

F.R. Berry & Associates

TRANSPORTATION PLANNING CONSULTANTS

660 Inverness Avenue

London, Ontario N6H 5R4

Tel: (519) 474 2527 Toll Free: 1 888 665 9192 Email: fyberry@rogers.com

August 27, 2020

Our Ref. **2038**

Mr. W. Branco
Noah Homes
950 Seacliff Drive
Kingsville ON
N9Y 2K9

Dear Mr. Branco:

**RE: PROPOSED RESIDENTIAL SUBDIVISION
HERITAGE ROAD, KINGSVILLE
REVISED TRAFFIC IMPACT ASSESSMENT**

In October, 2014, I prepared a preliminary traffic impact assessment for a proposed residential subdivision on Heritage Road in Kingsville. The location of the site is shown in **Figure 1**. You have requested that I update this assessment based on a revised site plan.

My original report contained a number of comments regarding access to and from the site. I understand that these issues have been resolved with the Town of Kingsville, in particular the alignment of the site access with Woodlawn Crescent.

The traffic impact assessment in my 2014 report was based on a peak period count at the intersection of Heritage Road and James Avenue, immediately north of the site. This count was made in October, 2014 (**Figure 2**). Normally, counts that are more than three years old are considered to be out of date and a new count should be undertaken. At this time, however, traffic counts are not reliable because of significant changes in traffic patterns caused by the Covid-19 pandemic. As a result, I have adopted an approach which estimates current and future peak hour traffic volumes at the intersections of Heritage Road with James Avenue and Woodlawn Crescent. This approach is described below.

Proposed Development

The revised site plan is shown in **Figure 3**. The proposed development includes 40 townhouse units as well as three single family homes fronting on Heritage Road. I understand that these lots have been severed from the main parcel and thus are not included in this revised assessment. Based on regression equations contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual for Land Use 210,



Multifamily Housing (Low-Rise), the site will generate 20 vehicle trips in the morning peak hour, 5 entering and 15 leaving, and 26 vehicle trips in the afternoon peak hour, 16 entering and 10 leaving. Based on the traffic count made in 2014, it is estimated that 90 percent of these trips will have an origin or destination to the north. The assignment of peak hour site generated trips is shown in **Figure 4**. All site generated trips were assumed to access Heritage Road directly.

Traffic Projections

The estimate of current peak hour traffic volumes and of projected peak hour volumes was done in two phases. First, an estimate was made of potential traffic entering and leaving Heritage Road via Woodlawn Crescent. This was done by examining the catchment areas for James Avenue and for Woodlawn Crescent. Both areas to the east of Heritage Road are similar in nature, well established low density residential neighbourhoods. Trip generation characteristics are very likely to be similar. The catchment area for Woodlawn Crescent, i.e. the area where trip origins and destinations are likely to use the Woodlawn Crescent access to Heritage Road, was estimated to be about three times the size of the James Avenue catchment area. Accordingly, peak hour volumes entering and leaving Woodlawn Crescent at Heritage Road were estimated to be three times the actual volumes counted at James Avenue.

The increase in through volumes on Heritage Road was based on an assumption that traffic growth from 2014 to 2020 and to the projected planning horizon year of 2026 would increase at a rate of 2.5 percent per year. Over the 12 year period from 2014 to 2026, this would represent an projected growth in peak hour traffic of over 34 percent. This compares to an assumed annual growth rate of 1.6 percent in the 2014 assessment. A significantly higher growth rate was assumed for this revised assessment based on the potential growth in traffic generated by proposed developments to the west on Heritage Road.

Since the residential neighbourhoods on either side of Heritage Road are stable, no increases in peak hour traffic volumes using James Avenue and Woodlawn Crescent were anticipated. These volumes were combined with the projected through peak hour traffic volumes on Heritage Road to give projected 2026 peak hour volumes as shown in **Figure 5**. 2026 was selected as being five years beyond anticipated build- out in 2021. Although the site plan shows a street access to Normandy Avenue, no estimate was made of cut-through traffic from the existing subdivision to the west. This volume would be small and, in any event, would include trips diverted from the James Avenue intersection. The net impact would be zero.



Level of Service

The projected 2026 peak hour turning movements at the intersections of James Avenue and Woodlawn Crescent/site access with Heritage Road were analyzed for level of service, delays and queue lengths using the Synchro 10 analysis program. The analysis was based on existing lane configurations, i.e. shared single lanes on all approaches. The results of the analysis are summarized in Table 1. Analysis reports are contained in Appendix A.

