



ALDRIDGE TRANSPORTATION CONSULTANTS, LLC

Advanced Transportation Planning and Traffic Engineering

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August 31, 2020

Mr. Eric Pearson
Cage Civil Engineering
999 18th St. S2110
Denver, CO 80202

RE: Transportation Impact Study - Revised
The Aurora Highlands Filings 7 Phases 1-3 DR Horton (#1440618)

Dear Mr. Pearson:

Aldridge Transportation Consultants (ATC) is pleased to present this traffic impact study for the proposed residential development of Filings 7 Phases 1-3 of The Aurora Highlands.

ATC is professional service firm specializing in traffic engineering and transportation planning. ATC's principal, John M.W. Aldridge is a Colorado licensed professional engineer. In the past 20 years, ATC has prepared over 1,200 traffic impact studies, designed over 100 traffic signals, and has provided expert witness testimony on engineering design and access issues on multi-million-dollar interchange and highway projects in Kansas and Colorado.

We acknowledge that City of Aurora's review of this study is only for general performance with submittal requirements, current design criteria, and standard engineering principles and practice.

ATC appreciates the opportunity to be of service. Please call if you have any questions. We can be reached at 303-703-9112.



Respectfully submitted,
Aldridge Transportation Consultants, LLC

John M.W. Aldridge, P.E.
Principal



INTRODUCTION

This Traffic Impact Study examines the impact on traffic caused by the development of Filings 7 Phases 1-3 of The Aurora Highlands. This is the first section of The Aurora Highlands to be developed. It includes the southern areas of West Village and Highlands Creek West. Figure 1 shows the full development of The Aurora Highlands with village and street names. Please note that the graphic is for illustrative purposes only and subject to change as planning and design is further developed.

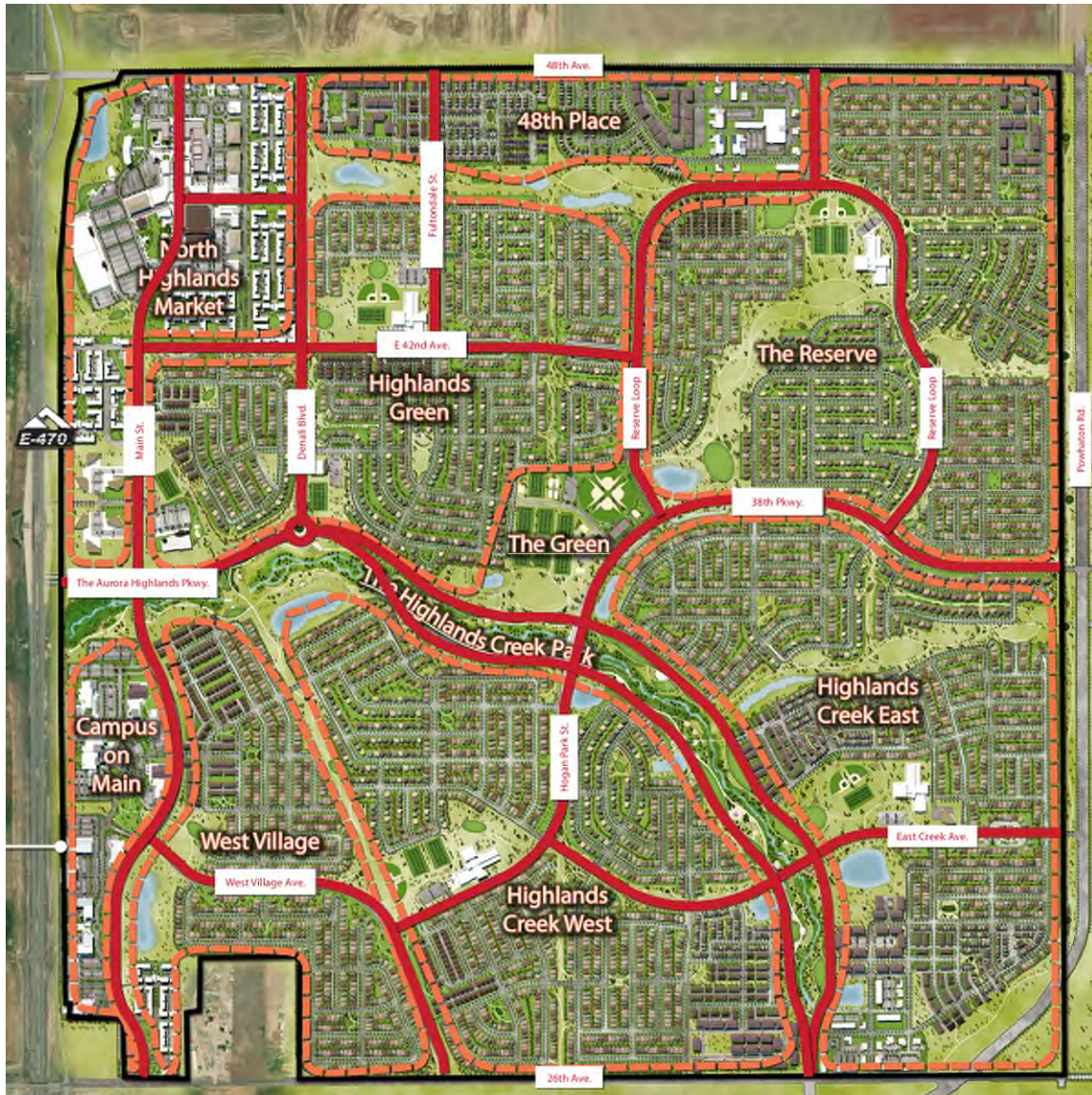


Figure 1 Village and Street Naming Plan



The **Aurora Highlands Traffic Impact Study** prepared by FHU in July 2018 provides an overall examination of the approximate 3,100-acre development plan shown in Figure 1. The FHU study focused on the long-term (2040) transportation needs not only for the full-build out but also for the areas that surround Aurora Highlands. The long-term analysis was based on the DRCOG planning using the Compass model and 2040 NEATS travel demand modeling. The **Northeast Area Transportation Study** (NEATS) transportation plan refresh was completed in October 2018 and is inclusive of the Aurora Highlands master development plan again as depicted in Figure 1. While adjustments to the land use and street layout are inevitable, these documents nonetheless provide a sound foundation and basis for this study and its improvement recommendations.

Per the FHU study, more refined traffic impact study could be prepared for each individual development application, such as this, to refine the specifics needed as development occurs. The FHU study sets the stage with respect to the roadway needs and classifications.

The sections that are the subject of this development application are shown in Figure 2



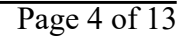
Figure 2 Subject Area and Streets

The proposed development plan features 1,030 units on approximately 203.5 acres. The density is about 5.1 du/ac. Of the 1,030 units, 288 are duplex lots and 742 are single-family.

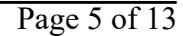
EXISTING CONDITIONS

Access to the site is restricted to one street now, 26th Ave. Main St. is under construction and will connect 26th Ave. to 38th Ave. and a future interchange with E-470. Most of the traffic will be oriented to/from the west on 26th Ave. crossing over E-470 to Picadilly Road. Gun Club Road from 26th Ave to 42nd Ave. parallels E-470. This road serves the E-470 office/maintenance complex. Gun Club Road may provide limited access to E-470 through the complex in the near-term.

26th Ave. is a 2-Lane Minor Arterial that extends from Picadilly Road to Watkins Road. It is undivided and in the subject area includes a 6-foot gravel shoulder. There is no sidewalk on either side. It carries approximately 1,000 ADT per NEATS, and the posted speed limit is 45 mph.



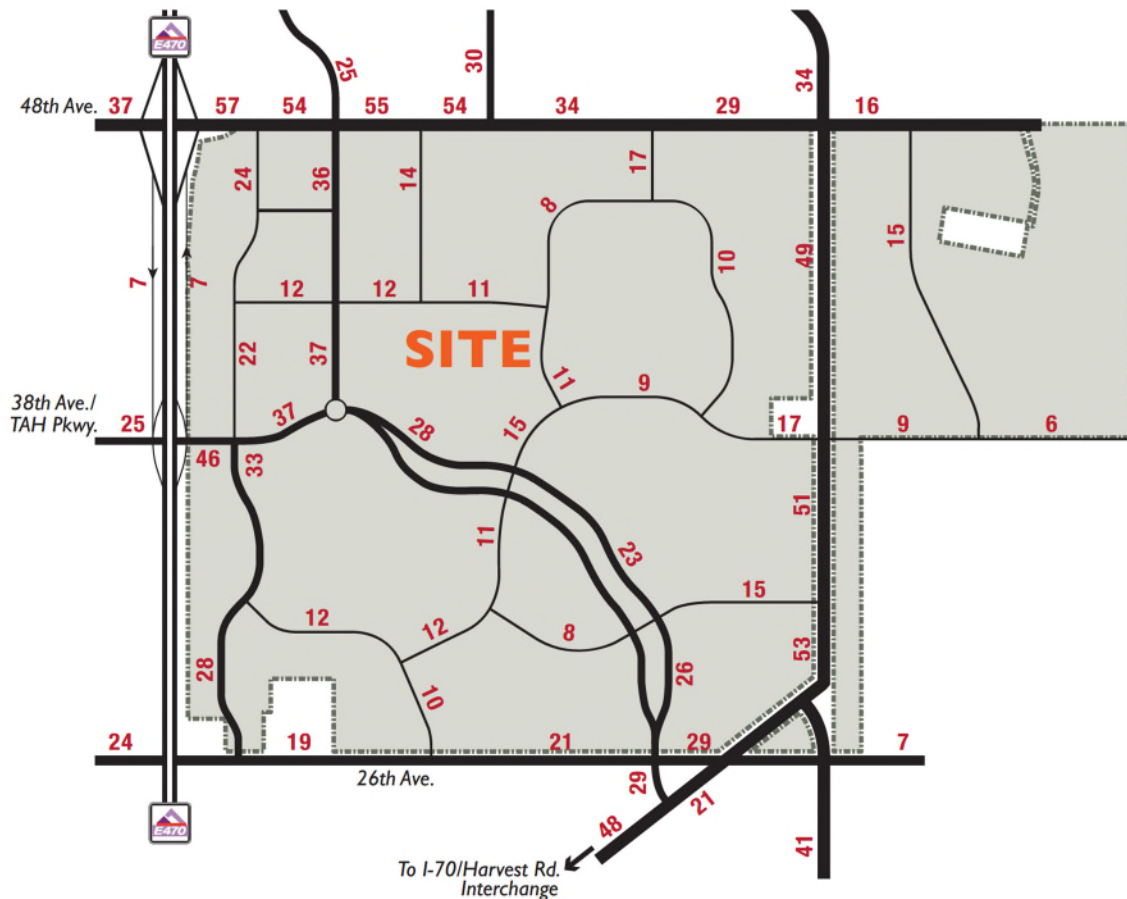
Initially, the traffic distribution will be heavily oriented to/from the west on 26th Ave. with at least an estimated 70/30 directional split. This includes a small share from Gun Club Road that comes from the E-470 access through the Authority's

