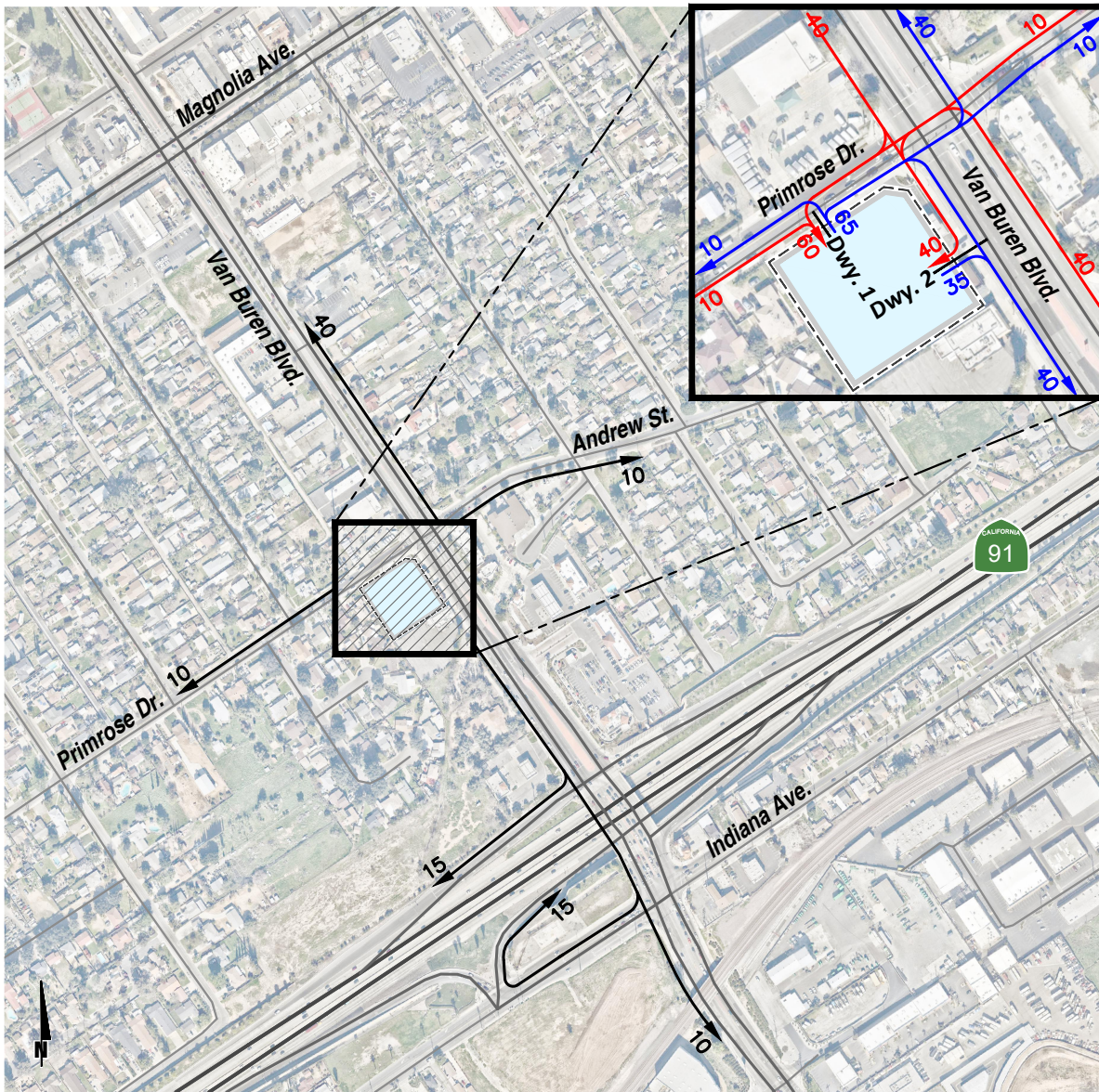


EXHIBIT 4 : PROJECT TRIP DISTRIBUTION



LEGEND:

- 10 = Percent To/From Project
- ➔ = Inbound
- ➔ = Outbound

EXHIBIT 5 : PROJECT TRAFFIC VOLUMES



LEGEND:

- 0** = Existing Intersection Analysis Location
- 0** = Future Intersection Analysis Location
- 00 (00) = Peak Hour Volume AM (PM)
- 00** = Average Daily Traffic (ADT)
- *** = Traffic Volumes Shown Here Are Total Net Trips

Table 1

Project Trip Generation Summary

Land Use ¹	ITE LU Code	Units ²	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Convenience Store/Gas Station - GFA (2-4k)	945	VFP	8.03	8.03	16.06	9.21	9.21	18.42	265.12

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

² TSF = thousand square feet

Project Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Convenience Store/Gas Station - GFA (2-4k)	12 VFP	96	96	192	111	111	222	3,182
Pass-By (76% AM; 75% PM/Daily) ² :		-73	-73	-146	-83	-83	-166	-2,388
Total Net Trips:		23	23	46	28	28	56	794

¹ VFP = Vehicle Fueling Positions

² Pass-by Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

APPENDIX 1.2: QUEUING ANALYSIS WORKSHEETS

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Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	47	150	162	119	134	167	150	164	76	153	240	752
Average Queue (ft)	8	71	79	45	78	76	103	119	27	44	180	342
95th Queue (ft)	32	127	140	90	124	153	164	172	62	108	316	608
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		0			0	1	2	5				
Queuing Penalty (veh)		0			0	4	10	23				
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	0	14	1	0	0	1				0	1	30
Queuing Penalty (veh)	0	1	1	0	0	1				0	3	200

Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	83	182	144	121	139	177	160	163	86	203	240	1418
Average Queue (ft)	15	100	68	36	112	111	105	123	32	102	236	1234
95th Queue (ft)	50	171	120	82	151	199	170	178	70	201	268	1744
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		2			5	8	4	8				34
Queuing Penalty (veh)		4			0	36	17	35				0
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	0	23	1	0	5	8				0	13	47
Queuing Penalty (veh)	1	3	0	0	17	20				2	55	396

Queuing and Blocking Report
 Cumulative (2045) Without Project - AM Peak Hour

7-Eleven TA (JN 16095)
 07/10/2024

Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	120	182	182	235	139	171	163	169	92	184	240	1433
Average Queue (ft)	27	104	103	67	103	116	125	136	28	74	228	1390
95th Queue (ft)	72	171	178	157	150	185	179	173	68	162	285	1544
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		2			3	7	8	13				54
Queuing Penalty (veh)		4			0	44	53	84				0
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	2	28	5	1	3	7				0	5	47
Queuing Penalty (veh)	4	7	5	1	14	14				1	27	487

Queuing and Blocking Report
 Cumulative (2045) Without Project - PM Peak Hour

7-Eleven TA (JN 16095)
 07/10/2024

Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	120	187	167	204	139	184	166	174	78	202	240	1437
Average Queue (ft)	38	137	106	71	126	151	129	138	29	109	236	1392
95th Queue (ft)	95	208	175	177	154	195	180	176	67	205	267	1520
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		6			12	22	8	14				58
Queuing Penalty (veh)		20			0	144	54	93				0
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	2	38	7	0	12	22				1	12	52
Queuing Penalty (veh)	5	12	7	0	60	82				3	72	606

Intersection: 2: Dwy. 1 & Primrose Dr.

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	115	93	67
Average Queue (ft)	13	13	28
95th Queue (ft)	69	52	55
Link Distance (ft)	181	176	330
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	120	183	190	203	139	180	172	175	87	199	240	1437
Average Queue (ft)	65	116	109	73	114	129	130	139	28	74	227	1402
95th Queue (ft)	125	193	171	148	152	192	179	176	68	168	287	1423
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		5			5	10	8	14				62
Queuing Penalty (veh)		14			0	64	52	88				0
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	12	31	4	1	5	10				0	6	51
Queuing Penalty (veh)	27	22	4	1	27	25				1	29	527

Intersection: 4: Van Buren Bl. & Dwy. 2

Movement	EB	NB	NB	NB
Directions Served	R	T	T	T
Maximum Queue (ft)	71	152	164	164
Average Queue (ft)	28	32	44	64
95th Queue (ft)	61	107	124	145
Link Distance (ft)	172	644	644	644
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 880

Intersection: 2: Dwy. 1 & Primrose Dr.

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	171	155	77
Average Queue (ft)	26	29	34
95th Queue (ft)	105	97	63
Link Distance (ft)	181	176	330
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Van Buren Bl. & Primrose Dr./Andrew St.

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	120	190	200	263	139	200	170	169	97	212	240	1425
Average Queue (ft)	80	145	112	82	131	154	129	137	32	119	232	1400
95th Queue (ft)	137	211	185	204	151	206	180	175	74	221	280	1419
Link Distance (ft)		176		447		140	140	140				1378
Upstream Blk Time (%)		7			25	39	10	15				61
Queuing Penalty (veh)		28			0	252	63	97				0
Storage Bay Dist (ft)	60		145		150				160	160	160	
Storage Blk Time (%)	24	40	9	1	25	39				1	16	53
Queuing Penalty (veh)	69	34	8	1	117	162				4	93	627

Intersection: 4: Van Buren Bl. & Dwy. 2

Movement	EB	NB	NB	NB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (ft)	78	331	245	232	18
Average Queue (ft)	34	133	72	76	1
95th Queue (ft)	63	288	185	176	9
Link Distance (ft)	172	644	644	644	140
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 1557

APPENDIX 3.1: TRAFFIC COUNTS

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Groups Printed- Total Volume

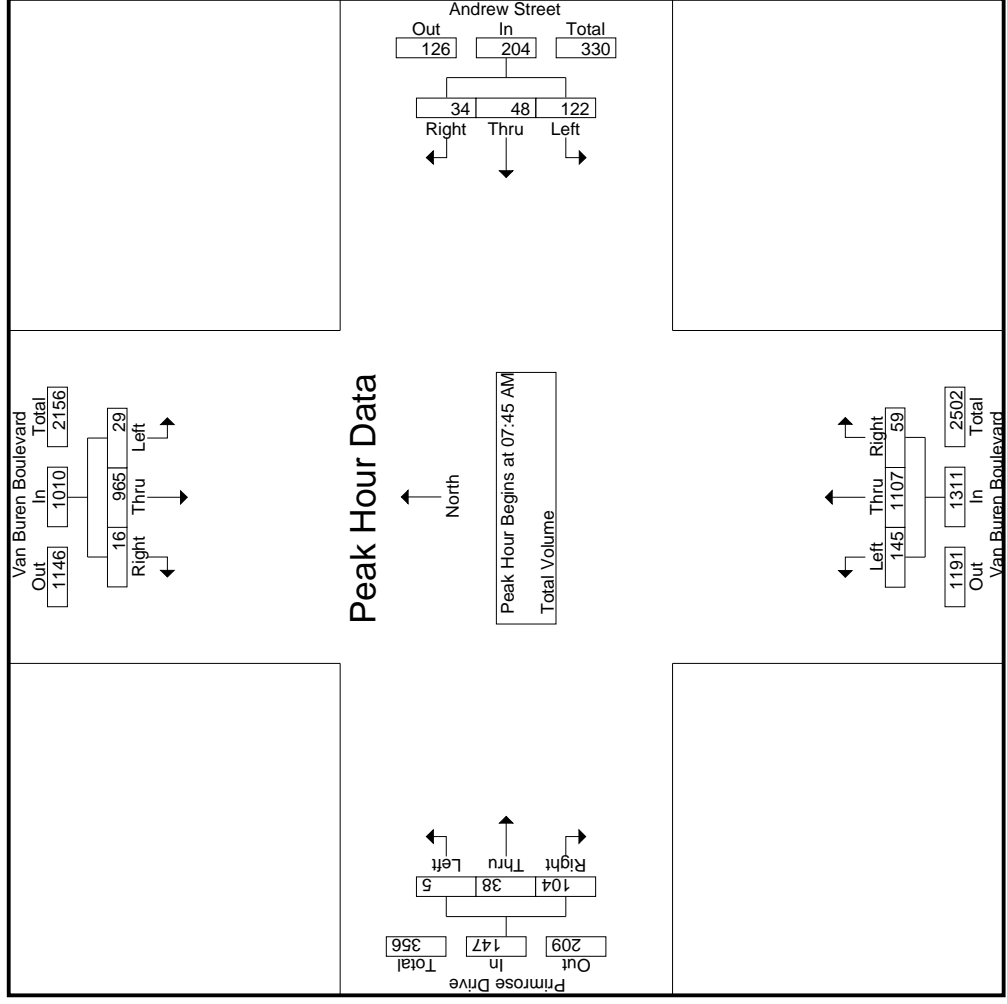
Start Time	Van Buren Boulevard Southbound						Andrew Street Westbound						Van Buren Boulevard Northbound						Primrose Drive Eastbound					
	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total
07:00 AM	3	223	1	0	227	227	22	4	3	2	29	29	22	252	3	2	277	277	1	5	26	14	32	32
07:15 AM	2	214	0	0	216	216	7	11	4	4	38	38	16	229	8	2	253	253	1	6	36	20	43	43
07:30 AM	4	234	1	0	239	239	7	4	4	4	31	31	23	271	10	2	304	304	4	13	33	11	50	50
07:45 AM	5	206	6	2	217	217	33	12	14	4	59	59	23	274	17	3	314	314	1	12	28	11	41	41
Total	14	877	8	2	899	899	95	30	32	14	157	157	84	1026	38	9	1148	1148	7	36	123	56	166	166
08:00 AM	12	268	5	0	285	285	27	10	10	5	47	47	34	312	13	2	359	359	4	8	31	11	43	43
08:15 AM	6	267	2	0	275	275	38	12	6	4	56	56	38	246	15	3	299	299	0	8	31	17	39	39
08:30 AM	6	224	3	0	233	233	24	14	4	2	42	42	50	275	14	3	339	339	0	10	14	6	24	24
08:45 AM	8	211	4	1	223	223	27	9	6	4	42	42	34	246	13	1	293	293	1	3	16	14	20	20
Total	32	970	14	1	1016	1016	116	45	26	15	187	187	156	1079	55	9	1290	1290	5	29	92	48	126	126
Grand Total	46	1847	22	3	1915	1915	211	75	58	29	344	344	240	2105	93	18	2438	2438	12	65	215	104	292	292
Approach %	2.4	96.4	1.1			61.3	21.8	16.9			6.9	9.8	86.3	3.8			48.9	4.1	22.3	73.6			5.9	3
Total %	0.9	37	0.4		38.4	4.2	1.5	1.2				4.8	42.2	1.9			48.9	0.2	1.3	4.3			5.9	97

Start Time	Van Buren Boulevard Southbound						Andrew Street Westbound						Van Buren Boulevard Northbound						Primrose Drive Eastbound					
	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total
07:45 AM	5	206	6	2	217	217	33	12	14	4	59	59	23	274	17	3	314	314	1	12	28	11	41	41
08:00 AM	12	268	5	0	285	285	27	10	10	5	47	47	34	312	13	2	359	359	4	8	31	11	43	43
08:15 AM	6	267	2	0	275	275	38	12	6	4	56	56	38	246	15	3	299	299	0	8	31	17	39	39
08:30 AM	6	224	3	0	233	233	24	14	4	2	42	42	50	275	14	3	339	339	0	10	14	6	24	24
Total Volume	29	965	16	1	1010	1010	122	48	34	4	204	204	145	1107	59	9	1311	1311	5	38	104	48	147	147
% App. Total	2.9	95.5	1.6		66.7	66.7	16.7	23.5	16.7	1.2	6.9	6.9	11.1	84.4	4.5	1.9	48.9	4.1	25.9	70.7			5.9	3
PHF	.604	.900	.667		.886	.886	.803	.857	.607	1.2	.864	.864	.725	.887	.868	1.9	.913	.855	.313	.792	.839	4.8	.855	.910

Counts Unlimited, Inc.
 PO Box 1178
 Corona, CA 92878
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Drive/Andrew Street
 Weather: Clear

File Name : T02_RIV_VB_Primary AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Drive/Andrew Street
 Weather: Clear

File Name : T02_RIV_VB_Prim AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 3

Start Time	Van Buren Boulevard Southbound			Andrew Street Westbound			Van Buren Boulevard Northbound			Primrose Drive Eastbound					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1															
Peak Hour for Each Approach Begins at:															
+0 mins.	4	234	1	33	12	14	59	23	274	17	314	1	6	36	43
+15 mins.	5	206	6	27	10	10	47	34	312	13	359	4	13	33	50
+30 mins.	12	268	5	38	12	6	56	38	246	15	299	1	12	28	41
+45 mins.	6	267	2	24	14	4	42	50	275	14	339	4	8	31	43
Total Volume	27	975	14	122	48	34	204	145	1107	59	1311	10	39	128	177
% App. Total	2.7	96	1.4	59.8	23.5	16.7	86.4	11.1	84.4	4.5	91.3	5.6	22	72.3	88.5
PHF	.563	.910	.583	.803	.857	.607	.864	.725	.887	.868	.913	.625	.750	.889	.885

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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Drive/Andrew Street
 Weather: Clear

File Name : T02_RIV_VB_Prims PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 1

Groups Printed- Total Volume

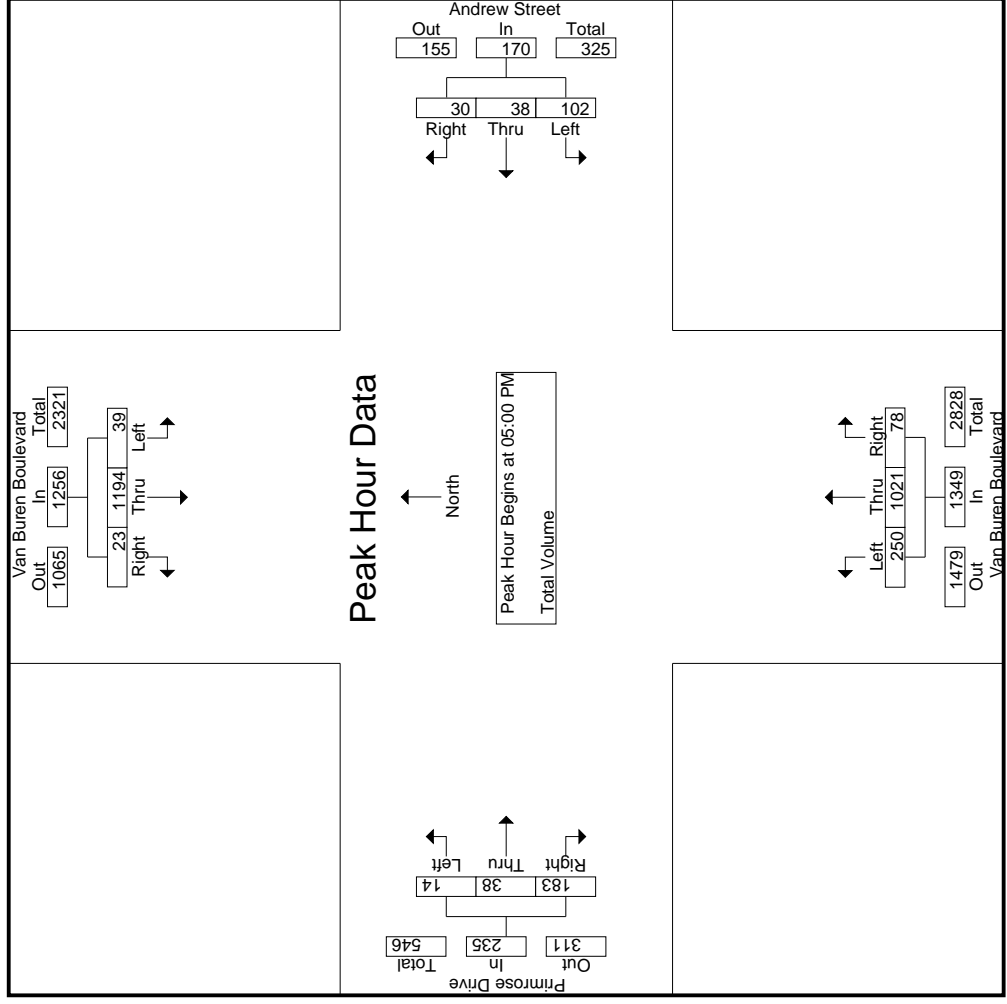
Start Time	Van Buren Boulevard Southbound					Andrew Street Westbound					Van Buren Boulevard Northbound					Primrose Drive Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	6	282	3	1	291	20	12	4	1	36	48	286	19	3	353	4	8	38	10	50	15	730	745
04:15 PM	9	291	6	1	306	15	10	4	2	29	49	254	12	1	315	11	5	33	12	49	16	699	715
04:30 PM	9	306	3	0	318	24	10	7	2	41	51	217	20	1	288	4	10	41	11	55	14	702	716
04:45 PM	13	263	5	0	281	25	11	8	5	44	58	260	25	5	343	5	7	33	11	45	21	713	734
Total	37	1142	17	2	1196	84	43	23	10	150	206	1017	76	10	1299	24	30	145	44	199	66	2844	2910
05:00 PM	5	333	8	0	346	28	14	6	2	48	47	259	16	6	322	4	3	33	11	40	19	756	775
05:15 PM	12	298	3	0	313	30	11	7	4	48	56	236	21	7	313	5	16	68	16	89	27	763	790
05:30 PM	8	277	4	0	289	23	9	9	5	41	80	271	22	1	373	1	7	44	18	52	24	755	779
05:45 PM	14	286	8	0	308	21	4	8	4	33	67	255	19	4	341	4	12	38	15	54	23	736	759
Total	39	1194	23	0	1256	102	38	30	15	170	250	1021	78	18	1349	14	38	183	60	235	93	3010	3103
Grand Total	76	2336	40	2	2452	186	81	53	25	320	456	2038	154	28	2648	38	68	328	104	434	159	5854	6013
Approach %	3.1	95.3	1.6			58.1	25.3	16.6		5.5	17.2	77	5.8		45.2	8.8	15.7	75.6		7.4	2.6	97.4	
Total %	1.3	39.9	0.7		41.9	3.2	1.4	0.9			7.8	34.8	2.6			0.6	1.2	5.6					

Start Time	Van Buren Boulevard Southbound					Andrew Street Westbound					Van Buren Boulevard Northbound					Primrose Drive Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
05:00 PM	5	333	8		346	28	14	6		48	47	259	16		322	4	3	33		40			756
05:15 PM	12	298	3		313	30	11	7		48	56	236	21		313	5	16	68		89			763
05:30 PM	8	277	4		289	23	9	9		41	80	271	22		373	1	7	44		52			755
05:45 PM	14	286	8		308	21	4	8		33	67	255	19		341	4	12	38		54			736
Total Volume	39	1194	23		1256	102	38	30		170	250	1021	78		1349	14	38	183		235			3010
% App. Total	3.1	95.1	1.8			60	22.4	17.6		5.8	18.5	75.7	5.8		16.2	6	16.2	77.9		7.9			.986
PHF	.696	.896	.719		.908	.850	.679	.833		.885	.781	.942	.886		.904	.700	.594	.673		.660			

Counts Unlimited, Inc.
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Drive/Andrew Street
 Weather: Clear

File Name : T02_RIV_VB_Primary PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



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 Corona, CA 92878
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Drive/Andrew Street
 Weather: Clear

File Name : T02_RIV_VB_Prim PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 3

Start Time	Van Buren Boulevard Southbound					Andrew Street Westbound					Van Buren Boulevard Northbound					Primrose Drive Eastbound					
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		
	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																				
Peak Hour for Each Approach Begins at:	04:30 PM																				
+0 mins.	9	306	3	318		24	10	7	41		58	260	25	343		05:00 PM	4	3	33	40	
+15 mins.	13	263	5	281		25	11	8	44		47	259	16	322		5	16	68	89		
+30 mins.	5	333	8	346		28	14	6	48		56	236	21	313		1	7	44	52		
+45 mins.	12	298	3	313		30	11	7	48		80	271	22	373		4	12	38	54		
Total Volume	39	1200	19	1258		107	46	28	181		241	1026	84	1351		14	38	183	235		
% App. Total	3.1	95.4	1.5			59.1	25.4	15.5			17.8	75.9	6.2			6	16.2	77.9			
PHF	.750	.901	.594	.909		.892	.821	.875	.943		.753	.946	.840	.905		.700	.594	.673	.660		

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Dr/Andrew St



Date: 5/22/2024
 Day: Wednesday

PEDESTRIANS

	North Leg Van Buren Boulevard Pedestrians	East Leg Andrew Street Pedestrians	South Leg Van Buren Boulevard Pedestrians	West Leg Primrose Drive Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	0	0	2	0	2
7:45 AM	4	0	0	0	4
8:00 AM	1	0	1	0	2
8:15 AM	1	2	0	0	3
8:30 AM	1	3	0	0	4
8:45 AM	0	1	0	0	1
TOTAL VOLUMES:	7	6	3	1	17

	North Leg Van Buren Boulevard Pedestrians	East Leg Andrew Street Pedestrians	South Leg Van Buren Boulevard Pedestrians	West Leg Primrose Drive Pedestrians	
4:00 PM	2	0	0	0	2
4:15 PM	1	0	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	1	2	1	4
5:00 PM	1	0	0	1	2
5:15 PM	0	0	2	0	2
5:30 PM	1	2	0	1	4
5:45 PM	1	1	1	0	3
TOTAL VOLUMES:	6	4	5	3	18

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: Primrose Dr/Andrew St



Date: 5/22/2024
 Day: Wednesday

BICYCLES

	Southbound Van Buren Boulevard			Westbound Andrew Street			Northbound Van Buren Boulevard			Eastbound Primrose Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
7:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	2	0	0	0	0	0	1	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	6	0	0	1	0	0	1	0	0	1	0	9

	Southbound Van Buren Boulevard			Westbound Andrew Street			Northbound Van Buren Boulevard			Eastbound Primrose Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	1	1	0	1	0	0	0	0	0	0	0	3
TOTAL VOLUMES:	0	1	1	0	2	0	0	0	0	0	0	0	4

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City of Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 Westbound Ramps
 Weather: Clear

File Name : T03_RIV_VB_91W AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 1

Groups Printed- Total Volume

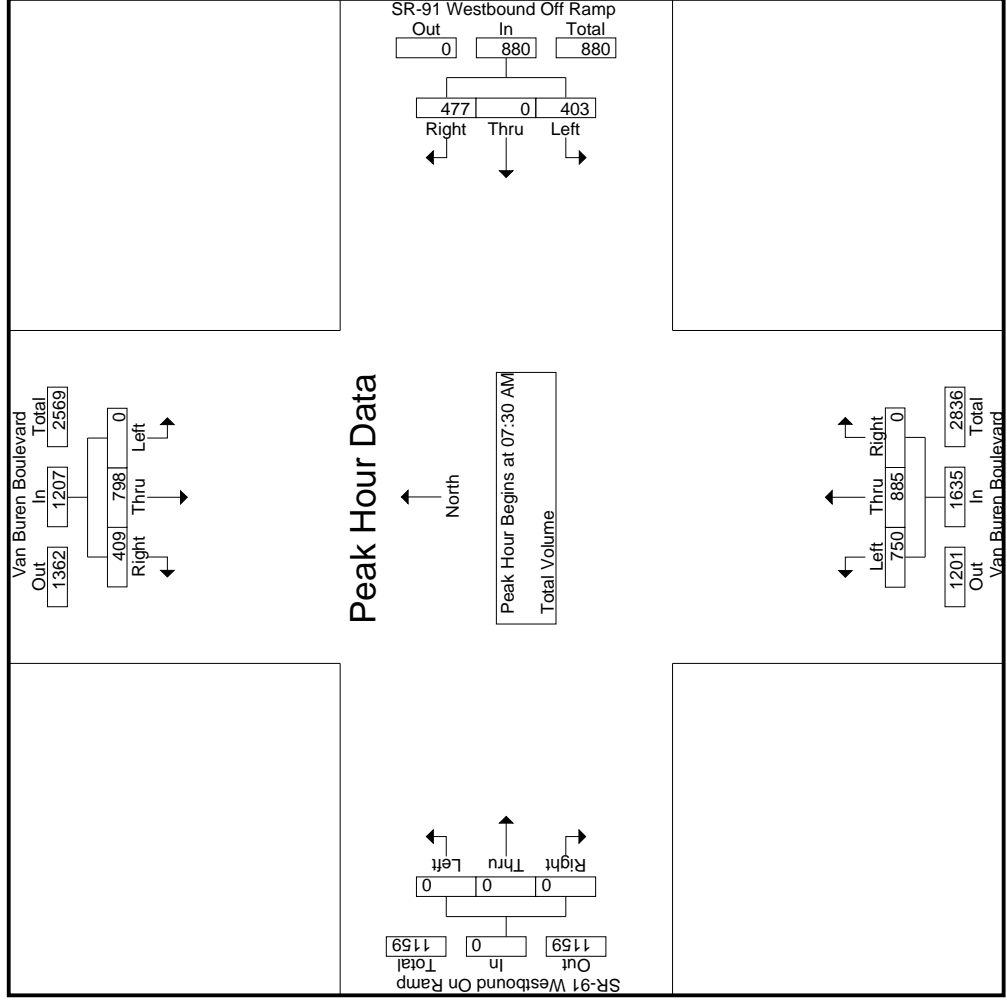
Start Time	Van Buren Boulevard Southbound						SR-91 Westbound Off Ramp Westbound						Van Buren Boulevard Northbound						SR-91 Westbound On Ramp Eastbound										
	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total
07:00 AM	0	181	89	22	270	270	58	0	91	64	149	149	205	193	0	0	398	398	0	0	0	0	0	0	86	817	903		
07:15 AM	0	175	87	18	262	262	79	0	92	59	171	171	188	180	0	0	368	368	0	0	0	0	0	0	77	801	878		
07:30 AM	0	203	102	33	305	305	80	0	112	62	192	192	162	223	0	0	385	385	0	0	0	0	0	0	95	882	977		
07:45 AM	0	167	77	27	244	244	114	0	127	60	241	241	187	218	0	0	405	405	0	0	0	0	0	0	87	890	977		
Total	0	726	355	100	1081	1081	331	0	422	245	753	753	742	814	0	0	1556	1556	0	0	0	0	0	0	345	3390	3735		
08:00 AM	0	216	115	19	331	331	113	0	119	72	232	232	198	222	0	0	420	420	0	0	0	0	0	0	91	983	1074		
08:15 AM	0	212	115	24	327	327	96	0	119	57	215	215	203	222	0	0	425	425	0	0	0	0	0	0	81	967	1048		
08:30 AM	0	184	96	17	280	280	62	0	106	64	168	168	207	222	0	0	429	429	0	0	0	0	0	0	81	877	958		
08:45 AM	0	177	92	14	269	269	100	0	117	56	217	217	181	160	0	0	341	341	0	0	0	0	0	0	70	827	897		
Total	0	789	418	74	1207	1207	371	0	461	249	832	832	789	826	0	0	1615	1615	0	0	0	0	0	0	323	3654	3977		
Grand Total	0	1515	773	174	2288	2288	702	0	883	494	1585	1585	1531	1640	0	0	3171	3171	0	0	0	0	0	0	668	7044	7712		
Approach %	0	66.2	33.8				44.3	0	55.7				48.3	51.7	0	0			0	0	0	0	0	0					
Total %	0	21.5	11		32.5		10	0	12.5		22.5		21.7	23.3	0	0	45		0	0	0	0	0	0	8.7	91.3			

