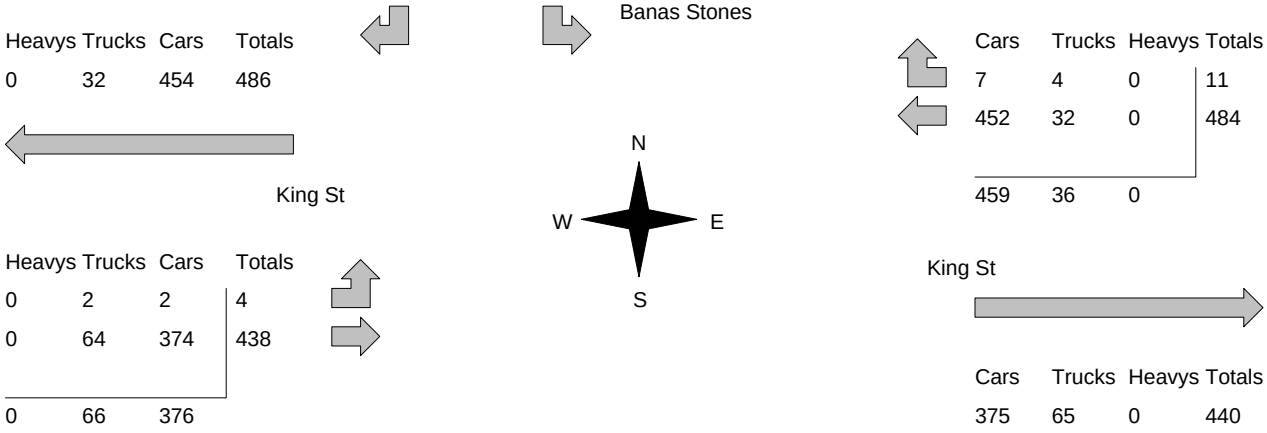
Major Road: King St runs W/E

North Leg Total: 19
North Entering: 4
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	1	1
Cars	2	1	3
Totals	2	2	

Heavys	0
Trucks	6
Cars	9
Totals	15

East Leg Total: 935
East Entering: 495
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 442
West Leg Total: 928

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Banas Stones
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

North Leg Total: 7
North Entering: 7
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	2	1	3
Cars	2	2	4
Totals	4	3	

Heavys	0
Trucks	0
Cars	0
Totals	0

East Leg Total: 1189
East Entering: 532
East Peds: 0
Peds Cross: ⧖

Heavys	Trucks	Cars	Totals
0	42	494	536

Banas Stones

Cars	Trucks	Heavys	Totals
0	0	0	0
492	40	0	532
492	40	0	

King St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	0	0
0	18	636	654
0	18	636	

King St

Cars	Trucks	Heavys	Totals
638	19	0	657

Peds Cross: ⧖
West Peds: 0
West Entering: 654
West Leg Total: 1190

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Banas Stones
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

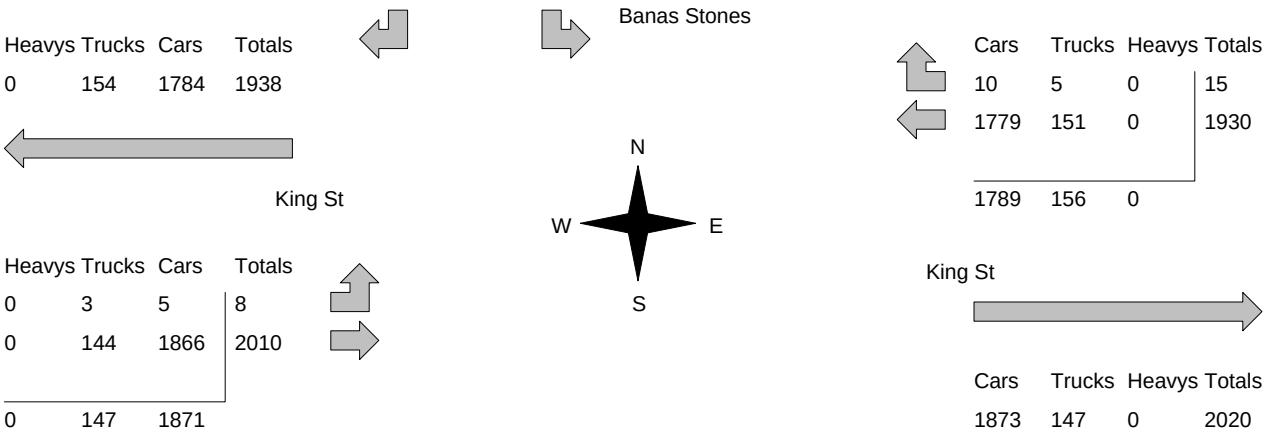
Major Road: King St runs W/E

North Leg Total: 41
North Entering: 18
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	3	3	6
Cars	5	7	12
Totals	8	10	

