Traffic Study

WESTWOOD MIDDLE SCHOOL TEMPORARY MODULAR SCHOOL

City of Gainesville, Alachua County, FL

Prepared for:

Alachua County Public Schools

Prepared by:

Kimley-Horn and Associates, Inc.

142880000
February 2020

747 SW 2nd Avenue, Suite 171
Gainesville, FL 32601

Kimley»Horn

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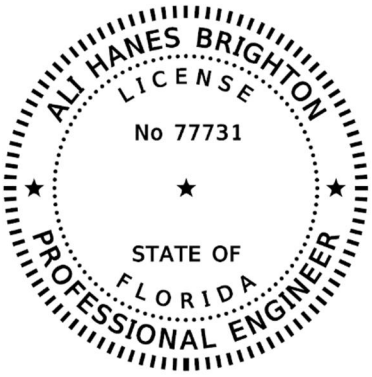

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February 2020

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EXECUTIVE SUMMARY

Alachua County Public Schools (ACPS) has proposed utilizing temporary transition schools to facilitate the renovations at several schools across the county. One of the proposed locations for a transition school is in the vacant field area on the south end of the existing Westwood Middle School campus, east of State Road 121 (SR 121)/NW 34th Street and south of NW 15th Avenue in Gainesville, Florida. If implemented, the proposed Temporary Modular School is proposed to host students and faculty from Howard Bishop Middle School during the 2020–2021 school year, Westwood Middle School during the 2021–2022 school year, and Littlewood Elementary School during the 2022–2023 school year.

This study evaluated intersection and roadway segment operations in the vicinity of the proposed Temporary Modular School for each school year in order to identify any deficiencies that may require improvements or mitigation while the Temporary Modular School is in use. The following four scenarios for the Temporary Modular School were studied:

- Howard Bishop Middle School at the Temporary Modular School staggered 45 minutes later than the standard ACPS middle school bell schedule during the 2020–2021 school year
- Howard Bishop Middle School at the Temporary Modular School with Westwood Middle School staggered 20 minutes later than the standard ACPS middle school bell schedule during the 2020–2021 school year
- Westwood Middle School at the Temporary Modular School during the 2021–2022 school year
- Littlewood Elementary School at the Temporary Modular School during the 2022–2023 school year

The study intersections are expected to operate at adopted levels of service or better during the school's AM and PM peak hours with the exception of the stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's arrival and dismissal periods under several of the Temporary Modular School study scenarios. However, the traffic impacts from each of the study scenarios are not expected to result in any significant and adverse impacts on the study area roadway segments.

Signal warrant analyses were performed at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue. The signal warrant analyses indicated that Warrant 2 (Four-Hour Vehicular Volume) and Warrant 3 (Peak Hour Volume) may be met during the school's arrival and dismissal periods under several of the Temporary Modular School study scenarios.

Based on the results of the intersection operation and signal warrant analyses, it is recommended that law enforcement officer (LEO) control of traffic be implemented for the following intersections and time periods:

- At the intersection of NW 8th Avenue at NW 31st Drive during the school's arrival and dismissal periods under the Howard Bishop 2020-2021 Temporary Conditions scenario with 45-minute staggered schedule
- At the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's arrival and dismissal periods under the Howard Bishop 2020-2021 Temporary Conditions scenario with Westwood 20-minute staggered schedule
- At the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's arrival period under the Littlewood 2022-2023 Temporary Conditions scenario

The LEO will facilitate the movement of traffic through the two subject intersections, resulting in traffic operations similar to a traffic signal control stopping the major street movements to allow for movements to and from the minor street (NW 31st Drive). This operational plan is common for facilities of this type in similar locations. In addition to the LEO control noted above, the following recommendations were made based on the field observations performed at the site:

- It is recommended that the buses for Howard Bishop Middle School utilize the Westside Park parking lot along NW 34th Street and a path be provided for students to reach the Temporary Modular School from there. Note that improvements are proposed for Westside Park from February 2020 through Fall 2020, which may limit the feasibility of utilizing the parking area for buses.
- It is recommended that a new sidewalk connection be added along NW 31st Drive near the existing bus loop area so that students attending the Temporary Modular School have a continuous sidewalk route without having to enter the existing Westwood Middle School campus.

Table of Contents

List of Figures

List of Tables

Appendix

INTRODUCTION

Major renovations are planned in the upcoming school years for the majority of the public schools in Alachua County. Alachua County Public Schools (ACPS) has proposed utilizing temporary transition schools to facilitate the renovations. One of the proposed locations for a transition school is at Westwood Middle School. If implemented, the proposed Temporary Modular School is proposed to host students and faculty from Howard Bishop Middle School during the 2020–2021 school year, Westwood Middle School during the 2021–2022 school year, and Littlewood Elementary School during the 2022–2023 school year.

Purpose and Need

The purpose of this traffic study is to evaluate potential impacts to the surrounding transportation network during each of the respective school years in which the three schools will utilize the Temporary Modular School at Westwood Middle School. The results of this study will be utilized in the decision-making process for determining whether this location will be utilized as a transition school during the renovations at Howard Bishop Middle School, Westwood Middle School, and Littlewood Elementary School.

Location and Study Area

The Temporary Modular School is planned to be located in the vacant field area on the south end of the existing Westwood Middle School campus, east of State Road 121 (SR 121)/NW 34th Street and south of NW 15th Avenue in Gainesville, Florida. The project location is illustrated in **Figure 1**.

The Temporary Modular School will have entirely separate classrooms, administrative spaces, and cafeteria facilities from the existing Westwood Middle School, as well as a separate parking area and parent drop-off/pick-up loop. The existing bus loop at Westwood Middle School or the parking area for Westside Park along SR 121/NW 34th Street may be utilized by both Westwood Middle School and the school using the Temporary Modular School during each respective year. A conceptual layout of the Temporary Modular School is provided in **Appendix A**.

The study area utilized for this traffic study includes six (6) intersections:

- SR 121/NW 34th Street and NW 16th Avenue (signalized)
- SR 121/NW 34th Street and NW 15th Avenue (unsignalized)
- SR 121/NW 34th Street and NW 8th Avenue (signalized)
- NW 31st Drive and NW 16th Avenue (unsignalized)
- NW 31st Drive and NW 15th Avenue (unsignalized)
- NW 31st Drive and NW 8th Avenue (unsignalized)

The study area intersections are identified in **Figure 1**.

FIGURE 1: PROJECT LOCATION

WESTWOOD MIDDLE SCHOOL - TEMPORARY MODULAR SCHOOL TRAFFIC STUDY ALACHUA COUNTY, FLORIDA

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Project No: 142880000 | February 2020 | Page 2

Temporary Modular School Schedules

This traffic study evaluates the temporary traffic conditions over each of the next three school years during student drop-off and pick-up periods at the Temporary Modular School campus. Currently, the first bell for both Howard Bishop Middle School and Westwood Middle School is at 9:20 AM and the final dismissal bell is at 3:37 PM. When Howard Bishop Middle School operates in the Temporary Modular School during the 2020–2021 school year, the bell schedule is planned to be altered in order to minimize the adverse traffic impacts of hosting two middle schools on the same campus. Per direction from ACPS, the analyses in this study assume two staggered scenarios. The first scenario assumes that the Howard Bishop Middle School schedule will be approximately 45 minutes later than the standard ACPS middle school bell schedule at approximately 10:00 AM to 4:15 PM during the 2020–2021 school year. The second scenario considers a reduced staggering to only 20 minutes to maintain the existing shared busing operations between Howard Bishop Middle School and Abraham Lincoln Middle School. This scenario conservatively assumes that the peak hours for Westwood Middle School and Howard Bishop Middle School at the Temporary Modular School occur simultaneously during the 2020–2021 school year.

When Westwood Middle School operates in the Temporary Modular School during the 2021–2022 school year, the bell schedule will remain consistent with current operations.

Littlewood Elementary School's first bell is at 7:45 AM and the final dismissal bell is at 1:52 PM. Since this bell schedule does not interfere or overlap with that of Westwood Middle School, the same bell schedule will be used when Littlewood Elementary School operates from the Temporary Modular School during the 2022–2023 school year.

Data Collection

Existing traffic data within the study area was collected on Tuesday, January 28, 2020. The data collected includes turning movement counts at the six (6) study area intersections from 7:00 AM to 10:30 AM and from 1:00 PM to 5:00 PM, accounting for the peak periods of morning and afternoon school traffic. The turning movement counts included quantities for heavy vehicles, pedestrians, and bicyclists utilizing the study area intersections.

Additionally, approach and departure volumes to and from each of the school driveways were collected in the hours surrounding each school's respective schedules. At Howard Bishop Middle School and Westwood Middle School, driveway counts were collected from 8:00 AM to 10:00 AM and from 2:30 PM to 4:30 PM. At Littlewood Elementary School, driveway counts were collected from 7:00 AM to 9:00 AM and from 1:00 PM to 3:00 PM.

At the two unsignalized intersections of NW 31st Drive with NW 8th Avenue and with NW 16th Avenue, 12-hour continuous turning movement counts were collected from 7:00 AM to 7:00 PM for use in signal warrant analyses at the two intersections.

The existing traffic data was used as a basis for the existing conditions analyses and for forecasting future year turning movement volumes. The turning movement counts are provided in **Appendix B**.

HOWARD BISHOP MIDDLE SCHOOL (2020–2021 SCHOOL YEAR)

The first school planned to operate from the Temporary Modular School is Howard Bishop Middle School. Operations for Howard Bishop Middle School will be conducted in the Temporary Modular School during the 2020–2021 school year.

Field Observations

Existing conditions were observed at Howard Bishop Middle School on Tuesday, January 28, 2020. During the morning arrival period, it was observed that student drop-off times were spread throughout the morning, as opposed to being highly concentrated in the 15 to 30 minutes before first bell. During the afternoon dismissal period, the stacking exceeded the available capacity in the parent pick-up/drop-off loop on NE 9th Street. Additionally, vehicles were observed parking in the striped on-street parking on NE 9th Street and parking along the grass shoulders along NE 19th Place.

Bell Schedule (Existing and Proposed)

Howard Bishop Middle School currently operates with the standard ACPS middle school bell schedule, with first bell at 9:20 AM and the final dismissal bell at 3:37 PM. Turning movements into and out of the Howard Bishop Middle School driveways were collected from 8:00 AM to 10:00 AM and from 2:30 PM to 4:30 PM.

When Howard Bishop Middle School operates in the Temporary Modular School during the 2020–2021 school year, the bell schedules are planned to be altered in order to minimize the adverse traffic impacts of hosting two middle schools on the same campus. Per direction from ACPS, the analyses in this study assume two staggered scenarios. The first scenario assumes that the bell schedule for Howard Bishop Middle School will be approximately 45 minutes later during the 2020–2021 school year. The first scenario is evaluated by applying the Howard Bishop Middle School trip diversions to the existing turning movement volumes from 9:00 AM to 10:00 AM and from 4:00 PM to 5:00 PM.

The second scenario assumes that Howard Bishop Middle School's current bell schedule (9:20 AM to 3:37 PM) would be maintained and the Westwood Middle School bell schedule would be staggered 20 minutes later (9:40 AM to 3:57 PM). This scenario is based on information from ACPS in a memorandum provided on February 14, 2020 which notes that there may consideration for a less staggered bell schedule when Howard Bishop Middle School is hosted in the Temporary Modular School in order to minimize impacts to the busing schedule at Abraham Lincoln Middle School. The ACPS memorandum is included in **Appendix C**. The second scenario is evaluated by applying the Howard Bishop Middle School trip diversions to the existing turning movement volumes from 8:30 AM to 9:30 AM and from 3:30 PM to 4:30 PM.

Peak Traffic Conditions

In order to evaluate the school's peak traffic conditions anticipated for the Temporary Modular School in the 2020–2021 school year, the existing turning movement volumes are combined with the forecasted drop-off and pick-up peak hour traffic volumes to and from Howard Bishop Middle School. When projecting trips to and from the Temporary Modular School, the driveway volumes at Howard Bishop Middle School were adjusted to account for vehicles that did not enter the driveways as well as students who walked or bicycled to school but will not be within a reasonable distance to walk or bicycle to the Westwood Middle School campus.

Existing Conditions at Study Area Intersections

First Scenario: Howard Bishop Staggered 45-Minutes Later

Existing conditions at the study area intersections for the Howard Bishop Middle School first scenario are based on turning movement volumes during the hours surrounding the proposed bell schedule. Turning movement volumes from 9:00 AM to 10:00 AM are utilized for the school's AM peak hour analysis since the peak driveway volumes during the morning peak at Howard Bishop Middle School occurred in the hour leading up the first bell. Turning movement volumes from 4:00 PM to 5:00 PM are utilized for the school's PM peak hour analysis. The existing turning movement volumes utilized for the Howard Bishop Middle School first scenario are illustrated in **Figure 2**.

The intersection operating conditions were evaluated using *Synchro 10* software, which implements traffic analysis methodologies from the latest *Highway Capacity Manual* (HCM). Results are provided in terms of Level of Service (LOS), Volume-to-Capacity (V/C) ratio, and delay. **Table 1** summarizes the existing intersection operating conditions at the six (6) study area intersections during the AM peak (9:00 AM to 10:00 AM) and PM peak (4:00 PM to 5:00 PM) of the proposed Howard Bishop Middle School bell schedule.

All study area intersections operate at their adopted LOS standard (LOS E) or better during the school's AM and PM peak hours. All movement V/C ratios are less than one, signifying adequate capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

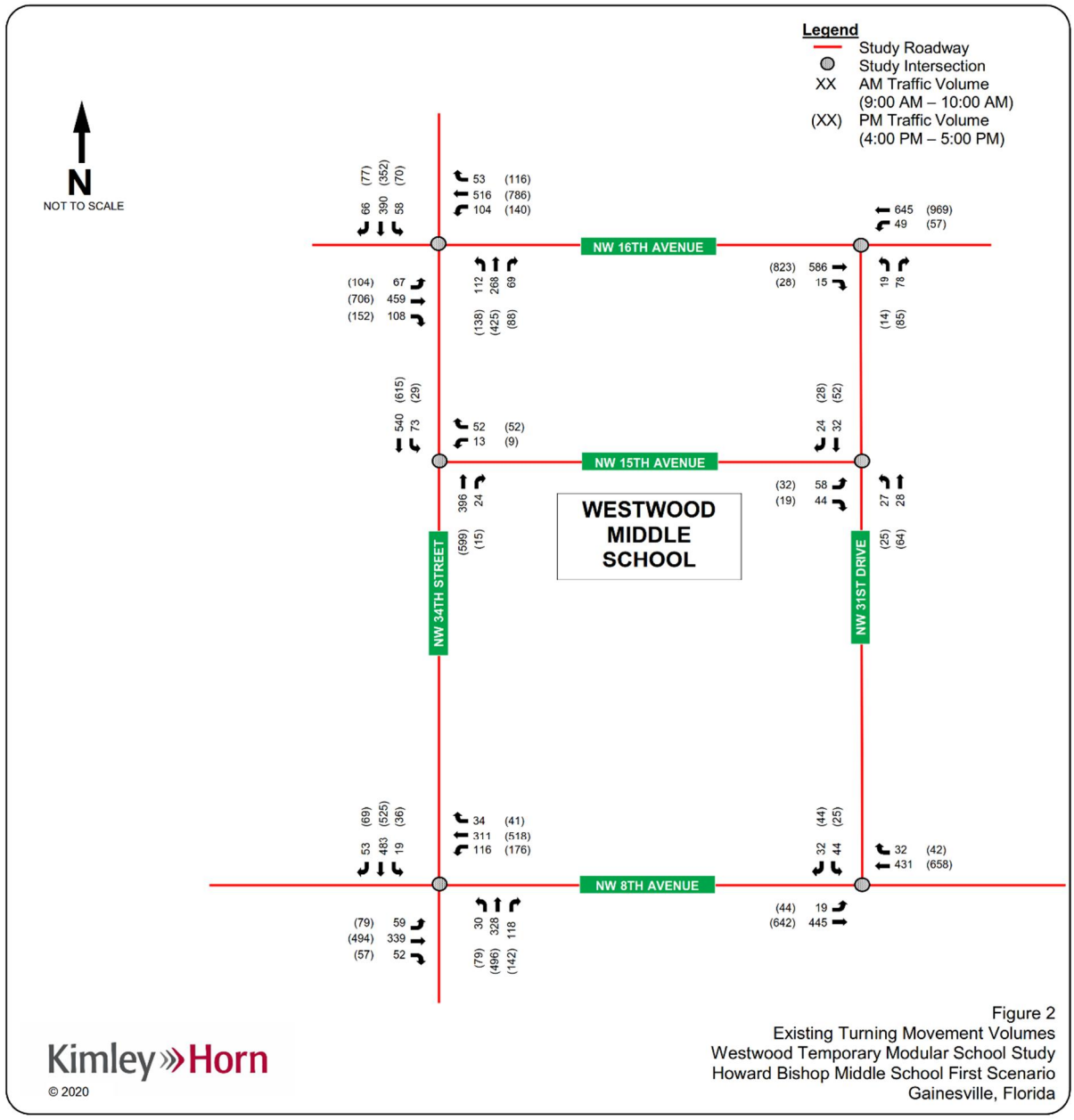

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Figure 2
Existing Turning Movement Volumes
Westwood Temporary Modular School Study
Howard Bishop Middle School First Scenario
Gainesville, Florida

Table 1: Existing Intersection Operations, Howard Bishop First Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**38.0**	**D**	**-**	**58.5**	**E**	**-**
	Northbound	**31.1**	**C**	**-**	**10.9**	**B**	**-**
	NBL	24.5	C	0.41	23.7	C	0.38
	NBT/R	33.3	C	0.54	7.4	A	0.66
	Southbound	**39.5**	**D**	**-**	**34.8**	**C**	**-**
	SBL	22.8	C	0.17	23.0	C	0.16
	SBT/R	41.6	D	0.75	36.7	D	0.57
	Eastbound	**43.2**	**D**	**-**	**82.3**	**F**	**-**
	EBL	31.6	C	0.27	46.0	D	0.68
	EBT/R	44.5	D	0.66	86.5	F	0.95
	Westbound	**36.5**	**D**	**-**	**77.7**	**E**	**-**
	WBL	26.1	C	0.37	50.9	D	0.79
	WBT/R	38.4	D	0.57	81.9	F	0.94
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**17.6**	**C**	**-**	**22.5**	**C**	**-**
	NBL/R	17.6	C	0.29	22.5	C	0.35
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	9.4	A	0.07	10.5	B	0.09
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**13.8**	**B**	**-**	**14.7**	**B**	**-**
	WBL/R	13.8	B	0.16	14.7	B	0.15
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	8.7	A	0.08	9.0	A	0.03
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**-**	**-**	**-**	**-**	**-**	**-**
	NBL	7.6	A	0.04	7.5	A	0.02
	Eastbound	**10.2**	**B**	**-**	**9.7**	**A**	**-**
	EBL	11.1	B	0.16	10.2	B	0.06
	EBR	9.1	A	0.09	8.8	A	0.03
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**34.7**	**C**	**-**	**52.0**	**D**	**-**
	Northbound	**28.3**	**C**	**-**	**27.6**	**C**	**-**
	NBL	21.1	C	0.15	21.7	C	0.25
	NBT/R	28.8	C	0.65	28.3	C	0.65
	Southbound	**34.0**	**C**	**-**	**39.0**	**D**	**-**
	SBL	19.8	B	0.08	20.6	C	0.11
	SBT/R	34.6	C	0.77	40.1	D	0.61
	Eastbound	**43.0**	**D**	**-**	**81.0**	**F**	**-**
	EBL	33.4	C	0.21	52.1	D	0.41
	EBT/R	44.4	D	0.60	85.6	F	0.89
	Westbound	**34.0**	**C**	**-**	**62.1**	**E**	**-**
	WBL	26.4	C	0.38	57.2	E	0.77
	WBT/R	36.6	D	0.41	63.7	E	0.72
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	8.4	A	0.02	9.4	A	0.05
	Southbound	**15.6**	**C**	**-**	**20.9**	**C**	**-**
	SBL/R	15.6	C	0.19	20.9	C	0.24

Second Scenario: Westwood Staggered 20-Minutes Later

Existing conditions at the study area intersections for the Howard Bishop Middle School second scenario are based on turning movement volumes during the hours surrounding the existing bell schedule. Turning movement volumes from 8:30 AM to 9:30 AM are utilized for the school's AM peak hour analysis and turning movement volumes from 3:00 PM to 4:00 PM are utilized for the school's PM peak hour analysis. The existing turning movement volumes utilized for the second scenario are illustrated in **Figure 3**.

The intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 2** summarizes the existing intersection operating conditions at the six (6) study area intersections during the AM peak (8:30 AM to 9:30 AM) and PM peak (3:30 PM to 4:30 PM) of the Howard Bishop Middle School bell schedule.

All study area intersections operate at their adopted LOS standard or better during the school's AM and PM peak hours. All movement V/C ratios are less than one, signifying adequate capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

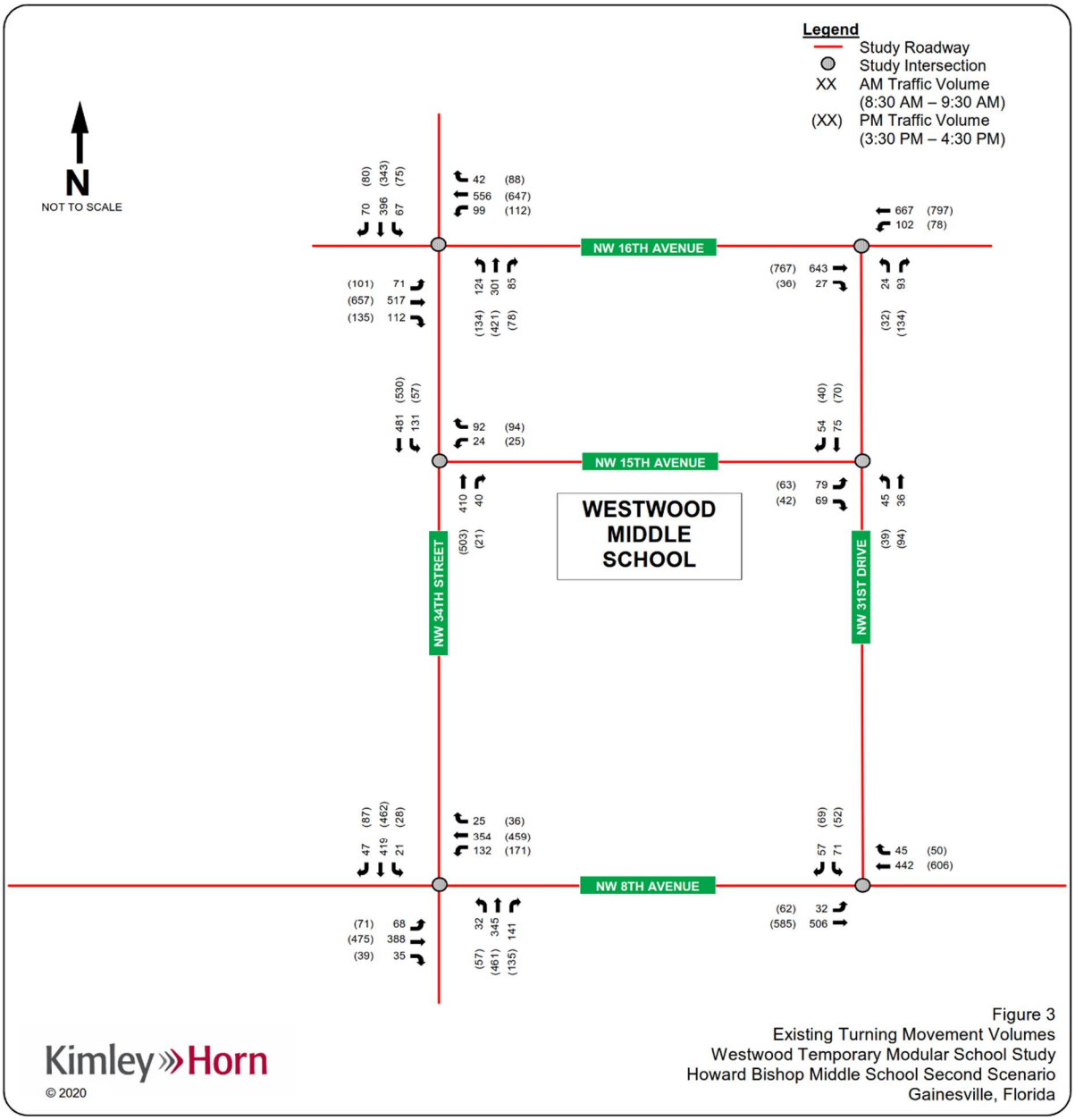

Figure 3
Existing Turning Movement Volumes
Westwood Temporary Modular School Study
Howard Bishop Middle School Second Scenario
Gainesville, Florida

Table 2: Existing Intersection Operations, Howard Bishop Second Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**38.5**	**D**	**-**	**51.0**	**D**	**-**
	Northbound	**33.0**	**C**	-	**47.9**	**D**	-
	NBL	24.8	C	0.43	31.1	C	0.45
	NBT/R	35.6	D	0.60	52.4	D	0.78
	Southbound	**39.7**	**D**	-	**46.2**	**D**	-
	SBL	23.6	C	0.20	33.4	C	0.33
	SBT/R	37.4	D	0.74	48.4	D	0.68
	Eastbound	**43.2**	**D**	-	**57.4**	**E**	-
	EBL	31.1	C	0.28	38.8	D	0.48
	EBT/R	44.5	D	0.68	59.8	E	0.81
	Westbound	**37.0**	**D**	-	**49.4**	**D**	-
	WBL	26.8	C	0.36	36.8	D	0.52
	WBT/R	38.6	D	0.56	51.4	D	0.69
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**20.0**	**C**	-	**34.4**	**D**	-
	NBL/R	20.0	C	0.35	34.4	D	0.62
	Westbound	-	-	-	-	-	-
	WBL	9.7	A	0.13	10.4	B	0.12
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**15.4**	**C**	-	**15.3**	**C**	-
	WBL/R	15.4	C	0.27	15.3	C	0.26
	Southbound	-	-	-	-	-	-
	SBL	9.0	A	0.14	8.8	A	0.06
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	-	-	-	-	-	-
	NBL	7.6	A	0.04	7.6	A	0.04
	Eastbound	**10.3**	**B**	-	**10.9**	**B**	-
	EBL	11.1	B	0.14	12.1	B	0.15
	EBR	9.3	A	0.09	9.2	A	0.07
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**33.8**	**C**	**-**	**50.1**	**D**	**-**
	Northbound	**31.8**	**C**	-	**48.4**	**D**	-
	NBL	20.1	C	0.14	31.1	C	0.28
	NBT/R	32.6	C	0.74	50.1	D	0.82
	Southbound	**31.5**	**C**	-	**46.9**	**D**	-
	SBL	21.0	C	0.10	33.0	C	0.17
	SBT/R	32.0	C	0.70	47.7	D	0.77
	Eastbound	**40.4**	**D**	-	**61.3**	**E**	-
	EBL	30.9	C	0.23	46.7	D	0.27
	EBT/R	41.9	D	0.62	63.3	E	0.68
	Westbound	**31.5**	**C**	-	**44.5**	**D**	-
	WBL	24.2	C	0.41	37.1	D	0.53
	WBT/R	34.1	C	0.43	47.0	D	0.47
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	-	-	-	-	-	-
	EBL	8.8	A	0.04	9.2	A	0.07
	Southbound	**23.3**	**C**	-	**24.0**	**C**	-
	SBL/R	23.3	C	0.44	24.0	C	0.40

Temporary Traffic Projections/Diversions

Howard Bishop Middle School is approximately 3.5 miles east of Westwood Middle School, generally located north of NE 16th Avenue and east of NE 9th Street. All diverted school traffic associated with parent and bus trips at the Temporary Modular School will come from and depart toward the east along either NW 16th Avenue or NW 8th Avenue. The number of trips forecasted to each route is estimated based on the directionality of entering and exiting trips at the Howard Bishop Middle School during data collection; trips coming from and going to the south are projected to utilize NW 8th Avenue and trips coming from and going to the north are projected to utilize NW 16th Avenue. Note that the number of trips diverted to the study intersections is assumed to be the same for both bell schedule scenarios for Howard Bishop Middle School.

The number of vehicle-trips assumed to and from the Temporary Modular School is anticipated to be approximately 11 percent (11%) greater than existing driveway volumes counted at Howard Bishop Middle School since approximately 11 percent (11%) of the student population lives within one mile of Howard Bishop Middle School and would no longer be likely to walk or bicycle to school. **Figure 4** and **Figure 5** illustrate the trip distribution estimates for the Howard Bishop Middle School scenario during the school AM peak hour and school PM peak hour, respectively. This provides for a conservative analysis since it is assumed that the majority of these students would likely be bussed.

The number of buses utilizing each route was provided by ACPS in a memorandum provided on February 14, 2020. The ACPS memorandum is included in **Appendix C**. The existing Westwood Middle School bus loop on NW 31st Drive does not have sufficient capacity for the projected 25 buses that would serve Howard Bishop Middle School students. Therefore, it is recommended that the buses for Howard Bishop Middle School utilize the Westside Park parking lot along NW 34th Street and a path be provided for students to reach the Temporary Modular School from there. Note that improvements are proposed for Westside Park from February 2020 through Fall 2020, which may limit the feasibility of utilizing the parking area for buses. **Figure 6** depicts the assignment of buses to study area intersections.

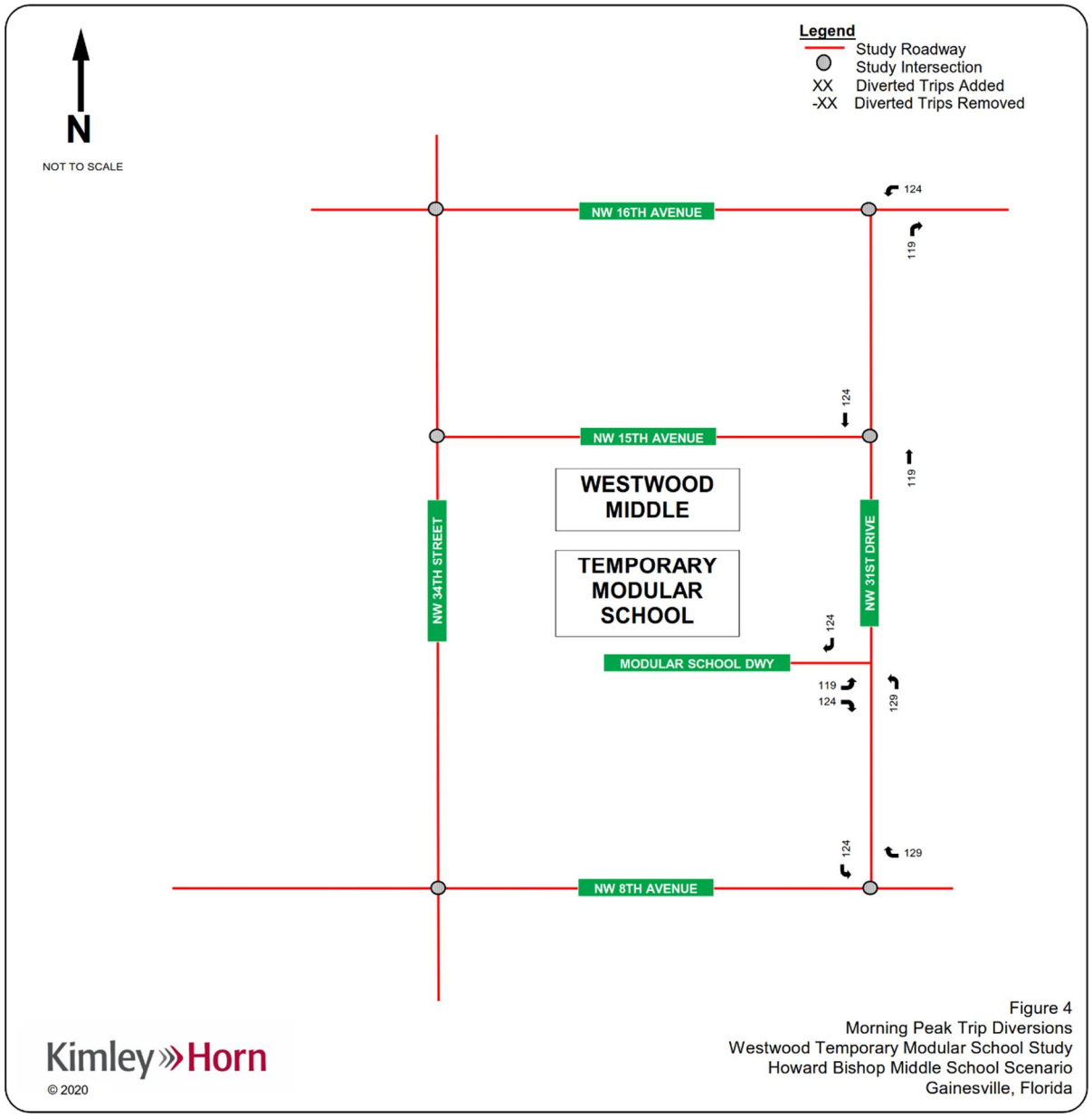

Figure 4
Morning Peak Trip Diversions
Westwood Temporary Modular School Study
Howard Bishop Middle School Scenario
Gainesville, Florida

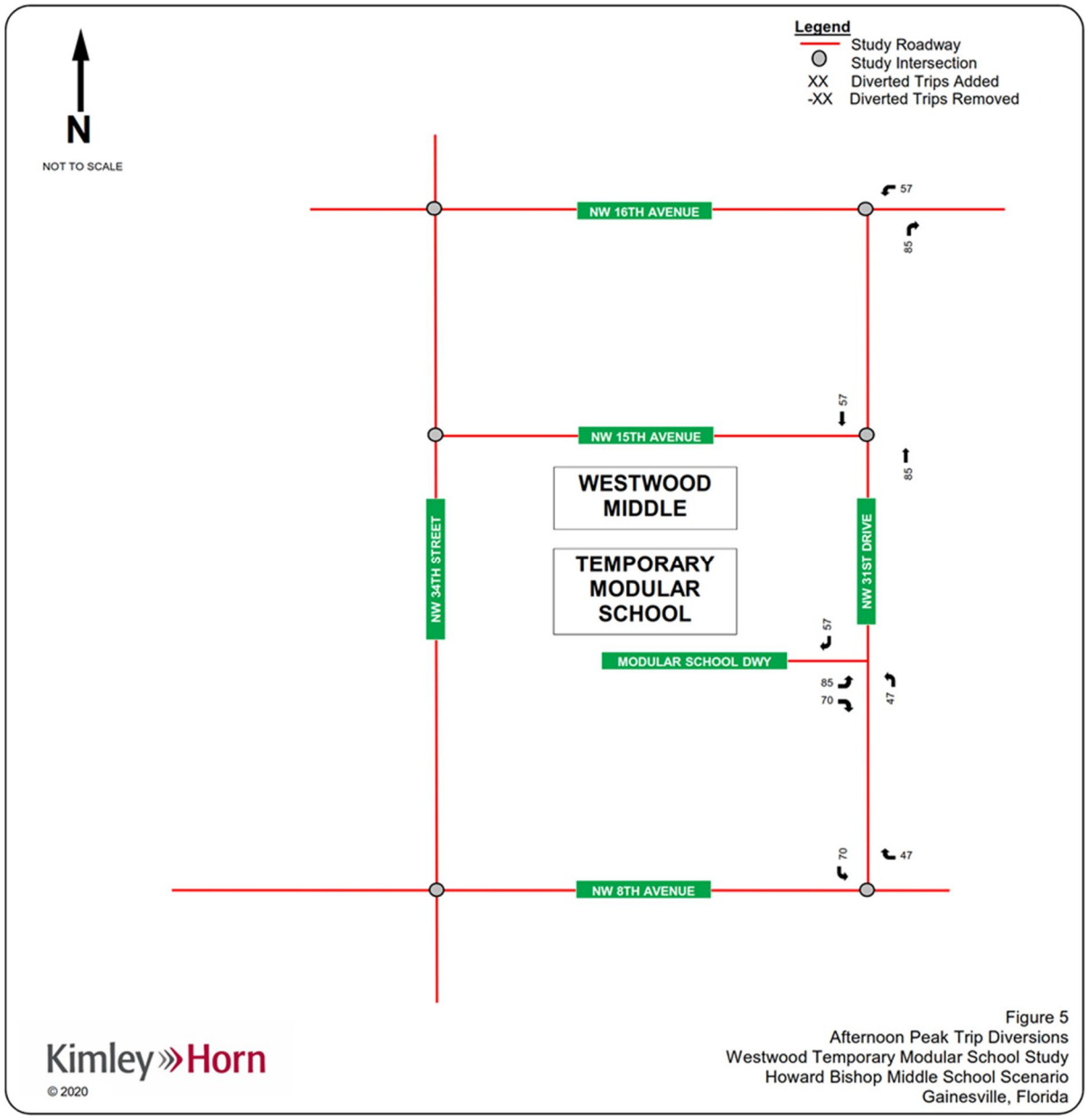

Figure 5
Afternoon Peak Trip Diversions
Westwood Temporary Modular School Study
Howard Bishop Middle School Scenario
Gainesville, Florida

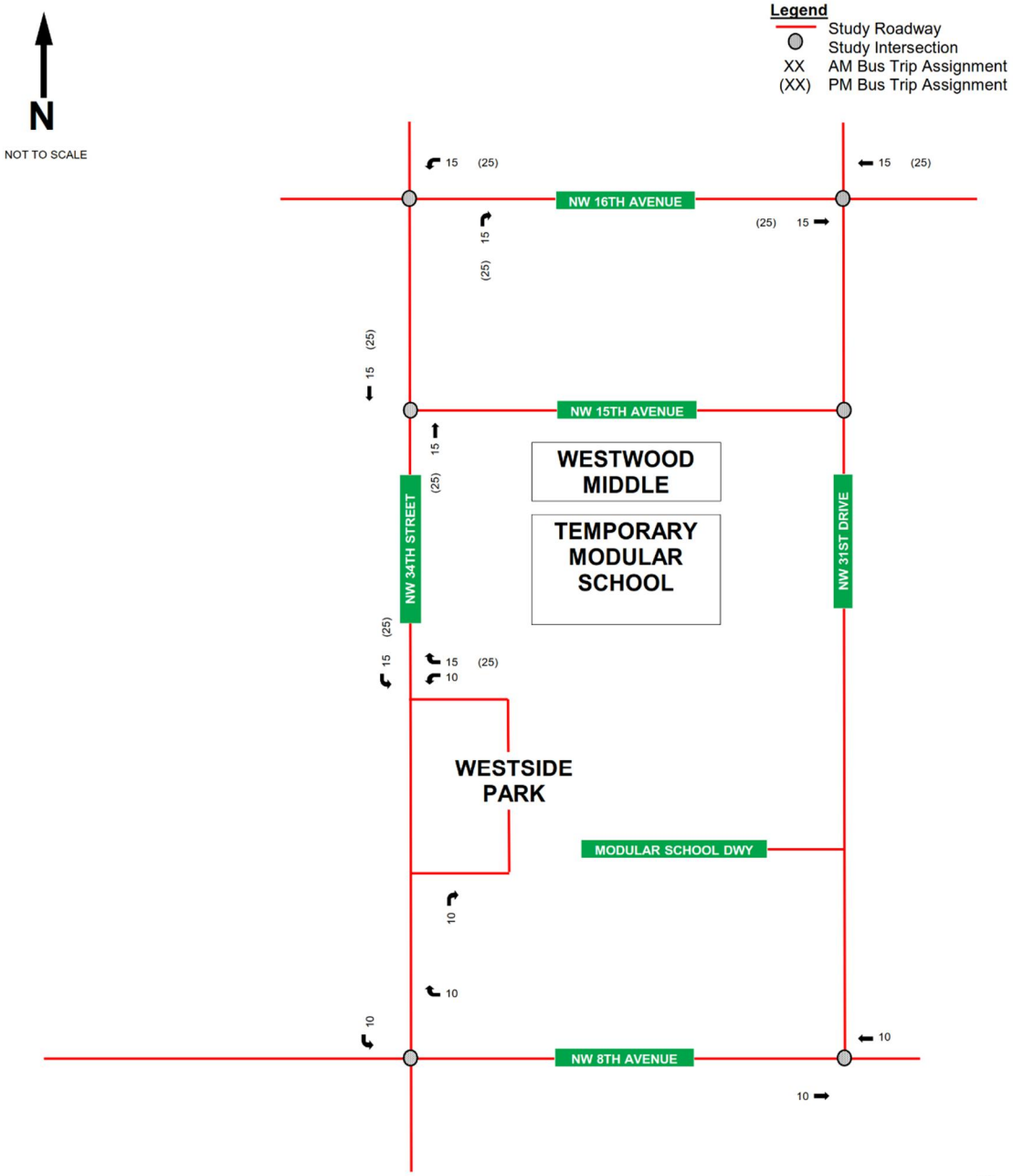

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Figure 6
Anticipated Bus Distribution
Westwood Temporary Modular School Study
Howard Bishop Middle School Scenario
Gainesville, Florida

Temporary Traffic Conditions Operations Analysis

First Scenario: Howard Bishop Staggered 45-Minutes Later

Temporary conditions at the study area intersections for the 2020–2021 school year are forecasted based on background growth of the existing turning movement volumes (**Figure 2**) and the addition of parent and bus traffic diverted from Howard Bishop Middle School to the Temporary Modular School. The temporary turning movement volumes during the 2020–2021 school year are illustrated in **Figure 7** for the first scenario. Intersection volume development worksheets detailing the temporary turning movement volume development for each intersection are provided in **Appendix E**.

The temporary future intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 3** summarizes the temporary intersection operating conditions at the six (6) study area intersections during the AM peak (9:00 AM to 10:00 AM) and PM peak (4:00 PM to 5:00 PM) of the proposed Howard Bishop Middle School first scenario bell schedule during the 2020–2021 school year.

All study area intersections are expected to continue to operate at their adopted LOS standard or better during the school's AM and PM peak hours with the inclusion of Howard Bishop Middle School traffic at the Temporary Modular School based on the first scenario bell schedule. All movement V/C ratios are less than one, signifying sufficient capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

The impacts of Temporary Modular School traffic on roadway segments within the study area were also evaluated for the school AM and PM peak hours. Peak hour directional service capacities for area roadways were determined based on daily roadway service capacities published in the Gainesville Metropolitan Transportation Planning Organization (MTPO) Multimodal LOS Report. Existing directional segment volumes, background directional segment volumes, and future directional segment volumes including trip diversions to the Temporary Modular School were compared to the respective peak hour directional capacities of area roadways. No roadway segments were determined to exceed their peak hour directional service capacities under the Howard Bishop Middle School first scenario bell schedule during the 2020–2021 school year. The results of the segment analyses are depicted in **Table 4**.

The impacts of the Howard Bishop Middle School first scenario are most concentrated at the stop-controlled intersections at the northern and southern termini of NW 31st Drive. The Signal Warrant Analysis section of this report will further discuss the impacts of added traffic volumes at those two intersections.

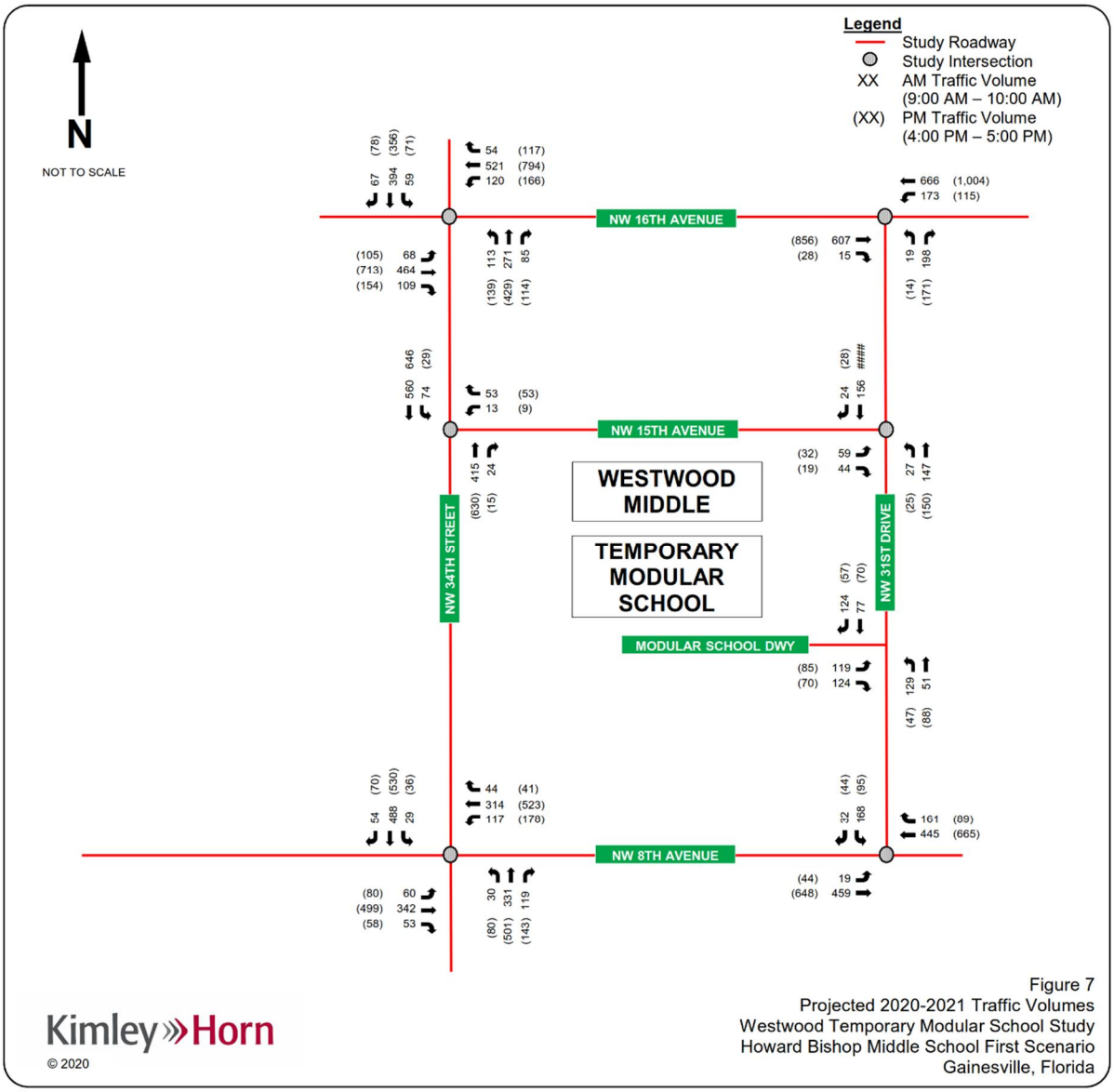

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Figure 7
Projected 2020-2021 Traffic Volumes
Westwood Temporary Modular School Study
Howard Bishop Middle School First Scenario
Gainesville, Florida

Table 3: Temporary (2020–2021) Intersection Operations, Howard Bishop First Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**39.2**	**D**	**-**	**57.6**	**E**	**-**
	Northbound	**33.0**	**C**	**-**	**13.5**	**B**	**-**
	NBL	25.7	C	0.43	25.0	C	0.40
	NBT/R	35.3	C	0.57	10.6	B	0.72
	Southbound	**41.1**	**D**	**-**	**37.0**	**D**	**-**
	SBL	24.1	C	0.18	24.5	C	0.18
	SBT/R	43.3	D	0.76	39.0	D	0.60
	Eastbound	**45.0**	**D**	**-**	**83.2**	**F**	**-**
	EBL	32.8	C	0.27	45.3	D	0.65
	EBT/R	46.4	D	0.67	87.8	F	0.96
	Westbound	**36.7**	**D**	**-**	**71.9**	**E**	**-**
	WBL	26.8	C	0.41	59.6	E	0.85
	WBT/R	38.8	D	0.56	74.2	E	0.91
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**31.6**	**D**	**-**	**32.3**	**D**	**-**
	NBL/R	31.6	D	0.68	32.3	D	0.62
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	10.6	B	0.24	11.3	B	0.18
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**14.2**	**B**	**-**	**15.3**	**C**	**-**
	WBL/R	14.2	B	0.17	15.3	C	0.16
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	8.8	A	0.09	9.1	A	0.03
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**-**	**-**	**-**	**-**	**-**	**-**
	NBL	8.2	A	0.05	7.6	A	0.02
	Eastbound	**15.8**	**C**	**-**	**10.8**	**B**	**-**
	EBL	19.6	C	0.33	11.7	B	0.07
	EBR	10.8	B	0.13	9.2	A	0.03
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**35.4**	**D**	**-**	**52.3**	**D**	**-**
	Northbound	**30.5**	**C**	**-**	**28.1**	**C**	**-**
	NBL	22.0	C	0.16	22.1	C	0.25
	NBT/R	31.0	C	0.68	28.8	C	0.66
	Southbound	**34.7**	**C**	**-**	**39.5**	**D**	**-**
	SBL	19.7	B	0.11	21.0	C	0.12
	SBT/R	35.5	D	0.79	40.7	D	0.62
	Eastbound	**42.8**	**D**	**-**	**81.4**	**F**	**-**
	EBL	33.2	C	0.21	51.9	D	0.41
	EBT/R	44.3	D	0.64	85.2	F	0.89
	Westbound	**33.9**	**C**	**-**	**62.0**	**E**	**-**
	WBL	26.2	C	0.38	57.5	E	0.77
	WBT/R	36.5	D	0.43	11.5	E	0.72
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	8.9	A	0.02	9.6	A	0.06
	Southbound	**34.4**	**D**	**-**	**47.0**	**E**	**-**
	SBL/R	32.9	D	0.65	47.0	E	0.65

Table 4: Segment Analyses – Howard Bishop Middle School (2020–2021) First Scenario

Roadway	From	To	Roadway Attributes [1]				Peak Hour Directional Service Capacity [2]	Existing (2020) AM Peak Hour Conditions			Existing (2020) PM Peak Hour Conditions			Future (2021) Background AM Peak Hour Conditions			Future (2021) Background PM Peak Hour Conditions			AM Peak Hour Project Traffic		PM Peak Hour Project Traffic		Future (2021) Total AM Peak Hour Conditions			Future (2021) Total PM Peak Hour Conditions		
			Functional Classification	Adopted LOS	Number of Lanes	Speed Limit		NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB[5]	SB/WB[5]	NB/EB[5]	SB/WB[5]	NB/EB Volume [6]	SB/WB Volume [6]	LOS	NB/EB Volume [6]	SB/WB Volume [6]	LOS
SR 121/NW 34th Street																												
	SR 26/University Ave	NW 16th Avenue	II State	E	2D	35	840	476	651	D	717	758	D	481	658	D	724	766	D	15	15	25	25	496	673	D	749	791	E
	NW 16th Avenue	SR 222/NW 39th Ave	I State	E	2U	40	880	388	514	C	645	499	C	392	519	C	651	504	C	0	0	0	0	392	519	C	651	504	C
NW 16th Avenue																												
	NW 43rd Street	US 441/NW 13th Street	I Major County	E	4D	40	1,800	664	694	C	962	1,042	C	671	701	C	972	1,052	C	134	139	110	82	805	840	C	1,082	1,134	C
NW 8th Avenue																												
	SR 26/Newberry Road	W 22nd Street	I Major City	E	4U	40	1,710	489	463	C	686	735	C	494	468	C	693	742	C	134	139	70	47	628	607	C	763	789	C
NW 31st Drive																												
	NW 8th Avenue	NW 16th Avenue	City	E	2U	25	576	97	76	C	99	85	C	98	77	C	100	86	C	129	124	85	70	227	201	C	185	156	C
NW 15th Avenue																												
	SR 121/NW 34th Stree	NW 31st Drive	City	E	2U	25	576	102	65	C	51	61	C	103	66	C	52	62	C	0	0	0	0	103	66	C	52	62	C

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Notes:

1. Roadway attributes were obtained from the Gainesville Metropolitan Transportation Planning Organization Multimodal Level of Service Report (2018).
2. Peak Hour Directional Service Volumes are reported based on the Florida Department of Transportation Quality/Level of Service Handbook (2013).
3. Peak Hour Directional volumes are calculated based on the approach and departure volumes from turning movement counts collected in January 2020.
4. Peak Hour Directional volumes are calculated based on the approach and departure volumes at study area intersections under future background conditions.
5. Project traffic was calculated as the maximum across the segment
6. Peak Hour Directional volumes are the sum of the future background conditions volumes and project traffic.

Second Scenario: Westwood Staggered 20-Minutes Later

Temporary conditions at the study area intersections for the 2020–2021 school year are forecasted based on background growth of the existing turning movement volumes (**Figure 3**) and the addition of parent and bus traffic diverted from Howard Bishop Middle School to the Temporary Modular School during the same peak periods as Westwood Middle School. The temporary turning movement volumes during the 2020–2021 school year are illustrated in **Figure 8** for the second scenario. Intersection volume development worksheets detailing the temporary turning movement volume development for each intersection are provided in **Appendix E**.