Start Time	Van Buren Boulevard Southbound						SR-91 Westbound Off Ramp Westbound						Van Buren Boulevard Northbound						SR-91 Westbound On Ramp Eastbound										
	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total
07:30 AM	0	203	102	33	305	305	80	0	112	62	192	192	162	223	0	0	385	385	0	0	0	0	0	0	0	0	0		
07:45 AM	0	167	77	27	244	244	114	0	127	60	241	241	187	218	0	0	405	405	0	0	0	0	0	0	0	0	0		
08:00 AM	0	216	115	19	331	331	96	0	119	57	215	215	203	222	0	0	425	425	0	0	0	0	0	0	0	0	0		
08:15 AM	0	177	92	14	269	269	100	0	117	56	217	217	181	160	0	0	341	341	0	0	0	0	0	0	0	0	0		
Total Volume	0	798	409	74	1207	1207	403	0	477	245	753	753	750	885	0	0	1635	1635	0	0	0	0	0	0	0	0	0		
% App. Total	0	66.1	33.9				45.8	0	54.2				45.9	54.1	0	0			0	0	0	0	0	0	0	0	0		
PHF	.000	.924	.889		.912		.884	.000	.939		.913		.924	.992	.000	.962	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.947		

Counts Unlimited, Inc.
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 Westbound Ramps
 Weather: Clear

File Name : T03_RIV_VB_91W AM
 Site Code : 05124531
 Start Date : 5/22/2024
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 Westbound Ramps
 Weather: Clear

File Name : T03_RIV_VB_91W AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 3

Start Time	Van Buren Boulevard Southbound				SR-91 Westbound Off Ramp Westbound				Van Buren Boulevard Northbound				SR-91 Westbound On Ramp Eastbound					
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Each Approach Begins at:																		
+0 mins.	0	203	102	305	07:30 AM	80	0	112	192	07:45 AM	187	218	0	405	07:00 AM	0	0	0
+15 mins.	0	167	77	244	114	0	127	241	218	198	222	0	420	0	0	0	0	0
+30 mins.	0	216	115	331	113	0	119	232	203	203	222	0	425	0	0	0	0	0
+45 mins.	0	212	115	327	96	0	119	215	222	207	222	0	429	0	0	0	0	0
Total Volume	0	798	409	1207	403	0	477	880	884	795	884	0	1679	0	0	0	0	0
% App. Total	0	66.1	33.9		45.8	0	54.2		47.3	52.7	0			0	0	0	0	0
PHF	.000	.924	.889	.912	.884	.000	.939	.913	.960	.995	.000	.978	.000	.000	.000	.000	.000	.000

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City of Riverside
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File Name : T03_RIV_VB_91W_PM
 Site Code : 05124531
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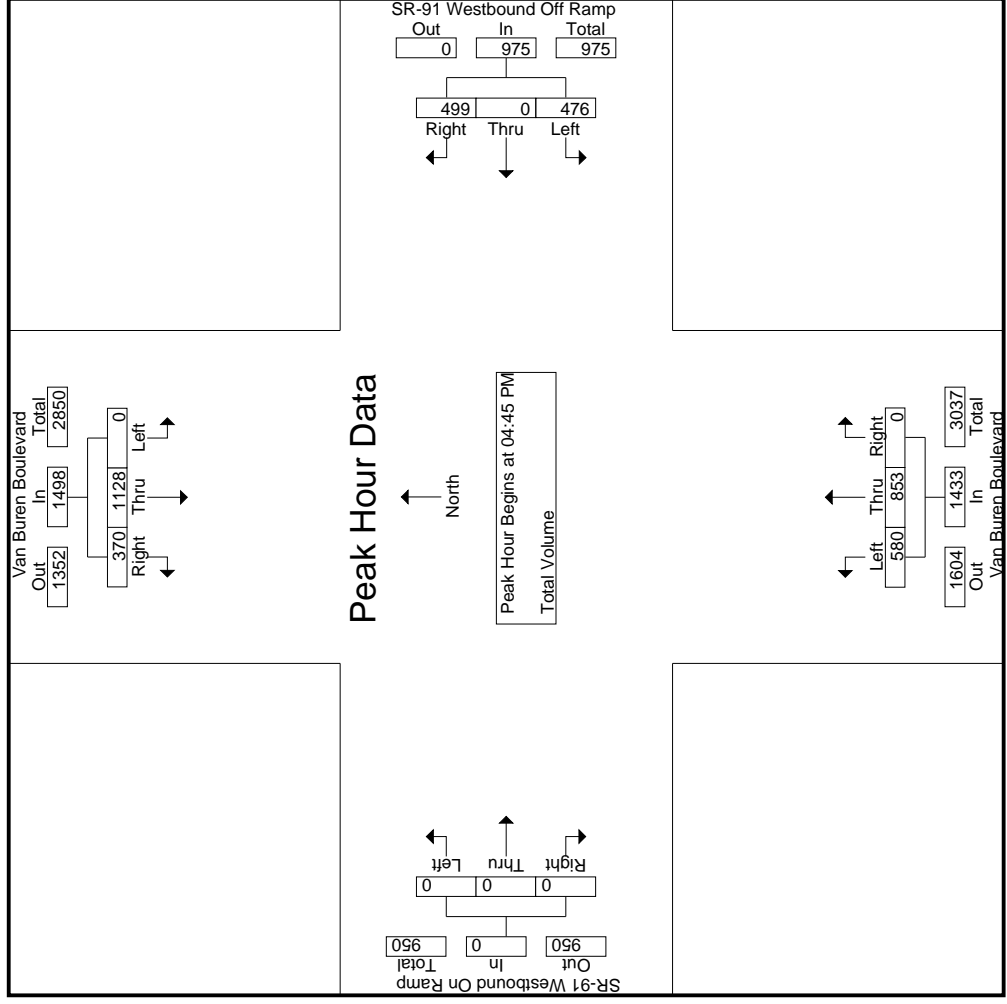
Groups Printed- Total Volume

Start Time	Van Buren Boulevard Southbound						SR-91 Westbound Off Ramp Westbound						Van Buren Boulevard Northbound						SR-91 Westbound On Ramp Eastbound											
	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Left	Thru	Right	RTOR	App. Total	Inclu. Total
04:00 PM	0	245	86	29	331	331	117	0	133	57	250	250	147	227	0	0	374	374	0	0	0	0	0	0	86	955	1041			
04:15 PM	0	248	97	20	345	345	117	1	116	47	234	234	144	208	0	0	352	352	0	0	0	0	0	0	67	931	998			
04:30 PM	0	282	84	21	366	366	115	0	126	68	241	241	129	172	0	0	301	301	0	0	0	0	0	0	89	908	997			
04:45 PM	0	247	84	27	331	331	118	0	134	65	252	252	156	227	0	0	383	383	0	0	0	0	0	0	92	966	1058			
Total	0	1022	351	97	1373	1373	467	1	509	237	977	977	576	834	0	0	1410	1410	0	0	0	0	0	0	334	3760	4094			
05:00 PM	0	297	94	35	391	391	118	0	124	61	242	242	130	199	0	0	329	329	0	0	0	0	0	0	96	962	1058			
05:15 PM	0	305	102	24	407	407	128	0	128	61	256	256	157	209	0	0	366	366	0	0	0	0	0	0	85	1029	1114			
05:30 PM	0	279	90	23	369	369	112	0	113	61	225	225	137	218	0	0	355	355	0	0	0	0	0	0	84	949	1033			
05:45 PM	0	281	77	25	358	358	130	0	119	51	249	249	122	219	0	0	341	341	0	0	0	0	0	0	76	948	1024			
Total	0	1162	363	107	1525	1525	488	0	484	234	972	972	546	845	0	0	1391	1391	0	0	0	0	0	0	341	3888	4229			
Grand Total	0	2184	714	204	2898	2898	955	1	993	471	1949	1949	1122	1679	0	0	2801	2801	0	0	0	0	0	0	675	7648	8323			
Approach %	0	75.4	24.6				49	0.1	50.9				40.1	59.9	0				0	0	0				8.1	91.9				
Total %	0	28.6	9.3		37.9		12.5	0	13		25.5		14.7	22	0		36.6		0	0	0				0	0	0			
Start Time	Van Buren Boulevard Southbound						SR-91 Westbound Off Ramp Westbound						Van Buren Boulevard Northbound						SR-91 Westbound On Ramp Eastbound											
04:45 PM	0	247	84		331	331	118	0	134		252	252	156	227	0		383	383	0	0	0				86	955	1041			
05:00 PM	0	297	94		391	391	118	0	124		242	242	130	199	0		355	355	0	0	0				84	949	1033			
05:15 PM	0	305	102		407	407	128	0	113		225	225	137	218	0		341	341	0	0	0				76	948	1024			
05:30 PM	0	279	90		369	369	112	0	119		249	249	122	219	0		1391	1391	0	0	0				341	3888	4229			
Total Volume	0	1128	370		1498	1498	476	0	499		975	975	580	853	0		1433	1433	0	0	0				675	7648	8323			
% App. Total	0	75.3	24.7				48.8	0	51.2				40.5	59.5	0				0	0	0				8.1	91.9				
PHF	.000	.925	.907		.920	.920	.930	.000	.931		.952	.952	.924	.939	.000		.935	.935	.000	.000	.000			.000	.000	.000	.949			

Counts Unlimited, Inc.
 PO Box 1178
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 Westbound Ramps
 Weather: Clear

File Name : T03_RIV_VB_91W_PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



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City of Riverside
 N/S: Van Buren Boulevard
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 Weather: Clear

File Name : T03_RIV_VB_91W_PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 3

Start Time	Van Buren Boulevard Southbound			SR-91 Westbound Off Ramp Westbound			Van Buren Boulevard Northbound			SR-91 Westbound On Ramp Eastbound							
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
+0 mins.	0	297	94	391	04:30 PM	0	126	241	04:45 PM	156	0	383	04:00 PM	0	0	0	0
+15 mins.	0	305	102	407	115	0	134	252	130	199	0	329	0	0	0	0	0
+30 mins.	0	279	90	369	118	0	124	242	157	209	0	366	0	0	0	0	0
+45 mins.	0	281	77	358	128	0	128	256	137	218	0	355	0	0	0	0	0
Total Volume	0	1162	363	1525	479	0	512	991	580	853	0	1433	0	0	0	0	0
% App. Total	0	76.2	23.8	937	48.3	0	51.7	968	40.5	59.5	0	935	0	0	0	0	0
PHF	.000	.952	.890	.937	.936	.000	.955	.968	.924	.939	.000	.935	.000	.000	.000	.000	.000

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 WB Ramps



Date: 5/22/2024
 Day: Wednesday

PEDESTRIANS

	North Leg Van Buren Boulevard Pedestrians	East Leg SR-91 WB Ramps Pedestrians	South Leg Van Buren Boulevard Pedestrians	West Leg SR-91 WB Ramps Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	1	0	0	1
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	1	1
8:30 AM	0	2	0	0	2
8:45 AM	1	1	0	1	3
TOTAL VOLUMES:	1	4	0	4	9

	North Leg Van Buren Boulevard Pedestrians	East Leg SR-91 WB Ramps Pedestrians	South Leg Van Buren Boulevard Pedestrians	West Leg SR-91 WB Ramps Pedestrians	
4:00 PM	0	0	0	1	1
4:15 PM	1	1	0	0	2
4:30 PM	0	0	0	5	5
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	1	1
5:15 PM	0	2	0	0	2
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	1	4	0	8	13

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: SR-91 WB Ramps



Date: 5/22/2024
 Day: Wednesday

BICYCLES

	Southbound Van Buren Boulevard			Westbound SR-91 WB Ramps			Northbound Van Buren Boulevard			Eastbound SR-91 WB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	0	1	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES:	0	2	0	0	0	0	0	4	0	0	0	0	6

	Southbound Van Buren Boulevard			Westbound SR-91 WB Ramps			Northbound Van Buren Boulevard			Eastbound SR-91 WB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
TOTAL VOLUMES:	0	2	0	0	0	0	0	6	0	0	0	0	8

Groups Printed- Total Volume

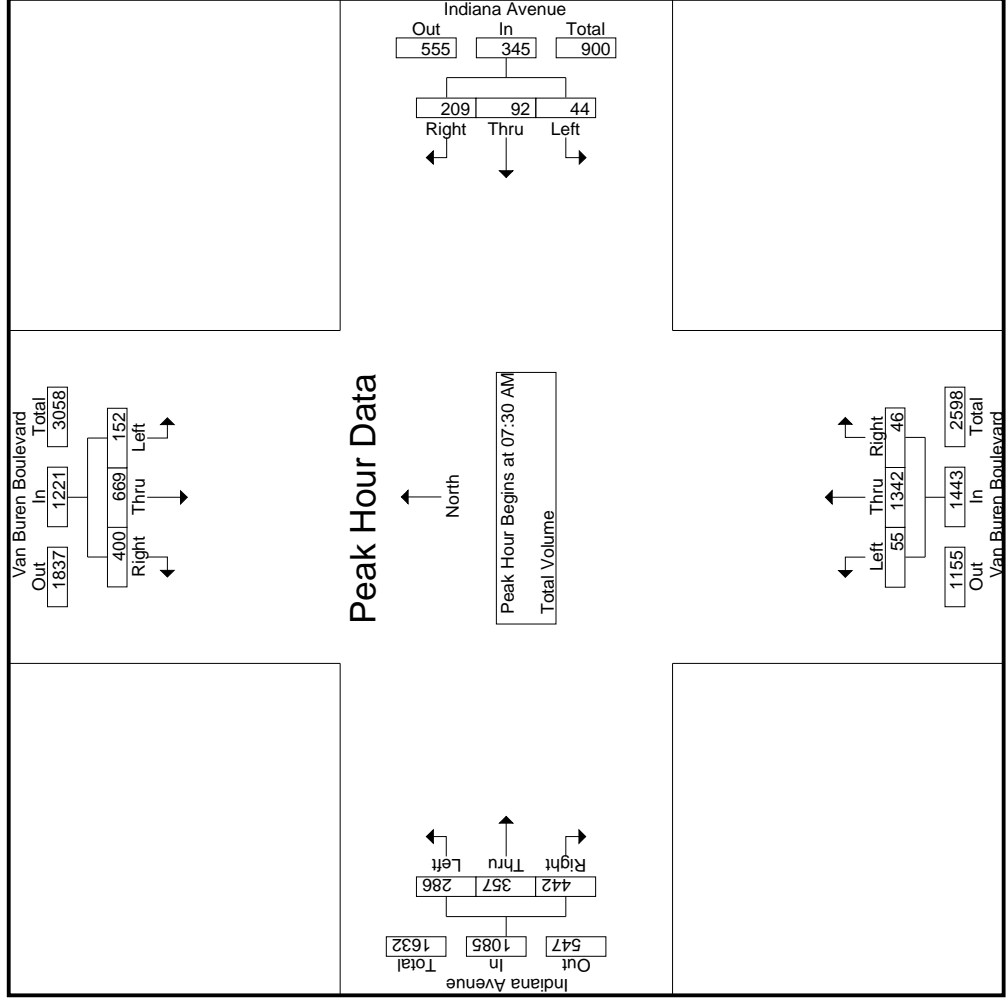
Start Time	Van Buren Boulevard Southbound					Indiana Avenue Westbound					Van Buren Boulevard Northbound					Indiana Avenue Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	20	128	98	31	246	7	28	49	6	84	4	384	8	0	396	37	39	102	53	178	90	904	994
07:15 AM	15	124	112	33	251	9	18	43	11	70	7	343	8	1	358	61	56	119	60	236	105	915	1020
07:30 AM	27	132	116	35	275	6	25	42	2	73	20	356	16	1	392	57	102	117	52	276	90	1016	1106
07:45 AM	38	160	94	30	292	14	20	51	4	85	12	320	11	0	343	77	99	111	65	287	99	1007	1106
Total	100	544	420	129	1064	36	91	185	23	312	43	1403	43	2	1489	232	296	449	230	977	384	3842	4226
08:00 AM	39	194	87	30	320	10	21	47	2	78	14	339	5	0	358	76	71	111	56	258	88	1014	1102
08:15 AM	48	183	103	32	334	14	26	69	3	109	9	327	14	0	350	76	85	103	57	264	92	1057	1149
08:30 AM	29	130	92	27	251	4	28	68	4	100	10	342	16	0	368	68	54	86	48	208	79	927	1006
08:45 AM	28	148	98	19	274	6	31	51	10	88	9	307	17	2	333	52	62	90	40	204	71	899	970
Total	144	655	380	108	1179	34	106	235	19	375	42	1315	52	2	1409	272	272	390	201	934	330	3897	4227
Grand Total	244	1199	800	237	2243	70	197	420	42	687	85	2718	95	4	2898	504	568	839	431	1911	714	7739	8453
Approach %	10.9	53.5	35.7			10.2	28.7	61.1		8.9	2.9	93.8	3.3		26.4	29.7	43.9						
Total %	3.2	15.5	10.3		29	0.9	2.5	5.4		8.9	1.1	35.1	1.2		6.5	7.3	10.8		24.7		8.4	91.6	

Start Time	Van Buren Boulevard Southbound					Indiana Avenue Westbound					Van Buren Boulevard Northbound					Indiana Avenue Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:30 AM	27	132	116	35	275	6	25	42	2	73	20	356	16	1	392	57	102	117	52	276			1016
07:45 AM	38	160	94	30	292	14	20	51	4	85	12	320	11	0	343	77	99	111	65	287			1007
08:00 AM	39	194	87	30	320	14	26	69	3	109	9	327	14	0	350	76	71	111	56	264			1014
08:15 AM	48	183	103	32	334	14	28	78	4	116	10	342	16	0	368	68	54	86	48	208			1057
Total Volume	152	669	400	122	1221	44	92	209	23	345	55	1342	46	2	1443	286	357	442	230	1085			4094
% App. Total	12.4	54.8	32.8		32.8	12.8	26.7	60.6		60.6	3.8	93	3.2		32.9	26.4	32.9	40.7		40.7			.968
PHF	.792	.862	.862		.914	.786	.885	.757		.791	.688	.942	.719		.920	.929	.875	.944		.945			

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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue
 Weather: Clear

File Name : T04_RIV_VB_Inci AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



Start Time	Van Buren Boulevard Southbound				Indiana Avenue Westbound				Van Buren Boulevard Northbound				Indiana Avenue Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																
	Peak Hour for Each Approach Begins at:																
	07:30 AM				08:00 AM				07:00 AM				07:30 AM				
+0 mins.	27	132	116	275	10	21	47	78	4	384	8	396	57	102	117	276	
+15 mins.	38	160	94	292	14	26	69	109	7	343	8	358	77	99	111	287	
+30 mins.	39	194	87	320	4	28	68	100	20	356	16	392	76	71	111	258	
+45 mins.	48	183	103	334	6	31	51	88	12	320	11	343	76	85	103	264	
Total Volume	152	669	400	1221	34	106	235	375	43	1403	43	1489	286	357	442	1085	
% App. Total	12.4	54.8	32.8		9.1	28.3	62.7		2.9	94.2	2.9		26.4	32.9	40.7		
PHF	.792	.862	.862	.914	.607	.855	.851	.860	.538	.913	.672	.940	.929	.875	.944	.945	

Counts Unlimited, Inc.
 PO Box 1178
 Corona, CA 92878
 (951) 268-6268

City of Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue
 Weather: Clear

File Name : T04_RIV_VB_Inci PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 1

Groups Printed- Total Volume

Start Time	Van Buren Boulevard Southbound					Indiana Avenue Westbound					Van Buren Boulevard Northbound					Indiana Avenue Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	35	220	106	38	361	6	40	50	6	96	12	292	24	0	328	81	115	183	88	379	132	1164	1296
04:15 PM	28	250	95	25	373	9	41	41	12	91	13	276	19	0	308	91	126	180	80	397	117	1169	1286
04:30 PM	32	240	119	32	391	12	42	30	7	84	9	223	10	2	242	81	116	196	58	393	99	1110	1209
04:45 PM	39	224	106	45	369	12	38	39	11	89	20	272	25	0	317	107	112	178	68	397	124	1172	1296
Total	134	934	426	140	1494	39	161	160	36	360	54	1063	78	2	1195	360	469	737	294	1566	472	4615	5087
05:00 PM	36	240	131	39	407	13	42	36	8	91	13	263	12	2	288	71	102	187	69	360	118	1146	1264
05:15 PM	48	268	126	62	442	24	37	45	5	106	14	262	13	2	289	103	112	193	83	408	152	1245	1397
05:30 PM	39	213	120	34	372	10	42	34	3	86	17	275	10	2	302	83	121	172	84	376	123	1136	1259
05:45 PM	41	233	141	64	415	12	38	34	5	84	20	262	7	0	289	83	109	170	66	362	135	1150	1285
Total	164	954	518	199	1636	59	159	149	21	367	64	1062	42	6	1168	340	444	722	302	1506	528	4677	5205
Grand Total	298	1888	944	339	3130	98	320	309	57	727	118	2125	120	8	2363	700	913	1459	596	3072	1000	9292	10292
Approach %	9.5	60.3	30.2			13.5	44	42.5		7.8	5	89.9	5.1		22.8	29.7	47.5						
Total %	3.2	20.3	10.2		33.7	1.1	3.4	3.3			1.3	22.9	1.3		7.5	9.8	15.7			33.1	9.7	90.3	

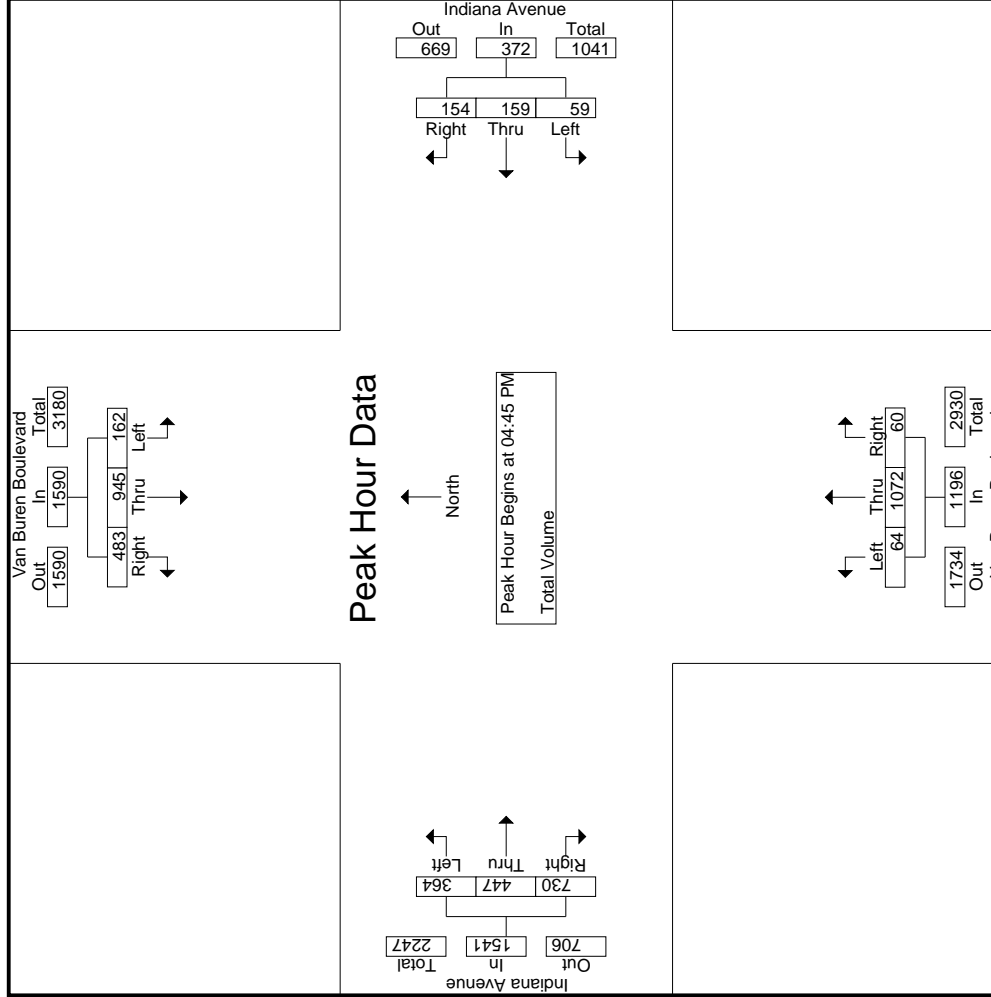
Start Time	Van Buren Boulevard Southbound					Indiana Avenue Westbound					Van Buren Boulevard Northbound					Indiana Avenue Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:45 PM	39	224	106		369	12	38	39		89	20	272	25		317	107	112	178		397			1172
05:00 PM	36	240	131		407	13	42	36		91	13	263	12		288	71	102	187		360			1146
05:15 PM	48	268	126		442	24	37	45		106	14	262	13		289	103	112	193		408			1245
05:30 PM	39	213	120		372	10	42	34		86	17	275	10		302	83	121	172		376			1136
Total Volume	162	945	483		1590	59	159	154		372	64	1072	60		1196	364	447	730		1541			4699
% App. Total	10.2	59.4	30.4		41.4	15.9	42.7	41.4		5	5.4	89.6	5		29	23.6	29	47.4		47.4			.944
PHF	.844	.882	.922		.899	.615	.946	.856		.877	.800	.975	.600		.943	.850	.924	.946		.944			

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

Counts Unlimited, Inc.
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue
 Weather: Clear

File Name : T04_RIV_VB_Inci PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



Counts Unlimited, Inc.
 PO Box 1178
 Corona, CA 92878
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City of Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue
 Weather: Clear

File Name : T04_RIV_VB_Inci PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 3

Start Time	Van Buren Boulevard Southbound					Indiana Avenue Westbound					Van Buren Boulevard Northbound					Indiana Avenue Eastbound				
	Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total		Left	Thru	Right	App. Total	Int. Total
	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Each Approach Begins at:																				
	05:00 PM					04:45 PM					04:45 PM					04:00 PM				
+0 mins.	36	240	131	407		12	38	39	89		20	272	25	317		81	115	183	379	
+15 mins.	48	268	126	442		13	42	36	91		13	263	12	288		91	126	180	397	
+30 mins.	39	213	120	372		24	37	45	106		14	262	13	289		81	116	196	393	
+45 mins.	41	233	141	415		10	42	34	86		17	275	10	302		107	112	178	397	
Total Volume	164	954	518	1636		59	159	154	372		64	1072	60	1196		360	469	737	1566	
% App. Total	10	58.3	31.7			15.9	42.7	41.4			5.4	89.6	5			23	29.9	47.1		
PHF	.854	.890	.918	.925		.615	.946	.856	.877		.800	.975	.600	.943		.841	.931	.940	.986	

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue



Date: 5/22/2024
 Day: Wednesday

PEDESTRIANS

	North Leg Van Buren Boulevard	East Leg Indiana Avenue	South Leg Van Buren Boulevard	West Leg Indiana Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	2	0	0	2
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	1	1
7:45 AM	1	3	0	1	5
8:00 AM	1	0	0	1	2
8:15 AM	1	0	0	0	1
8:30 AM	0	4	0	0	4
8:45 AM	0	0	0	1	1
TOTAL VOLUMES:	3	9	0	4	16

	North Leg Van Buren Boulevard	East Leg Indiana Avenue	South Leg Van Buren Boulevard	West Leg Indiana Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	1	2	0	0	3
4:15 PM	0	2	0	0	2
4:30 PM	3	3	0	3	9
4:45 PM	1	1	0	1	3
5:00 PM	0	1	0	0	1
5:15 PM	2	0	0	0	2
5:30 PM	1	0	0	0	1
5:45 PM	0	3	1	0	4
TOTAL VOLUMES:	8	12	1	4	25

Location: Riverside
 N/S: Van Buren Boulevard
 E/W: Indiana Avenue



Date: 5/22/2024
 Day: Wednesday

BICYCLES

	Southbound Van Buren Boulevard			Westbound Indiana Avenue			Northbound Van Buren Boulevard			Eastbound Indiana Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	3	0	0	0	1	0	0	0	0	0	0	4
7:45 AM	0	1	1	0	1	0	0	1	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	4	1	0	1	2	0	1	0	0	0	0	9