Heavys	0
Trucks	8
Cars	15
Totals	23

East Leg Total: 3965
East Entering: 1945
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 2018
West Leg Total: 3956

Comments

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Alliance Agri Turf Inc
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

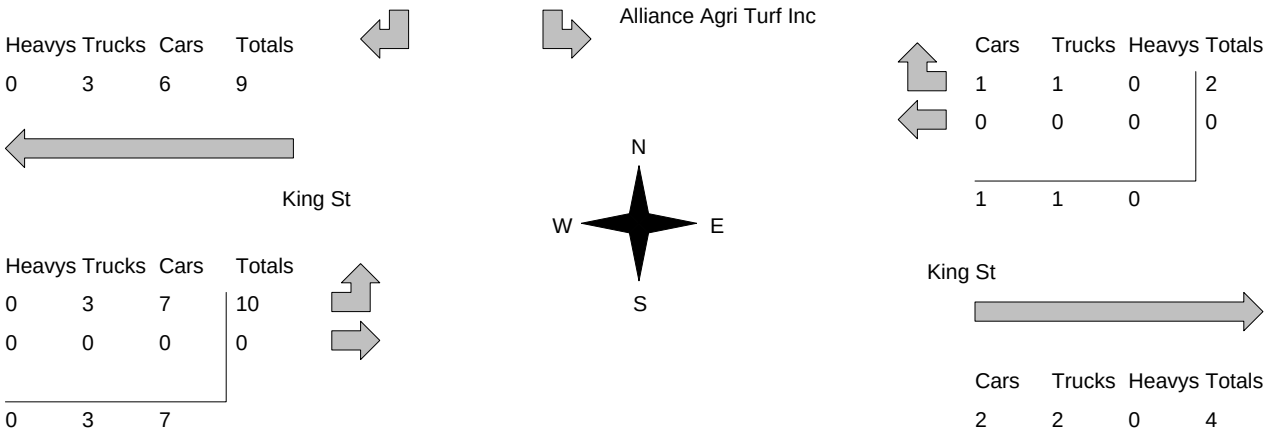
Major Road: King St runs W/E

North Leg Total: 25
North Entering: 13
North Peds: 0
Peds Cross:

Heavys	0	0	0
Trucks	3	2	5
Cars	6	2	8
Totals	9	4	

Heavys	0
Trucks	4
Cars	8
Totals	12

East Leg Total: 6
East Entering: 2
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 10
West Leg Total: 19

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Alliance Agri Turf Inc
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