The temporary future intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 5** summarizes the temporary intersection operating conditions at the six (6) study area intersections during the AM peak (8:30 AM to 9:30 AM) and PM peak (3:30 PM to 4:30 PM) of the proposed Howard Bishop Middle School second scenario bell schedule during the 2020–2021 school year.

During the school's AM and PM peak hours, the study intersections are expected to continue to operate at their adopted LOS standard or better with the exception of the stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue, which are expected to operate at LOS F. This result is common when a minor street stop-controlled approach crosses a high-volume major street free-flow approach during peak periods.

In order to address the operational issues anticipated on the minor street stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue, it is recommended that law enforcement officer (LEO) control of traffic be implemented at these intersections during the school's arrival and dismissal periods during the 2020-2021 school year. This operational plan is common for facilities of this type in similar locations. The LEO will facilitate the movement of traffic through the two subject intersections, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. In order to replicate LEO control, the intersections were analyzed as a signalized intersection using *Synchro 10* software. The results are summarized in **Table 5**. Both intersections would be expected to operate at their adopted LOS standard or better during the school's AM and PM peak hours with LEO control.

Synchro outputs are provided in **Appendix D**.

The impacts of Temporary Modular School traffic on roadway segments within the study area were also evaluated for the school's AM and PM peak hours. Peak hour directional service capacities for area roadways were determined based on daily roadway service capacities published in the Gainesville MTPO Multimodal LOS Report. Existing directional segment volumes, background directional segment volumes, and future directional segment volumes including trip diversions to the Temporary Modular School were compared to the respective peak hour directional capacities of area roadways. No roadway segments were determined to exceed their peak hour directional service capacities under the Howard Bishop Middle School second scenario bell schedule during the 2020–2021 school year. The results of the segment analyses are depicted in **Table 6**.

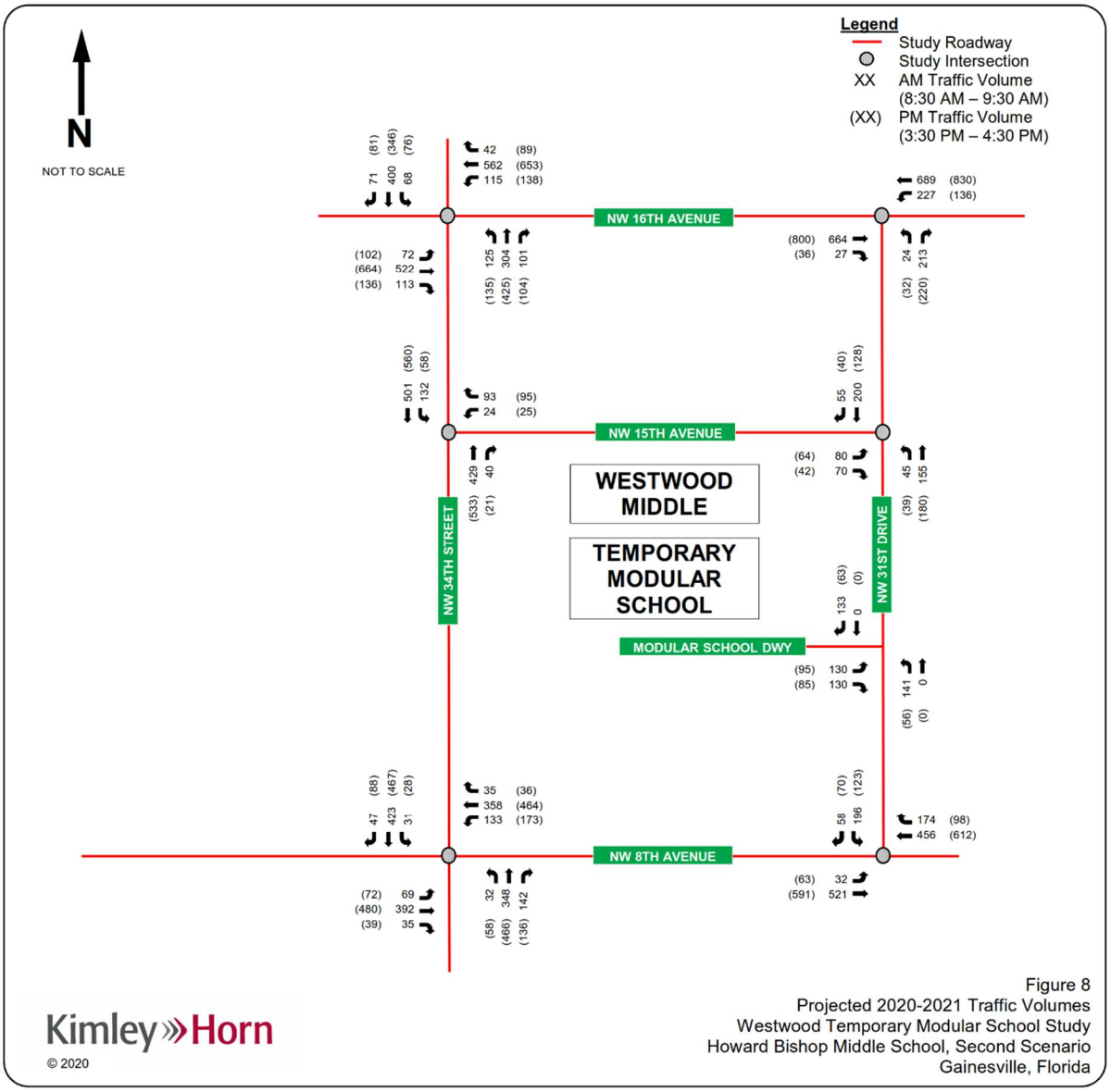

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Figure 8
Projected 2020-2021 Traffic Volumes
Westwood Temporary Modular School Study
Howard Bishop Middle School, Second Scenario
Gainesville, Florida

Table 5: Temporary (2020–2021) Intersection Operations, Howard Bishop Second Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**39.8**	**D**	**-**	**56.0**	**E**	**-**
	Northbound	**34.8**	**C**	**-**	**51.2**	**D**	**-**
	NBL	25.9	C	0.44	32.2	C	0.40
	NBT/R	37.6	D	0.63	56.0	E	0.72
	Southbound	**41.3**	**D**	**-**	**47.0**	**D**	**-**
	SBL	24.9	C	0.21	35.4	D	0.18
	SBT/R	43.7	D	0.75	49.1	D	0.60
	Eastbound	**45.1**	**D**	**-**	**67.0**	**E**	**-**
	EBL	32.5	C	0.28	42.8	D	0.65
	EBT/R	46.6	D	0.69	70.1	E	0.96
	Westbound	**37.2**	**D**	**-**	**53.4**	**D**	**-**
	WBL	27.2	C	0.40	43.1	D	0.85
	WBT/R	39.1	D	0.55	55.3	E	0.91
NW 31st Drive & NW 16th Avenue (Unsignalized)	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**38.7**	**E**	**-**	**83.5**	**F**	**-**
	NBL/R	38.7	E	0.73	83.5	F	0.97
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	10.8	B	0.28	11.2	B	0.21
NW 31st Drive & NW 16th Avenue (LEO Control)	**Overall Intersection**	**15.9**	**B**	**-**	**14.4**	**B**	**-**
	Northbound	**27.4**	**C**	**-**	**28.2**	**C**	**-**
	NBL/R	27.4	C	0.33	28.2	C	0.41
	Westbound	**10.4**	**B**	**-**	**8.6**	**A**	**-**
	WBL	27.8	C	0.69	30.2	C	0.64
	WBT	4.7	A	0.32	5.1	A	0.40
	Eastbound	**19.3**	**B**	**-**	**17.0**	**B**	**-**
	EBT/R	19.3	B	0.66	17.0	B	0.69
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**15.8**	**C**	**-**	**16.0**	**C**	**-**
	WBL/R	15.8	C	0.28	16.0	C	0.28
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	9.1	A	0.14	8.9	A	0.06
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**-**	**-**	**-**	**-**	**-**	**-**
	NBL	8.0	A	0.04	7.8	A	0.04
	Eastbound	**12.7**	**B**	**-**	**13.0**	**B**	**-**
	EBL	14.8	B	0.21	15.2	C	0.21
	EBR	10.3	B	0.11	9.7	A	0.07
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**34.6**	**C**	**-**	**50.7**	**D**	**-**
	Northbound	**34.5**	**C**	**-**	**48.6**	**D**	**-**
	NBL	20.9	C	0.14	31.5	C	0.29
	NBT/R	35.4	D	0.77	50.2	D	0.82
	Southbound	**31.5**	**C**	**-**	**47.4**	**D**	**-**
	SBL	20.9	C	0.14	33.4	C	0.18
	SBT/R	32.2	C	0.71	48.2	D	0.78
	Eastbound	**40.7**	**D**	**-**	**62.4**	**E**	**-**
	EBL	31.1	C	0.24	47.5	D	0.28
	EBT/R	42.3	D	0.62	64.5	E	0.69
	Westbound	**32.0**	**C**	**-**	**45.3**	**D**	**-**
	WBL	24.4	C	0.41	38.0	D	0.54
	WBT/R	34.6	C	0.44	47.9	D	0.48
NW 8th Avenue & NW 31st Drive (Unsignalized)	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	9.4	A	0.04	9.4	A	0.07
	Southbound	**146.5**	**F**	**-**	**55.2**	**F**	**-**
	SBL/R	146.5	F	1.16	55.2	F	0.78
NW 8th Avenue & NW 31st Drive (LEO Control)	**Overall Intersection**	**25.5**	**C**	**-**	**19.0**	**B**	**-**
	Eastbound	**10.7**	**B**	**-**	**9.8**	**A**	**-**
	EBL	61.3	E	0.64	49.4	D	0.62
	EBT	7.6	A	0.29	5.6	A	0.25
	Westbound	**27.1**	**C**	**-**	**20.0**	**B**	**-**
	WBT/R	27.1	C	0.85	20.0	B	0.76
	Southbound	**54.0**	**D**	**-**	**46.9**	**D**	**-**
	SBL/R	54.0	D	0.87	46.9	D	0.75

Table 6: Segment Analyses – Howard Bishop Middle School (2020–2021) Second Scenario

Roadway	From	To	Roadway Attributes [1]				Peak Hour Directional Service Capacity [2]	Existing (2020) AM Peak Hour Conditions			Existing (2020) PM Peak Hour Conditions			Future (2021) Background AM Peak Hour Conditions			Future (2021) Background PM Peak Hour Conditions			AM Peak Hour Project Traffic		PM Peak Hour Project Traffic		Future (2021) Total AM Peak Hour Conditions			Future (2021) Total PM Peak Hour Conditions		
			Functional Classification	Adopted LOS	Number of Lanes	Speed Limit		NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB[5]	SB/WB[5]	NB/EB[5]	SB/WB[5]	NB/EB Volume [6]	SB/WB Volume [6]	LOS	NB/EB Volume [6]	SB/WB Volume [6]	LOS
SR 121/NW 34th Street																												
	SR 26/University Ave	NW 16th Avenue	II State	E	2D	35	840	518	612	D	653	672	D	523	618	D	660	679	D	15	15	25	25	538	633	D	685	704	D
	NW 16th Avenue	SR 222/NW 39th Ave	I State	E	2U	40	880	414	533	C	610	498	C	418	538	C	616	503	C	0	0	0	0	418	538	C	616	503	C
NW 16th Avenue																												
	NW 43rd Street	US 441/NW 13th Street	I Major County	E	4D	40	1,800	736	769	C	901	875	C	743	777	C	910	884	C	134	139	110	82	877	916	C	1,020	966	C
NW 8th Avenue																												
	SR 26/Newberry Road	W 22nd Street	I Major City	E	4U	40	1,710	577	511	C	647	675	C	583	516	C	653	682	C	134	139	70	47	717	655	C	723	729	C
NW 31st Drive																												
	NW 8th Avenue	NW 16th Avenue	City	E	2U	25	576	117	144	C	166	121	C	118	145	C	168	122	C	129	124	85	70	247	269	D	253	192	C
NW 15th Avenue																												
	SR 121/NW 34th Stree	NW 31st Drive	City	E	2U	25	576	171	116	C	105	119	C	173	117	C	106	120	C	0	0	0	0	173	117	C	106	120	C

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Notes:

1. Roadway attributes were obtained from the Gainesville Metropolitan Transportation Planning Organization Multimodal Level of Service Report (2018).
2. Peak Hour Directional Service Volumes are reported based on the Florida Department of Transportation Quality/Level of Service Handbook (2013).
3. Peak Hour Directional volumes are calculated based on the approach and departure volumes from turning movement counts collected in January 2020.
4. Peak Hour Directional volumes are calculated based on the approach and departure volumes at study area intersections under future background conditions.
5. Project traffic was calculated as the maximum across the segment
6. Peak Hour Directional volumes are the sum of the future background conditions volumes and project traffic.

WESTWOOD MIDDLE SCHOOL (2021–2022 SCHOOL YEAR)

The second school planned to operate from the Temporary Modular School is Westwood Middle School. Operations for Westwood Middle School will be conducted in the Temporary Modular School during the 2021–2022 school year.

Field Observations

Existing conditions were observed at Westwood Middle School during the school's arrival and dismissal peak periods on Tuesday, January 28, 2020. During the arrival period, it was observed that student drop-off times were spread throughout the morning, as opposed to being highly concentrated in the 15 to 30 minutes before first bell. Westwood Middle School hosts a Morning Study Hall period beginning at 7:15 AM during which many students are dropped off early.

The northbound queues at NW 34th Street and NW 16th Avenue were observed extending south past the intersection of NW 34th Street and NW 15th Avenue, which caused some back-up on the westbound NW 15th Avenue approach as well. At times, the crossing guard at the intersection of NW 34th Street and NW 15th Avenue directed traffic, stopping through traffic on NW 34th Street to allow westbound left- and right-turns from NW 15th Avenue and southbound left-turns onto NW 15th Avenue.

During the dismissal period, it was observed that the buses serving Westwood Middle School stack beyond the available capacity of the bus loop. The condition was brief, but in the few minutes before and after the final dismissal bell, at least one bus was observed waiting on NW 31st Drive outside of the driveway.

Bell Schedule

Westwood Middle School operates with the standard Alachua County Public Schools middle school bell schedule, with first bell at 9:25 AM and the final dismissal bell at 3:37 PM. Turning movements into and out of the Westwood Middle School driveways were collected from 8:00 AM to 10:00 AM and from 2:30 PM to 4:30 PM.

The bell schedule for Westwood Middle School is expected to remain during the 2021–2022 school year when Westwood Middle school occupies the Temporary Modular School.

Peak Traffic Conditions

Traffic conditions for the Temporary Modular School in the 2021–2022 school year are expected to be very similar to existing conditions, since traffic patterns would be nearly identical to existing conditions. The number of students who walk, bicycle, ride a bus, or get dropped off by parents is not expected to change. Minor adjustments are applied to the distribution of driveway volumes within the study area to account for the change of the parent drop-off and pick-up location from NW 15th Avenue to NW 31st Drive.

Existing Conditions at Study Area Intersections

Existing conditions at the study area intersections for the Westwood Middle School scenario are based on turning movement volumes during the hours surrounding the existing bell schedule. Turning movement volumes from 8:30 AM to 9:30 AM are utilized for the school's AM peak hour analysis and turning movement volumes from 3:30 PM to 4:30 PM are utilized for the school's PM peak hour analysis. The existing turning movement volumes utilized for the Westwood Middle School scenario are illustrated in **Figure 9**.

The intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 7** summarizes the existing intersection operating conditions at the six (6) study area intersections during the AM peak (8:30 AM to 9:30 AM) and PM peak (3:30 PM to 4:30 PM) of the Westwood Middle School bell schedule.

All study area intersections operate at their adopted LOS standard or better during the school's AM and PM peak hours. All movement V/C ratios are less than one, signifying adequate capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

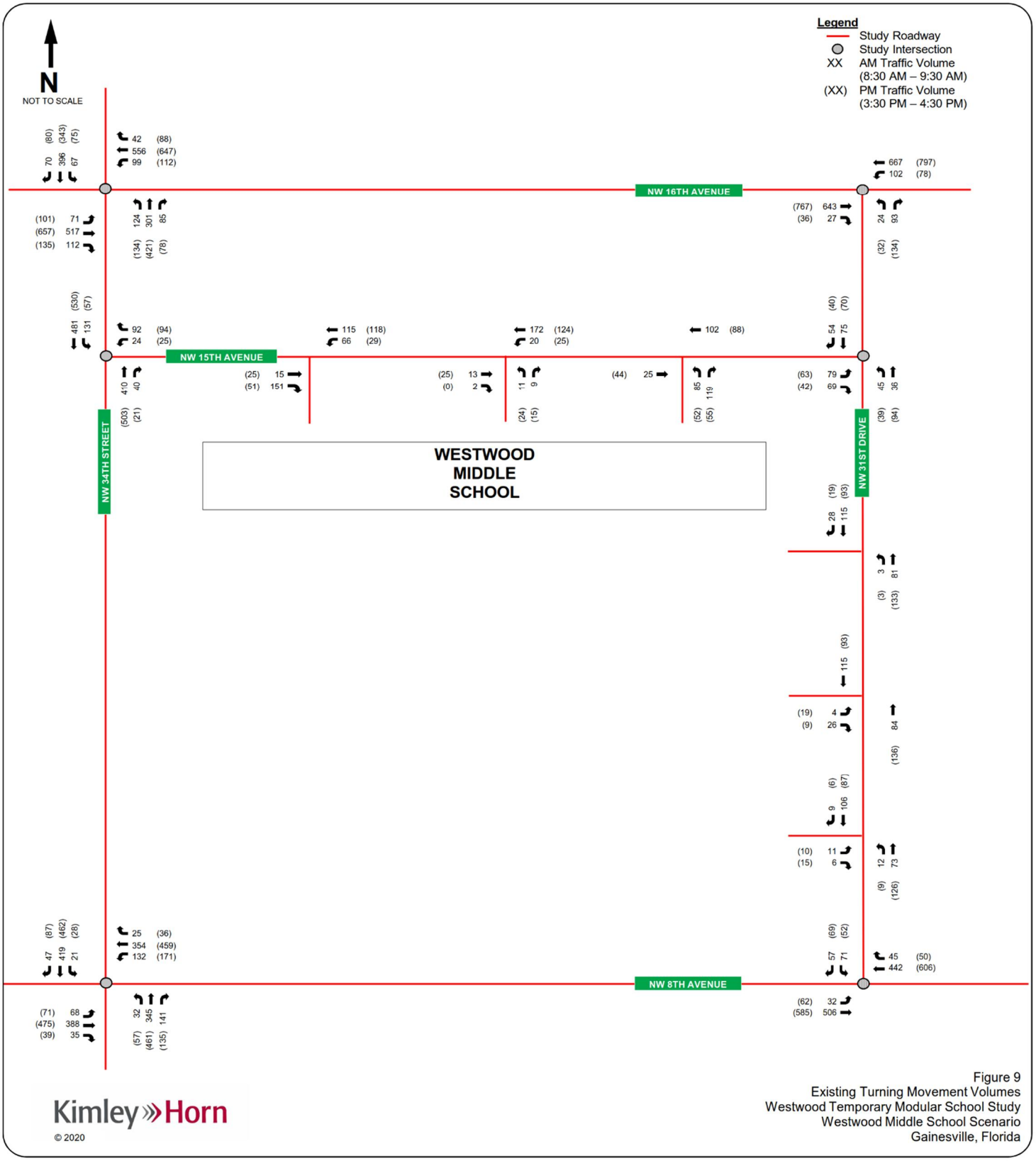

Figure 9
Existing Turning Movement Volumes
Westwood Temporary Modular School Study
Westwood Middle School Scenario
Gainesville, Florida

Table 7: Existing Conditions Intersection Operations, Westwood Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**38.5**	**D**	**-**	**51.0**	**D**	**-**
	Northbound	**33.0**	**C**	**-**	**47.9**	**D**	**-**
	NBL	24.8	C	0.43	31.1	C	0.45
	NBT/R	35.6	D	0.60	52.4	D	0.78
	Southbound	**39.7**	**D**	**-**	**46.2**	**D**	**-**
	SBL	23.6	C	0.20	33.4	C	0.33
	SBT/R	37.4	D	0.74	48.4	D	0.68
	Eastbound	**43.2**	**D**	**-**	**57.4**	**E**	**-**
	EBL	31.1	C	0.28	38.8	D	0.48
	EBT/R	44.5	D	0.68	59.8	E	0.81
	Westbound	**37.0**	**D**	**-**	**49.4**	**D**	**-**
	WBL	26.8	C	0.36	36.8	D	0.52
	WBT/R	38.6	D	0.56	51.4	D	0.69
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**20.0**	**C**	**-**	**34.4**	**D**	**-**
	NBL/R	20.0	C	0.35	34.4	D	0.62
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	9.7	A	0.13	10.4	B	0.12
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**15.4**	**C**	**-**	**15.3**	**C**	**-**
	WBL/R	15.4	C	0.27	15.3	C	0.26
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	9.0	A	0.14	8.8	A	0.06
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**-**	**-**	**-**	**-**	**-**	**-**
	NBL	7.6	A	0.04	7.6	A	0.04
	Eastbound	**10.3**	**B**	**-**	**10.9**	**B**	**-**
	EBL	11.1	B	0.14	12.1	B	0.15
	EBR	9.3	A	0.09	9.2	A	0.07
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**33.8**	**C**	**-**	**50.1**	**D**	**-**
	Northbound	**31.8**	**C**	**-**	**48.4**	**D**	**-**
	NBL	20.1	C	0.14	31.1	C	0.28
	NBT/R	32.6	C	0.74	50.1	D	0.82
	Southbound	**31.5**	**C**	**-**	**46.9**	**D**	**-**
	SBL	21.0	C	0.10	33.0	C	0.17
	SBT/R	32.0	C	0.70	47.7	D	0.77
	Eastbound	**40.4**	**D**	**-**	**61.3**	**E**	**-**
	EBL	30.9	C	0.23	46.7	D	0.27
	EBT/R	41.9	D	0.62	63.3	E	0.68
	Westbound	**31.5**	**C**	**-**	**44.5**	**D**	**-**
	WBL	24.2	C	0.41	37.1	D	0.53
	WBT/R	34.1	C	0.43	47.0	D	0.47
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	8.8	A	0.04	9.2	A	0.07
	Southbound	**23.3**	**C**	**-**	**24.0**	**C**	**-**
	SBL/R	23.3	C	0.44	24.0	C	0.40

Temporary Traffic Projections/Diversions

Diverted traffic for the Westwood Middle School scenario is contained to NW 15th Avenue and NW 31st Drive, since the student population is consistent with existing conditions. Adjustments for diverted trips were made to address the change in parent drop-off/pick-up location from NW 15th Avenue to NW 31st Drive.

Figure 10 and **Figure 11** illustrate the trip diversion estimates for the Westwood Middle School scenario during the school's AM and PM peak hour, respectively. It is assumed that buses will utilize the existing bus loop on NW 31st Drive for this scenario.

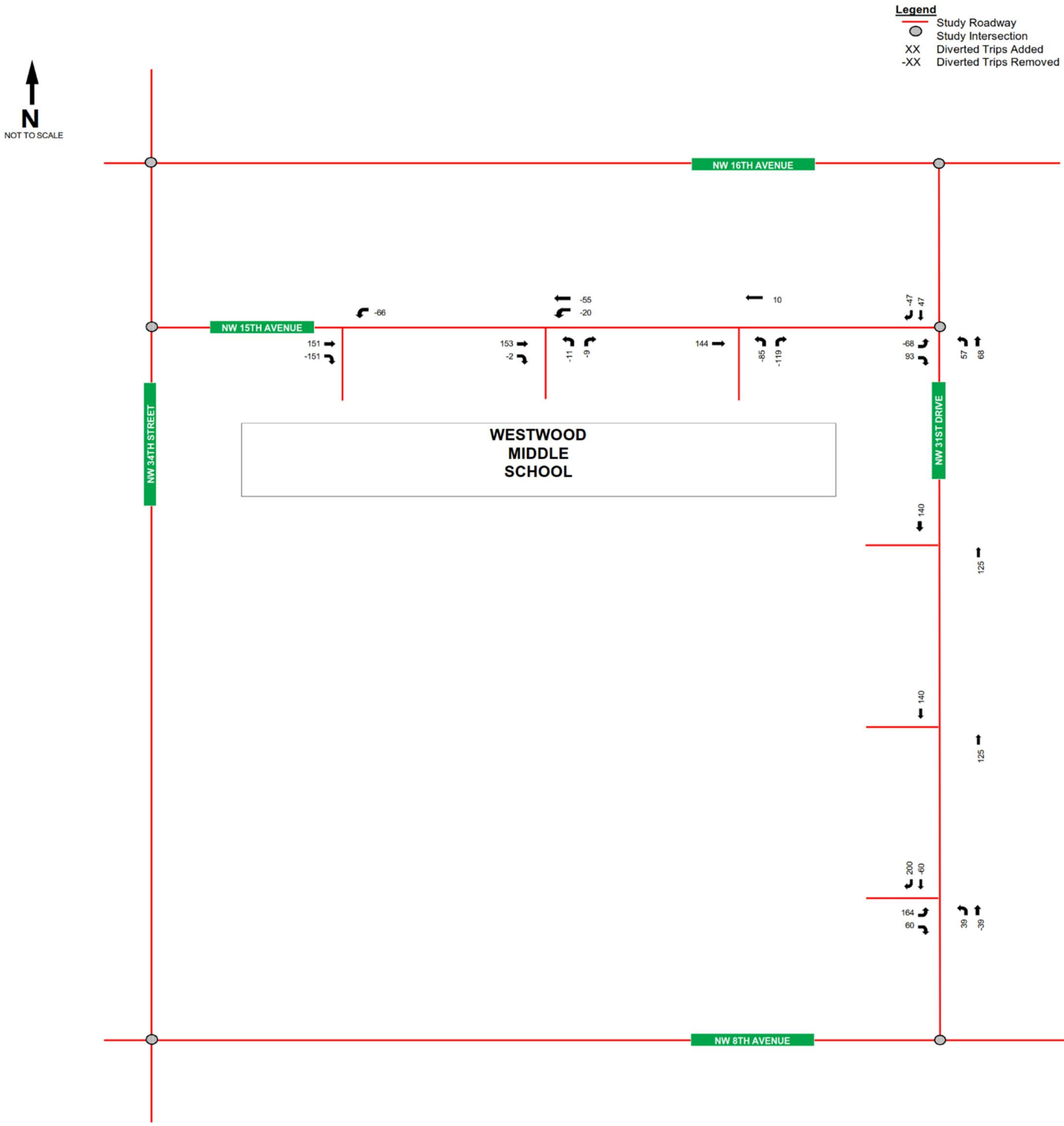

Figure 10
Morning Peak Trip Diversions
Westwood Temporary Modular School Study
Westwood Middle School Scenario
Gainesville, Florida

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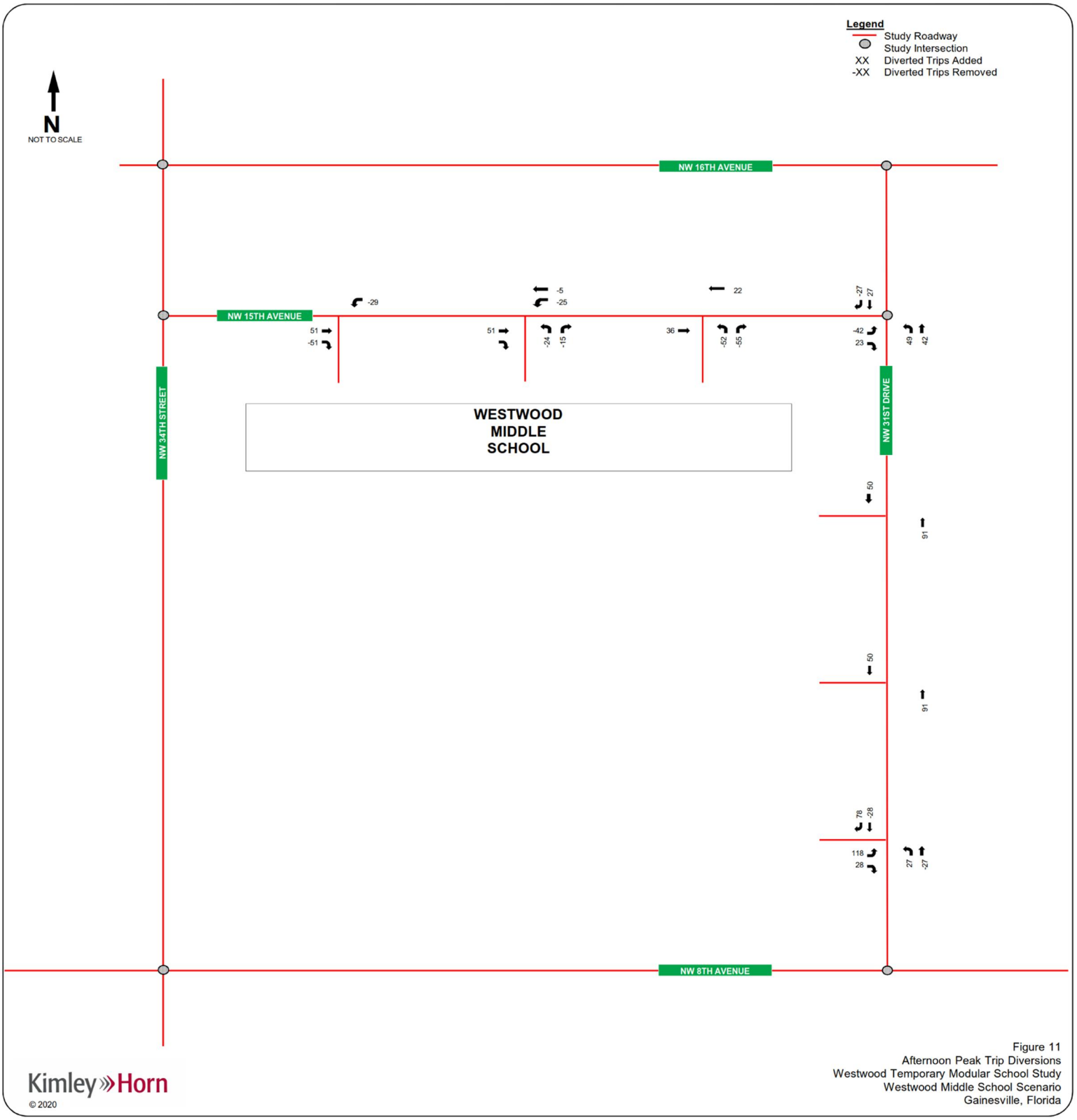

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Figure 11
Afternoon Peak Trip Diversions
Westwood Temporary Modular School Study
Westwood Middle School Scenario
Gainesville, Florida

Temporary Traffic Conditions Operations Analysis

Temporary conditions at the study area intersections for the 2021–2022 school year are forecasted based on background growth of the existing turning movement volumes and the diversion of parent drop-off/pick-up traffic to the Temporary Modular School driveway on NW 31st Drive. The temporary turning movement volumes during the 2021–2022 school year are illustrated in **Figure 12**. Intersection volume development worksheets detailing the temporary turning movement volume development for each intersection are provided in **Appendix E**.

The temporary future intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 8** summarizes the temporary intersection operating conditions at the six (6) study area intersections during the AM peak (8:30 AM to 9:30 AM) and PM peak (3:30 PM to 4:30 PM) of the Westwood Middle School bell schedule during the 2021–2022 school year.

All study area intersections are expected to continue to operate at their adopted LOS standard or better during the school's AM and PM peak hours under the Westwood Middle School scenario. All movement V/C ratios are less than one, signifying adequate capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

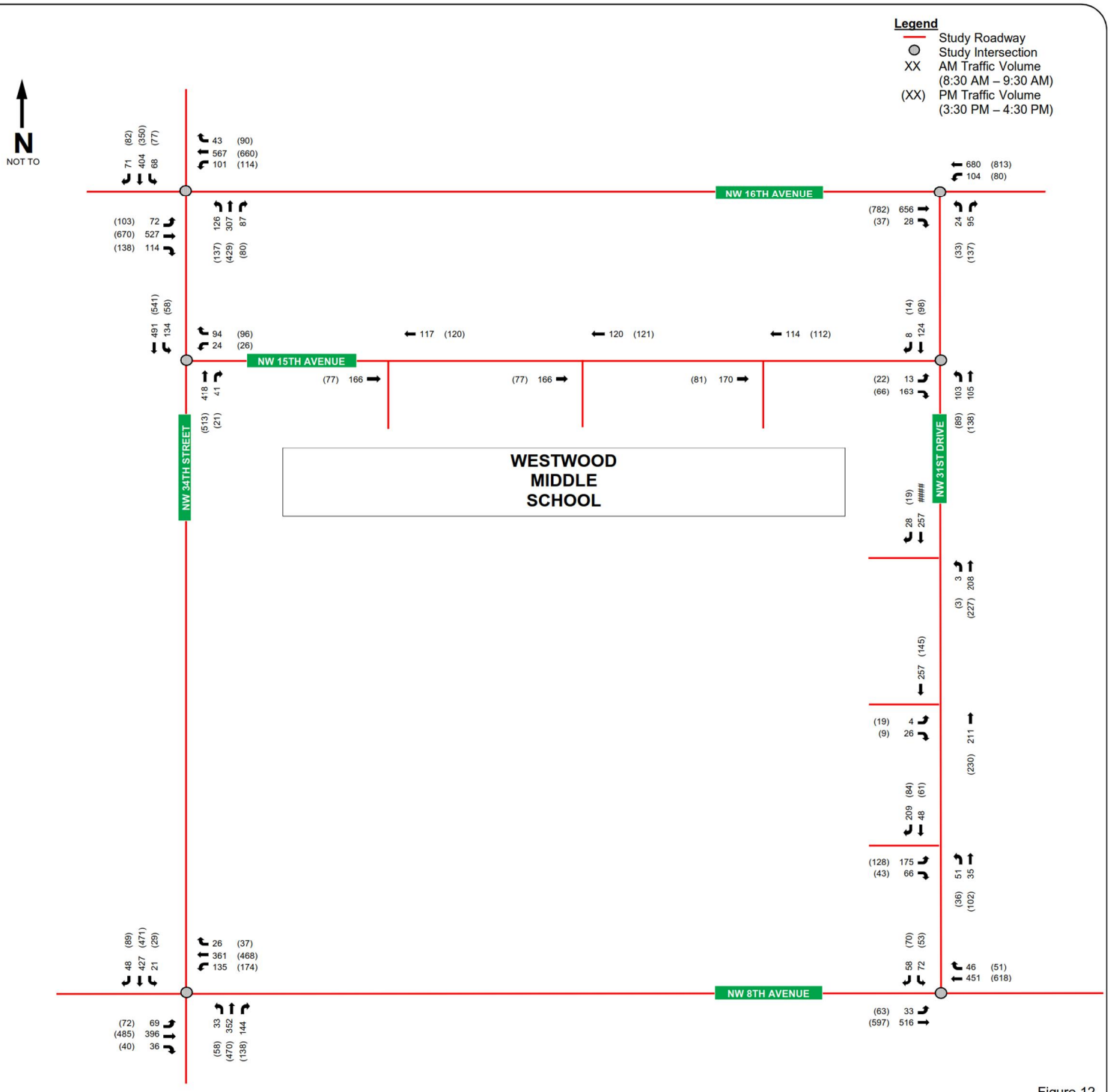

Figure 12
Projected 2021–2022 Turning Movement Volumes
Westwood Temporary Modular School Study
Westwood Middle School Scenario
Gainesville, Florida

Table 8: Temporary (2021–2022) Intersection Operations, Westwood Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**39.5**	**D**	**-**	**52.8**	**D**	**-**
	Northbound	**33.6**	**C**	**-**	**49.6**	**D**	**-**
	NBL	25.4	C	0.44	32.3	C	0.48
	NBT/R	36.2	D	0.61	54.3	D	0.79
	Southbound	**40.7**	**D**	**-**	**48.0**	**D**	**-**
	SBL	24.2	C	0.20	34.8	C	0.35
	SBT/R	43.0	D	0.75	50.4	D	0.69
	Eastbound	**44.4**	**D**	**-**	**59.3**	**E**	**-**
	EBL	32.0	C	0.29	39.7	D	0.50
	EBT/R	45.8	D	0.69	61.8	E	0.82
	Westbound	**37.9**	**D**	**-**	**51.1**	**D**	**-**
	WBL	27.6	C	0.37	38.3	D	0.54
	WBT/R	39.7	D	0.57	53.1	D	0.70
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**20.5**	**C**	**-**	**38.8**	**E**	**-**
	NBL/R	20.5	C	0.36	38.8	E	0.66
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	9.8	A	0.13	10.5	B	0.12
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**15.6**	**C**	**-**	**15.6**	**C**	**-**
	WBL/R	15.6	C	0.28	15.6	C	0.28
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	9.0	A	0.14	8.8	A	0.06
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**-**	**-**	**-**	**-**	**-**	**-**
	NBL	7.8	A	0.09	7.8	A	0.09
	Eastbound	**10.4**	**B**	**-**	**10.8**	**B**	**-**
	EBL	13.0	B	0.03	14.5	B	0.08
	EBR	10.2	B	0.22	9.5	A	0.11
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**34.6**	**C**	**-**	**51.4**	**D**	**-**
	Northbound	**32.5**	**C**	**-**	**49.6**	**D**	**-**
	NBL	20.5	C	0.14	32.0	C	0.29
	NBT/R	33.4	C	0.74	51.2	D	0.83
	Southbound	**32.0**	**C**	**-**	**48.2**	**D**	**-**
	SBL	21.4	C	0.10	34.0	C	0.19
	SBT/R	32.5	C	0.71	48.9	D	0.78
	Eastbound	**41.6**	**D**	**-**	**63.1**	**E**	**-**
	EBL	31.7	C	0.24	47.9	D	0.28
	EBT/R	43.1	D	0.63	65.2	E	0.69
	Westbound	**32.3**	**C**	**-**	**45.7**	**D**	**-**
	WBL	24.9	C	0.42	38.4	D	0.55
	WBT/R	34.9	C	0.43	48.2	D	0.48
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	8.8	A	0.04	9.3	A	0.07
	Southbound	**24.4**	**C**	**-**	**25.1**	**D**	**-**
	SBL/R	24.4	C	0.46	25.1	D	0.42

LITTLEWOOD ELEMENTARY SCHOOL (2022–2023 SCHOOL YEAR)

The third school planned to operate from the Temporary Modular School is Littlewood Elementary School. Operations for Littlewood Elementary School will be conducted in the Temporary Modular School during the 2022–2023 school year.

Field Observations

Existing conditions were observed at Littlewood Elementary School during the arrival and dismissal peak periods on Tuesday, January 28, 2020. During the arrival period, several buses were observed using the Westside Park parking area as a staging area before entering the bus loop on NW 34th Street, since the bus loop is only long enough to accommodate approximately five buses at one time. Additionally, the Westside Park parking area was utilized by parents avoiding the drop-off queue on the south side of the school. The drop-off queue was observed winding throughout the southern portion of the parking area and backed up into NW 8th Avenue (both the eastbound left-turn and the westbound right-turn movement) at times during the arrival period. It was also observed that a law enforcement officer set up a traffic barrier during the arrival period to prohibit southbound left-turns from the school driveway.

During the school's dismissal period, queues from the parent pick-up queue again exceeded the available capacity in the southern lot, resulting in backup into the inside eastbound through lane and the outside westbound through lane on NW 8th Avenue. There is no eastbound left-turn lane on NW 8th Avenue for vehicles turning into Littlewood Elementary School to queue.

Bell Schedule

Littlewood Elementary School operates with the standard Alachua County Public Schools elementary school bell schedule, with first bell at 7:40 AM and the final dismissal bell at 1:47 PM. Turning movements into and out of the Littlewood Elementary School driveways were collected from 7:00 AM to 9:00 AM and from 1:00 PM to 3:00 PM. The bell schedule for Littlewood Elementary School is expected to remain during the 2022–2023 school year when Littlewood Elementary school occupies the Temporary Modular School.

Peak Traffic Conditions

In order to evaluate the peak traffic conditions anticipated for the Temporary Modular School in the 2022–2023 school year, the existing turning movement volumes are combined with the forecasted drop-off and pick-up peak hour traffic volumes to and from Littlewood Elementary School. The number of students who walk, bicycle, ride a bus, or get dropped off by parents is not expected to change since Littlewood Elementary School is only one-quarter mile south of the Temporary Modular School. When projecting trips to and from the Temporary Modular School, the magnitude of driveway volumes at Littlewood Elementary School were assumed to remain the same as existing.

Existing Conditions at Study Area Intersections

Existing conditions at the study area intersections for the Littlewood Elementary School scenario are based on turning movement volumes during the hours surrounding the existing bell schedule. Turning movement volumes from 7:00 AM to 8:00 AM are utilized for the school's AM peak hour analysis and turning movement volumes from 1:15 PM to 2:15 PM are utilized for the school's PM peak hour analysis. The existing turning movement volumes utilized for the Littlewood Elementary School scenario are illustrated in **Figure 13**.

The intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 9** summarizes the existing intersection operating conditions at the six (6) study area intersections during the AM peak (7:00 AM to 8:00 AM) and PM peak (1:15 PM to 2:15 PM) of the Littlewood Elementary School bell schedule.

All study area intersections operate at their adopted LOS standard or better during the school's AM and PM peak hours. All movement V/C ratios are less than one, signifying adequate capacity for the existing volumes. *Synchro* outputs are provided in **Appendix D**.

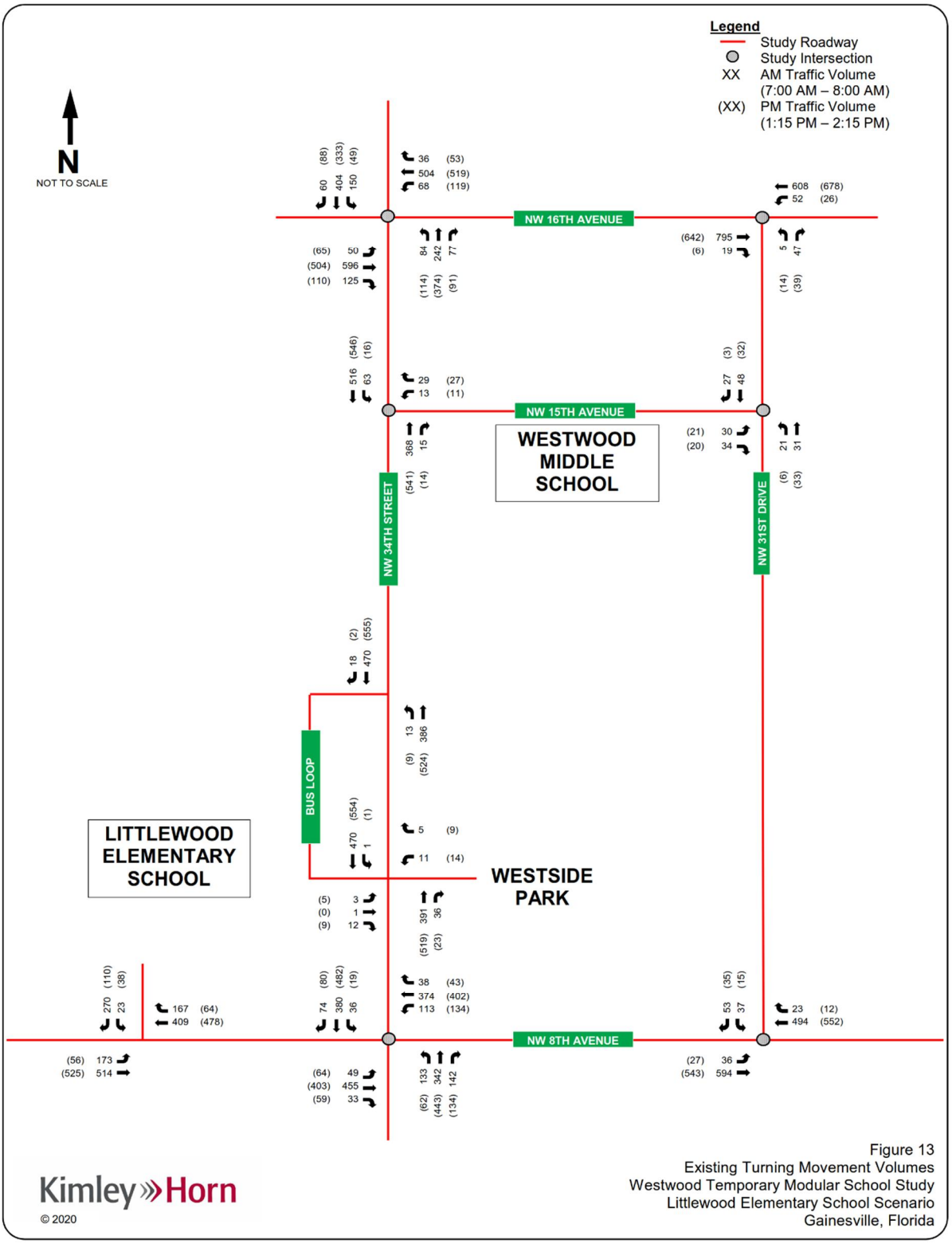

Figure 13
Existing Turning Movement Volumes
Westwood Temporary Modular School Study
Littlewood Elementary School Scenario
Gainesville, Florida

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Table 9: Existing Conditions Intersection Operations, Littlewood Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**48.4**	**D**	**-**	**37.3**	**D**	**-**
	Northbound	**51.5**	**D**	**-**	**34.7**	**C**	**-**
	NBL	40.5	D	0.49	22.9	C	0.38
	NBT/R	54.4	D	0.66	37.6	D	0.72
	Southbound	**52.3**	**D**	**-**	**38.1**	**D**	**-**
	SBL	32.6	C	0.51	25.5	C	0.20
	SBT/R	58.7	E	0.83	39.5	D	0.71
	Eastbound	**49.6**	**D**	**-**	**42.3**	**D**	**-**
	EBL	33.8	C	0.22	29.9	C	0.24
	EBT/R	50.7	D	0.70	43.7	D	0.70
	Westbound	**41.1**	**D**	**-**	**34.0**	**C**	**-**
	WBL	33.1	C	0.37	24.8	C	0.41
	WBT/R	42.1	D	0.49	36.0	D	0.54
NW 31st Drive & NW 16th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**17.0**	**C**	**-**	**14.9**	**B**	**-**
	NBL/R	17.0	C	0.18	14.9	B	0.13
	Westbound	**10.9**	**B**	**-**	**9.1**	**A**	**-**
	WBL	10.9	B	0.10	9.1	A	0.03
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**13.7**	**B**	**-**	**14.2**	**B**	**-**
	WBL/R	13.7	B	0.11	14.2	B	0.10
	Southbound	**8.6**	**A**	**-**	**8.8**	**A**	**-**
	SBL	8.6	A	0.07	8.8	A	0.02
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**7.5**	**A**	**-**	**7.3**	**A**	**-**
	NBL	7.5	A	0.02	7.3	A	0.01
	Eastbound	**9.4**	**A**	**-**	**9.0**	**A**	**-**
	EBL	10.0	B	0.06	9.3	A	0.04
	EBR	8.9	A	0.05	8.6	A	0.03
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**40.7**	**D**	**-**	**40.6**	**D**	**-**
	Northbound	**34.2**	**C**	**-**	**34.6**	**C**	**-**
	NBL	24.3	C	0.53	23.6	C	0.25
	NBT/R	36.9	D	0.75	35.8	D	0.73
	Southbound	**40.9**	**D**	**-**	**39.9**	**D**	**-**
	SBL	25.6	C	0.17	25.3	C	0.09
	SBT/R	42.2	D	0.77	40.4	D	0.76
	Eastbound	**49.9**	**D**	**-**	**50.5**	**D**	**-**
	EBL	36.6	D	0.21	39.5	D	0.22
	EBT/R	51.3	D	0.70	52.0	D	0.62
	Westbound	**38.8**	**D**	**-**	**39.0**	**D**	**-**
	WBL	31.0	C	0.47	30.8	C	0.40
	WBT/R	41.0	D	0.48	41.5	D	0.45
NW 8th Avenue & NW 31st Drive	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**9.1**	**A**	**-**	**8.8**	**A**	**-**
	EBL	9.1	A	0.05	8.8	A	0.03
	Southbound	**23.2**	**C**	**-**	**15.1**	**C**	**-**
	SBL/R	23.2	C	0.37	15.1	C	0.13

Temporary Traffic Projections/Diversions

The overall number of vehicle-trips entering the Temporary Modular School is expected to be equivalent to the number counted at the Littlewood Elementary School driveway, since the number of students who walk, bicycle, ride a bus, or get dropped off by parents is not expected to change. Diverted traffic for the Littlewood Elementary School scenario is expected to primarily access the Temporary Modular School via the intersection of NW 8th Avenue and NW 31st Drive. Approximately 85 percent (85%) of Littlewood Elementary School traffic is estimated to enter the Temporary Modular School from the south and 15 percent (15%) from the north.

Figure 14 and **Figure 15** illustrate the trip diversion estimates for the Littlewood Elementary School scenario during the school's AM and PM peak hour, respectively.

Buses for Littlewood Elementary School are assumed to utilize the parking area at Westside Park, consistent with bus staging operations under existing conditions. Therefore, no diversion of bus trips was applied when calculating the temporary traffic conditions for the Littlewood Elementary School scenario at the Temporary Modular School.