	Southbound Van Buren Boulevard			Westbound Indiana Avenue			Northbound Van Buren Boulevard			Eastbound Indiana Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
5:00 PM	1	0	0	0	0	1	0	1	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	1	0	0	0	0	0	0	0	0	0	0	2
TOTAL VOLUMES:	2	1	0	0	1	2	0	3	1	0	1	1	12

City of Riverside
 N/S: SR-91 Eastbound Ramps
 E/W: Indiana Avenue
 Weather: Clear

File Name : T05_RIV_91E_Indi AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 1

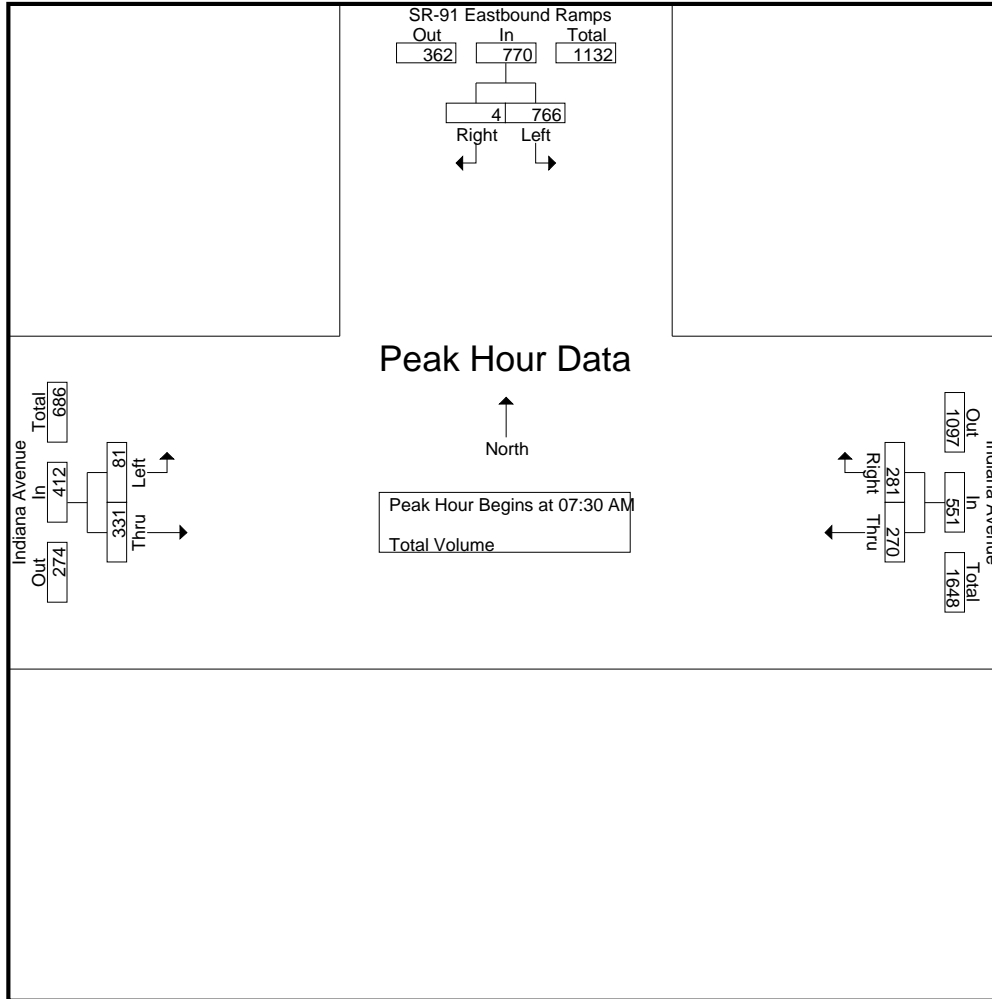
Groups Printed- Total Volume

Start Time	SR-91 Eastbound Ramps Southbound				Indiana Avenue Westbound				Indiana Avenue Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Left	Thru	RTOR	App. Total			
07:00 AM	149	1	0	150	51	71	35	122	17	31	0	48	35	320	355
07:15 AM	186	0	0	186	57	85	40	142	21	55	0	76	40	404	444
07:30 AM	170	0	0	170	68	93	26	161	31	101	0	132	26	463	489
07:45 AM	200	1	1	201	64	70	28	134	21	89	0	110	29	445	474
Total	705	2	1	707	240	319	129	559	90	276	0	366	130	1632	1762
08:00 AM	200	1	0	201	60	58	26	118	11	61	0	72	26	391	417
08:15 AM	196	2	0	198	78	60	32	138	18	80	0	98	32	434	466
08:30 AM	156	2	0	158	69	64	33	133	8	46	0	54	33	345	378
08:45 AM	172	2	0	174	73	57	8	130	19	44	0	63	8	367	375
Total	724	7	0	731	280	239	99	519	56	231	0	287	99	1537	1636
Grand Total	1429	9	1	1438	520	558	228	1078	146	507	0	653	229	3169	3398
Apprch %	99.4	0.6			48.2	51.8			22.4	77.6					
Total %	45.1	0.3		45.4	16.4	17.6		34	4.6	16		20.6	6.7	93.3	

Start Time	SR-91 Eastbound Ramps Southbound			Indiana Avenue Westbound			Indiana Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:30 AM	170	0	170	68	93	161	31	101	132	463
07:45 AM	200	1	201	64	70	134	21	89	110	445
08:00 AM	200	1	201	60	58	118	11	61	72	391
08:15 AM	196	2	198	78	60	138	18	80	98	434
Total Volume	766	4	770	270	281	551	81	331	412	1733
% App. Total	99.5	0.5		49	51		19.7	80.3		
PHF	.958	.500	.958	.865	.755	.856	.653	.819	.780	.936

City of Riverside
 N/S: SR-91 Eastbound Ramps
 E/W: Indiana Avenue
 Weather: Clear

File Name : T05_RIV_91E_Indi AM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:00 AM			07:30 AM		
+0 mins.	170	0	170	51	71	122	31	101	132
+15 mins.	200	1	201	57	85	142	21	89	110
+30 mins.	200	1	201	68	93	161	11	61	72
+45 mins.	196	2	198	64	70	134	18	80	98
Total Volume	766	4	770	240	319	559	81	331	412
% App. Total	99.5	0.5		42.9	57.1		19.7	80.3	
PHF	.958	.500	.958	.882	.858	.868	.653	.819	.780

City of Riverside
 N/S: SR-91 Eastbound Ramps
 E/W: Indiana Avenue
 Weather: Clear

File Name : T05_RIV_91E_Indi PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 1

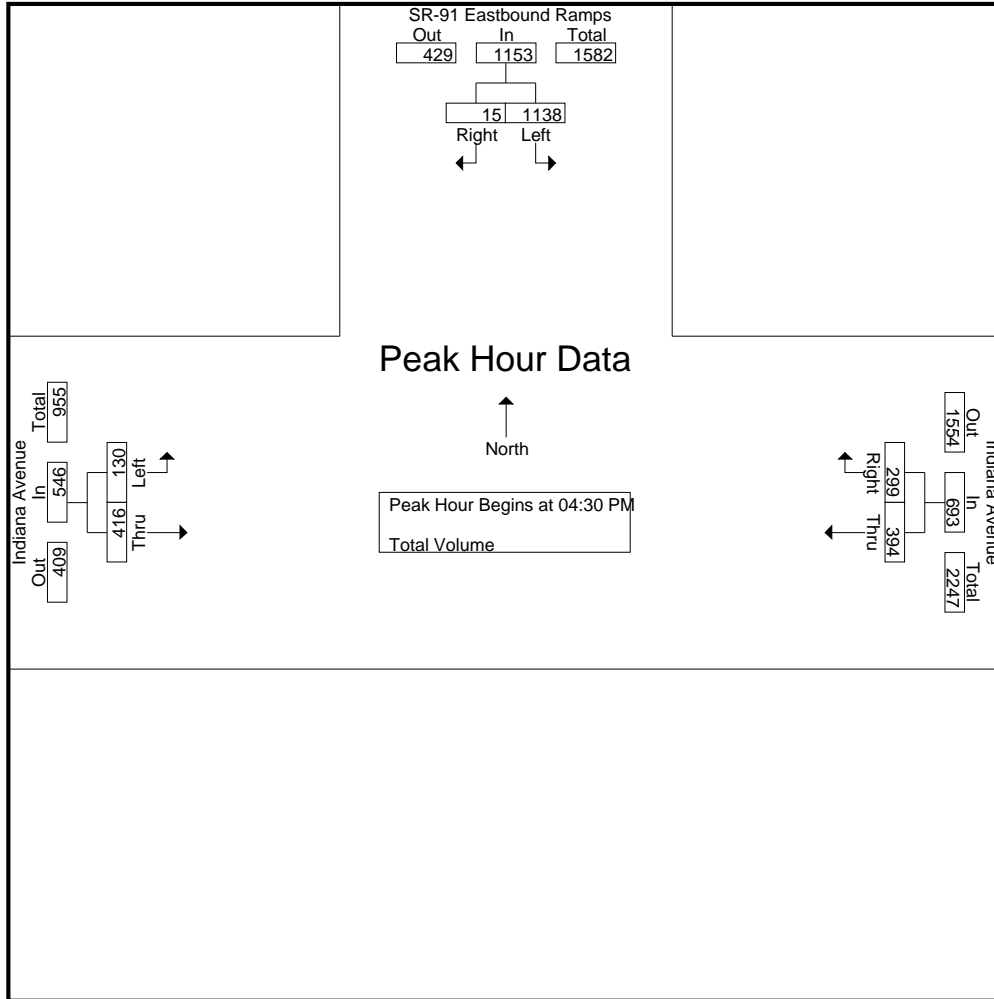
Groups Printed- Total Volume

Start Time	SR-91 Eastbound Ramps Southbound				Indiana Avenue Westbound				Indiana Avenue Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Left	Thru	RTOR	App. Total			
04:00 PM	287	5	0	292	89	61	27	150	30	111	0	141	27	583	610
04:15 PM	246	1	0	247	94	62	8	156	21	129	0	150	8	553	561
04:30 PM	298	3	0	301	85	69	25	154	29	96	0	125	25	580	605
04:45 PM	288	3	0	291	110	61	18	171	35	112	0	147	18	609	627
Total	1119	12	0	1131	378	253	78	631	115	448	0	563	78	2325	2403
05:00 PM	264	2	0	266	105	86	17	191	39	99	0	138	17	595	612
05:15 PM	288	7	1	295	94	83	43	177	27	109	0	136	44	608	652
05:30 PM	259	2	0	261	88	77	40	165	22	107	0	129	40	555	595
05:45 PM	296	0	0	296	110	79	42	189	15	89	0	104	42	589	631
Total	1107	11	1	1118	397	325	142	722	103	404	0	507	143	2347	2490
Grand Total	2226	23	1	2249	775	578	220	1353	218	852	0	1070	221	4672	4893
Apprch %	99	1			57.3	42.7			20.4	79.6					
Total %	47.6	0.5		48.1	16.6	12.4		29	4.7	18.2		22.9	4.5	95.5	

Start Time	SR-91 Eastbound Ramps Southbound			Indiana Avenue Westbound			Indiana Avenue Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:30 PM	298	3	301	85	69	154	29	96	125	580
04:45 PM	288	3	291	110	61	171	35	112	147	609
05:00 PM	264	2	266	105	86	191	39	99	138	595
05:15 PM	288	7	295	94	83	177	27	109	136	608
Total Volume	1138	15	1153	394	299	693	130	416	546	2392
% App. Total	98.7	1.3		56.9	43.1		23.8	76.2		
PHF	.955	.536	.958	.895	.869	.907	.833	.929	.929	.982

City of Riverside
 N/S: SR-91 Eastbound Ramps
 E/W: Indiana Avenue
 Weather: Clear

File Name : T05_RIV_91E_Indi PM
 Site Code : 05124531
 Start Date : 5/22/2024
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			05:00 PM			04:00 PM		
+0 mins.	298	3	301	105	86	191	30	111	141
+15 mins.	288	3	291	94	83	177	21	129	150
+30 mins.	264	2	266	88	77	165	29	96	125
+45 mins.	288	7	295	110	79	189	35	112	147
Total Volume	1138	15	1153	397	325	722	115	448	563
% App. Total	98.7	1.3		55	45		20.4	79.6	
PHF	.955	.536	.958	.902	.945	.945	.821	.868	.938

Location: Riverside
 N/S: SR-91 EB Ramps
 E/W: Indiana Avenue



Date: 5/22/2024
 Day: Wednesday

PEDESTRIANS

	North Leg SR-91 EB Ramps	East Leg Indiana Avenue	South Leg Dead End	West Leg Indiana Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	1	0	1
7:45 AM	1	0	0	0	1
8:00 AM	1	0	1	0	2
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	2	0	2	0	4

	North Leg SR-91 EB Ramps	East Leg Indiana Avenue	South Leg Dead End	West Leg Indiana Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	2	0	0	0	2
4:30 PM	0	0	1	0	1
4:45 PM	1	0	0	0	1
5:00 PM	1	0	0	0	1
5:15 PM	1	0	0	0	1
5:30 PM	1	0	1	1	3
5:45 PM	0	0	2	0	2
TOTAL VOLUMES:	6	0	4	1	11

Location: Riverside
 N/S: SR-91 EB Ramps
 E/W: Indiana Avenue



Date: 5/22/2024
 Day: Wednesday

BICYCLES

	Southbound SR-91 EB Ramps			Westbound Indiana Avenue			Northbound Dead End			Eastbound Indiana Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	2	0	0	0	0	0	2	0	4

	Southbound SR-91 EB Ramps			Westbound Indiana Avenue			Northbound Dead End			Eastbound Indiana Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	4	0	5

Counts Unlimited, Inc.

City of Riverside
 Van Buren Boulevard
 S/ Andrew Street
 24 Hour Directional Volume Count

PO Box 1178
 Corona, CA 92878
 (951) 268-6268
 email: counts@countsunlimited.com

RIV001
 Site Code: 051-24531

Start Time	5/22/24 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		105	326			62	281				
12:15		80	277			59	306				
12:30		49	331			57	309				
12:45		51	311	285	1245	48	310	226	1206	511	2451
01:00		55	317			34	285				
01:15		41	300			28	351				
01:30		28	331			33	309				
01:45		41	330	165	1278	24	315	119	1260	284	2538
02:00		29	355			33	350				
02:15		32	365			34	357				
02:30		29	355			32	325				
02:45		44	404	134	1479	50	335	149	1367	283	2846
03:00		29	312			59	328				
03:15		40	336			68	370				
03:30		50	306			90	339				
03:45		58	366	177	1320	102	293	319	1330	496	2650
04:00		58	353			116	340				
04:15		78	315			178	339				
04:30		164	288			179	371				
04:45		88	343	388	1299	191	321	664	1371	1052	2670
05:00		109	322			163	394				
05:15		122	313			183	396				
05:30		158	373			199	344				
05:45		169	341	558	1349	179	345	724	1479	1282	2828
06:00		194	352			212	345				
06:15		210	322			212	331				
06:30		256	267			246	319				
06:45		260	301	920	1242	237	288	907	1283	1827	2525
07:00		277	233			271	315				
07:15		253	272			270	279				
07:30		304	248			287	295				
07:45		314	245	1148	998	267	257	1095	1146	2243	2144
08:00		359	257			326	274				
08:15		299	189			336	246				
08:30		339	228			262	243				
08:45		293	205	1290	879	254	241	1178	1004	2468	1883
09:00		257	196			240	199				
09:15		244	175			238	194				
09:30		228	177			264	179				
09:45		277	150	1006	698	223	152	965	724	1971	1422
10:00		262	152			240	158				
10:15		253	138			276	145				
10:30		232	135			244	154				
10:45		265	123	1012	548	250	105	1010	562	2022	1110
11:00		277	114			277	115				
11:15		286	92			270	97				
11:30		250	85			291	119				
11:45		276	108	1089	399	289	67	1127	398	2216	797
Total		8172	12734	8172	12734	8483	13130	8483	13130	16655	25864
Combined Total		20906		20906		21613		21613		42519	
AM Peak	-	07:45	-	-	-	07:30	-	-	-	-	-
Vol.	-	1311	-	-	-	1216	-	-	-	-	-
P.H.F.		0.913				0.905					
PM Peak	-	-	02:00	-	-	-	04:30	-	-	-	-
Vol.	-	-	1479	-	-	-	1482	-	-	-	-
P.H.F.			0.915				0.936				
Percentage		39.1%	60.9%			39.2%	60.8%				
ADT/AADT		ADT 42,519		AADT 42,519							

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**APPENDIX 3.2: EXISTING (2024) CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Timings
1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
07/03/2024



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↘	↑↑	↑↑	↗	↘↘
Traffic Volume (vph)	81	331	270	281	766
Future Volume (vph)	81	331	270	281	766
Turn Type	Prot	NA	NA	pm+ov	Prot
Protected Phases	5	2	6	4	4
Permitted Phases				6	
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.5	49.5	10.0	10.0
Total Split (s)	21.0	74.0	53.0	56.0	56.0
Total Split (%)	16.2%	56.9%	40.8%	43.1%	43.1%
Yellow Time (s)	3.5	4.5	4.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
Act Effct Green (s)	11.6	82.1	66.0	103.9	37.4
Actuated g/C Ratio	0.09	0.63	0.51	0.80	0.29
v/c Ratio	0.54	0.16	0.16	0.23	0.83
Control Delay (s/veh)	68.8	10.7	23.5	0.8	50.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.8	10.7	23.5	0.8	50.8
LOS	E	B	C	A	D
Approach Delay (s/veh)		22.1	11.9		50.8
Approach LOS		C	B		D

Intersection Summary

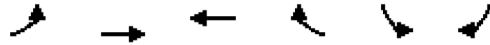
Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay (s/veh): 31.6
 Intersection LOS: C
 Intersection Capacity Utilization 75.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Indiana Av. & SR-91 EB Ramps



HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/03/2024



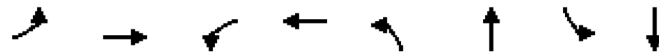
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗	↘↘	
Traffic Volume (veh/h)	81	331	270	281	766	4
Future Volume (veh/h)	81	331	270	281	766	4
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	352	287	159	815	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	109	2365	2026	1285	904	402
Arrive On Green	0.06	0.67	0.19	0.19	0.25	0.00
Sat Flow, veh/h	1781	3647	3647	1550	3563	1585
Grp Volume(v), veh/h	86	352	287	159	815	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1550	1781	1585
Q Serve(g_s), s	6.2	4.8	8.8	4.6	28.8	0.0
Cycle Q Clear(g_c), s	6.2	4.8	8.8	4.6	28.8	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	109	2365	2026	1285	904	402
V/C Ratio(X)	0.79	0.15	0.14	0.12	0.90	0.00
Avail Cap(c_a), veh/h	226	2365	2026	1285	1398	622
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.92	1.00	0.00
Uniform Delay (d), s/veh	60.2	8.1	26.2	4.6	46.9	0.0
Incr Delay (d2), s/veh	12.1	0.1	0.1	0.2	4.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.7	3.9	4.6	13.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	72.4	8.2	26.4	4.8	51.9	0.0
LnGrp LOS	E	A	C	A	D	
Approach Vol, veh/h		438	446		815	
Approach Delay, s/veh		20.8	18.7		51.9	
Approach LOS		C	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.0		38.0	12.4	79.6
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		68.5		51.0	16.5	47.5
Max Q Clear Time (g_c+I1), s		6.8		30.8	8.2	10.8
Green Ext Time (p_c), s		1.9		2.2	0.1	1.9

Intersection Summary	
HCM 7th Control Delay, s/veh	35.1
HCM 7th LOS	D

Notes
 User approved volume balancing among the lanes for turning movement.

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/03/2024

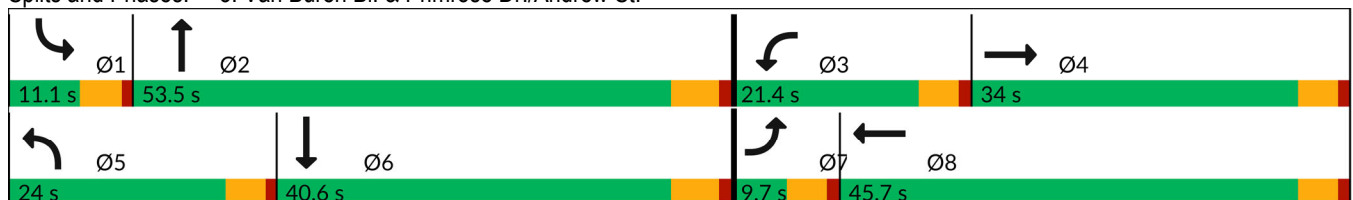


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	5	38	122	48	145	1107	29	965
Future Volume (vph)	5	38	122	48	145	1107	29	965
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	9.7	34.0	21.4	45.7	24.0	53.5	11.1	40.6
Total Split (%)	8.1%	28.3%	17.8%	38.1%	20.0%	44.6%	9.3%	33.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.3	13.3	11.1	27.9	12.4	37.2	6.0	25.9
Actuated g/C Ratio	0.06	0.16	0.13	0.34	0.15	0.45	0.07	0.31
v/c Ratio	0.04	0.44	0.57	0.15	0.60	0.57	0.25	0.68
Control Delay (s/veh)	48.2	17.2	47.5	16.6	46.6	19.8	49.2	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.2	17.2	47.5	16.6	46.6	19.8	49.2	28.6
LOS	D	B	D	B	D	B	D	C
Approach Delay (s/veh)		18.2		35.1		22.7		29.2
Approach LOS		B		D		C		C

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 82.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 25.9	Intersection LOS: C
Intersection Capacity Utilization 58.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	38	104	122	48	34	145	1107	59	29	965	16
Future Volume (veh/h)	5	38	104	122	48	34	145	1107	59	29	965	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	42	114	134	53	37	159	1216	65	32	1060	18
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	71	192	173	256	178	202	1989	106	61	1661	28
Arrive On Green	0.01	0.16	0.16	0.10	0.25	0.25	0.11	0.40	0.40	0.03	0.32	0.32
Sat Flow, veh/h	1781	445	1208	1781	1026	716	1781	4962	265	1781	5171	88
Grp Volume(v), veh/h	5	0	156	134	0	90	159	834	447	32	698	380
Grp Sat Flow(s),veh/h/ln	1781	0	1653	1781	0	1741	1781	1702	1823	1781	1702	1855
Q Serve(g_s), s	0.2	0.0	5.4	4.6	0.0	2.5	5.4	12.1	12.1	1.1	10.9	10.9
Cycle Q Clear(g_c), s	0.2	0.0	5.4	4.6	0.0	2.5	5.4	12.1	12.1	1.1	10.9	10.9
Prop In Lane	1.00		0.73	1.00		0.41	1.00		0.15	1.00		0.05
Lane Grp Cap(c), veh/h	12	0	263	173	0	434	202	1364	730	61	1094	596
V/C Ratio(X)	0.42	0.00	0.59	0.78	0.00	0.21	0.79	0.61	0.61	0.53	0.64	0.64
Avail Cap(c_a), veh/h	146	0	783	482	0	1153	557	2637	1412	186	1930	1051
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	24.3	27.4	0.0	18.5	26.8	14.8	14.8	29.5	18.0	18.0
Incr Delay (d2), s/veh	8.6	0.0	2.1	2.8	0.0	0.2	2.5	0.4	0.8	2.6	0.6	1.1
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	0.1	0.0	2.2	2.0	0.0	1.0	2.2	4.0	4.3	0.5	3.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.3	0.0	26.4	30.2	0.0	18.7	29.3	15.2	15.6	32.1	18.6	19.1
LnGrp LOS	D		C	C		B	C	B	B	C	B	B
Approach Vol, veh/h		161			224			1440			1110	
Approach Delay, s/veh		26.8			25.6			16.9			19.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	30.3	10.6	14.5	11.7	25.3	5.0	20.1				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	6.5	48.1	16.8	29.4	19.4	35.2	5.1	41.1				
Max Q Clear Time (g_c+I1), s	3.1	14.1	6.6	7.4	7.4	12.9	2.2	4.5				
Green Ext Time (p_c), s	0.0	10.1	0.1	0.9	0.1	7.1	0.0	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.0									
HCM 7th LOS			B									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

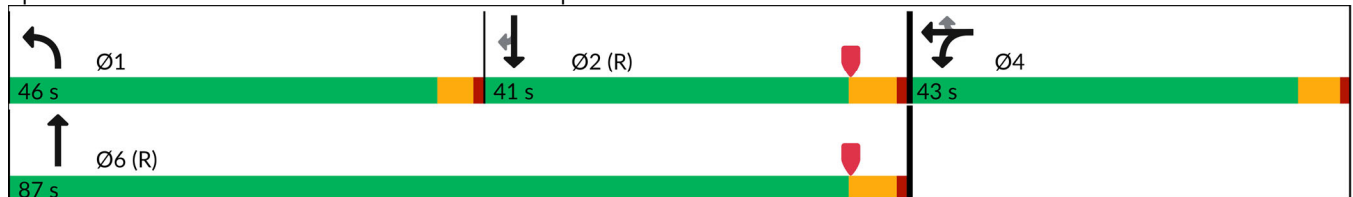
7-Eleven TA (JN 16095)
07/03/2024

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	411	0	477	750	885	814	409
Future Volume (vph)	411	0	477	750	885	814	409
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	43.0	43.0	43.0	46.0	87.0	41.0	41.0
Total Split (%)	33.1%	33.1%	33.1%	35.4%	66.9%	31.5%	31.5%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	31.3	31.3	31.3	35.0	88.2	48.6	48.6
Actuated g/C Ratio	0.24	0.24	0.24	0.27	0.68	0.37	0.37
v/c Ratio	0.81	0.75	0.64	0.86	0.27	0.36	0.51
Control Delay (s/veh)	61.6	45.2	26.8	68.0	11.2	32.1	5.7
Queue Delay	0.0	0.0	0.0	7.5	0.3	0.0	0.0
Total Delay (s/veh)	61.6	45.2	26.8	75.5	11.4	32.1	5.7
LOS	E	D	C	E	B	C	A
Approach Delay (s/veh)		45.0			40.8	23.3	
Approach LOS		D			D	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay (s/veh): 36.1 Intersection LOS: D
 Intersection Capacity Utilization 75.5% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	411	0	477	750	885	0	0	814	409
Future Volume (veh/h)	0	0	0	411	0	477	750	885	0	0	814	409
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				513	0	163	798	941	0	0	866	300
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				599	0	266	854	3836	0	0	3021	734
Arrive On Green				0.17	0.00	0.17	0.49	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1564
Grp Volume(v), veh/h				513	0	163	798	941	0	0	866	300
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1564
Q Serve(g_s), s				18.2	0.0	12.4	28.2	0.0	0.0	0.0	10.7	16.4
Cycle Q Clear(g_c), s				18.2	0.0	12.4	28.2	0.0	0.0	0.0	10.7	16.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				599	0	266	854	3836	0	0	3021	734
V/C Ratio(X)				0.86	0.00	0.61	0.93	0.25	0.00	0.00	0.29	0.41
Avail Cap(c_a), veh/h				1041	0	463	1103	3836	0	0	3021	734
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				52.6	0.0	50.1	31.9	0.0	0.0	0.0	21.1	22.6
Incr Delay (d2), s/veh				2.8	0.0	1.7	11.6	0.2	0.0	0.0	0.2	1.7
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.2	0.0	4.9	10.0	0.1	0.0	0.0	4.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				55.3	0.0	51.8	43.5	0.2	0.0	0.0	21.4	24.3
LnGrp LOS				E		D	D	A			C	C
Approach Vol, veh/h					676			1739			1166	
Approach Delay, s/veh					54.5			20.0			22.1	
Approach LOS					D			C			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	36.6	66.5		26.8		103.2						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	41.5	35.5		38.0		81.5						
Max Q Clear Time (g_c+I1), s	30.2	18.4		20.2		2.0						
Green Ext Time (p_c), s	1.9	5.3		1.7		6.1						

Intersection Summary		
HCM 7th Control Delay, s/veh		27.2
HCM 7th LOS		C

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved volume balancing among the lanes for turning movement.