[illegible]

The future (2040) traffic volumes for The Aurora Highlands have been established through the FHU study and NEATS travel modeling. The forecast volumes include the full build of The Aurora Highlands and land uses surrounding the Aurora Highlands area. These were heavily vetted with city staff in the preparation of the NEATS travel model according to the FHU study. Figure 6 is from the FHU study and shows the 2040 Total Traffic. It should be noted that while the FHU study projects 19-21,000 ADT on 26th Ave. NEATS projects about half that at 11,900 ADT. FHU explains that their travel modelling assumes build out of Aurora Highlands to its maximum potential although not a likely scenario. They did so to give the developer flexibility in the



development of each planning area and to meet the City's requirement in preparing a traffic impact study. To wit, the zones in this phase are being developed with 1,030 units vs. the 1,855 units programmed by FHU. Overall, the FHU study forecast 203,000 trips generated by the full build out. NEATS on the other hand forecast 117,000 trips from the same traffic analysis zones.



LEGEND

XXXX = Volumes in 1000's

[Shaded Area] = Aurora Highlands

Figure 6 2040 Total Traffic per the FHU Study

In both documents, however, the 2040 street network assumes that both Main St. and 26th Ave. will be 4-Lane Arterials. Moreover, based on the daily volumes traffic signal control will be likely at Main St./26th Ave. and at West Village Ave./26th Ave.

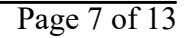


Figure 8 Near Term Phases 1-3 PM Total

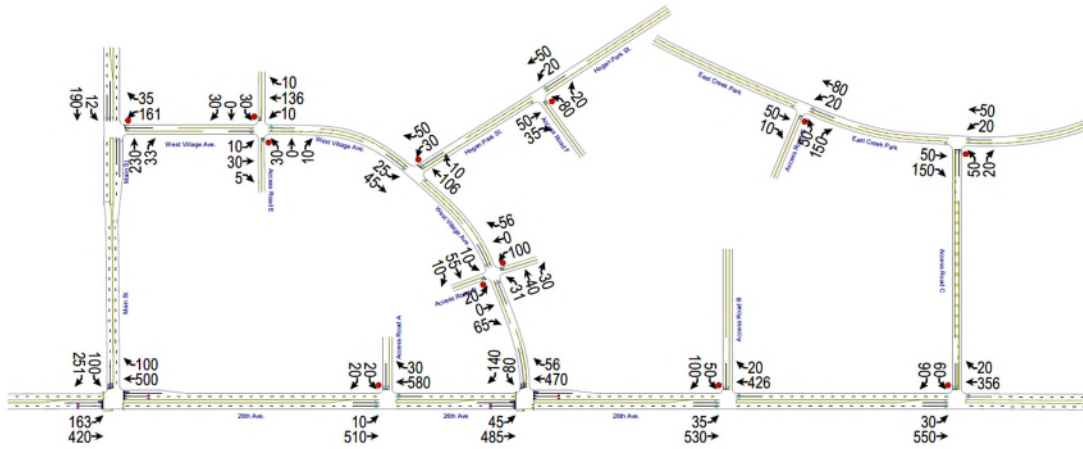


Figure 9 2040 AM Total

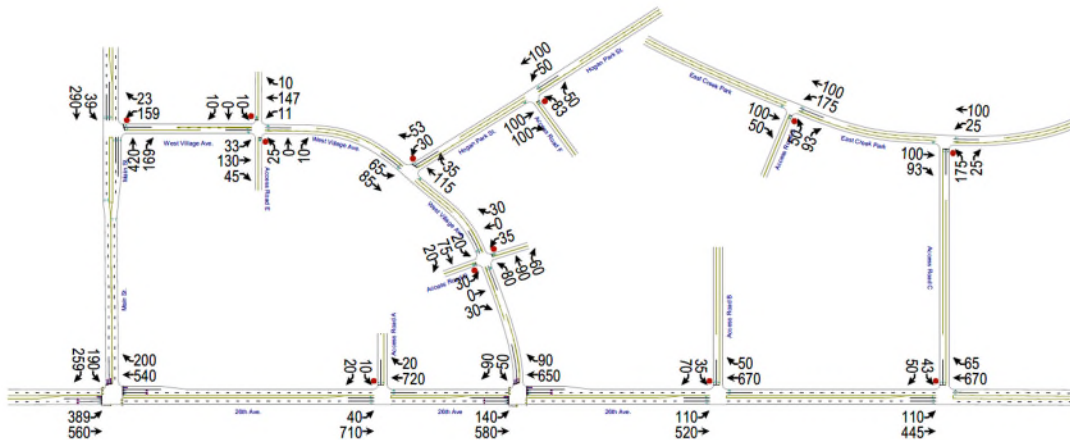


Figure 10 2040 PM Total

PEAK HOUR INTERSECTION LEVEL OF SERVICE

ATC uses Synchro v.10 for operations analyses. The Synchro methodology is based on the 6th Edition of the Highway Capacity Manual (HCM). The table summarizes the AM and PM peak hour LOS and the 95th percentile queue lengths for the near-term Phases 1-3 and the long term 2040 AM and PM peaks hours. As there are no existing intersections in the subject area, no analysis of the exiting conditions or background conditions is possible. Synchro reports for each timeframe are provided in the appendix.

The HCM states that, “LOS is used to translate complex numerical performance rating into a simple A-F system representative of the travelers’ perception of the quality of service provided by



a facility or service. Practitioners and decision makers alike must understand that the LOS letter result hides much of the complexity of facility performance¹.” LOS is a letter rating from A to F. LOS A indicates free-flow traffic conditions and little to no delay at intersections. LOS F is heavy traffic congestion with significant delay. LOS is provided for the overall operations at signalized intersections. LOS D is generally the benchmark for acceptable signalized intersection operations during the weekday peak hours. The critical movement, not the overall, indicates the LOS rating for unsignalized intersections, which is generally a left turn out from the minor street approach. Caution must be used when evaluating the LOS at unsignalized intersections particularly when LOS F is shown. In case of LOS F, the HCM recommends that other evaluation methods should be considered such as the volume over capacity ratios, the 95th percentile queue length, and duration of LOS F to make the most effective traffic control decision². LOS F at unsignalized intersections is typically normal during the weekday peak hours as the duration of the LOS F condition is relatively short.

Unsignalized Intersection LOS & 95%ile Summary					
LOS (Control Delay (secs) A=0-10, B=>10-15, C=>15-25, D=>25-35, E=>35-50, F=>50) / 95%ile Q (veh)					
		Near Term Phases 1-3		2040	
Intersection	Movement	AM	PM	AM	PM
26th Ave./West Village Ave.	Critical Movement SBL	B/.4	D/1.1	Signal	Signal
West Village Ave/ Road E	Critical Movement NBL	B/.2	B/.2	B/.2	B/.2
West Village Ave/ Road D	Critical Movement WBL	B/.7	B/.5	B/.7	B/.5
26th Ave./Road A	Critical Movement SBL	B/.2	C/.1	C/.3	D/.3
Main St./West Village Ave.	Critical Movement WBL	A/.6	B/.8	B/1.1	D/2.7
26th Ave./Road B	Critical Movement SBL	B/.3	C/.4	C/.6	E/1.3
26th Ave./Road C	Critical Movement SBL	B/.3	C/.5	C/.7	F/1.7
West Village Ave./Hogan Park	Critical Movement WBL	B/.1	B/.2	B/.1	B/.2
26th Ave./Main St.	Critical Movement SBL	C/.2	D/.4	Signal	Signal

Signalized Intersection LOS Summary				
LOS/Control Delay (secs) A=0-10, B=>10-20, C=>20-35, D=>35-55, E=>55-80, F=>80				
Intersection	Near-Term Phs. 1-3		2040 Total	
	AM	PM	AM	PM
26th Ave./West Village Ave.	Unsig.	Unsig.	C/22.0	B/11.5
26th Ave. /Main St.	Unsig.	Unsig.	B/16.1	C/21.8

The operations analysis demonstrates that all collector/collector, collector/local, and arterial/local intersections will operate as unsignalized intersections at an acceptable LOS with one exception at 26th Ave. and Road C. It will operate at LOS F, however the 95thile queue is minimal at 1.7 vehicles. The arterial/collector intersection, Main St./West Village Ave. will also operate acceptably remaining unsignalized. The critical movement, the westbound left out in the heaviest

¹ HCM version 6, Chapter 5, pages 5-3 – 5-6.