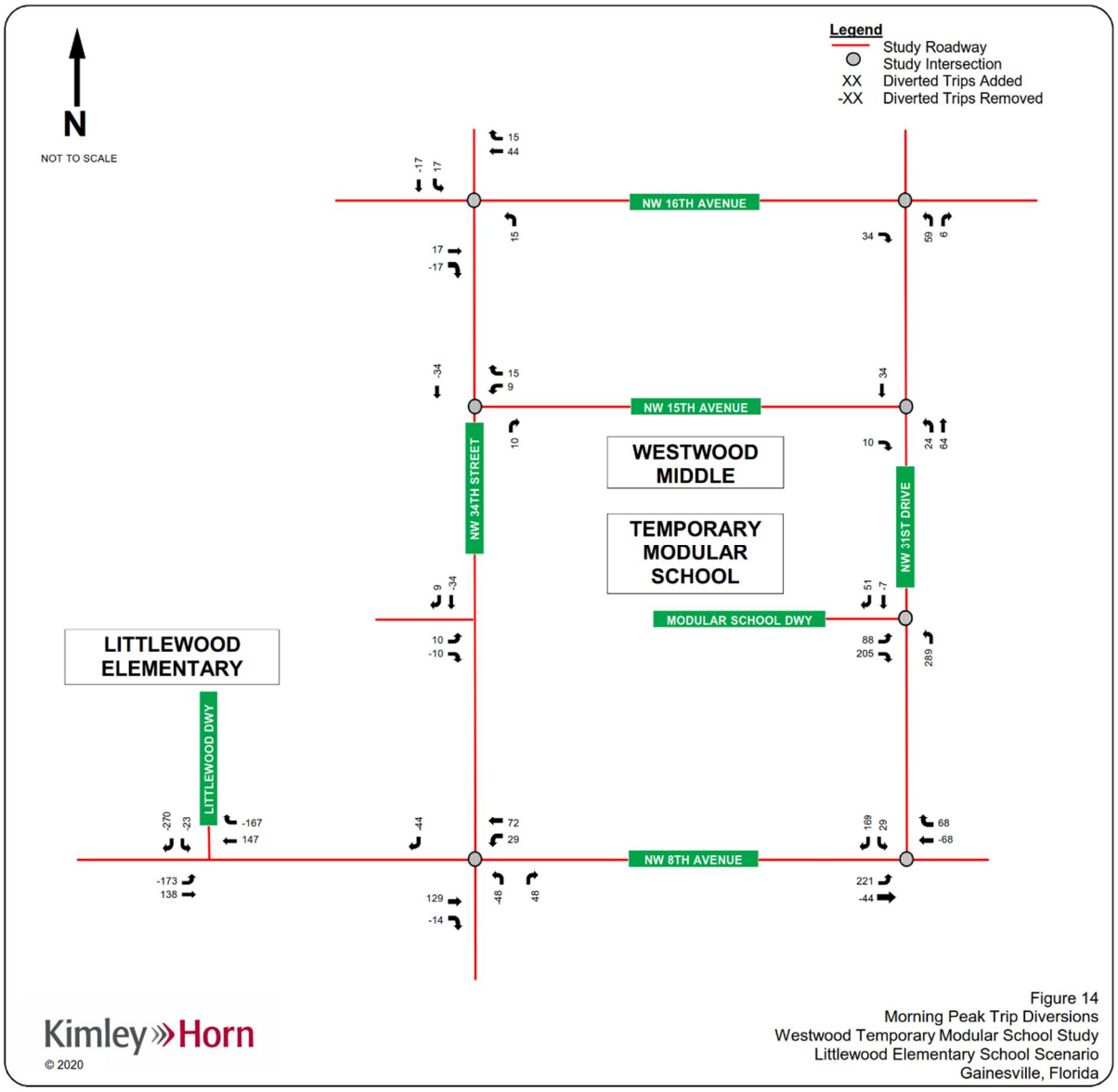

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Figure 14
Morning Peak Trip Diversions
Westwood Temporary Modular School Study
Littlewood Elementary School Scenario
Gainesville, Florida

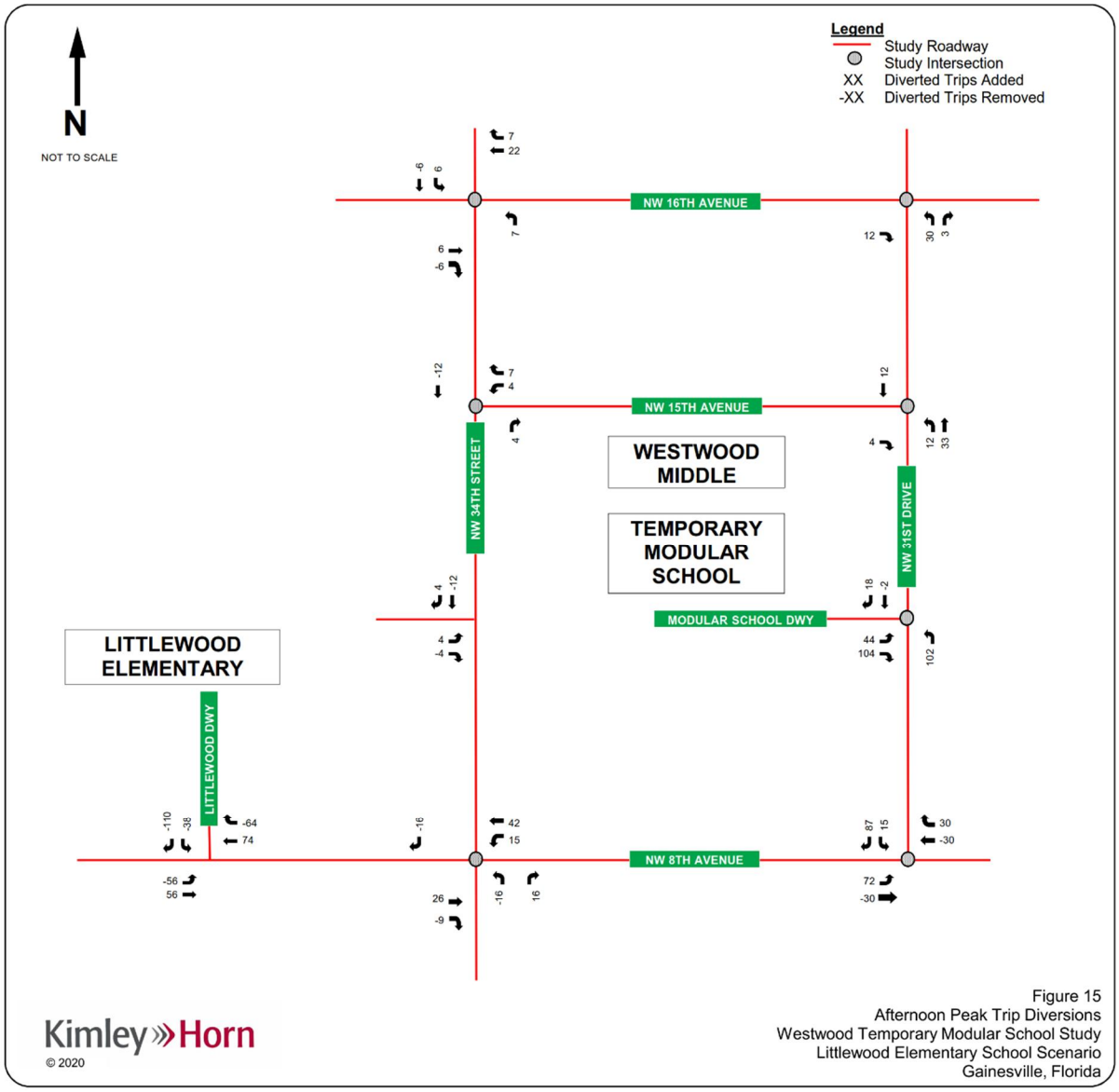

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Figure 15
Afternoon Peak Trip Diversions
Westwood Temporary Modular School Study
Littlewood Elementary School Scenario
Gainesville, Florida

Temporary Traffic Conditions Operations Analysis

Temporary conditions at the study area intersections for the 2022–2023 school year are forecasted based on background growth of the existing turning movement volumes and the diversion of parent drop-off/pick-up traffic to the Temporary Modular School driveway on NW 31st Drive. The temporary turning movement volumes during the 2022–2023 school year are illustrated in **Figure 16**. Intersection volume development worksheets detailing the temporary turning movement volume development for each intersection are provided in **Appendix E**.

The temporary future intersection operating conditions were evaluated using *Synchro 10* software. Results are provided in terms of LOS, V/C ratio, and delay. **Table 10** summarizes the temporary intersection operating conditions at the six (6) study area intersections during the AM peak (7:00 AM to 8:00 AM) and PM peak (1:15 PM to 2:15 PM) of the Littlewood Elementary School bell schedule during the 2022–2023 school year.

The study intersections are expected to continue to operate at their adopted LOS standard or better during the school's AM and PM peak hours with the exception of the stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue which are expected to operate at LOS F during the school's AM Peak hour. This result is common when a minor street stop-controlled approach crosses a high-volume major street free-flow approach during peak periods.

In order to address the operational issues anticipated on the minor street stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue, it is recommended that law enforcement officer (LEO) control of traffic be implemented at these intersections during the school's arrival period during the 2022-2023 school year. This operational plan is common for facilities of this type in similar locations. The LEO will facilitate the movement of traffic through the two subject intersections, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. In order to replicate LEO control, the intersections were analyzed as signalized intersections using *Synchro 10* software. The results are summarized in **Table 10**. Both intersections would be expected to operate at their adopted LOS standard or better during the school's AM peak hour with LEO control.

Synchro outputs are provided in **Appendix D**.

The impacts of Temporary Modular School traffic on roadway segments within the study area were also evaluated for the school's AM and PM peak hours. Peak hour directional service capacities for area roadways were determined based on daily roadway service capacities published in the Gainesville MTPO Multimodal LOS Report. Existing directional segment volumes, background directional segment volumes, and future directional segment volumes including trip diversions to the Temporary Modular School were compared to the respective peak hour directional capacities of area roadways. No roadway segments were determined to exceed their peak hour directional service capacities under the Littlewood Elementary School scenario during the 2022–2023 school year. The results of the segment analyses are depicted in **Table 11**.

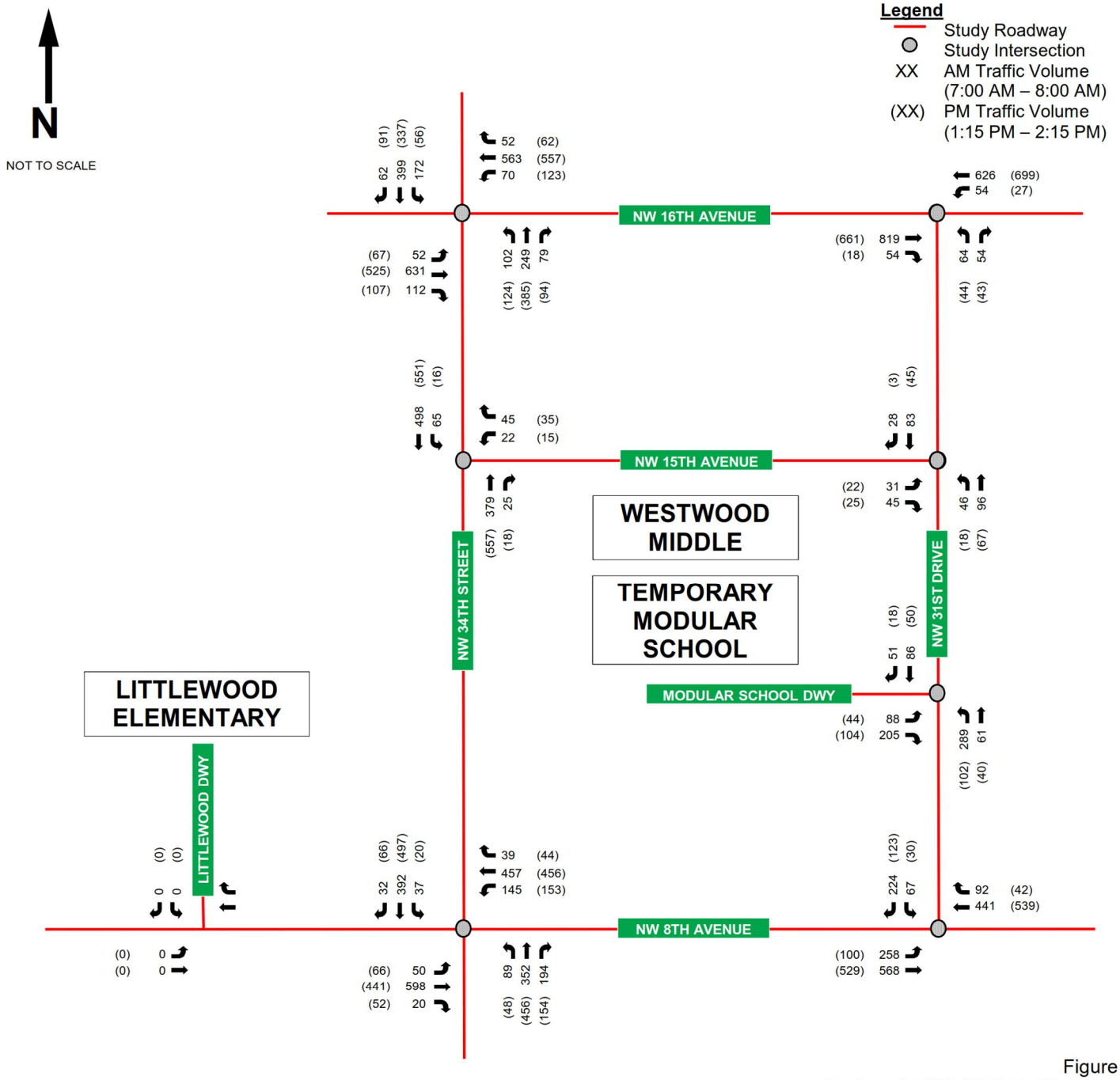

Figure 16
Projected 2022-2023 Traffic Volumes
Westwood Temporary Modular School Study
Littlewood Elementary School Scenario
Gainesville, Florida

Kimley»Horn

Table 10: Temporary (2022–2023) Intersection Operations, Littlewood Scenario

		AM Peak Hour			PM Peak Hour		
		Delay (sec/veh)	LOS	V/C	Delay (sec/veh)	LOS	V/C
NW 34th Street & NW 16th Avenue	**Overall Intersection**	**51.3**	**D**	**-**	**39.0**	**D**	**-**
	Northbound	**57.8**	**E**	**-**	**38.5**	**D**	**-**
	NBL	46.5	D	0.60	24.4	C	0.42
	NBT/R	61.3	E	0.71	42.2	D	0.77
	Southbound	**58.4**	**E**	**-**	**39.5**	**D**	**-**
	SBL	37.9	D	0.61	26.0	C	0.24
	SBT/R	66.1	E	0.86	41.3	D	0.72
	Eastbound	**49.6**	**D**	**-**	**43.3**	**D**	**-**
	EBL	34.2	C	0.25	30.6	C	0.27
	EBT/R	50.6	D	0.69	44.6	D	0.71
	Westbound	**42.6**	**D**	**-**	**35.1**	**D**	**-**
	WBL	33.8	C	0.38	25.4	C	0.43
	WBT/R	43.5	D	0.54	37.0	D	0.58
NW 31st Drive & NW 16th Avenue (Unsignalized)	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**151.0**	**F**	**-**	**22.4**	**C**	**-**
	NBL/R	151.0	F	1.05	22.4	C	0.31
	Westbound	**-**	**-**	**-**	**-**	**-**	**-**
	WBL	11.3	B	0.11	9.2	A	0.03
NW 31st Drive & NW 16th Avenue (LEO Control)	**Overall Intersection**	**13.9**	**B**	**-**	**10.8**	**B**	**-**
	Northbound	**34.5**	**C**	**-**	**23.4**	**C**	**-**
	NBL/R	34.5	C	0.66	23.4	C	0.38
	Westbound	**7.8**	**A**	**-**	**5.7**	**A**	**-**
	WBL	35.6	D	0.60	21.9	C	0.15
	WBT	5.4	A	0.35	5.1	A	0.34
	Eastbound	**15.9**	**B**	**-**	**14.7**	**B**	**-**
	EBT/R	15.9	B	0.73	14.7	B	0.60
NW 34th Street & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Westbound	**14.7**	**B**	**-**	**14.8**	**B**	**-**
	WBL/R	14.7	B	0.18	14.8	B	0.13
	Southbound	**-**	**-**	**-**	**-**	**-**	**-**
	SBL	8.7	A	0.08	8.9	A	0.02
NW 31st Drive & NW 15th Avenue	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Northbound	**7.7**	**A**	**-**	**7.4**	**A**	**-**
	NBL	7.7	A	0.05	7.4	A	0.02
	Eastbound	**10.4**	**B**	**-**	**9.3**	**A**	**-**
	EBL	12.1	B	0.08	10.0	B	0.04
	EBR	9.3	A	0.08	8.7	A	0.04
NW 34th Street & NW 8th Avenue	**Overall Intersection**	**51.5**	**D**	**-**	**44.5**	**D**	**-**
	Northbound	**56.2**	**E**	**-**	**40.3**	**D**	**-**
	NBL	31.3	C	0.39	25.9	C	0.20
	NBT/R	60.2	E	0.89	41.4	D	0.77
	Southbound	**46.3**	**D**	**-**	**39.5**	**D**	**-**
	SBL	36.6	D	0.28	27.5	C	0.10
	SBT/R	47.2	D	0.69	40.0	D	0.72
	Eastbound	**58.9**	**E**	**-**	**56.3**	**E**	**-**
	EBL	41.6	D	0.21	43.7	D	0.24
	EBT/R	60.3	E	0.74	58.0	E	0.65
	Westbound	**42.8**	**D**	**-**	**43.0**	**D**	**-**
	WBL	38.1	D	0.59	34.4	C	0.46
	WBT/R	44.1	D	0.47	45.6	D	0.48
NW 8th Avenue & NW 31st Drive (Unsignalized)	**Overall Intersection**	**-**	**-**	**-**	**-**	**-**	**-**
	Eastbound	**-**	**-**	**-**	**-**	**-**	**-**
	EBL	11.1	B	0.36	9.2	A	0.11
	Southbound	**446.3**	**F**	**-**	**20.1**	**C**	**-**
	SBL/R	446.3	F	1.86	20.1	C	0.40
NW 8th Avenue & NW 31st Drive (LEO Control)	**Overall Intersection**	**44.6**	**D**	**-**	**14.7**	**B**	**-**
	Eastbound	**26.3**	**C**	**-**	**9.2**	**A**	**-**
	EBL	65.8	E	0.89	36.4	D	0.64
	EBT	8.4	A	0.31	4.1	A	0.23
	Westbound	**60.0**	**E**	**-**	**16.7**	**B**	**-**
	WBT/R	60.0	E	0.96	16.7	B	0.71
	Southbound	**68.5**	**E**	**-**	**29.9**	**C**	**-**
	SBL/R	68.5	E	0.89	29.9	C	0.32

Table 11: Segment Analyses – Littlewood Elementary School (2022–2023) Scenario

Roadway	From	To	Roadway Attributes [1]				Peak Hour Directional Service Capacity [2]	Existing (2020) AM Peak Hour Conditions			Existing (2020) PM Peak Hour Conditions			Future (2023) Background AM Peak Hour Conditions			Future (2023) Background PM Peak Hour Conditions			AM Peak Hour Project Traffic		PM Peak Hour Project Traffic		Future (2023) Total AM Peak Hour Conditions			Future (2023) Total PM Peak Hour Conditions		
			Functional Classification	Adopted LOS	Number of Lanes	Speed Limit		NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [3]	SB/WB Volume [3]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB Volume [4]	SB/WB Volume [4]	LOS	NB/EB[5]	SB/WB[5]	NB/EB[5]	SB/WB[5]	NB/EB Volume [6]	SB/WB Volume [6]	LOS	NB/EB Volume [6]	SB/WB Volume [6]	LOS
SR 121/NW 34th Street																												
	SR 26/University Ave	NW 16th Avenue	II State	E	2D	35	840	617	597	D	639	675	D	636	615	D	658	695	D	15	0	7	0	651	615	D	665	695	D
	NW 16th Avenue	SR 222/NW 39th Ave	I State	E	2U	40	880	328	614	C	492	470	C	338	633	C	507	484	C	15	0	7	0	353	633	C	514	484	C
NW 16th Avenue																												
	NW 43rd Street	US 441/NW 13th Street	I Major County	E	4D	40	1,800	842	660	C	681	721	C	868	680	C	702	743	C	68	59	24	30	936	739	C	726	773	C
NW 8th Avenue																												
	SR 26/Newberry Road	W 22nd Street	I Major City	E	4U	40	1,710	633	581	C	570	587	C	652	599	C	587	605	C	160	169	36	69	812	768	C	623	674	C
NW 31st Drive																												
	NW 8th Avenue	NW 16th Avenue	City	E	2U	25	576	61	90	C	54	52	C	63	93	C	56	54	C	238	205	84	102	301	298	D	140	156	C
NW 15th Avenue																												
	SR 121/NW 34th Stree	NW 31st Drive	City	E	2U	25	576	78	48	C	41	38	C	80	49	C	42	39	C	27	24	10	12	107	73	C	52	51	C

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Notes:

1. Roadway attributes were obtained from the Gainesville Metropolitan Transportation Planning Organization Multimodal Level of Service Report (2018).
2. Peak Hour Directional Service Volumes are reported based on the Florida Department of Transportation Quality/Level of Service Handbook (2013).
3. Peak Hour Directional volumes are calculated based on the approach and departure volumes from turning movement counts collected in January 2020.
4. Peak Hour Directional volumes are calculated based on the approach and departure volumes at study area intersections under future background conditions.
5. Project traffic was calculated as the maximum across the segment
6. Peak Hour Directional volumes are the sum of the future background conditions volumes and project traffic.

TRAFFIC SIGNAL WARRANT ANALYSES

Signal warrant analyses were performed at the intersection of NW 8th Avenue and NW 31st Drive as well as the intersection of NW 16th Avenue and NW 31st Drive. The signal warrant analyses were performed based upon the criteria contained in the 2009 Edition of the *Manual on Uniform Traffic Control Devices* (*MUTCD*).

The signal warrant analyses evaluated existing conditions at the two intersections as well as the expected traffic conditions in the future years during which the Temporary Modular School will be utilized by Howard Bishop Middle School (2020–2021) and by Littlewood Elementary School (2022–2023). Analyses were completed for both of the Howard Bishop Middle School bell schedule scenarios.

The analyses for each condition were conducted assuming two different minor street assumptions; NW 31st Drive was considered the minor street in the first analysis for each condition and the mainline left turn (eastbound left turn for NW 8th Avenue and westbound left turn for NW 16th Avenue) was considered the minor street in the second analysis for each condition.

Right-turn volume reductions on the minor street approaches were applied in accordance with Pagones Theorem. The Pagones Theorem is included in **Appendix F**. This theorem stipulates various right-turn volume reductions for minor-street approaches based on the ratio of the right-turn volume to approach volume or minor street lane configuration. **Table 12** summarizes the right-turn volume reduction that should be applied based on the approach lane configuration and percentage of the right-turn hourly volume compared to the other movements' hourly volumes. The appropriate reductions were applied to the minor-street right-turn volume on an hourly basis.

Table 12: Pagones Theorem Hourly Right-Turn Volume Reduction

Situation	Minor-Street Approach Configuration	Right-Turn Percentage	Right-Turn Reduction
1	Shared left/through/right	R > 0.7A	60%
1	Shared left/through/right	0.7A ≥ R ≥ 0.35A	30%
1	Shared left/through/right	R ≤ 0.35A	20%
2	Exclusive left, shared through/right lane	R > 3T	60%
2	Exclusive left, shared through/right lane	3T ≥ R ≥ T/3	30%
2	Exclusive left, shared through/right lane	R ≤ T/3	20%
3	Any configuration with an exclusive right turn lane	-	75%

A = Approach volume R = Right-turn volume T = Through volume

The existing and future volumes at the two intersections were compared to criteria contained in the *MUTCD* for the following warrants:

- Warrant Number 1: Eight-Hour Vehicular Volume Warrant
  - Condition A: Minimum Vehicular Volume
  - Condition B: Interruption of Continuous Traffic
  - Combination of Conditions A & B
- Warrant Number 2: Four-Hour Vehicular Volume Warrant
- Warrant Number 3: Peak Hour Warrant
- Warrant Number 5: School Crossing
- Warrant Number 7: Crash Experience

NW 8th Avenue and NW 31st Drive

The intersection of NW 8th Avenue and NW 31st Drive is currently a two-way stop-controlled intersection with the southbound approach along NW 31st Drive operating under stop-controlled conditions. The westbound and eastbound approaches along NW 8th Avenue operate under free-flow conditions.

The following roadway characteristics were incorporated into the signal warrant analysis:

- Major street approaches number of lanes = 2
- Minor street approach number of lanes = 1
- Posted speed along major street = 35 mph

A reduction factor was applied to the southbound right-turn volume based on Pagones Theorem and the turning movement volumes at the intersection. The reduction factor varied at different count hours from 30 percent (30%) to 60 percent (60%).

Existing Conditions

Based on existing turning movement volumes, the intersection of NW 8th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the stop-controlled southbound NW 31st Drive approach as the minor street or when considering the NW 8th Avenue eastbound left-turn movement as the minor street.

The intersection also does not satisfy the thresholds for Warrant 5, since the highest number of major street crossings during school peak periods (including bicycles and pedestrians) in any 1 hour was 16 crossings and the minimum requirement to meet Warrant 5 is 20 crossings during the highest hour.

Based on crash history at this intersection, the criteria for Warrant 7 is not met since there were not at least 5 crashes susceptible to correction by a traffic signal within a 12-month period. Crash data from the University of Florida's *Signal Four Analytics* shows that 16 crashes occurred at this intersection from 2015 through 2019. The most common crash type was rear-end (14 crashes) and primarily involved westbound congestion at the adjacent intersection of NW 8th Avenue and NW 34th Street. The crash data is summarized in **Appendix F**.

The signal warrant analysis considering existing turning movement volumes is summarized in **Table 13**. A more thorough breakdown of the signal warrant analysis is included in **Appendix F**.

Table 13: Signal Warrant Summary – NW 8th Avenue and NW 31st Drive, Existing Conditions

Table 13A: Southbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	2 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	4 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	2 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied
Table 13B: Eastbound NW 8th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Howard Bishop Middle School (2020–2021), First Scenario

Based on forecasted turning movement volumes for the Howard Bishop Middle School first bell scenario, the intersection of NW 8th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1 or Warrant 3 when considering the stop-controlled southbound NW 31st Drive approach as the minor street, but may exceed the thresholds for Warrant 2 (Four Hour Vehicular Volume) during the school arrival and dismissal periods. The intersection does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the eastbound NW 8th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2020–2021 school year with the first bell scenario for Howard Bishop Middle School is summarized in **Table 14**. A more thorough breakdown of the signal warrant analysis is included in **Appendix F**. Since the signal is only warranted during the temporary school's arrival and dismissal period, it is recommended that law enforcement officer (LEO) control of traffic be implemented at this intersection during these peak periods during the 2020-2021 school year. The LEO will facilitate the movement of traffic through the subject intersection, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. This operational plan is common for facilities of this type in similar locations.

Table 14: Signal Warrant Summary – NW 8th Avenue and NW 31st Drive, Temporary (2020–2021) Conditions, Howard Bishop First Scenario

Table 14A: Southbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	1 hour	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	5 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	3 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	4 hours	**Satisfied**
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied
Table 14B: Eastbound NW 8th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Howard Bishop Middle School (2020–2021), Second Scenario

Based on forecasted turning movement volumes for the Howard Bishop Middle School second bell scenario, the intersection of NW 8th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1 or Warrant 2 when considering the stop-controlled southbound NW 31st Drive approach as the minor street, but may exceed the thresholds for Warrant 3 (Peak Hour Vehicular Volume) during the school arrival period. The intersection does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the eastbound NW 8th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2020–2021 school year with the second bell scenario for Howard Bishop Middle School is summarized in **Table 15**. A more thorough breakdown of the signal warrant analysis is included in **Appendix F**. Since the signal is only warranted during the temporary school's arrival period, it is recommended that law enforcement officer (LEO) control of traffic be implemented at this intersection during the school's peak periods during the 2020-2021 school year. The LEO will facilitate the movement of traffic through the subject intersection, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. This operational plan is common for facilities of this type in similar locations.

Table 15: Signal Warrant Summary – NW 8th Avenue and NW 31st Drive, Temporary (2020–2021) Conditions, Howard Bishop Second Scenario

Table 15A: Southbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	2 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	4 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	2 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	2 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	1 hour	**Satisfied**
Table 15B: Eastbound NW 8th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Littlewood Elementary School (2022–2023) Scenario

Based on forecasted turning movement volumes for the Littlewood Elementary School scenario, the intersection of NW 8th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1 or Warrant 2 when considering the stop-controlled southbound NW 31st Drive approach as the minor street, but may exceed the thresholds for Warrant 3 (Peak Hour Vehicular Volume) during the school arrival period. The intersection does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the eastbound NW 8th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2022–2023 school year for Littlewood Elementary School is summarized in **Table 16**. A more thorough breakdown of the signal warrant analysis is included in **Appendix F**. Since the signal is only warranted during the temporary school's arrival period, it is recommended that law enforcement officer (LEO) control of traffic be implemented at this intersection during the school's arrival period during the 2022-2023 school year. The LEO will facilitate the movement of traffic through the subject intersection, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. This operational plan is common for facilities of this type in similar locations.

Table 16: Signal Warrant Summary – NW 8th Avenue and NW 31st Drive, Temporary (2022–2023) Conditions, Littlewood Elementary School Scenario

Table 16A: Southbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	1 hour	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	4 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	2 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	3 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	1 hour	**Satisfied**
Table 16B: Eastbound NW 8th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	1 hour	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

NW 16th Avenue and NW 31st Drive

The intersection of NW 16th Avenue and NW 31st Drive is currently a two-way stop-controlled intersection with the northbound approach along NW 31st Drive operating under stop-controlled conditions. The westbound and eastbound approaches along NW 16th Avenue operate under free-flow conditions.

The following roadway characteristics were incorporated into the signal warrant analysis:

- Major street approaches number of lanes = 2
- Minor street approach number of lanes = 1
- Posted speed along major street = 40 mph

A reduction factor of 60 percent (60%) was applied to the northbound right-turn volumes based on Pagones Theorem and the turning movement volumes at the intersection.

Existing Conditions

Based on existing turning movement volumes, the intersection of NW 16th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the stop-controlled northbound NW 31st Drive approach as the minor street or when considering the westbound NW 16th Avenue left-turn movement as the minor street.

The intersection also does not satisfy the thresholds for Warrant 5, since zero major street crossings were observed during school peak periods (including bicycles and pedestrians) and the minimum requirement to meet Warrant 5 is 20 crossings during the highest hour.

Based on crash history at this intersection, the criteria for Warrant 7 is not met since there were not at least 5 crashes susceptible to correction by a traffic signal within a 12-month period. Crash data from the University of Florida's Signal Four Analytics shows that three crashes occurred at this intersection from 2015 through 2019. All three (3) crashes were rear-end collisions not correctable by a traffic signal. The crash data is summarized in **Appendix G**.

The signal warrant analysis considering existing turning movement volumes is summarized in **Table 17**. A more thorough breakdown of the signal warrant analysis is included in **Appendix G**.

Table 17: Signal Warrant Summary – NW 16th Avenue and NW 31st Drive, Existing Conditions

Table 17A: Northbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	1 hour	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied
Table 17B: Westbound NW 16th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Howard Bishop Middle School (2020–2021), First Scenario

Based on forecasted turning movement volumes for the Howard Bishop Middle School first bell scenario, the intersection of NW 16th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the stop-controlled northbound NW 31st Drive approach as the minor street or when considering the westbound NW 16th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2020–2021 school year with the first bell scenario for Howard Bishop Middle School is summarized in **Table 18**. A more thorough breakdown of the signal warrant analysis is included in **Appendix G**.

Table 18: Signal Warrant Summary – NW 16th Avenue and NW 31st Drive, Temporary (2020–2021) Conditions, Howard Bishop First Scenario

Table 18A: Northbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	3 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	3 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied
Table 18B: Westbound NW 16th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	1 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	1 hour	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Howard Bishop Middle School (2020–2021), Second Scenario

Based on forecasted turning movement volumes for the Howard Bishop Middle School second bell scenario, the intersection of NW 16th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1 or Warrant 2 when considering the stop-controlled southbound NW 31st Drive approach as the minor street, but may exceed the thresholds for Warrant 3 (Peak Hour Vehicular Volume) during the school arrival and dismissal period. The intersection does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the westbound NW 16th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2020–2021 school year with the second bell scenario for Howard Bishop Middle School is summarized in **Table 19**. A more thorough breakdown of the signal warrant analysis is included in **Appendix G**. Since the signal is only warranted during the temporary school's arrival and dismissal periods, it is recommended that law enforcement officer (LEO) control of traffic be implemented at this intersection during the school's peak periods during the 2020-2021 school year. The LEO will facilitate the movement of traffic through the subject intersection, and resulting operations are expected to be similar to a signal control stopping the major street movements to allow for movements to and from the minor street. This operational plan is common for facilities of this type in similar locations.

Table 19: Signal Warrant Summary – NW 16th Avenue and NW 31st Drive, Temporary (2020–2021) Conditions, Howard Bishop Second Scenario

Table 19A: Northbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hour	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	2 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	2 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	2 hours	**Satisfied**
Table 19B: Westbound NW 16th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	1 hour	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	2 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	1 hour	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

Temporary Conditions, Littlewood Elementary School (2022–2023) Scenario

Based on forecasted turning movement volumes for the Littlewood Elementary School scenario, the intersection of NW 16th Avenue and NW 31st Drive does not satisfy the thresholds for Warrant 1, Warrant 2, or Warrant 3 when considering the stop-controlled northbound NW 31st Drive approach as the minor street or when considering the westbound NW 16th Avenue left-turn movement as the minor street.

The signal warrant analysis considering forecasted turning movement volumes for the Temporary Modular School during the 2022–2023 school year for Littlewood Elementary School is summarized in **Table 20**. A more thorough breakdown of the signal warrant analysis is included in **Appendix G**.

Table 20: Signal Warrant Summary – NW 16th Avenue and NW 31st Drive, Temporary (2022–2023) Conditions, Littlewood Elementary School Scenario

Table 20A: Northbound NW 31st Drive Approach as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	2 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	1 hour	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied
Table 20B: Westbound NW 16th Avenue Left-turn Movement as Minor Street			
MUTCD Warrant	Criteria Needed	Observed	Satisfied/ Not Satisfied
Warrant No. 1, Condition A Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1, Condition B Eight-Hour Vehicular Volume	8 hours	0 hours	Not Satisfied
Warrant No. 1 Combination of Condition A & B	8 hours	0 hours	Not Satisfied
Warrant No. 2 Four-Hour Vehicular Volume	4 hours	0 hours	Not Satisfied
Warrant No. 3 Peak Hour Warrant	1 hour	0 hours	Not Satisfied

SUMMARY AND RECOMMENDATIONS

This traffic study has been completed for Alachua County Public Schools to evaluate the potential traffic impacts of hosting a Temporary Modular School on the Westwood Middle School campus east of NW 34th Street and south of NW 15th Avenue in Gainesville, Florida. The study considered the effect of hosting Howard Bishop Middle School in the Temporary Modular School during the 2020–2021 school year, Westwood Middle School in the Temporary Modular School during the 2021–2022 school year, and Littlewood Elementary School in the Temporary Modular School during the 2022–2023 school year. The study evaluated intersection operations and roadway operations in the vicinity of the Temporary Modular School for each school year in order to identify any deficiencies that may require improvements or mitigation while the Temporary Modular School is in use.

2020–2021 School Year: Howard Bishop Middle School

Two bell schedule scenarios were evaluated for the year during which Howard Bishop Middle School would potentially occupy the Temporary Modular School. The first scenario assumes that the bell schedule for Howard Bishop Middle School will be approximately 45 minutes later than the standard ACPS middle school bell schedule during the 2020–2021 school year. The second scenario assumes that Howard Bishop Middle School's current bell schedule would be maintained, and the Westwood Middle School bell schedule would be staggered 20 minutes later than the standard ACPS middle school bell schedule. The second scenario allows the existing shared bus operations serving Howard Bishop Middle School students and Abraham Lincoln Middle School students to remain during the 2020–2021 school year.

Traffic impacts from the Howard Bishop Middle School first scenario are not expected to result in any significant and adverse impacts on the study area roadway segments or intersections during the school's AM peak hour or PM peak hour during the 2020–2021 school year.

Signal warrant analyses were completed for the Howard Bishop Middle School first bell schedule scenario. The signal warrant analyses indicated that the volume thresholds for Warrant 2 (Four Hour Vehicular Volumes) may be exceeded at the intersection of NW 8th Avenue and NW 31st Drive during the school's arrival and dismissal periods with the first bell schedule scenario.

Under the Howard Bishop Middle School second scenario, the study intersections are expected to operate at their adopted LOS standard or better during the school's AM and PM peak hours with the exception of the stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue. However, traffic impacts from the Howard Bishop Middle School second scenario are not expected to result in any significant and adverse impacts on the study area roadway segments.

Signal warrant analyses were also completed for the Howard Bishop Middle School second bell schedule scenario. The signal warrant analyses indicated that the volume thresholds for Warrant 2 (Four Hour Vehicular Volumes) may be exceeded at the intersection of NW 8th Avenue and NW 31st Drive during the school's arrival period and the volume thresholds for Warrant 3 (Peak Hour Vehicular Volumes) may be exceeded at the intersection of NW 16th Avenue and NW 31st Drive during the school's arrival and dismissal periods with the second bell schedule scenario.

2021–2022 School Year: Westwood Middle School

Traffic impacts would be minimal during the 2021–2022 school year since Westwood Middle School would be hosted at the adjacent Temporary Modular School. Diverted traffic for Westwood Middle School would be contained to NW 15th Avenue and NW 31st Drive within the study area. An intersection

operations analysis was completed for the Westwood Middle School scenario, which was effectively an evaluation of background traffic growth at the study area intersections.

Traffic impacts from the Westwood Middle School scenario are not expected to result in any significant and adverse impacts on the study area intersections or roadway segments during the school's arrival or dismissal periods during the 2021–2022 school year.

2022–2023 School Year: Littlewood Elementary School

The Littlewood Elementary School scenario during the 2022–2023 school year would involve traffic diversions from the existing Littlewood Elementary School campus to the Temporary Modular School approximately one-quarter mile north. Since the campuses are in such close proximity, the number of students who walk, bicycle, ride a bus, or get dropped off by parents is not expected to change in this scenario. The bell schedule for Littlewood Elementary School would remain as it is under existing conditions, since the times would not overlap or interfere with the bell schedule at Westwood Middle School.

Under the Littlewood Elementary School scenario, the study intersections are expected to operate at their adopted LOS or better during the school's AM and PM peak hour with the exception of the stop-controlled approaches at the intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's AM peak hour.

Traffic impacts from the Littlewood Elementary School scenario are not expected to result in any significant and adverse impacts on the study area roadway segments.

Signal warrant analyses were completed for the Littlewood Elementary School scenario. The signal warrant analyses indicated that the volume thresholds for Warrant 3 (Peak Hour Vehicular Volumes) may be exceeded at the intersection of NW 8th Avenue and NW 31st Drive during the school's arrival period. The forecasted volumes did not indicate that a signal was warranted at the intersection of NW 16th Avenue and NW 31st Drive in the Littlewood Elementary School scenario.

Recommended Improvements

Anticipated intersection operations and signal warrant analysis results potentially justify the installation of traffic signals at the intersection of NW 16th Avenue and NW 31st Drive and the intersection of NW 8th Avenue and NW 31st Drive. However, given that these results are limited to the temporary school's arrival and dismissal periods under certain conditions, it is recommended that law enforcement officer (LEO) control of traffic be implemented for the following:

- Under Howard Bishop 2020-2021 Temporary Conditions First Bell Schedule Scenario: Intersection of NW 8th Avenue at NW 31st Drive during the school's arrival and dismissal periods
- Under Howard Bishop 2020-2021 Temporary Conditions Second Bell Schedule Scenario: Intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's arrival and dismissal periods
- Under Littlewood Elementary 2022-2023 Temporary Conditions: Intersections of NW 31st Drive with NW 16th Avenue and with NW 8th Avenue during the school's arrival period

The LEO could facilitate the movement of traffic through the two subject intersections during the peak morning drop-off period and the peak afternoon pick-up period as a cost-effective solution for the two impacted school years. This operational plan is common for facilities of this type in similar locations.

During the field observations, it was noted that the existing Westwood Middle School bus loop on NW 31st Drive does not have sufficient capacity for the projected 25 buses that would serve Howard Bishop

Middle School students. Therefore, it is recommended that the buses for Howard Bishop Middle School utilize the Westside Park parking lot along NW 34th Street and a path be provided for students to reach the Temporary Modular School from there. Note that improvements are proposed for Westside Park from February 2020 through Fall 2020, which may limit the feasibility of utilizing the parking area for buses.

Additionally, it was observed that the existing sidewalk along NW 31st Drive south of NW 15th Avenue is situated on the west side of the bus loop and requires pedestrians traveling along this section of NW 31st Drive to either enter the bus loop area on the existing Westwood Middle School campus or walk along the street. It is recommended that a new sidewalk connection be added along NW 31st Drive in this area so that students at the Temporary Modular School have a continuous sidewalk route without having to enter the existing Westwood Middle School campus.

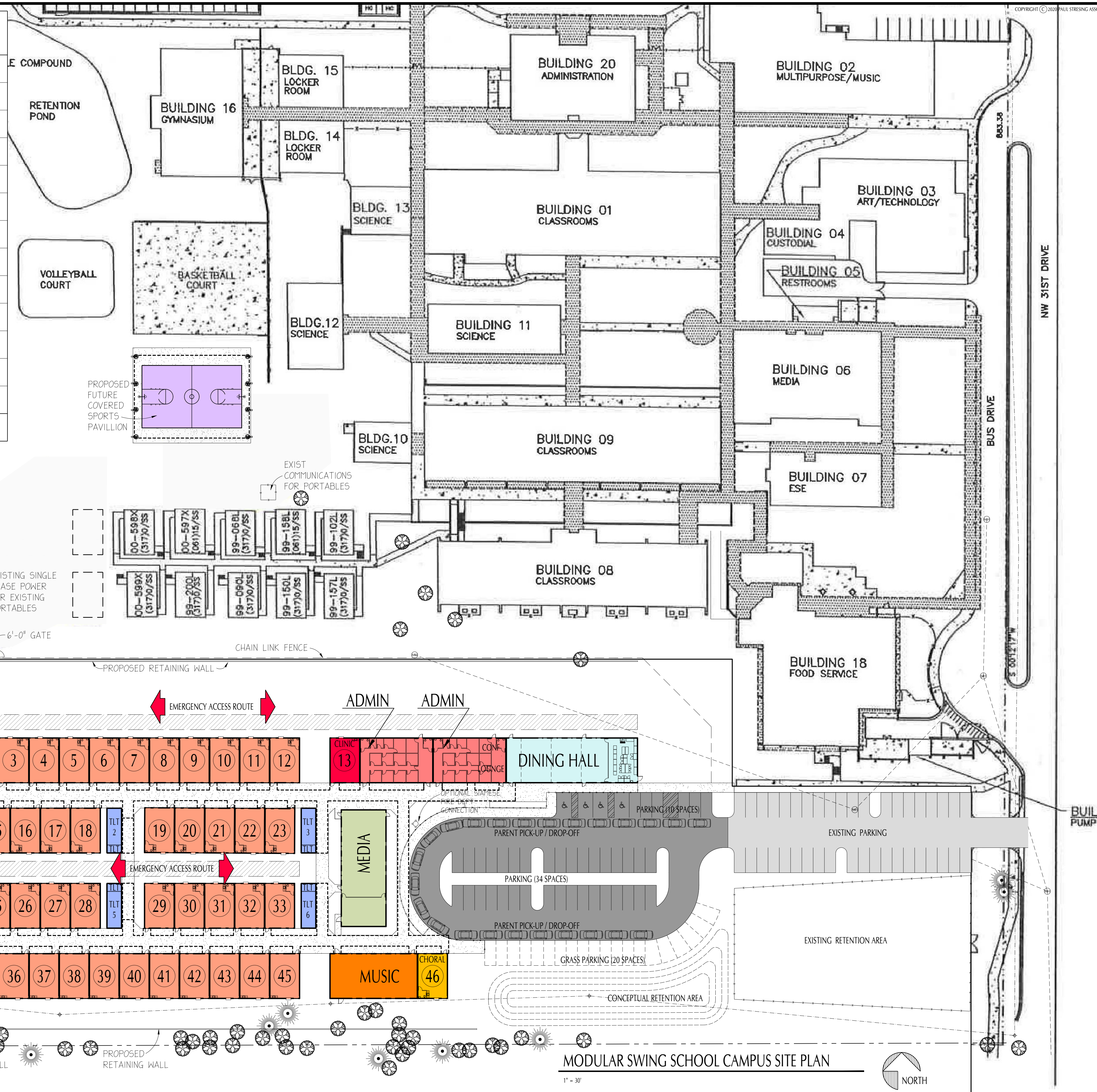
APPENDICES

APPENDIX A: Conceptual Plan

SUMMARY OF UNITS

42	MODULAR CLASS ROOMS (36'X24')
2	MODULAR P.E. (EXPAN. TO 4) (36'X24')
0	SKILLS (36'X24")
1	CLINIC (36'X24')
1	ART (36'X24')
1	CHORAL (36'X24')
1	MUSIC (36'X70')
1	MEDIA (36'X93')
3	ADMIN (36'X60')
2	DINING HALL/WARMING KIT. (36'X105)
1	KITCHEN & DRY STORAGE (36'X84')
6	RESTROOM (12'X36')
1	COVERED P.E. PAVILION

NOTE: (46) TOTAL MODULAR CLASSROOMS 36'X24")



RETENTION POND
BUILDING 16 GYMNASIUM
BLDG. 15 LOCKER ROOM
BLDG. 14 LOCKER ROOM
BLDG. 13 SCIENCE
BLDG.12 SCIENCE
BLDG.10 SCIENCE
BUILDING 20 ADMINISTRATION
BUILDING 02 MULTIPURPOSE/MUSIC
BUILDING 01 CLASSROOMS
BUILDING 03 ART/TECHNOLOGY
BUILDING 04 CUSTODIAL
BUILDING 05 RESTROOMS
BUILDING 11 SCIENCE
BUILDING 06 MEDIA
BUILDING 09 CLASSROOMS
BUILDING 07 ESE
BUILDING 08 CLASSROOMS
BUILDING 18 FOOD SERVICE
VOLLEYBALL COURT
BASKETBALL COURT
PROPOSED FUTURE COVERED SPORTS PAVILLION
EXIST COMMUNICATIONS FOR PORTABLES
SIGN
EXISTING SINGLE PHASE POWER FOR EXISTING PORTABLES
6'-0" GATE
CHAIN LINK FENCE
PROPOSED RETAINING WALL
NW 34TH STREET
NW 31ST DRIVE
BUS DRIVE
EMERGENCY ACCESS GATE #1
(EXACT LOCATION TO BE COORDINATED W/ FIRE RESCUE
EMERGENCY ACCESS GATE #2
(EXACT LOCATION TO BE COORDINATED W/ FIRE RESCUE
PROPOSED FIRE HYDRANT
EXISTING FIRE HYDRANT
P.E.
EMERGENCY ACCESS ROUTE
ADMIN
ADMIN
CLINIC
DINING HALL
MEDIA
MUSIC
CHORAL
PARKING (10 SPACES)
PARENT PICK-UP / DROP-OFF
PARKING (34 SPACES)
GRASS PARKING (20 SPACES)
EXISTING PARKING
EXISTING RETENTION AREA
CONCEPTUAL RETENTION AREA
NORTH

MODULAR SWING SCHOOL CAMPUS SITE PLAN

1" = 30'

ANY MODIFICATIONS TO THESE PLANS OR RE-USE OF THESE PLANS MUST BE APPROVED AND SIGNED BY THE ARCHITECT

ALACHUA COUNTY PUBLIC SCHOOLS

WESTWOOD MIDDLE SCHOOL

PORTABLE SWING SCHOOL CAMPUS FEASIBILITY ASSESSMENT

GAINESVILLE, FLORIDA

PAUL STRESING ASSOCIATES, INC.

02/21/20

APPENDIX B: Traffic Data

2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL

CATEGORY: 2601 GAINESVILLE URBAN

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2018 - 01/06/2018	1.08	1.11
2	01/07/2018 - 01/13/2018	1.06	1.09
3	01/14/2018 - 01/20/2018	1.04	1.07
4	01/21/2018 - 01/27/2018	1.02	1.05
5	01/28/2018 - 02/03/2018	1.00	1.03
* 6	02/04/2018 - 02/10/2018	0.98	1.01
* 7	02/11/2018 - 02/17/2018	0.96	0.99
* 8	02/18/2018 - 02/24/2018	0.96	0.99
* 9	02/25/2018 - 03/03/2018	0.97	1.00
*10	03/04/2018 - 03/10/2018	0.97	1.00
*11	03/11/2018 - 03/17/2018	0.97	1.00
*12	03/18/2018 - 03/24/2018	0.97	1.00
*13	03/25/2018 - 03/31/2018	0.97	1.00
*14	04/01/2018 - 04/07/2018	0.96	0.99
*15	04/08/2018 - 04/14/2018	0.96	0.99
*16	04/15/2018 - 04/21/2018	0.96	0.99
*17	04/22/2018 - 04/28/2018	0.98	1.01
*18	04/29/2018 - 05/05/2018	0.99	1.02
19	05/06/2018 - 05/12/2018	1.01	1.04
20	05/13/2018 - 05/19/2018	1.02	1.05
21	05/20/2018 - 05/26/2018	1.03	1.06
22	05/27/2018 - 06/02/2018	1.03	1.06
23	06/03/2018 - 06/09/2018	1.04	1.07
24	06/10/2018 - 06/16/2018	1.05	1.08
25	06/17/2018 - 06/23/2018	1.05	1.08
26	06/24/2018 - 06/30/2018	1.05	1.08
27	07/01/2018 - 07/07/2018	1.05	1.08
28	07/08/2018 - 07/14/2018	1.05	1.08
29	07/15/2018 - 07/21/2018	1.05	1.08
30	07/22/2018 - 07/28/2018	1.03	1.06
31	07/29/2018 - 08/04/2018	1.02	1.05
32	08/05/2018 - 08/11/2018	1.00	1.03
33	08/12/2018 - 08/18/2018	0.99	1.02
34	08/19/2018 - 08/25/2018	0.98	1.01
35	08/26/2018 - 09/01/2018	0.98	1.01
36	09/02/2018 - 09/08/2018	0.98	1.01
37	09/09/2018 - 09/15/2018	0.98	1.01
38	09/16/2018 - 09/22/2018	0.98	1.01
39	09/23/2018 - 09/29/2018	0.97	1.00
40	09/30/2018 - 10/06/2018	0.97	1.00
41	10/07/2018 - 10/13/2018	0.96	0.99
42	10/14/2018 - 10/20/2018	0.96	0.99
43	10/21/2018 - 10/27/2018	0.97	1.00
44	10/28/2018 - 11/03/2018	0.98	1.01
45	11/04/2018 - 11/10/2018	0.99	1.02
46	11/11/2018 - 11/17/2018	1.00	1.03
47	11/18/2018 - 11/24/2018	1.02	1.05
48	11/25/2018 - 12/01/2018	1.04	1.07
49	12/02/2018 - 12/08/2018	1.06	1.09
50	12/09/2018 - 12/15/2018	1.08	1.11
51	12/16/2018 - 12/22/2018	1.06	1.09
52	12/23/2018 - 12/29/2018	1.05	1.08
53	12/30/2018 - 12/31/2018	1.04	1.07

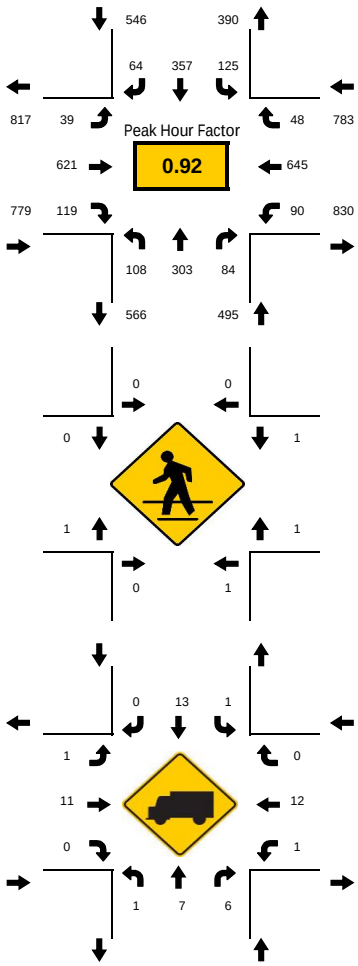
* PEAK SEASON

25-FEB-2019 16:26:21 830UPD 2_2601_PKSEASON.TXT

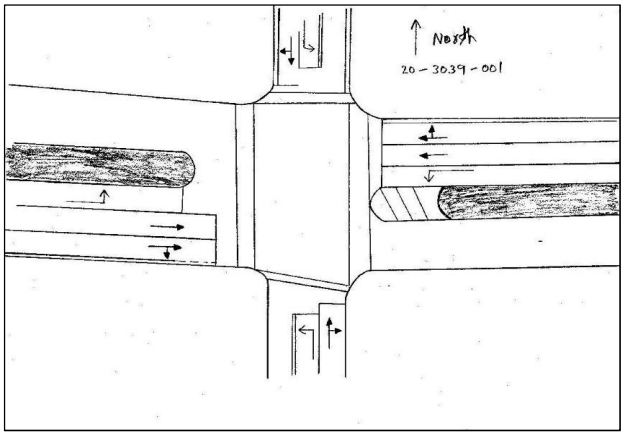
LOCATION: SR 121/NW 34th St & NW 16th Ave
CITY/STATE: Gainesville, FL

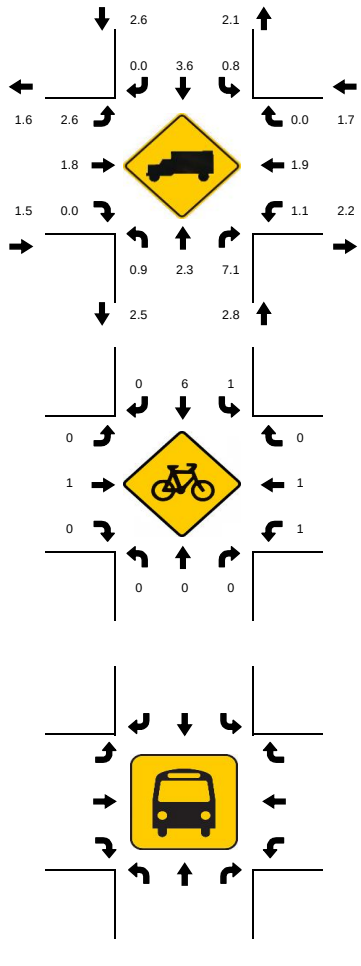
PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:30 AM - 07:45 AM



National Data & Surveying Services



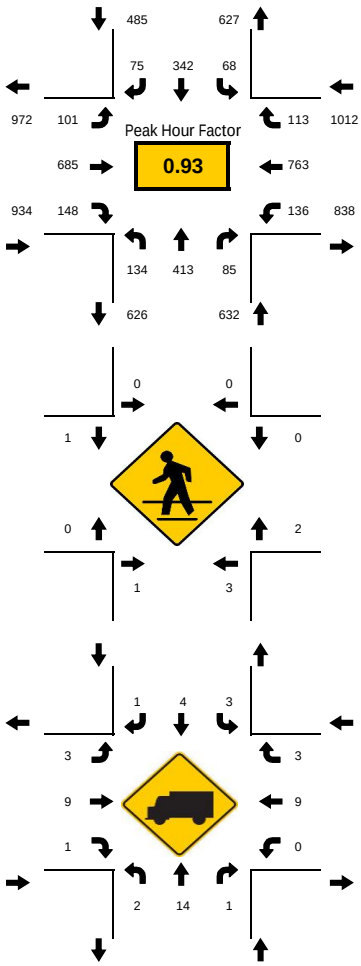


15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 16th Ave Eastbound					NW 16th Ave Westbound						Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
07:00 AM	3	40	8	0		34	88	17	0		11	91	16	0		6	56	5	0		375	2328
07:15 AM	17	53	17	0		37	99	13	0		17	158	37	0		20	115	10	1		594	2580
07:30 AM	30	71	21	0		33	102	13	0		12	176	40	0		25	180	6	0		709	2603
07:45 AM	32	71	29	0		42	103	15	0		9	154	28	0		15	138	14	0		650	2493
08:00 AM	27	75	18	0		29	97	18	0		8	148	24	0		23	146	14	0		627	2462
08:15 AM	19	86	16	0		21	55	18	0		10	143	27	0		27	181	14	0		617	2433
08:30 AM	24	91	28	0		19	90	22	0		14	124	22	0		24	129	12	0		599	2369
08:45 AM	39	72	22	0		22	84	17	0		22	149	28	0		19	137	8	0		619	2304
09:00 AM	30	63	17	0		11	123	13	0		13	111	28	0		29	151	9	0		598	2205
09:15 AM	27	66	16	0		13	87	16	0		20	118	31	0		24	123	12	0		553	2113
09:30 AM	27	73	17	0		18	92	18	0		9	99	25	1		24	118	13	0		534	2117
09:45 AM	25	58	17	0		14	77	17	0		23	118	21	0		24	109	17	0		520	1583
10:00 AM	30	63	18	0		13	78	20	0		17	97	28	0		28	104	10	0		506	1063
10:15 AM	23	84	30	0		9	80	17	0		16	108	39	0		33	113	5	0		557	557
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	128	344	116	0		168	412	72	0		48	704	160	0		108	724	56	0		**3040**	
Heavy Trucks	4	12	12			4	16	0			4	20	0			4	20	0			**96**	
Pedestrians		4					0					4					4				**12**	
Bicycles	0	0	0			4	8	0			0	4	0			4	4	0			**24**	
Railroad Stopped Buses																						