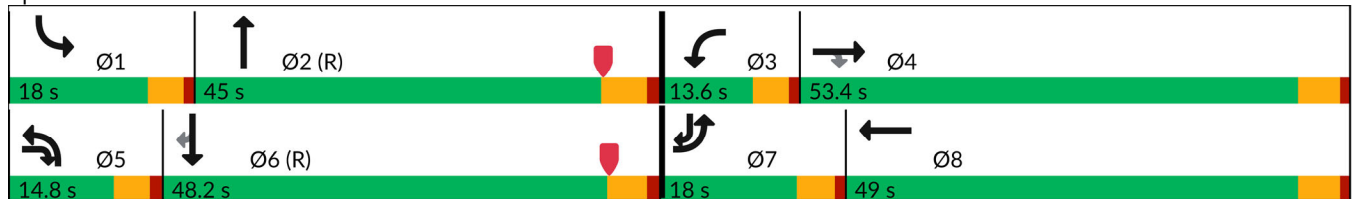
Timings
6: Van Buren Bl. & Indiana Av.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	289	361	447	44	92	55	1342	152	669	404
Future Volume (vph)	289	361	447	44	92	55	1342	152	669	404
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	18.0	53.4	14.8	13.6	49.0	14.8	45.0	18.0	48.2	18.0
Total Split (%)	13.8%	41.1%	11.4%	10.5%	37.7%	11.4%	34.6%	13.8%	37.1%	13.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	13.4	34.3	43.1	7.5	26.5	8.3	54.2	16.4	62.8	81.2
Actuated g/C Ratio	0.10	0.26	0.33	0.06	0.20	0.06	0.42	0.13	0.48	0.62
v/c Ratio	0.90	0.81	0.46	0.47	0.42	0.53	0.72	0.75	0.30	0.38
Control Delay (s/veh)	73.5	43.6	13.7	73.9	17.3	75.2	36.5	97.3	18.1	3.0
Queue Delay	50.2	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.4
Total Delay (s/veh)	123.7	43.9	13.7	73.9	17.5	75.2	36.5	97.3	18.1	3.4
LOS	F	D	B	E	B	E	D	F	B	A
Approach Delay (s/veh)		52.6			24.6		38.0		23.1	
Approach LOS		D			C		D		C	

Intersection Summary






























Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay (s/veh): 36.3
 Intersection LOS: D
 Intersection Capacity Utilization 74.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/03/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  		  	 	
Traffic Volume (veh/h)	289	361	447	44	92	209	55	1342	46	152	669	404
Future Volume (veh/h)	289	361	447	44	92	209	55	1342	46	152	669	404
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	318	397	81	48	101	151	60	1475	47	167	735	304
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	450	783	62	305	271	77	2392	76	185	2714	1007
Arrive On Green	0.03	0.08	0.08	0.03	0.17	0.17	0.04	0.47	0.47	0.03	0.18	0.18
Sat Flow, veh/h	3456	1870	2754	1781	1777	1580	1781	5079	162	1781	5106	1585
Grp Volume(v), veh/h	318	397	81	48	101	151	60	989	533	167	735	304
Grp Sat Flow(s),veh/h/ln	1728	1870	1377	1781	1777	1580	1781	1702	1837	1781	1702	1585
Q Serve(g_s), s	11.9	27.3	3.4	3.5	6.5	11.4	4.3	28.2	28.2	12.1	16.2	17.1
Cycle Q Clear(g_c), s	11.9	27.3	3.4	3.5	6.5	11.4	4.3	28.2	28.2	12.1	16.2	17.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	359	450	783	62	305	271	77	1603	865	185	2714	1007
V/C Ratio(X)	0.89	0.88	0.10	0.78	0.33	0.56	0.78	0.62	0.62	0.90	0.27	0.30
Avail Cap(c_a), veh/h	359	696	1146	125	601	535	141	1603	865	185	2714	1007
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	58.0	41.9	62.2	47.3	49.3	61.6	25.6	25.6	62.1	31.8	20.7
Incr Delay (d2), s/veh	17.1	5.6	0.0	7.5	0.5	1.3	6.2	1.8	3.3	39.2	0.2	0.8
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	6.4	14.4	1.1	1.7	2.9	4.5	2.1	11.2	12.5	7.8	7.4	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	79.1	63.6	41.9	69.8	47.8	50.7	67.8	27.4	28.9	101.3	32.0	21.5
LnGrp LOS	E	E	D	E	D	D	E	C	C	F	C	C
Approach Vol, veh/h		796			300			1582			1206	
Approach Delay, s/veh		67.6			52.8			29.5			39.0	
Approach LOS		E			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	66.7	9.0	36.3	10.1	74.6	18.0	27.3				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	13.5	39.5	9.1	48.4	10.3	* 43	13.5	44.0				
Max Q Clear Time (g_c+I1), s	14.1	30.2	5.5	29.3	6.3	19.1	13.9	13.4				
Green Ext Time (p_c), s	0.0	5.3	0.0	2.0	0.0	4.9	0.0	1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			42.0									
HCM 7th LOS			D									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
 1: Indiana Av. & SR-91 EB Ramps

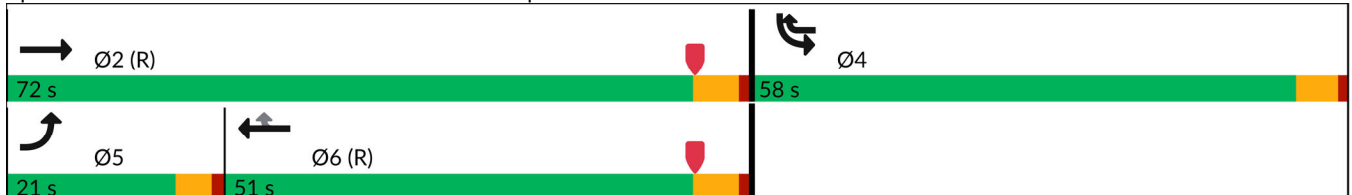


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↘↘
Traffic Volume (vph)	130	416	404	306	1138
Future Volume (vph)	130	416	404	306	1138
Turn Type	Prot	NA	NA	pm+ov	Prot
Protected Phases	5	2	6	4	4
Permitted Phases				6	
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.5	49.5	10.0	10.0
Total Split (s)	21.0	72.0	51.0	58.0	58.0
Total Split (%)	16.2%	55.4%	39.2%	44.6%	44.6%
Yellow Time (s)	3.5	4.5	4.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
Act Effct Green (s)	13.8	69.7	51.4	101.7	49.8
Actuated g/C Ratio	0.11	0.54	0.40	0.78	0.38
v/c Ratio	0.71	0.22	0.29	0.24	0.89
Control Delay (s/veh)	76.2	16.9	32.0	1.3	46.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.2	16.9	32.0	1.3	46.8
LOS	E	B	C	A	D
Approach Delay (s/veh)		31.1	18.8		46.8
Approach LOS		C	B		D

Intersection Summary

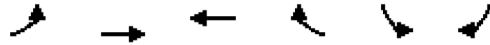
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 35.0	Intersection LOS: D
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Indiana Av. & SR-91 EB Ramps



HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

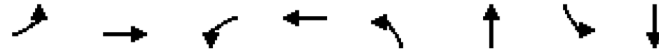
7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↗	↑↑	↑↑	↖	↘↘	
Traffic Volume (veh/h)	130	416	404	306	1138	15
Future Volume (veh/h)	130	416	404	306	1138	15
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	424	412	207	1175	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	158	2007	1568	1244	1262	562
Arrive On Green	0.09	0.56	0.15	0.15	0.35	0.00
Sat Flow, veh/h	1781	3647	3647	1547	3563	1585
Grp Volume(v), veh/h	133	424	412	207	1175	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1547	1781	1585
Q Serve(g_s), s	9.6	7.7	13.4	5.7	41.3	0.0
Cycle Q Clear(g_c), s	9.6	7.7	13.4	5.7	41.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	158	2007	1568	1244	1262	562
V/C Ratio(X)	0.84	0.21	0.26	0.17	0.93	0.00
Avail Cap(c_a), veh/h	226	2007	1568	1244	1452	646
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.90	0.90	1.00	0.00
Uniform Delay (d), s/veh	58.3	14.0	36.7	5.0	40.4	0.0
Incr Delay (d2), s/veh	15.2	0.2	0.4	0.3	9.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	3.0	6.5	6.5	19.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	73.5	14.2	37.1	5.3	50.3	0.0
LnGrp LOS	E	B	D	A	D	
Approach Vol, veh/h		557	619		1175	
Approach Delay, s/veh		28.4	26.5		50.3	
Approach LOS		C	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		78.9		51.1	16.1	62.9
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		66.5		53.0	16.5	45.5
Max Q Clear Time (g_c+I1), s		9.7		43.3	11.6	15.4
Green Ext Time (p_c), s		2.3		2.8	0.1	2.7
Intersection Summary						
HCM 7th Control Delay, s/veh			38.8			
HCM 7th LOS			D			
Notes						
User approved volume balancing among the lanes for turning movement.						

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/03/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	14	38	102	38	250	1021	39	1194
Future Volume (vph)	14	38	102	38	250	1021	39	1194
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	9.6	33.7	16.0	40.1	29.0	58.7	11.6	41.3
Total Split (%)	8.0%	28.1%	13.3%	33.4%	24.2%	48.9%	9.7%	34.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.2	13.5	9.3	26.2	17.3	45.9	6.3	30.0
Actuated g/C Ratio	0.06	0.15	0.10	0.29	0.19	0.51	0.07	0.33
v/c Ratio	0.14	0.56	0.56	0.13	0.75	0.43	0.32	0.73
Control Delay (s/veh)	52.3	15.2	55.6	18.3	50.9	16.0	53.6	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.3	15.2	55.6	18.3	50.9	16.0	53.6	30.6
LOS	D	B	E	B	D	B	D	C
Approach Delay (s/veh)		17.4		40.7		22.4		31.3
Approach LOS		B		D		C		C

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 90.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 26.8	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	38	183	102	38	30	250	1021	78	39	1194	23
Future Volume (veh/h)	14	38	183	102	38	30	250	1021	78	39	1194	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	38	124	103	38	15	253	1031	61	39	1206	23
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	59	192	133	267	105	300	2310	136	67	1742	33
Arrive On Green	0.02	0.15	0.15	0.07	0.21	0.21	0.17	0.47	0.47	0.04	0.34	0.34
Sat Flow, veh/h	1781	384	1252	1781	1269	501	1781	4930	291	1781	5156	98
Grp Volume(v), veh/h	14	0	162	103	0	53	253	712	380	39	796	433
Grp Sat Flow(s),veh/h/ln	1781	0	1636	1781	0	1769	1781	1702	1817	1781	1702	1850
Q Serve(g_s), s	0.6	0.0	6.7	4.1	0.0	1.8	9.9	10.1	10.1	1.6	14.6	14.6
Cycle Q Clear(g_c), s	0.6	0.0	6.7	4.1	0.0	1.8	9.9	10.1	10.1	1.6	14.6	14.6
Prop In Lane	1.00		0.77	1.00		0.28	1.00		0.16	1.00		0.05
Lane Grp Cap(c), veh/h	30	0	250	133	0	372	300	1595	851	67	1150	625
V/C Ratio(X)	0.46	0.00	0.65	0.78	0.00	0.14	0.84	0.45	0.45	0.58	0.69	0.69
Avail Cap(c_a), veh/h	124	0	661	282	0	871	603	2517	1343	173	1695	921
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	28.7	32.8	0.0	23.2	29.1	12.9	12.9	34.1	20.6	20.6
Incr Delay (d2), s/veh	4.1	0.0	2.8	3.7	0.0	0.2	2.5	0.2	0.4	3.0	0.8	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	0.3	0.0	2.8	1.9	0.0	0.7	4.1	3.3	3.6	0.7	5.3	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.2	0.0	31.5	36.4	0.0	23.3	31.6	13.1	13.2	37.1	21.4	22.0
LnGrp LOS	D		C	D		C	C	B	B	D	C	C
Approach Vol, veh/h		176			156			1345			1268	
Approach Delay, s/veh		32.1			32.0			16.6			22.1	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	39.2	10.0	15.6	16.7	29.8	5.8	19.8				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	7.0	53.3	11.4	29.1	24.4	35.9	5.0	35.5				
Max Q Clear Time (g_c+I1), s	3.6	12.1	6.1	8.7	11.9	16.6	2.6	3.8				
Green Ext Time (p_c), s	0.0	8.4	0.1	0.9	0.3	7.8	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh			20.7									
HCM 7th LOS			C									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
07/03/2024



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	476	0	499	580	853	1128	370
Future Volume (vph)	476	0	499	580	853	1128	370
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	49.0	49.0	49.0	39.0	81.0	42.0	42.0
Total Split (%)	37.7%	37.7%	37.7%	30.0%	62.3%	32.3%	32.3%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	34.2	34.2	34.2	27.9	85.3	52.9	52.9
Actuated g/C Ratio	0.26	0.26	0.26	0.21	0.66	0.41	0.41
v/c Ratio	0.81	0.78	0.65	0.83	0.27	0.46	0.45
Control Delay (s/veh)	58.3	48.4	28.7	69.8	11.9	30.7	5.0
Queue Delay	0.0	0.0	0.0	0.5	0.2	0.0	0.0
Total Delay (s/veh)	58.3	48.4	28.7	70.2	12.1	30.7	5.0
LOS	E	D	C	E	B	C	A
Approach Delay (s/veh)		45.6			35.7	24.4	
Approach LOS		D			D	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay (s/veh): 33.8 Intersection LOS: C
 Intersection Capacity Utilization 74.0% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	476	0	499	580	853	0	0	1128	370
Future Volume (veh/h)	0	0	0	476	0	499	580	853	0	0	1128	370
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				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
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				583	0	176	611	898	0	0	1187	274
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				673	0	300	669	3729	0	0	3231	795
Arrive On Green				0.19	0.00	0.19	0.39	1.00	0.00	0.00	0.50	0.50
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1583
Grp Volume(v), veh/h				583	0	176	611	898	0	0	1187	274
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1583
Q Serve(g_s), s				20.6	0.0	13.2	21.8	0.0	0.0	0.0	14.6	13.5
Cycle Q Clear(g_c), s				20.6	0.0	13.2	21.8	0.0	0.0	0.0	14.6	13.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				673	0	300	669	3729	0	0	3231	795
V/C Ratio(X)				0.87	0.00	0.59	0.91	0.24	0.00	0.00	0.37	0.34
Avail Cap(c_a), veh/h				1206	0	536	917	3729	0	0	3231	795
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				51.1	0.0	48.1	38.8	0.0	0.0	0.0	19.8	19.5
Incr Delay (d2), s/veh				2.7	0.0	1.4	10.0	0.2	0.0	0.0	0.3	1.2
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.2	0.0	5.2	8.2	0.1	0.0	0.0	5.4	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				53.8	0.0	49.5	48.8	0.2	0.0	0.0	20.1	20.7
LnGrp LOS				D		D	D	A			C	C
Approach Vol, veh/h					759			1509			1461	
Approach Delay, s/veh					52.8			19.9			20.2	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	29.6	70.8		29.6		100.4						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	34.5	36.5		44.0		75.5						
Max Q Clear Time (g_c+I1), s	23.8	16.6		22.6		2.0						
Green Ext Time (p_c), s	1.3	7.6		1.9		5.7						

Intersection Summary		
HCM 7th Control Delay, s/veh		26.7
HCM 7th LOS		C

Notes
 User approved volume balancing among the lanes for turning movement.

Timings
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/03/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	366	451	737	59	159	64	1072	163	954	487
Future Volume (vph)	366	451	737	59	159	64	1072	163	954	487
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	21.0	55.3	17.8	14.7	49.0	17.8	40.0	20.0	42.2	21.0
Total Split (%)	16.2%	42.5%	13.7%	11.3%	37.7%	13.7%	30.8%	15.4%	32.5%	16.2%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	16.6	39.2	53.6	8.4	29.1	9.3	48.6	16.3	56.0	73.1
Actuated g/C Ratio	0.13	0.30	0.41	0.06	0.22	0.07	0.37	0.13	0.43	0.56
v/c Ratio	0.89	0.86	0.63	0.56	0.39	0.54	0.64	0.78	0.46	0.47
Control Delay (s/veh)	69.8	38.2	13.2	76.9	20.3	72.8	38.1	100.1	20.1	3.5
Queue Delay	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3
Total Delay (s/veh)	69.8	38.5	13.2	76.9	20.4	72.8	38.1	100.1	20.1	3.8
LOS	E	D	B	E	C	E	D	F	C	A
Approach Delay (s/veh)		33.9			29.4		39.9		23.3	
Approach LOS		C			C		D		C	































Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay (s/veh): 31.4 Intersection LOS: C
 Intersection Capacity Utilization 75.2% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/03/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  		 	  	
Traffic Volume (veh/h)	366	451	737	59	159	154	64	1072	60	163	954	487
Future Volume (veh/h)	366	451	737	59	159	154	64	1072	60	163	954	487
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	480	461	63	169	135	68	1140	58	173	1015	327
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	439	552	959	81	412	308	87	1976	100	199	2354	931
Arrive On Green	0.04	0.10	0.10	0.05	0.21	0.21	0.05	0.40	0.40	0.04	0.15	0.15
Sat Flow, veh/h	3456	1870	2790	1781	1931	1446	1781	4969	253	1781	5106	1584
Grp Volume(v), veh/h	389	480	461	63	155	149	68	781	417	173	1015	327
Grp Sat Flow(s),veh/h/ln	1728	1870	1395	1781	1777	1600	1781	1702	1817	1781	1702	1584
Q Serve(g_s), s	14.6	32.9	19.1	4.6	9.7	10.5	4.9	23.3	23.3	12.6	23.4	18.7
Cycle Q Clear(g_c), s	14.6	32.9	19.1	4.6	9.7	10.5	4.9	23.3	23.3	12.6	23.4	18.7
Prop In Lane	1.00		1.00	1.00		0.90	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	439	552	959	81	379	341	87	1354	723	199	2354	931
V/C Ratio(X)	0.89	0.87	0.48	0.78	0.41	0.44	0.78	0.58	0.58	0.87	0.43	0.35
Avail Cap(c_a), veh/h	439	724	1215	140	601	542	182	1354	723	212	2354	931
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	56.2	43.9	61.4	44.1	44.4	61.1	30.6	30.6	61.6	39.6	23.4
Incr Delay (d2), s/veh	12.8	5.5	0.2	6.0	0.5	0.7	5.7	1.8	3.3	26.8	0.6	1.0
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	7.5	17.4	7.2	2.2	4.3	4.2	2.3	9.5	10.5	7.5	10.8	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	74.2	61.7	44.0	67.4	44.6	45.0	66.8	32.4	33.9	88.5	40.2	24.5
LnGrp LOS	E	E	D	E	D	D	E	C	C	F	D	C
Approach Vol, veh/h		1330			367			1266			1515	
Approach Delay, s/veh		59.2			48.7			34.7			42.3	
Approach LOS		E			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.1	57.2	10.4	43.3	10.8	65.4	21.0	32.7				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	15.5	34.5	10.2	50.3	13.3	* 37	16.5	44.0				
Max Q Clear Time (g_c+I1), s	14.6	25.3	6.6	34.9	6.9	25.4	16.6	12.5				
Green Ext Time (p_c), s	0.0	4.1	0.0	3.4	0.0	5.1	0.0	1.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			45.7									
HCM 7th LOS			D									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

APPENDIX 4.1: POST PROCESSING WORKSHEETS

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Project: Van Buren 7-Eleven TA
 Scenario: Horizon Year (2045) Without Project

Job #: 16095
 Analyst: RV
 Date: 6/28/24

LOCATION: SR-91 EB Ramps & Indiana Av.
 FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	969	1,036	67	7%	1,138	1,152	14	1%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	6	8	2	33%	15	14	-1	-7%
	SB Total	975	1,044	69	7%	1,153	1,166	13	1%
EAST BOUND	Left	112	109	-3	-3%	130	144	14	11%
	Through	521	584	63	12%	416	668	252	61%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	633	693	60	9%	546	812	266	49%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	504	742	238	47%	404	516	112	28%
	Right	458	471	13	3%	306	296	-10	-3%
	WB Total	962	1,213	251	26%	710	812	102	14%
TOTAL ENTERING VOLUME		2,570	2,950	380	15%	2,409	2,790	381	16%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,044	1,166			
North Leg	Outbound	580	440			
North Leg	TOTAL	1,624	1,606	9%	8%	18,955
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	TOTAL	0	0	#DIV/0!	#DIV/0!	-
East Leg	Inbound	1,213	812			
East Leg	Outbound	1,620	1,820			
East Leg	TOTAL	2,833	2,632	11%	10%	25,389
West Leg	Inbound	693	812			
West Leg	Outbound	750	530			
West Leg	TOTAL	1,443	1,342	14%	13%	10,015
OVERALL TOTAL		5,900	5,580	11%	10%	54,359

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Project: Van Buren 7-Eleven TA
 Scenario: Horizon Year (2045) Without Project

Job #: 16095
 Analyst: RV
 Date: 6/28/24

LOCATION: Van Buren Bl. & SR-91 WB Ramps
 FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	750	752	2	0%	580	698	118	20%
	Through	885	1,032	147	17%	853	979	126	15%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,635	1,784	149	9%	1,433	1,677	244	17%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	814	912	98	12%	1,128	1,196	68	6%
	Right	409	408	-1	0%	370	342	-28	-8%
	SB Total	1,223	1,320	97	8%	1,498	1,538	40	3%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	411	398	-13	-3%	476	564	88	18%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	477	478	1	0%	499	491	-8	-2%
	WB Total	888	876	-12	-1%	975	1,055	80	8%
TOTAL ENTERING VOLUME		3,746	3,980	234	6%	3,906	4,270	364	9%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,320	1,538			
North Leg	Outbound	1,510	1,470			
North Leg	TOTAL	2,830	3,008	7%	7%	43,037
South Leg	Inbound	1,784	1,677			
South Leg	Outbound	1,310	1,760			
South Leg	TOTAL	3,094	3,437	6%	7%	48,591
East Leg	Inbound	876	1,055			
East Leg	Outbound	0	0			
East Leg	TOTAL	876	1,055	8%	9%	11,339
West Leg	Inbound	0	0			
West Leg	Outbound	1,160	1,040			
West Leg	TOTAL	1,160	1,040	6%	5%	19,361
OVERALL TOTAL		7,960	8,540	7%	7%	122,328

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Project: Van Buren 7-Eleven TA
 Scenario: Horizon Year (2045) Without Project

Job #: 16095
 Analyst: RV
 Date: 6/28/24

LOCATION: Van Buren Bl. & Indiana Av.
 FORECAST YEAR: 2045

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	55	105	50	91%	64	71	7	11%
	Through	1,342	1,409	67	5%	1,072	1,196	124	12%
	Right	46	61	15	33%	60	63	3	5%
	NB Total	1,443	1,575	132	9%	1,196	1,330	134	11%
SOUTH BOUND	Left	152	129	-23	-15%	163	175	12	7%
	Through	669	675	6	1%	954	1,104	150	16%
	Right	404	498	94	23%	487	551	64	13%
	SB Total	1,225	1,302	77	6%	1,604	1,830	226	14%
EAST BOUND	Left	289	248	-41	-14%	366	433	67	18%
	Through	361	390	29	8%	451	503	52	12%
	Right	447	572	125	28%	737	884	147	20%
	EB Total	1,097	1,210	113	10%	1,554	1,820	266	17%
WEST BOUND	Left	44	73	29	66%	59	76	17	29%
	Through	92	187	95	103%	159	200	41	26%
	Right	209	233	24	11%	154	195	41	27%
	WB Total	345	493	148	43%	372	471	99	27%
TOTAL ENTERING VOLUME		4,110	4,580	470	11%	4,726	5,451	725	15%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,302	1,830			
North Leg	Outbound	1,890	1,824			
North Leg	TOTAL	3,192	3,654	7%	8%	44,507
South Leg	Inbound	1,575	1,330			
South Leg	Outbound	1,320	2,064			
South Leg	TOTAL	2,895	3,394	7%	8%	42,918
East Leg	Inbound	493	471			
East Leg	Outbound	580	741			
East Leg	TOTAL	1,073	1,212	9%	10%	11,639
West Leg	Inbound	1,210	1,820			
West Leg	Outbound	790	822			
West Leg	TOTAL	2,000	2,642	8%	10%	25,389
OVERALL TOTAL		9,160	10,902	7%	9%	124,453

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APPENDIX 5.1: BACKGROUND (2026) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Timings
1: Indiana Av. & SR-91 EB Ramps



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	102	477	445	416	889
Future Volume (vph)	102	477	445	416	889
Turn Type	Prot	NA	NA	pm+ov	Prot
Protected Phases	5	2	6	4	4
Permitted Phases				6	
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.5	49.5	10.0	10.0
Total Split (s)	21.0	85.0	64.0	45.0	45.0
Total Split (%)	16.2%	65.4%	49.2%	34.6%	34.6%
Yellow Time (s)	3.5	4.5	4.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
Act Effct Green (s)	13.3	77.9	60.1	102.2	41.6
Actuated g/C Ratio	0.10	0.60	0.46	0.79	0.32
v/c Ratio	0.60	0.24	0.29	0.34	0.86
Control Delay (s/veh)	68.9	13.1	27.5	1.8	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.9	13.1	27.5	1.8	50.3
LOS	E	B	C	A	D
Approach Delay (s/veh)		23.0	15.1		50.3
Approach LOS		C	B		D

Intersection Summary

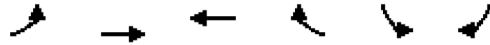
Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay (s/veh): 30.5 Intersection LOS: C
 Intersection Capacity Utilization 80.3% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Indiana Av. & SR-91 EB Ramps



HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



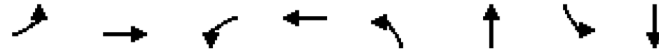
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↘↘↘	
Traffic Volume (veh/h)	102	477	445	416	889	4
Future Volume (veh/h)	102	477	445	416	889	4
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	507	473	303	946	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	134	2256	1866	1264	1013	451
Arrive On Green	0.08	0.63	0.17	0.17	0.28	0.00
Sat Flow, veh/h	1781	3647	3647	1549	3563	1585
Grp Volume(v), veh/h	109	507	473	303	946	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1549	1781	1585
Q Serve(g_s), s	7.8	7.9	15.0	9.0	33.6	0.0
Cycle Q Clear(g_c), s	7.8	7.9	15.0	9.0	33.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	134	2256	1866	1264	1013	451
V/C Ratio(X)	0.82	0.22	0.25	0.24	0.93	0.00
Avail Cap(c_a), veh/h	226	2256	1866	1264	1096	488
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	0.00
Uniform Delay (d), s/veh	59.2	10.1	31.7	5.6	45.3	0.0
Incr Delay (d2), s/veh	11.3	0.2	0.3	0.4	13.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.0	7.2	9.4	16.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	70.5	10.3	32.0	6.0	58.6	0.0
LnGrp LOS	E	B	C	A	E	
Approach Vol, veh/h		616	776		946	
Approach Delay, s/veh		21.0	21.8		58.6	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		42.0	14.3	73.8
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		79.5		40.0	16.5	58.5
Max Q Clear Time (g_c+I1), s		9.9		35.6	9.8	17.0
Green Ext Time (p_c), s		2.8		1.3	0.1	3.4
Intersection Summary						
HCM 7th Control Delay, s/veh			36.5			
HCM 7th LOS			D			

Notes

User approved volume balancing among the lanes for turning movement.

