TRAFFIC IMPACT STUDY

For

Ben-Hur of Brunswick, LLC **Proposed Warehouse Expansion**

Property Located at:

2400 US Route 1 Block 148 – Lot 5.03 Township of North Brunswick, Middlesex County, NJ



Lake Como, NJ 07719 | Chester, NJ 07930 (732) 681-0760

1904 Main Street | 245 Main Street, Suite #110

Nick Verderese, PE NJ PE License #38991

Justin P. Taylor, PE, PTOE NJ PE License #45988

Last Revised: September 1, 2022 Dated: June 17, 2022

2246-99-001T



INTRODUCTION

It is proposed to expand an existing warehouse on a parcel of land located along the northbound side of Route 1 opposite Thomas Avenue in North Brunswick Township, Middlesex County, New Jersey (see Figure 1 in Appendix A). The site is designated as Block 148 – Lot 5.03 on the Township of North Brunswick Tax Maps. The site is currently developed with a 246,049 SF warehouse. It is proposed to construct a 46,641 SF addition along the northern and eastern faces of the existing building for a total building size of 280,650 SF (approximately 12,040 SF of the existing building is anticipated to be removed as part of the proposed construction) (The Project). The site is located within the I-2 – Industrial District zone. Access to the site is proposed to be maintained via the existing right turn in/right turn out driveway along Route 1 northbound.

Dynamic Traffic LLC has been retained to prepare this study to assess the traffic impact associated with the construction of The Project on the adjacent roadway network. This study documents the methodology, analyses, findings and conclusions of our study and includes:

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- Existing traffic data was collected via manual turning movement (MTM) counts during the weekday AM and weekday PM peak periods at the intersection of Route 1 and the site driveway.
- Projections of traffic to be generated by the proposed expansion were prepared utilizing trip generation data as published by the New Jersey Department of Transportation. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.
- Capacity analyses were conducted for the Existing, No Build, and Build conditions for the study intersection.
- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.
- The site plan as designed was reviewed for sufficiency in accommodating large wheel base vehicles such as delivery trucks, refuse trucks, and emergency vehicles.
- The parking layout and supply was assessed based on accepted design standards, local requirements, and demand experienced at similar developments.



EXISTING CONDITIONS

A review of the existing roadway conditions near the proposed site was conducted to provide the basis for assessing the traffic impact of the development. This included field investigations of the surrounding roadways and intersections, collection of traffic volume data, and extensive analyses.

Existing Roadway Conditions

The following is a description of the roadway in the study area:

<u>Route 1</u> is an Urban Principal Arterial roadway under New Jersey Department of Transportation (NJDOT) jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 55 MPH and the roadway provides two (2) travel lanes in each direction with a variable shoulder width separated by a concrete barrier. On-street parking is prohibited. Curbing is provided intermittently along both sides of the roadway, while sidewalk is not provided along either side of the roadway. Route 1 provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Route 1 in the vicinity of The Project are primarily commercial.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Wednesday, June 8, 2022 from 7:00 to 9:00 AM and from 4:30 to 6:30 PM at the intersection of Route 1 and the site driveway. Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:15 - 8:15 AM and the weekday evening PSH occurs between 5:30 - 6:30 PM. Figure 2, located in Appendix A, shows the existing peak hour traffic volumes at the study intersection. All traffic counts are contained in Appendix B.

Existing Capacity Analysis

The methodology utilized in the capacity analyses is described in the *Highway Capacity Manual*, published by the Transportation Research Board. In general, the term Level of Service (LOS) is used to provide a "qualitative" evaluation of capacity based upon certain "quantitative" calculations related to empirical values, such as traffic volume and intersection control.

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table I describes the level of service ranges for unsignalized (stop controlled) intersections.



