



**Bright View Engineering**  
*Moving you forward*

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# Traffic Impact Study

Business and Industry (B-I) Zone  
Franklin Township  
Somerset County, New Jersey  
August 18, 2024

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## I. INTRODUCTION

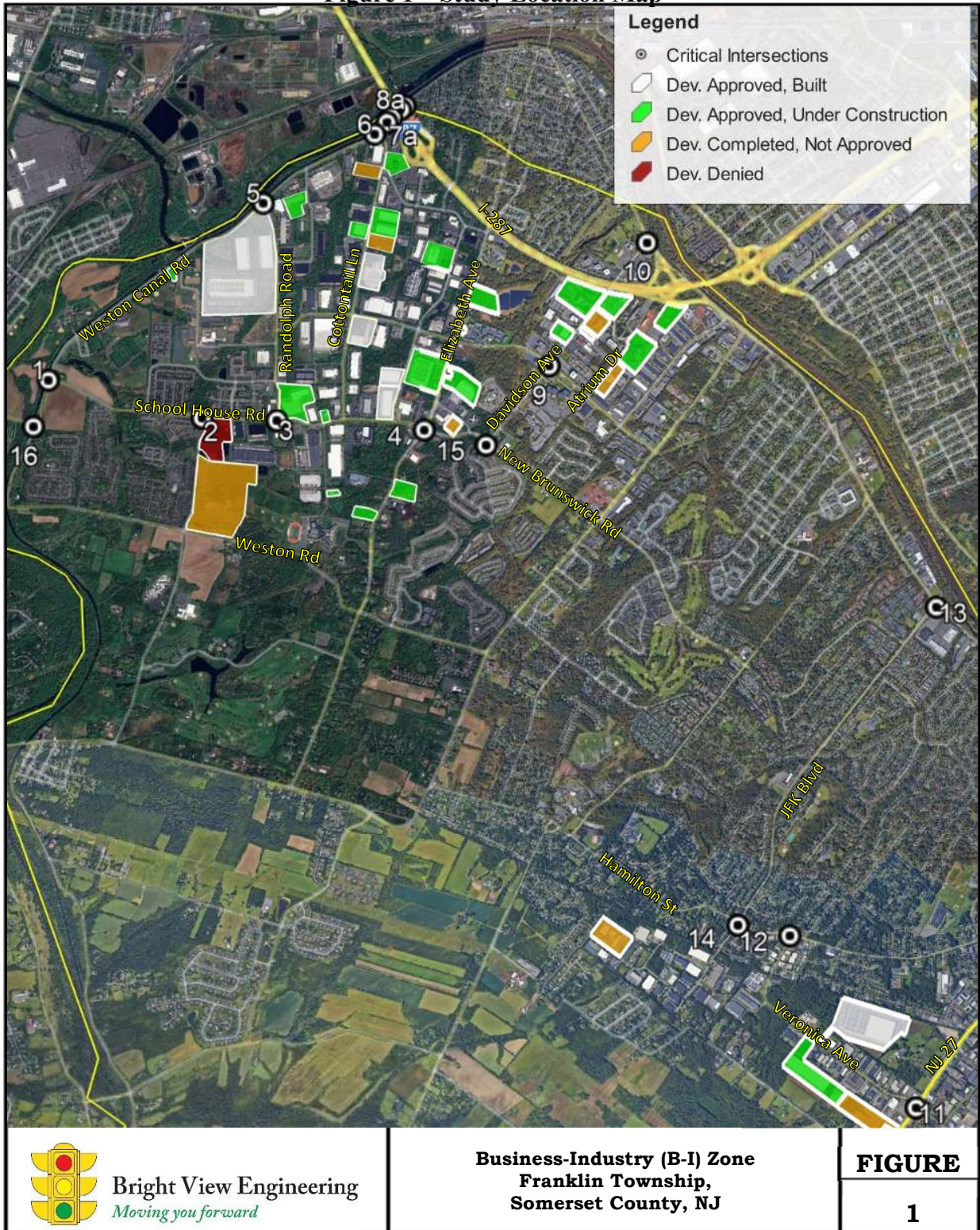
Bright View Engineering, LLC was tasked by the Township of Franklin (*the Township here-in*) with performing an evaluation of traffic conditions of the Township's Business and Industry (B-I) Zone at key network roadways and critical intersections within the study area. A study location map is included within **Figure 1** on the following page.

Bright View Engineering (*BVE here-in*), in coordination with the Township, collected data during various site visits and was provided data by the Township to assess the existing conditions along the study corridors. The collected data and observations were utilized to reexamine the master plan for the zoning for the Township. Our methodology conforms with the provisions set forth in *NJSA Title 39*, Institute of Transportation Engineers (*ITE*) literature, and applicable requirements from the Manual on Uniform Traffic Control Devices (*MUTCD*). Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the project, including the existing physical and traffic operating characteristics;
- 2023 Existing Traffic Conditions;
- Peak Hour Capacity Analysis of Existing Conditions and Future Conditions
- Recommendations for safety and operational improvements; and
- Summary and Conclusions.



**Figure 1 – Study Location Map**





## II. EXISTING CONDITIONS

Multiple field investigations were conducted to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations of the roadways in the study area, and existing vehicular and pedestrian traffic patterns. The following is a brief description of the roadways:

**I-287** general North to South orientation in Franklin Township, Somerset County. The roadway acts as an Urban Interstate under New Jersey Department of Transportation jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried May 2019*).

**School House Road** has a general East to West orientation which spans 2.15 miles along the study area. The road acts as an Urban Major Collector under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried September 2017*). The speed limit for this roadway range between 30 to 40 MPH. It is our opinion that a 30 to 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. School House Road allows for bi-directional travel with a pavement range of 24-32 feet. On-street parking is prohibited along both sides of School House Road.

**Weston Canal Road** has a general North to South orientation which spans 2.79 miles along the study area. The road acts as an Urban Major Collector under County jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried July 2011*). The speed limit for this roadway range between 35 to 45 MPH. It is our opinion that a 35 to 45 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Weston Canal Road allows for bi-directional travel with a pavement range of 22-34 feet. On-street parking is prohibited along both sides of Weston Canal Road.

**Mettlers Road** has a general North to South orientation which spans 1.90 miles along the study area. The road acts as an Urban Major Collector under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried October 2017*). The speed limit for this roadway range between 35 and 40 MPH. It is our opinion that a 35 and 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Mettlers Road allows for bi-directional travel with a pavement range of 20-28 feet. On-street parking is prohibited along both sides of Mettlers Road.



**Randolph Road** has a general North to South orientation which spans 1.21 miles along the study area. The road acts as an Urban Major Collector under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried September 2017*). The speed limit for this roadway range is posted at 40 MPH. It is our opinion that a 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Randolph Road allows for bi-directional travel with a pavement range of 24-32 feet. On-street parking is prohibited along both sides of Randolph Road.

**Elizabeth Avenue** has a general North to South orientation which spans 4.30 miles along the study area. The road acts as an Urban Minor Arterial under County jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried July 2011*). The speed limit for this roadway range between 25 to 40 MPH. It is our opinion that a 25 to 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Elizabeth Avenue allows for bi-directional travel with a pavement range of 20-24 feet. On-street parking is prohibited along both sides of Elizabeth Avenue.

**Cottontail Lane** has a general North to South orientation which spans approximately 1.62 miles in the study area. There is no posted speed limit for this roadway. It is our opinion that a 35 MPH speed limit is appropriate given the commercial uses and this speed limit conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. There are no NJDOT Straight Line Diagram for this roadway. Cottontail Lane allows for bi-directional travel with a pavement 30 feet. On-street parking is prohibited along both sides of Cottontail Lane.

**Davidson Avenue** has a general North to South orientation which spans 1.42 miles along the study area. The road acts as an Urban Major Collector under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried October 2017*). The speed limit for this roadway is posted at 45 MPH. It is our opinion that a 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Davidson Avenue allows for bi-directional travel with a pavement range of 36-48 feet. On-street parking is prohibited along both sides of Davidson Avenue.

**Pierce Street** has a general East to West orientation which spans approximately 2.30 miles in the study area. The speed limit for this roadway range between 35 and 40 MPH. It is our opinion that a 35 and 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. There are no NJDOT Straight Line Diagram for this roadway. Pierce Street allows for bi-directional travel with a pavement range of 22-40 feet. On-street parking is prohibited along both sides of Pierce Street.



**Easton Avenue** has a general North to South orientation which spans 3.15 miles along the study area. The road acts as an Urban Principal Arterial under County jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried November 2012*). The speed limit for this roadway range between 40 and 45 MPH. It is our opinion that a 40 and 45 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Easton Avenue allows for bi-directional travel with a pavement range of 24-48 feet. On-street parking is prohibited along both sides of Easton Avenue.

**Veronica Avenue** has a general East to West orientation which spans 1.43 miles along the study area. The road acts as an Urban Minor Arterial under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried October 2017*). The speed limit for this roadway along its entire length is 40 MPH. It is our opinion that a 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Veronica Avenue allows for bi-directional travel with a pavement of 32 feet. On-street parking is prohibited along both sides of Veronica Avenue.

**Hamilton Street** has a general East to West orientation which spans 2.75 miles along the study area. The road acts as an Urban Minor Arterial under County jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried October 2012*). The speed limit for this roadway range between 25 to 45 MPH. It is our opinion that a 25 to 45 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. Hamilton Street allows for bi-directional travel with a pavement range of 40-48 feet. On-street parking is prohibited along both sides of Hamilton Street.

**JFK Boulevard** has a general North to South orientation which spans 2.00 miles along the study area. The road acts as an Urban Minor Arterial under Municipal jurisdiction according to the most recent NJDOT Straight Line Diagram (*last inventoried October 2017*). The speed limit for this roadway is posted at 40 MPH. It is our opinion that a 40 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39, Chapter 4, Section 98, and the provisions set forth in R.S.39:4-96 and R.S.39:4-97. JFK Boulevard allows for bi-directional travel with a pavement range of 24-60 feet. On-street parking is prohibited along both sides of JFK Boulevard.

**NJ Route 27** has a general North to South orientation in Franklin Township, Somerset County. The roadway is under the jurisdiction of NJDOT in the vicinity of the site and is classified as an Urban Principal Arterial according to the most recent NJDOT Straight Line Diagram, (*last inventoried March 2021*).



### III. 2023 EXISTING TRAFFIC CONDITIONS

In order to gain a better understanding of existing traffic conditions, Bright View Engineering collected traffic data at the following critical intersections within the study area:

1. School House Road and Weston Canal Road
2. School House Road and Mettlers Road
3. School House Road and Randolph Road
4. School House Road / New Brunswick Road and Elizabeth Avenue
5. Randolph Road and Weston Canal Road
6. Weston Canal Road and Cottontail Lane
7. Weston Canal Road and I-287 Southbound On/Off Ramps
8. Weston Canal Road and I-287 Northbound On/Off Ramps
9. Davidson Avenue and Pierce Street
10. Davidson Avenue and Easton Avenue
11. Veronica Avenue and Route 27
12. Veronica Avenue and Hamilton Street
13. JFK Boulevard and Easton Avenue
14. JFK Boulevard and Hamilton Street
15. New Brunswick Road and Davidson Avenue/Manor Boulevard
16. Weston Canal Road and Manville Causeway

Manual Turning Movement Counts (*MTMC*) at the aforementioned locations were conducted on Wednesday, November 15, 2023, from 6:00 AM to 7:00 PM and Saturday, November 18, 2023, from 11:00 AM to 2:00 PM. We utilized individual peak hours for each study intersection.

Additional counts were conducted at the intersection of New Brunswick Road and Davidson Avenue/Manor Boulevard and at Weston Canal Road and Manville Causeway on Thursday, August 8, 2024, from 6:00 AM to 7:00 PM and Saturday, August 10, 2024, from 11:00 AM to 2:00 PM. The August 2024 traffic data was adjusted based on our 2023 counts on adjacent streets and on NJDOT seasonal correction factors, as necessary. Based on our calculations, the August 2024 counts are representative of the typical volumes at the two (2) additional intersections.





**Establishment of Peak Hour Factor**

The *peak hour factor (PHF)* is a ratio which expresses the relationship between the peak 15-minute flow rates and the full hourly volume. The PHF is calculated by multiplying the peak 15-minute flow rate at an intersection by four and then dividing the intersection hourly volume by that value. PHFs are usually observed between 0.80 and 0.98. These statistics indicate that the recorded traffic volumes approach the intersection consistently, with minimal interruption in the traffic stream.

The formula for the PHF is detailed below. **Table 1** depicts the observed peak hour factors:

$$PHF = \frac{V}{4 * V15} \quad \text{Whereas:}$$

PHF ..... represents the Peak Hour Factor  
 V ..... represents the total hourly Volume; and,  
 V15 ..... represents the peak 15-minute Volume.

**Table 1 – Peak Hour Factors (PHF)**

Intersection	Peak Hour Period		
	AM	PM	SAT
1 School House Road and Weston Canal Road	0.87	0.95	0.95
2 School House Road and Mettlers Road	0.87	0.90	0.81
3 School House Road and Randolph Road	0.85	0.87	0.83
4 School House Road and Elizabeth Avenue	0.91	0.95	0.94
5 Randolph Road and Weston Canal Road	0.90	0.85	0.90
6 Weston Canal Road and Cottontail Lane	0.90	0.94	0.88
7 Weston Canal Road and I-287 Southbound On/Off Ramps	0.92	0.95	0.91
8 Weston Canal Road and I-287 Northbound On/Off Ramps	0.89	0.91	0.92
9 Davidson Avenue and Pierce Street	0.95	0.84	0.96
10 Davidson Avenue and Easton Avenue	0.93	0.92	0.96
11 Veronica Avenue and Route 27	0.92	0.97	0.95
12 Veronica Avenue and Hamilton Street	0.93	0.93	0.93
13 JFK Boulevard and Easton Avenue	0.92	0.98	0.96
14 JFK Boulevard and Hamilton Street	0.92	0.97	0.96
15* New Brunswick Rd. and Davidson Ave./Manor Blvd.	0.96	0.89	0.96
16* Weston Canal Road and Manville Causeway	0.93	0.93	0.92
<b>Avg.</b>	<b>0.91</b>	<b>0.92</b>	<b>0.92</b>

These PHF’s indicate consistent traffic progression during the peak hour, with no sudden increases in traffic during the fifteen-minute intervals counted. We noted during our field observations that traffic flow was consistent throughout the peak periods, further corroborating the PHF calculation. It should be noted that based on our field observations and the resulting PHFs from our data collection, we opted to utilize the existing PHFs for all analyses. We felt that this was a reasonably conservative approach when examining the conditions in the study area.



**Establishment of Heavy Vehicle Factor**

The *heavy vehicle (%)* is the percentage of heavy vehicles (*buses, two-axle six tire vehicles or larger*) utilizing the roadway. By accounting for heavy vehicles as an overall percentage of total vehicles on a roadway segment, we are better able to analyze how these vehicles impact the roadway network and get a better understanding of just what types of vehicles are using the roadway network during peak traffic periods. **Table 2** below depicts the heavy vehicles factors observed at each intersection during the indicated Peak Hours.

**Table 2 – Existing Heavy Vehicle (%)**

Intersection	Peak Hour Period		
	AM	PM	SAT
1 School House Road and Weston Canal Road	3%	2%	2%
2 School House Road and Mettlers Road	2%	2%	2%
3 School House Road and Randolph Road	6%	2%	3%
4 School House Road and Elizabeth Avenue	2%	2%	2%
5 Randolph Road and Weston Canal Road	6%	3%	5%
6 Weston Canal Road and Cottontail Lane	7%	3%	3%
7 Weston Canal Road and I-287 Southbound On/Off Ramps	5%	4%	4%
8 Weston Canal Road and I-287 Northbound On/Off Ramps	6%	3%	2%
9 Davidson Avenue and Pierce Street	2%	2%	2%
10 Davidson Avenue and Easton Avenue	3%	2%	2%
11 Veronica Avenue and Route 27	5%	4%	2%
12 Veronica Avenue and Hamilton Street	6%	2%	2%
13 JFK Boulevard and Easton Avenue	4%	2%	2%
14 JFK Boulevard and Hamilton Street	4%	2%	2%
15* New Brunswick Rd and Davidson Ave/Manor Blvd	2%	2%	3%
16* Weston Canal Road and Manville Causeway	4%	2%	3%
<b>Avg.</b>	<b>4%</b>	<b>2%</b>	<b>3%</b>

To be conservative, we obtained the heavy vehicle percentages for our future build analyses by adding 20% of the new site trips of the pending developments as heavy vehicles within the study area.

The 2023 existing traffic volumes and heavy vehicle percentage calculations can be found within Appendix A.



#### IV. HCM CAPACITY ANALYSIS

The peak hour traffic operations within the project vicinity were evaluated at each of the study intersections. The analyses were performed using the latest version of *Synchro, Version 12*; a traffic analysis and simulation program. The results of these analyses provide Level of Service (LOS), volume/capacity descriptions and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a peak hour. Level of Service is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics such as freedom to maneuver, traffic interruption, comfort, and convenience. Six LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F", with "A" representing excellent conditions with no delays and failure and deficient operations denoted by Level "F". The HCS 7<sup>th</sup> Edition LOS criteria for intersections are summarized in **Table 3**.

**Table 3 – HCM 7<sup>th</sup> Edition: Signalized and Unsignalized LOS/Delay Criteria**

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
<b>A</b>	< 10	< 10
<b>B</b>	> 10 - 20	> 10 - 15
<b>C</b>	> 20 - 35	> 15 – 25
<b>D</b>	> 35 – 55	> 25 – 35
<b>E</b>	> 55 – 80	> 35 – 50
<b>F</b>	> 80	> 50



### 2023 Existing Conditions HCM Capacity Analysis

The existing peak hours of operation were evaluated at the study intersections for the weekday morning and evening and Saturday traffic volumes. The results of these analyses provide Level of Service and average seconds of delay for the intersection movements detailed in **Table 4** below. Further details regarding the operating level of service and approach delays may be observed within the Synchro Reports found within the appendices at the end of this report.

**Table 4 – 2023 Existing Conditions LOS/Delay**

Node	Roadway	Approach	AM		PM		SAT	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
1	School House Road	WBL	C	(34.2)	D	(41.3)	E	(64.1)
		WBR	B	(12.5)	B	(10.7)	B	(10.9)
	Weston Canal Road	NBT	B	(18.0)	B	(15.7)	B	(12.0)
		NBR	A	(01.6)	A	(01.7)	A	(02.4)
		SBL	A	(04.2)	A	(05.2)	A	(03.4)
		SBT	A	(08.7)	B	(17.8)	B	(11.1)
<i>Intersection</i>	<i>Overall</i>	<b>B</b>	<b>(14.8)</b>	<b>B</b>	<b>(18.7)</b>	<b>B</b>	<b>(16.3)</b>	
2	School House Road	WB	A	(04.7)	A	(02.2)	A	(01.3)
	Mettlers Road	NB	B	(15.3)	B	(14.8)	B	(19.1)
	<i>Intersection</i>	<i>Overall</i>	<b>A</b>	<b>(05.3)</b>	<b>A</b>	<b>(03.6)</b>	<b>A</b>	<b>(03.8)</b>
3	School House Road	EBL	A	(04.0)	B	(16.3)	A	(04.0)
		EBT	A	(02.7)	A	(03.5)	A	(03.9)
		WBTR	A	(09.0)	B	(16.9)	A	(08.9)
	Randolph Road	SBL	C	(23.7)	C	(22.2)	C	(21.5)
		SBR	C	(20.8)	C	(22.4)	C	(22.4)
	<i>Intersection</i>	<i>Overall</i>	<b>B</b>	<b>(10.4)</b>	<b>B</b>	<b>(15.1)</b>	<b>A</b>	<b>(08.4)</b>
4	School House Road	EBL	C	(29.3)	C	(30.7)	C	(33.3)
		EBT	D	(49.5)	D	(46.9)	D	(40.7)
		EBR	A	(00.0)	A	(00.0)	A	(00.0)
		WBL	C	(30.3)	D	(40.7)	C	(32.2)
		WBT	D	(39.8)	D	(40.1)	D	(45.4)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	Elizabeth Avenue	NBL	B	(13.1)	B	(14.8)	B	(11.2)
		NBT	B	(19.9)	B	(19.3)	B	(14.5)
		NBR	A	(00.0)	A	(00.0)	A	(00.0)
		SBL	D	(45.0)	E	(58.4)	D	(46.7)
		SBTR	B	(19.0)	B	(18.7)	B	(14.4)
<i>Intersection</i>	<i>Overall</i>	<b>C</b>	<b>(29.7)</b>	<b>C</b>	<b>(33.4)</b>	<b>C</b>	<b>(30.0)</b>	
5	Weston Canal Road	EBTR	D	(40.9)	C	(25.4)	C	(31.5)
		WBL	F	(149.2)	D	(54.7)	B	(16.1)
		WBT	A	(09.5)	B	(16.8)	B	(10.7)
	Randolph Road	NBL	C	(24.6)	C	(24.7)	C	(26.6)
		NBR	F	(81.0)	F	(142.1)	D	(41.5)
	<i>Intersection</i>	<i>Overall</i>	<b>E</b>	<b>(69.9)</b>	<b>D</b>	<b>(50.5)</b>	<b>C</b>	<b>(23.4)</b>



**Table 4 – 2023 Existing Conditions LOS/Delay (cont.)**

Node	Roadway	Approach	AM		PM		SAT	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
6	Weston Canal Road	EBTR	B	(12.3)	B	(18.0)	A	(09.8)
		WBL	A	(06.1)	A	(05.2)	A	(02.1)
		WBT	E	(66.6)	C	(25.1)	B	(18.7)
	Cottontail Lane	NBL	C	(29.7)	C	(31.9)	C	(21.6)
		NBR	C	(23.3)	C	(26.0)	C	(21.5)
<i>Intersection</i>		<i>Overall</i>	<i>C</i>	<i>(34.1)</i>	<i>C</i>	<i>(20.3)</i>	<i>B</i>	<i>(14.1)</i>
7	Weston Canal Road	EBTR	B	(11.0)	B	(10.9)	A	(08.3)
		WBT	B	(14.4)	B	(10.3)	A	(08.3)
		WBL	B	(15.1)	B	(10.6)	A	(08.6)
	I-287 SB Ramps	NBLR	D	(36.9)	C	(32.1)	C	(30.0)
	<i>Intersection</i>		<i>Overall</i>	<i>B</i>	<i>(19.9)</i>	<i>B</i>	<i>(15.8)</i>	<i>B</i>
8	Weston Canal Road	EBTR	A	(07.2)	A	(08.7)	A	(07.7)
		WBT	B	(12.8)	B	(16.8)	B	(11.1)
		WBL	A	(08.6)	A	(09.1)	A	(08.1)
	I-287 NB Ramps	NBLR	C	(30.5)	C	(31.3)	C	(30.1)
	<i>Intersection</i>		<i>Overall</i>	<i>B</i>	<i>(15.3)</i>	<i>B</i>	<i>(17.8)</i>	<i>B</i>
9	Pierce Street	EBL	E	(60.0)	E	(77.4)	D	(49.1)
		EBTR	C	(28.5)	C	(26.9)	C	(29.8)
		WBLT	D	(41.7)	D	(47.0)	D	(42.2)
		WBR	D	(39.4)	D	(46.5)	D	(38.0)
	Davidson Avenue	NBL	B	(13.6)	C	(21.1)	A	(08.1)
		NBTR	B	(19.9)	D	(37.0)	B	(11.2)
		SBL	B	(12.7)	C	(27.9)	A	(06.9)
		SBTR	B	(18.4)	C	(31.5)	A	(08.8)
	<i>Intersection</i>		<i>Overall</i>	<i>C</i>	<i>(26.8)</i>	<i>D</i>	<i>(39.1)</i>	<i>B</i>
10	Easton Avenue	EBT	C	(29.8)	C	(31.5)	C	(22.5)
		EBR	D	(42.4)	C	(33.8)	C	(22.2)
		WBL	F	(134.7)	F	(154.2)	D	(36.2)
		WBLT	F	(137.7)	F	(155.5)	D	(38.4)
	Davidson Avenue	NBL	D	(36.8)	C	(32.7)	D	(38.0)
		NBR	B	(13.7)	B	(16.7)	B	(13.4)
	<i>Intersection</i>		<i>Overall</i>	<i>E</i>	<i>(75.5)</i>	<i>F</i>	<i>(82.0)</i>	<i>C</i>
11	Veronica Avenue	EBL	C	(31.2)	C	(30.1)	C	(29.0)
		EBTR	D	(49.0)	D	(37.6)	D	(54.7)
		WBL	C	(28.7)	C	(26.7)	C	(31.6)
		WBTR	E	(72.7)	E	(68.9)	D	(37.0)
	NJ Route 27	NBL	B	(17.2)	B	(18.2)	B	(16.6)
		NBT	C	(26.2)	C	(23.8)	C	(23.1)
		NBR	C	(26.3)	C	(23.9)	C	(23.3)
		SBL	B	(18.3)	B	(16.4)	B	(16.8)
		SBT	C	(25.5)	C	(26.5)	C	(22.0)
		SBR	B	(19.4)	B	(17.7)	B	(15.3)
<i>Intersection</i>		<i>Overall</i>	<i>D</i>	<i>(35.5)</i>	<i>C</i>	<i>(33.7)</i>	<i>C</i>	<i>(29.0)</i>



**Table 4 – 2023 Existing Conditions LOS/Delay (cont.)**

Node	Roadway	Approach	AM		PM		SAT	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
12	Hamilton Street	EBTR	C	(22.5)	D	(37.1)	C	(23.1)
		WBL	B	(11.0)	B	(13.9)	B	(10.6)
		WBT	B	(12.4)	B	(16.7)	B	(11.8)
	Veronica Avenue	NBL	D	(48.6)	E	(58.6)	D	(47.3)
		NBR	B	(12.6)	B	(14.1)	B	(13.6)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(23.9)</i>	<i>C</i>	<i>(32.4)</i>	<i>C</i>	<i>(24.1)</i>
13	Easton Avenue	EBTR	C	(23.6)	C	(26.0)	C	(23.7)
		WBT	C	(32.2)	C	(28.7)	C	(25.0)
	JFK Boulevard	NBL	D	(38.3)	D	(37.5)	C	(33.6)
		NBR	C	(31.8)	C	(27.8)	C	(26.0)
		SBLTR	D	(40.0)	D	(46.7)	D	(38.2)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(31.5)</i>	<i>C</i>	<i>(31.3)</i>	<i>C</i>	<i>(27.8)</i>
14	Hamilton Street	EBL	B	(13.8)	B	(13.8)	B	(10.4)
		EBTR	C	(24.9)	B	(19.3)	B	(14.3)
		WBL	B	(15.3)	B	(13.4)	B	(11.0)
		WBT	B	(19.7)	C	(21.0)	B	(15.0)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	JFK Boulevard	NBL	C	(24.7)	C	(25.7)	C	(25.5)
		NBT	D	(44.4)	D	(38.7)	D	(36.5)
		NBR	C	(27.2)	C	(28.6)	C	(29.7)
		SBL	E	(56.1)	C	(27.5)	C	(28.2)
		SBT	C	(32.4)	D	(36.5)	C	(32.3)
		SBR	A	(00.0)	A	(00.0)	A	(00.0)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(29.3)</i>	<i>C</i>	<i>(24.4)</i>	<i>C</i>	<i>(20.9)</i>	
15*	New Brunswick Road	EBL	A	(08.7)	A	(09.8)	A	(07.0)
		EBTR	A	(09.1)	B	(13.2)	B	(10.2)
		WBL	B	(10.1)	B	(11.1)	A	(08.6)
		WBT	B	(14.0)	B	(15.3)	B	(12.2)
		WBR	B	(13.3)	B	(12.6)	B	(10.3)
	Davidson Avenue / Manor Boulevard	NBLT	C	(26.5)	C	(28.0)	C	(26.5)
		NBR	A	(02.9)	C	(26.7)	C	(25.7)
		SBL	C	(23.0)	C	(24.3)	C	(21.9)
		SBTR	D	(38.5)	<b>F</b>	<b>(111.6)</b>	C	(34.7)
<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(18.0)</i>	<i>D</i>	<i>(46.2)</i>	<i>B</i>	<i>(18.5)</i>	
16*	Manville Causeway	EBLR	A	(00.0)	A	(00.0)	A	(00.0)
	Weston Canal Road	NBLT	A	(09.7)	B	(11.3)	B	(10.4)
		SBTR	A	(00.0)	A	(00.0)	A	(00.0)
	<i>Intersection</i>	<i>Overall</i>	<i>A</i>	<i>(00.8)</i>	<i>A</i>	<i>(01.0)</i>	<i>A</i>	<i>(01.2)</i>

Based on our analysis of the Existing Conditions, most of the movements at the study intersection operate at a Level of Service ‘D’ or better for all peak hours. However, we observed that the intersection of Davidson Avenue & Easton Avenue operates at Level of Service ‘E’ and ‘F’ during the weekday morning and evening peak hours, respectively. Also, the northbound right and westbound left movements at the intersection of Weston Canal Road & Randolph Road operate at a Level of Service ‘F’ during the weekday peak hours.



## **2028 Full Build Conditions HCM Capacity Analysis**

The 2028 future traffic volumes refer to the existing traffic volumes, plus background traffic growth and any additional traffic from projects in the area. An overall growth rate of (2.75% as per the current NJDOT annual background growth rate table for Somerset County) over a span of five (5) years yields was utilized.

The following warehouse developments within the study area were obtained from the Planning Board of the Township of Franklin:

### **Approved application, and/or under construction:**

- Puleo International – 600 Atrium Drive – 90,655 SF Warehouse
- Valor Group – 50 Atrium Drive – 70,300 SF Warehouse Expansion
- B9 Cottontail – 200 Cottontail Lane – 235,855 SF Warehouse
- Baldwas Realty – 545 & 549 Weston Canal Road – 62,500 SF Warehouse
- BH31 School House Road – 31 School House Road – 74,800 SF Warehouse
- BREIT Industrial Canyon NJ1W02 – 1 Wiley Drive – 355,790 SF Warehouse
- BSREP III Logistics Acquisitions– 399 Campus Drive – 120,102 SF Warehouse
- Duke Realty Corporation – Elizabeth Ave & Grant St – 439,960 SF Warehouse
- Elion Acquisition – 47 Veronica Avenue – 544,050 SF Warehouse
- Elizabeth Realty Partners – 483-485 Elizabeth Avenue – 74,730 SF Warehouse
- Executive Drive Investments – 490 Elizabeth Avenue – 63,477 SF Warehouse
- EWA Somerset – 400 Atrium Drive – 426,000 SF Warehouse
- IDIL Davidson – 195-215 Davidson Ave – 23,500 SF Light Industrial
- Ivy River Property, LLC – 1 Riverview Drive – 141,343 SF Warehouse
- JWH Real Estate– 1100 Randolph Road – 100,265 SF Warehouse Expansion
- Milon Builders – 16 Heller Park Lane – Construction Services HQ
- Odin Pharmaceutical – 300 Franklin Square Drive – Warehouse, Office, Manufacturing
- Orion IV Logistics Center – 429 Elizabeth Avenue – 153,154 SF Warehouse

### **Complete Application, no approval:**

- 500 Atrium LLC – 500 Atrium Drive – 80,500 SF Warehouse
- Onyx 789 LLC – 785 New Brunswick Road – 128,796 SF Warehouse
- Concore Realty LLC – 403 Elizabeth Avenue – 15,425 SF Warehouse
- EL-ION Franklin Development – Veronica Avenue – 150,000 SF Warehouse
- HSU Property Holdings – 400 Cottontail Lane – 64,515 SF Warehouse Expansion
- L'Oreal – 100 Commerce Drive – 248,040 SF Warehouse Expansion
- Somerset Properties – 91 Cottontail Lane – 61,190 SF Warehouse
- MCS Franklin LLC – 163 Weston Road; 38, 43 & 49 Mettlers Road – 621,000 SF Warehouse



Denied/Withdrawn

- B9 Schoolhouse Owner – 96-104 School House Road – 244,975 SF Warehouse
- Davidson Plaza NJ LLC – 220 Davidson Avenue – 145,750 SF Warehouse
- Davidson Properties LLC – 230 Davidson Avenue – Office, Light Manufacturing, Ministry

The Future Conditions were divided into two (2) scenarios. The first scenario (FB-1) consists of existing conditions, background growth, and the approved/under construction developments. The second scenario (FB-2) consists of the first scenario and pending developments with complete application but no approval at the time of this study. Developments that have already been built and occupied are assumed to be included in the existing conditions. Any denied or withdrawn development applications were not included in our analysis.

The Levels of Service (LOS) are briefly detailed for the 2028 Full Build Conditions in **Table 5a, 5b, and 5c** for the morning peak hour, evening peak hour, and Saturday peak hour, respectively. Further details regarding the operating level of service and approach delays may be observed within the Synchro Reports found within the appendices at the end of this report.

**Table 5a – 2028 Full Build Conditions (FB-1) LOS/Delay – AM Peak Hour**

Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
1	School House Road	WBL	C	(34.2)	D	(36.1)	D	(37.1)
		WBR	B	(12.5)	B	(10.8)	B	(10.8)
	Weston Canal Road	NBT	B	(18.0)	D	(45.6)	E	(55.4)
		NBR	A	(01.6)	A	(01.9)	A	(02.0)
		SBL	A	(04.2)	A	(05.4)	A	(05.5)
		SBT	A	(08.7)	B	(10.3)	B	(10.6)
	<i>Intersection</i>	<i>Overall</i>	<b>B</b>	<b>(14.8)</b>	<b>C</b>	<b>(29.5)</b>	<b>C</b>	<b>(34.3)</b>
2	School House Road	WB	A	(04.7)	A	(04.8)	A	(04.8)
	Mettlers Road	NB	B	(15.3)	C	(24.0)	C	(27.4)
	<i>Intersection</i>	<i>Overall</i>	<b>A</b>	<b>(05.3)</b>	<b>A</b>	<b>(06.7)</b>	<b>A</b>	<b>(07.3)</b>
3	School House Road	EBL	A	(04.0)	A	(05.2)	A	(05.7)
		EBT	A	(02.7)	A	(03.4)	A	(03.5)
		WBTR	A	(09.0)	B	(11.5)	B	(12.5)
	Randolph Road	SBL	C	(23.7)	C	(29.3)	C	(29.4)
		SBR	C	(20.8)	C	(20.5)	C	(20.7)
	<i>Intersection</i>	<i>Overall</i>	<b>B</b>	<b>(10.4)</b>	<b>B</b>	<b>(12.7)</b>	<b>B</b>	<b>(13.1)</b>
4	School House Road	EBL	C	(29.3)	C	(29.6)	C	(30.3)
		EBT	D	(49.5)	D	(47.4)	D	(44.3)
		EBR	A	(00.0)	A	(00.0)	A	(00.0)
		WBL	C	(30.3)	C	(28.1)	C	(26.8)
		WBT	D	(39.8)	E	(58.1)	E	(60.5)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	Elizabeth Avenue	NBL	B	(13.1)	B	(18.8)	C	(20.0)
		NBT	B	(19.9)	C	(28.6)	C	(30.4)
		NBR	A	(00.0)	A	(00.0)	A	(00.0)
		SBL	D	(45.0)	D	(47.4)	D	(48.0)





Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
		SBTR	B	(19.0)	C	(24.5)	C	(25.5)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(29.7)</i>	<i>D</i>	<i>(36.6)</i>	<i>D</i>	<i>(37.3)</i>
5	Weston Canal Road	EBTR	D	(40.9)	F	(128.3)	F	(149.3)
		WBL	F	(149.2)	F	(330.7)	F	(333.8)
		WBT	A	(09.5)	B	(10.3)	B	(10.8)
	Randolph Road	NBL	C	(24.6)	C	(24.8)	C	(25.3)
		NBR	F	(81.0)	F	(132.4)	F	(139.5)
	<i>Intersection</i>	<i>Overall</i>	<i>E</i>	<i>(69.9)</i>	<i>F</i>	<i>(155.1)</i>	<i>F</i>	<i>(165.5)</i>
6	Weston Canal Road	EBTR	B	(12.3)	C	(27.7)	C	(32.4)
		WBL	A	(06.1)	C	(32.1)	D	(51.8)
		WBT	E	(66.6)	F	(429.2)	F	(503.8)
	Cottontail Lane	NBL	C	(29.7)	D	(40.6)	D	(43.0)
		NBR	C	(23.3)	B	(18.0)	B	(17.8)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(34.1)</i>	<i>F</i>	<i>(179.8)</i>	<i>F</i>	<i>(212.1)</i>
7	Weston Canal Road	EBTR	B	(11.0)	B	(15.9)	B	(16.0)
		WBT	B	(14.4)	C	(26.4)	C	(27.9)
		WBL	B	(15.1)	C	(29.4)	C	(31.5)
	I-287 SB Ramps	NBLR	D	(36.9)	F	(93.5)	F	(117.3)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(19.9)</i>	<i>D</i>	<i>(44.7)</i>	<i>D</i>	<i>(53.0)</i>
8	Weston Canal Road	EBTR	A	(07.2)	B	(13.7)	B	(14.8)
		WBT	B	(12.8)	C	(29.6)	C	(32.8)
		WBL	A	(08.6)	B	(17.1)	B	(18.8)
	I-287 NB Ramps	NBLR	C	(30.5)	D	(47.1)	D	(53.0)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(15.3)</i>	<i>C</i>	<i>(29.3)</i>	<i>C</i>	<i>(33.0)</i>
9	Pierce Street	EBL	E	(60.0)	E	(61.0)	E	(61.0)
		EBTR	C	(28.5)	C	(27.7)	C	(27.7)
		WBLT	D	(41.7)	D	(44.1)	D	(44.4)
		WBR	D	(39.4)	D	(42.7)	D	(42.7)
	Davidson Avenue	NBL	B	(13.6)	B	(16.6)	B	(16.6)
		NBTR	B	(19.9)	C	(26.1)	C	(26.7)
		SBL	B	(12.7)	B	(17.3)	B	(17.8)
		SBTR	B	(18.4)	C	(24.0)	C	(24.1)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(26.8)</i>	<i>C</i>	<i>(30.9)</i>	<i>C</i>	<i>(31.2)</i>
10	Easton Avenue	EBT	C	(29.8)	C	(33.4)	C	(33.5)
		EBR	D	(42.4)	F	(93.4)	F	(106.5)
		WBL	F	(134.7)	F	(266.7)	F	(286.3)
		WBLT	F	(137.7)	F	(271.5)	F	(283.6)
	Davidson Avenue	NBL	D	(36.8)	D	(36.3)	D	(36.6)
		NBR	B	(13.7)	B	(14.3)	B	(14.4)
	<i>Intersection</i>	<i>Overall</i>	<i>E</i>	<i>(75.5)</i>	<i>F</i>	<i>(142.8)</i>	<i>F</i>	<i>(151.7)</i>
11	Veronica Avenue	EBL	C	(31.2)	C	(30.8)	C	(30.7)
		EBTR	D	(49.0)	E	(63.1)	E	(71.5)
		WBL	C	(28.7)	C	(30.2)	C	(31.8)
		WBTR	E	(72.7)	F	(97.8)	F	(110.4)
	NJ Route 27	NBL	B	(17.2)	C	(28.3)	D	(39.3)
		NBT	C	(26.2)	C	(34.4)	C	(34.9)



Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
		NBR	C	(26.3)	C	(34.6)	D	(35.1)
		SBL	B	(18.3)	C	(27.5)	C	(28.1)
		SBT	C	(25.5)	C	(32.3)	C	(32.8)
		SBR	B	(19.4)	C	(22.8)	C	(23.6)
		<b>Intersection</b>	<b>Overall</b>	<b>D</b>	<b>(35.5)</b>	<b>D</b>	<b>(46.8)</b>	<b>D</b>
12	Hamilton Street	EBTR	C	(22.5)	C	(27.2)	C	(28.0)
		WBL	B	(11.0)	E	(12.5)	B	(12.7)
		WBT	B	(12.4)	C	(14.0)	B	(14.2)
	Veronica Avenue	NBL	D	(48.6)	F	(48.2)	D	(48.1)
		NBR	B	(12.6)	C	(12.1)	B	(12.1)
<b>Intersection</b>	<b>Overall</b>	<b>C</b>	<b>(23.9)</b>	<b>C</b>	<b>(26.0)</b>	<b>C</b>	<b>(26.4)</b>	
13	Easton Avenue	EBTR	C	(23.6)	C	(27.6)	C	(28.3)
		WBT	C	(32.2)	E	(60.4)	E	(58.1)
	JFK Boulevard	NBL	D	(38.3)	D	(44.2)	D	(45.3)
		NBR	C	(31.8)	C	(33.1)	C	(33.6)
		SBLTR	D	(40.0)	D	(41.5)	D	(41.7)
<b>Intersection</b>	<b>Overall</b>	<b>C</b>	<b>(31.5)</b>	<b>D</b>	<b>(44.5)</b>	<b>D</b>	<b>(44.1)</b>	
14	Hamilton Street	EBL	B	(13.8)	B	(15.4)	B	(15.4)
		EBTR	C	(24.9)	C	(31.6)	C	(31.7)
		WBL	B	(15.3)	C	(31.5)	B	(18.0)
		WBT	B	(19.7)	B	(18.0)	C	(21.9)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	JFK Boulevard	NBL	C	(24.7)	C	(24.7)	C	(24.8)
		NBT	D	(44.4)	D	(50.4)	D	(49.9)
		NBR	C	(27.2)	C	(26.7)	C	(26.7)
		SBL	E	(56.1)	F	(114.6)	F	(126.3)
		SBT	C	(32.4)	C	(34.1)	C	(34.4)
SBR	A	(00.0)	A	(00.0)	A	(00.0)		
<b>Intersection</b>	<b>Overall</b>	<b>C</b>	<b>(29.3)</b>	<b>D</b>	<b>(38.5)</b>	<b>D</b>	<b>(39.8)</b>	
15*	New Brunswick Road	EBL	A	(08.7)	B	(12.8)	B	(13.1)
		EBTR	A	(09.1)	B	(10.8)	B	(10.9)
		WBL	B	(10.1)	B	(11.2)	B	(11.3)
		WBT	B	(14.0)	B	(16.2)	B	(16.3)
		WBR	B	(13.3)	B	(16.4)	B	(16.4)
	Davidson Avenue / Manor Boulevard	NBLT	C	(26.5)	C	(27.7)	C	(27.8)
		NBR	A	(02.9)	C	(26.9)	C	(26.9)
		SBL	C	(23.0)	C	(23.1)	C	(23.1)
		SBTR	D	(38.5)	D	(45.7)	D	(46.0)
		<b>Intersection</b>	<b>Overall</b>	<b>B</b>	<b>(18.0)</b>	<b>C</b>	<b>(21.5)</b>	<b>C</b>
16*	Manville Causeway	EBLR	A	(00.0)	A	(00.0)	A	(00.0)
	Weston Canal Road	NBLT	A	(09.7)	B	(10.1)	B	(10.2)
		SBTR	A	(00.0)	A	(00.0)	A	(00.0)
	<b>Intersection</b>	<b>Overall</b>	<b>A</b>	<b>(00.8)</b>	<b>A</b>	<b>(00.8)</b>	<b>A</b>	<b>(00.8)</b>



**Table 5b – 2028 Full Build Conditions (FB-1) LOS/Delay – PM Peak Hour**

Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
1	School House Road	WBL	D	(41.3)	E	(62.8)	F	(82.8)
		WBR	B	(10.7)	A	(09.8)	A	(09.9)
	Weston Canal Road	NBT	B	(15.7)	C	(21.2)	C	(21.6)
		NBR	A	(01.7)	A	(01.8)	A	(01.9)
		SBL	A	(05.2)	A	(06.1)	A	(06.2)
		SBT	B	(17.8)	D	(37.3)	D	(44.0)
<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(18.7)</i>	<i>C</i>	<i>(32.2)</i>	<i>D</i>	<i>(38.6)</i>	
2	School House Road	WB	A	(02.2)	A	(02.0)	A	(02.0)
	Mettlers Road	NB	B	(14.8)	C	(20.9)	C	(25.8)
	<i>Intersection</i>	<i>Overall</i>	<i>A</i>	<i>(03.6)</i>	<i>A</i>	<i>(04.1)</i>	<i>A</i>	<i>(04.9)</i>
3	School House Road	EBL	B	(16.3)	F	(131.7)	F	(141.9)
		EBT	A	(03.5)	A	(03.8)	A	(04.0)
		WBTR	B	(16.9)	E	(61.8)	E	(75.8)
	Randolph Road	SBL	C	(22.2)	C	(23.4)	C	(23.5)
		SBR	C	(22.4)	C	(22.8)	C	(23.1)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(15.1)</i>	<i>E</i>	<i>(66.9)</i>	<i>E</i>	<i>(74.5)</i>
4	School House Road	EBL	C	(30.7)	C	(28.6)	C	(28.8)
		EBT	D	(46.9)	D	(51.4)	D	(52.0)
		EBR	A	(00.0)	A	(00.0)	A	(00.0)
		WBL	D	(40.7)	E	(59.6)	E	(59.8)
		WBT	D	(40.1)	D	(44.4)	D	(46.9)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	Elizabeth Avenue	NBL	B	(14.8)	B	(18.6)	B	(19.0)
		NBT	B	(19.3)	C	(24.9)	C	(25.4)
		NBR	A	(00.0)	A	(00.0)	A	(00.0)
		SBL	E	(58.4)	F	(125.5)	F	(142.7)
	SBTR	B	(18.7)	C	(26.5)	C	(27.3)	
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(33.4)</i>	<i>D</i>	<i>(45.8)</i>	<i>D</i>	<i>(48.4)</i>	
5	Weston Canal Road	EBTR	C	(25.4)	D	(35.4)	D	(36.8)
		WBL	D	(54.7)	F	(213.5)	F	(229.2)
		WBT	B	(16.8)	C	(31.5)	C	(34.8)
	Randolph Road	NBL	C	(24.7)	C	(25.1)	C	(25.1)
		NBR	F	(142.1)	F	(237.7)	F	(254.1)
<i>Intersection</i>	<i>Overall</i>	<i>D</i>	<i>(50.5)</i>	<i>F</i>	<i>(106.7)</i>	<i>F</i>	<i>(114.0)</i>	
6	Weston Canal Road	EBTR	B	(18.0)	F	(110.8)	F	(117.2)
		WBL	A	(05.2)	B	(11.2)	B	(11.9)
		WBT	C	(25.1)	F	(184.3)	F	(196.0)
	Cottontail Lane	NBL	C	(31.9)	E	(55.6)	E	(67.5)
		NBR	C	(26.0)	D	(42.0)	E	(66.5)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(20.3)</i>	<i>F</i>	<i>(104.4)</i>	<i>F</i>	<i>(114.1)</i>	
7	Weston Canal Road	EBTR	B	(10.9)	B	(17.7)	B	(18.8)
		WBT	B	(10.3)	B	(15.2)	B	(15.9)
		WBL	B	(10.6)	B	(15.9)	B	(16.6)
	I-287 SB Ramps	NBLR	C	(32.1)	D	(40.6)	D	(41.8)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(15.8)</i>	<i>C</i>	<i>(22.3)</i>	<i>C</i>	<i>(23.3)</i>



Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
8	Weston Canal Road	EBTR	A	(08.7)	B	(12.3)	B	(12.8)
		WBT	B	(16.8)	C	(31.4)	C	(33.6)
		WBL	A	(09.1)	B	(12.9)	B	(13.4)
	I-287 NB Ramps	NBLR	C	(31.3)	D	(39.9)	D	(41.1)
	<i>Intersection</i>	<i>Overall</i>	<b>B</b>	<b>(17.8)</b>	<b>C</b>	<b>(25.6)</b>	<b>C</b>	<b>(26.8)</b>
9	Pierce Street	EBL	E	(77.4)	F	(91.1)	F	(91.1)
		EBTR	C	(26.9)	C	(26.6)	C	(26.7)
		WBLT	D	(47.0)	E	(58.0)	E	(61.2)
		WBR	D	(46.5)	E	(55.3)	E	(55.3)
	Davidson Avenue	NBL	C	(21.1)	C	(29.5)	C	(29.7)
		NBTR	D	(37.0)	E	(69.5)	E	(74.1)
		SBL	C	(27.9)	F	(157.6)	F	(157.6)
		SBTR	C	(31.5)	E	(60.3)	E	(63.1)
<i>Intersection</i>	<i>Overall</i>	<b>D</b>	<b>(39.1)</b>	<b>E</b>	<b>(68.0)</b>	<b>E</b>	<b>(70.4)</b>	
10	Easton Avenue	EBT	C	(31.5)	C	(34.1)	C	(32.1)
		EBR	C	(33.8)	D	(36.1)	D	(36.5)
		WBL	F	(154.2)	F	(249.7)	F	(256.6)
		WBLT	F	(155.5)	F	(247.9)	F	(248.8)
	Davidson Avenue	NBL	C	(32.7)	D	(36.2)	D	(37.1)
		NBR	B	(16.7)	C	(22.0)	C	(22.7)
<i>Intersection</i>	<i>Overall</i>	<b>F</b>	<b>(82.0)</b>	<b>F</b>	<b>(122.2)</b>	<b>F</b>	<b>(123.1)</b>	
11	Veronica Avenue	EBL	C	(30.1)	C	(33.4)	D	(37.4)
		EBTR	D	(37.6)	D	(53.0)	E	(68.5)
		WBL	C	(26.7)	C	(28.6)	C	(30.2)
		WBTR	E	(68.9)	F	(116.5)	F	(120.2)
	NJ Route 27	NBL	B	(18.2)	C	(22.4)	C	(24.8)
		NBT	C	(23.8)	C	(27.2)	C	(28.2)
		NBR	C	(23.9)	C	(27.2)	C	(28.3)
		SBL	B	(16.4)	C	(20.9)	C	(22.0)
		SBT	C	(26.5)	C	(34.4)	D	(37.4)
		SBR	B	(17.7)	C	(20.0)	C	(21.2)
<i>Intersection</i>	<i>Overall</i>	<b>C</b>	<b>(33.7)</b>	<b>D</b>	<b>(47.7)</b>	<b>D</b>	<b>(52.0)</b>	
12	Hamilton Street	EBTR	D	(37.1)	E	(56.9)	E	(58.3)
		WBL	B	(13.9)	B	(16.1)	B	(16.2)
		WBT	B	(16.7)	B	(17.7)	B	(17.8)
	Veronica Avenue	NBL	E	(58.6)	F	(102.8)	F	(113.0)
		NBR	B	(14.1)	B	(14.2)	B	(14.3)
<i>Intersection</i>	<i>Overall</i>	<b>C</b>	<b>(32.4)</b>	<b>D</b>	<b>(49.4)</b>	<b>D</b>	<b>(52.3)</b>	
13	Easton Avenue	EBTR	C	(26.0)	C	(34.2)	C	(34.5)
		WBT	C	(28.7)	D	(44.0)	D	(44.3)
	JFK Boulevard	NBL	D	(37.5)	D	(41.3)	D	(41.6)
		NBR	C	(27.8)	C	(28.1)	C	(28.3)
		SBLTR	D	(46.7)	D	(54.9)	E	(55.3)
<i>Intersection</i>	<i>Overall</i>	<b>C</b>	<b>(31.3)</b>	<b>D</b>	<b>(40.9)</b>	<b>D</b>	<b>(41.1)</b>	
14	Hamilton Street	EBL	B	(13.8)	B	(16.4)	B	(16.5)
		EBTR	B	(19.3)	C	(22.7)	C	(22.8)



Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
		WBL	B	(13.4)	B	(14.8)	B	(14.8)
		WBT	C	(21.0)	C	(24.7)	C	(24.8)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	JFK Boulevard	NBL	C	(25.7)	C	(26.1)	C	(26.1)
		NBT	D	(38.7)	D	(42.1)	D	(42.7)
		NBR	C	(28.6)	C	(28.1)	C	(28.1)
		SBL	C	(27.5)	C	(31.7)	C	(32.5)
		SBT	D	(36.5)	D	(40.9)	D	(40.9)
		SBR	A	(00.0)	A	(00.0)	A	(00.0)
		<b>Intersection</b>	<b>Overall</b>	<b>C</b>	<b>(24.4)</b>	<b>C</b>	<b>(27.8)</b>	<b>C</b>
15*	New Brunswick Road	EBL	A	(09.8)	B	(10.1)	B	(10.1)
		EBTR	B	(13.2)	B	(16.1)	B	(16.5)
		WBL	B	(11.1)	B	(11.8)	B	(11.9)
		WBT	B	(15.3)	B	(16.3)	B	(16.3)
		WBR	B	(12.6)	B	(13.2)	B	(13.2)
	Davidson Avenue / Manor Boulevard	NBLT	C	(28.0)	C	(29.0)	C	(29.1)
		NBR	C	(26.7)	C	(27.5)	C	(27.6)
		SBL	C	(24.3)	E	(61.5)	E	(68.0)
	<b>Intersection</b>	<b>Overall</b>	<b>D</b>	<b>(46.2)</b>	<b>E</b>	<b>(77.2)</b>	<b>E</b>	<b>(79.6)</b>
16*	Manville Causeway	EBLR	A	(00.0)	A	(00.0)	A	(00.0)
	Weston Canal Road	NBLT	B	(11.3)	B	(13.3)	B	(13.7)
		SBTR	A	(00.0)	A	(00.0)	A	(00.0)
	<b>Intersection</b>	<b>Overall</b>	<b>A</b>	<b>(01.0)</b>	<b>A</b>	<b>(01.2)</b>	<b>A</b>	<b>(01.2)</b>



**Table 5c – 2028 Full Build Conditions (FB-1) LOS/Delay – SAT Peak Hour**

Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
1	School House Road	WBL	E	(64.1)	F	(96.1)	F	(100.4)
		WBR	B	(10.9)	B	(10.8)	D	(40.8)
	Weston Canal Road	NBT	B	(12.0)	B	(13.6)	B	(13.7)
		NBR	A	(02.4)	A	(02.5)	A	(02.6)
		SBL	A	(03.4)	A	(03.8)	A	(03.8)
		SBT	B	(11.1)	B	(12.4)	B	(12.4)
<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(16.3)</i>	<i>C</i>	<i>(21.2)</i>	<i>C</i>	<i>(21.8)</i>	
2	School House Road	WB	A	(01.3)	A	(01.4)	A	(01.4)
	Mettlers Road	NB	B	(19.1)	C	(27.6)	D	(28.8)
	<i>Intersection</i>	<i>Overall</i>	<i>A</i>	<i>(03.8)</i>	<i>A</i>	<i>(05.1)</i>	<i>A</i>	<i>(05.4)</i>
3	School House Road	EBL	A	(04.0)	A	(04.6)	A	(04.7)
		EBT	A	(03.9)	A	(04.3)	A	(04.4)
		WBTR	A	(08.9)	B	(10.3)	B	(10.5)
	Randolph Road	SBL	C	(21.5)	C	(21.8)	C	(21.8)
		SBR	C	(22.4)	C	(22.7)	C	(22.7)
	<i>Intersection</i>	<i>Overall</i>	<i>A</i>	<i>(08.4)</i>	<i>A</i>	<i>(09.2)</i>	<i>A</i>	<i>(09.3)</i>
4	School House Road	EBL	C	(33.3)	C	(34.4)	C	(34.4)
		EBT	D	(40.7)	D	(39.8)	D	(39.6)
		EBR	A	(00.0)	A	(00.0)	A	(00.0)
		WBL	C	(32.2)	C	(30.2)	C	(30.0)
		WBT	D	(45.4)	D	(47.2)	D	(47.4)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
	Elizabeth Avenue	NBL	B	(11.2)	B	(13.0)	B	(13.1)
		NBT	B	(14.5)	B	(17.0)	B	(17.2)
		NBR	A	(00.0)	A	(00.0)	A	(00.0)
		SBL	D	(46.7)	D	(48.9)	D	(48.9)
		SBTR	B	(14.4)	B	(17.0)	B	(17.1)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(30.0)</i>	<i>C</i>	<i>(31.2)</i>	<i>C</i>	<i>(31.3)</i>
5	Weston Canal Road	EBTR	C	(31.5)	E	(75.4)	E	(76.0)
		WBL	B	(16.1)	B	(19.8)	B	(19.9)
		WBT	B	(10.7)	B	(14.2)	B	(14.1)
	Randolph Road	NBL	C	(26.6)	C	(26.0)	C	(26.1)
		NBR	D	(41.5)	D	(46.1)	D	(45.8)
	<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(23.4)</i>	<i>D</i>	<i>(44.7)</i>	<i>D</i>	<i>(44.9)</i>
6	Weston Canal Road	EBTR	A	(09.8)	B	(12.4)	B	(12.6)
		WBL	A	(02.1)	A	(02.7)	A	(02.8)
		WBT	B	(18.7)	D	(36.9)	D	(38.5)
	Cottontail Lane	NBL	C	(21.6)	C	(23.5)	C	(23.5)
		NBR	C	(21.5)	C	(22.9)	C	(23.7)
<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(14.1)</i>	<i>C</i>	<i>(22.0)</i>	<i>C</i>	<i>(22.6)</i>	
7	Weston Canal Road	EBTR	A	(08.3)	B	(10.9)	B	(11.1)
		WBT	A	(08.3)	B	(11.0)	B	(11.3)
		WBL	A	(08.6)	B	(11.5)	B	(11.8)
	I-287 SB Ramps	NBLR	C	(30.0)	C	(33.0)	C	(33.6)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(13.7)</i>	<i>B</i>	<i>(16.6)</i>	<i>B</i>	<i>(16.9)</i>



Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
8	Weston Canal Road	EBTR	A	(07.7)	A	(09.9)	B	(10.0)
		WBT	B	(11.1)	B	(15.4)	B	(15.6)
		WBL	A	(08.1)	B	(10.5)	B	(10.7)
	I-287 NB Ramps	NBLR	C	(30.1)	C	(34.9)	D	(35.2)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(16.8)</i>	<i>C</i>	<i>(20.7)</i>	<i>C</i>	<i>(20.9)</i>
9	Pierce Street	EBL	D	(49.1)	D	(53.0)	D	(53.0)
		EBTR	C	(29.8)	C	(29.8)	C	(29.8)
		WBLT	D	(42.2)	D	(42.7)	D	(42.7)
		WBR	D	(38.0)	D	(38.0)	D	(38.0)
	Davidson Avenue	NBL	A	(08.1)	A	(08.7)	A	(08.7)
		NBTR	B	(11.2)	B	(12.8)	B	(12.8)
		SBL	A	(06.9)	A	(07.7)	A	(07.7)
		SBTR	A	(08.8)	B	(10.0)	B	(10.0)
<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(19.6)</i>	<i>C</i>	<i>(20.7)</i>	<i>C</i>	<i>(20.7)</i>	
10	Easton Avenue	EBT	C	(22.5)	C	(25.6)	C	(25.8)
		EBR	C	(22.2)	C	(24.6)	C	(24.7)
		WBL	D	(36.2)	D	(40.5)	D	(40.8)
		WBLT	D	(38.4)	D	(42.4)	D	(42.5)
	Davidson Avenue	NBL	D	(38.0)	D	(38.8)	D	(38.9)
		NBR	B	(13.4)	B	(13.2)	B	(13.3)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(27.2)</i>	<i>C</i>	<i>(29.8)</i>	<i>C</i>	<i>(29.8)</i>	
11	Veronica Avenue	EBL	C	(29.0)	C	(27.2)	C	(27.1)
		EBTR	D	(54.7)	E	(59.5)	E	(60.0)
		WBL	C	(31.6)	D	(35.7)	D	(35.8)
		WBTR	D	(37.0)	D	(37.3)	D	(37.2)
	NJ Route 27	NBL	B	(16.6)	B	(19.7)	B	(19.9)
		NBT	C	(23.1)	C	(27.7)	C	(27.9)
		NBR	C	(23.3)	C	(27.8)	C	(28.1)
		SBL	B	(16.8)	C	(29.3)	C	(29.9)
		SBT	C	(22.0)	C	(28.4)	C	(28.9)
		SBR	B	(15.3)	B	(17.7)	B	(18.1)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(29.0)</i>	<i>C</i>	<i>(33.9)</i>	<i>C</i>	<i>(34.2)</i>	
12	Hamilton Street	EBTR	C	(23.1)	C	(28.9)	C	(29.1)
		WBL	B	(10.6)	B	(12.5)	B	(12.6)
		WBT	B	(11.8)	B	(13.4)	B	(13.5)
	Veronica Avenue	NBL	D	(47.3)	D	(47.2)	D	(47.2)
		NBR	B	(13.6)	B	(13.1)	B	(13.1)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(24.1)</i>	<i>C</i>	<i>(26.9)</i>	<i>C</i>	<i>(27.0)</i>	
13	Easton Avenue	EBTR	C	(23.7)	C	(28.3)	C	(28.3)
		WBT	C	(25.0)	C	(31.4)	C	(31.4)
	JFK Boulevard	NBL	C	(33.6)	D	(36.8)	D	(36.9)
		NBR	C	(26.0)	C	(26.4)	C	(26.4)
		SBLTR	D	(38.2)	D	(40.7)	D	(40.7)
<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(27.8)</i>	<i>C</i>	<i>(32.3)</i>	<i>C</i>	<i>(32.3)</i>	
14	Hamilton Street	EBL	B	(10.4)	B	(11.2)	B	(11.2)
		EBTR	B	(14.3)	B	(15.8)	B	(15.9)



Node	Roadway	Approach	Existing		Full Build 1		Full Build 2	
			LOS	DELAY	LOS	DELAY	LOS	DELAY
	JFK Boulevard	WBL	B	(11.0)	B	(11.6)	B	(11.6)
		WBT	B	(15.0)	B	(16.3)	B	(16.3)
		WBR	A	(00.0)	A	(00.0)	A	(00.0)
		NBL	C	(25.5)	C	(25.4)	C	(25.4)
		NBT	D	(36.5)	D	(36.8)	D	(36.8)
		NBR	C	(29.7)	C	(29.4)	C	(29.4)
		SBL	C	(28.2)	C	(32.4)	C	(32.9)
		SBT	C	(32.3)	C	(32.9)	C	(32.9)
		SBR	A	(00.0)	A	(00.0)	A	(00.0)
		<i>Intersection</i>	<i>Overall</i>	<i>C</i>	<i>(20.9)</i>	<i>C</i>	<i>(22.2)</i>	<i>C</i>
15*	New Brunswick Road	EBL	A	(07.0)	A	(08.2)	A	(08.2)
		EBTR	B	(10.2)	B	(12.1)	B	(12.1)
		WBL	A	(08.6)	A	(09.4)	A	(09.4)
		WBT	B	(12.2)	B	(13.9)	B	(13.9)
		WBR	B	(10.3)	B	(11.4)	B	(11.4)
	Davidson Avenue / Manor Boulevard	NBLT	C	(26.5)	C	(27.1)	C	(27.1)
		NBR	C	(25.7)	C	(25.9)	C	(25.9)
		SBL	C	(21.9)	C	(21.7)	C	(21.7)
	<i>Intersection</i>	<i>Overall</i>	<i>B</i>	<i>(18.5)</i>	<i>C</i>	<i>(20.9)</i>	<i>C</i>	<i>(20.9)</i>
16*	Manville Causeway	EBLR	A	(00.0)	A	(00.0)	A	(00.0)
	Weston Canal Road	NBLT	B	(10.4)	B	(10.9)	B	(10.9)
		SBTR	A	(00.0)	A	(00.0)	A	(00.0)
	<i>Intersection</i>	<i>Overall</i>	<i>A</i>	<i>(01.2)</i>	<i>A</i>	<i>(01.2)</i>	<i>A</i>	<i>(01.2)</i>

The westbound left turn movements at the intersection of Weston Canal Road & School House Road will operate at a LOS ‘F’ during the evening and Saturday peak hours. The intersection of Randolph Road & School House Road will worsen to an overall LOS ‘E’ with the eastbound left turns operating at a LOS ‘F’ during the evening peak hour. The southbound left turn movements at the intersection of Elizabeth Avenue & School House Road will have a significant increase in delay during the evening peak hour and operate at a LOS ‘F’.

The intersection of Weston Canal Road and Randolph Road currently operates at an overall LOS ‘E’ during the morning peak hour with the westbound lefts and northbound rights operating at a LOS ‘F’. The full build conditions under both scenarios worsens to an overall LOS ‘F’ during the morning and evening peak hours. The intersection of Weston Canal Road and Cottontail Lane will experience increases in delays under the full build condition in both scenarios 1 and 2 with an overall LOS ‘F’ during the morning and evening peak hours. The northbound left and right turns from the I-287 ramp will experience significant delays under the full build conditions scenario 1 and 2 during the morning peak hour.

The intersection of Davidson and Pierce will experience additional delays and will operate at an overall LOS ‘E’, with the eastbound left turns and southbound left turns operating at a LOS ‘F’ during the evening peak hour. The westbound approach at the Davidson Avenue & Easton Avenue





intersection currently operates at a LOS 'F'. The full build conditions in both scenarios at the intersection of Davidson Avenue and Easton Avenue experiences an increase in delays for the westbound approach and degrades the eastbound right turns to a LOS 'F'. The westbound approaches at the Veronica Avenue & NJ Route 27 intersection will also experience an increase in delay and will operate at a LOS 'F' during the morning and evening peak hours. The northbound approach at the intersection of Veronica Avenue & Hamilton Street will operate at a LOS 'F' during the evening peak hour.

The southbound left turn movements at the intersection of JFK Boulevard and Hamilton Street will have an increase in delay and will operate at a LOS 'F' during the morning peak hour. The southbound through and right turn movements at the intersection of New Brunswick Road and Davidson Avenue currently operates at a level of service 'F' and will experience increase in delays under the full build condition scenarios.

Based on our analysis of the Full Build conditions for both scenario 1 and 2, multiple intersections will experience a significant increase in delay with movements with a LOS 'E' or 'F' during the roadway peak hours once all pending developments are added. We note that majority of the left turn movements at the study intersections will operate at LOS 'E' or 'F' during the study peak hours.



## V. SUMMARY AND CONCLUSIONS

Our analysis of the existing conditions and future conditions within the study area identified the following critical intersections that is anticipated to experience significant increase in delays with the additional background growth and construction of pending developments that have been approved and applications that have been completed by the Township's planning board.

The following intersections will have multiple movements with significant increase in delay and will operate with an overall LOS 'F'.

- Weston Canal Road & Randolph Road
- Weston Canal Road & Cottontail Lane
- Davidson Avenue & Easton Avenue

The following intersections will have specific movements identified below with a LOS 'F' but will operate at an overall LOS 'E' or better during any peak hour.

- School House Road & Weston Canal Road – WBL
- School House Road & Randolph Road – EBL
- School House Road & Elizabeth Avenue – SBL
- Weston Canal Road & I-287 Southbound Ramp – NBLR
- Davidson Avenue & Pierce Street – EBL
- Veronica Avenue & NJ Route 27 – WBTR
- Veronica Avenue & Hamilton Street – NBL
- JFK Boulevard & Hamilton Street – SBL
- New Brunswick Road & Davidson Avenue - SBTR

This report presents the microscopic capacity analysis of the critical intersections identified in the B/I Zone within the Township of Franklin. Recommendations for traffic calming are being evaluated and will be presented under a separate cover.

JAF/DR/as

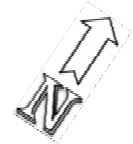
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**APPENDIX A**  
**VOLUME FIGURES**  
**PEAK HOUR FACTOR CALCULATIONS**  
**HEAVY VEHICLE PERCENTAGE**  
**CALCULATIONS**

# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Morning Peak Hours

## Weston Canal Road



# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Morning Peak Hours

Schoolhouse Lane & Davidson Road

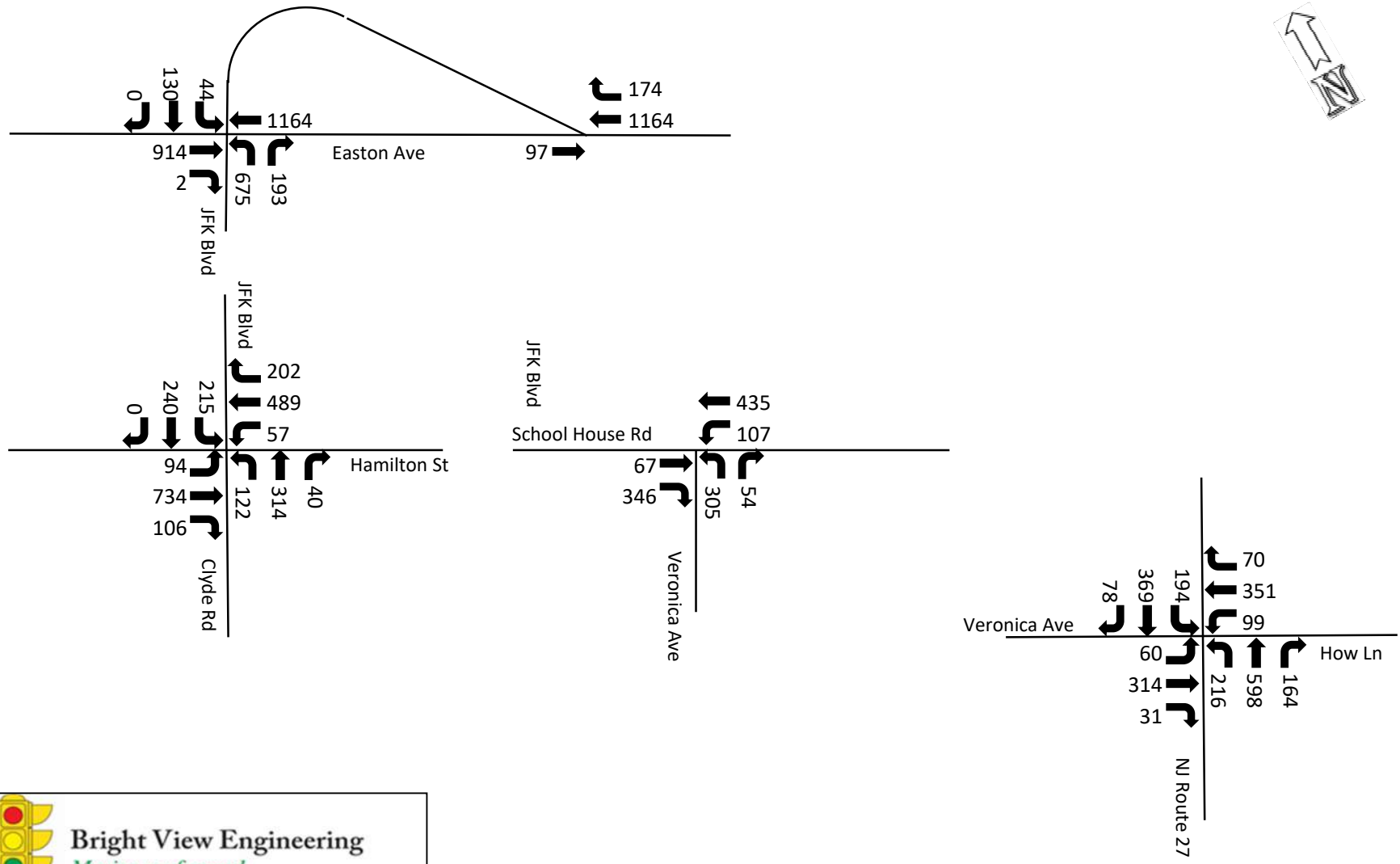
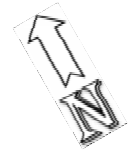


**Bright View Engineering**  
Moving you forward

# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Morning Peak Hours

## JFK Blvd & Veronica Ave

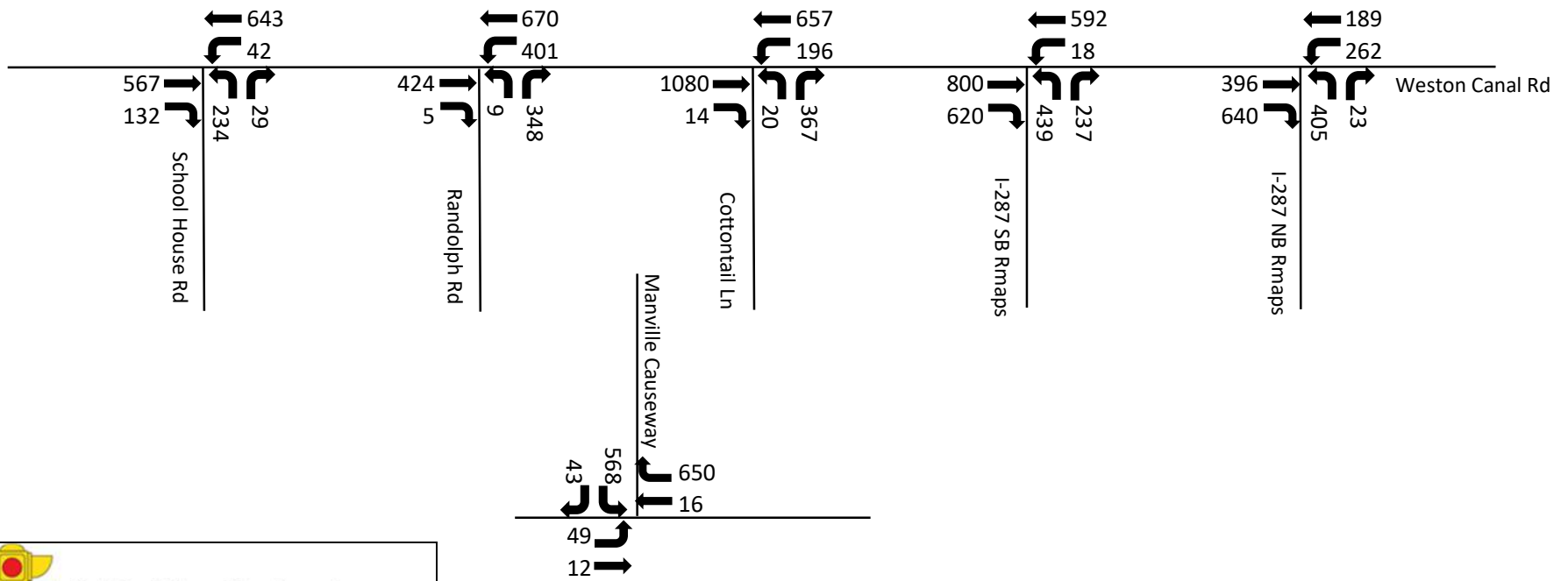
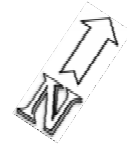


**Bright View Engineering**  
*Moving you forward*

# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Evening Peak Hours

## Weston Canal Road

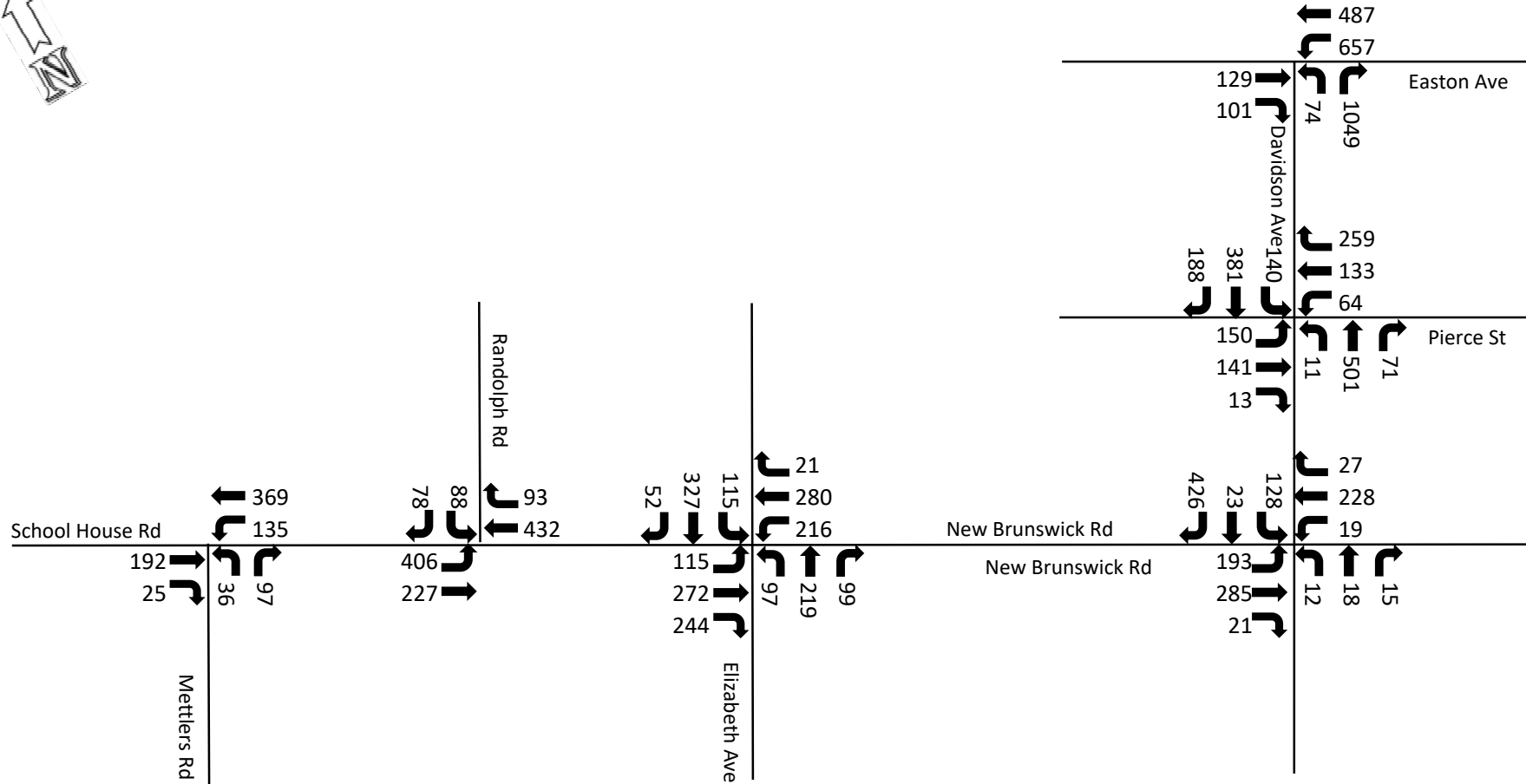


**Bright View Engineering**  
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# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Evening Peak Hours

Schoolhouse Lane & Davidson Road



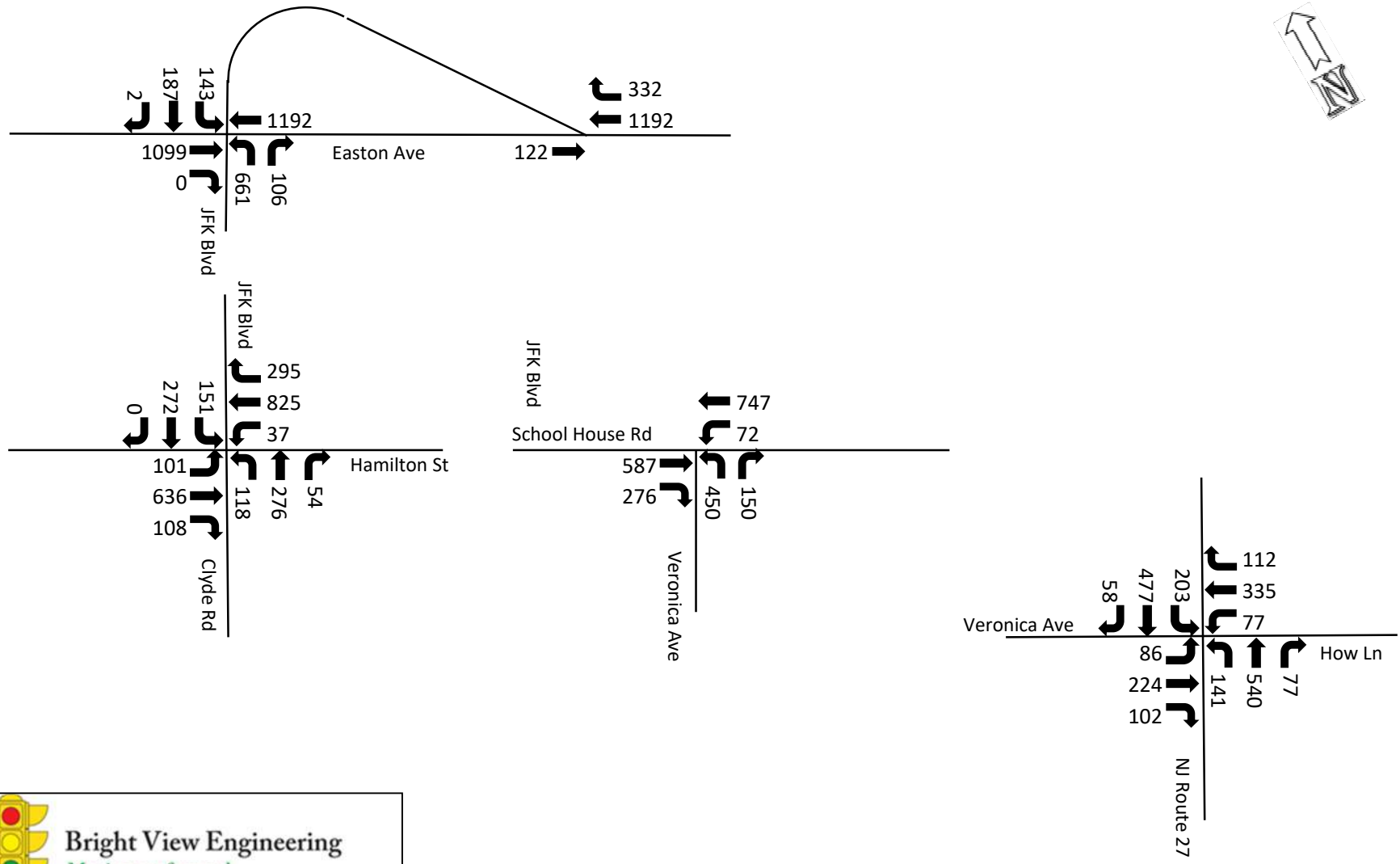
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# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Evening Peak Hours

JFK Blvd & Veronica Ave

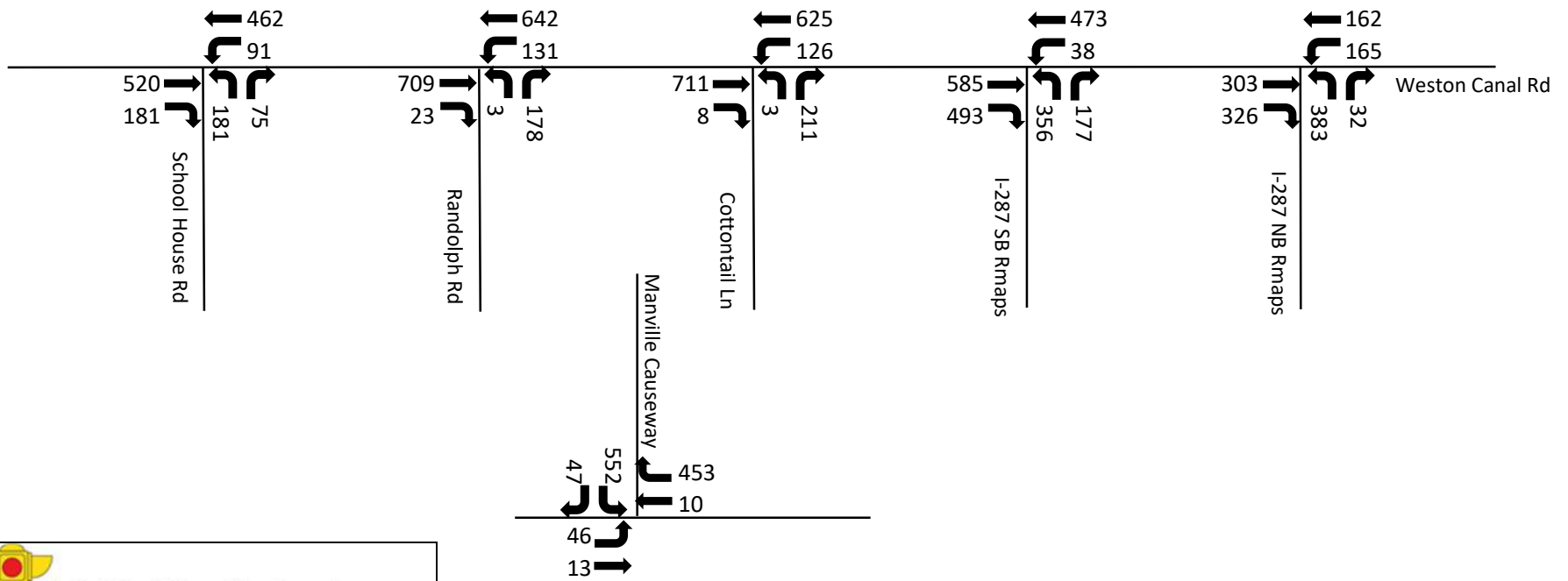
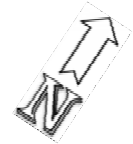


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# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Saturday Mid-Day Peak Hours

## Weston Canal Road

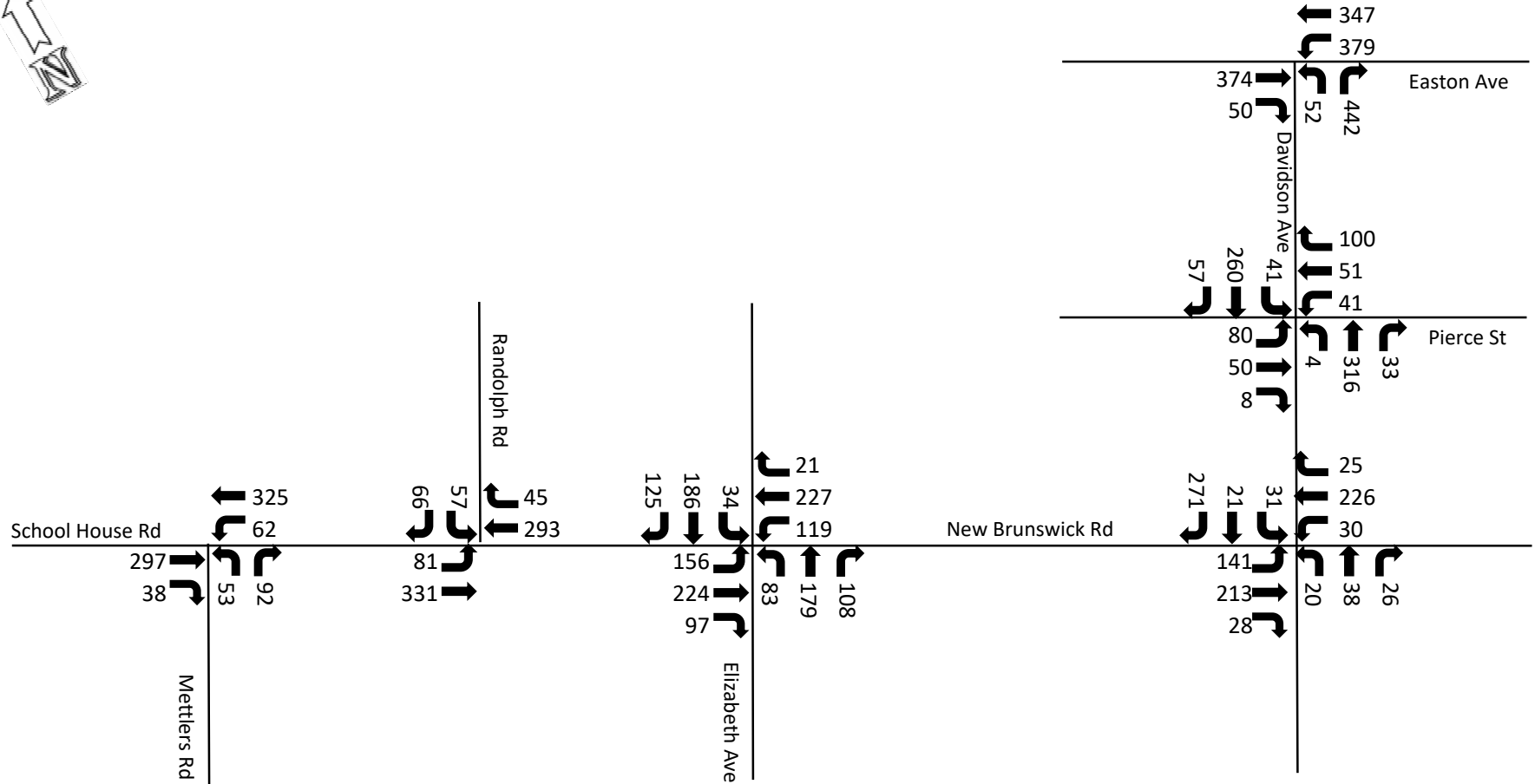


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# Franklin Township B-1 Zone Traffic Impact Study

2023 Existing Saturday Mid-Day Peak Hours

## Schoolhouse Lane & Davidson Road

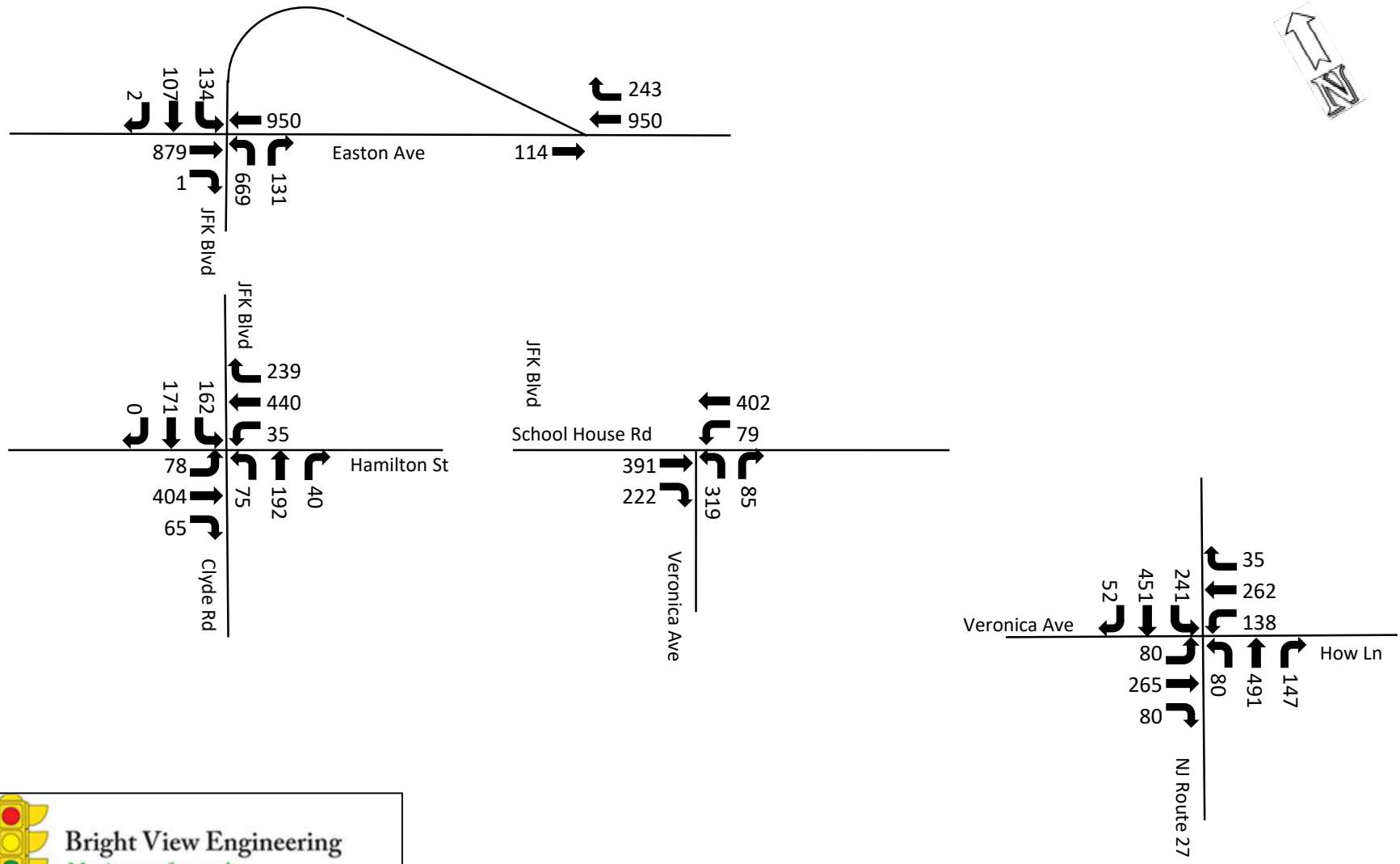


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# Franklin Township B-1 Zone Traffic Impact Study

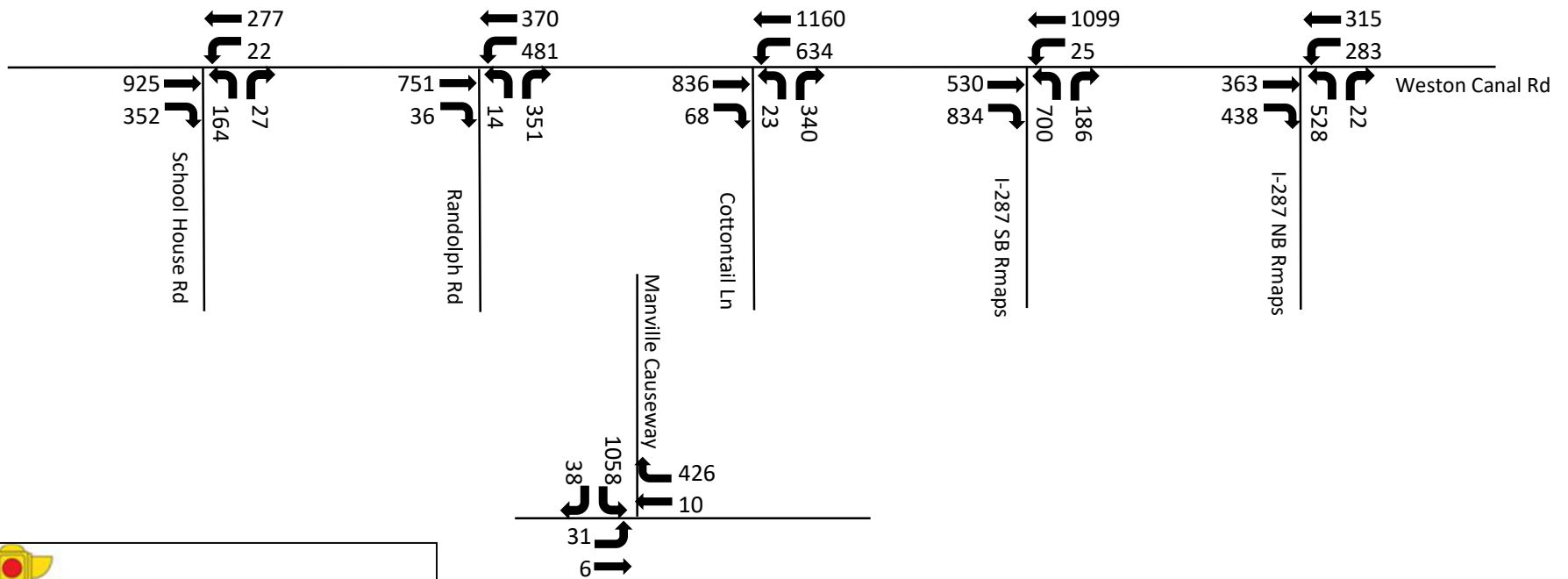
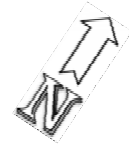
2023 Existing Saturday Mid-Day Peak Hours