² ditto



traffic time the 2040 PM condition operates at LOS D with a 95th percentile of 2.7 vehicles. The two other arterial/collector intersections at 26th Ave./West Village Ave. and 26th Ave./Main St. are projected to meet a traffic signal warrant per the next section. The traffic signals will provide acceptable overall LOS and delay at these intersections.

TRAFFIC SIGNAL WARRANTS

The City staff in comments dated March 27, 2020 is requiring "...signal warrant analysis of intersection with western "Collector" roadway with 26th Ave. Warrant 1,2,3 all to be included (collect 72 hr. tube counts for analysis)." This comment cannot be satisfied as traffic volume cannot be counted on non-existent roadways.

Generally, a traffic signal in a residential area is warranted by Warrant 1 and or 2 on actual hourly volume counts. Warrant 3 is not applicable in residential areas and is reserved for unusual cases per the MUTCD. Typically, in order to meet an eight-hour warrant (Warrant 1) or four-hour warrant (Warrant 2) the average daily volume on the minor street approach needs to exceed 2,000 ADT. This is projected to be the case in the 2040 condition at the intersections of Main St./26th Ave. and 26th Ave./West Village Ave. No other intersections in the development meet this criterion.

TRAFFIC CALMING

Also, in the March 27, 2020 comments City staff is requiring a discussion of the application of elements from the Traffic Calming Toolbox. In the toolbox or as in many other sources including FHWA's Traffic Calming ePrimer, there are a considerable number of traffic calming techniques to address a myriad of traffic related problems including speeding, cut-through traffic, and pedestrian safety. However, there first needs to be identification of a problem or perception of a problem to be resolved. Most importantly there needs to be consensus among the residents that would be affected and agreements with the public agency on maintenance of i.e. landscaping or streetscape features.

Per FHWA's Traffic Calming ePrimer:

"A successful program or process should include a mechanism by which both residents and professional staff can identify a problem or issue for which traffic calming may provide a solution. It should have the flexibility to be both reactive (i.e., able to respond to a citizen request to address a problem) and proactive, perhaps as a result of an ongoing monitoring effort by public agency staff. A project request should be able to be initiated by the local government staff, an elected official, or a community association. For a request from an individual, some level of support should be demonstrated by a formal mechanism (such as a petition) that reflects a specified number of residents, property owners, or businesses."

The City has a Neighborhood Traffic Calming Program that allows neighborhoods to apply for traffic calming program that aims to reduce speeding and cut-through traffic on residential streets and improve the neighborhood's quality of life. The application requires a neighborhood organization to list the exact location of the concern and to describe issues to be resolved such as speeding, cut-through traffic, problems crossing the street, drivers not obeying regulatory signs, etc. Once an application is received the City has a 10 step process to work with the neighbors, determine eligibility, get support from all affected neighbors, develop cost estimates, identify



effectiveness, determine impact on traffic patterns, and identify funding for the implementation of the approved measure.

Calming options to reduce speed include, but not limited to, automated speed radar signs, curb extensions, speed humps, roundabouts, chicanes, and raised crosswalks. These vary in effectiveness. Speed humps (cushions, tables, etc.) can be very effective, but also dangerous if not used properly. Automated speed radar signs are only marginally effective and unenforceable.

Once the project is fully developed and should problems arise, the City's program for traffic calming embodies a sound process to work with neighborhoods on implementing appropriate measures to resolve problems such as speeding, cut-through traffic, and pedestrian safety.

MITIGATION

West Village Ave. is a three-lane collector roadway with a center left turn lane. Per the City of Aurora Engineering Standards for roadway design and construction, exclusive right turn lanes on this type of roadway are **not** allowed. Table 2 from COA's Urban Street Standards is copied below. Note that a 3-Lane Collector is classified as a "Main Street" in the table and should not be confused with the arterial named Main St.

Table 2 - Intersection and Mid-Block Approach Design Matrix

	Boulevard	Multi-Way Boulevard	Main Street – Four Lanes with Median	Main Street – Two Lanes with Median/Ce nter Turn Lane	Main Street – Two Lanes with Median/Ce nter Turn Lane (Mid- Block)	Main Street – Two Lanes with Parallel Parking	Main Street – Two Lanes with Parallel Parking (Mid- Block)
Curb Extensions	No	Yes (access street only)	Yes	Yes	Yes	Yes	Yes
Corner Radii	25 Feet	20 Feet	20 Feet	20 Feet	NA	20 Feet	NA
Exclusive Left Turn Lanes Allowed	Yes	Yes (through street only)	Yes (when intersects with boulevards or existing major arterials)	Yes (when intersects with boulevards or existing major arterials)	NA	No	NA
Exclusive Right Turn Lanes Allowed	Yes	No	No	No	NA	No	NA
Standard Markings	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colored Paving	No	No	Yes	No	No	No	No
Pavers	No	No	No	Yes	Yes	Yes	Yes
High Visibility Markings	No	No	No	No	Yes	No	Yes
Pedestrian Refuge Islands	Yes	Yes	Yes	Yes	Yes	NA	NA

Exclusive left and right turn lanes will be allowed on Main St. and 26th Ave. as they are designated as Boulevards (Arterials). There are four intersections on 26th Ave., Access Roads A, B, C, and West Village Ave., and one on Main St. at West Village Ave. Assuming that there will a raised median with a width of 14 feet, the left turn at Access Roads A, B, and C should have a transition taper length of 110 feet and a 100-foot tangent section for storage. An exclusive right turn lane at these locations is not necessary as the turning volumes in the peak hour are relatively light. At the



West Village Ave. intersection on 26th Ave., the left turn lane should have a 110-foot transition taper and 150-foot long tangent for storage. The same dimensions would apply to the right turn lane. At the West Village Ave. and Main St. intersection, the left and right turn lanes should have a 110-foot transition taper and a 150-foot tangent for storage.

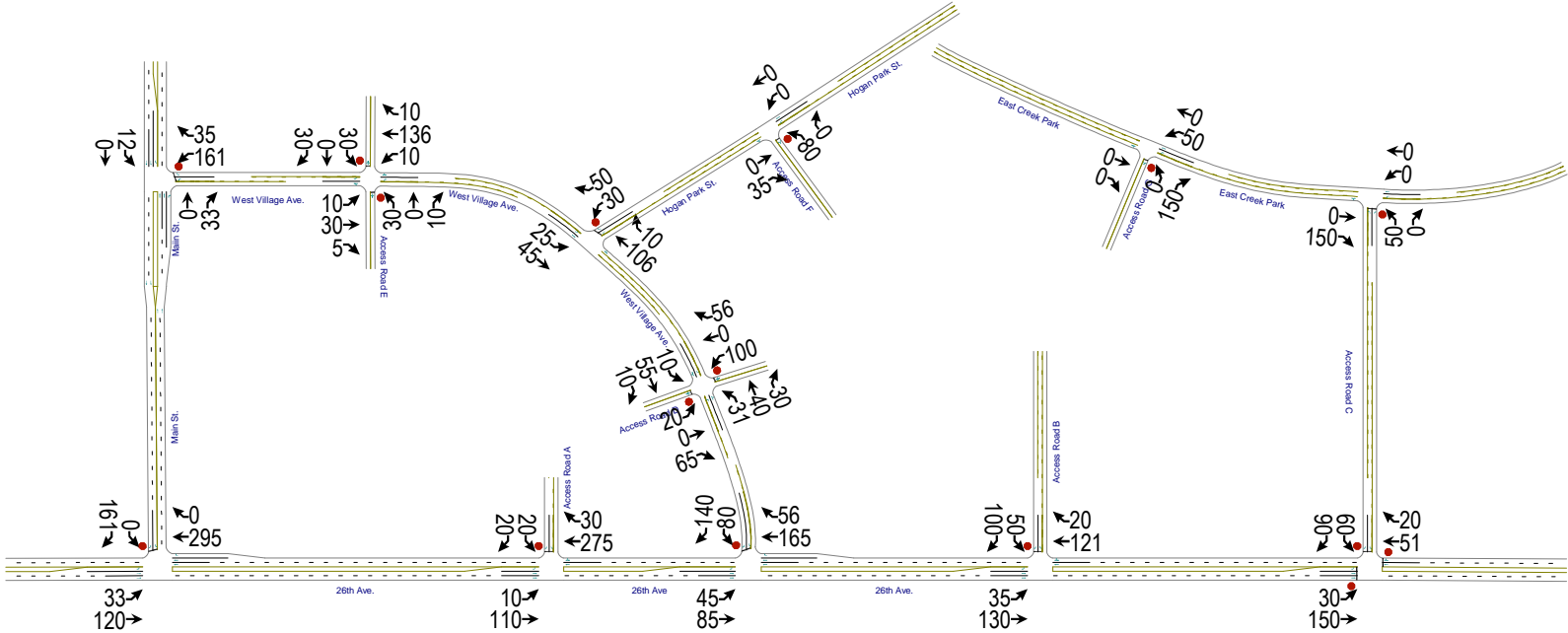
The roadways will be constructed to City standards which are designed to accommodate pedestrian and bicycle activity. The Aurora Highlands master plan will augment the standard with additional infrastructure to enhance bicycle ridership. Programs include widened sidewalks, two-way bike tracks, and off-street trail connections.