Leve for Uns	l of Service Criteria ignalized Intersections
Level of Service	Average Control Delay (seconds per vehicle)
а	0.0 to 10.0
b	10.1 to 15.0
С	15.1 to 25.0
d	25.1 to 35.0
e	35.1 to 50.0
f	greater than 50.0

Table I

It should be noted that the analyses within the *Highway Capacity Manual* assume a random arrival for all the movements, which may not be the case if an adjacent traffic signal is present that platoons vehicles, such as the signalized intersection of Route 1 and Finnegans Lane.

All capacity analyses were performed utilizing Synchro 11 software. It should be noted that the existing percentage of trucks and peak hour factors were used in the existing analysis. Table II summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in Appendix C.

	Table	Π		
Existing	Level	s of Ser	vice	
Intersection	Direc Move	ction/ ement	AM PSH	PM PSH
Route 1 & Site Driveway	WB	R	d (32)	e (36)

a (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

The following is a discussion pertaining to the existing intersection analyzed.

Route 1 & Site Driveway

The site driveway intersects Route 1 to form an unsignalized T-intersection with the westbound approach of the driveway operating under stop control. The northbound approach of Route 1 provides a dedicated through lane and a shared through/right turn lane. The westbound approach of the site driveway provides a dedicated right turn lane.

A review of the existing analysis reveals that the driveway operates at levels of service "E" or better during the analyzed peak periods. See Table II for the individual movement levels of service and delays.



FUTURE CONDITIONS

Traffic volumes and operational analyses were developed for both the 2024 No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of the site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 1.0% per year.

Through consultation with the North Brunswick Township Planning Board staff, there are no other developments in the vicinity of the site that have been approved but not yet constructed that are identified as significant traffic generators. It was assumed that the background growth rate was adequate to account for the traffic associated with all developments not listed.

Future 2024 No Build traffic volumes were developed by applying the background growth rate of 1.0% for two (2) years to the study area roadways existing traffic volumes. Figure 3, in Appendix A, shows the 2024 No Build traffic volumes.

Traffic Generation

Trip generation projections for The Project were prepared utilizing trip generation research data as published under Land Use Code (LUC) 150 – Warehousing from the NJDOT published rates. Table III below details existing and proposed traffic volumes associated with the subject project.

	T Trip (able III Generat	ion			
Land Has	1	AM PSH	I]	PM PSH	[
Land Use	In	Out	Total	In	Out	Total
246,049 SF Warehouse (Existing)	37	20	57	14	45	59
280,650 SF Warehouse (Proposed)	40	21	61	16	49	65
Difference (Proposed – Existing)	+3	+1	+4	+2	+4	+6

As shown in Table III, the proposed expansion is projected to result in a maximum of six (6) additional peak hour trips. However, it should be noted that as part of The Project, a user at the subject site known as Brunswick Logistics, which has 35 employees, will be vacating the existing facility and a user known as Yankee Clipper will be expanding with 10 additional employees as well as 1-2 additional truck deliveries per week. This change is anticipated to result in a net reduction of vehicular trips to the site during both the weekday morning and weekday evening peak hours. However, conservatively, the trip generation projections illustrated in Table III were utilized for the analyses contained herein.



Once the magnitude of traffic to be generated by the proposed expansion is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Figures 4 and 5, located in Appendix A, illustrate the Site Generated Traffic Trip Distribution and the Site Generated Trips, respectively. The Site Generated Trips assigned to the study area network were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 6.

Future Capacity Analysis

Operational conditions at the study intersection were analyzed under the No Build and Build conditions and are summarized in Table IV below.

	Future	Levels	of Servic	e		
	Direc	tion	AM	PSH	PM	PSH
Intersection	Move	ement	No Build	Build	No Build	Build
Route 1 & Site Driveway	WB	R	d (33)	d (33)	e (37)	e (38)

Table IV Suture Levels of Service

a (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

Route 1 & Site Driveway

With the addition of site generated traffic, the driveway is anticipated to operate at No Build levels of service "E" or better with little to no changes in delay during the analyzed peak hours. See Table IV for the individual movement levels of service and delays.



SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to The Project will be maintained via the existing right turn in/right turn out driveway along Route 1 northbound.

It is proposed to restripe most of the existing parking fields to provide minimum parking aisle widths of 25', which satisfy the Ordinance minimum aisle width requirement of 25' for 90-degree parking. These aisles will allow for two-way circulation and 90-degree parking. Review of the site plan design indicates that the site can sufficiently accommodate a large wheel base vehicle, such as a single unit truck (SU), or a tractor with a 53' trailer, along with the automobile traffic anticipated.

Parking

The North Brunswick Township Ordinance sets forth a parking requirement of 1 parking space per 2,500 square feet for storage, warehousing, distribution and shipping activity uses, 1 parking space per 250 SF for banks, financial and business offices and professional office uses, as well as 1 parking space per 5 executive office workers. This equates to a parking requirement of 110 parking spaces for the proposed 274,334 SF of warehouse, 26 spaces for the proposed 6,316 SF of office, and 1 space for the proposed 5 executives, or a total of 137 parking spaces. The site as proposed provides 134 parking spaces, inclusive of four make-ready electric vehicle charging spaces and seven (7) handicap spaces. As per the current Municipal Land Use Law (MLUL) (N.J.A.C. 40:55-D), electric vehicle charging stations count as two spaces for the purposes of complying with parking supply requirements, up to a maximum of 10% of the requirement. As such, the effective proposed parking supply is calculated to be 138 spaces, which satisfies the Ordinance requirement of 137 spaces.

To supplement the above, this office conducted a review of historical imagery as recorded by Nearmap in order to determine the prevailing parking demand on-site. The following table summarizes the observed parking demand on-site during peak operational periods of the weekday.

On-Site Park	ting Demand	
Date	Time	Occupied Spaces
Friday, October 23, 2015	3:12 PM	69
Wednesday, November 2, 2016	1:10 PM	60
Monday, April 3, 2017	12:51 PM	60
Wednesday, October 4, 2017	12:55 PM	48
Friday, April 20, 2018	12:12 PM	67
Thursday, December 6, 2018	10:54 AM	61
Wednesday, March 6, 2019	3:04 PM	77
Friday, March 19, 2021	2:59 PM	57
Monday, June 7, 2021	10:46 AM	58
Tuesday, October 19, 2021	11:55 AM	49
Wednesday, March 2, 2022	2:27 PM	67
Thursday, June 30, 2022	10:47 AM	63



Based upon a review of the data illustrated in Table V, the average observed on-site parking demand was found to be 61 spaces and the 85th percentile on-site parking demand was found to be 68 spaces. Further, as noted earlier in this report, as part of The Project, an existing user known as Brunswick Logistics is anticipated to leave the facility and an existing user known as Yankee Clipper is anticipated to expand. This behavior is anticipated to result in a net reduction in peak hour trips as well as a net reduction in the on-site parking demand. As such, the proposed parking supply of 134 spaces is anticipated to more than adequately support the anticipated on-site parking demand.

It is proposed to restripe most of the existing parking stalls in order to provide parking stall dimensions of 9'x18', which satisfy the Ordinance requirement of 9'x18'. It should be noted that industry standards recommend stall widths of between 8'3'' and 8'6'' and a length of 18' for low-turnover land uses such as The Project, which is met as designed.

The Ordinance also sets forth a loading requirement of 1 loading space for buildings greater than 5,000 SF and occupied for commerce, hospital, laundry, dry cleaning, places of public and quasi-public assembly, industry and other similar uses involved in the receipt and distribution by vehicles of materials or merchandise. Additionally, the Ordinance states that buildings in excess of 25,000 SF will be required to provide additional off-street loading spaces as determined by the Planning Board. Further, the Ordinance requires minimum loading space dimensions of 12'x35'. It is proposed to provide 22 loading spaces with dimensions of 12'x60'. As such, it is the opinion of this office that the intent of the Ordinance requirement is satisfied.