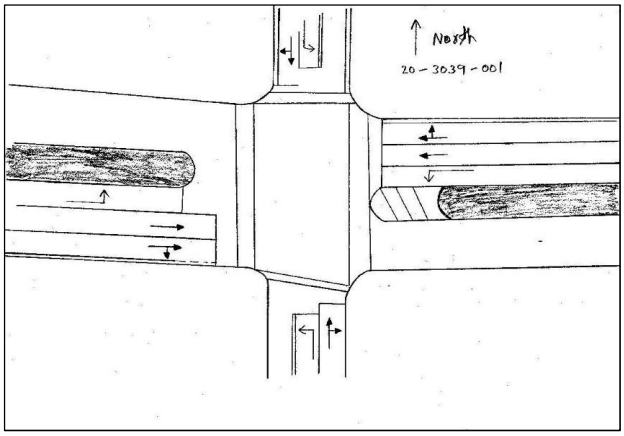
LOCATION: SR 121/NW 34th St & NW 16th Ave
CITY/STATE: Gainesville, FL

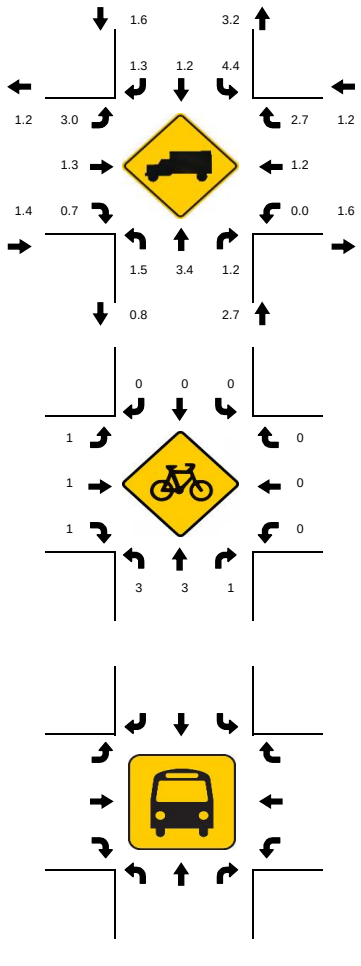
PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:45 PM - 05:00 PM



National Data & Surveying Services





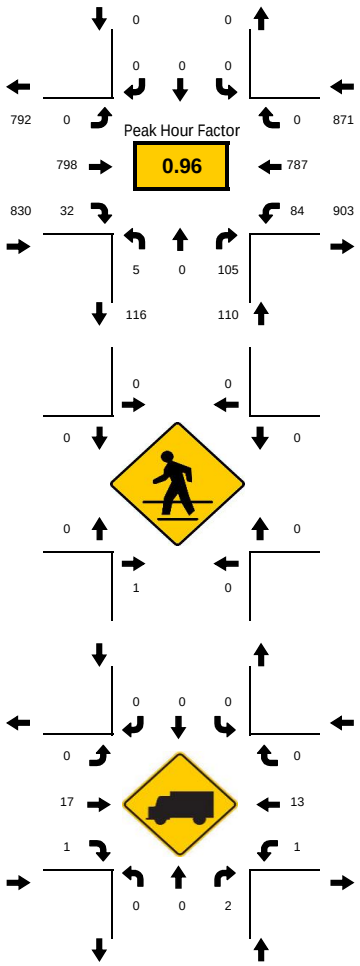
15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 16th Ave Eastbound					NW 16th Ave Westbound						Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
01:00 PM	21	96	33	0		11	103	22	0		19	122	36	0		35	108	11	0		617	2380
01:15 PM	31	112	21	0		12	82	23	0		22	126	30	0		35	116	12	0		622	2348
01:30 PM	31	75	20	0		9	87	18	0		14	115	35	0		27	148	9	0		588	2333
01:45 PM	26	89	25	0		15	81	19	0		15	110	17	0		31	115	10	0		553	2353
02:00 PM	23	87	22	0		12	73	25	0		12	138	25	0		23	125	20	0		585	2494
02:15 PM	20	99	29	0		12	77	15	0		20	135	27	0		35	125	13	0		607	2593
02:30 PM	24	74	35	0		12	95	22	0		24	114	32	0		42	115	19	0		608	2639
02:45 PM	33	103	27	0		9	81	20	0		25	136	34	0		36	165	25	0		694	2670
03:00 PM	37	83	20	0		14	83	19	0		31	131	39	0		45	168	14	0		684	2612
03:15 PM	25	83	29	0		15	89	17	0		14	154	31	0		31	144	21	0		653	2677
03:30 PM	27	86	19	0		20	92	20	0		21	142	25	0		26	145	16	0		639	2789
03:45 PM	44	107	13	0		24	83	18	0		17	127	31	1		24	131	16	0		636	2875
04:00 PM	33	110	19	0		11	79	17	0		28	176	40	0		26	186	24	0		749	3063
04:15 PM	26	106	25	0		18	79	23	0		32	193	35	0		33	166	29	0		765	2314
04:30 PM	42	121	25	0		19	100	19	0		16	129	28	0		39	163	24	0		725	1549
04:45 PM	33	76	16	0		20	84	16	0		25	187	45	0		38	248	36	0		824	824

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	168	484	100	0		80	400	92	0		128	772	180	0		156	992	144	0		**3696**
Heavy Trucks	8	20	4			8	8	4			12	16	4			0	16	8			**108**
Pedestrians		12					0					4					4				**20**
Bicycles	8	12	4			0	0	0			4	4	4			0	0	0			**36**
Railroad																					
Stopped Buses																					

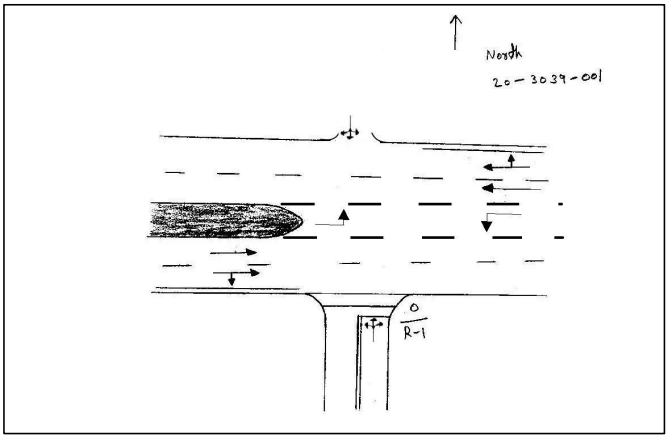
LOCATION: NW 31st Dr & NW 16th Ave
CITY/STATE: Gainesville, FL

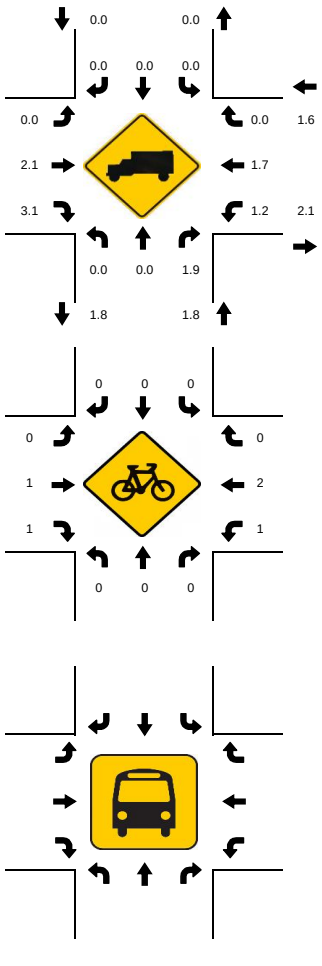
PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 08:00 AM - 08:15 AM



National Data & Surveying Services



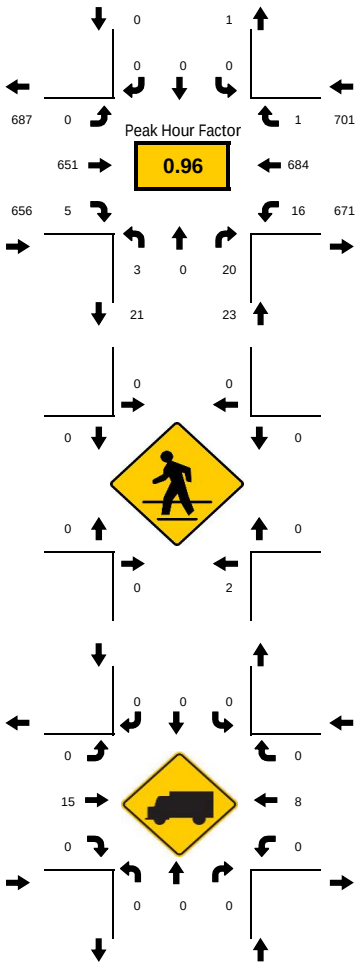


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 16th Ave Eastbound					NW 16th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	2	0	2	0		0	0	0	0		0	137	2	0		4	69	0	2		218	1486
07:15 AM	2	0	6	0		0	0	0	0		0	195	6	1		11	131	0	1		353	1739
07:30 AM	0	0	21	0		0	0	0	0		0	227	7	0		14	193	0	1		463	1811
07:45 AM	1	0	17	0		0	0	0	0		0	213	3	0		21	197	0	0		452	1752
08:00 AM	2	0	36	0		0	0	0	0		0	203	10	0		27	193	0	0		471	1688
08:15 AM	2	0	31	0		0	0	0	0		0	155	12	0		20	204	0	1		425	1625
08:30 AM	3	0	19	0		0	0	0	0		0	168	5	0		37	172	0	0		404	1511
08:45 AM	5	0	20	0		0	0	0	0		0	167	11	0		27	158	0	0		388	1413
09:00 AM	9	0	35	0		0	0	0	0		0	145	9	0		25	185	0	0		408	1353
09:15 AM	6	0	16	0		0	0	0	0		0	144	1	1		10	133	0	0		311	945
09:30 AM	2	0	14	0		0	0	0	0		0	133	2	0		9	146	0	0		306	634
09:45 AM	1	0	11	0		0	0	0	0		0	147	3	0		4	162	0	0		328	328
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	8	0	144	0		0	0	0	0		0	908	48	0		108	816	0	4		**2036**	
Heavy Trucks	0	0	8			0	0	0			0	20	4			4	20	0			**56**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0			0	0	0			0	4	4			4	4	0			**16**	
Railroad																						
Stopped Buses																						

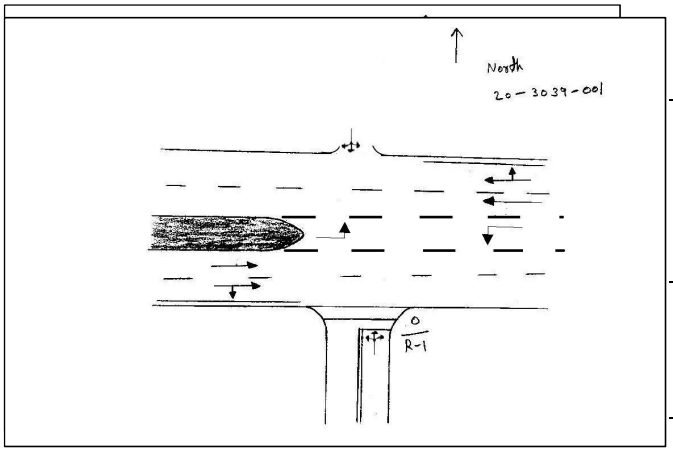
LOCATION: NW 31st Dr & NW 16th Ave
CITY/STATE: Gainesville, FL

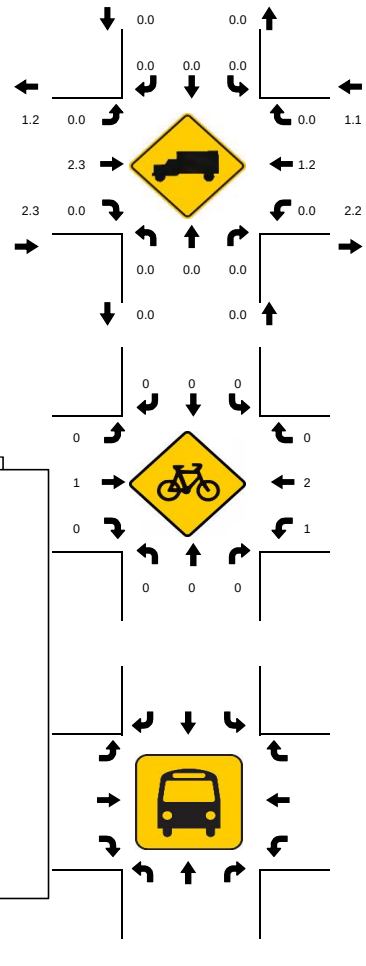
PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 12:15 PM - 01:15 PM
Peak 15-Minute: 12:30 PM - 12:45 PM



National Data & Surveying Services



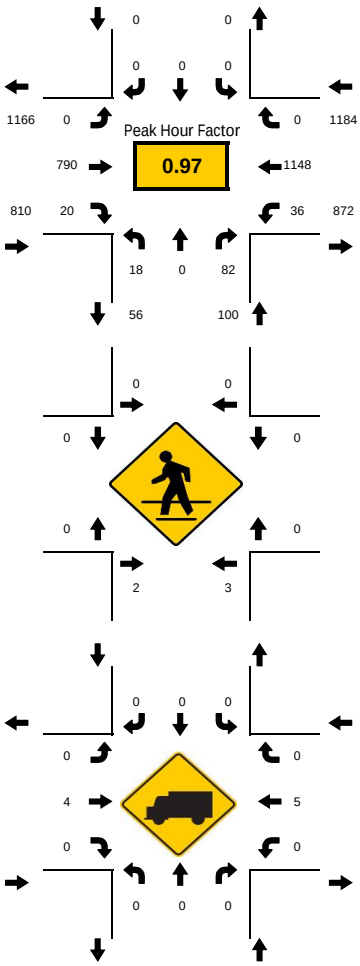


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 16th Ave Eastbound					NW 16th Ave Westbound						Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
10:00 AM	0	0	2	0		0	0	0	0		0	123	0	0		5	158	0	0		288	1240
10:15 AM	1	0	7	0		0	0	0	0		0	143	3	0		3	139	0	0		296	1293
10:30 AM	1	0	5	0		0	0	0	0		0	133	5	1		3	164	0	0		311	1331
10:45 AM	4	0	5	0		0	0	0	0		0	165	3	1		3	165	0	0		345	1354
11:00 AM	0	0	9	0		0	0	0	0		0	170	0	0		2	160	0	0		341	1310
11:15 AM	0	0	3	0		0	0	0	0		0	155	3	0		5	168	0	0		334	1315
11:30 AM	1	0	6	0		0	0	0	0		0	153	1	0		8	165	0	0		334	1329
11:45 AM	0	0	7	0		0	0	0	0		0	128	2	0		5	159	0	0		301	1354
12:00 PM	0	0	7	0		0	0	0	0		0	170	2	0		5	162	0	0		346	1376
12:15 PM	1	0	3	0		0	0	0	0		0	153	3	0		5	183	0	0		348	1380
12:30 PM	1	0	6	0		0	0	0	0		0	171	0	0		2	178	1	0		359	1373
12:45 PM	1	0	5	0		0	0	0	0		0	153	2	0		8	154	0	0		323	1342
01:00 PM	0	0	6	0		0	0	0	0		0	174	0	0		1	169	0	0		350	1358
01:15 PM	4	0	13	0		0	0	0	0		0	157	2	0		6	159	0	0		341	1008
01:30 PM	3	0	8	0		0	0	0	0		0	141	1	0		6	169	0	1		328	667
01:45 PM	3	0	5	0		0	0	0	0		0	147	2	0		9	173	0	0		339	339
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	**Total**	
All Vehicles	4	0	24	0		0	0	0	0		0	696	12	0		32	732	4	0		**1504**	
Heavy Trucks	0	0	0			0	0	0			0	32	0			0	12	0			**44**	
Pedestrians		8					0					0					0				**8**	
Bicycles	0	0	0			0	0	0			0	4	0			4	4	0			**12**	
Railroad																						
Stopped Buses																						

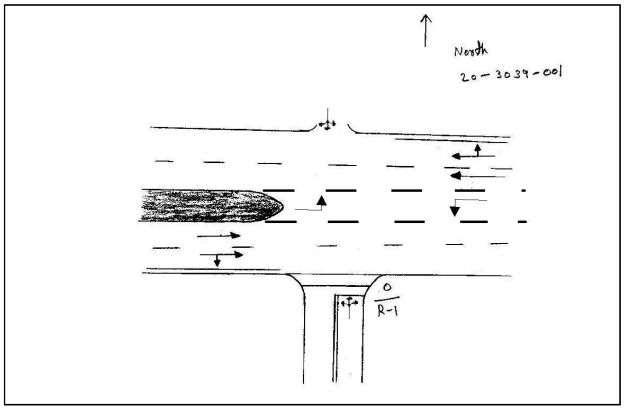
LOCATION: NW 31st Dr & NW 16th Ave
CITY/STATE: Gainesville, FL

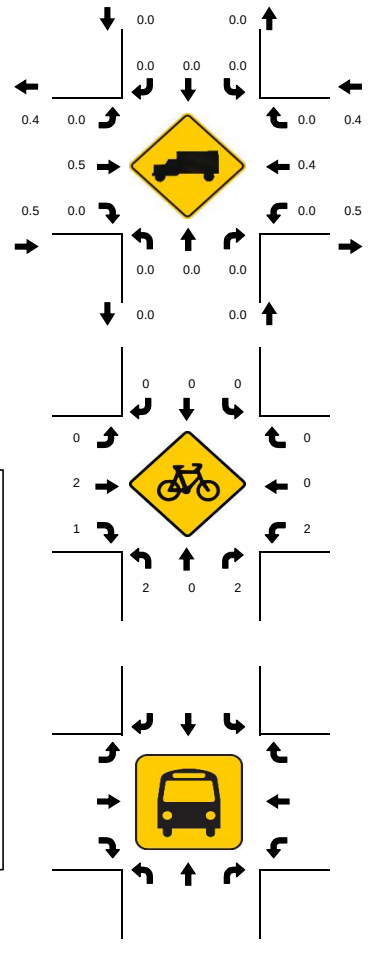
PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 04:45 PM - 05:45 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



National Data & Surveying Services





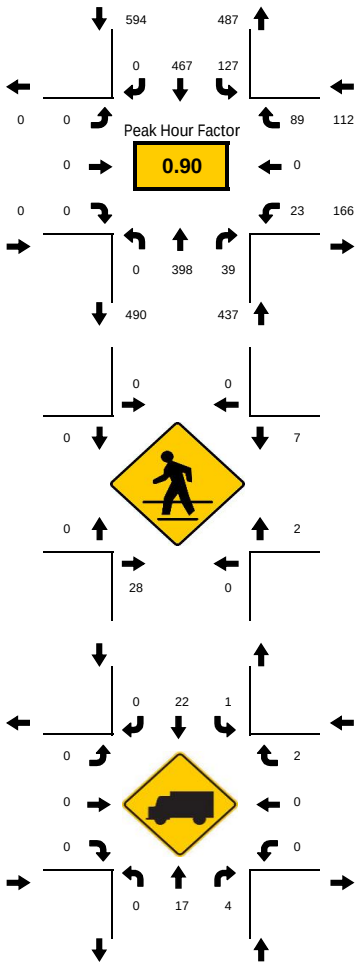
15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 16th Ave Eastbound					NW 16th Ave Westbound						Hourly
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	Total
02:00 PM	4	0	12	0		0	0	0	0		0	178	1	0		4	157	0	1		357	1504
02:15 PM	1	0	10	0		0	0	0	0		0	180	1	0		4	163	0	0		359	1563
02:30 PM	3	0	13	0		0	0	0	0		0	159	2	0		8	186	0	0		371	1615
02:45 PM	3	0	12	0		0	0	0	0		0	163	0	0		12	227	0	0		417	1680
03:00 PM	3	0	7	0		0	0	0	0		0	159	8	0		22	217	0	0		416	1685
03:15 PM	5	0	12	0		0	0	0	0		0	189	9	0		15	181	0	0		411	1708
03:30 PM	7	0	29	0		0	0	0	0		0	180	12	2		25	181	0	0		436	1795
03:45 PM	17	0	54	0		0	0	0	0		0	136	7	1		19	187	0	1		422	1806
04:00 PM	3	0	26	0		0	0	0	0		0	187	10	0		17	196	0	0		439	1920
04:15 PM	4	0	21	0		0	0	0	0		0	242	6	0		15	210	0	0		498	1996
04:30 PM	1	0	17	0		0	0	0	0		0	161	7	1		15	245	0	0		447	2035
04:45 PM	6	0	19	0		0	0	0	0		0	209	4	0		8	290	0	0		536	2094
05:00 PM	3	0	18	0		0	0	0	0		0	204	1	0		9	280	0	0		515	2064
05:15 PM	4	0	22	0		0	0	0	0		0	202	8	0		7	294	0	0		537	1990
05:30 PM	5	0	23	0		0	0	0	0		0	175	7	0		12	284	0	0		506	1870
05:45 PM	3	0	14	0		0	0	0	0		0	205	4	0		12	268	0	0		506	1674
06:00 PM	2	0	13	0		0	0	0	0		0	190	2	0		9	225	0	0		441	1488
06:15 PM	4	0	12	0		0	0	0	0		0	197	4	0		8	192	0	0		417	1047
06:30 PM	2	0	12	0		0	0	0	0		0	124	3	0		2	167	0	0		310	630
06:45 PM	0	0	8	0		0	0	0	0		0	150	0	0		1	161	0	0		320	320

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	24	0	92	0		0	0	0	0		0	836	32	0		48	1176	0	0		**2208**
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	12	0			**16**
Pedestrians		8					0					0					0				**8**
Bicycles	8	0	4			0	0	0			0	4	4			4	0	0			**24**
Railroad																					
Stopped Buses																					

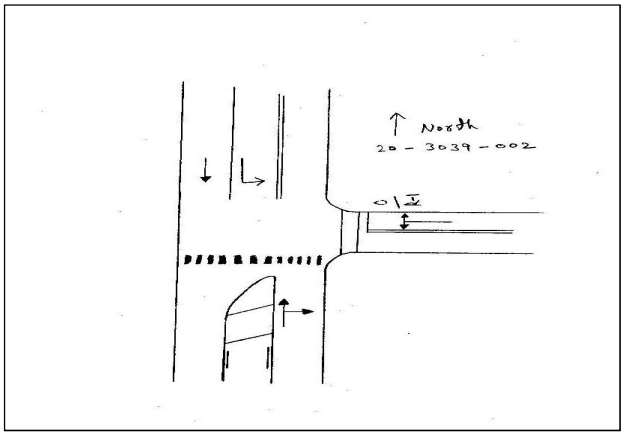
LOCATION: SR 121/NW 34th St & NW 15th Ave
CITY/STATE: Gainesville, FL

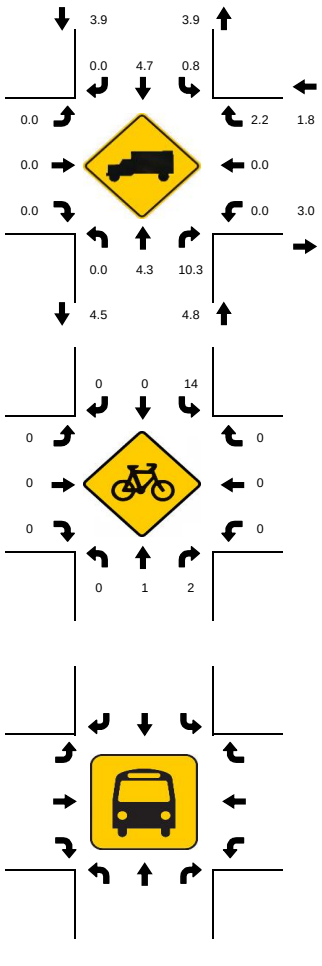
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 08:30 AM - 09:30 AM
Peak 15-Minute: 09:00 AM - 09:15 AM



National Data & Surveying Services



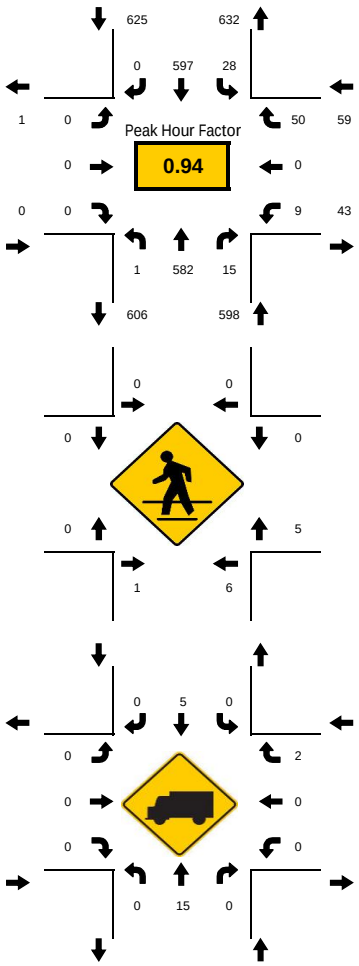


15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	50	0	0		3	103	0	0		0	0	0	0		0	0	2	0		158	975
07:15 AM	0	84	1	0		12	128	0	0		0	0	0	0		3	0	5	0		233	1091
07:30 AM	0	110	6	0		28	136	0	0		0	0	0	0		6	0	12	0		298	1095
07:45 AM	0	113	8	0		18	134	0	0		0	0	0	0		4	0	9	0		286	1087
08:00 AM	0	110	6	0		24	126	0	0		0	0	0	0		2	0	6	0		274	1075
08:15 AM	0	104	10	0		18	88	0	0		0	0	0	0		3	0	14	0		237	1117
08:30 AM	0	127	10	0		29	101	0	0		0	0	0	0		3	0	20	0		290	1143
08:45 AM	0	103	9	0		36	94	0	0		0	0	0	0		9	0	23	0		274	1115
09:00 AM	0	83	15	0		30	153	0	0		0	0	0	0		9	0	26	0		316	1065
09:15 AM	0	85	5	0		32	119	0	0		0	0	0	0		2	0	20	0		263	1004
09:30 AM	0	116	2	0		3	137	0	0		0	0	0	0		1	0	3	0		262	1032
09:45 AM	0	100	1	0		6	115	0	0		0	0	0	0		1	0	1	0		224	770
10:00 AM	0	114	2	0		3	132	0	0		0	0	0	0		2	0	2	0		255	546
10:15 AM	0	137	2	0		2	149	0	0		0	0	0	0		0	0	1	0		291	291
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	508	60	0		144	612	0	0		0	0	0	0		36	0	104	0		**1464**	
Heavy Trucks	0	28	12			4	36	0			0	0	0			0	0	4			**84**	
Pedestrians		44					0					0					16				**60**	
Bicycles	0	4	4			36	0	0			0	0	0			0	0	0			**44**	
Railroad																						
Stopped Buses																						

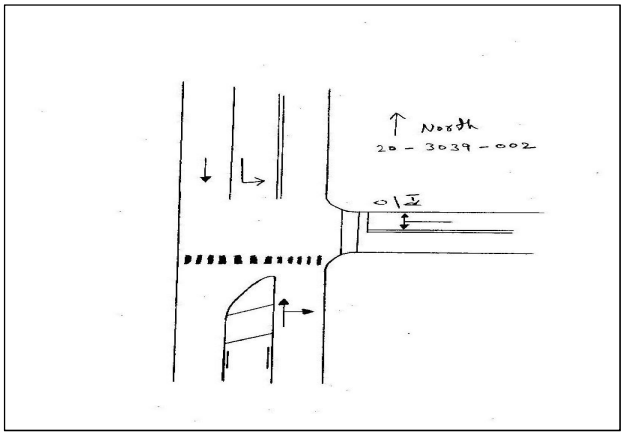
LOCATION: SR 121/NW 34th St & NW 15th Ave
CITY/STATE: Gainesville, FL

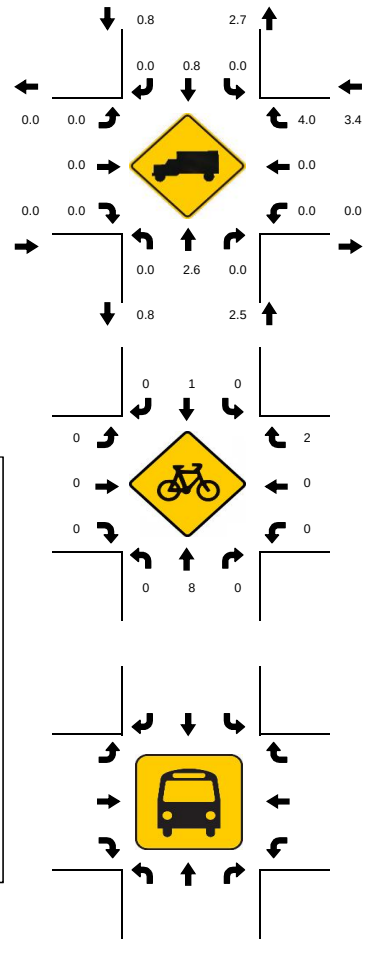
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:30 PM - 04:45 PM



National Data & Surveying Services





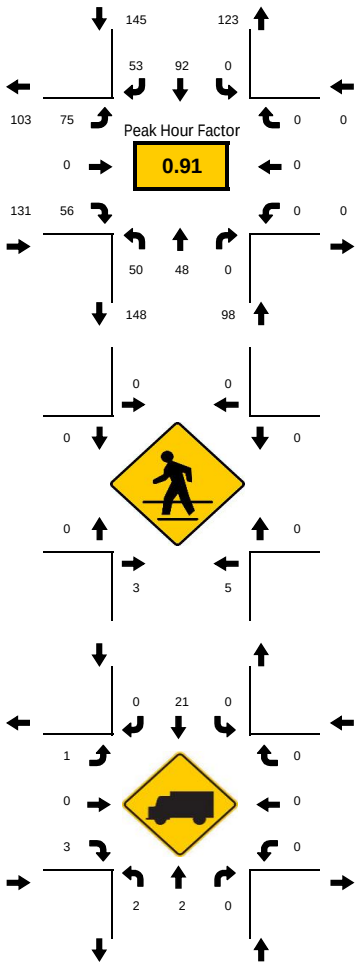
15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:00 PM	0	158	3	0		4	165	0	0		0	0	0	0		4	0	1	0		335	1194
01:15 PM	0	132	3	0		3	146	0	0		0	0	0	0		6	0	18	0		308	1122
01:30 PM	0	132	1	0		7	139	0	0		0	0	0	0		4	0	3	0		286	1107
01:45 PM	0	124	4	0		3	129	0	0		0	0	0	0		1	0	4	0		265	1113
02:00 PM	0	137	6	0		3	116	0	0		0	0	0	0		0	0	1	0		263	1181
02:15 PM	0	147	1	0		2	140	0	0		0	0	0	0		3	0	0	0		293	1228
02:30 PM	0	133	1	0		3	154	0	0		0	0	0	0		0	0	1	0		292	1233
02:45 PM	0	151	3	0		5	170	0	0		0	0	0	0		0	0	4	0		333	1213
03:00 PM	0	127	7	0		7	165	0	0		0	0	0	0		0	0	4	0		310	1177
03:15 PM	0	137	6	0		11	138	0	0		0	0	0	0		1	0	5	0		298	1177
03:30 PM	0	85	4	0		24	111	0	0		0	0	0	0		10	0	38	0		272	1194
03:45 PM	0	112	7	0		20	121	0	0		0	0	0	0		9	0	28	0		297	1262
04:00 PM	0	142	6	1		5	139	0	0		0	0	0	0		3	0	14	0		310	1282
04:15 PM	0	149	3	0		6	144	0	0		0	0	0	0		2	0	11	0		315	972
04:30 PM	0	165	1	0		7	157	0	0		0	0	0	0		0	0	10	0		340	657
04:45 PM	0	126	5	0		10	157	0	0		0	0	0	0		4	0	15	0		317	317

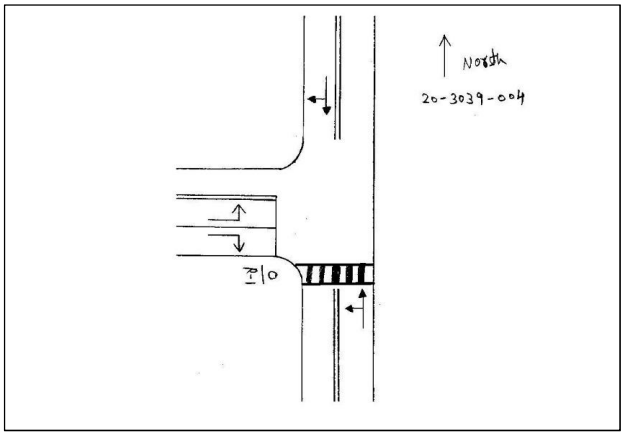
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	660	24	4		40	628	0	0		0	0	0	0		16	0	60	0		**1432**
Heavy Trucks	0	24	0			0	8	0			0	0	0			0	0	8			**40**
Pedestrians		16					0					0					8				**24**
Bicycles	0	20	0			0	4	0			0	0	0			0	0	4			**28**
Railroad																					
Stopped Buses																					

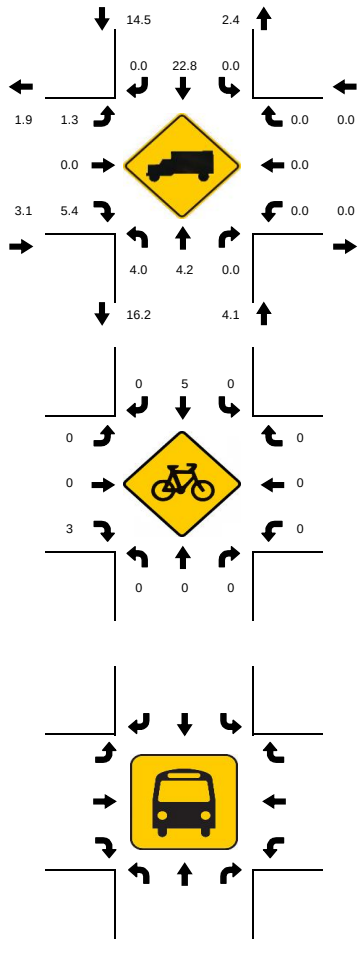
LOCATION: NW 31st Dr & NW 15th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-004
DATE: 01/28/2020

Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 09:00 AM - 09:15 AM







15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	1	4	0	0		0	6	0	0		0	0	1	0		0	0	0	0		12	185
07:15 AM	5	6	0	0		0	10	8	0		4	0	6	0		0	0	0	0		39	269
07:30 AM	7	9	0	0		0	13	8	0		17	0	11	0		0	0	0	0		65	308
07:45 AM	7	11	0	0		0	18	10	0		8	0	15	0		0	0	0	0		69	340
08:00 AM	7	24	0	0		0	21	13	0		17	0	14	0		0	0	0	0		96	367
08:15 AM	13	17	0	0		0	22	8	0		12	0	6	0		0	0	0	0		78	374
08:30 AM	12	10	0	0		0	27	17	0		14	0	17	0		0	0	0	0		97	348
08:45 AM	9	11	0	0		0	24	18	0		20	0	14	0		0	0	0	0		96	281
09:00 AM	16	10	0	0		0	19	10	0		29	0	19	0		0	0	0	0		103	206
09:15 AM	7	4	0	0		0	3	7	0		14	0	17	0		0	0	0	0		52	114
09:30 AM	2	5	0	0		0	5	4	0		10	0	4	0		0	0	0	0		30	79
09:45 AM	1	8	0	0		0	4	2	0		3	0	3	0		0	0	0	0		21	49
10:00 AM	2	3	0	0		0	5	0	0		1	0	0	0		0	0	0	0		11	28
10:15 AM	1	5	0	0		0	6	1	0		3	0	1	0		0	0	0	0		17	17
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	64	68	0	0		0	108	72	0		116	0	76	0		0	0	0	0		**504**	
Heavy Trucks	4	4	0			0	36	0			4	0	12			0	0	0			**60**	
Pedestrians		16					0					0					0				**16**	
Bicycles	0	0	0			0	8	0			0	0	4			0	0	0			**12**	
Railroad																						
Stopped Buses																						

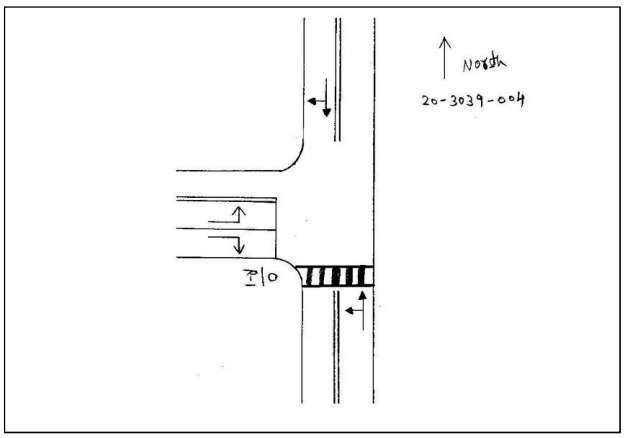
LOCATION: NW 31st Dr & NW 15th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-004
DATE: 01/28/2020

Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:45 PM - 04:00 PM

Peak Hour Factor
0.69

National Data & Surveying Services



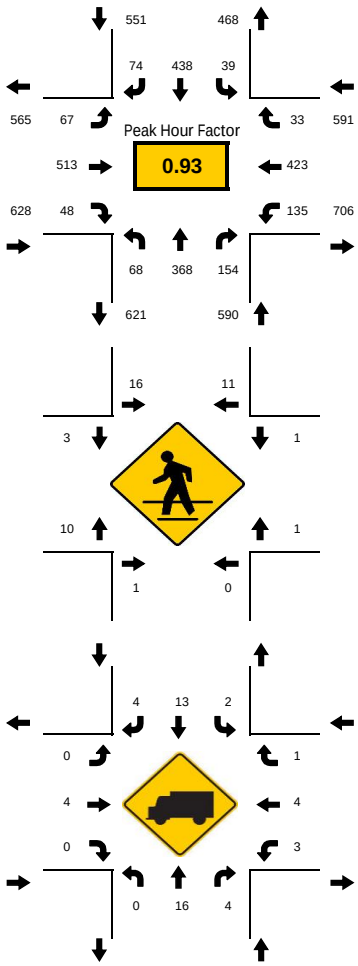
15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:00 PM	1	7	0	0		0	2	0	0		1	0	4	0		0	0	0	0		15	102
01:15 PM	3	8	0	0		0	7	2	0		9	0	11	0		0	0	0	0		40	111
01:30 PM	1	8	0	0		0	6	0	0		2	0	3	0		0	0	0	0		20	92
01:45 PM	0	7	0	0		0	12	1	0		4	0	3	0		0	0	0	0		27	99
02:00 PM	2	9	0	0		0	6	0	0		5	0	2	0		0	0	0	0		24	106
02:15 PM	2	8	0	0		0	2	2	0		2	0	5	0		0	0	0	0		21	128
02:30 PM	3	13	0	0		0	10	0	0		0	0	1	0		0	0	0	0		27	148
02:45 PM	2	10	0	0		0	8	7	0		5	0	2	0		0	0	0	0		34	212
03:00 PM	4	9	0	0		0	21	6	0		4	0	2	0		0	0	0	0		46	301
03:15 PM	5	8	0	0		0	12	6	0		7	0	3	0		0	0	0	0		41	323
03:30 PM	13	17	0	1		0	18	11	0		23	0	8	0		0	0	0	0		91	339
03:45 PM	11	41	0	0		0	18	12	0		19	0	22	0		0	0	0	0		123	293
04:00 PM	9	17	0	0		0	14	10	0		13	0	5	0		0	0	0	0		68	212
04:15 PM	5	16	0	0		0	18	6	0		6	0	6	0		0	0	0	0		57	144
04:30 PM	4	16	0	0		0	11	7	0		3	0	4	0		0	0	0	0		45	87
04:45 PM	6	13	0	0		0	7	4	0		9	0	3	0		0	0	0	0		42	42

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	52	164	0	4		0	72	48	0		92	0	88	0		0	0	0	0		**520**
Heavy Trucks	12	40	0			0	16	4			8	0	4			0	0	0			**84**
Pedestrians		188					0					4					0				**192**
Bicycles	8	24	0			0	0	0			0	0	0			0	0	0			**32**
Railroad																					
Stopped Buses																					

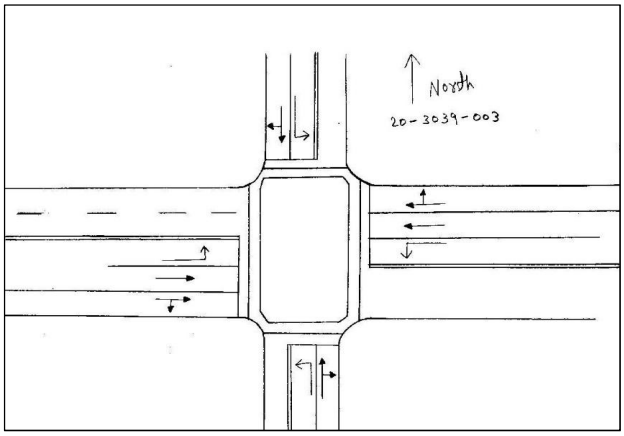
LOCATION: SR 121/NW 34th St & NW 8th Ave
CITY/STATE: Gainesville, FL

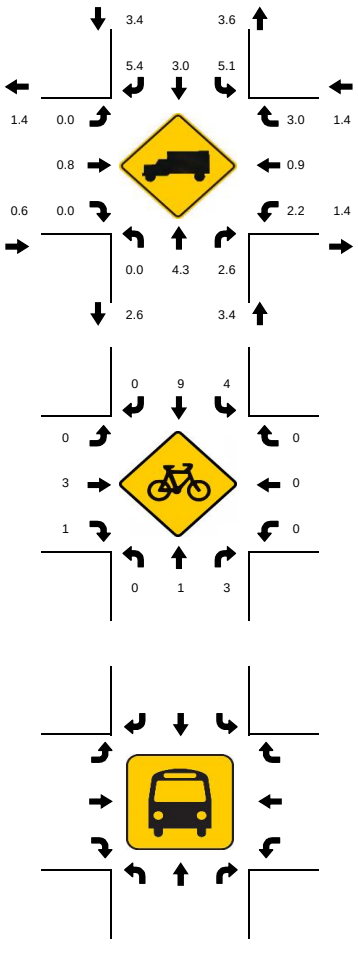
PROJECT ID: 20-03039-003
DATE: 01/28/2020

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:45 AM - 08:00 AM



National Data & Surveying Services



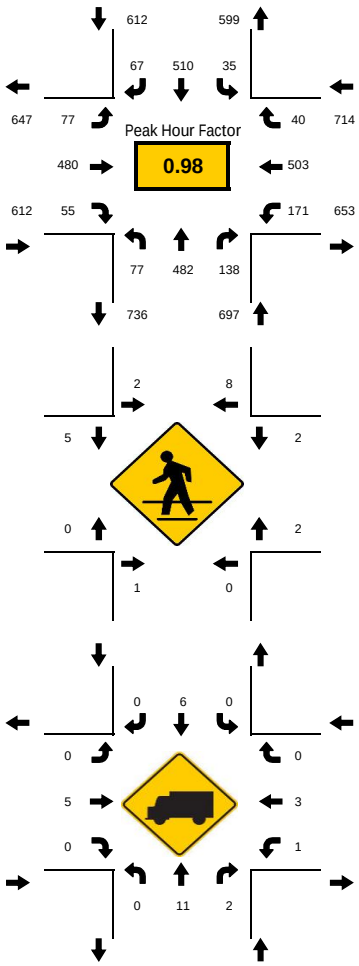


15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	25	65	38	0		0	71	24	0		4	63	5	0		14	47	6	0		362	2107
07:15 AM	47	89	24	0		12	82	12	0		12	123	2	0		26	90	10	0		529	2322
07:30 AM	46	82	47	0		15	100	23	0		13	111	6	0		24	96	16	0		579	2360
07:45 AM	11	96	29	0		8	116	13	0		19	145	19	0		46	130	5	0		637	2306
08:00 AM	7	81	38	0		7	122	15	0		15	127	11	0		42	107	5	0		577	2208
08:15 AM	4	109	40	0		9	100	23	0		20	130	12	0		23	90	7	0		567	2078
08:30 AM	7	90	37	0		4	83	11	0		23	113	5	0		43	103	6	0		525	1949
08:45 AM	12	97	42	0		9	85	12	0		11	120	5	0		31	110	5	0		539	1960
09:00 AM	4	65	33	0		4	129	16	0		20	73	15	0		28	53	7	0		447	1884
09:15 AM	8	83	25	0		3	110	7	0		12	71	9	0		26	78	6	0		438	1912
09:30 AM	10	89	26	0		10	124	18	0		14	113	10	0		25	88	9	0		536	1970
09:45 AM	7	81	31	0		1	106	10	0		11	72	16	0		34	83	11	0		463	1434
10:00 AM	8	90	16	0		7	109	20	0		18	84	9	0		27	73	14	0		475	971
10:15 AM	7	100	21	0		6	121	13	0		20	91	15	0		24	66	12	0		496	496
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	184	436	188	0		60	488	92	0		80	580	76	0		184	520	64	0		**2952**	
Heavy Trucks	0	24	8			8	20	16			0	8	0			4	8	4			**100**	
Pedestrians		4					40					24					4				**72**	
Bicycles	0	4	8			8	16	0			0	4	4			0	0	0			**44**	
Railroad Stopped Buses																						

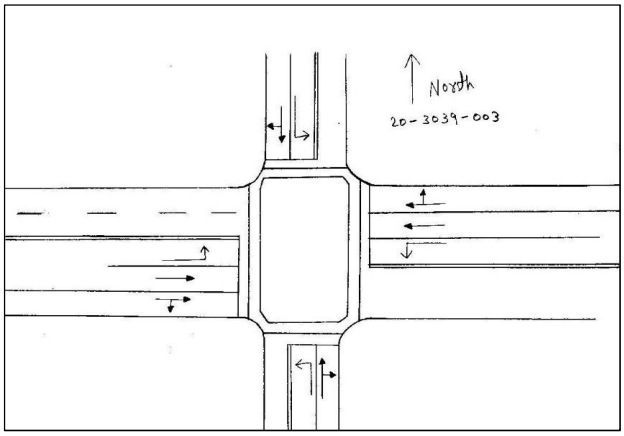
LOCATION: SR 121/NW 34th St & NW 8th Ave
CITY/STATE: Gainesville, FL

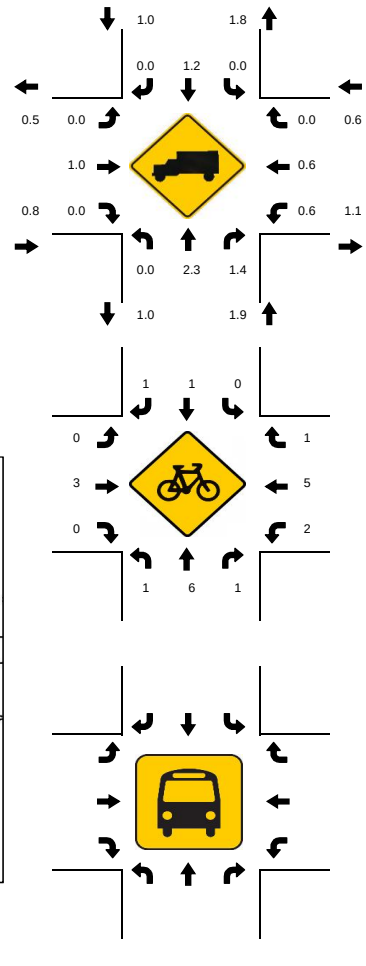
PROJECT ID: 20-03039-003
DATE: 01/28/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:00 PM - 04:15 PM



National Data & Surveying Services





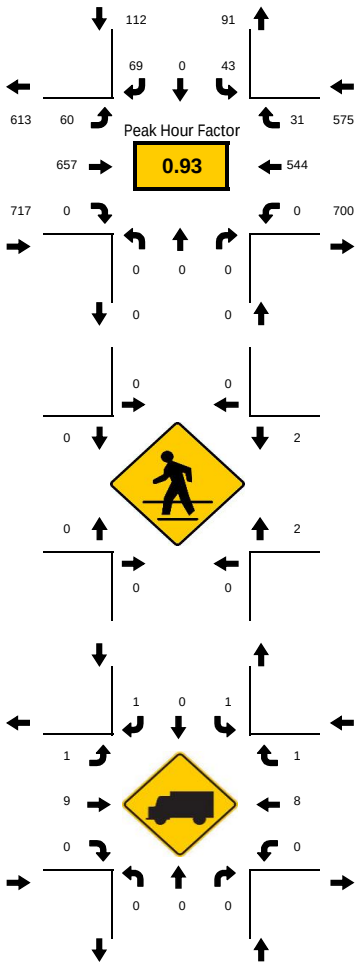
15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	Hourly Total
01:00 PM	11	128	27	0		5	124	27	0		22	84	9	0		39	77	13	0		566	2252
01:15 PM	14	105	41	0		5	133	28	0		14	90	18	0		30	100	12	0		590	2257
01:30 PM	12	107	22	0		2	111	13	0		16	112	17	0		34	104	16	0		566	2262
01:45 PM	17	110	28	0		7	114	14	0		13	79	5	0		41	91	10	1		530	2297
02:00 PM	17	108	39	0		4	110	23	0		19	110	17	0		25	95	4	0		571	2390
02:15 PM	12	123	39	0		3	127	17	0		18	103	11	0		34	104	4	0		595	2437
02:30 PM	17	103	35	0		3	118	12	0		21	126	14	0		37	107	8	0		601	2461
02:45 PM	13	109	36	0		9	112	26	0		28	133	5	0		39	105	8	0		623	2412
03:00 PM	18	106	40	0		11	140	31	0		23	99	8	0		37	93	12	0		618	2326
03:15 PM	16	96	39	0		9	111	16	0		22	109	26	0		41	118	16	0		619	2379
03:30 PM	7	108	32	0		9	92	22	0		15	105	6	0		36	110	10	0		552	2409
03:45 PM	14	100	36	0		6	110	20	0		16	105	5	0		32	87	6	0		537	2512
04:00 PM	10	111	35	0		6	139	18	0		22	116	11	0		61	131	11	0		671	2635
04:15 PM	24	129	28	0		6	108	24	0		16	135	16	0		37	118	8	0		649	1964
04:30 PM	21	112	37	0		14	129	14	0		22	116	14	0		54	110	12	0		655	1315
04:45 PM	22	130	38	0		9	134	11	0		17	113	14	0		19	144	9	0		660	660

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	96	520	152	0		56	556	96	0		88	540	64	0		244	576	48	0		**3036**
Heavy Trucks	0	12	4			0	12	0			0	12	0			4	4	0			**48**
Pedestrians		4					20					12					8				**44**
Bicycles	4	8	4			0	4	4			0	8	0			4	8	4			**48**
Railroad																					
Stopped Buses																					

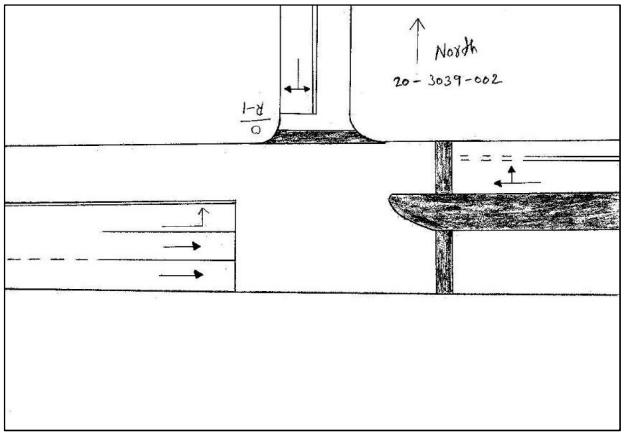
LOCATION: NW 31st Dr & NW 8th Ave
CITY/STATE: Gainesville, FL