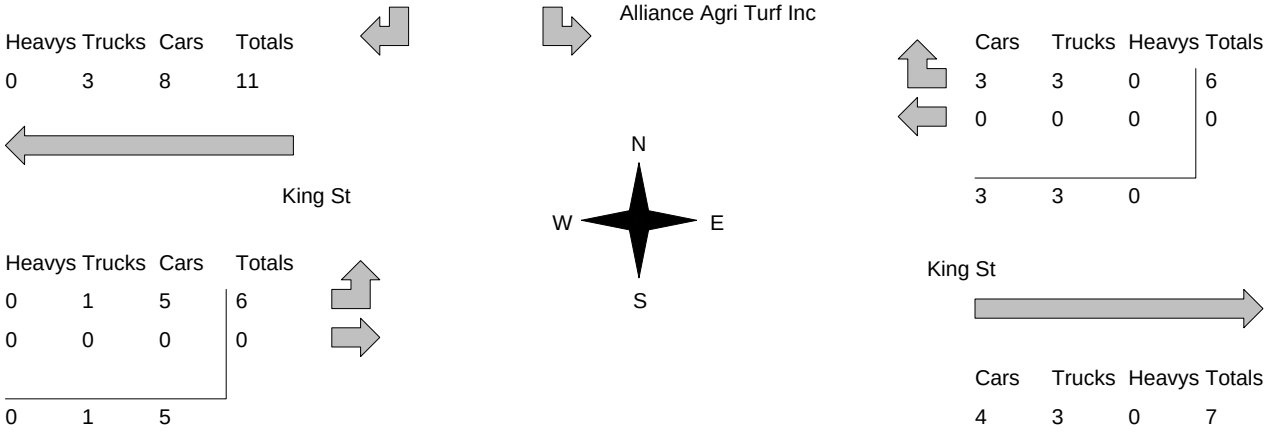
Major Road: King St runs W/E

North Leg Total: 30
North Entering: 18
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	3	3	6
Cars	8	4	12
Totals	11	7	

Heavys	0
Trucks	4
Cars	8
Totals	12

East Leg Total: 13
East Entering: 6
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 6
West Leg Total: 17

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500001
Intersection: King St & Alliance Agri Turf Inc
TFR File #: 9
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

North Leg Total: 81
North Entering: 44
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	7	6	13
Cars	19	12	31
Totals	26	18	

Heavys	0
Trucks	11
Cars	26
Totals	37

East Leg Total: 31
East Entering: 13
East Peds: 1
Peds Cross: ⧖

Alliance Agri Turf Inc

Heavys	Trucks	Cars	Totals
0	7	19	26

King St

Heavys	Trucks	Cars	Totals
0	6	18	24
0	0	0	0
0	6	18	

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Cars	Trucks	Heavys	Totals
8	5	0	13
0	0	0	0
8	5	0	

King St

Cars	Trucks	Heavys	Totals
12	6	0	18

Peds Cross: ⧖
West Peds: 0
West Entering: 24
West Leg Total: 50

Comments

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Caledon
Site #: 1822500002
Intersection: King St & Harvest Moon Dr
TFR File #: 27
Count date: 15-Jun-18

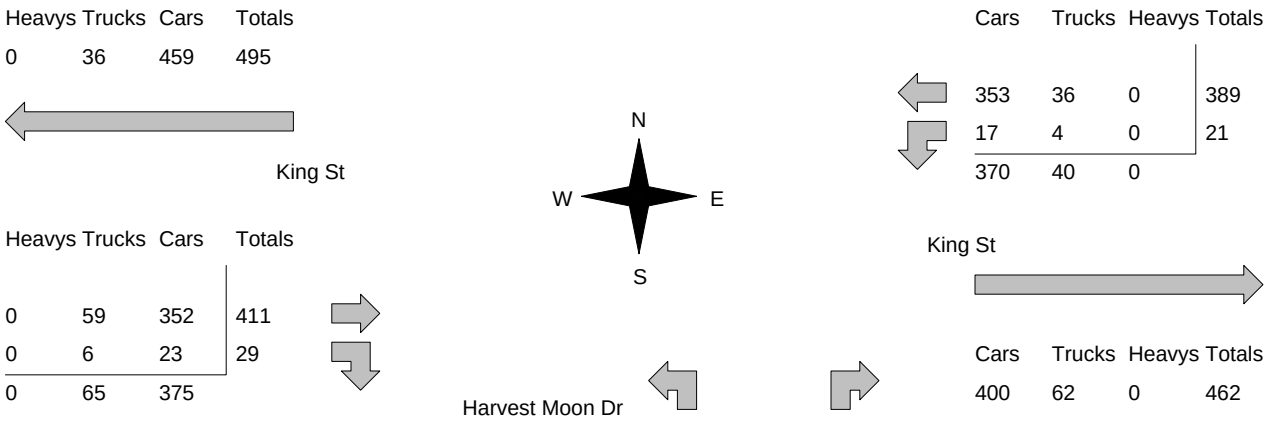
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

East Leg Total: 872
East Entering: 410
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 440
West Leg Total: 935

Cars 40
Trucks 10
Heavys 0
Totals 50

Cars 106 48 154
Trucks 0 3 3
Heavys 0 0 0
Totals 106 51

Peds Cross:
South Peds: 0
South Entering: 157
South Leg Total: 207

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Caledon
Site #: 1822500002
Intersection: King St & Harvest Moon Dr
TFR File #: 27
Count date: 15-Jun-18