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/10/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	23	41	143	51	189	1473	41	1352
Future Volume (vph)	23	41	143	51	189	1473	41	1352
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	9.7	34.0	21.4	45.7	24.0	53.5	11.1	40.6
Total Split (%)	8.1%	28.3%	17.8%	38.1%	20.0%	44.6%	9.3%	33.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.1	13.8	12.5	27.5	15.3	49.7	6.1	35.9
Actuated g/C Ratio	0.05	0.14	0.13	0.28	0.16	0.51	0.06	0.37
v/c Ratio	0.27	0.59	0.69	0.21	0.74	0.66	0.41	0.80
Control Delay (s/veh)	56.9	20.7	58.6	18.9	57.3	21.5	59.3	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.9	20.7	58.6	18.9	57.3	21.5	59.3	33.3
LOS	E	C	E	B	E	C	E	C
Approach Delay (s/veh)		24.4		42.5		25.4		34.0
Approach LOS		C		D		C		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 97
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay (s/veh): 29.8
 Intersection LOS: C
 Intersection Capacity Utilization 72.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



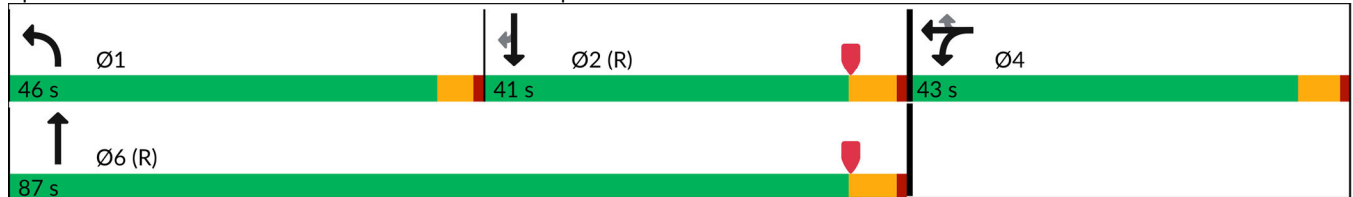
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	41	154	143	51	46	189	1473	76	41	1352	21
Future Volume (veh/h)	23	41	154	143	51	46	189	1473	76	41	1352	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	45	169	157	56	51	208	1619	84	45	1486	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	56	211	193	221	202	247	2300	119	69	1880	29
Arrive On Green	0.03	0.16	0.16	0.11	0.25	0.25	0.14	0.46	0.46	0.04	0.36	0.36
Sat Flow, veh/h	1781	344	1293	1781	902	821	1781	4970	258	1781	5180	80
Grp Volume(v), veh/h	25	0	214	157	0	107	208	1109	594	45	977	532
Grp Sat Flow(s),veh/h/ln	1781	0	1638	1781	0	1723	1781	1702	1824	1781	1702	1856
Q Serve(g_s), s	1.2	0.0	10.7	7.3	0.0	4.2	9.6	22.0	22.0	2.1	21.7	21.7
Cycle Q Clear(g_c), s	1.2	0.0	10.7	7.3	0.0	4.2	9.6	22.0	22.0	2.1	21.7	21.7
Prop In Lane	1.00		0.79	1.00		0.48	1.00		0.14	1.00		0.04
Lane Grp Cap(c), veh/h	47	0	268	193	0	423	247	1576	844	69	1235	674
V/C Ratio(X)	0.53	0.00	0.80	0.81	0.00	0.25	0.84	0.70	0.70	0.66	0.79	0.79
Avail Cap(c_a), veh/h	107	0	568	353	0	836	408	1933	1036	137	1415	771
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	0.0	34.1	36.9	0.0	25.7	35.6	18.1	18.1	40.2	24.1	24.1
Incr Delay (d2), s/veh	3.5	0.0	5.5	3.1	0.0	0.3	3.7	0.9	1.7	3.9	2.7	4.9
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	0.6	0.0	4.6	3.3	0.0	1.8	4.2	7.8	8.6	1.0	8.4	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.2	0.0	39.6	40.0	0.0	26.0	39.3	19.0	19.8	44.1	26.8	29.0
LnGrp LOS	D		D	D		C	D	B	B	D	C	C
Approach Vol, veh/h		239			264			1911			1554	
Approach Delay, s/veh		40.0			34.3			21.5			28.1	
Approach LOS		D			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	44.6	13.8	18.4	16.3	36.1	6.8	25.4				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	6.5	48.1	16.8	29.4	19.4	35.2	5.1	41.1				
Max Q Clear Time (g_c+I1), s	4.1	24.0	9.3	12.7	11.6	23.7	3.2	6.2				
Green Ext Time (p_c), s	0.0	12.9	0.1	1.2	0.2	7.0	0.0	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			26.0									
HCM 7th LOS			C									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	467	0	574	818	1133	1099	530
Future Volume (vph)	467	0	574	818	1133	1099	530
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	43.0	43.0	43.0	46.0	87.0	41.0	41.0
Total Split (%)	33.1%	33.1%	33.1%	35.4%	66.9%	31.5%	31.5%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	34.4	34.4	34.4	37.2	85.1	43.4	43.4
Actuated g/C Ratio	0.26	0.26	0.26	0.29	0.65	0.33	0.33
v/c Ratio	0.87	0.80	0.77	0.89	0.36	0.55	0.64
Control Delay (s/veh)	65.8	47.3	44.6	68.0	12.7	37.9	8.0
Queue Delay	0.1	0.0	0.0	49.7	0.4	0.0	0.0
Total Delay (s/veh)	65.9	47.3	44.6	117.7	13.1	37.9	8.0
LOS	E	D	D	F	B	D	A
Approach Delay (s/veh)		52.9			57.0	28.1	
Approach LOS		D			E	C	

Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay (s/veh): 45.9 Intersection LOS: D
 Intersection Capacity Utilization 87.4% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	467	0	574	818	1133	0	0	1099	530
Future Volume (veh/h)	0	0	0	467	0	574	818	1133	0	0	1099	530
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				605	0	232	870	1205	0	0	1169	429
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				696	0	310	921	3696	0	0	2719	661
Arrive On Green				0.20	0.00	0.20	0.53	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1564
Grp Volume(v), veh/h				605	0	232	870	1205	0	0	1169	429
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1564
Q Serve(g_s), s				21.4	0.0	17.9	30.8	0.0	0.0	0.0	16.7	28.4
Cycle Q Clear(g_c), s				21.4	0.0	17.9	30.8	0.0	0.0	0.0	16.7	28.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				696	0	310	921	3696	0	0	2719	661
V/C Ratio(X)				0.87	0.00	0.75	0.94	0.33	0.00	0.00	0.43	0.65
Avail Cap(c_a), veh/h				1041	0	463	1103	3696	0	0	2719	661
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				50.7	0.0	49.3	29.4	0.0	0.0	0.0	26.5	29.9
Incr Delay (d2), s/veh				4.7	0.0	2.7	13.8	0.2	0.0	0.0	0.5	4.9
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.7	0.0	7.2	10.7	0.1	0.0	0.0	6.3	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				55.4	0.0	52.0	43.3	0.2	0.0	0.0	27.0	34.8
LnGrp LOS				E		D	D	A			C	C
Approach Vol, veh/h					837			2075			1598	
Approach Delay, s/veh					54.4			18.3			29.1	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	39.2	60.4		30.4		99.6						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	41.5	35.5		38.0		81.5						
Max Q Clear Time (g_c+I1), s	32.8	30.4		23.4		2.0						
Green Ext Time (p_c), s	1.9	3.3		2.0		8.6						

Intersection Summary		
HCM 7th Control Delay, s/veh		28.8
HCM 7th LOS		C

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved volume balancing among the lanes for turning movement.

Timings
6: Van Buren Bl. & Indiana Av.

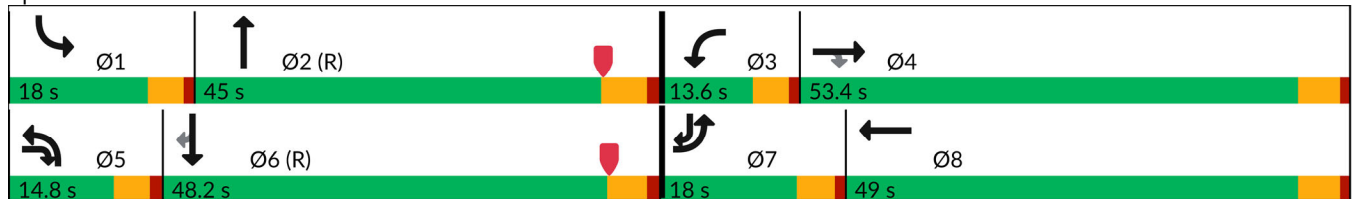
7-Eleven TA (JN 16095)
07/10/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	467	404	495	53	164	71	1439	174	766	626
Future Volume (vph)	467	404	495	53	164	71	1439	174	766	626
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	18.0	53.4	14.8	13.6	49.0	14.8	45.0	18.0	48.2	18.0
Total Split (%)	13.8%	41.1%	11.4%	10.5%	37.7%	11.4%	34.6%	13.8%	37.1%	13.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	13.5	37.3	47.1	7.8	29.7	9.3	47.6	19.7	58.5	77.0
Actuated g/C Ratio	0.10	0.29	0.36	0.06	0.23	0.07	0.37	0.15	0.45	0.59
v/c Ratio	1.44	0.83	0.49	0.55	0.53	0.62	0.88	0.72	0.37	0.60
Control Delay (s/veh)	246.3	44.7	17.0	78.4	25.9	79.3	46.3	86.5	17.7	9.5
Queue Delay	3.0	0.3	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.9
Total Delay (s/veh)	249.3	45.0	17.0	78.4	26.6	79.3	46.3	86.5	17.8	10.4
LOS	F	D	B	E	C	E	D	F	B	B
Approach Delay (s/veh)		104.7			32.4		47.8		22.5	
Approach LOS		F			C		D		C	

Intersection Summary






























Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.44
 Intersection Signal Delay (s/veh): 54.0 Intersection LOS: D
 Intersection Capacity Utilization 82.7% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  			  	
Traffic Volume (veh/h)	467	404	495	53	164	259	71	1439	50	174	766	626
Future Volume (veh/h)	467	404	495	53	164	259	71	1439	50	174	766	626
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	513	444	134	58	180	206	78	1581	51	191	842	548
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	500	891	75	365	325	98	2217	72	185	2478	934
Arrive On Green	0.03	0.09	0.09	0.04	0.21	0.21	0.06	0.44	0.44	0.03	0.16	0.16
Sat Flow, veh/h	3456	1870	2754	1781	1777	1580	1781	5077	164	1781	5106	1585
Grp Volume(v), veh/h	513	444	134	58	180	206	78	1060	572	191	842	548
Grp Sat Flow(s),veh/h/ln	1728	1870	1377	1781	1777	1580	1781	1702	1836	1781	1702	1585
Q Serve(g_s), s	13.5	30.5	5.4	4.2	11.6	15.5	5.6	33.1	33.1	13.5	19.0	34.0
Cycle Q Clear(g_c), s	13.5	30.5	5.4	4.2	11.6	15.5	5.6	33.1	33.1	13.5	19.0	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	359	500	891	75	365	325	98	1487	802	185	2478	934
V/C Ratio(X)	1.43	0.89	0.15	0.78	0.49	0.63	0.79	0.71	0.71	1.03	0.34	0.59
Avail Cap(c_a), veh/h	359	696	1179	125	601	535	141	1487	802	185	2478	934
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.8	57.3	39.4	61.7	45.7	47.2	60.7	29.9	29.9	62.8	36.1	29.3
Incr Delay (d2), s/veh	204.6	7.0	0.0	6.4	0.8	1.5	11.1	2.9	5.4	75.0	0.4	2.7
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	16.5	16.3	1.9	2.0	5.2	6.1	2.8	13.5	15.1	10.3	8.8	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	267.4	64.3	39.4	68.1	46.4	48.7	71.7	32.9	35.3	137.7	36.5	32.0
LnGrp LOS	F	E	D	E	D	D	E	C	D	F	D	C
Approach Vol, veh/h		1091			444			1710			1581	
Approach Delay, s/veh		156.8			50.3			35.5			47.1	
Approach LOS		F			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	62.3	9.9	39.8	11.7	68.6	18.0	31.7				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	13.5	39.5	9.1	48.4	10.3	* 43	13.5	44.0				
Max Q Clear Time (g_c+I1), s	15.5	35.1	6.2	32.5	7.6	36.0	15.5	17.5				
Green Ext Time (p_c), s	0.0	3.1	0.0	2.2	0.0	3.6	0.0	1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			68.1									
HCM 7th LOS			E									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
07/10/2024

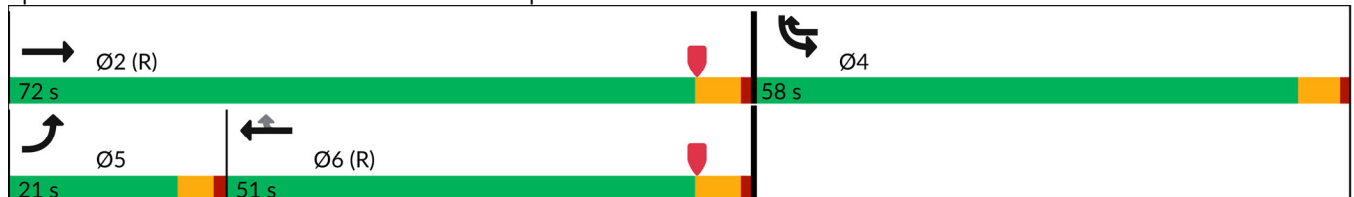


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↑↑	↑↑	↗	↘↘
Traffic Volume (vph)	154	578	565	395	1290
Future Volume (vph)	154	578	565	395	1290
Turn Type	Prot	NA	NA	pm+ov	Prot
Protected Phases	5	2	6	4	4
Permitted Phases				6	
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.5	49.5	10.0	10.0
Total Split (s)	21.0	72.0	51.0	58.0	58.0
Total Split (%)	16.2%	55.4%	39.2%	44.6%	44.6%
Yellow Time (s)	3.5	4.5	4.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
Act Effct Green (s)	15.4	64.9	45.0	100.1	54.6
Actuated g/C Ratio	0.12	0.50	0.35	0.77	0.42
v/c Ratio	0.75	0.33	0.47	0.32	0.92
Control Delay (s/veh)	77.2	20.5	40.2	1.5	47.0
Queue Delay	0.0	0.0	0.0	0.0	1.5
Total Delay (s/veh)	77.2	20.5	40.2	1.5	48.5
LOS	E	C	D	A	D
Approach Delay (s/veh)		32.4	24.3		48.5
Approach LOS		C	C		D

Intersection Summary

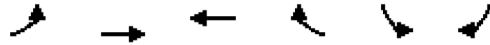
Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay (s/veh): 36.8
 Intersection LOS: D
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Indiana Av. & SR-91 EB Ramps



HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



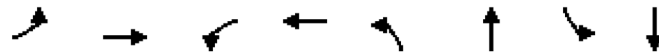
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗	↗	↘↘	↘
Traffic Volume (veh/h)	154	578	565	395	1290	16
Future Volume (veh/h)	154	578	565	395	1290	16
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	590	577	298	1331	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	182	1875	1388	1225	1396	621
Arrive On Green	0.10	0.53	0.13	0.13	0.39	0.00
Sat Flow, veh/h	1781	3647	3647	1546	3563	1585
Grp Volume(v), veh/h	157	590	577	298	1331	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1546	1781	1585
Q Serve(g_s), s	11.3	12.2	19.4	8.3	47.2	0.0
Cycle Q Clear(g_c), s	11.3	12.2	19.4	8.3	47.2	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	182	1875	1388	1225	1396	621
V/C Ratio(X)	0.86	0.31	0.42	0.24	0.95	0.00
Avail Cap(c_a), veh/h	226	1875	1388	1225	1452	646
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.77	0.77	1.00	0.00
Uniform Delay (d), s/veh	57.4	17.4	43.0	5.7	38.4	0.0
Incr Delay (d2), s/veh	21.9	0.4	0.7	0.4	13.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.0	9.4	9.8	22.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	79.4	17.8	43.7	6.1	52.1	0.0
LnGrp LOS	E	B	D	A	D	
Approach Vol, veh/h		747	875		1331	
Approach Delay, s/veh		30.8	30.9		52.1	
Approach LOS		C	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		74.1		55.9	17.8	56.3
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		66.5		53.0	16.5	45.5
Max Q Clear Time (g_c+I1), s		14.2		49.2	13.3	21.4
Green Ext Time (p_c), s		3.4		1.8	0.1	3.9
Intersection Summary						
HCM 7th Control Delay, s/veh			40.4			
HCM 7th LOS			D			

Notes

User approved volume balancing among the lanes for turning movement.

Timings

3: Van Buren Bl. & Primrose Dr./Andrew St.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	28	41	119	41	332	1331	52	1525
Future Volume (vph)	28	41	119	41	332	1331	52	1525
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	17.3	39.4	18.0	40.1	29.0	51.0	11.6	33.6
Total Split (%)	14.4%	32.8%	15.0%	33.4%	24.2%	42.5%	9.7%	28.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.2	13.5	10.2	24.0	22.6	47.0	6.4	28.6
Actuated g/C Ratio	0.07	0.14	0.11	0.25	0.24	0.50	0.07	0.30
v/c Ratio	0.24	0.63	0.63	0.18	0.79	0.57	0.44	1.02
Control Delay (s/veh)	50.5	15.4	57.0	17.9	49.8	19.7	57.5	63.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.5	15.4	57.0	17.9	49.8	19.7	57.5	63.3
LOS	D	B	E	B	D	B	E	E
Approach Delay (s/veh)		18.7		41.0		25.4		63.1
Approach LOS		B		D		C		E

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 94.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 41.4	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	41	224	119	41	42	332	1331	94	52	1525	29
Future Volume (veh/h)	28	41	224	119	41	42	332	1331	94	52	1525	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	41	165	120	41	27	335	1344	77	53	1540	29
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	55	221	151	237	156	372	2402	138	73	1643	31
Arrive On Green	0.03	0.17	0.17	0.08	0.23	0.23	0.21	0.49	0.49	0.04	0.32	0.32
Sat Flow, veh/h	1781	324	1304	1781	1044	688	1781	4939	283	1781	5157	97
Grp Volume(v), veh/h	28	0	206	120	0	68	335	926	495	53	1017	552
Grp Sat Flow(s),veh/h/ln	1781	0	1628	1781	0	1732	1781	1702	1818	1781	1702	1850
Q Serve(g_s), s	1.4	0.0	10.6	5.8	0.0	2.8	16.2	16.9	16.9	2.6	25.6	25.6
Cycle Q Clear(g_c), s	1.4	0.0	10.6	5.8	0.0	2.8	16.2	16.9	16.9	2.6	25.6	25.6
Prop In Lane	1.00		0.80	1.00		0.40	1.00		0.16	1.00		0.05
Lane Grp Cap(c), veh/h	50	0	277	151	0	392	372	1656	884	73	1084	589
V/C Ratio(X)	0.56	0.00	0.74	0.79	0.00	0.17	0.90	0.56	0.56	0.72	0.94	0.94
Avail Cap(c_a), veh/h	257	0	642	271	0	697	493	1760	940	141	1088	592
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	34.8	39.6	0.0	27.5	34.0	16.0	16.0	41.8	29.2	29.2
Incr Delay (d2), s/veh	3.6	0.0	4.0	3.6	0.0	0.2	13.7	0.4	0.7	4.9	14.7	22.7
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	0.7	0.0	4.5	2.7	0.0	1.2	8.0	6.0	6.4	1.2	11.9	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.9	0.0	38.8	43.2	0.0	27.7	47.6	16.3	16.6	46.7	43.9	51.9
LnGrp LOS	D		D	D		C	D	B	B	D	D	D
Approach Vol, veh/h		234			188			1756			1622	
Approach Delay, s/veh		39.6			37.6			22.4			46.7	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	48.3	12.1	19.6	23.0	33.5	7.1	24.6				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	7.0	45.6	13.4	34.8	24.4	28.2	12.7	35.5				
Max Q Clear Time (g_c+I1), s	4.6	18.9	7.8	12.6	18.2	27.6	3.4	4.8				
Green Ext Time (p_c), s	0.0	10.8	0.1	1.3	0.3	0.5	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			34.6									
HCM 7th LOS			C									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	537	0	602	639	1104	1371	450
Future Volume (vph)	537	0	602	639	1104	1371	450
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	49.0	49.0	49.0	39.0	81.0	42.0	42.0
Total Split (%)	37.7%	37.7%	37.7%	30.0%	62.3%	32.3%	32.3%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	38.0	38.0	38.0	29.8	81.5	47.2	47.2
Actuated g/C Ratio	0.29	0.29	0.29	0.23	0.63	0.36	0.36
v/c Ratio	0.85	0.82	0.77	0.86	0.36	0.62	0.55
Control Delay (s/veh)	59.7	48.3	43.9	64.4	17.1	37.1	5.7
Queue Delay	0.1	0.1	0.0	1.8	0.5	0.0	0.0
Total Delay (s/veh)	59.8	48.3	43.9	66.2	17.5	37.1	5.7
LOS	E	D	D	E	B	D	A
Approach Delay (s/veh)		50.9			35.4	29.4	
Approach LOS		D			D	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay (s/veh): 36.8
 Intersection LOS: D
 Intersection Capacity Utilization 79.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

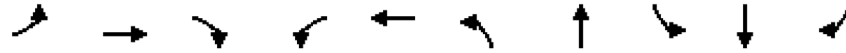
7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	537	0	602	639	1104	0	0	1371	450
Future Volume (veh/h)	0	0	0	537	0	602	639	1104	0	0	1371	450
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				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
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				681	0	249	673	1162	0	0	1443	359
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				778	0	346	728	3578	0	0	2932	721
Arrive On Green				0.22	0.00	0.22	0.42	1.00	0.00	0.00	0.46	0.46
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1583
Grp Volume(v), veh/h				681	0	249	673	1162	0	0	1443	359
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1583
Q Serve(g_s), s				24.0	0.0	18.9	24.0	0.0	0.0	0.0	20.5	20.8
Cycle Q Clear(g_c), s				24.0	0.0	18.9	24.0	0.0	0.0	0.0	20.5	20.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				778	0	346	728	3578	0	0	2932	721
V/C Ratio(X)				0.88	0.00	0.72	0.92	0.32	0.00	0.00	0.49	0.50
Avail Cap(c_a), veh/h				1206	0	536	917	3578	0	0	2932	721
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				49.1	0.0	47.1	36.7	0.0	0.0	0.0	24.8	24.9
Incr Delay (d2), s/veh				4.1	0.0	2.1	12.3	0.2	0.0	0.0	0.6	2.4
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.8	0.0	7.5	9.1	0.1	0.0	0.0	7.7	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				53.2	0.0	49.2	49.0	0.2	0.0	0.0	25.4	27.4
LnGrp LOS				D		D	D	A			C	C
Approach Vol, veh/h					930			1835			1802	
Approach Delay, s/veh					52.1			18.1			25.8	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	31.9	64.7		33.4		96.6						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	34.5	36.5		44.0		75.5						
Max Q Clear Time (g_c+I1), s	26.0	22.8		26.0		2.0						
Green Ext Time (p_c), s	1.4	7.8		2.4		8.1						
Intersection Summary												
HCM 7th Control Delay, s/veh				28.1								
HCM 7th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings

6: Van Buren Bl. & Indiana Av.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	549	536	783	64	210	85	1180	215	1028	665
Future Volume (vph)	549	536	783	64	210	85	1180	215	1028	665
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	21.0	55.3	17.8	14.7	49.0	17.8	40.0	20.0	42.2	21.0
Total Split (%)	16.2%	42.5%	13.7%	11.3%	37.7%	13.7%	30.8%	15.4%	32.5%	16.2%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	16.5	44.1	59.6	8.6	34.2	10.5	38.9	20.9	49.8	66.8
Actuated g/C Ratio	0.13	0.34	0.46	0.07	0.26	0.08	0.30	0.16	0.38	0.51
v/c Ratio	1.34	0.90	0.61	0.59	0.42	0.63	0.88	0.81	0.56	0.70
Control Delay (s/veh)	206.3	42.9	10.4	78.7	20.8	76.8	51.8	90.7	21.8	11.8
Queue Delay	0.3	2.5	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.9
Total Delay (s/veh)	206.6	45.4	10.4	78.7	20.9	76.8	51.8	90.7	22.0	12.6
LOS	F	D	B	E	C	E	D	F	C	B
Approach Delay (s/veh)		78.1			28.9		53.4		26.5	
Approach LOS		E			C		D		C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay (s/veh): 50.4
 Intersection LOS: D
 Intersection Capacity Utilization 84.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

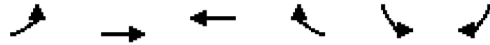
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	549	536	783	64	210	189	85	1180	69	215	1028	665
Future Volume (veh/h)	549	536	783	64	210	189	85	1180	69	215	1028	665
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	584	570	510	68	223	172	90	1255	67	229	1094	516
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	439	638	1127	87	512	377	112	1690	90	212	2029	831
Arrive On Green	0.04	0.11	0.11	0.05	0.26	0.26	0.06	0.34	0.34	0.04	0.13	0.13
Sat Flow, veh/h	3456	1870	2790	1781	1948	1434	1781	4954	264	1781	5106	1584
Grp Volume(v), veh/h	584	570	510	68	202	193	90	862	460	229	1094	516
Grp Sat Flow(s),veh/h/ln	1728	1870	1395	1781	1777	1605	1781	1702	1814	1781	1702	1584
Q Serve(g_s), s	16.5	39.1	20.3	4.9	12.3	13.1	6.5	29.1	29.1	15.5	26.0	32.5
Cycle Q Clear(g_c), s	16.5	39.1	20.3	4.9	12.3	13.1	6.5	29.1	29.1	15.5	26.0	32.5
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	439	638	1127	87	467	421	112	1161	619	212	2029	831
V/C Ratio(X)	1.33	0.89	0.45	0.78	0.43	0.46	0.80	0.74	0.74	1.08	0.54	0.62
Avail Cap(c_a), veh/h	439	724	1255	140	601	543	182	1161	619	212	2029	831
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	55.4	39.3	61.2	39.9	40.2	60.1	37.8	37.8	62.4	45.3	32.4
Incr Delay (d2), s/veh	158.3	7.8	0.1	5.7	0.5	0.6	5.0	4.3	7.9	84.1	1.0	3.5
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	17.3	21.0	7.6	2.3	5.4	5.2	3.0	12.4	13.8	12.4	12.1	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	220.6	63.1	39.4	66.9	40.4	40.7	65.1	42.1	45.6	146.5	46.4	35.8
LnGrp LOS	F	E	D	E	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1664			463			1412			1839	
Approach Delay, s/veh		111.1			44.4			44.7			55.9	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	49.9	10.8	49.3	12.7	57.2	21.0	39.1				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	15.5	34.5	10.2	50.3	13.3	* 37	16.5	44.0				
Max Q Clear Time (g_c+I1), s	17.5	31.1	6.9	41.1	8.5	34.5	18.5	15.1				
Green Ext Time (p_c), s	0.0	2.1	0.0	3.2	0.0	1.8	0.0	1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh			69.1									
HCM 7th LOS			E									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

**APPENDIX 5.2: BACKGROUND (2026) WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↷	↶	↷
Traffic Volume (veh/h)	102	477	445	419	892	4
Future Volume (veh/h)	102	477	445	419	892	4
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	507	473	306	949	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	134	2253	1864	1264	1016	452
Arrive On Green	0.08	0.63	0.17	0.17	0.29	0.00
Sat Flow, veh/h	1781	3647	3647	1549	3563	1585
Grp Volume(v), veh/h	109	507	473	306	949	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1549	1781	1585
Q Serve(g_s), s	7.8	7.9	15.0	9.1	33.7	0.0
Cycle Q Clear(g_c), s	7.8	7.9	15.0	9.1	33.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	134	2253	1864	1264	1016	452
V/C Ratio(X)	0.82	0.22	0.25	0.24	0.93	0.00
Avail Cap(c_a), veh/h	226	2253	1864	1264	1096	488
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	0.00
Uniform Delay (d), s/veh	59.2	10.1	31.8	5.6	45.3	0.0
Incr Delay (d2), s/veh	11.3	0.2	0.3	0.4	13.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.0	7.2	9.6	16.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	70.5	10.4	32.0	6.0	58.7	0.0
LnGrp LOS	E	B	C	A	E	
Approach Vol, veh/h		616	779		949	
Approach Delay, s/veh		21.0	21.8		58.7	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.9		42.1	14.3	73.7
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		79.5		40.0	16.5	58.5
Max Q Clear Time (g_c+I1), s		9.9		35.7	9.8	17.0
Green Ext Time (p_c), s		2.8		1.3	0.1	3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	36.5
HCM 7th LOS	D

Notes
 User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	218	2	48	261	2	49
Future Vol, veh/h	218	2	48	261	2	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	2	52	284	2	53

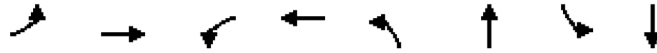
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	239	0	626 238
Stage 1	-	-	-	-	238 -
Stage 2	-	-	-	-	388 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1328	-	448 801
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	686 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1328	-	427 801
Mov Cap-2 Maneuver	-	-	-	-	427 -
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	654 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.22	10.01
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	280	-
HCM Lane V/C Ratio	0.072	-	-	0.039	-
HCM Control Delay (s/veh)	10	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	68	43	144	52	234	1437	41	1359
Future Volume (vph)	68	43	144	52	234	1437	41	1359
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	9.7	34.0	21.4	45.7	24.0	53.5	11.1	40.6
Total Split (%)	8.1%	28.3%	17.8%	38.1%	20.0%	44.6%	9.3%	33.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	5.2	13.9	12.6	21.4	18.0	52.0	6.1	35.6
Actuated g/C Ratio	0.05	0.14	0.13	0.21	0.18	0.52	0.06	0.36
v/c Ratio	0.82	0.61	0.71	0.27	0.80	0.63	0.42	0.84
Control Delay (s/veh)	105.6	22.6	60.8	21.6	60.3	20.9	60.9	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	105.6	22.6	60.8	21.6	60.3	20.9	60.9	35.8
LOS	F	C	E	C	E	C	E	D
Approach Delay (s/veh)		43.9		44.9		26.2		36.6
Approach LOS		D		D		C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 99.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay (s/veh): 32.7
 Intersection LOS: C
 Intersection Capacity Utilization 75.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	43	155	144	52	46	234	1437	76	41	1359	23
Future Volume (veh/h)	68	43	155	144	52	46	234	1437	76	41	1359	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	47	170	158	57	51	257	1579	84	45	1493	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	58	209	193	197	177	293	2379	127	67	1822	31
Arrive On Green	0.05	0.16	0.16	0.11	0.22	0.22	0.16	0.48	0.48	0.04	0.35	0.35
Sat Flow, veh/h	1781	355	1284	1781	910	814	1781	4963	264	1781	5172	87
Grp Volume(v), veh/h	75	0	217	158	0	108	257	1083	580	45	983	535
Grp Sat Flow(s),veh/h/ln	1781	0	1639	1781	0	1724	1781	1702	1823	1781	1702	1855
Q Serve(g_s), s	3.8	0.0	11.6	7.9	0.0	4.7	12.7	22.0	22.0	2.3	23.8	23.8
Cycle Q Clear(g_c), s	3.8	0.0	11.6	7.9	0.0	4.7	12.7	22.0	22.0	2.3	23.8	23.8
Prop In Lane	1.00		0.78	1.00		0.47	1.00		0.14	1.00		0.05
Lane Grp Cap(c), veh/h	96	0	267	193	0	374	293	1632	874	67	1199	653
V/C Ratio(X)	0.78	0.00	0.81	0.82	0.00	0.29	0.88	0.66	0.66	0.67	0.82	0.82
Avail Cap(c_a), veh/h	100	0	533	331	0	783	382	1809	969	128	1324	722
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	36.5	39.5	0.0	29.6	36.9	18.0	18.0	43.0	26.7	26.7
Incr Delay (d2), s/veh	27.7	0.0	5.9	3.3	0.0	0.4	13.9	0.8	1.5	4.4	3.9	6.9
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	2.4	0.0	5.0	3.6	0.0	2.0	6.4	7.9	8.7	1.0	9.6	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.9	0.0	42.5	42.8	0.0	30.0	50.8	18.8	19.5	47.4	30.6	33.5
LnGrp LOS	E		D	D		C	D	B	B	D	C	C
Approach Vol, veh/h		292			266			1920			1563	
Approach Delay, s/veh		49.5			37.6			23.3			32.1	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	48.8	14.4	19.3	19.5	37.3	9.5	24.2				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	6.5	48.1	16.8	29.4	19.4	35.2	5.1	41.1				
Max Q Clear Time (g_c+I1), s	4.3	24.0	9.9	13.6	14.7	25.8	5.8	6.7				
Green Ext Time (p_c), s	0.0	12.5	0.1	1.2	0.2	6.1	0.0	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			29.5									
HCM 7th LOS			C									

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	45	0	1747	1613	46
Future Vol, veh/h	0	45	0	1747	1613	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	49	0	1899	1753	50

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	902	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	241	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	241	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	23.69	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	241	-	-
HCM Lane V/C Ratio	-	0.203	-	-
HCM Control Delay (s/veh)	-	23.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-

