Appendix F: Traffic Operational Analysis Woodcrest Christian School Expansion

CARLSBAD
CLOVIS
IRVINE
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: March 31, 2025

TO: Philip Nitollama, PE, TE; City Traffic Engineer; City of Riverside

FROM: Ambarish Mukherjee, PE, AICP; Principal, LSA Associates, Inc.

SUBJECT: Woodcrest Christian School Supplemental Traffic Operations Analysis Memorandum (LSA Project # WCS2101)

LSA Associates, Inc. (LSA) has prepared this Supplemental Traffic Operations Analysis (TOA) Memorandum for the Woodcrest Christian School Expansion Project (Project) to evaluate the potential operational issues associated with the proposed Woodcrest Christian School expansion. The project is located at 18401 Van Buren Boulevard in the City of Riverside (City).

BACKGROUND AND PROJECT DESCRIPTION

LSA has previously prepared a TOA for the proposed project in March 2024 (March 2024 TOA). The March 2024 TOA identified that the intersection of Dauchy Avenue/Project Driveway 2 – Ardenwood Lane is projected to operate at a deficient LOS under Opening Year (2029) and Cumulative (2045) without and with projects conditions during both the a.m. (7:00 a.m. – 9:00 a.m.) and afternoon (2:00 p.m. – 4:00 p.m.) peak hour conditions. The recommended improvement included installation of a traffic signal at this school driveway. The March 2024 TOA also identified that the intersection of Dauchy Avenue/Project Driveway 4 is forecast to operate at a deficient LOS under the a.m. peak hour for Opening Year (2029) and both peak hours for Cumulative (2045). The recommended improvements included the addition of two-way left-turn lane (TWLTL) and the removal of on-street parking on both sides of Dauchy Avenue.

Based on discussion with City staff and the project team, an alternative re-routing of existing school traffic and project traffic associated with the school expansion was proposed to reduce the forecasted deficiencies at study intersections along Dauchy Avenue including Project Driveway 2 and Project Driveway 4. This alternative includes opening the existing driveway on Van Buren Boulevard as a right-out only driveway, restricting left-turn egress at Project Driveway 2 and Project Driveway 4 during the morning drop-off and afternoon pick-up hours, and closure of Project Driveway 3 previously analyzed as an ingress only driveway in the March 2024 TOA. Therefore, for purposes of this analysis, the right-out only Project Driveway 1 and restriction of left-turn egress movements at Project Driveway 2, Project Driveway 4, and closure of Dauchy Avenue/Project Driveway 3 during the peak hours have been considered to be project design features. It should be noted that the intersection of Dauchy Avenue/Project Driveway 2 – Ardenwood Lane and Dauchy Avenue/Project

Driveway 4 would remain a full-access driveway during off-peak hours. As such, this memo has been prepared as a supplement to the March 2024 TOA to examine the traffic operations at surrounding intersections affected by the re-distribution of existing school traffic and project traffic as a result of these updates project design features.

It should be noted that redistribution of project traffic as a result of changes being recommended to the aforementioned driveways will result in changes in traffic volumes (turn movement volumes) at the intersection of Chicago Avenue-Alta Cresta Avenue/Van Buren Boulevard and Dauchy Avenue-Taft Street/Krameria Avenue. Improvements were identified at both of these intersections in the March 2024 TOA. Based on the current analysis, it is not anticipated that any additional improvements will be required at these two intersections to address the operational deficiencies identified in the previous analysis.

INTERSECTION LOS ANALYSIS

Based on discussion with City staff, the following study intersections from the March 2024 TOA were included for analysis:

6. Dauchy Avenue/Van Buren Boulevard
7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane
19. Project Driveway 1/Van Buren Boulevard
20. Dauchy Avenue/Project Driveway 3
21. Dauchy Avenue/Project Driveway 4

As a conservative analysis, traffic operations were examined for the Cumulative (2045) conditions. Figure 1 illustrates the Cumulative (2045) plus project intersection lane geometries and traffic control. Traffic volumes for the Cumulative (2045) conditions were obtained from the March 2024 TOA.

Figure 2 illustrates the project trip distribution with the new right-out only driveway at Van Buren Boulevard, closure of Dauchy Avenue/Project Driveway 3 during pick-up and drop-off hours, and left-turn restriction at Dauchy Avenue/Project Driveway 2 – Ardenwood Lane and Dauchy Avenue/Project Driveway 4. Figure 3 illustrates the project trip assignment. Figure 4 illustrates the Cumulative (2045) with project conditions traffic volumes. Volume development worksheets are included in Appendix A.

Table A summarizes the intersection peak hour LOS analysis for Cumulative (2045) plus project conditions. The following intersections are forecast to operate at a deficient LOS:

6. Dauchy Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours)
19. Project Driveway 1/Van Buren Boulevard (both a.m. and afternoon peak hours)

Intersection LOS worksheets are included in Appendix B.

RECOMMENDED CIRCULATION IMPROVEMENTS

The following circulation improvements are recommended to offset the forecasted deficiencies:

6. Dauchy Avenue/Van Buren Boulevard: Add an eastbound through lane while widening the receiving leg to 3 through-lanes through the Transportation Uniform Mitigation Fee (TUMF) Program. Restripe the westbound right-turn lane to a westbound through-right lane while widening the receiving leg to 3 through-lanes. Extend the cycle length to 130 seconds and coordinate the timing with adjacent signals at Van Buren Village Driveway/Van Buren Boulevard. The recommended signal timing sheets are included as Appendix C.

7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane: Implement a 20 feet parking restriction on the northbound approach starting from the intersection due to Assembly Bill 413 (AB-413).

19. Project Driveway 1/Van Buren Boulevard: Provide right-of-way (ROW) for the addition of an eastbound through lane.

Table A summarizes the Cumulative (2045) plus project plus recommended improvements intersection LOS. As summarized in Table A, all study intersections are forecast to operate at a satisfactory LOS with the recommended improvements. Table B summarizes the list of recommended improvements for intersections and funding mechanism for study area intersections. Figure 5 illustrates the Cumulative (2045) plus project plus recommended improvements intersection geometrics and stop control.

PROJECT DESIGN FEATURES

In additional to recommended operational improvements, the project will also construct the following project design features to improve pedestrian safety and vehicular operations:

6. Dauchy Avenue/Van Buren Boulevard: Add continental crosswalks, audible pedestrian push buttons, and pedestrian restriction signs. Extend northbound left storage to 200 feet.

7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane: Install a left turn restriction sign with modified hours of application (R33A CA) [7 AM – 9 AM, 2 PM – 4 PM, School Days] at the eastbound approach for both lanes.

19. Project Driveway 1/Van Buren Boulevard: Provide right turn egress between 7 AM - 9 AM and 2 PM - 4 PM during school days.

20. Dauchy Avenue/Project Driveway 3: Closure of Project Driveway 3 during drop-off and pick-up hours.

21. Dauchy Avenue/Project Driveway 4: Install a left turn restriction sign with modified hours of application (R33A CA) [7 AM – 9 AM, 2 PM – 4 PM, School Days] at the eastbound approach.

Table C summarizes the list of project design features that will be implemented to improve traffic operations. As mentioned previously, Figure 5 illustrates the changes in intersection geometric and stop controls as part of the project design features being implemented by the project. Figure 6 illustrates the recommended conceptual striping plan at Project Driveway 2, Project Driveway 3, and Project Driveway 4. Appendix D illustrates the proposed internal circulation plan for the proposed project. Appendix E illustrates the proposed left turn restriction sign with modified hours of application (R33A CA – Modified).

INTERSECTION QUEUING ANALYSIS – DAUCHY AVENUE/VAN BUREN BOULEVARD

Based on discussion with City staff, an intersection turn-lane queuing analysis was performed at the intersection of Dauchy Avenue/Van Buren Boulevard. Table B summarizes the intersection queue lengths for Cumulative (2045) plus project conditions. The 95th percentile queue was obtained from Synchro. Intersection queuing worksheets are included in Appendix F.

As shown in Table B, the intersection queues are forecast to exceed the available storage for the northbound left-turn, southbound left-turn, eastbound left-turn, and westbound left-turn. Recommended improvements include extending the northbound left-turn storage length from 65 to 200 feet. No further improvements are feasible under current geometric constraints. The forecasted queues for the northbound, southbound, eastbound, and westbound left-turns will continue to exceed the available storage length.

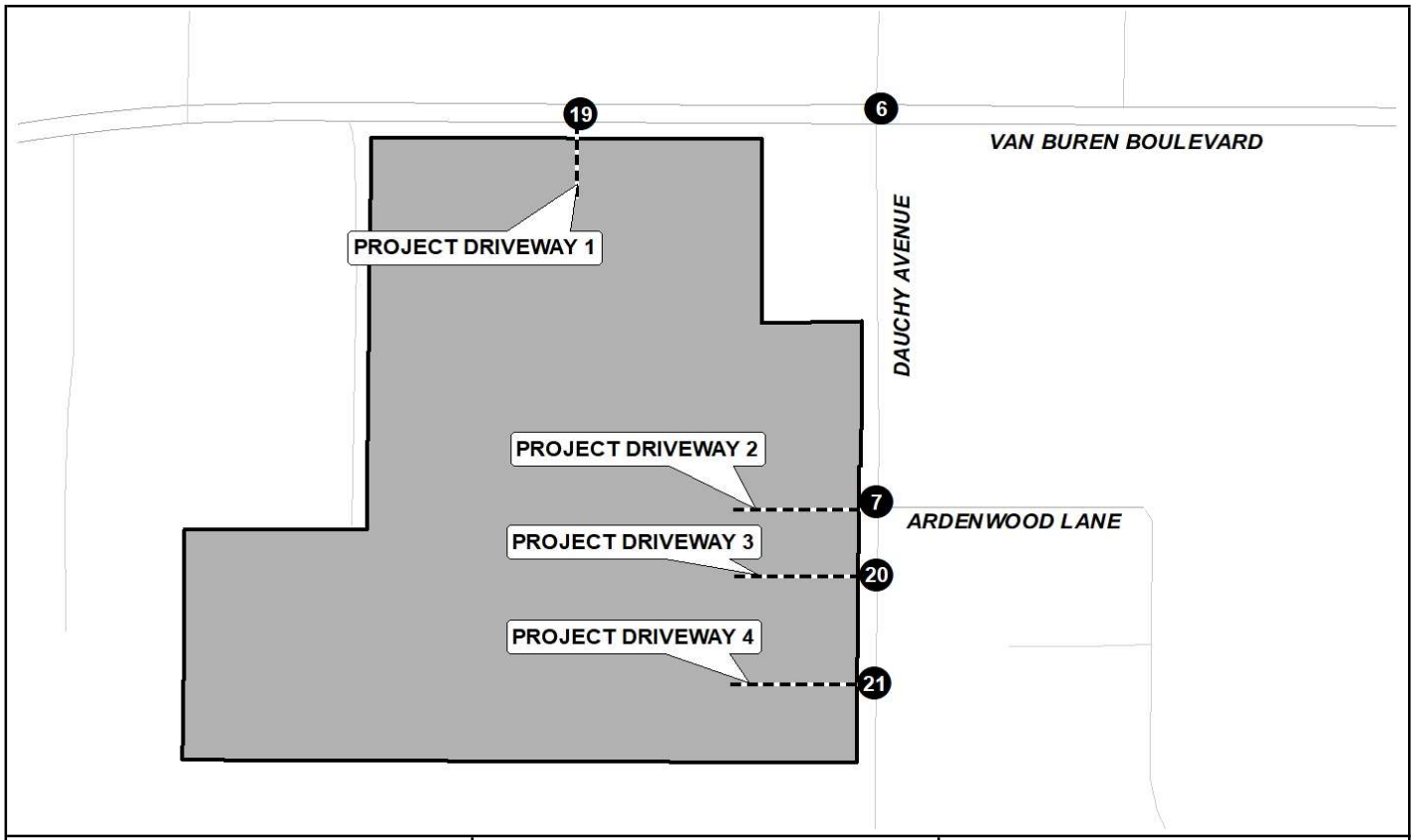
INTERSECTION SIGNAL WARRANT ANALYSIS – DAUCHY AVENUE/ARDENWOOD LANE

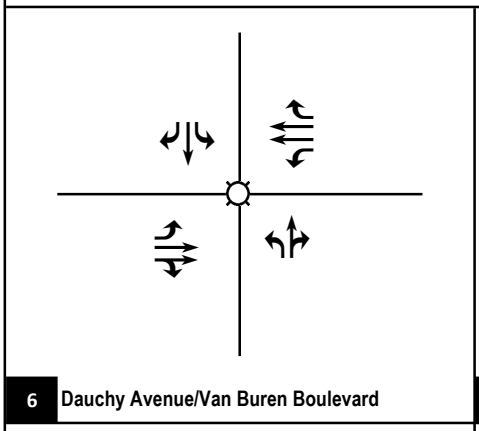
Based on discussion with City staff, a peak hour signal warrant analysis was conducted for the intersection of Dauchy Avenue/Project Driveway 2 – Ardenwood Lane to identify if a traffic signal is warranted after implementation of the project (worst case scenario). Figure 7 illustrates the peak hour signal warrant under Cumulative (2045) plus project conditions. As illustrated in Figure 7, the intersection does not meet the peak hour signal warrant. Additionally, the intersection is also forecast to operate at a satisfactory LOS under Cumulative (2045) plus project conditions. Therefore, with implementation of the project and project design features, this intersection will not require any additional circulation improvements.