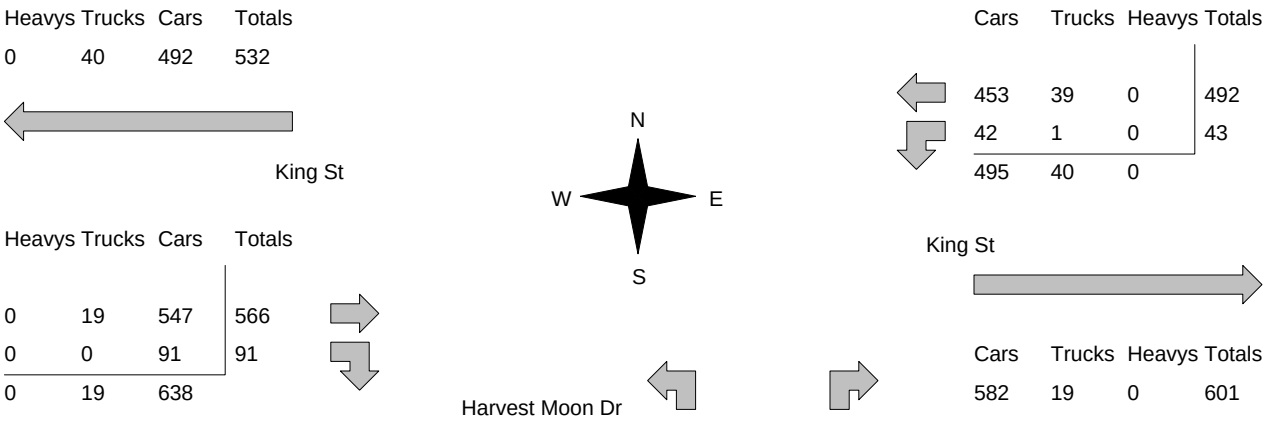
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

East Leg Total: 1136
East Entering: 535
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 657
West Leg Total: 1189

Cars 133
Trucks 1
Heavys 0
Totals 134

Cars 39 35 74
Trucks 1 0 1
Heavys 0 0 0
Totals 40 35

Peds Cross:
South Peds: 0
South Entering: 75
South Leg Total: 209

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500002
Intersection: King St & Harvest Moon Dr
TFR File #: 27
Count date: 15-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

East Leg Total: 3750
East Entering: 1798
East Peds: 0
Peds Cross: ⧖

	Heavys	Trucks	Cars	Totals
	0	157	1800	1957

King St

	Heavys	Trucks	Cars	Totals
	0	136	1663	1799
	0	11	219	230
	0	147	1882	

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	Cars	Trucks	Heavys	Totals
	1532	152	0	1684
	107	7	0	114
	1639	159	0	

King St

	Cars	Trucks	Heavys	Totals
	1810	142	0	1952

Harvest Moon Dr

Peds Cross: ⧖
West Peds: 0
West Entering: 2029
West Leg Total: 3986

Cars	326		
Trucks	18		
Heavys	0		
Totals	344		

Cars	268	147	415
Trucks	5	6	11
Heavys	0	0	0
Totals	273	153	

Peds Cross: ⋈
South Peds: 0
South Entering: 426
South Leg Total: 770

Comments

Ontario Traffic Inc.

Mid-day Peak Diagram

Specified Period
From: 12:00:00
To: 18:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

Municipality: Caledon
Site #: 1822500003
Intersection: King St & Banas Stones
TFR File #: 10
Count date: 16-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