Timings
5: Van Buren Bl. & SR-91 WB Ramps

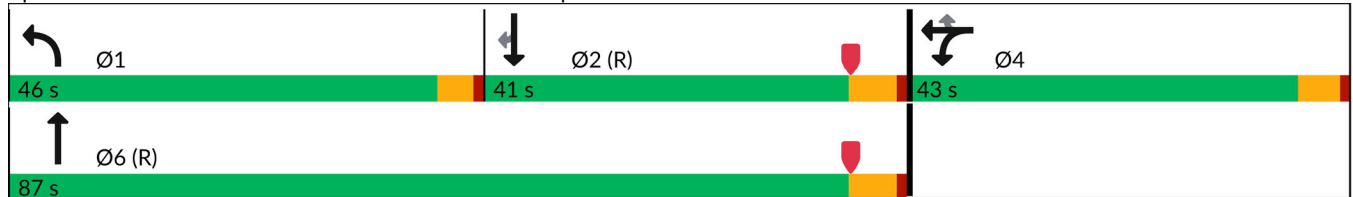


Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↔	↷	↶↷	↑↑↑	↑↑↑	↷
Traffic Volume (vph)	467	0	577	818	1139	1105	533
Future Volume (vph)	467	0	577	818	1139	1105	533
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	43.0	43.0	43.0	46.0	87.0	41.0	41.0
Total Split (%)	33.1%	33.1%	33.1%	35.4%	66.9%	31.5%	31.5%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	34.4	34.4	34.4	37.2	85.1	43.4	43.4
Actuated g/C Ratio	0.26	0.26	0.26	0.29	0.65	0.33	0.33
v/c Ratio	0.87	0.80	0.78	0.89	0.36	0.55	0.65
Control Delay (s/veh)	65.8	48.0	45.4	68.0	12.7	37.9	8.2
Queue Delay	0.1	0.1	0.0	49.7	0.4	0.0	0.0
Total Delay (s/veh)	65.9	48.0	45.4	117.7	13.1	37.9	8.2
LOS	E	D	D	F	B	D	A
Approach Delay (s/veh)		53.4			56.8	28.2	
Approach LOS		D			E	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay (s/veh): 46.0 Intersection LOS: D
 Intersection Capacity Utilization 87.7% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	467	0	577	818	1139	0	0	1105	533
Future Volume (veh/h)	0	0	0	467	0	577	818	1139	0	0	1105	533
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				606	0	234	870	1212	0	0	1176	432
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				697	0	310	921	3694	0	0	2717	660
Arrive On Green				0.20	0.00	0.20	0.53	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1564
Grp Volume(v), veh/h				606	0	234	870	1212	0	0	1176	432
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1564
Q Serve(g_s), s				21.4	0.0	18.1	30.8	0.0	0.0	0.0	16.8	28.7
Cycle Q Clear(g_c), s				21.4	0.0	18.1	30.8	0.0	0.0	0.0	16.8	28.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				697	0	310	921	3694	0	0	2717	660
V/C Ratio(X)				0.87	0.00	0.75	0.94	0.33	0.00	0.00	0.43	0.65
Avail Cap(c_a), veh/h				1041	0	463	1103	3694	0	0	2717	660
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				50.7	0.0	49.3	29.4	0.0	0.0	0.0	26.5	30.0
Incr Delay (d2), s/veh				4.7	0.0	2.9	13.8	0.2	0.0	0.0	0.5	5.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.8	0.0	7.2	10.7	0.1	0.0	0.0	6.4	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				55.4	0.0	52.2	43.3	0.2	0.0	0.0	27.0	35.0
LnGrp LOS				E		D	D	A			C	C
Approach Vol, veh/h					840			2082			1608	
Approach Delay, s/veh					54.5			18.2			29.2	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	39.2	60.4		30.4		99.6						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	41.5	35.5		38.0		81.5						
Max Q Clear Time (g_c+I1), s	32.8	30.7		23.4		2.0						
Green Ext Time (p_c), s	1.9	3.2		2.0		8.7						
Intersection Summary												
HCM 7th Control Delay, s/veh											28.8	
HCM 7th LOS											C	
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

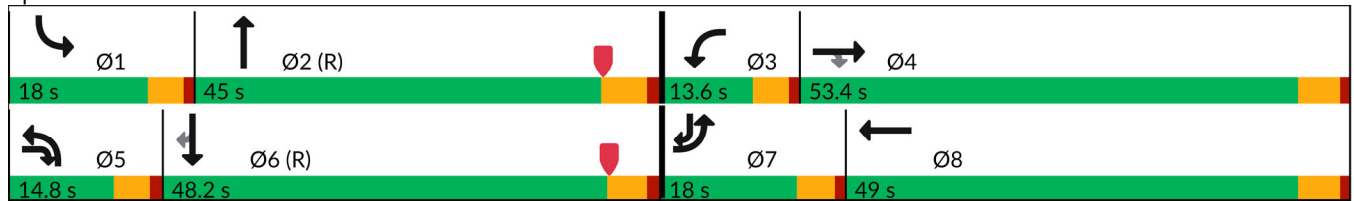
Timings
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	470	404	495	53	164	71	1441	174	768	629
Future Volume (vph)	470	404	495	53	164	71	1441	174	768	629
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	18.0	53.4	14.8	13.6	49.0	14.8	45.0	18.0	48.2	18.0
Total Split (%)	13.8%	41.1%	11.4%	10.5%	37.7%	11.4%	34.6%	13.8%	37.1%	13.8%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	13.5	37.3	47.1	7.8	29.7	9.3	47.6	19.7	58.5	77.0
Actuated g/C Ratio	0.10	0.29	0.36	0.06	0.23	0.07	0.37	0.15	0.45	0.59
v/c Ratio	1.45	0.83	0.49	0.55	0.53	0.62	0.88	0.72	0.37	0.61
Control Delay (s/veh)	250.0	44.6	16.9	78.4	25.9	79.3	46.4	86.6	17.7	9.6
Queue Delay	3.0	0.3	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.9
Total Delay (s/veh)	252.9	44.9	16.9	78.4	26.6	79.3	46.5	86.6	17.7	10.6
LOS	F	D	B	E	C	E	D	F	B	B
Approach Delay (s/veh)		106.1			32.4		47.9		22.5	
Approach LOS		F			C		D		C	




























Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.45
 Intersection Signal Delay (s/veh): 54.4 Intersection LOS: D
 Intersection Capacity Utilization 82.8% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			 			 	
Traffic Volume (veh/h)	470	404	495	53	164	259	71	1441	50	174	768	629
Future Volume (veh/h)	470	404	495	53	164	259	71	1441	50	174	768	629
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	516	444	134	58	180	206	78	1584	51	191	844	551
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	500	891	75	365	325	98	2218	71	185	2478	934
Arrive On Green	0.03	0.09	0.09	0.04	0.21	0.21	0.06	0.44	0.44	0.03	0.16	0.16
Sat Flow, veh/h	3456	1870	2754	1781	1777	1580	1781	5077	163	1781	5106	1585
Grp Volume(v), veh/h	516	444	134	58	180	206	78	1062	573	191	844	551
Grp Sat Flow(s),veh/h/ln	1728	1870	1377	1781	1777	1580	1781	1702	1836	1781	1702	1585
Q Serve(g_s), s	13.5	30.5	5.4	4.2	11.6	15.5	5.6	33.2	33.2	13.5	19.1	34.2
Cycle Q Clear(g_c), s	13.5	30.5	5.4	4.2	11.6	15.5	5.6	33.2	33.2	13.5	19.1	34.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	359	500	891	75	365	325	98	1487	802	185	2478	934
V/C Ratio(X)	1.44	0.89	0.15	0.78	0.49	0.63	0.79	0.71	0.71	1.03	0.34	0.59
Avail Cap(c_a), veh/h	359	696	1179	125	601	535	141	1487	802	185	2478	934
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.8	57.3	39.4	61.7	45.7	47.2	60.7	30.0	30.0	62.8	36.1	29.4
Incr Delay (d2), s/veh	208.3	7.0	0.0	6.4	0.8	1.5	11.1	3.0	5.4	75.0	0.4	2.7
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	16.6	16.3	1.9	2.0	5.2	6.1	2.8	13.6	15.2	10.3	8.8	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	271.0	64.3	39.4	68.1	46.4	48.7	71.7	32.9	35.4	137.7	36.5	32.1
LnGrp LOS	F	E	D	E	D	D	E	C	D	F	D	C
Approach Vol, veh/h		1094			444			1713			1586	
Approach Delay, s/veh		158.8			50.3			35.5			47.2	
Approach LOS		F			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	62.3	9.9	39.8	11.7	68.6	18.0	31.7				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	13.5	39.5	9.1	48.4	10.3	* 43	13.5	44.0				
Max Q Clear Time (g_c+I1), s	15.5	35.2	6.2	32.5	7.6	36.2	15.5	17.5				
Green Ext Time (p_c), s	0.0	3.0	0.0	2.2	0.0	3.6	0.0	1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			68.6									
HCM 7th LOS			E									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
1: Indiana Av. & SR-91 EB Ramps

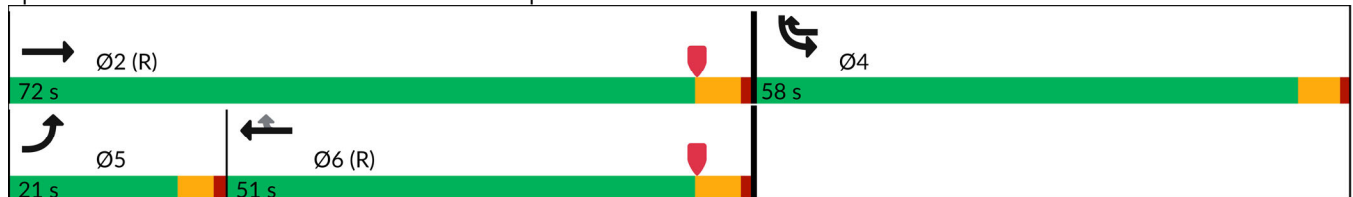


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	154	578	565	399	1294
Future Volume (vph)	154	578	565	399	1294
Turn Type	Prot	NA	NA	pm+ov	Prot
Protected Phases	5	2	6	4	4
Permitted Phases				6	
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.5	49.5	10.0	10.0
Total Split (s)	21.0	72.0	51.0	58.0	58.0
Total Split (%)	16.2%	55.4%	39.2%	44.6%	44.6%
Yellow Time (s)	3.5	4.5	4.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.5	5.5	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
Act Effct Green (s)	15.4	64.8	44.9	100.1	54.7
Actuated g/C Ratio	0.12	0.50	0.35	0.77	0.42
v/c Ratio	0.75	0.33	0.47	0.32	0.92
Control Delay (s/veh)	77.2	20.5	40.3	1.5	47.0
Queue Delay	0.0	0.0	0.0	0.0	1.6
Total Delay (s/veh)	77.2	20.5	40.3	1.6	48.6
LOS	E	C	D	A	D
Approach Delay (s/veh)		32.4	24.3		48.6
Approach LOS		C	C		D

Intersection Summary

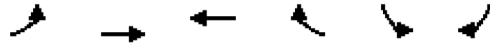
Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay (s/veh): 36.9
 Intersection LOS: D
 Intersection Capacity Utilization 95.1%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Indiana Av. & SR-91 EB Ramps



HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↗	↑↑	↑↑	↖	↘↘	
Traffic Volume (veh/h)	154	578	565	399	1294	16
Future Volume (veh/h)	154	578	565	399	1294	16
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	590	577	302	1335	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	182	1872	1385	1225	1399	622
Arrive On Green	0.10	0.53	0.13	0.13	0.39	0.00
Sat Flow, veh/h	1781	3647	3647	1546	3563	1585
Grp Volume(v), veh/h	157	590	577	302	1335	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1546	1781	1585
Q Serve(g_s), s	11.3	12.3	19.4	8.4	47.3	0.0
Cycle Q Clear(g_c), s	11.3	12.3	19.4	8.4	47.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	182	1872	1385	1225	1399	622
V/C Ratio(X)	0.86	0.32	0.42	0.25	0.95	0.00
Avail Cap(c_a), veh/h	226	1872	1385	1225	1452	646
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.77	0.77	1.00	0.00
Uniform Delay (d), s/veh	57.4	17.5	43.0	5.7	38.4	0.0
Incr Delay (d2), s/veh	21.9	0.4	0.7	0.4	13.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.0	9.4	9.9	22.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	79.4	17.9	43.8	6.1	52.3	0.0
LnGrp LOS	E	B	D	A	D	
Approach Vol, veh/h		747	879		1335	
Approach Delay, s/veh		30.8	30.8		52.3	
Approach LOS		C	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		74.0		56.0	17.8	56.1
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		66.5		53.0	16.5	45.5
Max Q Clear Time (g_c+I1), s		14.3		49.3	13.3	21.4
Green Ext Time (p_c), s		3.4		1.7	0.1	3.9
Intersection Summary						
HCM 7th Control Delay, s/veh			40.5			
HCM 7th LOS			D			

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	293	3	56	402	3	57
Future Vol, veh/h	293	3	56	402	3	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	318	3	61	437	3	62

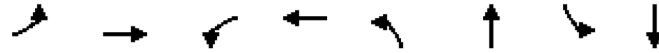
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	322	0	879 320
Stage 1	-	-	-	-	320 -
Stage 2	-	-	-	-	559 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1238	-	318 721
Stage 1	-	-	-	-	736 -
Stage 2	-	-	-	-	573 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1238	-	297 721
Mov Cap-2 Maneuver	-	-	-	-	297 -
Stage 1	-	-	-	-	736 -
Stage 2	-	-	-	-	535 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.99	10.92
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	220	-
HCM Lane V/C Ratio	0.097	-	-	0.049	-
HCM Control Delay (s/veh)	10.9	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/10/2024

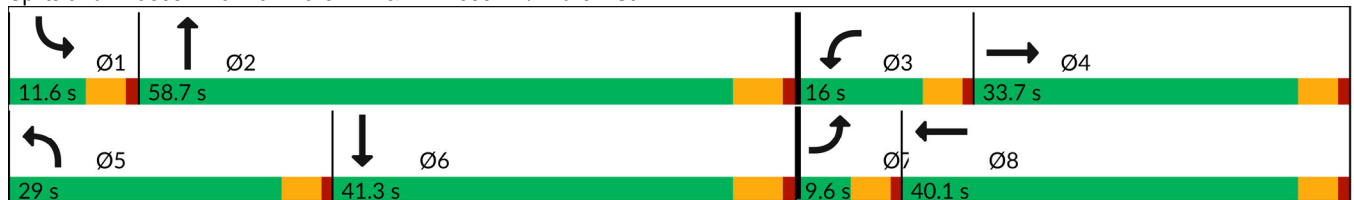


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↶↷	↶	↶↷
Traffic Volume (vph)	81	44	120	42	385	1289	52	1533
Future Volume (vph)	81	44	120	42	385	1289	52	1533
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	9.6	33.7	16.0	40.1	29.0	58.7	11.6	41.3
Total Split (%)	8.0%	28.1%	13.3%	33.4%	24.2%	48.9%	9.7%	34.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.7	14.1	10.3	18.9	24.5	56.2	6.4	36.1
Actuated g/C Ratio	0.08	0.14	0.10	0.18	0.23	0.54	0.06	0.35
v/c Ratio	0.56	0.69	0.70	0.24	0.94	0.51	0.49	0.90
Control Delay (s/veh)	66.8	21.3	68.2	20.8	71.6	17.8	65.0	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.8	21.3	68.2	20.8	71.6	17.8	65.0	41.4
LOS	E	C	E	C	E	B	E	D
Approach Delay (s/veh)		31.8		48.8		29.5		42.1
Approach LOS		C		D		C		D

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay (s/veh): 35.9	Intersection LOS: D
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	44	225	120	42	42	385	1289	94	52	1533	32
Future Volume (veh/h)	81	44	225	120	42	42	385	1289	94	52	1533	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	44	166	121	42	27	389	1302	77	53	1548	32
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	56	211	149	210	135	416	2613	155	68	1724	36
Arrive On Green	0.05	0.16	0.16	0.08	0.20	0.20	0.23	0.53	0.53	0.04	0.33	0.33
Sat Flow, veh/h	1781	342	1288	1781	1055	678	1781	4929	292	1781	5146	106
Grp Volume(v), veh/h	82	0	210	121	0	69	389	899	480	53	1024	556
Grp Sat Flow(s),veh/h/ln	1781	0	1630	1781	0	1733	1781	1702	1817	1781	1702	1848
Q Serve(g_s), s	4.8	0.0	12.9	7.0	0.0	3.5	22.3	17.6	17.6	3.1	29.8	29.8
Cycle Q Clear(g_c), s	4.8	0.0	12.9	7.0	0.0	3.5	22.3	17.6	17.6	3.1	29.8	29.8
Prop In Lane	1.00		0.79	1.00		0.39	1.00		0.16	1.00		0.06
Lane Grp Cap(c), veh/h	85	0	267	149	0	346	416	1805	963	68	1140	619
V/C Ratio(X)	0.96	0.00	0.79	0.81	0.00	0.20	0.94	0.50	0.50	0.78	0.90	0.90
Avail Cap(c_a), veh/h	85	0	455	195	0	590	417	1805	963	120	1172	636
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	0.0	41.8	47.0	0.0	34.8	39.2	15.6	15.6	49.7	33.0	33.0
Incr Delay (d2), s/veh	83.2	0.0	5.1	13.6	0.0	0.3	28.0	0.2	0.4	7.0	9.3	15.4
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	4.1	0.0	5.6	3.7	0.0	1.5	12.6	6.3	6.8	1.5	13.1	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	132.8	0.0	46.9	60.6	0.0	35.1	67.2	15.9	16.0	56.7	42.2	48.4
LnGrp LOS	F		D	E		D	E	B	B	E	D	D
Approach Vol, veh/h		292			190			1768			1633	
Approach Delay, s/veh		71.0			51.3			27.2			44.8	
Approach LOS		E			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	60.7	13.3	21.7	28.9	40.3	9.6	25.4				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	7.0	53.3	11.4	29.1	24.4	35.9	5.0	35.5				
Max Q Clear Time (g_c+I1), s	5.1	19.6	9.0	14.9	24.3	31.8	6.8	5.5				
Green Ext Time (p_c), s	0.0	11.2	0.0	1.1	0.0	3.1	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			39.1									
HCM 7th LOS			D									

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	51	0	1768	1828	52
Future Vol, veh/h	0	51	0	1768	1828	52
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	55	0	1922	1987	57

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	1022	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	201	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	201	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	29.66	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	201	-	-
HCM Lane V/C Ratio	-	0.276	-	-
HCM Control Delay (s/veh)	-	29.7	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-

Timings
5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	537	0	606	639	1111	1378	454
Future Volume (vph)	537	0	606	639	1111	1378	454
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	49.0	49.0	49.0	39.0	81.0	42.0	42.0
Total Split (%)	37.7%	37.7%	37.7%	30.0%	62.3%	32.3%	32.3%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	38.0	38.0	38.0	29.8	81.5	47.2	47.2
Actuated g/C Ratio	0.29	0.29	0.29	0.23	0.63	0.36	0.36
v/c Ratio	0.85	0.82	0.78	0.86	0.37	0.62	0.55
Control Delay (s/veh)	59.7	48.2	44.6	64.4	17.0	37.2	5.7
Queue Delay	0.1	0.1	0.0	1.8	0.5	0.0	0.0
Total Delay (s/veh)	59.8	48.3	44.6	66.2	17.5	37.2	5.7
LOS	E	D	D	E	B	D	A
Approach Delay (s/veh)		51.1			35.3	29.4	
Approach LOS		D			D	C	

Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay (s/veh): 36.8 Intersection LOS: D
 Intersection Capacity Utilization 80.1% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↷	↶↷	↶↷↶			↶↶↶	↷
Traffic Volume (veh/h)	0	0	0	537	0	606	639	1111	0	0	1378	454
Future Volume (veh/h)	0	0	0	537	0	606	639	1111	0	0	1378	454
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				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
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				682	0	251	673	1169	0	0	1451	363
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				779	0	347	728	3577	0	0	2929	721
Arrive On Green				0.22	0.00	0.22	0.42	1.00	0.00	0.00	0.46	0.46
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1583
Grp Volume(v), veh/h				682	0	251	673	1169	0	0	1451	363
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1583
Q Serve(g_s), s				24.0	0.0	19.1	24.0	0.0	0.0	0.0	20.6	21.1
Cycle Q Clear(g_c), s				24.0	0.0	19.1	24.0	0.0	0.0	0.0	20.6	21.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				779	0	347	728	3577	0	0	2929	721
V/C Ratio(X)				0.88	0.00	0.72	0.92	0.33	0.00	0.00	0.50	0.50
Avail Cap(c_a), veh/h				1206	0	536	917	3577	0	0	2929	721
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				49.1	0.0	47.1	36.7	0.0	0.0	0.0	24.9	25.0
Incr Delay (d2), s/veh				4.1	0.0	2.1	12.3	0.2	0.0	0.0	0.6	2.5
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.8	0.0	7.6	9.1	0.1	0.0	0.0	7.8	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				53.1	0.0	49.3	49.0	0.2	0.0	0.0	25.5	27.5
LnGrp LOS				D		D	D	A			C	C
Approach Vol, veh/h					933			1842			1814	
Approach Delay, s/veh					52.1			18.1			25.9	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	31.9	64.7		33.4		96.6						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	34.5	36.5		44.0		75.5						
Max Q Clear Time (g_c+I1), s	26.0	23.1		26.0		2.0						
Green Ext Time (p_c), s	1.4	7.7		2.4		8.2						

Intersection Summary

HCM 7th Control Delay, s/veh	28.1
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: Van Buren Bl. & Indiana Av.

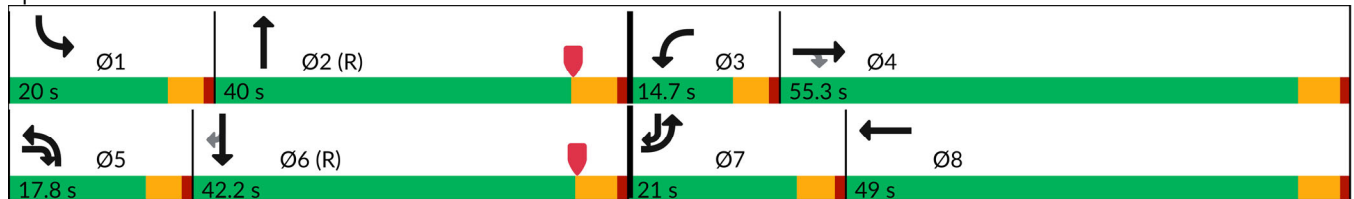
7-Eleven TA (JN 16095)
07/10/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	553	536	783	64	210	85	1183	215	1031	669
Future Volume (vph)	553	536	783	64	210	85	1183	215	1031	669
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	21.0	55.3	17.8	14.7	49.0	17.8	40.0	20.0	42.2	21.0
Total Split (%)	16.2%	42.5%	13.7%	11.3%	37.7%	13.7%	30.8%	15.4%	32.5%	16.2%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	16.5	44.1	59.6	8.6	34.2	10.5	38.9	20.9	49.8	66.8
Actuated g/C Ratio	0.13	0.34	0.46	0.07	0.26	0.08	0.30	0.16	0.38	0.51
v/c Ratio	1.35	0.90	0.61	0.59	0.42	0.63	0.88	0.81	0.56	0.70
Control Delay (s/veh)	211.5	43.0	10.3	78.7	20.8	76.8	52.0	91.1	21.8	12.1
Queue Delay	0.3	2.5	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.9
Total Delay (s/veh)	211.8	45.5	10.3	78.7	20.9	76.8	52.0	91.1	22.0	13.0
LOS	F	D	B	E	C	E	D	F	C	B
Approach Delay (s/veh)		79.9			28.9		53.6		26.6	
Approach LOS		E			C		D		C	

Intersection Summary
































Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay (s/veh): 51.1 Intersection LOS: D
 Intersection Capacity Utilization 84.9% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  		  	  	
Traffic Volume (veh/h)	553	536	783	64	210	189	85	1183	69	215	1031	669
Future Volume (veh/h)	553	536	783	64	210	189	85	1183	69	215	1031	669
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	588	570	510	68	223	172	90	1259	67	229	1097	521
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	439	638	1127	87	512	377	112	1690	90	212	2029	831
Arrive On Green	0.04	0.11	0.11	0.05	0.26	0.26	0.06	0.34	0.34	0.04	0.13	0.13
Sat Flow, veh/h	3456	1870	2790	1781	1948	1434	1781	4955	264	1781	5106	1584
Grp Volume(v), veh/h	588	570	510	68	202	193	90	865	461	229	1097	521
Grp Sat Flow(s),veh/h/ln	1728	1870	1395	1781	1777	1605	1781	1702	1815	1781	1702	1584
Q Serve(g_s), s	16.5	39.1	20.3	4.9	12.3	13.1	6.5	29.2	29.2	15.5	26.1	32.9
Cycle Q Clear(g_c), s	16.5	39.1	20.3	4.9	12.3	13.1	6.5	29.2	29.2	15.5	26.1	32.9
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	439	638	1127	87	467	421	112	1161	619	212	2029	831
V/C Ratio(X)	1.34	0.89	0.45	0.78	0.43	0.46	0.80	0.74	0.74	1.08	0.54	0.63
Avail Cap(c_a), veh/h	439	724	1255	140	601	543	182	1161	619	212	2029	831
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	55.4	39.3	61.2	39.9	40.2	60.1	37.8	37.8	62.4	45.4	32.5
Incr Delay (d2), s/veh	162.3	7.8	0.1	5.7	0.5	0.6	5.0	4.4	7.9	84.1	1.0	3.6
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	17.6	21.0	7.6	2.3	5.4	5.2	3.0	12.4	13.9	12.4	12.1	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	224.5	63.1	39.4	66.9	40.4	40.7	65.1	42.2	45.8	146.5	46.4	36.1
LnGrp LOS	F	E	D	E	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1668			463			1416			1847	
Approach Delay, s/veh		112.8			44.4			44.8			55.9	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	49.9	10.8	49.3	12.7	57.2	21.0	39.1				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	15.5	34.5	10.2	50.3	13.3	* 37	16.5	44.0				
Max Q Clear Time (g_c+I1), s	17.5	31.2	6.9	41.1	8.5	34.9	18.5	15.1				
Green Ext Time (p_c), s	0.0	2.1	0.0	3.2	0.0	1.6	0.0	1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh			69.6									
HCM 7th LOS			E									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

**APPENDIX 5.3: BACKGROUND (2026) WITH PROJECT CONDITIONS
TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	CALC <u>RV</u>	TRAFFIC CONDITIONS	2026 WP
Jurisdiction: <u>City of Riverside</u>				CHK <u>RV</u>	DATE <u>07/10/24</u>	DATE <u>07/10/24</u>
Major Street: <u>Primrose Dr.</u>					Critical Approach Speed (Major) <u>25</u> mph	
Minor Street: <u>Driveway 1</u>					Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes = <u>2</u>	lane	Minor Street Approach Lanes: <u>1</u>	lane			
Major Street Future ADT = <u>11,133</u>	vpd	Minor Street Future ADT = <u>846</u>	vpd			
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);						
or						
In built up area of isolated community of < 10,000 population						

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		Urban	Rural	Urban	Rural
<u>Major Street</u>	<u>Minor Street</u>				
1	1	8,000	5,600	2,400	1,680
2 + 11,133	1 846	9,600 *	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		Urban	Rural	Urban	Rural
<u>Major Street</u>	<u>Minor Street</u>				
1	1	12,000	8,400	1,200	850
2 + 11,133	1 846	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	<u>Not Satisfied</u>	80%		80%	
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more					
	<u>A</u>				
	35%				
	<u>B</u>				
	70%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



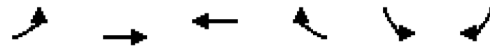
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**APPENDIX 6.1: CUMULATIVE (2045) WITHOUT PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



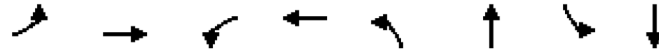
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗	↘↘	
Traffic Volume (veh/h)	109	584	510	471	946	8
Future Volume (veh/h)	109	584	510	471	946	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	615	537	357	1000	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	140	2255	1853	1259	1014	451
Arrive On Green	0.08	0.63	0.17	0.17	0.28	0.00
Sat Flow, veh/h	1781	3647	3647	1549	3563	1585
Grp Volume(v), veh/h	115	615	537	357	1000	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1549	1781	1585
Q Serve(g_s), s	8.3	9.9	17.1	10.9	36.3	0.0
Cycle Q Clear(g_c), s	8.3	9.9	17.1	10.9	36.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	140	2255	1853	1259	1014	451
V/C Ratio(X)	0.82	0.27	0.29	0.28	0.99	0.00
Avail Cap(c_a), veh/h	226	2255	1853	1259	1014	451
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.75	0.75	1.00	0.00
Uniform Delay (d), s/veh	59.0	10.5	32.8	6.1	46.2	0.0
Incr Delay (d2), s/veh	11.8	0.3	0.3	0.4	24.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	3.8	8.2	11.3	19.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	70.8	10.8	33.1	6.5	71.1	0.0
LnGrp LOS	E	B	C	A	E	
Approach Vol, veh/h		730	894		1000	
Approach Delay, s/veh		20.2	22.5		71.1	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		42.0	14.7	73.3
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		82.5		37.0	16.5	61.5
Max Q Clear Time (g_c+I1), s		11.9		38.3	10.3	19.1
Green Ext Time (p_c), s		3.5		0.0	0.1	4.0
Intersection Summary						
HCM 7th Control Delay, s/veh			40.4			
HCM 7th LOS			D			

Notes

User approved volume balancing among the lanes for turning movement.