## JFK Blvd & Veronica Ave



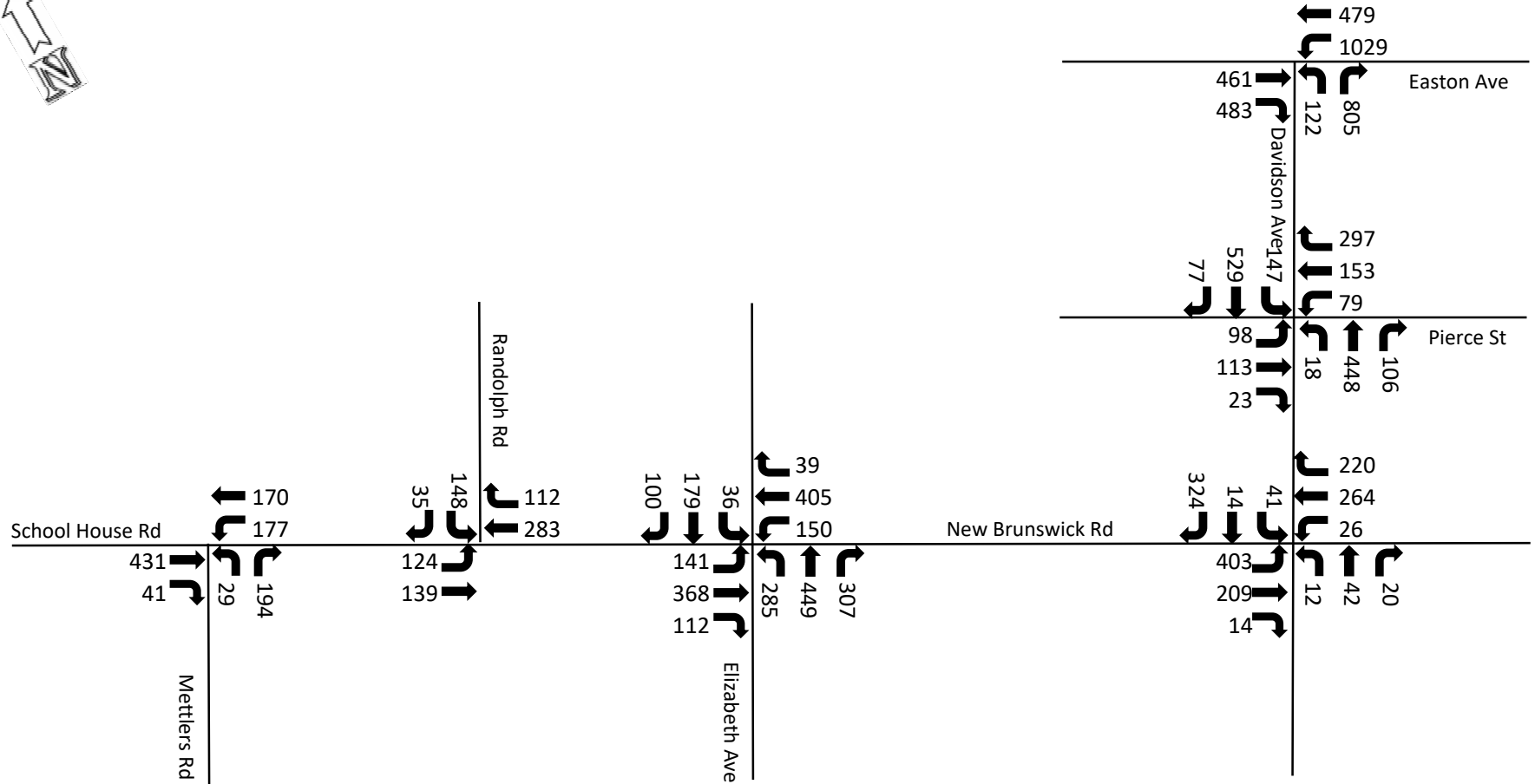
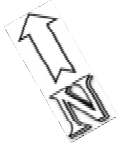
**Bright View Engineering**  
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Morning Peak Hour - Scenario 1  
**Weston Canal Road**



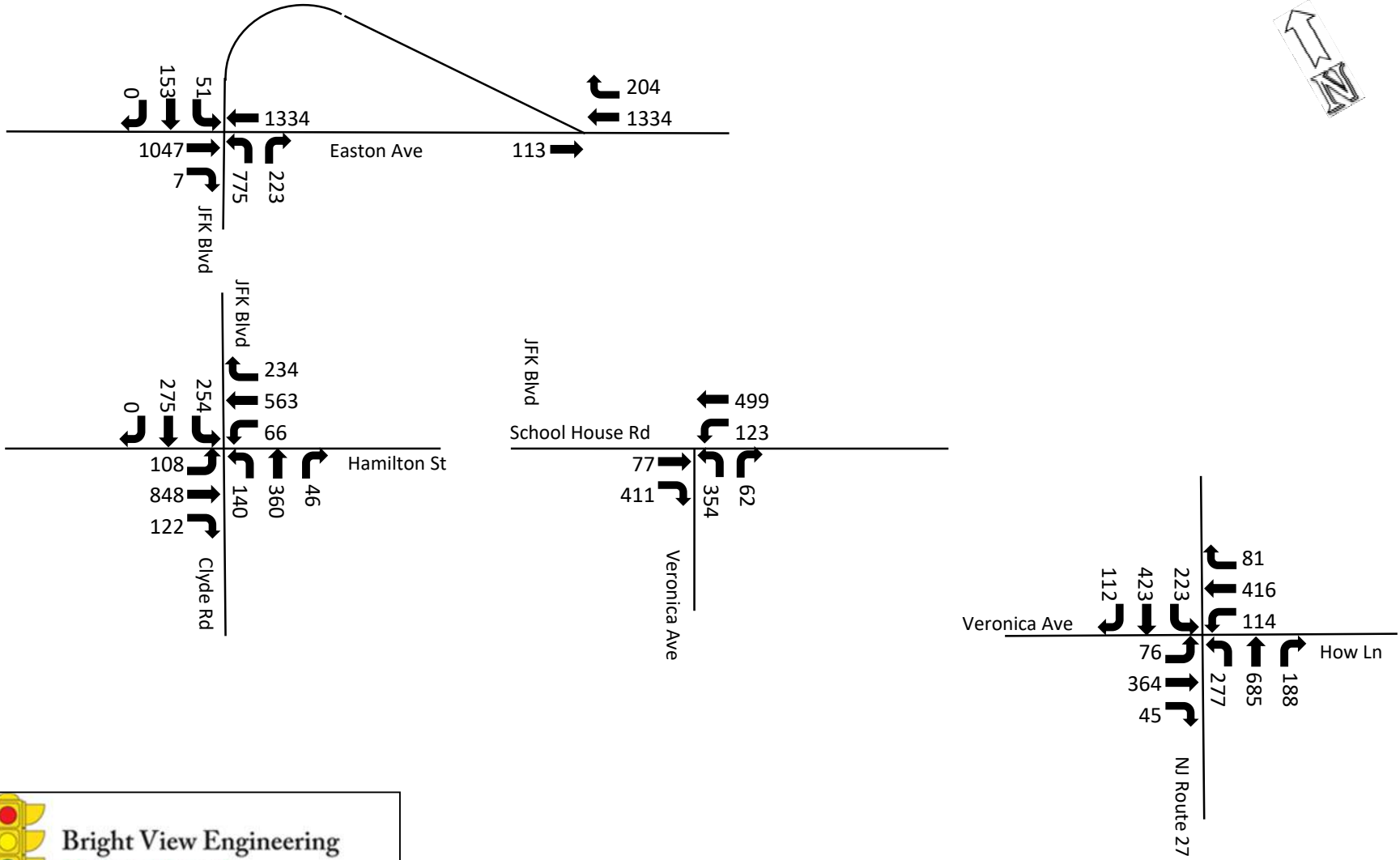
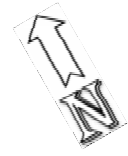
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Morning Peak Hour - Scenario 1  
**Schoolhouse Lane & Davidson Road**



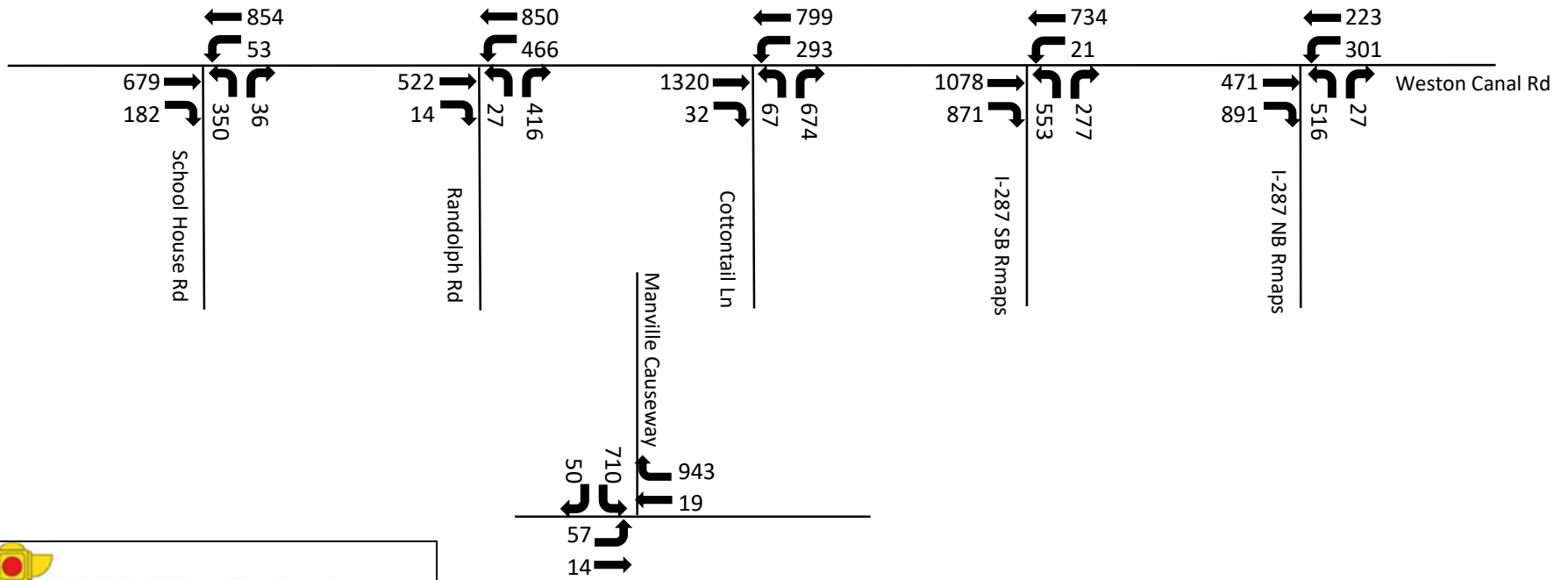
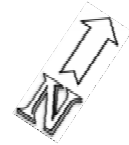
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Morning Peak Hour - Scenario 1  
**JFK Blvd & Veronica Ave**



**Bright View Engineering**  
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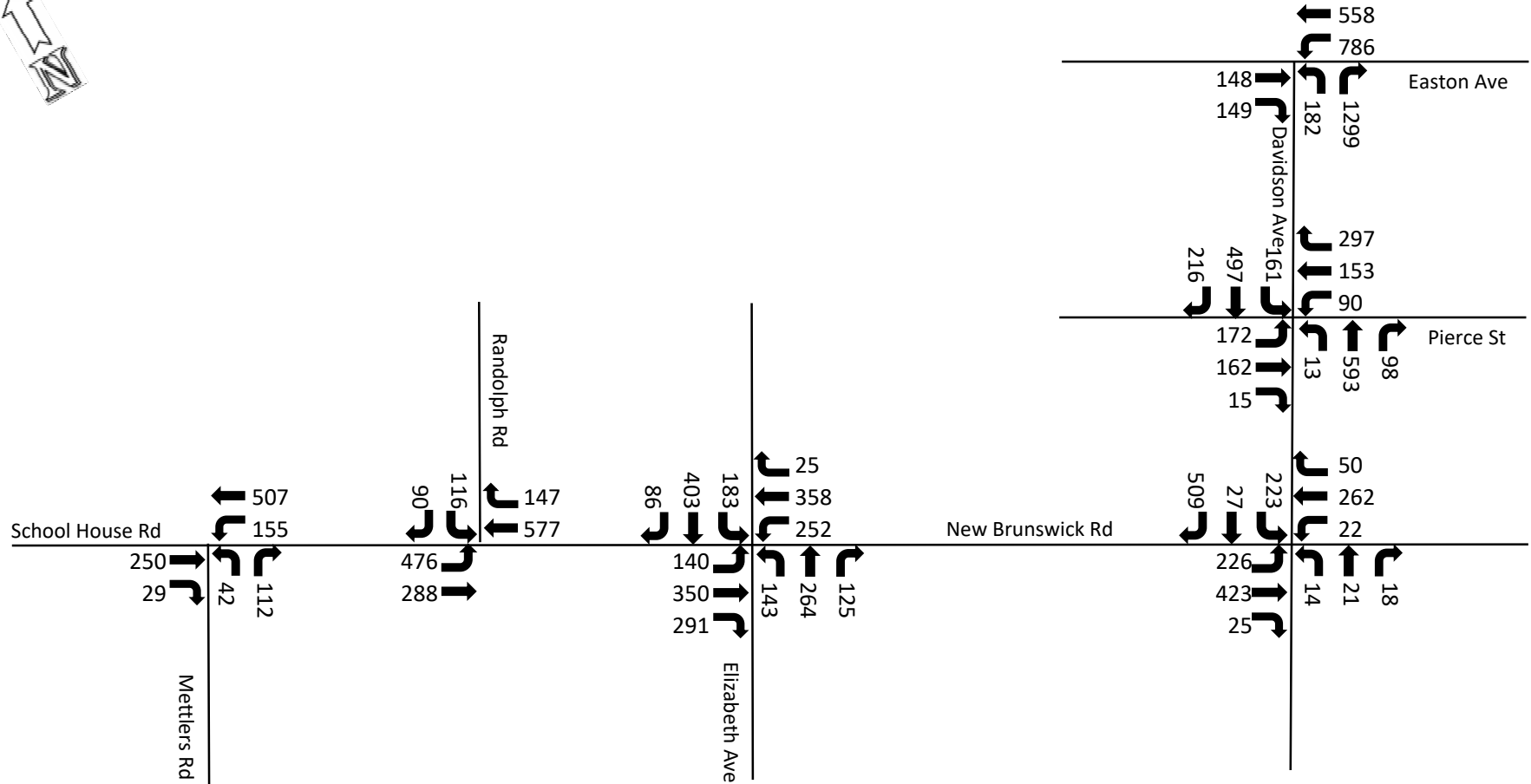
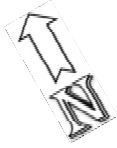
**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 1  
**Weston Canal Road**



**Bright View Engineering**  
*Moving you forward*

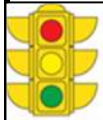
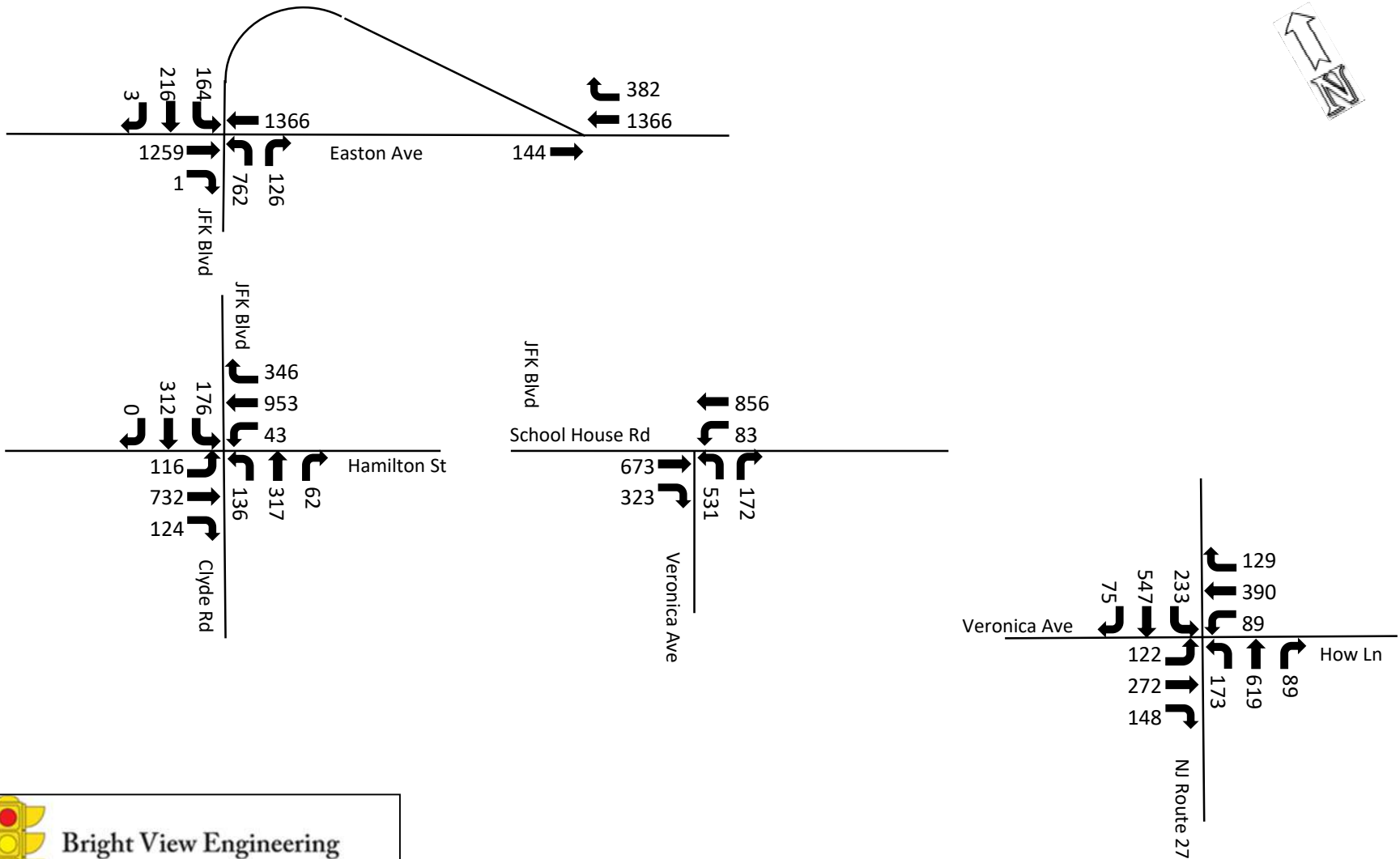


**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 1  
**Schoolhouse Lane & Davidson Road**



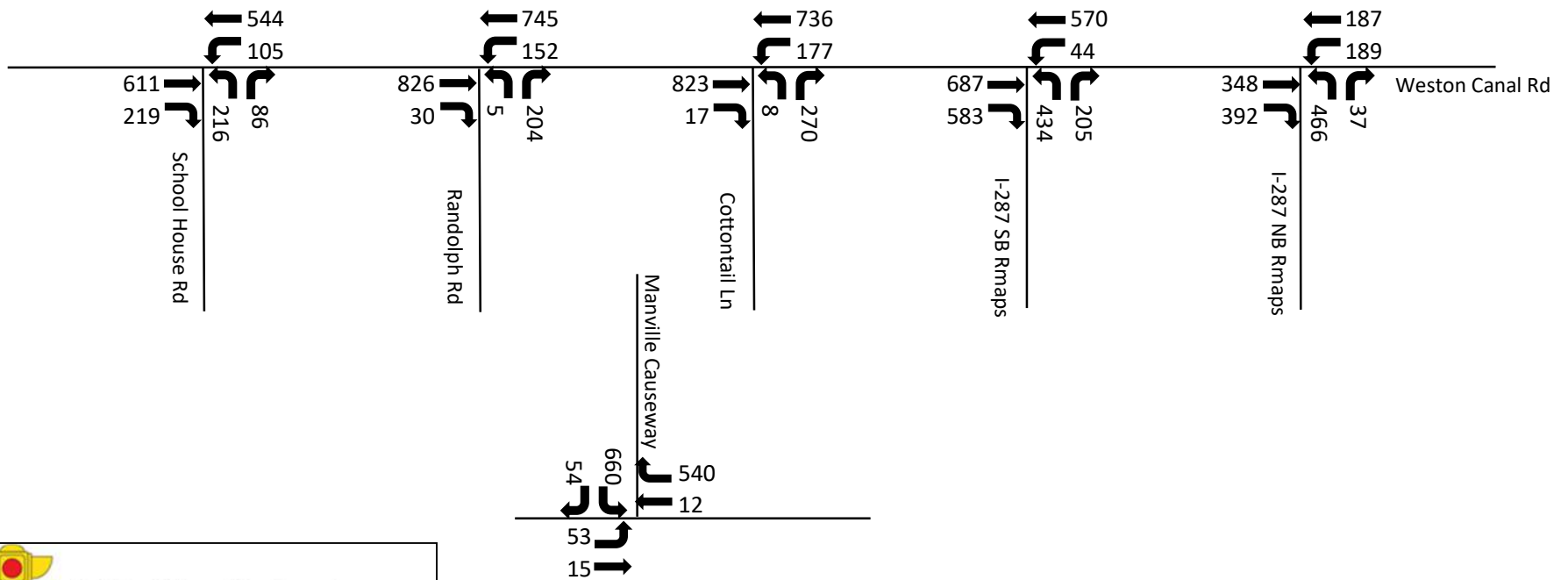
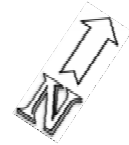
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 1  
**JFK Blvd & Veronica Ave**

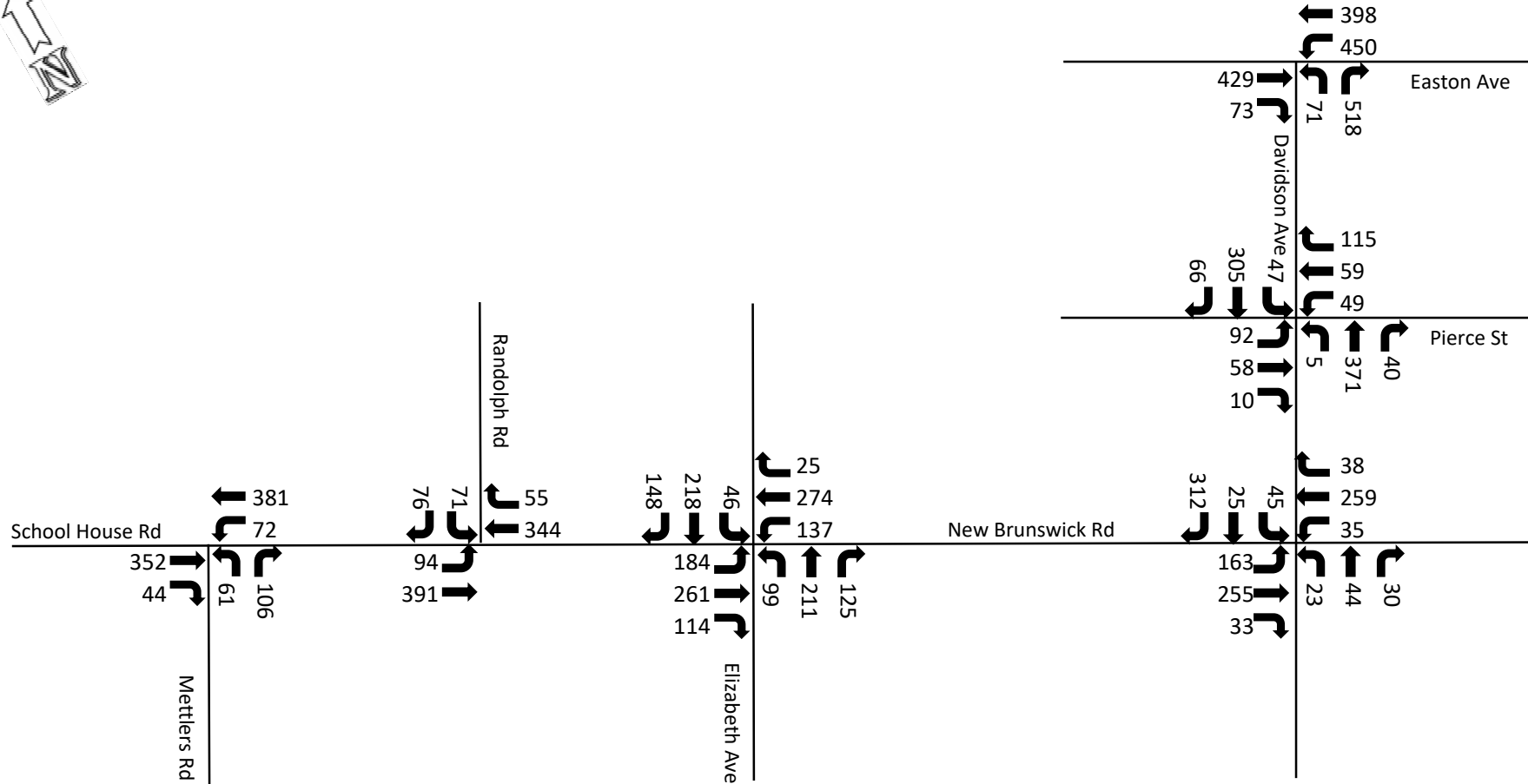
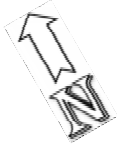


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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 1  
**Weston Canal Road**

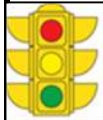
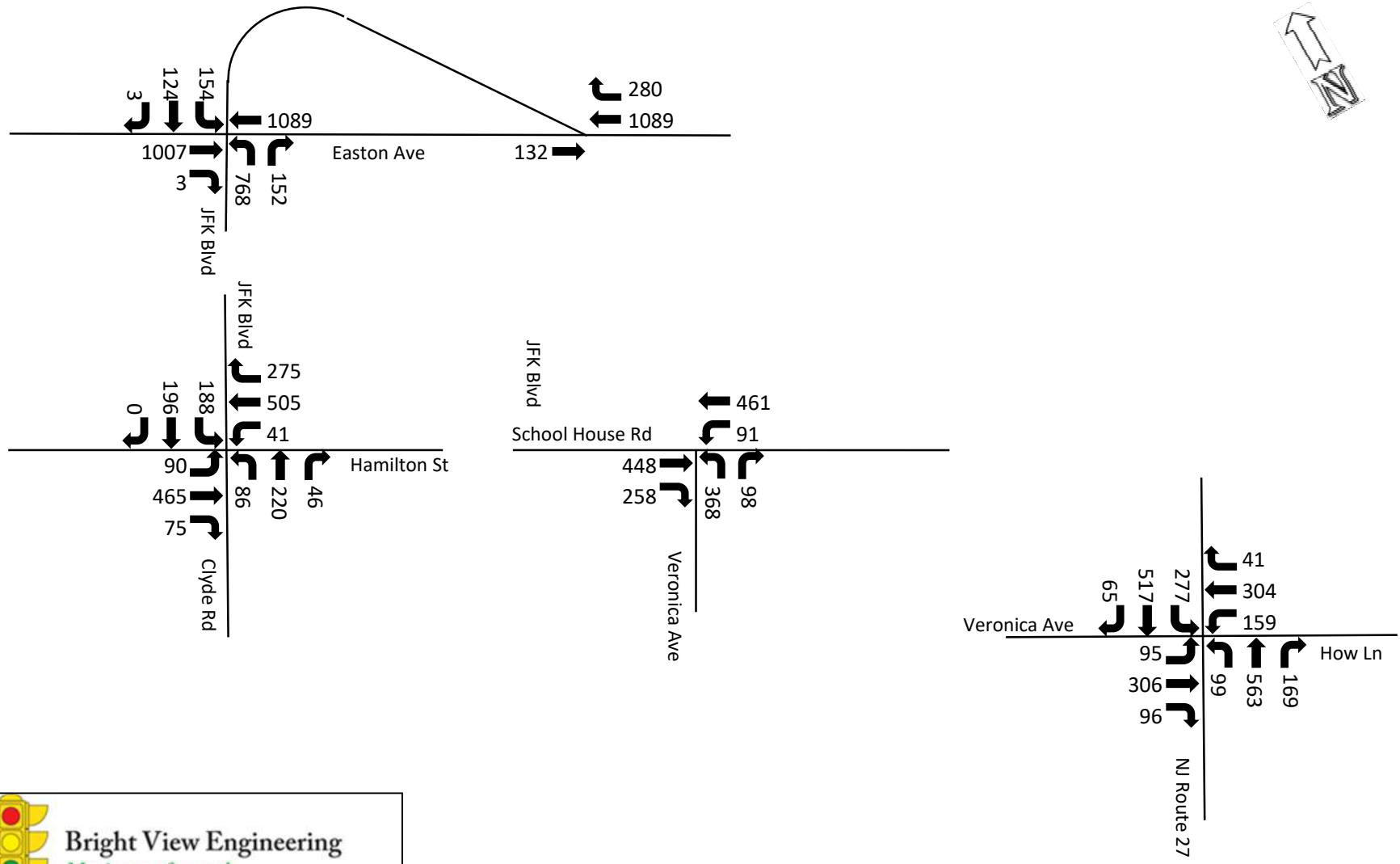
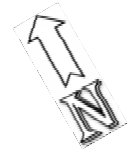


**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 1  
**Schoolhouse Lane & Davidson Road**



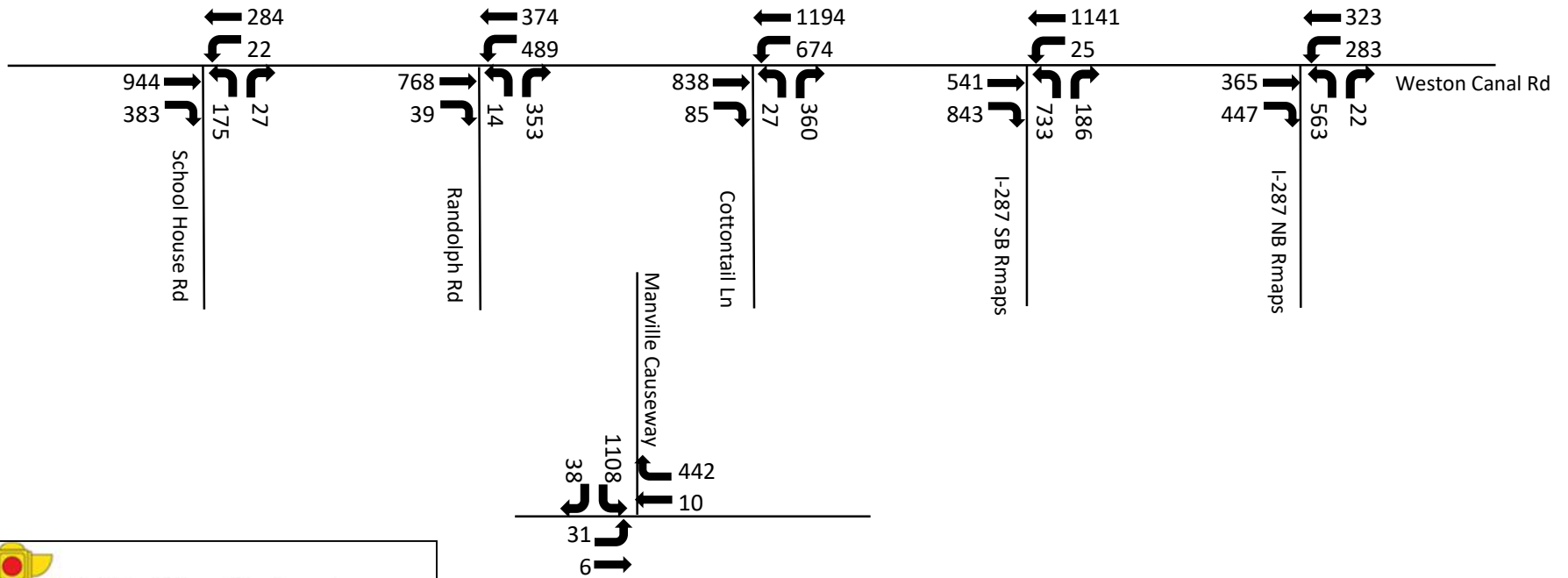
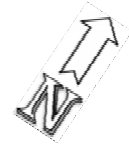
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 1  
**JFK Blvd & Veronica Ave**



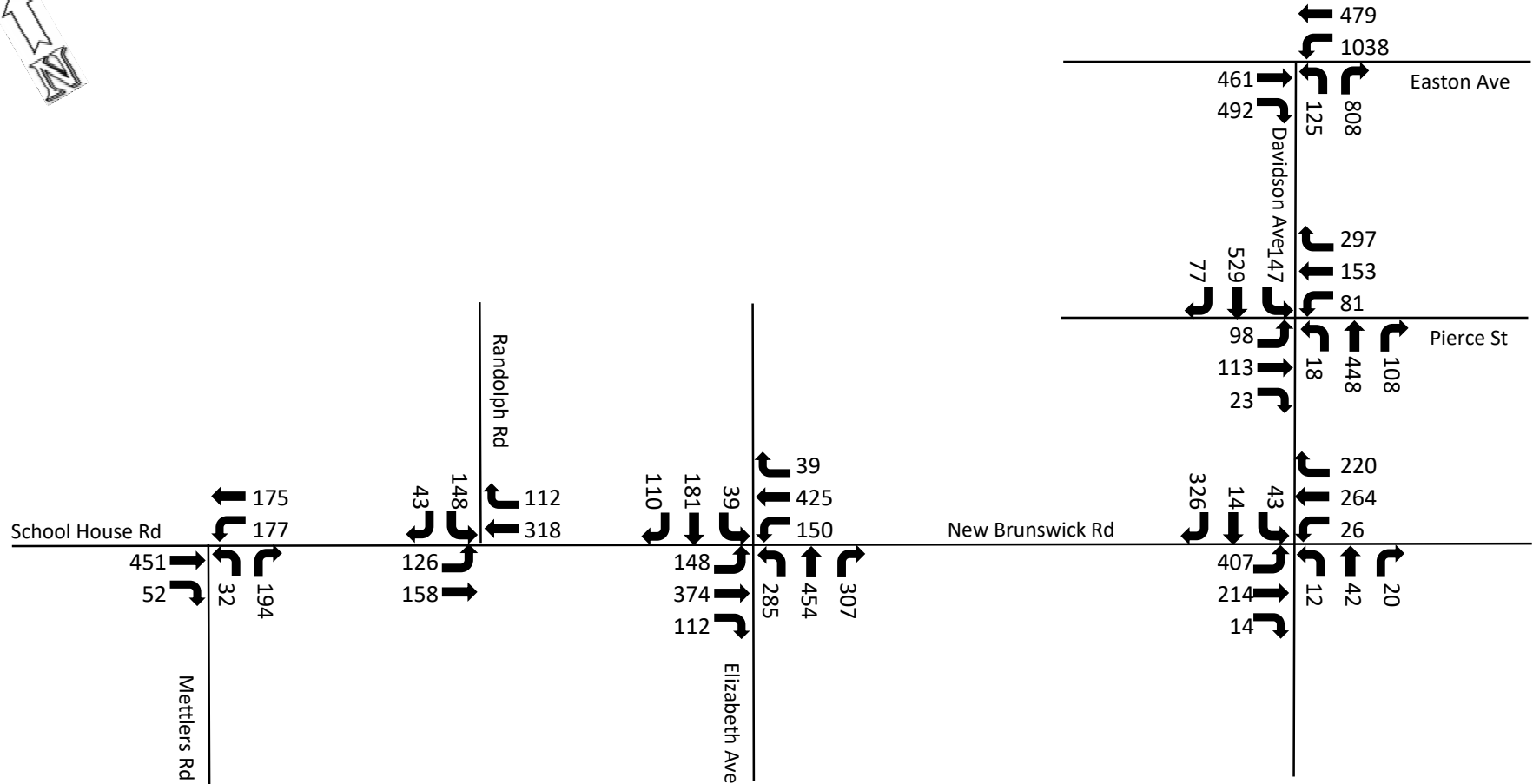
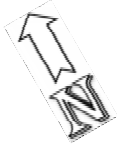
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Morning Peak Hour - Scenario 2  
**Weston Canal Road**



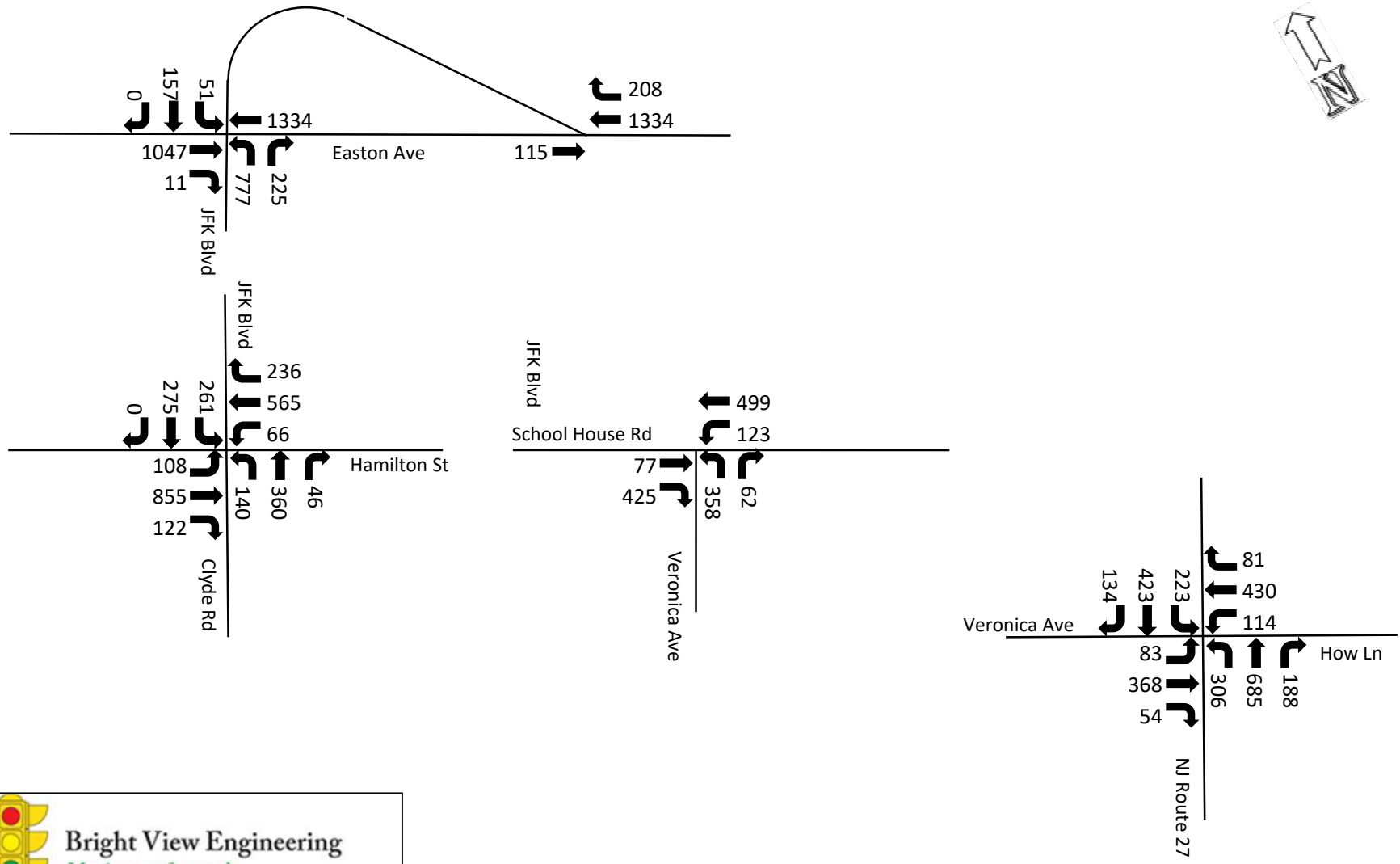
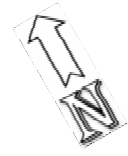
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Morning Peak Hour - Scenario 2  
**Schoolhouse Lane & Davidson Road**



**Bright View Engineering**  
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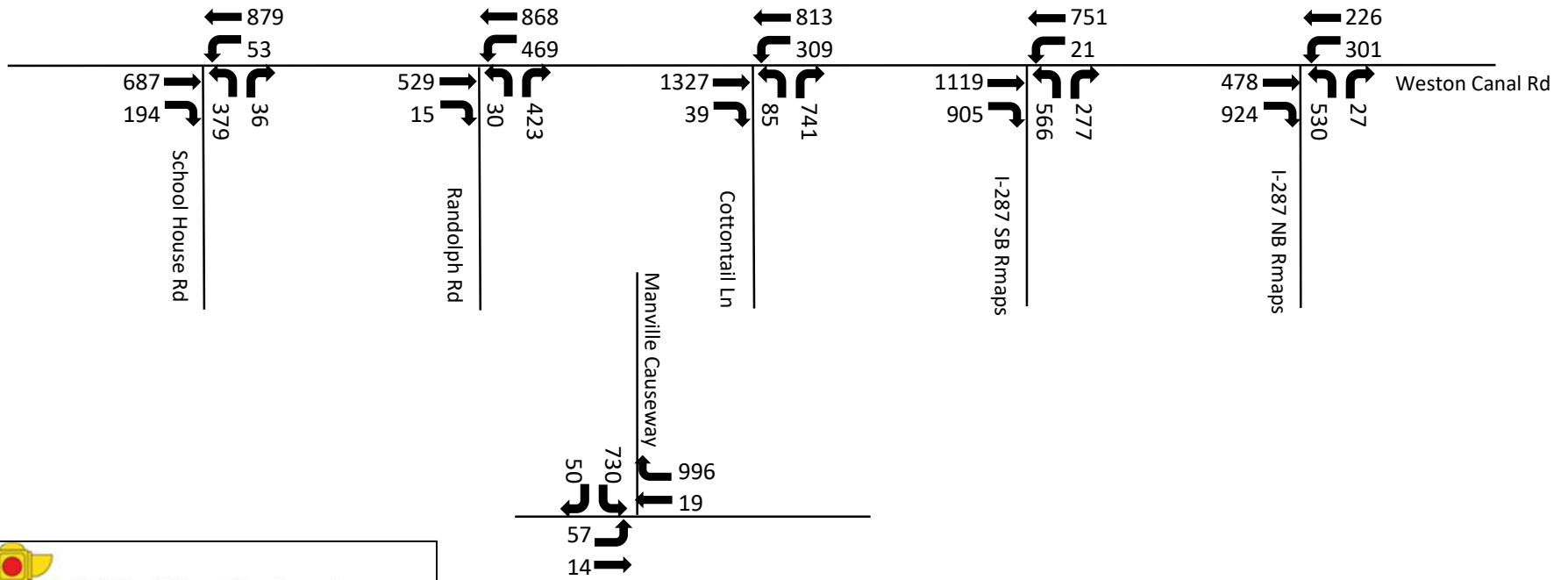
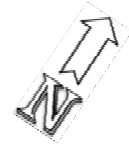
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 2028 Full Build Conditions - Morning Peak Hour - Scenario 2  
**JFK Blvd & Veronica Ave**



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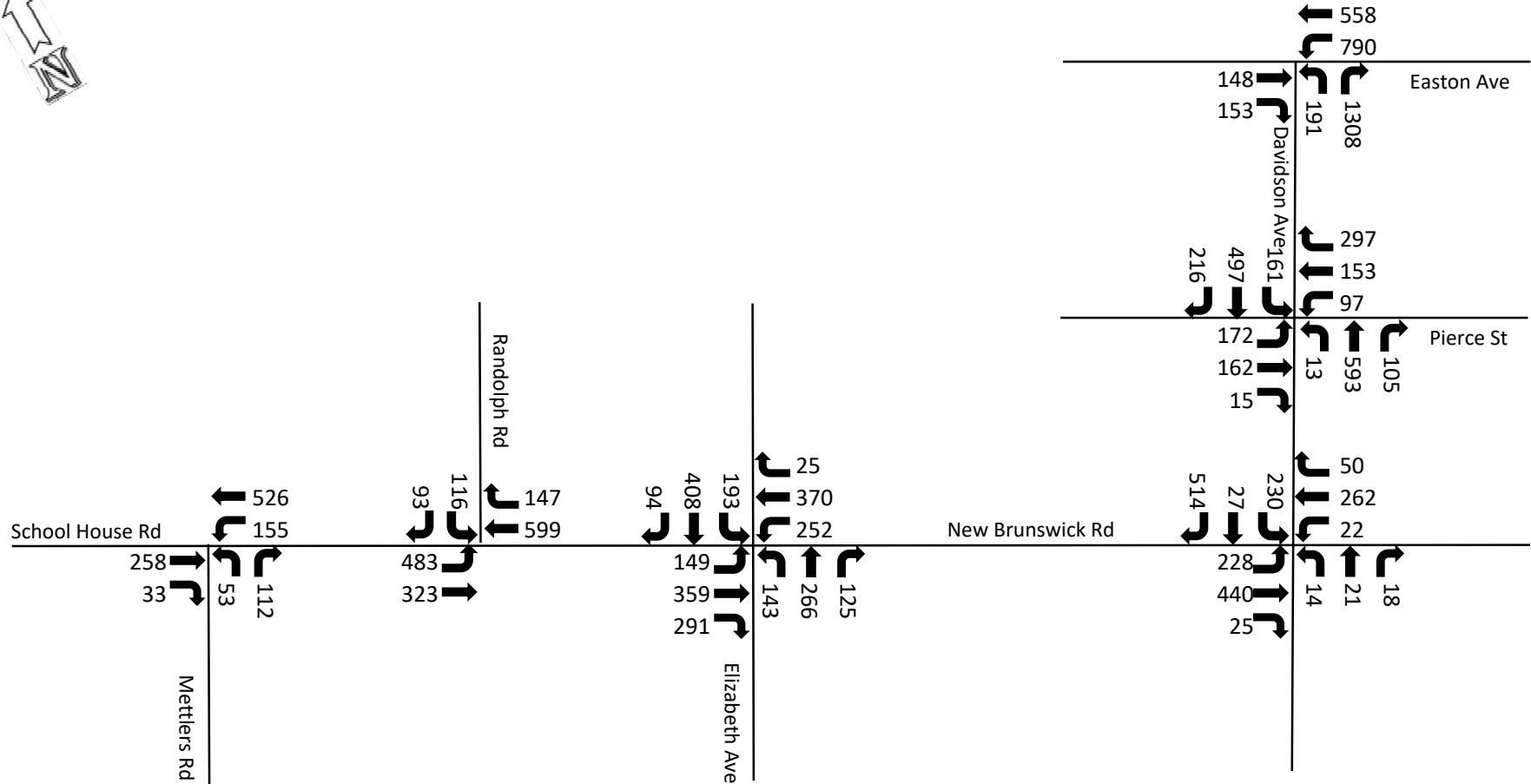


**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 2  
**Weston Canal Road**



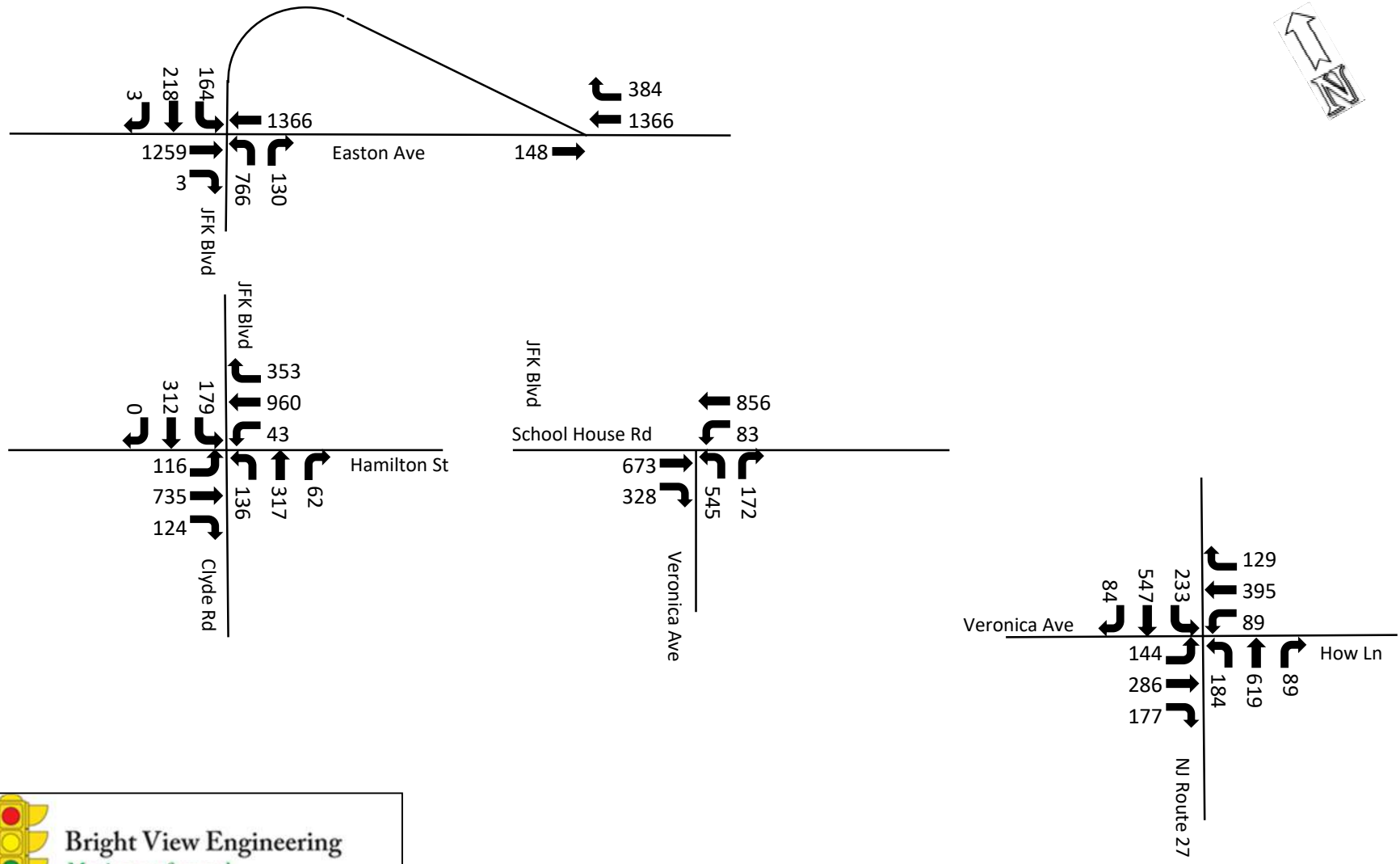
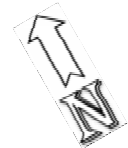
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 2  
**Schoolhouse Lane & Davidson Road**



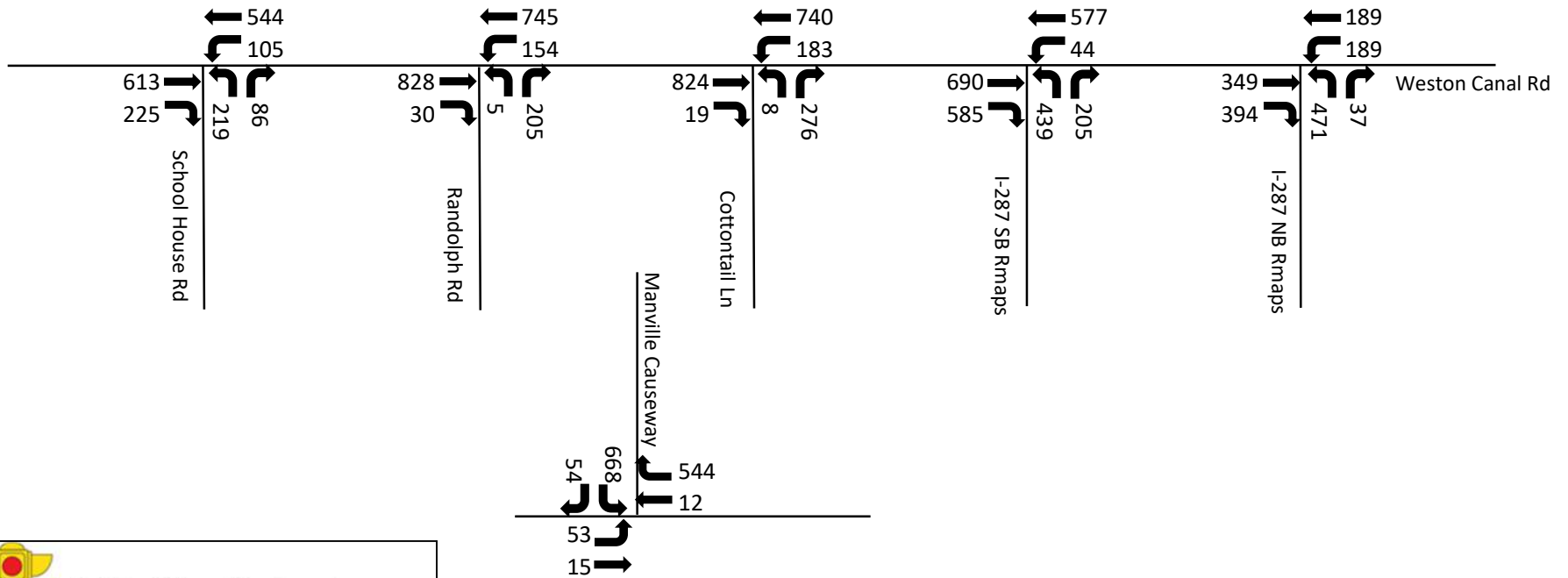
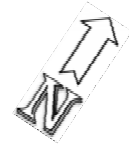
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Evening Peak Hour - Scenario 2  
**JFK Blvd & Veronica Ave**



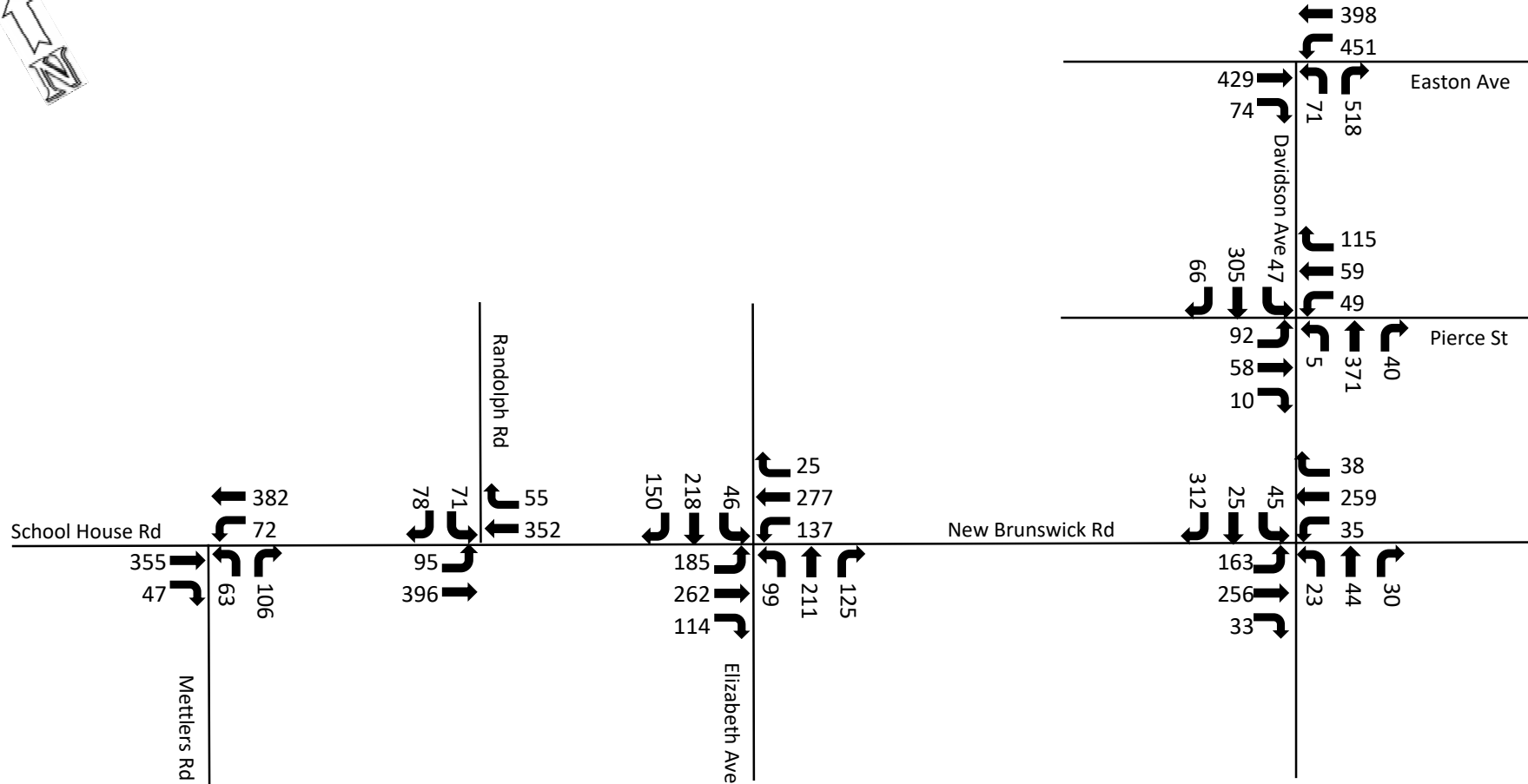
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 2  
**Weston Canal Road**



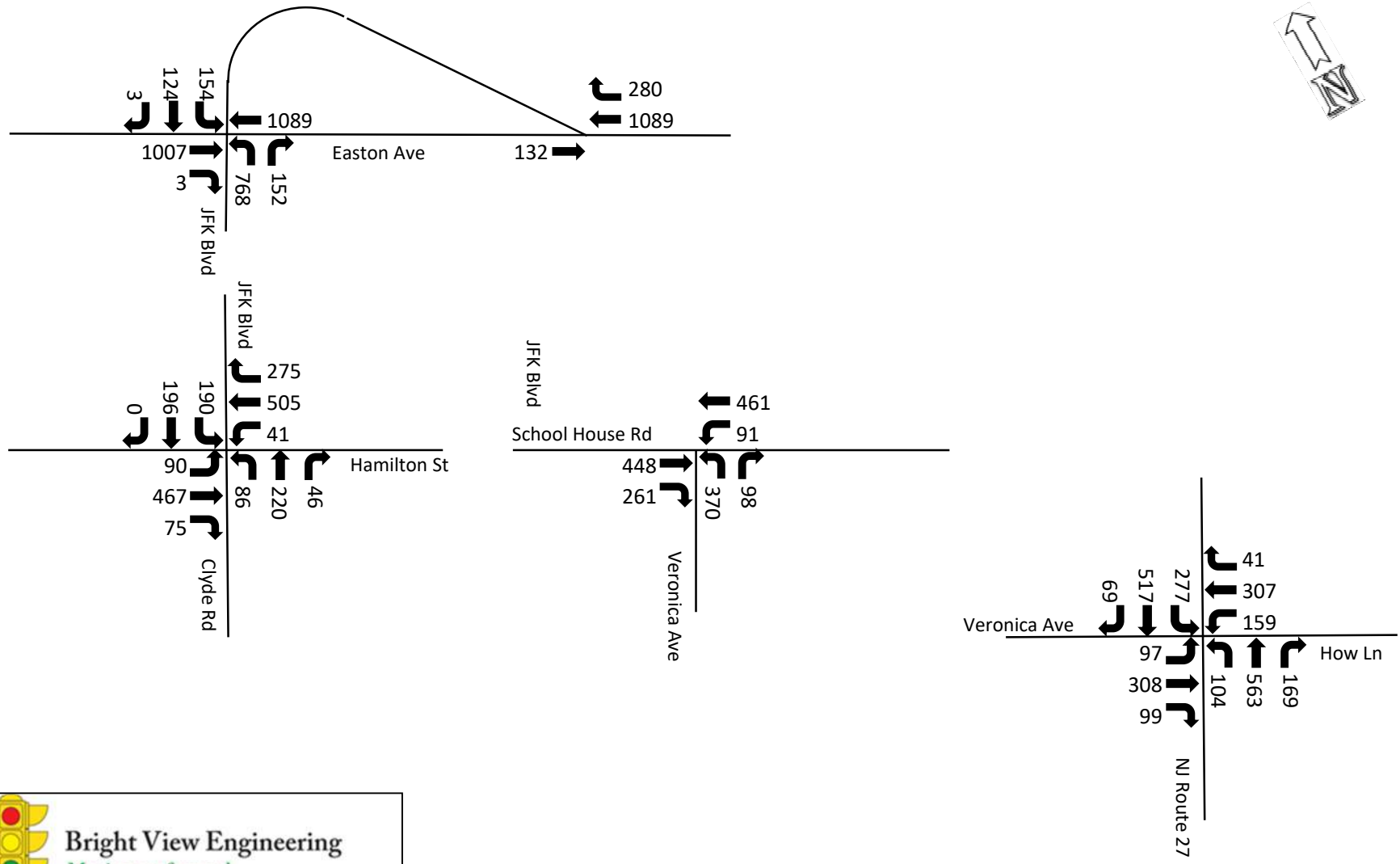
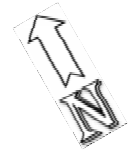
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 2  
**Schoolhouse Lane & Davidson Road**



**Bright View Engineering**  
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**Franklin Township B-1 Zone Traffic Impact Study**  
 2028 Full Build Conditions - Saturday Peak Hour - Scenario 2  
**JFK Blvd & Veronica Ave**



**Bright View Engineering**  
*Moving you forward*



**TOTAL VEHICLES**

1	Southbound				Westbound				Northbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
7:30	0	2	58	0	0	33	0	9	0	0	199	45
7:45	0	3	69	0	0	27	0	4	0	0	210	71
8:00	0	6	44	0	0	35	0	4	0	0	177	50
8:15	0	7	44	0	0	24	0	3	0	0	142	67
	<b>0</b>	<b>18</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>119</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>728</b>	<b>233</b>
PHF	0.87											
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
16:00	0	10	166	0	0	72	0	8	0	0	144	35
16:30	0	13	143	0	0	52	0	7	0	0	172	39
17:00	0	10	131	0	0	62	0	3	0	0	125	27
17:30	0	5	153	0	0	63	0	6	0	0	156	43
	<b>0</b>	<b>38</b>	<b>593</b>	<b>0</b>	<b>0</b>	<b>249</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>597</b>	<b>144</b>
PHF	0.95											

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound			
7:30	0	0	2	0	0	0	0	0	0	0	3	0
7:45	0	1	2	0	0	1	0	0	0	0	6	0
8:00	0	1	3	0	0	1	0	1	0	0	3	2
8:15	0	0	2	0	0	0	0	1	0	0	3	0
	<b>0</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>2</b>
HV%	5%				3%				2%			
	3%											
16:00	0	0	5	0	0	0	0	0	0	0	3	0
16:30	0	0	6	0	0	1	0	0	0	0	4	1
17:00	0	0	4	0	0	0	0	0	0	0	1	0
17:30	0	0	1	0	0	1	0	1	0	0	4	1
	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>2</b>
HV%	3%				2%				2%			
	2%											

**FULL-BUILD-1 HEAVY VEHICLES**

1	Southbound				Westbound				Northbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
NBVOL		22	284			175		27			944	383
DEVOL		1	37			38		4			110	116
20%		0	7			8		1			22	23
TOTHV	<b>0</b>	<b>2</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>25</b>
HV%	6%				6%				5%			
<b>PM</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
NBVOL		53	879			379		36			687	194
DEVOL		4	142			111		2			37	42
20%		1	28			22		0			7	8
TOTHV	<b>0</b>	<b>1</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>10</b>
HV%	5%				6%				3%			



**TOTAL VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
7:15	0	76	19	0	0	2	0	26	0	0	61	13
7:30	0	50	36	0	0	11	0	48	0	0	72	13
7:45	0	15	40	0	0	8	0	70	0	0	95	5
8:00	0	13	33	0	0	4	0	25	0	0	74	4
	<b>0</b>	<b>154</b>	<b>128</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>169</b>	<b>0</b>	<b>0</b>	<b>302</b>	<b>35</b>
PHF	0.87											
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
16:15	0	32	88	0	0	6	0	29	0	0	41	11
16:30	0	34	108	0	0	14	0	28	0	0	47	5
16:45	0	25	87	0	0	9	0	19	0	0	54	2
17:00	0	44	86	0	0	7	0	21	0	0	50	7
	<b>0</b>	<b>135</b>	<b>369</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>25</b>
PHF	0.90											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	1	0	0	0	0	1	0	0	0	0
8:00	0	0	0	0	0	1	0	0	0	0	2	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%			
16:15	0	0	0	0	0	0	0	0	0	0	1	0
16:30	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	1	0	0	0	0	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-1 HEAVY VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		177	175			32		194			451	52
DEVOL		0	28			3		0			105	11
20%		0	6			1		0			21	2
TOTHV	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>2</b>
HV%	2%				2%				5%			
<b>PM</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		155	526			53		112			258	33
DEVOL		0	103			11		0			38	4
20%		0	21			2		0			8	1
TOTHV	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1</b>
HV%	3%				2%				4%			





**TOTAL VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
7:30	0	16	0	8	0	0	82	22	0	25	98	0
7:45	0	17	0	8	0	0	61	26	0	36	129	0
8:00	0	29	0	7	0	0	40	21	0	20	83	0
8:15	0	32	0	7	0	0	40	17	0	23	96	0
	<b>0</b>	<b>94</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>223</b>	<b>86</b>	<b>0</b>	<b>104</b>	<b>406</b>	<b>0</b>
PHF	0.85											
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
16:30	0	26	0	28	0	0	108	16	0	15	62	0
16:45	0	9	0	13	0	0	91	23	0	11	58	0
17:00	0	32	0	25	0	0	115	30	0	22	57	0
17:15	0	21	0	12	0	0	118	24	0	12	50	0
	<b>0</b>	<b>88</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>432</b>	<b>93</b>	<b>0</b>	<b>60</b>	<b>227</b>	<b>0</b>
PHF	0.87											

**HEAVY VEHICLES**

	Southbund				Westbound				Eastbound			
7:30	0	1	0	1	0	0	1	3	0	1	2	0
7:45	0	4	0	0	0	0	1	3	0	0	1	0
8:00	0	3	0	0	0	0	1	2	0	1	2	0
8:15	0	5	0	0	0	0	1	0	0	1	0	0
	<b>0</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>
HV%	11%				4%				2%			
	6%											
16:30	0	1	0	0	0	0	0	0	0	1	1	0
16:45	0	1	0	0	0	0	1	0	0	0	0	0
17:00	0	2	0	0	0	0	1	2	0	1	0	0
17:15	0	0	0	0	0	0	0	4	0	0	1	0
	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-1 HEAVY VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		148		43			318	112		126	158	
DEVOL		40		8			62	13		6	89	
20%		8		2			12	3		1	18	
TOTHV	<b>0</b>	<b>21</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>11</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>0</b>
HV%	13%				6%				10%			
<b>PM</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		116		93			599	147		483	323	
DEVOL		15		3			104	40		18	63	
20%		3		1			21	8		4	13	
TOTHV	<b>0</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>14</b>	<b>0</b>	<b>6</b>	<b>15</b>	<b>0</b>
HV%	4%				5%				3%			



**TOTAL VEHICLES**

4	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
7:45	0	9	29	25	0	37	85	11	0	64	87	72	0	21	91	25
8:00	0	2	42	11	0	44	67	5	0	57	90	56	0	22	69	22
8:15	0	4	24	23	0	18	66	9	0	47	86	63	0	27	79	8
8:30	0	5	50	22	0	22	57	9	0	70	104	73	0	30	66	15
	<b>0</b>	<b>20</b>	<b>145</b>	<b>81</b>	<b>0</b>	<b>121</b>	<b>275</b>	<b>34</b>	<b>0</b>	<b>238</b>	<b>367</b>	<b>264</b>	<b>0</b>	<b>100</b>	<b>305</b>	<b>70</b>
PHF	0.91															
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
16:30	0	18	86	29	0	49	72	3	0	24	58	34	0	37	71	59
16:45	0	8	78	32	0	52	64	8	0	32	55	20	0	26	59	55
17:00	0	14	78	26	0	59	72	4	0	24	47	21	0	36	72	80
17:15	0	12	85	28	0	56	72	6	0	17	59	24	0	16	70	50
	<b>0</b>	<b>52</b>	<b>327</b>	<b>115</b>	<b>0</b>	<b>216</b>	<b>280</b>	<b>21</b>	<b>0</b>	<b>97</b>	<b>219</b>	<b>99</b>	<b>0</b>	<b>115</b>	<b>272</b>	<b>244</b>
PHF	0.95															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:45	0	0	3	0	0	0	0	0	0	2	1	1	0	1	0	2
8:00	0	0	2	0	0	0	0	0	0	4	1	0	0	2	0	2
8:15	0	0	0	0	0	0	2	0	0	0	4	0	0	0	1	0
8:30	0	0	1	0	0	0	0	0	0	2	0	1	0	0	1	1
	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>5</b>
HV%	2%				2%				2%				2%			
	2%															
16:30	0	0	2	0	0	0	1	0	0	2	1	0	0	2	0	2
16:45	0	0	2	0	0	1	0	0	0	2	0	0	0	0	0	0
17:00	0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>
HV%	2%				2%				2%				2%			
	2%															

**FULL-BUILD-1 HEAVY VEHICLES**

4	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
NBVOL		39	181	110		150	425	39		285	454	307		148	374	112
DEVOL		16	14	17		11	110	0		12	33	4		33	24	31
20%		3	3	3		2	22	0		2	7	1		7	5	6
TOTHV	<b>0</b>	<b>3</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>11</b>
HV%	5%				4%				2%				4%			
<b>PM</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
NBVOL		193	408	94		252	370	25		143	266	125		149	359	291
DEVOL		61	33	34		4	49	0		31	15	11		17	47	11
20%		12	7	7		1	10	0		6	3	2		3	9	2
TOTHV	<b>0</b>	<b>12</b>	<b>11</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>9</b>	<b>5</b>
HV%	4%				2%				4%				2%			



**TOTAL VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
6:30	0	126	72	0	0	3	0	104	0	0	136	5
6:45	0	108	85	0	0	0	0	72	0	0	136	3
7:00	0	118	83	0	0	2	0	64	0	0	136	5
7:15	0	53	54	0	0	0	0	62	0	0	178	5
	<b>0</b>	<b>405</b>	<b>294</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>302</b>	<b>0</b>	<b>0</b>	<b>586</b>	<b>18</b>
PHF	0.90											
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
18:00	0	65	180	0	0	2	0	44	0	0	80	1
18:15	0	79	207	0	0	2	0	153	0	0	106	1
18:30	0	112	163	0	0	1	0	95	0	0	133	1
18:45	0	145	120	0	0	4	0	56	0	0	105	2
	<b>0</b>	<b>401</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>348</b>	<b>0</b>	<b>0</b>	<b>424</b>	<b>5</b>
PHF	0.85											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	9	3	0	0	0	0	11	0	0	4	0
6:45	0	7	1	0	0	0	0	6	0	0	2	0
7:00	0	9	3	0	0	0	0	3	0	0	0	0
7:15	0	9	4	0	0	0	0	6	0	0	2	0
	<b>0</b>	<b>34</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>
HV%	6%				8%				2%			
	6%											
18:00	0	5	2	0	0	0	0	3	0	0	1	0
18:15	0	9	0	0	0	0	0	1	0	0	1	0
18:30	0	6	0	0	0	0	0	8	0	0	3	0
18:45	0	12	1	0	0	0	0	6	0	0	0	1
	<b>0</b>	<b>32</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>
HV%	3%				5%				2%			
	3%											

**FULL-BUILD-1 HEAVY VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		489	374			14		353			768	39
DEVOL		25	37			8		7			96	18
20%		5	7			2		1			19	4
TOTHV	<b>0</b>	<b>39</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>4</b>
HV%	7%				8%				4%			
<b>PM</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		469	868			30		423			529	15
DEVOL		9	100			19		24			43	9
20%		2	20			4		5			9	2
TOTHV	<b>0</b>	<b>34</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>3</b>
HV%	4%				6%				3%			



**TOTAL VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
6:30	0	83	266	0	0	2	0	39	0	0	125	4
6:45	0	109	305	0	0	0	0	28	0	0	172	7
7:00	0	98	172	0	0	2	0	83	0	0	176	5
7:15	0	88	149	0	0	3	0	82	0	0	239	5
	<b>0</b>	<b>378</b>	<b>892</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>232</b>	<b>0</b>	<b>0</b>	<b>712</b>	<b>21</b>
PHF	0.90											
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
17:00	0	83	266	0	0	5	0	108	0	0	238	4
17:15	0	109	305	0	0	7	0	91	0	0	216	4
17:30	0	98	172	0	0	7	0	86	0	0	327	2
17:45	0	88	149	0	0	1	0	82	0	0	299	4
	<b>0</b>	<b>378</b>	<b>892</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>367</b>	<b>0</b>	<b>0</b>	<b>1080</b>	<b>14</b>
PHF	0.94											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	2	13	0	0	0	0	6	0	0	9	0
6:45	0	6	7	0	0	0	0	3	0	0	10	0
7:00	0	6	15	0	0	0	0	6	0	0	10	0
7:15	0	18	13	0	0	0	0	7	0	0	7	0
	<b>0</b>	<b>32</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>
HV%	6%				9%				5%			
	7%											
17:00	0	6	7	0	0	0	0	5	0	0	4	0
17:15	0	5	7	0	0	0	0	1	0	0	4	0
17:30	0	2	2	0	0	0	0	0	0	0	11	0
17:45	0	6	8	0	0	0	0	4	0	0	9	0
	<b>0</b>	<b>19</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>0</b>
HV%	3%				3%				3%			
	3%											

**FULL-BUILD-1 HEAVY VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		674	1194			27		360			838	85
DEVOL		241	172			18		94			22	60
20%		48	34			4		19			4	12
TOTHV	<b>0</b>	<b>80</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>12</b>
HV%	9%				12%				6%			
<b>PM</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		309	813			85		741			1327	39
DEVOL		84	60			62		320			90	22
20%		17	12			12		64			18	4
TOTHV	<b>0</b>	<b>36</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>4</b>
HV%	6%				10%				4%			



**TOTAL VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
6:30	0	3	205	0	0	116	0	20	0	0	111	179
6:45	0	6	252	0	0	175	0	52	0	0	80	142
7:00	0	4	234	0	0	113	0	44	0	0	108	184
7:15	0	8	128	0	0	79	0	35	0	0	126	184
	<b>0</b>	<b>21</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>483</b>	<b>0</b>	<b>151</b>	<b>0</b>	<b>0</b>	<b>425</b>	<b>689</b>
PHF	0.92											
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
16:15	0	3	152	0	0	96	0	62	0	0	192	150
16:30	0	3	145	0	0	119	0	53	0	0	202	162
16:45	0	4	136	0	0	136	0	60	0	0	181	141
17:00	0	8	159	0	0	88	0	62	0	0	225	167
	<b>0</b>	<b>18</b>	<b>592</b>	<b>0</b>	<b>0</b>	<b>439</b>	<b>0</b>	<b>237</b>	<b>0</b>	<b>0</b>	<b>800</b>	<b>620</b>
PHF	0.95											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	0	9	0	0	6	0	0	0	0	6	16
6:45	0	0	11	0	0	4	0	2	0	0	6	5
7:00	0	0	16	0	0	11	0	0	0	0	3	6
7:15	0	0	10	0	0	8	0	0	0	0	10	11
	<b>0</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>38</b>
HV%	5%				5%				6%			
	5%											
16:15	0	0	6	0	0	6	0	1	0	0	6	14
16:30	0	0	6	0	0	3	0	0	0	0	3	9
16:45	0	0	7	0	0	5	0	1	0	0	6	7
17:00	0	0	6	0	0	5	0	0	0	0	2	3
	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>33</b>
HV%	4%				3%				4%			
	4%											

**FULL-BUILD-1 HEAVY VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		25	1141			733		186			541	843
DEVOL		0	203			179		13			54	53
20%		0	41			36		3			11	11
TOTHV	<b>0</b>	<b>0</b>	<b>87</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>49</b>
HV%	7%				8%				6%			
<b>PM</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		21	751			566		277			1119	905
DEVOL		0	72			63		5			202	194
20%		0	14			13		1			40	39
TOTHV	<b>0</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>57</b>	<b>72</b>
HV%	5%				4%				6%			



**TOTAL VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
7:30	0	45	65	0	0	73	0	7	0	0	73	79
7:45	0	77	60	0	0	93	0	6	0	0	90	97
8:00	0	65	75	0	0	73	0	2	0	0	73	76
8:15	0	60	60	0	0	84	0	4	0	0	76	93
	<b>0</b>	<b>247</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>323</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>312</b>	<b>345</b>
PHF	0.89											
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
17:00	0	65	47	0	1	88	0	3	0	0	84	152
17:15	0	84	47	0	0	100	0	1	0	0	102	145
17:30	0	58	55	0	0	102	0	6	0	0	115	192
17:45	0	55	40	0	0	115	0	13	0	0	95	151
	<b>0</b>	<b>262</b>	<b>189</b>	<b>0</b>	<b>1</b>	<b>405</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>396</b>	<b>640</b>
PHF	0.91											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:30	0	4	1	0	0	7	0	0	0	0	3	6
7:45	0	2	0	0	0	8	0	0	0	0	2	5
8:00	0	0	1	0	0	10	0	0	0	0	6	4
8:15	0	1	2	0	0	12	0	0	0	0	6	8
	<b>0</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>23</b>
HV%	2%				11%				6%			
	6%											
17:00	0	0	3	0	0	2	0	0	0	0	1	1
17:15	0	1	0	0	0	5	0	0	0	0	0	3
17:30	0	0	0	0	0	3	0	0	0	0	0	6
17:45	0	1	0	0	0	9	0	1	0	0	0	10
	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>20</b>
HV%	2%				5%				2%			
	3%											

**FULL-BUILD-1 HEAVY VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		283	323			563		22			365	447
DEVOL		0	25			193		0			7	51
20%		0	5			39		0			1	10
TOTHV	<b>0</b>	<b>7</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>33</b>
HV%	3%				13%				6%			
<b>PM</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		301	226			530		27			478	924
DEVOL		0	9			66		0			24	191
20%		0	2			13		0			5	38
TOTHV	<b>0</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>58</b>
HV%	2%				6%				5%			



**TOTAL VEHICLES**

9	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
7:30	0	25	96	44	0	20	37	69	0	0	82	26	0	16	21	1
7:45	0	30	112	50	0	18	40	63	0	7	101	26	0	19	28	4
8:00	0	37	125	46	0	15	22	67	0	6	65	23	0	30	26	9
8:15	0	36	117	67	0	11	34	60	0	2	93	13	0	20	23	6
	<b>0</b>	<b>128</b>	<b>450</b>	<b>207</b>	<b>0</b>	<b>64</b>	<b>133</b>	<b>259</b>	<b>0</b>	<b>15</b>	<b>341</b>	<b>88</b>	<b>0</b>	<b>85</b>	<b>98</b>	<b>20</b>
PHF	0.95															
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
17:00	0	37	103	38	0	27	43	106	0	4	149	19	0	48	43	5
17:15	0	42	106	43	0	17	23	64	0	4	102	17	0	30	34	5
17:30	0	32	84	43	0	27	34	82	0	2	151	18	0	41	37	1
17:45	0	29	88	64	0	8	19	52	0	1	99	17	0	31	27	2
	<b>0</b>	<b>140</b>	<b>381</b>	<b>188</b>	<b>0</b>	<b>79</b>	<b>119</b>	<b>304</b>	<b>0</b>	<b>11</b>	<b>501</b>	<b>71</b>	<b>0</b>	<b>150</b>	<b>141</b>	<b>13</b>
PHF	0.84															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:30	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0
7:45	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
HV%	2%				2%				2%				2%			
	2%															
17:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0
17:15	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0
17:45	0	0	1	2	0	0	0	0	0	0	2	0	0	1	0	0
	<b>0</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%				3%			
	2%															

**FULL-BUILD-1 HEAVY VEHICLES**

9	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
NBVOL		147	529	77		81	153	297		18	448	108		98	113	23
DEVOL		0	13	0		7	0	0		0	57	7		0	0	0
20%		0	3	0		1	0	0		0	11	1		0	0	0
TOTHV	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
HV%	2%				2%				3%				2%			
<b>PM</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
NBVOL		161	497	216		97	153	297		13	593	105		172	162	15
DEVOL		0	60	0		23	0	0		0	19	23		0	0	0
20%		0	12	0		5	0	0		0	4	5		0	0	0
TOTHV	<b>0</b>	<b>1</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
7:30	0	0	107	23	0	14	0	172	0	169	83	0
7:45	0	0	98	31	0	28	0	171	0	184	118	0
8:00	0	0	97	34	0	21	0	170	0	234	99	0
8:15	0	0	100	41	0	23	0	169	0	229	118	0
	<b>0</b>	<b>0</b>	<b>402</b>	<b>129</b>	<b>0</b>	<b>86</b>	<b>0</b>	<b>682</b>	<b>0</b>	<b>816</b>	<b>418</b>	<b>0</b>
PHF	0.93											
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
17:00	0	0	89	20	0	20	0	332	0	155	123	0
17:15	0	0	84	34	0	25	0	266	0	176	115	0
17:30	0	0	79	23	0	11	0	256	0	159	127	0
17:45	0	0	87	24	0	18	0	195	0	167	122	0
	<b>0</b>	<b>0</b>	<b>339</b>	<b>101</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>1049</b>	<b>0</b>	<b>657</b>	<b>487</b>	<b>0</b>
PHF	0.92											

**HEAVY VEHICLES**

	Eastbound				Northbound				Westbound			
7:30	0	0	2	2	0	0	0	8	0	1	1	0
7:45	0	0	7	0	0	0	0	3	0	2	3	0
8:00	0	0	3	0	0	0	0	6	0	2	3	0
8:15	0	0	4	1	0	0	0	2	0	5	0	0
	<b>0</b>	<b>0</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>0</b>
HV%	4%				2%				2%			
	3%											
17:00	0	0	2	0	0	0	0	1	0	1	2	0
17:15	0	0	1	0	0	0	0	4	0	2	0	0
17:30	0	0	0	0	0	0	0	2	0	2	2	0
17:45	0	0	0	0	0	0	0	2	0	3	0	0
	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>0</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-1 HEAVY VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			461	492			125	808			1038	479
DEVOL			0	103			26	26			103	0
20%			0	21			5	5			21	0
TOTHV	<b>0</b>	<b>0</b>	<b>16</b>	<b>24</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>31</b>	<b>7</b>	<b>0</b>
HV%	4%				3%				3%			
<b>PM</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			148	153			191	1308			790	558
DEVOL			0	37			106	106			37	0
20%			0	7			21	21			7	0
TOTHV	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>15</b>	<b>4</b>	<b>0</b>
HV%	3%				3%				2%			





**TOTAL VEHICLES**

11	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
7:45	0	70	108	25	0	32	93	16	0	48	146	45	0	12	93	4
8:00	0	33	93	19	0	22	87	17	0	59	144	46	0	15	72	5
8:15	0	42	71	6	0	22	84	18	0	53	145	37	0	19	74	11
8:30	0	49	97	28	0	23	87	19	0	56	163	36	0	14	75	11
	<b>0</b>	<b>194</b>	<b>369</b>	<b>78</b>	<b>0</b>	<b>99</b>	<b>351</b>	<b>70</b>	<b>0</b>	<b>216</b>	<b>598</b>	<b>164</b>	<b>0</b>	<b>60</b>	<b>314</b>	<b>31</b>
PHF	0.92															
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
16:00	0	60	120	9	0	20	75	10	0	47	143	17	0	27	55	32
16:15	0	52	131	17	0	11	92	33	0	33	118	24	0	19	76	22
16:30	0	44	123	15	0	24	74	36	0	26	146	17	0	23	40	20
16:45	0	47	103	17	0	22	94	33	0	35	133	19	0	17	53	28
	<b>0</b>	<b>203</b>	<b>477</b>	<b>58</b>	<b>0</b>	<b>77</b>	<b>335</b>	<b>112</b>	<b>0</b>	<b>141</b>	<b>540</b>	<b>77</b>	<b>0</b>	<b>86</b>	<b>224</b>	<b>102</b>
PHF	0.97															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:45	0	3	1	1	0	0	6	1	0	1	0	0	0	1	6	0
8:00	0	1	0	0	0	1	13	0	0	4	1	0	0	3	4	0
8:15	0	1	2	0	0	0	10	0	0	1	0	1	0	0	2	0
8:30	0	3	0	2	0	0	9	0	0	1	1	0	0	0	12	1
	<b>0</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>38</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>24</b>	<b>1</b>
HV%	2%				8%				2%				7%			
	5%															
16:00	0	1	1	0	0	1	9	1	0	1	0	1	0	1	6	1
16:15	0	0	1	0	0	0	5	0	0	0	2	1	0	0	6	1
16:30	0	1	1	0	0	1	2	0	0	1	3	0	0	1	5	0
16:45	0	5	0	0	0	0	3	1	0	2	1	0	0	0	3	2
	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>19</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>20</b>	<b>4</b>
HV%	2%				4%				2%				6%			
	4%															

**FULL-BUILD-1 HEAVY VEHICLES**

11	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
NBVOL		223	423	134		114	430	81		306	685	188		83	368	54
DEVOL		0	0	44		0	28	0		58	0	0		14	8	18
20%		0	0	9		0	6	0		12	0	0		3	2	4
TOTHV	<b>0</b>	<b>8</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>44</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>26</b>	<b>5</b>
HV%	3%				7%				2%				8%			
<b>PM</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
NBVOL		233	547	84		89	395	129		184	619	89		144	286	177
DEVOL		0	0	17		0	11	0		22	0	0		45	29	60
20%		0	0	3		0	2	0		4	0	0		9	6	12
TOTHV	<b>0</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>21</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>26</b>	<b>16</b>
HV%	2%				4%				2%				9%			



**TOTAL VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
7:30	0	26	105	0	0	77	0	15	0	0	171	93
7:45	0	37	137	0	0	79	0	8	0	0	154	99
8:00	0	17	88	0	0	73	0	15	0	0	168	78
8:15	0	27	105	0	0	76	0	16	0	0	174	76
	<b>0</b>	<b>107</b>	<b>435</b>	<b>0</b>	<b>0</b>	<b>305</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>667</b>	<b>346</b>
PHF	0.93											
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
16:30	0	12	202	0	0	93	0	28	0	0	146	69
16:45	0	18	180	0	0	120	0	37	0	0	146	55
17:00	0	19	202	0	0	123	0	54	0	0	134	81
17:15	0	23	163	0	0	114	0	31	0	0	161	71
	<b>0</b>	<b>72</b>	<b>747</b>	<b>0</b>	<b>0</b>	<b>450</b>	<b>0</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>587</b>	<b>276</b>
PHF	0.93											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:30	0	2	6	0	0	9	0	1	0	0	2	6
7:45	0	0	3	0	0	6	0	0	0	0	3	4
8:00	0	2	3	0	0	13	0	1	0	0	1	5
8:15	0	0	3	0	0	8	0	0	0	0	1	5
	<b>0</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>20</b>
HV%	4%				11%				3%			
	6%											
16:30	0	0	1	0	0	2	0	1	0	0	2	7
16:45	0	1	2	0	0	6	0	0	0	0	1	1
17:00	0	0	3	0	0	2	0	2	0	0	0	3
17:15	0	0	1	0	0	3	0	0	0	0	1	2
	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>13</b>
HV%	2%				3%				2%			
	2%											

**FULL-BUILD-1 HEAVY VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NBVOL		123				358		62			77	425
DEVOL		0				8		0			0	28
20%		0				2		0			0	6
TOTHV	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>26</b>
HV%	3%				10%				7%			
<b>PM</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NBVOL		83				545		172			673	328
DEVOL		0				29		0			0	11
20%		0				6		0			0	2
TOTHV	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>15</b>
HV%	2%				3%				2%			



**TOTAL VEHICLES**

13	Southbound				Westbound				Northbound				Eastbound				
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	
<b>MVMT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>	
7:45	0	11	20	1	0	0	270	0	0	200	0	42	0	0	142	0	
8:00	0	14	37	0	0	0	277	0	0	154	0	63	0	0	190	0	
8:15	0	9	29	0	0	0	298	0	0	178	0	50	0	0	273	1	
8:30	0	7	39	0	0	0	294	0	0	191	0	39	0	0	248	1	
	<b>0</b>	<b>41</b>	<b>125</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1139</b>	<b>0</b>	<b>0</b>	<b>723</b>	<b>0</b>	<b>194</b>	<b>0</b>	<b>0</b>	<b>853</b>	<b>2</b>	
PHF	0.92																
<b>MVMT</b>																	
16:45	0	25	48	4	0	0	325	0	0	168	0	22	0	0	234	1	
17:00	0	40	53	1	0	0	303	0	0	158	0	27	0	0	249	0	
17:15	0	26	48	1	0	0	315	0	0	168	0	17	0	0	277	0	
17:30	0	40	44	0	0	0	289	0	0	152	0	34	0	0	300	0	
	<b>0</b>	<b>131</b>	<b>193</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>1232</b>	<b>0</b>	<b>0</b>	<b>646</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>1060</b>	<b>1</b>	
PHF	0.98																

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound				
7:45	0	0	0	0	0	0	17	0	0	4	0	2	0	0	5	0	
8:00	0	0	0	0	0	0	19	0	0	5	0	0	0	0	13	0	
8:15	0	0	1	0	0	0	16	0	0	7	0	0	0	0	7	0	
8:30	0	1	0	0	0	0	19	0	0	8	0	0	0	0	8	0	
	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	
HV%	2%				6%				3%				4%				
	4%																
16:45	0	0	0	0	0	0	6	0	0	4	0	0	0	0	0	0	
17:00	0	0	1	0	0	0	6	0	0	3	0	0	0	0	0	0	
17:15	0	0	0	0	0	0	2	0	0	4	0	0	0	0	2	0	
17:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	3	0	
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	
HV%	2%				2%				2%				2%				
	2%																

**FULL-BUILD-1 HEAVY VEHICLES**

13	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>
NBVOL		51	157	0			1334			777		225			1047	11
DEVOL		0	8	0			0			3		3			0	8
20%		0	2	0			0			1		1			0	2
TOTHV	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>2</b>
HV%	2%				5%				3%				3%			
<b>PM</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>
NBVOL		164	218	3			1366			766		130			1259	3
DEVOL		0	3	0			0			8		8			0	3
20%		0	1	0			0			2		2			0	1
TOTHV	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

14	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
7:30	0	52	66	24	0	13	113	47	0	28	66	8	0	15	186	23
7:45	0	50	55	32	0	14	149	59	0	30	74	14	0	31	201	27
8:00	0	45	58	19	0	13	101	43	0	29	93	9	0	25	186	34
8:15	0	68	61	22	0	17	126	53	0	35	81	9	0	23	161	22
	<b>0</b>	<b>215</b>	<b>240</b>	<b>97</b>	<b>0</b>	<b>57</b>	<b>489</b>	<b>202</b>	<b>0</b>	<b>122</b>	<b>314</b>	<b>40</b>	<b>0</b>	<b>94</b>	<b>734</b>	<b>106</b>
PHF	0.92															
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
16:30	0	39	68	21	0	7	216	63	0	37	70	11	0	22	156	28
16:45	0	38	66	35	0	9	205	71	0	30	80	15	0	25	148	36
17:00	0	37	60	45	0	9	216	83	0	31	75	19	0	22	155	18
17:15	0	37	78	21	0	12	188	78	0	20	51	9	0	32	177	26
	<b>0</b>	<b>151</b>	<b>272</b>	<b>122</b>	<b>0</b>	<b>37</b>	<b>825</b>	<b>295</b>	<b>0</b>	<b>118</b>	<b>276</b>	<b>54</b>	<b>0</b>	<b>101</b>	<b>636</b>	<b>108</b>
PHF	0.97															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:30	0	5	2	0	0	4	2	7	0	1	3	2	0	0	1	0
7:45	0	0	1	0	0	0	7	4	0	2	0	3	0	0	3	2
8:00	0	1	2	0	0	0	6	4	0	1	0	0	0	1	3	0
8:15	0	3	3	0	0	0	11	3	0	1	0	0	0	0	3	2
	<b>0</b>	<b>9</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>26</b>	<b>18</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>4</b>
HV%	3%				6%				3%				2%			
	4%															
16:30	0	1	0	0	0	0	3	0	0	0	0	0	0	0	4	0
16:45	0	0	1	0	0	0	4	4	0	1	2	0	0	0	2	0
17:00	0	3	1	0	0	0	2	2	0	0	0	0	0	0	0	1
17:15	0	2	3	0	0	0	1	3	0	0	0	1	0	0	0	1
	<b>0</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
HV%	2%				2%				2%				2%			
	2%															

**FULL-BUILD-1 HEAVY VEHICLES**

14	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
NBVOL		261	275			66	565	236		140	360	46		108	855	122
DEVOL		14	0			0	4	4		0	0	0		0	14	0
20%		3	0			0	1	1		0	0	0		0	3	0
TOTHV	<b>0</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>27</b>	<b>19</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>4</b>
HV%	4%				6%				2%				2%			
<b>PM</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
NBVOL		179	312			43	960	353		136	317	62		116	735	124
DEVOL		6	0			0	15	15		0	0	0		0	6	0
20%		1	0			0	3	3		0	0	0		0	1	0
TOTHV	<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>2</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

15	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
8:00	0	3	4	81	0	4	54	34	0	2	9	4	0	102	24	3
8:15	0	5	3	66	0	8	55	37	0	2	9	3	0	85	39	3
8:30	0	7	1	70	0	3	60	30	0	1	7	6	0	74	44	5
8:45	0	5	4	59	0	7	61	41	0	5	11	4	0	82	53	1
	0	20	12	276	0	22	230	142	0	10	36	17	0	343	160	12
PHF	0.96															
		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
16:30	0	23	4	104	0	3	60	13	0	2	4	3	0	51	71	10
16:45	0	25	6	108	0	7	45	5	0	4	6	2	0	45	66	4
17:00	0	53	10	115	0	4	54	4	0	2	8	7	0	49	81	4
17:15	0	27	3	99	0	5	69	5	0	4	0	3	0	48	67	3
	0	128	23	426	0	19	228	27	0	12	18	15	0	193	285	21
PHF	0.89															