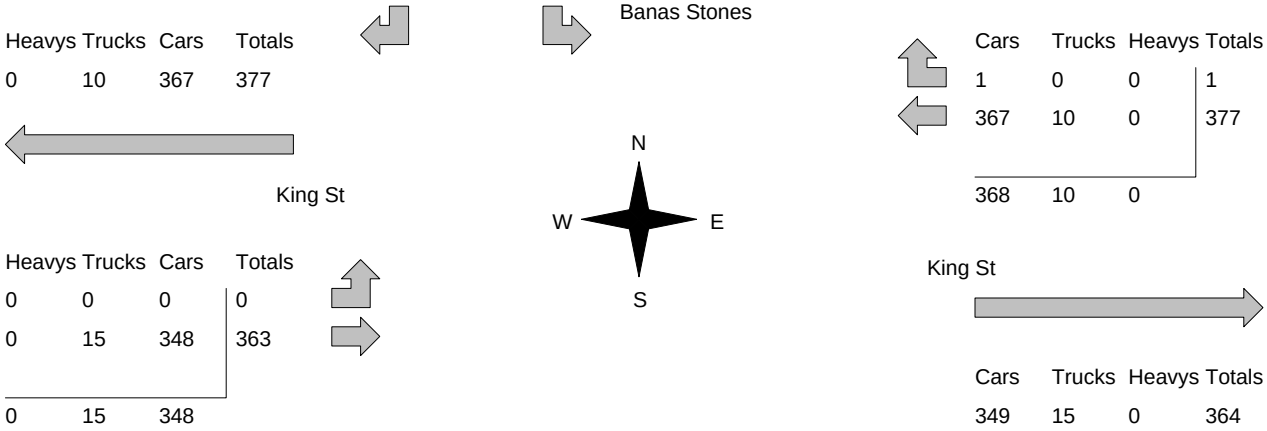
Major Road: King St runs W/E

North Leg Total: 2
North Entering: 1
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	0	1	1
Totals	0	1	

Heavys	0
Trucks	0
Cars	1
Totals	1

East Leg Total: 742
East Entering: 378
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 363
West Leg Total: 740

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500003
Intersection: King St & Banas Stones
TFR File #: 10
Count date: 16-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

North Leg Total: 4
North Entering: 2
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	0	2	2
Totals	0	2	

Heavys	0
Trucks	0
Cars	2
Totals	2

East Leg Total: 3923
East Entering: 1971
East Peds: 0
Peds Cross: ⋈

Banas Stones

Heavys	Trucks	Cars	Totals
0	51	1918	1969

King St

Heavys	Trucks	Cars	Totals
0	0	0	0
0	46	1904	1950
0	46	1904	

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Cars	Trucks	Heavys	Totals
2	0	0	2
1918	51	0	1969
1920	51	0	

King St

Cars	Trucks	Heavys	Totals
1906	46	0	1952

Peds Cross: ⋈
West Peds: 0
West Entering: 1950
West Leg Total: 3919

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: King St & Banas Stones | **Count Date:** 16-Jun-18 | **Municipality:** Caledon

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	1	0	0	1	0	1
14:00:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0
17:00:00	1	0	0	1	0	1
18:00:00	0	0	0	0	0	0
Totals:	2	0	0	2	0	2

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
Totals:	0	0	0	0	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	0	377	1	378	0	741
14:00:00	0	318	0	318	0	655
15:00:00	0	308	0	308	0	639
16:00:00	0	331	0	331	0	658
17:00:00	0	333	1	334	0	671
18:00:00	0	302	0	302	0	557
Totals:	0	1969	2	1971	0	3921

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	0	363	0	363	0
14:00:00	0	337	0	337	0
15:00:00	0	331	0	331	0
16:00:00	0	327	0	327	0
17:00:00	0	337	0	337	0
18:00:00	0	255	0	255	0
Totals:	0	1950	0	1950	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	12:00	13:00	14:00	15:00	16:00	17:00	18:00	18:00
Crossing Values:	0	1	0	0	0	1	0	0

Ontario Traffic Inc.