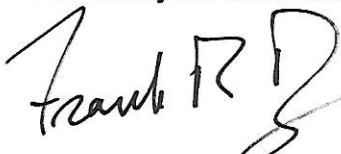
Both intersections will operate at a good level of service. Average delays to traffic on Heritage Road are below one second with the exception of the southbound movement at Woodlawn Crescent in the afternoon peak hour, the result of the projected 39 left turn movements in the peak hour. Average delays on the minor street approaches range from 8.9 to 11.1 seconds. These values are considered normal for minor streets intersecting an arterial. Calculated 95th percentile queue lengths would be negligible.

It is estimated that the proposed development would add 18 vehicles to the intersection of Heritage Road and Main Street in the morning peak hour and 23 vehicles in the afternoon peak hour. These volumes would have no significant impact on the operation of the intersection.

Summary and Conclusions

In summary, the proposed development would generate 20 vehicle trips in the morning peak hour and 26 vehicle trips in the afternoon peak hour. These volumes can be accommodated on Heritage Road with only a minor impact on existing intersections. No street improvements would be required.

Very truly yours
F. R. Berry & Associates



Frank R. Berry, P.Eng.
Principal

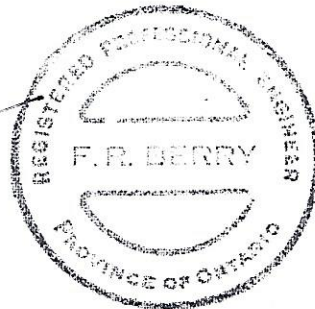




Figure 1
Area Plan

700 m



Site

50

20

King

Myrtle St

Division St

Elm St

Stewart St

McLean St

Stanley St

Nalbourne St

Herrington St

Queen St

Laurel St

Sherman Rd

Mill St W

McDonald St

Commissioner Dr

Harbour New Dr

Owen

Darpoon

Stonehedge Dr

Goghill Dr

Palenway Park

Malvern

Chrysler Greenway

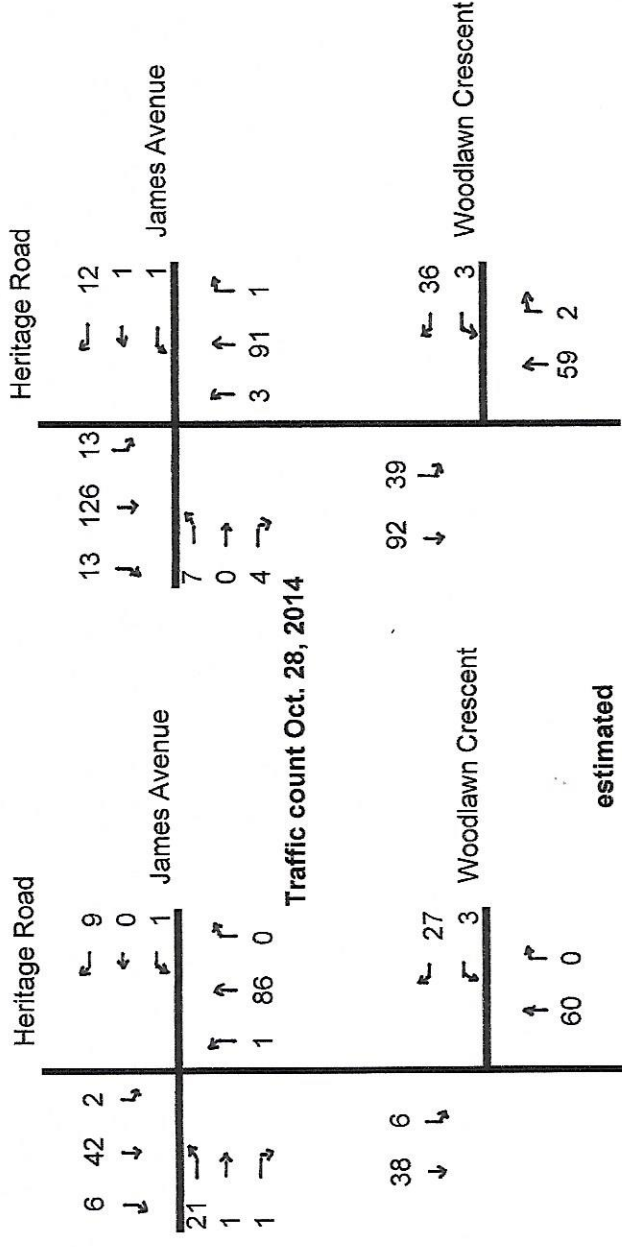
Cope Crescent

James Ave

Erie Ave W

Wride Ave

Essex St



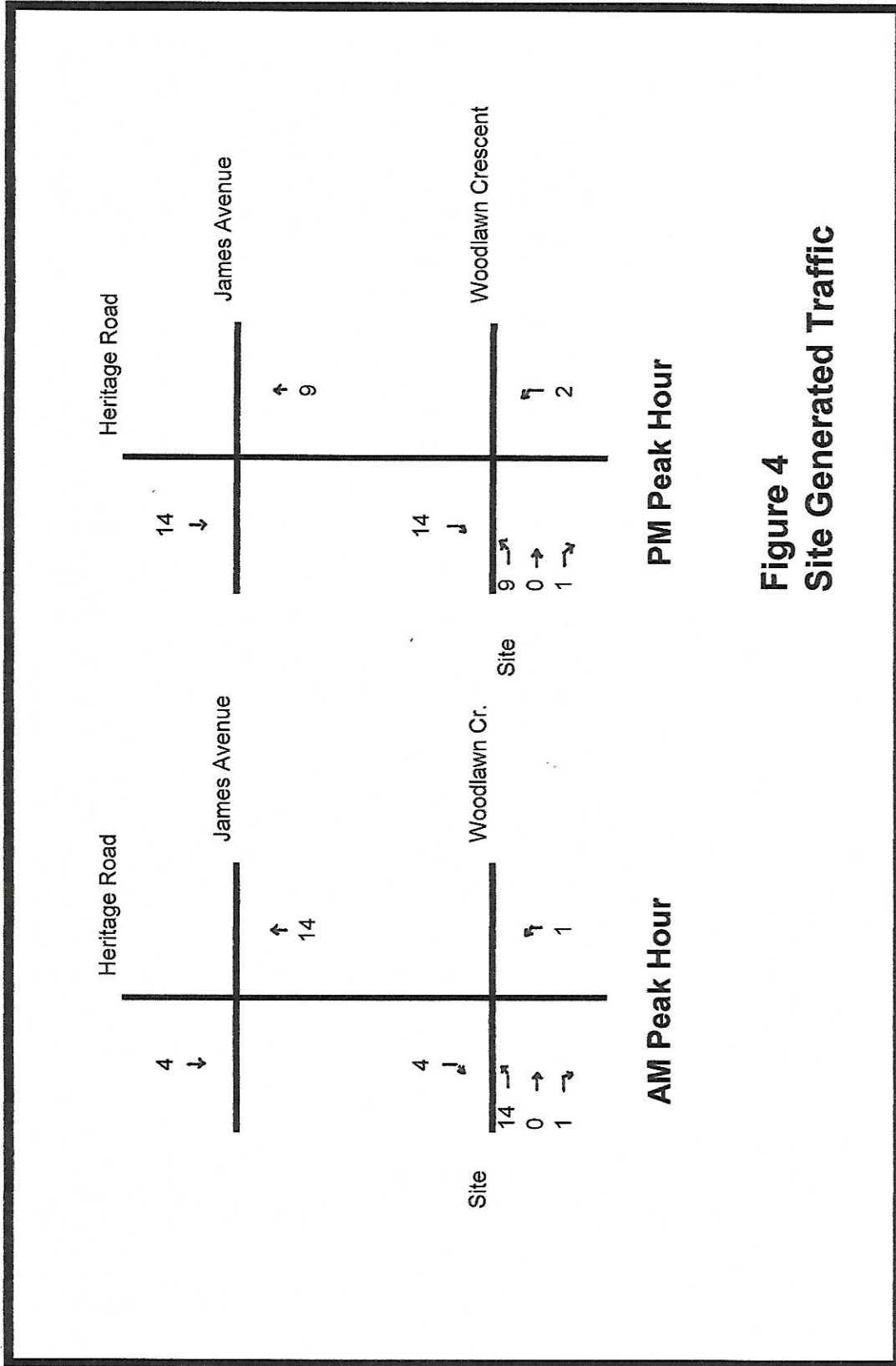
AM Peak Hour

PM Peak Hour

**Figure 2
Existing Traffic**

SITE PLAN
 SHOWING
PROPOSED SUBDIVISION LAYOUT
 ON
PART OF LOT 4
IN THE CONCESSION 1, WESTERN DIVISION
TOWN OF KINGSVILLE
 SCALE 1" = 40'