**HEAVY VEHICLES**

8:00	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0
8:15	0	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
8:45	0	1	0	3	0	0	2	0	0	0	1	0	0	1	0	0
	0	1	0	10	0	1	6	0	0	0	1	0	0	2	2	0
HV%	4%				2%				2%					2%		
	2%															
16:30	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1
16:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0
17:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	3	0	0	1	0	0	0	1	0	0	4	0	1
HV%	2%				2%				2%					2%		
	2%															

**FULL-BUILD-1 HEAVY VEHICLES**

15	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
AM		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
NBVOL		43	14	326		26	264	220		12	42	20		407	214	14
DEVOL		20	0	9		0	0	57		0	0	0		14	30	0
20%		4	0	2		0	0	11		0	0	0		3	6	0
TOTHV	0	5	0	12	0	1	6	11	0	0	1	0	0	5	8	0
HV%	4%				4%				2%				2%			
PM		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
NBVOL		230	27	514		22	262	50		14	21	18		228	440	25
DEVOL		83	0	26		0	0	19		0	0	0		6	113	0
20%		17	0	5		0	0	4		0	0	0		1	23	0
TOTHV	0	17	0	8	0	0	1	4	0	0	1	0	0	5	23	1
HV%	3%				2%				2%				4%			



**TOTAL VEHICLES**

16	Northbound				Southbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
		1601	1602				1603	1604		1605		1606
7:45	0	6	2	0	0	0	1	67	0	185	0	7
8:00	0	7	1	0	0	0	0	95	0	195	0	7
8:15	0	9	1	0	0	0	4	73	0	187	0	6
8:30	0	5	1	0	0	0	3	91	0	201	0	13
	<b>0</b>	<b>27</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>326</b>	<b>0</b>	<b>768</b>	<b>0</b>	<b>33</b>
PHF	0.93											
		1601	1602				1603	1604		1605		1606
16:30	0	7	1	0	0	0	4	181	0	145	0	10
16:45	0	13	3	0	0	0	4	140	0	132	0	10
17:00	0	14	5	0	0	0	6	176	0	144	0	13
17:15	0	15	3	0	0	0	2	153	0	147	0	10
	<b>0</b>	<b>49</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>650</b>	<b>0</b>	<b>568</b>	<b>0</b>	<b>43</b>
PHF	0.93											

**HEAVY VEHICLES**

7:45	0	0	0	0	0	0	0	1	0	6	0	0
8:00	0	0	0	0	0	0	0	6	0	4	0	0
8:15	0	0	0	0	0	0	0	4	0	6	0	1
8:30	0	0	1	0	0	0	0	6	0	2	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>1</b>
HV%	3%				5%				2%			
	4%											
16:30	0	0	0	0	0	0	0	2	0	3	0	0
16:45	0	0	1	0	0	0	0	3	0	5	0	0
17:00	0	0	0	0	0	0	0	4	0	0	0	0
17:15	0	0	0	0	0	0	0	1	0	1	0	1
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-1 HEAVY VEHICLES**

16	Northbound				Southbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
AM		1601	1602				1603	1604		1605		1606
NBVOL		31	6				10	442		1108		38
DEVOL		0	0				0	68		228		0
20%		0	0				0	14		46		0
TOTHV	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>64</b>	<b>0</b>	<b>1</b>
HV%	3%				7%				6%			
PM		1601	1602				1603	1604		1605		1606
NBVOL		57	14				19	996		730		50
DEVOL		0	0				0	251		79		0
20%		0	0				0	50		16		0
TOTHV	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>1</b>
HV%	2%				6%				3%			



**TOTAL VEHICLES**

1	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>		
11:15	0	21	114	0	0	39	0	10	0	0	132	27		
11:30	0	22	135	0	0	40	0	14	0	0	146	27		
11:45	0	26	94	0	0	29	0	23	0	0	131	82		
12:00	0	22	119	0	0	73	0	28	0	0	111	45		
	<b>0</b>	<b>91</b>	<b>462</b>	<b>0</b>	<b>0</b>	<b>181</b>	<b>0</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>520</b>	<b>181</b>		
PHF	0.95													

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
11:15	0	0	1	0	0	0	0	0	0	0	0	2	0	
11:30	0	0	1	0	0	0	0	0	0	0	0	1	0	
11:45	0	0	0	0	0	1	0	0	0	0	0	1	0	
12:00	0	0	2	0	0	0	0	0	0	0	0	0	2	
	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	
HV%	2%					2%					2%			

**FULL-BUILD-1 HEAVY VEHICLES**

1	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>SAT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>		
NBVOL		105	544			219		86			613	225		
DEVOL		0	14			11		0			17	17		
20%		0	3			2		0			3	3		
TOT HV	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>5</b>		
HV%	2%					2%					2%			



**TOTAL VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
11:45	0	14	71	0	0	19	0	29	0	0	121	13
12:00	0	17	106	0	0	17	0	15	0	0	67	10
12:15	0	20	72	0	0	9	0	20	0	0	60	8
12:30	0	11	76	0	0	8	0	28	0	0	49	7
	<b>0</b>	<b>62</b>	<b>325</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>0</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>297</b>	<b>38</b>
PHF	0.81											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:45	0	0	1	0	0	0	0	0	0	0	2	0
12:00	0	0	0	0	0	0	0	0	0	0	2	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-1 HEAVY VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		72	382			63		106			355	47
DEVOL		0	9			2		0			14	3
20%		0	2			0		0			3	1
TOT HV	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>
HV%	2%				2%				2%			





**TOTAL VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
11:30	0	13	0	9	0	0	56	8	0	13	86	0
11:45	0	11	0	15	0	0	71	11	0	44	110	0
12:00	0	25	0	35	0	0	89	11	0	13	70	0
12:15	0	8	0	7	0	0	77	15	0	11	65	0
<b>PHF</b>	<b>0.83</b>						<b>293</b>	<b>45</b>		<b>81</b>	<b>331</b>	<b>0</b>

**HEAVY VEHICLES**

	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
11:30	0	2	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	1	2	0	0	0	0
12:00	0	2	0	0	0	0	0	0	0	1	1	0
12:15	0	1	0	0	0	0	0	0	0	0	0	0
<b>HV%</b>	<b>4%</b>				<b>2%</b>				<b>2%</b>			
	3%											

**FULL-BUILD-1 HEAVY VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		71		78			352	55		95	396	
DEVOL		5		2			16	3		2	16	
20%		1		0			3	1		0	3	
TOTHV	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>
<b>HV%</b>	<b>4%</b>				<b>2%</b>				<b>2%</b>			



**TOTAL VEHICLES**

4	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>			
11:45	0	9	42	29	0	31	46	4	0	21	40	29	0	44	79	23			
12:00	0	7	43	26	0	29	70	9	0	28	46	28	0	50	49	31			
12:15	0	7	56	40	0	34	57	5	0	19	46	22	0	29	43	24			
12:30	0	11	45	30	0	25	54	3	0	15	47	29	0	33	53	19			
	0	<b>34</b>	<b>186</b>	<b>125</b>	<b>0</b>	<b>119</b>	<b>227</b>	<b>21</b>	<b>0</b>	<b>83</b>	<b>179</b>	<b>108</b>	<b>0</b>	<b>156</b>	<b>224</b>	<b>97</b>			
PHF	0.94																		

**HEAVY VEHICLES**

	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
11:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0		
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
12:15	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0		
12:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
	0	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>			
HV%	2%					2%					2%					2%			

**FULL-BUILD-1 HEAVY VEHICLES**

4	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>SAT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>			
NBVOL		46	218	150		137	277	25		99	211	125		185	262	114			
DEVOL		7	4	6		0	17	0		3	5	1		6	5	2			
20%		1	1	1		0	3	0		1	1	0		1	1	0			
TOT HV	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
12:45	0	35	166	0	0	1	0	39	0	0	136	1
13:00	0	24	175	0	0	0	0	41	0	0	221	5
13:15	0	30	181	0	0	1	0	46	0	0	196	7
13:30	0	42	120	0	0	1	0	52	0	0	156	10
	<b>0</b>	<b>131</b>	<b>642</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>178</b>	<b>0</b>	<b>0</b>	<b>709</b>	<b>23</b>
PHF	0.90											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
12:45	0	3	2	0	0	0	0	5	0	0	1	1
13:00	0	1	0	0	0	0	0	4	0	0	0	0
13:15	0	3	1	0	0	1	0	6	0	0	1	0
13:30	0	7	0	0	0	0	0	3	0	0	1	0
	<b>0</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>
HV%	2%				10%				2%			
	5%											

**FULL-BUILD-1 HEAVY VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		154	745			5		205			828	30
DEVOL		3	9			1		1			16	3
20%		1	2			0		0			3	1
TOT HV	<b>0</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
HV%	2%				9%				2%			



**TOTAL VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
12:00	0	31	162	0	0	0	0	42	0	0	185	1
12:15	0	44	166	0	0	0	0	77	0	0	187	3
12:30	0	23	140	0	0	2	0	43	0	0	180	2
12:45	0	28	157	0	0	1	0	49	0	0	159	2
	<b>0</b>	<b>126</b>	<b>625</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>711</b>	<b>8</b>
PHF	0.88											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
12:00	0	1	3	0	0	0	0	1	0	0	7	0
12:15	0	4	3	0	0	0	0	3	0	0	2	0
12:30	0	0	2	0	0	0	0	1	0	0	7	0
12:45	0	5	4	0	0	1	0	2	0	0	2	1
	<b>0</b>	<b>10</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>
HV%	3%				4%				3%			

**FULL-BUILD-1 HEAVY VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		183	740			8		276			824	19
DEVOL		38	24			4		34			9	9
20%		8	5			1		7			2	2
TOT HV	<b>0</b>	<b>18</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>
HV%	4%				6%				3%			



**TOTAL VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
11:15	0	8	114	0	0	79	0	31	0	0	113	110
11:30	0	9	126	0	0	106	0	49	0	0	148	124
11:45	0	9	133	0	0	95	0	53	0	0	154	140
12:00	0	12	100	0	0	76	0	44	0	0	170	119
	<b>0</b>	<b>38</b>	<b>473</b>	<b>0</b>	<b>0</b>	<b>356</b>	<b>0</b>	<b>177</b>	<b>0</b>	<b>0</b>	<b>585</b>	<b>493</b>
PHF	0.91											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:15	0	0	5	0	0	4	0	0	0	0	5	7
11:30	0	0	7	0	0	2	0	1	0	0	6	3
11:45	0	0	6	0	0	2	0	0	0	0	9	6
12:00	0	0	4	0	0	6	0	2	0	0	2	9
	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>25</b>
HV%	4%				3%				4%			
	4%											

**FULL-BUILD-1 HEAVY VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		44	577			439		205			690	585
DEVOL		0	35			31		2			20	20
20%		0	7			6		0			4	4
TOT HV	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>29</b>
HV%	5%				4%				4%			



**TOTAL VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
11:45	0	46	24	0	1	103	0	14	0	0	64	73
12:00	0	41	50	0	0	89	0	3	0	0	84	72
12:15	0	39	49	0	0	98	0	12	0	0	82	94
12:30	0	39	39	0	0	93	0	3	0	0	73	87
	<b>0</b>	<b>165</b>	<b>162</b>	<b>0</b>	<b>1</b>	<b>383</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>303</b>	<b>326</b>
PHF	0.92											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:45	0	0	0	0	0	3	0	2	0	0	1	3
12:00	0	0	0	0	0	3	0	0	0	0	2	3
12:15	0	1	3	0	0	0	0	0	0	0	0	4
12:30	0	0	0	0	0	3	0	0	0	0	0	4
	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>14</b>
HV%	2%				3%				3%			

**FULL-BUILD-1 HEAVY VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		189	189			471		37			349	394
DEVOL		0	3			32		0			1	20
20%		0	1			6		0			0	4
TOT HV	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>18</b>
HV%	2%				3%				3%			



**TOTAL VEHICLES**

9	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>			
13:00	0	12	54	14	0	12	15	25	0	1	59	9	0	12	16	0			
13:15	0	6	67	7	0	9	11	36	0	1	79	8	0	33	11	4			
13:30	0	4	67	20	0	9	9	18	0	2	99	8	0	16	15	2			
13:45	0	19	72	16	0	11	16	21	0	0	79	8	0	19	8	2			
	0	41	260	57	0	41	51	100	0	4	316	33	0	80	50	8			
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
13:00	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0		
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0		
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	0		
HV%	2%					2%					2%					2%			

**FULL-BUILD-1 HEAVY VEHICLES**

9	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>SAT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>			
NBVOL		47	305	66		49	59	115		5	371	40		92	58	10			
DEVOL		0	7	0		2	0	0		0	9	2		0	0	0			
20%		0	1	0		0	0	0		0	2	0		0	0	0			
TOTHV	0	0	1	0	0	0	0	1	0	0	4	0	0	1	0	0			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
11:45	0	0	91	19	0	8	0	116	0	104	81	0
12:00	0	0	88	12	0	11	0	116	0	100	102	0
12:15	0	0	91	6	0	15	0	108	0	108	84	0
12:30	0	0	104	13	0	18	0	102	0	67	80	0
	<b>0</b>	<b>0</b>	<b>374</b>	<b>50</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>442</b>	<b>0</b>	<b>379</b>	<b>347</b>	<b>0</b>
PHF	0.96											

**HEAVY VEHICLES**

	Eastbound				Northbound				Westbound			
11:45	0	0	3	0	0	0	0	1	0	0	1	0
12:00	0	0	0	0	0	1	0	0	0	0	0	0
12:15	0	0	0	1	0	0	0	1	0	1	1	0
12:30	0	0	3	0	0	0	0	0	0	1	1	0
	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-1 HEAVY VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			429	74			71	518			451	398
DEVOL			0	16			11	11			16	0
20%			0	3			2	2			3	0
TOT HV	<b>0</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			





**TOTAL VEHICLES**

11	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>			
12:30	0	64	126	15	0	39	65	38	0	17	137	34	0	12	63	29			
12:45	0	64	98	13	0	34	68	28	0	20	121	39	0	27	59	21			
13:00	0	54	105	14	0	31	60	32	0	19	113	36	0	22	83	19			
13:15	0	59	122	10	0	34	69	37	0	24	120	38	0	19	60	11			
	0	<b>241</b>	<b>451</b>	<b>52</b>	<b>0</b>	<b>138</b>	<b>262</b>	<b>135</b>	<b>0</b>	<b>80</b>	<b>491</b>	<b>147</b>	<b>0</b>	<b>80</b>	<b>265</b>	<b>80</b>			
PHF	0.95																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
12:30	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0			
12:45	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0			
13:00	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	1			
13:15	0	1	2	0	0	1	1	0	0	0	0	1	0	1	1	0			
	0	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>			
HV%	2%					2%					2%					2%			

**FULL-BUILD-1 HEAVY VEHICLES**

11	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>			
NBVOL		277	517	69		159	307	41		104	563	169		97	308	99			
DEVOL		0	0	9		0	6	0		12	0	0		5	4	7			
20%		0	0	2		0	1	0		2	0	0		1	1	1			
TOT HV	<b>0</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
11:45	0	21	99	0	0	70	0	21	0	0	101	66
12:00	0	15	110	0	0	98	0	24	0	0	94	60
12:15	0	20	113	0	0	79	0	17	0	0	88	42
12:30	0	23	80	0	0	72	0	23	0	0	108	54
	<b>0</b>	<b>79</b>	<b>402</b>	<b>0</b>	<b>0</b>	<b>319</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>391</b>	<b>222</b>
PHF	0.93											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:45	0	0	1	0	0	1	0	0	0	0	3	3
12:00	0	0	2	0	0	2	0	0	0	0	0	2
12:15	0	0	1	0	0	2	0	1	0	0	0	1
12:30	0	1	2	0	0	1	0	1	0	0	2	0
	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>6</b>
HV%	2%				2%				2%			

**FULL-BUILD-1 HEAVY VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NBVOL		91				370		98			448	261
DEVOL		0				4		0			0	6
20%		0				1		0			0	1
TOT HV	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>7</b>
HV%	2%				2%				2%			



**TOTAL VEHICLES**

13	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>				<b>1305</b>			<b>1307</b>		<b>1309</b>				<b>1302</b>	<b>1303</b>	
12:15	0	37	30	0	0	0	247	0	0	167	0	31	0	0	0	200	1		
12:30	0	39	27	0	0	0	225	0	0	179	0	36	0	0	0	245	0		
12:45	0	36	23	2	0	0	238	0	0	161	0	22	0	0	0	230	0		
13:00	0	22	27	0	0	0	240	0	0	162	0	42	0	0	0	204	0		
	0	<b>134</b>	<b>107</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>950</b>	<b>0</b>	<b>0</b>	<b>669</b>	<b>0</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>879</b>	<b>1</b>		
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
12:15	0	0	0	0	0	0	8	0	0	1	0	0	0	0	0	3	0		
12:30	0	0	1	0	0	0	4	0	0	4	0	2	0	0	0	3	0		
12:45	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	0		
13:00	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	0	0		
	0	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>		
HV%	2%				2%				2%				2%						

**FULL-BUILD-1 HEAVY VEHICLES**

13	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>				<b>1305</b>			<b>1307</b>		<b>1309</b>				<b>1302</b>	<b>1303</b>	
NBVOL		154	124	3			1089			768		152				1007	3		
DEVOL		0	1	0			0			1		1				0	1		
20%		0	0	0			0			0		0				0	0		
TOT HV	0	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>		
HV%	2%				2%				2%				2%						



**TOTAL VEHICLES**

14	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>			
11:45	0	40	30	24	0	6	113	54	0	14	44	12	0	22	113	17			
12:00	0	44	36	26	0	8	129	66	0	26	49	17	0	18	93	12			
12:15	0	39	61	39	0	15	109	60	0	20	48	4	0	21	86	19			
12:30	0	39	44	25	0	6	89	59	0	15	51	7	0	17	112	17			
	0	<b>162</b>	<b>171</b>	<b>114</b>	<b>0</b>	<b>35</b>	<b>440</b>	<b>239</b>	<b>0</b>	<b>75</b>	<b>192</b>	<b>40</b>	<b>0</b>	<b>78</b>	<b>404</b>	<b>65</b>			
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
11:45	0	3	0	0	0	1	1	0	0	0	0	1	0	0	1	0			
12:00	0	1	1	0	0	0	2	2	0	0	0	0	0	1	1	1			
12:15	0	0	2	0	0	0	0	1	0	1	0	0	0	0	1	0			
12:30	0	0	0	0	0	0	2	4	0	0	1	1	0	0	1	0			
	0	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>			
HV%	2%				2%				2%				2%						

**FULL-BUILD-1 HEAVY VEHICLES**

14	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>			
NBVOL		190	196			41	505	275		86	220	46		90	467	75			
DEVOL		4	0			0	1	1		0	0	0		0	4	0			
20%		1	0			0	0	0		0	0	0		0	1	0			
TOT HV	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>1</b>			
HV%	2%				2%				2%				2%						



**TOTAL VEHICLES**

15	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	
	1510	1511	1512	0	1504	1505	1506	0	1507	1508	1509	0	1501	1502	1503				
13:00	0	11	6	72	0	12	48	4	0	5	13	7	0	31	52	5			
13:15	0	6	5	67	0	3	59	6	0	6	13	5	0	35	52	9			
13:30	0	8	8	53	0	8	52	5	0	3	7	8	0	39	58	10			
13:45	0	6	2	79	0	7	67	10	0	6	5	6	0	36	51	4			
	0	31	21	271	0	30	226	25	0	20	38	26	0	141	213	28			
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
13:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0			
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0			
HV%	2%					2%					2%					2%			

**FULL-BUILD-1 HEAVY VEHICLES**

15	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	
SAT	1510	1511	1512	0	1504	1505	1506	0	1507	1508	1509	0	1501	1502	1503				
NBVOL	45	25	312	0	35	259	38	0	23	44	30	0	163	256	33				
DEVOL	9	0	1	0	0	0	9	0	0	0	0	0	1	12	0				
20%	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0				
TOT HV	0	2	0	1	0	0	0	2	0	0	0	0	0	2	0				
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

16	U	Northbound			U	Southbound			U	Eastbound		
		LT	THRU	RT		LT	THRU	RT		LT	THRU	RT
		1601	1602			1603	1604			1605		1606
12:15	0	12	3	0	0	0	2	122	0	119	0	11
12:30	0	10	2	0	0	0	4	119	0	155	0	13
12:45	0	14	3	0	0	0	0	91	0	139	0	11
13:00	0	10	5	0	0	0	4	121	0	139	0	12
	0	46	13	0	0	0	10	453	0	552	0	47
PHF	0.92											

**HEAVY VEHICLES**

		Northbound				Southbound				Eastbound		
		LT	THRU	RT		LT	THRU	RT		LT	THRU	RT
12:15	0	0	0	0	0	0	0	1	0	2	0	0
12:30	0	0	0	0	0	0	0	0	0	6	0	0
12:45	0	0	0	0	0	0	0	2	0	2	0	1
13:00	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	3	0	10	0	1
HV%	2%				2%				2%			

**FULL-BUILD-1 HEAVY VEHICLES**

16	U	Northbound			U	Southbound			U	Eastbound		
		LT	THRU	RT		LT	THRU	RT		LT	THRU	RT
SAT		1601	1602			1603	1604			1605		1606
NBVOL		53	15			12	544			668		54
DEVOL		0	0			0	25			35		0
20%		0	0			0	5			7		0
TOT HV	0	0	0	0	0	0	8	0	0	17	0	1
HV%	2%				2%				2%			



**TOTAL VEHICLES**

1	Southbound				Westbound				Northbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
7:30	0	2	58	0	0	33	0	9	0	0	199	45
7:45	0	3	69	0	0	27	0	4	0	0	210	71
8:00	0	6	44	0	0	35	0	4	0	0	177	50
8:15	0	7	44	0	0	24	0	3	0	0	142	67
	<b>0</b>	<b>18</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>119</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>728</b>	<b>233</b>
PHF	0.87											
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
16:00	0	10	166	0	0	72	0	8	0	0	144	35
16:30	0	13	143	0	0	52	0	7	0	0	172	39
17:00	0	10	131	0	0	62	0	3	0	0	125	27
17:30	0	5	153	0	0	63	0	6	0	0	156	43
	<b>0</b>	<b>38</b>	<b>593</b>	<b>0</b>	<b>0</b>	<b>249</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>597</b>	<b>144</b>
PHF	0.95											

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound			
7:30	0	0	2	0	0	0	0	0	0	0	3	0
7:45	0	1	2	0	0	1	0	0	0	0	6	0
8:00	0	1	3	0	0	1	0	1	0	0	3	2
8:15	0	0	2	0	0	0	0	1	0	0	3	0
	<b>0</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>2</b>
HV%	5%				3%				2%			
	3%											
16:00	0	0	5	0	0	0	0	0	0	0	3	0
16:30	0	0	6	0	0	1	0	0	0	0	4	1
17:00	0	0	4	0	0	0	0	0	0	0	1	0
17:30	0	0	1	0	0	1	0	1	0	0	4	1
	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>2</b>
HV%	3%				2%				2%			
	2%											

**FULL-BUILD-2 HEAVY VEHICLES**

1	Southbound				Westbound				Northbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
NBVOL		22	284			175		27			944	383
DEVOL		1	37			38		4			110	116
20%		0	7			8		1			22	23
TOTHV	<b>0</b>	<b>2</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>25</b>
HV%	6%				6%				5%			
<b>PM</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>
NBVOL		53	879			379		36			687	194
DEVOL		4	142			111		2			37	42
20%		1	28			22		0			7	8
TOTHV	<b>0</b>	<b>1</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>10</b>
HV%	5%				6%				3%			



**TOTAL VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
7:15	0	76	19	0	0	2	0	26	0	0	61	13
7:30	0	50	36	0	0	11	0	48	0	0	72	13
7:45	0	15	40	0	0	8	0	70	0	0	95	5
8:00	0	13	33	0	0	4	0	25	0	0	74	4
	<b>0</b>	<b>154</b>	<b>128</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>169</b>	<b>0</b>	<b>0</b>	<b>302</b>	<b>35</b>
PHF	0.87											
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
16:15	0	32	88	0	0	6	0	29	0	0	41	11
16:30	0	34	108	0	0	14	0	28	0	0	47	5
16:45	0	25	87	0	0	9	0	19	0	0	54	2
17:00	0	44	86	0	0	7	0	21	0	0	50	7
	<b>0</b>	<b>135</b>	<b>369</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>25</b>
PHF	0.90											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	1	0	0	0	0	1	0	0	0	0
8:00	0	0	0	0	0	1	0	0	0	0	2	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%			
16:15	0	0	0	0	0	0	0	0	0	0	1	0
16:30	0	0	0	0	0	0	0	0	0	0	1	0
16:45	0	0	1	0	0	0	0	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		177	175			32		194			451	52
DEVOL		0	28			3		0			105	11
20%		0	6			1		0			21	2
TOTHV	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>2</b>
HV%	2%				2%				5%			
<b>PM</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		155	526			53		112			258	33
DEVOL		0	103			11		0			38	4
20%		0	21			2		0			8	1
TOTHV	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1</b>
HV%	3%				2%				4%			





**TOTAL VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
7:30	0	16	0	8	0	0	82	22	0	25	98	0
7:45	0	17	0	8	0	0	61	26	0	36	129	0
8:00	0	29	0	7	0	0	40	21	0	20	83	0
8:15	0	32	0	7	0	0	40	17	0	23	96	0
	<b>0</b>	<b>94</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>223</b>	<b>86</b>	<b>0</b>	<b>104</b>	<b>406</b>	<b>0</b>
PHF	0.85											
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
16:30	0	26	0	28	0	0	108	16	0	15	62	0
16:45	0	9	0	13	0	0	91	23	0	11	58	0
17:00	0	32	0	25	0	0	115	30	0	22	57	0
17:15	0	21	0	12	0	0	118	24	0	12	50	0
	<b>0</b>	<b>88</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>432</b>	<b>93</b>	<b>0</b>	<b>60</b>	<b>227</b>	<b>0</b>
PHF	0.87											

**HEAVY VEHICLES**

	Southbund				Westbound				Eastbound			
7:30	0	1	0	1	0	0	1	3	0	1	2	0
7:45	0	4	0	0	0	0	1	3	0	0	1	0
8:00	0	3	0	0	0	0	1	2	0	1	2	0
8:15	0	5	0	0	0	0	1	0	0	1	0	0
	<b>0</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>
HV%	11%				4%				2%			
	6%											
16:30	0	1	0	0	0	0	0	0	0	1	1	0
16:45	0	1	0	0	0	0	1	0	0	0	0	0
17:00	0	2	0	0	0	0	1	2	0	1	0	0
17:15	0	0	0	0	0	0	0	4	0	0	1	0
	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-2 HEAVY VEHICLES**

3	Southbund				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		148		43			318	112		126	158	
DEVOL		40		8			62	13		6	89	
20%		8		2			12	3		1	18	
TOTHV	<b>0</b>	<b>21</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>11</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>0</b>
HV%	13%				6%				10%			
<b>PM</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		116		93			599	147		483	323	
DEVOL		15		3			104	40		18	63	
20%		3		1			21	8		4	13	
TOTHV	<b>0</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>14</b>	<b>0</b>	<b>6</b>	<b>15</b>	<b>0</b>
HV%	4%				5%				3%			



**TOTAL VEHICLES**

4	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
7:45	0	9	29	25	0	37	85	11	0	64	87	72	0	21	91	25
8:00	0	2	42	11	0	44	67	5	0	57	90	56	0	22	69	22
8:15	0	4	24	23	0	18	66	9	0	47	86	63	0	27	79	8
8:30	0	5	50	22	0	22	57	9	0	70	104	73	0	30	66	15
	<b>0</b>	<b>20</b>	<b>145</b>	<b>81</b>	<b>0</b>	<b>121</b>	<b>275</b>	<b>34</b>	<b>0</b>	<b>238</b>	<b>367</b>	<b>264</b>	<b>0</b>	<b>100</b>	<b>305</b>	<b>70</b>
PHF	0.91															
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
16:30	0	18	86	29	0	49	72	3	0	24	58	34	0	37	71	59
16:45	0	8	78	32	0	52	64	8	0	32	55	20	0	26	59	55
17:00	0	14	78	26	0	59	72	4	0	24	47	21	0	36	72	80
17:15	0	12	85	28	0	56	72	6	0	17	59	24	0	16	70	50
	<b>0</b>	<b>52</b>	<b>327</b>	<b>115</b>	<b>0</b>	<b>216</b>	<b>280</b>	<b>21</b>	<b>0</b>	<b>97</b>	<b>219</b>	<b>99</b>	<b>0</b>	<b>115</b>	<b>272</b>	<b>244</b>
PHF	0.95															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:45	0	0	3	0	0	0	0	0	0	2	1	1	0	1	0	2
8:00	0	0	2	0	0	0	0	0	0	4	1	0	0	2	0	2
8:15	0	0	0	0	0	0	2	0	0	0	4	0	0	0	1	0
8:30	0	0	1	0	0	0	0	0	0	2	0	1	0	0	1	1
	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>5</b>
HV%	2%				2%				2%				2%			
16:30	0	0	2	0	0	0	1	0	0	2	1	0	0	2	0	2
16:45	0	0	2	0	0	1	0	0	0	2	0	0	0	0	0	0
17:00	0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>
HV%	2%				2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

4	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
NBVOL		39	181	110		150	425	39		285	454	307		148	374	112
DEVOL		16	14	17		11	110	0		12	33	4		33	24	31
20%		3	3	3		2	22	0		2	7	1		7	5	6
TOTHV	<b>0</b>	<b>3</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>11</b>
HV%	5%				4%				2%				4%			
<b>PM</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>
NBVOL		193	408	94		252	370	25		143	266	125		149	359	291
DEVOL		61	33	34		4	49	0		31	15	11		17	47	11
20%		12	7	7		1	10	0		6	3	2		3	9	2
TOTHV	<b>0</b>	<b>12</b>	<b>11</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>9</b>	<b>5</b>
HV%	4%				2%				4%				2%			



**TOTAL VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
6:30	0	126	72	0	0	3	0	104	0	0	136	5
6:45	0	108	85	0	0	0	0	72	0	0	136	3
7:00	0	118	83	0	0	2	0	64	0	0	136	5
7:15	0	53	54	0	0	0	0	62	0	0	178	5
	<b>0</b>	<b>405</b>	<b>294</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>302</b>	<b>0</b>	<b>0</b>	<b>586</b>	<b>18</b>
PHF	0.90											
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
18:00	0	65	180	0	0	2	0	44	0	0	80	1
18:15	0	79	207	0	0	2	0	153	0	0	106	1
18:30	0	112	163	0	0	1	0	95	0	0	133	1
18:45	0	145	120	0	0	4	0	56	0	0	105	2
	<b>0</b>	<b>401</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>348</b>	<b>0</b>	<b>0</b>	<b>424</b>	<b>5</b>
PHF	0.85											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	9	3	0	0	0	0	11	0	0	4	0
6:45	0	7	1	0	0	0	0	6	0	0	2	0
7:00	0	9	3	0	0	0	0	3	0	0	0	0
7:15	0	9	4	0	0	0	0	6	0	0	2	0
	<b>0</b>	<b>34</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>
HV%	6%				8%				2%			
	6%											
18:00	0	5	2	0	0	0	0	3	0	0	1	0
18:15	0	9	0	0	0	0	0	1	0	0	1	0
18:30	0	6	0	0	0	0	0	8	0	0	3	0
18:45	0	12	1	0	0	0	0	6	0	0	0	1
	<b>0</b>	<b>32</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>
HV%	3%				5%				2%			
	3%											

**FULL-BUILD-2 HEAVY VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		489	374			14		353			768	39
DEVOL		25	37			8		7			96	18
20%		5	7			2		1			19	4
TOTHV	<b>0</b>	<b>39</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>4</b>
HV%	7%				8%				4%			
<b>PM</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		469	868			30		423			529	15
DEVOL		9	100			19		24			43	9
20%		2	20			4		5			9	2
TOTHV	<b>0</b>	<b>34</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>3</b>
HV%	4%				6%				3%			



**TOTAL VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
6:30	0	83	266	0	0	2	0	39	0	0	125	4
6:45	0	109	305	0	0	0	0	28	0	0	172	7
7:00	0	98	172	0	0	2	0	83	0	0	176	5
7:15	0	88	149	0	0	3	0	82	0	0	239	5
	<b>0</b>	<b>378</b>	<b>892</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>232</b>	<b>0</b>	<b>0</b>	<b>712</b>	<b>21</b>
PHF	0.90											
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
17:00	0	83	266	0	0	5	0	108	0	0	238	4
17:15	0	109	305	0	0	7	0	91	0	0	216	4
17:30	0	98	172	0	0	7	0	86	0	0	327	2
17:45	0	88	149	0	0	1	0	82	0	0	299	4
	<b>0</b>	<b>378</b>	<b>892</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>367</b>	<b>0</b>	<b>0</b>	<b>1080</b>	<b>14</b>
PHF	0.94											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	2	13	0	0	0	0	6	0	0	9	0
6:45	0	6	7	0	0	0	0	3	0	0	10	0
7:00	0	6	15	0	0	0	0	6	0	0	10	0
7:15	0	18	13	0	0	0	0	7	0	0	7	0
	<b>0</b>	<b>32</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>
HV%	6%				9%				5%			
	7%											
17:00	0	6	7	0	0	0	0	5	0	0	4	0
17:15	0	5	7	0	0	0	0	1	0	0	4	0
17:30	0	2	2	0	0	0	0	0	0	0	11	0
17:45	0	6	8	0	0	0	0	4	0	0	9	0
	<b>0</b>	<b>19</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>0</b>
HV%	3%				3%				3%			
	3%											

**FULL-BUILD-2 HEAVY VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		674	1194			27		360			838	85
DEVOL		241	172			18		94			22	60
20%		48	34			4		19			4	12
TOTHV	<b>0</b>	<b>80</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>12</b>
HV%	9%				12%				6%			
<b>PM</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		309	813			85		741			1327	39
DEVOL		84	60			62		320			90	22
20%		17	12			12		64			18	4
TOTHV	<b>0</b>	<b>36</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>4</b>
HV%	6%				10%				4%			



**TOTAL VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
6:30	0	3	205	0	0	116	0	20	0	0	111	179
6:45	0	6	252	0	0	175	0	52	0	0	80	142
7:00	0	4	234	0	0	113	0	44	0	0	108	184
7:15	0	8	128	0	0	79	0	35	0	0	126	184
	<b>0</b>	<b>21</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>483</b>	<b>0</b>	<b>151</b>	<b>0</b>	<b>0</b>	<b>425</b>	<b>689</b>
PHF	0.92											
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
16:15	0	3	152	0	0	96	0	62	0	0	192	150
16:30	0	3	145	0	0	119	0	53	0	0	202	162
16:45	0	4	136	0	0	136	0	60	0	0	181	141
17:00	0	8	159	0	0	88	0	62	0	0	225	167
	<b>0</b>	<b>18</b>	<b>592</b>	<b>0</b>	<b>0</b>	<b>439</b>	<b>0</b>	<b>237</b>	<b>0</b>	<b>0</b>	<b>800</b>	<b>620</b>
PHF	0.95											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
6:30	0	0	9	0	0	6	0	0	0	0	6	16
6:45	0	0	11	0	0	4	0	2	0	0	6	5
7:00	0	0	16	0	0	11	0	0	0	0	3	6
7:15	0	0	10	0	0	8	0	0	0	0	10	11
	<b>0</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>38</b>
HV%	5%				5%				6%			
	5%											
16:15	0	0	6	0	0	6	0	1	0	0	6	14
16:30	0	0	6	0	0	3	0	0	0	0	3	9
16:45	0	0	7	0	0	5	0	1	0	0	6	7
17:00	0	0	6	0	0	5	0	0	0	0	2	3
	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>33</b>
HV%	4%				3%				4%			
	4%											

**FULL-BUILD-2 HEAVY VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		25	1141			733		186			541	843
DEVOL		0	203			179		13			54	53
20%		0	41			36		3			11	11
TOTHV	<b>0</b>	<b>0</b>	<b>87</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>49</b>
HV%	7%				8%				6%			
<b>PM</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		21	751			566		277			1119	905
DEVOL		0	72			63		5			202	194
20%		0	14			13		1			40	39
TOTHV	<b>0</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>57</b>	<b>72</b>
HV%	5%				4%				6%			



**TOTAL VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
7:30	0	45	65	0	0	73	0	7	0	0	73	79
7:45	0	77	60	0	0	93	0	6	0	0	90	97
8:00	0	65	75	0	0	73	0	2	0	0	73	76
8:15	0	60	60	0	0	84	0	4	0	0	76	93
	<b>0</b>	<b>247</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>323</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>312</b>	<b>345</b>
PHF	0.89											
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
17:00	0	65	47	0	1	88	0	3	0	0	84	152
17:15	0	84	47	0	0	100	0	1	0	0	102	145
17:30	0	58	55	0	0	102	0	6	0	0	115	192
17:45	0	55	40	0	0	115	0	13	0	0	95	151
	<b>0</b>	<b>262</b>	<b>189</b>	<b>0</b>	<b>1</b>	<b>405</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>396</b>	<b>640</b>
PHF	0.91											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:30	0	4	1	0	0	7	0	0	0	0	3	6
7:45	0	2	0	0	0	8	0	0	0	0	2	5
8:00	0	0	1	0	0	10	0	0	0	0	6	4
8:15	0	1	2	0	0	12	0	0	0	0	6	8
	<b>0</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>23</b>
HV%	2%				11%				6%			
	6%											
17:00	0	0	3	0	0	2	0	0	0	0	1	1
17:15	0	1	0	0	0	5	0	0	0	0	0	3
17:30	0	0	0	0	0	3	0	0	0	0	0	6
17:45	0	1	0	0	0	9	0	1	0	0	0	10
	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>20</b>
HV%	2%				5%				2%			
	3%											

**FULL-BUILD-2 HEAVY VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		283	323			563		22			365	447
DEVOL		0	25			193		0			7	51
20%		0	5			39		0			1	10
TOTHV	<b>0</b>	<b>7</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>33</b>
HV%	3%				13%				6%			
<b>PM</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		301	226			530		27			478	924
DEVOL		0	9			66		0			24	191
20%		0	2			13		0			5	38
TOTHV	<b>0</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>58</b>
HV%	2%				6%				5%			



**TOTAL VEHICLES**

9	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
7:30	0	25	96	44	0	20	37	69	0	0	82	26	0	16	21	1
7:45	0	30	112	50	0	18	40	63	0	7	101	26	0	19	28	4
8:00	0	37	125	46	0	15	22	67	0	6	65	23	0	30	26	9
8:15	0	36	117	67	0	11	34	60	0	2	93	13	0	20	23	6
	<b>0</b>	<b>128</b>	<b>450</b>	<b>207</b>	<b>0</b>	<b>64</b>	<b>133</b>	<b>259</b>	<b>0</b>	<b>15</b>	<b>341</b>	<b>88</b>	<b>0</b>	<b>85</b>	<b>98</b>	<b>20</b>
PHF	0.95															
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
17:00	0	37	103	38	0	27	43	106	0	4	149	19	0	48	43	5
17:15	0	42	106	43	0	17	23	64	0	4	102	17	0	30	34	5
17:30	0	32	84	43	0	27	34	82	0	2	151	18	0	41	37	1
17:45	0	29	88	64	0	8	19	52	0	1	99	17	0	31	27	2
	<b>0</b>	<b>140</b>	<b>381</b>	<b>188</b>	<b>0</b>	<b>79</b>	<b>119</b>	<b>304</b>	<b>0</b>	<b>11</b>	<b>501</b>	<b>71</b>	<b>0</b>	<b>150</b>	<b>141</b>	<b>13</b>
PHF	0.84															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:30	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0
7:45	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
HV%	2%				2%				2%				2%			
	2%															
17:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0
17:15	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0
17:45	0	0	1	2	0	0	0	0	0	0	2	0	0	1	0	0
	<b>0</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%				3%			
	2%															

**FULL-BUILD-2 HEAVY VEHICLES**

9	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
NBVOL		147	529	77		81	153	297		18	448	108		98	113	23
DEVOL		0	13	0		7	0	0		0	57	7		0	0	0
20%		0	3	0		1	0	0		0	11	1		0	0	0
TOTHV	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
HV%	2%				2%				3%				2%			
<b>PM</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>
NBVOL		161	497	216		97	153	297		13	593	105		172	162	15
DEVOL		0	60	0		23	0	0		0	19	23		0	0	0
20%		0	12	0		5	0	0		0	4	5		0	0	0
TOTHV	<b>0</b>	<b>1</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
7:30	0	0	107	23	0	14	0	172	0	169	83	0
7:45	0	0	98	31	0	28	0	171	0	184	118	0
8:00	0	0	97	34	0	21	0	170	0	234	99	0
8:15	0	0	100	41	0	23	0	169	0	229	118	0
	<b>0</b>	<b>0</b>	<b>402</b>	<b>129</b>	<b>0</b>	<b>86</b>	<b>0</b>	<b>682</b>	<b>0</b>	<b>816</b>	<b>418</b>	<b>0</b>
PHF	0.93											
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
17:00	0	0	89	20	0	20	0	332	0	155	123	0
17:15	0	0	84	34	0	25	0	266	0	176	115	0
17:30	0	0	79	23	0	11	0	256	0	159	127	0
17:45	0	0	87	24	0	18	0	195	0	167	122	0
	<b>0</b>	<b>0</b>	<b>339</b>	<b>101</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>1049</b>	<b>0</b>	<b>657</b>	<b>487</b>	<b>0</b>
PHF	0.92											

**HEAVY VEHICLES**

	Eastbound				Northbound				Westbound			
7:30	0	0	2	2	0	0	0	8	0	1	1	0
7:45	0	0	7	0	0	0	0	3	0	2	3	0
8:00	0	0	3	0	0	0	0	6	0	2	3	0
8:15	0	0	4	1	0	0	0	2	0	5	0	0
	<b>0</b>	<b>0</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>0</b>
HV%	4%				2%				2%			
	3%											
17:00	0	0	2	0	0	0	0	1	0	1	2	0
17:15	0	0	1	0	0	0	0	4	0	2	0	0
17:30	0	0	0	0	0	0	0	2	0	2	2	0
17:45	0	0	0	0	0	0	0	2	0	3	0	0
	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>0</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-2 HEAVY VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			461	492			125	808			1038	479
DEVOL			0	103			26	26			103	0
20%			0	21			5	5			21	0
TOTHV	<b>0</b>	<b>0</b>	<b>16</b>	<b>24</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>31</b>	<b>7</b>	<b>0</b>
HV%	4%				3%				3%			
<b>PM</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			148	153			191	1308			790	558
DEVOL			0	37			106	106			37	0
20%			0	7			21	21			7	0
TOTHV	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>15</b>	<b>4</b>	<b>0</b>
HV%	3%				3%				2%			





**TOTAL VEHICLES**

11	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
7:45	0	70	108	25	0	32	93	16	0	48	146	45	0	12	93	4
8:00	0	33	93	19	0	22	87	17	0	59	144	46	0	15	72	5
8:15	0	42	71	6	0	22	84	18	0	53	145	37	0	19	74	11
8:30	0	49	97	28	0	23	87	19	0	56	163	36	0	14	75	11
	<b>0</b>	<b>194</b>	<b>369</b>	<b>78</b>	<b>0</b>	<b>99</b>	<b>351</b>	<b>70</b>	<b>0</b>	<b>216</b>	<b>598</b>	<b>164</b>	<b>0</b>	<b>60</b>	<b>314</b>	<b>31</b>
PHF	0.92															
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
16:00	0	60	120	9	0	20	75	10	0	47	143	17	0	27	55	32
16:15	0	52	131	17	0	11	92	33	0	33	118	24	0	19	76	22
16:30	0	44	123	15	0	24	74	36	0	26	146	17	0	23	40	20
16:45	0	47	103	17	0	22	94	33	0	35	133	19	0	17	53	28
	<b>0</b>	<b>203</b>	<b>477</b>	<b>58</b>	<b>0</b>	<b>77</b>	<b>335</b>	<b>112</b>	<b>0</b>	<b>141</b>	<b>540</b>	<b>77</b>	<b>0</b>	<b>86</b>	<b>224</b>	<b>102</b>
PHF	0.97															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:45	0	3	1	1	0	0	6	1	0	1	0	0	0	1	6	0
8:00	0	1	0	0	0	1	13	0	0	4	1	0	0	3	4	0
8:15	0	1	2	0	0	0	10	0	0	1	0	1	0	0	2	0
8:30	0	3	0	2	0	0	9	0	0	1	1	0	0	0	12	1
	<b>0</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>38</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>24</b>	<b>1</b>
HV%	2%				8%				2%				7%			
	5%															
16:00	0	1	1	0	0	1	9	1	0	1	0	1	0	1	6	1
16:15	0	0	1	0	0	0	5	0	0	0	2	1	0	0	6	1
16:30	0	1	1	0	0	1	2	0	0	1	3	0	0	1	5	0
16:45	0	5	0	0	0	0	3	1	0	2	1	0	0	0	3	2
	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>19</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>20</b>	<b>4</b>
HV%	2%				4%				2%				6%			
	4%															

**FULL-BUILD-2 HEAVY VEHICLES**

11	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
NBVOL		223	423	134		114	430	81		306	685	188		83	368	54
DEVOL		0	0	44		0	28	0		58	0	0		14	8	18
20%		0	0	9		0	6	0		12	0	0		3	2	4
TOTHV	<b>0</b>	<b>8</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>44</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>26</b>	<b>5</b>
HV%	3%				7%				2%				8%			
<b>PM</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>
NBVOL		233	547	84		89	395	129		184	619	89		144	286	177
DEVOL		0	0	17		0	11	0		22	0	0		45	29	60
20%		0	0	3		0	2	0		4	0	0		9	6	12
TOTHV	<b>0</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>21</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>26</b>	<b>16</b>
HV%	2%				4%				2%				9%			



**TOTAL VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
7:30	0	26	105	0	0	77	0	15	0	0	171	93
7:45	0	37	137	0	0	79	0	8	0	0	154	99
8:00	0	17	88	0	0	73	0	15	0	0	168	78
8:15	0	27	105	0	0	76	0	16	0	0	174	76
	<b>0</b>	<b>107</b>	<b>435</b>	<b>0</b>	<b>0</b>	<b>305</b>	<b>0</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>667</b>	<b>346</b>
PHF	0.93											
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
16:30	0	12	202	0	0	93	0	28	0	0	146	69
16:45	0	18	180	0	0	120	0	37	0	0	146	55
17:00	0	19	202	0	0	123	0	54	0	0	134	81
17:15	0	23	163	0	0	114	0	31	0	0	161	71
	<b>0</b>	<b>72</b>	<b>747</b>	<b>0</b>	<b>0</b>	<b>450</b>	<b>0</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>587</b>	<b>276</b>
PHF	0.93											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
7:30	0	2	6	0	0	9	0	1	0	0	2	6
7:45	0	0	3	0	0	6	0	0	0	0	3	4
8:00	0	2	3	0	0	13	0	1	0	0	1	5
8:15	0	0	3	0	0	8	0	0	0	0	1	5
	<b>0</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>20</b>
HV%	4%				11%				3%			
	6%											
16:30	0	0	1	0	0	2	0	1	0	0	2	7
16:45	0	1	2	0	0	6	0	0	0	0	1	1
17:00	0	0	3	0	0	2	0	2	0	0	0	3
17:15	0	0	1	0	0	3	0	0	0	0	1	2
	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>13</b>
HV%	2%				3%				2%			
	2%											

**FULL-BUILD-2 HEAVY VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NBVOL		123				358		62			77	425
DEVOL		0				8		0			0	28
20%		0				2		0			0	6
TOTHV	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>26</b>
HV%	3%				10%				7%			
<b>PM</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NBVOL		83				545		172			673	328
DEVOL		0				29		0			0	11
20%		0				6		0			0	2
TOTHV	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>15</b>
HV%	2%				3%				2%			



**TOTAL VEHICLES**

13	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>
7:45	0	11	20	1	0	0	270	0	0	200	0	42	0	0	142	0
8:00	0	14	37	0	0	0	277	0	0	154	0	63	0	0	190	0
8:15	0	9	29	0	0	0	298	0	0	178	0	50	0	0	273	1
8:30	0	7	39	0	0	0	294	0	0	191	0	39	0	0	248	1
	<b>0</b>	<b>41</b>	<b>125</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1139</b>	<b>0</b>	<b>0</b>	<b>723</b>	<b>0</b>	<b>194</b>	<b>0</b>	<b>0</b>	<b>853</b>	<b>2</b>
PHF	0.92															
<b>MVMT</b>																
16:45	0	25	48	4	0	0	325	0	0	168	0	22	0	0	234	1
17:00	0	40	53	1	0	0	303	0	0	158	0	27	0	0	249	0
17:15	0	26	48	1	0	0	315	0	0	168	0	17	0	0	277	0
17:30	0	40	44	0	0	0	289	0	0	152	0	34	0	0	300	0
	<b>0</b>	<b>131</b>	<b>193</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>1232</b>	<b>0</b>	<b>0</b>	<b>646</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>1060</b>	<b>1</b>
PHF	0.98															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:45	0	0	0	0	0	0	17	0	0	4	0	2	0	0	5	0
8:00	0	0	0	0	0	0	19	0	0	5	0	0	0	0	13	0
8:15	0	0	1	0	0	0	16	0	0	7	0	0	0	0	7	0
8:30	0	1	0	0	0	0	19	0	0	8	0	0	0	0	8	0
	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>
HV%	2%				6%				3%				4%			
	4%															
16:45	0	0	0	0	0	0	6	0	0	4	0	0	0	0	0	0
17:00	0	0	1	0	0	0	6	0	0	3	0	0	0	0	0	0
17:15	0	0	0	0	0	0	2	0	0	4	0	0	0	0	2	0
17:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	3	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>
HV%	2%				2%				2%				2%			
	2%															

**FULL-BUILD-2 HEAVY VEHICLES**

13	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>
NBVOL		51	157	0			1334			777		225			1047	11
DEVOL		0	8	0			0			3		3			0	8
20%		0	2	0			0			1		1			0	2
TOTHV	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>2</b>
HV%	2%				5%				3%				3%			
<b>PM</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>			<b>1305</b>			<b>1307</b>		<b>1309</b>			<b>1302</b>	<b>1303</b>
NBVOL		164	218	3			1366			766		130			1259	3
DEVOL		0	3	0			0			8		8			0	3
20%		0	1	0			0			2		2			0	1
TOTHV	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

14	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
7:30	0	52	66	24	0	13	113	47	0	28	66	8	0	15	186	23
7:45	0	50	55	32	0	14	149	59	0	30	74	14	0	31	201	27
8:00	0	45	58	19	0	13	101	43	0	29	93	9	0	25	186	34
8:15	0	68	61	22	0	17	126	53	0	35	81	9	0	23	161	22
	<b>0</b>	<b>215</b>	<b>240</b>	<b>97</b>	<b>0</b>	<b>57</b>	<b>489</b>	<b>202</b>	<b>0</b>	<b>122</b>	<b>314</b>	<b>40</b>	<b>0</b>	<b>94</b>	<b>734</b>	<b>106</b>
PHF	0.92															
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
16:30	0	39	68	21	0	7	216	63	0	37	70	11	0	22	156	28
16:45	0	38	66	35	0	9	205	71	0	30	80	15	0	25	148	36
17:00	0	37	60	45	0	9	216	83	0	31	75	19	0	22	155	18
17:15	0	37	78	21	0	12	188	78	0	20	51	9	0	32	177	26
	<b>0</b>	<b>151</b>	<b>272</b>	<b>122</b>	<b>0</b>	<b>37</b>	<b>825</b>	<b>295</b>	<b>0</b>	<b>118</b>	<b>276</b>	<b>54</b>	<b>0</b>	<b>101</b>	<b>636</b>	<b>108</b>
PHF	0.97															

**HEAVY VEHICLES**

	Southbound				Westbound				Northbound				Eastbound			
7:30	0	5	2	0	0	4	2	7	0	1	3	2	0	0	1	0
7:45	0	0	1	0	0	0	7	4	0	2	0	3	0	0	3	2
8:00	0	1	2	0	0	0	6	4	0	1	0	0	0	1	3	0
8:15	0	3	3	0	0	0	11	3	0	1	0	0	0	0	3	2
	<b>0</b>	<b>9</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>26</b>	<b>18</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>4</b>
HV%	3%				6%				3%				2%			
	4%															
16:30	0	1	0	0	0	0	3	0	0	0	0	0	0	0	4	0
16:45	0	0	1	0	0	0	4	4	0	1	2	0	0	0	2	0
17:00	0	3	1	0	0	0	2	2	0	0	0	0	0	0	0	1
17:15	0	2	3	0	0	0	1	3	0	0	0	1	0	0	0	1
	<b>0</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
HV%	2%				2%				2%				2%			
	2%															

**FULL-BUILD-2 HEAVY VEHICLES**

14	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
NBVOL		261	275			66	565	236		140	360	46		108	855	122
DEVOL		14	0			0	4	4		0	0	0		0	14	0
20%		3	0			0	1	1		0	0	0		0	3	0
TOTHV	<b>0</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>27</b>	<b>19</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>4</b>
HV%	4%				6%				2%				2%			
<b>PM</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>
NBVOL		179	312			43	960	353		136	317	62		116	735	124
DEVOL		6	0			0	15	15		0	0	0		0	6	0
20%		1	0			0	3	3		0	0	0		0	1	0
TOTHV	<b>0</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>2</b>
HV%	2%				2%				2%				2%			



**TOTAL VEHICLES**

15	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
8:00	0	3	4	81	0	4	54	34	0	2	9	4	0	102	24	3
8:15	0	5	3	66	0	8	55	37	0	2	9	3	0	85	39	3
8:30	0	7	1	70	0	3	60	30	0	1	7	6	0	74	44	5
8:45	0	5	4	59	0	7	61	41	0	5	11	4	0	82	53	1
<b>PHF</b>	0.96				0	22	230	142	0	10	36	17	0	343	160	12
		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
16:30	0	23	4	104	0	3	60	13	0	2	4	3	0	51	71	10
16:45	0	25	6	108	0	7	45	5	0	4	6	2	0	45	66	4
17:00	0	53	10	115	0	4	54	4	0	2	8	7	0	49	81	4
17:15	0	27	3	99	0	5	69	5	0	4	0	3	0	48	67	3
<b>PHF</b>	0.89				0	19	228	27	0	12	18	15	0	193	285	21

**HEAVY VEHICLES**

8:00	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0
8:15	0	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
8:45	0	1	0	3	0	0	2	0	0	0	1	0	0	1	0	0
<b>HV%</b>	4%				2%				2%				2%			
	2%															
16:30	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1
16:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0
17:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<b>HV%</b>	2%				2%				2%				2%			
	2%															

**FULL-BUILD-2 HEAVY VEHICLES**

15	Southbound				Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>AM</b>		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
NBVOL		43	14	326		26	264	220		12	42	20		407	214	14
DEVOL		20	0	9		0	0	57		0	0	0		14	30	0
20%		4	0	2		0	0	11		0	0	0		3	6	0
<b>TOTHV</b>	0	5	0	12	0	1	6	11	0	0	1	0	0	5	8	0
<b>HV%</b>	4%				4%				2%				2%			
<b>PM</b>		1510	1511	1512		1504	1505	1506		1507	1508	1509		1501	1502	1503
NBVOL		230	27	514		22	262	50		14	21	18		228	440	25
DEVOL		83	0	26		0	0	19		0	0	0		6	113	0
20%		17	0	5		0	0	4		0	0	0		1	23	0
<b>TOTHV</b>	0	17	0	8	0	0	1	4	0	0	1	0	0	5	23	1
<b>HV%</b>	3%				2%				2%				4%			



**TOTAL VEHICLES**

16	Northbound				Southbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
		<b>1601</b>	<b>1602</b>				<b>1603</b>	<b>1604</b>		<b>1605</b>		<b>1606</b>
7:45	0	6	2	0	0	0	1	67	0	185	0	7
8:00	0	7	1	0	0	0	0	95	0	195	0	7
8:15	0	9	1	0	0	0	4	73	0	187	0	6
8:30	0	5	1	0	0	0	3	91	0	201	0	13
	<b>0</b>	<b>27</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>326</b>	<b>0</b>	<b>768</b>	<b>0</b>	<b>33</b>
PHF	0.93											
		<b>1601</b>	<b>1602</b>				<b>1603</b>	<b>1604</b>		<b>1605</b>		<b>1606</b>
16:30	0	7	1	0	0	0	4	181	0	145	0	10
16:45	0	13	3	0	0	0	4	140	0	132	0	10
17:00	0	14	5	0	0	0	6	176	0	144	0	13
17:15	0	15	3	0	0	0	2	153	0	147	0	10
	<b>0</b>	<b>49</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>650</b>	<b>0</b>	<b>568</b>	<b>0</b>	<b>43</b>
PHF	0.93											

**HEAVY VEHICLES**

7:45	0	0	0	0	0	0	0	1	0	6	0	0
8:00	0	0	0	0	0	0	0	6	0	4	0	0
8:15	0	0	0	0	0	0	0	4	0	6	0	1
8:30	0	0	1	0	0	0	0	6	0	2	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>1</b>
HV%	3%				5%				2%			
	4%											
16:30	0	0	0	0	0	0	0	2	0	3	0	0
16:45	0	0	1	0	0	0	0	3	0	5	0	0
17:00	0	0	0	0	0	0	0	4	0	0	0	0
17:15	0	0	0	0	0	0	0	1	0	1	0	1
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>
HV%	2%				2%				2%			
	2%											

**FULL-BUILD-2 HEAVY VEHICLES**

16	Northbound				Southbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
AM		<b>1601</b>	<b>1602</b>				<b>1603</b>	<b>1604</b>		<b>1605</b>		<b>1606</b>
NBVOL		31	6				10	442		1108		38
DEVOL		0	0				0	68		228		0
20%		0	0				0	14		46		0
TOTHV	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>64</b>	<b>0</b>	<b>1</b>
HV%	3%				7%				6%			
PM		<b>1601</b>	<b>1602</b>				<b>1603</b>	<b>1604</b>		<b>1605</b>		<b>1606</b>
NBVOL		57	14				19	996		730		50
DEVOL		0	0				0	251		79		0
20%		0	0				0	50		16		0
TOTHV	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>1</b>
HV%	2%				6%				3%			



**TOTAL VEHICLES**

1	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>MVMT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>		
11:15	0	21	114	0	0	39	0	10	0	0	132	27		
11:30	0	22	135	0	0	40	0	14	0	0	146	27		
11:45	0	26	94	0	0	29	0	23	0	0	131	82		
12:00	0	22	119	0	0	73	0	28	0	0	111	45		
	<b>0</b>	<b>91</b>	<b>462</b>	<b>0</b>	<b>0</b>	<b>181</b>	<b>0</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>520</b>	<b>181</b>		
PHF	0.95													

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
11:15	0	0	1	0	0	0	0	0	0	0	0	2	0	
11:30	0	0	1	0	0	0	0	0	0	0	0	1	0	
11:45	0	0	0	0	0	1	0	0	0	0	0	1	0	
12:00	0	0	2	0	0	0	0	0	0	0	0	0	2	
	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	
HV%	2%					2%					2%			

**FULL-BUILD-2 HEAVY VEHICLES**

1	Southbound					Westbound					Northbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>SAT</b>		<b>105</b>	<b>106</b>			<b>101</b>		<b>102</b>			<b>103</b>	<b>104</b>		
NBVOL		105	544			219		86			613	225		
DEVOL		0	14			11		0			17	17		
20%		0	3			2		0			3	3		
TOTHV	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>5</b>		
HV%	2%					2%					2%			



**TOTAL VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
11:45	0	14	71	0	0	19	0	29	0	0	121	13
12:00	0	17	106	0	0	17	0	15	0	0	67	10
12:15	0	20	72	0	0	9	0	20	0	0	60	8
12:30	0	11	76	0	0	8	0	28	0	0	49	7
	<b>0</b>	<b>62</b>	<b>325</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>0</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>297</b>	<b>38</b>
PHF	0.81											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
11:45	0	0	1	0	0	0	0	0	0	0	2	0
12:00	0	0	0	0	0	0	0	0	0	0	2	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

2	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>203</b>	<b>204</b>			<b>205</b>		<b>206</b>			<b>201</b>	<b>202</b>
NBVOL		72	382			63		106			355	47
DEVOL		0	9			2		0			14	3
20%		0	2			0		0			3	1
TOTHV	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>
HV%	2%				2%				2%			





**TOTAL VEHICLES**

3	Southbound				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
11:30	0	13	0	9	0	0	56	8	0	13	86	0
11:45	0	11	0	15	0	0	71	11	0	44	110	0
12:00	0	25	0	35	0	0	89	11	0	13	70	0
12:15	0	8	0	7	0	0	77	15	0	11	65	0
<b>PHF</b>	<b>0</b>	<b>57</b>	<b>0</b>	<b>66</b>	<b>0</b>	<b>0</b>	<b>293</b>	<b>45</b>	<b>0</b>	<b>81</b>	<b>331</b>	<b>0</b>
	0.83											

**HEAVY VEHICLES**

	Southbound				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
11:30	0	2	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	1	2	0	0	0	0
12:00	0	2	0	0	0	0	0	0	0	1	1	0
12:15	0	1	0	0	0	0	0	0	0	0	0	0
<b>HV%</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
	4%				2%				2%			
	3%											

**FULL-BUILD-2 HEAVY VEHICLES**

3	Southbound				Westbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>305</b>		<b>306</b>			<b>303</b>	<b>304</b>		<b>301</b>	<b>302</b>	
NBVOL		71		78			352	55		95	396	
DEVOL		5		2			16	3		2	16	
20%		1		0			3	1		0	3	
TOTHV	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>
<b>HV%</b>	<b>4%</b>				<b>2%</b>				<b>2%</b>			



**TOTAL VEHICLES**

4	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>MVMT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>			
11:45	0	9	42	29	0	31	46	4	0	21	40	29	0	44	79	23			
12:00	0	7	43	26	0	29	70	9	0	28	46	28	0	50	49	31			
12:15	0	7	56	40	0	34	57	5	0	19	46	22	0	29	43	24			
12:30	0	11	45	30	0	25	54	3	0	15	47	29	0	33	53	19			
	0	<b>34</b>	<b>186</b>	<b>125</b>	<b>0</b>	<b>119</b>	<b>227</b>	<b>21</b>	<b>0</b>	<b>83</b>	<b>179</b>	<b>108</b>	<b>0</b>	<b>156</b>	<b>224</b>	<b>97</b>			
PHF	0.94																		

**HEAVY VEHICLES**

	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
11:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0		
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
12:15	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0		
12:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
	0	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>			
HV%	2%					2%					2%					2%			

**FULL-BUILD-2 HEAVY VEHICLES**

4	Southbund				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT		U	LT	THRU	RT
<b>SAT</b>		<b>410</b>	<b>411</b>	<b>412</b>		<b>404</b>	<b>405</b>	<b>406</b>		<b>407</b>	<b>408</b>	<b>409</b>		<b>401</b>	<b>402</b>	<b>403</b>			
NBVOL		46	218	150		137	277	25		99	211	125		185	262	114			
DEVOL		7	4	6		0	17	0		3	5	1		6	5	2			
20%		1	1	1		0	3	0		1	1	0		1	1	0			
TOT HV	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
12:45	0	35	166	0	0	1	0	39	0	0	136	1
13:00	0	24	175	0	0	0	0	41	0	0	221	5
13:15	0	30	181	0	0	1	0	46	0	0	196	7
13:30	0	42	120	0	0	1	0	52	0	0	156	10
	<b>0</b>	<b>131</b>	<b>642</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>178</b>	<b>0</b>	<b>0</b>	<b>709</b>	<b>23</b>
PHF	0.90											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
12:45	0	3	2	0	0	0	0	5	0	0	1	1
13:00	0	1	0	0	0	0	0	4	0	0	0	0
13:15	0	3	1	0	0	1	0	6	0	0	1	0
13:30	0	7	0	0	0	0	0	3	0	0	1	0
	<b>0</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>
HV%	2%				10%				2%			
	5%											

**FULL-BUILD-2 HEAVY VEHICLES**

5	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>503</b>	<b>504</b>			<b>505</b>		<b>506</b>			<b>501</b>	<b>502</b>
NBVOL		154	745			5		205			828	30
DEVOL		3	9			1		1			16	3
20%		1	2			0		0			3	1
TOT HV	<b>0</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
HV%	2%				9%				2%			



**TOTAL VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
12:00	0	31	162	0	0	0	0	42	0	0	185	1
12:15	0	44	166	0	0	0	0	77	0	0	187	3
12:30	0	23	140	0	0	2	0	43	0	0	180	2
12:45	0	28	157	0	0	1	0	49	0	0	159	2
	<b>0</b>	<b>126</b>	<b>625</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>711</b>	<b>8</b>
PHF	0.88											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
12:00	0	1	3	0	0	0	0	1	0	0	7	0
12:15	0	4	3	0	0	0	0	3	0	0	2	0
12:30	0	0	2	0	0	0	0	1	0	0	7	0
12:45	0	5	4	0	0	1	0	2	0	0	2	1
	<b>0</b>	<b>10</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>
HV%	3%				4%				3%			

**FULL-BUILD-2 HEAVY VEHICLES**

6	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>603</b>	<b>604</b>			<b>605</b>		<b>606</b>			<b>601</b>	<b>602</b>
NBVOL		183	740			8		276			824	19
DEVOL		38	24			4		34			9	9
20%		8	5			1		7			2	2
TOT HV	<b>0</b>	<b>18</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>
HV%	4%				6%				3%			



**TOTAL VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
11:15	0	8	114	0	0	79	0	31	0	0	113	110
11:30	0	9	126	0	0	106	0	49	0	0	148	124
11:45	0	9	133	0	0	95	0	53	0	0	154	140
12:00	0	12	100	0	0	76	0	44	0	0	170	119
	<b>0</b>	<b>38</b>	<b>473</b>	<b>0</b>	<b>0</b>	<b>356</b>	<b>0</b>	<b>177</b>	<b>0</b>	<b>0</b>	<b>585</b>	<b>493</b>
PHF	0.91											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:15	0	0	5	0	0	4	0	0	0	0	5	7
11:30	0	0	7	0	0	2	0	1	0	0	6	3
11:45	0	0	6	0	0	2	0	0	0	0	9	6
12:00	0	0	4	0	0	6	0	2	0	0	2	9
	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>25</b>
HV%	4%				3%				4%			

**FULL-BUILD-2 HEAVY VEHICLES**

7	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>703</b>	<b>704</b>			<b>705</b>		<b>706</b>			<b>701</b>	<b>702</b>
NBVOL		44	577			439		205			690	585
DEVOL		0	35			31		2			20	20
20%		0	7			6		0			4	4
TOTHV	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>29</b>
HV%	5%				4%				4%			



**TOTAL VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
11:45	0	46	24	0	1	103	0	14	0	0	64	73
12:00	0	41	50	0	0	89	0	3	0	0	84	72
12:15	0	39	49	0	0	98	0	12	0	0	82	94
12:30	0	39	39	0	0	93	0	3	0	0	73	87
	<b>0</b>	<b>165</b>	<b>162</b>	<b>0</b>	<b>1</b>	<b>383</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>303</b>	<b>326</b>
PHF	0.92											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:45	0	0	0	0	0	3	0	2	0	0	1	3
12:00	0	0	0	0	0	3	0	0	0	0	2	3
12:15	0	1	3	0	0	0	0	0	0	0	0	4
12:30	0	0	0	0	0	3	0	0	0	0	0	4
	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>14</b>
HV%	2%				3%				3%			

**FULL-BUILD-2 HEAVY VEHICLES**

8	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>803</b>	<b>804</b>			<b>805</b>		<b>806</b>			<b>801</b>	<b>802</b>
NBVOL		189	189			471		37			349	394
DEVOL		0	3			32		0			1	20
20%		0	1			6		0			0	4
TOTHV	<b>0</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>18</b>
HV%	2%				3%				3%			



**TOTAL VEHICLES**

9	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>			
13:00	0	12	54	14	0	12	15	25	0	1	59	9	0	12	16	0			
13:15	0	6	67	7	0	9	11	36	0	1	79	8	0	33	11	4			
13:30	0	4	67	20	0	9	9	18	0	2	99	8	0	16	15	2			
13:45	0	19	72	16	0	11	16	21	0	0	79	8	0	19	8	2			
	0	41	260	57	0	41	51	100	0	4	316	33	0	80	50	8			
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
13:00	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0		
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0		
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	0		
HV%	2%					2%					2%					2%			

**FULL-BUILD-2 HEAVY VEHICLES**

9	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>910</b>	<b>911</b>	<b>912</b>		<b>904</b>	<b>905</b>	<b>906</b>		<b>907</b>	<b>908</b>	<b>909</b>		<b>901</b>	<b>902</b>	<b>903</b>			
NBVOL		47	305	66		49	59	115		5	371	40		92	58	10			
DEVOL		0	7	0		2	0	0		0	9	2		0	0	0			
20%		0	1	0		0	0	0		0	2	0		0	0	0			
TOT HV	0	0	1	0	0	0	0	1	0	0	4	0	0	1	0	0			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
11:45	0	0	91	19	0	8	0	116	0	104	81	0
12:00	0	0	88	12	0	11	0	116	0	100	102	0
12:15	0	0	91	6	0	15	0	108	0	108	84	0
12:30	0	0	104	13	0	18	0	102	0	67	80	0
	<b>0</b>	<b>0</b>	<b>374</b>	<b>50</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>442</b>	<b>0</b>	<b>379</b>	<b>347</b>	<b>0</b>
PHF	0.96											

**HEAVY VEHICLES**

	Eastbound				Northbound				Westbound			
11:45	0	0	3	0	0	0	0	1	0	0	1	0
12:00	0	0	0	0	0	1	0	0	0	0	0	0
12:15	0	0	0	1	0	0	0	1	0	1	1	0
12:30	0	0	3	0	0	0	0	0	0	1	1	0
	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

10	Eastbound				Northbound				Westbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>			<b>1001</b>	<b>1002</b>			<b>1005</b>	<b>1006</b>			<b>1003</b>	<b>1004</b>
NBVOL			429	74			71	518			451	398
DEVOL			0	16			11	11			16	0
20%			0	3			2	2			3	0
TOTHV	<b>0</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>
HV%	2%				2%				2%			





**TOTAL VEHICLES**

11	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>			
12:30	0	64	126	15	0	39	65	38	0	17	137	34	0	12	63	29			
12:45	0	64	98	13	0	34	68	28	0	20	121	39	0	27	59	21			
13:00	0	54	105	14	0	31	60	32	0	19	113	36	0	22	83	19			
13:15	0	59	122	10	0	34	69	37	0	24	120	38	0	19	60	11			
	0	<b>241</b>	<b>451</b>	<b>52</b>	<b>0</b>	<b>138</b>	<b>262</b>	<b>135</b>	<b>0</b>	<b>80</b>	<b>491</b>	<b>147</b>	<b>0</b>	<b>80</b>	<b>265</b>	<b>80</b>			
PHF	0.95																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
12:30	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0		
12:45	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0		
13:00	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1		
13:15	0	1	2	0	0	1	1	0	0	0	0	1	0	1	1	0	0		
	0	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>			
HV%	2%					2%					2%					2%			

**FULL-BUILD-2 HEAVY VEHICLES**

11	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1110</b>	<b>1111</b>	<b>1112</b>		<b>1104</b>	<b>1105</b>	<b>1106</b>		<b>1107</b>	<b>1108</b>	<b>1109</b>		<b>1101</b>	<b>1102</b>	<b>1103</b>			
NBVOL		277	517	69		159	307	41		104	563	169		97	308	99			
DEVOL		0	0	9		0	6	0		12	0	0		5	4	7			
20%		0	0	2		0	1	0		2	0	0		1	1	1			
TOT HV	<b>0</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>			
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>MVMT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
11:45	0	21	99	0	0	70	0	21	0	0	101	66
12:00	0	15	110	0	0	98	0	24	0	0	94	60
12:15	0	20	113	0	0	79	0	17	0	0	88	42
12:30	0	23	80	0	0	72	0	23	0	0	108	54
	<b>0</b>	<b>79</b>	<b>402</b>	<b>0</b>	<b>0</b>	<b>319</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>391</b>	<b>222</b>
PHF	0.93											

**HEAVY VEHICLES**

	Westbound				Northbound				Eastbound			
11:45	0	0	1	0	0	1	0	0	0	0	3	3
12:00	0	0	2	0	0	2	0	0	0	0	0	2
12:15	0	0	1	0	0	2	0	1	0	0	0	1
12:30	0	1	2	0	0	1	0	1	0	0	2	0
	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>6</b>
HV%	2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

12	Westbound				Northbound				Eastbound			
	U	LT	THRU	RT	U	LT	THRU	RT	U	LT	THRU	RT
<b>SAT</b>		<b>1203</b>	<b>1024</b>			<b>1205</b>		<b>1206</b>			<b>1201</b>	<b>1202</b>
NB VOL		91				370		98			448	261
DEVOL		0				4		0			0	6
20%		0				1		0			0	1
TOT HV	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>7</b>
HV%	2%				2%				2%			



**TOTAL VEHICLES**

13	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>				<b>1305</b>			<b>1307</b>		<b>1309</b>				<b>1302</b>	<b>1303</b>	
12:15	0	37	30	0	0	0	247	0	0	167	0	31	0	0	0	200	1		
12:30	0	39	27	0	0	0	225	0	0	179	0	36	0	0	0	245	0		
12:45	0	36	23	2	0	0	238	0	0	161	0	22	0	0	0	230	0		
13:00	0	22	27	0	0	0	240	0	0	162	0	42	0	0	0	204	0		
	0	<b>134</b>	<b>107</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>950</b>	<b>0</b>	<b>0</b>	<b>669</b>	<b>0</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>879</b>	<b>1</b>		
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
12:15	0	0	0	0	0	0	8	0	0	1	0	0	0	0	0	3	0		
12:30	0	0	1	0	0	0	4	0	0	4	0	2	0	0	0	3	0		
12:45	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	0		
13:00	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	0	0		
	0	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>		
HV%	2%				2%				2%				2%						

**FULL-BUILD-2 HEAVY VEHICLES**

13	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1310</b>	<b>1311</b>	<b>1312</b>				<b>1305</b>			<b>1307</b>		<b>1309</b>				<b>1302</b>	<b>1303</b>	
NBVOL		154	124	3			1089			768		152				1007	3		
DEVOL		0	1	0			0			1		1				0	1		
20%		0	0	0			0			0		0				0	0		
TOT HV	0	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>		
HV%	2%				2%				2%				2%						



**TOTAL VEHICLES**

14	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>MVMT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>			
11:45	0	40	30	24	0	6	113	54	0	14	44	12	0	22	113	17			
12:00	0	44	36	26	0	8	129	66	0	26	49	17	0	18	93	12			
12:15	0	39	61	39	0	15	109	60	0	20	48	4	0	21	86	19			
12:30	0	39	44	25	0	6	89	59	0	15	51	7	0	17	112	17			
	0	<b>162</b>	<b>171</b>	<b>114</b>	<b>0</b>	<b>35</b>	<b>440</b>	<b>239</b>	<b>0</b>	<b>75</b>	<b>192</b>	<b>40</b>	<b>0</b>	<b>78</b>	<b>404</b>	<b>65</b>			
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
11:45	0	3	0	0	0	1	1	0	0	0	0	1	0	0	1	0			
12:00	0	1	1	0	0	0	2	2	0	0	0	0	0	1	1	1			
12:15	0	0	2	0	0	0	0	1	0	1	0	0	0	0	1	0			
12:30	0	0	0	0	0	0	2	4	0	0	1	1	0	0	1	0			
	0	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>			
HV%	2%				2%				2%				2%						

**FULL-BUILD-2 HEAVY VEHICLES**

14	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	U	LT	THRU	RT		LT	THRU	RT	LT		THRU	RT	LT	THRU		RT			
<b>SAT</b>		<b>1410</b>	<b>1411</b>	<b>1412</b>		<b>1404</b>	<b>1405</b>	<b>1406</b>		<b>1407</b>	<b>1408</b>	<b>1409</b>		<b>1401</b>	<b>1402</b>	<b>1403</b>			
NBVOL		190	196			41	505	275		86	220	46		90	467	75			
DEVOL		4	0			0	1	1		0	0	0		0	4	0			
20%		1	0			0	0	0		0	0	0		0	1	0			
TOT HV	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>1</b>			
HV%	2%				2%				2%				2%						



**TOTAL VEHICLES**

15	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U
	1510	1511	1512			1504	1505	1506			1507	1508	1509			1501	1502	1503	
13:00	0	11	6	72	0	12	48	4	0	0	5	13	7	0	0	31	52	5	
13:15	0	6	5	67	0	3	59	6	0	0	6	13	5	0	0	35	52	9	
13:30	0	8	8	53	0	8	52	5	0	0	3	7	8	0	0	39	58	10	
13:45	0	6	2	79	0	7	67	10	0	0	6	5	6	0	0	36	51	4	
	0	31	21	271	0	30	226	25	0	0	20	38	26	0	0	141	213	28	
PHF	0.96																		

**HEAVY VEHICLES**

	Southbound					Westbound					Northbound					Eastbound			
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HV%	2%					2%					2%					2%			

**FULL-BUILD-2 HEAVY VEHICLES**

15	Southbound				U	Westbound				U	Northbound				U	Eastbound			
	LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U		LT	THRU	RT	U
SAT	1510	1511	1512			1504	1505	1506			1507	1508	1509			1501	1502	1503	
NBVOL	45	25	312			35	259	38			23	44	30			163	256	33	
DEVOL	9	0	1			0	0	9			0	0	0			1	12	0	
20%	2	0	0			0	0	2			0	0	0			0	2	0	
TOT HV	0	2	0	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	
HV%	2%					2%					2%					2%			



**TOTAL VEHICLES**

16	U	Northbound			U	Southbound			U	Eastbound		
		LT	THRU	RT		LT	THRU	RT		LT	THRU	RT
		1601	1602			1603	1604			1605		1606
12:15	0	12	3	0	0	0	2	122	0	119	0	11
12:30	0	10	2	0	0	0	4	119	0	155	0	13
12:45	0	14	3	0	0	0	0	91	0	139	0	11
13:00	0	10	5	0	0	0	4	121	0	139	0	12
	0	46	13	0	0	0	10	453	0	552	0	47
PHF	0.92											

**HEAVY VEHICLES**

		Northbound				Southbound				Eastbound		
12:15	0	0	0	0	0	0	0	1	0	2	0	0
12:30	0	0	0	0	0	0	0	0	0	6	0	0
12:45	0	0	0	0	0	0	0	2	0	2	0	1
13:00	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	3	0	10	0	1
HV%	2%				2%				2%			

**FULL-BUILD-2 HEAVY VEHICLES**

16	U	Northbound			U	Southbound			U	Eastbound		
		LT	THRU	RT		LT	THRU	RT		LT	THRU	RT
SAT		1601	1602			1603	1604			1605		1606
NBVOL		53	15			12	544			668		54
DEVOL		0	0			0	25			35		0
20%		0	0			0	5			7		0
TOT HV	0	0	0	0	0	0	8	0	0	17	0	1
HV%	2%				2%				2%			

**APPENDIX B**  
**LEVEL OF SERVICE TABLES**  
**EXISTING VS.**  
**FULL BUILD 1 VS.**  
**FULL BUILD 2**

## Level of Service Calculations

1-WESTON-SCHOOL HOUSE				2-METTLERS-SCHOOL HOUSE				3-RANDOLPH-SCHOOL HOUSE				4-ELIZABETH-SCHOOL HOUSE			
Morning Peak Hour				Morning Peak Hour				Morning Peak Hour				Morning Peak Hour			
AM	Existing	FB1	FB2	AM	Existing	FB1	FB2	AM	Existing	FB1	FB2	AM	Existing	FB1	FB2
WBL	C (34.2)	D (36.1)	D (37.1)	WB	A (04.7)	A (04.8)	A (04.8)	EBL	A (04.0)	A (05.2)	A (05.7)	EBL	C (29.3)	C (29.6)	C (30.3)
WBR	B (12.5)	B (10.8)	B (10.8)	NB	B (15.3)	C (24.0)	C (27.4)	EBT	A (02.7)	A (03.4)	A (03.5)	EBT	D (49.5)	D (47.4)	D (44.3)
NBT	B (18.0)	D (45.6)	E (55.4)	Overall	A (05.3)	A (06.7)	A (07.3)	WBTR	A (09.0)	B (11.5)	B (12.5)	EBR	A (00.0)	A (00.0)	A (00.0)
NBR	A (01.6)	A (01.9)	A (02.0)					SBL	C (23.7)	C (29.3)	C (29.4)	WBL	C (30.3)	C (28.1)	C (26.8)
SBL	A (04.2)	A (05.4)	A (05.5)					SBR	C (20.8)	C (20.5)	C (20.7)	WBT	D (39.8)	E (58.1)	E (60.5)
SBT	A (08.7)	B (10.3)	B (10.6)					Overall	B (10.4)	B (12.7)	B (13.1)	WBR	A (00.0)	A (00.0)	A (00.0)
Overall	B (14.8)	C (29.5)	C (34.3)									NBL	B (13.1)	B (18.8)	C (20.0)
												NBT	B (19.9)	C (28.6)	C (30.4)
												NBR	A (00.0)	A (00.0)	A (00.0)
												SBL	D (45.0)	D (47.4)	D (48.0)
												SBTR	B (19.0)	C (24.5)	C (25.5)
												Overall	C (29.7)	D (36.6)	D (37.3)
Evening Peak Hour				Evening Peak Hour				Evening Peak Hour				Evening Peak Hour			
PM	Existing	FB1	FB2	PM	Existing	FB1	FB2	PM	Existing	FB1	FB2	PM	Existing	FB1	FB2
WBL	D (41.3)	E (62.8)	F (82.8)	WB	A (02.2)	A (02.0)	A (02.0)	EBL	B (16.3)	F (131.7)	F (141.9)	EBL	C (30.7)	C (28.6)	C (28.8)
WBR	B (10.7)	A (09.8)	A (09.9)	NB	B (14.8)	C (20.9)	C (25.8)	EBT	A (03.5)	A (03.8)	A (04.0)	EBT	D (46.9)	D (51.4)	D (52.0)
NBT	B (15.7)	C (21.2)	C (21.6)	Overall	A (03.6)	A (04.1)	A (04.9)	WBTR	B (16.9)	E (61.8)	E (75.8)	EBR	A (00.0)	A (00.0)	A (00.0)
NBR	A (01.7)	A (01.8)	A (01.9)					SBL	C (22.2)	C (23.4)	C (23.5)	WBL	D (40.7)	E (59.6)	E (59.8)
SBL	A (05.2)	A (06.1)	A (06.2)					SBR	C (22.4)	C (22.8)	C (23.1)	WBT	D (40.1)	D (44.4)	D (46.9)
SBT	B (17.8)	D (37.3)	D (44.0)					Overall	B (15.1)	E (66.9)	E (74.5)	WBR	A (00.0)	A (00.0)	A (00.0)
Overall	B (18.7)	C (32.2)	D (38.6)									NBL	B (14.8)	B (18.6)	B (19.0)
												NBT	B (19.3)	C (24.9)	C (25.4)
												NBR	A (00.0)	A (00.0)	A (00.0)
												SBL	E (58.4)	F (125.5)	F (142.7)
												SBTR	B (18.7)	C (26.5)	C (27.3)
												Overall	C (33.4)	D (45.8)	D (48.4)
Saturday Peak Hour				Saturday Peak Hour				Saturday Peak Hour				Saturday Peak Hour			
SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2
WBL	E (64.1)	F (96.1)	F (100.4)	WB	A (01.3)	A (01.4)	A (01.4)	EBL	A (04.0)	A (04.6)	A (04.7)	EBL	C (33.3)	C (34.4)	C (34.4)
WBR	B (10.9)	B (10.8)	D (40.8)	NB	B (19.1)	C (27.6)	D (28.8)	EBT	A (03.9)	A (04.3)	A (04.4)	EBT	D (40.7)	D (39.8)	D (39.6)
NBT	B (12.0)	B (13.6)	B (13.7)	Overall	A (03.8)	A (05.1)	A (05.4)	WBTR	A (08.9)	B (10.3)	B (10.5)	EBR	A (00.0)	A (00.0)	A (00.0)
NBR	A (02.4)	A (02.5)	A (02.6)					SBL	C (21.5)	C (21.8)	C (21.8)	WBL	C (32.2)	C (30.2)	C (30.0)
SBL	A (03.4)	A (03.8)	A (03.8)					SBR	C (22.4)	C (22.7)	C (22.7)	WBT	D (45.4)	D (47.2)	D (47.4)
SBT	B (11.1)	B (12.4)	B (12.4)					Overall	A (08.4)	A (09.2)	A (09.3)	WBR	A (00.0)	A (00.0)	A (00.0)
Overall	B (16.3)	C (21.2)	C (21.8)									NBL	B (11.2)	B (13.0)	B (13.1)
												NBT	B (14.5)	B (17.0)	B (17.2)
												NBR	A (00.0)	A (00.0)	A (00.0)
												SBL	D (46.7)	D (48.9)	D (48.9)
												SBTR	B (14.4)	B (17.0)	B (17.1)
												Overall	C (30.0)	C (31.2)	C (31.3)





### Level of Service Calculations

9-DAVIDSON-PIERCE				10-DAVIDSON-EASTON				11-Veronica-NJ 27				12-Veronica-Hamilton			
Morning Peak Hour				Morning Peak Hour				Morning Peak Hour				Morning Peak Hour			
AM	Existing	FB1	FB2	AM	Existing	FB1	FB2	AM	Existing	FB1	FB2	AM	Existing	FB1	FB2
EBL	E (60.0)	E (61.0)	E (61.0)	EBT	C (29.8)	C (33.4)	C (33.5)	EBL	C (31.2)	C (30.8)	C (30.7)	EBTR	C (22.5)	C (27.2)	C (28.0)
EBTR	C (28.5)	C (27.7)	C (27.7)	EBR	D (42.4)	F (93.4)	F (106.5)	EBTR	D (49.0)	E (63.1)	E (71.5)	WBL	B (11.0)	B (12.5)	B (12.7)
WBLT	D (41.7)	D (44.1)	D (44.4)	WBL	F (134.7)	F (266.7)	F (286.3)	WBL	C (28.7)	C (30.2)	C (31.8)	WBT	B (12.4)	B (14.0)	B (14.2)
WBR	D (39.4)	D (42.7)	D (42.7)	WBLT	F (137.7)	F (271.5)	F (283.6)	WBTR	E (72.7)	F (97.8)	F (110.4)	NBL	D (48.6)	D (48.2)	D (48.1)
NBL	B (13.6)	B (16.6)	B (16.6)	NBL	D (36.8)	D (36.3)	D (36.6)	NBL	B (17.2)	C (28.3)	D (39.3)	NBR	B (12.6)	B (12.1)	B (12.1)
NBTR	B (19.9)	C (26.1)	C (26.7)	NBR	B (13.7)	B (14.3)	B (14.4)	NBT	C (26.2)	C (34.4)	C (34.9)	Overall	C (23.9)	C (26.0)	C (26.4)
SBL	B (12.7)	B (17.3)	B (17.8)	Overall	E (75.5)	F (142.8)	F (151.7)	NBR	C (26.3)	C (34.6)	D (35.1)				
SBTR	B (18.4)	C (24.0)	C (24.1)					SBL	B (18.3)	C (27.5)	C (28.1)				
Overall	C (26.8)	C (30.9)	C (31.2)					SBT	C (25.5)	C (32.3)	C (32.8)				
								SBR	B (19.4)	C (22.8)	C (23.6)				
								Overall	D (35.5)	D (46.8)	D (51.4)				

9-DAVIDSON-PIERCE				10-DAVIDSON-EASTON				11-Veronica-NJ 27				12-Veronica-Hamilton			
Evening Peak Hour				Evening Peak Hour				Evening Peak Hour				Evening Peak Hour			
PM	Existing	FB1	FB2	PM	Existing	FB1	FB2	PM	Existing	FB1	FB2	PM	Existing	FB1	FB2
EBL	E (77.4)	F (91.1)	F (91.1)	EBT	C (31.5)	C (34.1)	C (32.1)	EBL	C (30.1)	C (33.4)	D (37.4)	EBTR	D (37.1)	E (56.9)	E (58.3)
EBTR	C (26.9)	C (26.6)	C (26.7)	EBR	C (33.8)	D (36.1)	D (36.5)	EBTR	D (37.6)	D (53.0)	E (68.5)	WBL	B (13.9)	B (16.1)	B (16.2)
WBLT	D (47.0)	E (58.0)	E (61.2)	WBL	F (154.2)	F (249.7)	F (256.6)	WBL	C (26.7)	C (28.6)	C (30.2)	WBT	B (16.7)	B (17.7)	B (17.8)
WBR	D (46.5)	E (55.3)	E (55.3)	WBLT	F (155.5)	F (247.9)	F (248.8)	WBTR	E (68.9)	F (116.5)	F (120.2)	NBL	E (58.6)	F (102.8)	F (113.0)
NBL	C (21.1)	C (29.5)	C (29.7)	NBL	C (32.7)	D (36.2)	D (37.1)	NBL	B (18.2)	C (22.4)	C (24.8)	NBR	B (14.1)	B (14.2)	B (14.3)
NBTR	D (37.0)	E (69.5)	E (74.1)	NBR	B (16.7)	C (22.0)	C (22.7)	NBT	C (23.8)	C (27.2)	C (28.2)	Overall	C (32.4)	D (49.4)	D (52.3)
SBL	C (27.9)	F (157.6)	F (157.6)	Overall	F (82.0)	F (122.2)	F (123.1)	NBR	C (23.9)	C (27.2)	C (28.3)				
SBTR	C (31.5)	E (60.3)	E (63.1)					SBL	B (16.4)	C (20.9)	C (22.0)				
Overall	D (39.1)	E (68.0)	E (70.4)					SBT	C (26.5)	C (34.4)	D (37.4)				
								SBR	B (17.7)	C (20.0)	C (21.2)				
								Overall	C (33.7)	D (47.7)	D (52.0)				

9-DAVIDSON-PIERCE				10-DAVIDSON-EASTON				11-Veronica-NJ 27				12-Veronica-Hamilton			
Saturday Peak Hour				Saturday Peak Hour				Saturday Peak Hour				Saturday Peak Hour			
SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2	SAT	Existing	FB1	FB2
EBL	D (49.1)	D (53.0)	D (53.0)	EBT	C (22.5)	C (25.6)	C (25.8)	EBL	C (29.0)	C (27.2)	C (27.1)	EBTR	C (23.1)	C (28.9)	C (29.1)
EBTR	C (29.8)	C (29.8)	C (29.8)	EBR	C (22.2)	C (24.6)	C (24.7)	EBTR	D (54.7)	E (59.5)	E (60.0)	WBL	B (10.6)	B (12.5)	B (12.6)
WBLT	D (42.2)	D (42.7)	D (42.7)	WBL	D (36.2)	D (40.5)	D (40.8)	WBL	C (31.6)	D (35.7)	D (35.8)	WBT	B (11.8)	B (13.4)	B (13.5)
WBR	D (38.0)	D (38.0)	D (38.0)	WBLT	D (38.4)	D (42.4)	D (42.5)	WBTR	D (37.0)	D (37.3)	D (37.2)	NBL	D (47.3)	D (47.2)	D (47.2)
NBL	A (08.1)	A (08.7)	A (08.7)	NBL	D (38.0)	D (38.8)	D (38.9)	NBL	B (16.6)	B (19.7)	B (19.9)	NBR	B (13.6)	B (13.1)	B (13.1)
NBTR	B (11.2)	B (12.8)	B (12.8)	NBR	B (13.4)	B (13.2)	B (13.3)	NBT	C (23.1)	C (27.7)	C (27.9)	Overall	C (24.1)	C (26.9)	C (27.0)
SBL	A (06.9)	A (07.7)	A (07.7)	Overall	C (27.2)	C (29.8)	C (29.8)	NBR	C (23.3)	C (27.8)	C (28.1)				
SBTR	A (08.8)	B (10.0)	B (10.0)					SBL	B (16.8)	C (29.3)	C (29.9)				
Overall	B (19.6)	C (20.7)	C (20.7)					SBT	C (22.0)	C (28.4)	C (28.9)				
								SBR	B (15.3)	B (17.7)	B (18.1)				
								Overall	C (29.0)	C (33.9)	C (34.2)				



**APPENDIX C**  
**SYNCHRO REPORTS**  
**EXISTING, FULL BUILD 1, FULL BUILD 2**

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

01-EXAM  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	119	20	728	233	18	215
Future Volume (vph)	119	20	728	233	18	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1568	1863	1583	1719	1810
Flt Permitted	0.950				0.188	
Satd. Flow (perm)	1752	1568	1863	1583	340	1810
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		23				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	2%	2%	5%	5%
Adj. Flow (vph)	137	23	837	268	21	247
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	23	837	268	21	247
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

01-EXAM  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	10.8	10.8	41.6	63.0	46.6	41.6
Actuated g/C Ratio	0.16	0.16	0.60	0.91	0.68	0.60
v/c Ratio	0.50	0.09	0.74	0.19	0.06	0.23
Control Delay (s/veh)	34.2	12.5	18.0	1.6	4.2	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.2	12.5	18.0	1.6	4.2	8.7
LOS	C	B	B	A	A	A
Approach Delay (s/veh)	31.1		14.0			8.4
Approach LOS	C		B			A

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 68.9  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay (s/veh): 14.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 55.3%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd

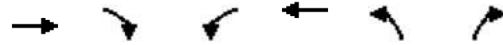


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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

01-EXAM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	302	35	154	128	25	169
Future Volume (vph)	302	35	154	128	25	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.883	
Flt Protected			0.950		0.994	
Satd. Flow (prot)	1837	0	1770	1863	1635	0
Flt Permitted			0.950		0.994	
Satd. Flow (perm)	1837	0	1770	1863	1635	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	347	40	177	147	29	194
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	0	177	147	223	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.4%
ICU Level of Service	A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	5.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	302	35	154	128	25	169
Future Vol, veh/h	302	35	154	128	25	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	347	40	177	147	29	194

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	387	0	868 367
Stage 1	-	-	-	-	367 -
Stage 2	-	-	-	-	501 -
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	-	-	1171	-	323 678
Stage 1	-	-	-	-	701 -
Stage 2	-	-	-	-	609 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1171	-	274 678
Mov Cap-2 Maneuver	-	-	-	-	274 -
Stage 1	-	-	-	-	701 -
Stage 2	-	-	-	-	517 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	4.71	15.32
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	570	-	-	1171	-
HCM Lane V/C Ratio	0.391	-	-	0.151	-
HCM Control Delay (s/veh)	15.3	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.5	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

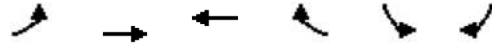
01-EXAM  
08/14/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	104	60	223	86	94	30
Future Volume (vph)	104	60	223	86	94	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.962			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1758	0	1626	1455
Flt Permitted	0.468				0.950	
Satd. Flow (perm)	872	1863	1758	0	1626	1455
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	4%	4%	11%	11%
Adj. Flow (vph)	122	71	262	101	111	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	71	363	0	111	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