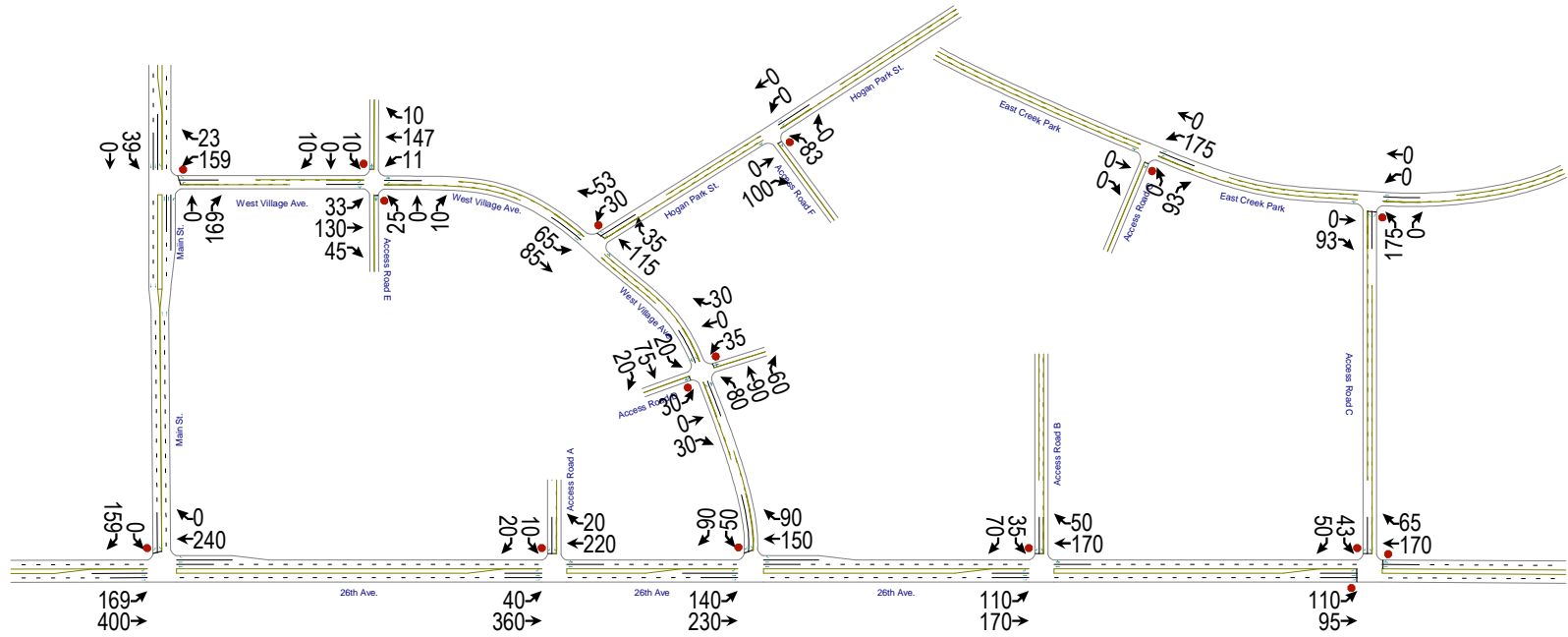
CONCLUSIONS & RECOMMENDATIONS

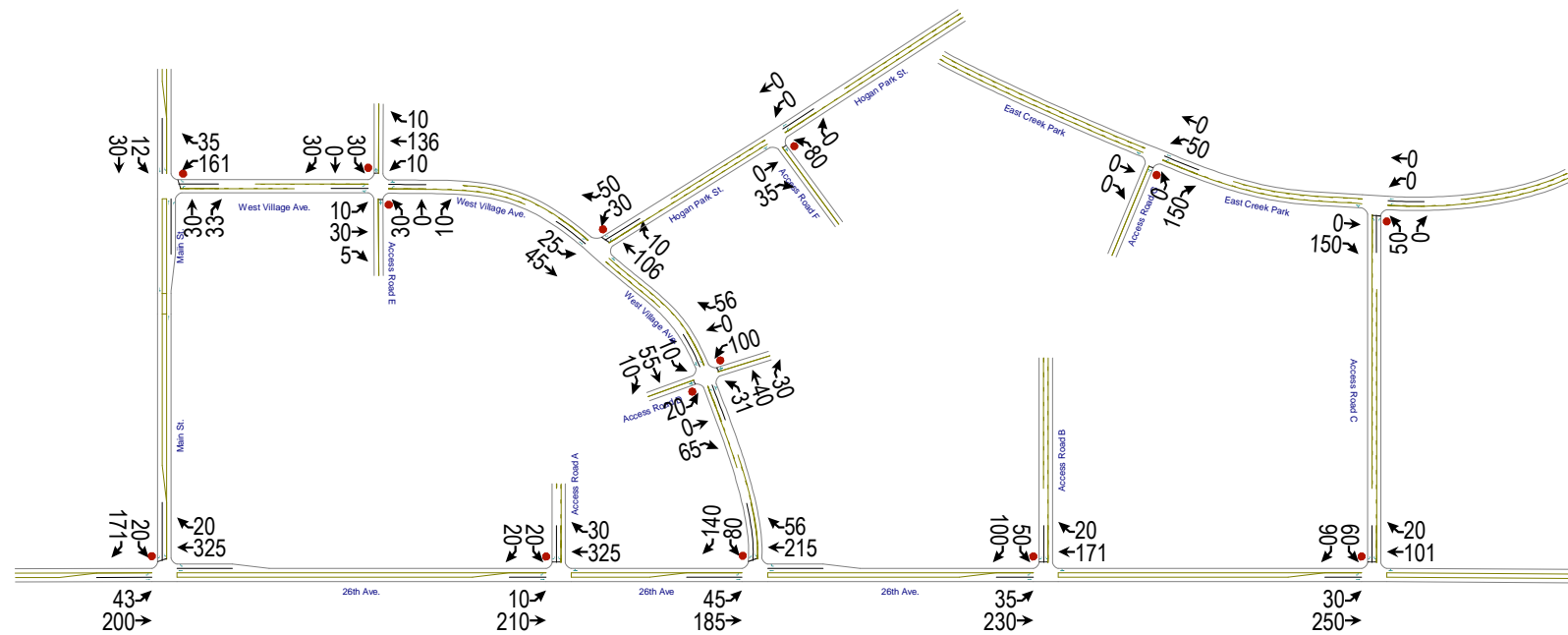
The analysis and recommendations contained herein demonstrate that the development of Filing 7, Phases 1-3 is consistent with the approved land use planning and roadway and intersection improvement recommendations in the FHU study and NEATS. This refined operations analysis show that the proposed roadways and intersections will function at an acceptable level of service.















APPENDIX







Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	185	215	56	80	140
Future Vol, veh/h	45	185	215	56	80	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	201	234	61	87	152
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	295	0	-	0	533	234
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1266	-	-	-	507	805
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1266	-	-	-	487	805
Mov Cap-2 Maneuver	-	-	-	-	487	-
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	752	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.6	0		11.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1266	-	-	-	487	805
HCM Lane V/C Ratio	0.039	-	-	-	0.179	0.189
HCM Control Delay (s)	8	-	-	-	14	10.5
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.7

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	30	5	10	136	10	30	0	10	30	0	30
Future Vol, veh/h	10	30	5	10	136	10	30	0	10	30	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
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	11	33	5	11	148	11	33	0	11	33	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	38	0	0	250	239	36	239	236	154
Stage 1	-	-	-	-	-	-	58	58	-	176	176	-
Stage 2	-	-	-	-	-	-	192	181	-	63	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	-	1572	-	-	703	662	1037	715	665	892
Stage 1	-	-	-	-	-	-	954	847	-	826	753	-
Stage 2	-	-	-	-	-	-	810	750	-	948	845	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1420	-	-	1572	-	-	670	652	1037	699	655	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	652	-	699	655	-
Stage 1	-	-	-	-	-	-	946	840	-	819	748	-
Stage 2	-	-	-	-	-	-	775	745	-	931	838	-






Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.5			10.2			10		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	735	1420	-	-	1572	-	-	784
HCM Lane V/C Ratio	0.059	0.008	-	-	0.007	-	-	0.083
HCM Control Delay (s)	10.2	7.6	-	-	7.3	-	-	10
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	20	0	65	100	0	56	31	40	30	10	55	10
Future Vol, veh/h	20	0	65	100	0	56	31	40	30	10	55	10
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	-	-	-	-	-	-	100	-	-	100	-	-
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	22	0	71	109	0	61	34	43	33	11	60	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	246	232	66	251	221	60	71	0	0	76	0	0
Stage 1	88	88	-	128	128	-	-	-	-	-	-	-
Stage 2	158	144	-	123	93	-	-	-	-	-	-	-
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	708	668	998	702	678	1005	1529	-	-	1523	-	-
Stage 1	920	822	-	876	790	-	-	-	-	-	-	-
Stage 2	844	778	-	881	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	650	649	998	637	658	1005	1529	-	-	1523	-	-
Mov Cap-2 Maneuver	650	649	-	637	658	-	-	-	-	-	-	-
Stage 1	900	816	-	857	773	-	-	-	-	-	-	-
Stage 2	775	761	-	813	812	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.5		11.4		2.3		1					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1529	-	-	886	733	1523	-	-				
HCM Lane V/C Ratio	0.022	-	-	0.104	0.231	0.007	-	-				
HCM Control Delay (s)	7.4	-	-	9.5	11.4	7.4	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.9	0	-	-				

Intersection







Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	210	325	30	20	20
Future Vol, veh/h	10	210	325	30	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	228	353	33	22	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	386	0	0 620 370
Stage 1	-	-	- 370 -
Stage 2	-	-	- 250 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1172	-	- 452 676
Stage 1	-	-	- 699 -
Stage 2	-	-	- 792 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1172	-	- 448 676
Mov Cap-2 Maneuver	-	-	- 448 -
Stage 1	-	-	- 693 -
Stage 2	-	-	- 792 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12
HCM LOS			B






Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1172	-	-	-	448	676
HCM Lane V/C Ratio	0.009	-	-	-	0.049	0.032
HCM Control Delay (s)	8.1	-	-	-	13.4	10.5
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1