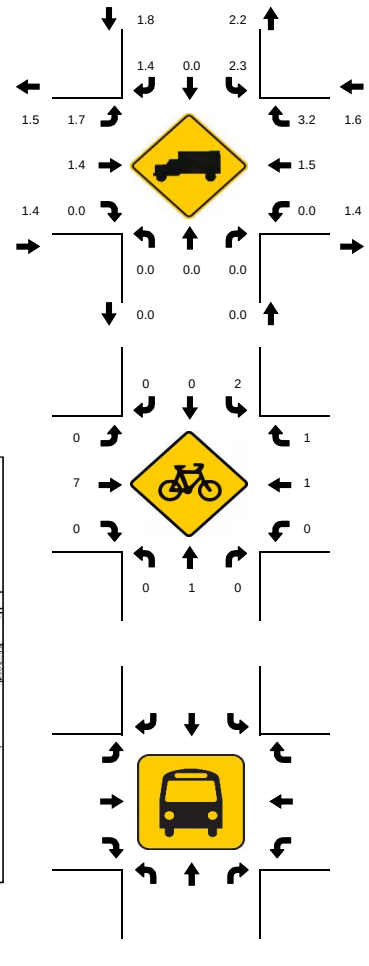
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:45 AM - 08:00 AM



National Data & Surveying Services



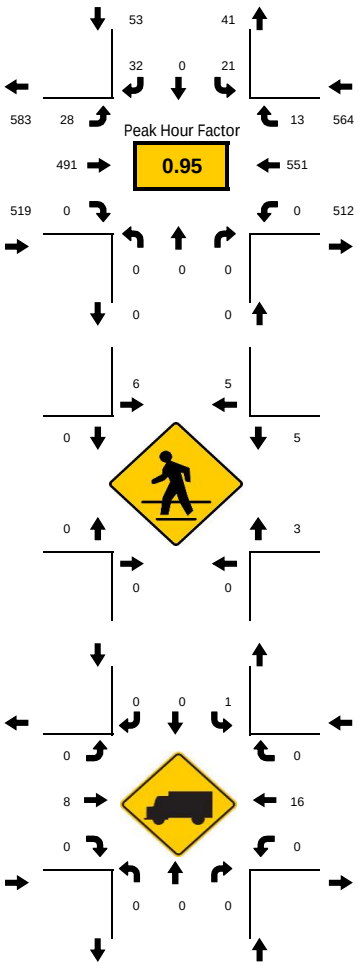


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	0	0	0		2	0	8	0		6	108	0	0		0	77	2	0		203	1201
07:15 AM	0	0	0	0		9	0	8	0		7	140	0	0		0	100	6	0		270	1341
07:30 AM	0	0	0	0		13	0	14	0		6	160	0	0		0	152	5	0		350	1404
07:45 AM	0	0	0	0		12	0	21	0		16	169	0	0		0	151	9	0		378	1389
08:00 AM	0	0	0	0		13	0	13	0		17	171	0	0		0	122	7	0		343	1325
08:15 AM	0	0	0	0		5	0	21	0		21	157	0	0		0	119	10	0		333	1243
08:30 AM	0	0	0	0		17	0	18	0		9	143	0	0		0	134	14	0		335	1119
08:45 AM	0	0	0	0		19	0	15	0		11	155	0	0		0	107	7	0		314	1045
09:00 AM	0	0	0	0		21	0	14	0		7	107	0	0		0	93	19	0		261	973
09:15 AM	0	0	0	0		12	0	8	0		4	86	0	0		0	95	4	0		209	712
09:30 AM	0	0	0	0		5	0	6	0		5	139	0	0		0	102	4	0		261	503
09:45 AM	0	0	0	0		5	0	3	0		2	100	0	0		0	128	4	0		242	242
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	0	0		52	0	84	0		84	684	0	0		0	608	40	0		**1552**	
Heavy Trucks	0	0	0			4	0	4			4	16	0			0	12	4			**44**	
Pedestrians		0					0					0					8				**8**	
Bicycles	0	4	0			4	0	0			0	8	0			0	4	4			**24**	
Railroad																						
Stopped Buses																						

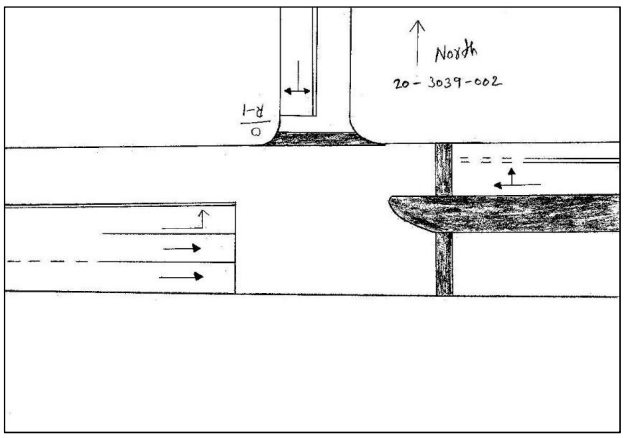
LOCATION: NW 31st Dr & NW 8th Ave
CITY/STATE: Gainesville, FL

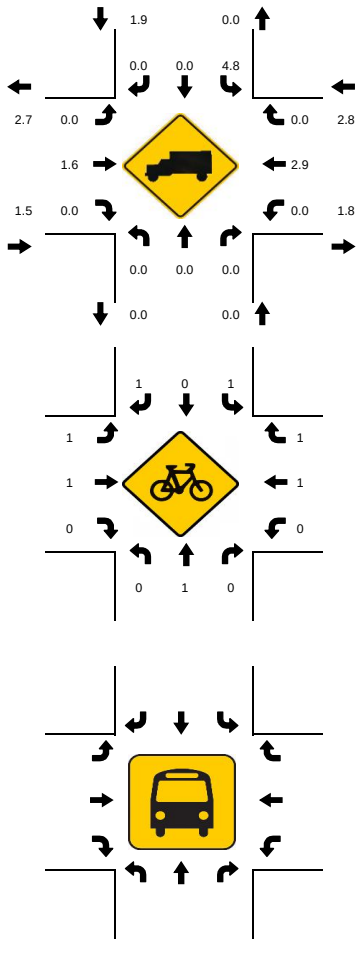
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 01:00 PM - 02:00 PM
Peak 15-Minute: 01:15 PM - 01:30 PM



National Data & Surveying Services



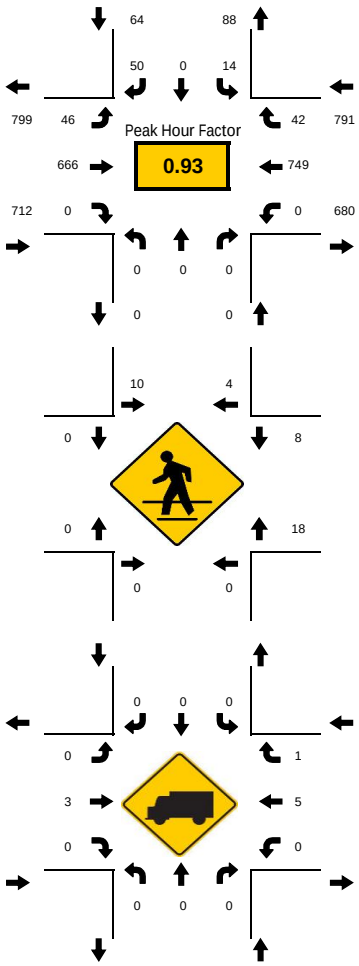


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
10:00 AM	0	0	0	0		0	0	5	0		1	110	0	0		0	102	3	0		221	932
10:15 AM	0	0	0	0		3	0	6	0		3	109	0	0		0	99	1	0		221	939
10:30 AM	0	0	0	0		3	0	3	0		1	102	0	0		0	121	3	0		233	967
10:45 AM	0	0	0	0		0	0	4	0		13	136	0	0		0	98	6	0		257	998
11:00 AM	0	0	0	0		0	0	1	0		3	120	0	0		0	102	2	0		228	994
11:15 AM	0	0	0	0		4	0	4	0		3	135	0	0		0	102	1	0		249	1020
11:30 AM	0	0	0	0		5	0	8	0		3	134	0	0		0	113	1	0		264	1013
11:45 AM	0	0	0	0		2	0	3	0		6	130	0	0		0	109	3	0		253	984
12:00 PM	0	0	0	0		4	0	8	0		4	113	0	0		0	123	2	0		254	978
12:15 PM	0	0	0	0		0	0	8	0		5	115	0	0		0	110	4	1		242	979
12:30 PM	0	0	0	0		1	0	2	0		6	107	0	0		0	116	3	0		235	1036
12:45 PM	0	0	0	0		4	0	10	0		2	96	0	0		0	130	5	0		247	1089
01:00 PM	0	0	0	0		8	0	3	0		6	109	0	0		0	126	3	0		255	1136
01:15 PM	0	0	0	0		7	0	12	0		8	139	0	0		0	130	3	0		299	881
01:30 PM	0	0	0	0		3	0	8	0		4	121	0	0		0	146	6	0		288	582
01:45 PM	0	0	0	0		3	0	9	0		10	122	0	0		0	149	1	0		294	294
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	0	0		32	0	48	0		40	556	0	0		0	596	24	0		**1296**	
Heavy Trucks	0	0	0			4	0	0			0	12	0			0	20	0			**36**	
Pedestrians		0					20					0					16				**36**	
Bicycles	0	4	0			4	0	4			4	4	0			0	4	4			**28**	
Railroad																						
Stopped Buses																						

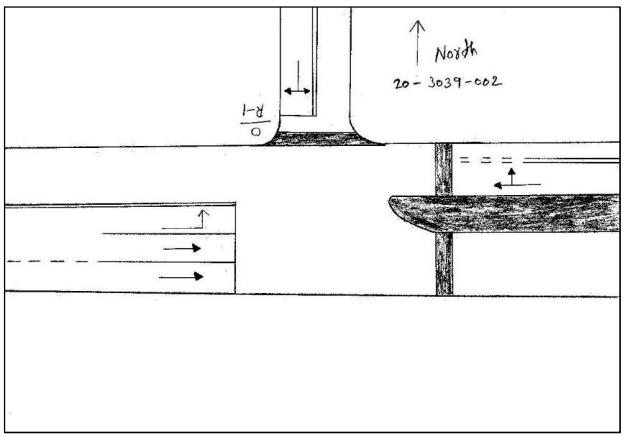
LOCATION: NW 31st Dr & NW 8th Ave
CITY/STATE: Gainesville, FL

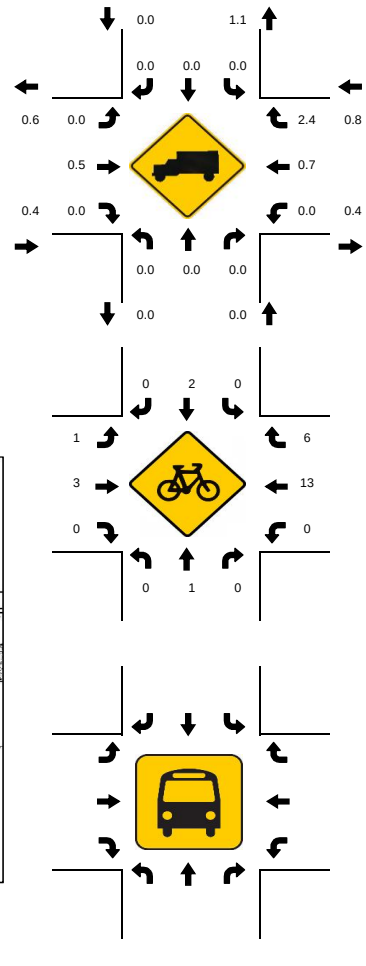
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



National Data & Surveying Services





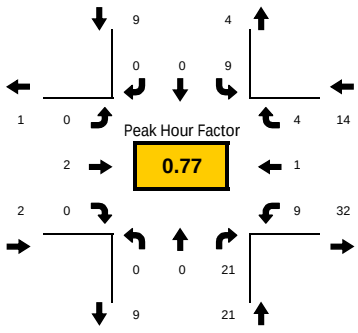
15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:00 PM	0	0	0	0		2	0	5	0		4	145	0	0		0	111	2	0		269	1185
02:15 PM	0	0	0	0		2	0	7	0		6	141	0	1		0	133	3	0		293	1238
02:30 PM	0	0	0	0		1	0	9	0		14	140	0	0		0	130	3	0		297	1275
02:45 PM	0	0	0	0		4	0	4	0		8	162	0	0		0	143	5	0		326	1329
03:00 PM	0	0	0	0		1	0	11	0		9	142	0	0		0	150	9	0		322	1355
03:15 PM	0	0	0	0		1	0	13	0		15	136	0	0		0	155	10	0		330	1375
03:30 PM	0	0	0	0		13	0	21	0		14	144	0	0		1	142	16	0		351	1383
03:45 PM	0	0	0	0		26	0	20	0		20	125	0	0		0	148	13	0		352	1402
04:00 PM	0	0	0	0		6	0	14	0		15	153	0	0		0	143	11	0		342	1413
04:15 PM	0	0	0	0		5	0	12	0		11	146	0	0		0	155	9	0		338	1438
04:30 PM	0	0	0	0		6	0	10	0		10	163	0	0		0	174	7	0		370	1521
04:45 PM	0	0	0	0		7	0	7	0		7	161	0	0		0	167	14	0		363	1541
05:00 PM	0	0	0	0		3	0	7	0		12	165	0	0		0	176	4	0		367	1567
05:15 PM	0	0	0	0		2	0	10	0		11	187	0	0		0	194	17	0		421	1500
05:30 PM	0	0	0	0		5	0	16	0		13	154	0	0		0	189	13	0		390	1389
05:45 PM	0	0	0	0		4	0	17	0		10	160	0	0		0	190	8	0		389	1293
06:00 PM	0	0	0	0		4	0	15	0		12	129	0	0		0	137	3	0		300	1141
06:15 PM	0	0	0	0		4	0	7	0		6	145	0	0		0	145	3	0		310	841
06:30 PM	0	0	0	0		4	0	3	0		8	129	0	0		0	147	3	0		294	531
06:45 PM	0	0	0	0		4	0	6	0		4	106	0	1		0	115	1	0		237	237

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	0	0		20	0	68	0		52	748	0	0		0	776	68	0		**1732**
Heavy Trucks	0	0	0			0	0	0			0	8	0			0	12	4			**24**
Pedestrians		0					16					0					40				**56**
Bicycles	0	4	0			0	8	0			4	4	0			0	24	12			**56**
Railroad																					
Stopped Buses																					

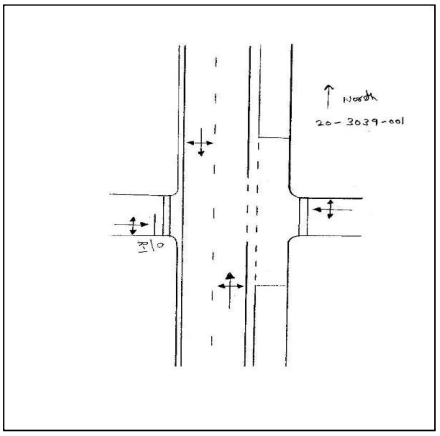
LOCATION: NE 9th St & NE 18th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:00 AM - 08:15 AM



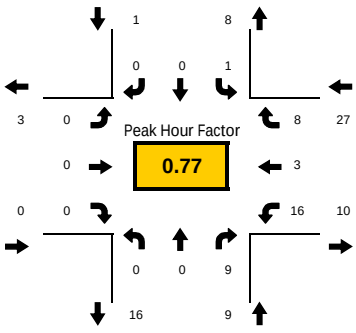
National Data & Surveying Services



15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					NE 18th Ave Eastbound					NE 18th Ave Westbound						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	Hourly Total
08:00 AM	0	0	7	0		5	0	0	0		0	2	0	0		0	1	0	0		15	46
08:15 AM	0	0	6	0		0	0	0	0		0	0	0	0		4	0	2	0		12	41
08:30 AM	0	0	6	0		2	0	0	0		0	0	0	0		4	0	1	0		13	35
08:45 AM	0	0	2	0		2	0	0	0		0	0	0	0		1	0	1	0		6	24
09:00 AM	0	0	2	0		2	0	0	0		0	1	0	0		2	0	3	0		10	23
09:15 AM	0	0	0	0		2	0	0	0		0	0	0	0		3	0	1	0		6	13
09:30 AM	0	0	1	0		1	0	0	0		0	0	0	0		0	0	0	0		2	7
09:45 AM	0	0	1	0		1	0	0	0		0	0	0	0		0	0	3	0		5	5
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	28	0		20	0	0	0		0	8	0	0		16	4	8	0		**84**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

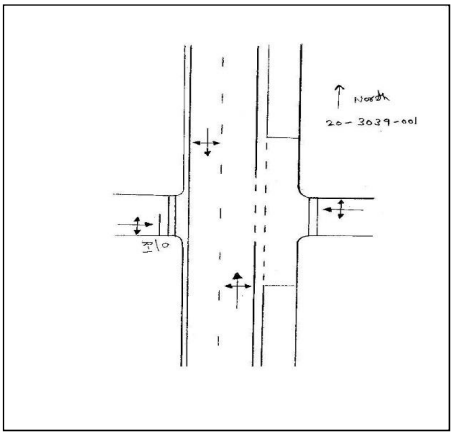
LOCATION: NE 9th St & NE 18th Ave
CITY/STATE: Gainesville, FL

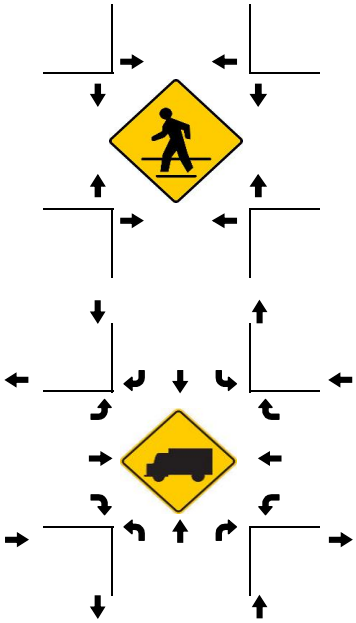
PROJECT ID: 20-03039-001
DATE: 01/28/2020

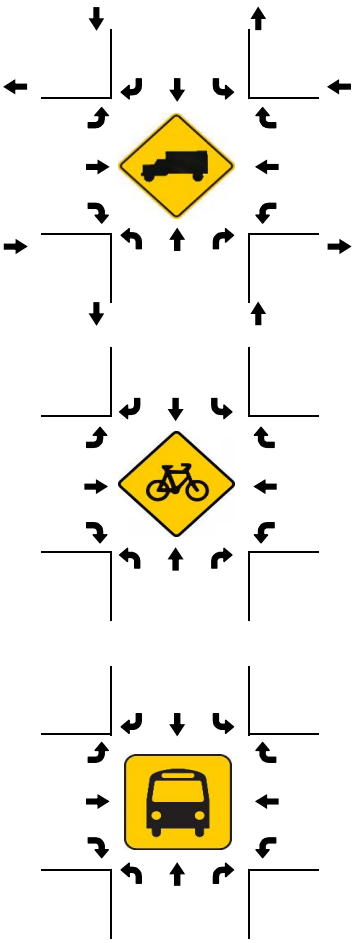


Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:30 PM - 03:45 PM

National Data & Surveying Services





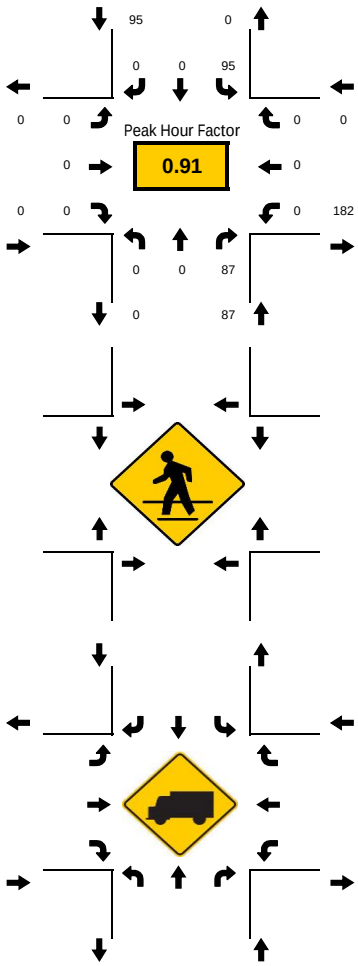


15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					NE 18th Ave Eastbound					NE 18th Ave Westbound						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	Hourly Total
02:30 PM	0	0	0	0		1	0	0	0		0	0	0	0		0	0	5	0		6	21
02:45 PM	0	0	0	0		2	0	0	0		0	0	0	0		1	0	2	0		5	27
03:00 PM	0	0	1	0		1	0	0	0		0	0	0	0		1	0	1	0		4	32
03:15 PM	0	0	1	0		3	0	0	0		0	1	0	0		1	0	0	0		6	34
03:30 PM	0	0	5	0		0	0	0	0		0	0	0	0		5	1	1	0		12	37
03:45 PM	0	0	2	0		1	0	0	0		0	0	0	0		2	2	3	0		10	25
04:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		5	0	1	0		6	15
04:15 PM	0	0	2	0		0	0	0	0		0	0	0	0		4	0	3	0		9	9

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	20	0		4	0	0	0		0	0	0	0		20	8	12	0		**64**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

LOCATION: NE 9th St & Howard W Bishop Middle School Southern Dwy N/O NE 18th Ave
CITY/STATE: Gainesville, FL

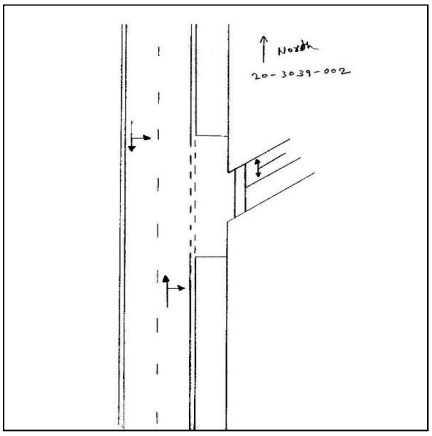
PROJECT ID: 20-03039-002
DATE: 01/28/2020

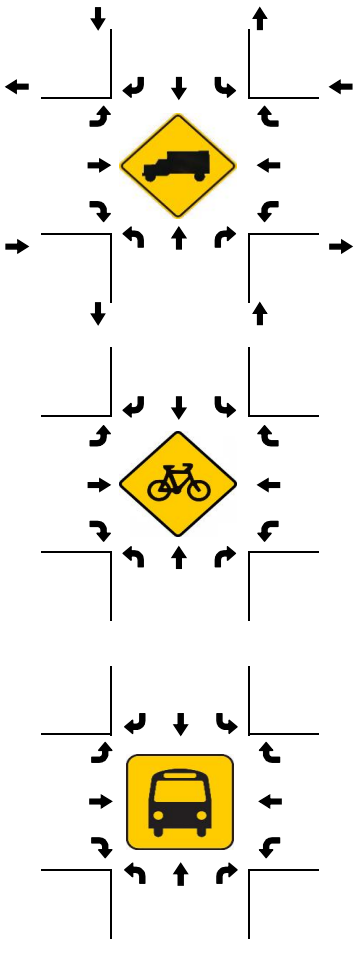


Peak Hour Factor: 0.91

Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 08:30 AM - 08:45 AM

National Data & Surveying Services



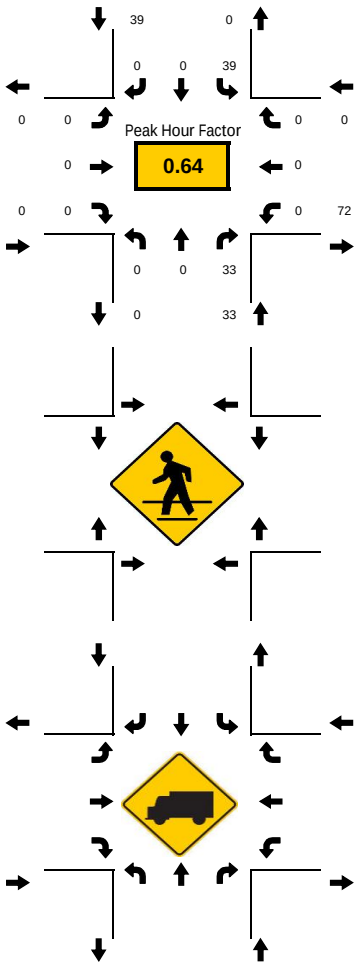


15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					p Middle School Southern Dwy Eastbound					p Middle School Southern Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	17	0		15	0	0	0		0	0	0	0		0	0	0	0		32	165
08:15 AM	0	0	19	0		22	0	0	0		0	0	0	0		0	0	0	0		41	182
08:30 AM	0	0	26	0		24	0	0	0		0	0	0	0		0	0	0	0		50	159
08:45 AM	0	0	22	0		20	0	0	0		0	0	0	0		0	0	0	0		42	115
09:00 AM	0	0	20	0		29	0	0	0		0	0	0	0		0	0	0	0		49	79
09:15 AM	0	0	10	0		8	0	0	0		0	0	0	0		0	0	0	0		18	30
09:30 AM	0	0	5	0		1	0	0	0		0	0	0	0		0	0	0	0		6	12
09:45 AM	0	0	6	0		0	0	0	0		0	0	0	0		0	0	0	0		6	6
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	104	0		116	0	0	0		0	0	0	0		0	0	0	0		**220**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

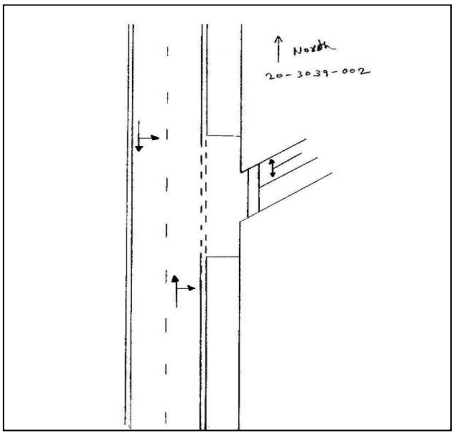
LOCATION: NE 9th St & Howard W Bishop Middle School Southern Dwy N/O NE 18th Ave
CITY/STATE: Gainesville, FL

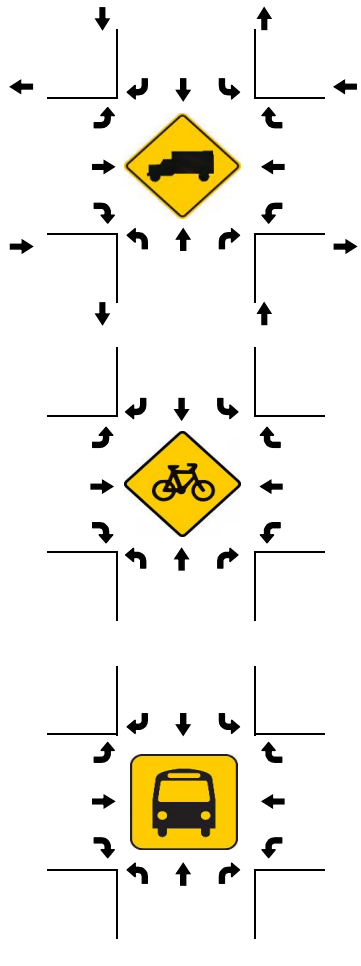
PROJECT ID: 20-03039-002
DATE: 01/28/2020

Peak-Hour: 03:00 PM - 04:00 PM
Peak 15-Minute: 03:30 PM - 03:45 PM



National Data & Surveying Services





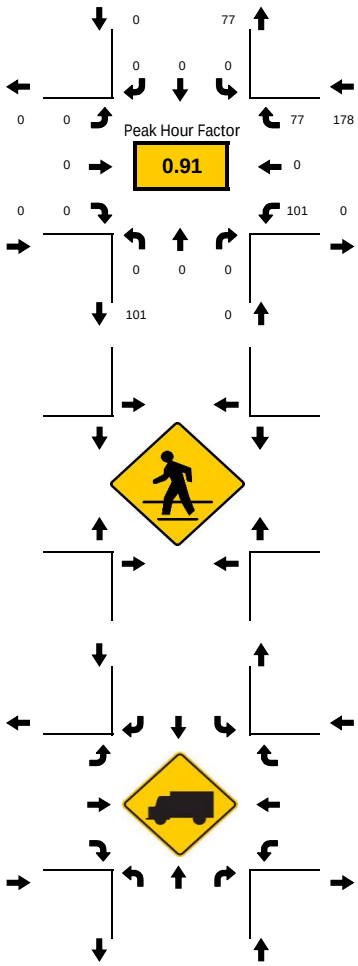
15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					p Middle School Southern Dwy Eastbound					p Middle School Southern Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	5	0		5	0	0	0		0	0	0	0		0	0	0	0		10	38
02:45 PM	0	0	4	0		3	0	0	0		0	0	0	0		0	0	0	0		7	56
03:00 PM	0	0	5	0		7	0	0	0		0	0	0	0		0	0	0	0		12	72
03:15 PM	0	0	4	0		5	0	0	0		0	0	0	0		0	0	0	0		9	70
03:30 PM	0	0	12	0		16	0	0	0		0	0	0	0		0	0	0	0		28	66
03:45 PM	0	0	12	0		11	0	0	0		0	0	0	0		0	0	0	0		23	38
04:00 PM	0	0	3	0		7	0	0	0		0	0	0	0		0	0	0	0		10	15
04:15 PM	0	0	4	0		1	0	0	0		0	0	0	0		0	0	0	0		5	5

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	48	0		64	0	0	0		0	0	0	0		0	0	0	0		**112**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

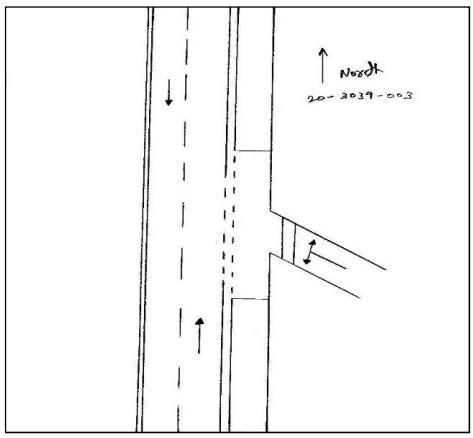
LOCATION: NE 9th St & Howard W Bishop Middle School Northern Dwy S/O NE 19th Pl
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-003
DATE: 01/28/2020

Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 08:30 AM - 08:45 AM



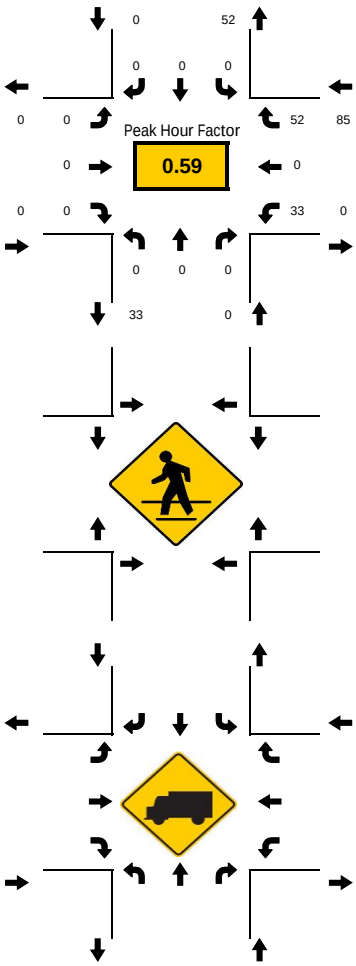
National Data & Surveying Services



15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					op Middle School Northern Dwy Eastbound					op Middle School Northern Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		18	0	15	0		33	166
08:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		25	0	16	0		41	178
08:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		24	0	25	0		49	160
08:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		27	0	16	0		43	115
09:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		25	0	20	0		45	77
09:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		12	0	11	0		23	32
09:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		2	0	2	0		4	9
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		2	0	3	0		5	5
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	0	0		0	0	0	0		0	0	0	0		108	0	100	0		**208**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

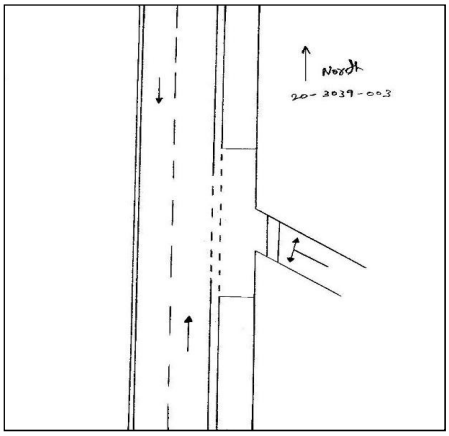
LOCATION: NE 9th St & Howard W Bishop Middle School Northern Dwy S/O NE 19th Pl
CITY/STATE: Gainesville, FL

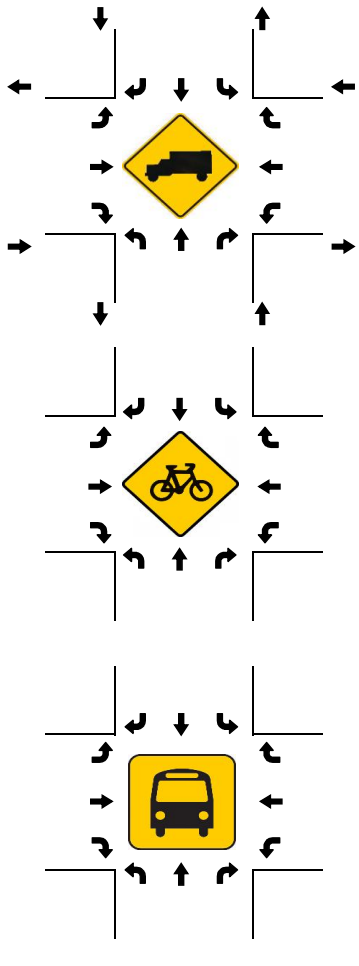
PROJECT ID: 20-03039-003
DATE: 01/28/2020



Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:30 PM - 03:45 PM

National Data & Surveying Services





15-Min Count Period Beginning At	NE 9th St Northbound					NE 9th St Southbound					op Middle School Northern Dwy Eastbound					op Middle School Northern Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		4	0	7	0		11	27
02:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		3	0	5	0		8	52
03:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		2	0	3	0		5	77
03:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		1	0	2	0		3	84
03:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		12	0	24	0		36	85
03:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		11	0	22	0		33	49
04:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		8	0	4	0		12	16
04:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		2	0	2	0		4	4

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	0	0		0	0	0	0		0	0	0	0		48	0	96	0		**144**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

LOCATION: Howard W Bishop Middle School Western Dwy E/O NE 9th St & NE 19th Pl
CITY/STATE: Gainesville, FL

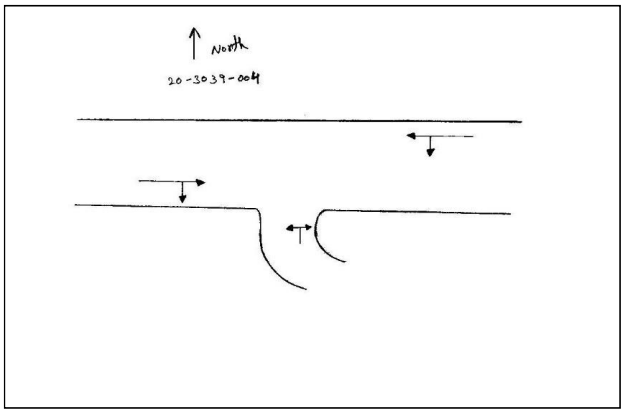
PROJECT ID: 20-03039-004
DATE: 01/28/2020

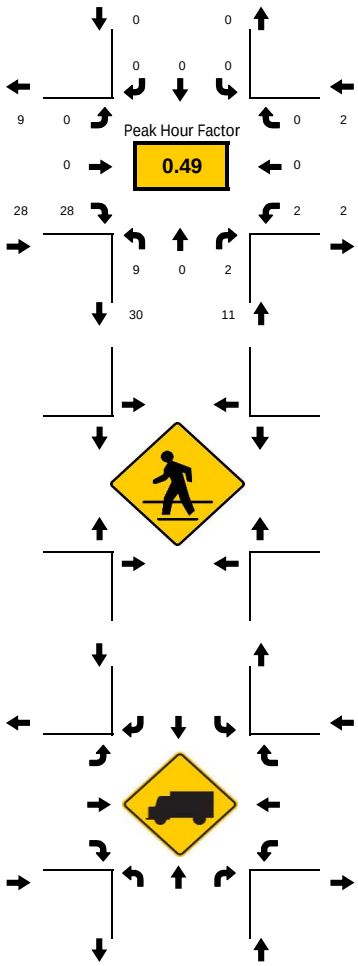
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:00 AM - 08:15 AM

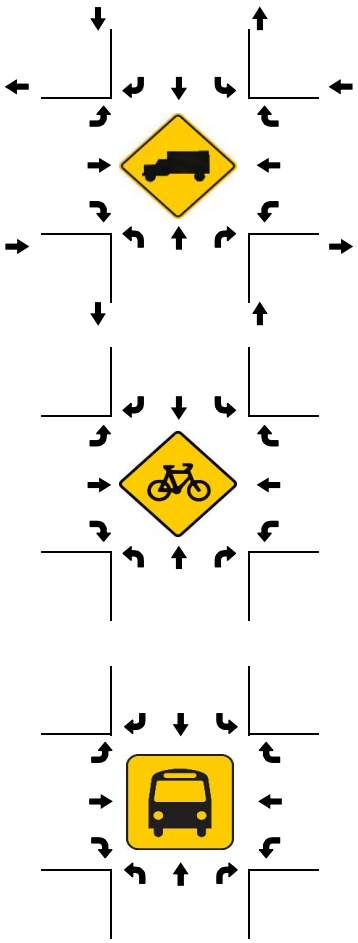
Peak Hour Factor

0.49

National Data & Surveying Services







15-Min Count Period Beginning At	hop Middle School Western Dwy Northbound					hop Middle School Western Dwy Southbound					NE 19th Pl Eastbound					NE 19th Pl Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	6	0	1	0		0	0	0	0		0	0	14	0		0	0	0	0		21	41
08:15 AM	3	0	0	0		0	0	0	0		0	0	2	0		0	0	0	0		5	22
08:30 AM	0	0	1	0		0	0	0	0		0	0	3	0		0	0	0	0		4	20
08:45 AM	0	0	0	0		0	0	0	0		0	0	9	0		2	0	0	0		11	17
09:00 AM	0	0	0	0		0	0	0	0		0	0	2	0		0	0	0	0		2	6
09:15 AM	0	0	0	0		0	0	0	0		0	0	3	0		0	0	0	0		3	4
09:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		1	0	0	0		1	1
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	24	0	4	0		0	0	0	0		0	0	56	0		8	0	0	0		**92**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: Howard W Bishop Middle School Western Dwy E/O NE 9th St & NE 19th Pl
CITY/STATE: Gainesville, FL

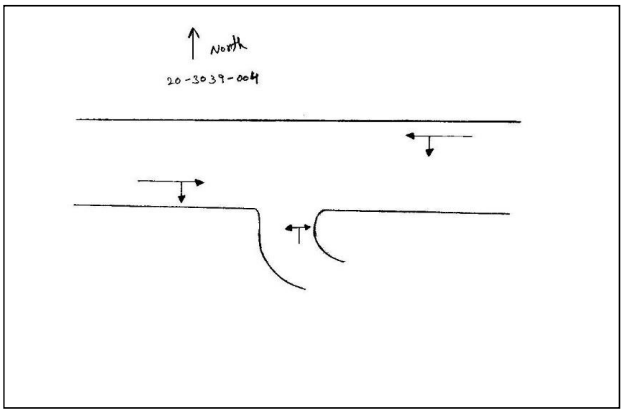
PROJECT ID: 20-03039-004
DATE: 01/28/2020

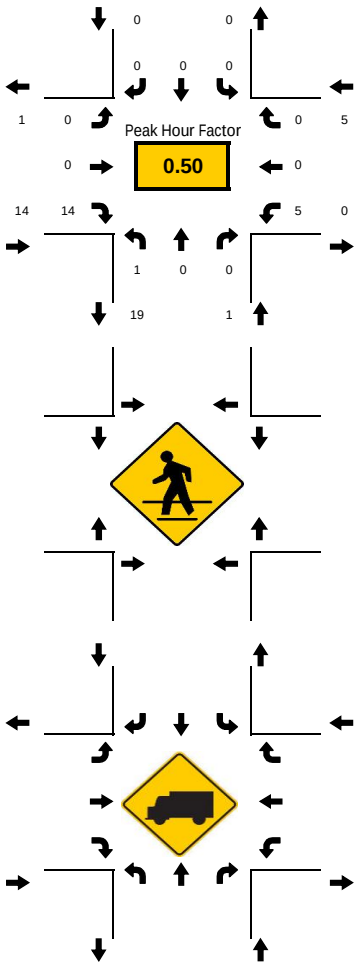
Peak-Hour: 03:15 PM - 04:15 PM
Peak 15-Minute: 03:45 PM - 04:00 PM

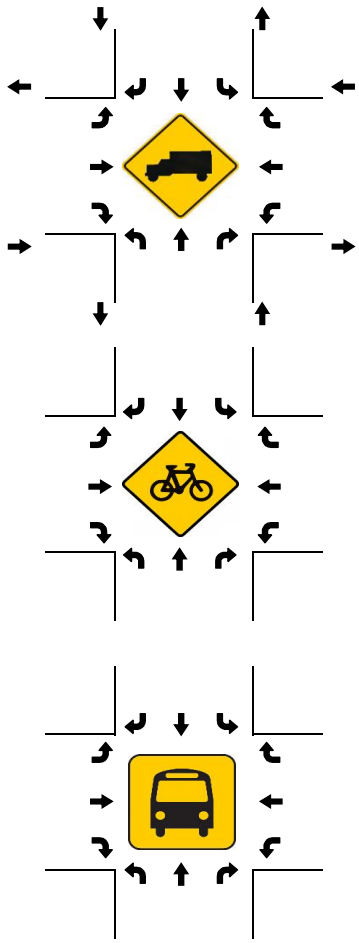
Peak Hour Factor

0.50

National Data & Surveying Services







15-Min Count Period Beginning At	hop Middle School Western Dwy Northbound					hop Middle School Western Dwy Southbound					NE 19th Pl Eastbound					NE 19th Pl Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	3
02:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	6
03:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	16
03:15 PM	0	0	0	0		0	0	0	0		0	0	1	0		2	0	0	0		3	20
03:30 PM	1	0	0	0		0	0	0	0		0	0	1	0		1	0	0	0		3	20
03:45 PM	0	0	0	0		0	0	0	0		0	0	8	0		2	0	0	0		10	17
04:00 PM	0	0	0	0		0	0	0	0		0	0	4	0		0	0	0	0		4	7
04:15 PM	1	0	0	0		0	0	0	0		0	0	1	0		1	0	0	0		3	3

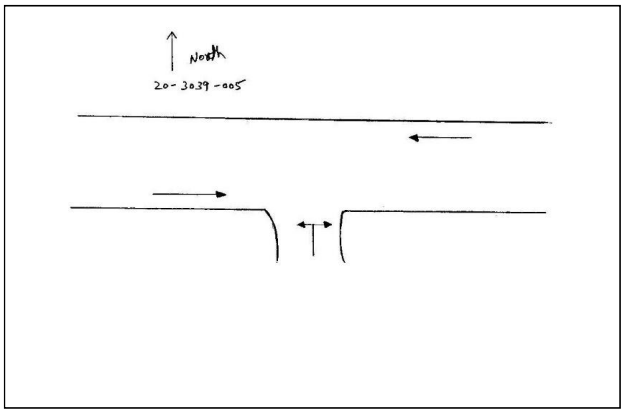
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	4	0	0	0		0	0	0	0		0	0	32	0		8	0	0	0		**44**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

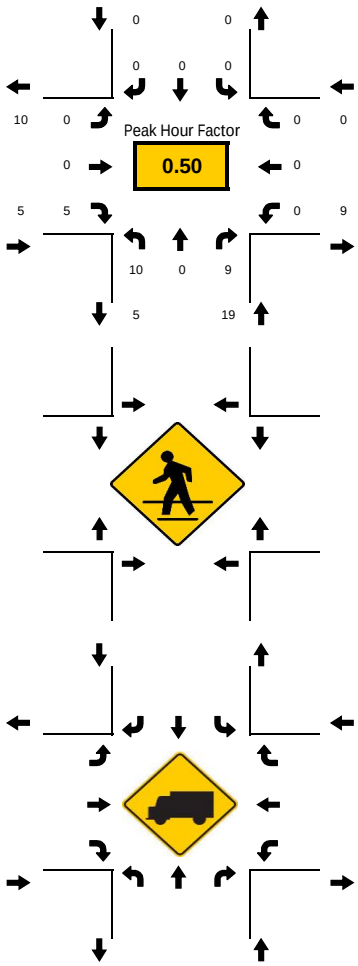
LOCATION: Howard W Bishop Middle School Eastern Dwy E/O NE 9th St & NE 19th Pl
CITY/STATE: Gainesville, FL

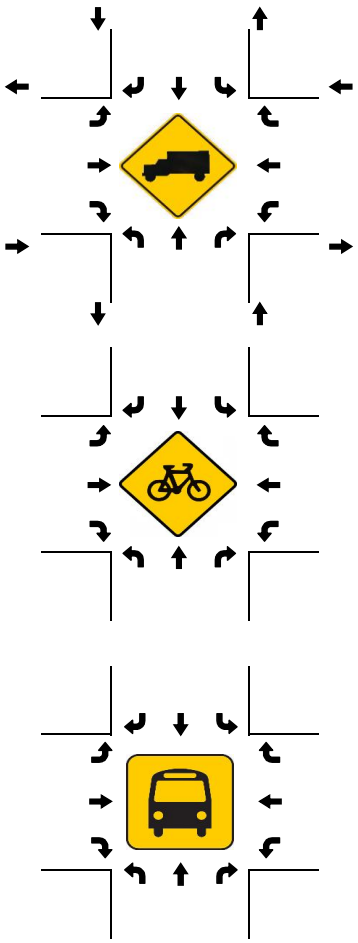
PROJECT ID: 20-03039-005
DATE: 01/28/2020

Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

National Data & Surveying Services





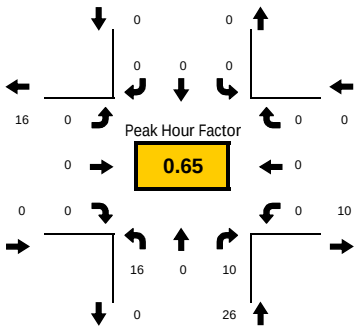


15-Min Count Period Beginning At	hop Middle School Eastern Dwy Northbound					hop Middle School Eastern Dwy Southbound					NE 19th Pl Eastbound					NE 19th Pl Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	20
08:15 AM	4	0	0	0		0	0	0	0		0	0	3	0		0	0	0	0		7	24
08:30 AM	1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		1	18
08:45 AM	4	0	7	0		0	0	0	0		0	0	1	0		0	0	0	0		12	17
09:00 AM	1	0	2	0		0	0	0	0		0	0	1	0		0	0	0	0		4	5
09:15 AM	1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		1	1
09:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	16	0	28	0		0	0	0	0		0	0	12	0		0	0	0	0		**56**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

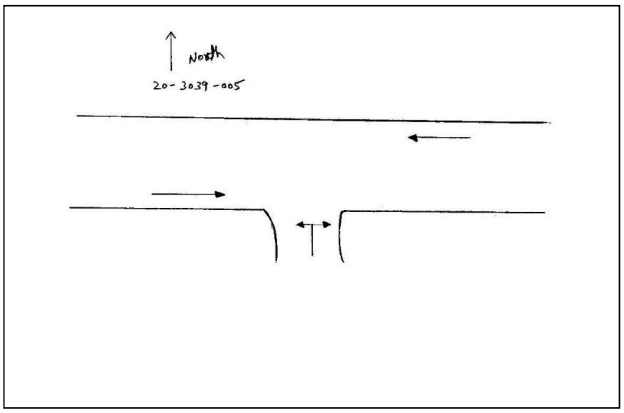
LOCATION: Howard W Bishop Middle School Eastern Dwy E/O NE 9th St & NE 19th Pl
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-005
DATE: 01/28/2020

Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:45 PM - 04:00 PM



National Data & Surveying Services



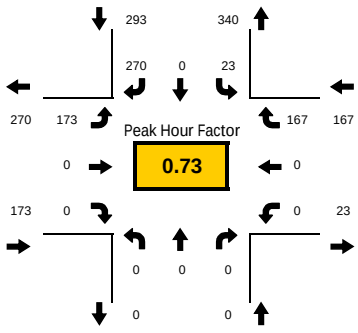
15-Min Count Period Beginning At	hop Middle School Eastern Dwy Northbound					hop Middle School Eastern Dwy Southbound					NE 19th Pl Eastbound					NE 19th Pl Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	1
02:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	5
03:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	15
03:15 PM	0	0	0	0		0	0	0	0		0	0	1	0		0	0	0	0		1	25
03:30 PM	0	0	4	0		0	0	0	0		0	0	0	0		0	0	0	0		4	26
03:45 PM	5	0	5	0		0	0	0	0		0	0	0	0		0	0	0	0		10	22
04:00 PM	9	0	1	0		0	0	0	0		0	0	0	0		0	0	0	0		10	12
04:15 PM	2	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		2	2

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	36	0	20	0		0	0	0	0		0	0	0	0		0	0	0	0		**56**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

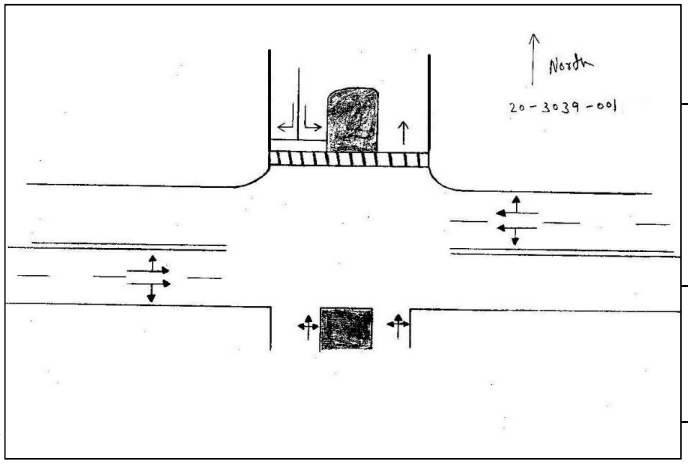
LOCATION: Littlewood Elementary School Dwy W/O SR 121/NW 34th St & NW 8th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:15 AM - 07:30 AM



National Data & Surveying Services

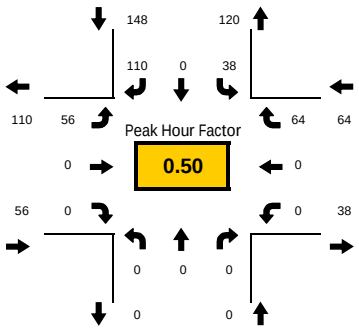


15-Min Count Period Beginning At	ementary School Dwy W/O SR 12 Northbound					ementary School Dwy W/O SR 1 Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	0	0	0		2	0	20	0		62	0	0	0		0	0	38	0		122	633
07:15 AM	0	0	0	0		1	0	96	0		64	0	0	0		0	0	55	0		216	534
07:30 AM	0	0	0	0		0	0	104	0		34	0	0	0		0	0	57	0		195	331
07:45 AM	0	0	0	0		20	0	50	0		13	0	0	0		0	0	17	0		100	149
08:00 AM	0	0	0	0		4	0	7	0		6	0	0	0		0	0	6	0		23	54
08:15 AM	0	0	0	0		1	0	4	0		4	0	0	0		0	0	4	0		13	31
08:30 AM	0	0	0	0		2	0	5	0		2	0	0	0		0	0	4	0		13	18
08:45 AM	0	0	0	0		0	0	1	0		1	0	0	0		0	0	3	0		5	5
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	0	0		80	0	416	0		256	0	0	0		0	0	228	0		**980**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

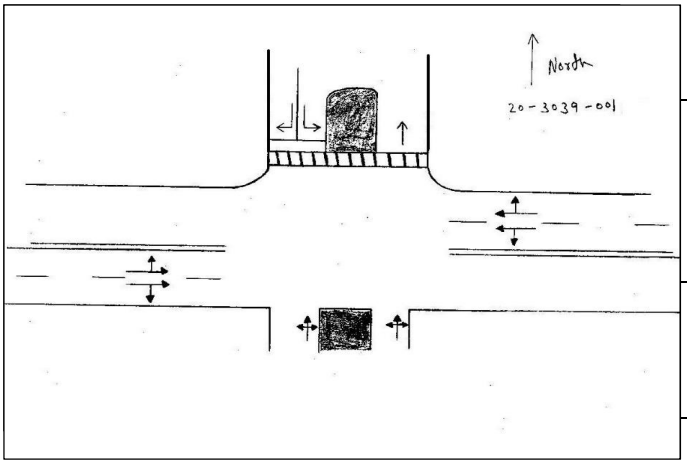
LOCATION: Littlewood Elementary School Dwy W/O SR 121/NW 34th St & NW 8th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 01:15 PM - 02:15 PM
Peak 15-Minute: 02:00 PM - 02:15 PM