01-EXAM  
08/14/2024

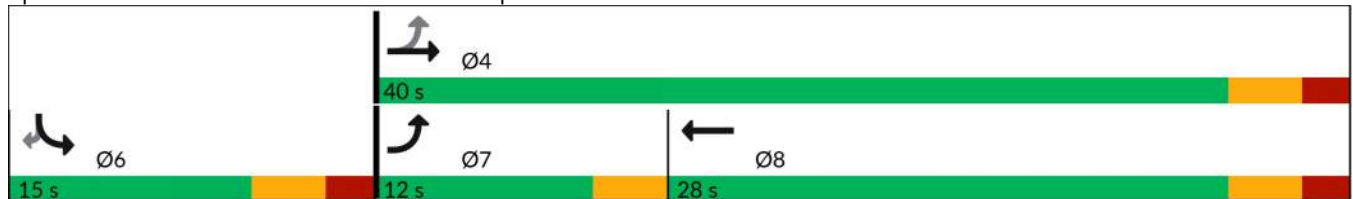


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.0	39.0	30.6		8.7	8.7
Actuated g/C Ratio	0.74	0.72	0.56		0.16	0.16
v/c Ratio	0.16	0.05	0.37		0.43	0.15
Control Delay (s/veh)	3.5	3.8	11.1		25.7	20.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	3.5	3.8	11.1		25.7	20.8
LOS	A	A	B		C	C
Approach Delay (s/veh)		3.6	11.1		24.6	
Approach LOS		A	B		C	

Intersection Summary

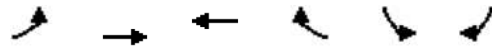
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.3  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.43  
 Intersection Signal Delay (s/veh): 11.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 40.3%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

01-EXAM  
 08/14/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑	↗		↙	↘	
Traffic Volume (veh/h)	104	60	223	86	94	30	
Future Volume (veh/h)	104	60	223	86	94	30	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1841	1841	1737	1737	
Adj Flow Rate, veh/h	122	71	262	101	111	35	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	
Percent Heavy Veh, %	2	2	4	4	11	11	
Cap, veh/h	735	1281	649	250	198	176	
Arrive On Green	0.11	0.68	0.51	0.51	0.12	0.12	
Sat Flow, veh/h	1781	1870	1265	488	1654	1472	
Grp Volume(v), veh/h	122	71	0	363	111	35	
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1753	1654	1472	
Q Serve(g_s), s	1.3	0.6	0.0	6.5	3.2	1.1	
Cycle Q Clear(g_c), s	1.3	0.6	0.0	6.5	3.2	1.1	
Prop In Lane	1.00			0.28	1.00	1.00	
Lane Grp Cap(c), veh/h	735	1281	0	900	198	176	
V/C Ratio(X)	0.17	0.06	0.00	0.40	0.56	0.20	
Avail Cap(c_a), veh/h	848	1281	0	900	324	288	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	3.9	2.6	0.0	7.6	21.2	20.3	
Incr Delay (d2), s/veh	0.1	0.1	0.0	1.3	2.5	0.5	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.0	1.9	1.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	4.0	2.7	0.0	9.0	23.7	20.8	
LnGrp LOS	A	A		A	C	C	
Approach Vol, veh/h		193	363		146		
Approach Delay, s/veh		3.5	9.0		23.0		
Approach LOS		A	A		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.1	8.8	31.2
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				2.6	5.2	3.3	8.5
Green Ext Time (p_c), s				0.3	0.1	0.1	1.7
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			10.4				
HCM 7th LOS			B				

Lanes, Volumes, Timings  
4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

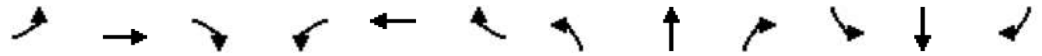
01-EXAM  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	305	70	121	275	34	238	367	264	20	145	81
Future Volume (vph)	100	305	70	121	275	34	238	367	264	20	145	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1762	0
Flt Permitted	0.350			0.271			0.481			0.950		
Satd. Flow (perm)	652	1863	1583	505	1863	1583	896	1863	1583	1770	1762	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Adj. Flow (vph)	110	335	77	133	302	37	262	403	290	22	159	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	335	77	133	302	37	262	403	290	22	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		
Permitted Phases	4		4	8		8	2		2		6	

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

01-EXAM  
 08/14/2024

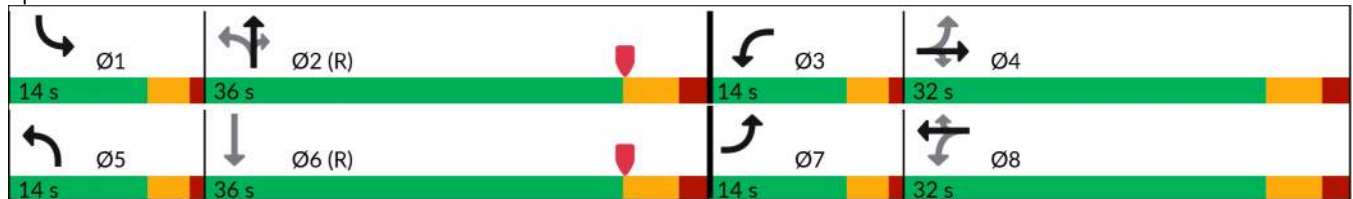


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	32.4	21.6	21.6	33.3	22.1	22.1	50.5	44.3	44.3	6.8	34.4	
Actuated g/C Ratio	0.34	0.23	0.23	0.35	0.23	0.23	0.53	0.46	0.46	0.07	0.36	
v/c Ratio	0.34	0.80	0.22	0.45	0.71	0.10	0.46	0.47	0.40	0.18	0.39	
Control Delay (s/veh)	21.1	49.4	30.3	23.5	43.0	28.1	16.8	23.1	22.3	44.7	27.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	21.1	49.4	30.3	23.5	43.0	28.1	16.8	23.1	22.3	44.7	27.1	
LOS	C	D	C	C	D	C	B	C	C	D	C	
Approach Delay (s/veh)		40.6			36.4			21.1			28.5	
Approach LOS		D			D			C			C	

Intersection Summary

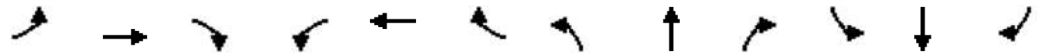
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay (s/veh): 29.9      Intersection LOS: C  
 Intersection Capacity Utilization 65.2%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

01-EXAM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	305	70	121	275	34	238	367	264	20	145	81
Future Volume (veh/h)	100	305	70	121	275	34	238	367	264	20	145	81
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	110	335	0	133	302	0	262	403	0	22	159	0
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	263	383		245	404		689	856		93	763	
Arrive On Green	0.07	0.20	0.00	0.08	0.22	0.00	0.10	0.46	0.00	0.05	0.41	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Grp Volume(v), veh/h	110	335	0	133	302	0	262	403	0	22	159	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	4.6	16.7	0.0	5.6	14.5	0.0	7.8	14.3	0.0	1.1	5.3	0.0
Cycle Q Clear(g_c), s	4.6	16.7	0.0	5.6	14.5	0.0	7.8	14.3	0.0	1.1	5.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	263	383		245	404		689	856		93	763	
V/C Ratio(X)	0.42	0.87		0.54	0.75		0.38	0.47		0.24	0.21	
Avail Cap(c_a), veh/h	331	507		293	507		694	856		186	763	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	37.0	0.0	28.4	35.2	0.0	12.8	18.0	0.0	43.7	18.4	0.0
Incr Delay (d2), s/veh	1.1	12.6	0.0	1.9	4.6	0.0	0.3	1.9	0.0	1.3	0.6	0.0
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	1.9	8.5	0.0	2.4	6.8	0.0	2.8	6.0	0.0	0.5	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.3	49.5	0.0	30.3	39.8	0.0	13.1	19.9	0.0	45.0	19.0	0.0
LnGrp LOS	C	D		C	D		B	B		D	B	
Approach Vol, veh/h		445			435			665			181	
Approach Delay, s/veh		44.5			36.9			17.2			22.2	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	49.9	11.4	25.7	13.8	45.1	10.3	26.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	3.1	16.3	7.6	18.7	9.8	7.3	6.6	16.5				
Green Ext Time (p_c), s	0.0	1.8	0.1	1.0	0.0	0.7	0.1	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											29.7	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

01-EXAM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	586	18	405	294	5	302
Future Volume (vph)	586	18	405	294	5	302
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1855	0	1703	1792	1671	1495
Flt Permitted			0.124		0.950	
Satd. Flow (perm)	1855	0	222	1792	1671	1495
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	6%	6%	8%	8%
Adj. Flow (vph)	651	20	450	327	6	336
Shared Lane Traffic (%)						
Lane Group Flow (vph)	671	0	450	327	6	336
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	



Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

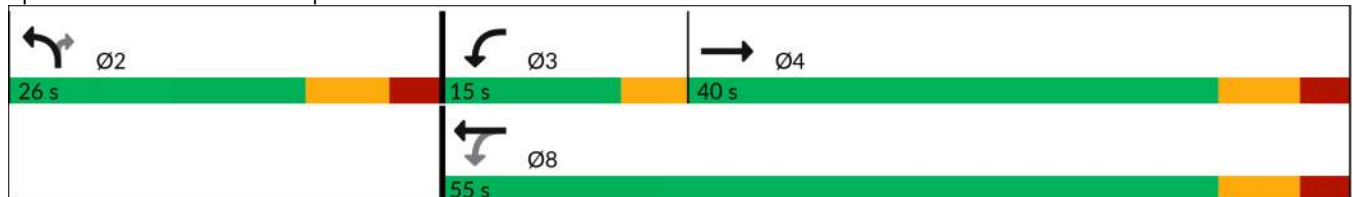


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	0.92		1.32	0.31	0.02	1.01
Control Delay (s/veh)	43.3		186.1	9.8	24.8	86.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.3		186.1	9.8	24.8	86.8
LOS	D		F	A	C	F
Approach Delay (s/veh)	43.3			111.9	85.8	
Approach LOS	D			F	F	

Intersection Summary

Area Type:	Other
Cycle Length:	81
Actuated Cycle Length:	81
Natural Cycle:	100
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.32
Intersection Signal Delay (s/veh):	81.2
Intersection LOS:	F
Intersection Capacity Utilization:	75.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

01-EXAM  
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	586	18	405	294	5	302
Future Volume (veh/h)	586	18	405	294	5	302
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1811	1781	1781
Adj Flow Rate, veh/h	651	20	450	327	6	336
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	6	6	8	8
Cap, veh/h	713	22	363	1051	377	335
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1805	55	1725	1811	1697	1510
Grp Volume(v), veh/h	0	671	450	327	6	336
Grp Sat Flow(s),veh/h/ln	0	1860	1725	1811	1697	1510
Q Serve(g_s), s	0.0	27.6	11.0	7.5	0.2	18.0
Cycle Q Clear(g_c), s	0.0	27.6	11.0	7.5	0.2	18.0
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	735	363	1051	377	335
V/C Ratio(X)	0.00	0.91	1.24	0.31	0.02	1.00
Avail Cap(c_a), veh/h	0	735	363	1051	377	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	23.2	20.0	8.7	24.6	31.5
Incr Delay (d2), s/veh	0.0	17.7	129.2	0.8	0.0	49.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.1	16.0	2.6	0.1	10.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	40.9	149.2	9.5	24.6	81.0
LnGrp LOS		D	F	A	C	F
Approach Vol, veh/h	671			777	342	
Approach Delay, s/veh	40.9			90.4	80.0	
Approach LOS	D			F	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	29.6		9.5
Green Ext Time (p_c), s		0.0	0.0	1.0		1.9
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			69.9			
HCM 7th LOS			E			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

01-EXAM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑	↘	↗
Traffic Volume (vph)	712	21	378	892	7	232
Future Volume (vph)	712	21	378	892	7	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.996					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3424	0	1703	1792	1656	1482
Flt Permitted			0.302		0.950	
Satd. Flow (perm)	3424	0	541	1792	1656	1482
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	9%	9%
Adj. Flow (vph)	791	23	420	991	8	258
Shared Lane Traffic (%)						
Lane Group Flow (vph)	814	0	420	991	8	258
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

01-EXAM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	31.8		50.6	31.8	7.2	17.8
Actuated g/C Ratio	0.52		0.83	0.52	0.12	0.29
v/c Ratio	0.46		0.56	1.06	0.04	0.59
Control Delay (s/veh)	12.3		6.1	66.6	29.7	23.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.3		6.1	66.6	29.7	23.3
LOS	B		A	E	C	C
Approach Delay (s/veh)	12.3			48.6	23.5	
Approach LOS	B			D	C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	60.9
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.06
Intersection Signal Delay (s/veh):	34.1
Intersection LOS:	C
Intersection Capacity Utilization:	64.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

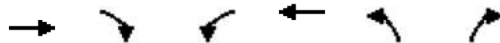
01-EXAM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	425	689	21	819	483	151
Future Volume (vph)	425	689	21	819	483	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.907			0.968		
Fl <sub>t</sub> Protected				0.999	0.963	
Satd. Flow (prot)	3089	0	0	3435	1687	0
Fl <sub>t</sub> Permitted				0.859	0.963	
Satd. Flow (perm)	3089	0	0	2953	1687	0
Right Turn on Red	No			No		
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	5%	5%	5%	5%
Adj. Flow (vph)	462	749	23	890	525	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1211	0	0	913	689	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4		8		2	
Permitted Phases	8					
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

01-EXAM  
08/14/2024

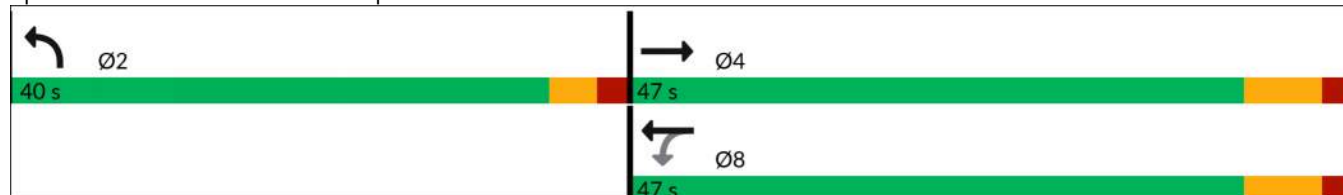


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.05dr			0.67	1.02	
Control Delay (s/veh)	28.3			21.5	66.6	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	28.3			21.5	66.6	
LOS	C			C	E	
Approach Delay (s/veh)	28.3			21.5	66.6	
Approach LOS	C			C	E	

Intersection Summary

Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 87  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.02  
 Intersection Signal Delay (s/veh): 35.5      Intersection LOS: D  
 Intersection Capacity Utilization 83.7%      ICU Level of Service E  
 Analysis Period (min) 15  
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
7: I287 SB Ramp & Weston Canal Rd

01-EXAM  
08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	425	689	21	819	483	151
Future Volume (veh/h)	425	689	21	819	483	151
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1826	1826	1826	1826
Adj Flow Rate, veh/h	462	0	23	890	525	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	5	5	5	5
Cap, veh/h	1768		68	1710	576	
Arrive On Green	0.51	0.00	0.51	0.51	0.33	0.00
Sat Flow, veh/h	3622	0	38	3410	1736	0
Grp Volume(v), veh/h	462	0	485	428	526	0
Grp Sat Flow(s),veh/h/ln	1721	0	1787	1578	1739	0
Q Serve(g_s), s	5.9	0.0	0.0	14.1	22.5	0.0
Cycle Q Clear(g_c), s	5.9	0.0	13.7	14.1	22.5	0.0
Prop In Lane		0.00	0.05		1.00	0.00
Lane Grp Cap(c), veh/h	1768		967	811	577	
V/C Ratio(X)	0.26		0.50	0.53	0.91	
Avail Cap(c_a), veh/h	1768		967	811	782	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.6	0.0	12.5	12.6	24.9	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.9	2.4	12.0	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	1.9	0.0	5.1	4.6	10.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.0	0.0	14.4	15.1	36.9	0.0
LnGrp LOS	B		B	B	D	
Approach Vol, veh/h	462			913	526	
Approach Delay, s/veh	11.0			14.7	36.9	
Approach LOS	B			B	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		30.8		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		24.5		7.9		16.1
Green Ext Time (p_c), s		1.3		3.0		5.6

Intersection Summary

HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

01-EXAM  
 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	312	345	247	260	323	19
Future Volume (vph)	312	345	247	260	323	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.921				0.993	
Fl <sub>t</sub> Protected				0.976	0.955	
Satd. Flow (prot)	3137	0	0	3454	1623	0
Fl <sub>t</sub> Permitted				0.563	0.955	
Satd. Flow (perm)	3137	0	0	1993	1623	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	6%	2%	2%	11%	11%
Adj. Flow (vph)	351	388	278	292	363	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	739	0	0	570	384	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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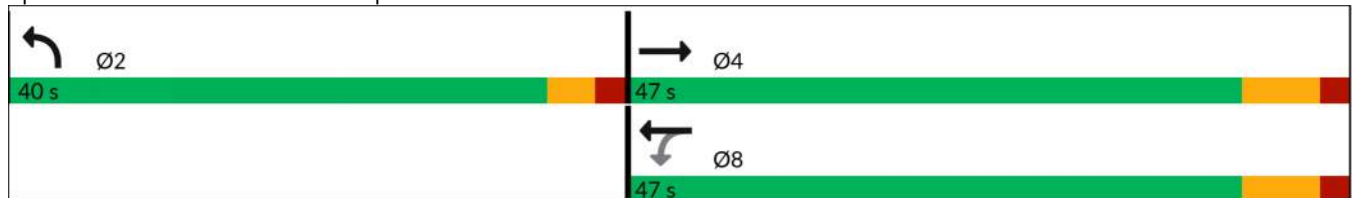


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.3			40.3	22.5	
Actuated g/C Ratio	0.54			0.54	0.30	
v/c Ratio	0.44			0.53	0.79	
Control Delay (s/veh)	12.7			14.9	35.9	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	12.7			14.9	35.9	
LOS	B			B	D	
Approach Delay (s/veh)	12.7			14.9	35.9	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	74.9
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.79
Intersection Signal Delay (s/veh):	18.7
Intersection LOS:	B
Intersection Capacity Utilization:	69.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

01-EXAM  
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	312	345	247	260	323	19
Future Volume (veh/h)	312	345	247	260	323	19
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1870	1870	1737	1737
Adj Flow Rate, veh/h	351	0	278	292	363	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	6	2	2	11	11
Cap, veh/h	1976		645	929	418	
Arrive On Green	0.57	0.00	0.57	0.57	0.25	0.00
Sat Flow, veh/h	3622	0	943	1702	1650	0
Grp Volume(v), veh/h	351	0	278	292	364	0
Grp Sat Flow(s),veh/h/ln	1721	0	943	1617	1654	0
Q Serve(g_s), s	3.4	0.0	12.2	6.5	14.7	0.0
Cycle Q Clear(g_c), s	3.4	0.0	15.6	6.5	14.7	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1976		645	929	419	
V/C Ratio(X)	0.18		0.43	0.31	0.87	
Avail Cap(c_a), veh/h	1976		645	929	831	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	10.7	7.7	24.9	0.0
Incr Delay (d2), s/veh	0.2	0.0	2.1	0.9	5.6	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	1.0	0.0	2.5	1.9	5.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.2	0.0	12.8	8.6	30.5	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	351			570	364	
Approach Delay, s/veh	7.2			10.7	30.5	
Approach LOS	A			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		22.7		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		16.7		5.4		17.6
Green Ext Time (p_c), s		1.0		2.2		3.7

Intersection Summary

HCM 7th Control Delay, s/veh			15.3			
HCM 7th LOS			B			

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

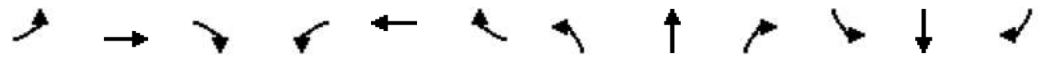
01-EXAM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	98	20	64	133	259	15	341	88	128	450	67
Future Volume (vph)	85	98	20	64	133	259	15	341	88	128	450	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850		0.969			0.980	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1770	1816	0	0	1833	1583	1770	1805	0	1770	1825	0
Flt Permitted	0.950				0.844		0.361			0.356		
Satd. Flow (perm)	1770	1816	0	0	1572	1583	672	1805	0	663	1825	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
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
Adj. Flow (vph)	89	103	21	67	140	273	16	359	93	135	474	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	124	0	0	207	273	16	452	0	135	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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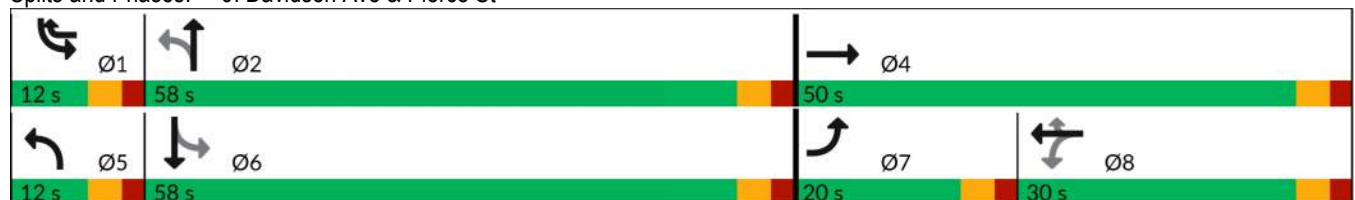


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effect Green (s)	10.8	31.5			18.6	30.8	60.9	53.8		64.1	61.5	
Actuated g/C Ratio	0.10	0.29			0.17	0.29	0.57	0.50		0.60	0.57	
v/c Ratio	0.50	0.23			0.76	0.60	0.04	0.50		0.29	0.52	
Control Delay (s/veh)	58.1	28.2			61.6	40.3	11.9	22.9		13.1	20.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	58.1	28.2			61.6	40.3	11.9	22.9		13.1	20.7	
LOS	E	C			E	D	B	C		B	C	
Approach Delay (s/veh)		40.7			49.5			22.5			19.2	
Approach LOS		D			D			C			B	

Intersection Summary

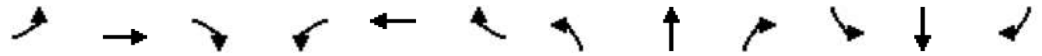
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	107.6
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.76
Intersection Signal Delay (s/veh):	30.4
Intersection LOS:	C
Intersection Capacity Utilization:	67.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St



HCM 7th Signalized Intersection Summary  
 9: Davidson Ave & Pierce St

01-EXAM  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷	↶	↷		↶	↷	
Traffic Volume (veh/h)	85	98	20	64	133	259	15	341	88	128	450	67
Future Volume (veh/h)	85	98	20	64	133	259	15	341	88	128	450	67
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	89	103	21	67	140	273	16	359	93	135	474	71
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	114	447	91	129	223	396	406	713	185	493	855	128
Arrive On Green	0.06	0.30	0.30	0.19	0.19	0.19	0.02	0.50	0.50	0.06	0.54	0.54
Sat Flow, veh/h	1781	1508	307	453	1201	1585	1781	1432	371	1781	1589	238
Grp Volume(v), veh/h	89	0	124	207	0	273	16	0	452	135	0	545
Grp Sat Flow(s),veh/h/ln	1781	0	1815	1654	0	1585	1781	0	1804	1781	0	1828
Q Serve(g_s), s	5.2	0.0	5.5	9.5	0.0	16.6	0.5	0.0	17.9	3.7	0.0	20.9
Cycle Q Clear(g_c), s	5.2	0.0	5.5	12.2	0.0	16.6	0.5	0.0	17.9	3.7	0.0	20.9
Prop In Lane	1.00		0.17	0.32		1.00	1.00		0.21	1.00		0.13
Lane Grp Cap(c), veh/h	114	0	538	352	0	396	406	0	898	493	0	983
V/C Ratio(X)	0.78	0.00	0.23	0.59	0.00	0.69	0.04	0.00	0.50	0.27	0.00	0.55
Avail Cap(c_a), veh/h	251	0	768	432	0	475	479	0	898	495	0	983
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.1	0.0	28.3	40.1	0.0	36.2	13.6	0.0	17.9	12.4	0.0	16.2
Incr Delay (d2), s/veh	11.0	0.0	0.2	1.6	0.0	3.3	0.0	0.0	2.0	0.3	0.0	2.3
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	2.6	0.0	2.3	5.0	0.0	6.5	0.2	0.0	7.3	1.4	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.0	0.0	28.5	41.7	0.0	39.4	13.6	0.0	19.9	12.7	0.0	18.4
LnGrp LOS	E		C	D		D	B		B	B		B
Approach Vol, veh/h		213			480			468			680	
Approach Delay, s/veh		41.7			40.4			19.7			17.3	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	58.0		36.5	7.6	62.2	11.8	24.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	5.7	19.9		7.5	2.5	22.9	7.2	18.6				
Green Ext Time (p_c), s	0.0	2.8		0.6	0.0	3.5	0.1	1.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			26.8									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓
Traffic Volume (vph)	402	339	816	418	86	682
Future Volume (vph)	402	339	816	418	86	682
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.983	0.950	
Satd. Flow (prot)	3471	1553	1681	1740	1770	2787
Flt Permitted			0.950	0.983	0.950	
Satd. Flow (perm)	3471	1553	1681	1740	1770	2787
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	432	365	877	449	92	733
Shared Lane Traffic (%)			26%			
Lane Group Flow (vph)	432	365	649	677	92	733
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	6	6	8	8	4	4 8

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

01-EXAM  
08/14/2024

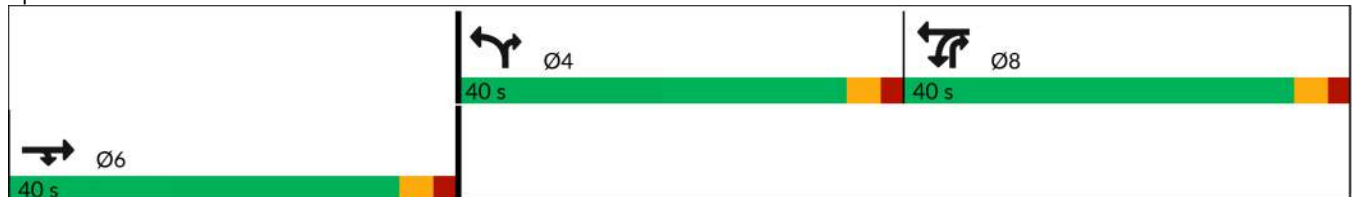


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
<b>Permitted Phases</b>						
Detector Phase	6	6	8	8	4	4 8
<b>Switch Phase</b>						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
<b>Lead/Lag</b>						
<b>Lead-Lag Optimize?</b>						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.1	35.1	35.1	35.1	22.4	62.4
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.21	0.58
v/c Ratio	0.38	0.72	1.18	1.19	0.25	0.45
Control Delay (s/veh)	29.8	42.4	134.8	137.8	36.8	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.8	42.4	134.8	137.8	36.8	13.8
LOS	C	D	F	F	D	B
Approach Delay (s/veh)	35.6			136.3	16.3	
Approach LOS	D			F	B	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 107.5  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.19  
 Intersection Signal Delay (s/veh): 75.5  
 Intersection LOS: E  
 Intersection Capacity Utilization 62.9%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Davidson Ave & Easton Ave





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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

01-EXAM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	314	31	99	351	70	216	598	164	194	369	78
Future Volume (vph)	60	314	31	99	351	70	216	598	164	194	369	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.986			0.975			0.968				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1751	0	1671	1715	0	1770	3426	0	1770	1863	1583
Flt Permitted	0.176			0.252			0.363			0.219		
Satd. Flow (perm)	313	1751	0	443	1715	0	676	3426	0	408	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	65	341	34	108	382	76	235	650	178	211	401	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	375	0	108	458	0	235	828	0	211	401	85
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

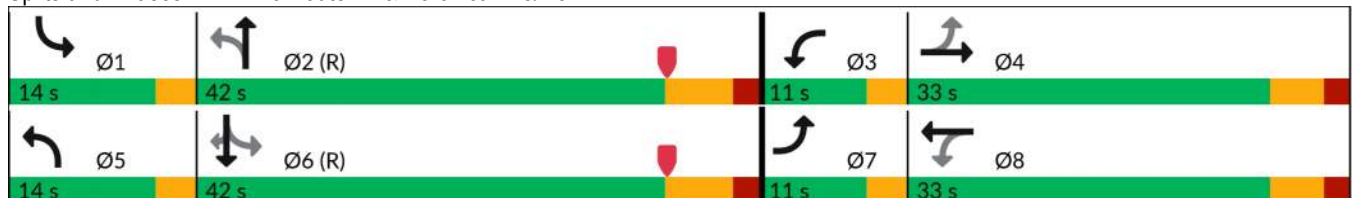
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		14.0	42.0		14.0	42.0	42.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		14.0%	42.0%		14.0%	42.0%	42.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		11.0	35.0		11.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	36.0	25.7		37.3	27.9		51.8	37.3		51.3	37.1	37.1
Actuated g/C Ratio	0.36	0.26		0.37	0.28		0.52	0.37		0.51	0.37	0.37
v/c Ratio	0.31	0.83		0.42	0.96		0.51	0.65		0.61	0.58	0.14
Control Delay (s/veh)	22.3	52.1		24.1	69.1		16.7	29.5		20.2	30.2	23.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	22.3	52.1		24.1	69.1		16.7	29.5		20.2	30.2	23.1
LOS	C	D		C	E		B	C		C	C	C
Approach Delay (s/veh)		47.7			60.5			26.7			26.3	
Approach LOS		D			E			C			C	

Intersection Summary

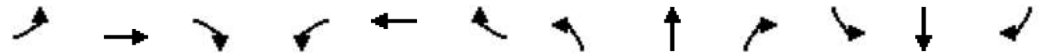
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay (s/veh): 36.9      Intersection LOS: D  
 Intersection Capacity Utilization 76.9%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

01-EXAM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	↖
Traffic Volume (veh/h)	60	314	31	99	351	70	216	598	164	194	369	78
Future Volume (veh/h)	60	314	31	99	351	70	216	598	164	194	369	78
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	1796	1796	1796	1781	1781	1781	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	341	34	108	382	76	235	650	178	211	401	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	8	8	8	2	2	2	2	2	2
Cap, veh/h	150	400	40	223	390	77	461	1127	308	381	750	636
Arrive On Green	0.04	0.25	0.25	0.06	0.27	0.27	0.10	0.41	0.41	0.09	0.40	0.40
Sat Flow, veh/h	1711	1607	160	1697	1443	287	1781	2757	754	1781	1870	1585
Grp Volume(v), veh/h	65	0	375	108	0	458	235	419	409	211	401	85
Grp Sat Flow(s),veh/h/ln	1711	0	1767	1697	0	1730	1781	1777	1735	1781	1870	1585
Q Serve(g_s), s	2.8	0.0	20.2	4.6	0.0	26.3	7.6	18.2	18.3	6.8	16.3	3.4
Cycle Q Clear(g_c), s	2.8	0.0	20.2	4.6	0.0	26.3	7.6	18.2	18.3	6.8	16.3	3.4
Prop In Lane	1.00		0.09	1.00		0.17	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	150	0	440	223	0	467	461	726	709	381	750	636
V/C Ratio(X)	0.43	0.00	0.85	0.48	0.00	0.98	0.51	0.58	0.58	0.55	0.53	0.13
Avail Cap(c_a), veh/h	215	0	477	252	0	467	484	726	709	418	750	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	29.2	0.0	35.8	27.0	0.0	36.2	16.3	22.9	22.9	17.0	22.8	18.9
Incr Delay (d2), s/veh	2.0	0.0	13.2	1.6	0.0	36.5	0.9	3.3	3.4	1.3	2.7	0.4
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	1.2	0.0	9.9	1.9	0.0	15.1	2.9	7.7	7.6	2.7	7.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.2	0.0	49.0	28.7	0.0	72.7	17.2	26.2	26.3	18.3	25.5	19.4
LnGrp LOS	C		D	C		E	B	C	C	B	C	B
Approach Vol, veh/h		440			566			1063			697	
Approach Delay, s/veh		46.3			64.3			24.2			22.6	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	47.9	9.3	30.9	12.7	47.1	7.2	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	27.0	11.0	35.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	8.8	20.3	6.6	22.2	9.6	18.3	4.8	28.3				
Green Ext Time (p_c), s	0.1	4.2	0.0	0.9	0.1	2.2	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			35.5									
HCM 7th LOS			D									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

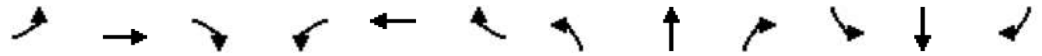
01-EXAM  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↙	↕↕		↙		↗		↕↕	
Traffic Volume (vph)	0	67	346	107	435	0	305	0	54	0	0	0
Future Volume (vph)	0	67	346	107	435	0	305	0	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3063	0	1736	3471	0	1626	0	1455	0	1863	0
Flt Permitted				0.406			0.950					
Satd. Flow (perm)	0	3063	0	742	3471	0	1626	0	1455	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			230	
Travel Time (s)		10.4			6.0			6.2			3.5	
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	3%	4%	4%	2%	11%	2%	11%	2%	2%	2%
Adj. Flow (vph)	0	72	372	115	468	0	328	0	58	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	444	0	115	468	0	328	0	58	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

01-EXAM  
08/14/2024

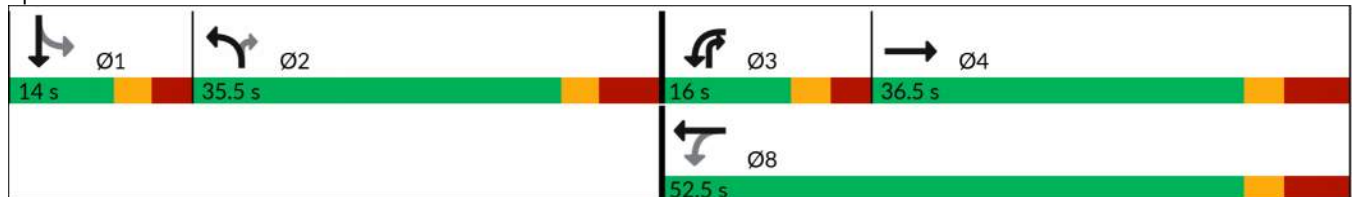


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		30.7		45.6	42.1		19.7		36.3			
Actuated g/C Ratio		0.37		0.56	0.51		0.24		0.44			
v/c Ratio		0.39		0.23	0.26		0.84		0.09			
Control Delay (s/veh)		22.5		11.0	12.4		48.7		12.6			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		22.5		11.0	12.4		48.7		12.6			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		22.5			12.1			43.3				
Approach LOS		C			B			D				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 81.9  
 Natural Cycle: 105  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay (s/veh): 23.9      Intersection LOS: C  
 Intersection Capacity Utilization 53.8%      ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 12: Veronica Ave & Hamilton St



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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

01-EXAM  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	914	2	0	1164	0	675	0	193	44	130	0
Future Volume (vph)	0	914	2	0	1164	0	675	0	193	44	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850			
Flt Protected							0.950				0.987	
Satd. Flow (prot)	0	3471	0	0	3406	0	3400	0	1568	0	3493	0
Flt Permitted							0.950				0.987	
Satd. Flow (perm)	0	3471	0	0	3406	0	3400	0	1568	0	3493	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	993	2	0	1265	0	734	0	210	48	141	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	995	0	0	1265	0	734	0	210	0	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												



Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

01-EXAM  
 08/14/2024

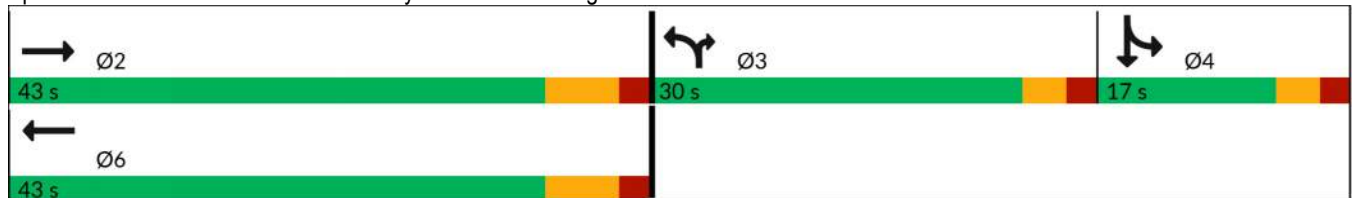


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.1			36.1		22.5		22.5			9.8
Actuated g/C Ratio		0.42			0.42		0.26		0.26			0.11
v/c Ratio		0.68			0.88		0.82		0.51			0.47
Control Delay (s/veh)		23.6			32.3		38.4		31.9			40.0
Queue Delay		0.0			0.0		0.0		0.0			0.0
Total Delay (s/veh)		23.6			32.3		38.4		31.9			40.0
LOS		C			C		D		C			D
Approach Delay (s/veh)		23.6			32.3			36.9				40.0
Approach LOS		C			C			D				D

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	85.4
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.88
Intersection Signal Delay (s/veh):	31.5
Intersection LOS:	C
Intersection Capacity Utilization:	70.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

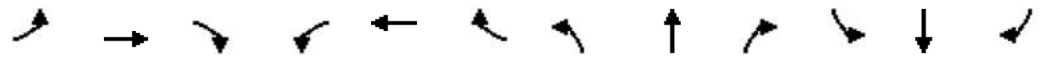
01-EXAM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	914	2	0	1164	0	675	0	193	44	130	0
Future Volume (veh/h)	0	914	2	0	1164	0	675	0	193	44	130	0
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	0	1841	1841	0	1811	0	1856	0	1856	1870	1870	1870
Adj Flow Rate, veh/h	0	993	2	0	1265	0	734	0	210	48	141	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	4	4	0	6	0	3	0	3	2	2	2
Cap, veh/h	0	2361	5	0	2269	0	0	0	0	110	326	0
Arrive On Green	0.00	0.66	0.66	0.00	0.66	0.00	0.00	0.00	0.00	0.12	0.12	0.00
Sat Flow, veh/h	0	3673	7	0	3622	0		0		908	2788	0
Grp Volume(v), veh/h	0	485	510	0	1265	0		0.0		97	92	0
Grp Sat Flow(s),veh/h/ln	0	1749	1839	0	1721	0				1825	1777	0
Q Serve(g_s), s	0.0	7.1	7.1	0.0	10.8	0.0				2.7	2.6	0.0
Cycle Q Clear(g_c), s	0.0	7.1	7.1	0.0	10.8	0.0				2.7	2.6	0.0
Prop In Lane	0.00		0.00	0.00		0.00				0.50		0.00
Lane Grp Cap(c), veh/h	0	1153	1213	0	2269	0				221	215	0
V/C Ratio(X)	0.00	0.42	0.42	0.00	0.56	0.00				0.44	0.43	0.00
Avail Cap(c_a), veh/h	0	1153	1213	0	2269	0				401	391	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.4	4.4	0.0	5.0	0.0				22.3	22.3	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.1	0.0	1.0	0.0				1.4	1.4	0.0
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	0.0	1.4	1.5	0.0	1.9	0.0				1.1	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	5.5	5.5	0.0	6.0	0.0				23.6	23.6	0.0
LnGrp LOS		A	A		A					C	C	
Approach Vol, veh/h		995			1265							189
Approach Delay, s/veh		5.5			6.0							23.6
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		11.6		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		9.1		4.7		12.8						
Green Ext Time (p_c), s		6.4		0.5		9.3						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				7.2								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

01-EXAM  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	734	106	57	489	202	122	314	40	215	240	97
Future Volume (vph)	94	734	106	57	489	202	122	314	40	215	240	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1703	3406	1524	1752	1845	1568	1752	1845	1568
Flt Permitted	0.411			0.194			0.437			0.284		
Satd. Flow (perm)	766	3472	0	348	3406	1524	806	1845	1568	524	1845	1568
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45		45			45			45		45
Link Distance (ft)		572		356			562			410		
Travel Time (s)		8.7		5.4			8.5			6.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	102	798	115	62	532	220	133	341	43	234	261	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	913	0	62	532	220	133	341	43	234	261	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		12
Link Offset(ft)		0		0			0			0		0
Crosswalk Width(ft)		16		16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94		94			94			94		94
Detector 2 Size(ft)		6		6			6			6		6
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0			0.0		0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

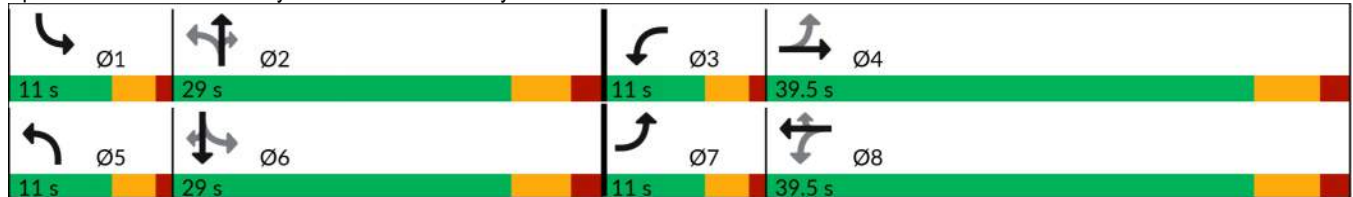
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	41.2	33.3		41.2	33.3	33.3	28.6	19.5	19.5	28.6	19.5	19.5
Actuated g/C Ratio	0.48	0.39		0.48	0.39	0.39	0.34	0.23	0.23	0.34	0.23	0.23
v/c Ratio	0.22	0.67		0.22	0.40	0.37	0.38	0.81	0.12	0.84	0.62	0.29
Control Delay (s/veh)	12.4	25.7		12.9	21.1	22.5	21.6	47.1	27.2	49.3	36.8	29.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.4	25.7		12.9	21.1	22.5	21.6	47.1	27.2	49.3	36.8	29.9
LOS	B	C		B	C	C	C	D	C	D	D	C
Approach Delay (s/veh)		24.3			20.8			38.9			40.5	
Approach LOS		C			C			D			D	

Intersection Summary

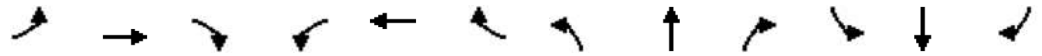
Area Type: Other  
 Cycle Length: 90.5  
 Actuated Cycle Length: 85  
 Natural Cycle: 95  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay (s/veh): 29.2      Intersection LOS: C  
 Intersection Capacity Utilization 75.0%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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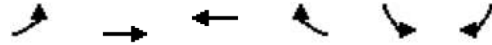
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	94	734	106	57	489	202	122	314	40	215	240	97
Future Volume (veh/h)	94	734	106	57	489	202	122	314	40	215	240	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	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	1811	1811	1811	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	102	798	115	62	532	0	133	341	43	234	261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	6	6	6	3	3	3	3	3	3
Cap, veh/h	460	1248	180	309	1337		321	394	334	265	401	
Arrive On Green	0.08	0.40	0.40	0.06	0.39	0.00	0.08	0.21	0.21	0.08	0.22	0.00
Sat Flow, veh/h	1781	3117	449	1725	3441	1535	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	102	455	458	62	532	0	133	341	43	234	261	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1725	1721	1535	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	2.8	17.5	17.5	1.7	9.5	0.0	4.9	15.1	1.9	7.0	10.9	0.0
Cycle Q Clear(g_c), s	2.8	17.5	17.5	1.7	9.5	0.0	4.9	15.1	1.9	7.0	10.9	0.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	711	716	309	1337		321	394	334	265	401	
V/C Ratio(X)	0.22	0.64	0.64	0.20	0.40		0.41	0.87	0.13	0.88	0.65	
Avail Cap(c_a), veh/h	473	711	716	342	1337		328	503	426	265	503	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.6	20.5	20.5	15.0	18.8	0.0	23.8	32.3	27.1	28.8	30.4	0.0
Incr Delay (d2), s/veh	0.2	4.4	4.3	0.3	0.9	0.0	0.9	12.1	0.2	27.3	2.0	0.0
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	1.0	7.3	7.4	0.6	3.6	0.0	2.0	7.6	0.7	3.3	4.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.8	24.9	24.9	15.3	19.7	0.0	24.7	44.4	27.2	56.1	32.4	0.0
LnGrp LOS	B	C	C	B	B		C	D	C	E	C	
Approach Vol, veh/h		1015			594			517			495	
Approach Delay, s/veh		23.8			19.2			37.9			43.6	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	24.0	9.4	40.5	10.7	24.3	10.4	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	17.1	3.7	19.5	6.9	12.9	4.8	11.5				
Green Ext Time (p_c), s	0.0	1.0	0.0	4.5	0.0	0.9	0.0	3.2				

Intersection Summary												
HCM 7th Control Delay, s/veh											29.3	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

01-EXAM  
 08/14/2024

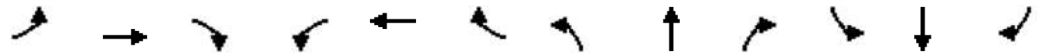


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	1164	174	0	0	0
Future Volume (vph)	0	1164	174	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	5085	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1265	189	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1265	189	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

01-EXAM  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	160	12	22	230	142	10	36	17	20	12	276
Future Volume (vph)	343	160	12	22	230	142	10	36	17	20	12	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.989				0.850			0.850		0.856	
Fl <sub>t</sub> Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1770	1842	0	1770	1863	1583	0	1844	1583	1736	1564	0
Fl <sub>t</sub> Permitted	0.543			0.644				0.888		0.595		
Satd. Flow (perm)	1011	1842	0	1200	1863	1583	0	1654	1583	1087	1564	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	357	167	13	23	240	148	10	38	18	21	13	288
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	180	0	23	240	148	0	48	18	21	301	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

01-EXAM  
08/14/2024

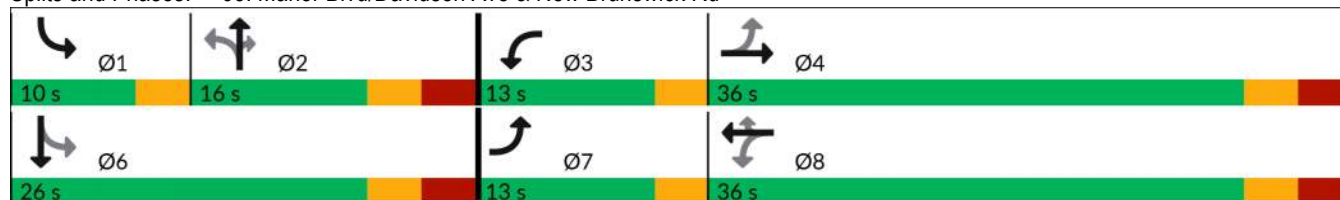


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0					7.0	
Flash Don't Walk (s)		11.0			11.0	11.0					11.0	
Pedestrian Calls (#/hr)		0			0	0					0	
Act Effect Green (s)	46.0	39.1		40.1	30.1	30.1		13.6	13.6	20.4	17.4	
Actuated g/C Ratio	0.64	0.54		0.55	0.42	0.42		0.19	0.19	0.28	0.24	
v/c Ratio	0.48	0.18		0.03	0.31	0.23		0.16	0.06	0.06	0.80	
Control Delay (s/veh)	9.0	11.2		6.0	16.3	15.7		28.5	27.8	18.9	43.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	9.0	11.2		6.0	16.3	15.7		28.5	27.8	18.9	43.1	
LOS	A	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		9.7			15.5			28.3			41.5	
Approach LOS		A			B			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	72.4
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay (s/veh):	20.1
Intersection LOS:	C
Intersection Capacity Utilization:	62.1%
ICU Level of Service:	B
Analysis Period (min):	15

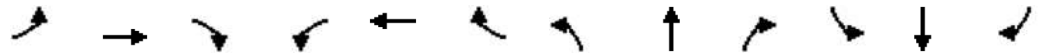
Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd





HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

01-EXAM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	343	160	12	22	230	142	10	36	17	20	12	276
Future Volume (veh/h)	343	160	12	22	230	142	10	36	17	20	12	276
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	1841	1841	1841
Adj Flow Rate, veh/h	357	167	12	23	240	148	10	38	18	21	12	288
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	4	4
Cap, veh/h	684	907	65	685	804	681	76	192	232	213	14	336
Arrive On Green	0.13	0.53	0.53	0.04	0.43	0.43	0.15	0.15	0.15	0.03	0.22	0.22
Sat Flow, veh/h	1781	1724	124	1781	1870	1585	91	1314	1585	1753	63	1507
Grp Volume(v), veh/h	357	0	179	23	240	148	48	0	18	21	0	300
Grp Sat Flow(s),veh/h/ln	1781	0	1848	1781	1870	1585	1405	0	1585	1753	0	1570
Q Serve(g_s), s	7.2	0.0	3.5	0.5	5.9	4.1	0.1	0.0	0.7	0.7	0.0	12.8
Cycle Q Clear(g_c), s	7.2	0.0	3.5	0.5	5.9	4.1	7.5	0.0	0.7	0.7	0.0	12.8
Prop In Lane	1.00		0.07	1.00		1.00	0.21		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	684	0	972	685	804	681	268	0	232	213	0	350
V/C Ratio(X)	0.52	0.00	0.18	0.03	0.30	0.22	0.18	0.00	0.08	0.10	0.00	0.86
Avail Cap(c_a), veh/h	702	0	972	876	804	681	268	0	232	330	0	450
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	0.0	8.7	10.1	13.0	12.5	26.1	0.0	25.7	22.8	0.0	26.1
Incr Delay (d2), s/veh	0.7	0.0	0.4	0.0	1.0	0.7	0.3	0.0	0.1	0.2	0.0	12.4
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	2.3	0.0	1.3	0.2	2.4	1.4	0.7	0.0	0.3	0.3	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.7	0.0	9.1	10.1	14.0	13.3	26.5	0.0	25.9	23.0	0.0	38.5
LnGrp LOS	A		A	B	B	B	C		C	C		D
Approach Vol, veh/h		536			411			66				321
Approach Delay, s/veh		8.8			13.5			26.3				37.5
Approach LOS		A			B			C				D
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	5.3	16.2	5.5	42.7		21.6	12.3	36.0				
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0		6.0	3.0	6.0				
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0		20.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	2.7	9.5	2.5	5.5		14.8	9.2	7.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9		0.8	0.1	1.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			18.0									
HCM 7th LOS			B									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

01-EXAM  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	768	33	27	5	8	326
Future Volume (vph)	768	33	27	5	8	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.995				0.868	
Fl <sub>t</sub> Protected	0.954			0.959		
Satd. Flow (prot)	1768	0	0	1769	1571	0
Fl <sub>t</sub> Permitted	0.954			0.959		
Satd. Flow (perm)	1768	0	0	1769	1571	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Adj. Flow (vph)	826	35	29	5	9	351
Shared Lane Traffic (%)						
Lane Group Flow (vph)	861	0	0	34	360	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	74.7%
ICU Level of Service	D
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	768	33	27	5	8	326
Future Vol, veh/h	768	33	27	5	8	326
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	3	3	5	5
Mvmt Flow	826	35	29	5	9	351













Major/Minor	Minor2	Major2		
Conflicting Flow All	184	184	-	0
Stage 1	184	184	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.43	6.53	-	-
Critical Hdwy Stg 1	5.43	5.53	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.527	4.027	-	-
Pot Cap-1 Maneuver	803	709	-	-
Stage 1	845	746	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	803	0	-	-
Mov Cap-2 Maneuver	803	0	-	-
Stage 1	845	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	9.68	0
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	803	-	-
HCM Lane V/C Ratio	0.043	-	-
HCM Control Delay (s/veh)	9.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

02-EXPM  
08/14/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	234	29	567	132	42	643
Future Volume (vph)	234	29	567	132	42	643
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1752	1845
Flt Permitted	0.950				0.325	
Satd. Flow (perm)	1770	1583	1863	1583	600	1845
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		31				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Adj. Flow (vph)	246	31	597	139	44	677
Shared Lane Traffic (%)						
Lane Group Flow (vph)	246	31	597	139	44	677
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
 1: Weston Canal Rd & Schoolhouse Rd

02-EXPM  
 08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	14.6	14.6	41.6	65.6	48.0	41.6
Actuated g/C Ratio	0.19	0.19	0.56	0.88	0.64	0.56
v/c Ratio	0.72	0.09	0.58	0.10	0.09	0.66
Control Delay (s/veh)	41.3	10.7	15.8	1.8	5.2	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.3	10.7	15.8	1.8	5.2	17.8
LOS	D	B	B	A	A	B
Approach Delay (s/veh)	37.9		13.1			17.1
Approach LOS	D		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 74.9  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay (s/veh): 18.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 58.3%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd

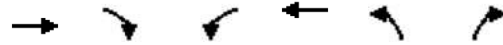


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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	192	25	135	369	36	97
Future Volume (vph)	192	25	135	369	36	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.901	
Flt Protected			0.950		0.987	
Satd. Flow (prot)	1833	0	1770	1863	1657	0
Flt Permitted			0.950		0.987	
Satd. Flow (perm)	1833	0	1770	1863	1657	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	213	28	150	410	40	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	0	150	410	148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.1%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	192	25	135	369	36	97
Future Vol, veh/h	192	25	135	369	36	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	28	150	410	40	108

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	241	0	937 227
Stage 1	-	-	-	-	227 -
Stage 2	-	-	-	-	710 -
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	-	-	1325	-	294 812
Stage 1	-	-	-	-	811 -
Stage 2	-	-	-	-	487 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1325	-	260 812
Mov Cap-2 Maneuver	-	-	-	-	260 -
Stage 1	-	-	-	-	811 -
Stage 2	-	-	-	-	432 -

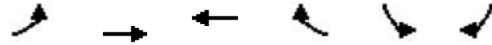
Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.16	14.75
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	516	-	-	1325	-
HCM Lane V/C Ratio	0.286	-	-	0.113	-
HCM Control Delay (s/veh)	14.7	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0.4	-



Lanes, Volumes, Timings  
 3: Schoolhouse Rd & Randolph Rd

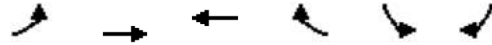
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↶	↶		↶	↶
Traffic Volume (vph)	406	227	432	93	88	78
Future Volume (vph)	406	227	432	93	88	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.976			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1818	0	1770	1583
Flt Permitted	0.230				0.950	
Satd. Flow (perm)	428	1863	1818	0	1770	1583
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	467	261	497	107	101	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	467	261	604	0	101	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6

Lanes, Volumes, Timings  
 3: Schoolhouse Rd & Randolph Rd

02-EXPM  
 08/14/2024

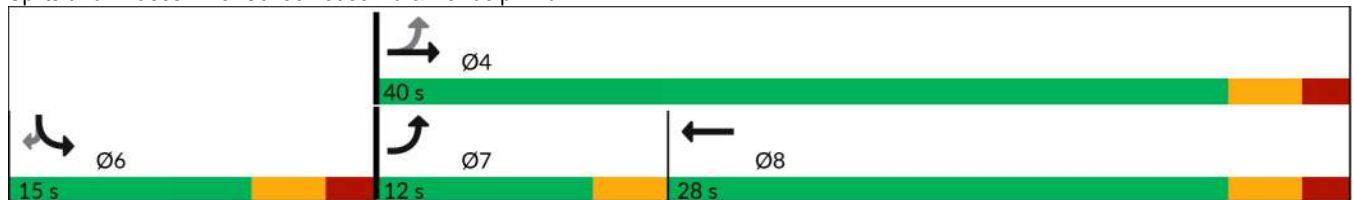


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	37.5	36.8	23.3		8.4	8.4
Actuated g/C Ratio	0.74	0.72	0.46		0.16	0.16
v/c Ratio	0.84	0.19	0.73		0.35	0.34
Control Delay (s/veh)	25.2	4.2	20.1		23.6	24.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	25.2	4.2	20.1		23.6	24.0
LOS	C	A	C		C	C
Approach Delay (s/veh)		17.7	20.1		23.8	
Approach LOS		B	C		C	

Intersection Summary

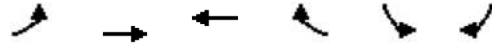
Area Type:	Other
Cycle Length:	55
Actuated Cycle Length:	51
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.84
Intersection Signal Delay (s/veh):	19.4
Intersection LOS:	B
Intersection Capacity Utilization:	68.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

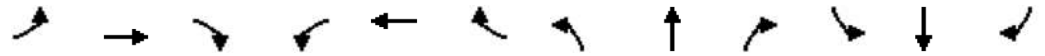
02-EXPM  
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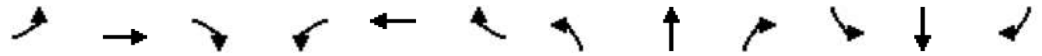
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	406	227	432	93	88	78	
Future Volume (veh/h)	406	227	432	93	88	78	
Initial Q (Qb), veh	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	467	261	497	107	101	90	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	582	1270	684	147	226	201	
Arrive On Green	0.16	0.68	0.46	0.46	0.13	0.13	
Sat Flow, veh/h	1781	1870	1491	321	1781	1585	
Grp Volume(v), veh/h	467	261	0	604	101	90	
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1813	1781	1585	
Q Serve(g_s), s	6.2	2.7	0.0	14.0	2.7	2.7	
Cycle Q Clear(g_c), s	6.2	2.7	0.0	14.0	2.7	2.7	
Prop In Lane	1.00			0.18	1.00	1.00	
Lane Grp Cap(c), veh/h	582	1270	0	831	226	201	
V/C Ratio(X)	0.80	0.21	0.00	0.73	0.45	0.45	
Avail Cap(c_a), veh/h	604	1270	0	831	346	308	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	8.8	3.1	0.0	11.3	20.8	20.8	
Incr Delay (d2), s/veh	7.5	0.4	0.0	5.5	1.4	1.6	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.2	0.4	0.0	5.1	1.0	0.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	16.3	3.5	0.0	16.9	22.2	22.4	
LnGrp LOS	B	A		B	C	C	
Approach Vol, veh/h		728	604		191		
Approach Delay, s/veh		11.7	16.9		22.3		
Approach LOS		B	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.5	11.4	28.6
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				4.7	4.7	8.2	16.0
Green Ext Time (p_c), s				1.4	0.2	0.1	2.1
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			15.1				
HCM 7th LOS			B				

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

02-EXPM  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	272	244	216	280	21	97	219	99	115	327	52
Future Volume (vph)	115	272	244	216	280	21	97	219	99	115	327	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1824	0
Flt Permitted	0.365			0.333			0.421			0.950		
Satd. Flow (perm)	680	1863	1583	620	1863	1583	784	1863	1583	1770	1824	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Adj. Flow (vph)	121	286	257	227	295	22	102	231	104	121	344	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	286	257	227	295	22	102	231	104	121	399	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		
Permitted Phases	4		4	8		8	2		2		6	

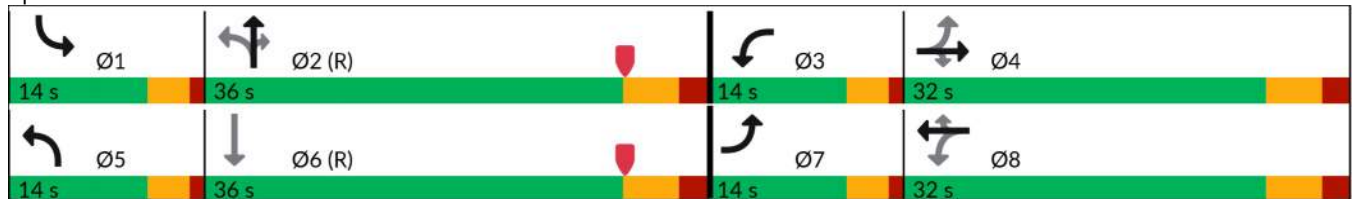


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	31.5	20.5	20.5	33.4	21.4	21.4	45.4	35.2	35.2	10.3	39.4	
Actuated g/C Ratio	0.33	0.21	0.21	0.35	0.22	0.22	0.47	0.37	0.37	0.11	0.41	
v/c Ratio	0.37	0.72	0.76	0.68	0.71	0.06	0.22	0.34	0.18	0.64	0.53	
Control Delay (s/veh)	22.1	45.2	49.9	31.7	44.0	27.9	13.8	25.4	23.8	57.1	27.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	22.1	45.2	49.9	31.7	44.0	27.9	13.8	25.4	23.8	57.1	27.4	
LOS	C	D	D	C	D	C	B	C	C	E	C	
Approach Delay (s/veh)		42.8			38.2			22.3			34.3	
Approach LOS		D			D			C			C	

Intersection Summary

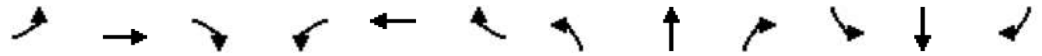
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay (s/veh): 35.5      Intersection LOS: D  
 Intersection Capacity Utilization 68.7%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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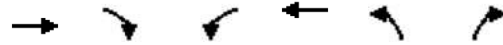
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	115	272	244	216	280	21	97	219	99	115	327	52
Future Volume (veh/h)	115	272	244	216	280	21	97	219	99	115	327	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	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	121	286	0	227	295	0	102	231	0	121	344	0
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	273	335		295	394		513	787		156	857	
Arrive On Green	0.07	0.18	0.00	0.10	0.21	0.00	0.05	0.42	0.00	0.09	0.46	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Grp Volume(v), veh/h	121	286	0	227	295	0	102	231	0	121	344	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	5.2	14.2	0.0	9.9	14.2	0.0	3.1	7.8	0.0	6.4	11.7	0.0
Cycle Q Clear(g_c), s	5.2	14.2	0.0	9.9	14.2	0.0	3.1	7.8	0.0	6.4	11.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	273	335		295	394		513	787		156	857	
V/C Ratio(X)	0.44	0.85		0.77	0.75		0.20	0.29		0.77	0.40	
Avail Cap(c_a), veh/h	328	507		295	507		609	787		186	857	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.5	38.2	0.0	28.9	35.5	0.0	14.6	18.4	0.0	42.9	17.3	0.0
Incr Delay (d2), s/veh	1.1	8.7	0.0	11.8	4.5	0.0	0.2	0.9	0.0	15.6	1.4	0.0
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	2.2	7.0	0.0	4.9	6.6	0.0	1.2	3.3	0.0	3.4	4.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.7	46.9	0.0	40.7	40.1	0.0	14.8	19.3	0.0	58.4	18.7	0.0
LnGrp LOS	C	D		D	D		B	B		E	B	
Approach Vol, veh/h		407			522			333			465	
Approach Delay, s/veh		42.1			40.4			18.0			29.0	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.4	46.4	14.0	23.2	8.8	50.0	11.0	26.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	8.4	9.8	11.9	16.2	5.1	13.7	7.2	16.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	1.0	0.1	1.6	0.1	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											33.4	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	424	5	401	670	9	348
Future Volume (vph)	424	5	401	670	9	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1859	0	1752	1845	1719	1538
Flt Permitted			0.277		0.950	
Satd. Flow (perm)	1859	0	511	1845	1719	1538
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Adj. Flow (vph)	499	6	472	788	11	409
Shared Lane Traffic (%)						
Lane Group Flow (vph)	505	0	472	788	11	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

02-EXPM  
08/14/2024

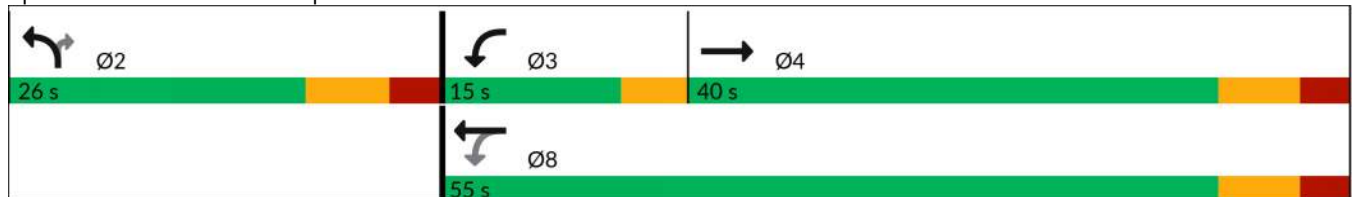


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	0.69		0.96	0.74	0.03	1.20
Control Delay (s/veh)	26.3		45.1	17.7	25.1	145.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.3		45.1	17.7	25.1	145.8
LOS	C		D	B	C	F
Approach Delay (s/veh)	26.3			28.0	142.6	
Approach LOS	C			C	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 81  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.20  
 Intersection Signal Delay (s/veh): 49.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 65.7%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd





HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

02-EXPM  
08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	424	5	401	670	9	348
Future Volume (veh/h)	424	5	401	670	9	348
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1826	1826
Adj Flow Rate, veh/h	499	6	472	788	11	409
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	3	3	5	5
Cap, veh/h	729	9	480	1077	386	344
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1844	22	1767	1856	1739	1547
Grp Volume(v), veh/h	0	505	472	788	11	409
Grp Sat Flow(s),veh/h/ln	0	1866	1767	1856	1739	1547
Q Serve(g_s), s	0.0	18.2	11.0	25.1	0.4	18.0
Cycle Q Clear(g_c), s	0.0	18.2	11.0	25.1	0.4	18.0
Prop In Lane		0.01	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	737	480	1077	386	344
V/C Ratio(X)	0.00	0.68	0.98	0.73	0.03	1.19
Avail Cap(c_a), veh/h	0	737	480	1077	386	344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	20.3	18.2	12.4	24.7	31.5
Incr Delay (d2), s/veh	0.0	5.1	36.5	4.4	0.0	110.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	9.0	9.4	0.2	16.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	25.4	54.7	16.8	24.7	142.1
LnGrp LOS		C	D	B	C	F
Approach Vol, veh/h	505			1260	420	
Approach Delay, s/veh	25.4			31.0	139.0	
Approach LOS	C			C	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	20.2		27.1
Green Ext Time (p_c), s		0.0	0.0	2.3		5.1
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			50.5			
HCM 7th LOS			D			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵	↵
Traffic Volume (vph)	1080	14	196	657	20	367
Future Volume (vph)	1080	14	196	657	20	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3498	0	1752	1845	1752	1568
Flt Permitted			0.140		0.950	
Satd. Flow (perm)	3498	0	258	1845	1752	1568
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	1149	15	209	699	21	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1164	0	209	699	21	390
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	31.5		54.8	31.5	7.1	22.6
Actuated g/C Ratio	0.48		0.84	0.48	0.11	0.35
v/c Ratio	0.69		0.31	0.78	0.11	0.72
Control Delay (s/veh)	18.0		5.3	25.2	32.0	26.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.0		5.3	25.2	32.0	26.0
LOS	B		A	C	C	C
Approach Delay (s/veh)	18.0			20.6	26.3	
Approach LOS	B			C	C	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 65.3  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay (s/veh): 20.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 62.2%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	800	620	18	592	439	237
Future Volume (vph)	800	620	18	592	439	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.934				0.953	
Fl <sub>t</sub> Protected				0.999	0.969	
Satd. Flow (prot)	3242	0	0	3468	1703	0
Fl <sub>t</sub> Permitted				0.760	0.969	
Satd. Flow (perm)	3242	0	0	2638	1703	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	4%	3%	3%
Adj. Flow (vph)	842	653	19	623	462	249
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1495	0	0	642	711	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.00			0.53	1.04	
Control Delay (s/veh)	48.9			18.8	72.4	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	48.9			18.8	72.4	
LOS	D			B	E	
Approach Delay (s/veh)	48.9			18.8	72.4	
Approach LOS	D			B	E	

Intersection Summary

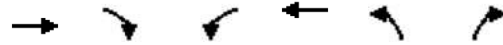
Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.04
Intersection Signal Delay (s/veh):	48.0
Intersection LOS:	D
Intersection Capacity Utilization:	90.8%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

02-EXPM  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	
Traffic Volume (veh/h)	800	620	18	592	439	237
Future Volume (veh/h)	800	620	18	592	439	237
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1856	1856
Adj Flow Rate, veh/h	842	0	19	623	462	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	3	3
Cap, veh/h	1898		73	1801	519	
Arrive On Green	0.54	0.00	0.54	0.54	0.29	0.00
Sat Flow, veh/h	3681	0	40	3403	1764	0
Grp Volume(v), veh/h	842	0	339	303	463	0
Grp Sat Flow(s),veh/h/ln	1749	0	1767	1591	1767	0
Q Serve(g_s), s	10.7	0.0	0.0	7.9	18.5	0.0
Cycle Q Clear(g_c), s	10.7	0.0	7.6	7.9	18.5	0.0
Prop In Lane		0.00	0.06		1.00	0.00
Lane Grp Cap(c), veh/h	1898		1011	864	520	
V/C Ratio(X)	0.44		0.34	0.35	0.89	
Avail Cap(c_a), veh/h	1898		1011	864	839	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	9.4	9.5	24.9	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.9	1.1	7.2	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	3.4	0.0	2.7	2.4	7.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.9	0.0	10.3	10.6	32.1	0.0
LnGrp LOS	B		B	B	C	
Approach Vol, veh/h	842			642	463	
Approach Delay, s/veh	10.9			10.5	32.1	
Approach LOS	B			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		26.7		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		20.5		12.7		9.9
Green Ext Time (p_c), s		1.2		5.8		3.9

Intersection Summary

HCM 7th Control Delay, s/veh	15.8
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

02-EXPM  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	396	640	262	189	405	23
Future Volume (vph)	396	640	262	189	405	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.907			0.993		
Fl <sub>t</sub> Protected				0.972	0.955	
Satd. Flow (prot)	3210	0	0	3440	1716	0
Fl <sub>t</sub> Permitted				0.548	0.955	
Satd. Flow (perm)	3210	0	0	1939	1716	0
Right Turn on Red	No			No		
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	430	696	285	205	440	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1126	0	0	490	465	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Number of Detectors	2	1		2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100	20		100	20	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	6	20		6	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm		NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4	8		8	2	
Switch Phase						



Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

02-EXPM  
 08/14/2024

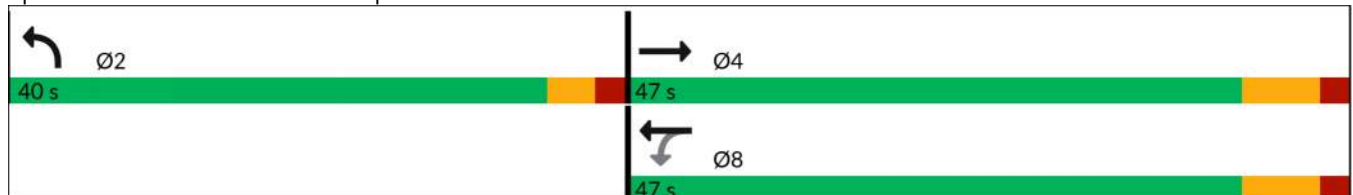


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.3			40.3	25.4	
Actuated g/C Ratio	0.52			0.52	0.33	
v/c Ratio	0.68			1.63dl	0.83	
Control Delay (s/veh)	17.8			15.6	37.4	
Queue Delay	0.2			0.0	0.0	
Total Delay (s/veh)	18.0			15.6	37.4	
LOS	B			B	D	
Approach Delay (s/veh)	18.0			15.6	37.4	
Approach LOS	B			B	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 77.8  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay (s/veh): 21.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 85.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

02-EXPM  
 08/14/2024



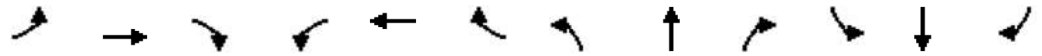
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	396	640	262	189	405	23
Future Volume (veh/h)	396	640	262	189	405	23
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	430	0	285	205	440	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	1951		565	888	497	
Arrive On Green	0.55	0.00	0.55	0.55	0.29	0.00
Sat Flow, veh/h	3741	0	850	1702	1735	0
Grp Volume(v), veh/h	430	0	285	205	441	0
Grp Sat Flow(s),veh/h/ln	1777	0	850	1617	1739	0
Q Serve(g_s), s	4.5	0.0	15.8	4.8	17.7	0.0
Cycle Q Clear(g_c), s	4.5	0.0	20.4	4.8	17.7	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1951		565	888	498	
V/C Ratio(X)	0.22		0.50	0.23	0.89	
Avail Cap(c_a), veh/h	1951		565	888	835	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	13.7	8.5	24.9	0.0
Incr Delay (d2), s/veh	0.3	0.0	3.2	0.6	6.5	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	1.4	0.0	3.3	1.5	7.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.7	0.0	16.8	9.1	31.3	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	430			490	441	
Approach Delay, s/veh	8.7			13.6	31.3	
Approach LOS	A			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		25.9		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		19.7		6.5		22.4
Green Ext Time (p_c), s		1.2		2.7		3.1

Intersection Summary		
HCM 7th Control Delay, s/veh		17.8
HCM 7th LOS		B

Notes  
 Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 9: Davidson Ave & Pierce St

02-EXPM  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	141	13	64	133	259	11	501	71	140	381	188
Future Volume (vph)	150	141	13	64	133	259	11	501	71	140	381	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988				0.850		0.981			0.950	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1752	1823	0	0	1833	1583	1770	1827	0	1770	1770	0
Flt Permitted	0.950				0.822		0.219			0.155		
Satd. Flow (perm)	1752	1823	0	0	1531	1583	408	1827	0	289	1770	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	179	168	15	76	158	308	13	596	85	167	454	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	183	0	0	234	308	13	681	0	167	678	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

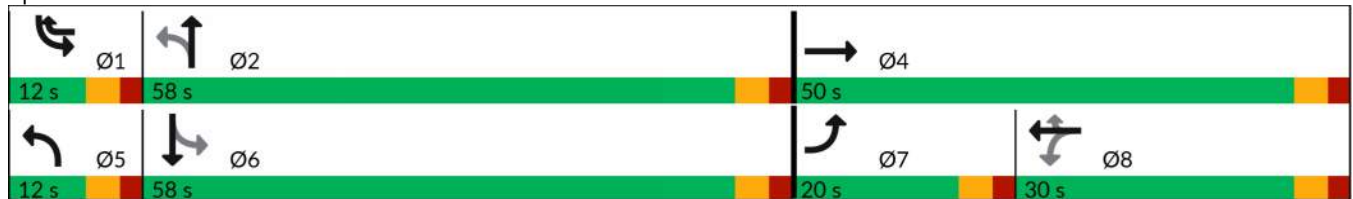
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases		4		8		8	2			6		
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	14.3	40.7			21.4	33.4	60.1	53.1		63.2	60.5	
Actuated g/C Ratio	0.12	0.35			0.18	0.29	0.52	0.46		0.55	0.52	
v/c Ratio	0.83	0.29			0.83	0.68	0.04	0.81		0.68	0.73	
Control Delay (s/veh)	80.0	28.1			69.7	44.7	13.1	37.4		29.7	30.0	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	80.0	28.1			69.7	44.7	13.1	37.4		29.7	30.0	
LOS	E	C			E	D	B	D		C	C	
Approach Delay (s/veh)		53.8			55.5			37.0			29.9	
Approach LOS		D			E			D			C	

Intersection Summary

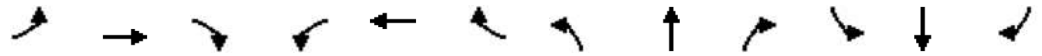
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	115.9
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.83
Intersection Signal Delay (s/veh):	41.1
Intersection LOS:	D
Intersection Capacity Utilization:	73.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St



HCM 7th Signalized Intersection Summary  
 9: Davidson Ave & Pierce St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	141	13	64	133	259	11	501	71	140	381	188
Future Volume (veh/h)	150	141	13	64	133	259	11	501	71	140	381	188
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	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	168	15	76	158	308	13	596	85	167	454	224
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	604	54	133	230	412	231	724	103	265	581	287
Arrive On Green	0.12	0.36	0.36	0.20	0.20	0.20	0.02	0.45	0.45	0.06	0.49	0.49
Sat Flow, veh/h	1767	1679	150	463	1149	1585	1781	1601	228	1781	1182	583
Grp Volume(v), veh/h	179	0	183	234	0	308	13	0	681	167	0	678
Grp Sat Flow(s),veh/h/ln	1767	0	1829	1612	0	1585	1781	0	1829	1781	0	1765
Q Serve(g_s), s	11.7	0.0	8.3	13.4	0.0	20.9	0.5	0.0	38.0	5.7	0.0	37.1
Cycle Q Clear(g_c), s	11.7	0.0	8.3	15.7	0.0	20.9	0.5	0.0	38.0	5.7	0.0	37.1
Prop In Lane	1.00		0.08	0.32		1.00	1.00		0.12	1.00		0.33
Lane Grp Cap(c), veh/h	206	0	658	363	0	412	231	0	828	265	0	868
V/C Ratio(X)	0.87	0.00	0.28	0.64	0.00	0.75	0.06	0.00	0.82	0.63	0.00	0.78
Avail Cap(c_a), veh/h	226	0	703	384	0	433	301	0	828	265	0	868
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	26.7	43.6	0.0	39.8	21.0	0.0	28.0	23.1	0.0	24.6
Incr Delay (d2), s/veh	26.5	0.0	0.2	3.4	0.0	6.7	0.1	0.0	9.1	4.7	0.0	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	6.5	0.0	3.5	6.5	0.0	8.6	0.2	0.0	17.5	2.5	0.0	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.4	0.0	26.9	47.0	0.0	46.5	21.1	0.0	37.0	27.9	0.0	31.5
LnGrp LOS	E		C	D		D	C		D	C		C
Approach Vol, veh/h		362			542			694			845	
Approach Delay, s/veh		51.9			46.7			36.7			30.8	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	58.0		47.1	7.4	62.6	18.7	28.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	7.7	40.0		10.3	2.5	39.1	13.7	22.9				
Green Ext Time (p_c), s	0.0	3.5		1.0	0.0	3.7	0.1	0.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			39.1									
HCM 7th LOS			D									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	129	101	657	487	74	1049
Future Volume (vph)	129	101	657	487	74	1049
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.992	0.950	
Satd. Flow (prot)	3539	1583	1681	1755	1770	2787
Flt Permitted			0.950	0.992	0.950	
Satd. Flow (perm)	3539	1583	1681	1755	1770	2787
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	110	714	529	80	1140
Shared Lane Traffic (%)			15%			
Lane Group Flow (vph)	140	110	607	636	80	1140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8
Permitted Phases						

Lanes, Volumes, Timings  
 10: Davidson Ave & Easton Ave

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 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	8	8	4	4 8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effect Green (s)	35.0	35.0	35.0	35.0	33.4	73.5
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.28	0.62
v/c Ratio	0.13	0.24	1.22	1.23	0.16	0.66
Control Delay (s/veh)	31.5	33.8	154.3	155.5	32.8	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.5	33.8	154.3	155.5	32.8	16.7
LOS	C	C	F	F	C	B
Approach Delay (s/veh)	32.5			154.9	17.8	
Approach LOS	C			F	B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	118.5
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.23
Intersection Signal Delay (s/veh):	82.0
Intersection LOS:	F
Intersection Capacity Utilization:	51.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: Davidson Ave & Easton Ave



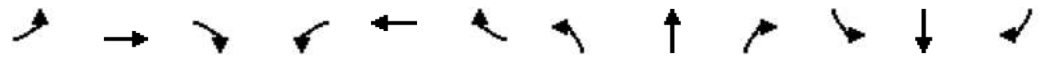
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HCM 7th Edition methodology expects strict NEMA phasing.



Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

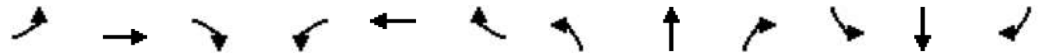
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	224	102	77	335	112	141	540	77	203	477	58
Future Volume (vph)	86	224	102	77	335	112	141	540	77	203	477	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.953			0.962			0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	1708	0	1736	1758	0	1770	3472	0	1770	1863	1583
Flt Permitted	0.149			0.344			0.288			0.334		
Satd. Flow (perm)	267	1708	0	628	1758	0	536	3472	0	622	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	6%	6%	6%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	89	231	105	79	345	115	145	557	79	209	492	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	336	0	79	460	0	145	636	0	209	492	60
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

02-EXPM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		12.0	44.0		12.0	44.0	44.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		12.0%	44.0%		12.0%	44.0%	44.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		9.0	37.0		9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	36.7	27.3		36.5	27.2		51.7	39.3		52.3	39.6	39.6
Actuated g/C Ratio	0.37	0.27		0.37	0.27		0.52	0.39		0.52	0.40	0.40
v/c Ratio	0.43	0.72		0.25	0.96		0.38	0.47		0.49	0.67	0.10
Control Delay (s/veh)	25.4	43.1		20.7	70.2		14.9	24.7		16.6	31.3	21.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.4	43.1		20.7	70.2		14.9	24.7		16.6	31.3	21.3
LOS	C	D		C	E		B	C		B	C	C
Approach Delay (s/veh)		39.4			62.9			22.9			26.5	
Approach LOS		D			E			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay (s/veh): 35.4      Intersection LOS: D  
 Intersection Capacity Utilization 79.6%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

02-EXPM  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	224	102	77	335	112	141	540	77	203	477	58
Future Volume (veh/h)	86	224	102	77	335	112	141	540	77	203	477	58
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	1811	1811	1811	1841	1841	1841	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	231	105	79	345	115	145	557	79	209	492	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	6	4	4	4	2	2	2	2	2	2
Cap, veh/h	173	325	148	256	357	119	374	1253	177	441	787	667
Arrive On Green	0.05	0.28	0.28	0.05	0.27	0.27	0.07	0.40	0.40	0.09	0.42	0.42
Sat Flow, veh/h	1725	1179	536	1753	1321	440	1781	3126	442	1781	1870	1585
Grp Volume(v), veh/h	89	0	336	79	0	460	145	316	320	209	492	60
Grp Sat Flow(s),veh/h/ln	1725	0	1715	1753	0	1761	1781	1777	1791	1781	1870	1585
Q Serve(g_s), s	3.7	0.0	17.7	3.2	0.0	25.8	4.7	13.0	13.0	6.7	20.7	2.3
Cycle Q Clear(g_c), s	3.7	0.0	17.7	3.2	0.0	25.8	4.7	13.0	13.0	6.7	20.7	2.3
Prop In Lane	1.00		0.31	1.00		0.25	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	173	0	473	256	0	476	374	712	718	441	787	667
V/C Ratio(X)	0.51	0.00	0.71	0.31	0.00	0.97	0.39	0.44	0.45	0.47	0.62	0.09
Avail Cap(c_a), veh/h	221	0	473	314	0	476	416	712	718	447	787	667
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	27.8	0.0	32.6	26.0	0.0	36.1	17.5	21.8	21.9	15.6	22.7	17.4
Incr Delay (d2), s/veh	2.4	0.0	4.9	0.7	0.0	32.8	0.7	2.0	2.0	0.8	3.7	0.3
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	1.5	0.0	7.6	1.3	0.0	14.7	1.8	5.4	5.5	2.6	9.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.1	0.0	37.6	26.7	0.0	68.9	18.2	23.8	23.9	16.4	26.5	17.7
LnGrp LOS	C		D	C		E	B	C	C	B	C	B
Approach Vol, veh/h		425			539			781			761	
Approach Delay, s/veh		36.0			62.7			22.8			23.0	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	47.1	7.7	33.6	9.7	49.1	8.2	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	8.7	15.0	5.2	19.7	6.7	22.7	5.7	27.8				
Green Ext Time (p_c), s	0.0	3.5	0.0	1.1	0.1	2.6	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			33.7									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

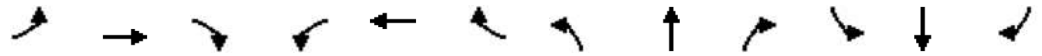
02-EXPM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	587	276	72	747	0	450	0	150	0	0	0
Future Volume (vph)	0	587	276	72	747	0	450	0	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3369	0	1770	3539	0	1752	0	1568	0	1863	0
Flt Permitted				0.153			0.950					
Satd. Flow (perm)	0	3369	0	285	3539	0	1752	0	1568	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45		45			45		45		45	
Link Distance (ft)		684		399			410		222		222	
Travel Time (s)		10.4		6.0			6.2		3.4		3.4	
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	631	297	77	803	0	484	0	161	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	0	77	803	0	484	0	161	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12		12		12	
Link Offset(ft)		0		0			12		-30		-30	
Crosswalk Width(ft)		50		40			16		16		16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94		94								94
Detector 2 Size(ft)		6		6								6
Detector 2 Type		Cl+Ex		Cl+Ex								Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0								0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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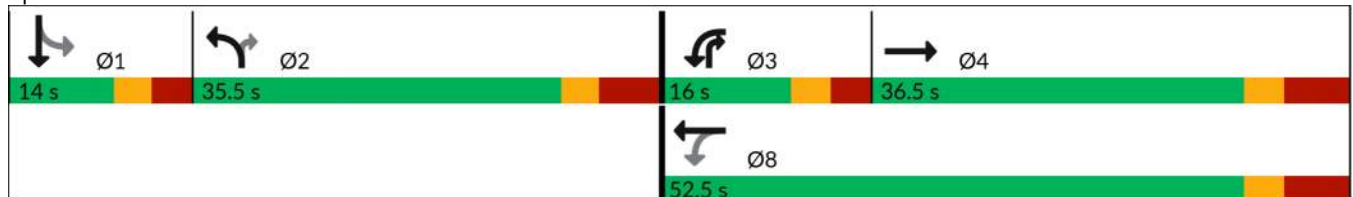


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		28.6		45.5	42.0		26.0		41.9			
Actuated g/C Ratio		0.33		0.52	0.48		0.30		0.48			
v/c Ratio		0.85		0.30	0.48		0.94		0.22			
Control Delay (s/veh)		37.1		13.9	16.7		58.6		14.1			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		37.1		13.9	16.7		58.6		14.1			
LOS		D		B	B		E		B			
Approach Delay (s/veh)		37.1			16.5			47.5				
Approach LOS		D			B			D				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 88  
 Natural Cycle: 105  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay (s/veh): 32.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 72.1%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 12: Veronica Ave & Hamilton St

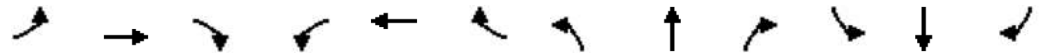


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

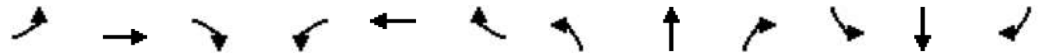
02-EXPM  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	1099	0	0	1192	0	661	0	106	143	187	2
Future Volume (vph)	0	1099	0	0	1192	0	661	0	106	143	187	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850		0.999	
Fl t Protected							0.950				0.979	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Fl t Permitted							0.950				0.979	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1121	0	0	1216	0	674	0	108	146	191	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1121	0	0	1216	0	674	0	108	0	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

02-EXPM  
 08/14/2024

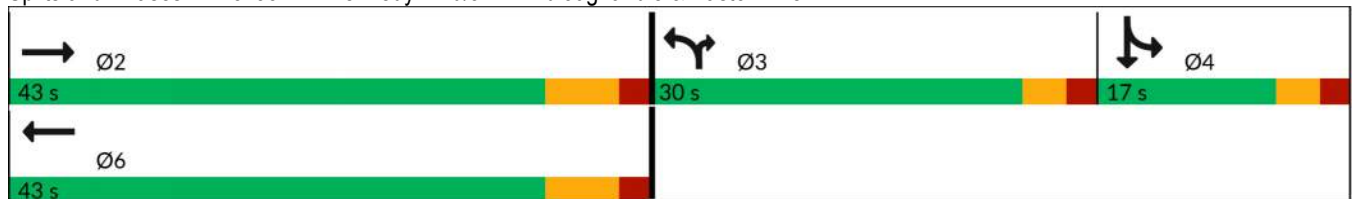


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.1			36.1		21.5		21.5		11.6	
Actuated g/C Ratio		0.42			0.42		0.25		0.25		0.13	
v/c Ratio		0.76			0.82		0.79		0.27		0.73	
Control Delay (s/veh)		26.0			28.7		37.6		27.9		46.7	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		26.0			28.7		37.6		27.9		46.7	
LOS		C			C		D		C		D	
Approach Delay (s/veh)		26.0			28.7			36.2			46.7	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 86.2  
 Natural Cycle: 80  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay (s/veh): 31.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 74.5%  
 ICU Level of Service D  
 Analysis Period (min) 15

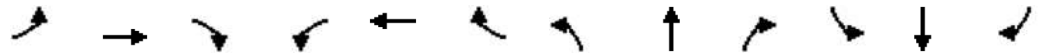
Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave





HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

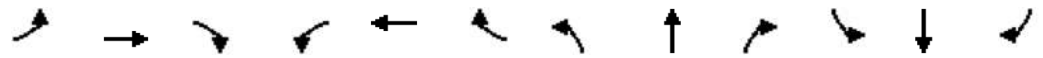
02-EXPM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	1099	0	0	1192	0	661	0	106	143	187	2
Future Volume (veh/h)	0	1099	0	0	1192	0	661	0	106	143	187	2
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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1121	0	0	1216	0	674	0	108	146	191	2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2298	0	0	2298	0	0	0	0	215	286	3
Arrive On Green	0.00	0.65	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3741	0	0	3741	0		0		1562	2075	22
Grp Volume(v), veh/h	0	1121	0	0	1216	0		0.0		168	0	171
Grp Sat Flow(s),veh/h/ln	0	1777	0	0	1777	0				1792	0	1866
Q Serve(g_s), s	0.0	9.1	0.0	0.0	10.2	0.0				4.9	0.0	4.9
Cycle Q Clear(g_c), s	0.0	9.1	0.0	0.0	10.2	0.0				4.9	0.0	4.9
Prop In Lane	0.00		0.00	0.00		0.00				0.87		0.01
Lane Grp Cap(c), veh/h	0	2298	0	0	2298	0				247	0	257
V/C Ratio(X)	0.00	0.49	0.00	0.00	0.53	0.00				0.68	0.00	0.67
Avail Cap(c_a), veh/h	0	2298	0	0	2298	0				386	0	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	5.3	0.0				22.8	0.0	22.8
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.9	0.0				3.3	0.0	3.0
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	0.0	1.8	0.0	0.0	2.0	0.0				2.0	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	5.8	0.0	0.0	6.2	0.0				26.1	0.0	25.8
LnGrp LOS		A			A					C		C
Approach Vol, veh/h		1121			1216							339
Approach Delay, s/veh		5.8			6.2							25.9
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		12.7		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		11.1		6.9		12.2						
Green Ext Time (p_c), s		8.2		0.8		8.9						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				8.5								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

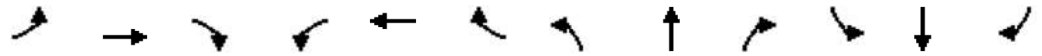
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	636	108	37	825	295	118	276	54	151	272	122
Future Volume (vph)	101	636	108	37	825	295	118	276	54	151	272	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.222			0.292			0.452			0.340		
Satd. Flow (perm)	414	3461	0	544	3539	1583	842	1863	1583	633	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	656	111	38	851	304	122	285	56	156	280	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	767	0	38	851	304	122	285	56	156	280	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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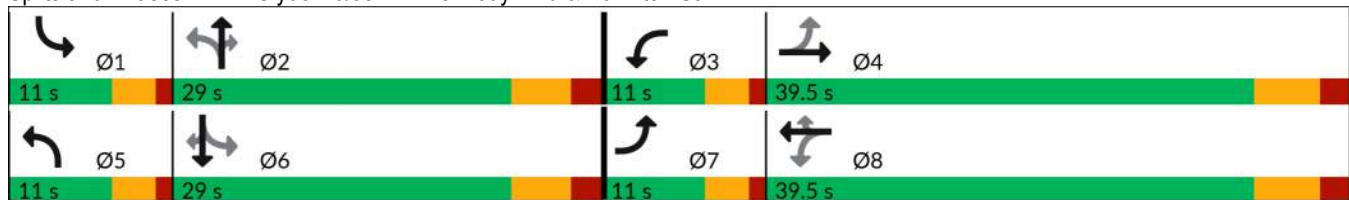


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	42.1	35.6		41.3	33.4	33.4	26.4	17.3	17.3	27.4	20.1	20.1
Actuated g/C Ratio	0.51	0.43		0.50	0.40	0.40	0.32	0.21	0.21	0.33	0.24	0.24
v/c Ratio	0.32	0.52		0.10	0.60	0.48	0.35	0.73	0.17	0.51	0.62	0.33
Control Delay (s/veh)	13.2	20.7		10.9	23.1	23.4	21.4	42.8	28.4	25.4	36.7	30.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.2	20.7		10.9	23.1	23.4	21.4	42.8	28.4	25.4	36.7	30.8
LOS	B	C		B	C	C	C	D	C	C	D	C
Approach Delay (s/veh)		19.9			22.8			35.4			32.2	
Approach LOS		B			C			D			C	

Intersection Summary

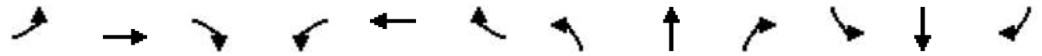
Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	82.9
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.73
Intersection Signal Delay (s/veh):	25.6
Intersection LOS:	C
Intersection Capacity Utilization:	68.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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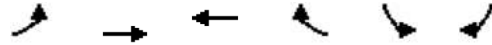
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	101	636	108	37	825	295	118	276	54	151	272	122
Future Volume (veh/h)	101	636	108	37	825	295	118	276	54	151	272	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	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	104	656	111	38	851	0	122	285	56	156	280	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	1310	221	368	1431		282	345	292	279	355	
Arrive On Green	0.08	0.43	0.43	0.05	0.40	0.00	0.08	0.18	0.18	0.09	0.19	0.00
Sat Flow, veh/h	1781	3041	514	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	104	383	384	38	851	0	122	285	56	156	280	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.6	12.8	12.9	1.0	15.4	0.0	4.4	12.0	2.4	5.7	11.7	0.0
Cycle Q Clear(g_c), s	2.6	12.8	12.9	1.0	15.4	0.0	4.4	12.0	2.4	5.7	11.7	0.0
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	365	765	766	368	1431		282	345	292	279	355	
V/C Ratio(X)	0.29	0.50	0.50	0.10	0.59		0.43	0.83	0.19	0.56	0.79	
Avail Cap(c_a), veh/h	379	765	766	432	1431		292	525	445	279	525	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.4	16.9	16.9	13.3	19.2	0.0	24.7	32.2	28.3	25.0	31.6	0.0
Incr Delay (d2), s/veh	0.4	2.3	2.3	0.1	1.8	0.0	1.0	6.5	0.3	2.5	4.9	0.0
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	0.9	5.1	5.1	0.4	6.0	0.0	1.8	5.7	0.9	2.4	5.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.8	19.3	19.3	13.4	21.0	0.0	25.7	38.7	28.6	27.5	36.5	0.0
LnGrp LOS	B	B	B	B	C		C	D	C	C	D	
Approach Vol, veh/h		871			889			463			436	
Approach Delay, s/veh		18.6			20.7			34.1			33.3	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	21.1	8.1	41.8	10.6	21.5	10.3	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	7.7	14.0	3.0	14.9	6.4	13.7	4.6	17.4				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.1	0.0	0.9	0.0	4.8				