Intersection						
Int Delay, s/veh	6.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	161	35	30	33	12	30
Future Vol, veh/h	161	35	30	33	12	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	150	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	38	33	36	13	33

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	92	33	0	0	69	0
Stage 1	33	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	908	1041	-	-	1532	-
Stage 1	989	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	901	1041	-	-	1532	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	2.1
HCM LOS	A		






Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 901 1041 1532	-	-
HCM Lane V/C Ratio	-	- 0.194 0.037 0.009	-	-
HCM Control Delay (s)	-	- 10 8.6 7.4	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.7 0.1 0	-	-

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	230	171	20	50	100
Future Vol, veh/h	35	230	171	20	50	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	250	186	22	54	109

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	208	0	0	523	197
Stage 1	-	-	-	197	-
Stage 2	-	-	-	326	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1363	-	-	514	844
Stage 1	-	-	-	836	-
Stage 2	-	-	-	731	-
Platoon blocked, %	-	-	-		
Mov Cap-1 Maneuver	1363	-	-	500	844
Mov Cap-2 Maneuver	-	-	-	500	-
Stage 1	-	-	-	813	-
Stage 2	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11
HCM LOS			B






Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1363	-	-	-	500	844
HCM Lane V/C Ratio	0.028	-	-	-	0.109	0.129
HCM Control Delay (s)	7.7	-	-	-	13.1	9.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.4

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	250	101	20	60	90
Future Vol, veh/h	30	250	101	20	60	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	272	110	22	65	98

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	132	0	0 459 121
Stage 1	-	-	- 121 -
Stage 2	-	-	- 338 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1453	-	- 560 930
Stage 1	-	-	- 904 -
Stage 2	-	-	- 722 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1453	-	- 547 930
Mov Cap-2 Maneuver	-	-	- 547 -
Stage 1	-	-	- 883 -
Stage 2	-	-	- 722 -







Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1453	-	-	-	547	930
HCM Lane V/C Ratio	0.022	-	-	-	0.119	0.105
HCM Control Delay (s)	7.5	-	-	-	12.5	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.4

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	150	0	0	50	0
Future Vol, veh/h	0	150	0	0	50	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	163	0	0	54	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	163	0	83	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1416	-	919	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1416	-	919	978
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		9.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	855	-	-	-	1416	-
HCM Lane V/C Ratio	0.064	-	-	-	-	-
HCM Control Delay (s)	9.5	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

Intersection






Int Delay, s/veh 3.5







Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	30	50	25	45	106	10
Future Vol, veh/h	30	50	25	45	106	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	54	27	49	115	11





Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	224	121	126
Stage 1	121	-	-
Stage 2	103	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	764	930	1460
Stage 1	904	-	-
Stage 2	921	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	750	930	1460
Mov Cap-2 Maneuver	754	-	-
Stage 1	888	-	-
Stage 2	921	-	-

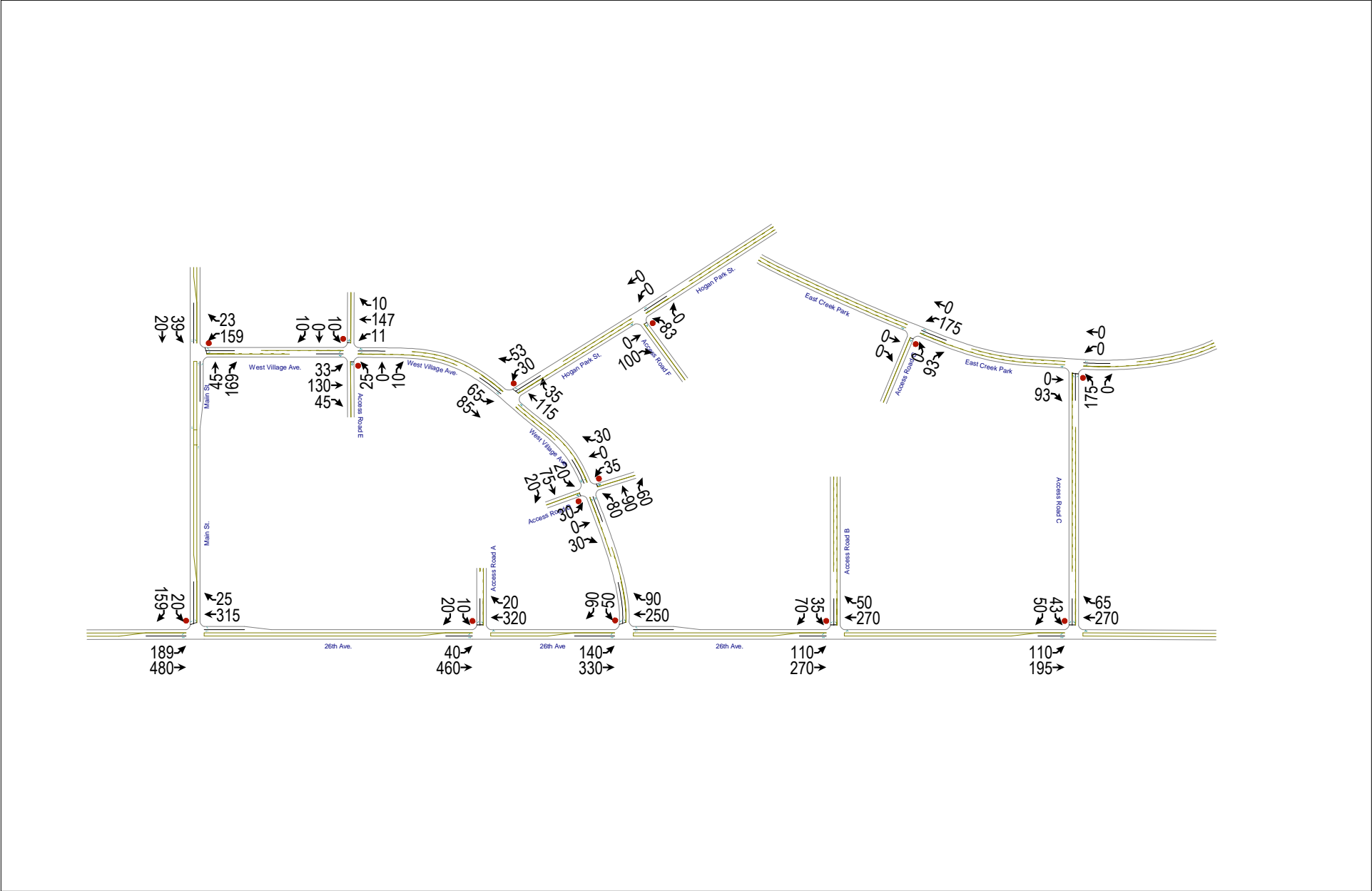
Approach	WB	SE	NW
HCM Control Delay, s	9.4	2.7	0
HCM LOS	A		







Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	754	930	1460	-
HCM Lane V/C Ratio	-	-	0.043	0.058	0.019	-
HCM Control Delay (s)	-	-	10	9.1	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.2	0.1	-







Intersection						
Int Delay, s/veh	8.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	50	0	0	150
Future Vol, veh/h	0	0	50	0	0	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	54	0	0	163
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	109	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	888	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	859	1084
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	886	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		7.3		8.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1084	-	-	1622	-	
HCM Lane V/C Ratio	0.15	-	-	0.034	-	
HCM Control Delay (s)	8.9	-	-	7.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	200	325	20	20	171
Future Vol, veh/h	43	200	325	20	20	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	217	353	22	22	186
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	375	0	-	0	664	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	311	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1183	-	-	-	426	691
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1183	-	-	-	409	691
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	743	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		12.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1183	-	-	-	409	691
HCM Lane V/C Ratio	0.04	-	-	-	0.053	0.269
HCM Control Delay (s)	8.2	-	-	-	14.3	12.1
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	1.1

Intersection						
Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	0	35	0	0	80	0
Future Vol, veh/h	0	35	0	0	80	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	0	0	87	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	38	0	20	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1572	-	997	1059
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	997	1059
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NW		
HCM Control Delay, s	0	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	915	-	-	1572	-	
HCM Lane V/C Ratio	0.095	-	-	-	-	
HCM Control Delay (s)	9.3	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	









Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	330	250	90	50	90
Future Vol, veh/h	140	330	250	90	50	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	359	272	98	54	98
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	370	0	-	0	935	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	663	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1189	-	-	-	295	767
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	512	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1189	-	-	-	257	767
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	512	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.5	0		14.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1189	-	-	-	257	767
HCM Lane V/C Ratio	0.128	-	-	-	0.211	0.128
HCM Control Delay (s)	8.5	-	-	-	22.7	10.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.8	0.4

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	130	45	11	147	10	25	0	10	10	0	10
Future Vol, veh/h	33	130	45	11	147	10	25	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
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	36	141	49	12	160	11	27	0	11	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	190	0	0	433	433	166	433	452	166
Stage 1	-	-	-	-	-	-	238	238	-	190	190	-
Stage 2	-	-	-	-	-	-	195	195	-	243	262	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1406	-	-	1384	-	-	533	516	878	533	503	878
Stage 1	-	-	-	-	-	-	765	708	-	812	743	-
Stage 2	-	-	-	-	-	-	807	739	-	761	691	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1406	-	-	1384	-	-	513	498	878	513	485	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	498	-	513	485	-
Stage 1	-	-	-	-	-	-	745	690	-	791	736	-
Stage 2	-	-	-	-	-	-	790	732	-	732	673	-






Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.5			11.6			10.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	1406	-	-	1384	-	-	648
HCM Lane V/C Ratio	0.065	0.026	-	-	0.009	-	-	0.034
HCM Control Delay (s)	11.6	7.6	-	-	7.6	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	30	35	0	30	80	90	60	20	75	20
Future Vol, veh/h	30	0	30	35	0	30	80	90	60	20	75	20
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	-	-	-	-	-	-	100	-	-	100	-	-
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	33	0	33	38	0	33	87	98	65	22	82	22
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	458	474	93	459	453	131	104	0	0	163	0	0
Stage 1	137	137	-	305	305	-	-	-	-	-	-	-
Stage 2	321	337	-	154	148	-	-	-	-	-	-	-
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	513	489	964	512	503	919	1488	-	-	1416	-	-
Stage 1	866	783	-	705	662	-	-	-	-	-	-	-
Stage 2	691	641	-	848	775	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	467	453	964	467	466	919	1488	-	-	1416	-	-
Mov Cap-2 Maneuver	467	453	-	467	466	-	-	-	-	-	-	-
Stage 1	816	770	-	664	624	-	-	-	-	-	-	-
Stage 2	628	604	-	807	763	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		11.7		2.6		1.3					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1488	-	-	629	604	1416	-	-				
HCM Lane V/C Ratio	0.058	-	-	0.104	0.117	0.015	-	-				
HCM Control Delay (s)	7.6	-	-	11.4	11.7	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0	-	-				

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	460	320	20	10	20
Future Vol, veh/h	40	460	320	20	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	500	348	22	11	22







Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	370	0	0 945 359
Stage 1	-	-	- 359 -
Stage 2	-	-	- 586 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1189	-	- 291 685
Stage 1	-	-	- 707 -
Stage 2	-	-	- 556 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1189	-	- 281 685
Mov Cap-2 Maneuver	-	-	- 281 -
Stage 1	-	-	- 682 -
Stage 2	-	-	- 556 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1189	-	-	-	281	685
HCM Lane V/C Ratio	0.037	-	-	-	0.039	0.032
HCM Control Delay (s)	8.1	-	-	-	18.3	10.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Intersection

Int Delay, s/veh 4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	159	23	45	169	39	20
Future Vol, veh/h	159	23	45	169	39	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	150	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	25	49	184	42	22






Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	155	49	0
Stage 1	49	-	-
Stage 2	106	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	836	1020	-
Stage 1	973	-	-
Stage 2	918	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	810	1020	-
Mov Cap-2 Maneuver	810	-	-
Stage 1	973	-	-
Stage 2	890	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	5.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 810 1020 1335	-	-
HCM Lane V/C Ratio	-	- 0.213 0.025 0.032	-	-
HCM Control Delay (s)	-	- 10.6 8.6 7.8	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.8 0.1 0.1	-	-

Intersection






Int Delay, s/veh 2.9






Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	270	270	50	35	70
Future Vol, veh/h	110	270	270	50	35	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	293	293	54	38	76

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	347	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1212	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1212	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1212	-	-	-	297	721
HCM Lane V/C Ratio	0.099	-	-	-	0.128	0.106
HCM Control Delay (s)	8.3	-	-	-	18.9	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4	0.4







Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	195	270	65	43	50
Future Vol, veh/h	110	195	270	65	43	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	212	293	71	47	54
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	364	0	-	0	781	329
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1195	-	-	-	363	712
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1195	-	-	-	327	712
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	641	-
Approach	EB	WB		SB		
HCM Control Delay, s	3	0		13.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1195	-	-	-	327	712
HCM Lane V/C Ratio	0.1	-	-	-	0.143	0.076
HCM Control Delay (s)	8.3	-	-	-	17.8	10.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5	0.2

Intersection						
Int Delay, s/veh	6.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	93	0	0	175	0
Future Vol, veh/h	0	93	0	0	175	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	101	0	0	190	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	101	0	52	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1491	-	957	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1491	-	957	1017
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	884	-	-	-	1491	-
HCM Lane V/C Ratio	0.215	-	-	-	-	-
HCM Control Delay (s)	10.2	0	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	-	0	-

Intersection

Int Delay, s/veh 3.6

Movement WBL WBR SEL SET NWT NWR

Lane Configurations						
Traffic Vol, veh/h	30	53	65	85	115	35
Future Vol, veh/h	30	53	65	85	115	35
Conflicting Peds, #/hr	0	0	0	0	0	35
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	58	71	92	125	38

Major/Minor Minor2 Major1 Major2






Conflicting Flow All	413	179	198	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	595	864	1375	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	527	835	1329	-	-	-
Mov Cap-2 Maneuver	596	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	778	-	-	-	-	-







Approach WB SE NW





HCM Control Delay, s	10.3	3.4	0
HCM LOS	B		

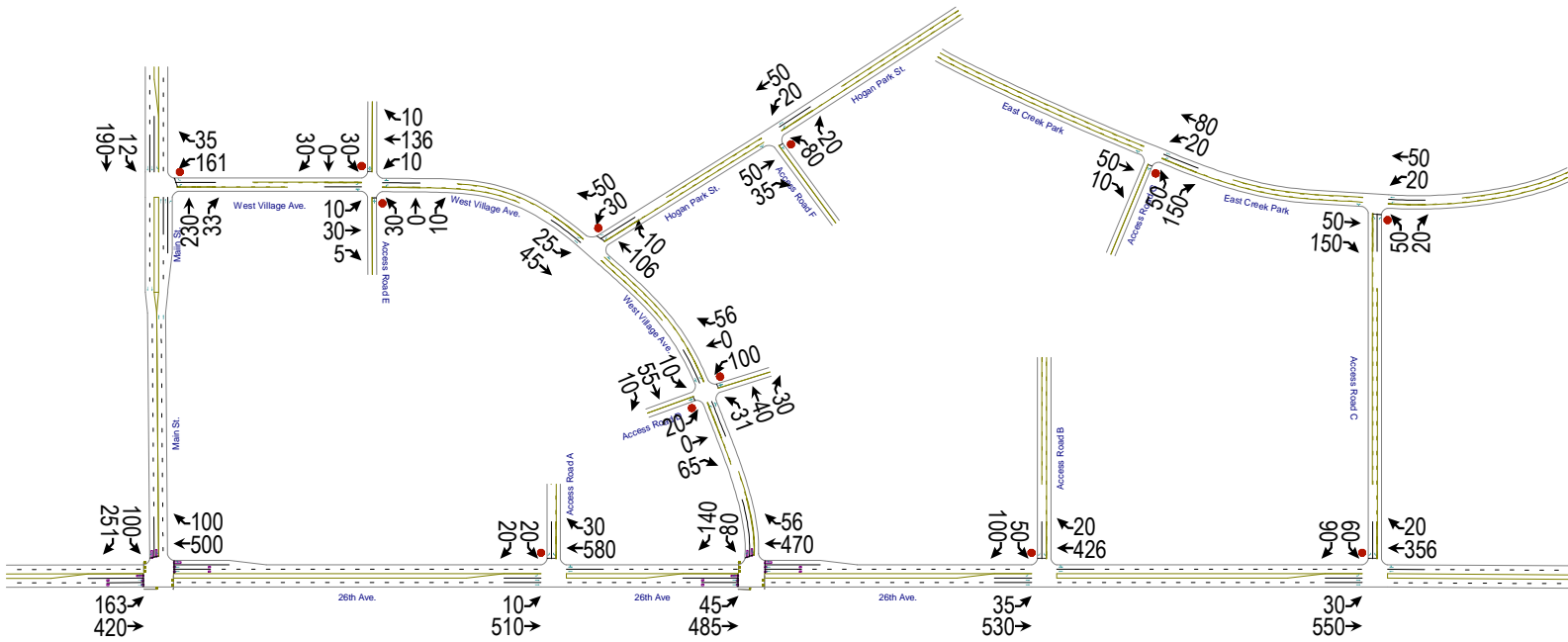
Minor Lane/Major Mvmt NWT NWRWBLn1WBLn2 SEL SET

Capacity (veh/h)	-	-	596	835	1329	-
HCM Lane V/C Ratio	-	-	0.055	0.069	0.053	-
HCM Control Delay (s)	-	-	11.4	9.6	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.2	-

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	175	0	0	93
Future Vol, veh/h	0	0	175	0	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	190	0	0	101
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	381	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	621	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	548	1084
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	610	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		7.5		8.7	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1084	-	-	1622	-	
HCM Lane V/C Ratio	0.093	-	-	0.117	-	
HCM Control Delay (s)	8.7	-	-	7.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.4	-	







Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	189	480	315	25	20	159
Future Vol, veh/h	189	480	315	25	20	159
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	205	522	342	27	22	173
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	369	0	-	0	1274	342
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	932	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1190	-	-	-	184	701
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	383	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1190	-	-	-	152	701
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	383	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.4	0		14.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1190	-	-	-	152	701
HCM Lane V/C Ratio	0.173	-	-	-	0.143	0.247
HCM Control Delay (s)	8.7	-	-	-	32.6	11.8
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.5	1