**Figure 4
Site Generated Traffic**

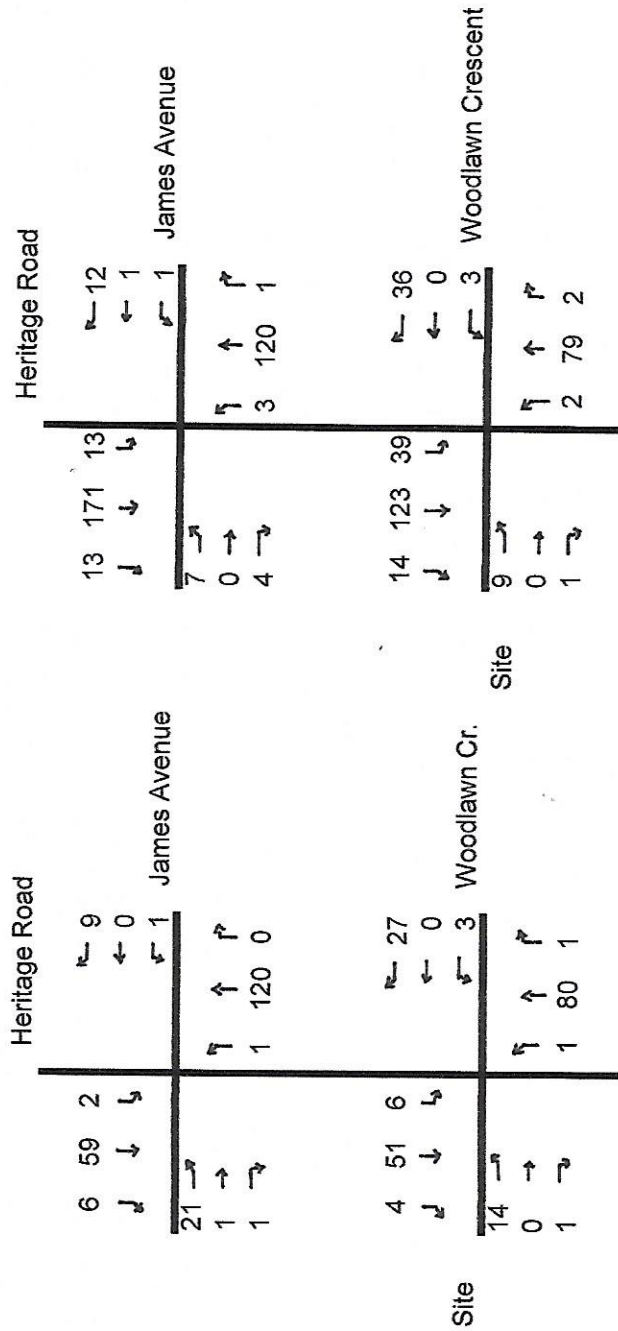


Figure 5
Total Traffic 2026

Intersection	AM Peak Hour				PM Peak Hour				
	v/c	Del.	LofS	Q	v/c	Del.	LofS	Q	
Heritage Road and James Avenue	Eastbound LTR	0.034	10.0	B	0.1	0.018	10.6	B	0.1
	Westbound LTR	0.012	9.0	A	0.0	0.018	9.3	A	0.1
	Northbound LTR	0.001	0.1	A	0.0	0.002	0.2	A	0.0
	Southbound LTR	0.001	0.2	A	0.0	0.01	0.5	A	0.0
	Intersection Delay LofS	1.5sec A				1.1sec A			
Heritage Road and Woodlawn Cresc.	Eastbound LTR	0.021	9.8	A	0.0	0.018	11.1	B	0.1
	Westbound LTR	0.034	8.9	A	0.0	0.046	9.1	A	0.1
	Northbound LTR	0.001	0.1	A	0.0	0.002	0.2	A	0.0
	Southbound LTR	0.004	0.7	A	0.0	0.028	1.7	A	0.1
	Intersection Delay LofS	2.5sec A				2.5sec A			

Note: Del. - ave. delay (secs.)
LofS - level of service
v/c - volume to capacity ratio
ICU - intersection capacity utilization
Q - maximum queue length (veh)
(95th percentile)