FINDINGS & CONCLUSIONS

Findings

Based upon the detailed analyses as documented herein, the following findings are noted:

- The proposed warehouse expansion is projected to generate 3 entering trips and 0 exiting trips during the weekday morning peak hour and 2 entering trips and 3 exiting trips during the weekday evening peak hour that are "new" to the adjacent roadway network.
- Access to the site is proposed to be maintained via the existing right turn in/right turn out driveway along Route 1 northbound.
- With the addition of site generated traffic, the intersection of Route 1 and the site driveway is anticipated to operate at No Build levels of service "E" or better with little to no changes in delay during the peak hours studied.
- As proposed, The Project's site driveway and internal circulation have been designed to provide for safe and efficient movement of automobiles and large wheel base vehicles.
- The proposed parking supply and design is sufficient to support the projected demand.

Conclusions

Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic LLC that the adjacent street system of the New Jersey Department of Transportation will not experience any significant degradation in operating conditions with the construction of The Project. The site driveway is located to provide safe and efficient access to the adjacent roadway system. The site plan as proposed provides for good circulation throughout the site and provides adequate parking to accommodate The Project's needs.

Appendix A Traffic Volume Figures













Appendix B Project Information

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719 245 Main Street - Suite #110, Chester, NJ 07930 732-681-0760

E/W: 2400 Route 1 Driveway N/S: Route 1 Town/County: North Brunswick/Middlesex Job #: 2246-99-001T File Name : 2400 Route 1 Driveway - AMPM Site Code : 00000000 Start Date : 6/8/2022 Page No : 1

		Groups	Printed- Cars	Trucks (SU)	- Trucks (TT)			
	2400	Route 1 Driv	veway		2400 Rout	e 1 Driveway		
		Westbound	l		North	nbound		
Start Time	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	0	2	550	9	0	559	561
07:15 AM	0	0	0	649	2	0	651	651
07:30 AM	1	0	1	649	4	0	653	654
07:45 AM	0	0	0	657	4	0	661	661
Total	3	0	3	2505	19	0	2524	2527
08:00 AM	0	0	0	688	7	0	695	695
08:15 AM	2	0	2	635	6	0	641	643
08:30 AM	2	0	2	620	5	0	625	627
08:45 AM	2	0	2	616	12	0	628	630
Total	6	0	6	2559	30	0	2589	2595
*** BREAK ***								
04:30 PM	7	0	7	566	1	0	567	574
04:45 PM	5	0	5	617	0	0	617	622
Total	12	0	12	1183	1	0	1184	1196
05:00 PM	7	0	7	671	1	0	672	679
05:15 PM	3	0	3	615	2	0	617	620
05:30 PM	6	0	6	653	0	0	653	659
05:45 PM	4	0	4	649	4	0	653	657
Total	20	0	20	2588	7	0	2595	2615
06:00 PM	14	0	14	649	0	0	649	663
06:15 PM	4	0	4	643	2	0	645	649
Grand Total	59	0	59	10127	59	0	10186	10245
Apprch %	100	0		99.4	0.6	0		
Total %	0.6	0	0.6	98.8	0.6	0	99.4	
Cars	53	0	53	9830	54	0	9884	9937
% Cars	89.8	0	89.8	97.1	91.5	0	97	97
Trucks (SU)	2	0	2	128	2	0	130	132
% Trucks (SU)	3.4	0	3.4	1.3	3.4	0	1.3	1.3
Trucks (TT)	4	0	4	169	3	0	172	176
% Trucks (TT)	6.8	0	6.8	1.7	5.1	0	1.7	1.7

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719 245 Main Street - Suite #110, Chester, NJ 07930 732-681-0760