Intersection						
Int Delay, s/veh	4.3					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	0	100	0	0	83	0
Future Vol, veh/h	0	100	0	0	83	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	109	0	0	90	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	109	0	56	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1481	-	952	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1481	-	952	1012
Mov Cap-2 Maneuver	-	-	-	-	881	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NW		
HCM Control Delay, s	0	0		9.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	881	-	-	1481	-	
HCM Lane V/C Ratio	0.102	-	-	-	-	
HCM Control Delay (s)	9.6	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	485	470	56	80	140
Future Volume (veh/h)	45	485	470	56	80	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	527	511	61	87	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	243	975	975	435	1037	923
Arrive On Green	0.27	0.27	0.27	0.27	0.58	0.58
Sat Flow, veh/h	840	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	49	527	511	61	87	152
Grp Sat Flow(s),veh/h/ln	840	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.3	7.9	7.6	1.8	1.3	2.8
Cycle Q Clear(g_c), s	10.9	7.9	7.6	1.8	1.3	2.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	243	975	975	435	1037	923
V/C Ratio(X)	0.20	0.54	0.52	0.14	0.08	0.16
Avail Cap(c_a), veh/h	609	2522	2522	1125	1037	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	19.4	19.3	17.2	5.8	6.1
Incr Delay (d2), s/veh	0.4	0.5	0.4	0.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.0	0.6	0.4	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.3	19.9	19.7	17.3	5.9	6.4
LnGrp LOS	C	B	B	B	A	A
Approach Vol, veh/h		576	572		239	
Approach Delay, s/veh		20.2	19.5		6.2	
Approach LOS		C	B		A	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				21.7	41.0	21.7
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				44.5	36.5	44.5
Max Q Clear Time (g_c+I1), s				12.9	4.8	9.6
Green Ext Time (p_c), s				4.3	0.8	4.0
Intersection Summary						
HCM 6th Ctrl Delay			17.5			
HCM 6th LOS			B			






Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	30	5	10	136	10	30	0	10	30	0	30
Future Vol, veh/h	10	30	5	10	136	10	30	0	10	30	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
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	11	33	5	11	148	11	33	0	11	33	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	38	0	0	250	239	36	239	236	154
Stage 1	-	-	-	-	-	-	58	58	-	176	176	-
Stage 2	-	-	-	-	-	-	192	181	-	63	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	-	1572	-	-	703	662	1037	715	665	892
Stage 1	-	-	-	-	-	-	954	847	-	826	753	-
Stage 2	-	-	-	-	-	-	810	750	-	948	845	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1420	-	-	1572	-	-	670	652	1037	699	655	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	652	-	699	655	-
Stage 1	-	-	-	-	-	-	946	840	-	819	748	-
Stage 2	-	-	-	-	-	-	775	745	-	931	838	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.5			10.2			10		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	735	1420	-	-	1572	-	-	784
HCM Lane V/C Ratio	0.059	0.008	-	-	0.007	-	-	0.083
HCM Control Delay (s)	10.2	7.6	-	-	7.3	-	-	10
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3







Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	20	0	65	100	0	56	31	40	30	10	55	10
Future Vol, veh/h	20	0	65	100	0	56	31	40	30	10	55	10
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	-	-	-	-	-	-	100	-	-	100	-	-
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	22	0	71	109	0	61	34	43	33	11	60	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	246	232	66	251	221	60	71	0	0	76	0	0
Stage 1	88	88	-	128	128	-	-	-	-	-	-	-
Stage 2	158	144	-	123	93	-	-	-	-	-	-	-
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	708	668	998	702	678	1005	1529	-	-	1523	-	-
Stage 1	920	822	-	876	790	-	-	-	-	-	-	-
Stage 2	844	778	-	881	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	650	649	998	637	658	1005	1529	-	-	1523	-	-
Mov Cap-2 Maneuver	650	649	-	637	658	-	-	-	-	-	-	-
Stage 1	900	816	-	857	773	-	-	-	-	-	-	-
Stage 2	775	761	-	813	812	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.5		11.4		2.3		1					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1529	-	-	886	733	1523	-	-				
HCM Lane V/C Ratio	0.022	-	-	0.104	0.231	0.007	-	-				
HCM Control Delay (s)	7.4	-	-	9.5	11.4	7.4	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.9	0	-	-				






Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	510	580	30	20	20
Future Vol, veh/h	10	510	580	30	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	554	630	33	22	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	663	0	0	946	332
Stage 1	-	-	-	647	-
Stage 2	-	-	-	299	-
Critical Hdwy	4.14	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	3.52	3.32
Pot Cap-1 Maneuver	922	-	-	260	664
Stage 1	-	-	-	483	-
Stage 2	-	-	-	726	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	922	-	-	257	664
Mov Cap-2 Maneuver	-	-	-	257	-
Stage 1	-	-	-	477	-
Stage 2	-	-	-	726	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	922	-	-	-	257	664
HCM Lane V/C Ratio	0.012	-	-	-	0.085	0.033
HCM Control Delay (s)	9	-	-	-	20.3	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1






Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	161	35	230	33	12	190
Future Vol, veh/h	161	35	230	33	12	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	150	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	175	38	250	36	13	207
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	380	125	0	0	286	0
Stage 1	250	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	595	902	-	-	1273	-
Stage 1	768	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	589	902	-	-	1273	-
Mov Cap-2 Maneuver	589	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.9	0	0.5			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 589 902 1273	-	-		
HCM Lane V/C Ratio	-	- 0.297 0.042 0.01	-	-		
HCM Control Delay (s)	-	- 13.7 9.2 7.9	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 1.2 0.1 0	-	-		






Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	530	426	20	50	100
Future Vol, veh/h	35	530	426	20	50	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	576	463	22	54	109







Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	485	0	0	838	243
Stage 1	-	-	-	474	-
Stage 2	-	-	-	364	-
Critical Hdwy	4.14	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	3.52	3.32
Pot Cap-1 Maneuver	1074	-	-	305	758
Stage 1	-	-	-	592	-
Stage 2	-	-	-	673	-
Platoon blocked, %	-	-	-		
Mov Cap-1 Maneuver	1074	-	-	294	758
Mov Cap-2 Maneuver	-	-	-	294	-
Stage 1	-	-	-	571	-
Stage 2	-	-	-	673	-






Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.7
HCM LOS			B





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1074	-	-	-	294	758
HCM Lane V/C Ratio	0.035	-	-	-	0.185	0.143
HCM Control Delay (s)	8.5	-	-	-	20	10.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.5

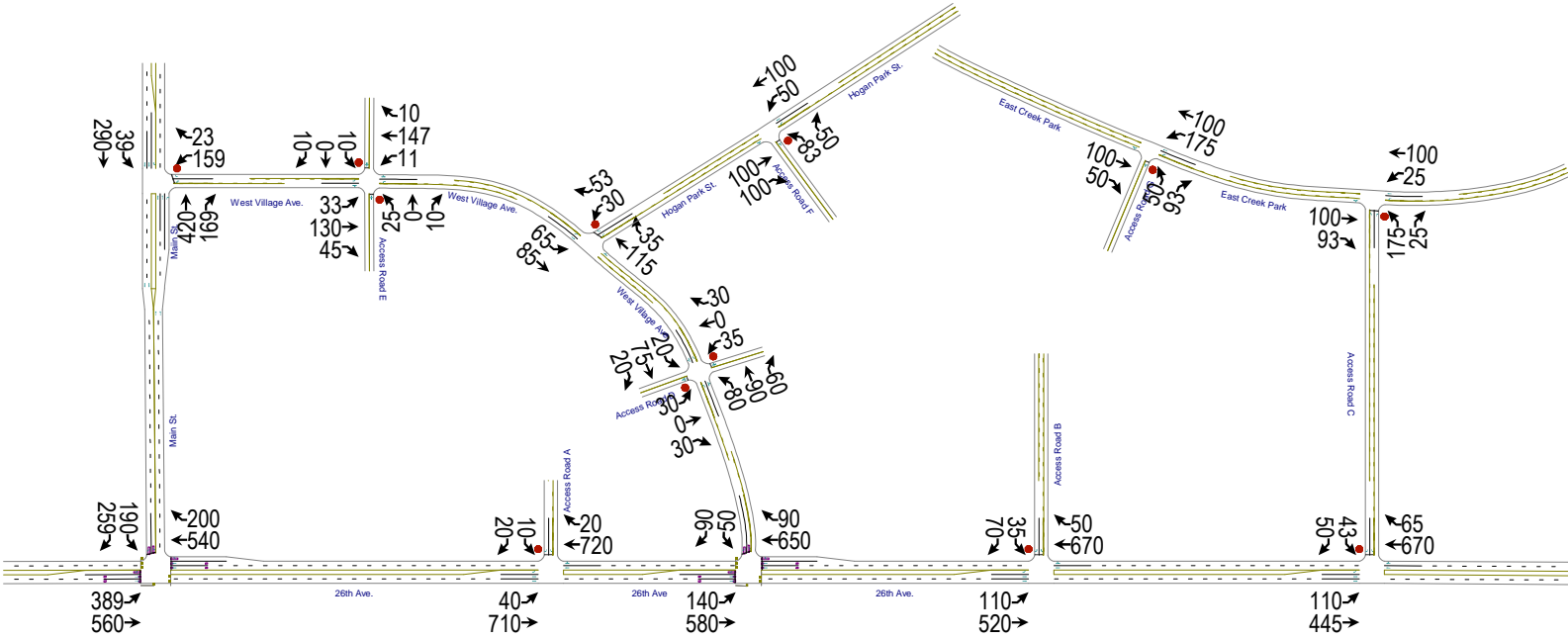
Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	550	356	20	60	90
Future Vol, veh/h	30	550	356	20	60	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	598	387	22	65	98
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	409	0	-	0	763	205
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1146	-	-	-	341	802
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1146	-	-	-	331	802
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	673	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		13.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1146	-	-	-	331	802
HCM Lane V/C Ratio	0.028	-	-	-	0.197	0.122
HCM Control Delay (s)	8.2	-	-	-	18.5	10.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.4

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	150	20	50	50	20
Future Vol, veh/h	50	150	20	50	50	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	163	22	54	54	22
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	217	0	234	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1353	-	754	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1353	-	742	913
Mov Cap-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	911	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.2		9.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	749	913	-	-	1353	-
HCM Lane V/C Ratio	0.073	0.024	-	-	0.016	-
HCM Control Delay (s)	10.2	9	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	30	50	25	45	106	10
Future Vol, veh/h	30	50	25	45	106	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	54	27	49	115	11
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	224	121	126	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	764	930	1460	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	750	930	1460	-	-	-
Mov Cap-2 Maneuver	754	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Approach	WB		SE		NW	
HCM Control Delay, s	9.4		2.7		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NWT		NWRWBLn1WBLn2		SEL	SET
Capacity (veh/h)	-		754 930 1460			-
HCM Lane V/C Ratio	-		0.043 0.058 0.019			-
HCM Control Delay (s)	-		10 9.1 7.5			-
HCM Lane LOS	-		B A A			-
HCM 95th %tile Q(veh)	-		0.1 0.2 0.1			-