Attachments:

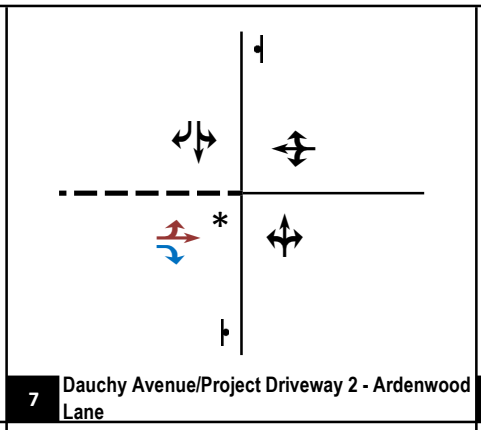
Figure 1 – Cumulative (2045) with Project Study Intersection Geometrics and Traffic Control
Figure 2 – Project Trip Distribution
Figure 3 – Project Trip Assignment
Figure 4 – Cumulative (2045) with Project Peak Hour Traffic Volumes
Figure 5 – Cumulative (2045) with Project with Improvements Study Intersection Geometrics and Traffic Control
Figure 6 – Conceptual Striping and Restrictions

FIGURES

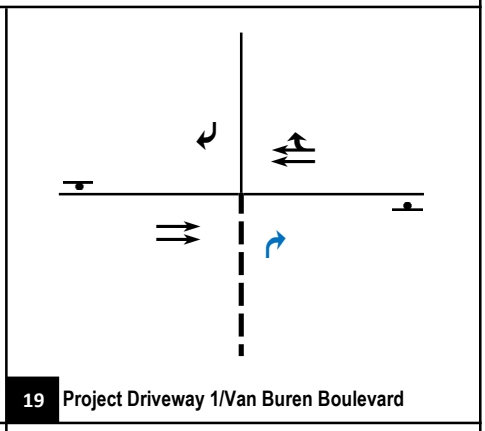




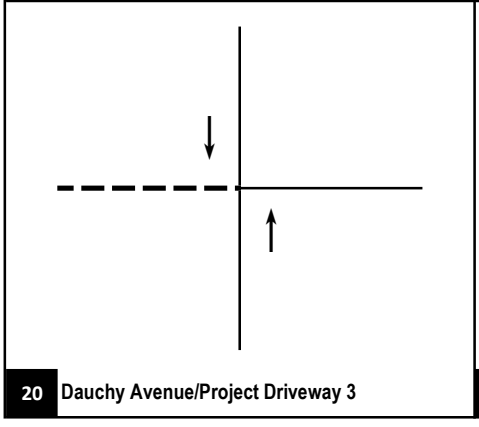
6 Dauchy Avenue/Van Buren Boulevard



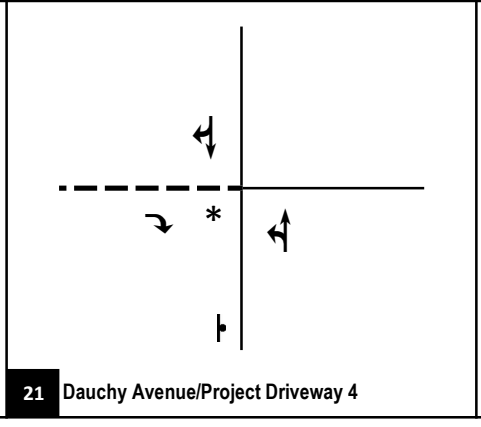
7 Dauchy Avenue/Project Driveway 2 - Ardenwood Lane



19 Project Driveway 1/Van Buren Boulevard



20 Dauchy Avenue/Project Driveway 3



21 Dauchy Avenue/Project Driveway 4

LSA

*Left Turn Restrict During Pick-Up and Drop-Off Period

Legend

Stop Sign

Signal

Project Design Feature (Restricted Movement)

Project Driveway

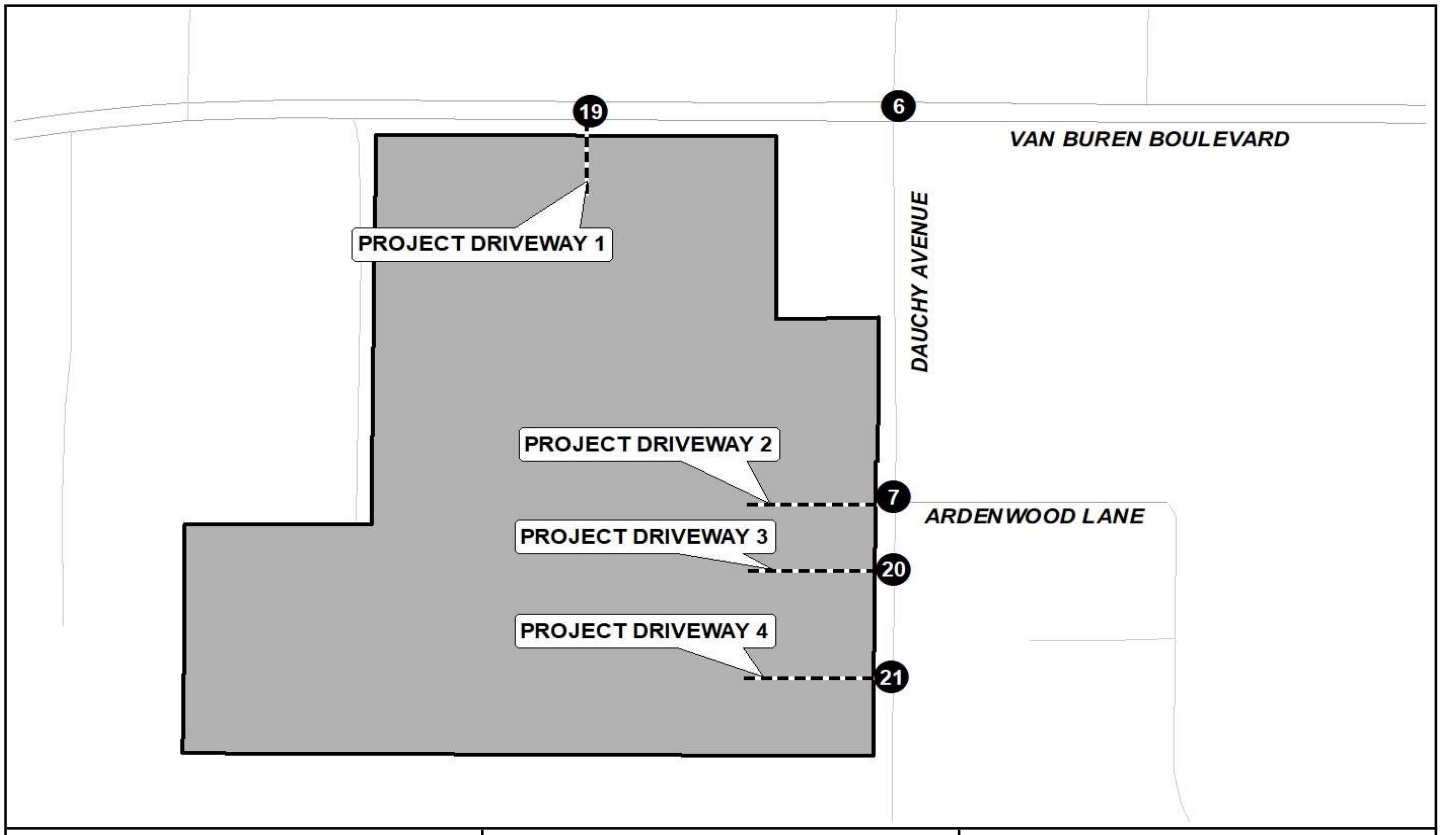
Project Design Feature

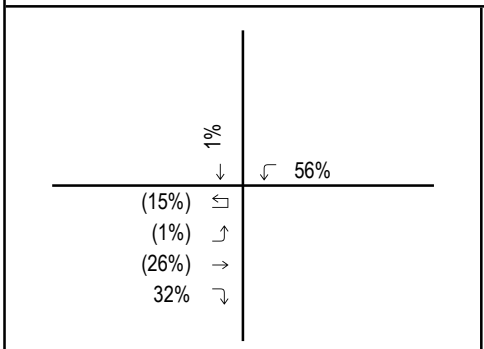
FIGURE 1

Woodcrest Christian School Expansion Project

Supplemental Traffic Operations Analysis Memorandum

Cumulative (2045) with Project Study Intersection Geometrics and Traffic Control





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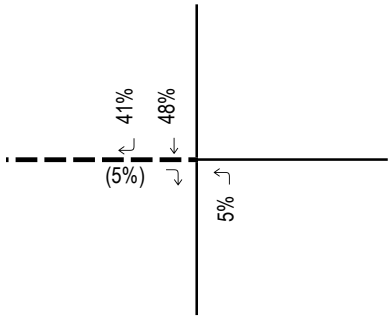
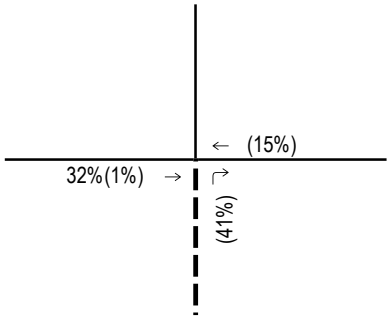
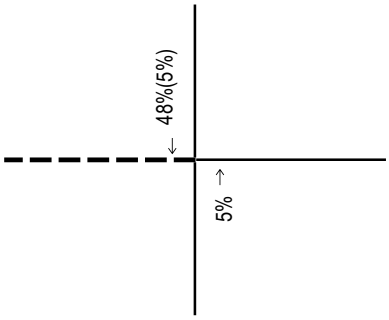


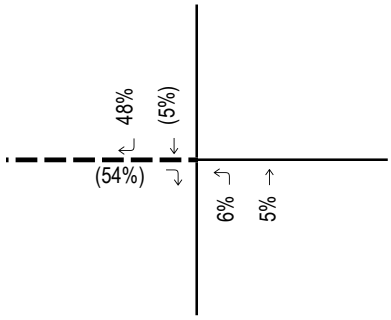
7 Dauchy Avenue/Project Driveway 2 - Ardenwood Lane



19 Project Driveway 1/Van Buren Boulevard



20 Dauchy Avenue/Project Driveway 3



21 Dauchy Avenue/Project Driveway 4

FIGURE 2

LSA

XX% (YY%)
Inbound (Outbound) Distribution

Project Driveway

Woodcrest Christian School Expansion Project
Supplemental Traffic Operations Analysis Memorandum

Project Trip Distribution

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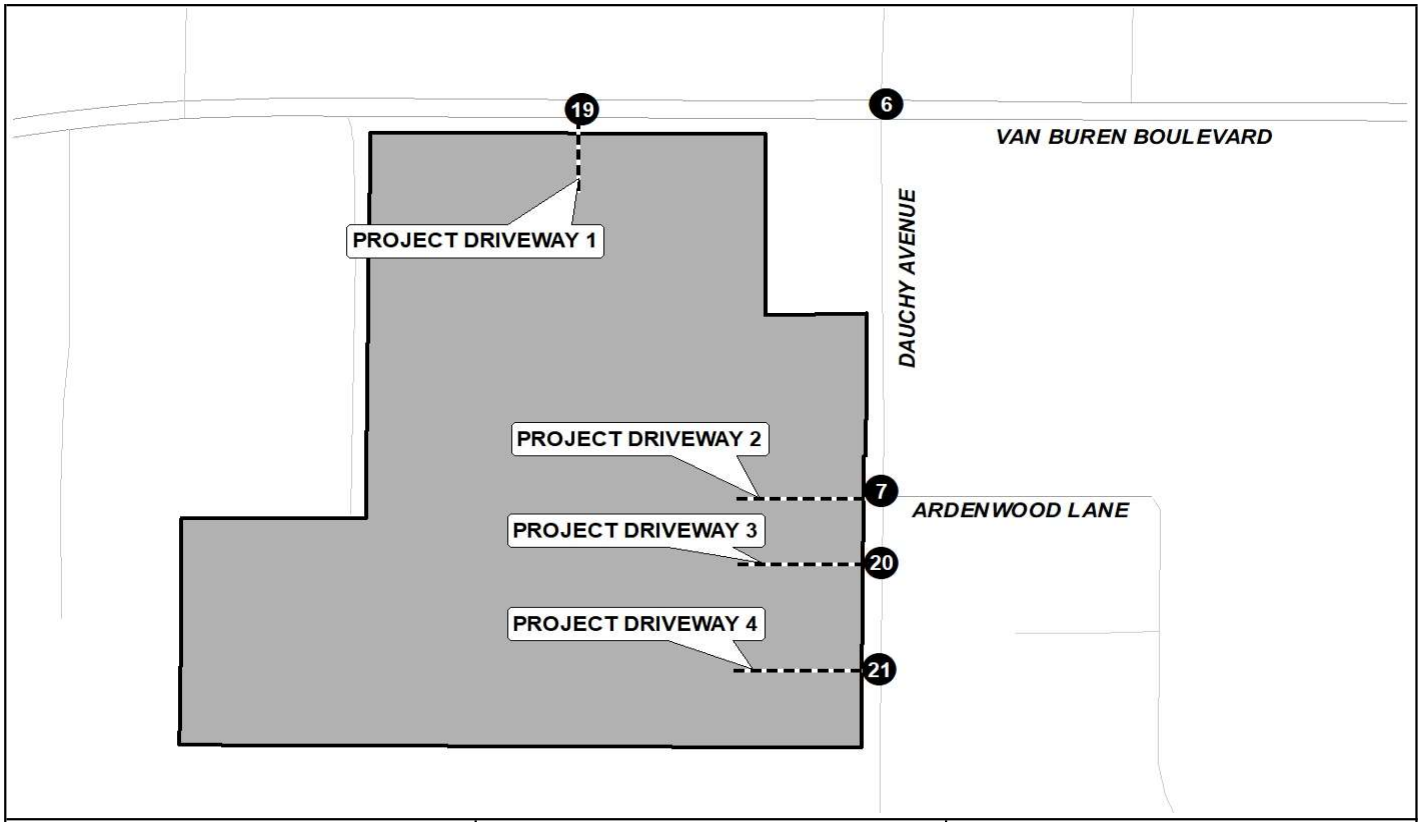
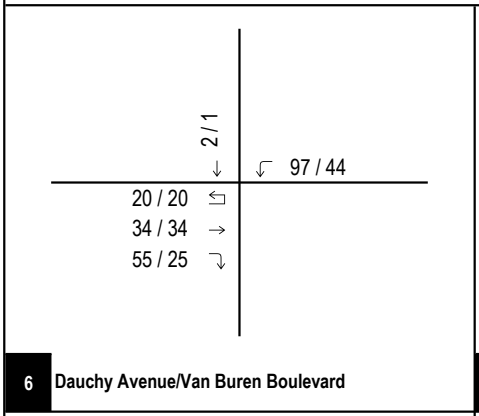
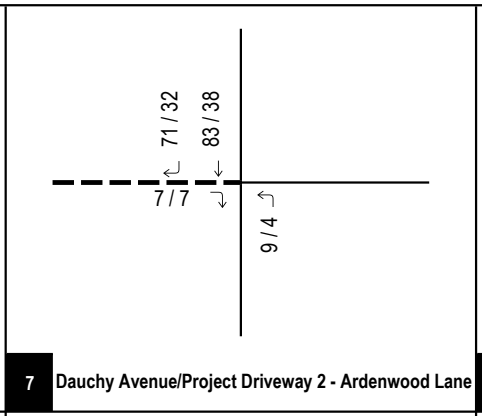
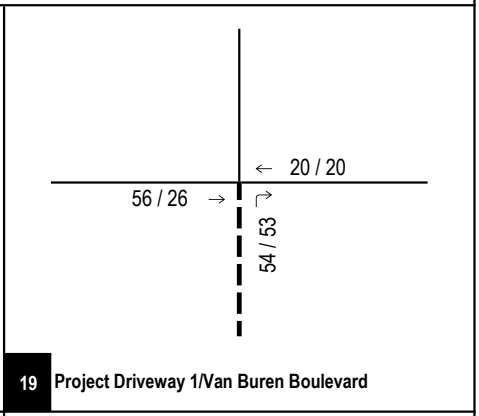




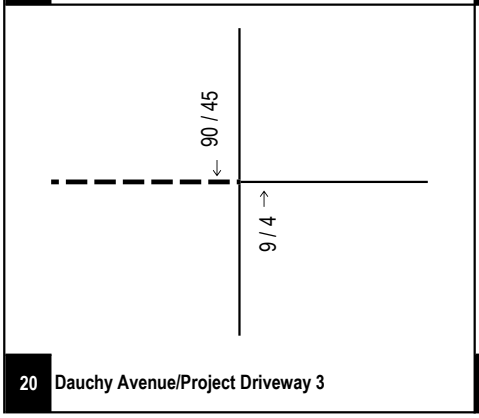
6 Dauchy Avenue/Van Buren Boulevard



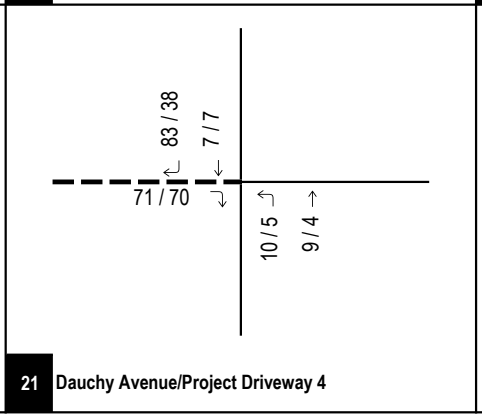
7 Dauchy Avenue/Project Driveway 2 - Ardenwood Lane