Mid-day Peak Diagram

Specified Period
From: 12:00:00
To: 18:00:00

One Hour Peak
From: 12:15:00
To: 13:15:00

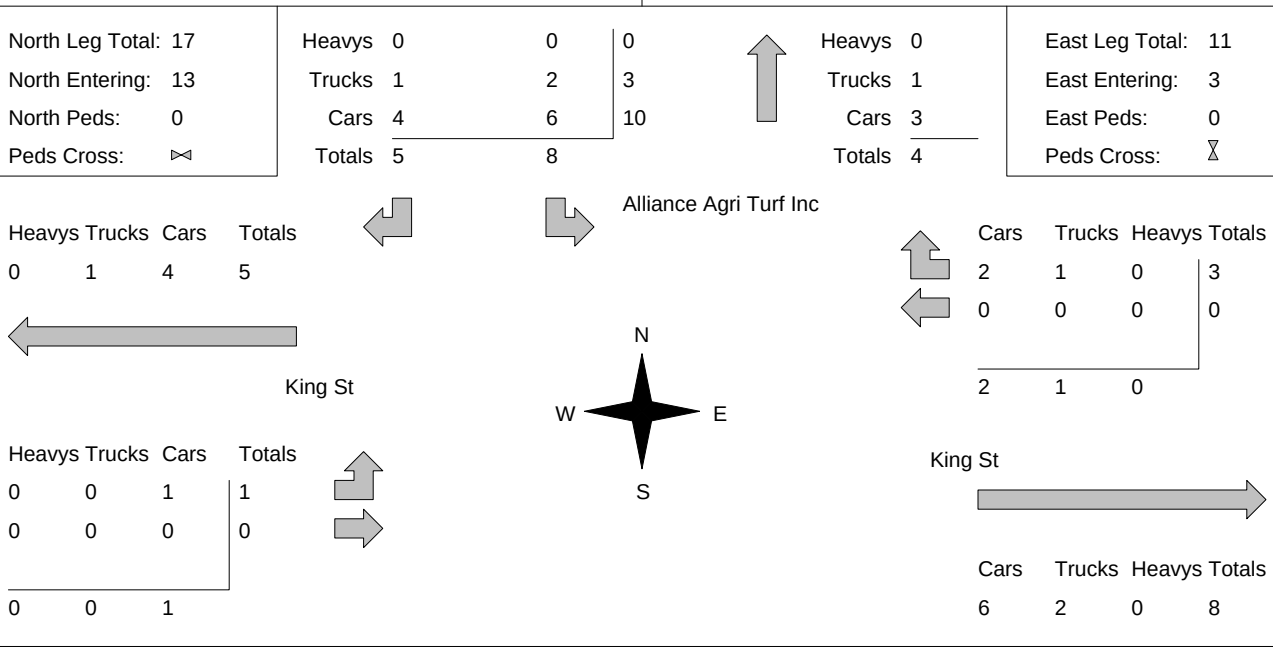
Municipality: Caledon
Site #: 1822500003
Intersection: King St & Alliance Agri Turf Inc
TFR File #: 10
Count date: 16-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E



Peds Cross:
West Peds: 0
West Entering: 1
West Leg Total: 6

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500003
Intersection: King St & Alliance Agri Turf Inc
TFR File #: 10
Count date: 16-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

North Leg Total: 28
North Entering: 20
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	3	4
Cars	5	11	16
Totals	6	14	

Heavys	0
Trucks	2
Cars	6
Totals	8

East Leg Total: 21
East Entering: 7
East Peds: 0
Peds Cross: ⧖

Alliance Agri Turf Inc

Heavys	Trucks	Cars	Totals
0	1	5	6

Cars	Trucks	Heavys	Totals
5	2	0	7
0	0	0	0
5	2	0	

King St

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Heavys	Trucks	Cars	Totals
0	0	1	1
0	0	0	0
0	0	1	

King St

Cars	Trucks	Heavys	Totals
11	3	0	14

Peds Cross: ⧖
West Peds: 0
West Entering: 1
West Leg Total: 7

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: King St & Alliance Agri Turf Inc | **Count Date:** 16-Jun-18 | **Municipality:** Caledon

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	6	0	4	10	0	10
14:00:00	5	0	2	7	0	7
15:00:00	1	0	0	1	0	1
16:00:00	1	0	0	1	0	1
17:00:00	0	0	0	0	0	0
18:00:00	1	0	0	1	0	1
Totals:	14	0	6	20	0	20

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
	0	0	0	0	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	0	0	5	5	0	6
14:00:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
16:00:00	0	0	1	1	0	1
17:00:00	0	0	0	0	0	0
18:00:00	0	0	1	1	0	1
Totals:	0	0	7	7	0	8

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	1	0	0	1	0
14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
	1	0	0	1	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	0:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
Crossing Values:	0	0	6	5	1	1	0	1

Ontario Traffic Inc.

Mid-day Peak Diagram

Specified Period
From: 12:00:00
To: 18:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

Municipality: Caledon
Site #: 1822500004
Intersection: King St & Harvest Moon Dr
TFR File #: 14
Count date: 16-Jun-18