Intersection Summary												
HCM 7th Control Delay, s/veh				24.4								
HCM 7th LOS				C								

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

02-EXPM  
 08/14/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	1192	332	0	0	0
Future Volume (vph)	0	1192	332	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	5085	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1296	361	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1296	361	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

02-EXPM  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	285	21	19	228	27	12	18	15	128	23	426
Future Volume (vph)	193	285	21	19	228	27	12	18	15	128	23	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.990				0.850			0.850		0.858	
Fl <sub>t</sub> Protected	0.950			0.950				0.981		0.950		
Satd. Flow (prot)	1770	1844	0	1770	1863	1583	0	1827	1583	1770	1598	0
Fl <sub>t</sub> Permitted	0.520			0.554				0.475		0.567		
Satd. Flow (perm)	969	1844	0	1032	1863	1583	0	885	1583	1056	1598	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	217	320	24	21	256	30	13	20	17	144	26	479
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	344	0	21	256	30	0	33	17	144	505	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

02-EXPM  
08/14/2024

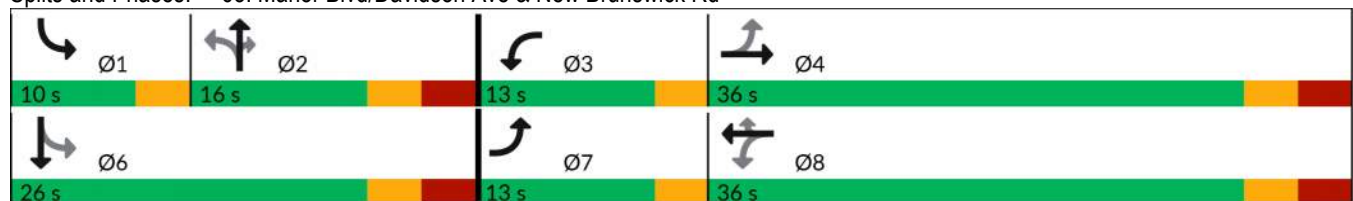


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0					7.0	
Flash Don't Walk (s)		11.0			11.0	11.0					11.0	
Pedestrian Calls (#/hr)		0			0	0					0	
Act Effect Green (s)	45.4	38.4		40.0	30.0	30.0		11.5	11.5	23.0	20.0	
Actuated g/C Ratio	0.61	0.52		0.54	0.40	0.40		0.15	0.15	0.31	0.27	
v/c Ratio	0.31	0.36		0.03	0.34	0.05		0.24	0.07	0.34	1.18	
Control Delay (s/veh)	7.8	13.3		6.1	17.2	14.1		34.6	29.5	22.2	129.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	7.8	13.3		6.1	17.2	14.1		34.6	29.5	22.2	129.7	
LOS	A	B		A	B	B		C	C	C	F	
Approach Delay (s/veh)		11.1			16.1			32.9			105.9	
Approach LOS		B			B			C			F	

Intersection Summary

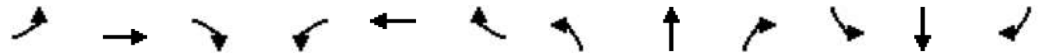
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	74.4
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.18
Intersection Signal Delay (s/veh):	52.0
Intersection LOS:	D
Intersection Capacity Utilization:	64.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

02-EXPM  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	285	21	19	228	27	12	18	15	128	23	426
Future Volume (veh/h)	193	285	21	19	228	27	12	18	15	128	23	426
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	217	320	24	21	256	30	13	20	17	144	26	479
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	626	825	62	534	780	661	70	74	229	264	23	421
Arrive On Green	0.10	0.48	0.48	0.03	0.42	0.42	0.14	0.14	0.14	0.09	0.28	0.28
Sat Flow, veh/h	1781	1718	129	1781	1870	1585	0	513	1585	1781	82	1515
Grp Volume(v), veh/h	217	0	344	21	256	30	33	0	17	144	0	505
Grp Sat Flow(s),veh/h/ln	1781	0	1847	1781	1870	1585	513	0	1585	1781	0	1598
Q Serve(g_s), s	4.6	0.0	8.6	0.5	6.6	0.8	0.0	0.0	0.7	4.7	0.0	20.0
Cycle Q Clear(g_c), s	4.6	0.0	8.6	0.5	6.6	0.8	10.4	0.0	0.7	4.7	0.0	20.0
Prop In Lane	1.00		0.07	1.00		1.00	0.39		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	626	0	886	534	780	661	144	0	229	264	0	444
V/C Ratio(X)	0.35	0.00	0.39	0.04	0.33	0.05	0.23	0.00	0.07	0.55	0.00	1.14
Avail Cap(c_a), veh/h	703	0	886	722	780	661	144	0	229	274	0	444
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	12.0	11.1	14.1	12.4	27.2	0.0	26.6	22.2	0.0	26.0
Incr Delay (d2), s/veh	0.3	0.0	1.3	0.0	1.1	0.1	0.8	0.0	0.1	2.1	0.0	85.6
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	1.5	0.0	3.4	0.2	2.8	0.3	0.5	0.0	0.2	1.9	0.0	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.6	0.0	13.2	11.1	15.3	12.6	28.0	0.0	26.7	24.3	0.0	111.6
LnGrp LOS	A		B	B	B	B	C		C	C		F
Approach Vol, veh/h	561		307				50			649		
Approach Delay, s/veh	11.8		14.7				27.6			92.2		
Approach LOS	B		B				C			F		
Timer - Assigned Phs	1	2	3	4	6	7	8					
Phs Duration (G+Y+Rc), s	9.6	16.4	5.4	40.5	26.0	9.9	36.0					
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	6.0	3.0	6.0					
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0	20.0	10.0	30.0					
Max Q Clear Time (g_c+I1), s	6.7	12.4	2.5	10.6	22.0	6.6	8.6					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.9	0.0	0.2	1.5					
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			46.2									
HCM 7th LOS			D									



Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

02-EXPM  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	568	43	49	12	16	650
Future Volume (vph)	568	43	49	12	16	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.991				0.868	
Fl <sub>t</sub> Protected	0.956			0.961		
Satd. Flow (prot)	1765	0	0	1790	1617	0
Fl <sub>t</sub> Permitted	0.956			0.961		
Satd. Flow (perm)	1765	0	0	1790	1617	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	611	46	53	13	17	699
Shared Lane Traffic (%)						
Lane Group Flow (vph)	657	0	0	66	716	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.8%
Analysis Period (min)	15
	ICU Level of Service E

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	568	43	49	12	16	650
Future Vol, veh/h	568	43	49	12	16	650
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	611	46	53	13	17	699













Major/Minor	Minor2	Major2		
Conflicting Flow All	367	367	-	0
Stage 1	367	367	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	633	562	-	-
Stage 1	701	622	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	633	0	-	-
Mov Cap-2 Maneuver	633	0	-	-
Stage 1	701	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	11.34	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	633	-	-
HCM Lane V/C Ratio	0.104	-	-
HCM Control Delay (s/veh)	11.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

03-EXSA  
08/14/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	181	75	520	181	91	462
Future Volume (vph)	181	75	520	181	91	462
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.380	
Satd. Flow (perm)	1770	1583	1863	1583	708	1863
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		79				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	191	79	547	191	96	486
Shared Lane Traffic (%)						
Lane Group Flow (vph)	191	79	547	191	96	486
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2
Permitted Phases		4		2	2	

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

03-EXSA  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	46.5	13.0	11.0	46.5
Total Split (s)	15.0	15.0	46.5	15.0	11.0	46.5
Total Split (%)	20.7%	20.7%	64.1%	20.7%	15.2%	64.1%
Maximum Green (s)	9.0	9.0	40.0	9.0	7.0	40.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effect Green (s)	9.0	9.0	40.2	57.1	48.1	40.2
Actuated g/C Ratio	0.13	0.13	0.57	0.81	0.68	0.57
v/c Ratio	0.84	0.29	0.51	0.15	0.16	0.46
Control Delay (s/veh)	64.2	11.0	12.0	2.5	3.4	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.2	11.0	12.0	2.5	3.4	11.2
LOS	E	B	B	A	A	B
Approach Delay (s/veh)	48.6		9.5			9.9
Approach LOS	D		A			A

Intersection Summary

Area Type:	Other
Cycle Length:	72.5
Actuated Cycle Length:	70.3
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.84
Intersection Signal Delay (s/veh):	16.3
Intersection LOS:	B
Intersection Capacity Utilization:	57.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	297	38	62	325	53	92
Future Volume (vph)	297	38	62	325	53	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.914	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	1835	0	1770	1863	1672	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	1835	0	1770	1863	1672	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	367	47	77	401	65	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	414	0	77	401	179	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	297	38	62	325	53	92
Future Vol, veh/h	297	38	62	325	53	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	367	47	77	401	65	114

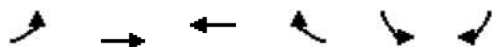
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	414	0	944 390
Stage 1	-	-	-	-	390 -
Stage 2	-	-	-	-	554 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1145	-	291 658
Stage 1	-	-	-	-	684 -
Stage 2	-	-	-	-	575 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1145	-	271 658
Mov Cap-2 Maneuver	-	-	-	-	271 -
Stage 1	-	-	-	-	684 -
Stage 2	-	-	-	-	537 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.34	19.06
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	-	-	1145	-
HCM Lane V/C Ratio	0.414	-	-	0.067	-
HCM Control Delay (s/veh)	19.1	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2	-	-	0.2	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

03-EXSA  
08/14/2024

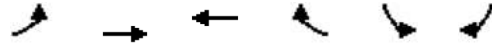


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	81	331	293	45	57	66
Future Volume (vph)	81	331	293	45	57	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1829	0	1736	1553
Flt Permitted	0.436				0.950	
Satd. Flow (perm)	812	1863	1829	0	1736	1553
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Adj. Flow (vph)	98	399	353	54	69	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	399	407	0	69	80
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	



Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

03-EXSA  
08/14/2024

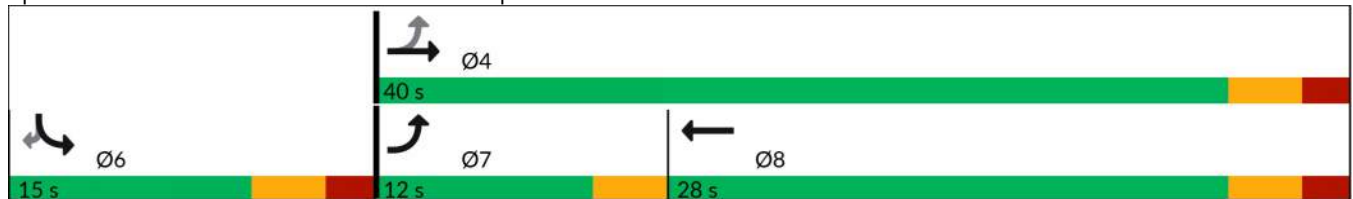


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.3	39.3	31.1		8.3	8.3
Actuated g/C Ratio	0.74	0.73	0.57		0.15	0.15
v/c Ratio	0.13	0.30	0.39		0.26	0.34
Control Delay (s/veh)	3.3	4.6	10.9		22.4	24.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	3.3	4.6	10.9		22.4	24.3
LOS	A	A	B		C	C
Approach Delay (s/veh)		4.4	10.9		23.4	
Approach LOS		A	B		C	

Intersection Summary

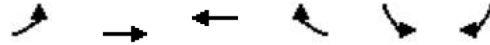
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.2  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay (s/veh): 9.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 41.5%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

03-EXSA  
 08/14/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↕	↗	↖		↘	↖	
Traffic Volume (veh/h)	81	331	293	45	57	66	
Future Volume (veh/h)	81	331	293	45	57	66	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1841	
Adj Flow Rate, veh/h	98	399	353	54	69	80	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	
Percent Heavy Veh, %	2	2	2	2	4	4	
Cap, veh/h	701	1280	828	127	211	188	
Arrive On Green	0.10	0.68	0.52	0.52	0.12	0.12	
Sat Flow, veh/h	1781	1870	1584	242	1753	1560	
Grp Volume(v), veh/h	98	399	0	407	69	80	
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1827	1753	1560	
Q Serve(g_s), s	1.0	4.4	0.0	7.0	1.8	2.4	
Cycle Q Clear(g_c), s	1.0	4.4	0.0	7.0	1.8	2.4	
Prop In Lane	1.00			0.13	1.00	1.00	
Lane Grp Cap(c), veh/h	701	1280	0	955	211	188	
V/C Ratio(X)	0.14	0.31	0.00	0.43	0.33	0.43	
Avail Cap(c_a), veh/h	832	1280	0	955	343	305	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	3.9	3.2	0.0	7.5	20.6	20.9	
Incr Delay (d2), s/veh	0.1	0.6	0.0	1.4	0.9	1.5	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.1	0.7	0.0	2.1	0.7	2.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	4.0	3.9	0.0	8.9	21.5	22.4	
LnGrp LOS	A	A		A	C	C	
Approach Vol, veh/h		497	407		149		
Approach Delay, s/veh		3.9	8.9		22.0		
Approach LOS		A	A		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.2	8.3	31.7
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				6.4	4.4	3.0	9.0
Green Ext Time (p_c), s				2.3	0.2	0.1	1.9
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			8.4				
HCM 7th LOS			A				

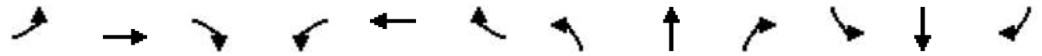
Lanes, Volumes, Timings  
4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

03-EXSA  
08/14/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	224	97	119	227	21	83	179	108	34	186	125
Future Volume (vph)	156	224	97	119	227	21	83	179	108	34	186	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1751	0
Flt Permitted	0.388			0.420			0.461			0.950		
Satd. Flow (perm)	723	1863	1583	782	1863	1583	859	1863	1583	1770	1751	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Adj. Flow (vph)	166	238	103	127	241	22	88	190	115	36	198	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	238	103	127	241	22	88	190	115	36	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		
Permitted Phases	4		4	8		8	2		2		6	

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

03-EXSA  
 08/14/2024

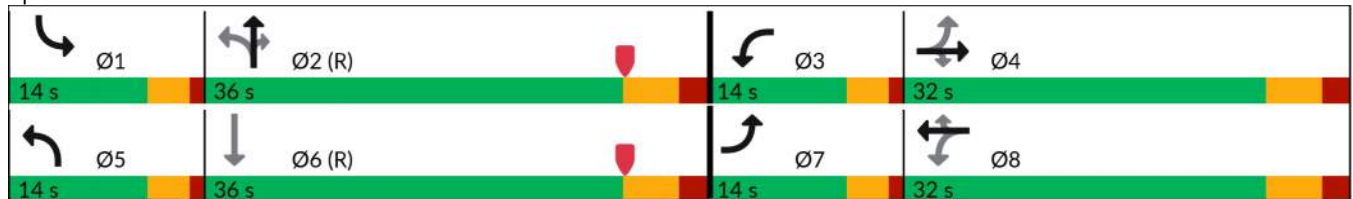


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	29.7	18.0	18.0	28.9	17.6	17.6	52.5	45.2	45.2	7.4	42.9	
Actuated g/C Ratio	0.31	0.19	0.19	0.30	0.18	0.18	0.55	0.47	0.47	0.08	0.45	
v/c Ratio	0.51	0.68	0.35	0.38	0.70	0.08	0.16	0.22	0.15	0.26	0.42	
Control Delay (s/veh)	27.2	45.9	36.0	24.4	47.6	30.5	11.6	19.0	18.9	45.8	23.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.2	45.9	36.0	24.4	47.6	30.5	11.6	19.0	18.9	45.8	23.0	
LOS	C	D	D	C	D	C	B	B	B	D	C	
Approach Delay (s/veh)		37.8			39.1			17.3			25.2	
Approach LOS		D			D			B			C	

Intersection Summary

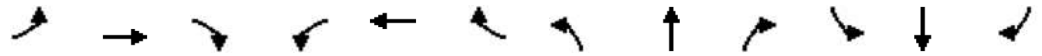
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay (s/veh): 30.4      Intersection LOS: C  
 Intersection Capacity Utilization 59.3%      ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

03-EXSA  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	224	97	119	227	21	83	179	108	34	186	125
Future Volume (veh/h)	156	224	97	119	227	21	83	179	108	34	186	125
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	166	238	0	127	241	0	88	190	0	36	198	0
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	282	326		275	290		671	912		93	921	
Arrive On Green	0.10	0.17	0.00	0.08	0.16	0.00	0.05	0.49	0.00	0.05	0.49	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Grp Volume(v), veh/h	166	238	0	127	241	0	88	190	0	36	198	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	7.4	11.6	0.0	5.7	12.0	0.0	2.3	5.6	0.0	1.9	5.8	0.0
Cycle Q Clear(g_c), s	7.4	11.6	0.0	5.7	12.0	0.0	2.3	5.6	0.0	1.9	5.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	282	326		275	290		671	912		93	921	
V/C Ratio(X)	0.59	0.73		0.46	0.83		0.13	0.21		0.39	0.21	
Avail Cap(c_a), veh/h	295	507		322	507		773	912		186	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.5	37.5	0.0	31.0	39.3	0.0	11.1	14.0	0.0	44.0	13.8	0.0
Incr Delay (d2), s/veh	2.8	3.1	0.0	1.2	6.1	0.0	0.1	0.5	0.0	2.6	0.5	0.0
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	3.2	5.3	0.0	2.4	5.7	0.0	0.8	2.3	0.0	0.9	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.3	40.7	0.0	32.2	45.4	0.0	11.2	14.5	0.0	46.7	14.4	0.0
LnGrp LOS	C	D		C	D		B	B		D	B	
Approach Vol, veh/h		404			368			278			234	
Approach Delay, s/veh		37.6			40.9			13.5			19.3	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	52.8	11.5	22.7	8.5	53.3	13.3	20.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	3.9	7.6	7.7	13.6	4.3	7.8	9.4	14.0				
Green Ext Time (p_c), s	0.0	0.9	0.1	0.9	0.1	0.9	0.0	0.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			30.0									
HCM 7th LOS			C									

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

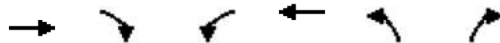
03-EXSA  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	709	23	131	642	3	178
Future Volume (vph)	709	23	131	642	3	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1855	0	1770	1863	1641	1468
Flt Permitted			0.103		0.950	
Satd. Flow (perm)	1855	0	192	1863	1641	1468
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	10%	10%
Adj. Flow (vph)	788	26	146	713	3	198
Shared Lane Traffic (%)						
Lane Group Flow (vph)	814	0	146	713	3	198
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

03-EXSA  
08/14/2024

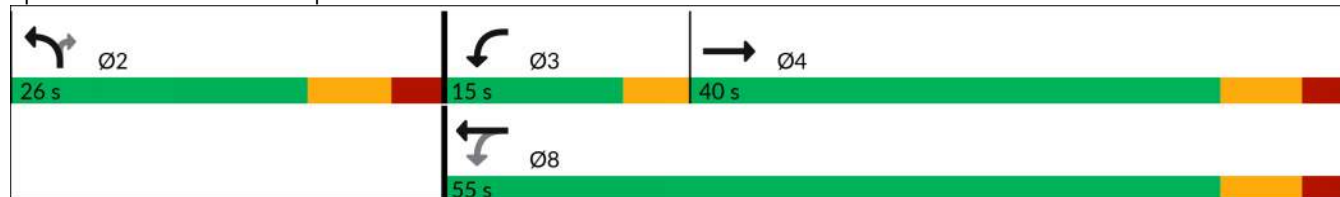


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	34.7		51.1	47.1	14.6	14.6
Actuated g/C Ratio	0.45		0.66	0.61	0.19	0.19
v/c Ratio	0.98		0.49	0.63	0.01	0.72
Control Delay (s/veh)	52.0		13.7	13.6	24.7	44.9
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.0		13.7	13.6	24.7	44.9
LOS	D		B	B	C	D
Approach Delay (s/veh)	52.0			13.6	44.6	
Approach LOS	D			B	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 77.7  
 Natural Cycle: 80  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay (s/veh): 33.6  
 Intersection LOS: C  
 Intersection Capacity Utilization 66.8%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 5: Randolph Rd & Weston Canal Rd

03-EXSA  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	709	23	131	642	3	178
Future Volume (veh/h)	709	23	131	642	3	178
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1752	1752
Adj Flow Rate, veh/h	788	26	146	713	3	198
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	10	10
Cap, veh/h	874	29	312	1175	264	235
Arrive On Green	0.49	0.49	0.09	0.63	0.16	0.16
Sat Flow, veh/h	1800	59	1781	1870	1668	1485
Grp Volume(v), veh/h	0	814	146	713	3	198
Grp Sat Flow(s),veh/h/ln	0	1860	1781	1870	1668	1485
Q Serve(g_s), s	0.0	30.0	2.7	17.1	0.1	9.7
Cycle Q Clear(g_c), s	0.0	30.0	2.7	17.1	0.1	9.7
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	903	312	1175	264	235
V/C Ratio(X)	0.00	0.90	0.47	0.61	0.01	0.84
Avail Cap(c_a), veh/h	0	903	415	1175	401	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.6	15.0	8.4	26.6	30.6
Incr Delay (d2), s/veh	0.0	13.9	1.1	2.3	0.0	10.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.8	1.1	5.6	0.0	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	31.5	16.1	10.7	26.6	41.5
LnGrp LOS		C	B	B	C	D
Approach Vol, veh/h	814			859	201	
Approach Delay, s/veh	31.5			11.6	41.2	
Approach LOS	C			B	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		19.8	10.7	44.3		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		11.7	4.7	32.0		19.1
Green Ext Time (p_c), s		0.3	0.2	0.0		4.9
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			23.4			
HCM 7th LOS			C			



Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵	↵
Traffic Volume (vph)	711	8	126	625	3	211
Future Volume (vph)	711	8	126	625	3	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3498	0	1752	1845	1736	1553
Flt Permitted			0.311		0.950	
Satd. Flow (perm)	3498	0	574	1845	1736	1553
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%
Adj. Flow (vph)	808	9	143	710	3	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	817	0	143	710	3	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	17.0	11.0
Total Split (s)	32.0		19.0	32.0	17.0	19.0
Total Split (%)	47.1%		27.9%	47.1%	25.0%	27.9%
Maximum Green (s)	25.0		15.0	25.0	10.0	15.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	26.8		41.1	26.8	7.1	13.7
Actuated g/C Ratio	0.52		0.80	0.52	0.14	0.27
v/c Ratio	0.45		0.20	0.74	0.01	0.58
Control Delay (s/veh)	9.9		2.2	18.7	21.7	21.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.9		2.2	18.7	21.7	21.6
LOS	A		A	B	C	C
Approach Delay (s/veh)	9.9			16.0	21.6	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other  
 Cycle Length: 68  
 Actuated Cycle Length: 51.6  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay (s/veh): 14.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.4%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd

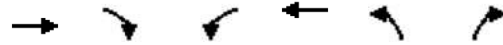


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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

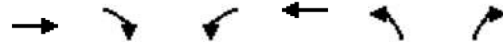
03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	585	493	38	473	356	177
Future Volume (vph)	585	493	38	473	356	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.931				0.955	
Fl <sub>t</sub> Protected				0.996	0.968	
Satd. Flow (prot)	3232	0	0	3457	1705	0
Fl <sub>t</sub> Permitted				0.739	0.968	
Satd. Flow (perm)	3232	0	0	2565	1705	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	4%	4%	3%	3%
Adj. Flow (vph)	643	542	42	520	391	195
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1185	0	0	562	586	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

03-EXSA  
08/14/2024

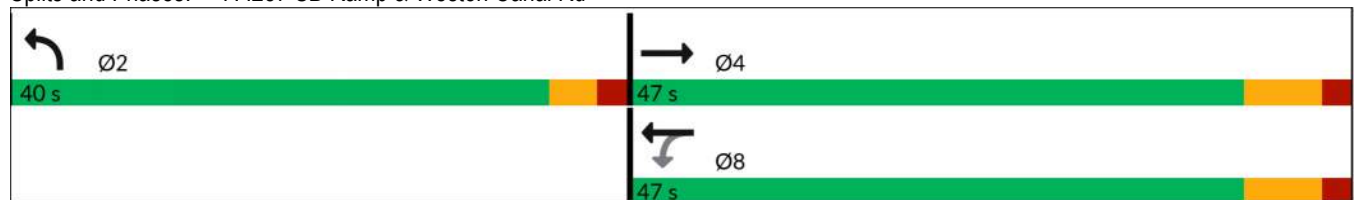


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.1			40.1	31.5	
Actuated g/C Ratio	0.48			0.48	0.38	
v/c Ratio	0.77			0.46	0.91	
Control Delay (s/veh)	22.8			16.8	45.4	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	22.8			16.8	45.4	
LOS	C			B	D	
Approach Delay (s/veh)	22.8			16.8	45.4	
Approach LOS	C			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	83.7
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.91
Intersection Signal Delay (s/veh):	27.0
Intersection LOS:	C
Intersection Capacity Utilization:	82.6%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

03-EXSA  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	585	493	38	473	356	177
Future Volume (veh/h)	585	493	38	473	356	177
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1856	1856
Adj Flow Rate, veh/h	643	0	42	520	391	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	3	3
Cap, veh/h	2002		151	1745	451	
Arrive On Green	0.57	0.00	0.57	0.57	0.26	0.00
Sat Flow, veh/h	3681	0	161	3133	1763	0
Grp Volume(v), veh/h	643	0	288	274	392	0
Grp Sat Flow(s),veh/h/ln	1749	0	1619	1591	1767	0
Q Serve(g_s), s	6.7	0.0	0.0	6.2	14.8	0.0
Cycle Q Clear(g_c), s	6.7	0.0	5.5	6.2	14.8	0.0
Prop In Lane		0.00	0.15		1.00	0.00
Lane Grp Cap(c), veh/h	2002		985	911	452	
V/C Ratio(X)	0.32		0.29	0.30	0.87	
Avail Cap(c_a), veh/h	2002		985	911	885	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.8	0.0	7.6	7.7	24.9	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.8	0.9	5.1	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	2.0	0.0	1.8	1.8	6.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.3	0.0	8.3	8.6	30.0	0.0
LnGrp LOS	A		A	A	C	
Approach Vol, veh/h	643			562	392	
Approach Delay, s/veh	8.3			8.4	30.0	
Approach LOS	A			A	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		22.9		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		16.8		8.7		8.2
Green Ext Time (p_c), s		1.1		4.3		3.4

Intersection Summary

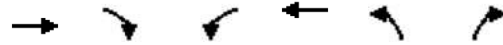
HCM 7th Control Delay, s/veh	13.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

03-EXSA  
 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	303	326	165	162	383	32
Future Volume (vph)	303	326	165	162	383	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.922				0.990	
Fl <sub>t</sub> Protected				0.975	0.956	
Satd. Flow (prot)	3231	0	0	3451	1746	0
Fl <sub>t</sub> Permitted				0.572	0.956	
Satd. Flow (perm)	3231	0	0	2024	1746	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	329	354	179	176	416	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	683	0	0	355	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

03-EXSA  
 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.3			40.3	24.5	
Actuated g/C Ratio	0.52			0.52	0.32	
v/c Ratio	0.40			0.33	0.81	
Control Delay (s/veh)	13.1			13.1	36.0	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	13.1			13.1	36.0	
LOS	B			B	D	
Approach Delay (s/veh)	13.1			13.1	36.0	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	76.9
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.81
Intersection Signal Delay (s/veh):	20.0
Intersection LOS:	C
Intersection Capacity Utilization:	67.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd





HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

03-EXSA  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	303	326	165	162	383	32
Future Volume (veh/h)	303	326	165	162	383	32
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1856	1856
Adj Flow Rate, veh/h	329	0	179	176	416	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	2	2	3	3
Cap, veh/h	1981		644	908	475	
Arrive On Green	0.56	0.00	0.56	0.56	0.27	0.00
Sat Flow, veh/h	3711	0	967	1702	1763	0
Grp Volume(v), veh/h	329	0	179	176	417	0
Grp Sat Flow(s),veh/h/ln	1763	0	967	1617	1767	0
Q Serve(g_s), s	3.2	0.0	7.1	3.8	16.1	0.0
Cycle Q Clear(g_c), s	3.2	0.0	10.3	3.8	16.1	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1981		644	908	477	
V/C Ratio(X)	0.17		0.28	0.19	0.88	
Avail Cap(c_a), veh/h	1981		644	908	869	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	10.0	7.7	24.9	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.1	0.5	5.2	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	1.0	0.0	1.5	1.1	6.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.7	0.0	11.1	8.1	30.1	0.0
LnGrp LOS	A		B	A	C	
Approach Vol, veh/h	329			355	417	
Approach Delay, s/veh	7.7			9.6	30.1	
Approach LOS	A			A	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		24.2		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		18.1		5.2		12.3
Green Ext Time (p_c), s		1.1		2.0		2.2

Intersection Summary

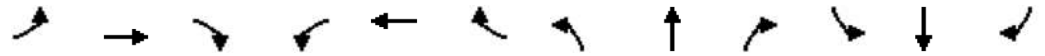
HCM 7th Control Delay, s/veh	16.8
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

03-EXSA  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	50	8	41	51	100	4	316	33	41	260	57
Future Volume (vph)	80	50	8	41	51	100	4	316	33	41	260	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980				0.850		0.986			0.973	
Flt Protected	0.950				0.978		0.950			0.950		
Satd. Flow (prot)	1770	1825	0	0	1822	1583	1770	1837	0	1770	1812	0
Flt Permitted	0.950				0.827		0.561			0.450		
Satd. Flow (perm)	1770	1825	0	0	1540	1583	1045	1837	0	838	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	83	52	8	43	53	104	4	329	34	43	271	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	60	0	0	96	104	4	363	0	43	330	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

03-EXSA  
08/14/2024

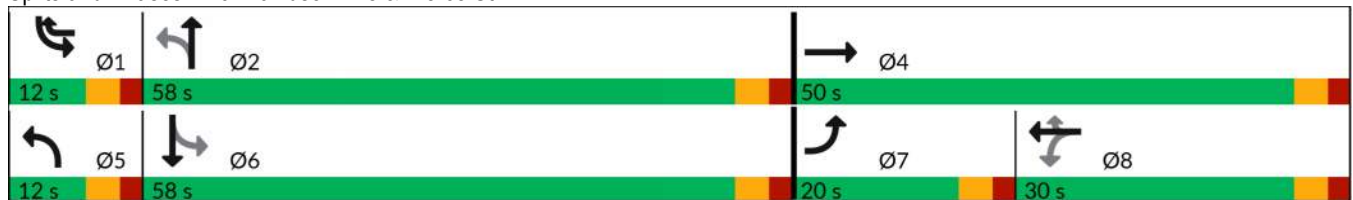


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	10.2	23.8			11.5	20.7	63.6	56.5		67.8	67.7	
Actuated g/C Ratio	0.10	0.24			0.12	0.21	0.64	0.57		0.68	0.68	
v/c Ratio	0.46	0.14			0.54	0.32	0.01	0.35		0.07	0.27	
Control Delay (s/veh)	52.4	28.5			54.8	35.7	8.8	16.0		8.7	11.4	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	52.4	28.5			54.8	35.7	8.8	16.0		8.7	11.4	
LOS	D	C			D	D	A	B		A	B	
Approach Delay (s/veh)		42.4			44.9			15.9			11.1	
Approach LOS		D			D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99.7
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.54
Intersection Signal Delay (s/veh):	23.1
Intersection LOS:	C
Intersection Capacity Utilization:	48.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St



HCM 7th Signalized Intersection Summary

03-EXSA

9: Davidson Ave & Pierce St

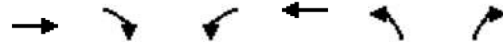
08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	50	8	41	51	100	4	316	33	41	260	57
Future Volume (veh/h)	80	50	8	41	51	100	4	316	33	41	260	57
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	83	52	8	43	53	104	4	329	34	43	271	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	333	51	111	91	222	652	960	99	649	921	201
Arrive On Green	0.07	0.21	0.21	0.09	0.09	0.09	0.01	0.58	0.58	0.05	0.62	0.62
Sat Flow, veh/h	1781	1583	244	609	1023	1585	1781	1667	172	1781	1488	324
Grp Volume(v), veh/h	83	0	60	96	0	104	4	0	363	43	0	330
Grp Sat Flow(s),veh/h/ln	1781	0	1827	1631	0	1585	1781	0	1839	1781	0	1812
Q Serve(g_s), s	4.2	0.0	2.5	4.0	0.0	5.6	0.1	0.0	9.6	0.8	0.0	7.8
Cycle Q Clear(g_c), s	4.2	0.0	2.5	5.2	0.0	5.6	0.1	0.0	9.6	0.8	0.0	7.8
Prop In Lane	1.00		0.13	0.45		1.00	1.00		0.09	1.00		0.18
Lane Grp Cap(c), veh/h	119	0	385	202	0	222	652	0	1059	649	0	1122
V/C Ratio(X)	0.70	0.00	0.16	0.47	0.00	0.47	0.01	0.00	0.34	0.07	0.00	0.29
Avail Cap(c_a), veh/h	290	0	893	492	0	511	775	0	1059	694	0	1122
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	29.7	40.4	0.0	36.4	8.1	0.0	10.3	6.8	0.0	8.2
Incr Delay (d2), s/veh	7.1	0.0	0.2	1.7	0.0	1.5	0.0	0.0	0.9	0.0	0.0	0.7
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	2.0	0.0	1.0	2.1	0.0	2.1	0.0	0.0	3.5	0.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.1	0.0	29.8	42.2	0.0	38.0	8.1	0.0	11.2	6.9	0.0	8.8
LnGrp LOS	D		C	D		D	A		B	A		A
Approach Vol, veh/h		143			200			367				373
Approach Delay, s/veh		41.0			40.0			11.2				8.6
Approach LOS		D			D			B				A
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	58.0		24.4	5.7	62.0	11.2	13.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	2.8	11.6		4.5	2.1	9.8	6.2	7.6				
Green Ext Time (p_c), s	0.0	2.1		0.3	0.0	1.9	0.1	0.7				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			19.6									
HCM 7th LOS			B									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	374	50	379	347	52	442
Future Volume (vph)	374	50	379	347	52	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.995	0.950	
Satd. Flow (prot)	3539	1583	1681	1761	1770	2787
Flt Permitted			0.950	0.995	0.950	
Satd. Flow (perm)	3539	1583	1681	1761	1770	2787
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	390	52	395	361	54	460
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	390	52	355	401	54	460
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8
Permitted Phases						

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

03-EXSA  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	8	8	4	4 8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.3	35.3	28.6	28.6	14.3	48.0
Actuated g/C Ratio	0.38	0.38	0.31	0.31	0.15	0.51
v/c Ratio	0.29	0.09	0.69	0.74	0.20	0.32
Control Delay (s/veh)	22.6	22.2	36.2	38.5	38.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	22.2	36.2	38.5	38.1	13.5
LOS	C	C	D	D	D	B
Approach Delay (s/veh)	22.5			37.4	16.1	
Approach LOS	C			D	B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	93.4
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.74
Intersection Signal Delay (s/veh):	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	46.6%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: Davidson Ave & Easton Ave

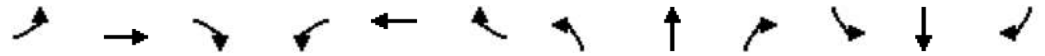


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

03-EXSA  
 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	265	80	138	262	35	80	491	147	241	451	52
Future Volume (vph)	80	265	80	138	262	35	80	491	147	241	451	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.965			0.982			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1798	0	1770	1829	0	1770	3415	0	1770	1863	1583
Flt Permitted	0.385			0.238			0.359			0.293		
Satd. Flow (perm)	717	1798	0	443	1829	0	669	3415	0	546	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
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
Adj. Flow (vph)	84	279	84	145	276	37	84	517	155	254	475	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	363	0	145	313	0	84	672	0	254	475	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		6



Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

03-EXSA  
 08/14/2024

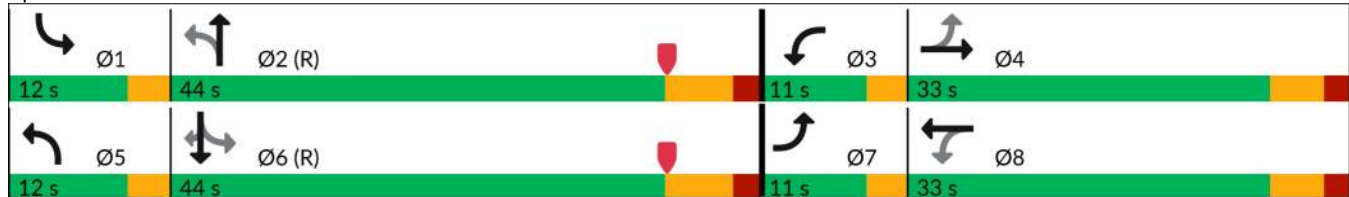


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		12.0	44.0		12.0	44.0	44.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		12.0%	44.0%		12.0%	44.0%	44.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		9.0	37.0		9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	34.4	23.9		35.5	26.1		51.2	39.6		55.0	43.4	43.4
Actuated g/C Ratio	0.34	0.24		0.36	0.26		0.51	0.40		0.55	0.43	0.43
v/c Ratio	0.26	0.85		0.55	0.66		0.20	0.50		0.61	0.59	0.08
Control Delay (s/veh)	21.3	54.6		28.9	40.5		12.4	25.0		19.7	27.3	20.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	21.3	54.6		28.9	40.5		12.4	25.0		19.7	27.3	20.2
LOS	C	D		C	D		B	C		B	C	C
Approach Delay (s/veh)		48.3			36.8			23.6			24.4	
Approach LOS		D			D			C			C	

Intersection Summary

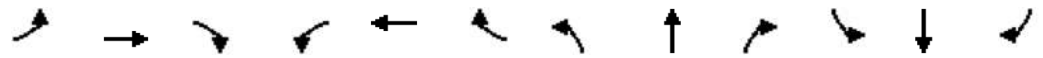
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay (s/veh): 30.8      Intersection LOS: C  
 Intersection Capacity Utilization 75.6%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

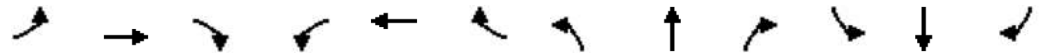
03-EXSA  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↗	↖
Traffic Volume (veh/h)	80	265	80	138	262	35	80	491	147	241	451	52
Future Volume (veh/h)	80	265	80	138	262	35	80	491	147	241	451	52
Initial 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	84	279	84	145	276	37	84	517	155	254	475	55
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	268	311	94	242	409	55	395	1122	335	444	862	730
Arrive On Green	0.05	0.23	0.23	0.08	0.25	0.25	0.05	0.42	0.42	0.09	0.46	0.46
Sat Flow, veh/h	1781	1380	416	1781	1615	216	1781	2698	805	1781	1870	1585
Grp Volume(v), veh/h	84	0	363	145	0	313	84	340	332	254	475	55
Grp Sat Flow(s),veh/h/ln	1781	0	1796	1781	0	1831	1781	1777	1725	1781	1870	1585
Q Serve(g_s), s	3.6	0.0	19.6	6.0	0.0	15.4	2.7	13.8	13.9	7.9	18.4	1.9
Cycle Q Clear(g_c), s	3.6	0.0	19.6	6.0	0.0	15.4	2.7	13.8	13.9	7.9	18.4	1.9
Prop In Lane	1.00		0.23	1.00		0.12	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	268	0	405	242	0	464	395	739	718	444	862	730
V/C Ratio(X)	0.31	0.00	0.90	0.60	0.00	0.67	0.21	0.46	0.46	0.57	0.55	0.08
Avail Cap(c_a), veh/h	321	0	485	244	0	494	474	739	718	444	862	730
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	28.4	0.0	37.6	27.7	0.0	33.6	16.3	21.1	21.1	15.0	19.5	15.1
Incr Delay (d2), s/veh	0.7	0.0	17.1	4.0	0.0	3.3	0.3	2.1	2.1	1.8	2.5	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	10.1	2.7	0.0	6.9	1.0	5.8	5.7	3.1	7.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	0.0	54.7	31.6	0.0	37.0	16.6	23.1	23.3	16.8	22.0	15.3
LnGrp LOS	C		D	C		D	B	C	C	B	C	B
Approach Vol, veh/h		447			458			756			784	
Approach Delay, s/veh		49.9			35.3			22.5			19.8	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	48.6	10.9	28.5	7.5	53.1	8.1	31.3				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	9.9	15.9	8.0	21.6	4.7	20.4	5.6	17.4				
Green Ext Time (p_c), s	0.0	3.7	0.0	0.9	0.1	2.6	0.0	1.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			29.0									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

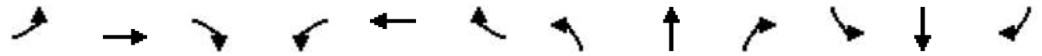
03-EXSA  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	391	222	79	402	0	319	0	85	0	0	0
Future Volume (vph)	0	391	222	79	402	0	319	0	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.946							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3348	0	1770	3539	0	1770	0	1583	0	1863	0
Flt Permitted				0.314			0.950					
Satd. Flow (perm)	0	3348	0	585	3539	0	1770	0	1583	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45		45			45		45		45	
Link Distance (ft)		684		399			410		196			
Travel Time (s)		10.4		6.0			6.2		3.0			
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	420	239	85	432	0	343	0	91	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	659	0	85	432	0	343	0	91	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12		12		12	
Link Offset(ft)		0		0			12		-30			
Crosswalk Width(ft)		50		40			16		16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94		94								94
Detector 2 Size(ft)		6		6								6
Detector 2 Type		Cl+Ex		Cl+Ex								Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0								0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1
Permitted Phases				8					2		1	

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

03-EXSA  
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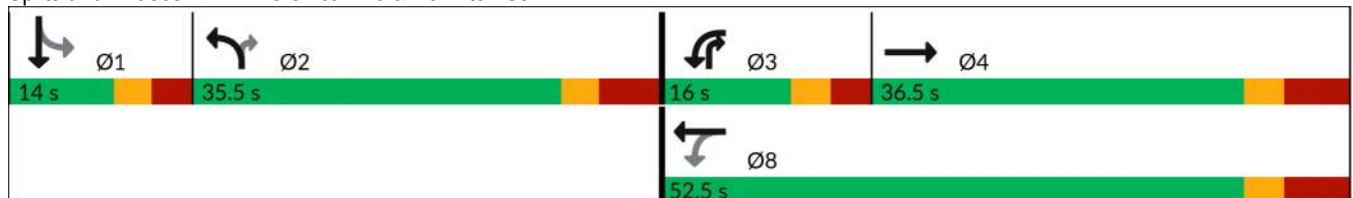


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effect Green (s)		31.3		45.7	42.2		18.9		34.8			
Actuated g/C Ratio		0.39		0.56	0.52		0.23		0.43			
v/c Ratio		0.51		0.20	0.23		0.83		0.13			
Control Delay (s/veh)		23.1		10.7	11.8		47.3		13.7			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		23.1		10.7	11.8		47.3		13.7			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		23.1			11.7			40.3				
Approach LOS		C			B			D				

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	81.1
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.83
Intersection Signal Delay (s/veh):	24.1
Intersection LOS:	C
Intersection Capacity Utilization:	57.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 12: Veronica Ave & Hamilton St

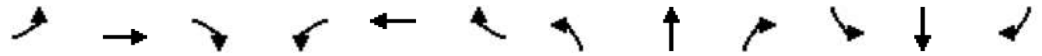


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

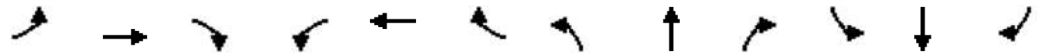
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	879	1	0	950	0	669	0	131	134	107	2
Future Volume (vph)	0	879	1	0	950	0	669	0	131	134	107	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850		0.999	
Flt Protected							0.950				0.973	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3440	0
Flt Permitted							0.950				0.973	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3440	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	916	1	0	990	0	697	0	136	140	111	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	917	0	0	990	0	697	0	136	0	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

03-EXSA  
 08/14/2024

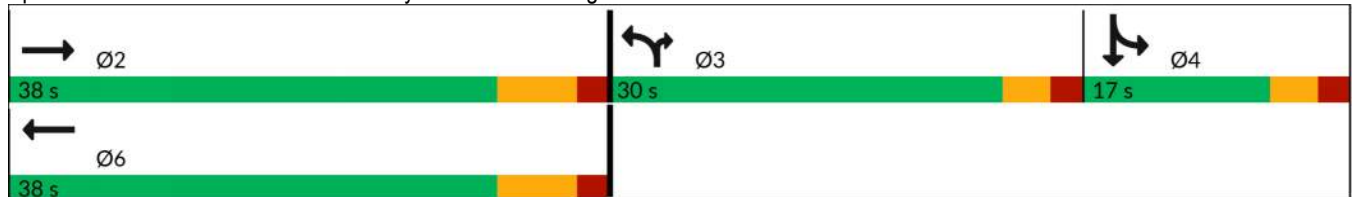


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		38.0			38.0		23.0		23.0	12.0	12.0	
Total Split (s)		38.0			38.0		30.0		30.0	17.0	17.0	
Total Split (%)		44.7%			44.7%		35.3%		35.3%	20.0%	20.0%	
Maximum Green (s)		31.0			31.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		31.2			31.2		21.0		21.0		10.5	
Actuated g/C Ratio		0.39			0.39		0.26		0.26		0.13	
v/c Ratio		0.66			0.72		0.77		0.33		0.56	
Control Delay (s/veh)		23.7			25.0		33.7		26.1		38.2	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		23.7			25.0		33.7		26.1		38.2	
LOS		C			C		C		C		D	
Approach Delay (s/veh)		23.7			25.0			32.4			38.2	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	79.7
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.77
Intersection Signal Delay (s/veh):	27.8
Intersection LOS:	C
Intersection Capacity Utilization:	61.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

03-EXSA  
 08/14/2024

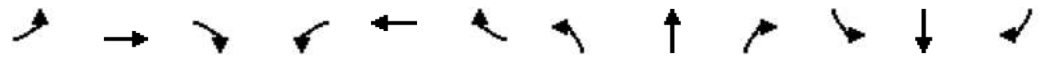


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	879	1	0	950	0	669	0	131	134	107	2
Future Volume (veh/h)	0	879	1	0	950	0	669	0	131	134	107	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	916	1	0	990	0	697	0	136	140	111	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2268	2	0	2213	0	0	0	0	243	250	4
Arrive On Green	0.00	0.62	0.62	0.00	0.62	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3736	4	0	3741	0		0		1781	1831	33
Grp Volume(v), veh/h	0	447	470	0	990	0		0.0		140	0	113
Grp Sat Flow(s),veh/h/ln	0	1777	1870	0	1777	0				1781	0	1864
Q Serve(g_s), s	0.0	6.3	6.3	0.0	7.3	0.0				3.7	0.0	2.8
Cycle Q Clear(g_c), s	0.0	6.3	6.3	0.0	7.3	0.0				3.7	0.0	2.8
Prop In Lane	0.00		0.00	0.00		0.00				1.00		0.02
Lane Grp Cap(c), veh/h	0	1106	1164	0	2213	0				243	0	254
V/C Ratio(X)	0.00	0.40	0.40	0.00	0.45	0.00				0.58	0.00	0.44
Avail Cap(c_a), veh/h	0	1106	1164	0	2213	0				429	0	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.7	4.7	0.0	4.9	0.0				20.2	0.0	19.8
Incr Delay (d2), s/veh	0.0	1.1	1.0	0.0	0.7	0.0				2.2	0.0	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	0.0	1.3	1.4	0.0	1.3	0.0				1.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	5.8	5.8	0.0	5.6	0.0				22.3	0.0	21.0
LnGrp LOS		A	A		A					C		C
Approach Vol, veh/h		917			990							253
Approach Delay, s/veh		5.8			5.6							21.7
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		11.8		38.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		31.0		12.0		31.0						
Max Q Clear Time (g_c+I1), s		8.3		5.7		9.3						
Green Ext Time (p_c), s		5.4		0.6		6.7						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				7.6								
HCM 7th LOS				A								



Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

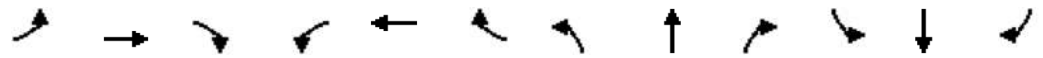
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	404	65	35	440	239	75	192	40	162	171	114
Future Volume (vph)	78	404	65	35	440	239	75	192	40	162	171	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3465	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.457			0.474			0.645			0.474		
Satd. Flow (perm)	851	3465	0	883	3539	1583	1201	1863	1583	883	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	81	421	68	36	458	249	78	200	42	169	178	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	489	0	36	458	249	78	200	42	169	178	119
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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 08/14/2024

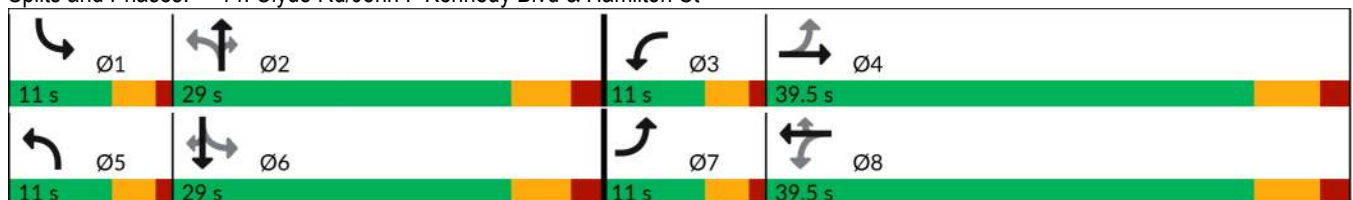


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	42.0	35.5		41.2	33.3	33.3	22.8	13.7	13.7	23.8	16.4	16.4
Actuated g/C Ratio	0.53	0.45		0.52	0.42	0.42	0.29	0.17	0.17	0.30	0.21	0.21
v/c Ratio	0.15	0.31		0.07	0.31	0.37	0.20	0.62	0.15	0.49	0.46	0.36
Control Delay (s/veh)	9.7	16.5		9.2	17.4	19.7	20.1	39.8	29.5	25.5	34.0	32.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.7	16.5		9.2	17.4	19.7	20.1	39.8	29.5	25.5	34.0	32.9
LOS	A	B		A	B	B	C	D	C	C	C	C
Approach Delay (s/veh)		15.5			17.7			33.6			30.7	
Approach LOS		B			B			C			C	

Intersection Summary

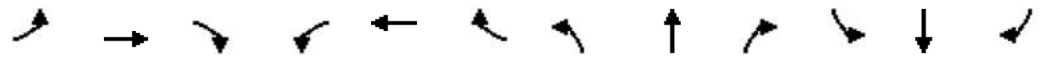
Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	79.2
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.62
Intersection Signal Delay (s/veh):	22.4
Intersection LOS:	C
Intersection Capacity Utilization:	55.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

03-EXSA  
 08/14/2024



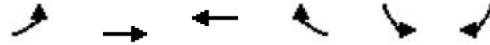
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	78	404	65	35	440	239	75	192	40	162	171	114
Future Volume (veh/h)	78	404	65	35	440	239	75	192	40	162	171	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	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	81	421	68	36	458	0	78	200	42	169	178	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	547	1393	223	513	1522		307	262	222	297	294	
Arrive On Green	0.07	0.45	0.45	0.05	0.43	0.00	0.07	0.14	0.14	0.09	0.16	0.00
Sat Flow, veh/h	1781	3067	492	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	81	243	246	36	458	0	78	200	42	169	178	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1782	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.8	6.7	6.7	0.8	6.5	0.0	2.8	7.9	1.8	6.2	6.8	0.0
Cycle Q Clear(g_c), s	1.8	6.7	6.7	0.8	6.5	0.0	2.8	7.9	1.8	6.2	6.8	0.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	547	807	809	513	1522		307	262	222	297	294	
V/C Ratio(X)	0.15	0.30	0.30	0.07	0.30		0.25	0.76	0.19	0.57	0.61	
Avail Cap(c_a), veh/h	576	807	809	588	1522		338	558	473	297	558	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.3	13.3	13.3	10.9	14.5	0.0	25.1	31.9	29.3	25.7	30.2	0.0
Incr Delay (d2), s/veh	0.1	1.0	1.0	0.1	0.5	0.0	0.4	4.6	0.4	2.5	2.0	0.0
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	0.6	2.5	2.5	0.3	2.4	0.0	1.1	3.7	0.7	2.6	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.4	14.2	14.3	11.0	15.0	0.0	25.5	36.5	29.7	28.2	32.3	0.0
LnGrp LOS	B	B	B	B	B		C	D	C	C	C	
Approach Vol, veh/h		570			494			320			347	
Approach Delay, s/veh		13.7			14.7			32.9			30.3	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	16.8	7.8	41.5	9.7	18.1	9.8	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	8.2	9.9	2.8	8.7	4.8	8.8	3.8	8.5				
Green Ext Time (p_c), s	0.0	0.9	0.0	2.6	0.0	0.7	0.0	2.8				

Intersection Summary												
HCM 7th Control Delay, s/veh											20.9	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

03-EXSA  
 08/14/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	950	243	0	0	0
Future Volume (vph)	0	950	243	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	5085	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1033	264	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	1033	264	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

03-EXSA  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	213	28	30	226	25	20	38	26	31	21	271
Future Volume (vph)	141	213	28	30	226	25	20	38	26	31	21	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.983				0.850			0.850		0.861	
Fl <sub>t</sub> Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	1831	0	1770	1863	1583	0	1831	1583	1770	1604	0
Fl <sub>t</sub> Permitted	0.557			0.603				0.802		0.585		
Satd. Flow (perm)	1038	1831	0	1123	1863	1583	0	1494	1583	1090	1604	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	147	222	29	31	235	26	21	40	27	32	22	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	251	0	31	235	26	0	61	27	32	304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

03-EXSA  
08/14/2024

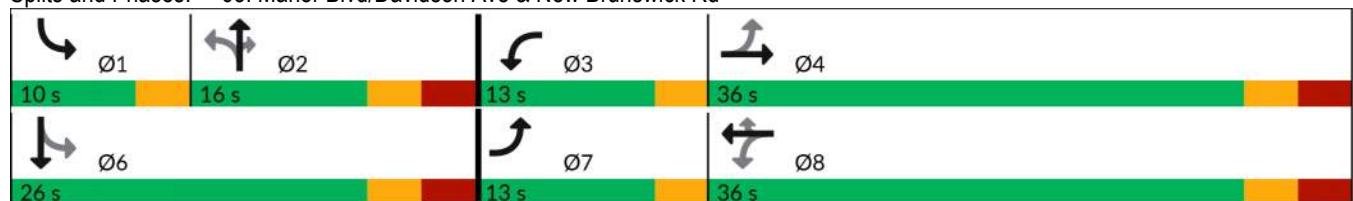


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0			7.0	7.0						7.0
Flash Don't Walk (s)		11.0			11.0	11.0						11.0
Pedestrian Calls (#/hr)		0			0	0						0
Act Effect Green (s)	42.4	35.8		38.8	30.5	30.5		13.3	13.3	20.0	17.0	
Actuated g/C Ratio	0.62	0.52		0.56	0.44	0.44		0.19	0.19	0.29	0.25	
v/c Ratio	0.20	0.26		0.04	0.28	0.04		0.21	0.09	0.08	0.77	
Control Delay (s/veh)	6.6	11.9		6.0	15.4	13.6		29.2	27.8	18.9	39.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	6.6	11.9		6.0	15.4	13.6		29.2	27.8	18.9	39.1	
LOS	A	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		10.0			14.2			28.7			37.2	
Approach LOS		A			B			C			D	

Intersection Summary

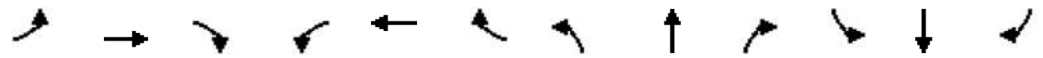
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	68.7
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.77
Intersection Signal Delay (s/veh):	20.8
Intersection LOS:	C
Intersection Capacity Utilization:	52.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

03-EXSA  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	213	28	30	226	25	20	38	26	31	21	271
Future Volume (veh/h)	141	213	28	30	226	25	20	38	26	31	21	271
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	147	222	29	31	235	26	21	40	27	32	22	282
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	700	817	107	670	845	716	95	132	210	247	26	334
Arrive On Green	0.10	0.50	0.50	0.05	0.45	0.45	0.13	0.13	0.13	0.05	0.22	0.22
Sat Flow, veh/h	1781	1621	212	1781	1870	1585	166	1000	1585	1781	116	1487
Grp Volume(v), veh/h	147	0	251	31	235	26	61	0	27	32	0	304
Grp Sat Flow(s),veh/h/ln	1781	0	1832	1781	1870	1585	1166	0	1585	1781	0	1603
Q Serve(g_s), s	2.5	0.0	5.2	0.6	5.2	0.6	0.1	0.0	1.0	1.0	0.0	12.1
Cycle Q Clear(g_c), s	2.5	0.0	5.2	0.6	5.2	0.6	6.1	0.0	1.0	1.0	0.0	12.1
Prop In Lane	1.00		0.12	1.00		1.00	0.34		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	700	0	923	670	845	716	227	0	210	247	0	360
V/C Ratio(X)	0.21	0.00	0.27	0.05	0.28	0.04	0.27	0.00	0.13	0.13	0.00	0.85
Avail Cap(c_a), veh/h	793	0	923	856	845	716	254	0	239	351	0	482
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.8	0.0	9.5	8.6	11.4	10.2	25.9	0.0	25.5	21.7	0.0	24.7
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.0	0.8	0.1	0.6	0.0	0.3	0.2	0.0	10.1
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	0.8	0.0	1.9	0.2	2.1	0.2	0.8	0.0	0.4	0.4	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.0	0.0	10.2	8.6	12.2	10.3	26.5	0.0	25.7	21.9	0.0	34.7
LnGrp LOS	A		B	A	B	B	C		C	C		C
Approach Vol, veh/h		398			292			88				336
Approach Delay, s/veh		9.0			11.7			26.3				33.5
Approach LOS		A			B			C				C
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	6.1	14.8	6.0	39.5		20.9	9.5	36.0				
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0		6.0	3.0	6.0				
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0		20.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	3.0	8.1	2.6	7.2		14.1	4.5	7.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4		0.8	0.2	1.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			18.5									
HCM 7th LOS			B									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

03-EXSA  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	552	47	46	13	10	453
Future Volume (vph)	552	47	46	13	10	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.868	
Flt Protected	0.956			0.962		
Satd. Flow (prot)	1761	0	0	1792	1617	0
Flt Permitted	0.956			0.962		
Satd. Flow (perm)	1761	0	0	1792	1617	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	600	51	50	14	11	492
Shared Lane Traffic (%)						
Lane Group Flow (vph)	651	0	0	64	503	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	75.3%
Analysis Period (min)	15
	ICU Level of Service D



Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	552	47	46	13	10	453
Future Vol, veh/h	552	47	46	13	10	453
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	600	51	50	14	11	492













Major/Minor	Minor2	Major2		
Conflicting Flow All	257	257	-	0
Stage 1	257	257	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	732	647	-	-
Stage 1	786	695	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	732	0	-	-
Mov Cap-2 Maneuver	732	0	-	-
Stage 1	786	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	10.39	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	732	-	-
HCM Lane V/C Ratio	0.088	-	-
HCM Control Delay (s/veh)	10.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	164	27	925	352	22	277
Future Volume (vph)	164	27	925	352	22	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1703	1524	1810	1538	1703	1792
Fl <sub>t</sub> Permitted	0.950				0.096	
Satd. Flow (perm)	1703	1524	1810	1538	172	1792
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		31				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	6%	5%	5%	6%	6%
Adj. Flow (vph)	189	31	1063	405	25	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	31	1063	405	25	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	13.0	13.0	41.6	65.2	46.6	41.6
Actuated g/C Ratio	0.18	0.18	0.59	0.92	0.66	0.59
v/c Ratio	0.61	0.10	1.00	0.29	0.09	0.30
Control Delay (s/veh)	36.4	10.9	48.2	1.9	5.4	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.4	10.9	48.2	1.9	5.4	10.4
LOS	D	B	D	A	A	B
Approach Delay (s/veh)	32.8		35.4			10.0
Approach LOS	C		D			B

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 71.1  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay (s/veh): 30.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 68.2%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	431	41	177	170	29	194
Future Volume (vph)	431	41	177	170	29	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.882	
Flt Protected			0.950		0.994	
Satd. Flow (prot)	1788	0	1770	1863	1633	0
Flt Permitted			0.950		0.994	
Satd. Flow (perm)	1788	0	1770	1863	1633	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	495	47	203	195	33	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	542	0	203	195	256	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.6%
Analysis Period (min)	15
	ICU Level of Service B

Intersection						
Int Delay, s/veh	6.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	431	41	177	170	29	194
Future Vol, veh/h	431	41	177	170	29	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	495	47	203	195	33	223

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	543	0	1121 519
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	602 -
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	-	-	1026	-	228 557
Stage 1	-	-	-	-	597 -
Stage 2	-	-	-	-	547 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1026	-	183 557
Mov Cap-2 Maneuver	-	-	-	-	183 -
Stage 1	-	-	-	-	597 -
Stage 2	-	-	-	-	438 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	4.78	23.99
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	440	-	-	1026	-
HCM Lane V/C Ratio	0.583	-	-	0.198	-
HCM Control Delay (s/veh)	24	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.6	-	-	0.7	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

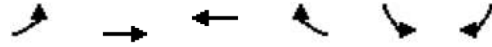
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↘	↙
Traffic Volume (vph)	124	139	283	112	148	35
Future Volume (vph)	124	139	283	112	148	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.962			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1641	1727	1724	0	1597	1429
Flt Permitted	0.382				0.950	
Satd. Flow (perm)	660	1727	1724	0	1597	1429
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	10%	10%	6%	6%	13%	13%
Adj. Flow (vph)	146	164	333	132	174	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	164	465	0	174	41
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
 3: Schoolhouse Rd & Randolph Rd

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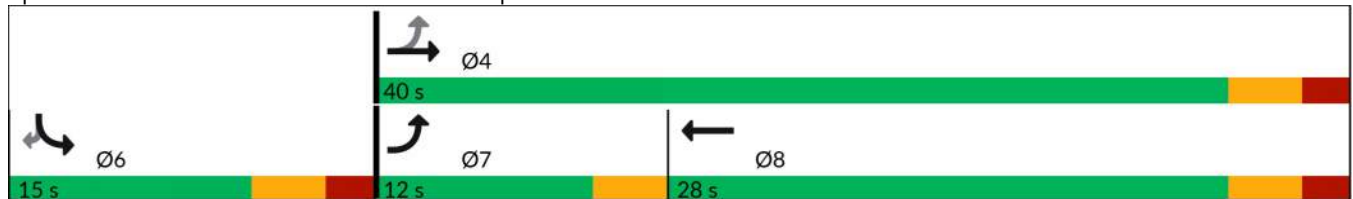


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.0	39.0	30.4		9.3	9.3
Actuated g/C Ratio	0.73	0.71	0.55		0.17	0.17
v/c Ratio	0.24	0.13	0.49		0.64	0.17
Control Delay (s/veh)	4.1	4.2	13.3		33.7	21.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	4.1	4.2	13.3		33.7	21.0
LOS	A	A	B		C	C
Approach Delay (s/veh)		4.2	13.3		31.3	
Approach LOS		A	B		C	

Intersection Summary

Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.9  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay (s/veh): 14.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 48.4%  
 ICU Level of Service A  
 Analysis Period (min) 15

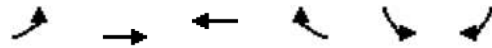
Splits and Phases: 3: Schoolhouse Rd & Randolph Rd





HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

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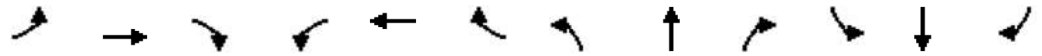
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	124	139	283	112	148	35	
Future Volume (veh/h)	124	139	283	112	148	35	
Initial Q (Qb), veh	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1752	1752	1811	1811	1707	1707	
Adj Flow Rate, veh/h	146	164	333	132	174	41	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	
Percent Heavy Veh, %	10	10	6	6	13	13	
Cap, veh/h	603	1174	611	242	225	200	
Arrive On Green	0.12	0.67	0.49	0.49	0.14	0.14	
Sat Flow, veh/h	1668	1752	1234	489	1626	1447	
Grp Volume(v), veh/h	146	164	0	465	174	41	
Grp Sat Flow(s),veh/h/ln	1668	1752	0	1723	1626	1447	
Q Serve(g_s), s	1.7	1.8	0.0	9.7	5.4	1.3	
Cycle Q Clear(g_c), s	1.7	1.8	0.0	9.7	5.4	1.3	
Prop In Lane	1.00			0.28	1.00	1.00	
Lane Grp Cap(c), veh/h	603	1174	0	853	225	200	
V/C Ratio(X)	0.24	0.14	0.00	0.55	0.78	0.21	
Avail Cap(c_a), veh/h	693	1174	0	853	311	277	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	5.1	3.1	0.0	9.1	21.7	20.0	
Incr Delay (d2), s/veh	0.2	0.2	0.0	2.5	7.9	0.5	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.0	3.0	2.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	5.3	3.4	0.0	11.6	29.6	20.5	
LnGrp LOS	A	A		B	C	C	
Approach Vol, veh/h		310	465		215		
Approach Delay, s/veh		4.3	11.6		27.9		
Approach LOS		A	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	12.2	9.2	30.8
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				3.8	7.4	3.7	11.7
Green Ext Time (p_c), s				0.8	0.1	0.1	2.1
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			12.8				
HCM 7th LOS			B				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	368	112	150	405	39	285	449	307	36	179	100
Future Volume (vph)	141	368	112	150	405	39	285	449	307	36	179	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	1736	1827	1553	1770	1863	1583	1719	1712	0
Flt Permitted	0.164			0.224			0.388			0.950		
Satd. Flow (perm)	300	1827	1553	409	1827	1553	723	1863	1583	1719	1712	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	155	404	123	165	445	43	313	493	337	40	197	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	404	123	165	445	43	313	493	337	40	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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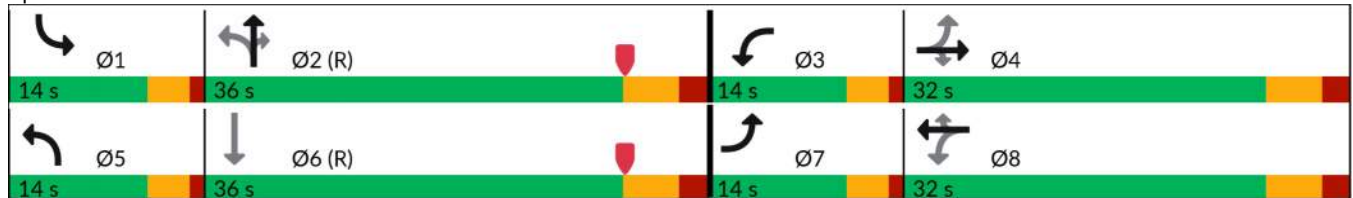


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	36.7	25.3	25.3	36.8	25.3	25.3	45.6	37.6	37.6	7.7	31.2	
Actuated g/C Ratio	0.38	0.26	0.26	0.38	0.26	0.26	0.48	0.39	0.39	0.08	0.33	
v/c Ratio	0.61	0.84	0.30	0.57	0.92	0.11	0.69	0.68	0.54	0.29	0.55	
Control Delay (s/veh)	27.9	50.5	30.3	25.6	61.4	27.2	26.3	32.5	29.1	46.4	31.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.9	50.5	30.3	25.6	61.4	27.2	26.3	32.5	29.1	46.4	31.8	
LOS	C	D	C	C	E	C	C	C	C	D	C	
Approach Delay (s/veh)		41.7			50.1			29.8			33.5	
Approach LOS		D			D			C			C	

Intersection Summary

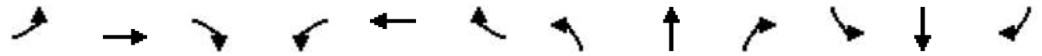
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay (s/veh): 37.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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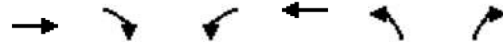
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	141	368	112	150	405	39	285	449	307	36	179	100
Future Volume (veh/h)	141	368	112	150	405	39	285	449	307	36	179	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	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	1841	1841	1841	1841	1841	1841	1870	1870	1870	1826	1826	1826
Adj Flow Rate, veh/h	155	404	0	165	445	0	313	493	0	40	197	0
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, %	4	4	4	4	4	4	2	2	2	5	5	5
Cap, veh/h	245	471		275	479		573	739		91	626	
Arrive On Green	0.08	0.26	0.00	0.09	0.26	0.00	0.10	0.40	0.00	0.05	0.34	0.00
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1781	1870	1585	1739	1826	0
Grp Volume(v), veh/h	155	404	0	165	445	0	313	493	0	40	197	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1781	1870	1585	1739	1826	0
Q Serve(g_s), s	6.1	20.1	0.0	6.5	22.6	0.0	10.0	20.8	0.0	2.1	7.6	0.0
Cycle Q Clear(g_c), s	6.1	20.1	0.0	6.5	22.6	0.0	10.0	20.8	0.0	2.1	7.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	245	471		275	479		573	739		91	626	
V/C Ratio(X)	0.63	0.86		0.60	0.93		0.55	0.67		0.44	0.31	
Avail Cap(c_a), veh/h	280	499		303	499		573	739		181	626	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.9	34.0	0.0	25.3	34.6	0.0	17.7	23.9	0.0	44.1	23.2	0.0
Incr Delay (d2), s/veh	3.7	13.3	0.0	2.8	23.5	0.0	1.1	4.7	0.0	3.4	1.3	0.0
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	2.6	10.2	0.0	2.7	12.6	0.0	4.2	9.4	0.0	1.0	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.6	47.4	0.0	28.1	58.1	0.0	18.8	28.6	0.0	47.5	24.5	0.0
LnGrp LOS	C	D		C	E		B	C		D	C	
Approach Vol, veh/h		559			610			806			237	
Approach Delay, s/veh		42.4			50.0			24.8			28.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	43.9	12.5	30.6	14.0	38.9	12.1	31.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	4.1	22.8	8.5	22.1	12.0	9.6	8.1	24.6				
Green Ext Time (p_c), s	0.0	1.6	0.1	0.8	0.0	0.9	0.1	0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh											36.6	
HCM 7th LOS											D	

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

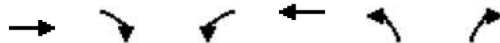
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	751	36	481	370	14	351
Future Volume (vph)	751	36	481	370	14	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1816	0	1687	1776	1671	1495
Flt Permitted			0.111		0.950	
Satd. Flow (perm)	1816	0	197	1776	1671	1495
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	7%	7%	8%	8%
Adj. Flow (vph)	834	40	534	411	16	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	874	0	534	411	16	390
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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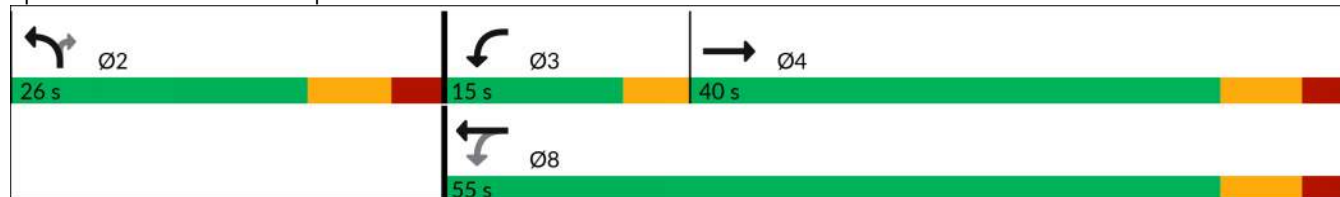


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	1.22		1.64	0.40	0.04	1.17
Control Delay (s/veh)	136.7		321.8	10.7	25.3	137.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	136.7		321.8	10.7	25.3	137.3
LOS	F		F	B	C	F
Approach Delay (s/veh)	136.7			186.5	132.9	
Approach LOS	F			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 81  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.64  
 Intersection Signal Delay (s/veh): 157.1      Intersection LOS: F  
 Intersection Capacity Utilization 89.2%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

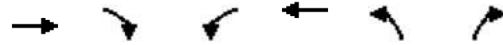
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	751	36	481	370	14	351
Future Volume (veh/h)	751	36	481	370	14	351
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1796	1796	1781	1781
Adj Flow Rate, veh/h	834	40	534	411	16	390
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	7	7	8	8
Cap, veh/h	688	33	321	1042	377	335
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1742	84	1711	1796	1697	1510
Grp Volume(v), veh/h	0	874	534	411	16	390
Grp Sat Flow(s),veh/h/ln	0	1826	1711	1796	1697	1510
Q Serve(g_s), s	0.0	32.0	11.0	10.1	0.6	18.0
Cycle Q Clear(g_c), s	0.0	32.0	11.0	10.1	0.6	18.0
Prop In Lane		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	721	321	1042	377	335
V/C Ratio(X)	0.00	1.21	1.66	0.39	0.04	1.16
Avail Cap(c_a), veh/h	0	721	321	1042	377	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.5	23.5	9.3	24.7	31.5
Incr Delay (d2), s/veh	0.0	107.9	311.6	1.1	0.0	100.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	33.6	30.3	3.4	0.2	15.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	132.4	335.1	10.4	24.8	132.4
LnGrp LOS		F	F	B	C	F
Approach Vol, veh/h	874			945	406	
Approach Delay, s/veh	132.4			193.9	128.2	
Approach LOS	F			F	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	34.0		12.1
Green Ext Time (p_c), s		0.0	0.0	0.0		2.4
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			157.7			
HCM 7th LOS			F			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

04-FBAM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵	↵
Traffic Volume (vph)	836	68	634	1160	23	340
Future Volume (vph)	836	68	634	1160	23	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.989					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3368	0	1656	1743	1612	1442
Flt Permitted			0.142		0.950	
Satd. Flow (perm)	3368	0	248	1743	1612	1442
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	6%	9%	9%	12%	12%
Adj. Flow (vph)	929	76	704	1289	26	378
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1005	0	704	1289	26	378
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3



Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

04-FBAM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	31.3		68.2	31.3	7.1	39.0
Actuated g/C Ratio	0.38		0.84	0.38	0.09	0.48
v/c Ratio	0.78		0.89	1.93	0.19	0.55
Control Delay (s/veh)	28.5		32.8	443.6	40.7	18.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5		32.8	443.6	40.7	18.0
LOS	C		C	F	D	B
Approach Delay (s/veh)	28.5			298.5	19.5	
Approach LOS	C			F	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 81.3  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.93  
 Intersection Signal Delay (s/veh): 185.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 81.2%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

04-FBAM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	530	834	25	1099	700	186
Future Volume (vph)	530	834	25	1099	700	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr t	0.908				0.972	
Fl t Protected				0.999	0.962	
Satd. Flow (prot)	3092	0	0	3370	1645	0
Fl t Permitted				0.730	0.962	
Satd. Flow (perm)	3092	0	0	2463	1645	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	7%	7%	8%	8%
Adj. Flow (vph)	576	907	27	1195	761	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1483	0	0	1222	963	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

04-FBAM-1  
08/14/2024



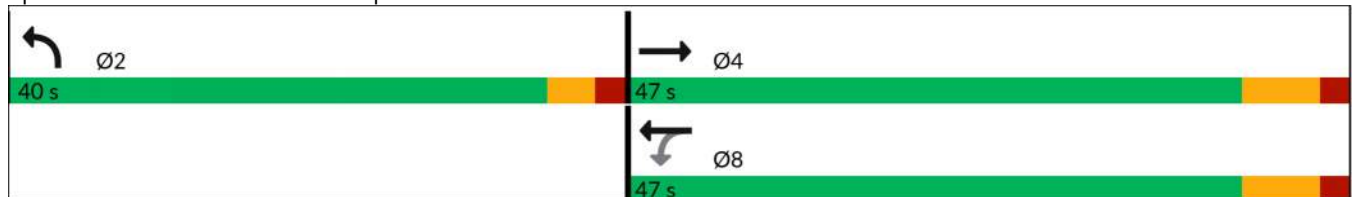
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.27dr			1.08	1.46	
Control Delay (s/veh)	61.0			75.9	239.1	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	61.0			75.9	239.1	
LOS	E			E	F	
Approach Delay (s/veh)	61.0			75.9	239.1	
Approach LOS	E			E	F	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.46
Intersection Signal Delay (s/veh):	112.7
Intersection LOS:	F
Intersection Capacity Utilization:	108.4%
ICU Level of Service:	G
Analysis Period (min):	15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
7: I287 SB Ramp & Weston Canal Rd

04-FBAM-1  
08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	530	834	25	1099	700	186
Future Volume (veh/h)	530	834	25	1099	700	186
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1796	1796	1781	1781
Adj Flow Rate, veh/h	576	0	27	1195	761	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	7	7	8	8
Cap, veh/h	1582		60	1501	682	
Arrive On Green	0.46	0.00	0.46	0.46	0.40	0.00
Sat Flow, veh/h	3622	0	38	3347	1694	0
Grp Volume(v), veh/h	576	0	649	573	762	0
Grp Sat Flow(s),veh/h/ln	1721	0	1750	1553	1697	0
Q Serve(g_s), s	9.4	0.0	8.3	27.5	35.0	0.0
Cycle Q Clear(g_c), s	9.4	0.0	27.2	27.5	35.0	0.0
Prop In Lane		0.00	0.04		1.00	0.00
Lane Grp Cap(c), veh/h	1582		848	714	683	
V/C Ratio(X)	0.36		0.77	0.80	1.12	
Avail Cap(c_a), veh/h	1582		848	714	683	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	19.9	20.1	26.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	6.5	9.3	71.0	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	3.4	0.0	11.2	10.5	25.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.9	0.0	26.4	29.4	97.0	0.0
LnGrp LOS	B		C	C	F	
Approach Vol, veh/h	576			1222	762	
Approach Delay, s/veh	15.9			27.8	97.0	
Approach LOS	B			C	F	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		40.0		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		37.0		11.4		29.5
Green Ext Time (p_c), s		0.0		3.7		5.4

Intersection Summary

HCM 7th Control Delay, s/veh	45.7
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

04-FBAM-1  
 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	363	438	283	315	528	22
Future Volume (vph)	363	438	283	315	528	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.918				0.995	
Fl <sub>t</sub> Protected				0.977	0.954	
Satd. Flow (prot)	3126	0	0	3424	1596	0
Fl <sub>t</sub> Permitted				0.529	0.954	
Satd. Flow (perm)	3126	0	0	1854	1596	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	6%	3%	3%	13%	13%
Adj. Flow (vph)	408	492	318	354	593	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	900	0	0	672	618	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

04-FBAM-1  
 08/14/2024

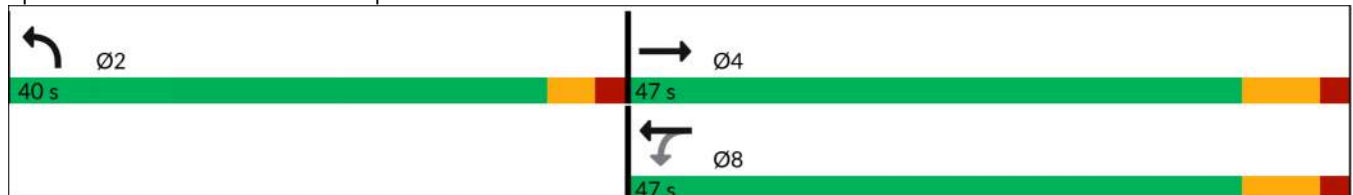


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	34.5	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	0.62			1.56dl	0.97	
Control Delay (s/veh)	20.0			27.9	56.8	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	20.0			27.9	56.8	
LOS	C			C	E	
Approach Delay (s/veh)	20.0			27.9	56.8	
Approach LOS	C			C	E	

Intersection Summary

Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 86.5  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay (s/veh): 32.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 87.5%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

04-FBAM-1  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	363	438	283	315	528	22
Future Volume (veh/h)	363	438	283	315	528	22
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1856	1856	1707	1707
Adj Flow Rate, veh/h	408	0	318	354	593	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	6	3	3	13	13
Cap, veh/h	1626		475	758	626	
Arrive On Green	0.47	0.00	0.47	0.47	0.39	0.00
Sat Flow, veh/h	3622	0	824	1689	1623	0
Grp Volume(v), veh/h	408	0	318	354	594	0
Grp Sat Flow(s),veh/h/ln	1721	0	824	1604	1626	0
Q Serve(g_s), s	6.0	0.0	24.7	12.6	29.9	0.0
Cycle Q Clear(g_c), s	6.0	0.0	30.7	12.6	29.9	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1626		475	758	627	
V/C Ratio(X)	0.25		0.67	0.47	0.95	
Avail Cap(c_a), veh/h	1626		475	758	673	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	0.0	22.5	15.1	25.2	0.0
Incr Delay (d2), s/veh	0.4	0.0	7.3	2.1	21.9	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	2.1	0.0	5.9	4.4	14.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.7	0.0	29.9	17.2	47.1	0.0
LnGrp LOS	B		C	B	D	
Approach Vol, veh/h	408			672	594	
Approach Delay, s/veh	13.7			23.2	47.1	
Approach LOS	B			C	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		37.6		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		31.9		8.0		32.7
Green Ext Time (p_c), s		0.7		2.6		2.5

Intersection Summary

HCM 7th Control Delay, s/veh	29.4
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

04-FBAM-1  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	113	23	79	153	297	18	448	106	147	529	77
Future Volume (vph)	98	113	23	79	153	297	18	448	106	147	529	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850		0.971			0.981	
Flt Protected	0.950				0.983		0.950			0.950		
Satd. Flow (prot)	1770	1816	0	0	1831	1583	1752	1791	0	1770	1827	0
Flt Permitted	0.950				0.830		0.263			0.238		
Satd. Flow (perm)	1770	1816	0	0	1546	1583	485	1791	0	443	1827	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	103	119	24	83	161	313	19	472	112	155	557	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	143	0	0	244	313	19	584	0	155	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

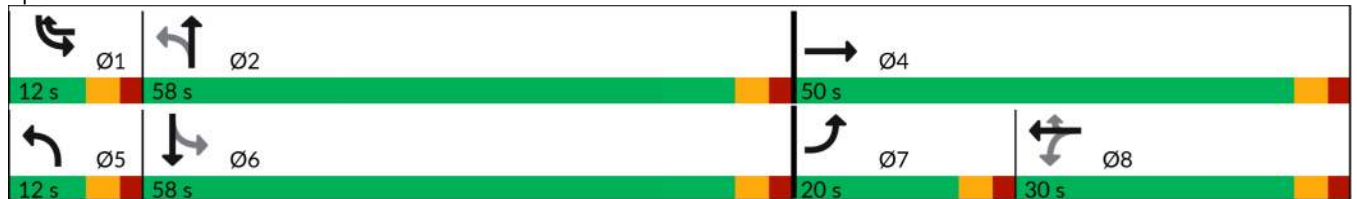
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases		4		8		8	2			6		
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	11.6	38.1			21.5	33.6	60.2	53.2		63.4	60.7	
Actuated g/C Ratio	0.10	0.34			0.19	0.30	0.53	0.47		0.56	0.54	
v/c Ratio	0.57	0.23			0.83	0.67	0.06	0.70		0.47	0.65	
Control Delay (s/veh)	62.1	27.6			68.3	43.3	12.8	30.4		17.9	25.8	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	62.1	27.6			68.3	43.3	12.8	30.4		17.9	25.8	
LOS	E	C			E	D	B	C		B	C	
Approach Delay (s/veh)		42.1			54.2			29.9			24.3	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 113.4  
 Natural Cycle: 115  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay (s/veh): 35.4      Intersection LOS: D  
 Intersection Capacity Utilization 74.8%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 9: Davidson Ave & Pierce St



HCM 7th Signalized Intersection Summary

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9: Davidson Ave & Pierce St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	113	23	79	153	297	18	448	106	147	529	77
Future Volume (veh/h)	98	113	23	79	153	297	18	448	106	147	529	77
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	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	103	119	24	83	161	313	19	472	112	155	557	81
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	3	3	3	2	2	2
Cap, veh/h	130	488	98	145	231	425	313	694	165	365	820	119
Arrive On Green	0.07	0.32	0.32	0.21	0.21	0.21	0.03	0.48	0.48	0.06	0.51	0.51
Sat Flow, veh/h	1781	1511	305	495	1127	1585	1767	1450	344	1781	1596	232
Grp Volume(v), veh/h	103	0	143	244	0	313	19	0	584	155	0	638
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1622	0	1585	1767	0	1794	1781	0	1829
Q Serve(g_s), s	6.3	0.0	6.4	13.4	0.0	19.9	0.6	0.0	27.9	4.8	0.0	28.9
Cycle Q Clear(g_c), s	6.3	0.0	6.4	15.5	0.0	19.9	0.6	0.0	27.9	4.8	0.0	28.9
Prop In Lane	1.00		0.17	0.34		1.00	1.00		0.19	1.00		0.13
Lane Grp Cap(c), veh/h	130	0	587	376	0	425	313	0	859	365	0	939
V/C Ratio(X)	0.80	0.00	0.24	0.65	0.00	0.74	0.06	0.00	0.68	0.42	0.00	0.68
Avail Cap(c_a), veh/h	241	0	738	409	0	457	375	0	859	366	0	939
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	27.5	41.0	0.0	37.0	16.5	0.0	22.3	16.9	0.0	20.1
Incr Delay (d2), s/veh	10.5	0.0	0.2	3.2	0.0	5.7	0.1	0.0	4.3	0.8	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.7	6.3	0.0	8.1	0.2	0.0	11.8	1.8	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.0	0.0	27.7	44.1	0.0	42.7	16.6	0.0	26.6	17.7	0.0	24.1
LnGrp LOS	E		C	D		D	B		C	B		C
Approach Vol, veh/h		246			557			603			793	
Approach Delay, s/veh		41.7			43.3			26.3			22.8	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	58.0		40.8	8.1	61.8	13.1	27.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	6.8	29.9		8.4	2.6	30.9	8.3	21.9				
Green Ext Time (p_c), s	0.0	3.6		0.7	0.0	4.0	0.1	0.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			31.1									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	461	483	1029	479	122	805
Future Volume (vph)	461	483	1029	479	122	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.982	0.950	
Satd. Flow (prot)	3471	1553	1665	1721	1752	2760
Flt Permitted			0.950	0.982	0.950	
Satd. Flow (perm)	3471	1553	1665	1721	1752	2760
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Adj. Flow (vph)	496	519	1106	515	131	866
Shared Lane Traffic (%)			28%			
Lane Group Flow (vph)	496	519	796	825	131	866
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
<b>Permitted Phases</b>						
Detector Phase	2	2	8	8	4	4 8
<b>Switch Phase</b>						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
<b>Lead/Lag</b>						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.1	35.1	35.1	35.1	27.2	67.3
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.24	0.60
v/c Ratio	0.46	1.07	1.53	1.54	0.31	0.52
Control Delay (s/veh)	33.5	99.8	279.5	281.3	36.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.5	99.8	279.5	281.3	36.5	14.4
LOS	C	F	F	F	D	B
Approach Delay (s/veh)	67.4			280.4	17.3	
Approach LOS	E			F	B	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 112.4  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.54  
 Intersection Signal Delay (s/veh): 148.7      Intersection LOS: F  
 Intersection Capacity Utilization 79.3%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 10: Davidson Ave & Easton Ave

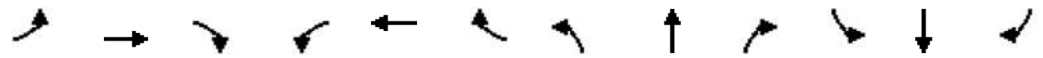


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

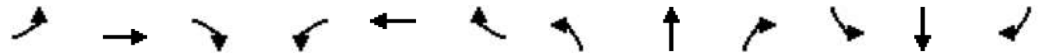
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	364	45	114	416	81	277	685	188	223	423	112
Future Volume (vph)	76	364	45	114	416	81	277	685	188	223	423	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.983			0.976			0.968				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1729	0	1687	1733	0	1770	3426	0	1752	1845	1568
Flt Permitted	0.144			0.174			0.272			0.144		
Satd. Flow (perm)	253	1729	0	309	1733	0	507	3426	0	266	1845	1568
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	83	396	49	124	452	88	301	745	204	242	460	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	445	0	124	540	0	301	949	0	242	460	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		14.0	42.0		14.0	42.0	42.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		14.0%	42.0%		14.0%	42.0%	42.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		11.0	35.0		11.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	37.7	27.2		38.7	29.3		50.2	35.2		49.8	35.0	35.0
Actuated g/C Ratio	0.38	0.27		0.39	0.29		0.50	0.35		0.50	0.35	0.35
v/c Ratio	0.41	0.95		0.55	1.07		0.77	0.79		0.83	0.71	0.22
Control Delay (s/veh)	24.9	67.3		28.6	94.6		28.9	34.8		41.0	35.5	24.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	24.9	67.3		28.6	94.6		28.9	34.8		41.0	35.5	24.3
LOS	C	E		C	F		C	C		D	D	C
Approach Delay (s/veh)		60.6			82.3			33.4			35.4	
Approach LOS		E			F			C			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.07  
 Intersection Signal Delay (s/veh): 48.3      Intersection LOS: D  
 Intersection Capacity Utilization 86.1%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln





HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

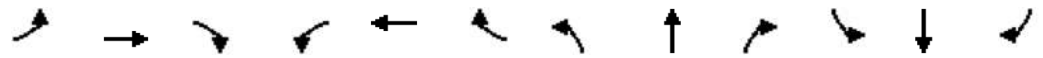
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	364	45	114	416	81	277	685	188	223	423	112
Future Volume (veh/h)	76	364	45	114	416	81	277	685	188	223	423	112
Initial Q (Qb), veh	0	0	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	1781	1781	1781	1796	1796	1796	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	83	396	49	124	452	88	301	745	204	242	460	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	7	7	7	2	2	2	3	3	3
Cap, veh/h	157	419	52	208	422	82	394	1010	277	335	670	568
Arrive On Green	0.05	0.27	0.27	0.07	0.29	0.29	0.11	0.37	0.37	0.10	0.36	0.36
Sat Flow, veh/h	1697	1554	192	1711	1461	284	1781	2757	755	1767	1856	1572
Grp Volume(v), veh/h	83	0	445	124	0	540	301	480	469	242	460	122
Grp Sat Flow(s),veh/h/ln	1697	0	1747	1711	0	1745	1781	1777	1734	1767	1856	1572
Q Serve(g_s), s	3.5	0.0	25.0	5.1	0.0	28.9	10.7	23.5	23.5	8.5	21.1	5.4
Cycle Q Clear(g_c), s	3.5	0.0	25.0	5.1	0.0	28.9	10.7	23.5	23.5	8.5	21.1	5.4
Prop In Lane	1.00		0.11	1.00		0.16	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	157	0	471	208	0	504	394	651	635	335	670	568
V/C Ratio(X)	0.53	0.00	0.94	0.60	0.00	1.07	0.76	0.74	0.74	0.72	0.69	0.21
Avail Cap(c_a), veh/h	208	0	472	227	0	504	394	651	635	344	670	568
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	28.0	0.0	35.8	26.7	0.0	35.6	20.3	27.5	27.5	20.9	27.1	22.1
Incr Delay (d2), s/veh	2.8	0.0	27.9	3.6	0.0	60.5	8.7	7.3	7.5	7.1	5.6	0.9
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	1.5	0.0	13.7	2.2	0.0	20.0	5.0	10.6	10.3	3.8	9.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.7	0.0	63.7	30.3	0.0	96.1	29.0	34.8	35.0	28.1	32.8	23.0
LnGrp LOS	C		E	C		F	C	C	C	C	C	C
Approach Vol, veh/h		528			664			1250			824	
Approach Delay, s/veh		58.5			83.8			33.5			29.9	
Approach LOS		E			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	43.6	9.9	33.0	14.0	43.1	8.0	34.9				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	27.0	11.0	35.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	10.5	25.5	7.1	27.0	12.7	23.1	5.5	30.9				
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	2.4	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			46.9									
HCM 7th LOS			D									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

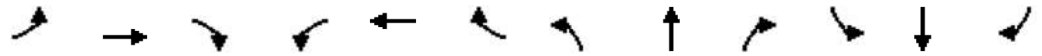
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	77	411	123	499	0	354	0	62	0	0	0
Future Volume (vph)	0	77	411	123	499	0	354	0	62	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.874							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	2949	0	1752	3505	0	1641	0	1468	0	1900	0
Flt Permitted				0.369			0.950					
Satd. Flow (perm)	0	2949	0	681	3505	0	1641	0	1468	0	1900	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			199	
Travel Time (s)		10.4			6.0			6.2			3.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	10%	10%	10%	0%	0%	0%
Adj. Flow (vph)	0	83	442	132	537	0	381	0	67	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	132	537	0	381	0	67	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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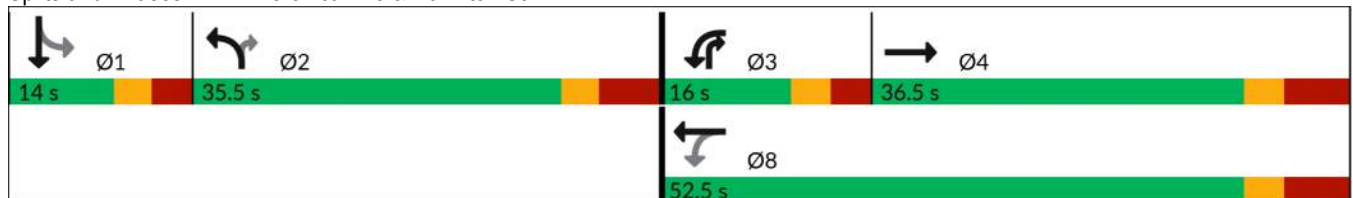


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		27.5		45.6	42.1		23.4		40.5			
Actuated g/C Ratio		0.32		0.53	0.49		0.27		0.47			
v/c Ratio		0.89dr		0.29	0.31		0.85		0.10			
Control Delay (s/veh)		27.6		12.6	14.1		48.1		12.1			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		27.6		12.6	14.1		48.1		12.1			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		27.6			13.8			42.7				
Approach LOS		C			B			D				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 85.5  
 Natural Cycle: 105  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay (s/veh): 26.1      Intersection LOS: C  
 Intersection Capacity Utilization 59.8%      ICU Level of Service B  
 Analysis Period (min) 15  
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 12: Veronica Ave & Hamilton St