19 Project Driveway 1/Van Buren Boulevard



20 Dauchy Avenue/Project Driveway 3



21 Dauchy Avenue/Project Driveway 4

FIGURE 3

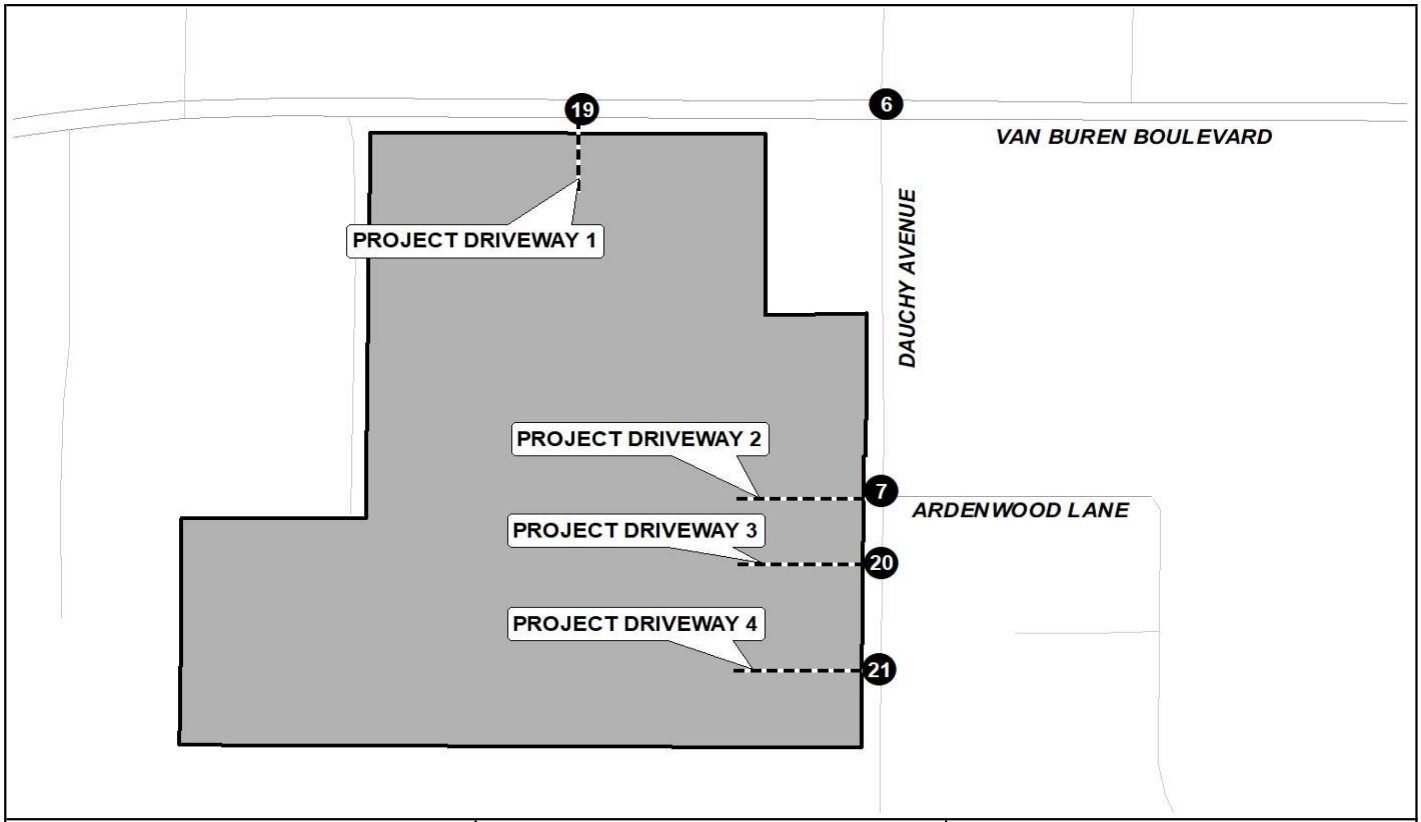
LSA

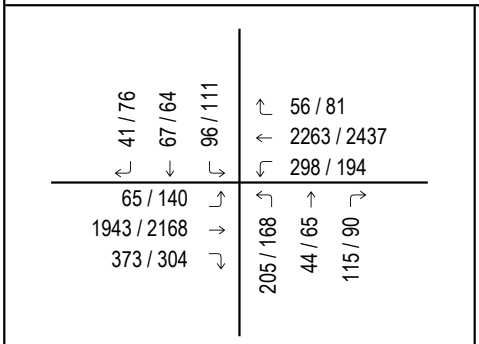
XX / YY
AM / Afternoon Peak Hour Trips

Project Driveway

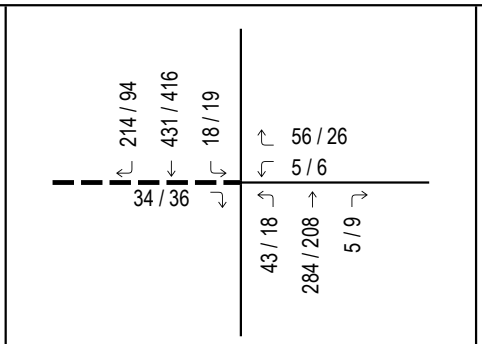
Woodcrest Christian School Expansion Project
Supplemental Traffic Operations Analysis Memorandum

Project Trip Assignment

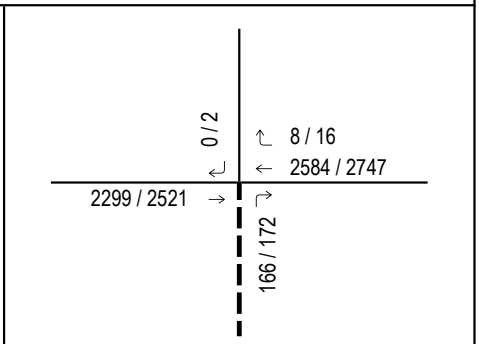




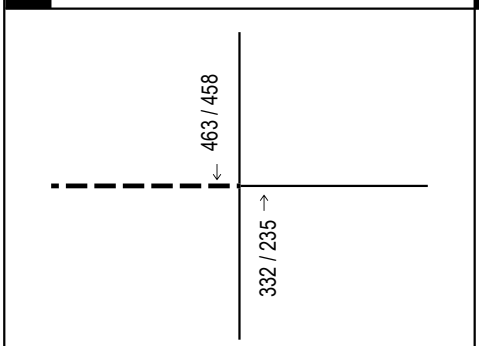
6 Dauchy Avenue/Van Buren Boulevard



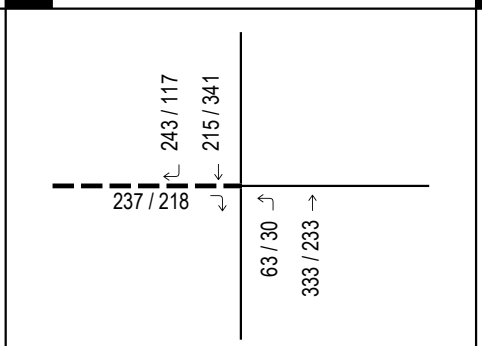
7 Dauchy Avenue/Project Driveway 2 - Ardenwood Lane



19 Project Driveway 1/Van Buren Boulevard



20 Dauchy Avenue/Project Driveway 3



21 Dauchy Avenue/Project Driveway 4

FIGURE 4

LSA

XXXX / YYYY
AM / Afternoon Peak Hour Trips

Project Driveway

Woodcrest Christian School Expansion Project
Supplemental Traffic Operations Analysis Memorandum

Cumulative (2045) with Project Peak Hour Traffic Volumes

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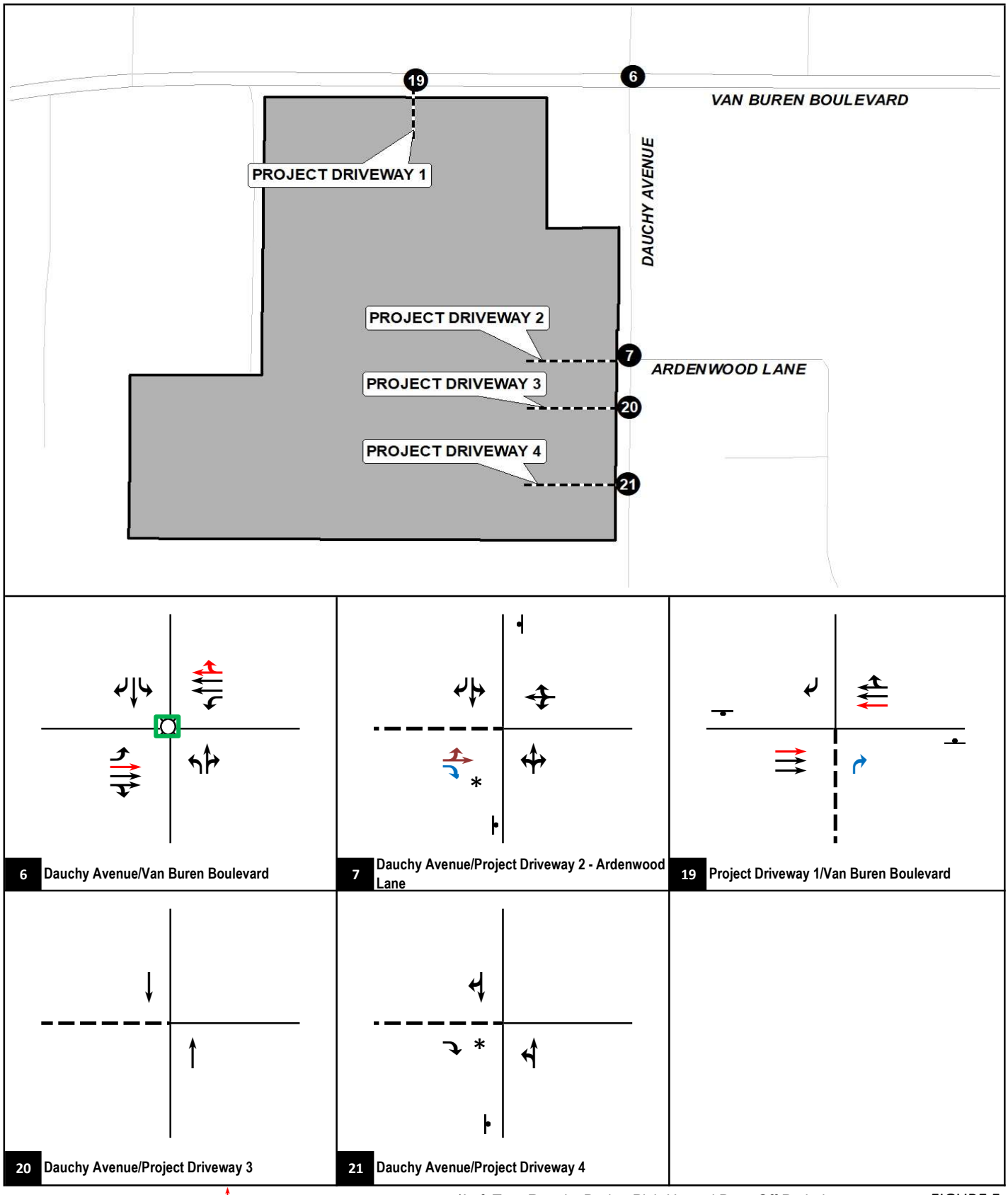

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Legend

Optimize Signal Timing

Stop Sign

Improvements

Project Design Feature (Restricted Movement)

Project Driveway

Project Design Feature

*Left Turn Restrict During Pick-Up and Drop-Off Period

FIGURE 5

Woodcrest Christian School Expansion Project

Supplemental Traffic Operations Analysis Memorandum

Cumulative (2045) with Project with Improvements Study Intersection Geometrics and Traffic Control

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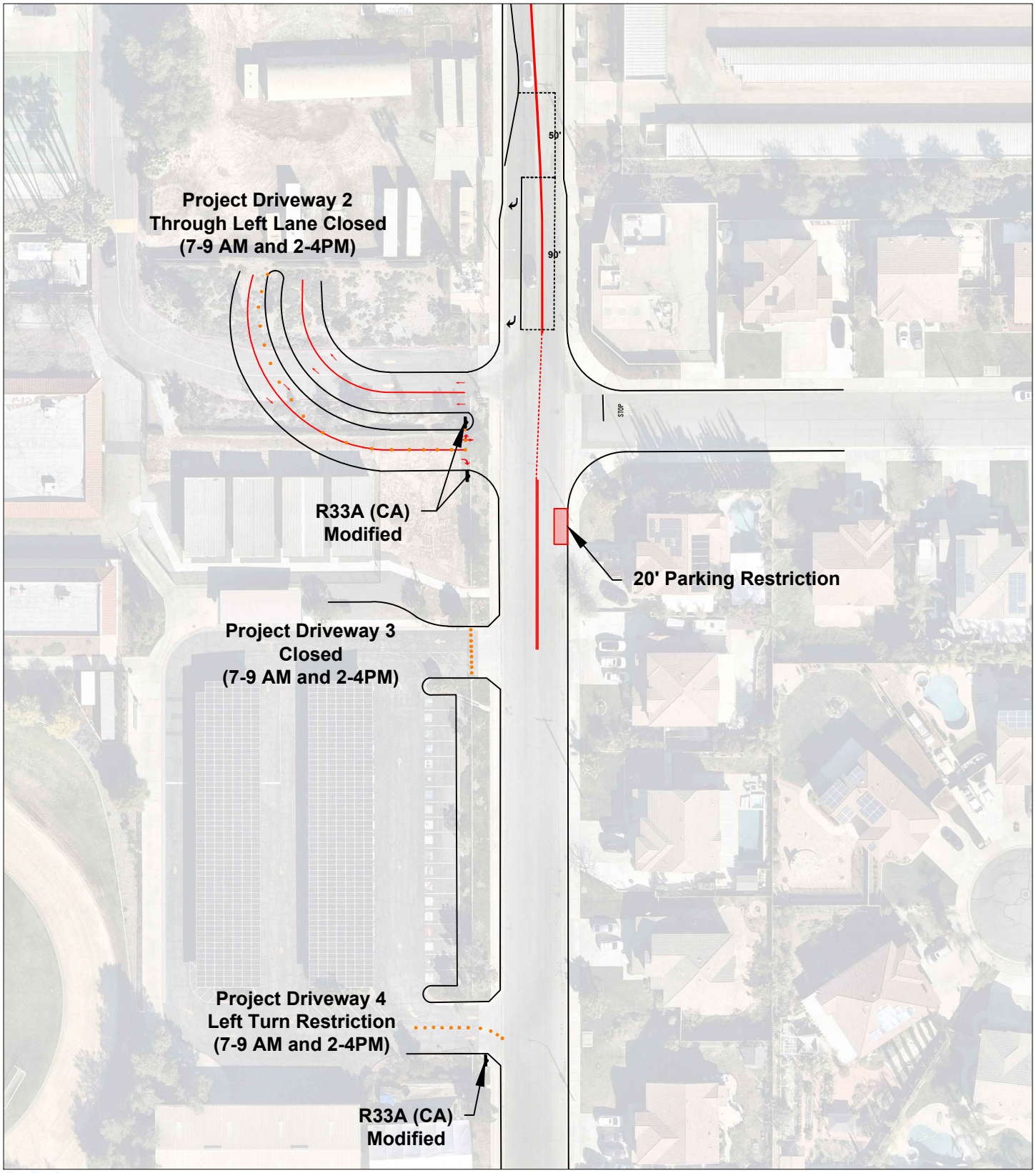