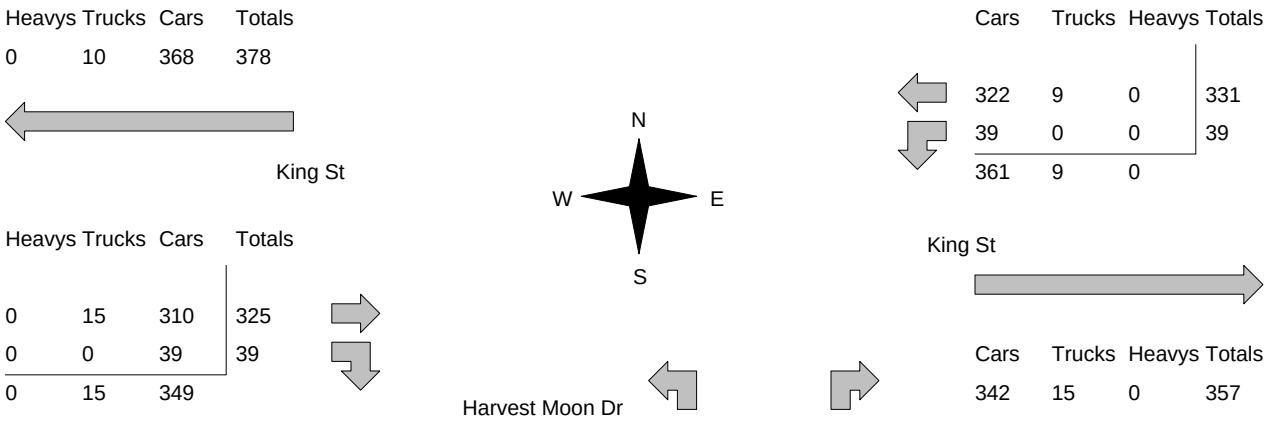
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

East Leg Total: 727
East Entering: 370
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 364
West Leg Total: 742

Cars 78
Trucks 0
Heavys 0
Totals 78

Cars 46 32 78
Trucks 1 0 1
Heavys 0 0 0
Totals 47 32

Peds Cross: ⋈
South Peds: 1
South Entering: 79
South Leg Total: 157

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Caledon
Site #: 1822500004
Intersection: King St & Harvest Moon Dr
TFR File #: 14
Count date: 16-Jun-18

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: King St runs W/E

East Leg Total: 3863
East Entering: 1961
East Peds: 0
Peds Cross: ⧖

Heavys	Trucks	Cars	Totals
0	51	1920	1971

King St

Heavys	Trucks	Cars	Totals
0	46	1689	1735
0	0	216	216
0	46	1905	

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	Cars	Trucks	Heavys	Totals
←	1717	50	0	1767
↓	192	2	0	194
	1909	52	0	

King St

Cars	Trucks	Heavys	Totals
1856	46	0	1902

Harvest Moon Dr

Peds Cross: ⧖
West Peds: 1
West Entering: 1951
West Leg Total: 3922

Cars	408	203	167	370
Trucks	2	1	0	1
Heavys	0	0	0	0
Totals	410	204	167	

Peds Cross: ⋈
South Peds: 1
South Entering: 371
South Leg Total: 781

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: King St & Harvest Moon Dr | **Count Date:** 16-Jun-18 | **Municipality:** Caledon

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	0	0	0	0	0	79
14:00:00	0	0	0	0	0	57
15:00:00	0	0	0	0	0	49
16:00:00	0	0	0	0	0	60
17:00:00	0	0	0	0	0	70
18:00:00	0	0	0	0	0	56
Totals:	0	0	0	0	0	371

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	47	0	32	79	1
14:00:00	30	0	27	57	0
15:00:00	28	0	21	49	0
16:00:00	29	0	31	60	0
17:00:00	39	0	31	70	0
18:00:00	31	0	25	56	0
Totals:	204	0	167	371	1

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
12:00:00	0	0	0	0	0	0
13:00:00	39	331	0	370	0	734
14:00:00	26	288	0	314	0	651
15:00:00	32	280	0	312	0	643
16:00:00	24	302	0	326	0	652
17:00:00	41	295	0	336	0	674
18:00:00	32	271	0	303	0	558
Totals:	194	1767	0	1961	0	3912

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
12:00:00	0	0	0	0	0
13:00:00	0	325	39	364	0
14:00:00	0	305	32	337	0
15:00:00	0	297	34	331	0
16:00:00	0	300	26	326	0
17:00:00	0	290	48	338	1
18:00:00	0	218	37	255	0
Totals:	0	1735	216	1951	1

Calculated Values for Traffic Crossing Major Street

Hours Ending:	0:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
Crossing Values:	0	0	47	30	28	29	40	31