Table 1

Level of Service
Heritage Road

Total 2026

APPENDIX A
LEVEL OF SERVICE ANALYSIS



Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Vol, veh/h	21	1	1	1	0	9	1	120	0	2	59	6
Future Vol, veh/h	21	1	1	1	0	9	1	120	0	2	59	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	1	1	1	0	10	1	130	0	2	64	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	209	204	68	205	207	130	71	0	0	130	0	0
Stage 1	72	72	-	132	132	-	-	-	-	-	-	-
Stage 2	137	132	-	73	75	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	748	692	995	753	690	920	1529	-	-	1455	-	-
Stage 1	938	835	-	871	787	-	-	-	-	-	-	-
Stage 2	866	787	-	937	833	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	739	691	995	750	689	920	1529	-	-	1455	-	-
Mov Cap-2 Maneuver	739	691	-	750	689	-	-	-	-	-	-	-
Stage 1	937	834	-	870	786	-	-	-	-	-	-	-
Stage 2	856	786	-	934	832	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	9	0.1	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1529	-	-	745	900	1455	-
HCM Lane V/C Ratio	0.001	-	-	0.034	0.012	0.001	-
HCM Control Delay (s)	7.4	0	-	10	9	7.5	0
HCM Lane LOS	A	A	-	B	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	7	0	4	1	1	12	3	120	1	13	171	13
Future Vol, veh/h	7	0	4	1	1	12	3	120	1	13	171	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	4	1	1	13	3	130	1	14	186	14

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	365	358	193	360	365	131	200	0	0	131	0	0
Stage 1	221	221	-	137	137	-	-	-	-	-	-	-
Stage 2	144	137	-	223	228	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	591	568	849	596	563	919	1372	-	-	1454	-	-
Stage 1	781	720	-	866	783	-	-	-	-	-	-	-
Stage 2	859	783	-	780	715	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	576	561	849	587	556	919	1372	-	-	1454	-	-
Mov Cap-2 Maneuver	576	561	-	587	556	-	-	-	-	-	-	-
Stage 1	779	712	-	864	781	-	-	-	-	-	-	-
Stage 2	844	781	-	767	707	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.3	0.2	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	652	845	1454	-
HCM Lane V/C Ratio	0.002	-	-	0.018	0.018	0.01	-
HCM Control Delay (s)	7.6	0	-	10.6	9.3	7.5	0
HCM Lane LOS	A	A	-	B	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	14	0	1	3	0	27	1	80	1	6	51	4
Future Vol, veh/h	14	0	1	3	0	27	1	80	1	6	51	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	1	3	0	29	1	87	1	7	55	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	175	161	57	162	163	88	59	0	0	88	0	0
Stage 1	71	71	-	90	90	-	-	-	-	-	-	-
Stage 2	104	90	-	72	73	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	788	731	1009	803	729	970	1545	-	-	1508	-	-
Stage 1	939	836	-	917	820	-	-	-	-	-	-	-
Stage 2	902	820	-	938	834	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	760	727	1009	798	725	970	1545	-	-	1508	-	-
Mov Cap-2 Maneuver	760	727	-	798	725	-	-	-	-	-	-	-
Stage 1	938	832	-	916	819	-	-	-	-	-	-	-
Stage 2	874	819	-	932	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.9	0.1	0.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1545	-	-	773	950	1508	-	-
HCM Lane V/C Ratio	0.001	-	-	0.021	0.034	0.004	-	-
HCM Control Delay (s)	7.3	0	-	9.8	8.9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	9	0	1	3	0	36	2	79	2	39	123	14
Future Vol, veh/h	9	0	1	3	0	36	2	79	2	39	123	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	0	1	3	0	39	2	86	2	42	134	15

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	337	318	142	317	324	87	149	0	0	88	0	0
Stage 1	226	226	-	91	91	-	-	-	-	-	-	-
Stage 2	111	92	-	226	233	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	617	598	906	636	594	971	1432	-	-	1508	-	-
Stage 1	777	717	-	916	820	-	-	-	-	-	-	-
Stage 2	894	819	-	777	712	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	578	579	906	620	576	971	1432	-	-	1508	-	-
Mov Cap-2 Maneuver	578	579	-	620	576	-	-	-	-	-	-	-
Stage 1	776	695	-	915	819	-	-	-	-	-	-	-
Stage 2	857	818	-	753	691	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.1		9.1		0.2		1.7	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1432	-	-	600	930	1508	-	-
HCM Lane V/C Ratio	0.002	-	-	0.018	0.046	0.028	-	-
HCM Control Delay (s)	7.5	0	-	11.1	9.1	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-