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LEGEND

- Parking Restriction (Assembly Bill 413)
- Turning Restriction
- R33A (CA) (Modified)

7-9 AM
2-4 PM
School Days

0 40 80
FEET

FIGURE 6

Woodcrest Christian School
Supplemental Traffic Operations Analysis Memorandum

Conceptual Striping and Restrictions

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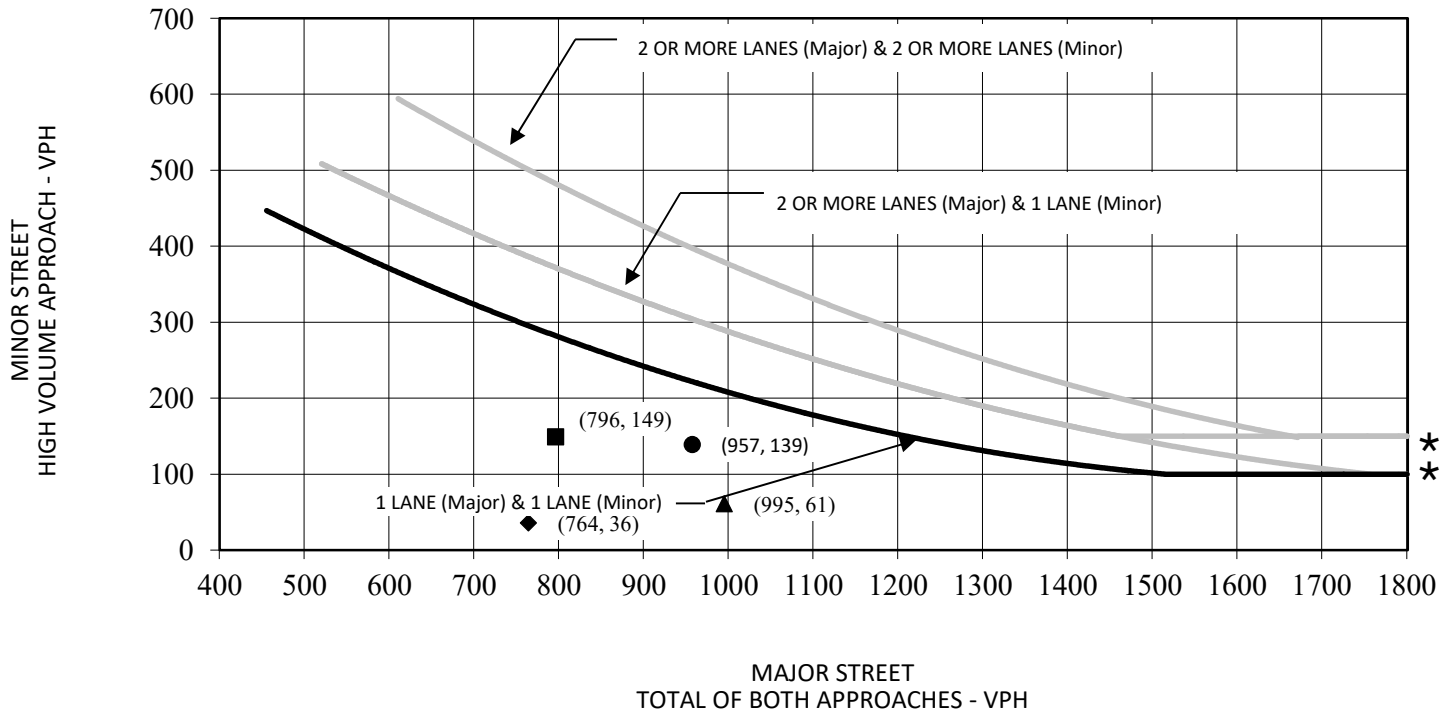
WARRANT 3, PEAK HOUR



* 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

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FIGURE 7

● Without Project AM Peak Hour

▲ With Project AM Peak Hour

■ Without Project Afternoon Peak Hour

◆ With Project Afternoon Peak Hour

Woodcrest Christian School Expansion Project

Supplemental Traffic Operations Analysis Memorandum

SOURCE: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 4C-3

Cumulative Peak Hour Warrant - Dauchy Avenue/Project Driveway 2-Ardenwood Lane

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TABLES

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Table A: Cumulative (2045) Intersection Levels of Service

Intersection	Jurisdiction	LOS Standard	Cumulative No Project					Cumulative With Project					Cumulative With Project With Improvements				
				A.M. Peak Hour		Afternoon Peak Hour			A.M. Peak Hour		Afternoon Peak Hour			A.M. Peak Hour		Afternoon Peak Hour	
			Control	Delay (sec.)	LOS	Delay (sec.)	LOS	Control	Delay (sec.)	LOS	Delay (sec.)	LOS	Control	Delay (sec.)	LOS	Delay (sec.)	LOS
6 . Dauchy Avenue/Van Buren Boulevard	County of Riverside/City of Riverside	D	Signal	>100	F *	>100	F *	Signal	>100	F *	>100	F *	Signal	44.3	D	37.4	D
7 . Dauchy Avenue/Project Driveway 2 - Ardenwood Lane	City of Riverside	C	TWSC	58.1	F *	75.4	F *	TWSC	12.2	B	12.8	B	TWSC	12.2	B	12.8	B
19 . Project Driveway 1/Van Buren Boulevard	County of Riverside/City of Riverside	D	TWSC	>100	F *	>100	F *	TWSC	>100	F *	>100	F *	TWSC	21.4	C	28.8	D
20 . Dauchy Avenue/Project Driveway 3	County of Riverside/City of Riverside	D	TWSC	8.2	A	8.4	A	TWSC	0.0	A	0.0	A	TWSC	0.0	A	0.0	A
21 . Dauchy Avenue/Project Driveway 4	County of Riverside/City of Riverside	D	TWSC	21.2	C	20.2	C	TWSC	14.4	B	16.7	C	TWSC	14.4	B	16.7	C

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

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Table B: Recommended Improvements for Intersections and Funding Mechanism

Intersection	Improvements Covered by TUMF	Improvements In Coordination With City and County
6 . Dauchy Avenue/Van Buren Boulevard	Add EBT. Add EB and WB receiving lane.	Restripe WBR to WBTR. Extend the cycle length to 130 seconds and coordinate the timing with adjacent signals at Van Buren Village Driveway/Van Buren Boulevard.
7 . Dauchy Avenue/Project Driveway 2 - Ardenwood Lane		Restrict a 20' parking restriction on the northbound approach.
19 . Project Driveway 1/Van Buren Boulevard	Add EBT and WBT.	The project to provide right-of-way along the project frontage for EBT.

Notes:

EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right

TWLTL = Two-Way-Left-Turn-Lane

TUMF refers to the Transportation Uniform Mitigation Fee Program.

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Table C: Project Design Features

Intersection	Project Responsibility
6 . Dauchy Avenue/Van Buren Boulevard	Add continental crosswalks, audible pedestrian push buttons, and pedestrian restriction signs. Extend NBL storage to 200'.
7 . Dauchy Avenue/Project Driveway 2 - Ardenwood Lane	Install a left turn restriction sign (R33A-CA Modified) at the eastbound approach for both lanes.
19 . Project Driveway 1/Van Buren Boulevard	Provide right turn egress between 7 AM - 9 AM and 2 PM - 4 PM during school days.
20 . Dauchy Avenue/Project Driveway 3	Closure of driveway between 7 AM - 9 AM and 2 PM - 4 PM during school days.
21 . Dauchy Avenue/Project Driveway 4	Install a left turn restriction sign (R33A-CA Modified) at the eastbound approach.

Notes:

EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right

TWLTL = Two-Way-Left-Turn-Lane

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Table D: Cumulative (2045) Intersection Queuing Analysis

Intersection	Movement	Existing Storage Length[1] (ft/ln)	Recommended Storage Length (ft/ln)	Cumulative (2045) With Project[2]		Cumulative (2045) With Project With Imp.[2]	
				AM Peak Hour	Afternoon Peak Hour	AM Peak Hour	Afternoon Peak Hour
6 . Dauchy Avenue/Van Buren Boulevard Signal	**NBL[3]**	65	200	**260**	**180**	**215**	185
	SBL	75	75	**110**	**125**	**105**	**125**
	SBR	55	55	0	25	0	0
	EBL	305	305	300	**455**	240	**330**
	WBL	420	420	**590**	395	**520**	360

Notes:

ft/ln = feet per lane

EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound

L = Left; T= Through; R = Right

Bold = Queue exceeds available storage.

1 Storage length for all movements obtained from Google Earth measurements.

2 All queues reported are 95th percentile queues. Queues for signalized intersections have been reported from Synchro.

3 Northbound left turn storage lane proposed to be extended by 135 feet.

P:\T-Z\WCS2101_Woodcrest Christian School Expansion\Traffic\July 2023\Memo\Intersection Queue.xlsx (3/28/2025)

APPENDIX A

VOLUME DEVELOPMENT WORKSHEETS

LSA

Table A: Cumulative (2045) Peak Hour Volume Summary

	AM Peak Hour				PM Peak Hour			
	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project
6 Dauchy Avenue/Van Buren Boulevard								
NBL	339	0	(134)	205	285	0	(117)	168
NBT	72	0	(28)	44	110	0	(45)	65
NBR	190	0	(75)	115	153	0	(63)	90
SBL	96	0	0	96	111	0	0	111
SBT	65	2	0	67	63	1	0	64
SBR	41	0	0	41	76	0	0	76
EBL	36	1	28	65	94	1	45	140
EBT	1,874	34	35	1,943	2,101	34	33	2,168
EBR	318	55	0	373	279	25	0	304
WBL	201	97	0	298	150	44	0	194
WBT	2,263	0	0	2,263	2,437	0	0	2,437
WBR	56	0	0	56	81	0	0	81
EBU	0	20	63	83	0	20	62	82
North Leg								
Approach	202	2	0	204	250	1	0	251
Departure	164	1	0	165	285	1	0	286
Total	366	3	0	369	535	2	0	537
South Leg								
Approach	601	0	(237)	364	548	0	(225)	323
Departure	584	154	0	738	492	70	0	562
Total	1,185	154	(237)	1,102	1,040	70	(225)	885
East Leg								
Approach	2,520	97	0	2,617	2,668	44	0	2,712
Departure	2,160	34	(40)	2,154	2,365	34	(30)	2,369
Total	4,680	131	(40)	4,771	5,033	78	(30)	5,081
West Leg								
Approach	2,228	90	126	2,381	2,474	60	140	2,612
Departure	2,643	0	(71)	2,509	2,798	0	(55)	2,681
Total	4,871	90	55	4,890	5,272	60	85	5,293
Total Approaches								
Approach	5,551	189	(111)	5,566	5,940	105	(85)	5,898
Departure	5,551	189	(111)	5,566	5,940	105	(85)	5,898
Total	11,102	378	(222)	11,132	11,880	210	(170)	11,796

LSA

Table A: Cumulative (2045) Peak Hour Volume Summary

	AM Peak Hour				PM Peak Hour			
	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project
7 Dauchy Avenue/Project Driveway 2 - Ardenwood Lane								
NBL	34	9	0	43	14	4	0	18
NBT	409	0	(125)	284	314	0	(106)	208
NBR	5	0	0	5	9	0	0	9
SBL	18	0	0	18	19	0	0	19
SBT	348	83	0	431	378	38	0	416
SBR	143	71	0	214	62	32	0	94
EBL	112	0	(112)	0	119	0	(119)	0
EBT	0	0	0	0	1	0	(1)	0
EBR	27	7	0	34	29	7	0	36
WBL	5	0	0	5	6	0	0	6
WBT	0	0	0	0	0	0	0	0
WBR	56	0	0	56	26	0	0	26
North Leg								
Approach	509	154	0	663	459	70	0	529
Departure	577	0	(237)	340	459	0	(225)	234
Total	1,086	154	(237)	1,003	918	70	(225)	763
South Leg								
Approach	448	9	(125)	332	337	4	(106)	235
Departure	380	90	0	470	413	45	0	458
Total	828	99	(125)	802	750	49	(106)	693
East Leg								
Approach	61	0	0	61	32	0	0	32
Departure	23	0	0	23	29	0	(1)	28
Total	84	0	0	84	61	0	(1)	60
West Leg								
Approach	139	7	(112)	34	149	7	(120)	36
Departure	177	80	0	257	76	36	0	112
Total	316	87	(112)	291	225	43	(120)	148
Total Approaches								
Approach	1,157	170	(237)	1,090	977	81	(226)	832
Departure	1,157	170	(237)	1,090	977	81	(226)	832
Total	2,314	340	(474)	2,180	1,954	162	(452)	1,664

LSA

Table A: Cumulative (2045) Peak Hour Volume Summary

	AM Peak Hour				PM Peak Hour			
	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project
19 Project Driveway 1/Van Buren Boulevard								
NBL	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0
NBR	0	54	112	166	0	53	119	172
SBL	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0
SBR	0	0	0	0	2	0	0	2
EBL	0	0	0	0	0	0	0	0
EBT	2,228	56	15	2,299	2,474	26	21	2,521
EBR	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0
WBT	2,635	20	(71)	2,584	2,782	20	(55)	2,747
WBR	8	0	0	8	16	0	0	16
North Leg								
Approach	0	0	0	0	2	0	0	2
Departure	8	0	0	8	16	0	0	16
Total	8	0	0	8	18	0	0	18
South Leg								
Approach	0	54	112	166	0	53	119	172
Departure	0	0	0	0	0	0	0	0
Total	0	54	112	166	0	53	119	172
East Leg								
Approach	2,643	20	(71)	2,592	2,798	20	(55)	2,763
Departure	2,228	110	127	2,465	2,474	79	140	2,693
Total	4,871	130	56	5,057	5,272	99	85	5,456
West Leg								
Approach	2,228	56	15	2,299	2,474	26	21	2,521
Departure	2,635	20	(71)	2,584	2,784	20	(55)	2,749
Total	4,863	76	(56)	4,883	5,258	46	(34)	5,270
Total Approaches								
Approach	4,871	130	56	5,057	5,274	99	85	5,458
Departure	4,871	130	56	5,057	5,274	99	85	5,458
Total	9,742	260	112	10,114	10,548	198	170	10,916