E/W: 2400 Route 1 Driveway N/S: Route 1 Town/County: North Brunswick/Middlesex Job #: 2246-99-001T File Name : 2400 Route 1 Driveway - AMPM Site Code : 00000000 Start Date : 6/8/2022 Page No : 2

	2400) Route 1 Dri	veway		2400 Rout	e 1 Driveway]
		Westbound	ł		Nort	hbound		
Start Time	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 0	7:00 AM to 11	45 AM - Peak	(1 of 1					
Peak Hour for Entire Interse	ection Begins a	at 07:15 AM						
07:15 AM	0	0	0	649	2	0	651	651
07:30 AM	1	0	1	649	4	0	653	654
07:45 AM	0	0	0	657	4	0	661	661
08:00 AM	0	0	0	688	7	0	695	695
Total Volume	1	0	1	2643	17	0	2660	2661
% App. Total	100	0		99.4	0.6	0		
PHF	.250	.000	.250	.960	.607	.000	.957	.957
Cars	1	0	1	2562	16	0	2578	2579
% Cars	100	0	100	96.9	94.1	0	96.9	96.9
Trucks (SU)	0	0	0	43	0	0	43	43
% Trucks (SU)	0	0	0	1.6	0	0	1.6	1.6
Trucks (TT)	0	0	0	38	1	0	39	39
% Trucks (TT)	0	0	0	1.4	5.9	0	1.5	1.5
Peak Hour Analysis From 1	2:00 PM to 06	:15 PM - Peak	< 1 of 1					
Peak Hour for Entire Interse	ection Begins a	at 05:30 PM						
05:30 PM	6	0	6	653	0	0	653	659
05:45 PM	4	0	4	649	4	0	653	657
06:00 PM	14	0	14	649	0	0	649	663
06:15 PM	4	0	4	643	2	0	645	649
Total Volume	28	0	28	2594	6	0	2600	2628
% App. Total	100	0		99.8	0.2	0		
PHF	.500	.000	.500	.993	.375	.000	.995	.991
Cars	27	0	27	2554	5	0	2559	2586
% Cars	96.4	0	96.4	98.5	83.3	0	98.4	98.4
Trucks (SU)	1	0	1	10	1	0	11	12
% Trucks (SU)	3.6	0	3.6	0.4	16.7	0	0.4	0.5
Trucks (TT)	0	0	0	30	0	0	30	30
% Trucks (TT)	0	0	0	1.2	0	0	1.2	1.1



SRI = 00000001

Date last inventoried: May 2018

Appendix C Capacity Analysis

0					
WBL	WBR	NBT	NBR	SBL	SBT
	1	≜ ⊅			
0	1	2643	17	0	0
0	1	2643	17	0	0
0	0	0	0	0	0
Stop	Stop	Free	Free	Free	Free
-	None	-	None	-	None
-	0	-	-	-	-
,# 0	-	0	-	-	0
0	-	1	-	-	0
96	96	96	96	96	96
0	0	3	6	0	0
0	1	2753	18	0	0
	0 WBL 0 0 0 Stop - , # 0 96 0 0	0 WBL WBR 7 0 1 0 1 0 1 0 5top Stop 5top Stop - None - 0 , # 0 0 , # 0 0 , # 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 WBL WBR NBT ↑ ↑↑ 0 1 2643 0 1 2643 0 1 2643 0 0 0 Stop Stop Free - None - - 0 - , # 0 - 0 0 - , # 0 - 0 0 - , # 0 3 0 3 0 1 2753	NBL WBR NBT NBR WBL WBR NBT NBR 1 2643 17 0 1 2643 17 0 1 2643 17 0 0 0 0 Stop Stop Free Free None - None - 0 0 0 - # 0 - 1 - 96 96 96 96 96 0 0 3 6 0 0 1 2753 18	0 NBT NBR SBL WBL WBR NBT NBR SBL 1 2643 17 0 0 1 2643 17 0 0 1 2643 17 0 0 1 2643 17 0 0 0 0 0 0 0 Stop Stop Free Free Free None - None - - 0 - 0 - - - # 0 - 0 - - - # 0 - 0 - - - # 0 - 0 - - - 96 96 96 96 96 0 0 1 2753 18 0