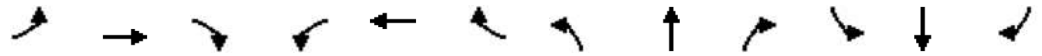


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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 08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↑		↔		↗		↔	
Traffic Volume (vph)	0	1047	7	0	1334	0	775	0	223	51	153	0
Future Volume (vph)	0	1047	7	0	1334	0	775	0	223	51	153	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.999							0.850			
Fl <sub>t</sub> Protected							0.950				0.988	
Satd. Flow (prot)	0	3501	0	0	3438	0	3400	0	1568	0	3497	0
Fl <sub>t</sub> Permitted							0.950				0.988	
Satd. Flow (perm)	0	3501	0	0	3438	0	3400	0	1568	0	3497	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	1138	8	0	1450	0	842	0	242	55	166	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1146	0	0	1450	0	842	0	242	0	221	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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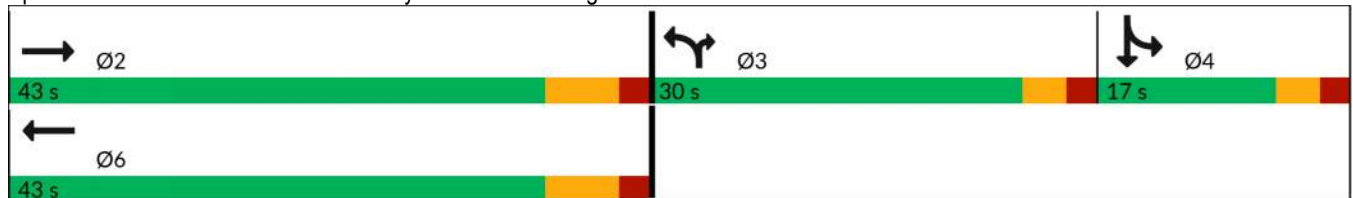


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.1			36.1		24.1		24.1			10.4
Actuated g/C Ratio		0.41			0.41		0.28		0.28			0.12
v/c Ratio		0.80			1.02		0.90		0.56			0.53
Control Delay (s/veh)		28.1			57.8		44.9		33.3			41.5
Queue Delay		0.0			0.0		0.0		0.0			0.0
Total Delay (s/veh)		28.1			57.8		44.9		33.3			41.5
LOS		C			E		D		C			D
Approach Delay (s/veh)		28.1			57.8			42.4				41.5
Approach LOS		C			E			D				D

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	87.6
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.02
Intersection Signal Delay (s/veh):	43.9
Intersection LOS:	D
Intersection Capacity Utilization:	78.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

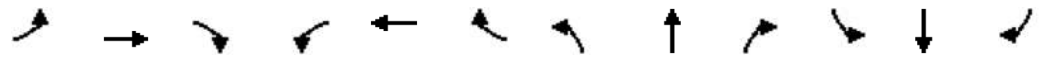
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↑		↔		↗		↔	
Traffic Volume (veh/h)	0	1047	7	0	1334	0	775	0	223	51	153	0
Future Volume (veh/h)	0	1047	7	0	1334	0	775	0	223	51	153	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	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	0	1856	1856	0	1826	0	1856	0	1856	1870	1870	1870
Adj Flow Rate, veh/h	0	1138	8	0	1450	0	842	0	242	55	166	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	5	0	3	0	3	2	2	2
Cap, veh/h	0	2359	17	0	2281	0	0	0	0	110	335	0
Arrive On Green	0.00	0.66	0.66	0.00	0.66	0.00	0.00	0.00	0.00	0.12	0.12	0.00
Sat Flow, veh/h	0	3681	25	0	3652	0		0		890	2806	0
Grp Volume(v), veh/h	0	559	587	0	1450	0		0.0		113	108	0
Grp Sat Flow(s),veh/h/ln	0	1763	1851	0	1735	0				1826	1777	0
Q Serve(g_s), s	0.0	8.7	8.7	0.0	13.5	0.0				3.2	3.1	0.0
Cycle Q Clear(g_c), s	0.0	8.7	8.7	0.0	13.5	0.0				3.2	3.1	0.0
Prop In Lane	0.00		0.01	0.00		0.00				0.49		0.00
Lane Grp Cap(c), veh/h	0	1159	1217	0	2281	0				225	219	0
V/C Ratio(X)	0.00	0.48	0.48	0.00	0.64	0.00				0.50	0.49	0.00
Avail Cap(c_a), veh/h	0	1159	1217	0	2281	0				400	389	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.7	4.7	0.0	5.5	0.0				22.4	22.4	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.4	0.0	1.4	0.0				1.7	1.7	0.0
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	0.0	1.8	1.9	0.0	2.5	0.0				1.3	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	6.1	6.1	0.0	6.9	0.0				24.1	24.1	0.0
LnGrp LOS		A	A		A					C	C	
Approach Vol, veh/h		1146			1450							221
Approach Delay, s/veh		6.1			6.9							24.1
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		11.8		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		10.7		5.2		15.5						
Green Ext Time (p_c), s		7.6		0.5		10.4						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				7.9								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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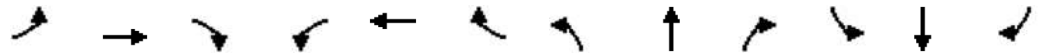


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	848	122	66	563	234	140	360	46	254	275	0
Future Volume (vph)	108	848	122	66	563	234	140	360	46	254	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1703	3406	1524	1770	1863	1583	1736	1827	1827
Flt Permitted	0.353			0.126			0.383			0.223		
Satd. Flow (perm)	658	3472	0	226	3406	1524	713	1863	1583	407	1827	1827
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45		45			45			45		45
Link Distance (ft)		572		356			562			410		
Travel Time (s)		8.7		5.4			8.5			6.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	117	922	133	72	612	254	152	391	50	276	299	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	1055	0	72	612	254	152	391	50	276	299	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		12
Link Offset(ft)		0		0			0			0		0
Crosswalk Width(ft)		16		16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94		94			94			94		94
Detector 2 Size(ft)		6		6			6			6		6
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0			0.0		0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1		6



Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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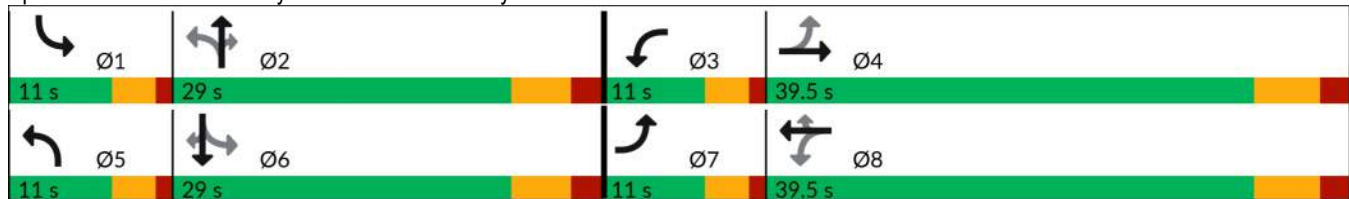


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	41.1	33.2		41.1	33.2	33.2	30.4	21.3	21.3	30.4	21.3	
Actuated g/C Ratio	0.47	0.38		0.47	0.38	0.38	0.35	0.25	0.25	0.35	0.25	
v/c Ratio	0.29	0.79		0.32	0.47	0.43	0.45	0.85	0.13	1.10	0.67	
Control Delay (s/veh)	13.5	30.2		15.1	22.6	24.1	23.1	50.9	27.2	113.3	38.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	13.5	30.2		15.1	22.6	24.1	23.1	50.9	27.2	113.3	38.2	
LOS	B	C		B	C	C	C	D	C	F	D	
Approach Delay (s/veh)		28.5			22.4			41.7			74.2	
Approach LOS		C			C			D			E	

Intersection Summary

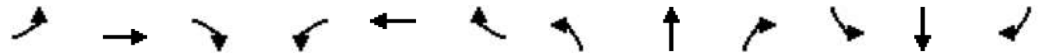
Area Type: Other  
 Cycle Length: 90.5  
 Actuated Cycle Length: 86.7  
 Natural Cycle: 95  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay (s/veh): 37.2      Intersection LOS: D  
 Intersection Capacity Utilization 83.3%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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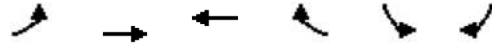
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	108	848	122	66	563	234	140	360	46	254	275	0
Future Volume (veh/h)	108	848	122	66	563	234	140	360	46	254	275	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	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	1811	1811	1811	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	117	922	133	72	612	0	152	391	50	276	299	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	6	6	6	2	2	2	4	4	4
Cap, veh/h	412	1204	174	263	1297		317	437	370	251	430	
Arrive On Green	0.08	0.39	0.39	0.07	0.38	0.00	0.08	0.23	0.23	0.08	0.23	0.00
Sat Flow, veh/h	1781	3117	450	1725	3441	1535	1781	1870	1585	1753	1841	1560
Grp Volume(v), veh/h	117	526	529	72	612	0	152	391	50	276	299	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1789	1725	1721	1535	1781	1870	1585	1753	1841	1560
Q Serve(g_s), s	3.4	22.6	22.6	2.1	11.8	0.0	5.6	17.7	2.2	7.0	13.0	0.0
Cycle Q Clear(g_c), s	3.4	22.6	22.6	2.1	11.8	0.0	5.6	17.7	2.2	7.0	13.0	0.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	686	691	263	1297		317	437	370	251	430	
V/C Ratio(X)	0.28	0.77	0.77	0.27	0.47		0.48	0.89	0.13	1.10	0.70	
Avail Cap(c_a), veh/h	421	686	691	287	1297		317	491	416	251	484	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.0	23.4	23.4	17.3	20.7	0.0	23.7	32.5	26.5	30.3	30.7	0.0
Incr Delay (d2), s/veh	0.4	8.0	7.9	0.6	1.2	0.0	1.1	17.4	0.2	85.3	3.7	0.0
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	1.3	10.0	10.1	0.8	4.5	0.0	2.3	9.6	0.8	7.8	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.4	31.4	31.4	17.9	21.9	0.0	24.8	49.9	26.7	115.6	34.4	0.0
LnGrp LOS	B	C	C	B	C		C	D	C	F	C	
Approach Vol, veh/h		1172			684			593			575	
Approach Delay, s/veh		29.8			21.5			41.5			73.4	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	26.5	9.8	40.3	11.0	26.5	10.6	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	19.7	4.1	24.6	7.6	15.0	5.4	13.8				
Green Ext Time (p_c), s	0.0	0.7	0.0	3.9	0.0	0.9	0.0	3.6				

Intersection Summary												
HCM 7th Control Delay, s/veh											38.5	
HCM 7th LOS											D	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	113	1334	204	0	0
Future Volume (vph)	0	113	1334	204	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Fr t			0.980			
Flt Protected						
Satd. Flow (prot)	0	5085	3468	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	5085	3468	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	123	1450	222	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	1672	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	403	209	14	26	264	220	12	42	20	41	14	324
Future Volume (vph)	403	209	14	26	264	220	12	42	20	41	14	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.990				0.850			0.850		0.856	
Fl <sub>t</sub> Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1770	1844	0	1770	1863	1583	0	1842	1583	1770	1595	0
Fl <sub>t</sub> Permitted	0.504			0.613				0.856		0.584		
Satd. Flow (perm)	939	1844	0	1142	1863	1583	0	1595	1583	1088	1595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	420	218	15	27	275	229	13	44	21	43	15	338
Shared Lane Traffic (%)												
Lane Group Flow (vph)	420	233	0	27	275	229	0	57	21	43	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

04-FBAM-1  
08/14/2024

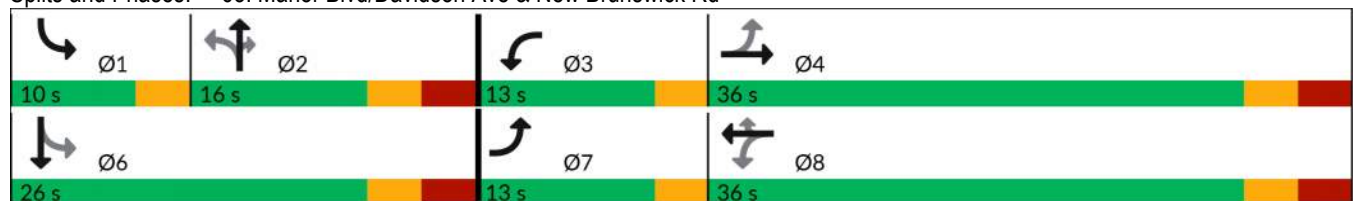


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	46.0	39.1		40.0	30.0	30.0		12.9	12.9	21.8	18.8	
Actuated g/C Ratio	0.62	0.53		0.54	0.41	0.41		0.17	0.17	0.30	0.25	
v/c Ratio	0.60	0.24		0.04	0.36	0.36		0.21	0.08	0.11	0.87	
Control Delay (s/veh)	11.4	11.8		6.1	17.4	17.6		30.7	29.3	19.4	49.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	11.4	11.8		6.1	17.4	17.6		30.7	29.3	19.4	49.9	
LOS	B	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		11.6			16.9			30.3			46.6	
Approach LOS		B			B			C			D	

Intersection Summary

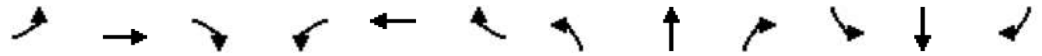
Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	73.8
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.87
Intersection Signal Delay (s/veh):	22.5
Intersection LOS:	C
Intersection Capacity Utilization:	70.3%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	209	14	26	264	220	12	42	20	41	14	324
Future Volume (veh/h)	403	209	14	26	264	220	12	42	20	41	14	324
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	420	218	15	27	275	229	12	44	21	43	15	338
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	618	877	60	641	768	650	71	180	239	241	17	378
Arrive On Green	0.14	0.51	0.51	0.04	0.41	0.41	0.15	0.15	0.15	0.06	0.25	0.25
Sat Flow, veh/h	1781	1730	119	1781	1870	1585	77	1196	1585	1781	68	1528
Grp Volume(v), veh/h	420	0	233	27	275	229	56	0	21	43	0	353
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1585	1272	0	1585	1781	0	1595
Q Serve(g_s), s	9.6	0.0	5.2	0.6	7.4	7.3	0.1	0.0	0.8	1.4	0.0	15.6
Cycle Q Clear(g_c), s	9.6	0.0	5.2	0.6	7.4	7.3	8.7	0.0	0.8	1.4	0.0	15.6
Prop In Lane	1.00		0.06	1.00		1.00	0.21		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	618	0	937	641	768	650	252	0	239	241	0	395
V/C Ratio(X)	0.68	0.00	0.25	0.04	0.36	0.35	0.22	0.00	0.09	0.18	0.00	0.89
Avail Cap(c_a), veh/h	618	0	937	813	768	650	252	0	239	312	0	436
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	10.2	11.2	14.9	14.9	27.2	0.0	26.7	22.8	0.0	26.6
Incr Delay (d2), s/veh	3.0	0.0	0.6	0.0	1.3	1.5	0.4	0.0	0.2	0.3	0.0	19.1
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	3.5	0.0	2.0	0.2	3.1	2.6	0.8	0.0	0.3	0.6	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.8	0.0	10.8	11.2	16.2	16.4	27.7	0.0	26.9	23.1	0.0	45.7
LnGrp LOS	B		B	B	B	B	C		C	C		D
Approach Vol, veh/h	653		531				77		396			
Approach Delay, s/veh	12.1		16.0				27.5		43.2			
Approach LOS	B		B				C		D			
Timer - Assigned Phs	1	2	3	4	6	7	8					
Phs Duration (G+Y+Rc), s	7.1	17.0	6.0	43.0	24.1	13.0	36.0					
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	6.0	3.0	6.0					
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0	20.0	10.0	30.0					
Max Q Clear Time (g_c+I1), s	3.4	10.7	2.6	7.2	17.6	11.6	9.4					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.5	0.0	2.3					
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			21.5									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1058	0	31	6	10	426
Future Volume (vph)	1058	0	31	6	10	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.868	
Fl <sub>t</sub> Protected	0.950			0.959		
Satd. Flow (prot)	1703	0	0	1769	1541	0
Fl <sub>t</sub> Permitted	0.950			0.959		
Satd. Flow (perm)	1703	0	0	1769	1541	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	6%	3%	3%	7%	7%
Adj. Flow (vph)	1138	0	33	6	11	458
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1138	0	0	39	469	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	92.3%
Analysis Period (min)	15
	ICU Level of Service F

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1058	0	31	6	10	426
Future Vol, veh/h	1058	0	31	6	10	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	3	3	7	7
Mvmt Flow	1138	0	33	6	11	458

Major/Minor	Minor2	Major2		
Conflicting Flow All	240	240	-	0
Stage 1	240	240	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.43	6.53	-	-
Critical Hdwy Stg 1	5.43	5.53	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.527	4.027	-	-
Pot Cap-1 Maneuver	746	660	-	-
Stage 1	798	705	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	746	0	-	-
Mov Cap-2 Maneuver	746	0	-	-
Stage 1	798	0	-	-
Stage 2	-	0	-	-













Approach	NB	SB
HCM Control Delay, s/v	10.1	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	746	-	-
HCM Lane V/C Ratio	0.053	-	-
HCM Control Delay (s/veh)	10.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-



Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	36	679	182	53	854
Future Volume (vph)	350	36	679	182	53	854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1703	1524	1845	1568	1719	1810
Fl <sub>t</sub> Permitted	0.950				0.213	
Satd. Flow (perm)	1703	1524	1845	1568	385	1810
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		38				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	6%	3%	3%	5%	5%
Adj. Flow (vph)	368	38	715	192	56	899
Shared Lane Traffic (%)						
Lane Group Flow (vph)	368	38	715	192	56	899
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

05-FBPM-1  
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	18.1	18.1	41.2	68.4	47.7	41.2
Actuated g/C Ratio	0.23	0.23	0.53	0.88	0.61	0.53
v/c Ratio	0.93	0.10	0.74	0.14	0.16	0.94
Control Delay (s/veh)	64.8	9.9	21.2	1.8	6.1	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.8	9.9	21.2	1.8	6.1	38.9
LOS	E	A	C	A	A	D
Approach Delay (s/veh)	59.7		17.1			36.9
Approach LOS	E		B			D

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 78.1  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay (s/veh): 33.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 74.8%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd

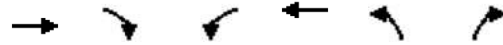


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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

05-FBPM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	29	155	507	42	112
Future Volume (vph)	250	29	155	507	42	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.902	
Flt Protected			0.950		0.986	
Satd. Flow (prot)	1801	0	1752	1845	1657	0
Flt Permitted			0.950		0.986	
Satd. Flow (perm)	1801	0	1752	1845	1657	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	3%	3%	2%	2%
Adj. Flow (vph)	278	32	172	563	47	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	0	172	563	171	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	250	29	155	507	42	112
Future Vol, veh/h	250	29	155	507	42	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	278	32	172	563	47	124

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	310	0	1202 294
Stage 1	-	-	-	-	294 -
Stage 2	-	-	-	-	908 -
Critical Hdwy	-	-	4.13	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.227	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1245	-	204 745
Stage 1	-	-	-	-	756 -
Stage 2	-	-	-	-	393 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1245	-	176 745
Mov Cap-2 Maneuver	-	-	-	-	176 -
Stage 1	-	-	-	-	756 -
Stage 2	-	-	-	-	339 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.96	20.85
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	396	-	-	1245	-
HCM Lane V/C Ratio	0.432	-	-	0.138	-
HCM Control Delay (s/veh)	20.9	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0.5	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

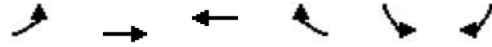
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	476	288	577	147	116	90
Future Volume (vph)	476	288	577	147	116	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1845	1761	0	1736	1553
Flt Permitted	0.152				0.950	
Satd. Flow (perm)	280	1845	1761	0	1736	1553
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	5%	5%	4%	4%
Adj. Flow (vph)	547	331	663	169	133	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	547	331	832	0	133	103
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
 3: Schoolhouse Rd & Randolph Rd

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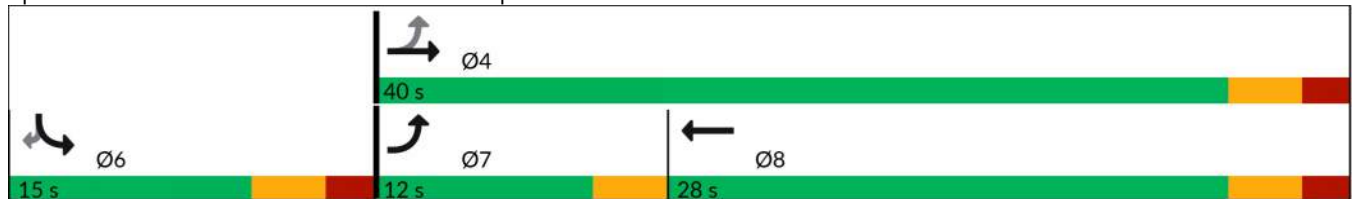


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	37.6	36.9	23.4		8.9	8.9
Actuated g/C Ratio	0.73	0.72	0.45		0.17	0.17
v/c Ratio	1.18	0.25	1.04		0.45	0.39
Control Delay (s/veh)	118.5	4.7	64.2		25.5	24.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	118.5	4.7	64.2		25.5	24.7
LOS	F	A	E		C	C
Approach Delay (s/veh)		75.6	64.2		25.2	
Approach LOS		E	E		C	

Intersection Summary

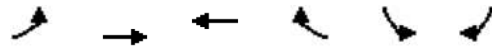
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 51.5  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.18  
 Intersection Signal Delay (s/veh): 64.6  
 Intersection LOS: E  
 Intersection Capacity Utilization 83.8%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



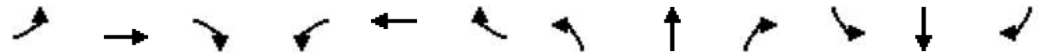
HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

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 08/14/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↕	↗	↖		↘	↙	
Traffic Volume (veh/h)	476	288	577	147	116	90	
Future Volume (veh/h)	476	288	577	147	116	90	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1856	1856	1826	1826	1841	1841	
Adj Flow Rate, veh/h	547	331	663	169	133	103	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	5	5	4	4	
Cap, veh/h	446	1255	624	159	229	204	
Arrive On Green	0.17	0.68	0.44	0.44	0.13	0.13	
Sat Flow, veh/h	1767	1856	1404	358	1753	1560	
Grp Volume(v), veh/h	547	331	0	832	133	103	
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1761	1753	1560	
Q Serve(g_s), s	9.0	3.6	0.0	23.0	3.7	3.2	
Cycle Q Clear(g_c), s	9.0	3.6	0.0	23.0	3.7	3.2	
Prop In Lane	1.00			0.20	1.00	1.00	
Lane Grp Cap(c), veh/h	446	1255	0	783	229	204	
V/C Ratio(X)	1.23	0.26	0.00	1.06	0.58	0.51	
Avail Cap(c_a), veh/h	446	1255	0	783	339	301	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	14.4	3.3	0.0	14.4	21.2	20.9	
Incr Delay (d2), s/veh	120.0	0.5	0.0	50.3	2.3	1.9	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	17.2	0.6	0.0	17.1	1.4	2.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	134.5	3.8	0.0	64.6	23.5	22.9	
LnGrp LOS	F	A		F	C	C	
Approach Vol, veh/h		878	832		236		
Approach Delay, s/veh		85.2	64.6		23.2		
Approach LOS		F	E		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.8	12.0	28.0
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				5.6	5.7	11.0	25.0
Green Ext Time (p_c), s				1.8	0.3	0.0	0.0
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			68.9				
HCM 7th LOS			E				





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	350	291	252	358	25	143	264	125	183	403	86
Future Volume (vph)	140	350	291	252	358	25	143	264	125	183	403	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1736	1827	1553	1736	1778	0
Flt Permitted	0.248			0.236			0.234			0.950		
Satd. Flow (perm)	462	1863	1583	440	1863	1583	428	1827	1553	1736	1778	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	147	368	306	265	377	26	151	278	132	193	424	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	368	306	265	377	26	151	278	132	193	515	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		

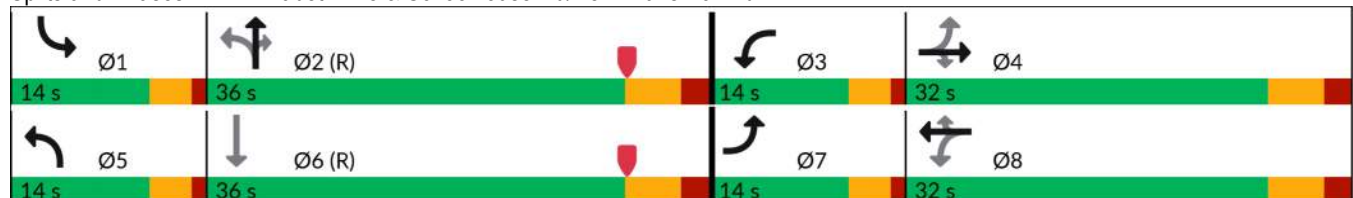


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	34.4	23.1	23.1	35.8	23.8	23.8	41.2	30.1	30.1	12.8	33.8	
Actuated g/C Ratio	0.36	0.24	0.24	0.37	0.25	0.25	0.43	0.31	0.31	0.13	0.35	
v/c Ratio	0.50	0.82	0.81	0.88	0.82	0.07	0.49	0.49	0.27	0.84	0.82	
Control Delay (s/veh)	24.0	50.0	50.7	51.0	49.1	27.0	19.6	30.2	26.7	73.1	42.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	24.0	50.0	50.7	51.0	49.1	27.0	19.6	30.2	26.7	73.1	42.8	
LOS	C	D	D	D	D	C	B	C	C	E	D	
Approach Delay (s/veh)		45.6			49.0			26.5			51.1	
Approach LOS		D			D			C			D	

Intersection Summary

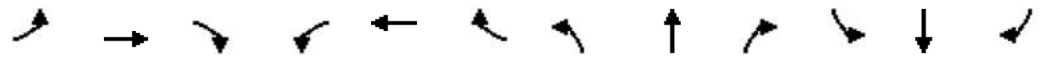
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay (s/veh): 44.0      Intersection LOS: D  
 Intersection Capacity Utilization 83.4%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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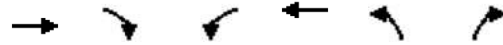
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	140	350	291	252	358	25	143	264	125	183	403	86
Future Volume (veh/h)	140	350	291	252	358	25	143	264	125	183	403	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	147	368	0	265	377	0	151	278	0	193	424	0
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	4	4	4	4	4	4
Cap, veh/h	274	414		292	455		404	666		183	722	
Arrive On Green	0.08	0.22	0.00	0.10	0.24	0.00	0.07	0.36	0.00	0.10	0.39	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1753	1841	1560	1753	1841	0
Grp Volume(v), veh/h	147	368	0	265	377	0	151	278	0	193	424	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1753	1841	1560	1753	1841	0
Q Serve(g_s), s	6.0	18.3	0.0	10.0	18.3	0.0	5.1	10.9	0.0	10.0	17.5	0.0
Cycle Q Clear(g_c), s	6.0	18.3	0.0	10.0	18.3	0.0	5.1	10.9	0.0	10.0	17.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	274	414		292	455		404	666		183	722	
V/C Ratio(X)	0.54	0.89		0.91	0.83		0.37	0.42		1.06	0.59	
Avail Cap(c_a), veh/h	313	507		292	507		457	666		183	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.0	36.2	0.0	29.4	34.4	0.0	18.0	23.0	0.0	43.0	23.0	0.0
Incr Delay (d2), s/veh	1.6	15.2	0.0	30.3	10.2	0.0	0.6	1.9	0.0	82.5	3.5	0.0
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	2.5	9.6	0.0	6.9	9.1	0.0	2.0	4.8	0.0	8.3	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	51.4	0.0	59.6	44.6	0.0	18.6	24.9	0.0	125.5	26.5	0.0
LnGrp LOS	C	D		E	D		B	C		F	C	
Approach Vol, veh/h		515			642			429			617	
Approach Delay, s/veh		44.9			50.8			22.7			57.5	
Approach LOS		D			D			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	40.7	14.0	27.3	11.1	43.7	11.9	29.3				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	12.0	12.9	12.0	20.3	7.1	19.5	8.0	20.3				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.9	0.1	1.7	0.1	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			45.8									
HCM 7th LOS			D									

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	522	14	466	850	27	416
Future Volume (vph)	522	14	466	850	27	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1839	0	1736	1827	1703	1524
Flt Permitted			0.161		0.950	
Satd. Flow (perm)	1839	0	294	1827	1703	1524
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	3%	4%	4%	6%	6%
Adj. Flow (vph)	614	16	548	1000	32	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	630	0	548	1000	32	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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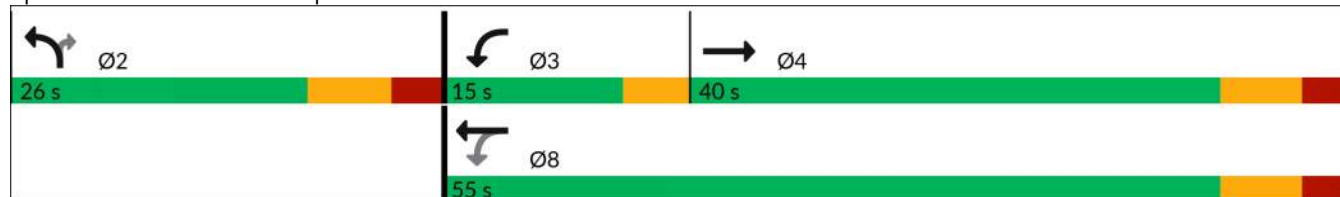


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	0.87		1.44	0.94	0.08	1.45
Control Delay (s/veh)	37.4		232.9	34.7	25.8	245.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.4		232.9	34.7	25.8	245.1
LOS	D		F	C	C	F
Approach Delay (s/veh)	37.4			104.8	231.6	
Approach LOS	D			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 81  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.45  
 Intersection Signal Delay (s/veh): 113.6      Intersection LOS: F  
 Intersection Capacity Utilization 75.0%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	522	14	466	850	27	416
Future Volume (veh/h)	522	14	466	850	27	416
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	614	16	548	1000	32	489
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	711	19	391	1068	383	341
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1800	47	1753	1841	1725	1535
Grp Volume(v), veh/h	0	630	548	1000	32	489
Grp Sat Flow(s),veh/h/ln	0	1847	1753	1841	1725	1535
Q Serve(g_s), s	0.0	25.4	11.0	40.4	1.2	18.0
Cycle Q Clear(g_c), s	0.0	25.4	11.0	40.4	1.2	18.0
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	730	391	1068	383	341
V/C Ratio(X)	0.00	0.86	1.40	0.94	0.08	1.43
Avail Cap(c_a), veh/h	0	730	391	1068	383	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	22.5	18.2	15.6	25.0	31.5
Incr Delay (d2), s/veh	0.0	12.9	195.3	15.9	0.1	211.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	24.4	17.6	0.5	26.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	35.4	213.5	31.5	25.1	242.8
LnGrp LOS		D	F	C	C	F
Approach Vol, veh/h	630			1548	521	
Approach Delay, s/veh	35.4			96.0	229.4	
Approach LOS	D			F	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	27.4		42.4
Green Ext Time (p_c), s		0.0	0.0	1.6		2.7
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			107.6			
HCM 7th LOS			F			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

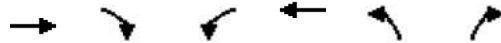
05-FBPM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵	↵
Traffic Volume (vph)	1320	32	293	799	67	674
Future Volume (vph)	1320	32	293	799	67	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.996					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3457	0	1703	1792	1641	1468
Flt Permitted			0.129		0.950	
Satd. Flow (perm)	3457	0	231	1792	1641	1468
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	6%	6%	10%	10%
Adj. Flow (vph)	1404	34	312	850	71	717
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1438	0	312	850	71	717
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	31.2		68.3	31.2	7.0	45.0
Actuated g/C Ratio	0.36		0.78	0.36	0.08	0.52
v/c Ratio	1.17		0.41	1.33	0.54	0.95
Control Delay (s/veh)	112.2		11.2	186.0	56.2	43.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	112.2		11.2	186.0	56.2	43.5
LOS	F		B	F	E	D
Approach Delay (s/veh)	112.2			139.0	44.7	
Approach LOS	F			F	D	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	87.2
Natural Cycle:	110
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.33
Intersection Signal Delay (s/veh):	105.7
Intersection LOS:	F
Intersection Capacity Utilization:	88.4%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd





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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

05-FBPM-1  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	1078	871	21	734	553	277
Future Volume (vph)	1078	871	21	734	553	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.933				0.955	
Fl <sub>t</sub> Protected				0.999	0.968	
Satd. Flow (prot)	3177	0	0	3435	1689	0
Fl <sub>t</sub> Permitted				0.653	0.968	
Satd. Flow (perm)	3177	0	0	2245	1689	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	6%	5%	5%	4%	4%
Adj. Flow (vph)	1135	917	22	773	582	292
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2052	0	0	795	874	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

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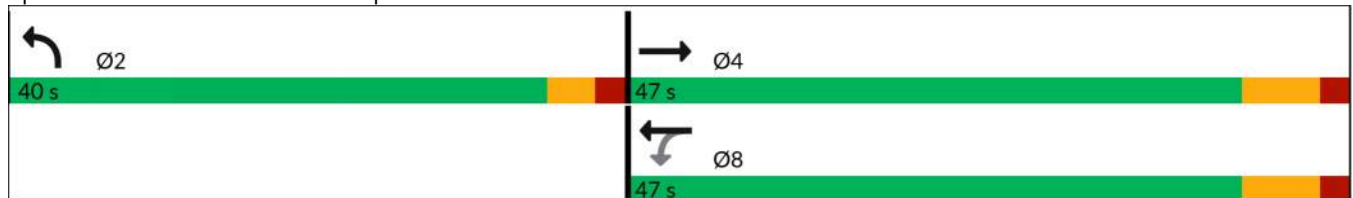


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.41			0.77	1.29	
Control Delay (s/veh)	210.8			25.9	166.4	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	210.8			25.9	166.4	
LOS	F			C	F	
Approach Delay (s/veh)	210.8			25.9	166.4	
Approach LOS	F			C	F	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	150
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.41
Intersection Signal Delay (s/veh):	160.9
Intersection LOS:	F
Intersection Capacity Utilization:	115.3%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	1078	871	21	734	553	277
Future Volume (veh/h)	1078	871	21	734	553	277
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1826	1826	1841	1841
Adj Flow Rate, veh/h	1135	0	22	773	582	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	5	5	4	4
Cap, veh/h	1697		66	1606	628	
Arrive On Green	0.49	0.00	0.49	0.49	0.36	0.00
Sat Flow, veh/h	3622	0	39	3340	1750	0
Grp Volume(v), veh/h	1135	0	415	380	583	0
Grp Sat Flow(s),veh/h/ln	1721	0	1718	1578	1753	0
Q Serve(g_s), s	20.2	0.0	0.0	13.0	25.9	0.0
Cycle Q Clear(g_c), s	20.2	0.0	12.1	13.0	25.9	0.0
Prop In Lane		0.00	0.05		1.00	0.00
Lane Grp Cap(c), veh/h	1697		894	778	629	
V/C Ratio(X)	0.67		0.46	0.49	0.93	
Avail Cap(c_a), veh/h	1697		894	778	756	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	13.5	13.7	25.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	1.7	2.2	15.6	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	7.2	0.0	4.7	4.4	12.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.7	0.0	15.2	15.9	40.6	0.0
LnGrp LOS	B		B	B	D	
Approach Vol, veh/h	1135			795	583	
Approach Delay, s/veh	17.7			15.6	40.6	
Approach LOS	B			B	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		34.1		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		27.9		22.2		15.0
Green Ext Time (p_c), s		1.2		7.2		4.9

Intersection Summary

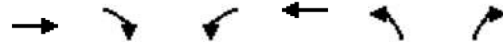
HCM 7th Control Delay, s/veh	22.3
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	471	891	301	223	516	27
Future Volume (vph)	471	891	301	223	516	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.902				0.993	
Fl <sub>t</sub> Protected				0.972	0.955	
Satd. Flow (prot)	3101	0	0	3440	1700	0
Fl <sub>t</sub> Permitted				0.584	0.955	
Satd. Flow (perm)	3101	0	0	2067	1700	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	6%	6%
Adj. Flow (vph)	512	968	327	242	561	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1480	0	0	569	590	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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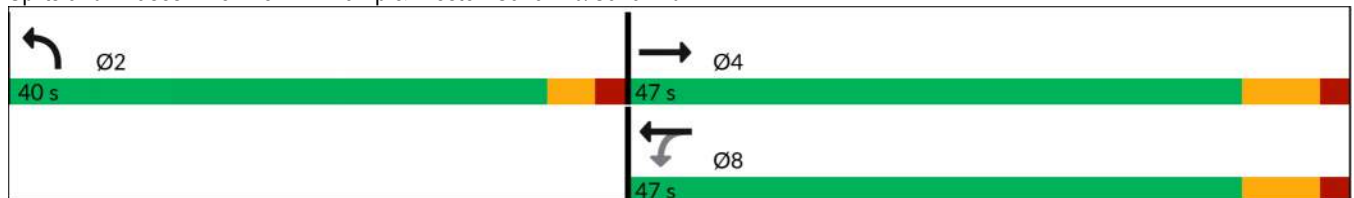


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.1			40.1	31.8	
Actuated g/C Ratio	0.48			0.48	0.38	
v/c Ratio	1.30dr			3.72dl	0.92	
Control Delay (s/veh)	47.5			19.5	46.0	
Queue Delay	10.4			0.0	0.0	
Total Delay (s/veh)	57.9			19.5	46.0	
LOS	E			B	D	
Approach Delay (s/veh)	57.9			19.5	46.0	
Approach LOS	E			B	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 84  
 Natural Cycle: 80  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay (s/veh): 46.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 104.5%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.  
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

05-FBPM-1  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	
Traffic Volume (veh/h)	471	891	301	223	516	27
Future Volume (veh/h)	471	891	301	223	516	27
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	1870	1870	1811	1811
Adj Flow Rate, veh/h	512	0	327	242	561	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	2	2	6	6
Cap, veh/h	1727		454	805	608	
Arrive On Green	0.50	0.00	0.50	0.50	0.35	0.00
Sat Flow, veh/h	3652	0	733	1702	1722	0
Grp Volume(v), veh/h	512	0	327	242	562	0
Grp Sat Flow(s),veh/h/ln	1735	0	733	1617	1725	0
Q Serve(g_s), s	7.0	0.0	27.6	7.1	25.1	0.0
Cycle Q Clear(g_c), s	7.0	0.0	34.6	7.1	25.1	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1727		454	805	609	
V/C Ratio(X)	0.30		0.72	0.30	0.92	
Avail Cap(c_a), veh/h	1727		454	805	751	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.9	0.0	22.1	11.9	25.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	9.5	1.0	15.0	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	2.4	0.0	6.2	2.4	11.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.3	0.0	31.5	12.9	39.9	0.0
LnGrp LOS	B		C	B	D	
Approach Vol, veh/h	512			569	562	
Approach Delay, s/veh	12.3			23.6	39.9	
Approach LOS	B			C	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		33.4		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		27.1		9.0		36.6
Green Ext Time (p_c), s		1.2		3.3		1.3

Intersection Summary		
HCM 7th Control Delay, s/veh		25.7
HCM 7th LOS		C

Notes  
 Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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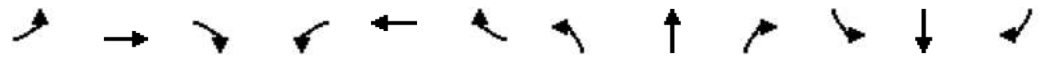


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	162	15	90	153	297	13	593	98	161	497	216
Future Volume (vph)	172	162	15	90	153	297	13	593	98	161	497	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987				0.850		0.979			0.955	
Flt Protected	0.950				0.982		0.950			0.950		
Satd. Flow (prot)	1770	1839	0	0	1829	1583	1770	1824	0	1770	1779	0
Flt Permitted	0.950				0.790		0.071			0.066		
Satd. Flow (perm)	1770	1839	0	0	1472	1583	132	1824	0	123	1779	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	205	193	18	107	182	354	15	706	117	192	592	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	211	0	0	289	354	15	823	0	192	849	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		



Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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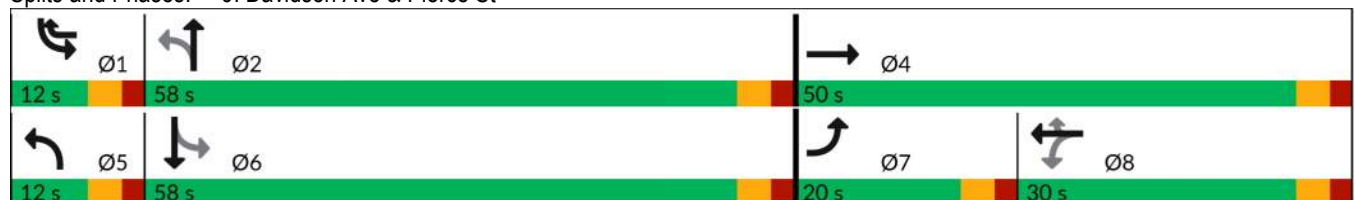


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	15.0	44.7			24.7	36.7	60.0	53.0		63.0	60.2	
Actuated g/C Ratio	0.13	0.37			0.21	0.31	0.50	0.44		0.53	0.50	
v/c Ratio	0.93	0.31			0.95	0.73	0.09	1.02		1.20	0.95	
Control Delay (s/veh)	96.3	28.1			88.6	47.2	14.1	70.5		161.0	50.0	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	96.3	28.1			88.6	47.2	14.1	70.5		161.0	50.0	
LOS	F	C			F	D	B	E		F	D	
Approach Delay (s/veh)		61.7			65.8			69.5			70.5	
Approach LOS		E			E			E			E	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	119.7
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.20
Intersection Signal Delay (s/veh):	67.9
Intersection LOS:	E
Intersection Capacity Utilization:	85.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St



HCM 7th Signalized Intersection Summary

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9: Davidson Ave & Pierce St







08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	162	15	90	153	297	13	593	98	161	497	216
Future Volume (veh/h)	172	162	15	90	153	297	13	593	98	161	497	216
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	205	193	18	107	182	354	15	706	117	192	592	257
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	632	59	156	207	423	101	691	115	164	590	256
Arrive On Green	0.13	0.38	0.38	0.21	0.21	0.21	0.02	0.44	0.44	0.06	0.48	0.48
Sat Flow, veh/h	1781	1685	157	549	993	1585	1781	1564	259	1781	1237	537
Grp Volume(v), veh/h	205	0	211	289	0	354	15	0	823	192	0	849
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1542	0	1585	1781	0	1824	1781	0	1774
Q Serve(g_s), s	13.7	0.0	9.7	21.1	0.0	25.0	0.5	0.0	53.0	7.0	0.0	57.2
Cycle Q Clear(g_c), s	13.7	0.0	9.7	21.9	0.0	25.0	0.5	0.0	53.0	7.0	0.0	57.2
Prop In Lane	1.00		0.09	0.37		1.00	1.00		0.14	1.00		0.30
Lane Grp Cap(c), veh/h	223	0	691	362	0	423	101	0	805	164	0	846
V/C Ratio(X)	0.92	0.00	0.31	0.80	0.00	0.84	0.15	0.00	1.02	1.17	0.00	1.00
Avail Cap(c_a), veh/h	223	0	691	362	0	423	164	0	805	164	0	846
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	26.5	46.2	0.0	41.5	29.0	0.0	33.5	33.7	0.0	31.4
Incr Delay (d2), s/veh	39.2	0.0	0.2	11.8	0.0	13.8	0.7	0.0	37.3	123.9	0.0	31.8
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	8.3	0.0	4.2	9.3	0.0	11.1	0.2	0.0	30.0	8.5	0.0	29.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	91.1	0.0	26.7	58.0	0.0	55.3	29.7	0.0	70.8	157.6	0.0	63.1
LnGrp LOS	F		C	E		E	C		F	F		F
Approach Vol, veh/h		416			643			838			1041	
Approach Delay, s/veh		58.4			56.5			70.1			80.6	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	58.0		50.0	7.8	62.2	20.0	30.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	9.0	55.0		11.7	2.5	59.2	15.7	27.0				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			69.2									
HCM 7th LOS			E									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↑↑
Traffic Volume (vph)	148	149	786	558	182	1299
Future Volume (vph)	148	149	786	558	182	1299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.991	0.950	
Satd. Flow (prot)	3505	1568	1681	1754	1752	2760
Flt Permitted			0.950	0.991	0.950	
Satd. Flow (perm)	3505	1568	1681	1754	1752	2760
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	161	162	854	607	198	1412
Shared Lane Traffic (%)			16%			
Lane Group Flow (vph)	161	162	717	744	198	1412
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
<b>Permitted Phases</b>						
Detector Phase	2	2	8	8	4	4 8
<b>Switch Phase</b>						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
<b>Lead/Lag</b>						
<b>Lead-Lag Optimize?</b>						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.0	35.0	35.0	35.0	35.0	75.0
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.63
v/c Ratio	0.16	0.35	1.46	1.46	0.39	0.82
Control Delay (s/veh)	32.1	36.3	252.3	248.8	36.7	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.1	36.3	252.3	248.8	36.7	22.4
LOS	C	D	F	F	D	C
Approach Delay (s/veh)	34.2			250.5	24.1	
Approach LOS	C			F	C	

**Intersection Summary**

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.46
Intersection Signal Delay (s/veh):	122.5
Intersection LOS:	F
Intersection Capacity Utilization:	63.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 10: Davidson Ave & Easton Ave



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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

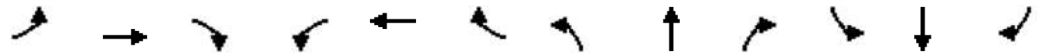
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	272	148	89	390	129	173	619	89	233	547	75
Future Volume (vph)	122	272	148	89	390	129	173	619	89	233	547	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.947			0.963			0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	1651	0	1736	1759	0	1770	3472	0	1770	1863	1583
Flt Permitted	0.137			0.237			0.184			0.267		
Satd. Flow (perm)	239	1651	0	433	1759	0	343	3472	0	497	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	9%	9%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	126	280	153	92	402	133	178	638	92	240	564	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	433	0	92	535	0	178	730	0	240	564	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		12.0	44.0		12.0	44.0	44.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		12.0%	44.0%		12.0%	44.0%	44.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		9.0	37.0		9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	38.7	29.3		37.7	27.2		49.7	37.0		50.3	37.3	37.3
Actuated g/C Ratio	0.39	0.29		0.38	0.27		0.50	0.37		0.50	0.37	0.37
v/c Ratio	0.62	0.90		0.35	1.12		0.61	0.57		0.66	0.81	0.13
Control Delay (s/veh)	33.4	58.4		22.5	114.3		21.6	27.3		23.0	39.3	21.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	33.4	58.4		22.5	114.3		21.6	27.3		23.0	39.3	21.7
LOS	C	E		C	F		C	C		C	D	C
Approach Delay (s/veh)		52.8			100.8			26.1			33.4	
Approach LOS		D			F			C			C	

Intersection Summary

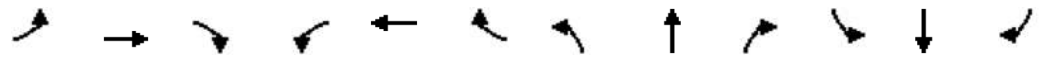
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay (s/veh): 49.0      Intersection LOS: D  
 Intersection Capacity Utilization 91.0%      ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	272	148	89	390	129	173	619	89	233	547	75
Future Volume (veh/h)	122	272	148	89	390	129	173	619	89	233	547	75
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	1767	1767	1767	1841	1841	1841	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	280	153	92	402	133	178	638	92	240	564	77
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	9	9	9	4	4	4	2	2	2	2	2	2
Cap, veh/h	191	309	169	199	357	118	313	1182	170	391	728	617
Arrive On Green	0.07	0.29	0.29	0.05	0.27	0.27	0.08	0.38	0.38	0.09	0.39	0.39
Sat Flow, veh/h	1682	1074	587	1753	1324	438	1781	3118	449	1781	1870	1585
Grp Volume(v), veh/h	126	0	433	92	0	535	178	363	367	240	564	77
Grp Sat Flow(s),veh/h/ln	1682	0	1661	1753	0	1762	1781	1777	1790	1781	1870	1585
Q Serve(g_s), s	5.3	0.0	25.1	3.7	0.0	27.0	6.0	15.9	16.0	8.3	26.4	3.1
Cycle Q Clear(g_c), s	5.3	0.0	25.1	3.7	0.0	27.0	6.0	15.9	16.0	8.3	26.4	3.1
Prop In Lane	1.00		0.35	1.00		0.25	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	477	199	0	476	313	674	679	391	728	617
V/C Ratio(X)	0.66	0.00	0.91	0.46	0.00	1.12	0.57	0.54	0.54	0.61	0.77	0.12
Avail Cap(c_a), veh/h	207	0	477	246	0	476	331	674	679	391	728	617
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	26.8	0.0	34.3	27.2	0.0	36.5	20.4	24.2	24.2	18.2	26.7	19.6
Incr Delay (d2), s/veh	6.8	0.0	20.9	1.7	0.0	80.0	2.0	3.1	3.1	2.8	7.9	0.4
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	2.3	0.0	12.3	1.6	0.0	21.5	2.4	6.8	6.9	3.4	12.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.6	0.0	55.3	28.8	0.0	116.5	22.5	27.3	27.3	21.0	34.6	20.0
LnGrp LOS	C		E	C		F	C	C	C	C	C	C
Approach Vol, veh/h		559			627			908			881	
Approach Delay, s/veh		50.4			103.7			26.4			29.6	
Approach LOS		D			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	44.9	8.3	34.7	11.0	45.9	10.1	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	10.3	18.0	5.7	27.1	8.0	28.4	7.3	29.0				
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	2.4	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			48.1									
HCM 7th LOS			D									



Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	673	323	83	856	0	531	0	172	0	0	0
Future Volume (vph)	0	673	323	83	856	0	531	0	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3366	0	1770	3539	0	1752	0	1568	0	1863	0
Flt Permitted				0.109			0.950					
Satd. Flow (perm)	0	3366	0	203	3539	0	1752	0	1568	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			201	
Travel Time (s)		10.4			6.0			6.2			3.0	
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	724	347	89	920	0	571	0	185	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1071	0	89	920	0	571	0	185	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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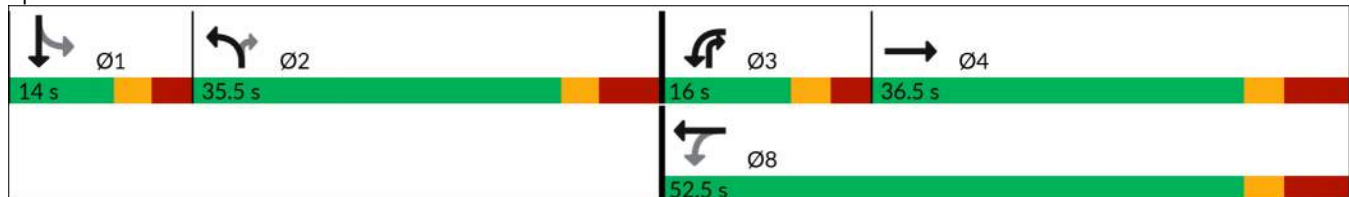


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		28.3		45.5	42.0		26.0		42.2			
Actuated g/C Ratio		0.32		0.52	0.48		0.30		0.48			
v/c Ratio		0.99		0.40	0.54		1.10		0.25			
Control Delay (s/veh)		56.9		16.2	17.8		102.9		14.3			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		56.9		16.2	17.8		102.9		14.3			
LOS		E		B	B		F		B			
Approach Delay (s/veh)		56.9			17.6			81.2				
Approach LOS		E			B			F				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 88  
 Natural Cycle: 125  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay (s/veh): 49.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 80.9%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 12: Veronica Ave & Hamilton St



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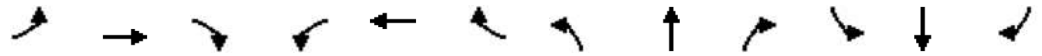
HCM 7th Edition methodology expects strict NEMA phasing.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	1259	1	0	1366	0	762	0	126	164	216	3
Future Volume (vph)	0	1259	1	0	1366	0	762	0	126	164	216	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>									0.850		0.999	
Fl <sub>t</sub> Protected							0.950				0.979	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Fl <sub>t</sub> Permitted							0.950				0.979	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1285	1	0	1394	0	778	0	129	167	220	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1286	0	0	1394	0	778	0	129	0	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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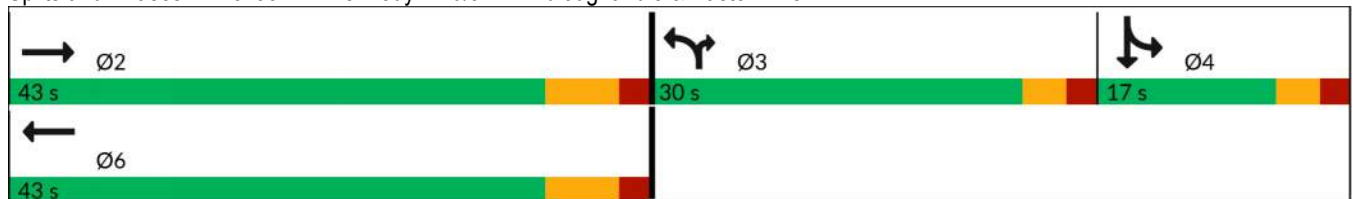


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.0			36.0		23.4		23.4		11.9	
Actuated g/C Ratio		0.41			0.41		0.26		0.26		0.13	
v/c Ratio		0.89			0.97		0.85		0.31		0.84	
Control Delay (s/veh)		34.3			44.1		41.4		28.2		55.0	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		34.3			44.1		41.4		28.2		55.0	
LOS		C			D		D		C		D	
Approach Delay (s/veh)		34.3			44.1			39.5			55.0	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 88.4  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay (s/veh): 40.9      Intersection LOS: D  
 Intersection Capacity Utilization 83.7%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

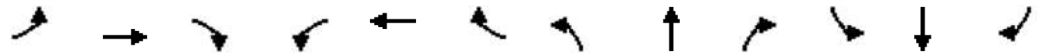
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	1259	1	0	1366	0	762	0	126	164	216	3
Future Volume (veh/h)	0	1259	1	0	1366	0	762	0	126	164	216	3
Initial Q (Qb), veh	0	0	0	0	0	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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1285	1	0	1394	0	778	0	129	167	220	3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2320	2	0	2263	0	0	0	0	235	313	4
Arrive On Green	0.00	0.64	0.64	0.00	0.64	0.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	0	3737	3	0	3741	0		0		1555	2074	28
Grp Volume(v), veh/h	0	627	659	0	1394	0		0.0		192	0	198
Grp Sat Flow(s),veh/h/ln	0	1777	1870	0	1777	0				1793	0	1865
Q Serve(g_s), s	0.0	11.2	11.2	0.0	13.3	0.0				5.8	0.0	5.7
Cycle Q Clear(g_c), s	0.0	11.2	11.2	0.0	13.3	0.0				5.8	0.0	5.7
Prop In Lane	0.00		0.00	0.00		0.00				0.87		0.02
Lane Grp Cap(c), veh/h	0	1131	1191	0	2263	0				271	0	282
V/C Ratio(X)	0.00	0.55	0.55	0.00	0.62	0.00				0.71	0.00	0.70
Avail Cap(c_a), veh/h	0	1131	1191	0	2263	0				380	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.8	5.8	0.0	6.1	0.0				22.8	0.0	22.8
Incr Delay (d2), s/veh	0.0	2.0	1.9	0.0	1.3	0.0				3.6	0.0	3.2
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	0.0	2.7	2.8	0.0	2.9	0.0				2.4	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	7.7	7.6	0.0	7.4	0.0				26.4	0.0	26.0
LnGrp LOS		A	A		A					C		C
Approach Vol, veh/h		1286			1394							390
Approach Delay, s/veh		7.7			7.4							26.2
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		13.5		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		13.2		7.8		15.3						
Green Ext Time (p_c), s		8.6		0.8		9.9						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				9.9								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

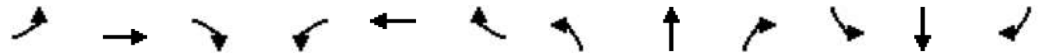
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	732	124	43	953	346	136	317	62	176	312	0
Future Volume (vph)	116	732	124	43	953	346	136	317	62	176	312	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978				0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3539	1583	1770	1863	1583	1770	1863	1863
Flt Permitted	0.161			0.230			0.310			0.301		
Satd. Flow (perm)	300	3461	0	428	3539	1583	577	1863	1583	561	1863	1863
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	120	755	128	44	982	357	140	327	64	181	322	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	883	0	44	982	357	140	327	64	181	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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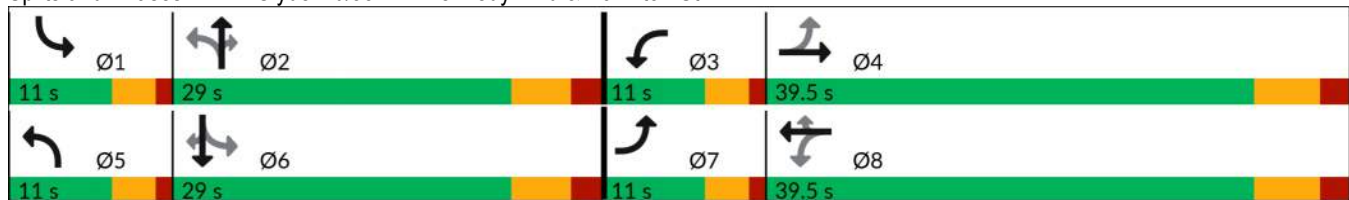


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	42.0	35.5		41.2	33.3	33.3	28.2	19.1	19.1	28.2	19.1	
Actuated g/C Ratio	0.50	0.42		0.49	0.39	0.39	0.33	0.23	0.23	0.33	0.23	
v/c Ratio	0.44	0.61		0.14	0.70	0.57	0.48	0.78	0.18	0.63	0.76	
Control Delay (s/veh)	16.4	23.1		11.8	26.2	26.3	24.4	44.7	28.2	30.3	43.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	16.4	23.1		11.8	26.2	26.3	24.4	44.7	28.2	30.3	43.9	
LOS	B	C		B	C	C	C	D	C	C	D	
Approach Delay (s/veh)		22.3			25.8			37.4			39.0	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	84.6
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay (s/veh):	28.5
Intersection LOS:	C
Intersection Capacity Utilization:	76.3%
ICU Level of Service:	D
Analysis Period (min):	15

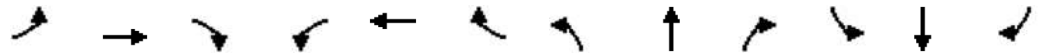
Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St





HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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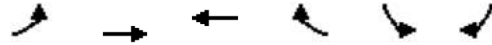
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	732	124	43	953	346	136	317	62	176	312	0
Future Volume (veh/h)	116	732	124	43	953	346	136	317	62	176	312	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	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	120	755	128	44	982	0	140	327	64	181	322	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	1264	214	320	1390		274	383	325	269	386	
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.00	0.08	0.20	0.20	0.08	0.21	0.00
Sat Flow, veh/h	1781	3039	515	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	120	441	442	44	982	0	140	327	64	181	322	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.2	16.3	16.3	1.2	19.6	0.0	5.1	14.2	2.8	6.8	13.9	0.0
Cycle Q Clear(g_c), s	3.2	16.3	16.3	1.2	19.6	0.0	5.1	14.2	2.8	6.8	13.9	0.0
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	739	739	320	1390		274	383	325	269	386	
V/C Ratio(X)	0.38	0.60	0.60	0.14	0.71		0.51	0.85	0.20	0.67	0.83	
Avail Cap(c_a), veh/h	324	739	739	373	1390		277	510	432	269	510	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	19.2	19.2	14.6	21.6	0.0	24.6	32.3	27.8	25.3	32.1	0.0
Incr Delay (d2), s/veh	0.8	3.5	3.5	0.2	3.0	0.0	1.5	10.3	0.3	6.4	8.8	0.0
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	1.2	6.7	6.7	0.4	7.8	0.0	2.1	7.1	1.0	3.1	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.4	22.7	22.7	14.8	24.7	0.0	26.1	42.7	28.1	31.7	40.9	0.0
LnGrp LOS	B	C	C	B	C		C	D	C	C	D	
Approach Vol, veh/h		1003			1026			531			503	
Approach Delay, s/veh		21.9			24.2			36.6			37.6	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	23.3	8.5	41.6	10.9	23.4	10.6	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	8.8	16.2	3.2	18.3	7.1	15.9	5.2	21.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.5	0.0	0.9	0.0	4.8				

Intersection Summary												
HCM 7th Control Delay, s/veh											27.8	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	144	1366	382	0	0
Future Volume (vph)	0	144	1366	382	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Fr t			0.967			
Flt Protected						
Satd. Flow (prot)	0	5085	3422	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	5085	3422	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	157	1485	415	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	157	1900	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.3% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	423	25	22	262	50	14	21	18	223	27	509
Future Volume (vph)	226	423	25	22	262	50	14	21	18	223	27	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.992				0.850			0.850		0.857	
Fl <sub>t</sub> Protected	0.950			0.950				0.980		0.950		
Satd. Flow (prot)	1770	1848	0	1770	1863	1583	0	1825	1583	1770	1596	0
Fl <sub>t</sub> Permitted	0.477			0.436				0.467		0.487		
Satd. Flow (perm)	889	1848	0	812	1863	1583	0	870	1583	907	1596	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	254	475	28	25	294	56	16	24	20	251	30	572
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	503	0	25	294	56	0	40	20	251	602	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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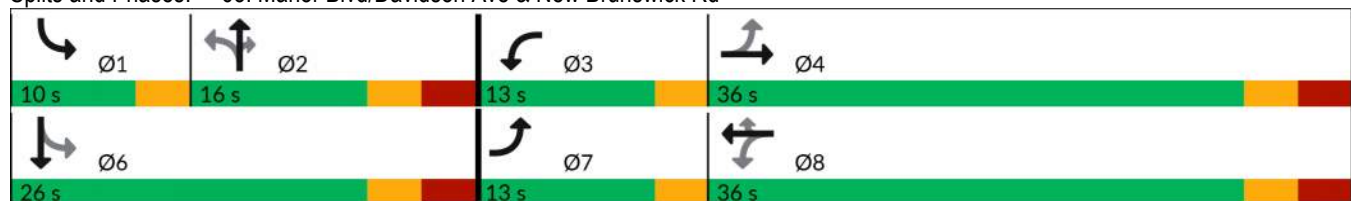


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	45.6	38.6		40.0	30.0	30.0		9.1	9.1	23.0	20.0	
Actuated g/C Ratio	0.61	0.52		0.54	0.40	0.40		0.12	0.12	0.31	0.27	
v/c Ratio	0.39	0.53		0.05	0.39	0.09		0.37	0.10	0.58	1.41	
Control Delay (s/veh)	8.5	15.7		6.2	17.9	14.6		40.5	30.1	28.5	224.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	8.5	15.7		6.2	17.9	14.6		40.5	30.1	28.5	224.1	
LOS	A	B		A	B	B		D	C	C	F	
Approach Delay (s/veh)		13.3			16.6			37.0			166.5	
Approach LOS		B			B			D			F	

Intersection Summary

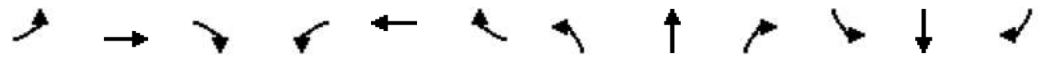
Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 74.6  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.41  
 Intersection Signal Delay (s/veh): 78.5  
 Intersection LOS: E  
 Intersection Capacity Utilization 77.5%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	423	25	22	262	50	14	21	18	223	27	509
Future Volume (veh/h)	226	423	25	22	262	50	14	21	18	223	27	509
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	254	475	28	25	294	56	16	24	20	251	30	572
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	599	839	49	423	773	655	69	71	218	271	22	418
Arrive On Green	0.11	0.48	0.48	0.04	0.41	0.41	0.14	0.14	0.14	0.10	0.28	0.28
Sat Flow, veh/h	1781	1749	103	1781	1870	1585	0	517	1585	1781	80	1518
Grp Volume(v), veh/h	254	0	503	25	294	56	40	0	20	251	0	602
Grp Sat Flow(s),veh/h/ln	1781	0	1852	1781	1870	1585	517	0	1585	1781	0	1597
Q Serve(g_s), s	5.5	0.0	14.1	0.6	8.0	1.6	0.0	0.0	0.8	7.0	0.0	20.0
Cycle Q Clear(g_c), s	5.5	0.0	14.1	0.6	8.0	1.6	10.0	0.0	0.8	7.0	0.0	20.0
Prop In Lane	1.00		0.06	1.00		1.00	0.40		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	599	0	889	423	773	655	141	0	218	271	0	440
V/C Ratio(X)	0.42	0.00	0.57	0.06	0.38	0.09	0.28	0.00	0.09	0.93	0.00	1.37
Avail Cap(c_a), veh/h	657	0	889	601	773	655	141	0	218	271	0	440
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	13.5	11.7	14.8	13.0	28.0	0.0	27.3	25.7	0.0	26.3
Incr Delay (d2), s/veh	0.5	0.0	2.6	0.1	1.4	0.3	1.1	0.0	0.2	35.7	0.0	179.9
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	1.9	0.0	5.7	0.2	3.4	0.6	0.6	0.0	0.3	6.0	0.0	28.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.1	0.0	16.1	11.8	16.3	13.2	29.0	0.0	27.5	61.5	0.0	206.2
LnGrp LOS	B		B	B	B	B	C		C	E		F
Approach Vol, veh/h	757		375				60		853			
Approach Delay, s/veh	14.1		15.5				28.5		163.6			
Approach LOS	B		B				C		F			
Timer - Assigned Phs	1	2	3	4	6	7	8					
Phs Duration (G+Y+Rc), s	10.0	16.0	5.8	40.9	26.0	10.6	36.0					
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	6.0	3.0	6.0					
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0	20.0	10.0	30.0					
Max Q Clear Time (g_c+I1), s	9.0	12.0	2.6	16.1	22.0	7.5	10.0					
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	0.2	1.8					
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			77.2									
HCM 7th LOS			E									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

05-FBPM-1  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	710	0	57	14	19	943
Future Volume (vph)	710	0	57	14	19	943
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.868	
Fl <sub>t</sub> Protected	0.950			0.961		
Satd. Flow (prot)	1752	0	0	1790	1556	0
Fl <sub>t</sub> Permitted	0.950			0.961		
Satd. Flow (perm)	1752	0	0	1790	1556	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Adj. Flow (vph)	763	0	61	15	20	1014
Shared Lane Traffic (%)						
Lane Group Flow (vph)	763	0	0	76	1034	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	105.4%
	ICU Level of Service G
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	710	0	57	14	19	943
Future Vol, veh/h	710	0	57	14	19	943
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	2	2	6	6
Mvmt Flow	763	0	61	15	20	1014

Major/Minor	Minor2	Major2		
Conflicting Flow All	527	527	-	0
Stage 1	527	527	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	511	456	-	-
Stage 1	592	528	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	511	0	-	-
Mov Cap-2 Maneuver	511	0	-	-
Stage 1	592	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	13.27	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	511	-	-
HCM Lane V/C Ratio	0.149	-	-
HCM Control Delay (s/veh)	13.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

06-FBSA-1  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	216	86	611	219	105	544
Future Volume (vph)	216	86	611	219	105	544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl <sub>t</sub> Permitted	0.950				0.309	
Satd. Flow (perm)	1770	1583	1863	1583	576	1863
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		91				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	227	91	643	231	111	573
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	91	643	231	111	573
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2
Permitted Phases		4		2	2	



Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

06-FBSA-1  
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	46.5	13.0	11.0	46.5
Total Split (s)	15.0	15.0	46.5	15.0	11.0	46.5
Total Split (%)	20.7%	20.7%	64.1%	20.7%	15.2%	64.1%
Maximum Green (s)	9.0	9.0	40.0	9.0	7.0	40.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effect Green (s)	9.0	9.0	40.2	57.1	48.1	40.2
Actuated g/C Ratio	0.13	0.13	0.57	0.81	0.68	0.57
v/c Ratio	1.00	0.32	0.60	0.18	0.22	0.54
Control Delay (s/veh)	96.2	10.8	13.7	2.6	3.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	96.2	10.8	13.7	2.6	3.8	12.4
LOS	F	B	B	A	A	B
Approach Delay (s/veh)	71.7		10.7			11.0
Approach LOS	E		B			B

Intersection Summary

Area Type:	Other
Cycle Length:	72.5
Actuated Cycle Length:	70.3
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.00
Intersection Signal Delay (s/veh):	21.2
Intersection LOS:	C
Intersection Capacity Utilization:	63.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

06-FBSA-1  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	352	44	72	381	61	106
Future Volume (vph)	352	44	72	381	61	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.914	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	1835	0	1770	1863	1672	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	1835	0	1770	1863	1672	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	435	54	89	470	75	131
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	0	89	470	206	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	352	44	72	381	61	106
Future Vol, veh/h	352	44	72	381	61	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	435	54	89	470	75	131

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	489	0	1110
Stage 1	-	-	-	-	462
Stage 2	-	-	-	-	648
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1074	-	232
Stage 1	-	-	-	-	634
Stage 2	-	-	-	-	521
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1074	-	212
Mov Cap-2 Maneuver	-	-	-	-	212
Stage 1	-	-	-	-	634
Stage 2	-	-	-	-	478

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.38	27.57
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	1074	-
HCM Lane V/C Ratio	0.573	-	-	0.083	-
HCM Control Delay (s/veh)	27.6	-	-	8.7	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	3.4	-	-	0.3	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

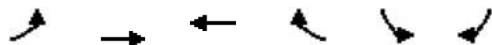
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	391	344	55	71	76
Future Volume (vph)	94	391	344	55	71	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.981			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1827	0	1736	1553
Flt Permitted	0.378				0.950	
Satd. Flow (perm)	704	1863	1827	0	1736	1553
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Adj. Flow (vph)	113	471	414	66	86	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	471	480	0	86	92
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.0	39.0	30.7		8.5	8.5
Actuated g/C Ratio	0.74	0.72	0.57		0.16	0.16
v/c Ratio	0.17	0.35	0.46		0.32	0.38
Control Delay (s/veh)	3.6	5.1	12.0		23.2	24.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	3.6	5.1	12.0		23.2	24.9
LOS	A	A	B		C	C
Approach Delay (s/veh)		4.8	12.0		24.1	
Approach LOS		A	B		C	

Intersection Summary

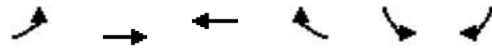
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.1  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.46  
 Intersection Signal Delay (s/veh): 10.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 44.8%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

























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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑	↗		↙	↘	
Traffic Volume (veh/h)	94	391	344	55	71	76	
Future Volume (veh/h)	94	391	344	55	71	76	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1841	
Adj Flow Rate, veh/h	113	471	414	66	86	92	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	
Percent Heavy Veh, %	2	2	2	2	4	4	
Cap, veh/h	644	1272	808	129	220	196	
Arrive On Green	0.11	0.68	0.51	0.51	0.13	0.13	
Sat Flow, veh/h	1781	1870	1574	251	1753	1560	
Grp Volume(v), veh/h	113	471	0	480	86	92	
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1825	1753	1560	
Q Serve(g_s), s	1.2	5.5	0.0	8.9	2.3	2.8	
Cycle Q Clear(g_c), s	1.2	5.5	0.0	8.9	2.3	2.8	
Prop In Lane	1.00			0.14	1.00	1.00	
Lane Grp Cap(c), veh/h	644	1272	0	936	220	196	
V/C Ratio(X)	0.18	0.37	0.00	0.51	0.39	0.47	
Avail Cap(c_a), veh/h	762	1272	0	936	341	303	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	4.5	3.5	0.0	8.3	20.7	20.9	
Incr Delay (d2), s/veh	0.1	0.8	0.0	2.0	1.1	1.8	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.9	0.0	2.7	0.9	0.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	4.6	4.3	0.0	10.3	21.8	22.7	
LnGrp LOS	A	A		B	C	C	
Approach Vol, veh/h		584	480		178		
Approach Delay, s/veh		4.4	10.3		22.3		
Approach LOS		A	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.5	8.6	31.4
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				7.5	4.8	3.2	10.9
Green Ext Time (p_c), s				2.8	0.2	0.1	2.2
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			9.2				
HCM 7th LOS			A				

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	261	114	137	274	25	99	211	125	46	218	148
Future Volume (vph)	184	261	114	137	274	25	99	211	125	46	218	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.939	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1749	0
Flt Permitted	0.324			0.371			0.385			0.950		
Satd. Flow (perm)	604	1863	1583	691	1863	1583	717	1863	1583	1770	1749	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Adj. Flow (vph)	196	278	121	146	291	27	105	224	133	49	232	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	278	121	146	291	27	105	224	133	49	389	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		
Permitted Phases	4		4	8		8	2		2		6	



Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

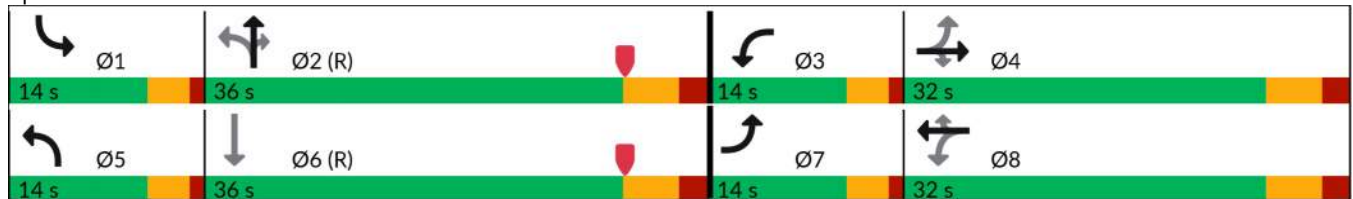
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	32.2	20.4	20.4	31.4	20.0	20.0	49.9	42.4	42.4	7.9	40.1	
Actuated g/C Ratio	0.34	0.21	0.21	0.33	0.21	0.21	0.52	0.44	0.44	0.08	0.42	
v/c Ratio	0.61	0.70	0.36	0.44	0.75	0.08	0.23	0.27	0.19	0.34	0.53	
Control Delay (s/veh)	29.1	44.6	34.3	23.9	47.6	28.8	13.4	21.5	21.1	47.3	27.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	29.1	44.6	34.3	23.9	47.6	28.8	13.4	21.5	21.1	47.3	27.2	
LOS	C	D	C	C	D	C	B	C	C	D	C	
Approach Delay (s/veh)		37.4			39.1			19.5			29.4	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay (s/veh): 31.8      Intersection LOS: C  
 Intersection Capacity Utilization 67.3%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	184	261	114	137	274	25	99	211	125	46	218	148
Future Volume (veh/h)	184	261	114	137	274	25	99	211	125	46	218	148
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	196	278	0	146	291	0	105	224	0	49	232	0
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	294	376		294	340		599	848		93	853	
Arrive On Green	0.10	0.20	0.00	0.09	0.18	0.00	0.05	0.45	0.00	0.05	0.46	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Grp Volume(v), veh/h	196	278	0	146	291	0	105	224	0	49	232	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	8.5	13.4	0.0	6.3	14.5	0.0	3.0	7.1	0.0	2.6	7.4	0.0
Cycle Q Clear(g_c), s	8.5	13.4	0.0	6.3	14.5	0.0	3.0	7.1	0.0	2.6	7.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	294	376		294	340		599	848		93	853	
V/C Ratio(X)	0.67	0.74		0.50	0.86		0.18	0.26		0.53	0.27	
Avail Cap(c_a), veh/h	294	507		328	507		696	848		186	853	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	36.0	0.0	28.9	38.0	0.0	12.9	16.3	0.0	44.4	16.2	0.0
Incr Delay (d2), s/veh	5.6	3.9	0.0	1.3	9.1	0.0	0.1	0.8	0.0	4.6	0.8	0.0
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	3.9	6.2	0.0	2.6	7.2	0.0	1.1	3.0	0.0	1.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.4	39.8	0.0	30.2	47.2	0.0	13.0	17.0	0.0	48.9	17.0	0.0
LnGrp LOS	C	D		C	D		B	B		D	B	
Approach Vol, veh/h		474			437			329			281	
Approach Delay, s/veh		37.6			41.5			15.8			22.6	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	49.5	12.2	25.3	8.8	49.8	14.0	23.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	4.6	9.1	8.3	15.4	5.0	9.4	10.5	16.5				
Green Ext Time (p_c), s	0.0	1.0	0.1	1.0	0.1	1.1	0.0	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											31.2	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↵	↕	↵	↗
Traffic Volume (vph)	826	30	152	745	5	204
Future Volume (vph)	826	30	152	745	5	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1853	0	1770	1863	1656	1482
Flt Permitted			0.104		0.950	
Satd. Flow (perm)	1853	0	194	1863	1656	1482
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	9%	9%
Adj. Flow (vph)	918	33	169	828	6	227
Shared Lane Traffic (%)						
Lane Group Flow (vph)	951	0	169	828	6	227
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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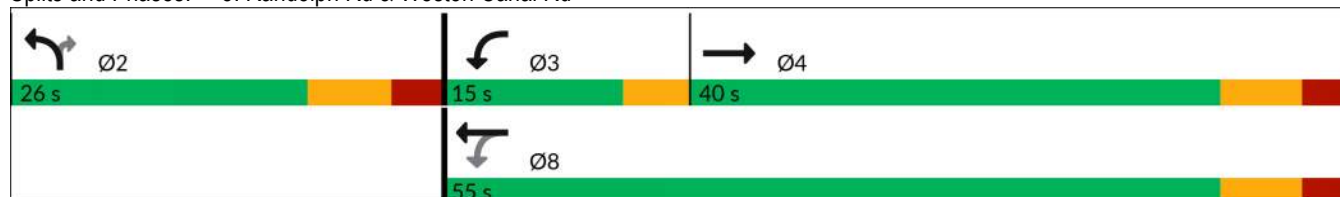


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	34.3		51.1	47.1	15.7	15.7
Actuated g/C Ratio	0.44		0.65	0.60	0.20	0.20
v/c Ratio	1.18		0.56	0.74	0.02	0.77
Control Delay (s/veh)	118.0		17.0	17.3	24.8	48.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	118.0		17.0	17.3	24.8	48.3
LOS	F		B	B	C	D
Approach Delay (s/veh)	118.0			17.3	47.7	
Approach LOS	F			B	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 78.8  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.18  
 Intersection Signal Delay (s/veh): 64.4  
 Intersection LOS: E  
 Intersection Capacity Utilization 74.5%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	826	30	152	745	5	204
Future Volume (veh/h)	826	30	152	745	5	204
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1767	1767
Adj Flow Rate, veh/h	918	33	169	828	6	227
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	9	9
Cap, veh/h	849	31	253	1150	296	264
Arrive On Green	0.47	0.47	0.09	0.61	0.18	0.18
Sat Flow, veh/h	1794	64	1781	1870	1682	1497
Grp Volume(v), veh/h	0	951	169	828	6	227
Grp Sat Flow(s),veh/h/ln	0	1859	1781	1870	1682	1497
Q Serve(g_s), s	0.0	36.2	3.3	23.4	0.2	11.3
Cycle Q Clear(g_c), s	0.0	36.2	3.3	23.4	0.2	11.3
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	880	253	1150	296	264
V/C Ratio(X)	0.00	1.08	0.67	0.72	0.02	0.86
Avail Cap(c_a), veh/h	0	880	350	1150	396	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	20.1	16.7	10.2	26.0	30.6
Incr Delay (d2), s/veh	0.0	54.6	3.0	3.9	0.0	15.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	26.1	1.4	8.1	0.1	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	74.8	19.7	14.1	26.1	45.6
LnGrp LOS		F	B	B	C	D
Approach Vol, veh/h	951			997	233	
Approach Delay, s/veh	74.8			15.1	45.1	
Approach LOS	E			B	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		21.5	10.8	44.2		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		13.3	5.3	38.2		25.4
Green Ext Time (p_c), s		0.3	0.2	0.0		5.7
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			44.3			
HCM 7th LOS			D			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑	↵	↵
Traffic Volume (vph)	823	17	177	736	8	270
Future Volume (vph)	823	17	177	736	8	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3494	0	1736	1827	1703	1524
Flt Permitted			0.234		0.950	
Satd. Flow (perm)	3494	0	428	1827	1703	1524
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	4%	4%	6%	6%
Adj. Flow (vph)	935	19	201	836	9	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	954	0	201	836	9	307
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

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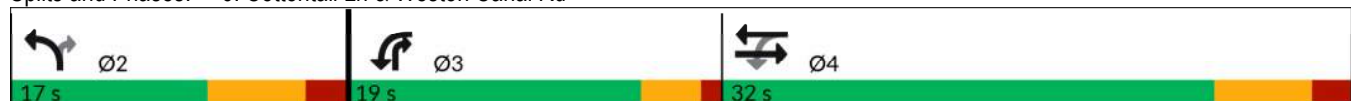


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	17.0	11.0
Total Split (s)	32.0		19.0	32.0	17.0	19.0
Total Split (%)	47.1%		27.9%	47.1%	25.0%	27.9%
Maximum Green (s)	25.0		15.0	25.0	10.0	15.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	25.4		41.9	25.4	7.1	15.7
Actuated g/C Ratio	0.49		0.80	0.49	0.14	0.30
v/c Ratio	0.56		0.30	0.94	0.04	0.67
Control Delay (s/veh)	12.5		2.7	37.0	23.5	23.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.5		2.7	37.0	23.5	23.3
LOS	B		A	D	C	C
Approach Delay (s/veh)	12.5			30.3	23.3	
Approach LOS	B			C	C	

Intersection Summary

Area Type: Other  
 Cycle Length: 68  
 Actuated Cycle Length: 52.3  
 Natural Cycle: 70  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay (s/veh): 22.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 56.2%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.



Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	687	583	44	570	434	205
Future Volume (vph)	687	583	44	570	434	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.931				0.957	
Fl <sub>t</sub> Protected				0.996	0.967	
Satd. Flow (prot)	3232	0	0	3424	1691	0
Fl <sub>t</sub> Permitted				0.635	0.967	
Satd. Flow (perm)	3232	0	0	2183	1691	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	5%	5%	4%	4%
Adj. Flow (vph)	755	641	48	626	477	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1396	0	0	674	702	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

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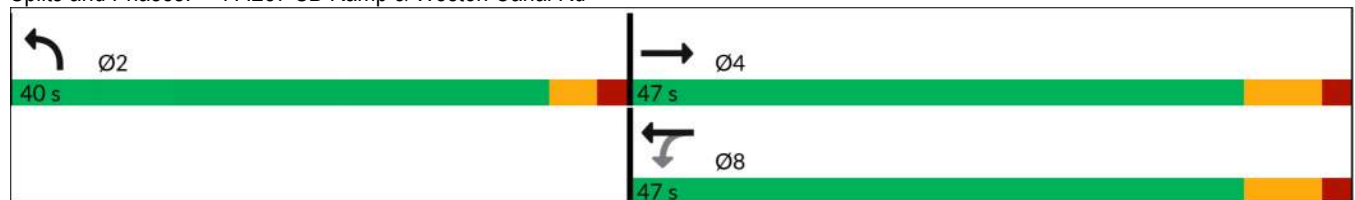


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	0.94			0.67	1.03	
Control Delay (s/veh)	36.3			22.5	70.9	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	36.3			22.5	70.9	
LOS	D			C	E	
Approach Delay (s/veh)	36.3			22.5	70.9	
Approach LOS	D			C	E	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.03
Intersection Signal Delay (s/veh):	41.7
Intersection LOS:	D
Intersection Capacity Utilization:	95.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	687	583	44	570	434	205
Future Volume (veh/h)	687	583	44	570	434	205
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1841	1841
Adj Flow Rate, veh/h	755	0	48	626	477	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	5	5	4	4
Cap, veh/h	1871		134	1612	533	
Arrive On Green	0.54	0.00	0.54	0.54	0.30	0.00
Sat Flow, veh/h	3681	0	148	3097	1750	0
Grp Volume(v), veh/h	755	0	341	333	478	0
Grp Sat Flow(s),veh/h/ln	1749	0	1583	1578	1753	0
Q Serve(g_s), s	9.6	0.0	0.0	9.3	19.5	0.0
Cycle Q Clear(g_c), s	9.6	0.0	8.0	9.3	19.5	0.0
Prop In Lane		0.00	0.14		1.00	0.00
Lane Grp Cap(c), veh/h	1871		902	845	534	
V/C Ratio(X)	0.40		0.38	0.39	0.90	
Avail Cap(c_a), veh/h	1871		902	845	821	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	9.9	10.2	24.9	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.2	1.4	8.5	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	3.1	0.0	2.9	2.9	8.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.0	0.0	11.1	11.6	33.3	0.0
LnGrp LOS	B		B	B	C	
Approach Vol, veh/h	755			674	478	
Approach Delay, s/veh	11.0			11.4	33.3	
Approach LOS	B			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		27.8		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		21.5		11.6		11.3
Green Ext Time (p_c), s		1.3		5.2		4.2

Intersection Summary

HCM 7th Control Delay, s/veh	16.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	348	392	189	187	466	37
Future Volume (vph)	348	392	189	187	466	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.921				0.990	
Fl <sub>t</sub> Protected				0.975	0.956	
Satd. Flow (prot)	3228	0	0	3451	1746	0
Fl <sub>t</sub> Permitted				0.539	0.956	
Satd. Flow (perm)	3228	0	0	1908	1746	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	378	426	205	203	507	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	804	0	0	408	547	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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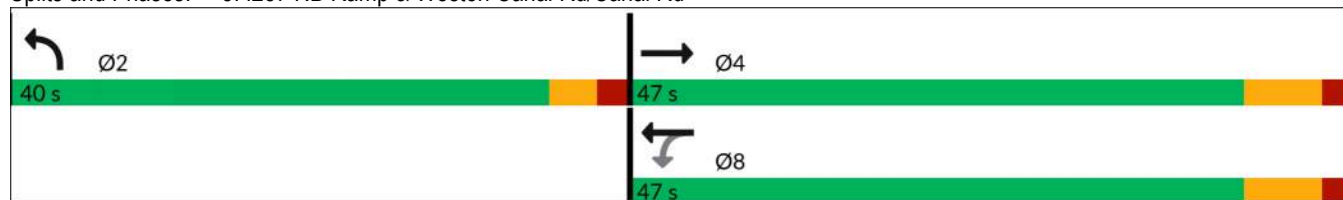


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.2			40.2	29.1	
Actuated g/C Ratio	0.49			0.49	0.36	
v/c Ratio	0.50			0.43	0.88	
Control Delay (s/veh)	16.2			16.2	40.7	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	16.2			16.2	40.7	
LOS	B			B	D	
Approach Delay (s/veh)	16.2			16.2	40.7	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	81.4
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.88
Intersection Signal Delay (s/veh):	23.8
Intersection LOS:	C
Intersection Capacity Utilization:	76.8%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	
Traffic Volume (veh/h)	348	392	189	187	466	37
Future Volume (veh/h)	348	392	189	187	466	37
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1856	1856
Adj Flow Rate, veh/h	378	0	205	203	507	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	2	2	3	3
Cap, veh/h	1849		564	848	562	
Arrive On Green	0.52	0.00	0.52	0.52	0.32	0.00
Sat Flow, veh/h	3711	0	895	1702	1764	0
Grp Volume(v), veh/h	378	0	205	203	508	0
Grp Sat Flow(s),veh/h/ln	1763	0	895	1617	1767	0
Q Serve(g_s), s	4.4	0.0	10.4	5.2	21.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	14.8	5.2	21.0	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1849		564	848	563	
V/C Ratio(X)	0.20		0.36	0.24	0.90	
Avail Cap(c_a), veh/h	1849		564	848	811	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	13.6	9.9	24.9	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.7	10.0	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	1.4	0.0	2.3	1.7	9.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.9	0.0	15.4	10.5	34.9	0.0
LnGrp LOS	A		B	B	C	
Approach Vol, veh/h	378			408	508	
Approach Delay, s/veh	9.9			13.0	34.9	
Approach LOS	A			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		29.3		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		23.0		6.4		16.8
Green Ext Time (p_c), s		1.3		2.4		2.6

Intersection Summary

HCM 7th Control Delay, s/veh	20.7
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	58	10	49	59	115	5	371	40	47	305	66
Future Volume (vph)	92	58	10	49	59	115	5	371	40	47	305	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850		0.985			0.973	
Flt Protected	0.950				0.978		0.950			0.950		
Satd. Flow (prot)	1770	1824	0	0	1822	1583	1770	1835	0	1770	1812	0
Flt Permitted	0.950				0.820		0.524			0.388		
Satd. Flow (perm)	1770	1824	0	0	1527	1583	976	1835	0	723	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	96	60	10	51	61	120	5	386	42	49	318	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	70	0	0	112	120	5	428	0	49	387	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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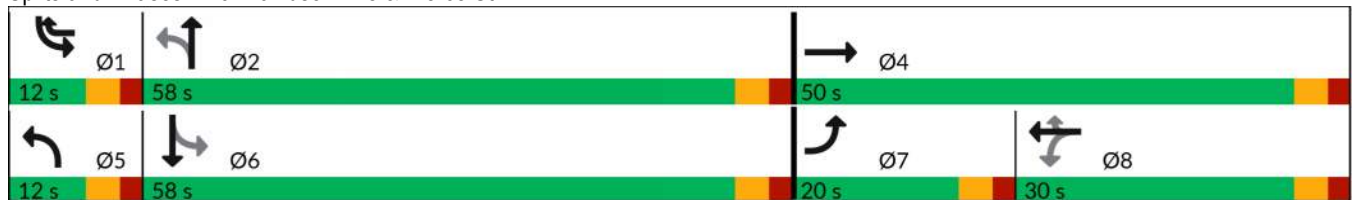


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effect Green (s)	10.8	25.6			12.7	24.8	60.7	53.6		64.9	63.6	
Actuated g/C Ratio	0.11	0.25			0.13	0.24	0.60	0.53		0.64	0.63	
v/c Ratio	0.51	0.15			0.59	0.31	0.01	0.44		0.09	0.34	
Control Delay (s/veh)	54.5	28.2			56.1	35.0	9.6	18.7		9.5	13.1	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	54.5	28.2			56.1	35.0	9.6	18.7		9.5	13.1	
LOS	D	C			E	D	A	B		A	B	
Approach Delay (s/veh)		43.4			45.2			18.6			12.7	
Approach LOS		D			D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	101.5
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.59
Intersection Signal Delay (s/veh):	24.7
Intersection LOS:	C
Intersection Capacity Utilization:	52.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St



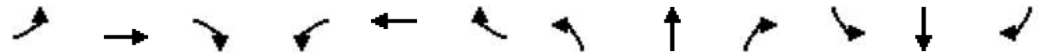


HCM 7th Signalized Intersection Summary

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9: Davidson Ave & Pierce St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	58	10	49	59	115	5	371	40	47	305	66
Future Volume (veh/h)	92	58	10	49	59	115	5	371	40	47	305	66
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	96	60	10	51	61	120	5	386	42	49	318	69
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	346	58	118	98	242	595	936	102	588	907	197
Arrive On Green	0.07	0.22	0.22	0.10	0.10	0.10	0.01	0.56	0.56	0.05	0.61	0.61
Sat Flow, veh/h	1781	1563	260	630	985	1585	1781	1658	180	1781	1489	323
Grp Volume(v), veh/h	96	0	70	112	0	120	5	0	428	49	0	387
Grp Sat Flow(s),veh/h/ln	1781	0	1823	1615	0	1585	1781	0	1838	1781	0	1812
Q Serve(g_s), s	5.0	0.0	2.9	5.1	0.0	6.5	0.1	0.0	12.4	1.0	0.0	10.0
Cycle Q Clear(g_c), s	5.0	0.0	2.9	6.2	0.0	6.5	0.1	0.0	12.4	1.0	0.0	10.0
Prop In Lane	1.00		0.14	0.46		1.00	1.00		0.10	1.00		0.18
Lane Grp Cap(c), veh/h	123	0	404	216	0	242	595	0	1038	588	0	1104
V/C Ratio(X)	0.78	0.00	0.17	0.52	0.00	0.50	0.01	0.00	0.41	0.08	0.00	0.35
Avail Cap(c_a), veh/h	285	0	874	480	0	507	711	0	1038	625	0	1104
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	29.6	40.8	0.0	36.4	8.7	0.0	11.6	7.6	0.0	9.1
Incr Delay (d2), s/veh	10.0	0.0	0.2	1.9	0.0	1.6	0.0	0.0	1.2	0.1	0.0	0.9
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	1.2	2.5	0.0	2.5	0.0	0.0	4.7	0.3	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	53.0	0.0	29.8	42.7	0.0	38.0	8.7	0.0	12.8	7.7	0.0	10.0
LnGrp LOS	D		C	D		D	A		B	A		A
Approach Vol, veh/h		166			232			433				436
Approach Delay, s/veh		43.2			40.3			12.8				9.7
Approach LOS		D			D			B				A
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	58.0		25.8	5.9	62.2	11.5	14.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	3.0	14.4		4.9	2.1	12.0	7.0	8.5				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	2.3	0.1	0.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			20.7									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	429	73	450	398	71	518
Future Volume (vph)	429	73	450	398	71	518
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.995	0.950	
Satd. Flow (prot)	3539	1583	1681	1761	1770	2787
Flt Permitted			0.950	0.995	0.950	
Satd. Flow (perm)	3539	1583	1681	1761	1770	2787
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	447	76	469	415	74	540
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	447	76	422	462	74	540
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8
Permitted Phases						

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	8	8	4	4 8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.2	35.2	32.7	32.7	16.5	54.2
Actuated g/C Ratio	0.35	0.35	0.33	0.33	0.17	0.55
v/c Ratio	0.36	0.14	0.76	0.80	0.25	0.36
Control Delay (s/veh)	25.8	24.6	40.7	42.5	38.9	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.8	24.6	40.7	42.5	38.9	13.3
LOS	C	C	D	D	D	B
Approach Delay (s/veh)	25.6			41.6	16.4	
Approach LOS	C			D	B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99.4
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay (s/veh):	29.8
Intersection LOS:	C
Intersection Capacity Utilization:	51.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: Davidson Ave & Easton Ave



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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	306	96	159	304	41	99	563	169	277	517	65
Future Volume (vph)	95	306	96	159	304	41	99	563	169	277	517	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.964			0.982			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1829	0	1770	3415	0	1770	1863	1583
Flt Permitted	0.328			0.182			0.256			0.232		
Satd. Flow (perm)	611	1796	0	339	1829	0	477	3415	0	432	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
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
Adj. Flow (vph)	100	322	101	167	320	43	104	593	178	292	544	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	423	0	167	363	0	104	771	0	292	544	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		6

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

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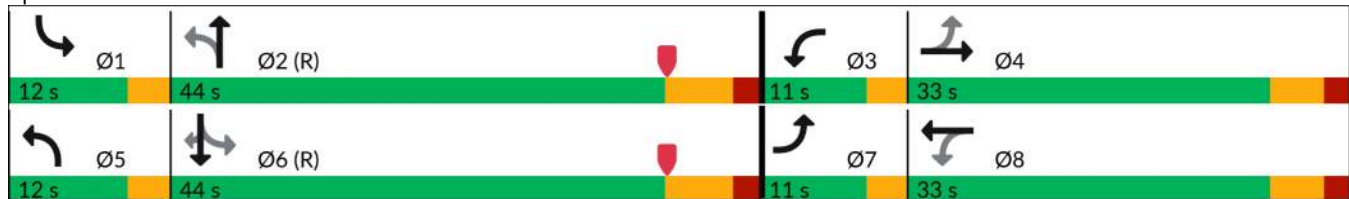


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		12.0	44.0		12.0	44.0	44.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		12.0%	44.0%		12.0%	44.0%	44.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		9.0	37.0		9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effect Green (s)	36.5	25.9		37.5	28.1		49.6	37.6		52.2	40.9	40.9
Actuated g/C Ratio	0.37	0.26		0.38	0.28		0.50	0.38		0.52	0.41	0.41
v/c Ratio	0.32	0.91		0.69	0.71		0.31	0.60		0.83	0.71	0.11
Control Delay (s/veh)	21.7	61.2		36.6	41.6		14.2	27.7		37.1	32.7	21.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	21.7	61.2		36.6	41.6		14.2	27.7		37.1	32.7	21.1
LOS	C	E		D	D		B	C		D	C	C
Approach Delay (s/veh)		53.7			40.0			26.1			33.2	
Approach LOS		D			D			C			C	

Intersection Summary

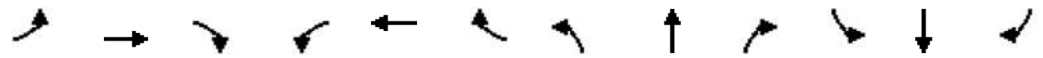
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay (s/veh): 36.1      Intersection LOS: D  
 Intersection Capacity Utilization 84.6%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	306	96	159	304	41	99	563	169	277	517	65
Future Volume (veh/h)	95	306	96	159	304	41	99	563	169	277	517	65
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	100	322	101	167	320	43	104	593	178	292	544	68
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	275	348	109	238	448	60	316	1038	311	380	791	670
Arrive On Green	0.06	0.25	0.25	0.08	0.28	0.28	0.05	0.39	0.39	0.09	0.42	0.42
Sat Flow, veh/h	1781	1365	428	1781	1614	217	1781	2695	807	1781	1870	1585
Grp Volume(v), veh/h	100	0	423	167	0	363	104	391	380	292	544	68
Grp Sat Flow(s),veh/h/ln	1781	0	1793	1781	0	1831	1781	1777	1725	1781	1870	1585
Q Serve(g_s), s	4.1	0.0	23.0	6.8	0.0	17.9	3.5	17.3	17.4	9.0	23.7	2.6
Cycle Q Clear(g_c), s	4.1	0.0	23.0	6.8	0.0	17.9	3.5	17.3	17.4	9.0	23.7	2.6
Prop In Lane	1.00		0.24	1.00		0.12	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	275	0	457	238	0	508	316	684	664	380	791	670
V/C Ratio(X)	0.36	0.00	0.93	0.70	0.00	0.71	0.33	0.57	0.57	0.77	0.69	0.10
Avail Cap(c_a), veh/h	315	0	484	238	0	508	383	684	664	380	791	670
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	26.4	0.0	36.3	26.9	0.0	32.6	19.1	24.2	24.3	20.1	23.5	17.4
Incr Delay (d2), s/veh	0.8	0.0	23.2	8.8	0.0	4.7	0.6	3.4	3.6	9.2	4.9	0.3
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	1.7	0.0	12.4	3.3	0.0	8.1	1.4	7.4	7.2	4.6	10.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.2	0.0	59.5	35.7	0.0	37.3	19.7	27.7	27.8	29.3	28.4	17.7
LnGrp LOS	C		E	D		D	B	C	C	C	C	B
Approach Vol, veh/h	523		530				875			904		
Approach Delay, s/veh	53.3		36.8				26.8			27.9		
Approach LOS	D		D				C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	45.5	11.0	31.5	8.2	49.3	8.7	33.7				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	11.0	19.4	8.8	25.0	5.5	25.7	6.1	19.9				
Green Ext Time (p_c), s	0.0	4.2	0.0	0.5	0.1	2.6	0.0	1.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			33.9									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	448	258	91	461	0	368	0	98	0	0	0
Future Volume (vph)	0	448	258	91	461	0	368	0	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3345	0	1770	3539	0	1770	0	1583	0	1863	0
Flt Permitted				0.240			0.950					
Satd. Flow (perm)	0	3345	0	447	3539	0	1770	0	1583	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			198	
Travel Time (s)		10.4			6.0			6.2			3.0	
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	482	277	98	496	0	396	0	105	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	759	0	98	496	0	396	0	105	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1
Permitted Phases				8					2		1	



Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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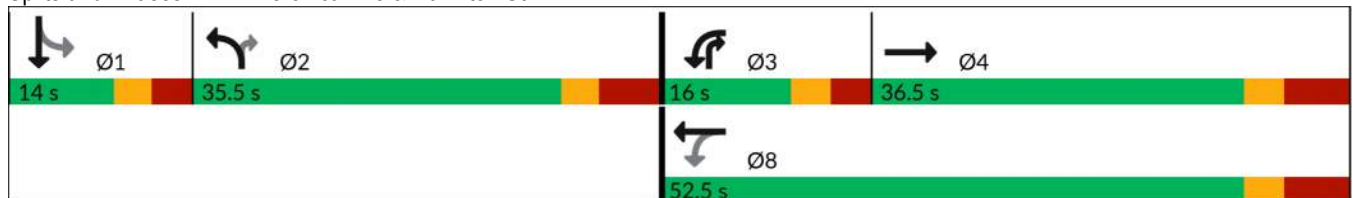


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effect Green (s)		28.2		45.6	42.1		22.3		38.6			
Actuated g/C Ratio		0.33		0.54	0.50		0.26		0.46			
v/c Ratio		0.68		0.28	0.28		0.85		0.15			
Control Delay (s/veh)		28.9		12.6	13.4		47.3		13.1			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		28.9		12.6	13.4		47.3		13.1			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		28.9			13.3			40.1				
Approach LOS		C			B			D				

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	84.4
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.85
Intersection Signal Delay (s/veh):	26.9
Intersection LOS:	C
Intersection Capacity Utilization:	64.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 12: Veronica Ave & Hamilton St

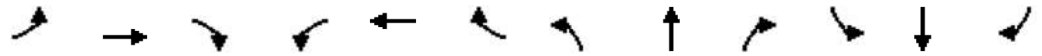


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

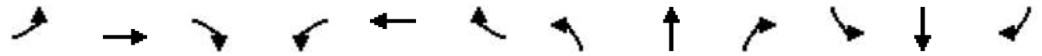
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	1007	3	0	1089	0	768	0	152	154	124	3
Future Volume (vph)	0	1007	3	0	1089	0	768	0	152	154	124	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850		0.998	
Flt Protected							0.950				0.973	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3437	0
Flt Permitted							0.950				0.973	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3437	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1049	3	0	1134	0	800	0	158	160	129	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1052	0	0	1134	0	800	0	158	0	292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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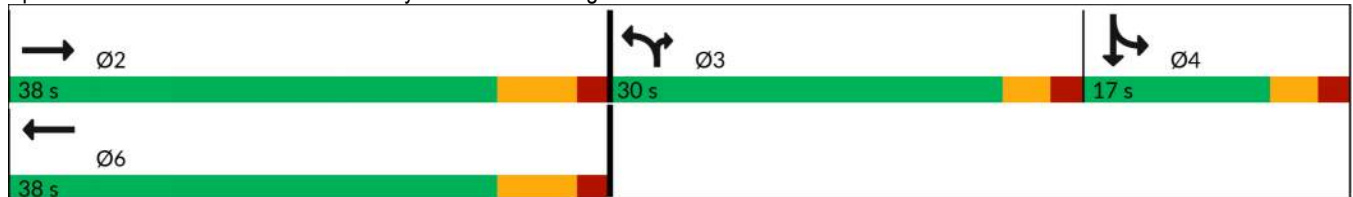


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		38.0			38.0		23.0		23.0	12.0	12.0	
Total Split (s)		38.0			38.0		30.0		30.0	17.0	17.0	
Total Split (%)		44.7%			44.7%		35.3%		35.3%	20.0%	20.0%	
Maximum Green (s)		31.0			31.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effect Green (s)		31.1			31.1		22.9		22.9		11.0	
Actuated g/C Ratio		0.38			0.38		0.28		0.28		0.13	
v/c Ratio		0.78			0.85		0.84		0.36		0.63	
Control Delay (s/veh)		28.3			31.4		36.9		26.4		40.7	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		28.3			31.4		36.9		26.4		40.7	
LOS		C			C		D		C		D	
Approach Delay (s/veh)		28.3			31.4			35.1			40.7	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	85
Actuated Cycle Length:	82
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.85
Intersection Signal Delay (s/veh):	32.3
Intersection LOS:	C
Intersection Capacity Utilization:	73.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

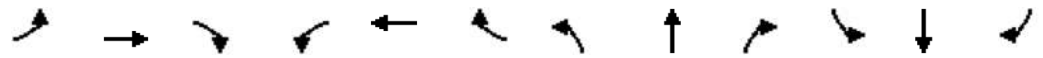
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↑		↖↗		↖		↕	↖↗
Traffic Volume (veh/h)	0	1007	3	0	1089	0	768	0	152	154	124	3
Future Volume (veh/h)	0	1007	3	0	1089	0	768	0	152	154	124	3
Initial Q (Qb), veh	0	0	0	0	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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1049	3	0	1134	0	800	0	158	160	129	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2259	6	0	2209	0	0	0	0	246	251	6
Arrive On Green	0.00	0.62	0.62	0.00	0.62	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3728	10	0	3741	0		0		1781	1820	42
Grp Volume(v), veh/h	0	513	539	0	1134	0		0.0		160	0	132
Grp Sat Flow(s),veh/h/ln	0	1777	1868	0	1777	0				1781	0	1863
Q Serve(g_s), s	0.0	7.7	7.7	0.0	8.8	0.0				4.2	0.0	3.3
Cycle Q Clear(g_c), s	0.0	7.7	7.7	0.0	8.8	0.0				4.2	0.0	3.3
Prop In Lane	0.00		0.01	0.00		0.00				1.00		0.02
Lane Grp Cap(c), veh/h	0	1104	1161	0	2209	0				246	0	257
V/C Ratio(X)	0.00	0.46	0.46	0.00	0.51	0.00				0.65	0.00	0.51
Avail Cap(c_a), veh/h	0	1104	1161	0	2209	0				429	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	5.0	0.0	5.2	0.0				20.4	0.0	19.9
Incr Delay (d2), s/veh	0.0	1.4	1.3	0.0	0.9	0.0				2.9	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.7	0.0	1.7	0.0				1.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	6.4	6.4	0.0	6.1	0.0				23.3	0.0	21.5
LnGrp LOS		A	A		A					C		C
Approach Vol, veh/h		1052			1134							292
Approach Delay, s/veh		6.4			6.1							22.5
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		11.9		38.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		31.0		12.0		31.0						
Max Q Clear Time (g_c+I1), s		9.7		6.2		10.8						
Green Ext Time (p_c), s		6.4		0.7		7.6						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				8.2								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

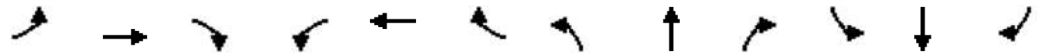
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	465	75	41	505	275	86	220	46	188	196	0
Future Volume (vph)	90	465	75	41	505	275	86	220	46	188	196	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3465	0	1770	3539	1583	1770	1863	1583	1770	1863	1863
Flt Permitted	0.408			0.422			0.604			0.426		
Satd. Flow (perm)	760	3465	0	786	3539	1583	1125	1863	1583	794	1863	1863
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45		45			45			45		45
Link Distance (ft)		572		356			562			410		
Travel Time (s)		8.7		5.4			8.5			6.2		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	94	484	78	43	526	286	90	229	48	196	204	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	562	0	43	526	286	90	229	48	196	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12			12		12
Link Offset(ft)		0		0			0			0		0
Crosswalk Width(ft)		16		16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94		94			94			94		94
Detector 2 Size(ft)		6		6			6			6		6
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0			0.0		0.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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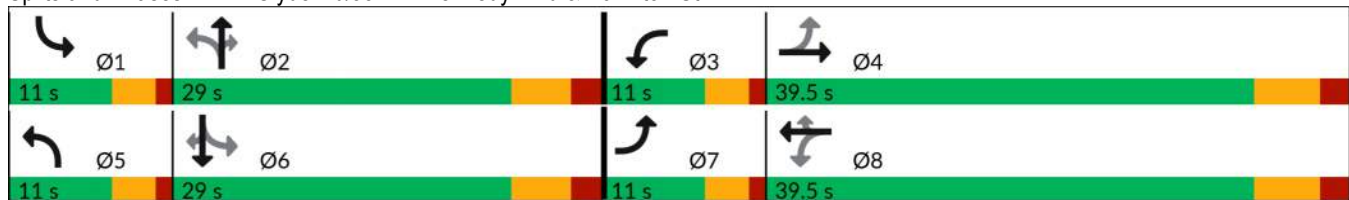


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	42.0	35.6		41.2	33.4	33.4	24.2	15.1	15.1	25.1	17.8	
Actuated g/C Ratio	0.52	0.44		0.51	0.41	0.41	0.30	0.19	0.19	0.31	0.22	
v/c Ratio	0.19	0.37		0.09	0.36	0.44	0.23	0.66	0.16	0.59	0.50	
Control Delay (s/veh)	10.7	17.7		10.0	18.6	21.5	20.1	40.4	29.0	28.5	34.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	10.7	17.7		10.0	18.6	21.5	20.1	40.4	29.0	28.5	34.1	
LOS	B	B		A	B	C	C	D	C	C	C	
Approach Delay (s/veh)		16.7			19.2			33.9			31.4	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	80.6
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.66
Intersection Signal Delay (s/veh):	23.0
Intersection LOS:	C
Intersection Capacity Utilization:	60.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↖	↖	↕	↖	↖	↕	↖
Traffic Volume (veh/h)	90	465	75	41	505	275	86	220	46	188	196	0
Future Volume (veh/h)	90	465	75	41	505	275	86	220	46	188	196	0
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	94	484	78	43	526	0	90	229	48	196	204	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	508	1355	217	473	1487		305	291	246	291	314	
Arrive On Green	0.08	0.44	0.44	0.05	0.42	0.00	0.08	0.16	0.16	0.09	0.17	0.00
Sat Flow, veh/h	1781	3067	492	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	94	279	283	43	526	0	90	229	48	196	204	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1782	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.2	8.2	8.3	1.0	8.0	0.0	3.2	9.3	2.1	7.0	8.0	0.0
Cycle Q Clear(g_c), s	2.2	8.2	8.3	1.0	8.0	0.0	3.2	9.3	2.1	7.0	8.0	0.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	508	785	787	473	1487		305	291	246	291	314	
V/C Ratio(X)	0.19	0.36	0.36	0.09	0.35		0.30	0.79	0.19	0.67	0.65	
Avail Cap(c_a), veh/h	528	785	787	535	1487		327	545	462	291	545	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.0	14.6	14.6	11.5	15.7	0.0	24.8	32.1	29.0	26.4	30.7	0.0
Incr Delay (d2), s/veh	0.2	1.3	1.3	0.1	0.7	0.0	0.5	4.7	0.4	6.0	2.3	0.0
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	0.8	3.1	3.2	0.4	3.0	0.0	1.3	4.3	0.8	3.3	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.2	15.8	15.9	11.6	16.3	0.0	25.4	36.8	29.4	32.4	32.9	0.0
LnGrp LOS	B	B	B	B	B		C	D	C	C	C	
Approach Vol, veh/h		656			569			367			400	
Approach Delay, s/veh		15.2			16.0			33.0			32.7	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	18.3	8.3	41.3	10.0	19.2	10.1	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	11.3	3.0	10.3	5.2	10.0	4.2	10.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	3.1	0.0	0.7	0.0	3.2				

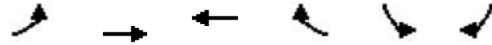
Intersection Summary												
HCM 7th Control Delay, s/veh											22.2	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	132	1089	280	0	0
Future Volume (vph)	0	132	1089	280	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Fr <sub>t</sub>			0.969			
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	5085	3430	0	0	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	5085	3430	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	143	1184	304	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	143	1488	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.4% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	255	33	35	259	38	23	44	30	45	25	312
Future Volume (vph)	163	255	33	35	259	38	23	44	30	45	25	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.983				0.850			0.850		0.861	
Fl <sub>t</sub> Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	1831	0	1770	1863	1583	0	1831	1583	1770	1604	0
Fl <sub>t</sub> Permitted	0.513			0.577				0.773		0.575		
Satd. Flow (perm)	956	1831	0	1075	1863	1583	0	1440	1583	1071	1604	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	170	266	34	36	270	40	24	46	31	47	26	325
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	300	0	36	270	40	0	70	31	47	351	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

06-FBSA-1  
 08/14/2024

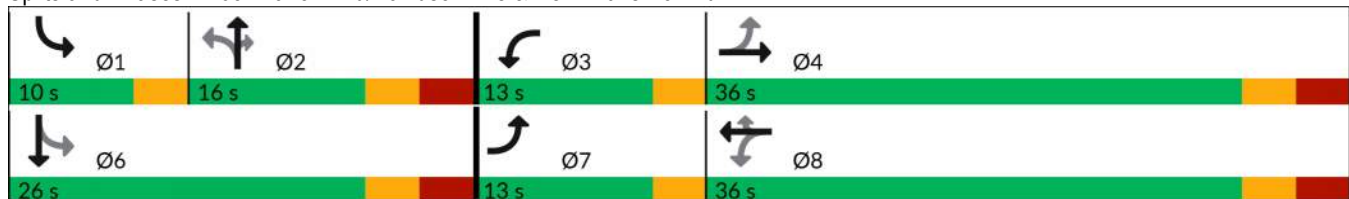


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	45.1	38.2		40.1	30.1	30.1		12.7	12.7	21.5	18.5	
Actuated g/C Ratio	0.62	0.53		0.55	0.41	0.41		0.17	0.17	0.30	0.25	
v/c Ratio	0.24	0.31		0.05	0.35	0.06		0.28	0.11	0.12	0.86	
Control Delay (s/veh)	7.1	12.5		6.2	16.9	14.2		32.1	29.5	19.4	48.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	7.1	12.5		6.2	16.9	14.2		32.1	29.5	19.4	48.2	
LOS	A	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		10.6			15.5			31.3			44.8	
Approach LOS		B			B			C			D	

Intersection Summary

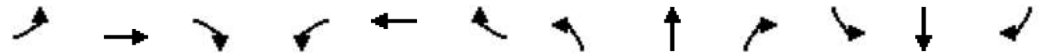
Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 72.6  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay (s/veh): 23.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 58.7%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

06-FBSA-1  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	163	255	33	35	259	38	23	44	30	45	25	312	
Future Volume (veh/h)	163	255	33	35	259	38	23	44	30	45	25	312	
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	170	266	34	36	270	40	24	46	31	47	26	325	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	642	784	100	606	814	690	90	129	230	259	30	370	
Arrive On Green	0.10	0.48	0.48	0.05	0.44	0.44	0.15	0.15	0.15	0.06	0.25	0.25	
Sat Flow, veh/h	1781	1625	208	1781	1870	1585	133	884	1585	1781	119	1484	
Grp Volume(v), veh/h	170	0	300	36	270	40	70	0	31	47	0	351	
Grp Sat Flow(s),veh/h/ln	1781	0	1833	1781	1870	1585	1018	0	1585	1781	0	1603	
Q Serve(g_s), s	3.2	0.0	7.0	0.7	6.6	1.0	0.2	0.0	1.2	1.4	0.0	14.5	
Cycle Q Clear(g_c), s	3.2	0.0	7.0	0.7	6.6	1.0	7.5	0.0	1.2	1.4	0.0	14.5	
Prop In Lane	1.00		0.11	1.00		1.00	0.34		1.00	1.00		0.93	
Lane Grp Cap(c), veh/h	642	0	884	606	814	690	218	0	230	259	0	399	
V/C Ratio(X)	0.26	0.00	0.34	0.06	0.33	0.06	0.32	0.00	0.13	0.18	0.00	0.88	
Avail Cap(c_a), veh/h	727	0	884	775	814	690	218	0	230	333	0	465	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	7.9	0.0	11.0	9.4	12.8	11.3	26.3	0.0	25.7	21.4	0.0	24.9	
Incr Delay (d2), s/veh	0.2	0.0	1.0	0.0	1.1	0.2	0.8	0.0	0.3	0.3	0.0	15.6	
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	1.0	0.0	2.7	0.3	2.7	0.3	1.0	0.0	0.4	0.6	0.0	6.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	8.2	0.0	12.1	9.4	13.9	11.4	27.1	0.0	25.9	21.7	0.0	40.5	
LnGrp LOS	A		B	A	B	B	C		C	C		D	
Approach Vol, veh/h	470						346		101		398		
Approach Delay, s/veh	10.7						13.2		26.7		38.2		
Approach LOS	B						B		C		D		
Timer - Assigned Phs	1	2	3	4		6	7	8					
Phs Duration (G+Y+Rc), s	7.2	16.0	6.5	39.2		23.2	9.7	36.0					
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0		6.0	3.0	6.0					
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0		20.0	10.0	30.0					
Max Q Clear Time (g_c+I1), s	3.4	9.5	2.7	9.0		16.5	5.2	8.6					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7		0.7	0.2	1.6					
<b>Intersection Summary</b>													
HCM 7th Control Delay, s/veh			20.9										
HCM 7th LOS			C										

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

06-FBSA-1  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	660	0	53	15	12	540
Future Volume (vph)	660	0	53	15	12	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't					0.868	
Flt Protected	0.950			0.962		
Satd. Flow (prot)	1770	0	0	1792	1617	0
Flt Permitted	0.950			0.962		
Satd. Flow (perm)	1770	0	0	1792	1617	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	0	58	16	13	587
Shared Lane Traffic (%)						
Lane Group Flow (vph)	717	0	0	74	600	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	84.3%
Analysis Period (min)	15
	ICU Level of Service E

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	660	0	53	15	12	540
Future Vol, veh/h	660	0	53	15	12	540
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	717	0	58	16	13	587

Major/Minor	Minor2	Major2		
Conflicting Flow All	307	307	-	0
Stage 1	307	307	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	686	607	-	-
Stage 1	746	661	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	686	0	-	-
Mov Cap-2 Maneuver	686	0	-	-
Stage 1	746	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	10.88	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	686	-	-
HCM Lane V/C Ratio	0.108	-	-
HCM Control Delay (s/veh)	10.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

07-FBAM-2  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	175	27	944	383	22	284
Future Volume (vph)	175	27	944	383	22	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1703	1524	1810	1538	1703	1792
Flt Permitted	0.950				0.096	
Satd. Flow (perm)	1703	1524	1810	1538	172	1792
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		31				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	6%	6%	5%	5%	6%	6%
Adj. Flow (vph)	201	31	1085	440	25	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	31	1085	440	25	326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

07-FBAM-2  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	13.3	13.3	41.6	65.6	46.6	41.6
Actuated g/C Ratio	0.19	0.19	0.58	0.92	0.65	0.58
v/c Ratio	0.63	0.10	1.03	0.31	0.09	0.31
Control Delay (s/veh)	37.1	10.8	55.4	2.0	5.5	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.1	10.8	55.4	2.0	5.5	10.6
LOS	D	B	E	A	A	B
Approach Delay (s/veh)	33.6		40.0			10.3
Approach LOS	C		D			B

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 71.5  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay (s/veh): 34.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.8%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd





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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

07-FBAM-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	451	52	177	175	32	194
Future Volume (vph)	451	52	177	175	32	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.884	
Flt Protected			0.950		0.993	
Satd. Flow (prot)	1784	0	1770	1863	1635	0
Flt Permitted			0.950		0.993	
Satd. Flow (perm)	1784	0	1770	1863	1635	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	518	60	203	201	37	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	578	0	203	201	260	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.4%
Analysis Period (min)	15
	ICU Level of Service B

Intersection						
Int Delay, s/veh	7.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	451	52	177	175	32	194
Future Vol, veh/h	451	52	177	175	32	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	518	60	203	201	37	223

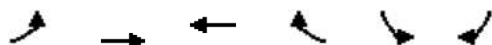
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	578	0	1156 548
Stage 1	-	-	-	-	548 -
Stage 2	-	-	-	-	608 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	995	-	217 536
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	543 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	995	-	173 536
Mov Cap-2 Maneuver	-	-	-	-	173 -
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	432 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	4.8	27.36
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	413	-	-	995	-
HCM Lane V/C Ratio	0.629	-	-	0.204	-
HCM Control Delay (s/veh)	27.4	-	-	9.5	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4.2	-	-	0.8	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

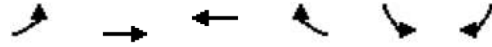
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	126	158	318	112	148	43
Future Volume (vph)	126	158	318	112	148	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.965			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1641	1727	1730	0	1597	1429
Flt Permitted	0.351				0.950	
Satd. Flow (perm)	606	1727	1730	0	1597	1429
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	10%	10%	6%	6%	13%	13%
Adj. Flow (vph)	148	186	374	132	174	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	186	506	0	174	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

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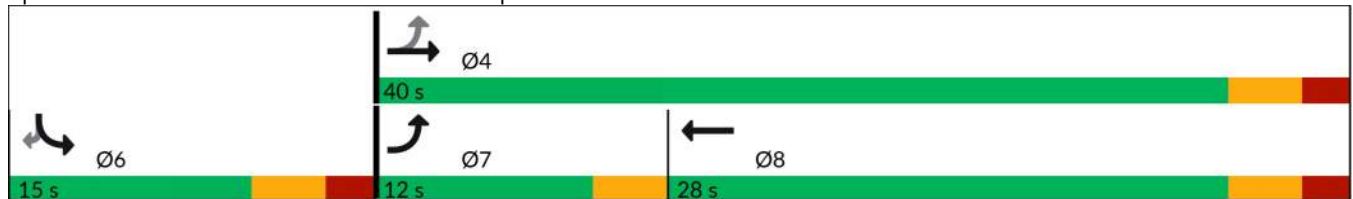


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.0	39.0	30.4		9.3	9.3
Actuated g/C Ratio	0.73	0.71	0.55		0.17	0.17
v/c Ratio	0.25	0.15	0.53		0.64	0.21
Control Delay (s/veh)	4.3	4.3	14.2		33.7	21.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	4.3	4.3	14.2		33.7	21.7
LOS	A	A	B		C	C
Approach Delay (s/veh)		4.3	14.2		31.0	
Approach LOS		A	B		C	

Intersection Summary

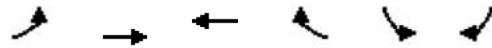
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay (s/veh): 14.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.4%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd

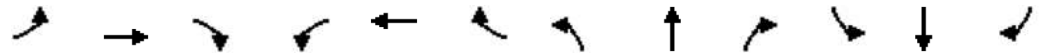


HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

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 08/14/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	126	158	318	112	148	43	
Future Volume (veh/h)	126	158	318	112	148	43	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1752	1752	1811	1811	1707	1707	
Adj Flow Rate, veh/h	148	186	374	132	174	51	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	
Percent Heavy Veh, %	10	10	6	6	13	13	
Cap, veh/h	573	1173	632	223	226	201	
Arrive On Green	0.12	0.67	0.49	0.49	0.14	0.14	
Sat Flow, veh/h	1668	1752	1279	451	1626	1447	
Grp Volume(v), veh/h	148	186	0	506	174	51	
Grp Sat Flow(s),veh/h/ln	1668	1752	0	1730	1626	1447	
Q Serve(g_s), s	1.8	2.1	0.0	10.9	5.4	1.6	
Cycle Q Clear(g_c), s	1.8	2.1	0.0	10.9	5.4	1.6	
Prop In Lane	1.00			0.26	1.00	1.00	
Lane Grp Cap(c), veh/h	573	1173	0	854	226	201	
V/C Ratio(X)	0.26	0.16	0.00	0.59	0.77	0.25	
Avail Cap(c_a), veh/h	663	1173	0	854	311	277	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	5.4	3.2	0.0	9.5	21.7	20.1	
Incr Delay (d2), s/veh	0.2	0.3	0.0	3.0	7.7	0.7	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.0	3.4	2.2	1.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	5.7	3.5	0.0	12.5	29.4	20.7	
LnGrp LOS	A	A		B	C	C	
Approach Vol, veh/h		334	506		225		
Approach Delay, s/veh		4.5	12.5		27.4		
Approach LOS		A	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	12.3	9.2	30.8
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				4.1	7.4	3.8	12.9
Green Ext Time (p_c), s				0.9	0.2	0.2	2.1
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			13.1				
HCM 7th LOS			B				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	374	112	150	425	39	285	454	307	39	181	110
Future Volume (vph)	148	374	112	150	425	39	285	454	307	39	181	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	1736	1827	1553	1770	1863	1583	1719	1706	0
Flt Permitted	0.154			0.225			0.367			0.950		
Satd. Flow (perm)	281	1827	1553	411	1827	1553	684	1863	1583	1719	1706	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	163	411	123	165	467	43	313	499	337	43	199	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	411	123	165	467	43	313	499	337	43	320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		

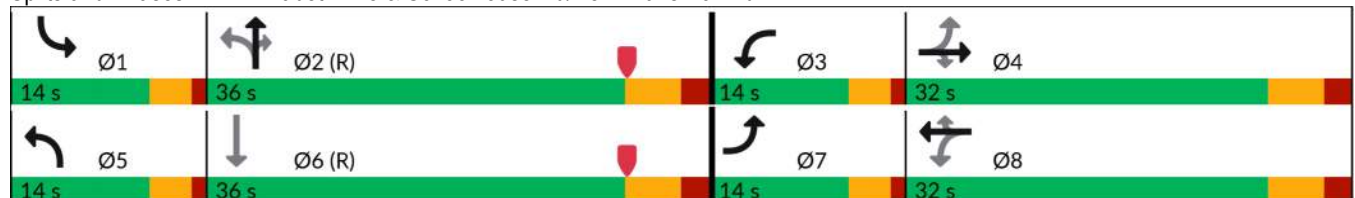


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	37.4	25.9	25.9	37.3	25.8	25.8	44.9	36.9	36.9	7.8	30.5	
Actuated g/C Ratio	0.39	0.27	0.27	0.39	0.27	0.27	0.47	0.38	0.38	0.08	0.32	
v/c Ratio	0.64	0.84	0.29	0.57	0.95	0.10	0.72	0.70	0.55	0.31	0.59	
Control Delay (s/veh)	30.1	49.6	30.1	25.4	66.4	27.2	28.3	33.5	29.6	46.8	33.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.1	49.6	30.1	25.4	66.4	27.2	28.3	33.5	29.6	46.8	33.1	
LOS	C	D	C	C	E	C	C	C	C	D	C	
Approach Delay (s/veh)		41.6			53.8			31.0			34.7	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay (s/veh): 39.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 79.3%  
 ICU Level of Service D  
 Analysis Period (min) 15

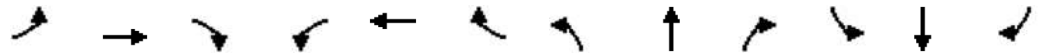
Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd





HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	148	374	112	150	425	39	285	454	307	39	181	110
Future Volume (veh/h)	148	374	112	150	425	39	285	454	307	39	181	110
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	1841	1841	1841	1841	1841	1841	1870	1870	1870	1826	1826	1826
Adj Flow Rate, veh/h	163	411	0	165	467	0	313	499	0	43	199	0
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, %	4	4	4	4	4	4	2	2	2	5	5	5
Cap, veh/h	246	495		284	496		556	717		91	605	
Arrive On Green	0.09	0.27	0.00	0.09	0.27	0.00	0.10	0.38	0.00	0.05	0.33	0.00
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1781	1870	1585	1739	1826	0
Grp Volume(v), veh/h	163	411	0	165	467	0	313	499	0	43	199	0
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1781	1870	1585	1739	1826	0
Q Serve(g_s), s	6.3	20.2	0.0	6.4	23.8	0.0	10.0	21.5	0.0	2.3	7.9	0.0
Cycle Q Clear(g_c), s	6.3	20.2	0.0	6.4	23.8	0.0	10.0	21.5	0.0	2.3	7.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	246	495		284	496		556	717		91	605	
V/C Ratio(X)	0.66	0.83		0.58	0.94		0.56	0.70		0.47	0.33	
Avail Cap(c_a), veh/h	277	499		314	499		556	717		181	605	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.3	33.0	0.0	24.5	34.3	0.0	18.7	24.9	0.0	44.2	24.1	0.0
Incr Delay (d2), s/veh	4.9	11.3	0.0	2.2	26.2	0.0	1.3	5.5	0.0	3.8	1.5	0.0
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	2.8	10.0	0.0	2.6	13.6	0.0	4.3	9.8	0.0	1.1	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.3	44.3	0.0	26.8	60.5	0.0	20.0	30.4	0.0	48.0	25.5	0.0
LnGrp LOS	C	D		C	E		B	C		D	C	
Approach Vol, veh/h		574			632			812			242	
Approach Delay, s/veh		40.3			51.7			26.4			29.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	42.8	12.4	31.8	14.0	37.8	12.3	31.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	4.3	23.5	8.4	22.2	12.0	9.9	8.3	25.8				
Green Ext Time (p_c), s	0.0	1.5	0.1	0.8	0.0	0.9	0.1	0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh											37.3	
HCM 7th LOS											D	

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	768	39	489	374	14	353
Future Volume (vph)	768	39	489	374	14	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1816	0	1687	1776	1671	1495
Flt Permitted			0.111		0.950	
Satd. Flow (perm)	1816	0	197	1776	1671	1495
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	7%	7%	8%	8%
Adj. Flow (vph)	853	43	543	416	16	392
Shared Lane Traffic (%)						
Lane Group Flow (vph)	896	0	543	416	16	392
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

07-FBAM-2  
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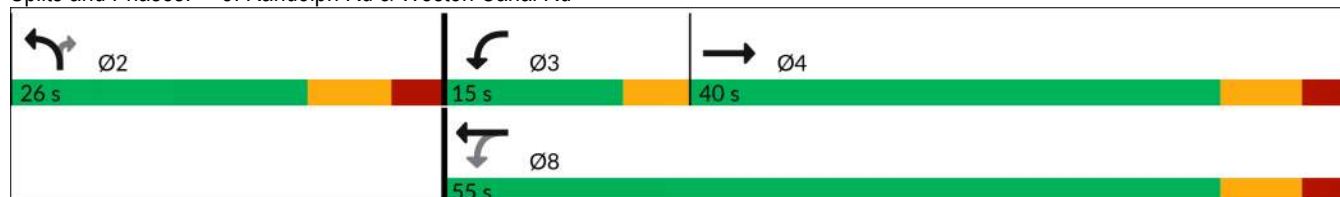


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	1.25		1.67	0.40	0.04	1.18
Control Delay (s/veh)	149.3		333.8	10.8	25.3	139.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	149.3		333.8	10.8	25.3	139.5
LOS	F		F	B	C	F
Approach Delay (s/veh)	149.3			193.7	135.0	
Approach LOS	F			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 81  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.67  
 Intersection Signal Delay (s/veh): 165.5      Intersection LOS: F  
 Intersection Capacity Utilization 90.7%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

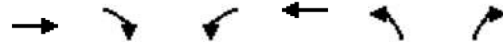
07-FBAM-2  
08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	768	39	489	374	14	353
Future Volume (veh/h)	768	39	489	374	14	353
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1796	1796	1781	1781
Adj Flow Rate, veh/h	853	43	543	416	16	392
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	7	7	8	8
Cap, veh/h	686	35	321	1042	377	335
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1737	88	1711	1796	1697	1510
Grp Volume(v), veh/h	0	896	543	416	16	392
Grp Sat Flow(s),veh/h/ln	0	1825	1711	1796	1697	1510
Q Serve(g_s), s	0.0	32.0	11.0	10.2	0.6	18.0
Cycle Q Clear(g_c), s	0.0	32.0	11.0	10.2	0.6	18.0
Prop In Lane		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	721	321	1042	377	335
V/C Ratio(X)	0.00	1.24	1.69	0.40	0.04	1.17
Avail Cap(c_a), veh/h	0	721	321	1042	377	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.5	23.5	9.3	24.7	31.5
Incr Delay (d2), s/veh	0.0	120.8	323.9	1.1	0.0	103.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	36.2	31.4	3.5	0.2	15.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	145.3	347.4	10.4	24.8	134.7
LnGrp LOS		F	F	B	C	F
Approach Vol, veh/h	896			959	408	
Approach Delay, s/veh	145.3			201.2	130.3	
Approach LOS	F			F	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	34.0		12.2
Green Ext Time (p_c), s		0.0	0.0	0.0		2.5
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			166.3			
HCM 7th LOS			F			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

07-FBAM-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑	↘	↗
Traffic Volume (vph)	838	85	674	1194	27	360
Future Volume (vph)	838	85	674	1194	27	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.986					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3358	0	1656	1743	1612	1442
Flt Permitted			0.128		0.950	
Satd. Flow (perm)	3358	0	223	1743	1612	1442
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	6%	9%	9%	12%	12%
Adj. Flow (vph)	931	94	749	1327	30	400
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1025	0	749	1327	30	400
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	31.2		68.5	31.2	7.0	42.1
Actuated g/C Ratio	0.37		0.81	0.37	0.08	0.50
v/c Ratio	0.83		0.98	2.06	0.22	0.56
Control Delay (s/veh)	32.4		51.8	503.8	43.0	17.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4		51.8	503.8	43.0	17.8
LOS	C		D	F	D	B
Approach Delay (s/veh)	32.4			340.7	19.6	
Approach LOS	C			F	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 84.4  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 2.06  
 Intersection Signal Delay (s/veh): 212.1      Intersection LOS: F  
 Intersection Capacity Utilization 84.0%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

07-FBAM-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	541	843	25	1141	733	186
Future Volume (vph)	541	843	25	1141	733	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.909				0.973	
Fl <sub>t</sub> Protected				0.999	0.962	
Satd. Flow (prot)	3096	0	0	3370	1647	0
Fl <sub>t</sub> Permitted				0.722	0.962	
Satd. Flow (perm)	3096	0	0	2436	1647	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	7%	7%	8%	8%
Adj. Flow (vph)	588	916	27	1240	797	202
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1504	0	0	1267	999	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						



Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

07-FBAM-2  
08/14/2024



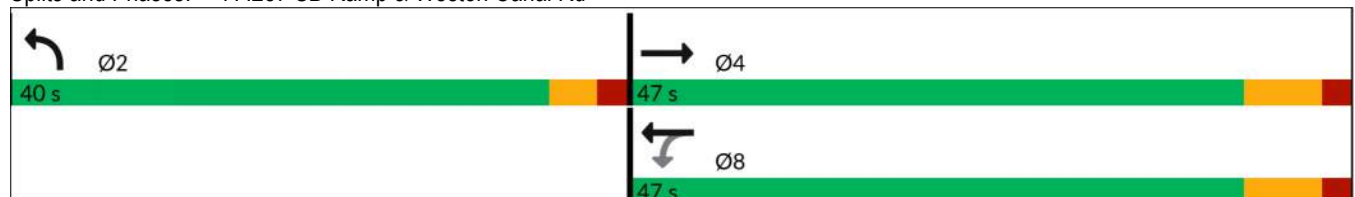
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.29dr			1.13	1.51	
Control Delay (s/veh)	65.3			95.6	261.7	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	65.3			95.6	261.7	
LOS	E			F	F	
Approach Delay (s/veh)	65.3			95.6	261.7	
Approach LOS	E			F	F	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.51
Intersection Signal Delay (s/veh):	127.5
Intersection LOS:	F
Intersection Capacity Utilization:	111.4%
ICU Level of Service:	H
Analysis Period (min):	15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

07-FBAM-2  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	541	843	25	1141	733	186
Future Volume (veh/h)	541	843	25	1141	733	186
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1796	1796	1781	1781
Adj Flow Rate, veh/h	588	0	27	1240	797	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	7	7	8	8
Cap, veh/h	1582		60	1502	682	
Arrive On Green	0.46	0.00	0.46	0.46	0.40	0.00
Sat Flow, veh/h	3622	0	36	3349	1695	0
Grp Volume(v), veh/h	588	0	673	594	798	0
Grp Sat Flow(s),veh/h/ln	1721	0	1751	1553	1697	0
Q Serve(g_s), s	9.7	0.0	10.0	29.1	35.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	28.9	29.1	35.0	0.0
Prop In Lane		0.00	0.04		1.00	0.00
Lane Grp Cap(c), veh/h	1582		848	714	683	
V/C Ratio(X)	0.37		0.79	0.83	1.17	
Avail Cap(c_a), veh/h	1582		848	714	683	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.3	0.0	20.4	20.6	26.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	7.5	10.9	91.3	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	3.5	0.0	12.0	11.3	29.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.0	0.0	27.9	31.5	117.3	0.0
LnGrp LOS	B		C	C	F	
Approach Vol, veh/h	588			1267	798	
Approach Delay, s/veh	16.0			29.6	117.3	
Approach LOS	B			C	F	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		40.0		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		37.0		11.7		31.1
Green Ext Time (p_c), s		0.0		3.8		4.9
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			53.0			
HCM 7th LOS			D			

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

07-FBAM-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	365	447	283	323	563	22
Future Volume (vph)	365	447	283	323	563	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.917				0.995	
Fl <sub>t</sub> Protected				0.977	0.954	
Satd. Flow (prot)	3123	0	0	3424	1596	0
Fl <sub>t</sub> Permitted				0.529	0.954	
Satd. Flow (perm)	3123	0	0	1854	1596	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	6%	3%	3%	13%	13%
Adj. Flow (vph)	410	502	318	363	633	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	912	0	0	681	658	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

07-FBAM-2  
 08/14/2024

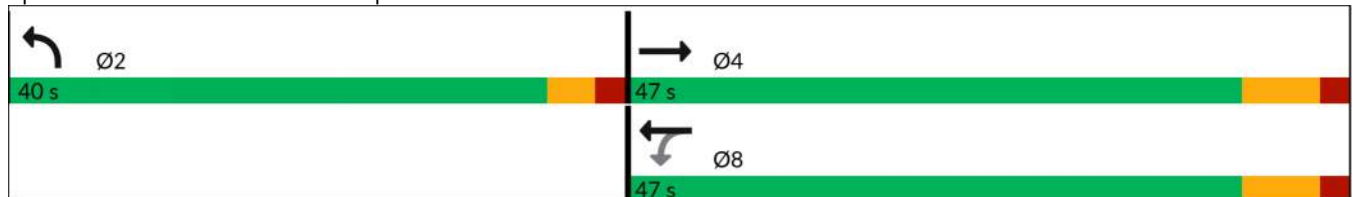


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	0.64			1.61dl	1.02	
Control Delay (s/veh)	20.4			28.9	70.0	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	20.4			28.9	70.0	
LOS	C			C	E	
Approach Delay (s/veh)	20.4			28.9	70.0	
Approach LOS	C			C	E	

Intersection Summary

Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 87  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.02  
 Intersection Signal Delay (s/veh): 37.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 90.0%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

07-FBAM-2  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	
Traffic Volume (veh/h)	365	447	283	323	563	22
Future Volume (veh/h)	365	447	283	323	563	22
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1856	1856	1707	1707
Adj Flow Rate, veh/h	410	0	318	363	633	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	6	3	3	13	13
Cap, veh/h	1582		457	738	653	
Arrive On Green	0.46	0.00	0.46	0.46	0.40	0.00
Sat Flow, veh/h	3622	0	814	1689	1624	0
Grp Volume(v), veh/h	410	0	318	363	634	0
Grp Sat Flow(s),veh/h/ln	1721	0	814	1604	1626	0
Q Serve(g_s), s	6.4	0.0	26.1	13.7	33.2	0.0
Cycle Q Clear(g_c), s	6.4	0.0	32.5	13.7	33.2	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1582		457	738	654	
V/C Ratio(X)	0.26		0.70	0.49	0.97	
Avail Cap(c_a), veh/h	1582		457	738	654	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.4	0.0	24.4	16.4	25.5	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.5	2.3	27.5	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	2.3	0.0	6.4	4.9	16.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.8	0.0	32.8	18.8	53.0	0.0
LnGrp LOS	B		C	B	D	
Approach Vol, veh/h	410			681	634	
Approach Delay, s/veh	14.8			25.3	53.0	
Approach LOS	B			C	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		40.0		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		35.2		8.4		34.5
Green Ext Time (p_c), s		0.0		2.6		2.1

Intersection Summary		
HCM 7th Control Delay, s/veh		33.0
HCM 7th LOS		C

Notes  
 Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

07-FBAM-2  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	113	23	81	153	297	18	448	108	147	529	77
Future Volume (vph)	98	113	23	81	153	297	18	448	108	147	529	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850		0.971			0.981	
Flt Protected	0.950				0.983		0.950			0.950		
Satd. Flow (prot)	1770	1816	0	0	1831	1583	1752	1791	0	1770	1827	0
Flt Permitted	0.950				0.828		0.262			0.236		
Satd. Flow (perm)	1770	1816	0	0	1542	1583	483	1791	0	440	1827	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	103	119	24	85	161	313	19	472	114	155	557	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	143	0	0	246	313	19	586	0	155	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

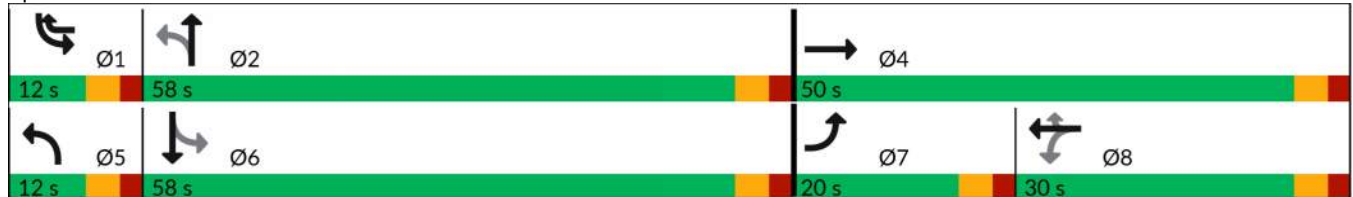
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases		4		8		8	2			6		
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	11.6	38.3			21.7	33.7	60.2	53.2		63.3	60.7	
Actuated g/C Ratio	0.10	0.34			0.19	0.30	0.53	0.47		0.56	0.53	
v/c Ratio	0.57	0.23			0.84	0.67	0.06	0.70		0.47	0.65	
Control Delay (s/veh)	62.1	27.6			68.8	43.1	12.8	30.6		18.1	25.9	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	62.1	27.6			68.8	43.1	12.8	30.6		18.1	25.9	
LOS	E	C			E	D	B	C		B	C	
Approach Delay (s/veh)		42.0			54.4			30.1			24.4	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	113.5
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.84
Intersection Signal Delay (s/veh):	35.5
Intersection LOS:	D
Intersection Capacity Utilization:	74.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St

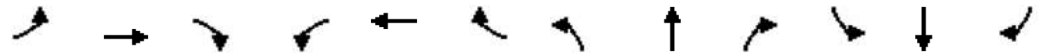


HCM 7th Signalized Intersection Summary

07-FBAM-2

9: Davidson Ave & Pierce St

08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	113	23	81	153	297	18	448	108	147	529	77
Future Volume (veh/h)	98	113	23	81	153	297	18	448	108	147	529	77
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	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	103	119	24	85	161	313	19	472	114	155	557	81
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	3	3	3	2	2	2
Cap, veh/h	130	488	98	147	228	425	313	691	167	364	820	119
Arrive On Green	0.07	0.32	0.32	0.21	0.21	0.21	0.03	0.48	0.48	0.06	0.51	0.51
Sat Flow, veh/h	1781	1511	305	504	1113	1585	1767	1444	349	1781	1596	232
Grp Volume(v), veh/h	103	0	143	246	0	313	19	0	586	155	0	638
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1617	0	1585	1767	0	1793	1781	0	1829
Q Serve(g_s), s	6.3	0.0	6.4	13.7	0.0	19.9	0.6	0.0	28.0	4.8	0.0	28.9
Cycle Q Clear(g_c), s	6.3	0.0	6.4	15.7	0.0	19.9	0.6	0.0	28.0	4.8	0.0	28.9
Prop In Lane	1.00		0.17	0.35		1.00	1.00		0.19	1.00		0.13
Lane Grp Cap(c), veh/h	130	0	587	376	0	425	313	0	858	364	0	939
V/C Ratio(X)	0.80	0.00	0.24	0.65	0.00	0.74	0.06	0.00	0.68	0.43	0.00	0.68
Avail Cap(c_a), veh/h	241	0	738	408	0	457	375	0	858	365	0	939
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	27.5	41.1	0.0	37.0	16.5	0.0	22.4	17.0	0.0	20.1
Incr Delay (d2), s/veh	10.5	0.0	0.2	3.3	0.0	5.7	0.1	0.0	4.4	0.8	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.7	6.4	0.0	8.1	0.2	0.0	11.9	1.8	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.0	0.0	27.7	44.4	0.0	42.7	16.6	0.0	26.7	17.8	0.0	24.1
LnGrp LOS	E		C	D		D	B		C	B		C
Approach Vol, veh/h		246			559			605			793	
Approach Delay, s/veh		41.7			43.4			26.4			22.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	58.0		40.8	8.1	61.8	13.1	27.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	6.8	30.0		8.4	2.6	30.9	8.3	21.9				
Green Ext Time (p_c), s	0.0	3.6		0.7	0.0	4.0	0.1	0.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			31.2									
HCM 7th LOS			C									



Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	461	492	1038	479	125	808
Future Volume (vph)	461	492	1038	479	125	808
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.981	0.950	
Satd. Flow (prot)	3471	1553	1665	1719	1752	2760
Flt Permitted			0.950	0.981	0.950	
Satd. Flow (perm)	3471	1553	1665	1719	1752	2760
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	4%	3%	3%	3%	3%
Adj. Flow (vph)	496	529	1116	515	134	869
Shared Lane Traffic (%)			28%			
Lane Group Flow (vph)	496	529	804	827	134	869
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
<b>Permitted Phases</b>						
Detector Phase	2	2	8	8	4	4 8
<b>Switch Phase</b>						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
<b>Lead/Lag</b>						
<b>Lead-Lag Optimize?</b>						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.1	35.1	35.1	35.1	27.2	67.3
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.24	0.60
v/c Ratio	0.46	1.09	1.55	1.54	0.32	0.53
Control Delay (s/veh)	33.5	106.5	286.3	283.6	36.6	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.5	106.5	286.3	283.6	36.6	14.4
LOS	C	F	F	F	D	B
Approach Delay (s/veh)	71.2			284.9	17.4	
Approach LOS	E			F	B	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 112.4  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.55  
 Intersection Signal Delay (s/veh): 151.7  
 Intersection LOS: F  
 Intersection Capacity Utilization 80.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 10: Davidson Ave & Easton Ave

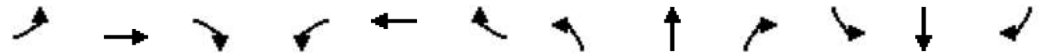


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

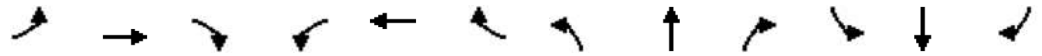
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	368	54	114	430	81	306	685	188	223	423	134
Future Volume (vph)	83	368	54	114	430	81	306	685	188	223	423	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.981			0.976			0.968				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1726	0	1687	1733	0	1770	3426	0	1752	1845	1568
Flt Permitted	0.144			0.155			0.272			0.144		
Satd. Flow (perm)	253	1726	0	275	1733	0	507	3426	0	266	1845	1568
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	8%	8%	7%	7%	7%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	90	400	59	124	467	88	333	745	204	242	460	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	459	0	124	555	0	333	949	0	242	460	146
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

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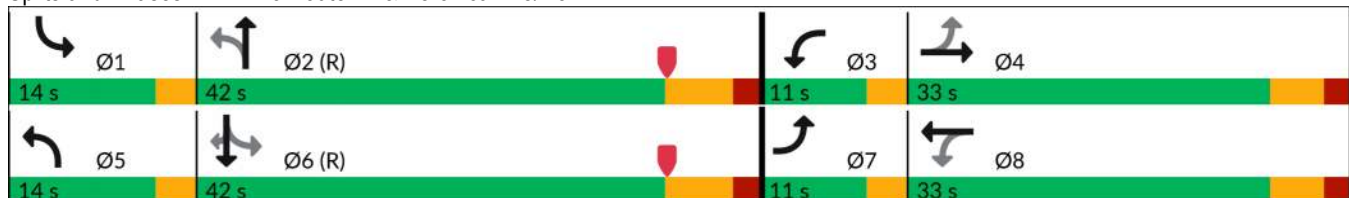


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		14.0	42.0		14.0	42.0	42.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		14.0%	42.0%		14.0%	42.0%	42.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		11.0	35.0		11.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	37.8	27.2		38.7	29.3		50.2	35.2		49.8	35.0	35.0
Actuated g/C Ratio	0.38	0.27		0.39	0.29		0.50	0.35		0.50	0.35	0.35
v/c Ratio	0.45	0.98		0.58	1.09		0.85	0.79		0.83	0.71	0.27
Control Delay (s/veh)	25.8	73.7		30.1	104.4		36.8	34.8		41.0	35.5	25.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.8	73.7		30.1	104.4		36.8	34.8		41.0	35.5	25.0
LOS	C	E		C	F		D	C		D	D	C
Approach Delay (s/veh)		65.9			90.8			35.3			35.3	
Approach LOS		E			F			D			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.09  
 Intersection Signal Delay (s/veh): 51.5      Intersection LOS: D  
 Intersection Capacity Utilization 88.9%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	368	54	114	430	81	306	685	188	223	423	134
Future Volume (veh/h)	83	368	54	114	430	81	306	685	188	223	423	134
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	1781	1781	1781	1796	1796	1796	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	90	400	59	124	467	88	333	745	204	242	460	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	7	7	7	2	2	2	3	3	3
Cap, veh/h	163	410	60	198	420	79	390	1008	276	334	670	567
Arrive On Green	0.05	0.27	0.27	0.07	0.29	0.29	0.11	0.37	0.37	0.11	0.36	0.36
Sat Flow, veh/h	1697	1517	224	1711	1470	277	1781	2757	755	1767	1856	1572
Grp Volume(v), veh/h	90	0	459	124	0	555	333	480	469	242	460	146
Grp Sat Flow(s),veh/h/ln	1697	0	1741	1711	0	1746	1781	1777	1734	1767	1856	1572
Q Serve(g_s), s	3.8	0.0	26.1	5.1	0.0	28.6	11.0	23.5	23.5	8.5	21.1	6.5
Cycle Q Clear(g_c), s	3.8	0.0	26.1	5.1	0.0	28.6	11.0	23.5	23.5	8.5	21.1	6.5
Prop In Lane	1.00		0.13	1.00		0.16	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	163	0	470	198	0	499	390	650	635	334	670	567
V/C Ratio(X)	0.55	0.00	0.98	0.63	0.00	1.11	0.85	0.74	0.74	0.72	0.69	0.26
Avail Cap(c_a), veh/h	208	0	470	217	0	499	390	650	635	343	670	567
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	27.8	0.0	36.2	26.9	0.0	35.7	22.8	27.6	27.6	21.0	27.2	22.5
Incr Delay (d2), s/veh	2.9	0.0	35.3	4.9	0.0	74.7	16.5	7.4	7.5	7.2	5.7	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	1.6	0.0	15.0	2.2	0.0	21.7	6.3	10.6	10.4	3.8	9.7	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.7	0.0	71.5	31.8	0.0	110.4	39.3	34.9	35.1	28.1	32.8	23.6
LnGrp LOS	C		E	C		F	D	C	D	C	C	C
Approach Vol, veh/h		549			679			1282			848	
Approach Delay, s/veh		64.8			96.1			36.1			29.9	
Approach LOS		E			F			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	43.6	9.9	33.0	14.0	43.1	8.3	34.6				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	27.0	11.0	35.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	10.5	25.5	7.1	28.1	13.0	23.1	5.8	30.6				
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	2.4	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			51.4									
HCM 7th LOS			D									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	77	425	123	499	0	358	0	62	0	0	0
Future Volume (vph)	0	77	425	123	499	0	358	0	62	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.873							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	2945	0	1752	3505	0	1641	0	1468	0	1900	0
Flt Permitted				0.358			0.950					
Satd. Flow (perm)	0	2945	0	660	3505	0	1641	0	1468	0	1900	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			199	
Travel Time (s)		10.4			6.0			6.2			3.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	10%	10%	10%	0%	0%	0%
Adj. Flow (vph)	0	83	457	132	537	0	385	0	67	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	0	132	537	0	385	0	67	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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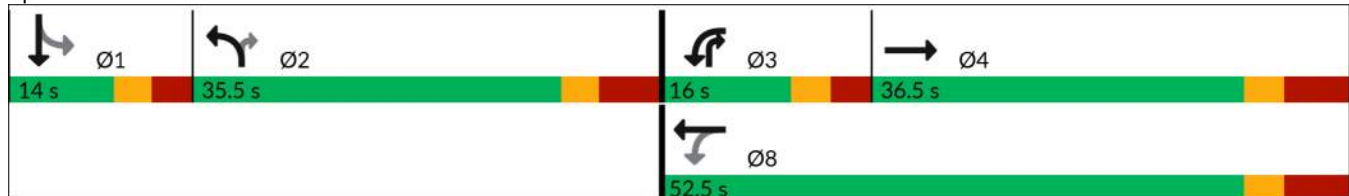


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		27.5		45.6	42.0		23.7		40.8			
Actuated g/C Ratio		0.32		0.53	0.49		0.28		0.48			
v/c Ratio		0.93dr		0.30	0.31		0.85		0.10			
Control Delay (s/veh)		28.0		12.7	14.2		48.1		12.1			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		28.0		12.7	14.2		48.1		12.1			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		28.0			13.9			42.8				
Approach LOS		C			B			D				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 85.8  
 Natural Cycle: 105  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay (s/veh): 26.4      Intersection LOS: C  
 Intersection Capacity Utilization 60.5%      ICU Level of Service B  
 Analysis Period (min) 15  
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 12: Veronica Ave & Hamilton St





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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

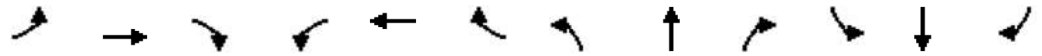
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↑		↔		↗		↔	
Traffic Volume (vph)	0	1047	11	0	1334	0	777	0	225	51	157	0
Future Volume (vph)	0	1047	11	0	1334	0	777	0	225	51	157	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr't		0.998							0.850			
Flt Protected							0.950				0.988	
Satd. Flow (prot)	0	3498	0	0	3438	0	3400	0	1568	0	3497	0
Flt Permitted							0.950				0.988	
Satd. Flow (perm)	0	3498	0	0	3438	0	3400	0	1568	0	3497	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	1138	12	0	1450	0	845	0	245	55	171	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1150	0	0	1450	0	845	0	245	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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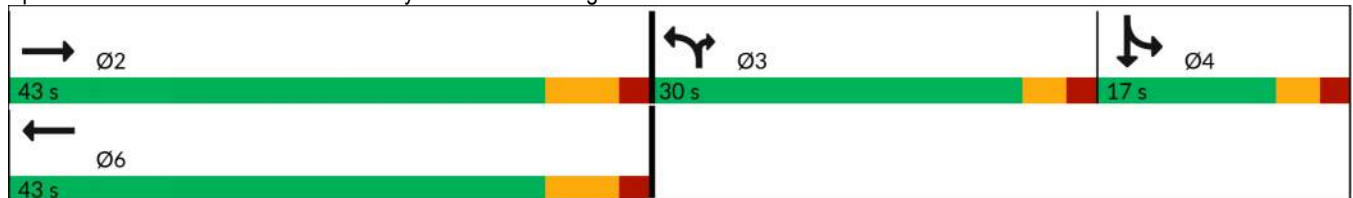


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.0			36.0		24.1		24.1			10.5
Actuated g/C Ratio		0.41			0.41		0.28		0.28			0.12
v/c Ratio		0.80			1.03		0.90		0.57			0.54
Control Delay (s/veh)		28.3			58.1		45.3		33.6			41.7
Queue Delay		0.0			0.0		0.0		0.0			0.0
Total Delay (s/veh)		28.3			58.1		45.3		33.6			41.7
LOS		C			E		D		C			D
Approach Delay (s/veh)		28.3			58.1			42.7				41.7
Approach LOS		C			E			D				D

Intersection Summary

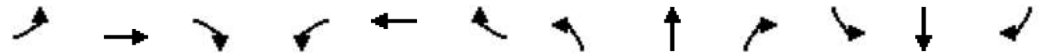
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	87.6
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.03
Intersection Signal Delay (s/veh):	44.1
Intersection LOS:	D
Intersection Capacity Utilization:	78.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↑		↔		↗		↔	
Traffic Volume (veh/h)	0	1047	11	0	1334	0	777	0	225	51	157	0
Future Volume (veh/h)	0	1047	11	0	1334	0	777	0	225	51	157	0
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	0	1856	1856	0	1826	0	1856	0	1856	1870	1870	1870
Adj Flow Rate, veh/h	0	1138	12	0	1450	0	845	0	245	55	171	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	0	5	0	3	0	3	2	2	2
Cap, veh/h	0	2349	25	0	2280	0	0	0	0	108	338	0
Arrive On Green	0.00	0.66	0.66	0.00	0.66	0.00	0.00	0.00	0.00	0.12	0.12	0.00
Sat Flow, veh/h	0	3667	38	0	3652	0		0		871	2826	0
Grp Volume(v), veh/h	0	561	589	0	1450	0		0.0		115	111	0
Grp Sat Flow(s),veh/h/ln	0	1763	1849	0	1735	0				1827	1777	0
Q Serve(g_s), s	0.0	8.8	8.8	0.0	13.5	0.0				3.2	3.2	0.0
Cycle Q Clear(g_c), s	0.0	8.8	8.8	0.0	13.5	0.0				3.2	3.2	0.0
Prop In Lane	0.00		0.02	0.00		0.00				0.48		0.00
Lane Grp Cap(c), veh/h	0	1159	1215	0	2280	0				226	220	0
V/C Ratio(X)	0.00	0.48	0.48	0.00	0.64	0.00				0.51	0.50	0.00
Avail Cap(c_a), veh/h	0	1159	1215	0	2280	0				400	389	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.7	4.7	0.0	5.5	0.0				22.4	22.4	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.4	0.0	1.4	0.0				1.8	1.8	0.0
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	0.0	1.8	1.9	0.0	2.5	0.0				1.3	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	6.2	6.1	0.0	6.9	0.0				24.2	24.2	0.0
LnGrp LOS		A	A		A					C	C	
Approach Vol, veh/h		1150			1450							226
Approach Delay, s/veh		6.1			6.9							24.2
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		11.8		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		10.8		5.2		15.5						
Green Ext Time (p_c), s		7.6		0.6		10.4						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				8.0								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	855	122	66	565	236	140	360	46	261	275	115
Future Volume (vph)	108	855	122	66	565	236	140	360	46	261	275	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1703	3406	1524	1770	1863	1583	1736	1827	1553
Flt Permitted	0.351			0.124			0.383			0.223		
Satd. Flow (perm)	654	3472	0	222	3406	1524	713	1863	1583	407	1827	1553
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	117	929	133	72	614	257	152	391	50	284	299	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	1062	0	72	614	257	152	391	50	284	299	125
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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 08/14/2024

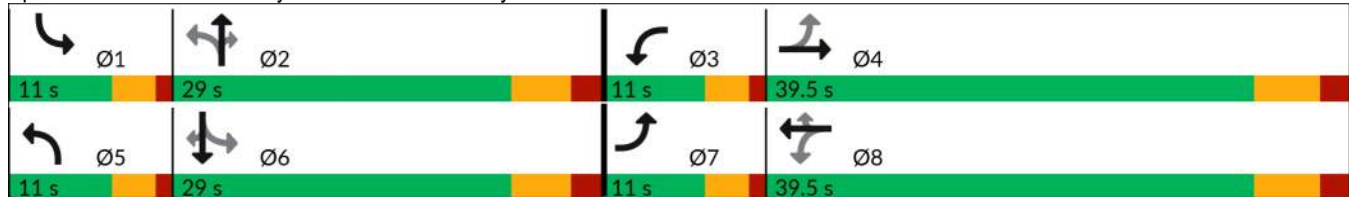


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	41.1	33.2		41.1	33.2	33.2	30.4	21.3	21.3	30.4	21.3	21.3
Actuated g/C Ratio	0.47	0.38		0.47	0.38	0.38	0.35	0.25	0.25	0.35	0.25	0.25
v/c Ratio	0.29	0.80		0.32	0.47	0.44	0.45	0.85	0.13	1.14	0.67	0.33
Control Delay (s/veh)	13.5	30.4		15.2	22.6	24.2	23.1	50.9	27.2	124.0	38.2	30.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.5	30.4		15.2	22.6	24.2	23.1	50.9	27.2	124.0	38.2	30.2
LOS	B	C		B	C	C	C	D	C	F	D	C
Approach Delay (s/veh)		28.8			22.5			41.7			71.2	
Approach LOS		C			C			D			E	

Intersection Summary

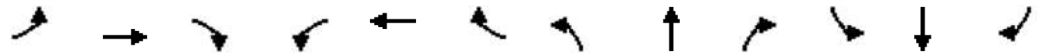
Area Type: Other  
 Cycle Length: 90.5  
 Actuated Cycle Length: 86.7  
 Natural Cycle: 95  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay (s/veh): 38.0      Intersection LOS: D  
 Intersection Capacity Utilization 83.8%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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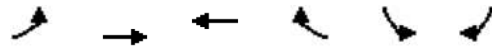
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	108	855	122	66	565	236	140	360	46	261	275	115
Future Volume (veh/h)	108	855	122	66	565	236	140	360	46	261	275	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	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	1811	1811	1811	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	117	929	133	72	614	0	152	391	50	284	299	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	6	6	6	2	2	2	4	4	4
Cap, veh/h	412	1205	172	261	1297		317	437	370	251	430	
Arrive On Green	0.08	0.39	0.39	0.07	0.38	0.00	0.08	0.23	0.23	0.08	0.23	0.00
Sat Flow, veh/h	1781	3120	447	1725	3441	1535	1781	1870	1585	1753	1841	1560
Grp Volume(v), veh/h	117	529	533	72	614	0	152	391	50	284	299	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1725	1721	1535	1781	1870	1585	1753	1841	1560
Q Serve(g_s), s	3.4	22.8	22.8	2.1	11.8	0.0	5.6	17.7	2.2	7.0	13.0	0.0
Cycle Q Clear(g_c), s	3.4	22.8	22.8	2.1	11.8	0.0	5.6	17.7	2.2	7.0	13.0	0.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	686	691	261	1297		317	437	370	251	430	
V/C Ratio(X)	0.28	0.77	0.77	0.28	0.47		0.48	0.89	0.13	1.13	0.70	
Avail Cap(c_a), veh/h	420	686	691	285	1297		317	491	416	251	484	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.0	23.5	23.5	17.4	20.7	0.0	23.7	32.5	26.5	30.3	30.7	0.0
Incr Delay (d2), s/veh	0.4	8.2	8.1	0.6	1.2	0.0	1.1	17.4	0.2	96.1	3.7	0.0
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	1.3	10.1	10.2	0.8	4.5	0.0	2.3	9.6	0.8	8.5	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.4	31.7	31.6	18.0	21.9	0.0	24.8	49.9	26.7	126.3	34.4	0.0
LnGrp LOS	B	C	C	B	C		C	D	C	F	C	
Approach Vol, veh/h		1179			686			593			583	
Approach Delay, s/veh		30.0			21.5			41.5			79.2	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	26.5	9.8	40.3	11.0	26.5	10.6	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	19.7	4.1	24.8	7.6	15.0	5.4	13.8				
Green Ext Time (p_c), s	0.0	0.7	0.0	3.9	0.0	0.9	0.0	3.6				

Intersection Summary												
HCM 7th Control Delay, s/veh											39.8	
HCM 7th LOS											D	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	1334	208	0	0	0
Future Volume (vph)	0	1334	208	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	5085	3539	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1450	226	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	1450	226	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.1%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

07-FBAM-2  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	407	214	14	26	264	220	12	42	20	43	14	326
Future Volume (vph)	407	214	14	26	264	220	12	42	20	43	14	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.991				0.850			0.850		0.856	
Fl <sub>t</sub> Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1770	1846	0	1770	1863	1583	0	1842	1583	1770	1595	0
Fl <sub>t</sub> Permitted	0.504			0.611				0.856		0.584		
Satd. Flow (perm)	939	1846	0	1138	1863	1583	0	1595	1583	1088	1595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	424	223	15	27	275	229	13	44	21	45	15	340
Shared Lane Traffic (%)												
Lane Group Flow (vph)	424	238	0	27	275	229	0	57	21	45	355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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08/14/2024

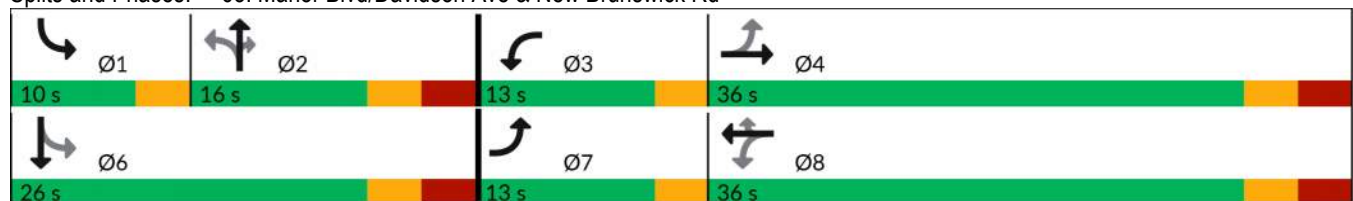


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	46.0	39.1		40.0	30.0	30.0		12.9	12.9	21.9	18.9	
Actuated g/C Ratio	0.62	0.53		0.54	0.41	0.41		0.17	0.17	0.30	0.26	
v/c Ratio	0.61	0.24		0.04	0.36	0.36		0.20	0.08	0.12	0.87	
Control Delay (s/veh)	11.6	11.9		6.1	17.4	17.6		30.7	29.3	19.4	50.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	11.6	11.9		6.1	17.4	17.6		30.7	29.3	19.4	50.2	
LOS	B	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		11.7			16.9			30.3			46.7	
Approach LOS		B			B			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	73.9
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.87
Intersection Signal Delay (s/veh):	22.6
Intersection LOS:	C
Intersection Capacity Utilization:	70.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

07-FBAM-2  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	407	214	14	26	264	220	12	42	20	43	14	326
Future Volume (veh/h)	407	214	14	26	264	220	12	42	20	43	14	326
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	424	223	15	27	275	229	12	44	21	45	15	340
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	617	877	59	638	766	650	71	180	238	243	17	380
Arrive On Green	0.14	0.51	0.51	0.04	0.41	0.41	0.15	0.15	0.15	0.06	0.25	0.25
Sat Flow, veh/h	1781	1733	117	1781	1870	1585	76	1195	1585	1781	67	1528
Grp Volume(v), veh/h	424	0	238	27	275	229	56	0	21	45	0	355
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1585	1271	0	1585	1781	0	1595
Q Serve(g_s), s	9.7	0.0	5.3	0.6	7.4	7.3	0.1	0.0	0.8	1.5	0.0	15.7
Cycle Q Clear(g_c), s	9.7	0.0	5.3	0.6	7.4	7.3	8.7	0.0	0.8	1.5	0.0	15.7
Prop In Lane	1.00		0.06	1.00		1.00	0.21		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	617	0	936	638	766	650	251	0	238	243	0	397
V/C Ratio(X)	0.69	0.00	0.25	0.04	0.36	0.35	0.22	0.00	0.09	0.18	0.00	0.89
Avail Cap(c_a), veh/h	617	0	936	810	766	650	251	0	238	312	0	436
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.9	0.0	10.3	11.2	14.9	14.9	27.3	0.0	26.8	22.8	0.0	26.6
Incr Delay (d2), s/veh	3.2	0.0	0.7	0.0	1.3	1.5	0.4	0.0	0.2	0.4	0.0	19.4
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	3.6	0.0	2.1	0.2	3.2	2.6	0.8	0.0	0.3	0.6	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	0.0	10.9	11.3	16.3	16.4	27.8	0.0	26.9	23.1	0.0	46.0
LnGrp LOS	B		B	B	B	B	C		C	C		D
Approach Vol, veh/h		662			531			77				400
Approach Delay, s/veh		12.3			16.1			27.5				43.4
Approach LOS		B			B			C				D
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	7.2	17.0	6.0	43.0		24.2	13.0	36.0				
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0		6.0	3.0	6.0				
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0		20.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	3.5	10.7	2.6	7.3		17.7	11.7	9.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3		0.5	0.0	2.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			21.6									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

07-FBAM-2  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1108	38	31	6	10	442
Future Volume (vph)	1108	38	31	6	10	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.996				0.868	
Fl <sub>t</sub> Protected	0.954			0.959		
Satd. Flow (prot)	1703	0	0	1769	1541	0
Fl <sub>t</sub> Permitted	0.954			0.959		
Satd. Flow (perm)	1703	0	0	1769	1541	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	6%	3%	3%	7%	7%
Adj. Flow (vph)	1191	41	33	6	11	475
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1232	0	0	39	486	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	98.2%
Analysis Period (min)	15
	ICU Level of Service F

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1108	38	31	6	10	442
Future Vol, veh/h	1108	38	31	6	10	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	3	3	7	7
Mvmt Flow	1191	41	33	6	11	475













Major/Minor	Minor2	Major2		
Conflicting Flow All	248	248	-	0
Stage 1	248	248	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.43	6.53	-	-
Critical Hdwy Stg 1	5.43	5.53	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.527	4.027	-	-
Pot Cap-1 Maneuver	738	653	-	-
Stage 1	791	699	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	738	0	-	-
Mov Cap-2 Maneuver	738	0	-	-
Stage 1	791	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	10.16	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	738	-	-
HCM Lane V/C Ratio	0.054	-	-
HCM Control Delay (s/veh)	10.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

08-FBPM-2  
08/14/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	379	36	687	194	53	879
Future Volume (vph)	379	36	687	194	53	879
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1703	1524	1845	1568	1719	1810
Flt Permitted	0.950				0.206	
Satd. Flow (perm)	1703	1524	1845	1568	373	1810
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		38				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	6%	3%	3%	5%	5%
Adj. Flow (vph)	399	38	723	204	56	925
Shared Lane Traffic (%)						
Lane Group Flow (vph)	399	38	723	204	56	925
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

08-FBPM-2  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		2	2	
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	47.5	13.0	11.0	47.5
Total Split (s)	24.0	24.0	47.5	24.0	11.0	47.5
Total Split (%)	29.1%	29.1%	57.6%	29.1%	13.3%	57.6%
Maximum Green (s)	18.0	18.0	41.0	18.0	7.0	41.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	18.1	18.1	41.2	68.4	47.7	41.2
Actuated g/C Ratio	0.23	0.23	0.53	0.88	0.61	0.53
v/c Ratio	1.01	0.10	0.74	0.15	0.16	0.97
Control Delay (s/veh)	82.8	9.9	21.6	1.9	6.2	44.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	82.8	9.9	21.6	1.9	6.2	44.0
LOS	F	A	C	A	A	D
Approach Delay (s/veh)	76.4		17.2			41.9
Approach LOS	E		B			D

Intersection Summary

Area Type: Other  
 Cycle Length: 82.5  
 Actuated Cycle Length: 78.1  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay (s/veh): 38.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 77.7%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.



Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

08-FBPM-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	258	33	155	526	53	112
Future Volume (vph)	258	33	155	526	53	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985				0.909	
Flt Protected			0.950		0.984	
Satd. Flow (prot)	1800	0	1752	1845	1666	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	1800	0	1752	1845	1666	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	3%	3%	2%	2%
Adj. Flow (vph)	287	37	172	584	59	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	324	0	172	584	183	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	258	33	155	526	53	112
Future Vol, veh/h	258	33	155	526	53	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	287	37	172	584	59	124

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	323	0	1234 305
Stage 1	-	-	-	-	305 -
Stage 2	-	-	-	-	929 -
Critical Hdwy	-	-	4.13	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.227	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1231	-	195 735
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	385 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1231	-	168 735
Mov Cap-2 Maneuver	-	-	-	-	168 -
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	331 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.91	25.78
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1231	-
HCM Lane V/C Ratio	0.52	-	-	0.14	-
HCM Control Delay (s/veh)	25.8	-	-	8.4	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	2.9	-	-	0.5	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

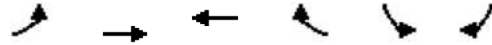
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	483	323	599	147	116	93
Future Volume (vph)	483	323	599	147	116	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1845	1761	0	1736	1553
Flt Permitted	0.152				0.950	
Satd. Flow (perm)	280	1845	1761	0	1736	1553
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	5%	5%	4%	4%
Adj. Flow (vph)	555	371	689	169	133	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	555	371	858	0	133	107
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

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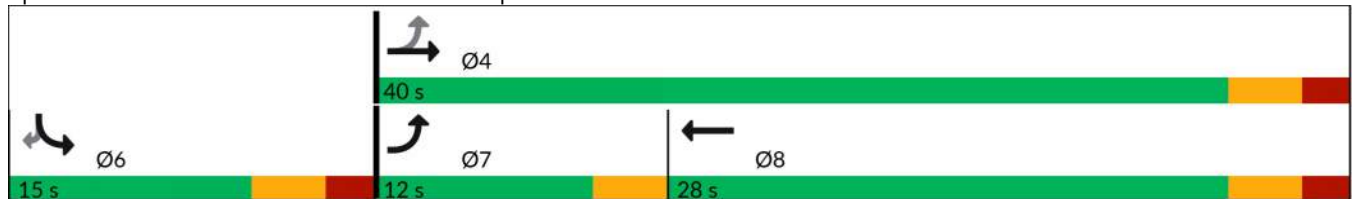


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	37.6	36.9	23.4		8.9	8.9
Actuated g/C Ratio	0.73	0.72	0.45		0.17	0.17
v/c Ratio	1.19	0.28	1.07		0.45	0.40
Control Delay (s/veh)	125.3	4.8	74.7		25.5	25.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	125.3	4.8	74.7		25.5	25.1
LOS	F	A	E		C	C
Approach Delay (s/veh)		77.0	74.7		25.3	
Approach LOS		E	E		C	

Intersection Summary

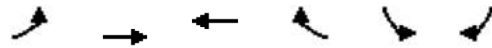
Area Type:	Other
Cycle Length:	55
Actuated Cycle Length:	51.5
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.19
Intersection Signal Delay (s/veh):	69.9
Intersection LOS:	E
Intersection Capacity Utilization:	85.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



























HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

08-FBPM-2  
 08/14/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↙	↑	↘		↙	↘	
Traffic Volume (veh/h)	483	323	599	147	116	93	
Future Volume (veh/h)	483	323	599	147	116	93	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1856	1856	1826	1826	1841	1841	
Adj Flow Rate, veh/h	555	371	689	169	133	107	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	5	5	4	4	
Cap, veh/h	446	1254	629	154	229	204	
Arrive On Green	0.17	0.68	0.44	0.44	0.13	0.13	
Sat Flow, veh/h	1767	1856	1416	347	1753	1560	
Grp Volume(v), veh/h	555	371	0	858	133	107	
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1763	1753	1560	
Q Serve(g_s), s	9.0	4.2	0.0	23.0	3.7	3.3	
Cycle Q Clear(g_c), s	9.0	4.2	0.0	23.0	3.7	3.3	
Prop In Lane	1.00			0.20	1.00	1.00	
Lane Grp Cap(c), veh/h	446	1254	0	783	229	204	
V/C Ratio(X)	1.24	0.30	0.00	1.10	0.58	0.52	
Avail Cap(c_a), veh/h	446	1254	0	783	339	301	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	14.4	3.4	0.0	14.4	21.2	21.0	
Incr Delay (d2), s/veh	127.4	0.6	0.0	61.4	2.3	2.1	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	18.1	0.7	0.0	19.6	1.4	3.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	141.9	4.0	0.0	75.8	23.5	23.1	
LnGrp LOS	F	A		F	C	C	
Approach Vol, veh/h		926	858		240		
Approach Delay, s/veh		86.6	75.8		23.3		
Approach LOS		F	E		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.8	12.0	28.0
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				6.2	5.7	11.0	25.0
Green Ext Time (p_c), s				2.1	0.3	0.0	0.0
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			74.5				
HCM 7th LOS			E				

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	359	291	252	370	25	143	266	125	193	408	94
Future Volume (vph)	149	359	291	252	370	25	143	266	125	193	408	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1736	1827	1553	1736	1776	0
Flt Permitted	0.231			0.226			0.211			0.950		
Satd. Flow (perm)	430	1863	1583	421	1863	1583	385	1827	1553	1736	1776	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	157	378	306	265	389	26	151	280	132	203	429	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	378	306	265	389	26	151	280	132	203	528	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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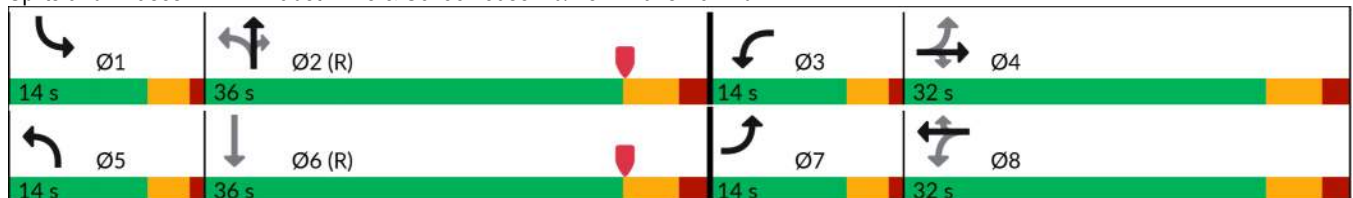


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8	2		2		6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	34.9	23.4	23.4	36.0	24.0	24.0	41.1	30.0	30.0	12.6	33.4	
Actuated g/C Ratio	0.36	0.24	0.24	0.38	0.25	0.25	0.43	0.31	0.31	0.13	0.35	
v/c Ratio	0.55	0.83	0.79	0.89	0.83	0.07	0.52	0.49	0.27	0.90	0.85	
Control Delay (s/veh)	25.3	50.7	49.4	52.9	50.6	26.8	20.6	30.4	26.7	83.0	45.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	25.3	50.7	49.4	52.9	50.6	26.8	20.6	30.4	26.7	83.0	45.8	
LOS	C	D	D	D	D	C	C	C	C	F	D	
Approach Delay (s/veh)		45.5			50.6			26.9			56.1	
Approach LOS		D			D			C			E	

Intersection Summary

Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay (s/veh): 45.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 84.6%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	149	359	291	252	370	25	143	266	125	193	408	94
Future Volume (veh/h)	149	359	291	252	370	25	143	266	125	193	408	94
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	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	157	378	0	265	389	0	151	280	0	203	429	0
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	4	4	4	4	4	4
Cap, veh/h	274	423		291	456		394	657		183	713	
Arrive On Green	0.09	0.23	0.00	0.10	0.24	0.00	0.07	0.36	0.00	0.10	0.39	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1753	1841	1560	1753	1841	0
Grp Volume(v), veh/h	157	378	0	265	389	0	151	280	0	203	429	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1753	1841	1560	1753	1841	0
Q Serve(g_s), s	6.4	18.8	0.0	10.0	19.1	0.0	5.1	11.1	0.0	10.0	17.9	0.0
Cycle Q Clear(g_c), s	6.4	18.8	0.0	10.0	19.1	0.0	5.1	11.1	0.0	10.0	17.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	274	423		291	456		394	657		183	713	
V/C Ratio(X)	0.57	0.89		0.91	0.85		0.38	0.43		1.11	0.60	
Avail Cap(c_a), veh/h	306	507		291	507		447	657		183	713	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	36.0	0.0	29.1	34.6	0.0	18.4	23.4	0.0	43.0	23.5	0.0
Incr Delay (d2), s/veh	2.1	16.0	0.0	30.7	12.2	0.0	0.6	2.0	0.0	99.7	3.7	0.0
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	2.7	10.0	0.0	6.9	9.7	0.0	2.0	4.8	0.0	9.2	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.8	52.0	0.0	59.8	46.9	0.0	19.0	25.4	0.0	142.7	27.3	0.0
LnGrp LOS	C	D		E	D		B	C		F	C	
Approach Vol, veh/h		535			654			431			632	
Approach Delay, s/veh		45.2			52.1			23.2			64.3	
Approach LOS		D			D			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	40.3	14.0	27.7	11.1	43.2	12.3	29.4				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	12.0	13.1	12.0	20.8	7.1	19.9	8.4	21.1				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.9	0.1	1.7	0.1	0.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			48.4									
HCM 7th LOS			D									

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	529	15	469	868	30	423
Future Volume (vph)	529	15	469	868	30	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1837	0	1736	1827	1703	1524
Flt Permitted			0.152		0.950	
Satd. Flow (perm)	1837	0	278	1827	1703	1524
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	3%	3%	4%	4%	6%	6%
Adj. Flow (vph)	622	18	552	1021	35	498
Shared Lane Traffic (%)						
Lane Group Flow (vph)	640	0	552	1021	35	498
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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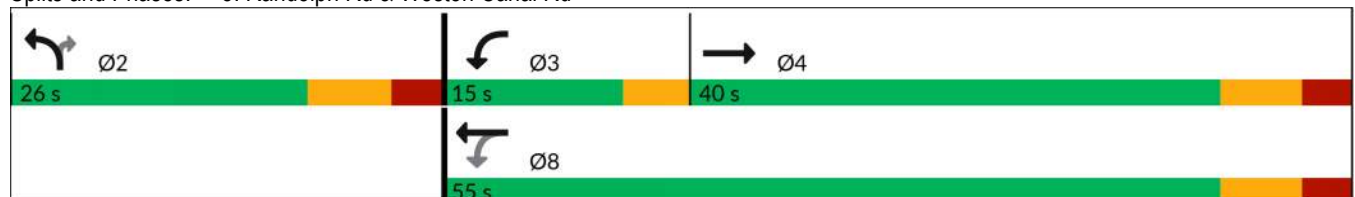


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	32.0		51.0	47.0	18.0	18.0
Actuated g/C Ratio	0.40		0.63	0.58	0.22	0.22
v/c Ratio	0.88		1.48	0.96	0.09	1.47
Control Delay (s/veh)	39.0		249.8	38.3	25.9	256.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.0		249.8	38.3	25.9	256.2
LOS	D		F	D	C	F
Approach Delay (s/veh)	39.0			112.5	241.1	
Approach LOS	D			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 81  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.48  
 Intersection Signal Delay (s/veh): 120.3      Intersection LOS: F  
 Intersection Capacity Utilization 75.6%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
5: Randolph Rd & Weston Canal Rd

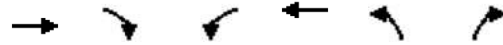
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	529	15	469	868	30	423
Future Volume (veh/h)	529	15	469	868	30	423
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1841	1841	1811	1811
Adj Flow Rate, veh/h	622	18	552	1021	35	498
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	4	4	6	6
Cap, veh/h	709	21	384	1068	383	341
Arrive On Green	0.40	0.40	0.14	0.58	0.22	0.22
Sat Flow, veh/h	1794	52	1753	1841	1725	1535
Grp Volume(v), veh/h	0	640	552	1021	35	498
Grp Sat Flow(s),veh/h/ln	0	1846	1753	1841	1725	1535
Q Serve(g_s), s	0.0	26.0	11.0	42.3	1.3	18.0
Cycle Q Clear(g_c), s	0.0	26.0	11.0	42.3	1.3	18.0
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	729	384	1068	383	341
V/C Ratio(X)	0.00	0.88	1.44	0.96	0.09	1.46
Avail Cap(c_a), veh/h	0	729	384	1068	383	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	22.7	18.7	16.0	25.0	31.5
Incr Delay (d2), s/veh	0.0	14.1	210.4	18.8	0.1	222.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.7	25.6	19.0	0.5	27.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	36.8	229.2	34.8	25.1	254.1
LnGrp LOS		D	F	C	C	F
Approach Vol, veh/h	640			1573	533	
Approach Delay, s/veh	36.8			103.0	239.1	
Approach LOS	D			F	F	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	15.0	40.0		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		20.0	13.0	28.0		44.3
Green Ext Time (p_c), s		0.0	0.0	1.4		1.7
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			114.0			
HCM 7th LOS			F			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

08-FBPM-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑	↙	↗
Traffic Volume (vph)	1327	39	309	813	85	741
Future Volume (vph)	1327	39	309	813	85	741
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.996					0.850
Fl <sub>t</sub> Protected			0.950		0.950	
Satd. Flow (prot)	3457	0	1703	1792	1641	1468
Fl <sub>t</sub> Permitted			0.129		0.950	
Satd. Flow (perm)	3457	0	231	1792	1641	1468
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	4%	6%	6%	10%	10%
Adj. Flow (vph)	1412	41	329	865	90	788
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1453	0	329	865	90	788
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	14.0	11.0
Total Split (s)	38.0		38.0	38.0	14.0	38.0
Total Split (%)	42.2%		42.2%	42.2%	15.6%	42.2%
Maximum Green (s)	31.0		34.0	31.0	7.0	34.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	31.1		68.3	31.1	7.0	45.0
Actuated g/C Ratio	0.36		0.78	0.36	0.08	0.52
v/c Ratio	1.18		0.43	1.35	0.68	1.04
Control Delay (s/veh)	117.2		11.9	196.0	67.5	66.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	117.2		11.9	196.0	67.5	66.5
LOS	F		B	F	E	E
Approach Delay (s/veh)	117.2			145.3	66.6	
Approach LOS	F			F	E	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.2  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.35  
 Intersection Signal Delay (s/veh): 114.1      Intersection LOS: F  
 Intersection Capacity Utilization 93.0%      ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

08-FBPM-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	1119	905	21	751	566	277
Future Volume (vph)	1119	905	21	751	566	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.933				0.956	
Fl <sub>t</sub> Protected				0.999	0.968	
Satd. Flow (prot)	3177	0	0	3435	1691	0
Fl <sub>t</sub> Permitted				0.653	0.968	
Satd. Flow (perm)	3177	0	0	2245	1691	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	6%	6%	5%	5%	4%	4%
Adj. Flow (vph)	1178	953	22	791	596	292
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2131	0	0	813	888	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

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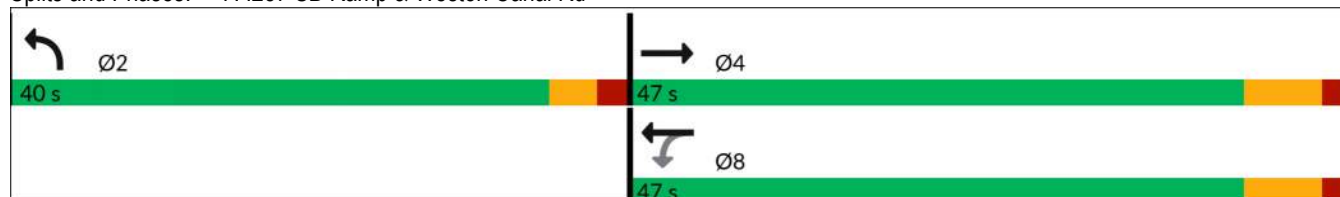


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	1.46			0.79	1.31	
Control Delay (s/veh)	234.6			26.7	174.3	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	234.6			26.7	174.3	
LOS	F			C	F	
Approach Delay (s/veh)	234.6			26.7	174.3	
Approach LOS	F			C	F	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	140
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.46
Intersection Signal Delay (s/veh):	176.5
Intersection LOS:	F
Intersection Capacity Utilization:	118.3%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd





HCM 7th Signalized Intersection Summary  
7: I287 SB Ramp & Weston Canal Rd

08-FBPM-2  
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	1119	905	21	751	566	277
Future Volume (veh/h)	1119	905	21	751	566	277
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1826	1826	1841	1841
Adj Flow Rate, veh/h	1178	0	22	791	596	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	6	5	5	4	4
Cap, veh/h	1679		64	1578	640	
Arrive On Green	0.49	0.00	0.49	0.49	0.37	0.00
Sat Flow, veh/h	3622	0	37	3318	1750	0
Grp Volume(v), veh/h	1178	0	424	389	597	0
Grp Sat Flow(s),veh/h/ln	1721	0	1694	1578	1753	0
Q Serve(g_s), s	21.9	0.0	0.2	13.7	26.8	0.0
Cycle Q Clear(g_c), s	21.9	0.0	22.0	13.7	26.8	0.0
Prop In Lane		0.00	0.05		1.00	0.00
Lane Grp Cap(c), veh/h	1679		873	770	641	
V/C Ratio(X)	0.70		0.49	0.51	0.93	
Avail Cap(c_a), veh/h	1679		873	770	748	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	14.0	14.3	25.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	1.9	2.4	16.8	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	7.8	0.0	4.9	4.7	12.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.8	0.0	15.9	16.6	41.8	0.0
LnGrp LOS	B		B	B	D	
Approach Vol, veh/h	1178			813	597	
Approach Delay, s/veh	18.8			16.3	41.8	
Approach LOS	B			B	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		35.0		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		28.8		23.9		24.0
Green Ext Time (p_c), s		1.1		7.2		4.4

Intersection Summary

HCM 7th Control Delay, s/veh			23.3			
HCM 7th LOS			C			

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

08-FBPM-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	478	924	301	226	530	27
Future Volume (vph)	478	924	301	226	530	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.901			0.994		
Fl <sub>t</sub> Protected				0.972	0.955	
Satd. Flow (prot)	3098	0	0	3440	1702	0
Fl <sub>t</sub> Permitted				0.590	0.955	
Satd. Flow (perm)	3098	0	0	2088	1702	0
Right Turn on Red	No			No		
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	6%	6%
Adj. Flow (vph)	520	1004	327	246	576	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1524	0	0	573	605	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