LSA

Table A: Cumulative (2045) Peak Hour Volume Summary

	AM Peak Hour				PM Peak Hour			
	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project
20 Dauchy Avenue/Project Driveway 3								
NBL	15	0	(15)	0	11	0	(11)	0
NBT	448	9	(125)	332	337	4	(106)	235
NBR	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0
SBT	259	90	114	463	347	45	66	458
SBR	114	0	(114)	0	66	0	(66)	0
EBL	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0
North Leg								
Approach	373	90	0	463	413	45	0	458
Departure	448	9	(125)	332	337	4	(106)	235
Total	821	99	(125)	795	750	49	(106)	693
South Leg								
Approach	463	9	(140)	332	348	4	(117)	235
Departure	259	90	114	463	347	45	66	458
Total	722	99	(26)	795	695	49	(51)	693
East Leg								
Approach	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
West Leg								
Approach	0	0	0	0	0	0	0	0
Departure	129	0	(129)	0	77	0	(77)	0
Total	129	0	(129)	0	77	0	(77)	0
Total Approaches								
Approach	836	99	(140)	795	761	49	(117)	693
Departure	836	99	(140)	795	761	49	(117)	693
Total	1,672	198	(280)	1,590	1,522	98	(234)	1,386

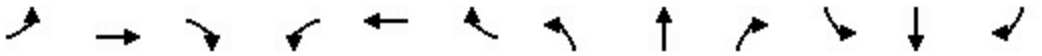
LSA

Table A: Cumulative (2045) Peak Hour Volume Summary

	AM Peak Hour				PM Peak Hour			
	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project	Cumulative Without Project	Project Trips	Driveway Vol Adjust	Cumulative With Project
21 Dauchy Avenue/Project Driveway 4								
NBL	38	10	15	63	14	5	11	30
NBT	339	9	(15)	333	240	4	(11)	233
NBR	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0
SBT	208	7	0	215	334	7	0	341
SBR	46	83	114	243	13	38	66	117
EBL	125	0	(125)	0	106	0	(106)	0
EBT	0	0	0	0	0	0	0	0
EBR	41	71	125	237	42	70	106	218
WBL	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0
North Leg								
Approach	254	90	114	458	347	45	66	458
Departure	464	9	(140)	333	346	4	(117)	233
Total	718	99	(26)	791	693	49	(51)	691
South Leg								
Approach	377	19	0	396	254	9	0	263
Departure	249	78	125	452	376	77	106	559
Total	626	97	125	848	630	86	106	822
East Leg								
Approach	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
West Leg								
Approach	166	71	0	237	148	70	0	218
Departure	84	93	129	306	27	43	77	147
Total	250	164	129	543	175	113	77	365
Total Approaches								
Approach	797	180	114	1,091	749	124	66	939
Departure	797	180	114	1,091	749	124	66	939
Total	1,594	360	228	2,182	1,498	248	132	1,878

APPENDIX B

INTERSECTION LOS WORKSHEETS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1874	318	201	2263	56	339	72	190	96	65	41
Future Volume (veh/h)	36	1874	318	201	2263	56	339	72	190	96	65	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	38	1973	335	212	2382	59	357	76	200	101	68	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	73	1698	279	97	2031	906	352	85	223	178	348	295
Arrive On Green	0.01	0.18	0.18	0.05	0.56	0.56	0.05	0.18	0.18	0.05	0.18	0.18
Sat Flow, veh/h	1810	3093	508	1810	3610	1610	1810	463	1218	1810	1900	1610
Grp Volume(v), veh/h	38	1124	1184	212	2382	59	357	0	276	101	68	43
Grp Sat Flow(s),veh/h/ln	1810	1805	1796	1810	1805	1610	1810	0	1681	1810	1900	1610
Q Serve(g_s), s	2.7	71.4	71.4	7.0	73.1	2.2	7.0	0.0	20.9	5.9	3.9	2.9
Cycle Q Clear(g_c), s	2.7	71.4	71.4	7.0	73.1	2.2	7.0	0.0	20.9	5.9	3.9	2.9
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	73	991	986	97	2031	906	352	0	308	178	348	295
V/C Ratio(X)	0.52	1.13	1.20	2.18	1.17	0.07	1.01	0.00	0.90	0.57	0.20	0.15
Avail Cap(c_a), veh/h	97	991	986	97	2031	906	352	0	388	178	438	372
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	53.2	53.2	61.5	28.4	12.9	51.8	0.0	51.9	41.9	45.0	44.5
Incr Delay (d2), s/veh	2.2	73.3	100.1	561.3	83.3	0.1	51.5	0.0	19.4	2.6	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	54.5	61.5	18.3	51.4	0.8	13.3	0.0	10.5	2.8	1.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.0	126.5	153.3	622.8	111.8	13.0	103.4	0.0	71.3	44.5	45.2	44.8
LnGrp LOS	E	F	F	F	F	B	F		E	D	D	D
Approach Vol, veh/h		2346			2653			633			212	
Approach Delay, s/veh		139.0			150.4			89.4			44.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	78.6	11.0	28.4	10.2	80.3	11.0	28.4
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	5.0	7.2	4.0	4.6
Max Green Setting (Gmax), s	7.0	65.2	7.0	30.0	7.0	65.2	7.0	30.0
Max Q Clear Time (g_c+I1), s	9.0	73.4	9.0	5.9	4.7	75.1	7.9	22.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	135.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	112	0	27	5	0	56	34	409	5	18	348	143
Future Vol, veh/h	112	0	27	5	0	56	34	409	5	18	348	143
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	-	-	-	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	127	0	31	6	0	64	39	465	6	20	395	163

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1013	984	395	1078	1144	468	558	0	0	471	0	0
Stage 1	435	435	-	546	546	-	-	-	-	-	-	-
Stage 2	578	549	-	532	598	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	219	250	659	198	202	599	1023	-	-	1101	-	-
Stage 1	604	584	-	526	521	-	-	-	-	-	-	-
Stage 2	505	520	-	535	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	184	231	659	178	186	599	1023	-	-	1101	-	-
Mov Cap-2 Maneuver	184	231	-	178	186	-	-	-	-	-	-	-
Stage 1	573	568	-	499	494	-	-	-	-	-	-	-
Stage 2	428	493	-	496	481	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	58.1	13.3	0.7	0.3
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1023	-	-	214	502	1101	-	-
HCM Lane V/C Ratio	0.038	-	-	0.738	0.138	0.019	-	-
HCM Ctrl Dly (s/v)	8.7	0	-	58.1	13.3	8.3	0	-
HCM Lane LOS	A	A	-	F	B	A	A	-
HCM 95th %tile Q (veh)	0.1	-	-	5	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2228	0	0	2635	8	0	0	0	0	0	0
Future Vol, veh/h	0	2228	0	0	2635	8	0	0	0	0	0	0
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	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2370	0	0	2803	9	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1185	-	-	1406
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*155	0	0	-
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			2
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*155	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q (veh)	-	-	-	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	15	448	259	114
Future Vol, veh/h	0	0	15	448	259	114
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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	18	527	305	134

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	935	372	439	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	297	678	1132	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	290	678	1132	-	-	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	687	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1132	-	-	-	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Ctrl Dly (s/v)	8.2	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

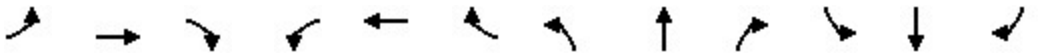
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	41	38	339	208	46
Future Vol, veh/h	125	41	38	339	208	46
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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	147	48	45	399	245	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	761	272	299	0	-	0
Stage 1	272	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	376	772	1274	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	772	1274	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	21.2	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1274	-	414	-	-
HCM Lane V/C Ratio	0.035	-	0.472	-	-
HCM Ctrl Dly (s/v)	7.9	0	21.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0.1	-	2.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	2101	279	150	2437	81	285	110	153	111	63	76
Future Volume (veh/h)	94	2101	279	150	2437	81	285	110	153	111	63	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	99	2212	294	158	2565	85	300	116	161	117	66	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	1763	229	97	1983	878	343	130	180	178	348	287
Arrive On Green	0.05	0.55	0.55	0.05	0.55	0.55	0.05	0.18	0.18	0.05	0.18	0.18
Sat Flow, veh/h	1810	3210	417	1810	3610	1598	1810	708	982	1810	1900	1565
Grp Volume(v), veh/h	99	1221	1285	158	2565	85	300	0	277	117	66	80
Grp Sat Flow(s),veh/h/ln	1810	1805	1821	1810	1805	1598	1810	0	1690	1810	1900	1565
Q Serve(g_s), s	7.0	71.4	71.4	7.0	71.4	3.3	7.0	0.0	20.8	6.9	3.8	5.7
Cycle Q Clear(g_c), s	7.0	71.4	71.4	7.0	71.4	3.3	7.0	0.0	20.8	6.9	3.8	5.7
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	97	991	1000	97	1983	878	343	0	309	178	348	287
V/C Ratio(X)	1.02	1.23	1.28	1.62	1.29	0.10	0.88	0.00	0.90	0.66	0.19	0.28
Avail Cap(c_a), veh/h	97	991	1000	97	1983	878	343	0	390	178	438	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	29.3	29.3	61.5	29.3	13.9	49.8	0.0	51.9	42.3	44.9	45.7
Incr Delay (d2), s/veh	95.6	113.0	135.7	321.6	136.0	0.2	20.8	0.0	19.3	6.8	0.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	66.9	73.8	12.2	73.2	4.5	18.1	0.0	11.7	4.6	2.4	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	157.1	142.3	165.0	383.1	165.3	14.2	70.6	0.0	71.2	49.1	45.2	46.2
LnGrp LOS	F	F	F	F	F	B	E		E	D	D	D
Approach Vol, veh/h		2605			2808			577			263	
Approach Delay, s/veh		154.1			173.0			70.9			47.3	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	78.6	11.0	28.4	12.0	78.6	11.0	28.4
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	5.0	7.2	4.0	4.6
Max Green Setting (Gmax), s	7.0	65.2	7.0	30.0	7.0	65.2	7.0	30.0
Max Q Clear Time (g_c+I1), s	9.0	73.4	9.0	7.7	9.0	73.4	8.9	22.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	150.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	119	1	29	6	0	26	14	314	9	19	378	62
Future Vol, veh/h	119	1	29	6	0	26	14	314	9	19	378	62
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	-	-	-	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	157	1	38	8	0	34	18	413	12	25	497	82

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1019	1008	497	1063	1084	419	579	0	0	425	0	0
Stage 1	547	547	-	455	455	-	-	-	-	-	-	-
Stage 2	472	461	-	608	629	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	217	242	577	203	219	638	1005	-	-	1145	-	-
Stage 1	525	521	-	589	572	-	-	-	-	-	-	-
Stage 2	576	569	-	486	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	229	577	181	207	638	1005	-	-	1145	-	-
Mov Cap-2 Maneuver	197	229	-	181	207	-	-	-	-	-	-	-
Stage 1	513	504	-	575	559	-	-	-	-	-	-	-
Stage 2	533	556	-	438	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	75.4	14.2	0.4	0.3
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1005	-	-	226	433	1145	-	-
HCM Lane V/C Ratio	0.018	-	-	0.867	0.097	0.022	-	-
HCM Ctrl Dly (s/v)	8.6	0	-	75.4	14.2	8.2	0	-
HCM Lane LOS	A	A	-	F	B	A	A	-
HCM 95th %tile Q (veh)	0.1	-	-	6.9	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2474	0	0	2782	16	0	0	0	0	0	2
Future Vol, veh/h	0	2474	0	0	2782	16	0	0	0	0	0	2
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	-	-	-	-	-	-	-	-	0	-	-	0
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2689	0	0	3024	17	0	0	0	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1345	-	-	1521
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*50	0	0	-
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			2
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*50	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0	
HCM LOS			A	-

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-
HCM 95th %tile Q (veh)	-	-	-	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	11	337	347	66
Future Vol, veh/h	0	0	11	337	347	66
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	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	13	406	418	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	890	458	498	0	-	0
Stage 1	458	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	316	607	1076	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	311	607	1076	-	-	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1076	-	-	-	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	8.4	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

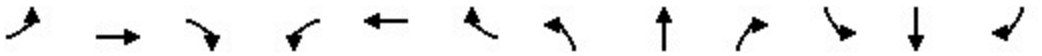
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	106	42	14	240	334	13
Future Vol, veh/h	106	42	14	240	334	13
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	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	133	53	18	300	418	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	762	426	434	0	-	0
Stage 1	426	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	376	633	1136	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	369	633	1136	-	-	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.2	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1136	-	419	-	-
HCM Lane V/C Ratio	0.015	-	0.442	-	-
HCM Ctrl Dly (s/v)	8.2	0	20.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0	-	2.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	1943	373	298	2263	56	205	44	115	96	67	41
Future Volume (veh/h)	148	1943	373	298	2263	56	205	44	115	96	67	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	156	2045	393	314	2382	59	216	46	121	101	71	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	111	1735	321	111	2068	922	288	56	148	205	231	196
Arrive On Green	0.06	0.57	0.57	0.06	0.57	0.57	0.06	0.12	0.12	0.06	0.12	0.12
Sat Flow, veh/h	1810	3029	561	1810	3610	1610	1810	463	1218	1810	1900	1610
Grp Volume(v), veh/h	156	1188	1250	314	2382	59	216	0	167	101	71	43
Grp Sat Flow(s),veh/h/ln	1810	1805	1785	1810	1805	1610	1810	0	1681	1810	1900	1610
Q Serve(g_s), s	7.0	65.2	65.2	7.0	65.2	1.8	7.0	0.0	11.0	5.5	3.9	2.7
Cycle Q Clear(g_c), s	7.0	65.2	65.2	7.0	65.2	1.8	7.0	0.0	11.0	5.5	3.9	2.7
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	111	1034	1022	111	2068	922	288	0	204	205	231	196
V/C Ratio(X)	1.40	1.15	1.22	2.82	1.15	0.06	0.75	0.00	0.82	0.49	0.31	0.22
Avail Cap(c_a), veh/h	111	1034	1022	111	2068	922	288	0	443	205	501	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	24.3	24.3	53.4	24.3	10.8	45.4	0.0	48.8	40.8	45.6	45.1
Incr Delay (d2), s/veh	226.0	78.5	109.1	844.1	74.5	0.0	9.3	0.0	7.8	0.7	0.7	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	46.1	54.3	29.2	44.9	0.7	3.3	0.0	5.1	2.5	1.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	279.4	102.8	133.5	897.6	98.8	10.8	54.7	0.0	56.6	41.5	46.4	45.7
LnGrp LOS	F	F	F	F	F	B	D		E	D	D	D
Approach Vol, veh/h		2594			2755			383			215	
Approach Delay, s/veh		128.2			187.9			55.5			43.9	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	72.4	11.0	18.4	12.0	72.4	11.0	18.4
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	5.0	7.2	4.0	4.6
Max Green Setting (Gmax), s	7.0	65.2	7.0	30.0	7.0	65.2	7.0	30.0
Max Q Clear Time (g_c+I1), s	9.0	67.2	9.0	5.9	9.0	67.2	7.5	13.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	148.1
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	34	5	0	56	43	284	5	18	431	214
Future Vol, veh/h	0	0	34	5	0	56	43	284	5	18	431	214
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	-	-	0	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	88	95	88	95	88	88	88	88	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	36	6	0	64	45	323	6	20	490	225