Major/Minor	Minor1	M	Major1	
Conflicting Flow All	-	1386	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.9	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.3	-	-
Pot Cap-1 Maneuver	0	135	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	· -	135	-	-
Mov Cap-2 Maneuver	· -	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Annroach	WR		NB	
HCM Control Delay	31.9		0	
HCM LOS	, 01.0 D		U	
	U			
Minor Lane/Major Mv	mt	NBT	NBRW	/BLn1
Capacity (veh/h)		-	-	135
HCM Lane V/C Ratio		-	-	800.0

HCM Control Delay (s) - - 31.9 HCM Lane LOS - - D HCM 95th %tile Q(veh) - - 0
HCM Lane LOS - D HCM 95th %tile Q(veh) - 0
HCM 95th %tile Q(veh) 0

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		1	_ ≜î ≽			
Traffic Vol, veh/h	0	28	2594	6	0	0
Future Vol, veh/h	0	28	2594	6	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage	,# 0	-	0	-	-	0
Grade, %	0	-	1	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	17	0	0
Mvmt Flow	0	28	2620	6	0	0

Major/Minor	Minor1	Ν	Major1	
Conflicting Flow All	-	1313	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.98	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.34	-	-
Pot Cap-1 Maneuver	0	146	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	146	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Approach	WB		NB	
HCM Control Delay, s	35.5		0	
HCM LOS	Е			
Minor Lane/Major Mvr	nt	NBT	NBRW	/BLn1
Capacity (veh/h)		-	-	146
HCM Lane V/C Ratio		-	- (0.194
HCM Control Delay (s	5)	-	-	35.5

Е

0.7

-

-

-

-

HCM Lane LOS

HCM 95th %tile Q(veh)

Intersection							
Int Delay, s/veh	0						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations		1	≜ †₽				
Traffic Vol, veh/h	0	1	2696	17	0	0	
Future Vol, veh/h	0	1	2696	17	0	0	

0	1	2090	17	0	0
0	0	0	0	0	0
Stop	Stop	Free	Free	Free	Free
-	None	-	None	-	None
-	0	-	-	-	-
# 0	-	0	-	-	0
0	-	1	-	-	0
96	96	96	96	96	96
0	0	3	6	0	0
0	1	2808	18	0	0
	0 Stop - # 0 96 0	0 0 Stop Stop - None - 0 # 0 0 96 96 0 0 0 1	0 1 2090 0 0 0 Stop Stop Free - None - - 0 - # 0 - 0 0 - 1 96 96 96 0 0 3 0 1 2808	0 1 2696 17 0 0 0 0 Stop Stop Free Free - None - None - 0 - - # 0 - 0 - 96 96 96 96 0 0 0 3 6 0 0 1 2808 18 18	0 1 2090 17 0 0 0 0 0 0 0 Stop Stop Free Free Free Free - None - None - - 0 - - - # 0 - 0 - - 96 96 96 96 96 0 0 0 3 6 0 0 1 2808 18 0

Major/Minor	Minor1	I	Major1		
Conflicting Flow All	-	1413	0	0	
Stage 1	-	-	-	-	
Stage 2	-	-	-	-	
Critical Hdwy	-	6.9	-	-	
Critical Hdwy Stg 1	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	
Follow-up Hdwy	-	3.3	-	-	
Pot Cap-1 Maneuver	0	130	-	-	
Stage 1	0	-	-	-	
Stage 2	0	-	-	-	
Platoon blocked, %			-	-	
Mov Cap-1 Maneuver	· -	130	-	-	
Mov Cap-2 Maneuver	• -	-	-	-	
Stage 1	-	-	-	-	
Stage 2	-	-	-	-	
Approach	\//D		ND		
Approach	VVD		IND		
HCM Control Delay, s	32.9		0		
HCM LOS	D				
Minor Lane/Maior My	mt	NBT	NRRW	/BI n1	
			1.510	400	