National Data & Surveying Services

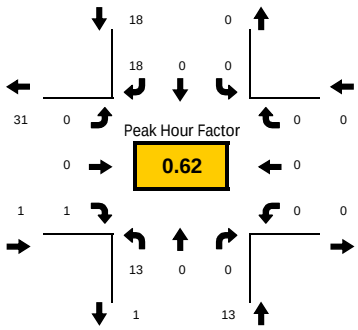


15-Min Count Period Beginning At	ementary School Dwy W/O SR 12 Northbound					ementary School Dwy W/O SR 1 Southbound					NW 8th Ave Eastbound					NW 8th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:00 PM	0	0	0	0		3	0	1	0		6	0	0	0		0	0	7	0		17	150
01:15 PM	0	0	0	0		4	0	4	0		11	0	0	0		0	0	10	0		29	268
01:30 PM	0	0	0	0		2	0	9	0		10	0	0	0		0	0	15	0		36	263
01:45 PM	0	0	0	0		7	0	24	0		18	0	0	0		0	0	19	0		68	247
02:00 PM	0	0	0	0		25	0	73	0		17	0	0	0		0	0	20	0		135	222
02:15 PM	0	0	0	0		5	0	15	0		0	0	0	0		0	0	4	0		24	87
02:30 PM	0	0	0	0		5	0	4	0		6	0	0	0		0	0	5	0		20	63
02:45 PM	0	0	0	0		8	0	13	0		10	0	0	0		0	0	12	0		43	43
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	0	0		100	0	292	0		72	0	0	0		0	0	80	0		**544**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: SR 121/NW 34th St & Littlewood Elementary School Dwy N/O NW 8th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-002
DATE: 01/28/2020

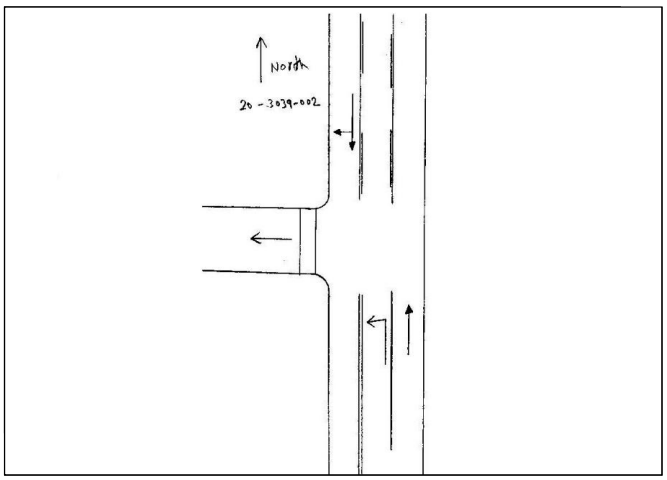
Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:15 AM - 07:30 AM



Peak Hour Factor

0.62

National Data & Surveying Services

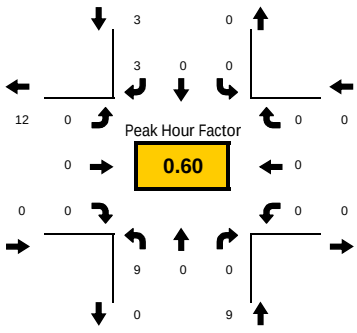


15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					d Elementary School Dwy N/O N Eastbound					d Elementary School Dwy N/O N Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	6	0	0	0		0	0	6	0		0	0	0	0		0	0	0	0		12	32
07:15 AM	3	0	0	0		0	0	10	0		0	0	0	0		0	0	0	0		13	20
07:30 AM	4	0	0	0		0	0	1	0		0	0	1	0		0	0	0	0		6	7
07:45 AM	0	0	0	0		0	0	1	0		0	0	0	0		0	0	0	0		1	1
08:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
08:15 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
08:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
08:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	24	0	0	0		0	0	40	0		0	0	4	0		0	0	0	0		**68**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: SR 121/NW 34th St & Littlewood Elementary School Dwy N/O NW 8th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-002
DATE: 01/28/2020

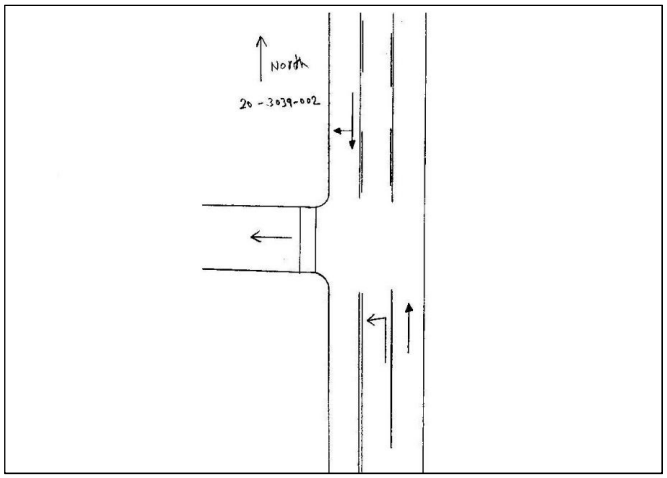
Peak-Hour: 01:30 PM - 02:30 PM
Peak 15-Minute: 01:45 PM - 02:00 PM

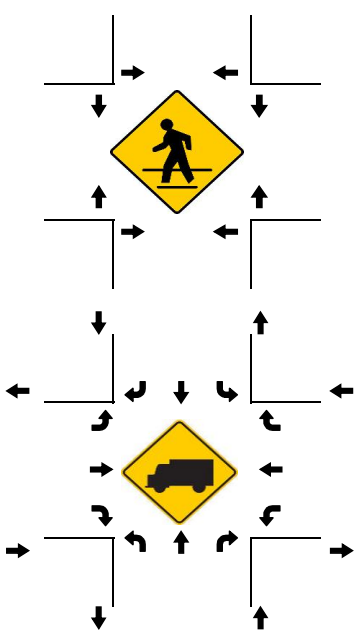


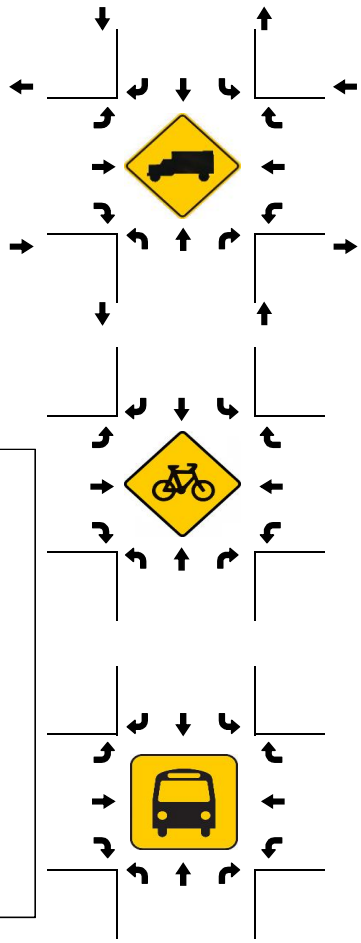
Peak Hour Factor

0.60

National Data & Surveying Services







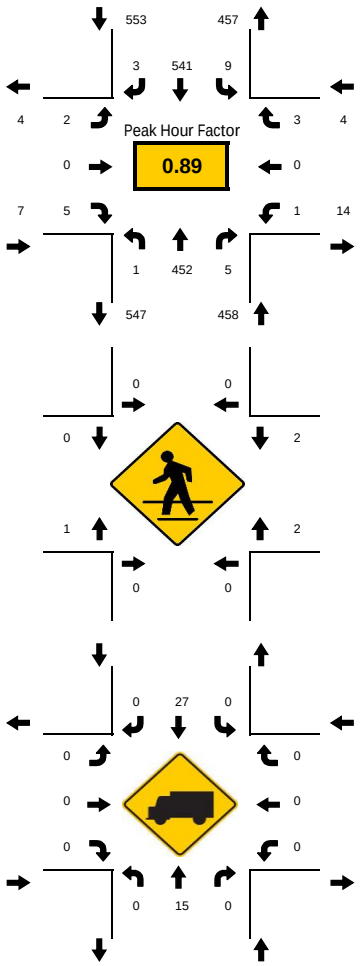
15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					d Elementary School Dwy N/O N Eastbound					d Elementary School Dwy N/O N Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:00 PM	1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		1	10
01:15 PM	1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		1	11
01:30 PM	2	0	0	0		0	0	1	0		0	0	0	0		0	0	0	0		3	12
01:45 PM	4	0	0	0		0	0	1	0		0	0	0	0		0	0	0	0		5	12
02:00 PM	2	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		2	10
02:15 PM	1	0	0	0		0	0	1	0		0	0	0	0		0	0	0	0		2	8
02:30 PM	0	0	0	0		0	0	1	0		2	0	0	0		0	0	0	0		3	6
02:45 PM	0	0	0	0		0	0	0	0		3	0	0	0		0	0	0	0		3	3

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	16	0	0	0		0	0	4	0		0	0	0	0		0	0	0	0		**20**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

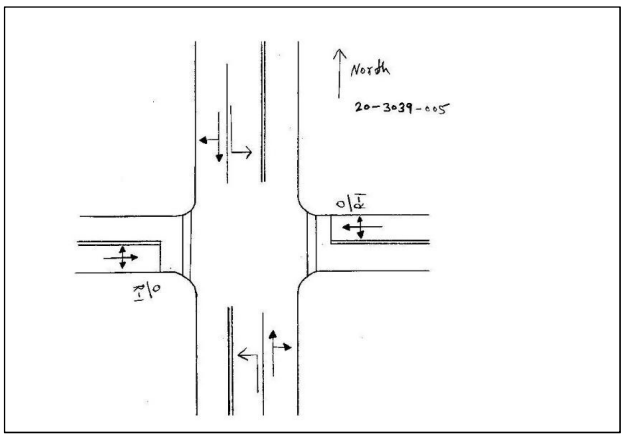
LOCATION: SR 121/NW 34th St & NW 10th Ave N
CITY/STATE: Gainesville, FL

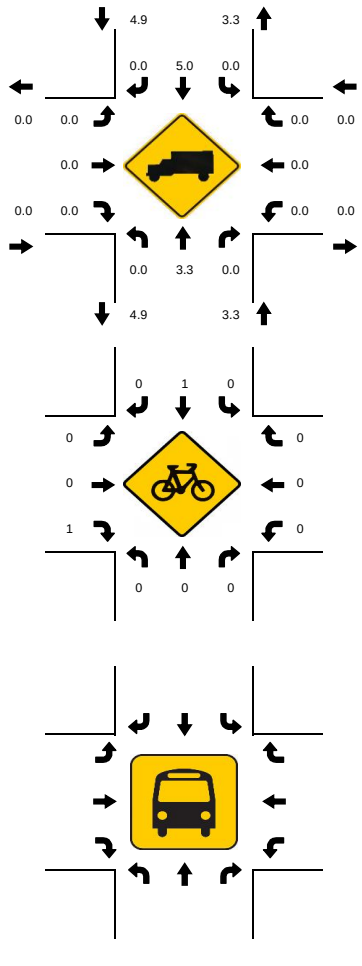
PROJECT ID: 20-03039-005
DATE: 01/28/2020

Peak-Hour: 09:30 AM - 10:30 AM
Peak 15-Minute: 10:15 AM - 10:30 AM



National Data & Surveying Services





15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 10th Ave N Eastbound					NW 10th Ave N Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	1	52	1	0		2	90	0	0		0	0	4	0		0	0	0	0		150	890
07:15 AM	0	98	0	0		7	119	5	0		0	1	5	0		0	0	2	0		237	977
07:30 AM	2	98	0	0		6	121	7	0		3	0	7	0		1	0	9	0		254	1002
07:45 AM	0	114	0	0		0	116	0	0		3	0	8	0		1	2	5	0		249	978
08:00 AM	0	96	0	0		3	131	0	0		0	0	4	0		2	0	1	0		237	956
08:15 AM	0	128	0	0		4	121	1	0		1	0	1	0		3	0	3	0		262	948
08:30 AM	0	121	0	0		0	99	2	0		1	0	3	0		3	0	1	0		230	908
08:45 AM	0	119	0	0		0	108	0	0		0	0	0	0		0	0	0	0		227	942
09:00 AM	0	84	1	0		2	135	3	0		1	0	3	0		0	0	0	0		229	940
09:15 AM	2	102	1	0		1	115	0	0		0	0	1	0		0	0	0	0		222	958
09:30 AM	0	104	3	0		1	154	0	0		1	0	1	0		0	0	0	0		264	1022
09:45 AM	1	104	2	0		0	115	0	0		0	0	1	0		0	0	2	0		225	758
10:00 AM	0	105	0	0		4	133	1	0		0	0	3	0		1	0	0	0		247	533
10:15 AM	0	139	0	0		4	139	2	0		1	0	0	0		0	0	1	0		286	286
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	4	556	12	0		16	616	8	0		4	0	12	0		4	0	8	0		**1240**	
Heavy Trucks	0	24	0			0	44	0			0	0	0			0	0				**68**	
Pedestrians		0					0					4					12				**16**	
Bicycles	0	0	0			0	4	0			0	0	4			0	0				**8**	
Railroad Stopped Buses																						

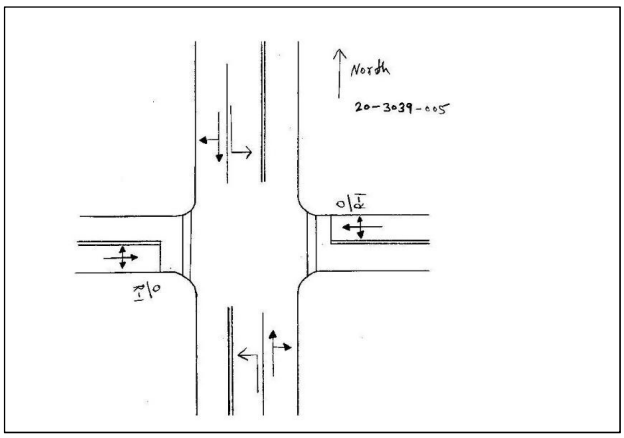
LOCATION: SR 121/NW 34th St & NW 10th Ave N
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-005
DATE: 01/28/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:45 PM - 05:00 PM

Peak Hour Factor: 0.97

National Data & Surveying Services



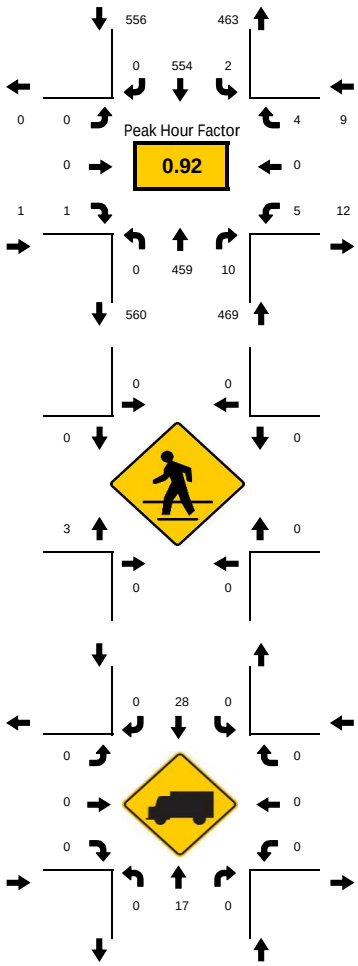
15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 10th Ave N Eastbound					NW 10th Ave N Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
01:00 PM	0	164	0	0		1	158	0	0		1	0	3	0		1	0	2	0		330	1162
01:15 PM	0	134	2	0		1	160	0	0		0	0	0	0		1	0	5	0		303	1091
01:30 PM	1	135	0	0		8	133	1	0		2	0	1	0		1	0	2	0		284	1089
01:45 PM	1	107	0	0		4	123	0	0		1	0	0	0		3	0	6	0		245	1074
02:00 PM	0	130	0	0		0	114	2	0		2	0	1	0		1	0	9	0		259	1135
02:15 PM	1	149	0	0		2	142	0	0		1	0	1	0		3	0	2	0		301	1202
02:30 PM	0	132	0	0		3	126	2	0		1	0	2	0		1	0	2	0		269	1182
02:45 PM	3	146	0	0		2	148	0	0		1	0	1	0		2	0	3	0		306	1154
03:00 PM	5	136	2	0		2	173	0	0		0	0	0	0		3	0	5	0		326	1105
03:15 PM	2	134	1	0		3	137	0	0		1	0	0	0		2	0	1	0		281	1070
03:30 PM	0	114	2	0		2	113	0	0		0	1	1	0		3	0	5	0		241	1098
03:45 PM	0	120	0	1		4	128	0	0		0	0	1	0		3	0	0	0		257	1158
04:00 PM	2	133	0	1		3	143	0	0		0	0	2	0		3	1	3	0		291	1215
04:15 PM	3	154	1	0		5	138	1	0		2	0	1	0		3	0	1	0		309	924
04:30 PM	0	137	0	0		1	158	1	0		0	0	1	0		3	0	0	0		301	615
04:45 PM	3	152	0	1		1	152	1	0		0	0	1	0		2	0	1	0		314	314

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	12	616	4	4		20	632	4	0		8	0	8	0		12	4	12	0		**1336**
Heavy Trucks	0	16	0			0	12	0			0	0	0			0	0	0			**28**
Pedestrians		4					4					12					12				**32**
Bicycles	0	20	0			0	4	4			0	0	0			0	0	0			**28**
Railroad																					
Stopped Buses																					

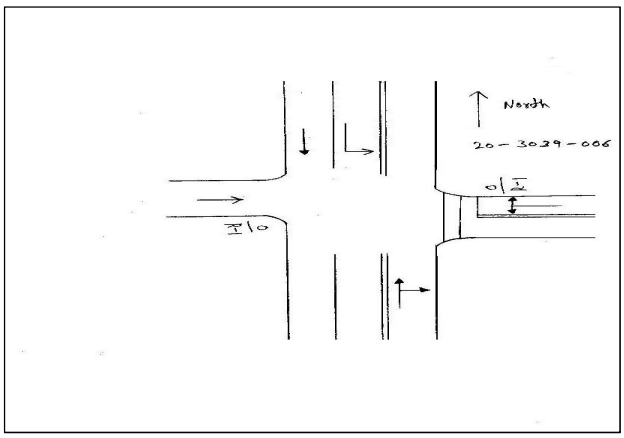
LOCATION: SR 121/NW 34th St & NW 10th Ave S
CITY/STATE: Gainesville, FL

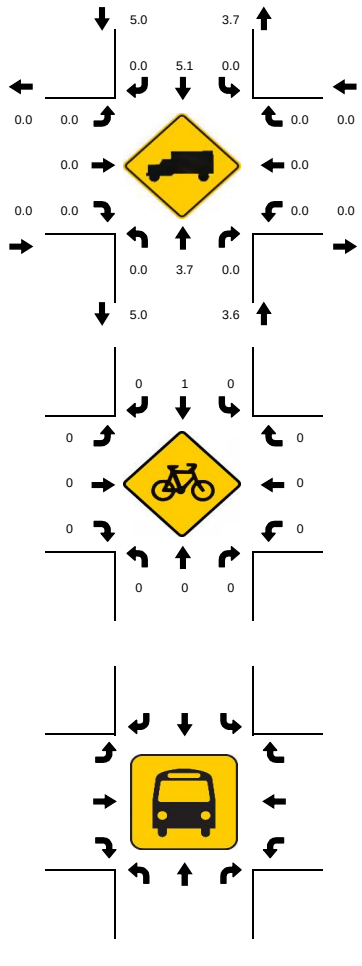
PROJECT ID: 20-03039-006
DATE: 01/28/2020

Peak-Hour: 09:30 AM - 10:30 AM
Peak 15-Minute: 09:30 AM - 09:45 AM



National Data & Surveying Services





15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 10th Ave S Eastbound					NW 10th Ave S Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	63	4	0		0	87	0	0		1	0	0	0		0	0	2	0		157	904
07:15 AM	0	101	15	0		1	109	0	0		1	1	6	0		4	0	1	0		239	992
07:30 AM	0	93	12	0		0	110	0	0		0	0	2	0		5	0	1	0		223	1005
07:45 AM	0	123	4	0		0	150	0	0		1	0	4	0		2	0	1	0		285	1013
08:00 AM	0	100	2	0		0	142	0	0		0	0	0	0		1	0	0	0		245	936
08:15 AM	0	123	6	0		1	118	0	0		0	0	0	0		4	0	0	0		252	946
08:30 AM	0	122	2	0		0	106	0	0		0	0	0	0		0	0	1	0		231	905
08:45 AM	0	107	3	0		0	97	0	0		0	0	0	0		1	0	0	0		208	954
09:00 AM	0	97	2	0		0	154	0	0		0	0	0	0		1	0	1	0		255	958
09:15 AM	0	96	1	0		0	114	0	0		0	0	0	0		0	0	0	0		211	973
09:30 AM	0	114	2	0		1	158	0	0		0	0	0	0		4	0	1	0		280	1035
09:45 AM	0	95	3	0		0	114	0	0		0	0	0	0		0	0	0	0		212	755
10:00 AM	0	122	2	0		0	143	0	0		0	0	1	0		1	0	1	0		270	543
10:15 AM	0	128	3	0		1	139	0	0		0	0	0	0		0	0	2	0		273	273
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	**Total**	
All Vehicles	0	512	12	0		4	632	0	0		0	0	4	0		16	0	8	0		**1188**	
Heavy Trucks	0	24	0			0	36	0			0	0	0			0		0	0		**60**	
Pedestrians		0					0					8					0				**8**	
Bicycles	0	0	0			0	4	0			0	0	0			0		0	0		**4**	
Railroad Stopped Buses																						

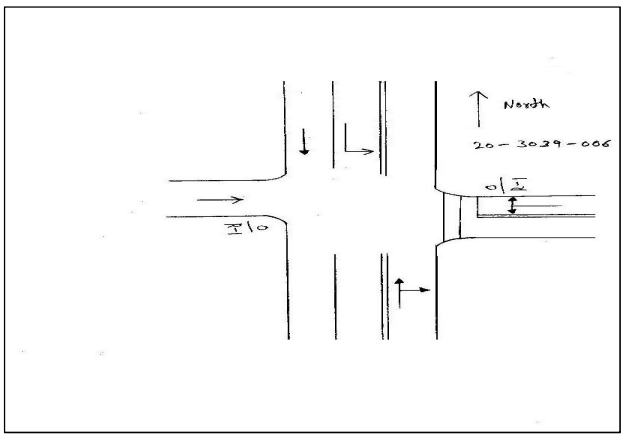
LOCATION: SR 121/NW 34th St & NW 10th Ave S
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-006
DATE: 01/28/2020

Peak-Hour: 04:00 PM - 05:00 PM
Peak 15-Minute: 04:30 PM - 04:45 PM

Peak Hour Factor: 0.93

National Data & Surveying Services



15-Min Count Period Beginning At	SR 121/NW 34th St Northbound					SR 121/NW 34th St Southbound					NW 10th Ave S Eastbound					NW 10th Ave S Westbound						Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
01:00 PM	0	169	5	0		0	159	0	0		0	0	0	0		1	0	1	0		335	1173
01:15 PM	0	122	6	0		1	157	0	0		0	0	0	0		4	0	0	0		290	1102
01:30 PM	0	134	7	0		0	133	0	0		1	0	0	0		2	0	2	0		279	1101
01:45 PM	0	123	6	0		0	129	0	0		3	0	3	0		2	0	3	0		269	1085
02:00 PM	0	125	3	0		0	119	0	0		1	0	6	0		6	0	4	0		264	1136
02:15 PM	0	135	6	0		1	142	0	0		2	0	1	0		1	0	1	0		289	1180
02:30 PM	0	129	3	0		0	125	0	0		0	0	0	0		3	0	3	0		263	1193
02:45 PM	0	147	4	0		0	164	0	0		3	0	1	0		1	0	0	0		320	1181
03:00 PM	0	133	3	0		0	160	0	0		0	0	6	0		3	0	3	0		308	1099
03:15 PM	0	144	6	0		0	149	0	0		1	0	0	0		2	0	0	0		302	1118
03:30 PM	0	120	8	0		0	118	0	0		0	0	1	0		3	0	1	0		251	1091
03:45 PM	0	108	6	0		0	121	0	0		0	0	2	0		1	0	0	0		238	1169
04:00 PM	0	140	13	0		0	165	0	0		0	0	1	0		7	0	1	0		327	1222
04:15 PM	0	139	3	0		0	128	0	0		0	0	0	0		3	0	2	0		275	895
04:30 PM	0	149	4	0		1	168	0	0		0	0	2	0		3	0	2	0		329	620
04:45 PM	0	135	7	0		2	144	0	0		0	0	0	0		1	0	2	0		291	291

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	596	52	0		8	672	0	0		0	0	8	0		28	0	8	0		**1372**
Heavy Trucks	0	12	0			0	12	0			0	0	0			0	0	0			**24**
Pedestrians		0					0					8					12				**20**
Bicycles	0	16	4			0	4	0			0	0	0			4	0	0			**28**
Railroad																					
Stopped Buses																					

LOCATION: Westwood Middle School Western Dwy E/O SR 121/NW 34th St & NW 15th Ave
CITY/STATE: Gainesville, FL

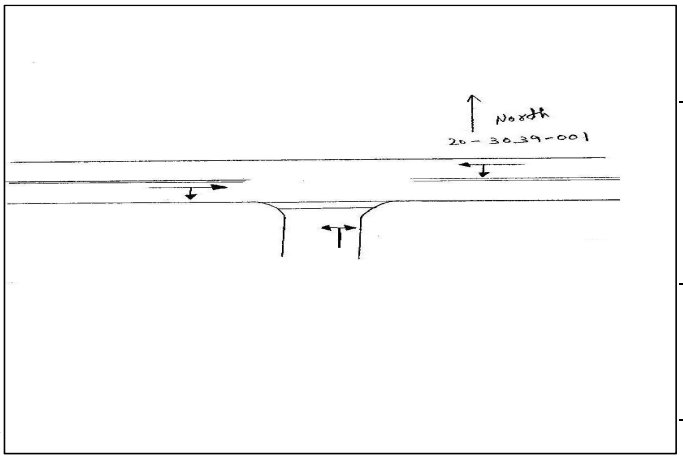
PROJECT ID: 20-03039-001
DATE: 01/28/2020

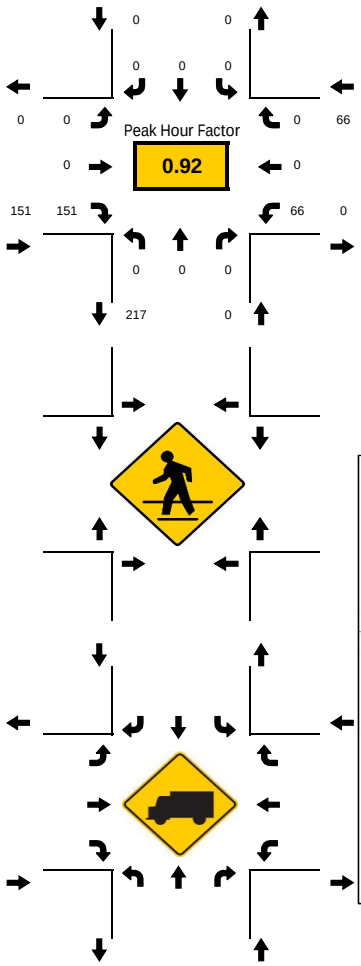
Peak-Hour: 08:30 AM - 09:30 AM
Peak 15-Minute: 08:30 AM - 08:45 AM

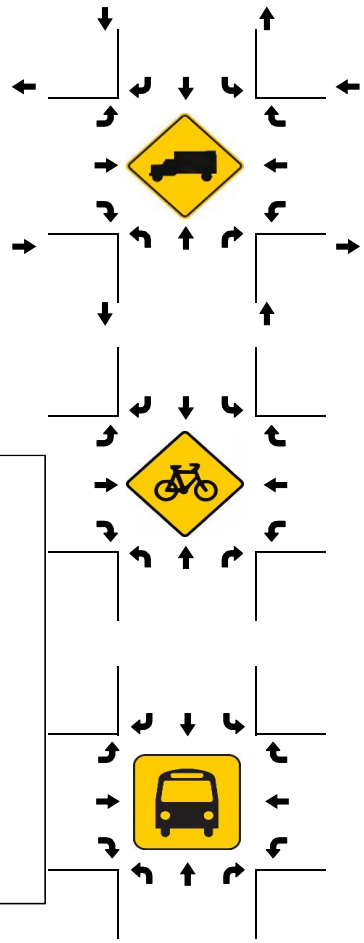
Peak Hour Factor

0.92

National Data & Surveying Services





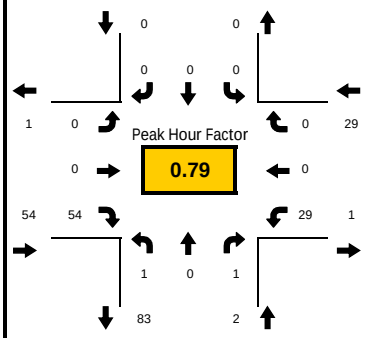


15-Min Count Period Beginning At	Idle School Western Dwy E/O SR Northbound					Idle School Western Dwy E/O SR Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	0	0		0	0	0	0		0	0	21	0		15	0	0	0		36	180
08:15 AM	0	0	0	0		0	0	0	0		0	0	23	0		10	0	0	0		33	203
08:30 AM	0	0	0	0		0	0	0	0		0	0	36	0		23	0	0	0		59	217
08:45 AM	0	0	0	0		0	0	0	0		0	0	41	0		11	0	0	0		52	164
09:00 AM	0	0	0	0		0	0	0	0		0	0	40	0		19	0	0	0		59	113
09:15 AM	0	0	0	0		0	0	0	0		0	0	34	0		13	0	0	0		47	54
09:30 AM	0	0	0	0		0	0	0	0		0	0	5	0		1	0	0	0		6	7
09:45 AM	0	0	0	0		0	0	0	0		0	0	1	0		0	0	0	0		1	1
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	0	0		0	0	0	0		0	0	164	0		92	0	0	0		**256**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

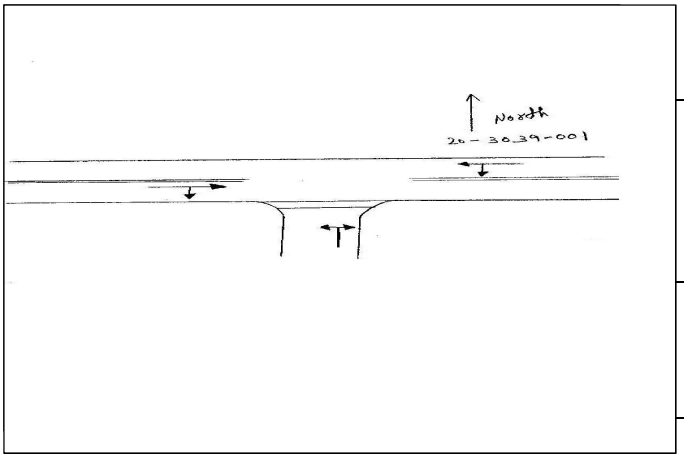
LOCATION: Westwood Middle School Western Dwy E/O SR 121/NW 34th St & NW 15th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-001
DATE: 01/28/2020

Peak-Hour: 03:15 PM - 04:15 PM
Peak 15-Minute: 03:30 PM - 03:45 PM



National Data & Surveying Services

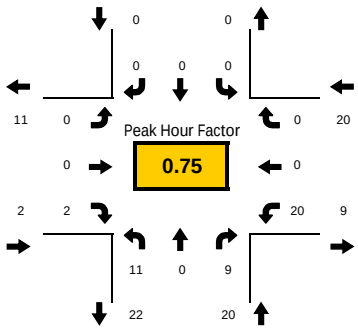


15-Min Count Period Beginning At	Idle School Western Dwy E/O SR Northbound					Idle School Western Dwy E/O SR Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	2	0		1	0	0	0		3	37
02:45 PM	0	0	0	0		0	0	0	0		0	0	3	0		2	0	0	0		5	61
03:00 PM	1	0	0	0		0	0	0	0		0	0	6	0		9	0	0	0		16	82
03:15 PM	0	0	1	0		0	0	0	0		0	0	9	0		3	0	0	0		13	85
03:30 PM	0	0	0	0		0	0	0	0		0	0	19	0		8	0	0	0		27	81
03:45 PM	0	0	0	0		0	0	0	0		0	0	17	0		9	0	0	0		26	54
04:00 PM	1	0	0	0		0	0	0	0		0	0	9	0		9	0	0	0		19	28
04:15 PM	0	0	0	0		0	0	0	0		0	0	6	0		3	0	0	0		9	9
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	4	0	4	0		0	0	0	0		0	0	76	0		36	0	0	0		**120**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

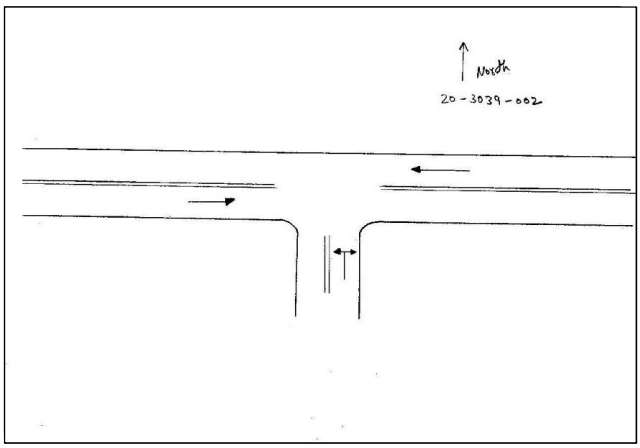
LOCATION: Westwood Middle School Middle Dwy & NW 15th Ave
CITY/STATE: Gainesville, FL

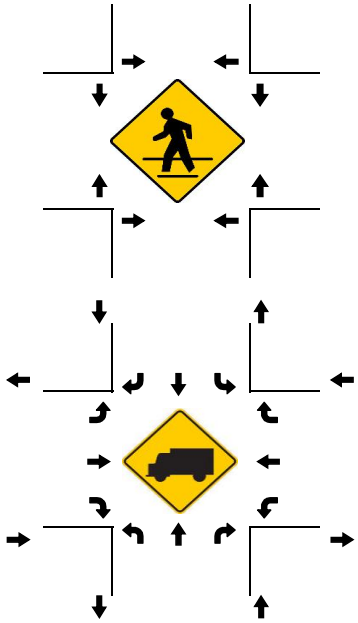
PROJECT ID: 20-03039-002
DATE: 01/28/2020

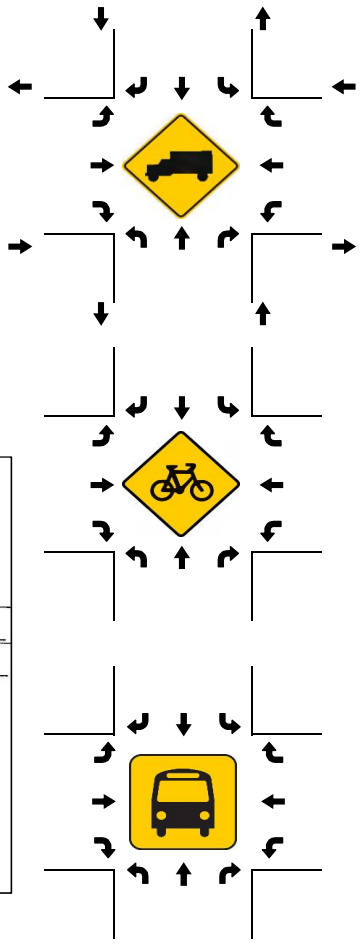
Peak-Hour: 08:30 AM - 09:30 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



National Data & Surveying Services







15-Min Count Period Beginning At	Westwood Middle School Middle D Northbound					Westwood Middle School Middle D Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	0	0		0	0	0	0		0	0	1	0		5	0	0	0		6	35
08:15 AM	0	0	1	0		0	0	0	0		0	0	0	0		4	0	0	0		5	41
08:30 AM	4	0	1	0		0	0	0	0		0	0	2	0		3	0	0	0		10	42
08:45 AM	2	0	1	0		0	0	0	0		0	0	0	0		11	0	0	0		14	41
09:00 AM	5	0	4	0		0	0	0	0		0	0	0	0		3	0	0	0		12	29
09:15 AM	0	0	3	0		0	0	0	0		0	0	0	0		3	0	0	0		6	17
09:30 AM	2	0	0	0		0	0	0	0		0	0	0	0		7	0	0	0		9	11
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		2	0	0	0		2	2
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	20	0	16	0		0	0	0	0		0	0	8	0		44	0	0	0		**88**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: Westwood Middle School Middle Dwy & NW 15th Ave
CITY/STATE: Gainesville, FL

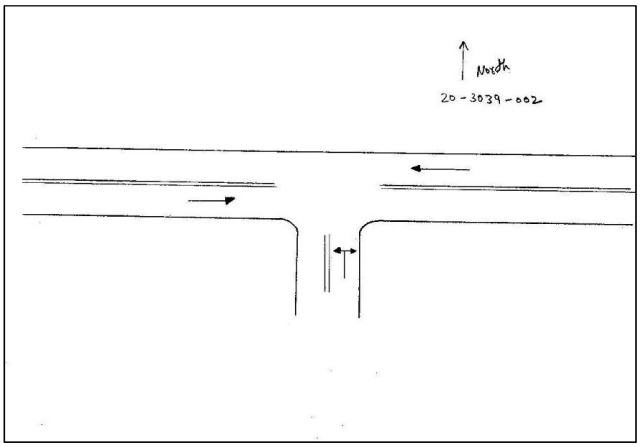
PROJECT ID: 20-03039-002
DATE: 01/28/2020

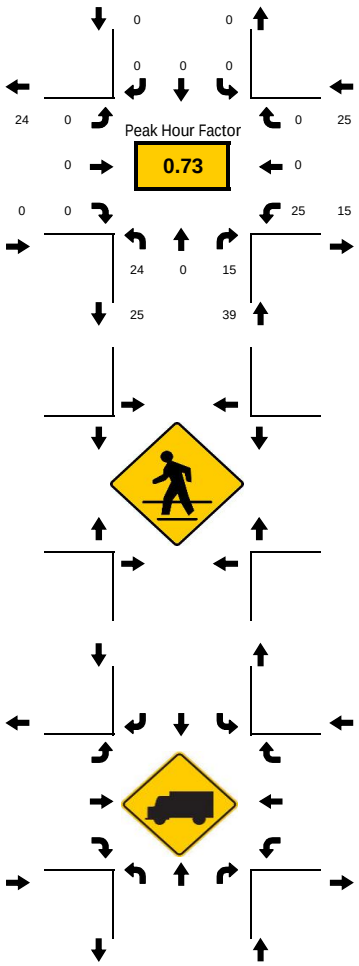
Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:45 PM - 04:00 PM

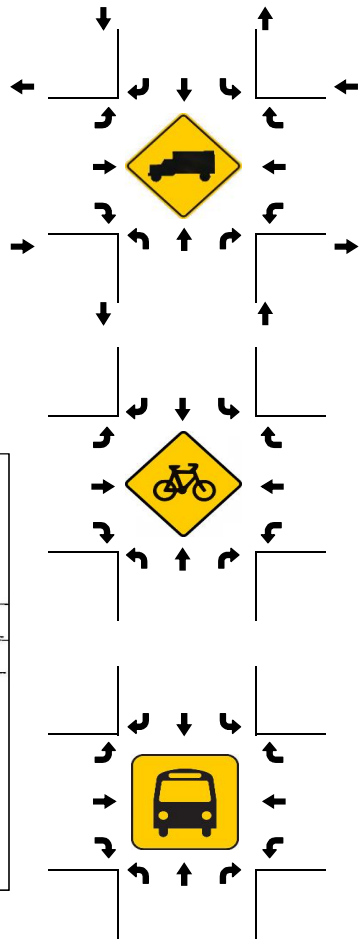
Peak Hour Factor

0.73

National Data & Surveying Services







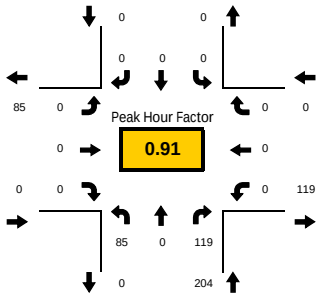
15-Min Count Period Beginning At	Westwood Middle School Middle D Northbound					Westwood Middle School Middle D Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	1	0		1	0	0	0		2	20
02:45 PM	2	0	2	0		0	0	0	0		0	0	0	0		4	0	0	0		8	37
03:00 PM	0	0	0	0		0	0	0	0		0	0	1	0		6	0	0	0		7	51
03:15 PM	3	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		3	56
03:30 PM	9	0	8	0		0	0	0	0		0	0	0	0		2	0	0	0		19	64
03:45 PM	11	0	2	0		0	0	0	0		0	0	0	0		9	0	0	0		22	45
04:00 PM	3	0	3	0		0	0	0	0		0	0	0	0		6	0	0	0		12	23
04:15 PM	1	0	2	0		0	0	0	0		0	0	0	0		8	0	0	0		11	11

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	44	0	32	0		0	0	0	0		0	0	0	0		36	0	0	0		**112**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

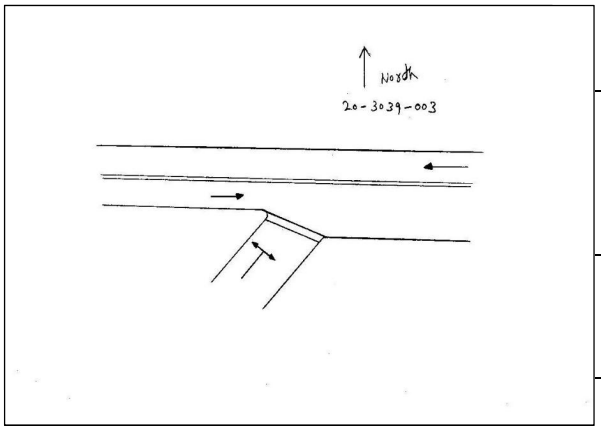
LOCATION: Westwood Middle School Eastern Dwy W/O NW 31st Dr & NW 15th Ave
CITY/STATE: Gainesville, FL

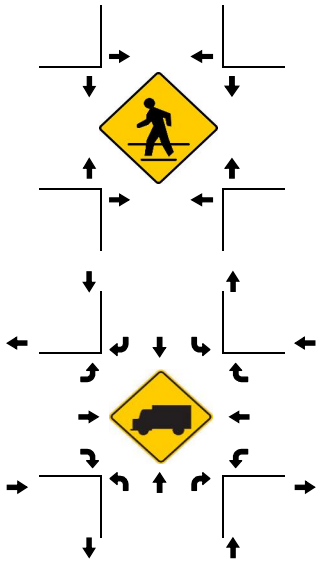
PROJECT ID: 20-03039-003
DATE: 01/28/2020

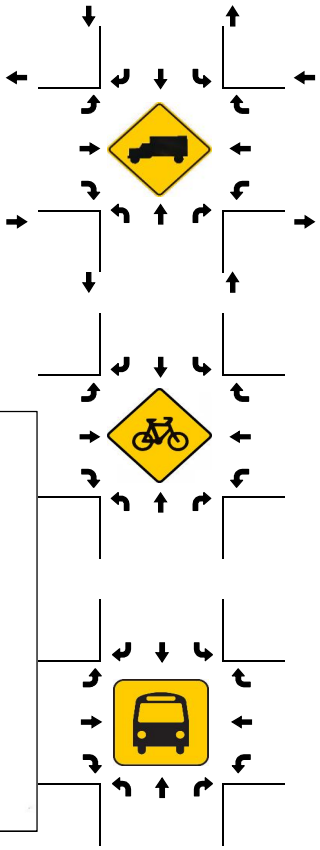
Peak-Hour: 08:30 AM - 09:30 AM
Peak 15-Minute: 09:00 AM - 09:15 AM



National Data & Surveying Services





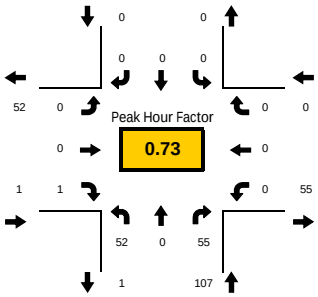


15-Min Count Period Beginning At	Middle School Eastern Dwy W/O Northbound					Middle School Eastern Dwy W/O Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	10	0	21	0		0	0	0	0		0	0	0	0		0	0	0	0		31	150
08:15 AM	11	0	15	0		0	0	0	0		0	0	0	0		0	0	0	0		26	175
08:30 AM	16	0	28	0		0	0	0	0		0	0	0	0		0	0	0	0		44	204
08:45 AM	24	0	25	0		0	0	0	0		0	0	0	0		0	0	0	0		49	177
09:00 AM	20	0	36	0		0	0	0	0		0	0	0	0		0	0	0	0		56	130
09:15 AM	25	0	30	0		0	0	0	0		0	0	0	0		0	0	0	0		55	74
09:30 AM	3	0	14	0		0	0	0	0		0	0	0	0		0	0	0	0		17	19
09:45 AM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	0	0		2	2
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	100	0	144	0		0	0	0	0		0	0	0	0		0	0	0	0		**244**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

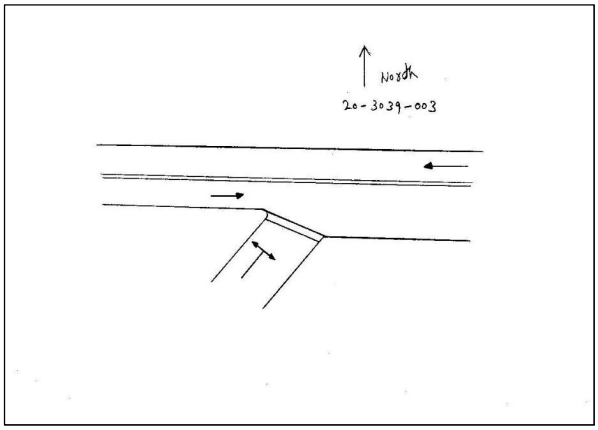
LOCATION: Westwood Middle School Eastern Dwy W/O NW 31st Dr & NW 15th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-003
DATE: 01/28/2020

Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:45 PM - 04:00 PM



National Data & Surveying Services

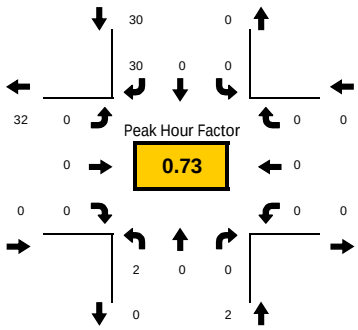


15-Min Count Period Beginning At	Middle School Eastern Dwy W/O Northbound					Middle School Eastern Dwy W/O Southbound					NW 15th Ave Eastbound					NW 15th Ave Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	1	0	1	0		0	0	0	0		0	0	0	0		0	0	0	0		2	25
02:45 PM	1	0	1	0		0	0	0	0		0	0	1	0		0	0	0	0		3	52
03:00 PM	7	0	3	0		0	0	0	0		0	0	0	0		0	0	0	0		10	86
03:15 PM	2	0	7	0		0	0	0	0		0	0	0	0		1	0	0	0		10	103
03:30 PM	15	0	14	0		0	0	0	0		0	0	0	0		0	0	0	0		29	108
03:45 PM	18	0	19	0		0	0	0	0		0	0	0	0		0	0	0	0		37	79
04:00 PM	11	0	16	0		0	0	0	0		0	0	0	0		0	0	0	0		27	42
04:15 PM	8	0	6	0		0	0	0	0		0	0	1	0		0	0	0	0		15	15
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	72	0	76	0		0	0	0	0		0	0	4	0		0	0	0	0		**152**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: NW 31st Dr & Westwood Middle School Northern Dwy S/O NW 15th Ave
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-004
DATE: 01/28/2020

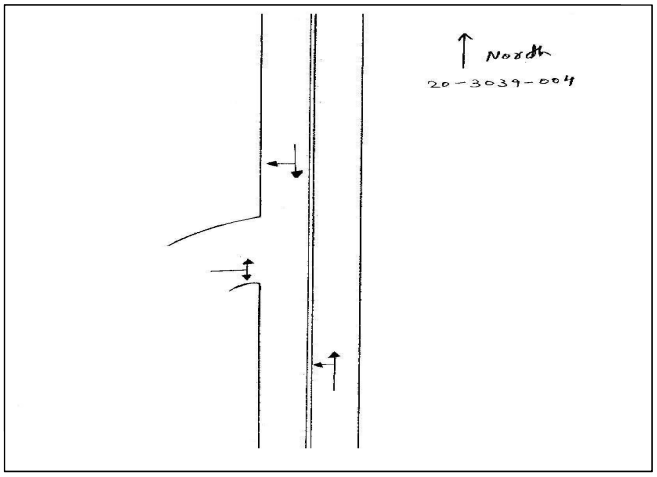
Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

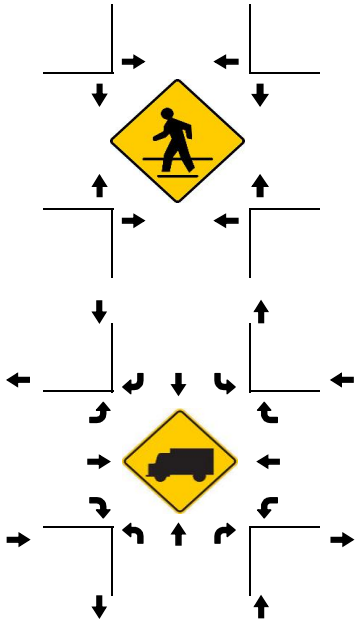


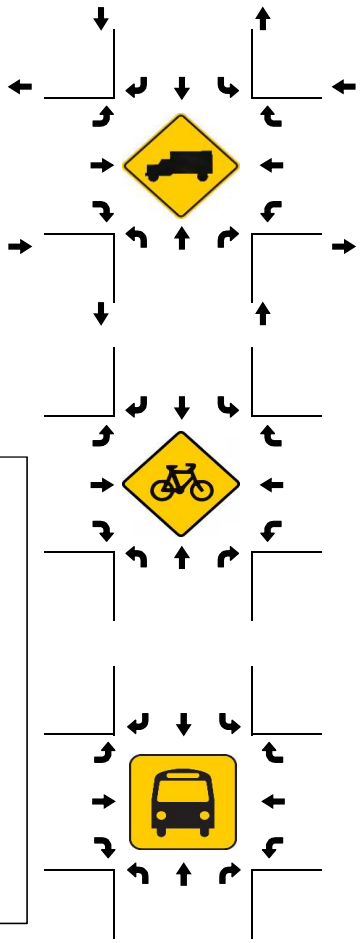
Peak Hour Factor

0.73

National Data & Surveying Services







15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					iddle School Northern Dwy S/O Eastbound					iddle School Northern Dwy S/O Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	3	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		3	25
08:15 AM	0	0	0	0		0	0	2	0		0	0	0	0		0	0	0	0		2	32
08:30 AM	0	0	0	0		0	0	9	0		0	0	0	0		0	0	0	0		9	32
08:45 AM	1	0	0	0		0	0	10	0		0	0	0	0		0	0	0	0		11	23
09:00 AM	1	0	0	0		0	0	9	0		0	0	0	0		0	0	0	0		10	12
09:15 AM	1	0	0	0		0	0	0	0		0	0	1	0		0	0	0	0		2	2
09:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	4	0	0	0		0	0	40	0		0	0	0	0		0	0	0	0		**44**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: NW 31st Dr & Westwood Middle School Northern Dwy S/O NW 15th Ave
CITY/STATE: Gainesville, FL

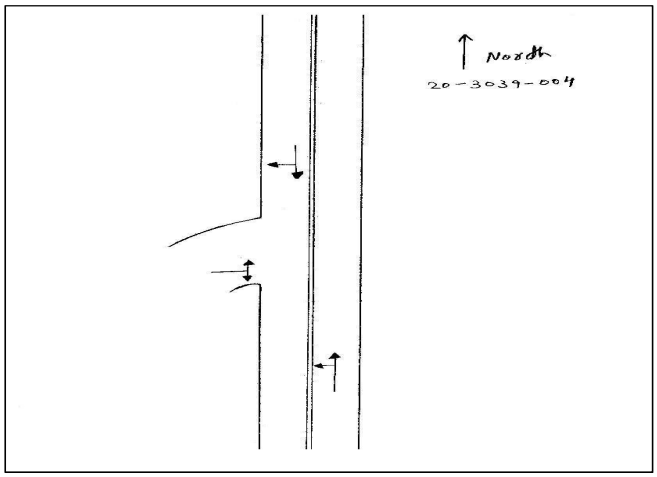
PROJECT ID: 20-03039-004
DATE: 01/28/2020