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	978	949	490	1077	1171	326	715	0	0	329	0	0
Stage 1	530	530	-	416	416	-	-	-	-	-	-	-
Stage 2	448	419	-	661	755	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	232	262	582	198	194	720	895	-	-	1242	-	-
Stage 1	536	530	-	618	595	-	-	-	-	-	-	-
Stage 2	594	593	-	455	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	239	582	173	177	720	895	-	-	1242	-	-
Mov Cap-2 Maneuver	197	239	-	173	177	-	-	-	-	-	-	-
Stage 1	503	515	-	580	558	-	-	-	-	-	-	-
Stage 2	508	556	-	415	408	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.6	12.2	1.1	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	895	-	-	-	582	572	1242	-	-
HCM Lane V/C Ratio	0.051	-	-	-	0.061	0.121	0.016	-	-
HCM Ctrl Dly (s/v)	9.2	-	-	0	11.6	12.2	7.9	0	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-
HCM 95th %tile Q (veh)	0.2	-	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2299	0	0	2584	8	0	0	166	0	0	0
Future Vol, veh/h	0	2299	0	0	2584	8	0	0	166	0	0	0
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	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2446	0	0	2749	9	0	0	177	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1223	-	-	1379
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	~ 174	0	0	137
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	~ 174	-	-	137
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	126.3	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	174	-	-	-	-	-
HCM Lane V/C Ratio	1.015	-	-	-	-	-
HCM Ctrl Dly (s/v)	126.3	-	-	-	-	0
HCM Lane LOS	F	-	-	-	-	A
HCM 95th %tile Q (veh)	8.3	-	-	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	332	463	0
Future Vol, veh/h	0	0	0	332	463	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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	391	545	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	936	545	545	0	-	0
Stage 1	545	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	297	542	1034	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	542	1034	-	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

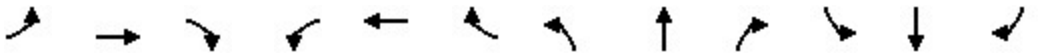
Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	237	63	333	215	243
Future Vol, veh/h	0	237	63	333	215	243
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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	279	74	392	253	286

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	936	396	539	0	-	0
Stage 1	396	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	297	658	1040	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	270	658	1040	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	588	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.4	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1040	-	658	-	-
HCM Lane V/C Ratio	0.071	-	0.424	-	-
HCM Ctrl Dly (s/v)	8.7	0	14.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0.2	-	2.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	2168	304	194	2437	81	168	65	90	111	64	76
Future Volume (veh/h)	222	2168	304	194	2437	81	168	65	90	111	64	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	2282	320	204	2565	85	177	68	95	117	67	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	112	1830	250	112	2073	918	282	83	116	205	227	184
Arrive On Green	0.06	0.57	0.57	0.06	0.57	0.57	0.06	0.12	0.12	0.06	0.12	0.12
Sat Flow, veh/h	1810	3187	436	1810	3610	1599	1810	698	975	1810	1900	1541
Grp Volume(v), veh/h	234	1268	1334	204	2565	85	177	0	163	117	67	80
Grp Sat Flow(s),veh/h/ln	1810	1805	1818	1810	1805	1599	1810	0	1673	1810	1900	1541
Q Serve(g_s), s	7.0	65.2	65.2	7.0	65.2	2.7	7.0	0.0	10.8	6.4	3.7	5.5
Cycle Q Clear(g_c), s	7.0	65.2	65.2	7.0	65.2	2.7	7.0	0.0	10.8	6.4	3.7	5.5
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	112	1036	1044	112	2073	918	282	0	200	205	227	184
V/C Ratio(X)	2.10	1.22	1.28	1.83	1.24	0.09	0.63	0.00	0.82	0.57	0.30	0.43
Avail Cap(c_a), veh/h	112	1036	1044	112	2073	918	282	0	442	205	502	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	24.2	24.2	53.3	24.2	10.9	43.6	0.0	48.8	41.3	45.6	46.4
Incr Delay (d2), s/veh	523.2	109.2	132.8	405.8	111.3	0.0	3.4	0.0	7.9	2.5	0.7	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	54.9	62.2	15.6	55.5	1.0	1.6	0.0	5.0	3.0	1.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	576.5	133.4	157.0	459.1	135.5	10.9	46.9	0.0	56.6	43.7	46.4	48.0
LnGrp LOS	F	F	F	F	F	B	D		E	D	D	D
Approach Vol, veh/h		2836			2854			340			264	
Approach Delay, s/veh		181.1			154.9			51.6			45.7	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	72.4	11.0	18.2	12.0	72.4	11.0	18.2
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	5.0	7.2	4.0	4.6
Max Green Setting (Gmax), s	7.0	65.2	7.0	30.0	7.0	65.2	7.0	30.0
Max Q Clear Time (g_c+I1), s	9.0	67.2	9.0	7.5	9.0	67.2	8.4	12.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	156.5
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	36	6	0	26	18	208	9	19	416	94
Future Vol, veh/h	0	0	36	6	0	26	18	208	9	19	416	94
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	-	-	0	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	76	95	76	95	76	76	76	76	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	38	8	0	34	19	274	12	25	547	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	932	921	547	984	1014	280	646	0	0	286	0	0
Stage 1	597	597	-	318	318	-	-	-	-	-	-	-
Stage 2	335	324	-	666	696	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	249	273	541	229	240	764	949	-	-	1288	-	-
Stage 1	493	495	-	698	657	-	-	-	-	-	-	-
Stage 2	683	653	-	452	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	228	258	541	204	227	764	949	-	-	1288	-	-
Mov Cap-2 Maneuver	228	258	-	204	227	-	-	-	-	-	-	-
Stage 1	481	480	-	681	641	-	-	-	-	-	-	-
Stage 2	637	637	-	407	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.2	12.8	0.6	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	949	-	-	-	541	504	1288	-	-
HCM Lane V/C Ratio	0.02	-	-	-	0.07	0.084	0.019	-	-
HCM Ctrl Dly (s/v)	8.9	-	-	0	12.2	12.8	7.9	0	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2521	0	0	2747	16	0	0	172	0	0	2
Future Vol, veh/h	0	2521	0	0	2747	16	0	0	172	0	0	2
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	-	-	-	-	-	-	-	-	0	-	-	0
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2740	0	0	2986	17	0	0	187	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1370	-	-	1502
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	~ 139	0	0	113
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	~ 139	-	-	113
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	255.8	37.5
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	139	-	-	-	-	113
HCM Lane V/C Ratio	1.345	-	-	-	-	0.019
HCM Ctrl Dly (s/v)	255.8	-	-	-	-	37.5
HCM Lane LOS	F	-	-	-	-	E
HCM 95th %tile Q (veh)	11.9	-	-	-	-	0.1

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	235	458	0
Future Vol, veh/h	0	0	0	235	458	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	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	283	552	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	835	552	552	0	-	0
Stage 1	552	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	340	537	1028	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	537	1028	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1028	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	218	30	233	341	117
Future Vol, veh/h	0	218	30	233	341	117
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	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	273	38	291	426	146

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	866	499	572	0	-	0
Stage 1	499	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	326	576	1011	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	311	576	1011	-	-	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.7	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1011	-	576	-	-
HCM Lane V/C Ratio	0.037	-	0.473	-	-
HCM Ctrl Dly (s/v)	8.7	0	16.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0.1	-	2.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	1943	373	298	2263	56	205	44	115	96	67	41
Future Volume (veh/h)	148	1943	373	298	2263	56	205	44	115	96	67	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	156	2045	393	314	2382	59	216	46	121	101	71	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	953	3890	724	251	2517	62	428	114	300	341	438	372
Arrive On Green	0.17	0.29	0.29	0.14	0.48	0.48	0.06	0.25	0.25	0.05	0.23	0.23
Sat Flow, veh/h	1810	4376	815	1810	5206	128	1810	463	1218	1810	1900	1610
Grp Volume(v), veh/h	156	1602	836	314	1579	862	216	0	167	101	71	43
Grp Sat Flow(s),veh/h/ln	1810	1729	1733	1810	1729	1877	1810	0	1681	1810	1900	1610
Q Serve(g_s), s	9.5	50.2	52.7	18.0	56.4	57.0	8.0	0.0	10.8	5.6	3.9	2.3
Cycle Q Clear(g_c), s	9.5	50.2	52.7	18.0	56.4	57.0	8.0	0.0	10.8	5.6	3.9	2.3
Prop In Lane	1.00		0.47	1.00		0.07	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	953	3073	1540	251	1672	907	428	0	414	341	438	372
V/C Ratio(X)	0.16	0.52	0.54	1.25	0.94	0.95	0.51	0.00	0.40	0.30	0.16	0.12
Avail Cap(c_a), veh/h	953	3073	1540	251	1681	912	428	0	414	341	438	372
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	22.9	23.7	56.0	31.9	32.1	38.5	0.0	41.0	36.3	40.0	26.6
Incr Delay (d2), s/veh	0.0	0.6	1.4	142.4	12.3	20.0	0.4	0.0	2.9	0.2	0.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	23.3	24.8	17.9	24.5	28.8	2.0	0.0	4.9	2.5	1.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.4	23.5	25.1	198.4	44.2	52.0	38.9	0.0	43.9	36.5	40.7	27.2
LnGrp LOS	C	C	C	F	D	D	D		D	D	D	C
Approach Vol, veh/h		2594			2755			383			215	
Approach Delay, s/veh		24.4			64.2			41.1			36.0	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	124.6	12.0	34.6	77.5	70.0	10.0	36.6
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	7.2	* 7.2	4.0	4.6
Max Green Setting (Gmax), s	18.0	53.2	8.0	30.0	8.0	* 63	6.0	32.0
Max Q Clear Time (g_c+I1), s	20.0	54.7	10.0	5.9	11.5	59.0	7.6	12.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	3.8	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	44.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	34	5	0	56	43	284	5	18	431	214
Future Vol, veh/h	0	0	34	5	0	56	43	284	5	18	431	214
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	-	-	0	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	88	95	88	95	88	88	88	88	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	36	6	0	64	45	323	6	20	490	225

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	978	949	490	1077	1171	326	715	0	0	329	0	0
Stage 1	530	530	-	416	416	-	-	-	-	-	-	-
Stage 2	448	419	-	661	755	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	232	262	582	198	194	720	895	-	-	1242	-	-
Stage 1	536	530	-	618	595	-	-	-	-	-	-	-
Stage 2	594	593	-	455	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	239	582	173	177	720	895	-	-	1242	-	-
Mov Cap-2 Maneuver	197	239	-	173	177	-	-	-	-	-	-	-
Stage 1	503	515	-	580	558	-	-	-	-	-	-	-
Stage 2	508	556	-	415	408	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.6	12.2	1.1	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	895	-	-	-	582	572	1242	-	-
HCM Lane V/C Ratio	0.051	-	-	-	0.061	0.121	0.016	-	-
HCM Ctrl Dly (s/v)	9.2	-	-	0	11.6	12.2	7.9	0	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-
HCM 95th %tile Q (veh)	0.2	-	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2299	0	0	2584	8	0	0	166	0	0	0
Future Vol, veh/h	0	2299	0	0	2584	8	0	0	166	0	0	0
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	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2446	0	0	2749	9	0	0	177	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1223	-	-	1379
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*394	0	0	*313
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*394	-	-	*313
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	21.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	394	-	-	-	-	-
HCM Lane V/C Ratio	0.448	-	-	-	-	-
HCM Ctrl Dly (s/v)	21.4	-	-	-	-	0
HCM Lane LOS	C	-	-	-	-	A
HCM 95th %tile Q (veh)	2.3	-	-	-	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	332	463	0
Future Vol, veh/h	0	0	0	332	463	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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	391	545	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	936	545	545	0	-	0
Stage 1	545	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	297	542	1034	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	542	1034	-	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

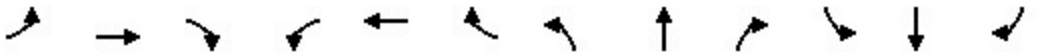
Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	237	63	333	215	243
Future Vol, veh/h	0	237	63	333	215	243
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	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	279	74	392	253	286

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	936	396	539	0	-	0
Stage 1	396	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	297	658	1040	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	270	658	1040	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	588	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.4	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1040	-	658	-	-
HCM Lane V/C Ratio	0.071	-	0.424	-	-
HCM Ctrl Dly (s/v)	8.7	0	14.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0.2	-	2.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	2168	304	194	2437	81	168	65	90	111	64	76
Future Volume (veh/h)	222	2168	304	194	2437	81	168	65	90	111	64	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	234	2282	320	204	2565	85	177	68	95	117	67	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1161	4819	657	181	2507	82	376	152	213	314	438	363
Arrive On Green	0.21	0.34	0.34	0.10	0.49	0.49	0.04	0.22	0.22	0.05	0.23	0.23
Sat Flow, veh/h	1810	4613	629	1810	5156	170	1810	707	987	1810	1900	1575
Grp Volume(v), veh/h	234	1694	908	204	1714	936	177	0	163	117	67	80
Grp Sat Flow(s),veh/h/ln	1810	1729	1784	1810	1729	1868	1810	0	1694	1810	1900	1575
Q Serve(g_s), s	13.8	0.0	0.0	13.0	63.2	63.2	5.0	0.0	10.9	6.6	3.7	4.3
Cycle Q Clear(g_c), s	13.8	0.0	0.0	13.0	63.2	63.2	5.0	0.0	10.9	6.6	3.7	4.3
Prop In Lane	1.00		0.35	1.00		0.09	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	1161	3612	1864	181	1681	908	376	0	365	314	438	363
V/C Ratio(X)	0.20	0.47	0.49	1.13	1.02	1.03	0.47	0.00	0.45	0.37	0.15	0.22
Avail Cap(c_a), veh/h	1161	3612	1864	181	1681	908	376	0	365	314	438	363
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	0.0	58.5	33.4	33.4	41.5	0.0	44.3	37.6	39.9	25.5
Incr Delay (d2), s/veh	0.0	0.4	0.9	105.3	27.0	38.1	0.3	0.0	3.9	0.3	0.7	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.2	0.5	11.1	30.5	35.7	2.5	0.0	5.0	3.0	1.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.9	0.4	0.9	163.8	60.4	71.5	41.8	0.0	48.2	37.9	40.6	26.9
LnGrp LOS	C	A	A	F	F	F	D		D	D	D	C
Approach Vol, veh/h		2836			2854			340			264	
Approach Delay, s/veh		2.5			71.4			44.9			35.3	
Approach LOS		A			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	145.2	9.0	34.6	92.8	70.4	11.0	32.6
Change Period (Y+Rc), s	5.0	7.2	4.0	4.6	7.2	* 7.2	4.0	4.6
Max Green Setting (Gmax), s	13.0	61.2	5.0	30.0	11.0	* 63	7.0	28.0
Max Q Clear Time (g_c+I1), s	15.0	2.0	7.0	6.3	15.8	65.2	8.6	12.9
Green Ext Time (p_c), s	0.0	36.8	0.0	0.6	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	37.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	36	6	0	26	18	208	9	19	416	94
Future Vol, veh/h	0	0	36	6	0	26	18	208	9	19	416	94
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	-	-	0	-	-	-	-	-	-	-	-	90
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	76	95	76	95	76	76	76	76	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	38	8	0	34	19	274	12	25	547	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	932	921	547	984	1014	280	646	0	0	286	0	0
Stage 1	597	597	-	318	318	-	-	-	-	-	-	-
Stage 2	335	324	-	666	696	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	249	273	541	229	240	764	949	-	-	1288	-	-
Stage 1	493	495	-	698	657	-	-	-	-	-	-	-
Stage 2	683	653	-	452	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	228	258	541	204	227	764	949	-	-	1288	-	-
Mov Cap-2 Maneuver	228	258	-	204	227	-	-	-	-	-	-	-
Stage 1	481	480	-	681	641	-	-	-	-	-	-	-
Stage 2	637	637	-	407	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.2	12.8	0.6	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	949	-	-	-	541	504	1288	-	-
HCM Lane V/C Ratio	0.02	-	-	-	0.07	0.084	0.019	-	-
HCM Ctrl Dly (s/v)	8.9	-	-	0	12.2	12.8	7.9	0	-
HCM Lane LOS	A	-	-	A	B	B	A	A	-
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Traffic Vol, veh/h	0	2521	0	0	2747	16	0	0	172	0	0	2
Future Vol, veh/h	0	2521	0	0	2747	16	0	0	172	0	0	2
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	-	-	-	-	-	-	-	-	0	-	-	0
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	2740	0	0	2986	17	0	0	187	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1370	-	-	1502
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*333	0	0	*272
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*333	-	-	*272
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	28.8	18.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	333	-	-	-	-	272
HCM Lane V/C Ratio	0.561	-	-	-	-	0.008
HCM Ctrl Dly (s/v)	28.8	-	-	-	-	18.3
HCM Lane LOS	D	-	-	-	-	C
HCM 95th %tile Q (veh)	3.3	-	-	-	-	0