Capacity (veh/h)	-	-	130	
HCM Lane V/C Ratio	-	- (800.0	
HCM Control Delay (s)	-	-	32.9	
HCM Lane LOS	-	-	D	
HCM 95th %tile Q(veh)	-	-	0	

Intersection						
Int Delay, s/veh	0.4					
int Delay, 5/Ven	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		1	_ ≜ î≽			
Traffic Vol, veh/h	0	28	2646	6	0	0
Future Vol, veh/h	0	28	2646	6	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage	,# 0	-	0	-	-	0
Grade, %	0	-	1	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	17	0	0
Mvmt Flow	0	28	2673	6	0	0

Major/Minor	Minor1	M	Major1	
Conflicting Flow All	-	1340	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.98	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.34	-	-
Pot Cap-1 Maneuver	0	140	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	· -	140	-	-
Mov Cap-2 Maneuver		-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Approach	WB		NB	
HCM Control Delay, s	37.1		0	
HCM LOS	E		-	
Minor Long/Major Mu	mt	NDT		/DIn1
	m	INBI	INBRIN	
Capacity (veh/h)		-	-	140

	-	- 140	
HCM Lane V/C Ratio	-	- 0.202	
HCM Control Delay (s)	-	- 37.1	
HCM Lane LOS	-	- E	
HCM 95th %tile Q(veh)	-	- 0.7	

tersection	

lr

Int Delay, s/veh	0						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations		1	_ ≜ î≽				
Traffic Vol, veh/h	0	2	2696	20	0	0	
Future Vol, veh/h	0	2	2696	20	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage,	# 0	-	0	-	-	0	
Grade, %	0	-	1	-	-	0	
Peak Hour Factor	96	96	96	96	96	96	
Heavy Vehicles, %	0	0	3	6	0	0	
M∨mt Flow	0	2	2808	21	0	0	

Major/Minor	Minor1	M	Major1	
Conflicting Flow All	-	1415	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.9	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.3	-	-
Pot Cap-1 Maneuver	0	129	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	· –	129	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Annroach	W/R		NR	
HCM Control Delay	33 /		0	
HCM LOS	55.4 D		U	
	D			
Minor Lane/Major Mvr	nt	NBT	NBRW	BLn1

Capacity (veh/h)	-	- 129			
HCM Lane V/C Ratio	-	- 0.016			
HCM Control Delay (s)	-	- 33.4			
HCM Lane LOS	-	- D			
HCM 95th %tile Q(veh)	-	- 0			

Interportion						
Intersection						
Int Delay, s/veh	0.5					
Mayamant			NDT		CDI	ODT
Movement	WBL	WBR	INR I	NBK	SBL	SBI
Lane Configurations		1	_ ≜ β			
Traffic Vol, veh/h	0	32	2646	8	0	0
Future Vol, veh/h	0	32	2646	8	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage	e, # 0	-	0	-	-	0
Grade, %	0	-	1	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	4	2	17	0	0
Mumt Flour						

Major/Minor	Minor1	ſ	Major1	
Conflicting Flow All	-	1341	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.98	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.34	-	-
Pot Cap-1 Maneuver	0	140	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	· -	140	-	-
Mov Cap-2 Maneuver	· -	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Annroach	WR		NR	
HCM Control Delay	38.3		0	
HCM LOS	50.5		0	
	L			
Minor Lane/Major Mvi	nt	NBT	NBRW	/BLn1
Capacity (veh/h)		-	-	140
HCM Lane V/C Ratio		-	-	0.231
HCM Control Delay (s	;)	-	-	38.3
HCM Lane LOS		-	-	F

- 0.8

-

HCM 95th %tile Q(veh)