Intersection						
Int Delay, s/veh	6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	10	20	80	50	150
Future Vol, veh/h	50	10	20	80	50	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	11	22	87	54	163
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	65	0	191	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1537	-	798	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1537	-	787	1005
Mov Cap-2 Maneuver	-	-	-	-	775	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	882	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.5		10	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	936	-	-	1537	-	
HCM Lane V/C Ratio	0.232	-	-	0.014	-	
HCM Control Delay (s)	10	-	-	7.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0	-	

Intersection						
Int Delay, s/veh	4.5					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	50	35	20	50	80	20
Future Vol, veh/h	50	35	20	50	80	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	38	22	54	87	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	92	0	171	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1503	-	819	989
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1503	-	807	989
Mov Cap-2 Maneuver	-	-	-	-	792	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	912	-
Approach	EB	WB		NW		
HCM Control Delay, s	0	2.1		10		
HCM LOS	B					
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	825	-	-	1503	-	
HCM Lane V/C Ratio	0.132	-	-	0.014	-	
HCM Control Delay (s)	10	-	-	7.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	











Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	140	580	650	90	50	90
Future Volume (veh/h)	140	580	650	90	50	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	630	707	98	54	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	345	1660	1660	740	686	611
Arrive On Green	0.47	0.47	0.47	0.47	0.39	0.39
Sat Flow, veh/h	677	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	152	630	707	98	54	98
Grp Sat Flow(s),veh/h/ln	677	1777	1777	1585	1781	1585
Q Serve(g_s), s	11.8	7.0	8.1	2.1	1.2	2.5
Cycle Q Clear(g_c), s	19.8	7.0	8.1	2.1	1.2	2.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	345	1660	1660	740	686	611
V/C Ratio(X)	0.44	0.38	0.43	0.13	0.08	0.16
Avail Cap(c_a), veh/h	666	3350	3350	1494	686	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	10.5	10.8	9.2	11.9	12.3
Incr Delay (d2), s/veh	0.9	0.1	0.2	0.1	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.4	2.7	0.7	0.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.3	10.7	11.0	9.3	12.1	12.8
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h		782	805		152	
Approach Delay, s/veh		12.2	10.8		12.6	
Approach LOS		B	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				33.0	28.0	33.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				57.5	23.5	57.5
Max Q Clear Time (g_c+I1), s				21.8	4.5	10.1
Green Ext Time (p_c), s				6.7	0.4	6.2
Intersection Summary						
HCM 6th Ctrl Delay			11.6			
HCM 6th LOS			B			






Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	130	45	11	147	10	25	0	10	10	0	10
Future Vol, veh/h	33	130	45	11	147	10	25	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
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	36	141	49	12	160	11	27	0	11	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	171	0	0	190	0	0	433	433	166	433	452	166
Stage 1	-	-	-	-	-	-	238	238	-	190	190	-
Stage 2	-	-	-	-	-	-	195	195	-	243	262	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1406	-	-	1384	-	-	533	516	878	533	503	878
Stage 1	-	-	-	-	-	-	765	708	-	812	743	-
Stage 2	-	-	-	-	-	-	807	739	-	761	691	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1406	-	-	1384	-	-	513	498	878	513	485	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	498	-	513	485	-
Stage 1	-	-	-	-	-	-	745	690	-	791	736	-
Stage 2	-	-	-	-	-	-	790	732	-	732	673	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.5			11.6			10.7		
HCM LOS							B			B		







Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	1406	-	-	1384	-	-	648
HCM Lane V/C Ratio	0.065	0.026	-	-	0.009	-	-	0.034
HCM Control Delay (s)	11.6	7.6	-	-	7.6	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	30	35	0	30	80	90	60	20	75	20
Future Vol, veh/h	30	0	30	35	0	30	80	90	60	20	75	20
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	-	-	-	-	-	-	100	-	-	100	-	-
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	33	0	33	38	0	33	87	98	65	22	82	22
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	458	474	93	459	453	131	104	0	0	163	0	0
Stage 1	137	137	-	305	305	-	-	-	-	-	-	-
Stage 2	321	337	-	154	148	-	-	-	-	-	-	-
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	513	489	964	512	503	919	1488	-	-	1416	-	-
Stage 1	866	783	-	705	662	-	-	-	-	-	-	-
Stage 2	691	641	-	848	775	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	467	453	964	467	466	919	1488	-	-	1416	-	-
Mov Cap-2 Maneuver	467	453	-	467	466	-	-	-	-	-	-	-
Stage 1	816	770	-	664	624	-	-	-	-	-	-	-
Stage 2	628	604	-	807	763	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		11.7		2.6		1.3					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1488	-	-	629	604	1416	-	-				
HCM Lane V/C Ratio	0.058	-	-	0.104	0.117	0.015	-	-				
HCM Control Delay (s)	7.6	-	-	11.4	11.7	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0	-	-				

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	710	720	20	10	20
Future Vol, veh/h	40	710	720	20	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	772	783	22	11	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	805	0	-	0	1266	403
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	472	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	815	-	-	-	161	597
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	815	-	-	-	152	597
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	594	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		17.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	815	-	-	-	152	597
HCM Lane V/C Ratio	0.053	-	-	-	0.072	0.036
HCM Control Delay (s)	9.7	-	-	-	30.5	11.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	0.1

Intersection






Int Delay, s/veh 4






Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	159	23	420	169	39	290
Future Vol, veh/h	159	23	420	169	39	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	150	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	25	457	184	42	315






Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	699	229	0
Stage 1	457	-	-
Stage 2	242	-	-
Critical Hdwy	6.84	6.94	4.14
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	2.22
Pot Cap-1 Maneuver	374	774	939
Stage 1	604	-	-
Stage 2	776	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	357	774	939
Mov Cap-2 Maneuver	357	-	-
Stage 1	604	-	-
Stage 2	741	-	-







Approach	WB	NB	SB
HCM Control Delay, s	22.4	0	1.1
HCM LOS	C		






Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	357 774	939	-
HCM Lane V/C Ratio	-	0.484 0.032	0.045	-
HCM Control Delay (s)	-	24.2 9.8	9	-
HCM Lane LOS	-	C A	A	-
HCM 95th %tile Q(veh)	-	2.5 0.1	0.1	-






Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	520	670	50	35	70
Future Vol, veh/h	110	520	670	50	35	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	565	728	54	38	76
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	782	0	-	0	1278	391
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	832	-	-	-	158	608
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	832	-	-	-	135	608
Mov Cap-2 Maneuver	-	-	-	-	135	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		21.8		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	832	-	-	-	135	608
HCM Lane V/C Ratio	0.144	-	-	-	0.282	0.125
HCM Control Delay (s)	10.1	-	-	-	41.8	11.8
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.1	0.4

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	445	670	65	43	50
Future Vol, veh/h	110	445	670	65	43	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	484	728	71	47	54
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	799	0	-	0	1246	400
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	819	-	-	-	166	600
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	587	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	819	-	-	-	142	600
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	358	-
Stage 2	-	-	-	-	587	-
Approach	EB	WB		SB		
HCM Control Delay, s	2	0		25.8		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	819	-	-	-	142	600
HCM Lane V/C Ratio	0.146	-	-	-	0.329	0.091
HCM Control Delay (s)	10.1	-	-	-	42.3	11.6
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.3	0.3

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	93	25	100	175	25
Future Vol, veh/h	100	93	25	100	175	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	101	27	109	190	27
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	210	0	323	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	671	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	658	885
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	849	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.5		11.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	692	885	-	-	1361	-
HCM Lane V/C Ratio	0.275	0.031	-	-	0.02	-
HCM Control Delay (s)	12.2	9.2	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	30	53	65	85	115	35
Future Vol, veh/h	30	53	65	85	115	35
Conflicting Peds, #/hr	0	0	0	0	0	35
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	58	71	92	125	38
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	413	179	198	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	595	864	1375	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	527	835	1329	-	-	-
Mov Cap-2 Maneuver	596	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Approach	WB	SE		NW		
HCM Control Delay, s	10.3	3.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NWT	NWR	WBLn1	WBLn2	SEL	SET
Capacity (veh/h)	-	-	596	835	1329	-
HCM Lane V/C Ratio	-	-	0.055	0.069	0.053	-
HCM Control Delay (s)	-	-	11.4	9.6	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.2	-

Intersection						
Int Delay, s/veh	5.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	50	175	100	50	93
Future Vol, veh/h	100	50	175	100	50	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	54	190	109	54	101
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	163	0	625	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1416	-	449	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1416	-	389	913
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	533	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.1		11.9	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	677	-	-	1416	-	
HCM Lane V/C Ratio	0.23	-	-	0.134	-	
HCM Control Delay (s)	11.9	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.5	-	

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	100	100	50	100	83	50
Future Vol, veh/h	100	100	50	100	83	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	109	54	109	90	54
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	218	0	381	164
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1352	-	621	881
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	819	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1352	-	596	881
Mov Cap-2 Maneuver	-	-	-	-	646	-
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	786	-
Approach	EB		WB		NW	
HCM Control Delay, s	0		2.6		11.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	718	-	-	1352	-	
HCM Lane V/C Ratio	0.201	-	-	0.04	-	
HCM Control Delay (s)	11.3	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-	