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	235	458	0
Future Vol, veh/h	0	0	0	235	458	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	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	283	552	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	835	552	552	0	-	0
Stage 1	552	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	340	537	1028	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	537	1028	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1028	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q (veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	218	30	233	341	117
Future Vol, veh/h	0	218	30	233	341	117
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	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	273	38	291	426	146

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	866	499	572	0	-	0
Stage 1	499	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	326	576	1011	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	311	576	1011	-	-	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.7	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1011	-	576	-	-
HCM Lane V/C Ratio	0.037	-	0.473	-	-
HCM Ctrl Dly (s/v)	8.7	0	16.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0.1	-	2.5	-	-

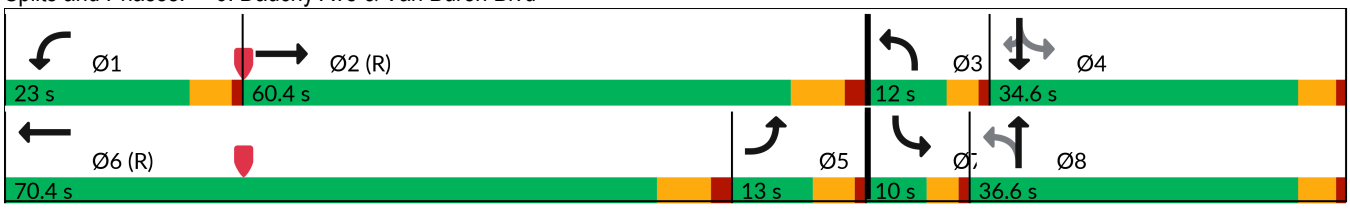
APPENDIX C

TRAFFIC SIGNAL TIMING WORKSHEETS

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	148	1943	298	2263	205	44	96	67	41
Future Volume (vph)	148	1943	298	2263	205	44	96	67	41
Turn Type	Prot	NA	Prot	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2	1	6	3	8	7	4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	3	8	7	4	4
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.2	10.0	30.2	9.0	9.6	9.0	34.6	34.6
Total Split (s)	13.0	60.4	23.0	70.4	12.0	36.6	10.0	34.6	34.6
Total Split (%)	10.0%	46.5%	17.7%	54.2%	9.2%	28.2%	7.7%	26.6%	26.6%
Yellow Time (s)	4.0	5.2	4.0	5.2	3.0	3.6	3.0	3.6	3.6
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.2	5.0	7.2	4.0	4.6	4.0	4.6	4.6
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	Max	None	Max	Max
Act Effct Green (s)	8.0	53.2	18.0	63.2	40.6	32.0	36.6	30.0	30.0
Actuated g/C Ratio	0.06	0.41	0.14	0.49	0.31	0.25	0.28	0.23	0.23
v/c Ratio	1.41	1.17	1.26	0.97	0.50	0.34	0.30	0.16	0.09
Control Delay (s/veh)	252.7	109.1	190.6	45.0	39.2	19.4	34.6	41.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	252.7	109.1	190.6	45.0	39.2	19.4	34.6	41.2	0.3
LOS	F	F	F	D	D	B	C	D	A
Approach Delay (s/veh)		117.7		61.6		30.6		29.9	
Approach LOS		F		E		C		C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay (s/veh): 82.9	Intersection LOS: F
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

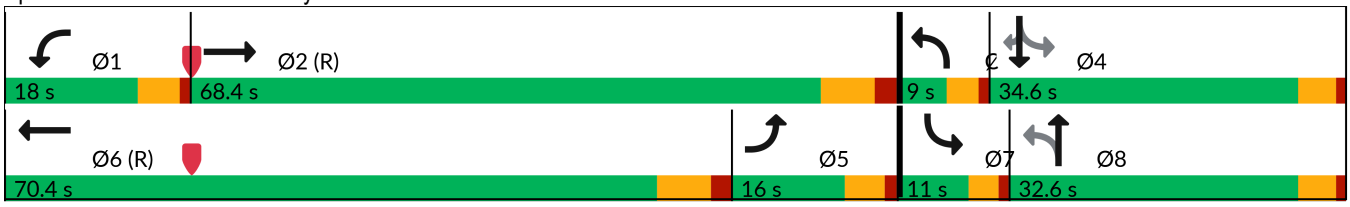
Splits and Phases: 6: Dauchy Ave & Van Buren Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	222	2168	194	2437	168	65	111	64	76
Future Volume (vph)	222	2168	194	2437	168	65	111	64	76
Turn Type	Prot	NA	Prot	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	5	2	1	6	3	8	7	4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	3	8	7	4	4
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.2	10.0	30.2	9.0	9.6	11.0	34.6	34.6
Total Split (s)	16.0	68.4	18.0	70.4	9.0	32.6	11.0	34.6	34.6
Total Split (%)	12.3%	52.6%	13.8%	54.2%	6.9%	25.1%	8.5%	26.6%	26.6%
Yellow Time (s)	4.0	5.2	4.0	5.2	3.0	3.6	3.0	3.6	3.6
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.2	5.0	7.2	4.0	4.6	4.0	4.6	4.6
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	Max	None	Max	Max
Act Effct Green (s)	11.0	61.2	13.0	63.2	33.7	28.1	37.5	30.0	30.0
Actuated g/C Ratio	0.08	0.47	0.10	0.49	0.26	0.22	0.29	0.23	0.23
v/c Ratio	1.54	1.08	1.13	1.06	0.49	0.39	0.37	0.15	0.16
Control Delay (s/veh)	296.4	70.4	159.0	68.1	43.3	33.4	37.8	41.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	296.4	70.4	159.0	68.1	43.3	33.4	37.8	41.1	0.7
LOS	F	E	F	E	D	C	D	D	A
Approach Delay (s/veh)		89.1		74.6		38.6		27.4	
Approach LOS		F		E		D		C	

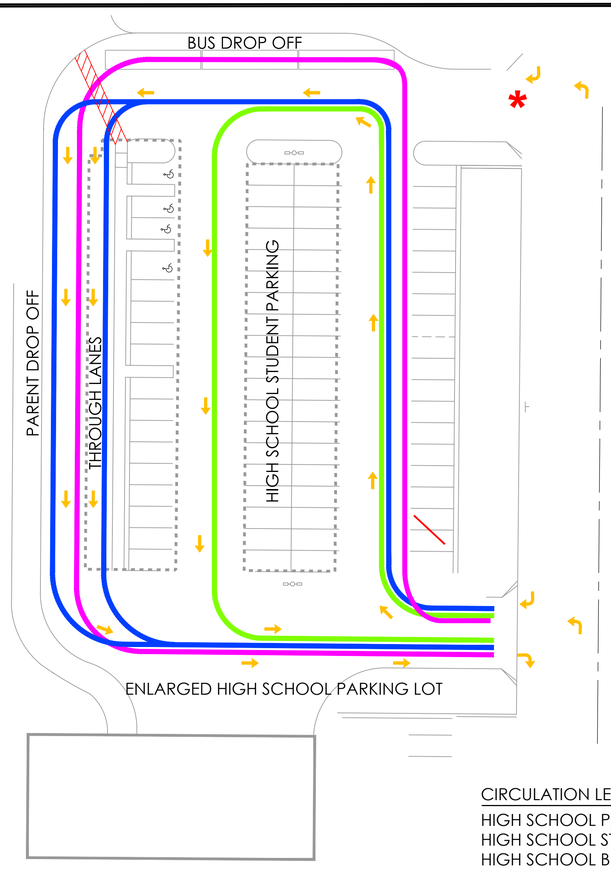
Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay (s/veh): 77.2	Intersection LOS: E
Intersection Capacity Utilization 112.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Dauchy Ave & Van Buren Blvd



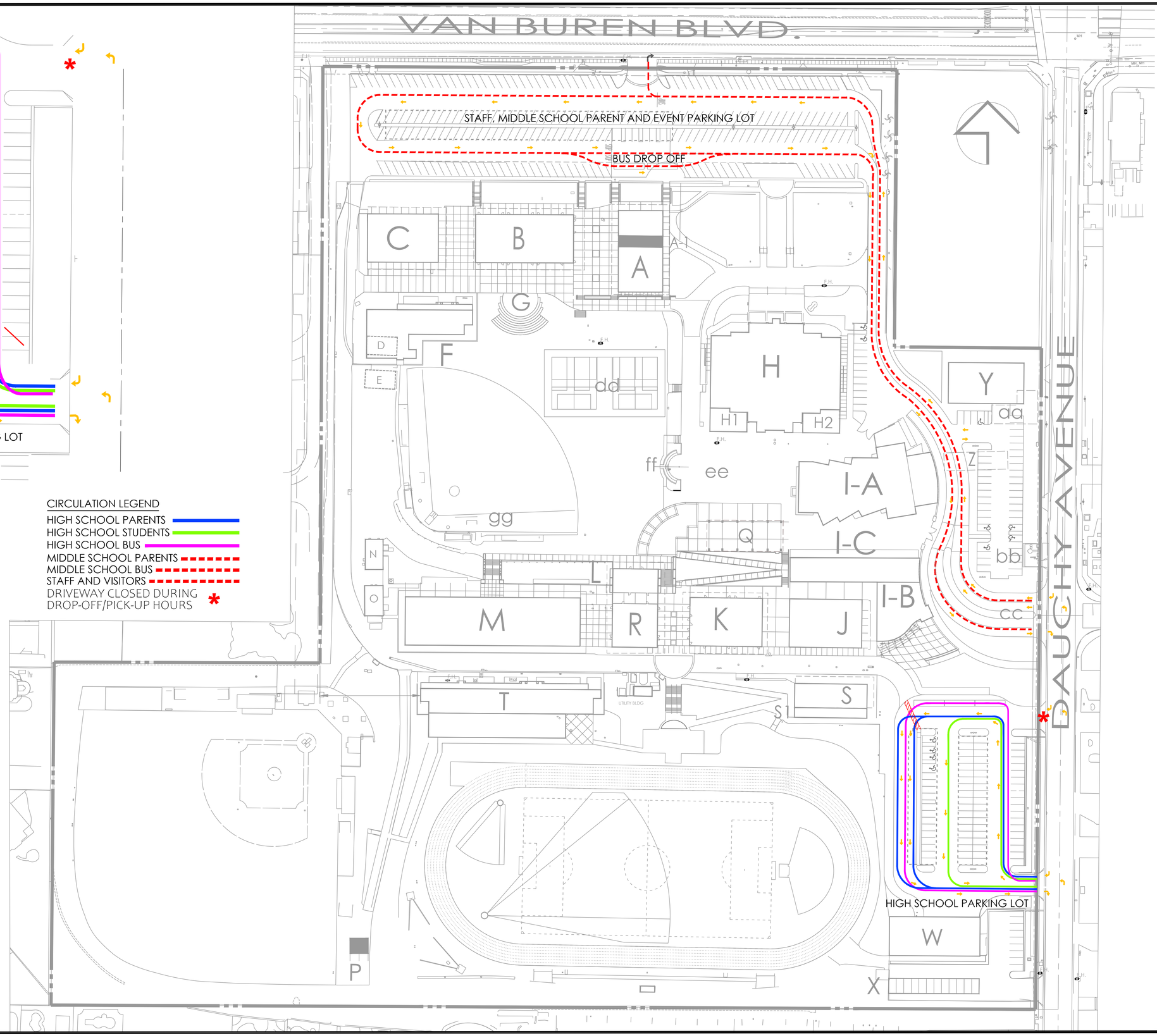
APPENDIX D

CONCEPTUAL PARKING LOT CIRCULATION PLAN



CIRCULATION LEGEND

- HIGH SCHOOL PARENTS
- HIGH SCHOOL STUDENTS
- HIGH SCHOOL BUS
- MIDDLE SCHOOL PARENTS
- MIDDLE SCHOOL BUS
- STAFF AND VISITORS
- DRIVEWAY CLOSED DURING DROP-OFF/PICK-UP HOURS *



CHARLES BROWN ARCHITECT
5140 VICTORIA AVENUE, RIVERSIDE CA 92501
951-683 6222 / cbrown@cbarchitect.org

LICENSED ARCHITECT JERRY CHARLES BROWN C-4786 APRIL 30, 2025 REGISTERED STATE OF CALIFORNIA

WOODCREST CHRISTIAN HIGH SCHOOL
MASTER PLAN
18401 VAN BUREN BLVD. RIVERSIDE, CA. 92508

JOB	
DATE	08/15/23
REV. 1	10-09-23
2	02-16-24
SCALE:	1" = 60'-0"