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08/14/2024

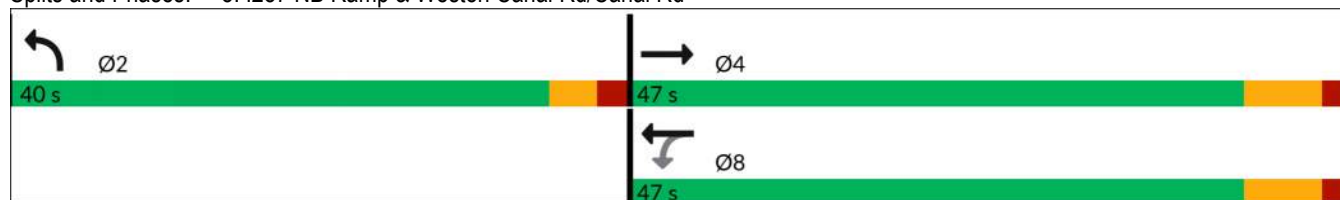


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.1			40.1	32.5	
Actuated g/C Ratio	0.47			0.47	0.38	
v/c Ratio	1.35dr			3.72dl	0.93	
Control Delay (s/veh)	58.4			19.7	47.3	
Queue Delay	12.9			0.0	0.0	
Total Delay (s/veh)	71.3			19.7	47.3	
LOS	E			B	D	
Approach Delay (s/veh)	71.3			19.7	47.3	
Approach LOS	E			B	D	

Intersection Summary

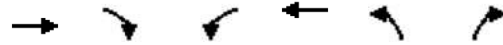
Area Type: Other  
 Cycle Length: 87  
 Actuated Cycle Length: 84.6  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay (s/veh): 55.0      Intersection LOS: E  
 Intersection Capacity Utilization 106.5%      ICU Level of Service G  
 Analysis Period (min) 15  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.  
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

08-FBPM-2  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	478	924	301	226	530	27
Future Volume (veh/h)	478	924	301	226	530	27
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	1870	1870	1811	1811
Adj Flow Rate, veh/h	520	0	327	246	576	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	2	2	6	6
Cap, veh/h	1707		443	795	621	
Arrive On Green	0.49	0.00	0.49	0.49	0.36	0.00
Sat Flow, veh/h	3652	0	721	1702	1722	0
Grp Volume(v), veh/h	520	0	327	246	577	0
Grp Sat Flow(s),veh/h/ln	1735	0	721	1617	1725	0
Q Serve(g_s), s	7.3	0.0	28.7	7.4	26.1	0.0
Cycle Q Clear(g_c), s	7.3	0.0	35.9	7.4	26.1	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1707		443	795	622	
V/C Ratio(X)	0.30		0.74	0.31	0.93	
Avail Cap(c_a), veh/h	1707		443	795	742	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	23.1	12.4	25.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	10.5	1.0	16.2	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	2.5	0.0	6.5	2.5	12.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.8	0.0	33.6	13.4	41.1	0.0
LnGrp LOS	B		C	B	D	
Approach Vol, veh/h	520			573	577	
Approach Delay, s/veh	12.8			24.9	41.1	
Approach LOS	B			C	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		34.3		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		28.1		9.3		37.9
Green Ext Time (p_c), s		1.2		3.4		0.8
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			26.8			
HCM 7th LOS			C			

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	162	15	97	153	297	13	593	105	161	497	216
Future Volume (vph)	172	162	15	97	153	297	13	593	105	161	497	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987				0.850		0.977			0.955	
Flt Protected	0.950				0.981		0.950			0.950		
Satd. Flow (prot)	1770	1839	0	0	1827	1583	1770	1820	0	1770	1779	0
Flt Permitted	0.950				0.783		0.071			0.066		
Satd. Flow (perm)	1770	1839	0	0	1459	1583	132	1820	0	123	1779	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	205	193	18	115	182	354	15	706	125	192	592	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	211	0	0	297	354	15	831	0	192	849	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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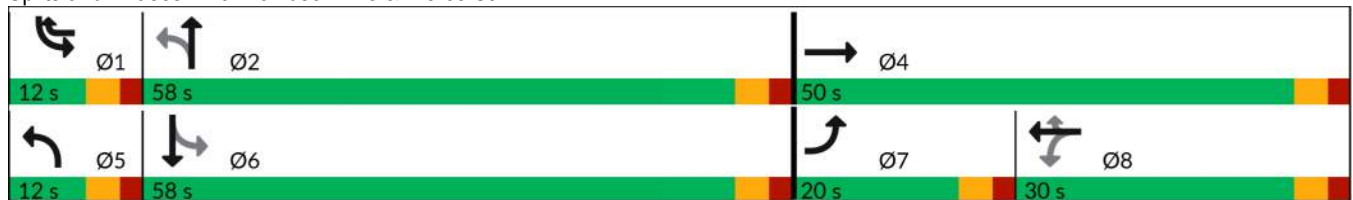


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effect Green (s)	15.0	45.0			25.0	37.0	60.0	53.0		63.0	60.2	
Actuated g/C Ratio	0.13	0.38			0.21	0.31	0.50	0.44		0.53	0.50	
v/c Ratio	0.93	0.31			0.98	0.73	0.09	1.03		1.20	0.95	
Control Delay (s/veh)	96.7	28.0			94.7	46.9	14.1	74.7		162.2	50.6	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	96.7	28.0			94.7	46.9	14.1	74.7		162.2	50.6	
LOS	F	C			F	D	B	E		F	D	
Approach Delay (s/veh)		61.9			68.8			73.6			71.2	
Approach LOS		E			E			E			E	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	125
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.20
Intersection Signal Delay (s/veh):	70.0
Intersection LOS:	E
Intersection Capacity Utilization:	86.1%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St

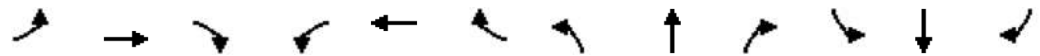


HCM 7th Signalized Intersection Summary

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9: Davidson Ave & Pierce St

08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	162	15	97	153	297	13	593	105	161	497	216
Future Volume (veh/h)	172	162	15	97	153	297	13	593	105	161	497	216
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	205	193	18	115	182	354	15	706	125	192	592	257
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	632	59	162	198	423	101	683	121	164	590	256
Arrive On Green	0.13	0.38	0.38	0.21	0.21	0.21	0.02	0.44	0.44	0.06	0.48	0.48
Sat Flow, veh/h	1781	1685	157	577	949	1585	1781	1547	274	1781	1237	537
Grp Volume(v), veh/h	205	0	211	297	0	354	15	0	831	192	0	849
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1526	0	1585	1781	0	1821	1781	0	1774
Q Serve(g_s), s	13.7	0.0	9.7	22.5	0.0	25.0	0.5	0.0	53.0	7.0	0.0	57.2
Cycle Q Clear(g_c), s	13.7	0.0	9.7	23.0	0.0	25.0	0.5	0.0	53.0	7.0	0.0	57.2
Prop In Lane	1.00		0.09	0.39		1.00	1.00		0.15	1.00		0.30
Lane Grp Cap(c), veh/h	223	0	691	359	0	423	101	0	804	164	0	846
V/C Ratio(X)	0.92	0.00	0.31	0.83	0.00	0.84	0.15	0.00	1.03	1.17	0.00	1.00
Avail Cap(c_a), veh/h	223	0	691	359	0	423	164	0	804	164	0	846
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	26.5	46.6	0.0	41.5	29.0	0.0	33.5	33.7	0.0	31.4
Incr Delay (d2), s/veh	39.2	0.0	0.2	14.6	0.0	13.8	0.7	0.0	40.6	123.9	0.0	31.8
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	8.3	0.0	4.2	9.9	0.0	11.1	0.2	0.0	30.7	8.5	0.0	29.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	91.1	0.0	26.7	61.2	0.0	55.3	29.7	0.0	74.1	157.6	0.0	63.1
LnGrp LOS	F		C	E		E	C		F	F		F
Approach Vol, veh/h		416			651			846			1041	
Approach Delay, s/veh		58.4			58.0			73.3			80.6	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	58.0		50.0	7.8	62.2	20.0	30.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	9.0	55.0		11.7	2.5	59.2	15.7	27.0				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			70.4									
HCM 7th LOS			E									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	148	153	790	558	191	1308
Future Volume (vph)	148	153	790	558	191	1308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.991	0.950	
Satd. Flow (prot)	3505	1568	1681	1754	1752	2760
Flt Permitted			0.950	0.991	0.950	
Satd. Flow (perm)	3505	1568	1681	1754	1752	2760
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	161	166	859	607	208	1422
Shared Lane Traffic (%)			16%			
Lane Group Flow (vph)	161	166	722	744	208	1422
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8



Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
<b>Permitted Phases</b>						
Detector Phase	2	2	8	8	4	4 8
<b>Switch Phase</b>						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
<b>Lead/Lag</b>						
<b>Lead-Lag Optimize?</b>						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effect Green (s)	35.0	35.0	35.0	35.0	35.0	75.0
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.63
v/c Ratio	0.16	0.36	1.47	1.46	0.41	0.82
Control Delay (s/veh)	32.1	36.5	256.6	248.8	37.1	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.1	36.5	256.6	248.8	37.1	22.7
LOS	C	D	F	F	D	C
Approach Delay (s/veh)	34.3			252.6		24.5
Approach LOS	C			F		C

**Intersection Summary**

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.47  
 Intersection Signal Delay (s/veh): 123.1      Intersection LOS: F  
 Intersection Capacity Utilization 63.8%      ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 10: Davidson Ave & Easton Ave

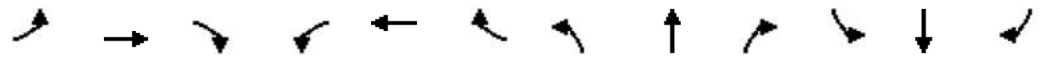


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

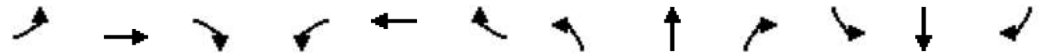
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	286	177	89	395	129	184	619	89	233	547	84
Future Volume (vph)	144	286	177	89	395	129	184	619	89	233	547	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.943			0.963			0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	1644	0	1736	1759	0	1770	3472	0	1770	1863	1583
Flt Permitted	0.137			0.174			0.182			0.267		
Satd. Flow (perm)	239	1644	0	318	1759	0	339	3472	0	497	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	9%	9%	9%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	148	295	182	92	407	133	190	638	92	240	564	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	477	0	92	540	0	190	730	0	240	564	87
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lanes, Volumes, Timings  
 11: NJ Route 27 & Veronica Ave/How Ln

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		3	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	12.0		5.0	12.0	12.0
Minimum Split (s)	8.0	24.0		8.0	24.0		8.0	42.0		8.0	42.0	42.0
Total Split (s)	11.0	33.0		11.0	33.0		12.0	44.0		12.0	44.0	44.0
Total Split (%)	11.0%	33.0%		11.0%	33.0%		12.0%	44.0%		12.0%	44.0%	44.0%
Maximum Green (s)	8.0	27.0		8.0	27.0		9.0	37.0		9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	5.0		3.0	5.0	5.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	7.0		3.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0			7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	38.7	29.3		37.5	27.0		49.8	37.0		50.2	37.2	37.2
Actuated g/C Ratio	0.39	0.29		0.38	0.27		0.50	0.37		0.50	0.37	0.37
v/c Ratio	0.72	0.99		0.41	1.14		0.65	0.57		0.66	0.81	0.15
Control Delay (s/veh)	41.2	77.2		24.1	120.5		23.5	27.3		23.1	39.5	21.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	41.2	77.2		24.1	120.5		23.5	27.3		23.1	39.5	21.9
LOS	D	E		C	F		C	C		C	D	C
Approach Delay (s/veh)		68.6			106.5			26.5			33.3	
Approach LOS		E			F			C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay (s/veh): 53.5      Intersection LOS: D  
 Intersection Capacity Utilization 93.1%      ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 11: NJ Route 27 & Veronica Ave/How Ln



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

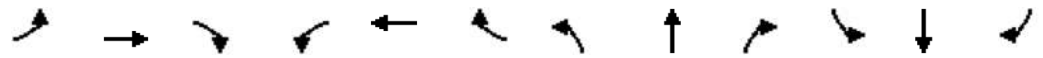
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	286	177	89	395	129	184	619	89	233	547	84
Future Volume (veh/h)	144	286	177	89	395	129	184	619	89	233	547	84
Initial Q (Qb), veh	0	0	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	1767	1767	1767	1841	1841	1841	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	295	182	92	407	133	190	638	92	240	564	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	9	9	9	4	4	4	2	2	2	2	2	2
Cap, veh/h	206	303	187	176	359	117	306	1154	166	383	702	595
Arrive On Green	0.08	0.30	0.30	0.05	0.27	0.27	0.08	0.37	0.37	0.09	0.38	0.38
Sat Flow, veh/h	1682	1022	631	1753	1328	434	1781	3118	449	1781	1870	1585
Grp Volume(v), veh/h	148	0	477	92	0	540	190	363	367	240	564	87
Grp Sat Flow(s),veh/h/ln	1682	0	1653	1753	0	1763	1781	1777	1790	1781	1870	1585
Q Serve(g_s), s	6.1	0.0	28.5	3.7	0.0	27.0	6.5	16.2	16.2	8.4	27.0	3.6
Cycle Q Clear(g_c), s	6.1	0.0	28.5	3.7	0.0	27.0	6.5	16.2	16.2	8.4	27.0	3.6
Prop In Lane	1.00		0.38	1.00		0.25	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	206	0	490	176	0	476	306	658	663	383	702	595
V/C Ratio(X)	0.72	0.00	0.97	0.52	0.00	1.13	0.62	0.55	0.55	0.63	0.80	0.15
Avail Cap(c_a), veh/h	207	0	490	222	0	476	315	658	663	383	702	595
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	26.1	0.0	34.8	27.7	0.0	36.5	21.2	24.9	24.9	18.8	27.9	20.6
Incr Delay (d2), s/veh	11.3	0.0	33.7	2.4	0.0	83.7	3.6	3.3	3.3	3.2	9.5	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	15.3	1.6	0.0	21.9	2.8	7.0	7.0	3.5	13.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.4	0.0	68.5	30.2	0.0	120.2	24.8	28.2	28.3	22.0	37.4	21.2
LnGrp LOS	D		E	C		F	C	C	C	C	D	C
Approach Vol, veh/h		625			632			920			891	
Approach Delay, s/veh		61.1			107.1			27.5			31.7	
Approach LOS		E			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	44.0	8.3	35.6	11.5	44.5	11.0	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	10.4	18.2	5.7	30.5	8.5	29.0	8.1	29.0				
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	2.3	0.0	0.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			52.0									
HCM 7th LOS			D									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	673	328	83	856	0	545	0	172	0	0	0
Future Volume (vph)	0	673	328	83	856	0	545	0	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3366	0	1770	3539	0	1752	0	1568	0	1863	0
Flt Permitted				0.109			0.950					
Satd. Flow (perm)	0	3366	0	203	3539	0	1752	0	1568	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45				45
Link Distance (ft)		684			399			410				201
Travel Time (s)		10.4			6.0			6.2				3.0
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	0	724	353	89	920	0	586	0	185	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1077	0	89	920	0	586	0	185	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			12				-30
Crosswalk Width(ft)		50			40			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

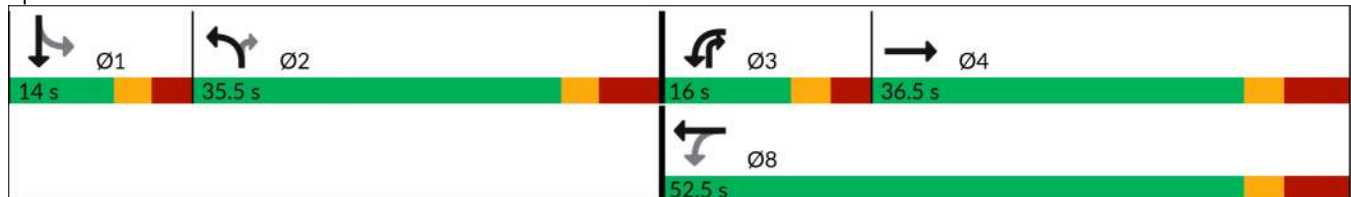
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8					2	1		
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effct Green (s)		28.3		45.5	42.0		26.0		42.2			
Actuated g/C Ratio		0.32		0.52	0.48		0.30		0.48			
v/c Ratio		1.00		0.40	0.54		1.13		0.25			
Control Delay (s/veh)		58.3		16.2	17.8		113.0		14.3			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		58.3		16.2	17.8		113.0		14.3			
LOS		E		B	B		F		B			
Approach Delay (s/veh)		58.3			17.6			89.3				
Approach LOS		E			B			F				

Intersection Summary

Area Type: Other  
 Cycle Length: 102  
 Actuated Cycle Length: 88  
 Natural Cycle: 135  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.13  
 Intersection Signal Delay (s/veh): 52.3      Intersection LOS: D  
 Intersection Capacity Utilization 81.8%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 12: Veronica Ave & Hamilton St



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HCM 7th Edition methodology expects strict NEMA phasing.



Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

08-FBPM-2  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	1259	3	0	1366	0	766	0	130	164	218	3
Future Volume (vph)	0	1259	3	0	1366	0	766	0	130	164	218	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850		0.999	
Flt Protected							0.950				0.979	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Flt Permitted							0.950				0.979	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3461	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1285	3	0	1394	0	782	0	133	167	222	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1288	0	0	1394	0	782	0	133	0	392	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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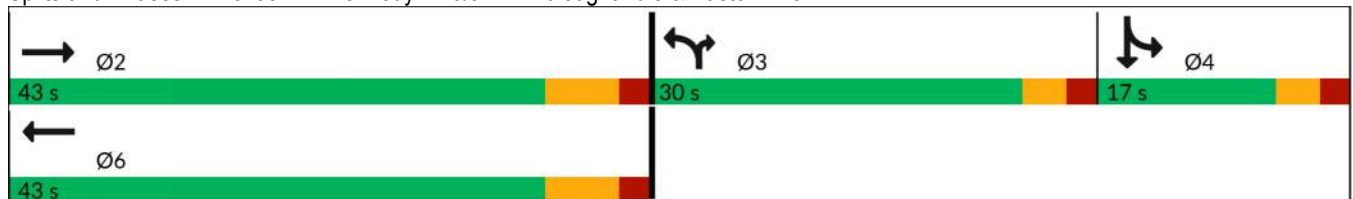


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		43.0			43.0		23.0		23.0	12.0	12.0	
Total Split (s)		43.0			43.0		30.0		30.0	17.0	17.0	
Total Split (%)		47.8%			47.8%		33.3%		33.3%	18.9%	18.9%	
Maximum Green (s)		36.0			36.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effct Green (s)		36.0			36.0		23.5		23.5		11.9	
Actuated g/C Ratio		0.41			0.41		0.27		0.27		0.13	
v/c Ratio		0.89			0.97		0.86		0.32		0.84	
Control Delay (s/veh)		34.5			44.3		41.6		28.3		55.3	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		34.5			44.3		41.6		28.3		55.3	
LOS		C			D		D		C		E	
Approach Delay (s/veh)		34.5			44.3			39.7			55.3	
Approach LOS		C			D			D			E	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 88.5  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay (s/veh): 41.1      Intersection LOS: D  
 Intersection Capacity Utilization 83.8%      ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

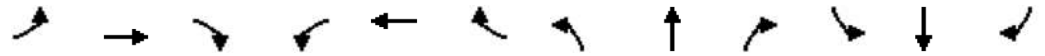
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	1259	3	0	1366	0	766	0	130	164	218	3
Future Volume (veh/h)	0	1259	3	0	1366	0	766	0	130	164	218	3
Initial Q (Qb), veh	0	0	0	0	0	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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1285	3	0	1394	0	782	0	133	167	222	3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2315	5	0	2261	0	0	0	0	234	316	4
Arrive On Green	0.00	0.64	0.64	0.00	0.64	0.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	0	3731	8	0	3741	0		0		1548	2083	28
Grp Volume(v), veh/h	0	628	660	0	1394	0		0.0		193	0	199
Grp Sat Flow(s),veh/h/ln	0	1777	1869	0	1777	0				1793	0	1865
Q Serve(g_s), s	0.0	11.2	11.2	0.0	13.3	0.0				5.8	0.0	5.7
Cycle Q Clear(g_c), s	0.0	11.2	11.2	0.0	13.3	0.0				5.8	0.0	5.7
Prop In Lane	0.00		0.00	0.00		0.00				0.86		0.02
Lane Grp Cap(c), veh/h	0	1131	1189	0	2261	0				272	0	283
V/C Ratio(X)	0.00	0.56	0.56	0.00	0.62	0.00				0.71	0.00	0.70
Avail Cap(c_a), veh/h	0	1131	1189	0	2261	0				380	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.8	5.8	0.0	6.2	0.0				22.8	0.0	22.8
Incr Delay (d2), s/veh	0.0	2.0	1.9	0.0	1.3	0.0				3.7	0.0	3.2
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	0.0	2.7	2.8	0.0	2.9	0.0				2.4	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	7.8	7.7	0.0	7.4	0.0				26.5	0.0	26.0
LnGrp LOS		A	A		A					C		C
Approach Vol, veh/h		1288			1394							392
Approach Delay, s/veh		7.7			7.4							26.2
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		43.0		13.6		43.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		36.0		12.0		36.0						
Max Q Clear Time (g_c+I1), s		13.2		7.8		15.3						
Green Ext Time (p_c), s		8.6		0.8		9.9						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				9.9								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	735	124	43	960	353	136	317	62	179	312	148
Future Volume (vph)	116	735	124	43	960	353	136	317	62	179	312	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.158			0.228			0.310			0.301		
Satd. Flow (perm)	294	3461	0	425	3539	1583	577	1863	1583	561	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	120	758	128	44	990	364	140	327	64	185	322	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	886	0	44	990	364	140	327	64	185	322	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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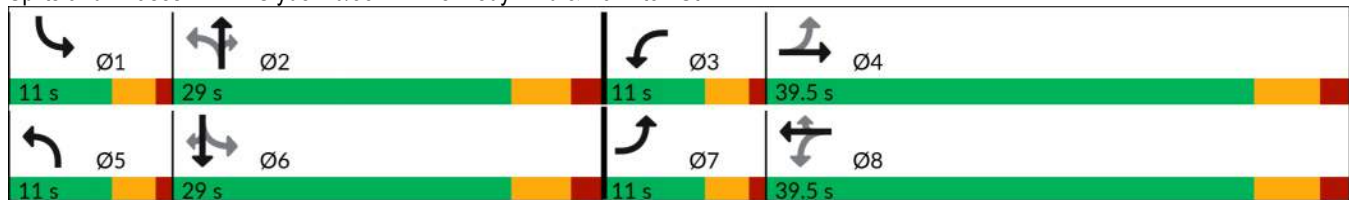


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	42.0	35.5		41.2	33.3	33.3	28.2	19.1	19.1	28.2	19.1	19.1
Actuated g/C Ratio	0.50	0.42		0.49	0.39	0.39	0.33	0.23	0.23	0.33	0.23	0.23
v/c Ratio	0.45	0.61		0.14	0.71	0.58	0.48	0.78	0.18	0.64	0.76	0.43
Control Delay (s/veh)	16.6	23.1		11.8	26.4	26.6	24.4	44.7	28.2	31.1	43.9	32.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	23.1		11.8	26.4	26.6	24.4	44.7	28.2	31.1	43.9	32.6
LOS	B	C		B	C	C	C	D	C	C	D	C
Approach Delay (s/veh)		22.3			26.0			37.4			37.7	
Approach LOS		C			C			D			D	

Intersection Summary

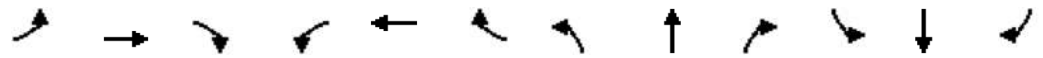
Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	84.6
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay (s/veh):	28.8
Intersection LOS:	C
Intersection Capacity Utilization:	76.6%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	116	735	124	43	960	353	136	317	62	179	312	148
Future Volume (veh/h)	116	735	124	43	960	353	136	317	62	179	312	148
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	120	758	128	44	990	0	140	327	64	185	322	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	1264	213	320	1390		274	383	325	269	386	
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.00	0.08	0.20	0.20	0.08	0.21	0.00
Sat Flow, veh/h	1781	3041	513	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	120	443	443	44	990	0	140	327	64	185	322	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.2	16.4	16.4	1.2	19.8	0.0	5.1	14.2	2.8	7.0	13.9	0.0
Cycle Q Clear(g_c), s	3.2	16.4	16.4	1.2	19.8	0.0	5.1	14.2	2.8	7.0	13.9	0.0
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	739	739	320	1390		274	383	325	269	386	
V/C Ratio(X)	0.38	0.60	0.60	0.14	0.71		0.51	0.85	0.20	0.69	0.83	
Avail Cap(c_a), veh/h	322	739	739	372	1390		277	510	432	269	510	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.7	19.2	19.2	14.6	21.7	0.0	24.6	32.3	27.8	25.3	32.1	0.0
Incr Delay (d2), s/veh	0.8	3.6	3.6	0.2	3.1	0.0	1.5	10.3	0.3	7.1	8.8	0.0
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	1.2	6.7	6.7	0.4	7.9	0.0	2.1	7.1	1.0	3.2	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	22.8	22.8	14.8	24.8	0.0	26.1	42.7	28.1	32.5	40.9	0.0
LnGrp LOS	B	C	C	B	C		C	D	C	C	D	
Approach Vol, veh/h		1006			1034			531			507	
Approach Delay, s/veh		22.0			24.4			36.6			37.8	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	23.3	8.5	41.6	10.9	23.4	10.6	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	16.2	3.2	18.4	7.1	15.9	5.2	21.8				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.5	0.0	0.9	0.0	4.8				

Intersection Summary

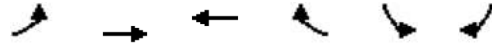
HCM 7th Control Delay, s/veh	27.9
HCM 7th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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 08/14/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	1366	384	0	0	0
Future Volume (vph)	0	1366	384	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	5085	3539	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1485	417	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	1485	417	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

08-FBPM-2  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	440	25	22	262	50	14	21	18	230	27	514
Future Volume (vph)	228	440	25	22	262	50	14	21	18	230	27	514
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.992				0.850			0.850		0.857	
Fl <sub>t</sub> Protected	0.950			0.950				0.980		0.950		
Satd. Flow (prot)	1770	1848	0	1770	1863	1583	0	1825	1583	1770	1596	0
Fl <sub>t</sub> Permitted	0.478			0.417				0.467		0.487		
Satd. Flow (perm)	890	1848	0	777	1863	1583	0	870	1583	907	1596	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	256	494	28	25	294	56	16	24	20	258	30	578
Shared Lane Traffic (%)												
Lane Group Flow (vph)	256	522	0	25	294	56	0	40	20	258	608	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	



Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

08-FBPM-2  
08/14/2024

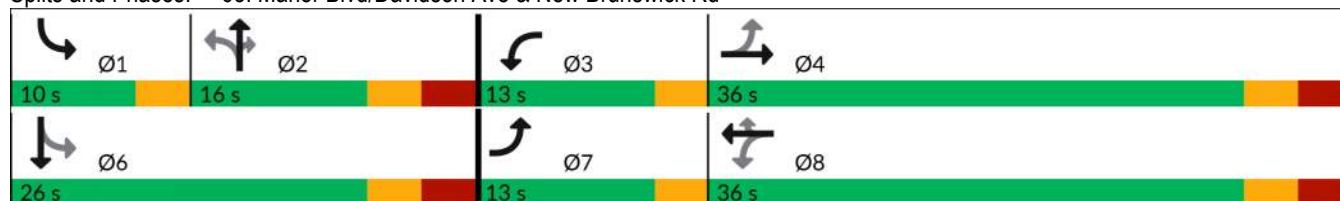


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	45.6	38.6		40.0	30.0	30.0		9.1	9.1	23.0	20.0	
Actuated g/C Ratio	0.61	0.52		0.54	0.40	0.40		0.12	0.12	0.31	0.27	
v/c Ratio	0.39	0.55		0.05	0.39	0.09		0.37	0.10	0.59	1.42	
Control Delay (s/veh)	8.5	16.1		6.2	17.9	14.6		40.5	30.1	29.2	230.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	8.5	16.1		6.2	17.9	14.6		40.5	30.1	29.2	230.0	
LOS	A	B		A	B	B		D	C	C	F	
Approach Delay (s/veh)		13.6			16.7			37.0			170.2	
Approach LOS		B			B			D			F	

Intersection Summary

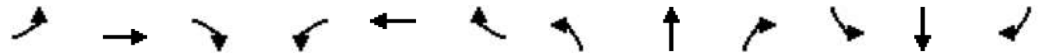
Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 74.6  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.42  
 Intersection Signal Delay (s/veh): 80.0      Intersection LOS: F  
 Intersection Capacity Utilization 78.7%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

08-FBPM-2  
 08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	440	25	22	262	50	14	21	18	230	27	514
Future Volume (veh/h)	228	440	25	22	262	50	14	21	18	230	27	514
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	256	494	28	25	294	56	16	24	20	258	30	578
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	600	842	48	410	772	654	69	71	218	271	22	418
Arrive On Green	0.11	0.48	0.48	0.04	0.41	0.41	0.14	0.14	0.14	0.10	0.28	0.28
Sat Flow, veh/h	1781	1753	99	1781	1870	1585	0	517	1585	1781	79	1518
Grp Volume(v), veh/h	256	0	522	25	294	56	40	0	20	258	0	608
Grp Sat Flow(s),veh/h/ln	1781	0	1852	1781	1870	1585	517	0	1585	1781	0	1597
Q Serve(g_s), s	5.5	0.0	14.8	0.6	8.0	1.6	0.0	0.0	0.8	7.0	0.0	20.0
Cycle Q Clear(g_c), s	5.5	0.0	14.8	0.6	8.0	1.6	10.0	0.0	0.8	7.0	0.0	20.0
Prop In Lane	1.00		0.05	1.00		1.00	0.40		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	600	0	890	410	772	654	141	0	218	271	0	439
V/C Ratio(X)	0.43	0.00	0.59	0.06	0.38	0.09	0.28	0.00	0.09	0.95	0.00	1.38
Avail Cap(c_a), veh/h	657	0	890	587	772	654	141	0	218	271	0	439
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	13.7	11.8	14.9	13.0	28.0	0.0	27.4	26.0	0.0	26.3
Incr Delay (d2), s/veh	0.5	0.0	2.8	0.1	1.4	0.3	1.1	0.0	0.2	42.0	0.0	186.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	6.1	0.2	3.4	0.6	0.6	0.0	0.3	6.6	0.0	29.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.1	0.0	16.5	11.9	16.3	13.2	29.1	0.0	27.6	68.0	0.0	212.6
LnGrp LOS	B		B	B	B	B	C		C	E		F
Approach Vol, veh/h		778			375			60				866
Approach Delay, s/veh		14.4			15.5			28.6				169.5
Approach LOS		B			B			C				F
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	10.0	16.0	5.8	40.9		26.0	10.7	36.0				
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0		6.0	3.0	6.0				
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0		20.0	10.0	30.0				
Max Q Clear Time (g_c+I1), s	9.0	12.0	2.6	16.8		22.0	7.5	10.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.7		0.0	0.2	1.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			79.6									
HCM 7th LOS			E									

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

08-FBPM-2  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	730	50	57	14	19	996
Future Volume (vph)	730	50	57	14	19	996
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.991				0.867	
Fl <sub>t</sub> Protected	0.955			0.961		
Satd. Flow (prot)	1746	0	0	1790	1554	0
Fl <sub>t</sub> Permitted	0.955			0.961		
Satd. Flow (perm)	1746	0	0	1790	1554	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	2%	2%	6%	6%
Adj. Flow (vph)	785	54	61	15	20	1071
Shared Lane Traffic (%)						
Lane Group Flow (vph)	839	0	0	76	1091	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	112.8%
	ICU Level of Service H
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	730	50	57	14	19	996
Future Vol, veh/h	730	50	57	14	19	996
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	2	2	6	6
Mvmt Flow	785	54	61	15	20	1071

Major/Minor	Minor2	Major2		
Conflicting Flow All	556	556	-	0
Stage 1	556	556	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	492	439	-	-
Stage 1	574	513	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	492	0	-	-
Mov Cap-2 Maneuver	492	0	-	-
Stage 1	574	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	13.65	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	492	-	-
HCM Lane V/C Ratio	0.155	-	-
HCM Control Delay (s/veh)	13.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

09-FBSA-2  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	219	86	613	225	105	544
Future Volume (vph)	219	86	613	225	105	544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		350	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl <sub>t</sub> Permitted	0.950				0.308	
Satd. Flow (perm)	1770	1583	1863	1583	574	1863
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)		91				
Link Speed (mph)	45		45			45
Link Distance (ft)	598		643			474
Travel Time (s)	9.1		9.7			7.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	231	91	645	237	111	573
Shared Lane Traffic (%)						
Lane Group Flow (vph)	231	91	645	237	111	573
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	30		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	4		2	4	1	2
Permitted Phases		4		2	2	

Lanes, Volumes, Timings  
1: Weston Canal Rd & Schoolhouse Rd

09-FBSA-2  
08/14/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	4	4	2	4	1	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.0	13.0	46.5	13.0	11.0	46.5
Total Split (s)	15.0	15.0	46.5	15.0	11.0	46.5
Total Split (%)	20.7%	20.7%	64.1%	20.7%	15.2%	64.1%
Maximum Green (s)	9.0	9.0	40.0	9.0	7.0	40.0
Yellow Time (s)	4.0	4.0	4.5	4.0	4.0	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.5	6.0	4.0	6.5
Lead/Lag			Lag		Lead	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	None	None	Max
Walk Time (s)	7.0	7.0		7.0		
Flash Don't Walk (s)	11.0	11.0		11.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effect Green (s)	9.0	9.0	40.2	57.1	48.1	40.2
Actuated g/C Ratio	0.13	0.13	0.57	0.81	0.68	0.57
v/c Ratio	1.02	0.32	0.61	0.18	0.22	0.54
Control Delay (s/veh)	100.4	10.8	13.7	2.6	3.8	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	100.4	10.8	13.7	2.6	3.8	12.4
LOS	F	B	B	A	A	B
Approach Delay (s/veh)	75.1		10.7			11.0
Approach LOS	E		B			B

Intersection Summary

Area Type:	Other
Cycle Length:	72.5
Actuated Cycle Length:	70.3
Natural Cycle:	75
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.02
Intersection Signal Delay (s/veh):	21.8
Intersection LOS:	C
Intersection Capacity Utilization:	64.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: Weston Canal Rd & Schoolhouse Rd

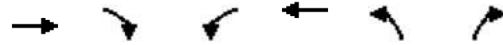


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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
2: Mettlers Rd & Schoolhouse Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	355	47	72	382	63	106
Future Volume (vph)	355	47	72	382	63	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.915	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	1833	0	1770	1863	1674	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	1833	0	1770	1863	1674	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	707			732	348	
Travel Time (s)	10.7			11.1	5.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	438	58	89	472	78	131
Shared Lane Traffic (%)						
Lane Group Flow (vph)	496	0	89	472	209	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.5%
ICU Level of Service	A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	355	47	72	382	63	106
Future Vol, veh/h	355	47	72	382	63	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	58	89	472	78	131

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	496	0	1117 467
Stage 1	-	-	-	-	467 -
Stage 2	-	-	-	-	649 -
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	-	-	1068	-	229 596
Stage 1	-	-	-	-	631 -
Stage 2	-	-	-	-	520 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1068	-	210 596
Mov Cap-2 Maneuver	-	-	-	-	210 -
Stage 1	-	-	-	-	631 -
Stage 2	-	-	-	-	477 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.38	28.77
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	1068	-
HCM Lane V/C Ratio	0.589	-	-	0.083	-
HCM Control Delay (s/veh)	28.8	-	-	8.7	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	3.6	-	-	0.3	-

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

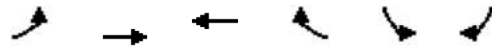
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↗	↖		↘	↙
Traffic Volume (vph)	95	396	352	55	71	78
Future Volume (vph)	95	396	352	55	71	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	250	0
Storage Lanes	1			0	1	1
Taper Length (ft)	75				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1829	0	1736	1553
Flt Permitted	0.370				0.950	
Satd. Flow (perm)	689	1863	1829	0	1736	1553
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		437	442		567	
Travel Time (s)		6.6	6.7		8.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Adj. Flow (vph)	114	477	424	66	86	94
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	477	490	0	86	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		12	-12		0	
Crosswalk Width(ft)		80	30		40	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	

Lanes, Volumes, Timings  
3: Schoolhouse Rd & Randolph Rd

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	23.0	23.0		15.0	15.0
Total Split (s)	12.0	40.0	28.0		15.0	15.0
Total Split (%)	21.8%	72.7%	50.9%		27.3%	27.3%
Maximum Green (s)	9.0	35.0	23.0		10.0	10.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	0.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Max	Max		None	None
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		11.0	11.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)	40.0	38.9	30.6		8.5	8.5
Actuated g/C Ratio	0.74	0.72	0.57		0.16	0.16
v/c Ratio	0.17	0.36	0.47		0.32	0.39
Control Delay (s/veh)	3.6	5.1	12.2		23.2	25.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	3.6	5.1	12.2		23.2	25.1
LOS	A	A	B		C	C
Approach Delay (s/veh)		4.9	12.2		24.2	
Approach LOS		A	B		C	

Intersection Summary

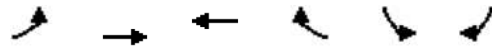
Area Type: Other  
 Cycle Length: 55  
 Actuated Cycle Length: 54.1  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay (s/veh): 10.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 45.2%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: Schoolhouse Rd & Randolph Rd



HCM 7th Signalized Intersection Summary  
 3: Schoolhouse Rd & Randolph Rd

























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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑	↗		↙	↘	
Traffic Volume (veh/h)	95	396	352	55	71	78	
Future Volume (veh/h)	95	396	352	55	71	78	
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			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1841	
Adj Flow Rate, veh/h	114	477	424	66	86	94	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	
Percent Heavy Veh, %	2	2	2	2	4	4	
Cap, veh/h	637	1272	810	126	220	196	
Arrive On Green	0.11	0.68	0.51	0.51	0.13	0.13	
Sat Flow, veh/h	1781	1870	1580	246	1753	1560	
Grp Volume(v), veh/h	114	477	0	490	86	94	
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1826	1753	1560	
Q Serve(g_s), s	1.2	5.6	0.0	9.2	2.3	2.9	
Cycle Q Clear(g_c), s	1.2	5.6	0.0	9.2	2.3	2.9	
Prop In Lane	1.00			0.13	1.00	1.00	
Lane Grp Cap(c), veh/h	637	1272	0	936	220	196	
V/C Ratio(X)	0.18	0.38	0.00	0.52	0.39	0.48	
Avail Cap(c_a), veh/h	754	1272	0	936	341	303	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	4.6	3.5	0.0	8.4	20.7	20.9	
Incr Delay (d2), s/veh	0.1	0.8	0.0	2.1	1.1	1.8	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.9	0.0	2.8	0.9	2.6	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	4.7	4.4	0.0	10.5	21.8	22.7	
LnGrp LOS	A	A		B	C	C	
Approach Vol, veh/h		591	490		180		
Approach Delay, s/veh		4.4	10.5		22.3		
Approach LOS		A	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				40.0	11.5	8.6	31.4
Change Period (Y+Rc), s				5.0	5.0	3.0	5.0
Max Green Setting (Gmax), s				35.0	10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s				7.6	4.9	3.2	11.2
Green Ext Time (p_c), s				2.8	0.2	0.1	2.2
<b>Intersection Summary</b>							
HCM 7th Control Delay, s/veh			9.3				
HCM 7th LOS			A				

Lanes, Volumes, Timings  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

09-FBSA-2  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	262	114	137	277	25	99	211	125	46	218	150
Future Volume (vph)	185	262	114	137	277	25	99	211	125	46	218	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	150		150	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.939	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1749	0
Flt Permitted	0.317			0.370			0.381			0.950		
Satd. Flow (perm)	590	1863	1583	689	1863	1583	710	1863	1583	1770	1749	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		461			523			393			304	
Travel Time (s)		7.0			7.9			6.0			4.6	
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
Adj. Flow (vph)	197	279	121	146	295	27	105	224	133	49	232	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	279	121	146	295	27	105	224	133	49	392	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1		
Permitted Phases	4		4	8		8	2		2		6	

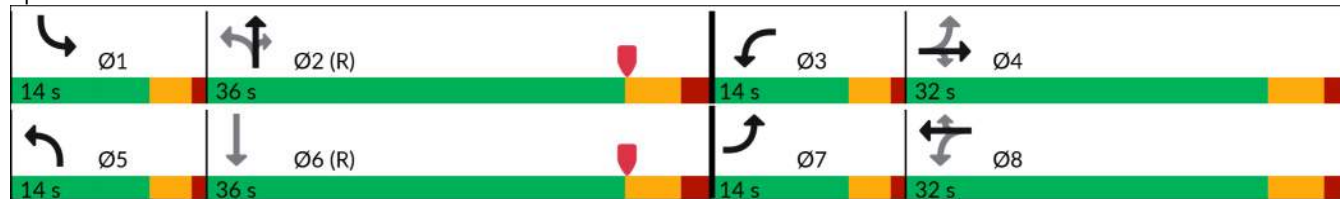


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	9.0	24.0	24.0	10.0	24.0	24.0	10.0	36.0	36.0	10.0	36.0	
Total Split (s)	14.0	32.0	32.0	14.0	32.0	32.0	14.0	36.0	36.0	14.0	36.0	
Total Split (%)	14.6%	33.3%	33.3%	14.6%	33.3%	33.3%	14.6%	37.5%	37.5%	14.6%	37.5%	
Maximum Green (s)	10.0	26.0	26.0	10.0	26.0	26.0	10.0	30.0	30.0	10.0	30.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0	0	0	
Act Effct Green (s)	32.3	20.5	20.5	31.5	20.1	20.1	49.8	42.2	42.2	7.9	39.9	
Actuated g/C Ratio	0.34	0.21	0.21	0.33	0.21	0.21	0.52	0.44	0.44	0.08	0.42	
v/c Ratio	0.62	0.70	0.36	0.44	0.76	0.08	0.23	0.27	0.19	0.34	0.54	
Control Delay (s/veh)	29.3	44.3	34.1	23.8	47.9	28.7	13.5	21.6	21.2	47.3	27.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	29.3	44.3	34.1	23.8	47.9	28.7	13.5	21.6	21.2	47.3	27.4	
LOS	C	D	C	C	D	C	B	C	C	D	C	
Approach Delay (s/veh)		37.3			39.2			19.6			29.6	
Approach LOS		D			D			B			C	

Intersection Summary

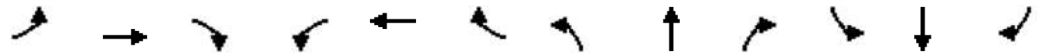
Area Type: Other  
 Cycle Length: 96  
 Actuated Cycle Length: 96  
 Offset: 67 (70%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay (s/veh): 31.9      Intersection LOS: C  
 Intersection Capacity Utilization 67.6%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd



HCM 7th Signalized Intersection Summary  
 4: Elizabeth Ave & Schoolhouse Rd/New Brunswick Rd

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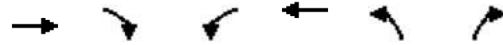
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	185	262	114	137	277	25	99	211	125	46	218	150
Future Volume (veh/h)	185	262	114	137	277	25	99	211	125	46	218	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	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	197	279	0	146	295	0	105	224	0	49	232	0
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	294	380		296	344		596	844		93	849	
Arrive On Green	0.10	0.20	0.00	0.08	0.18	0.00	0.05	0.45	0.00	0.05	0.45	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Grp Volume(v), veh/h	197	279	0	146	295	0	105	224	0	49	232	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	8.5	13.4	0.0	6.3	14.7	0.0	3.0	7.2	0.0	2.6	7.4	0.0
Cycle Q Clear(g_c), s	8.5	13.4	0.0	6.3	14.7	0.0	3.0	7.2	0.0	2.6	7.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	294	380		296	344		596	844		93	849	
V/C Ratio(X)	0.67	0.73		0.49	0.86		0.18	0.27		0.53	0.27	
Avail Cap(c_a), veh/h	294	507		330	507		693	844		186	849	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.7	35.8	0.0	28.7	37.9	0.0	13.0	16.4	0.0	44.4	16.4	0.0
Incr Delay (d2), s/veh	5.7	3.7	0.0	1.3	9.4	0.0	0.1	0.8	0.0	4.6	0.8	0.0
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	3.9	6.2	0.0	2.6	7.3	0.0	1.1	3.0	0.0	1.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.4	39.6	0.0	30.0	47.4	0.0	13.1	17.2	0.0	48.9	17.1	0.0
LnGrp LOS	C	D		C	D		B	B		D	B	
Approach Vol, veh/h		476			441			329			281	
Approach Delay, s/veh		37.4			41.6			15.9			22.7	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	49.3	12.2	25.5	8.8	49.6	14.0	23.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	30.0	10.0	26.0	10.0	30.0	10.0	26.0				
Max Q Clear Time (g_c+I1), s	4.6	9.2	8.3	15.4	5.0	9.4	10.5	16.7				
Green Ext Time (p_c), s	0.0	1.0	0.1	1.0	0.1	1.1	0.0	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			31.3									
HCM 7th LOS			C									

Notes  
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	828	30	154	745	5	205
Future Volume (vph)	828	30	154	745	5	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	600		0	300
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1853	0	1770	1863	1656	1482
Flt Permitted			0.104		0.950	
Satd. Flow (perm)	1853	0	194	1863	1656	1482
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	1057			990	560	
Travel Time (s)	16.0			15.0	8.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	9%	9%
Adj. Flow (vph)	920	33	171	828	6	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	953	0	171	828	6	228
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	30			30	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	



Lanes, Volumes, Timings  
5: Randolph Rd & Weston Canal Rd

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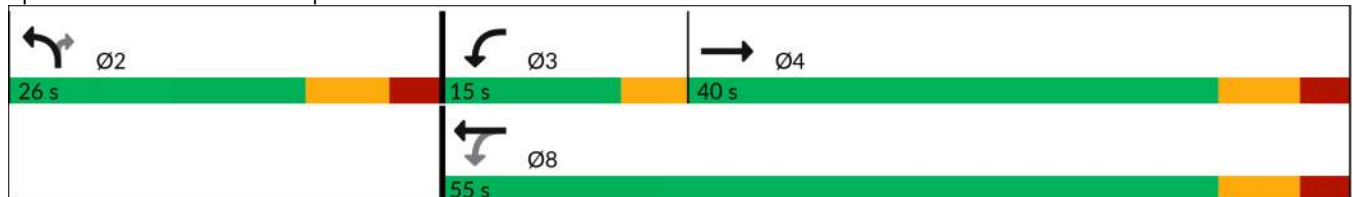


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	5.0	5.0
Minimum Split (s)	40.0		13.0	51.0	13.0	13.0
Total Split (s)	40.0		15.0	55.0	26.0	26.0
Total Split (%)	49.4%		18.5%	67.9%	32.1%	32.1%
Maximum Green (s)	32.0		11.0	47.0	18.0	18.0
Yellow Time (s)	5.0		4.0	5.0	5.0	5.0
All-Red Time (s)	3.0		0.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0		4.0	8.0	8.0	8.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	34.3		51.1	47.1	15.7	15.7
Actuated g/C Ratio	0.44		0.65	0.60	0.20	0.20
v/c Ratio	1.18		0.57	0.74	0.02	0.77
Control Delay (s/veh)	119.5		17.3	17.4	24.8	48.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	119.5		17.3	17.4	24.8	48.5
LOS	F		B	B	C	D
Approach Delay (s/veh)	119.5			17.3	47.8	
Approach LOS	F			B	D	

Intersection Summary

Area Type: Other  
 Cycle Length: 81  
 Actuated Cycle Length: 78.8  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 1.18  
 Intersection Signal Delay (s/veh): 65.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 74.8%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 5: Randolph Rd & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 5: Randolph Rd & Weston Canal Rd

09-FBSA-2  
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	828	30	154	745	5	205
Future Volume (veh/h)	828	30	154	745	5	205
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1767	1767
Adj Flow Rate, veh/h	920	33	171	828	6	228
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	9	9
Cap, veh/h	848	30	253	1149	297	265
Arrive On Green	0.47	0.47	0.09	0.61	0.18	0.18
Sat Flow, veh/h	1794	64	1781	1870	1682	1497
Grp Volume(v), veh/h	0	953	171	828	6	228
Grp Sat Flow(s),veh/h/ln	0	1859	1781	1870	1682	1497
Q Serve(g_s), s	0.0	36.2	3.3	23.5	0.2	11.3
Cycle Q Clear(g_c), s	0.0	36.2	3.3	23.5	0.2	11.3
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	879	253	1149	297	265
V/C Ratio(X)	0.00	1.08	0.68	0.72	0.02	0.86
Avail Cap(c_a), veh/h	0	879	350	1149	396	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	20.2	16.7	10.2	26.0	30.6
Incr Delay (d2), s/veh	0.0	55.8	3.2	3.9	0.0	15.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	26.4	1.4	8.2	0.1	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	76.0	19.9	14.1	26.1	45.8
LnGrp LOS		F	B	B	C	D
Approach Vol, veh/h	953			999	234	
Approach Delay, s/veh	76.0			15.1	45.3	
Approach LOS	E			B	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		21.5	10.8	44.2		55.0
Change Period (Y+Rc), s		8.0	4.0	8.0		8.0
Max Green Setting (Gmax), s		18.0	11.0	32.0		47.0
Max Q Clear Time (g_c+I1), s		13.3	5.3	38.2		25.5
Green Ext Time (p_c), s		0.3	0.2	0.0		5.7
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			44.9			
HCM 7th LOS			D			

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

09-FBSA-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑	↙	↗
Traffic Volume (vph)	824	19	183	740	8	276
Future Volume (vph)	824	19	183	740	8	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		100	0
Storage Lanes		0	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3494	0	1736	1827	1703	1524
Flt Permitted			0.232		0.950	
Satd. Flow (perm)	3494	0	424	1827	1703	1524
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	410			618	363	
Travel Time (s)	6.2			9.4	5.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	4%	4%	6%	6%
Adj. Flow (vph)	936	22	208	841	9	314
Shared Lane Traffic (%)						
Lane Group Flow (vph)	958	0	208	841	9	314
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	4	2	3

Lanes, Volumes, Timings  
6: Cottontail Ln & Weston Canal Rd

09-FBSA-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			4			2
Detector Phase	4		3	4	2	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	32.0		11.0	32.0	17.0	11.0
Total Split (s)	32.0		19.0	32.0	17.0	19.0
Total Split (%)	47.1%		27.9%	47.1%	25.0%	27.9%
Maximum Green (s)	25.0		15.0	25.0	10.0	15.0
Yellow Time (s)	5.0		3.0	5.0	5.0	3.0
All-Red Time (s)	2.0		1.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0		4.0	7.0	7.0	4.0
Lead/Lag	Lag		Lead	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	Max	None	None
Walk Time (s)	7.0			7.0	7.0	
Flash Don't Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	25.4		41.9	25.4	7.1	15.8
Actuated g/C Ratio	0.49		0.80	0.49	0.14	0.30
v/c Ratio	0.57		0.31	0.95	0.04	0.68
Control Delay (s/veh)	12.6		2.8	38.5	23.5	23.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.6		2.8	38.5	23.5	23.7
LOS	B		A	D	C	C
Approach Delay (s/veh)	12.6			31.4	23.7	
Approach LOS	B			C	C	

Intersection Summary

Area Type: Other  
 Cycle Length: 68  
 Actuated Cycle Length: 52.3  
 Natural Cycle: 70  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay (s/veh): 22.6  
 Intersection LOS: C  
 Intersection Capacity Utilization 56.4%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 6: Cottontail Ln & Weston Canal Rd



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HCM 7th Edition methodology does not support Non-NEMA phasing.

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

09-FBSA-2  
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	690	585	44	577	439	205
Future Volume (vph)	690	585	44	577	439	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.931				0.957	
Fl <sub>t</sub> Protected				0.996	0.967	
Satd. Flow (prot)	3232	0	0	3424	1691	0
Fl <sub>t</sub> Permitted				0.634	0.967	
Satd. Flow (perm)	3232	0	0	2180	1691	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	618			497	899	
Travel Time (s)	9.4			7.5	13.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	4%	5%	5%	4%	4%
Adj. Flow (vph)	758	643	48	634	482	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1401	0	0	682	707	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	90	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
7: I287 SB Ramp & Weston Canal Rd

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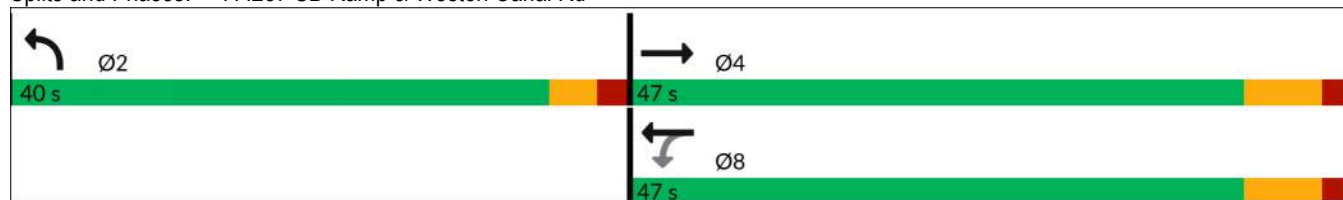


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	40.0		40.0	40.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.0			40.0	35.0	
Actuated g/C Ratio	0.46			0.46	0.40	
v/c Ratio	0.94			0.68	1.04	
Control Delay (s/veh)	36.8			22.8	73.0	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	36.8			22.8	73.0	
LOS	D			C	E	
Approach Delay (s/veh)	36.8			22.8	73.0	
Approach LOS	D			C	E	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	87
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	1.04
Intersection Signal Delay (s/veh):	42.6
Intersection LOS:	D
Intersection Capacity Utilization:	96.3%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 7: I287 SB Ramp & Weston Canal Rd



HCM 7th Signalized Intersection Summary  
 7: I287 SB Ramp & Weston Canal Rd

09-FBSA-2  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	
Traffic Volume (veh/h)	690	585	44	577	439	205
Future Volume (veh/h)	690	585	44	577	439	205
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1841	1841
Adj Flow Rate, veh/h	758	0	48	634	482	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	5	5	4	4
Cap, veh/h	1864		132	1609	537	
Arrive On Green	0.53	0.00	0.53	0.53	0.31	0.00
Sat Flow, veh/h	3681	0	146	3102	1750	0
Grp Volume(v), veh/h	758	0	345	337	483	0
Grp Sat Flow(s),veh/h/ln	1749	0	1586	1578	1753	0
Q Serve(g_s), s	9.7	0.0	0.0	9.5	19.8	0.0
Cycle Q Clear(g_c), s	9.7	0.0	8.2	9.5	19.8	0.0
Prop In Lane		0.00	0.14		1.00	0.00
Lane Grp Cap(c), veh/h	1864		900	841	538	
V/C Ratio(X)	0.41		0.38	0.40	0.90	
Avail Cap(c_a), veh/h	1864		900	841	818	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.4	0.0	10.1	10.4	24.9	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.2	1.4	8.8	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	3.2	0.0	2.9	3.0	8.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.1	0.0	11.3	11.8	33.6	0.0
LnGrp LOS	B		B	B	C	
Approach Vol, veh/h	758			682	483	
Approach Delay, s/veh	11.1			11.6	33.6	
Approach LOS	B			B	C	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		28.0		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		21.8		11.7		11.5
Green Ext Time (p_c), s		1.3		5.2		4.3

Intersection Summary

HCM 7th Control Delay, s/veh	16.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Lanes, Volumes, Timings  
8: I287 NB Ramp & Weston Canal Rd/Canal Rd

09-FBSA-2  
08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	349	394	189	189	471	37
Future Volume (vph)	349	394	189	189	471	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Fr <sub>t</sub>	0.920				0.990	
Fl <sub>t</sub> Protected				0.976	0.956	
Satd. Flow (prot)	3224	0	0	3454	1746	0
Fl <sub>t</sub> Permitted				0.538	0.956	
Satd. Flow (perm)	3224	0	0	1904	1746	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	497			333	630	
Travel Time (s)	7.5			5.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	379	428	205	205	512	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	807	0	0	410	552	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	75	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						

Lanes, Volumes, Timings  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

09-FBSA-2  
 08/14/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	47.0		47.0	47.0	23.0	
Total Split (s)	47.0		47.0	47.0	40.0	
Total Split (%)	54.0%		54.0%	54.0%	46.0%	
Maximum Green (s)	40.0		40.0	40.0	35.0	
Yellow Time (s)	5.0		5.0	5.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	7.0			7.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		Max	Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Don't Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effect Green (s)	40.2			40.2	29.4	
Actuated g/C Ratio	0.49			0.49	0.36	
v/c Ratio	0.51			0.44	0.88	
Control Delay (s/veh)	16.3			16.4	41.1	
Queue Delay	0.0			0.0	0.0	
Total Delay (s/veh)	16.3			16.4	41.1	
LOS	B			B	D	
Approach Delay (s/veh)	16.3			16.4	41.1	
Approach LOS	B			B	D	

Intersection Summary

Area Type:	Other
Cycle Length:	87
Actuated Cycle Length:	81.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.88
Intersection Signal Delay (s/veh):	24.1
Intersection LOS:	C
Intersection Capacity Utilization:	77.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 8: I287 NB Ramp & Weston Canal Rd/Canal Rd



HCM 7th Signalized Intersection Summary  
 8: I287 NB Ramp & Weston Canal Rd/Canal Rd

09-FBSA-2  
 08/14/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	349	394	189	189	471	37
Future Volume (veh/h)	349	394	189	189	471	37
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	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1856	1856
Adj Flow Rate, veh/h	379	0	205	205	512	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	2	2	3	3
Cap, veh/h	1841		561	845	566	
Arrive On Green	0.52	0.00	0.52	0.52	0.32	0.00
Sat Flow, veh/h	3711	0	893	1702	1764	0
Grp Volume(v), veh/h	379	0	205	205	513	0
Grp Sat Flow(s),veh/h/ln	1763	0	893	1617	1767	0
Q Serve(g_s), s	4.4	0.0	10.5	5.3	21.3	0.0
Cycle Q Clear(g_c), s	4.4	0.0	14.9	5.3	21.3	0.0
Prop In Lane		0.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1841		561	845	567	
V/C Ratio(X)	0.21		0.37	0.24	0.90	
Avail Cap(c_a), veh/h	1841		561	845	808	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	13.8	10.0	24.9	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.7	10.3	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	1.5	0.0	2.3	1.7	9.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.0	0.0	15.6	10.7	35.2	0.0
LnGrp LOS	B		B	B	D	
Approach Vol, veh/h	379			410	513	
Approach Delay, s/veh	10.0			13.2	35.2	
Approach LOS	B			B	D	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		29.6		47.0		47.0
Change Period (Y+Rc), s		5.0		7.0		7.0
Max Green Setting (Gmax), s		35.0		40.0		40.0
Max Q Clear Time (g_c+I1), s		23.3		6.4		16.9
Green Ext Time (p_c), s		1.3		2.4		2.6

Intersection Summary

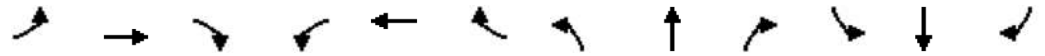
HCM 7th Control Delay, s/veh	20.9
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

09-FBSA-2  
08/14/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	58	10	49	59	115	5	371	40	47	305	66
Future Volume (vph)	92	58	10	49	59	115	5	371	40	47	305	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		275	150		0	225		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850		0.985			0.973	
Flt Protected	0.950				0.978		0.950			0.950		
Satd. Flow (prot)	1770	1824	0	0	1822	1583	1770	1835	0	1770	1812	0
Flt Permitted	0.950				0.820		0.524			0.388		
Satd. Flow (perm)	1770	1824	0	0	1527	1583	976	1835	0	723	1812	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		894			1400			1216			1225	
Travel Time (s)		13.5			21.2			18.4			18.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	96	60	10	51	61	120	5	386	42	49	318	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	70	0	0	112	120	5	428	0	49	387	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases		4		8		8	2			6		

Lanes, Volumes, Timings  
9: Davidson Ave & Pierce St

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08/14/2024

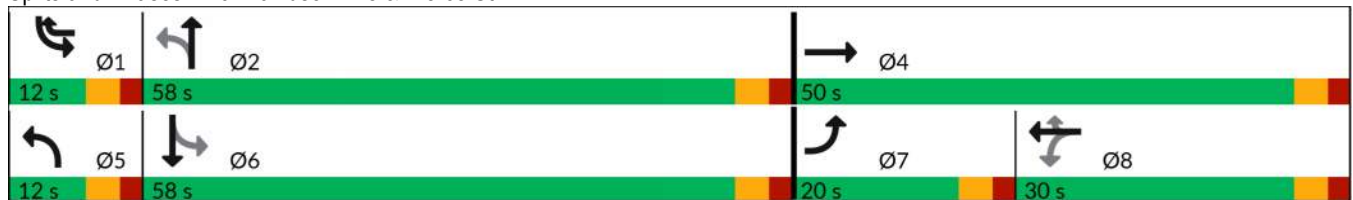


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	45.0		30.0	30.0	12.0	12.0	58.0		12.0	23.0	
Total Split (s)	20.0	50.0		30.0	30.0	12.0	12.0	58.0		12.0	58.0	
Total Split (%)	16.7%	41.7%		25.0%	25.0%	10.0%	10.0%	48.3%		10.0%	48.3%	
Maximum Green (s)	15.0	45.0		25.0	25.0	7.0	7.0	53.0		7.0	53.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max		None	Max	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	10.8	25.6			12.7	24.8	60.7	53.6		64.9	63.6	
Actuated g/C Ratio	0.11	0.25			0.13	0.24	0.60	0.53		0.64	0.63	
v/c Ratio	0.51	0.15			0.59	0.31	0.01	0.44		0.09	0.34	
Control Delay (s/veh)	54.5	28.2			56.1	35.0	9.6	18.7		9.5	13.1	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	54.5	28.2			56.1	35.0	9.6	18.7		9.5	13.1	
LOS	D	C			E	D	A	B		A	B	
Approach Delay (s/veh)		43.4			45.2			18.6			12.7	
Approach LOS		D			D			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	101.5
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.59
Intersection Signal Delay (s/veh):	24.7
Intersection LOS:	C
Intersection Capacity Utilization:	52.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 9: Davidson Ave & Pierce St

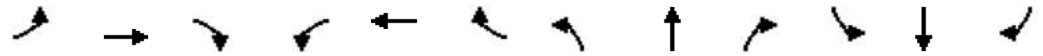


HCM 7th Signalized Intersection Summary

09-FBSA-2

9: Davidson Ave & Pierce St

08/14/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	58	10	49	59	115	5	371	40	47	305	66
Future Volume (veh/h)	92	58	10	49	59	115	5	371	40	47	305	66
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	96	60	10	51	61	120	5	386	42	49	318	69
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	346	58	118	98	242	595	936	102	588	907	197
Arrive On Green	0.07	0.22	0.22	0.10	0.10	0.10	0.01	0.56	0.56	0.05	0.61	0.61
Sat Flow, veh/h	1781	1563	260	630	985	1585	1781	1658	180	1781	1489	323
Grp Volume(v), veh/h	96	0	70	112	0	120	5	0	428	49	0	387
Grp Sat Flow(s),veh/h/ln	1781	0	1823	1615	0	1585	1781	0	1838	1781	0	1812
Q Serve(g_s), s	5.0	0.0	2.9	5.1	0.0	6.5	0.1	0.0	12.4	1.0	0.0	10.0
Cycle Q Clear(g_c), s	5.0	0.0	2.9	6.2	0.0	6.5	0.1	0.0	12.4	1.0	0.0	10.0
Prop In Lane	1.00		0.14	0.46		1.00	1.00		0.10	1.00		0.18
Lane Grp Cap(c), veh/h	123	0	404	216	0	242	595	0	1038	588	0	1104
V/C Ratio(X)	0.78	0.00	0.17	0.52	0.00	0.50	0.01	0.00	0.41	0.08	0.00	0.35
Avail Cap(c_a), veh/h	285	0	874	480	0	507	711	0	1038	625	0	1104
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	29.6	40.8	0.0	36.4	8.7	0.0	11.6	7.6	0.0	9.1
Incr Delay (d2), s/veh	10.0	0.0	0.2	1.9	0.0	1.6	0.0	0.0	1.2	0.1	0.0	0.9
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	1.2	2.5	0.0	2.5	0.0	0.0	4.7	0.3	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	53.0	0.0	29.8	42.7	0.0	38.0	8.7	0.0	12.8	7.7	0.0	10.0
LnGrp LOS	D		C	D		D	A		B	A		A
Approach Vol, veh/h		166			232			433				436
Approach Delay, s/veh		43.2			40.3			12.8				9.7
Approach LOS		D			D			B				A
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	58.0		25.8	5.9	62.2	11.5	14.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	53.0		45.0	7.0	53.0	15.0	25.0				
Max Q Clear Time (g_c+I1), s	3.0	14.4		4.9	2.1	12.0	7.0	8.5				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	2.3	0.1	0.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			20.7									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↓	↓	↓↓
Traffic Volume (vph)	429	74	451	398	71	518
Future Volume (vph)	429	74	451	398	71	518
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		100	250
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950	0.995	0.950	
Satd. Flow (prot)	3539	1583	1681	1761	1770	2787
Flt Permitted			0.950	0.995	0.950	
Satd. Flow (perm)	3539	1583	1681	1761	1770	2787
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	45	
Link Distance (ft)	352			349	1131	
Travel Time (s)	5.3			5.3	17.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	447	77	470	415	74	540
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	447	77	423	462	74	540
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	6	
Crosswalk Width(ft)	40			40	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Prot	Split	NA	Prot	pt+ov
Protected Phases	2	2	8	8	4	4 8
Permitted Phases						

Lanes, Volumes, Timings  
10: Davidson Ave & Easton Ave

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2	2	8	8	4	4 8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	35.2	35.2	32.7	32.7	16.5	54.2
Actuated g/C Ratio	0.35	0.35	0.33	0.33	0.17	0.55
v/c Ratio	0.36	0.14	0.77	0.80	0.25	0.36
Control Delay (s/veh)	25.8	24.7	40.8	42.5	38.9	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.8	24.7	40.8	42.5	38.9	13.3
LOS	C	C	D	D	D	B
Approach Delay (s/veh)	25.6			41.7	16.4	
Approach LOS	C			D	B	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99.4
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.80
Intersection Signal Delay (s/veh):	29.8
Intersection LOS:	C
Intersection Capacity Utilization:	51.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 10: Davidson Ave & Easton Ave



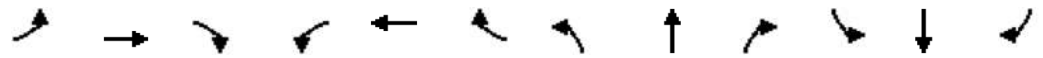


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
11: NJ Route 27 & Veronica Ave/How Ln

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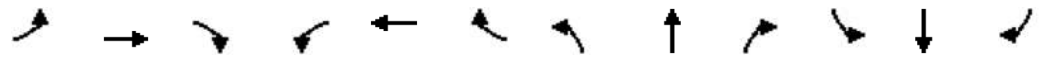


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	308	99	159	307	41	104	563	169	277	517	69
Future Volume (vph)	97	308	99	159	307	41	104	563	169	277	517	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		0	0		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.964			0.982			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1829	0	1770	3415	0	1770	1863	1583
Flt Permitted	0.326			0.178			0.230			0.240		
Satd. Flow (perm)	607	1796	0	332	1829	0	428	3415	0	447	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		284			442			406			290	
Travel Time (s)		4.3			6.7			6.2			4.4	
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
Adj. Flow (vph)	102	324	104	167	323	43	109	593	178	292	544	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	428	0	167	366	0	109	771	0	292	544	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			-6			0	
Crosswalk Width(ft)		30			30			36			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		6



HCM 7th Signalized Intersection Summary  
 11: NJ Route 27 & Veronica Ave/How Ln

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	308	99	159	307	41	104	563	169	277	517	69
Future Volume (veh/h)	97	308	99	159	307	41	104	563	169	277	517	69
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	102	324	104	167	323	43	109	593	178	292	544	73
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	276	349	112	238	451	60	314	1031	309	378	782	663
Arrive On Green	0.06	0.26	0.26	0.08	0.28	0.28	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	1781	1357	435	1781	1616	215	1781	2695	807	1781	1870	1585
Grp Volume(v), veh/h	102	0	428	167	0	366	109	391	380	292	544	73
Grp Sat Flow(s),veh/h/ln	1781	0	1792	1781	0	1832	1781	1777	1725	1781	1870	1585
Q Serve(g_s), s	4.2	0.0	23.3	6.7	0.0	18.0	3.7	17.4	17.5	9.0	23.9	2.8
Cycle Q Clear(g_c), s	4.2	0.0	23.3	6.7	0.0	18.0	3.7	17.4	17.5	9.0	23.9	2.8
Prop In Lane	1.00		0.24	1.00		0.12	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	461	238	0	511	314	680	660	378	782	663
V/C Ratio(X)	0.37	0.00	0.93	0.70	0.00	0.72	0.35	0.57	0.58	0.77	0.70	0.11
Avail Cap(c_a), veh/h	315	0	484	238	0	511	377	680	660	378	782	663
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	26.2	0.0	36.2	26.8	0.0	32.5	19.3	24.4	24.4	20.3	23.9	17.7
Incr Delay (d2), s/veh	0.8	0.0	23.8	8.9	0.0	4.8	0.7	3.5	3.6	9.6	5.1	0.3
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	1.7	0.0	12.6	3.3	0.0	8.2	1.5	7.5	7.3	4.7	10.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.1	0.0	60.0	35.8	0.0	37.2	19.9	27.9	28.1	29.9	28.9	18.1
LnGrp LOS	C		E	D		D	B	C	C	C	C	B
Approach Vol, veh/h		530			533			880			909	
Approach Delay, s/veh		53.7			36.8			27.0			28.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	45.3	11.0	31.7	8.5	48.8	8.8	33.9				
Change Period (Y+Rc), s	3.0	7.0	3.0	6.0	3.0	7.0	3.0	6.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	27.0	9.0	37.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	11.0	19.5	8.7	25.3	5.7	25.9	6.2	20.0				
Green Ext Time (p_c), s	0.0	4.2	0.0	0.4	0.1	2.6	0.0	1.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			34.2									
HCM 7th LOS			C									

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↗		↕	
Traffic Volume (vph)	0	448	261	91	461	0	370	0	98	0	0	0
Future Volume (vph)	0	448	261	91	461	0	370	0	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	1		1	0		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945							0.850			
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3345	0	1770	3539	0	1770	0	1583	0	1863	0
Flt Permitted				0.238			0.950					
Satd. Flow (perm)	0	3345	0	443	3539	0	1770	0	1583	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		684			399			410			198	
Travel Time (s)		10.4			6.0			6.2			3.0	
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	482	281	98	496	0	398	0	105	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	763	0	98	496	0	398	0	105	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			12			-30	
Crosswalk Width(ft)		50			40			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1		1	1		2
Detector Template		Thru		Left	Thru		Left		Right	Left		Thru
Leading Detector (ft)		100		20	100		20		20	20		100
Trailing Detector (ft)		0		0	0		0		0	0		0
Detector 1 Position(ft)		0		0	0		0		0	0		0
Detector 1 Size(ft)		6		20	6		20		20	20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		pm+pt	NA		Prot		pm+ov			
Protected Phases		4		3	8		2		3			1
Permitted Phases				8					2		1	

Lanes, Volumes, Timings  
12: Veronica Ave & Hamilton St

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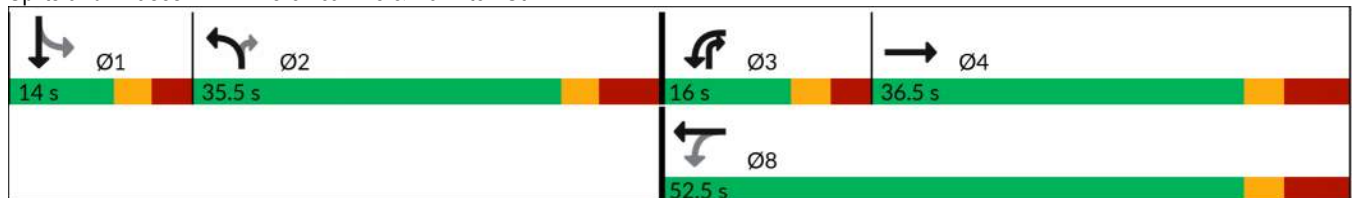


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		4		3	8		2		3	1	1	
Switch Phase												
Minimum Initial (s)		7.0		5.0	7.0		7.0		5.0	7.0	7.0	
Minimum Split (s)		36.5		11.0	52.5		35.5		11.0	14.0	14.0	
Total Split (s)		36.5		16.0	52.5		35.5		16.0	14.0	14.0	
Total Split (%)		35.8%		15.7%	51.5%		34.8%		15.7%	13.7%	13.7%	
Maximum Green (s)		28.5		10.0	44.5		28.0		10.0	8.0	8.0	
Yellow Time (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		5.0		3.0	5.0		4.5		3.0	3.0	3.0	
Lost Time Adjust (s)		2.5		1.0	2.5		2.0		1.0		3.0	
Total Lost Time (s)		10.5		7.0	10.5		9.5		7.0		9.0	
Lead/Lag		Lag		Lead			Lag		Lead	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max		None	Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0					
Flash Don't Walk (s)		15.0			15.0		15.0					
Pedestrian Calls (#/hr)		0			0		0					
Act Effect Green (s)		28.2		45.6	42.1		22.5		38.8			
Actuated g/C Ratio		0.33		0.54	0.50		0.27		0.46			
v/c Ratio		0.68		0.28	0.28		0.85		0.14			
Control Delay (s/veh)		29.1		12.6	13.5		47.2		13.1			
Queue Delay		0.0		0.0	0.0		0.0		0.0			
Total Delay (s/veh)		29.1		12.6	13.5		47.2		13.1			
LOS		C		B	B		D		B			
Approach Delay (s/veh)		29.1			13.4			40.1				
Approach LOS		C			B			D				

Intersection Summary

Area Type:	Other
Cycle Length:	102
Actuated Cycle Length:	84.6
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.85
Intersection Signal Delay (s/veh):	27.0
Intersection LOS:	C
Intersection Capacity Utilization:	64.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 12: Veronica Ave & Hamilton St

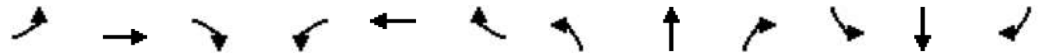


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HCM 7th Edition methodology expects strict NEMA phasing.

Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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 08/14/2024

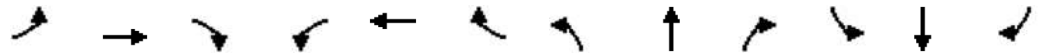


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (vph)	0	1007	3	0	1089	0	768	0	152	154	124	3
Future Volume (vph)	0	1007	3	0	1089	0	768	0	152	154	124	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	0.95
Fr t									0.850		0.998	
Flt Protected							0.950				0.973	
Satd. Flow (prot)	0	3539	0	0	3539	0	3433	0	1583	0	3437	0
Flt Permitted							0.950				0.973	
Satd. Flow (perm)	0	3539	0	0	3539	0	3433	0	1583	0	3437	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		883			274			383			118	
Travel Time (s)		13.4			4.2			5.8			1.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1049	3	0	1134	0	800	0	158	160	129	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1052	0	0	1134	0	800	0	158	0	292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2			2		1		1	1	2	
Detector Template		Thru			Thru		Left		Right	Left	Thru	
Leading Detector (ft)		100			100		20		20	20	100	
Trailing Detector (ft)		0			0		0		0	0	0	
Detector 1 Position(ft)		0			0		0		0	0	0	
Detector 1 Size(ft)		6			6		20		20	20	6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0		0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA			NA		Prot		Prot	Split	NA	
Protected Phases		2			6		3		3	4	4	
Permitted Phases												
Detector Phase		2			6		3		3	4	4	
Switch Phase												
Minimum Initial (s)		12.0			12.0		7.0		7.0	7.0	7.0	



Lanes, Volumes, Timings  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

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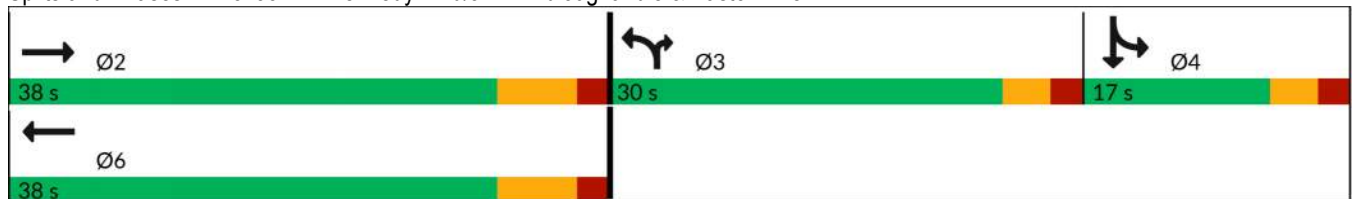


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		38.0			38.0		23.0		23.0	12.0	12.0	
Total Split (s)		38.0			38.0		30.0		30.0	17.0	17.0	
Total Split (%)		44.7%			44.7%		35.3%		35.3%	20.0%	20.0%	
Maximum Green (s)		31.0			31.0		25.0		25.0	12.0	12.0	
Yellow Time (s)		5.0			5.0		3.0		3.0	3.0	3.0	
All-Red Time (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0		0.0		0.0	
Total Lost Time (s)		7.0			7.0		5.0		5.0		5.0	
Lead/Lag							Lead		Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0		3.0	3.0	3.0	
Recall Mode		Max			Max		None		None	None	None	
Walk Time (s)		7.0			7.0		7.0		7.0			
Flash Don't Walk (s)		11.0			11.0		11.0		11.0			
Pedestrian Calls (#/hr)		0			0		0		0			
Act Effect Green (s)		31.1			31.1		22.9		22.9		11.0	
Actuated g/C Ratio		0.38			0.38		0.28		0.28		0.13	
v/c Ratio		0.78			0.85		0.84		0.36		0.63	
Control Delay (s/veh)		28.3			31.4		36.9		26.4		40.7	
Queue Delay		0.0			0.0		0.0		0.0		0.0	
Total Delay (s/veh)		28.3			31.4		36.9		26.4		40.7	
LOS		C			C		D		C		D	
Approach Delay (s/veh)		28.3			31.4			35.1			40.7	
Approach LOS		C			C			D			D	

Intersection Summary

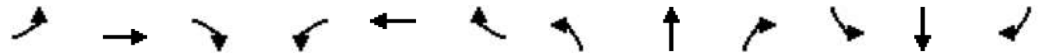
Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 82  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay (s/veh): 32.3      Intersection LOS: C  
 Intersection Capacity Utilization 73.9%      ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave



HCM 7th Signalized Intersection Summary  
 13: John F Kennedy Blvd/JFK Blvd Jughandle & Easton Ave

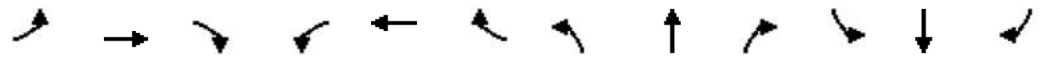
09-FBSA-2  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑↑		↑		↑↑	
Traffic Volume (veh/h)	0	1007	3	0	1089	0	768	0	152	154	124	3
Future Volume (veh/h)	0	1007	3	0	1089	0	768	0	152	154	124	3
Initial Q (Qb), veh	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	0	1870	1870	0	1870	0	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1049	3	0	1134	0	800	0	158	160	129	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	0	2	0	2	2	2	2
Cap, veh/h	0	2259	6	0	2209	0	0	0	0	246	251	6
Arrive On Green	0.00	0.62	0.62	0.00	0.62	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3728	10	0	3741	0		0		1781	1820	42
Grp Volume(v), veh/h	0	513	539	0	1134	0		0.0		160	0	132
Grp Sat Flow(s),veh/h/ln	0	1777	1868	0	1777	0				1781	0	1863
Q Serve(g_s), s	0.0	7.7	7.7	0.0	8.8	0.0				4.2	0.0	3.3
Cycle Q Clear(g_c), s	0.0	7.7	7.7	0.0	8.8	0.0				4.2	0.0	3.3
Prop In Lane	0.00		0.01	0.00		0.00				1.00		0.02
Lane Grp Cap(c), veh/h	0	1104	1161	0	2209	0				246	0	257
V/C Ratio(X)	0.00	0.46	0.46	0.00	0.51	0.00				0.65	0.00	0.51
Avail Cap(c_a), veh/h	0	1104	1161	0	2209	0				429	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	5.0	0.0	5.2	0.0				20.4	0.0	19.9
Incr Delay (d2), s/veh	0.0	1.4	1.3	0.0	0.9	0.0				2.9	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.7	0.0	1.7	0.0				1.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	6.4	6.4	0.0	6.1	0.0				23.3	0.0	21.5
LnGrp LOS		A	A		A					C		C
Approach Vol, veh/h		1052			1134							292
Approach Delay, s/veh		6.4			6.1							22.5
Approach LOS		A			A							C
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		11.9		38.0						
Change Period (Y+Rc), s		7.0		5.0		7.0						
Max Green Setting (Gmax), s		31.0		12.0		31.0						
Max Q Clear Time (g_c+I1), s		9.7		6.2		10.8						
Green Ext Time (p_c), s		6.4		0.7		7.6						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				8.2								
HCM 7th LOS				A								

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

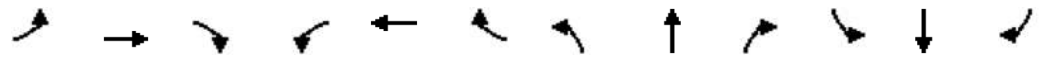
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	467	75	41	505	275	86	220	46	190	196	132
Future Volume (vph)	90	467	75	41	505	275	86	220	46	190	196	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	165		0	200		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3465	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.408			0.421			0.604			0.426		
Satd. Flow (perm)	760	3465	0	784	3539	1583	1125	1863	1583	794	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		572			356			562			410	
Travel Time (s)		8.7			5.4			8.5			6.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	94	486	78	43	526	286	90	229	48	198	204	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	564	0	43	526	286	90	229	48	198	204	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6

Lanes, Volumes, Timings  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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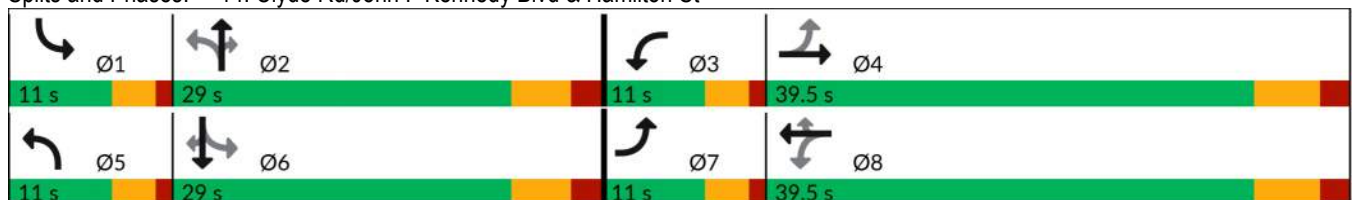


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (s)	11.0	39.5		11.0	39.5	39.5	11.0	29.0	29.0	11.0	29.0	29.0
Total Split (%)	12.2%	43.6%		12.2%	43.6%	43.6%	12.2%	32.0%	32.0%	12.2%	32.0%	32.0%
Maximum Green (s)	7.0	33.0		7.0	33.0	33.0	7.0	23.0	23.0	7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5	6.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		12.0			12.0	12.0		9.0	9.0		9.0	9.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effect Green (s)	42.0	35.6		41.2	33.4	33.4	24.2	15.1	15.1	25.1	17.8	17.8
Actuated g/C Ratio	0.52	0.44		0.51	0.41	0.41	0.30	0.19	0.19	0.31	0.22	0.22
v/c Ratio	0.19	0.37		0.09	0.36	0.44	0.23	0.66	0.16	0.59	0.50	0.40
Control Delay (s/veh)	10.7	17.8		10.0	18.6	21.5	20.1	40.4	29.0	28.8	34.1	32.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.7	17.8		10.0	18.6	21.5	20.1	40.4	29.0	28.8	34.1	32.9
LOS	B	B		A	B	C	C	D	C	C	C	C
Approach Delay (s/veh)		16.7			19.2			33.9			31.8	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90.5
Actuated Cycle Length:	80.6
Natural Cycle:	95
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.66
Intersection Signal Delay (s/veh):	23.6
Intersection LOS:	C
Intersection Capacity Utilization:	60.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 14: Clyde Rd/John F Kennedy Blvd & Hamilton St



HCM 7th Signalized Intersection Summary  
 14: Clyde Rd/John F Kennedy Blvd & Hamilton St

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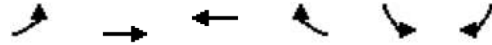
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	90	467	75	41	505	275	86	220	46	190	196	132
Future Volume (veh/h)	90	467	75	41	505	275	86	220	46	190	196	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	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	94	486	78	43	526	0	90	229	48	198	204	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	508	1356	217	472	1487		305	291	246	291	314	
Arrive On Green	0.08	0.44	0.44	0.05	0.42	0.00	0.08	0.16	0.16	0.09	0.17	0.00
Sat Flow, veh/h	1781	3069	490	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	94	280	284	43	526	0	90	229	48	198	204	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1782	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.2	8.2	8.3	1.0	8.0	0.0	3.2	9.3	2.1	7.0	8.0	0.0
Cycle Q Clear(g_c), s	2.2	8.2	8.3	1.0	8.0	0.0	3.2	9.3	2.1	7.0	8.0	0.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	508	785	787	472	1487		305	291	246	291	314	
V/C Ratio(X)	0.19	0.36	0.36	0.09	0.35		0.30	0.79	0.19	0.68	0.65	
Avail Cap(c_a), veh/h	528	785	787	534	1487		327	545	462	291	545	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.0	14.6	14.6	11.5	15.7	0.0	24.8	32.1	29.0	26.5	30.7	0.0
Incr Delay (d2), s/veh	0.2	1.3	1.3	0.1	0.7	0.0	0.5	4.7	0.4	6.3	2.3	0.0
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	0.8	3.2	3.2	0.4	3.0	0.0	1.3	4.3	0.8	3.4	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.2	15.9	15.9	11.6	16.3	0.0	25.4	36.8	29.4	32.9	32.9	0.0
LnGrp LOS	B	B	B	B	B		C	D	C	C	C	
Approach Vol, veh/h		658			569			367			402	
Approach Delay, s/veh		15.2			16.0			33.0			32.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	18.3	8.3	41.3	10.0	19.2	10.1	39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	4.0	6.0	4.0	6.5				
Max Green Setting (Gmax), s	7.0	23.0	7.0	33.0	7.0	23.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	11.3	3.0	10.3	5.2	10.0	4.2	10.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	3.1	0.0	0.7	0.0	3.2				

Intersection Summary												
HCM 7th Control Delay, s/veh											22.3	
HCM 7th LOS											C	

Notes  
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings  
 15: Easton Ave & NB Ramp to JFK Pkwy

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			
Traffic Volume (vph)	0	1089	280	0	0	0
Future Volume (vph)	0	1089	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	5085	3539	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	5085	3539	0	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		274	638		298	
Travel Time (s)		4.2	9.7		4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1184	304	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	1184	304	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	256	33	35	259	38	23	44	30	45	25	312
Future Volume (vph)	163	256	33	35	259	38	23	44	30	45	25	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.983				0.850			0.850		0.861	
Fl <sub>t</sub> Protected	0.950			0.950				0.983		0.950		
Satd. Flow (prot)	1770	1831	0	1770	1863	1583	0	1831	1583	1770	1604	0
Fl <sub>t</sub> Permitted	0.513			0.577				0.773		0.575		
Satd. Flow (perm)	956	1831	0	1075	1863	1583	0	1440	1583	1071	1604	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		280			422			374			285	
Travel Time (s)		5.5			8.2			5.7			4.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	170	267	34	36	270	40	24	46	31	47	26	325
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	301	0	36	270	40	0	70	31	47	351	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Lanes, Volumes, Timings  
63: Manor Blvd/Davidson Ave & New Brunswick Rd

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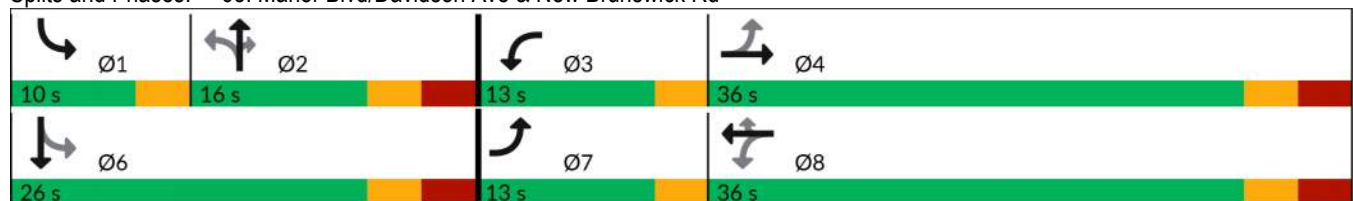


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	10.0	24.0		13.0	24.0	24.0	13.0	13.0	13.0	10.0	24.0	
Total Split (s)	13.0	36.0		13.0	36.0	36.0	16.0	16.0	16.0	10.0	26.0	
Total Split (%)	17.3%	48.0%		17.3%	48.0%	48.0%	21.3%	21.3%	21.3%	13.3%	34.7%	
Maximum Green (s)	10.0	30.0		10.0	30.0	30.0	10.0	10.0	10.0	7.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0	6.0		6.0	6.0	3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max		None	Max	Max	None	None	None	None	None	
Walk Time (s)		7.0		7.0	7.0						7.0	
Flash Don't Walk (s)		11.0		11.0	11.0						11.0	
Pedestrian Calls (#/hr)		0		0	0						0	
Act Effect Green (s)	45.1	38.2		40.1	30.1	30.1		12.7	12.7	21.5	18.5	
Actuated g/C Ratio	0.62	0.53		0.55	0.41	0.41		0.17	0.17	0.30	0.25	
v/c Ratio	0.24	0.31		0.05	0.35	0.06		0.28	0.11	0.12	0.86	
Control Delay (s/veh)	7.1	12.5		6.2	16.9	14.2		32.1	29.5	19.4	48.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	7.1	12.5		6.2	16.9	14.2		32.1	29.5	19.4	48.2	
LOS	A	B		A	B	B		C	C	B	D	
Approach Delay (s/veh)		10.6			15.5			31.3			44.8	
Approach LOS		B			B			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	72.6
Natural Cycle:	65
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.86
Intersection Signal Delay (s/veh):	23.8
Intersection LOS:	C
Intersection Capacity Utilization:	58.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 63: Manor Blvd/Davidson Ave & New Brunswick Rd





HCM 7th Signalized Intersection Summary  
 63: Manor Blvd/Davidson Ave & New Brunswick Rd

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	163	256	33	35	259	38	23	44	30	45	25	312	
Future Volume (veh/h)	163	256	33	35	259	38	23	44	30	45	25	312	
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	170	267	34	36	270	40	24	46	31	47	26	325	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	642	785	100	605	814	690	90	129	230	259	30	370	
Arrive On Green	0.10	0.48	0.48	0.05	0.44	0.44	0.15	0.15	0.15	0.06	0.25	0.25	
Sat Flow, veh/h	1781	1626	207	1781	1870	1585	133	884	1585	1781	119	1484	
Grp Volume(v), veh/h	170	0	301	36	270	40	70	0	31	47	0	351	
Grp Sat Flow(s),veh/h/ln	1781	0	1833	1781	1870	1585	1018	0	1585	1781	0	1603	
Q Serve(g_s), s	3.2	0.0	7.0	0.7	6.6	1.0	0.2	0.0	1.2	1.4	0.0	14.5	
Cycle Q Clear(g_c), s	3.2	0.0	7.0	0.7	6.6	1.0	7.5	0.0	1.2	1.4	0.0	14.5	
Prop In Lane	1.00		0.11	1.00		1.00	0.34		1.00	1.00		0.93	
Lane Grp Cap(c), veh/h	642	0	884	605	814	690	218	0	230	259	0	399	
V/C Ratio(X)	0.26	0.00	0.34	0.06	0.33	0.06	0.32	0.00	0.13	0.18	0.00	0.88	
Avail Cap(c_a), veh/h	727	0	884	774	814	690	218	0	230	333	0	465	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	7.9	0.0	11.0	9.4	12.8	11.3	26.3	0.0	25.7	21.4	0.0	24.9	
Incr Delay (d2), s/veh	0.2	0.0	1.0	0.0	1.1	0.2	0.8	0.0	0.3	0.3	0.0	15.6	
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	1.0	0.0	2.7	0.3	2.7	0.3	1.0	0.0	0.4	0.6	0.0	6.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	8.2	0.0	12.1	9.4	13.9	11.4	27.1	0.0	25.9	21.7	0.0	40.5	
LnGrp LOS	A		B	A	B	B	C		C	C		D	
Approach Vol, veh/h	471						346		101		398		
Approach Delay, s/veh	10.7						13.2		26.7		38.2		
Approach LOS	B						B		C		D		
Timer - Assigned Phs	1	2	3	4	6		7	8					
Phs Duration (G+Y+Rc), s	7.2	16.0	6.5	39.2	23.2		9.7	36.0					
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	6.0		3.0	6.0					
Max Green Setting (Gmax), s	7.0	10.0	10.0	30.0	20.0		10.0	30.0					
Max Q Clear Time (g_c+I1), s	3.4	9.5	2.7	9.0	16.5		5.2	8.6					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.7		0.2	1.6					
<b>Intersection Summary</b>													
HCM 7th Control Delay, s/veh			20.9										
HCM 7th LOS			C										

Lanes, Volumes, Timings  
68: Weston Canal Rd & Manville Causeway

09-FBSA-2  
08/14/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	668	54	53	15	12	544
Future Volume (vph)	668	54	53	15	12	544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.990				0.868	
Fl <sub>t</sub> Protected	0.956			0.962		
Satd. Flow (prot)	1763	0	0	1792	1617	0
Fl <sub>t</sub> Permitted	0.956			0.962		
Satd. Flow (perm)	1763	0	0	1792	1617	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	241			220	261	
Travel Time (s)	4.7			4.3	5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	726	59	58	16	13	591
Shared Lane Traffic (%)						
Lane Group Flow (vph)	785	0	0	74	604	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Stop	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	88.3%
Analysis Period (min)	15
	ICU Level of Service E

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	668	54	53	15	12	544
Future Vol, veh/h	668	54	53	15	12	544
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	726	59	58	16	13	591

Major/Minor	Minor2	Major2		
Conflicting Flow All	309	309	-	0
Stage 1	309	309	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.42	6.52	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	-
Pot Cap-1 Maneuver	684	606	-	-
Stage 1	745	660	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	684	0	-	-
Mov Cap-2 Maneuver	684	0	-	-
Stage 1	745	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s/v	10.9	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBLn1	SBT	SBR
Capacity (veh/h)	684	-	-
HCM Lane V/C Ratio	0.108	-	-
HCM Control Delay (s/veh)	10.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-