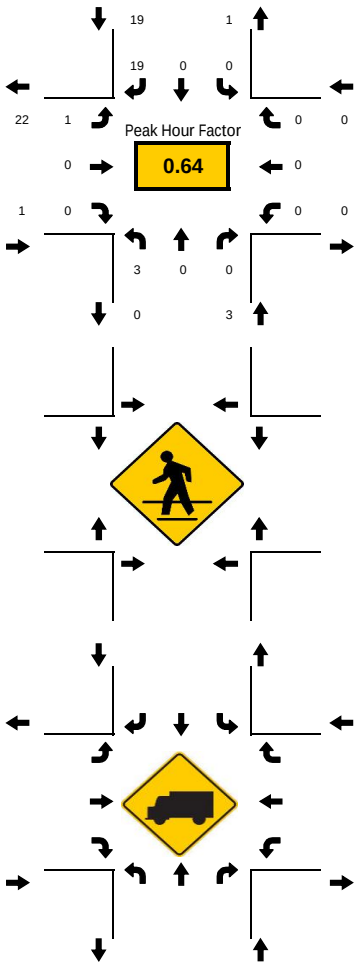
Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 04:15 PM - 04:30 PM

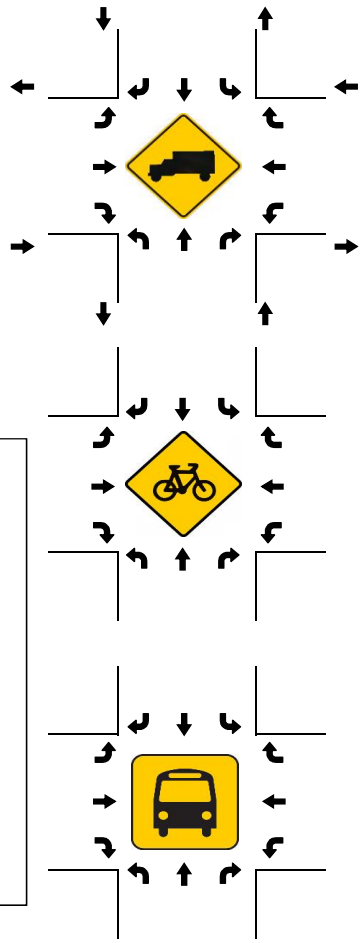
Peak Hour Factor

0.64

National Data & Surveying Services







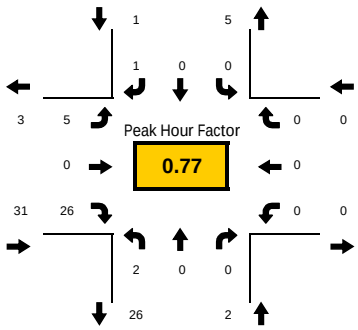
15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					iddle School Northern Dwy S/O Eastbound					iddle School Northern Dwy S/O Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	8
02:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	13
03:00 PM	0	0	0	0		0	0	5	0		0	0	0	0		0	0	0	0		5	18
03:15 PM	1	0	0	0		0	0	2	0		0	0	0	0		0	0	0	0		3	17
03:30 PM	0	0	0	0		0	0	5	0		0	0	0	0		0	0	0	0		5	23
03:45 PM	0	0	0	0		0	0	5	0		0	0	0	0		0	0	0	0		5	18
04:00 PM	2	0	0	0		0	0	2	0		0	0	0	0		0	0	0	0		4	13
04:15 PM	1	0	0	0		0	0	7	0		1	0	0	0		0	0	0	0		9	9

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	8	0	0	0		0	0	28	0		4	0	0	0		0	0	0	0		**40**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

LOCATION: NW 31st Dr & Westwood Middle School Middle Dwy
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-005
DATE: 01/28/2020

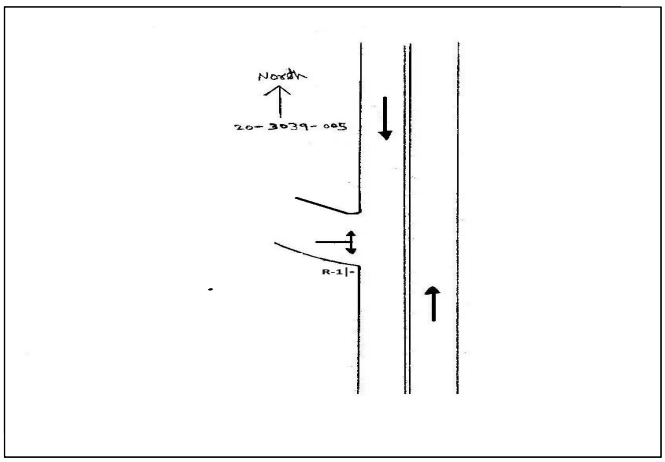
Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



Peak Hour Factor

0.77

National Data & Surveying Services

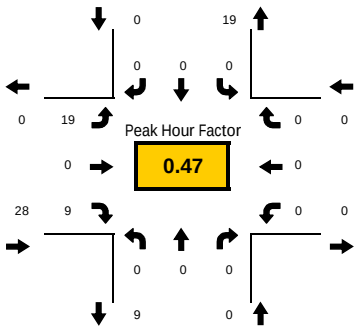


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					stwood Middle School Middle D Eastbound					stwood Middle School Middle D Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	0	0	0	0		0	0	0	0		0	0	2	0		0	0	0	0		2	25
08:15 AM	1	0	0	0		0	0	0	0		2	0	1	0		0	0	0	0		4	34
08:30 AM	1	0	0	0		0	0	0	0		1	0	6	0		0	0	0	0		8	32
08:45 AM	0	0	0	0		0	0	0	0		1	0	10	0		0	0	0	0		11	24
09:00 AM	0	0	0	0		0	0	1	0		1	0	9	0		0	0	0	0		11	13
09:15 AM	0	0	0	0		0	0	0	0		1	0	1	0		0	0	0	0		2	2
09:30 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	4	0	0	0		0	0	4	0		8	0	40	0		0	0	0	0		**56**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

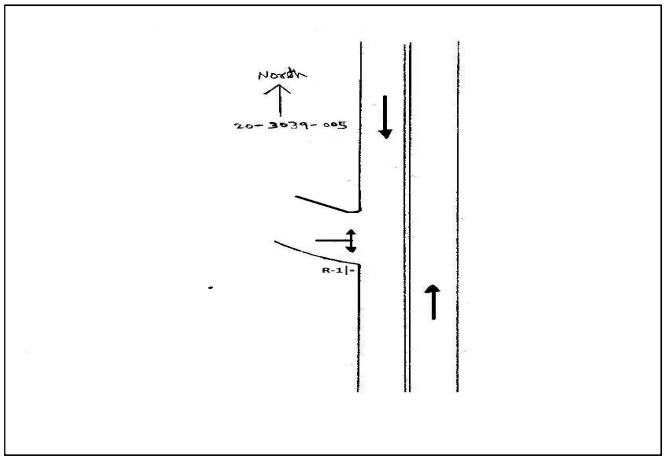
LOCATION: NW 31st Dr & Westwood Middle School Middle Dwy
CITY/STATE: Gainesville, FL

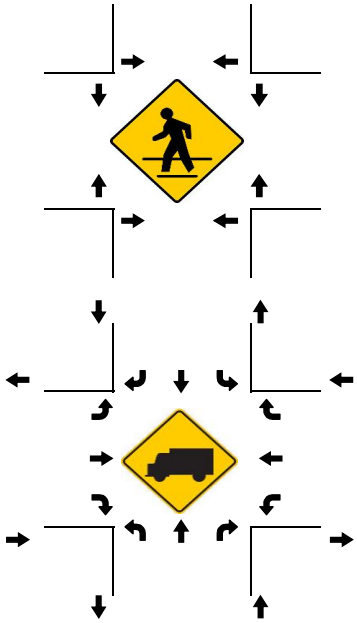
PROJECT ID: 20-03039-005
DATE: 01/28/2020

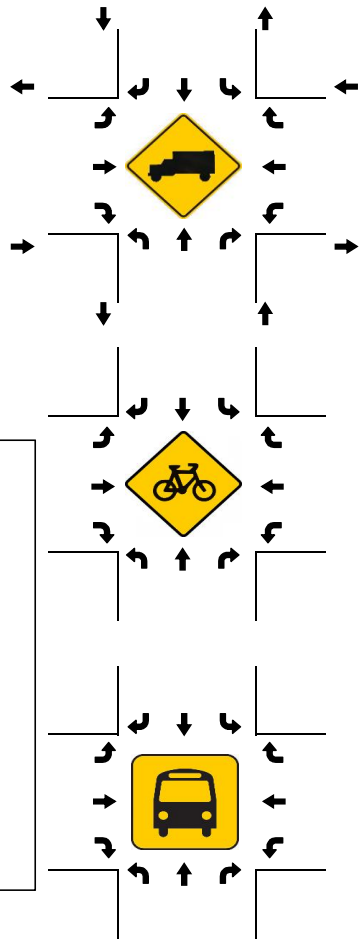
Peak-Hour: 03:30 PM - 04:30 PM
Peak 15-Minute: 03:45 PM - 04:00 PM



National Data & Surveying Services







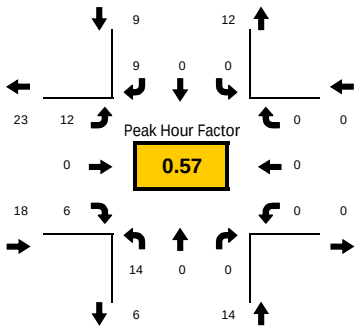
15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					Westwood Middle School Middle D Eastbound					Westwood Middle School Middle D Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	2
02:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	3
03:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	18
03:15 PM	0	0	0	0		0	0	1	0		0	0	1	0		0	0	0	0		2	24
03:30 PM	0	0	0	0		0	0	0	0		1	0	0	0		0	0	0	0		1	28
03:45 PM	0	0	0	0		0	0	0	0		13	0	2	0		0	0	0	0		15	27
04:00 PM	0	0	0	0		0	0	0	0		2	0	4	0		0	0	0	0		6	12
04:15 PM	0	0	0	0		0	0	0	0		3	0	3	0		0	0	0	0		6	6

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	0	0	0	0		0	0	0	0		52	0	16	0		0	0	0	0		**68**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

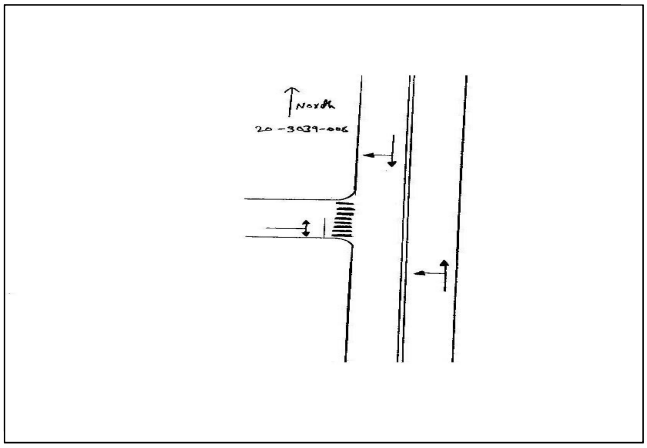
LOCATION: NW 31st Dr & Westwood Middle School Southern Dwy
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-006
DATE: 01/28/2020

Peak-Hour: 08:15 AM - 09:15 AM
Peak 15-Minute: 09:00 AM - 09:15 AM



National Data & Surveying Services

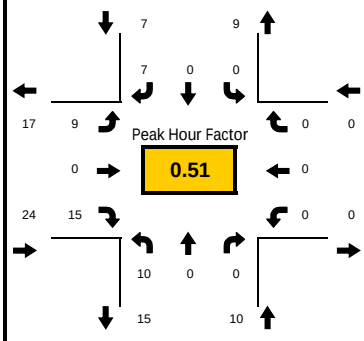


15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					twood Middle School Southern Eastbound					twood Middle School Southern Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
08:00 AM	1	0	0	0		0	0	5	0		0	0	0	0		0	0	0	0		6	29
08:15 AM	2	0	0	0		0	0	1	0		1	0	2	0		0	0	0	0		6	41
08:30 AM	5	0	0	0		0	0	1	0		2	0	1	0		0	0	0	0		9	38
08:45 AM	0	0	0	0		0	0	4	0		4	0	0	0		0	0	0	0		8	30
09:00 AM	7	0	0	0		0	0	3	0		5	0	3	0		0	0	0	0		18	22
09:15 AM	0	0	0	0		0	0	1	0		0	0	2	0		0	0	0	0		3	4
09:30 AM	0	0	0	0		0	0	1	0		0	0	0	0		0	0	0	0		1	1
09:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	28	0	0	0		0	0	16	0		20	0	12	0		0	0	0	0		**76**	
Heavy Trucks																					**0**	
Pedestrians																					**0**	
Bicycles																					**0**	
Railroad																						
Stopped Buses																						

LOCATION: NW 31st Dr & Westwood Middle School Southern Dwy
CITY/STATE: Gainesville, FL

PROJECT ID: 20-03039-006
DATE: 01/28/2020

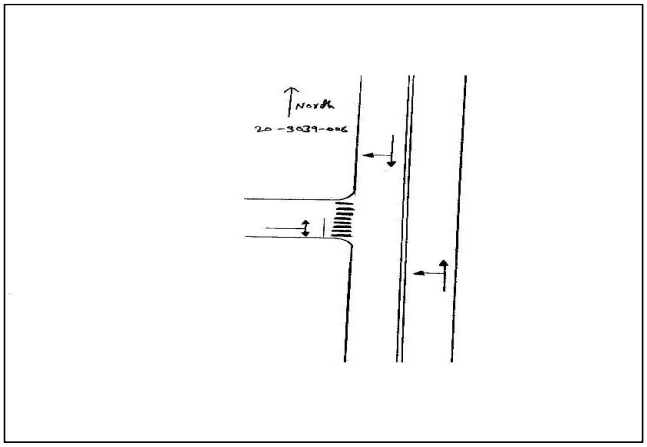
Peak-Hour: 03:15 PM - 04:15 PM
Peak 15-Minute: 03:30 PM - 03:45 PM

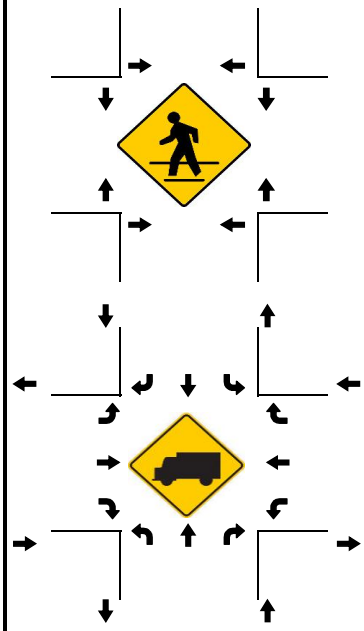


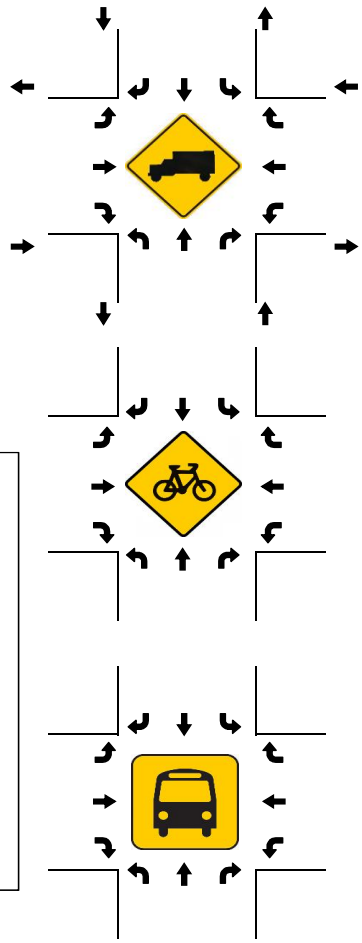
Peak Hour Factor

0.51

National Data & Surveying Services







15-Min Count Period Beginning At	NW 31st Dr Northbound					NW 31st Dr Southbound					twood Middle School Southern Eastbound					twood Middle School Southern Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
02:30 PM	1	0	0	0		0	0	0	0		5	0	3	0		0	0	0	0		9	19
02:45 PM	0	0	0	0		0	0	1	0		0	0	1	0		0	0	0	0		2	30
03:00 PM	0	0	0	0		0	0	4	0		0	0	0	0		0	0	0	0		4	40
03:15 PM	1	0	0	0		0	0	3	0		0	0	0	0		0	0	0	0		4	41
03:30 PM	4	0	0	0		0	0	2	0		6	0	8	0		0	0	0	0		20	40
03:45 PM	4	0	0	0		0	0	1	0		1	0	6	0		0	0	0	0		12	20
04:00 PM	1	0	0	0		0	0	1	0		2	0	1	0		0	0	0	0		5	8
04:15 PM	0	0	0	0		0	0	2	0		1	0	0	0		0	0	0	0		3	3

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	
All Vehicles	16	0	0	0		0	0	12	0		24	0	32	0		0	0	0	0		**84**
Heavy Trucks																					**0**
Pedestrians																					**0**
Bicycles																					**0**
Railroad																					
Stopped Buses																					

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Phase [1.1.1]

	1 (NL)	2 (ST)	3 (EL)	4 (WT)	5 (SL)	6 (NT)	7 (WL)	8 (ET)	9	10	11	12	13	14	15	16
Walk	0	7	0	7	0	7	0	7	0	0	7	0	0	0	0	0
Ped Clearance	0	20	0	16	0	20	0	16	0	0	20	0	0	0	0	0
Min Green	5	10	5	10	5	10	5	10	0	0	4	0	0	0	0	0
Passage	1.5	3	1.5	1.5	1.5	3	1.5	1.5	0	0	1	0	0	0	0	0
Max1	20	80	20	50	20	80	20	50	0	0	25	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	3.8	4.3	4.8	4.8	4.3	4.3	4.7	4.8	3.5	3.5	3	0	0	0	0	0
Red	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0
Red Revert	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Exit		ON				ON										
Rest In Walk																

Phase Option [1.1.2]

	1 (NL)	2 (ST)	3 (EL)	4 (WT)	5 (SL)	6 (NT)	7 (WL)	8 (ET)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call																
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable		ON				ON										
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

Entry	Call Phases				From	To	From	To	From	To	From	To	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

Entry	Call Phases				From	To	From	To	From	To	From	To	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	4	2.5	30	0	3.8	2	1	0
2	7	20	15	5	80	0	4.3	2	2	0
3	0	0	4	2.5	30	0	4.8	2	3	0
4	7	16	15	5	50	0	4.8	2	4	0
5	0	0	4	2.5	30	0	4.3	2	5	0
6	7	20	15	5	80	0	4.3	2	6	0
7	0	0	4	2.5	30	0	4.7	2	7	0
8	7	16	15	5	50	0	4.8	2	8	0

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

City of Gainesville Timing Sheet 1/23/2020 3:15:01 PM

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Mode	Diamond Mode	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Start Red Time	Disable Init Ped	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF	900	3	10	OFF		USER	4PH		ON	ALARM				ON	ON		OFF	OFF	OFF	16

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
4050			OFF					

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	ON	OFF

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2	1								2								R-T/OTH		4.7	2
Overlap 3																	NORMAL		3.5	1.5
Overlap 4	3								4								R-T/OTH		4.8	2
Overlap 5																	NORMAL		3.5	1.5
Overlap 6	5								6								R-T/OTH		4.7	2
Overlap 7																	NORMAL		3.5	1.5
Overlap 8	7								8								R-T/OTH		4.8	2

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds									
Overlap 1																									OFF	ON
Overlap 2																									OFF	ON
Overlap 3																									OFF	ON
Overlap 4																									OFF	ON
Overlap 5																									OFF	OFF
Overlap 6																									OFF	OFF
Overlap 7																									OFF	OFF
Overlap 8																									OFF	OFF

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	0	0	5	2	0	0	7	4	0	0	1	6	0	0	3	8
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	2	2	4	4	6	6	8	8	9	10	11	12	13	14	15	16	2	4	6	8				
Type	OLP	VEH	OLP	VEH	OLP	VEH	OLP	VEH	OLP	OLP	OLP	OLP	OLP	OLP	OLP	OLP	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	YEL	RED	RED	RED	YEL	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Flash 1-2 Hertz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Alt Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output
OFF	DEFAULT	TX2_V14	ON	AUTO	EXT

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1		1					1	1			1	1			
2		1		1			1	1			1	1			
3	1						1	1	1	1					
4	1		1				1	1	1	1					
5				1			1	1							
6		1		1			1	1							
7			1				1	1							
8	1		1				1	1							
9	1	1	1	1			1								
10	1	1	1	1											
11															
12															
13	1	1	1												
14	1	1													
15	1														

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac								Detector								MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON								ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	ON
3	
4	ON
5	ON
6	
7	
8	
9	
10	
11	
12	ON
13	ON
14	ON
15	ON
16	
17	ON
18	ON
19	ON
20	ON
21	ON
22	ON
23	ON
24	ON
25	ON
26	ON
27	ON
28	ON
29	ON
30	ON
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	
62	
63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	ON
3	
4	ON
5	ON
6	
7	
8	
9	
10	
11	
12	ON
13	ON
14	ON
15	ON
16	
17	ON
18	ON
19	ON
20	ON
21	ON
22	ON
23	ON
24	ON
25	ON
26	ON
27	ON
28	ON
29	ON
30	ON
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	
62	
63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash						
Override Higher	ON	ON	ON	ON	ON	ON
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	5	5	5	5
Min Walk						
Ped Clear		20				
Track Green						
Min Dwell	10	10	10	10	10	10
Max Presence	120	120	120	120	120	120
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1	4	2	3	4	2	1
Dwell P2	8	6	8	7	5	6
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1	4	2	4	4	2	2
Exit R2	8	6	8	8	6	6
Exit R3						
Exit R4						

Alarms, Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
4	2	VOT_MON	TEST B

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
ON	ON

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	2	6										
Overlaps												

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable	ON	ON	ON	ON	ON	ON
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MIN	MIN	MIN	MIN	MIN	MIN
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1			4	8	6	2
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow	4	4	4	4	4	4
Red	1	1	1	1	1	1
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Coordination, Modes,+ [2.1]

Modes

Operational	Correct	Maximum	Force-Off
	SHRT/LNG	MAX INH	FIXED

Modes+

Mode	Leave Before	Leave After	Recycle	Stop In Walk	External	Auto Reset	Latch Sec Foff	Coord Easy Float	Yield Value	Coord NTCIP Yield Sign	Closed Loop Active	
FRC	TIMED	TIMED	NO_RECYCLE	ON	OFF	ON	OFF	OFF	0	+	OFF	ON

Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	90		162							250	90		162		90	
Offset Time	7		124							152	87		124			
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	16	16	1	16	16	16	16	16	16	16	16	16	1	16	16	16
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time	90								160							
Offset Time	26								2							
Split Number	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Seq Number	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	34	15	28	13	34	15	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	66	25	51	20	66	25	51								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	19	13	15	13	19	13	15								
Mode	NON	MIN	NON	NON	NON	MIN	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	MIN	MIN	ENB	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	155	25	50	20	155	25	50								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	37	14	27	12	37	14	27								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MIN	NON	NON	NON	MIN	NON	NON	ENB	OMT	MIN	NON	NON	NON	NON	NON
Coord-Ph		ON														

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	95	15	40	12	95	15	40								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MIN	NON	NON	NON	MIN	NON	NON	NON	OMT	MIN	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	34	15	28	13	34	15	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	30	65	15	50	14	81	25	40								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																

Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 28	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 29	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 30	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 31	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 32	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	OMT	OMT	OMT	MAX	OMT	OMT	OMT	MAX	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON		ON												

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month										1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1																																																	1
2																																																			2
3	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
5																																																		5
6																																																		6
7																																																		7
8																																																		8
9																																																		9
10																																																		10
11	1	1	1	1	1	1	1	1	1	1	1	1		1	1		1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
12	1	1	1	1	1	1		1	1	1	1	1						1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
13	1	1	1	1	1	1	1	1	1	1	1	1				1				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13
14						1								1	1	1	1					1	1				1	1	1	1					1	1	1	1				1	1	1	1					14
15						1												1						1				1						1											1					2
16						1							1	1	1	1				1	1																								1	1			1
17																																																	17
18					1											1	1	1																											1	1	1			18
19																																																	19
20																																																	20
21																																																	21
22																																																	22
23																																																	23
24																																																	24
25																																																	25
26																																																	26
27																																																	27
28																																																	28
29																																																	29
30																																																	30
31							1							1	1	1	1			1	1			1	1	1	1					1	1	1							1	1	1	1			1	1	1	1	1
32							1											1				1							1						1								1							1	2

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	7	9	12	15	18	19	21	21						
Minute		45	45				30			30						
Action	95	11	95	11	95	3	95	11	95	6						

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	7	9	12	12	19	21	21							
Minute		45	45			30			30							
Action	95	11	95	11	95	3	11	95	6							

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	11	14	20	21										
Minute			45			30										
Action	95	95	95	95	95	95										

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	11	14	20	21										
Minute			45													
Action	95	95	95	95	95	95										

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	12	13	14	15	16	18	19	21					
Minute		45	35		37	22	22	7	30							
Action	95	8	95	95	8	95	8	3	95	95	95					

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	12	13	14	15	16	18	21						
Minute		45	35		37	22	22	7	45							
Action	95	8	95	95	8	95	8	3	95	95						

Station : 4050 - NW 16th Ave @ 34th St - FYA (SCHOOL) (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8	ON										
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	25											
26	26											
27	27											
28	28											
29	29											
30	30											
31	31											
32	32											
33	33											
34	34											
35	35											
36	36											
37	37											
38	38											
39	39											
40	40											
41	41											
42	42											
43	43											
44	44											
45	45											
46	46											
47	47											
48	48											
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
99												
100	255											

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Phase [1.1.1]

	1 (NL)	2 (ST)	3 (EL)	4 (WT)	5 (SL)	6 (NT)	7 (WL)	8 (ET)	9	10	11	12	13	14	15	16
Walk	0	7	0	7	0	7	0	7	0	0	7	0	0	0	0	0
Ped Clearance	0	18	0	15	0	21	0	16	0	0	21	0	0	0	0	0
Min Green	4	15	4	15	4	15	4	15	0	0	4	0	0	0	0	0
Passage	1.5	3	1.5	2	1.5	3	1.5	2	0	0	2	0	0	0	0	0
Max1	15	80	15	45	15	80	15	45	0	0	25	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	0	0	3	0	0	0	0	0
Red	2.7	2.7	2.1	2.1	2.7	2.7	2.1	2.1	0	0	0	0	0	0	0	0
Red Revert	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Exit		ON				ON										
Rest In Walk																

Phase Option [1.1.2]

	1 (NL)	2 (ST)	3 (EL)	4 (WT)	5 (SL)	6 (NT)	7 (WL)	8 (ET)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call																
Min Recall																
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable		ON				ON										
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

Entry	Call Phases				From	To	From	To	From	To	From	To	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

Entry	Call Phases				From	To	From	To	From	To	From	To	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	0
2	7	18	10	5	35	0	4.1	2.7	2	0
3	0	0	0	0	0	0	0	0	0	0
4	7	15	10	5	35	0	4.1	2.1	4	0
5	0	0	0	0	0	0	0	0	0	0
6	7	21	10	5	35	0	4.1	2.7	6	0
7	0	0	0	0	0	0	0	0	0	0
8	7	16	10	5	35	0	4.1	2.1	8	0

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	4	2.5	30	0	4.1	2.7	1	0
2	7	18	15	5	110	0	4.1	2.7	2	0
3	0	0	4	2.5	30	0	4.1	2.1	3	0
4	7	15	15	4	50	0	4.1	2.1	4	0
5	0	0	4	2.5	30	0	4.1	2.7	5	0
6	7	21	15	5	110	0	4.1	2.7	6	0
7	0	0	4	2.5	30	0	4.1	2.1	7	0
8	7	16	15	4	50	0	4.1	2.1	8	0

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

City of Gainesville Timing Sheet 1/23/2020 2:48:27 PM

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Mode	Diamond Mode	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Start Red Time	Disable Init Ped	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF	900	3	10	OFF		USER	4PH		ON	ALARM				ON	ON		OFF	OFF	OFF	16

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
4550		3	OFF					

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	ON	OFF

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2	1								2								R-T/OTH		4.1	2.7
Overlap 3																	NORMAL		3.5	1.5
Overlap 4	3								4								R-T/OTH		4.1	2.1
Overlap 5																	NORMAL		3.5	1.5
Overlap 6	5								6								R-T/OTH		4.1	2.7
Overlap 7																	NORMAL		3.5	1.5
Overlap 8	7								8								R-T/OTH		4.1	2.1

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds									
Overlap 1																									OFF	OFF
Overlap 2																									OFF	ON
Overlap 3																									OFF	OFF
Overlap 4																									OFF	ON
Overlap 5																									OFF	OFF
Overlap 6																									OFF	ON
Overlap 7																									OFF	OFF
Overlap 8																									OFF	ON

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	1	2	3	4	5	6	7	8	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	2	2	4	4	6	6	8	8	9	10	11	12	13	14	15	16	2	4	6	8				
Type	OLP	VEH	OLP	VEH	OLP	VEH	OLP	VEH	OLP	OLP	OLP	OLP	OLP	OLP	OLP	OLP	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	YEL	RED	RED	RED	YEL	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Flash 1-2 Hertz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Alt Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output
OFF	DEFAULT	TX2_V14	ON	AUTO	EXT

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1		1					1	1			1	1			
2		1		1			1	1			1	1			
3	1						1	1	1	1					
4	1		1				1	1	1	1					
5				1			1	1							
6		1		1			1	1							
7			1				1	1							
8	1		1				1	1							
9	1	1	1	1			1								
10	1	1	1	1											
11															
12															
13	1	1	1												
14	1	1													
15	1														

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac								Detector								MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON								ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	ON
3	
4	ON
5	ON
6	
7	
8	
9	
10	
11	
12	ON
13	ON
14	ON
15	ON
16	ON
17	ON
18	ON
19	ON
20	ON
21	ON
22	ON
23	ON
24	ON
25	ON
26	ON
27	ON
28	ON
29	ON
30	ON
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	
62	
63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	ON
3	
4	ON
5	ON
6	
7	
8	
9	
10	
11	
12	ON
13	ON
14	ON
15	ON
16	ON
17	ON
18	ON
19	ON
20	ON
21	ON
22	ON
23	ON
24	ON
25	ON
26	ON
27	ON
28	ON
29	ON
30	ON
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	ON
60	ON
61	
62	
63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green	5	5	5	5	5	5
Min Walk						
Ped Clear		21				
Track Green						
Min Dwell	10	10	10	10	10	10
Max Presence	999	999	120	120	120	120
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1	4	2	3	4	2	1
Dwell P2	8	6	8	7	5	6
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1	4	2	4	4	2	2
Exit R2	8	6	8	8	6	6
Exit R3						
Exit R4						

Alarms, Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
35	15	VOT_MON	TEST B

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
ON	ON

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	2	6										
Overlaps												

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable	ON	ON	ON	ON	ON	ON
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt	ON	ON	ON	ON	ON	ON
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1			4	8	6	2
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow	4	4	4	4	4	4
Red	2	2	2	2	2	2
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Coordination, Modes,+ [2.1]

Modes

Operational	Correct	Maximum	Force-Off
	SHRT/LNG	MAX INH	FIXED

Modes+

Mode	Leave Before	Leave After	Recycle	Stop In Walk	External	Auto Reset	Latch Sec Foff	Coord Easy Float	Yield Value	Coord NTCIP Yield Sign	Closed Loop Active	
FRC	TIMED	TIMED	NO_RECYCLE	ON	OFF	ON	OFF	OFF	0	+	OFF	ON

Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	90		162	120						250			162		90	
Offset Time	33		81							110			81			
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	16	16	1	16	16	16	16	16	16	16	16	16	1	16	16	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time	90								160	200			40			
Offset Time	71								110							
Split Number	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Seq Number	16	16	16	16	16	16	16	16	16	16	16	16	1	1	1	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	34	15	28	13	34	15	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	79	25	38	20	79	25	38								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	45	20	35	20	45	20	35								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	MIN	MIN	ENB	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	165	25	40	20	165	25	40								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	34	15	28	13	34	15	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MIN	NON	NON	NON	MIN	NON	NON	ENB	OMT	MIN	NON	NON	NON	NON	NON
Coord-Ph		ON														

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	89	25	28	20	89	25	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MIN	NON	NON	NON	MIN	NON	NON	NON	OMT	MIN	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	13	34	15	28	13	34	15	28								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	25	50	15	70	15	60	50	35								
Mode	NON	MIN	NON	MIN	NON	MIN	NON	MIN	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	15	30	15	140	15	30	15	140								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																

Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 28	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 29	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time		20		20		20		20								
Mode	OMT	MAX	OMT	NON	OMT	MAX	OMT	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 30	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 31	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 32	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	OMT	OMT	OMT	MAX	OMT	OMT	OMT	MAX	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph				ON												

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month									1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1																																																			1
2																																																			2
3	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
5																																																			5
6																																																			6
7																																																			7
8																																																			8
9																																																			9
10																																																			10
11	1	1	1	1	1	1	1	1	1	1	1	1		1	1		1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
12	1	1	1	1	1	1		1	1	1	1	1						1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
13	1	1	1	1	1	1	1	1	1	1	1	1				1				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13
14						1								1	1	1	1					1	1				1	1	1	1				1	1	1	1				1	1	1	1							14
15						1												1						1							1							1							1						2
16						1								1	1	1	1			1	1																											1	1		1
17																																																			17
18					1											1	1	1																												1	1	1			18
19																																																			19
20																																																			20
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29																																																			29
30																																																			30
31							1							1	1	1	1			1	1				1	1	1	1				1	1	1	1				1	1	1	1				1	1	1	1		1
32							1											1				1							1							1							1							1	2

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	7	9	12	15	18	19	21							
Minute		45	45				30									
Action	95	1	95	1	95	3	95	1	95							

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	7	9	12	12	19	21								
Minute		45	45			30										
Action	95	1	95	1	95	3	1	95								

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	11	14	20											
Minute			45													
Action	95	95	95	95	95											

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	11	14	20											
Minute			45													
Action	95	95	95	95	95											

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	12	13	14	15	16	18	19	21					
Minute		45	35		37	22	22	7	30							
Action	95	8	95	95	8	95	8	3	95	95	95					

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	12	13	14	15	16	18	21						
Minute		45	35		37	22	22	7	45							
Action	95	8	95	95	8	95	8	3	95	95						

Station : 4550 - NW 8th Ave @ 34th St - FYA (SCHOOL) (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8	ON										
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	254											
26	26											
27	27											
28	28											
29	29											
30	30											
31	31											
32	32											
33	33											
34	34											
35	35											
36	36											
37	37											
38	38											
39	39											
40	40											
41	41											
42	42											
43	43											
44	44											
45	45											
46	46											
47	47											
48	48											
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56												
57												
58												
59												
60												
61												
62												
63												
64												
99												
100	255											

APPENDIX C: ACPS Temporary School Bus Operations Memorandum

Alachua County Public Schools

An 'A-rated' District

Mission Statement: We are committed to the success of every student!

District Office
620 East University Avenue
Gainesville, Florida
32601-5498

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Traffic - Transportation Survey Responses for Alternative Sites of Temporary Modular Transitional School 02/14/2020

1. How many buses currently serve Westwood Middle School? Is this number anticipated to change over the next 3 years?

    A. Currently, there are 12 buses. There may be a couple buses added once the construction is completed at Westwood Middle.

2. How many buses currently serve Howard Bishop Middle School?

    A. Currently, there are 15 buses.

3. How many buses are anticipated to serve Howard Bishop Middle School students during the 2020-2021 school year if the temporary modular school adjacent to Westwood is used?

    A. We anticipate about 25 buses. We would need to add ten buses because Howard Bishop is a Magnet School.

4. What times are the buses anticipated to serve Howard Bishop Middle School students during the 2020-2021 school year planned to arrive at the temporary modular school adjacent to Westwood?

    A. To avoid having all traffic at the same time through the Westwood neighborhood area, we would consider staggering the school times for Howard Bishop Middle and Westwood Middle. Howard Bishop Middle and Lincoln Middle students ride together on the bus. This needs to be considered when determining which school would start first.
    B. Howard Bishop Middle Bus Time Arrivals: 8:50 - 9:10 a.m. Departures: 3:20 – 3:47 p.m. Bell Times: 9:20 a.m. and 3:37 p.m.
    C. Westwood Middle Bus Time Arrivals: 9:10 – 9:30 a.m. Departures: 3:47 – 3:57 p.m. Bell Times: 9:40 a.m. and 3:57 p.m.

5. Where will the buses that are anticipated to serve Howard Bishop Middle School students during the 2020-2021 school year come from as they are arriving at the temporary modular school adjacent to Westwood? For example, "8 buses are anticipated to arrive from the east via NW 16th Avenue". Will the patterns be different in the morning and afternoon?

    A. About 10 to 15 of our buses will come from the east via NW 16th Avenue. The other 10 buses would come from the east via NW 8th Avenue turning north onto NW 31 Drive.

6. Where will each of the buses that are anticipated to serve Howard Bishop Middle School students during the 2020-2021 school year go after leaving the temporary modular school adjacent to Westwood? For example, "5 buses are anticipated to depart destined for northbound on NW 34th Street via NW 16th Avenue". Will the patterns be different in the morning and afternoon?

    A. In the afternoon, all 25 buses will travel north on NW 31st Drive and head east on NW 16th Avenue.

7. How many buses currently serve Littlewood Elementary School?

    A. Currently, there are 11 buses.

8. How many buses are anticipated to serve Littlewood Elementary School students during the 2022-2023 school year if the temporary modular school adjacent to Westwood is used?

    A. There will be 11 buses.

9. What times are the buses anticipated to serve Littlewood Elementary School students during the 2022-2023 school year planned to arrive at the temporary modular school adjacent to Westwood?

    A. Littlewood Elementary Bus Time Arrivals: 7:15 – 7:30 a.m. Departures: 1:35 – 2:05 p.m. Bell Times: 7:45 a.m. and 1:47 p.m.

10. Where will each of the buses that are anticipated to serve Littlewood Elementary School students during the 2022-2023 school year come from as they are arriving at the temporary modular school adjacent to Westwood? For example, "7 buses are anticipated to arrive from the west via NW 8th Avenue". Will the patterns be different in the morning and afternoon?

    A. About eight to nine buses will travel east on NW 16th Avenue and turn south onto NW 31st Drive. The other two to three buses will travel east on NW 8th Avenue and turn north on NW 31st Drive.

11. Where will each of the buses that are anticipated to serve Littlewood Elementary School students during the 2022-2023 school year go after leaving the temporary modular school adjacent to Westwood? For example, “6 buses are anticipated to depart destined for westbound on NW 8th Avenue”. Will the patterns be different in the morning and afternoon?

    A. About eight to nine buses will depart the temporary modular school heading north onto NW 31st Drive, then head west onto NW 15th Ave and north onto NW 34th Street. The other two to three buses will depart by traveling south onto NW 31st Drive and then head west on NW 8th Avenue. The pattern is the same for the morning and afternoon.

/kn

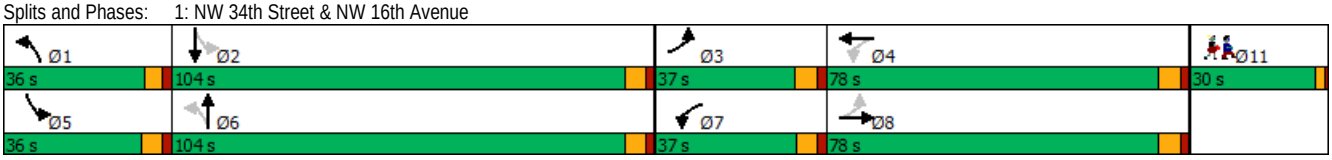
APPENDIX D: Synchro Outputs

Howard Bishop First Scenario – Existing Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	67	459	108	104	516	53	112	268	69	58	390	66	
Future Volume (vph)	67	459	108	104	516	53	112	268	69	58	390	66	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 133.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	459	108	104	516	53	112	268	69	58	390	66
Future Volume (vph)	67	459	108	104	516	53	112	268	69	58	390	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3438		1770	3489		1752	1788		1752	1804	
Flt Permitted	0.32	1.00		0.21	1.00		0.21	1.00		0.39	1.00	
Satd. Flow (perm)	604	3438		385	3489		396	1788		714	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	499	117	113	561	58	122	291	75	63	424	72
RTOR Reduction (vph)	0	7	0	0	3	0	0	3	0	0	2	0
Lane Group Flow (vph)	73	609	0	113	616	0	122	363	0	63	494	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	42.4	34.9		54.3	40.8		59.7	49.2		56.4	47.8	
Effective Green, g (s)	43.4	35.4		55.3	41.3		60.7	49.7		57.4	48.3	
Actuated g/C Ratio	0.33	0.27		0.42	0.31		0.46	0.38		0.43	0.37	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	268	919		307	1089		294	671		381	658	
v/s Ratio Prot	0.02	c0.18		c0.04	c0.18		c0.03	0.20		0.01	c0.27	
v/s Ratio Perm	0.07			0.11			0.16			0.06		
v/c Ratio	0.27	0.66		0.37	0.57		0.41	0.54		0.17	0.75	
Uniform Delay, d1	31.4	43.1		25.9	38.0		24.1	32.4		22.8	36.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.4		0.3	0.4		0.3	0.9		0.1	4.8	
Delay (s)	31.6	44.5		26.1	38.4		24.5	33.3		22.8	41.6	
Level of Service	C	D		C	D		C	C		C	D	
Approach Delay (s)		43.2			36.5			31.1			39.5	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	132.3	Sum of lost time (s)	27.2
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	586	15	49	645	19	78
Future Vol, veh/h	586	15	49	645	19	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	706	18	59	777	23	94

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	724	0	1222	362
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	507	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	874	-	172	635
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	874	-	160	635
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	402	-	-	874	-
HCM Lane V/C Ratio	0.291	-	-	0.068	-
HCM Control Delay (s)	17.6	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	52	396	24	73	540
Future Vol, veh/h	13	52	396	24	73	540
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	15	62	471	29	87	643

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1303	486	0	0	500	0
Stage 1	486	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	177	581	-	-	1054	-
Stage 1	618	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	162	581	-	-	1054	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	398	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	1054	-
HCM Lane V/C Ratio	-	-	0.16	0.082	-
HCM Control Delay (s)	-	-	13.8	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.3	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	44	27	28	32	24
Future Vol, veh/h	58	44	27	28	32	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	116	88	54	56	64	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	252	88	112	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	734	968	1465	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	706	968	1465	-	-	-
Mov Cap-2 Maneuver	706	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	863	-	-	-	-	-

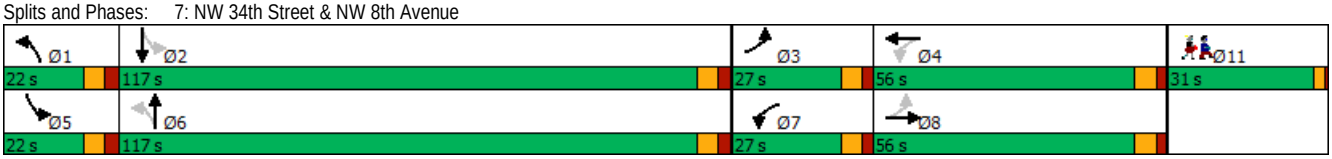
Approach	EB	NB	SB
HCM Control Delay, s	10.2	3.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1465	-	706	968	-	-
HCM Lane V/C Ratio	0.037	-	0.164	0.091	-	-
HCM Control Delay (s)	7.6	0	11.1	9.1	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	59	339	52	116	311	34	30	328	118	19	483	53	
Future Volume (vph)	59	339	52	116	311	34	30	328	118	19	483	53	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 120.5	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	339	52	116	311	34	30	328	118	19	483	53
Future Volume (vph)	59	339	52	116	311	34	30	328	118	19	483	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3469		1770	3486		1770	1789		1770	1835	
Flt Permitted	0.52	1.00		0.27	1.00		0.19	1.00		0.30	1.00	
Satd. Flow (perm)	969	3469		503	3486		349	1789		558	1835	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	67	385	59	132	353	39	34	373	134	22	549	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	67	444	0	132	392	0	34	507	0	22	609	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.7	25.4		46.2	32.7		57.2	53.0		55.0	51.9	
Effective Green, g (s)	33.7	25.9		46.7	33.2		58.2	53.5		56.0	52.4	
Actuated g/C Ratio	0.28	0.21		0.38	0.27		0.48	0.44		0.46	0.43	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	318	735		349	947		221	783		291	787	
v/s Ratio Prot	0.01	c0.13		c0.05	c0.11		c0.01	0.28		0.00	c0.33	
v/s Ratio Perm	0.04			0.10			0.07			0.03		
v/c Ratio	0.21	0.60		0.38	0.41		0.15	0.65		0.08	0.77	
Uniform Delay, d1	33.3	43.5		26.1	36.5		21.0	26.9		19.7	29.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.3	0.1		0.1	1.9		0.0	4.8	
Delay (s)	33.4	44.4		26.4	36.6		21.1	28.8		19.8	34.6	
Level of Service	C	D		C	D		C	C		B	C	
Approach Delay (s)		43.0			34.0			28.3			34.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	122.1	Sum of lost time (s)	27.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	445	431	32	44	32
Future Vol, veh/h	19	445	431	32	44	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	20	478	463	34	47	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	759	480
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	279	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1065	-	-	-	358	585
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	744	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1065	-	-	-	351	585
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	744	-

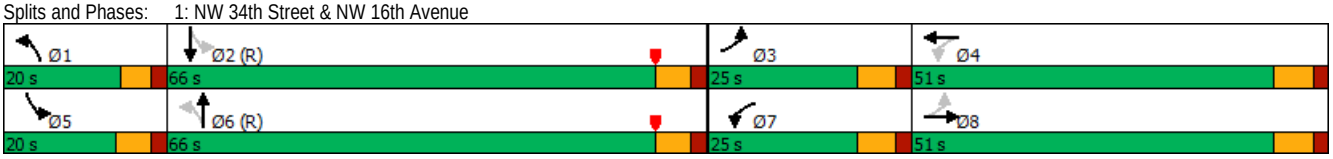
Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1065	-	-	-	422
HCM Lane V/C Ratio	0.019	-	-	-	0.194
HCM Control Delay (s)	8.4	-	-	-	15.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	706	152	140	786	116	138	425	88	70	352	77
Future Volume (vph)	104	706	152	140	786	116	138	425	88	70	352	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		0	435		0	130		0	70		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		2375			968			409			1279	
Travel Time (s)		64.8			26.4			11.2			34.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3	
Total Split (s)	25.0	51.0		25.0	51.0		20.0	66.0		20.0	66.0	
Total Split (%)	15.4%	31.5%		15.4%	31.5%		12.3%	40.7%		12.3%	40.7%	
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 162	
Actuated Cycle Length: 162	
Offset: 124 (77%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	706	152	140	786	116	138	425	88	70	352	77
Future Volume (veh/h)	104	706	152	140	786	116	138	425	88	70	352	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	112	759	163	151	845	125	148	457	95	75	378	83
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	796	171	190	897	133	390	697	145	460	658	144
Arrive On Green	0.06	0.27	0.27	0.08	0.29	0.29	0.12	0.93	0.92	0.04	0.44	0.44
Sat Flow, veh/h	1781	2910	625	1781	3105	459	1781	1502	312	1781	1485	326
Grp Volume(v), veh/h	112	463	459	151	484	486	148	0	552	75	0	461
Grp Sat Flow(s),veh/h/ln	1781	1777	1758	1781	1777	1788	1781	0	1814	1781	0	1812
Q Serve(g_s), s	7.2	41.5	41.5	9.8	43.1	43.1	7.5	0.0	9.1	3.7	0.0	30.8
Cycle Q Clear(g_c), s	7.2	41.5	41.5	9.8	43.1	43.1	7.5	0.0	9.1	3.7	0.0	30.8
Prop In Lane	1.00		0.36	1.00		0.26	1.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	165	486	481	190	513	517	390	0	842	460	0	803
V/C Ratio(X)	0.68	0.95	0.95	0.79	0.94	0.94	0.38	0.00	0.66	0.16	0.00	0.57
Avail Cap(c_a), veh/h	263	490	485	262	513	517	441	0	842	550	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.2	57.8	57.9	43.4	56.3	56.3	23.5	0.0	3.5	23.0	0.0	33.7
Incr Delay (d2), s/veh	1.8	28.7	28.9	7.5	25.6	25.5	0.2	0.0	4.0	0.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	22.7	22.5	4.8	23.1	23.3	3.0	0.0	2.6	1.6	0.0	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	86.5	86.8	50.9	81.9	81.9	23.7	0.0	7.4	23.0	0.0	36.7
LnGrp LOS	D	F	F	D	F	F	C	A	A	C	A	D
Approach Vol, veh/h		1034			1121			700			536	
Approach Delay, s/veh		82.3			77.7			10.9			34.8	
Approach LOS		F			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	77.6	16.0	53.1	11.8	81.0	18.5	50.6
Change Period (Y+Rc), s	* 5.8	6.3	6.8	6.8	6.3	6.3	6.7	6.8
Max Green Setting (Gmax), s	* 14	59.7	18.2	44.2	13.7	59.7	18.3	44.2
Max Q Clear Time (g_c+I1), s	9.5	32.8	9.2	45.1	5.7	11.1	11.8	43.5
Green Ext Time (p_c), s	0.1	3.3	0.1	0.0	0.0	4.6	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	58.5
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	823	28	57	969	14	85
Future Vol, veh/h	823	28	57	969	14	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	914	31	63	1077	16	94

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	945	0	1595	473
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	665	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	722	-	98	538
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	722	-	89	538
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	432	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	314	-	-	722	-
HCM Lane V/C Ratio	0.35	-	-	0.088	-
HCM Control Delay (s)	22.5	-	-	10.5	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	52	599	15	29	615
Future Vol, veh/h	9	52	599	15	29	615
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	55	637	16	31	654

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1361	645	0	0	653	0
Stage 1	645	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	163	472	-	-	934	-
Stage 1	522	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	158	472	-	-	934	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	468	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	934	-
HCM Lane V/C Ratio	-	-	0.15	0.033	-
HCM Control Delay (s)	-	-	14.7	9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	19	25	64	52	28
Future Vol, veh/h	32	19	25	64	52	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	24	32	82	67	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	231	85	103	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	757	974	1489	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	740	974	1489	-	-	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	881	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1489	-	740	974	-	-
HCM Lane V/C Ratio	0.022	-	0.055	0.025	-	-
HCM Control Delay (s)	7.5	0	10.2	8.8	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	494	57	176	518	41	79	496	142	36	525	69
Future Volume (vph)	79	494	57	176	518	41	79	496	142	36	525	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	120		0	150		0	160		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		716			952			919			247	
Travel Time (s)		19.5			26.0			25.1			6.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	19.5	29.2		19.5	28.2		19.5	34.8		19.5	31.8	
Total Split (s)	25.0	38.0		25.0	38.0		20.0	79.0		20.0	79.0	
Total Split (%)	15.4%	23.5%		15.4%	23.5%		12.3%	48.8%		12.3%	48.8%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1	
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 162	
Actuated Cycle Length: 162	
Offset: 81 (50%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	494	57	176	518	41	79	496	142	36	525	69
Future Volume (veh/h)	79	494	57	176	518	41	79	496	142	36	525	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	504	58	180	529	42	81	506	145	37	536	70
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	566	65	235	738	58	330	777	223	323	883	115
Arrive On Green	0.05	0.18	0.17	0.10	0.22	0.22	0.03	0.56	0.55	0.02	0.36	0.36
Sat Flow, veh/h	1781	3212	368	1781	3335	264	1781	1398	401	1781	1621	212
Grp Volume(v), veh/h	81	278	284	180	281	290	81	0	651	37	0	606
Grp Sat Flow(s),veh/h/ln	1781	1777	1804	1781	1777	1823	1781	0	1798	1781	0	1832
Q Serve(g_s), s	6.0	24.7	24.9	13.0	23.7	23.8	3.2	0.0	40.8	1.5	0.0	43.7
Cycle Q Clear(g_c), s	6.0	24.7	24.9	13.0	23.7	23.8	3.2	0.0	40.8	1.5	0.0	43.7
Prop In Lane	1.00		0.20	1.00		0.14	1.00		0.22	1.00		0.12
Lane Grp Cap(c), veh/h	198	313	318	235	393	403	330	0	1000	323	0	998
V/C Ratio(X)	0.41	0.89	0.89	0.77	0.72	0.72	0.25	0.00	0.65	0.11	0.00	0.61
Avail Cap(c_a), veh/h	319	354	360	276	393	403	419	0	1000	433	0	998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	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	51.6	65.1	65.3	48.8	58.3	58.4	21.6	0.0	25.0	20.5	0.0	37.3
Incr Delay (d2), s/veh	0.5	19.7	20.3	8.4	5.3	5.3	0.1	0.0	3.3	0.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	13.0	13.4	6.5	11.4	11.7	1.4	0.0	18.6	0.6	0.0	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	84.8	85.6	57.2	63.6	63.7	21.7	0.0	28.3	20.6	0.0	40.1
LnGrp LOS	D	F	F	E	E	E	C	A	C	C	A	D
Approach Vol, veh/h		643			751			732			643	
Approach Delay, s/veh		81.0			62.1			27.6			39.0	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	94.5	14.0	41.6	10.0	96.4	21.3	34.3
Change Period (Y+Rc), s	* 6.8	* 6.8	6.2	6.2	* 6.8	* 6.8	6.2	6.2
Max Green Setting (Gmax), s	* 13	* 72	18.8	31.8	* 13	* 72	18.8	31.8
Max Q Clear Time (g_c+I1), s	5.2	45.7	8.0	25.8	3.5	42.8	15.0	26.9
Green Ext Time (p_c), s	0.0	4.7	0.0	1.3	0.0	5.5	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	642	658	42	25	44
Future Vol, veh/h	44	642	658	42	25	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	676	693	44	26	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	737	0	-	0	1145	715
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	867	-	-	-	206	430
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	867	-	-	-	195	430
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	20.9
HCM LOS			C