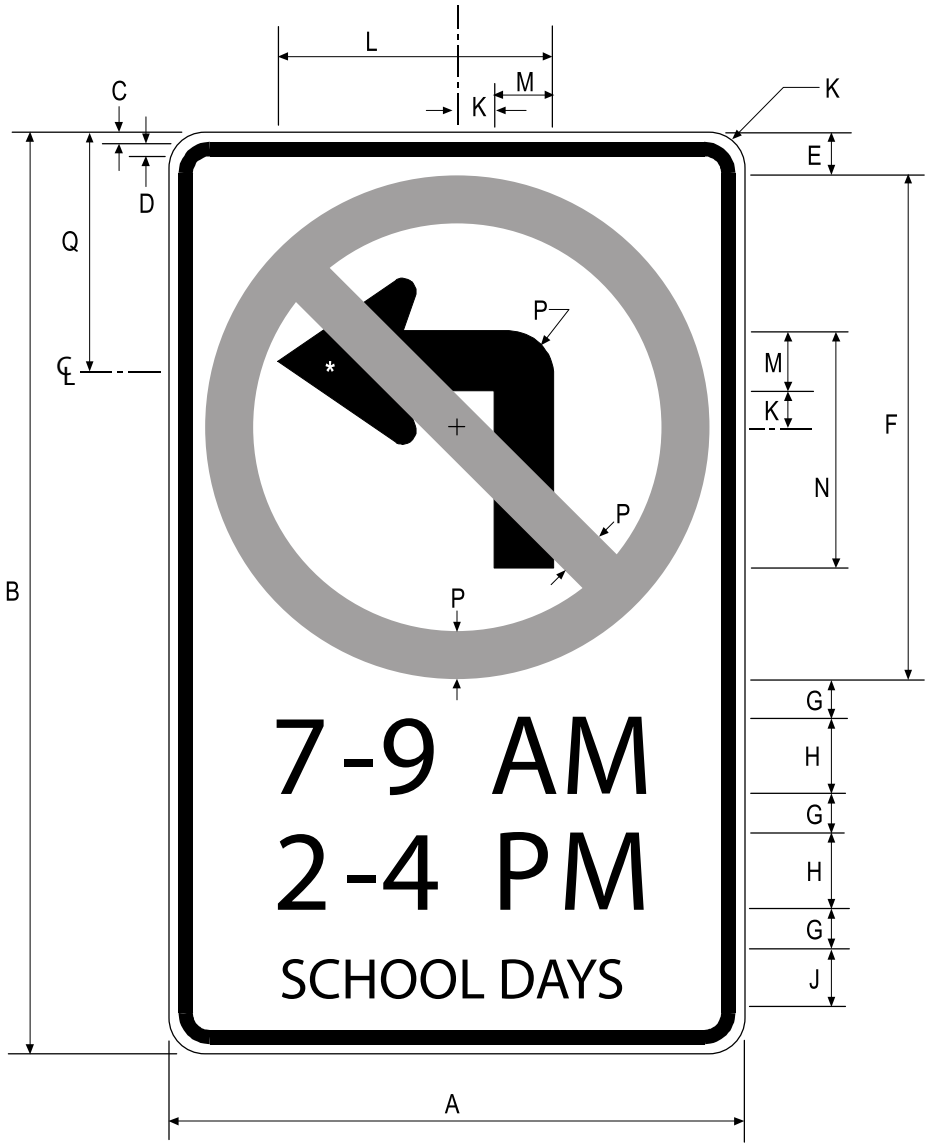
PARKING CIRCULATION

CUP-2.2

DRAWING	#
OF	#

APPENDIX E

CONCEPTUAL ON-STREET PARKING RESTRICTION SIGN



* For arrowhead dimensions, see page 6-2 of the Standard Highway Signs Book.

R33A (CA) - Modified

ENGLISH UNITS

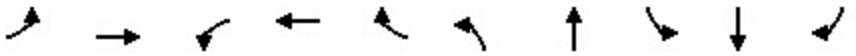
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
30	48	.5	.75	2.25	26.25	2	4D	3D	1.875	14.5	3.125	13.125	2.5	15.375

COLORS: CIRCLE & DIAGONAL - RED (RETROREFLECTIVE)
SYMBOL, BORDER & LEGEND - BLACK
BACKGROUND - WHITE (RETROREFLECTIVE)

9/26/06

APPENDIX F

INTERSECTION QUEUING WORKSHEETS

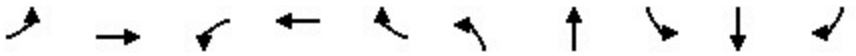


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	156	2438	314	2382	59	216	167	101	71	43
v/c Ratio	1.37	1.17	2.75	1.12	0.06	0.88	0.68	0.55	0.39	0.17
Control Delay (s/veh)	252.6	105.9	836.4	84.1	1.1	77.0	35.5	49.6	52.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	252.6	105.9	836.4	84.1	1.1	77.0	35.5	49.6	52.6	1.4
Queue Length 50th (ft)	~146	~1085	~379	~1022	0	141	49	61	48	0
Queue Length 95th (ft)	#296	#1335	#586	#1268	9	#257	120	110	93	0
Internal Link Dist (ft)		483		2566			678		609	
Turn Bay Length (ft)	305		420		375	65		75		55
Base Capacity (vph)	114	2083	114	2131	990	245	529	186	516	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.37	1.17	2.75	1.12	0.06	0.88	0.32	0.54	0.14	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	234	2602	204	2565	85	177	163	117	67	80
v/c Ratio	2.09	1.27	1.82	1.23	0.09	0.66	0.68	0.59	0.31	0.29
Control Delay (s/veh)	549.6	149.8	436.1	132.3	2.7	52.2	47.1	50.4	49.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	549.6	149.8	436.1	132.3	2.7	52.2	47.1	50.4	49.3	6.1
Queue Length 50th (ft)	~269	~1260	~224	~1210	0	112	79	72	45	0
Queue Length 95th (ft)	#451	#1513	#395	#1460	22	179	150	124	89	23
Internal Link Dist (ft)		483		2566			678		609	
Turn Bay Length (ft)	305		420		375	65		75		55
Base Capacity (vph)	112	2050	112	2087	932	268	498	198	505	496
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.09	1.27	1.82	1.23	0.09	0.66	0.33	0.59	0.13	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	156	2438	314	2441	216	167	101	71	43
v/c Ratio	1.41	1.17	1.26	0.97	0.50	0.34	0.30	0.16	0.09
Control Delay (s/veh)	252.7	109.1	190.6	45.0	39.2	19.4	34.6	41.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	252.7	109.1	190.6	45.0	39.2	19.4	34.6	41.2	0.3
Queue Length 50th (ft)	~178	~891	~331	715	139	47	60	48	0
Queue Length 95th (ft)	m#238	#974	#517	#849	211	111	105	91	0
Internal Link Dist (ft)		483		2566		678		609	
Turn Bay Length (ft)	305		420		200		75		55
Base Capacity (vph)	111	2086	249	2513	428	489	341	438	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	1.17	1.26	0.97	0.50	0.34	0.30	0.16	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	234	2602	204	2650	177	163	117	67	80
v/c Ratio	1.54	1.08	1.13	1.06	0.49	0.39	0.37	0.15	0.16
Control Delay (s/veh)	296.4	70.4	159.0	68.1	43.3	33.4	37.8	41.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	296.4	70.4	159.0	68.1	43.3	33.4	37.8	41.1	0.7
Queue Length 50th (ft)	~280	~896	~199	~895	115	82	73	45	0
Queue Length 95th (ft)	m#326	#977	#359	#984	181	152	125	87	0
Internal Link Dist (ft)		483		2566		678		609	
Turn Bay Length (ft)	305		420		200		75		55
Base Capacity (vph)	152	2403	180	2508	362	413	317	438	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.54	1.08	1.13	1.06	0.49	0.39	0.37	0.15	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX G

WOODCREST CHRISTIAN SCHOOL EXPANSION TRAFFIC OPERATIONAL ANALYSIS

TRAFFIC OPERATIONAL ANALYSIS

WOODCREST CHRISTIAN SCHOOL EXPANSION

CITY OF RIVERSIDE

RIVERSIDE COUNTY, CALIFORNIA

This Traffic Operational Analysis has been prepared under the supervision of
Ambarish Mukherjee, P.E.

LSA

March 2024

TRAFFIC OPERATIONAL ANALYSIS

WOODCREST CHRISTIAN SCHOOL EXPANSION

CITY OF RIVERSIDE

RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

Vital Patel, City Traffic Engineer
City of Riverside
3900 Main Street
Riverside, California 92501

Prepared by:

LSA
1500 Iowa Avenue, Suite 200
Riverside, California 92507
(951) 781-9310

Project No. WCS2101

March 2024

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1.0 EXECUTIVE SUMMARY

The proposed Woodcrest Christian School Expansion Project will include expansion of the existing school's enrollment by 280 students. This expansion will include the addition of administrative offices, classroom buildings, amphitheater, food service facilities, lockers/snack bar, a chapel arts building, weight room, and storage rooms.

The project site is located south of Van Buren Boulevard between Little Court and Dauchy Avenue in the City of Riverside (City). The existing project parcel is considered as Public Facilities/Institutional (PF) in the General Plan Land Use and Public Facilities (PF-SP) Orangecrest Specific Plan Overlay as the Zoning. The adjacent parcel (APN 266020059) located northeast of the current Woodcrest Christian School site will be acquired as part of this project. The adjacent parcel is considered as Mixed Use-Village (MU-V) in the General Plan Land Use and Mixed Use – Village – 2 Story Building – 15 feet Building Setback (MU-V-S-2-X-15-SP) Orangecrest Specific Plan Overlay as the Zoning. This project will only require a Conditional Use Permit (CUP) but not require a General Plan Amendment (GPA) nor Zone Change (ZC). The project is anticipated to be completed by year 2029.

Access to the project site is currently provided via five driveways, one on Van Buren Boulevard and four driveways on Dauchy Avenue. Following is a description of all driveways providing access to the site:

- Driveway on Van Buren Boulevard:
    - Project Driveway 1: This is a gated right-in/right-out (RIRO) driveway. Project traffic would not be typically allowed to use this driveway.
- Driveways on Dauchy Avenue:
    - Project Driveway 2: This is a full-access driveway.
    - Project Driveway 3: This is an entrance only driveway.
    - Project Driveway 4: This is a full-access driveway.
    - Project Driveway 5: This is a restricted access driveway for authorized vehicles. Project traffic would not be allowed to use this driveway.

The project is forecast to generate 814 daily trips, with 303 trips in the a.m. peak hour, and 209 trips occurring during the afternoon peak hour.

The study area for the project was based on the criteria defined in the City of Riverside Public Works Department *Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment* (dated July 2020). Based on the City's TIA Guidelines and discussions with City staff during the scoping agreement process, the study area includes 23 intersections and 3 roadway segments.

Traffic conditions were examined for the weekday daily, a.m., and afternoon peak hour conditions under the following scenarios:

- Existing Conditions;
- Opening Year (2029) without Project Conditions;
- Opening Year (2029) with Project Conditions;
- Cumulative (2045) without Project Conditions; and
- Cumulative (2045) with Project Conditions.

1.1 EXISTING CONDITIONS SUMMARY

Based on the criteria as discussed in the "Level of Service Procedures" section of this report, under existing conditions, the following intersections operates at a deficient LOS:

5. Ridgeway Avenue/Van Buren Boulevard (afternoon peak hour only); and
12. Trautwein Road/John F Kennedy Drive (a.m. peak hour only).

All other intersections operate at a satisfactory LOS under existing conditions. For roadway segments, all three study roadway segments operate at a deficient LOS.

1.2 PROJECT TRAFFIC

The trip generation for the purposed use was developed based on trip generation survey counts collected from the project driveways. Counts were collected over on a Tuesday and Thursday, and the highest a.m. peak hour, afternoon peak hour, and daily counts over the two days were used for developing the trip generation for the existing on-site use. Trip generation rates were developed using empirical trip generation data collected. Using the collected trip generation data, the rate was applied to the future number of students anticipated to be enrolled after the expansion. The expansion of the school is anticipated to generate 303 trips in the a.m. peak hour, 209 trips in the p.m. peak hour, and 814 daily trips.

1.3 PROJECT DESIGN FEATURES

The following project design features have been proposed as part of the school's expansion to minimize the potential effects of project traffic:

- Realignment of Project Driveway 2 to remove existing offset with Ardenwood Lane.
- Addition of a receiving lane at Project Driveway 2 to improve ingress maneuvers.
- Restripe existing lane geometry for the eastbound direction at Project Driveway 2 from a left through right to a through left.
- Addition of a right turn lane for the eastbound direction at Project Driveway 2.
- Relocation of bus parking at rear parking lot to extend vehicle storage for student drop-off and pick-up.

1.4 OPENING YEAR (2029) CONDITIONS SUMMARY

Based on the criteria as discussed in the "Level of Service Procedure" section of this report, under opening year without project conditions, the following intersections are forecast to operate at a deficient LOS:

1. Washington Street/Van Buren Boulevard (afternoon peak hour only);
2. Chicago Avenue – Alta Cresta Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
4. Little Court/Van Buren Boulevard (afternoon peak hour only);
5. Ridgeway Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
6. Dauchy Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane (both a.m. and afternoon peak hours);
8. Dauchy Avenue – Taft Street/Krameria Avenue (both a.m. and afternoon peak hours);
11. Trautwein Road/Mission Grove Parkway (both a.m. and afternoon peak hours);
12. Trautwein Road/John F Kennedy Drive (a.m. peak hour only);
14. Trautwein Road/Orange Terrace Parkway (a.m. peak hour only);
16. Trautwein Road/Van Buren Boulevard (afternoon peak hour only);
18. Barton Street/Van Buren Boulevard (both a.m. and afternoon peak hours); and
19. Project Driveway 1/Van Buren Boulevard (afternoon peak hour).

All other intersections are forecast to operate at a satisfactory LOS under opening year without project conditions.

Under opening year with project conditions, the following intersections are forecast to operate at a deficient LOS:

1. Washington Street/Van Buren Boulevard (afternoon peak hour only);
2. Chicago Avenue – Alta Cresta Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
4. Little Court/Van Buren Boulevard (afternoon peak hour only);
5. Ridgeway Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
6. Dauchy Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);

7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane (both a.m. and afternoon peak hours);
8. Dauchy Avenue – Taft Street/Krameria Avenue (both a.m. and afternoon peak hours);
11. Trautwein Road/Mission Grove Parkway (both a.m. and afternoon peak hours);
12. Trautwein Road/John F Kennedy Drive (a.m. peak hour only);
14. Trautwein Road/Orange Terrace Parkway (a.m. peak hour only);
16. Trautwein Road/Van Buren Boulevard (afternoon peak hour only);
18. Barton Street/Van Buren Boulevard (both a.m. and afternoon peak hours);
19. Project Driveway 1/Van Buren Boulevard (afternoon peak hour); and
21. Dauchy Avenue/Project Driveway 4 (a.m. peak hour).

All other intersections are forecast to operate at a satisfactory LOS under opening year with project conditions.

1.5 CUMULATIVE (2045) CONDITIONS SUMMARY

Based on the criteria as discussed in the "Level of Service Procedure" section of this report, under cumulative without project conditions, the following intersections are forecast to operate at a deficient LOS:

1. Washington Street/Van Buren Boulevard (both a.m. and afternoon peak hours);
2. Chicago Avenue – Alta Cresta Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
4. Little Court/Van Buren Boulevard (afternoon peak hour only);
5. Ridgeway Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
6. Dauchy Avenue/Van Buren Boulevard (both a.m. and afternoon peak hours);
7. Dauchy Avenue/Project Driveway 2 – Ardenwood Lane (both a.m. and afternoon peak hours);
8. Dauchy Avenue – Taft Street/Krameria Avenue (both a.m. and afternoon peak hours);
11. Trautwein Road/Mission Grove Parkway (both a.m. and afternoon peak hours);
12. Trautwein Road/John F Kennedy Drive (a.m. peak hour only);
14. Trautwein Road/Orange Terrace Parkway (a.m. peak hour only);
16. Trautwein Road/Van Buren Boulevard (afternoon peak hour only);
18. Barton Street/Van Buren Boulevard (both a.m. and afternoon peak hours); and