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/10/2024

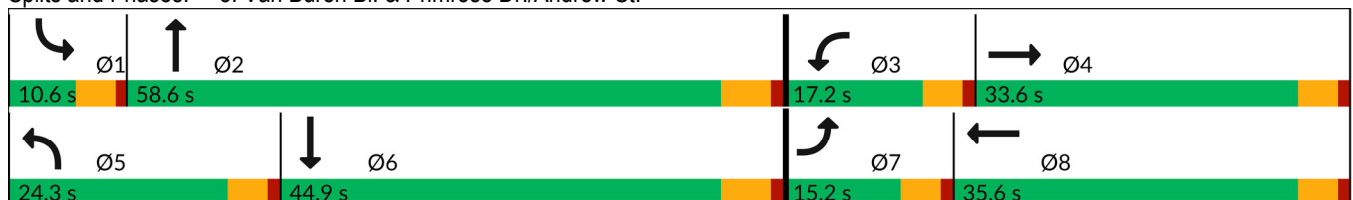


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	25	45	157	56	208	1620	45	1487
Future Volume (vph)	25	45	157	56	208	1620	45	1487
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	15.2	33.6	17.2	35.6	24.3	58.6	10.6	44.9
Total Split (%)	12.7%	28.0%	14.3%	29.7%	20.3%	48.8%	8.8%	37.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.2	14.1	12.3	24.5	16.2	51.2	5.8	38.5
Actuated g/C Ratio	0.06	0.14	0.12	0.24	0.16	0.51	0.06	0.38
v/c Ratio	0.24	0.63	0.76	0.25	0.77	0.70	0.46	0.82
Control Delay (s/veh)	54.2	23.0	68.4	25.0	60.4	21.9	64.7	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.2	23.0	68.4	25.0	60.4	21.9	64.7	33.2
LOS	D	C	E	C	E	C	E	C
Approach Delay (s/veh)		26.2		50.7		26.1		34.1
Approach LOS		C		D		C		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 100.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay (s/veh): 30.9
 Intersection LOS: C
 Intersection Capacity Utilization 78.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	45	169	157	56	51	208	1620	84	45	1487	23
Future Volume (veh/h)	25	45	169	157	56	51	208	1620	84	45	1487	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	47	178	165	59	54	219	1705	88	47	1565	24
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	57	216	198	226	207	254	2383	123	67	1938	30
Arrive On Green	0.03	0.17	0.17	0.11	0.25	0.25	0.14	0.48	0.48	0.04	0.37	0.37
Sat Flow, veh/h	1781	342	1295	1781	899	823	1781	4972	256	1781	5181	79
Grp Volume(v), veh/h	26	0	225	165	0	113	219	1167	626	47	1028	561
Grp Sat Flow(s),veh/h/ln	1781	0	1637	1781	0	1722	1781	1702	1824	1781	1702	1856
Q Serve(g_s), s	1.3	0.0	12.4	8.5	0.0	4.9	11.2	25.4	25.5	2.4	25.3	25.4
Cycle Q Clear(g_c), s	1.3	0.0	12.4	8.5	0.0	4.9	11.2	25.4	25.5	2.4	25.3	25.4
Prop In Lane	1.00		0.79	1.00		0.48	1.00		0.14	1.00		0.04
Lane Grp Cap(c), veh/h	47	0	273	198	0	433	254	1631	874	67	1274	694
V/C Ratio(X)	0.56	0.00	0.82	0.83	0.00	0.26	0.86	0.72	0.72	0.70	0.81	0.81
Avail Cap(c_a), veh/h	202	0	507	240	0	571	375	1935	1037	114	1437	783
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	37.7	40.7	0.0	28.0	39.2	19.3	19.3	44.5	26.3	26.3
Incr Delay (d2), s/veh	3.8	0.0	6.2	16.0	0.0	0.3	9.0	1.0	1.9	4.9	3.2	5.7
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	0.6	0.0	5.4	4.6	0.0	2.1	5.4	9.3	10.2	1.1	10.1	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.8	0.0	43.8	56.8	0.0	28.4	48.2	20.3	21.3	49.4	29.4	31.9
LnGrp LOS	D		D	E		C	D	C	C	D	C	C
Approach Vol, veh/h		251			278			2012			1636	
Approach Delay, s/veh		44.4			45.2			23.7			30.8	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	50.3	15.0	20.2	18.0	40.4	7.1	28.1				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	6.0	53.2	12.6	29.0	19.7	39.5	10.6	31.0				
Max Q Clear Time (g_c+I1), s	4.4	27.5	10.5	14.4	13.2	27.4	3.3	6.9				
Green Ext Time (p_c), s	0.0	14.2	0.0	1.2	0.2	7.7	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			29.2									
HCM 7th LOS			C									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

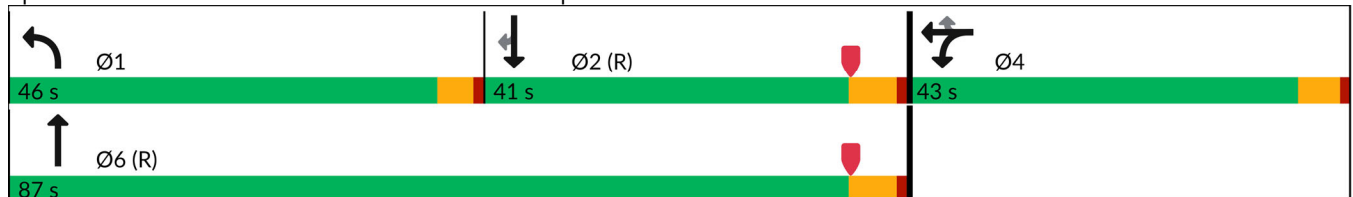


Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	514	0	631	900	1246	1209	583
Future Volume (vph)	514	0	631	900	1246	1209	583
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	43.0	43.0	43.0	46.0	87.0	41.0	41.0
Total Split (%)	33.1%	33.1%	33.1%	35.4%	66.9%	31.5%	31.5%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	35.8	35.8	35.8	39.2	83.7	40.0	40.0
Actuated g/C Ratio	0.28	0.28	0.28	0.30	0.64	0.31	0.31
v/c Ratio	0.91	0.87	0.83	0.91	0.40	0.65	0.72
Control Delay (s/veh)	70.4	56.3	52.4	66.5	14.1	41.7	12.2
Queue Delay	0.5	0.3	0.0	49.0	0.6	0.0	0.0
Total Delay (s/veh)	70.8	56.6	52.4	115.5	14.8	41.7	12.2
LOS	E	E	D	F	B	D	B
Approach Delay (s/veh)		60.2			57.0	32.1	
Approach LOS		E			E	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay (s/veh): 48.9 Intersection LOS: D
 Intersection Capacity Utilization 94.9% ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	514	0	631	900	1246	0	0	1209	583
Future Volume (veh/h)	0	0	0	514	0	631	900	1246	0	0	1209	583
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				667	0	269	947	1312	0	0	1273	480
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				760	0	338	991	3604	0	0	2474	601
Arrive On Green				0.21	0.00	0.21	0.57	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1563
Grp Volume(v), veh/h				667	0	269	947	1312	0	0	1273	480
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1563
Q Serve(g_s), s				23.6	0.0	20.9	33.6	0.0	0.0	0.0	19.7	35.5
Cycle Q Clear(g_c), s				23.6	0.0	20.9	33.6	0.0	0.0	0.0	19.7	35.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				760	0	338	991	3604	0	0	2474	601
V/C Ratio(X)				0.88	0.00	0.80	0.96	0.36	0.00	0.00	0.51	0.80
Avail Cap(c_a), veh/h				1041	0	463	1103	3604	0	0	2474	601
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				49.5	0.0	48.4	26.9	0.0	0.0	0.0	30.7	35.5
Incr Delay (d2), s/veh				6.0	0.0	5.8	16.4	0.3	0.0	0.0	0.8	10.6
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.8	0.0	8.6	11.4	0.1	0.0	0.0	7.6	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				55.5	0.0	54.2	43.3	0.3	0.0	0.0	31.5	46.2
LnGrp LOS				E		D	D	A			C	D
Approach Vol, veh/h					936			2259			1753	
Approach Delay, s/veh					55.1			18.3			35.5	
Approach LOS					E			B			D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	41.8	55.5		32.7		97.3						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	41.5	35.5		38.0		81.5						
Max Q Clear Time (g_c+I1), s	35.6	37.5		25.6		2.0						
Green Ext Time (p_c), s	1.7	0.0		2.2		9.8						
Intersection Summary												
HCM 7th Control Delay, s/veh						31.4						
HCM 7th LOS						C						
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	514	444	572	73	187	105	1583	191	843	689
Future Volume (vph)	514	444	572	73	187	105	1583	191	843	689
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	19.0	52.3	20.0	16.7	50.0	20.0	45.0	16.0	41.0	19.0
Total Split (%)	14.6%	40.2%	15.4%	12.8%	38.5%	15.4%	34.6%	12.3%	31.5%	14.6%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	14.5	38.2	50.8	9.6	31.3	12.1	42.8	21.9	53.2	72.7
Actuated g/C Ratio	0.11	0.29	0.39	0.07	0.24	0.09	0.33	0.17	0.41	0.56
v/c Ratio	1.42	0.85	0.51	0.59	0.54	0.68	1.04	0.67	0.43	0.66
Control Delay (s/veh)	237.9	46.3	16.4	75.9	24.4	76.8	75.6	80.9	19.6	12.0
Queue Delay	4.2	0.3	0.0	0.0	0.8	0.0	3.8	0.0	0.1	2.2
Total Delay (s/veh)	242.1	46.6	16.4	75.9	25.3	76.8	79.4	80.9	19.7	14.2
LOS	F	D	B	E	C	E	E	F	B	B
Approach Delay (s/veh)		101.0			32.1		79.2		24.3	
Approach LOS		F			C		E		C	

Intersection Summary






























Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.42
 Intersection Signal Delay (s/veh): 63.5
 Intersection LOS: E
 Intersection Capacity Utilization 89.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



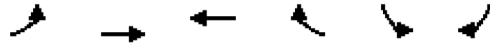
HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  			  	
Traffic Volume (veh/h)	514	444	572	73	187	285	105	1583	61	191	843	689
Future Volume (veh/h)	514	444	572	73	187	285	105	1583	61	191	843	689
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	541	467	209	77	197	224	111	1666	60	201	887	591
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	526	985	97	398	354	135	2153	77	158	2239	872
Arrive On Green	0.04	0.09	0.09	0.05	0.22	0.22	0.08	0.43	0.43	0.03	0.14	0.14
Sat Flow, veh/h	3456	1870	2754	1781	1777	1581	1781	5055	182	1781	5106	1585
Grp Volume(v), veh/h	541	467	209	77	197	224	111	1122	604	201	887	591
Grp Sat Flow(s),veh/h/ln	1728	1870	1377	1781	1777	1581	1781	1702	1833	1781	1702	1585
Q Serve(g_s), s	14.5	32.1	8.2	5.6	12.6	16.7	8.0	36.7	36.7	11.5	20.5	37.9
Cycle Q Clear(g_c), s	14.5	32.1	8.2	5.6	12.6	16.7	8.0	36.7	36.7	11.5	20.5	37.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	385	526	985	97	398	354	135	1450	780	158	2239	872
V/C Ratio(X)	1.40	0.89	0.21	0.79	0.49	0.63	0.82	0.77	0.77	1.28	0.40	0.68
Avail Cap(c_a), veh/h	385	681	1213	167	615	547	212	1450	780	158	2239	872
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	57.0	37.3	60.7	44.0	45.6	59.2	32.0	32.0	63.1	40.0	33.0
Incr Delay (d2), s/veh	193.1	8.3	0.1	5.3	0.7	1.4	6.9	4.1	7.4	164.0	0.5	4.2
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	17.1	17.3	2.9	2.6	5.5	6.6	3.8	15.2	17.1	12.7	9.4	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	255.7	65.3	37.3	66.0	44.7	47.0	66.1	36.0	39.3	227.1	40.5	37.2
LnGrp LOS	F	E	D	E	D	D	E	D	D	F	D	D
Approach Vol, veh/h	1217			498			1837			1679		
Approach Delay, s/veh	145.1			49.0			38.9			61.7		
Approach LOS	F			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	60.9	11.6	41.5	14.4	62.5	19.0	34.1				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	11.5	39.5	12.2	47.3	15.5	* 36	14.5	45.0				
Max Q Clear Time (g_c+I1), s	13.5	38.7	7.6	34.1	10.0	39.9	16.5	18.7				
Green Ext Time (p_c), s	0.0	0.6	0.0	2.4	0.1	0.0	0.0	2.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	71.9											
HCM 7th LOS	E											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



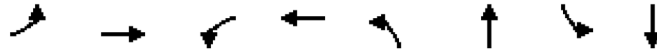
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑	↗	↘↘	
Traffic Volume (veh/h)	169	668	622	435	1410	18
Future Volume (veh/h)	169	668	622	435	1410	18
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	172	682	635	339	1456	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	1818	1301	1212	1452	646
Arrive On Green	0.11	0.51	0.12	0.12	0.41	0.00
Sat Flow, veh/h	1781	3647	3647	1545	3563	1585
Grp Volume(v), veh/h	172	682	635	339	1456	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1545	1781	1585
Q Serve(g_s), s	12.4	15.1	21.7	9.6	53.0	0.0
Cycle Q Clear(g_c), s	12.4	15.1	21.7	9.6	53.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	197	1818	1301	1212	1452	646
V/C Ratio(X)	0.87	0.38	0.49	0.28	1.00	0.00
Avail Cap(c_a), veh/h	226	1818	1301	1212	1452	646
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.70	0.70	1.00	0.00
Uniform Delay (d), s/veh	56.9	19.2	45.8	6.1	38.5	0.0
Incr Delay (d2), s/veh	25.7	0.6	0.9	0.4	24.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	6.2	10.5	11.3	26.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	82.6	19.8	46.7	6.5	62.7	0.0
LnGrp LOS	F	B	D	A	F	
Approach Vol, veh/h		854	974		1456	
Approach Delay, s/veh		32.4	32.7		62.7	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		72.0		58.0	18.9	53.1
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		66.5		53.0	16.5	45.5
Max Q Clear Time (g_c+I1), s		17.1		55.0	14.4	23.7
Green Ext Time (p_c), s		4.0		0.0	0.1	4.3

Intersection Summary	
HCM 7th Control Delay, s/veh	45.9
HCM 7th LOS	D

Notes
 User approved volume balancing among the lanes for turning movement.

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/10/2024

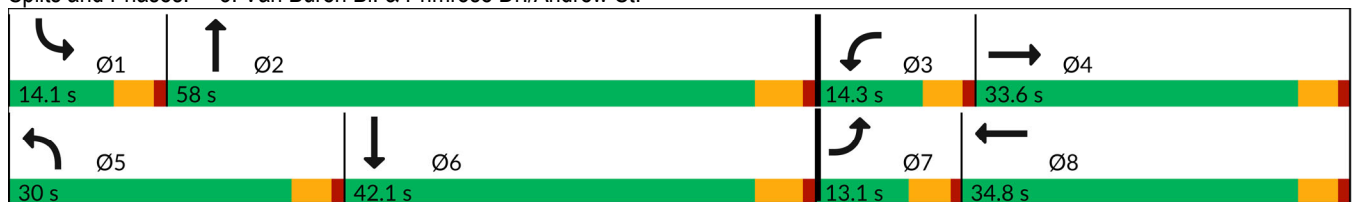


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	31	45	131	45	365	1464	57	1678
Future Volume (vph)	31	45	131	45	365	1464	57	1678
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	13.1	33.6	14.3	34.8	30.0	58.0	14.1	42.1
Total Split (%)	10.9%	28.0%	11.9%	29.0%	25.0%	48.3%	11.8%	35.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	6.4	14.5	9.7	21.9	25.5	56.9	7.5	36.9
Actuated g/C Ratio	0.06	0.14	0.09	0.21	0.24	0.54	0.07	0.35
v/c Ratio	0.29	0.72	0.81	0.24	0.87	0.59	0.46	0.98
Control Delay (s/veh)	56.5	22.4	83.5	23.4	60.8	19.3	60.8	51.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.5	22.4	83.5	23.4	60.8	19.3	60.8	51.8
LOS	E	C	F	C	E	B	E	D
Approach Delay (s/veh)		25.7		59.0		27.1		52.1
Approach LOS		C		E		C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 105.9
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay (s/veh): 39.1
 Intersection LOS: D
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	45	246	131	45	46	365	1464	103	57	1678	32
Future Volume (veh/h)	31	45	246	131	45	46	365	1464	103	57	1678	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	45	187	132	45	31	369	1479	86	58	1695	32
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	55	229	159	242	166	396	2555	149	75	1739	33
Arrive On Green	0.03	0.17	0.17	0.09	0.24	0.24	0.22	0.52	0.52	0.04	0.34	0.34
Sat Flow, veh/h	1781	315	1311	1781	1023	705	1781	4935	287	1781	5157	97
Grp Volume(v), veh/h	31	0	232	132	0	76	369	1020	545	58	1119	608
Grp Sat Flow(s),veh/h/ln	1781	0	1626	1781	0	1729	1781	1702	1818	1781	1702	1850
Q Serve(g_s), s	1.9	0.0	14.9	7.9	0.0	3.8	22.1	22.5	22.5	3.5	35.3	35.3
Cycle Q Clear(g_c), s	1.9	0.0	14.9	7.9	0.0	3.8	22.1	22.5	22.5	3.5	35.3	35.3
Prop In Lane	1.00		0.81	1.00		0.41	1.00		0.16	1.00		0.05
Lane Grp Cap(c), veh/h	50	0	284	159	0	408	396	1762	941	75	1148	624
V/C Ratio(X)	0.62	0.00	0.82	0.83	0.00	0.19	0.93	0.58	0.58	0.78	0.97	0.97
Avail Cap(c_a), veh/h	139	0	433	159	0	480	416	1762	941	155	1148	624
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	43.2	48.8	0.0	33.2	41.5	18.1	18.1	51.6	35.6	35.6
Incr Delay (d2), s/veh	4.7	0.0	7.0	28.1	0.0	0.2	26.4	0.5	0.9	6.3	20.6	29.7
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	0.9	0.0	6.6	4.8	0.0	1.6	12.3	8.3	9.0	1.7	17.2	20.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.0	0.0	50.2	76.9	0.0	33.4	67.9	18.6	19.0	57.9	56.2	65.3
LnGrp LOS	E		D	E		C	E	B	B	E	E	E
Approach Vol, veh/h		263			208			1934			1785	
Approach Delay, s/veh		51.0			61.0			28.1			59.4	
Approach LOS		D			E			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	61.7	14.3	23.6	28.8	42.1	7.6	30.3				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	9.5	52.6	9.7	29.0	25.4	36.7	8.5	30.2				
Max Q Clear Time (g_c+I1), s	5.5	24.5	9.9	16.9	24.1	37.3	3.9	5.8				
Green Ext Time (p_c), s	0.0	12.5	0.0	1.1	0.1	0.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			44.5									
HCM 7th LOS			D									

Timings
5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	564	0	662	698	1214	1509	495
Future Volume (vph)	564	0	662	698	1214	1509	495
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	49.0	49.0	49.0	39.0	81.0	42.0	42.0
Total Split (%)	37.7%	37.7%	37.7%	30.0%	62.3%	32.3%	32.3%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	40.0	40.0	40.0	31.4	79.5	43.6	43.6
Actuated g/C Ratio	0.31	0.31	0.31	0.24	0.61	0.34	0.34
v/c Ratio	0.87	0.85	0.82	0.89	0.41	0.74	0.60
Control Delay (s/veh)	60.5	52.8	48.9	62.0	19.9	42.0	6.2
Queue Delay	0.5	0.4	0.0	9.7	0.6	0.0	0.0
Total Delay (s/veh)	61.0	53.2	48.9	71.7	20.5	42.1	6.2
LOS	E	D	D	E	C	D	A
Approach Delay (s/veh)		54.6			39.2	33.2	
Approach LOS		D			D	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay (s/veh): 40.5 Intersection LOS: D
 Intersection Capacity Utilization 85.6% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



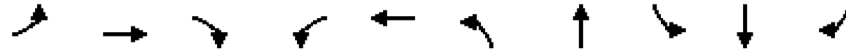
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	564	0	662	698	1214	0	0	1509	495
Future Volume (veh/h)	0	0	0	564	0	662	698	1214	0	0	1509	495
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				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
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				730	0	291	735	1278	0	0	1588	406
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				830	0	369	785	3504	0	0	2730	672
Arrive On Green				0.23	0.00	0.23	0.45	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1583
Grp Volume(v), veh/h				730	0	291	735	1278	0	0	1588	406
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1583
Q Serve(g_s), s				25.7	0.0	22.4	26.3	0.0	0.0	0.0	24.5	25.8
Cycle Q Clear(g_c), s				25.7	0.0	22.4	26.3	0.0	0.0	0.0	24.5	25.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				830	0	369	785	3504	0	0	2730	672
V/C Ratio(X)				0.88	0.00	0.79	0.94	0.36	0.00	0.00	0.58	0.60
Avail Cap(c_a), veh/h				1206	0	536	917	3504	0	0	2730	672
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				48.1	0.0	46.8	34.6	0.0	0.0	0.0	28.6	29.0
Incr Delay (d2), s/veh				4.9	0.0	4.0	14.8	0.3	0.0	0.0	0.9	4.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.6	0.0	9.0	9.9	0.1	0.0	0.0	9.4	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				53.0	0.0	50.8	49.4	0.3	0.0	0.0	29.5	33.0
LnGrp LOS				D		D	D	A			C	C
Approach Vol, veh/h					1021			2013			1994	
Approach Delay, s/veh					52.4			18.2			30.2	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	34.0	60.7		35.3		94.7						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	34.5	36.5		44.0		75.5						
Max Q Clear Time (g_c+I1), s	28.3	27.8		27.7		2.0						
Green Ext Time (p_c), s	1.3	6.1		2.6		9.4						

Intersection Summary		
HCM 7th Control Delay, s/veh		29.9
HCM 7th LOS		C

Notes
 User approved volume balancing among the lanes for turning movement.

Timings

6: Van Buren Bl. & Indiana Av.

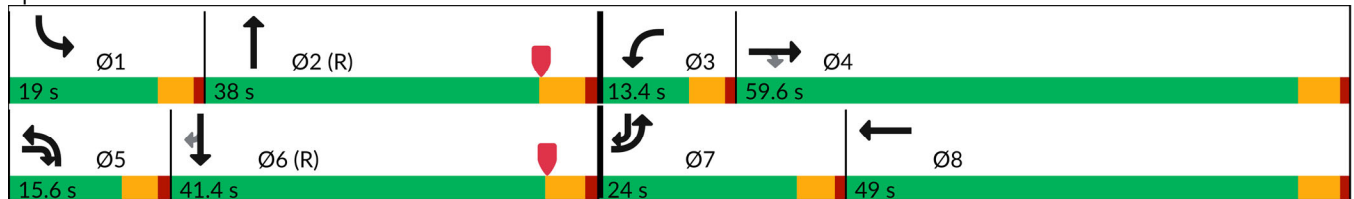


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖↗	↖	↖↗	↖	↖↗↘	↖	↖↗↘	↖
Traffic Volume (vph)	604	590	884	76	231	94	1196	237	1104	732
Future Volume (vph)	604	590	884	76	231	94	1196	237	1104	732
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	24.0	59.6	15.6	13.4	49.0	15.6	38.0	19.0	41.4	24.0
Total Split (%)	18.5%	45.8%	12.0%	10.3%	37.7%	12.0%	29.2%	14.6%	31.8%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	19.5	48.2	63.6	8.3	37.0	10.4	32.5	21.5	44.1	64.1
Actuated g/C Ratio	0.15	0.37	0.49	0.06	0.28	0.08	0.25	0.17	0.34	0.49
v/c Ratio	1.24	0.90	0.66	0.71	0.42	0.70	1.06	0.85	0.67	0.80
Control Delay (s/veh)	165.0	47.1	13.7	90.7	22.3	83.1	89.2	90.8	25.5	16.0
Queue Delay	0.5	7.0	0.6	0.0	0.4	0.0	0.0	0.0	0.3	2.6
Total Delay (s/veh)	165.5	54.1	14.4	90.7	22.6	83.1	89.2	90.8	25.8	18.7
LOS	F	D	B	F	C	F	F	F	C	B
Approach Delay (s/veh)		69.6			32.9		88.8		30.7	
Approach LOS		E			C		F		C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay (s/veh): 57.5
 Intersection LOS: E
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔↔	↔	↔↔		↔	↔↔↔		↔	↔↔↔	↔
Traffic Volume (veh/h)	604	590	884	76	231	195	94	1196	76	237	1104	732
Future Volume (veh/h)	604	590	884	76	231	195	94	1196	76	237	1104	732
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	636	621	611	80	243	177	99	1259	74	249	1162	582
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	696	1229	101	556	389	122	1524	90	199	1801	796
Arrive On Green	0.05	0.12	0.12	0.06	0.28	0.28	0.07	0.31	0.31	0.04	0.12	0.12
Sat Flow, veh/h	3456	1870	2790	1781	1994	1395	1781	4924	289	1781	5106	1584
Grp Volume(v), veh/h	636	621	611	80	215	205	99	870	463	249	1162	582
Grp Sat Flow(s),veh/h/ln	1728	1870	1395	1781	1777	1612	1781	1702	1809	1781	1702	1584
Q Serve(g_s), s	19.5	42.5	24.0	5.8	12.9	13.6	7.1	30.8	30.8	14.5	28.3	36.9
Cycle Q Clear(g_c), s	19.5	42.5	24.0	5.8	12.9	13.6	7.1	30.8	30.8	14.5	28.3	36.9
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	518	696	1229	101	495	450	122	1054	560	199	1801	796
V/C Ratio(X)	1.23	0.89	0.50	0.80	0.43	0.46	0.81	0.83	0.83	1.25	0.65	0.73
Avail Cap(c_a), veh/h	518	786	1362	122	601	546	152	1054	560	199	1801	796
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	54.4	37.8	60.6	38.5	38.7	59.7	41.6	41.6	62.6	49.7	34.5
Incr Delay (d2), s/veh	112.2	7.1	0.1	20.8	0.4	0.5	18.8	7.4	13.1	148.4	1.8	5.9
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	17.1	22.7	9.0	3.2	5.6	5.4	3.8	13.6	15.3	15.1	13.2	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	174.0	61.5	37.9	81.4	38.9	39.3	78.5	49.0	54.7	211.0	51.5	40.3
LnGrp LOS	F	E	D	F	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1868			500			1432			1993	
Approach Delay, s/veh		92.1			45.9			52.9			68.1	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	45.8	11.8	53.4	13.4	51.4	24.0	41.2				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	14.5	32.5	8.9	54.6	11.1	* 36	19.5	44.0				
Max Q Clear Time (g_c+I1), s	16.5	32.8	7.8	44.5	9.1	38.9	21.5	15.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.9	0.0	0.0	0.0	2.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											70.2	
HCM 7th LOS											E	

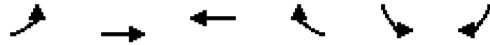
Notes
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

**APPENDIX 6.2: CUMULATIVE (2045) WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↑↑	↑	↙↘	
Traffic Volume (veh/h)	109	584	510	474	949	8
Future Volume (veh/h)	109	584	510	474	949	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	615	537	360	1003	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	140	2255	1853	1259	1014	451
Arrive On Green	0.08	0.63	0.17	0.17	0.28	0.00
Sat Flow, veh/h	1781	3647	3647	1549	3563	1585
Grp Volume(v), veh/h	115	615	537	360	1003	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1549	1781	1585
Q Serve(g_s), s	8.3	9.9	17.1	11.0	36.4	0.0
Cycle Q Clear(g_c), s	8.3	9.9	17.1	11.0	36.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	140	2255	1853	1259	1014	451
V/C Ratio(X)	0.82	0.27	0.29	0.29	0.99	0.00
Avail Cap(c_a), veh/h	226	2255	1853	1259	1014	451
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.75	0.75	1.00	0.00
Uniform Delay (d), s/veh	59.0	10.5	32.8	6.1	46.3	0.0
Incr Delay (d2), s/veh	11.8	0.3	0.3	0.4	25.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	3.8	8.2	11.4	19.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	70.8	10.8	33.1	6.5	71.8	0.0
LnGrp LOS	E	B	C	A	E	
Approach Vol, veh/h		730	897		1003	
Approach Delay, s/veh		20.2	22.5		71.8	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		42.0	14.7	73.3
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		82.5		37.0	16.5	61.5
Max Q Clear Time (g_c+I1), s		11.9		38.4	10.3	19.1
Green Ext Time (p_c), s		3.5		0.0	0.1	4.0
Intersection Summary						
HCM 7th Control Delay, s/veh			40.7			
HCM 7th LOS			D			

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	239	2	48	287	2	49
Future Vol, veh/h	239	2	48	287	2	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	252	2	51	302	2	52

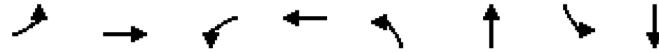
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	254	0	656 253
Stage 1	-	-	-	-	253 -
Stage 2	-	-	-	-	403 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1311	-	430 786
Stage 1	-	-	-	-	789 -
Stage 2	-	-	-	-	675 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1311	-	410 786
Mov Cap-2 Maneuver	-	-	-	-	410 -
Stage 1	-	-	-	-	789 -
Stage 2	-	-	-	-	644 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.13	10.11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	759	-	-	258	-
HCM Lane V/C Ratio	0.071	-	-	0.039	-
HCM Control Delay (s/veh)	10.1	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
07/10/2024

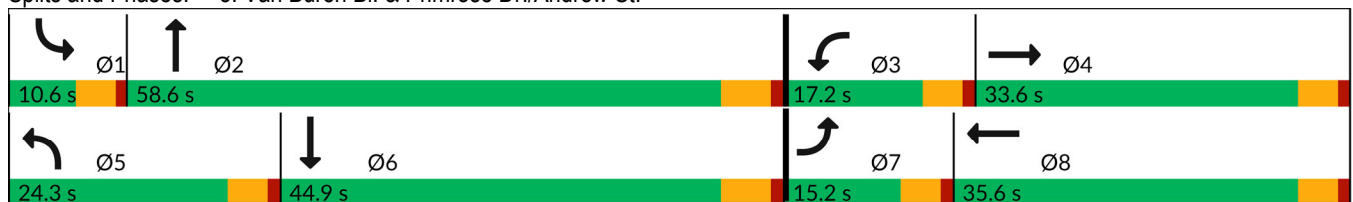


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	70	47	158	57	253	1584	45	1494
Future Volume (vph)	70	47	158	57	253	1584	45	1494
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	15.2	33.6	17.2	35.6	24.3	58.6	10.6	44.9
Total Split (%)	12.7%	28.0%	14.3%	29.7%	20.3%	48.8%	8.8%	37.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.3	14.3	12.3	20.6	18.9	54.2	5.8	38.9
Actuated g/C Ratio	0.08	0.14	0.12	0.20	0.18	0.52	0.06	0.37
v/c Ratio	0.53	0.65	0.79	0.31	0.83	0.67	0.47	0.84
Control Delay (s/veh)	61.7	25.1	72.8	28.4	63.9	21.2	66.7	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	61.7	25.1	72.8	28.4	63.9	21.2	66.7	35.5
LOS	E	C	E	C	E	C	E	D
Approach Delay (s/veh)		34.0		54.8		26.8		36.3
Approach LOS		C		D		C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 103.8
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay (s/veh): 32.9
 Intersection LOS: C
 Intersection Capacity Utilization 81.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	47	170	158	57	51	253	1584	84	45	1494	25
Future Volume (veh/h)	70	47	170	158	57	51	253	1584	84	45	1494	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	49	179	166	60	54	266	1667	88	47	1573	26
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	59	214	197	203	183	298	2454	129	65	1880	31
Arrive On Green	0.05	0.17	0.17	0.11	0.22	0.22	0.17	0.49	0.49	0.04	0.36	0.36
Sat Flow, veh/h	1781	352	1287	1781	907	816	1781	4965	262	1781	5174	86
Grp Volume(v), veh/h	74	0	228	166	0	114	266	1142	613	47	1035	564
Grp Sat Flow(s),veh/h/ln	1781	0	1639	1781	0	1723	1781	1702	1823	1781	1702	1855
Q Serve(g_s), s	4.1	0.0	13.5	9.1	0.0	5.5	14.6	25.5	25.6	2.6	27.8	27.8
Cycle Q Clear(g_c), s	4.1	0.0	13.5	9.1	0.0	5.5	14.6	25.5	25.6	2.6	27.8	27.8
Prop In Lane	1.00		0.79	1.00		0.47	1.00		0.14	1.00		0.05
Lane Grp Cap(c), veh/h	95	0	273	197	0	385	298	1683	901	65	1237	674
V/C Ratio(X)	0.78	0.00	0.84	0.84	0.00	0.30	0.89	0.68	0.68	0.72	0.84	0.84
Avail Cap(c_a), veh/h	189	0	476	225	0	535	351	1813	971	107	1346	734
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	0.0	40.3	43.6	0.0	32.2	40.7	19.2	19.2	47.6	29.1	29.1
Incr Delay (d2), s/veh	5.0	0.0	6.7	19.8	0.0	0.4	19.7	0.9	1.8	5.6	4.5	7.9
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	2.0	0.0	5.9	5.1	0.0	2.4	7.8	9.4	10.3	1.2	11.4	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.7	0.0	47.0	63.3	0.0	32.7	60.4	20.2	21.0	53.2	33.6	37.0
LnGrp LOS	D		D	E		C	E	C	C	D	C	D
Approach Vol, veh/h		302			280			2021			1646	
Approach Delay, s/veh		48.2			50.9			25.7			35.3	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	54.8	15.7	21.2	21.3	41.7	9.9	26.9				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	6.0	53.2	12.6	29.0	19.7	39.5	10.6	31.0				
Max Q Clear Time (g_c+I1), s	4.6	27.6	11.1	15.5	16.6	29.8	6.1	7.5				
Green Ext Time (p_c), s	0.0	13.8	0.0	1.2	0.1	6.5	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			32.7									
HCM 7th LOS			C									

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	45	0	1921	1777	46
Future Vol, veh/h	0	45	0	1921	1777	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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	0	2022	1871	48

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	959	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	221	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	221	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v25.71		0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	221	-
HCM Lane V/C Ratio	-	0.215	-
HCM Control Delay (s/veh)	-	25.7	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	0.8	-

HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/10/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	514	0	634	900	1252	0	0	1215	586
Future Volume (veh/h)	0	0	0	514	0	634	900	1252	0	0	1215	586
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				668	0	271	947	1318	0	0	1279	483
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				761	0	339	991	3602	0	0	2472	601
Arrive On Green				0.21	0.00	0.21	0.57	1.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1563
Grp Volume(v), veh/h				668	0	271	947	1318	0	0	1279	483
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1563
Q Serve(g_s), s				23.6	0.0	21.1	33.6	0.0	0.0	0.0	19.9	35.8
Cycle Q Clear(g_c), s				23.6	0.0	21.1	33.6	0.0	0.0	0.0	19.9	35.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				761	0	339	991	3602	0	0	2472	601
V/C Ratio(X)				0.88	0.00	0.80	0.96	0.37	0.00	0.00	0.52	0.80
Avail Cap(c_a), veh/h				1041	0	463	1103	3602	0	0	2472	601
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				49.5	0.0	48.5	26.9	0.0	0.0	0.0	30.8	35.7
Incr Delay (d2), s/veh				6.1	0.0	6.0	16.4	0.3	0.0	0.0	0.8	11.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.8	0.0	8.7	11.4	0.1	0.0	0.0	7.7	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				55.5	0.0	54.5	43.3	0.3	0.0	0.0	31.5	46.6
LnGrp LOS				E		D	D	A			C	D
Approach Vol, veh/h					939			2265			1762	
Approach Delay, s/veh					55.2			18.3			35.7	
Approach LOS					E			B			D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	41.8	55.4		32.8		97.2						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	41.5	35.5		38.0		81.5						
Max Q Clear Time (g_c+I1), s	35.6	37.8		25.6		2.0						
Green Ext Time (p_c), s	1.7	0.0		2.2		9.9						

Intersection Summary		
HCM 7th Control Delay, s/veh		31.4
HCM 7th LOS		C

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved volume balancing among the lanes for turning movement.

Timings
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	517	444	572	73	187	105	1585	191	845	692
Future Volume (vph)	517	444	572	73	187	105	1585	191	845	692
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	19.0	52.3	20.0	16.7	50.0	20.0	45.0	16.0	41.0	19.0
Total Split (%)	14.6%	40.2%	15.4%	12.8%	38.5%	15.4%	34.6%	12.3%	31.5%	14.6%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	14.5	38.2	50.8	9.6	31.3	12.1	42.8	21.9	53.2	72.7
Actuated g/C Ratio	0.11	0.29	0.39	0.07	0.24	0.09	0.33	0.17	0.41	0.56
v/c Ratio	1.42	0.85	0.51	0.59	0.54	0.68	1.04	0.67	0.43	0.66
Control Delay (s/veh)	241.2	46.2	16.4	75.9	24.4	76.8	76.0	80.9	19.6	12.2
Queue Delay	4.2	0.3	0.0	0.0	0.8	0.0	3.8	0.0	0.1	2.3
Total Delay (s/veh)	245.4	46.5	16.4	75.9	25.3	76.8	79.8	80.9	19.7	14.5
LOS	F	D	B	E	C	E	E	F	B	B
Approach Delay (s/veh)		102.3			32.1		79.6		24.4	
Approach LOS		F			C		E		C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.42
 Intersection Signal Delay (s/veh): 64.0 Intersection LOS: E
 Intersection Capacity Utilization 89.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/10/2024



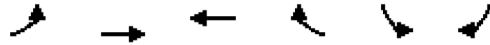
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	517	444	572	73	187	285	105	1585	61	191	845	692
Future Volume (veh/h)	517	444	572	73	187	285	105	1585	61	191	845	692
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	544	467	209	77	197	224	111	1668	60	201	889	594
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	526	985	97	398	354	135	2153	77	158	2239	872
Arrive On Green	0.04	0.09	0.09	0.05	0.22	0.22	0.08	0.43	0.43	0.03	0.14	0.14
Sat Flow, veh/h	3456	1870	2754	1781	1777	1581	1781	5055	182	1781	5106	1585
Grp Volume(v), veh/h	544	467	209	77	197	224	111	1123	605	201	889	594
Grp Sat Flow(s),veh/h/ln	1728	1870	1377	1781	1777	1581	1781	1702	1833	1781	1702	1585
Q Serve(g_s), s	14.5	32.1	8.2	5.6	12.6	16.7	8.0	36.7	36.8	11.5	20.5	38.1
Cycle Q Clear(g_c), s	14.5	32.1	8.2	5.6	12.6	16.7	8.0	36.7	36.8	11.5	20.5	38.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	385	526	985	97	398	354	135	1450	780	158	2239	872
V/C Ratio(X)	1.41	0.89	0.21	0.79	0.49	0.63	0.82	0.77	0.78	1.28	0.40	0.68
Avail Cap(c_a), veh/h	385	681	1213	167	615	547	212	1450	780	158	2239	872
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	57.0	37.3	60.7	44.0	45.6	59.2	32.0	32.0	63.1	40.0	33.1
Incr Delay (d2), s/veh	196.4	8.3	0.1	5.3	0.7	1.4	6.9	4.1	7.4	164.0	0.5	4.3
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	17.2	17.3	2.9	2.6	5.5	6.6	3.8	15.2	17.1	12.7	9.5	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	259.0	65.3	37.3	66.0	44.7	47.0	66.1	36.1	39.4	227.1	40.5	37.4
LnGrp LOS	F	E	D	E	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1220			498			1839			1684	
Approach Delay, s/veh		146.9			49.0			39.0			61.7	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	60.9	11.6	41.5	14.4	62.5	19.0	34.1				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	11.5	39.5	12.2	47.3	15.5	* 36	14.5	45.0				
Max Q Clear Time (g_c+I1), s	13.5	38.8	7.6	34.1	10.0	40.1	16.5	18.7				
Green Ext Time (p_c), s	0.0	0.6	0.0	2.4	0.1	0.0	0.0	2.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											72.3	
HCM 7th LOS											E	

Notes
User approved pedestrian interval to be less than phase max green.
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 7th Signalized Intersection Summary
 1: Indiana Av. & SR-91 EB Ramps

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↷	↶	↶
Traffic Volume (veh/h)	169	668	622	439	1414	18
Future Volume (veh/h)	169	668	622	439	1414	18
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	172	682	635	343	1460	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	1818	1301	1212	1452	646
Arrive On Green	0.11	0.51	0.12	0.12	0.41	0.00
Sat Flow, veh/h	1781	3647	3647	1545	3563	1585
Grp Volume(v), veh/h	172	682	635	343	1460	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1545	1781	1585
Q Serve(g_s), s	12.4	15.1	21.7	9.8	53.0	0.0
Cycle Q Clear(g_c), s	12.4	15.1	21.7	9.8	53.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	197	1818	1301	1212	1452	646
V/C Ratio(X)	0.87	0.38	0.49	0.28	1.01	0.00
Avail Cap(c_a), veh/h	226	1818	1301	1212	1452	646
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.69	0.69	1.00	0.00
Uniform Delay (d), s/veh	56.9	19.2	45.8	6.1	38.5	0.0
Incr Delay (d2), s/veh	25.7	0.6	0.9	0.4	24.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	6.2	10.5	11.5	26.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	82.6	19.8	46.7	6.5	63.4	0.0
LnGrp LOS	F	B	D	A	F	
Approach Vol, veh/h		854	978		1460	
Approach Delay, s/veh		32.4	32.6		63.4	
Approach LOS		C	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		72.0		58.0	18.9	53.1
Change Period (Y+Rc), s		5.5		5.0	4.5	5.5
Max Green Setting (Gmax), s		66.5		53.0	16.5	45.5
Max Q Clear Time (g_c+I1), s		17.1		55.0	14.4	23.7
Green Ext Time (p_c), s		4.0		0.0	0.1	4.3

Intersection Summary		
HCM 7th Control Delay, s/veh		46.2
HCM 7th LOS		D

Notes
 User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	322	3	56	442	3	57
Future Vol, veh/h	322	3	56	442	3	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	339	3	59	465	3	60

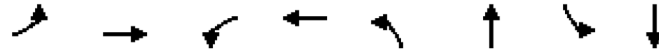
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	342	0	924 341
Stage 1	-	-	-	-	341 -
Stage 2	-	-	-	-	583 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1217	-	299 702
Stage 1	-	-	-	-	720 -
Stage 2	-	-	-	-	558 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1217	-	280 702
Mov Cap-2 Maneuver	-	-	-	-	280 -
Stage 1	-	-	-	-	720 -
Stage 2	-	-	-	-	521 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.91	11.11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	653	-	-	202	-
HCM Lane V/C Ratio	0.097	-	-	0.048	-
HCM Control Delay (s/veh)	11.1	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Timings
3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
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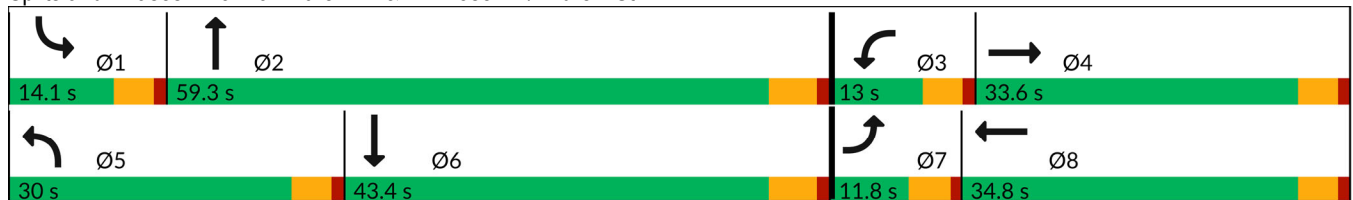


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↶	↷	↶	↷	↶	↑↑↑	↶	↑↑↑
Traffic Volume (vph)	84	48	132	46	418	1422	57	1686
Future Volume (vph)	84	48	132	46	418	1422	57	1686
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	33.6	9.6	33.6	9.6	22.4	9.6	22.4
Total Split (s)	11.8	33.6	13.0	34.8	30.0	59.3	14.1	43.4
Total Split (%)	9.8%	28.0%	10.8%	29.0%	25.0%	49.4%	11.8%	36.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.4	3.6	4.4
All-Red Time (s)	1.0	1.0	1.0	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
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.4	4.6	5.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	10.6	15.0	8.4	16.0	25.5	58.2	7.5	38.2
Actuated g/C Ratio	0.10	0.14	0.08	0.15	0.24	0.55	0.07	0.36
v/c Ratio	0.49	0.74	0.95	0.32	1.00	0.56	0.46	0.96
Control Delay (s/veh)	59.9	25.4	115.0	26.0	84.5	18.4	61.2	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.9	25.4	115.0	26.0	84.5	18.4	61.2	47.1
LOS	E	C	F	C	F	B	E	D
Approach Delay (s/veh)		33.1		78.6		32.6		47.5
Approach LOS		C		E		C		D

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 106.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 41.2	Intersection LOS: D
Intersection Capacity Utilization 98.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Van Buren Bl. & Primrose Dr./Andrew St.



HCM 7th Signalized Intersection Summary
 3: Van Buren Bl. & Primrose Dr./Andrew St.

7-Eleven TA (JN 16095)
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	48	247	132	46	46	418	1422	103	57	1686	35
Future Volume (veh/h)	84	48	247	132	46	46	418	1422	103	57	1686	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	48	188	133	46	31	422	1436	86	58	1703	35
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	58	229	135	198	134	410	2620	157	75	1770	36
Arrive On Green	0.06	0.18	0.18	0.08	0.19	0.19	0.23	0.53	0.53	0.04	0.34	0.34
Sat Flow, veh/h	1781	331	1298	1781	1033	696	1781	4925	295	1781	5147	106
Grp Volume(v), veh/h	85	0	236	133	0	77	422	992	530	58	1126	612
Grp Sat Flow(s),veh/h/ln	1781	0	1629	1781	0	1729	1781	1702	1816	1781	1702	1848
Q Serve(g_s), s	5.2	0.0	15.4	8.2	0.0	4.2	25.4	21.3	21.3	3.6	35.8	35.9
Cycle Q Clear(g_c), s	5.2	0.0	15.4	8.2	0.0	4.2	25.4	21.3	21.3	3.6	35.8	35.9
Prop In Lane	1.00		0.80	1.00		0.40	1.00		0.16	1.00		0.06
Lane Grp Cap(c), veh/h	108	0	287	135	0	332	410	1811	966	75	1171	636
V/C Ratio(X)	0.79	0.00	0.82	0.98	0.00	0.23	1.03	0.55	0.55	0.78	0.96	0.96
Avail Cap(c_a), veh/h	116	0	428	135	0	473	410	1811	966	153	1171	636
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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	43.8	50.9	0.0	37.7	42.5	17.1	17.1	52.4	35.5	35.5
Incr Delay (d2), s/veh	25.2	0.0	7.8	71.3	0.0	0.4	52.4	0.4	0.7	6.3	17.9	26.6
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	3.1	0.0	6.9	6.4	0.0	1.8	16.8	7.8	8.4	1.7	17.0	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.4	0.0	51.7	122.3	0.0	38.1	94.9	17.4	17.7	58.7	53.4	62.1
LnGrp LOS	E		D	F		D	F	B	B	E	D	E
Approach Vol, veh/h		321			210			1944			1796	
Approach Delay, s/veh		58.2			91.4			34.3			56.5	
Approach LOS		E			F			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	64.1	13.0	24.1	30.0	43.4	11.3	25.8				
Change Period (Y+Rc), s	4.6	5.4	4.6	4.6	4.6	5.4	4.6	4.6				
Max Green Setting (Gmax), s	9.5	53.9	8.4	29.0	25.4	38.0	7.2	30.2				
Max Q Clear Time (g_c+I1), s	5.6	23.3	10.2	17.4	27.4	37.9	7.2	6.2				
Green Ext Time (p_c), s	0.0	12.5	0.0	1.1	0.0	0.1	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			48.3									
HCM 7th LOS			D									

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	51	0	1943	2015	52
Future Vol, veh/h	0	51	0	1943	2015	52
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	54	0	2045	2121	55

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	1088	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	181	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	181	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v33.03		0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 181	-	-
HCM Lane V/C Ratio	- 0.296	-	-
HCM Control Delay (s/veh)	- 33	-	-
HCM Lane LOS	- D	-	-
HCM 95th %tile Q(veh)	- 1.2	-	-

Timings
5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
07/03/2024

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	564	0	666	698	1221	1516	499
Future Volume (vph)	564	0	666	698	1221	1516	499
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		1	6	2	
Permitted Phases			4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	9.5	35.5	37.5	37.5
Total Split (s)	49.0	49.0	49.0	39.0	81.0	42.0	42.0
Total Split (%)	37.7%	37.7%	37.7%	30.0%	62.3%	32.3%	32.3%
Yellow Time (s)	4.0	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	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
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.5	5.5	5.5
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	40.0	40.0	40.0	31.4	79.5	43.6	43.6
Actuated g/C Ratio	0.31	0.31	0.31	0.24	0.61	0.34	0.34
v/c Ratio	0.87	0.86	0.82	0.89	0.41	0.74	0.60
Control Delay (s/veh)	60.5	53.0	49.5	62.0	20.0	42.1	6.3
Queue Delay	0.5	0.5	0.0	9.7	0.7	0.0	0.0
Total Delay (s/veh)	61.1	53.5	49.5	71.7	20.6	42.2	6.3
LOS	E	D	D	E	C	D	A
Approach Delay (s/veh)		54.8			39.2	33.3	
Approach LOS		D			D	C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay (s/veh): 40.6
 Intersection LOS: D
 Intersection Capacity Utilization 85.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Van Buren Bl. & SR-91 WB Ramps



HCM 7th Signalized Intersection Summary
 5: Van Buren Bl. & SR-91 WB Ramps

7-Eleven TA (JN 16095)
 07/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↑↑↑			↑↑↑↑	↗
Traffic Volume (veh/h)	0	0	0	564	0	666	698	1221	0	0	1516	499
Future Volume (veh/h)	0	0	0	564	0	666	698	1221	0	0	1516	499
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				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
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				731	0	293	735	1285	0	0	1596	410
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				832	0	370	785	3502	0	0	2728	671
Arrive On Green				0.23	0.00	0.23	0.45	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1583
Grp Volume(v), veh/h				731	0	293	735	1285	0	0	1596	410
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1583
Q Serve(g_s), s				25.7	0.0	22.6	26.3	0.0	0.0	0.0	24.7	26.2
Cycle Q Clear(g_c), s				25.7	0.0	22.6	26.3	0.0	0.0	0.0	24.7	26.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				832	0	370	785	3502	0	0	2728	671
V/C Ratio(X)				0.88	0.00	0.79	0.94	0.37	0.00	0.00	0.59	0.61
Avail Cap(c_a), veh/h				1206	0	536	917	3502	0	0	2728	671
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				48.1	0.0	46.9	34.6	0.0	0.0	0.0	28.7	29.1
Incr Delay (d2), s/veh				4.9	0.0	4.2	14.8	0.3	0.0	0.0	0.9	4.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.7	0.0	9.1	9.9	0.1	0.0	0.0	9.4	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				53.0	0.0	51.1	49.4	0.3	0.0	0.0	29.6	33.2
LnGrp LOS				D		D	D	A			C	C
Approach Vol, veh/h					1024			2020			2006	
Approach Delay, s/veh					52.4			18.1			30.3	
Approach LOS					D			B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	34.0	60.6		35.3		94.7						
Change Period (Y+Rc), s	4.5	5.5		5.0		5.5						
Max Green Setting (Gmax), s	34.5	36.5		44.0		75.5						
Max Q Clear Time (g_c+I1), s	28.3	28.2		27.7		2.0						
Green Ext Time (p_c), s	1.3	5.9		2.6		9.5						

Intersection Summary		
HCM 7th Control Delay, s/veh		29.9
HCM 7th LOS		C

Notes
 User approved volume balancing among the lanes for turning movement.

Timings
6: Van Buren Bl. & Indiana Av.

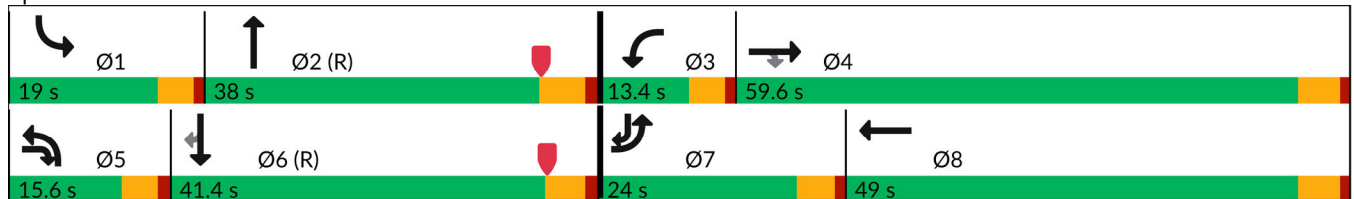
7-Eleven TA (JN 16095)
07/03/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	608	590	884	76	231	94	1199	237	1107	736
Future Volume (vph)	608	590	884	76	231	94	1199	237	1107	736
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	7
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	10.0	9.5	9.5	49.0	9.5	29.5	9.5	32.0	9.5
Total Split (s)	24.0	59.6	15.6	13.4	49.0	15.6	38.0	19.0	41.4	24.0
Total Split (%)	18.5%	45.8%	12.0%	10.3%	37.7%	12.0%	29.2%	14.6%	31.8%	18.5%
Yellow Time (s)	3.5	4.0	3.5	3.5	4.0	3.5	4.5	3.5	4.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	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	0.0
Total Lost Time (s)	4.5	5.0	4.5	4.5	5.0	4.5	5.5	4.5	5.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	None
Act Effct Green (s)	19.5	48.2	63.6	8.3	37.0	10.4	32.5	21.5	44.1	64.1
Actuated g/C Ratio	0.15	0.37	0.49	0.06	0.28	0.08	0.25	0.17	0.34	0.49
v/c Ratio	1.25	0.90	0.66	0.71	0.42	0.70	1.06	0.85	0.68	0.80
Control Delay (s/veh)	168.1	47.2	13.9	90.7	22.3	83.1	89.9	90.8	25.5	16.3
Queue Delay	0.5	7.0	0.6	0.0	0.4	0.0	0.0	0.0	0.3	2.8
Total Delay (s/veh)	168.5	54.2	14.5	90.7	22.6	83.1	89.9	90.8	25.8	19.1
LOS	F	D	B	F	C	F	F	F	C	B
Approach Delay (s/veh)		70.7			32.9		89.5		30.8	
Approach LOS		E			C		F		C	

Intersection Summary






























Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.25
 Intersection Signal Delay (s/veh): 58.1
 Intersection LOS: E
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Van Buren Bl. & Indiana Av.



HCM 7th Signalized Intersection Summary
6: Van Buren Bl. & Indiana Av.

7-Eleven TA (JN 16095)
07/03/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 		 			  			  	
Traffic Volume (veh/h)	608	590	884	76	231	195	94	1199	76	237	1107	736
Future Volume (veh/h)	608	590	884	76	231	195	94	1199	76	237	1107	736
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	640	621	611	80	243	177	99	1262	74	249	1165	586
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	518	696	1229	101	556	389	122	1525	89	199	1801	796
Arrive On Green	0.05	0.12	0.12	0.06	0.28	0.28	0.07	0.31	0.31	0.04	0.12	0.12
Sat Flow, veh/h	3456	1870	2790	1781	1994	1395	1781	4924	289	1781	5106	1584
Grp Volume(v), veh/h	640	621	611	80	215	205	99	872	464	249	1165	586
Grp Sat Flow(s),veh/h/ln	1728	1870	1395	1781	1777	1612	1781	1702	1809	1781	1702	1584
Q Serve(g_s), s	19.5	42.5	24.0	5.8	12.9	13.6	7.1	30.9	30.9	14.5	28.3	37.2
Cycle Q Clear(g_c), s	19.5	42.5	24.0	5.8	12.9	13.6	7.1	30.9	30.9	14.5	28.3	37.2
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	518	696	1229	101	495	450	122	1054	560	199	1801	796
V/C Ratio(X)	1.23	0.89	0.50	0.80	0.43	0.46	0.81	0.83	0.83	1.25	0.65	0.74
Avail Cap(c_a), veh/h	518	786	1362	122	601	546	152	1054	560	199	1801	796
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	54.4	37.8	60.6	38.5	38.7	59.7	41.7	41.7	62.6	49.7	34.6
Incr Delay (d2), s/veh	115.5	7.1	0.1	20.8	0.4	0.5	18.8	7.5	13.2	148.4	1.8	6.0
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	17.4	22.7	9.0	3.2	5.6	5.4	3.8	13.6	15.4	15.1	13.2	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	177.2	61.5	37.9	81.4	38.9	39.3	78.5	49.1	54.9	211.0	51.5	40.6
LnGrp LOS	F	E	D	F	D	D	E	D	D	F	D	D
Approach Vol, veh/h		1872			500			1435			2000	
Approach Delay, s/veh		93.4			45.9			53.0			68.2	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	45.8	11.8	53.4	13.4	51.4	24.0	41.2				
Change Period (Y+Rc), s	4.5	5.5	4.5	5.0	4.5	* 5.5	4.5	5.0				
Max Green Setting (Gmax), s	14.5	32.5	8.9	54.6	11.1	* 36	19.5	44.0				
Max Q Clear Time (g_c+I1), s	16.5	32.9	7.8	44.5	9.1	39.2	21.5	15.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.9	0.0	0.0	0.0	2.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			70.6									
HCM 7th LOS			E									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

**APPENDIX 6.3: CUMULATIVE (2045) WITH PROJECT CONDITIONS
TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	<u>CALC</u>	<u>TRAFFIC CONDITIONS</u>	<u>2045 WP</u>
Jurisdiction: <u>City of Riverside</u>				<u>RV</u>		<u>DATE 07/10/24</u>
Major Street: <u>Primrose Dr.</u>				<u>CHK RV</u>		<u>DATE 07/10/24</u>
Minor Street: <u>Driveway 1</u>					Critical Approach Speed (Major) <u>25 mph</u>	
					Critical Approach Speed (Minor) <u>25 mph</u>	
Major Street Approach Lanes = <u>2</u>	lane	Minor Street Approach Lanes: <u>1</u>	lane			
Major Street Future ADT = <u>12,161</u>	vpd	Minor Street Future ADT = <u>846</u>	vpd			
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);						<input type="checkbox"/>
						or
In built up area of isolated community of < 10,000 population						<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume					
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1	1	8,000	5,600	2,400	1,680
2 + 12,161	1 846	9,600 *	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
Number of lanes for moving traffic on each approach		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
1	1	12,000	8,400	1,200	850
2 + 12,161	1 846	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
<u>Satisfied</u>	<u>Not Satisfied</u>				
	XX				
No one condition satisfied, but following conditions fulfilled 80% of more		2 CONDITIONS 80%		2 CONDITIONS 80%	
	<u>A</u>				
	35%				
	<u>B</u>				
	70%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



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