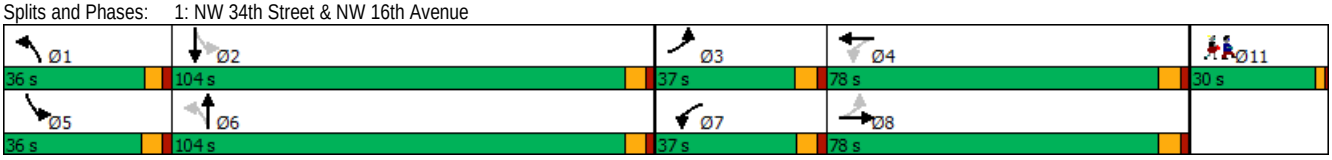
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	867	-	-	-	299
HCM Lane V/C Ratio	0.053	-	-	-	0.243
HCM Control Delay (s)	9.4	-	-	-	20.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9

Howard Bishop Second Scenario – Existing Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70	
Future Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 135.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70
Future Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3445		1770	3502		1752	1784		1752	1803	
Flt Permitted	0.31	1.00		0.20	1.00		0.22	1.00		0.34	1.00	
Satd. Flow (perm)	582	3445		367	3502		405	1784		629	1803	
Peak-hour factor, PHF	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)	74	539	117	103	579	44	129	314	89	70	412	73
RTOR Reduction (vph)	0	6	0	0	2	0	0	3	0	0	2	0
Lane Group Flow (vph)	74	650	0	103	621	0	129	400	0	70	484	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	44.4	36.8		54.3	41.7		60.5	49.4		57.0	47.9	
Effective Green, g (s)	45.4	37.3		55.3	42.2		61.5	49.9		58.0	48.4	
Actuated g/C Ratio	0.34	0.28		0.41	0.31		0.46	0.37		0.43	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	268	958		288	1102		302	664		352	651	
v/s Ratio Prot	0.02	c0.19		c0.03	c0.18		c0.04	0.22		0.01	c0.27	
v/s Ratio Perm	0.08			0.11			0.16			0.07		
v/c Ratio	0.28	0.68		0.36	0.56		0.43	0.60		0.20	0.74	
Uniform Delay, d1	30.9	43.0		26.5	38.2		24.4	34.0		23.6	37.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5		0.3	0.4		0.4	1.5		0.1	4.6	
Delay (s)	31.1	44.5		26.8	38.6		24.8	35.6		23.7	42.0	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		43.2			37.0			33.0			39.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	27.2
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	643	27	102	667	24	93
Future Vol, veh/h	643	27	102	667	24	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	691	29	110	717	26	100

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	720	0	1285	360
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	877	-	156	637
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	877	-	137	637
Mov Cap-2 Maneuver	-	-	-	-	137	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	459	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	877	-
HCM Lane V/C Ratio	0.346	-	-	0.125	-
HCM Control Delay (s)	20	-	-	9.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	92	410	40	131	481
Future Vol, veh/h	24	92	410	40	131	481
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	27	102	456	44	146	534

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1304	478	0	0	500	0
Stage 1	478	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	177	587	-	-	1054	-
Stage 1	624	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	152	587	-	-	1054	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	370	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	475	1054	-
HCM Lane V/C Ratio	-	-	0.271	0.138	-
HCM Control Delay (s)	-	-	15.4	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.5	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	69	45	36	75	54
Future Vol, veh/h	79	69	45	36	75	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	94	82	54	43	89	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	272	121	153	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	715	928	1415	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	687	928	1415	-	-	-
Mov Cap-2 Maneuver	687	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	874	-	-	-	-	-

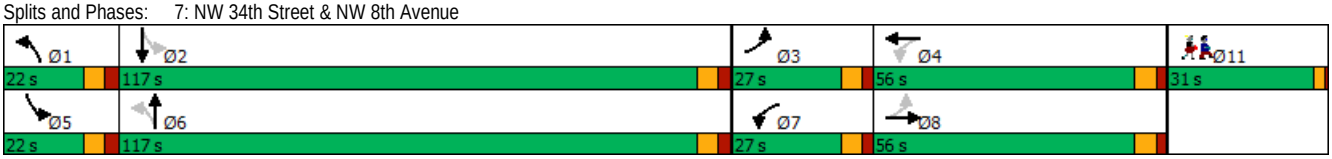
Approach	EB	NB	SB
HCM Control Delay, s	10.3	4.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1415	-	687	928	-	-
HCM Lane V/C Ratio	0.038	-	0.137	0.089	-	-
HCM Control Delay (s)	7.6	0	11.1	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47	
Future Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 114.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47
Future Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3495		1770	3504		1770	1782		1770	1835	
Flt Permitted	0.51	1.00		0.26	1.00		0.25	1.00		0.25	1.00	
Satd. Flow (perm)	943	3495		481	3504		457	1782		460	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	431	39	147	393	28	36	383	157	23	466	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	76	470	0	147	421	0	36	540	0	23	518	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.2	24.8		45.7	32.1		51.5	47.2		49.1	46.0	
Effective Green, g (s)	33.2	25.3		46.2	32.6		52.5	47.7		50.1	46.5	
Actuated g/C Ratio	0.29	0.22		0.40	0.28		0.45	0.41		0.43	0.40	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	326	763		361	986		261	734		239	736	
v/s Ratio Prot	0.02	c0.13		c0.05	c0.12		c0.01	c0.30		0.00	0.28	
v/s Ratio Perm	0.05			0.11			0.06			0.04		
v/c Ratio	0.23	0.62		0.41	0.43		0.14	0.74		0.10	0.70	
Uniform Delay, d1	30.8	40.9		23.9	34.0		20.0	28.7		21.0	28.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.3	0.1		0.1	3.8		0.1	3.1	
Delay (s)	30.9	41.9		24.2	34.1		20.1	32.6		21.0	32.0	
Level of Service	C	D		C	C		C	C		C	C	
Approach Delay (s)		40.4			31.5			31.8			31.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	115.8	Sum of lost time (s)	27.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	506	442	45	71	57
Future Vol, veh/h	32	506	442	45	71	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	602	526	54	85	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	580	0	-	0	930	553
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	992	-	-	-	281	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	992	-	-	-	270	532
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	664	-

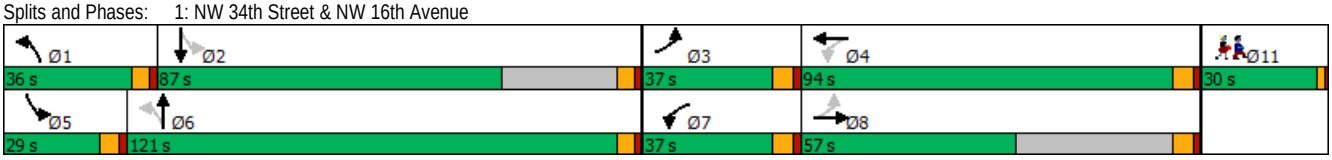
Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	23.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	992	-	-	-	346
HCM Lane V/C Ratio	0.038	-	-	-	0.44
HCM Control Delay (s)	8.8	-	-	-	23.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80	
Future Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	57.0		37.0	94.0		36.0	121.0		29.0	87.0		30.0
Total Split (%)	11.9%	18.3%		11.9%	30.2%		11.6%	38.9%		9.3%	28.0%		10%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 311	
Actuated Cycle Length: 176.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80
Future Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3475		1770	1819		1770	1810	
Flt Permitted	0.19	1.00		0.11	1.00		0.25	1.00		0.18	1.00	
Satd. Flow (perm)	350	3449		201	3475		459	1819		344	1810	
Peak-hour factor, PHF	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)	111	722	148	123	711	97	147	463	86	82	377	88
RTOR Reduction (vph)	0	6	0	0	3	0	0	2	0	0	2	0
Lane Group Flow (vph)	111	864	0	123	805	0	147	547	0	82	463	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.3	53.9		74.8	58.6		81.3	67.3		77.0	65.4	
Effective Green, g (s)	66.3	54.4		75.8	59.1		82.3	67.8		78.0	65.9	
Actuated g/C Ratio	0.38	0.31		0.43	0.34		0.47	0.39		0.45	0.38	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	229	1071		236	1172		324	704		251	681	
v/s Ratio Prot	0.03	c0.25		c0.05	c0.23		c0.04	c0.30		0.02	0.26	
v/s Ratio Perm	0.15			0.18			0.18			0.12		
v/c Ratio	0.48	0.81		0.52	0.69		0.45	0.78		0.33	0.68	
Uniform Delay, d1	38.2	55.5		35.9	50.0		30.8	47.0		33.1	45.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	4.3		1.0	1.3		0.4	5.4		0.3	2.7	
Delay (s)	38.8	59.8		36.8	51.4		31.1	52.4		33.4	48.4	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		57.4			49.4			47.9			46.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	175.1	Sum of lost time (s)	27.2
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	36	78	797	32	134
Future Vol, veh/h	767	36	78	797	32	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	852	40	87	886	36	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	892	0	1489	446
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	617	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	756	-	115	560
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	756	-	102	560
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	34.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	300	-	-	756	-
HCM Lane V/C Ratio	0.615	-	-	0.115	-
HCM Control Delay (s)	34.4	-	-	10.4	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	3.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	94	503	21	57	530
Future Vol, veh/h	25	94	503	21	57	530
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	99	529	22	60	558

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1218	540	0	0	551	0
Stage 1	540	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	199	542	-	-	1019	-
Stage 1	584	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	187	542	-	-	1019	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	474	1019	-
HCM Lane V/C Ratio	-	-	0.264	0.059	-
HCM Control Delay (s)	-	-	15.3	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	63	42	39	94	70	40
Future Vol, veh/h	63	42	39	94	70	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	61	57	136	101	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	380	130	159	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	622	920	1420	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	595	920	1420	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	792	-	-	-	-	-

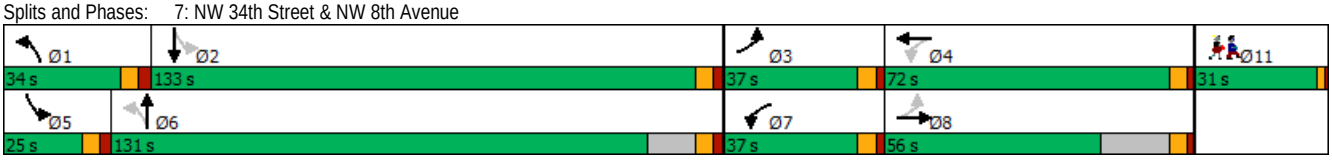
Approach	EB	NB	SB
HCM Control Delay, s	10.9	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1420	-	595	920	-	-
HCM Lane V/C Ratio	0.04	-	0.153	0.066	-	-
HCM Control Delay (s)	7.6	0	12.1	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87	
Future Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	37.0	56.0		37.0	72.0		34.0	131.0		25.0	133.0		31.0
Total Split (%)	12.1%	18.2%		12.1%	23.5%		11.1%	42.7%		8.1%	43.3%		10%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 307	
Actuated Cycle Length: 177.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87
Future Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3501		1770	1799		1770	1818	
Flt Permitted	0.44	1.00		0.19	1.00		0.17	1.00		0.15	1.00	
Satd. Flow (perm)	825	3499		357	3501		324	1799		280	1818	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	79	528	43	190	510	40	63	512	150	31	513	97
RTOR Reduction (vph)	0	2	0	0	1	0	0	3	0	0	2	0
Lane Group Flow (vph)	79	569	0	190	549	0	63	659	0	31	608	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	51.1	42.1		74.0	58.8		86.2	78.7		82.0	76.6	
Effective Green, g (s)	52.1	42.6		74.5	59.3		87.2	79.2		83.0	77.1	
Actuated g/C Ratio	0.29	0.24		0.42	0.33		0.49	0.45		0.47	0.43	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	292	837		357	1167		223	800		180	787	
v/s Ratio Prot	0.01	c0.16		c0.08	0.16		c0.01	c0.37		0.01	0.33	
v/s Ratio Perm	0.06			0.14			0.13			0.07		
v/c Ratio	0.27	0.68		0.53	0.47		0.28	0.82		0.17	0.77	
Uniform Delay, d1	46.6	61.5		36.4	46.9		30.8	43.2		32.8	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.8		0.8	0.1		0.3	6.9		0.2	4.7	
Delay (s)	46.7	63.3		37.1	47.0		31.1	50.1		33.0	47.7	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		61.3			44.5			48.4			46.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	177.9	Sum of lost time (s)	27.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	585	606	50	52	69
Future Vol, veh/h	62	585	606	50	52	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	597	618	51	53	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	669	0	-	0	1069	644
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	425	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	919	-	-	-	230	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	919	-	-	-	214	472
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	24
HCM LOS			C

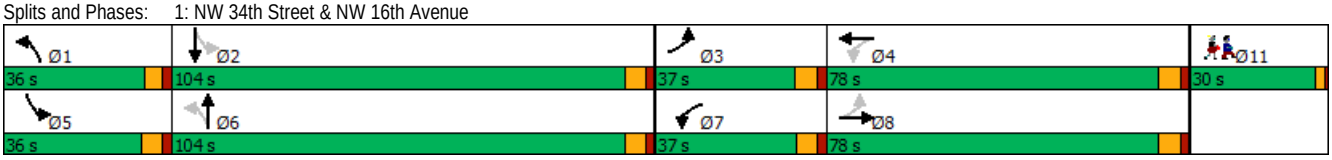
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	919	-	-	-	311
HCM Lane V/C Ratio	0.069	-	-	-	0.397
HCM Control Delay (s)	9.2	-	-	-	24
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8

Howard Bishop First Scenario – Temporary (2020-21) Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	68	464	109	120	521	54	113	271	85	59	394	67	
Future Volume (vph)	68	464	109	120	521	54	113	271	85	59	394	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 138.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	464	109	120	521	54	113	271	85	59	394	67
Future Volume (vph)	68	464	109	120	521	54	113	271	85	59	394	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3439		1770	3489		1752	1779		1752	1804	
Flt Permitted	0.34	1.00		0.20	1.00		0.21	1.00		0.36	1.00	
Satd. Flow (perm)	625	3439		371	3489		381	1779		665	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	504	118	130	566	59	123	295	92	64	428	73
RTOR Reduction (vph)	0	7	0	0	3	0	0	4	0	0	2	0
Lane Group Flow (vph)	74	615	0	130	622	0	123	383	0	64	499	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	43.7	36.0		58.0	43.5		61.6	50.9		58.1	49.4	
Effective Green, g (s)	44.7	36.5		58.5	44.0		62.6	51.4		59.1	49.9	
Actuated g/C Ratio	0.33	0.27		0.43	0.32		0.46	0.38		0.43	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	272	916		319	1120		286	667		359	657	
v/s Ratio Prot	0.02	c0.18		c0.05	c0.18		c0.04	0.22		0.01	c0.28	
v/s Ratio Perm	0.07			0.13			0.16			0.06		
v/c Ratio	0.27	0.67		0.41	0.56		0.43	0.57		0.18	0.76	
Uniform Delay, d1	32.6	44.9		26.4	38.4		25.4	34.1		24.0	38.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5		0.3	0.3		0.4	1.2		0.1	5.0	
Delay (s)	32.8	46.4		26.8	38.8		25.7	35.3		24.1	43.3	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		45.0			36.7			33.0			41.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	137.0	Sum of lost time (s)	27.2
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	607	15	173	666	19	198
Future Vol, veh/h	607	15	173	666	19	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	731	18	208	802	23	239

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	749	0	1557	375
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	817	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	856	-	103	623
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	395	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	856	-	78	623
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	299	-

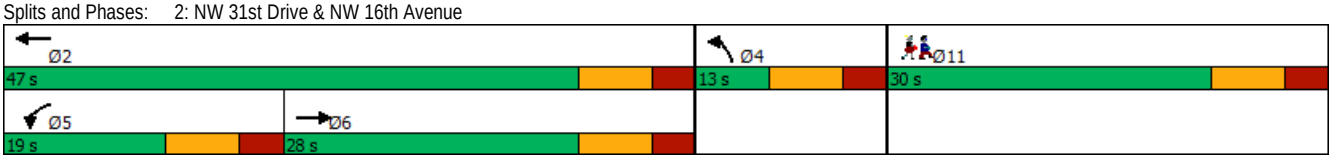
Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	387	-	-	856	-
HCM Lane V/C Ratio	0.676	-	-	0.243	-
HCM Control Delay (s)	31.6	-	-	10.6	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	4.8	-	-	1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø11
Lane Configurations							
Traffic Volume (vph)	607	15	173	666	19	198	
Future Volume (vph)	607	15	173	666	19	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	160		0	0	
Storage Lanes		0	1		1	0	
Taper Length (ft)			0		25		
Right Turn on Red		Yes				Yes	
Link Speed (mph)	20			20	20		
Link Distance (ft)	968			1349	424		
Travel Time (s)	33.0			46.0	14.5		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Turn Type	NA		Prot	NA	Prot		
Protected Phases	6		5	2	4		11
Permitted Phases							
Detector Phase	6		5	2	4		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	13.0		13.0	13.0	13.0		30.0
Total Split (s)	28.0		19.0	47.0	13.0		30.0
Total Split (%)	31.1%		21.1%	52.2%	14.4%		33%
Yellow Time (s)	5.0		5.0	5.0	5.0		5.0
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	8.0		8.0	8.0	8.0		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	Min	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 59.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	15	173	666	19	198
Future Volume (vph)	607	15	173	666	19	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3526		1770	3539	1626	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3526		1770	3539	1626	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	731	18	208	802	23	239
RTOR Reduction (vph)	1	0	0	0	219	0
Lane Group Flow (vph)	748	0	208	802	43	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	19.6		11.0	38.6	5.0	
Effective Green, g (s)	19.6		11.0	38.6	5.0	
Actuated g/C Ratio	0.33		0.18	0.65	0.08	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1159		326	2292	136	
v/s Ratio Prot	c0.21		c0.12	0.23	c0.03	
v/s Ratio Perm						
v/c Ratio	0.65		0.64	0.35	0.32	
Uniform Delay, d1	17.0		22.5	4.8	25.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		4.1	0.1	1.3	
Delay (s)	18.3		26.5	4.9	27.0	
Level of Service	B		C	A	C	
Approach Delay (s)	18.3			9.3	27.0	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	32.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	53	415	24	74	560
Future Vol, veh/h	13	53	415	24	74	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	15	63	494	29	88	667

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1352	509	0	0	523	0
Stage 1	509	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	165	564	-	-	1033	-
Stage 1	604	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	151	564	-	-	1033	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	470	1033	-
HCM Lane V/C Ratio	-	-	0.167	0.085	-
HCM Control Delay (s)	-	-	14.2	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.3	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	44	27	147	156	24
Future Vol, veh/h	59	44	27	147	156	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	118	88	54	294	312	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	738	336	360	0	-	0
Stage 1	336	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	384	704	1188	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	363	704	1188	-	-	-
Mov Cap-2 Maneuver	363	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	673	-	-	-	-	-

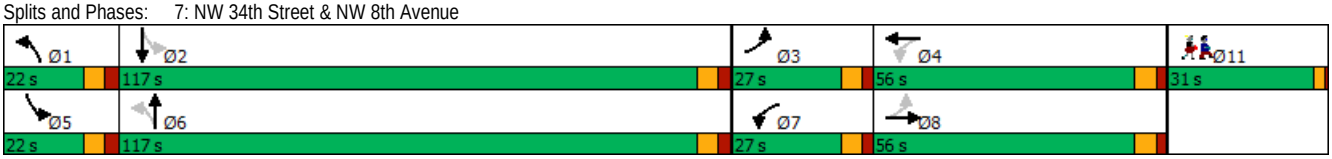
Approach	EB	NB	SB
HCM Control Delay, s	15.8	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1188	-	363	704	-	-
HCM Lane V/C Ratio	0.045	-	0.325	0.125	-	-
HCM Control Delay (s)	8.2	0	19.6	10.8	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	60	342	53	117	314	44	30	331	119	29	488	54	
Future Volume (vph)	60	342	53	117	314	44	30	331	119	29	488	54	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 122.1	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	342	53	117	314	44	30	331	119	29	488	54
Future Volume (vph)	60	342	53	117	314	44	30	331	119	29	488	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3468		1770	3474		1770	1789		1770	1835	
Flt Permitted	0.51	1.00		0.27	1.00		0.18	1.00		0.27	1.00	
Satd. Flow (perm)	955	3468		499	3474		342	1789		506	1835	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	68	389	60	133	357	50	34	376	135	33	555	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	68	449	0	133	407	0	34	511	0	33	616	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.9	25.6		46.5	33.0		55.1	50.9		56.3	51.5	
Effective Green, g (s)	33.9	26.1		47.0	33.5		56.1	51.4		57.3	52.0	
Actuated g/C Ratio	0.28	0.21		0.39	0.27		0.46	0.42		0.47	0.43	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	317	741		350	953		212	753		292	782	
v/s Ratio Prot	0.01	c0.13		c0.05	c0.12		c0.01	0.29		0.00	c0.34	
v/s Ratio Perm	0.05			0.10			0.07			0.05		
v/c Ratio	0.21	0.61		0.38	0.43		0.16	0.68		0.11	0.79	
Uniform Delay, d1	33.1	43.3		25.9	36.4		21.9	28.6		19.6	30.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.3	0.1		0.1	2.4		0.1	5.3	
Delay (s)	33.2	44.3		26.2	36.5		22.0	31.0		19.7	35.5	
Level of Service	C	D		C	D		C	C		B	D	
Approach Delay (s)		42.8			33.9			30.5			34.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	459	445	161	168	32
Future Vol, veh/h	19	459	445	161	168	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	20	494	478	173	181	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	651	0	-	0	852	565
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	287	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	933	-	-	-	314	523
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	933	-	-	-	307	523
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	737	-

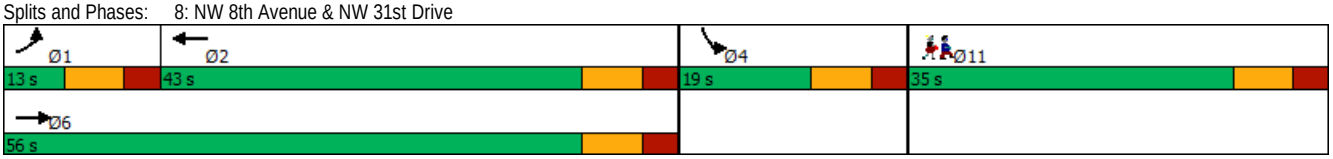
Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	34.4
HCM LOS			D

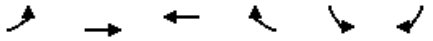
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	933	-	-	-	329
HCM Lane V/C Ratio	0.022	-	-	-	0.654
HCM Control Delay (s)	8.9	-	-	-	34.4
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	4.3

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø11
Lane Configurations							
Traffic Volume (vph)	19	459	445	161	168	32	
Future Volume (vph)	19	459	445	161	168	32	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%	0%		0%		
Storage Length (ft)	150			0	0	0	
Storage Lanes	1			0	1	0	
Taper Length (ft)	25				25		
Right Turn on Red				Yes		Yes	
Link Speed (mph)		20	35		25		
Link Distance (ft)		952	1847		1399		
Travel Time (s)		32.5	36.0		38.2		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Turn Type	Prot	NA	NA		Prot		
Protected Phases	1	6	2		4		11
Permitted Phases							
Detector Phase	1	6	2		4		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	13.0	13.0	13.0		13.0		35.0
Total Split (s)	13.0	56.0	43.0		19.0		35.0
Total Split (%)	11.8%	50.9%	39.1%		17.3%		32%
Yellow Time (s)	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	3.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		
Total Lost Time (s)	8.0	8.0	8.0		8.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	None	None		None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 64.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	459	445	161	168	32
Future Volume (vph)	19	459	445	161	168	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.96		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	1796		1749	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	1796		1749	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	20	494	478	173	181	34
RTOR Reduction (vph)	0	0	9	0	6	0
Lane Group Flow (vph)	20	494	642	0	209	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	0.9	44.1	35.2		11.1	
Effective Green, g (s)	0.9	44.1	35.2		11.1	
Actuated g/C Ratio	0.01	0.62	0.49		0.16	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	22	2191	887		272	
v/s Ratio Prot	0.01	c0.14	c0.36		c0.12	
v/s Ratio Perm						
v/c Ratio	0.91	0.23	0.72		0.77	
Uniform Delay, d1	35.1	6.0	14.2		28.8	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	148.5	0.1	3.0		12.3	
Delay (s)	183.6	6.0	17.1		41.1	
Level of Service	F	A	B		D	
Approach Delay (s)		13.0	17.1		41.1	
Approach LOS		B	B		D	

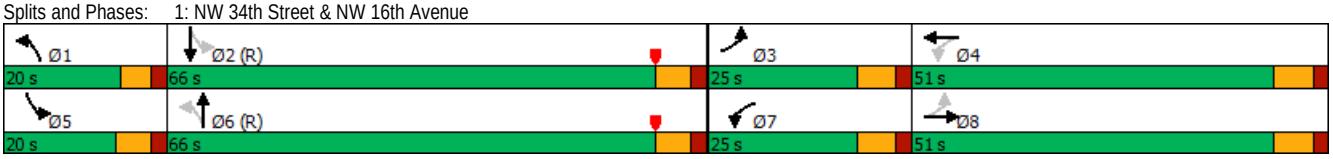
Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	32.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	713	154	166	794	117	139	429	114	71	356	78
Future Volume (vph)	105	713	154	166	794	117	139	429	114	71	356	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	225		0	435		0	130		0	70		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		2375			968			409			1279	
Travel Time (s)		64.8			26.4			11.2			34.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3	
Total Split (s)	25.0	51.0		25.0	51.0		20.0	66.0		20.0	66.0	
Total Split (%)	15.4%	31.5%		15.4%	31.5%		12.3%	40.7%		12.3%	40.7%	
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 162	
Actuated Cycle Length: 162	
Offset: 124 (77%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	713	154	166	794	117	139	429	114	71	356	78
Future Volume (veh/h)	105	713	154	166	794	117	139	429	114	71	356	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	113	767	166	178	854	126	149	461	123	76	383	84
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	801	173	208	936	138	370	641	171	411	637	140
Arrive On Green	0.06	0.28	0.27	0.09	0.30	0.30	0.13	0.90	0.90	0.04	0.43	0.43
Sat Flow, veh/h	1781	2905	629	1781	3106	458	1781	1423	380	1781	1486	326
Grp Volume(v), veh/h	113	469	464	178	488	492	149	0	584	76	0	467
Grp Sat Flow(s),veh/h/ln	1781	1777	1757	1781	1777	1788	1781	0	1802	1781	0	1812
Q Serve(g_s), s	7.3	42.1	42.1	11.5	42.9	42.9	7.7	0.0	14.8	3.8	0.0	32.1
Cycle Q Clear(g_c), s	7.3	42.1	42.1	11.5	42.9	42.9	7.7	0.0	14.8	3.8	0.0	32.1
Prop In Lane	1.00		0.36	1.00		0.26	1.00		0.21	1.00		0.18
Lane Grp Cap(c), veh/h	173	490	484	208	535	539	370	0	812	411	0	777
V/C Ratio(X)	0.65	0.96	0.96	0.85	0.91	0.91	0.40	0.00	0.72	0.18	0.00	0.60
Avail Cap(c_a), veh/h	271	490	485	261	535	539	420	0	812	499	0	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	57.8	57.8	42.7	54.5	54.6	24.7	0.0	5.2	24.5	0.0	35.6
Incr Delay (d2), s/veh	1.6	29.9	30.1	16.9	19.7	19.6	0.3	0.0	5.4	0.1	0.0	3.4
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	3.4	23.1	22.9	6.1	22.3	22.5	3.1	0.0	3.7	1.7	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	87.6	87.9	59.6	74.2	74.2	25.0	0.0	10.6	24.5	0.0	39.0
LnGrp LOS	D	F	F	E	E	E	C	A	B	C	A	D
Approach Vol, veh/h		1046			1158			733			543	
Approach Delay, s/veh		83.2			71.9			13.5			37.0	
Approach LOS		F			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	75.3	16.1	55.1	12.0	78.8	20.2	50.9
Change Period (Y+Rc), s	* 5.8	6.3	6.8	6.8	6.3	6.3	6.7	6.8
Max Green Setting (Gmax), s	* 14	59.7	18.2	44.2	13.7	59.7	18.3	44.2
Max Q Clear Time (g_c+I1), s	9.7	34.1	9.3	44.9	5.8	16.8	13.5	44.1
Green Ext Time (p_c), s	0.1	3.4	0.1	0.0	0.0	4.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.6
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	856	28	115	1004	14	171
Future Vol, veh/h	856	28	115	1004	14	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	951	31	128	1116	16	190

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	982	0	1781	491
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	814	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	699	-	73	523
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	699	-	60	523
Mov Cap-2 Maneuver	-	-	-	-	60	-
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	324	-

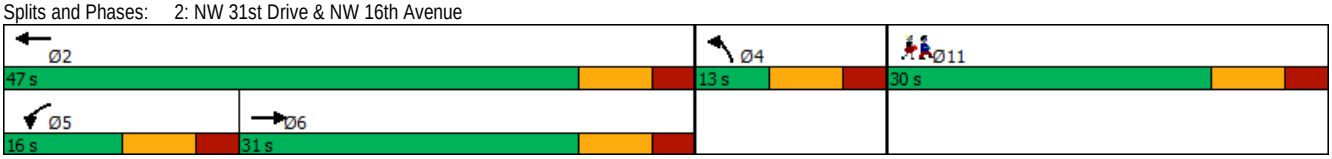
Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	32.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	330	-	-	699	-
HCM Lane V/C Ratio	0.623	-	-	0.183	-
HCM Control Delay (s)	32.3	-	-	11.3	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	4	-	-	0.7	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø11
Lane Configurations							
Traffic Volume (vph)	856	28	115	1004	14	171	
Future Volume (vph)	856	28	115	1004	14	171	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	160		0	0	
Storage Lanes		0	1		1	0	
Taper Length (ft)			25		25		
Right Turn on Red		Yes				Yes	
Link Speed (mph)	20			20	20		
Link Distance (ft)	968			1349	424		
Travel Time (s)	33.0			46.0	14.5		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Turn Type	NA		Prot	NA	Prot		
Protected Phases	6		5	2	4		11
Permitted Phases							
Detector Phase	6		5	2	4		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	13.0		13.0	13.0	13.0		30.0
Total Split (s)	31.0		16.0	47.0	13.0		30.0
Total Split (%)	34.4%		17.8%	52.2%	14.4%		33%
Yellow Time (s)	5.0		5.0	5.0	5.0		5.0
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	8.0		8.0	8.0	8.0		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	Min	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	44	648	665	89	95	44
Future Volume (vph)	44	648	665	89	95	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.98		0.96	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1770	3539	1833		1724	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1770	3539	1833		1724	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	682	700	94	100	46
RTOR Reduction (vph)	0	0	3	0	13	0
Lane Group Flow (vph)	46	682	791	0	133	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	3.8	56.1	44.3		11.0	
Effective Green, g (s)	3.8	56.1	44.3		11.0	
Actuated g/C Ratio	0.05	0.68	0.53		0.13	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	80	2389	977		228	
v/s Ratio Prot	0.03	c0.19	c0.43		c0.08	
v/s Ratio Perm						
v/c Ratio	0.57	0.29	0.81		0.58	
Uniform Delay, d1	38.9	5.4	15.9		33.9	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.6	0.1	5.0		3.8	
Delay (s)	48.5	5.5	21.0		37.7	
Level of Service	D	A	C		D	
Approach Delay (s)		8.2	21.0		37.7	
Approach LOS		A	C		D	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	32.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	53	630	15	29	646
Future Vol, veh/h	9	53	630	15	29	646
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	56	670	16	31	687

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1427	678	0	0	686	0
Stage 1	678	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	149	452	-	-	908	-
Stage 1	504	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	144	452	-	-	908	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	416	908	-
HCM Lane V/C Ratio	-	-	0.159	0.034	-
HCM Control Delay (s)	-	-	15.3	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	19	25	150	110	28
Future Vol, veh/h	32	19	25	150	110	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	24	32	192	141	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	415	159	177	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	594	886	1399	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	579	886	1399	-	-	-
Mov Cap-2 Maneuver	579	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1399	-	579	886	-	-
HCM Lane V/C Ratio	0.023	-	0.071	0.027	-	-
HCM Control Delay (s)	7.6	0	11.7	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	499	58	178	523	41	80	501	143	36	530	70
Future Volume (vph)	80	499	58	178	523	41	80	501	143	36	530	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	120		0	150		0	160		0	170		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		716			952			919			247	
Travel Time (s)		19.5			26.0			25.1			6.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	19.5	29.2		19.5	28.2		19.5	34.8		19.5	31.8	
Total Split (s)	25.0	38.0		25.0	38.0		20.0	79.0		20.0	79.0	
Total Split (%)	15.4%	23.5%		15.4%	23.5%		12.3%	48.8%		12.3%	48.8%	
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1	
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 162	
Actuated Cycle Length: 162	
Offset: 81 (50%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	499	58	178	523	41	80	501	143	36	530	70
Future Volume (veh/h)	80	499	58	178	523	41	80	501	143	36	530	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	82	509	59	182	534	42	82	511	146	37	541	71
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	571	66	236	745	58	324	775	221	316	878	115
Arrive On Green	0.05	0.18	0.17	0.10	0.22	0.22	0.04	0.55	0.55	0.02	0.36	0.36
Sat Flow, veh/h	1781	3210	371	1781	3338	262	1781	1399	400	1781	1620	213
Grp Volume(v), veh/h	82	281	287	182	284	292	82	0	657	37	0	612
Grp Sat Flow(s),veh/h/ln	1781	1777	1804	1781	1777	1823	1781	0	1798	1781	0	1832
Q Serve(g_s), s	6.0	25.0	25.2	13.1	23.9	24.0	3.3	0.0	41.6	1.5	0.0	44.4
Cycle Q Clear(g_c), s	6.0	25.0	25.2	13.1	23.9	24.0	3.3	0.0	41.6	1.5	0.0	44.4
Prop In Lane	1.00		0.21	1.00		0.14	1.00		0.22	1.00		0.12
Lane Grp Cap(c), veh/h	199	316	321	236	396	407	324	0	996	316	0	993
V/C Ratio(X)	0.41	0.89	0.89	0.77	0.72	0.72	0.25	0.00	0.66	0.12	0.00	0.62
Avail Cap(c_a), veh/h	319	354	360	275	396	407	412	0	996	426	0	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	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	51.4	65.0	65.2	48.6	58.2	58.3	22.0	0.0	25.4	20.9	0.0	37.8
Incr Delay (d2), s/veh	0.5	20.2	20.9	8.9	5.2	5.2	0.2	0.0	3.4	0.1	0.0	2.9
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	2.8	13.2	13.6	6.5	11.5	11.8	1.4	0.0	19.0	0.6	0.0	22.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	85.2	86.0	57.5	63.4	63.5	22.1	0.0	28.8	21.0	0.0	40.7
LnGrp LOS	D	F	F	E	E	E	C	A	C	C	A	D
Approach Vol, veh/h		650			758			739			649	
Approach Delay, s/veh		81.4			62.0			28.1			39.5	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	94.1	14.1	41.8	10.0	96.1	21.4	34.5
Change Period (Y+Rc), s	* 6.8	* 6.8	6.2	6.2	* 6.8	* 6.8	6.2	6.2
Max Green Setting (Gmax), s	* 13	* 72	18.8	31.8	* 13	* 72	18.8	31.8
Max Q Clear Time (g_c+I1), s	5.3	46.4	8.0	26.0	3.5	43.6	15.1	27.2
Green Ext Time (p_c), s	0.0	4.8	0.0	1.3	0.0	5.5	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	52.3
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	648	665	89	95	44
Future Vol, veh/h	44	648	665	89	95	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	682	700	94	100	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	794	0	-	0	1180	747
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	825	-	-	-	196	412
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	825	-	-	-	185	412
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	47
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	825	-	-	-	224
HCM Lane V/C Ratio	0.056	-	-	-	0.653
HCM Control Delay (s)	9.6	-	-	-	47
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	856	28	115	1004	14	171
Future Volume (vph)	856	28	115	1004	14	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3522		1770	3539	1624	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3522		1770	3539	1624	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	951	31	128	1116	16	190
RTOR Reduction (vph)	2	0	0	0	174	0
Lane Group Flow (vph)	980	0	128	1116	32	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	23.0		8.0	39.0	5.0	
Effective Green, g (s)	23.0		8.0	39.0	5.0	
Actuated g/C Ratio	0.38		0.13	0.65	0.08	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1350		236	2300	135	
v/s Ratio Prot	c0.28		0.07	c0.32	c0.02	
v/s Ratio Perm						
v/c Ratio	0.73		0.54	0.49	0.24	
Uniform Delay, d1	15.8		24.3	5.4	25.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.0		2.5	0.2	0.9	
Delay (s)	17.8		26.8	5.5	26.6	
Level of Service	B		C	A	C	
Approach Delay (s)	17.8			7.7	26.6	
Approach LOS	B			A	C	

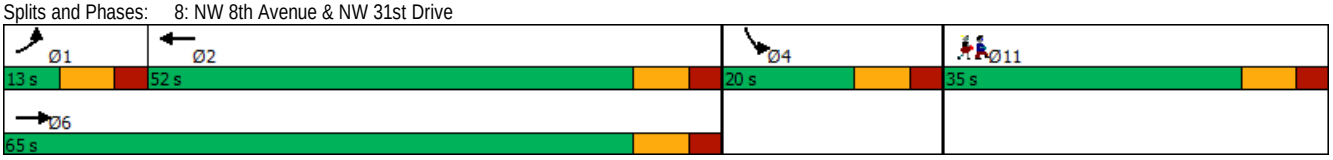
Intersection Summary				
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	32.0	
Intersection Capacity Utilization	62.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø11
Lane Configurations							
Traffic Volume (vph)	44	648	665	89	95	44	
Future Volume (vph)	44	648	665	89	95	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%	0%		0%		
Storage Length (ft)	150			0	0	0	
Storage Lanes	1			0	1	0	
Taper Length (ft)	25				25		
Right Turn on Red				Yes		Yes	
Link Speed (mph)		20	35		25		
Link Distance (ft)		952	1847		1399		
Travel Time (s)		32.5	36.0		38.2		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Turn Type	Prot	NA	NA		Prot		
Protected Phases	1	6	2		4		11
Permitted Phases							
Detector Phase	1	6	2		4		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	13.0	13.0	13.0		13.0		35.0
Total Split (s)	13.0	65.0	52.0		20.0		35.0
Total Split (%)	10.8%	54.2%	43.3%		16.7%		29%
Yellow Time (s)	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	3.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		
Total Lost Time (s)	8.0	8.0	8.0		8.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	None	None		None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 81.4	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive

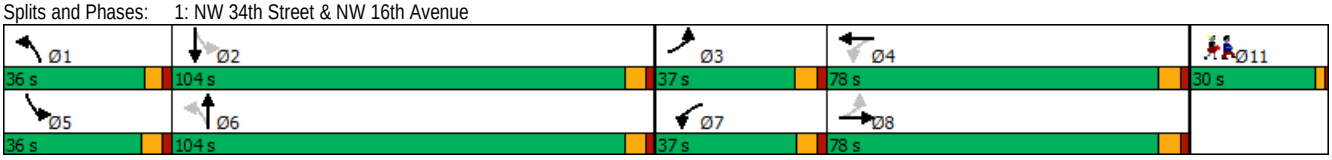


Howard Bishop Second Scenario – Temporary (2020-21) Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	72	522	113	115	562	42	125	304	101	68	400	71	
Future Volume (vph)	72	522	113	115	562	42	125	304	101	68	400	71	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 140.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	522	113	115	562	42	125	304	101	68	400	71
Future Volume (vph)	72	522	113	115	562	42	125	304	101	68	400	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3445		1770	3502		1752	1776		1752	1803	
Flt Permitted	0.32	1.00		0.18	1.00		0.21	1.00		0.32	1.00	
Satd. Flow (perm)	602	3445		343	3502		391	1776		589	1803	
Peak-hour factor, PHF	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)	75	544	118	120	585	44	130	317	105	71	417	74
RTOR Reduction (vph)	0	7	0	0	2	0	0	4	0	0	2	0
Lane Group Flow (vph)	75	655	0	120	627	0	130	418	0	71	489	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	45.5	37.8		58.6	44.3		62.7	51.3		58.8	49.6	
Effective Green, g (s)	46.5	38.3		59.3	44.8		63.7	51.8		59.8	50.1	
Actuated g/C Ratio	0.34	0.28		0.43	0.32		0.46	0.37		0.43	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	270	951		298	1131		296	663		335	651	
v/s Ratio Prot	0.02	c0.19		c0.04	c0.18		c0.04	0.24		0.01	c0.27	
v/s Ratio Perm	0.08			0.13			0.16			0.08		
v/c Ratio	0.28	0.69		0.40	0.55		0.44	0.63		0.21	0.75	
Uniform Delay, d1	32.3	44.9		26.9	38.7		25.5	35.6		24.8	38.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.7		0.3	0.3		0.4	2.0		0.1	4.9	
Delay (s)	32.5	46.6		27.2	39.1		25.9	37.6		24.9	43.7	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		45.1			37.2			34.8			41.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	138.7	Sum of lost time (s)	27.2
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	27	227	689	24	213
Future Vol, veh/h	664	27	227	689	24	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	714	29	244	741	26	229

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	743	0	1588	372
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	859	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	860	-	99	625
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	860	-	71	625
Mov Cap-2 Maneuver	-	-	-	-	71	-
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	269	-

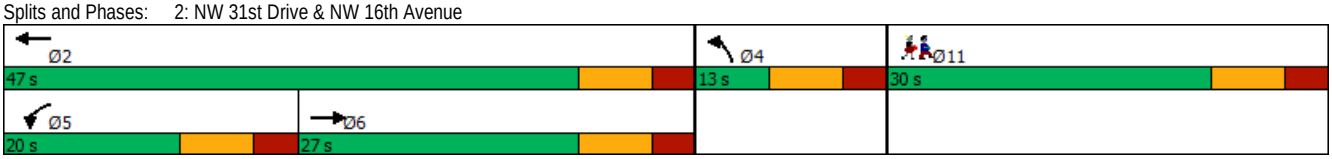
Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	38.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	349	-	-	860	-
HCM Lane V/C Ratio	0.73	-	-	0.284	-
HCM Control Delay (s)	38.7	-	-	10.8	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	5.5	-	-	1.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø11
Lane Configurations							
Traffic Volume (vph)	664	27	227	689	24	213	
Future Volume (vph)	664	27	227	689	24	213	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	160		0	0	
Storage Lanes		0	1		1	0	
Taper Length (ft)			0		25		
Right Turn on Red		Yes				Yes	
Link Speed (mph)	20			20	20		
Link Distance (ft)	968			1349	424		
Travel Time (s)	33.0			46.0	14.5		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Turn Type	NA		Prot	NA	Prot		
Protected Phases	6		5	2	4		11
Permitted Phases							
Detector Phase	6		5	2	4		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	13.0		13.0	13.0	13.0		30.0
Total Split (s)	27.0		20.0	47.0	13.0		30.0
Total Split (%)	30.0%		22.2%	52.2%	14.4%		33%
Yellow Time (s)	5.0		5.0	5.0	5.0		5.0
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	8.0		8.0	8.0	8.0		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	Min	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	664	27	227	689	24	213
Future Volume (vph)	664	27	227	689	24	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3518		1770	3539	1629	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3518		1770	3539	1629	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	714	29	244	741	26	229
RTOR Reduction (vph)	3	0	0	0	210	0
Lane Group Flow (vph)	740	0	244	741	45	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	19.0		12.0	39.0	5.0	
Effective Green, g (s)	19.0		12.0	39.0	5.0	
Actuated g/C Ratio	0.32		0.20	0.65	0.08	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1114		354	2300	135	
v/s Ratio Prot	c0.21		c0.14	0.21	c0.03	
v/s Ratio Perm						
v/c Ratio	0.66		0.69	0.32	0.33	
Uniform Delay, d1	17.7		22.3	4.6	25.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.5		5.5	0.1	1.5	
Delay (s)	19.3		27.8	4.7	27.4	
Level of Service	B		C	A	C	
Approach Delay (s)	19.3			10.4	27.4	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	93	429	40	132	501
Future Vol, veh/h	24	93	429	40	132	501
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	27	103	477	44	147	557

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1350	499	0	0	521	0
Stage 1	499	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	166	572	-	-	1035	-
Stage 1	610	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	142	572	-	-	1035	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	360	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	462	1035	-
HCM Lane V/C Ratio	-	-	0.281	0.142	-
HCM Control Delay (s)	-	-	15.8	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.5	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	70	45	155	200	55
Future Vol, veh/h	80	70	45	155	200	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	95	83	54	185	238	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	564	271	303	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	485	765	1247	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	462	765	1247	-	-	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	755	-	-	-	-	-

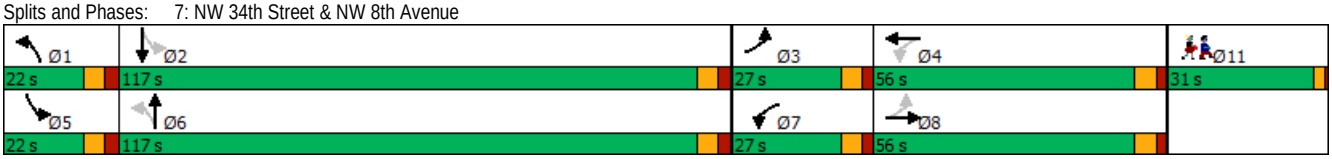
Approach	EB	NB	SB
HCM Control Delay, s	12.7	1.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1247	-	462	765	-	-
HCM Lane V/C Ratio	0.043	-	0.206	0.109	-	-
HCM Control Delay (s)	8	0	14.8	10.3	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	69	392	35	133	358	35	32	348	142	31	423	47	
Future Volume (vph)	69	392	35	133	358	35	32	348	142	31	423	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 117	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	392	35	133	358	35	32	348	142	31	423	47
Future Volume (vph)	69	392	35	133	358	35	32	348	142	31	423	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3496		1770	3492		1770	1782		1770	1835	
Flt Permitted	0.50	1.00		0.25	1.00		0.25	1.00		0.22	1.00	
Satd. Flow (perm)	928	3496		475	3492		469	1782		408	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	436	39	148	398	39	36	387	158	34	470	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	475	0	148	437	0	36	545	0	34	522	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.7	25.2		46.2	32.5		50.5	46.2		51.5	46.7	
Effective Green, g (s)	33.7	25.7		46.7	33.0		51.5	46.7		52.5	47.2	
Actuated g/C Ratio	0.29	0.22		0.40	0.28		0.44	0.40		0.45	0.40	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	324	767		358	984		259	711		244	740	
v/s Ratio Prot	0.02	c0.14		c0.05	c0.13		0.01	c0.31		c0.01	0.28	
v/s Ratio Perm	0.05			0.11			0.06			0.06		
v/c Ratio	0.24	0.62		0.41	0.44		0.14	0.77		0.14	0.71	
Uniform Delay, d1	31.0	41.2		24.2	34.5		20.8	30.4		20.8	29.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.1		0.3	0.1		0.1	5.0		0.1	3.1	
Delay (s)	31.1	42.3		24.4	34.6		20.9	35.4		20.9	32.2	
Level of Service	C	D		C	C		C	D		C	C	
Approach Delay (s)		40.7			32.0			34.5			31.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	26.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	521	456	174	196	58
Future Vol, veh/h	32	521	456	174	196	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	620	543	207	233	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	750	0	-	0	1033	647
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	857	-	-	-	242	470
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	~ 231	470
Mov Cap-2 Maneuver	-	-	-	-	~ 231	-
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	146.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	-	-	261
HCM Lane V/C Ratio	0.044	-	-	-	1.159
HCM Control Delay (s)	9.4	-	-	-	146.5
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	13.5

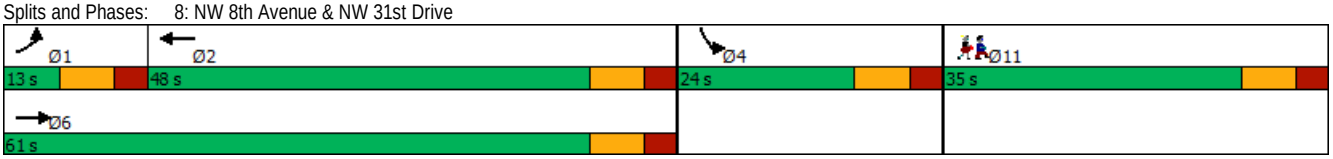
Notes

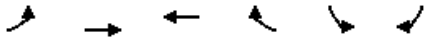
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø11
Lane Configurations							
Traffic Volume (vph)	32	521	456	174	196	58	
Future Volume (vph)	32	521	456	174	196	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%	0%		0%		
Storage Length (ft)	150			0	0	0	
Storage Lanes	1			0	1	0	
Taper Length (ft)	25				25		
Right Turn on Red				Yes		Yes	
Link Speed (mph)		20	35		25		
Link Distance (ft)		952	1847		1399		
Travel Time (s)		32.5	36.0		38.2		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Turn Type	Prot	NA	NA		Prot		
Protected Phases	1	6	2		4		11
Permitted Phases							
Detector Phase	1	6	2		4		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	13.0	13.0	13.0		13.0		35.0
Total Split (s)	13.0	61.0	48.0		24.0		35.0
Total Split (%)	10.8%	50.8%	40.0%		20.0%		29%
Yellow Time (s)	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	3.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		
Total Lost Time (s)	8.0	8.0	8.0		8.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	None	None		None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 79.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	521	456	174	196	58
Future Volume (vph)	32	521	456	174	196	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.96		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1770	3539	1793		1738	
Flt Permitted	0.95	1.00	1.00		0.96	
Satd. Flow (perm)	1770	3539	1793		1738	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	38	620	543	207	233	69
RTOR Reduction (vph)	0	0	9	0	8	0
Lane Group Flow (vph)	38	620	741	0	294	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	2.8	51.1	40.3		16.1	
Effective Green, g (s)	2.8	51.1	40.3		16.1	
Actuated g/C Ratio	0.03	0.61	0.48		0.19	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	59	2173	868		336	
v/s Ratio Prot	0.02	c0.18	c0.41		c0.17	
v/s Ratio Perm						
v/c Ratio	0.64	0.29	0.85		0.87	
Uniform Delay, d1	39.7	7.5	18.9		32.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	21.6	0.1	8.2		21.5	
Delay (s)	61.3	7.6	27.1		54.0	
Level of Service	E	A	C		D	
Approach Delay (s)		10.7	27.1		54.0	
Approach LOS		B	C		D	

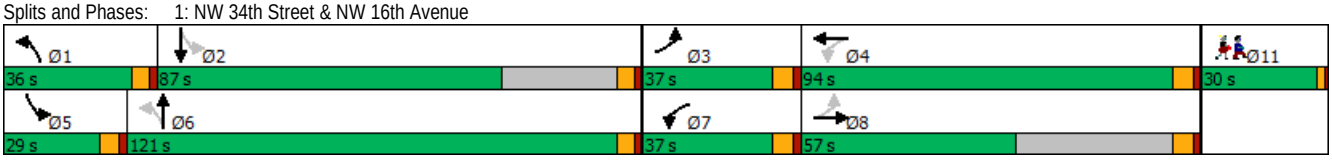
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	32.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	102	664	136	138	653	89	135	425	104	76	346	81	
Future Volume (vph)	102	664	136	138	653	89	135	425	104	76	346	81	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	57.0		37.0	94.0		36.0	121.0		29.0	87.0		30.0
Total Split (%)	11.9%	18.3%		11.9%	30.2%		11.6%	38.9%		9.3%	28.0%		10%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 311	
Actuated Cycle Length: 186.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	664	136	138	653	89	135	425	104	76	346	81
Future Volume (vph)	102	664	136	138	653	89	135	425	104	76	346	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3475		1770	1808		1770	1810	
Flt Permitted	0.19	1.00		0.08	1.00		0.25	1.00		0.16	1.00	
Satd. Flow (perm)	349	3449		149	3475		472	1808		303	1810	
Peak-hour factor, PHF	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)	112	730	149	152	718	98	148	467	114	84	380	89
RTOR Reduction (vph)	0	6	0	0	3	0	0	2	0	0	2	0
Lane Group Flow (vph)	112	873	0	152	813	0	148	579	0	84	467	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	66.1	53.5		80.7	61.3		87.3	73.1		83.4	71.4	
Effective Green, g (s)	67.1	54.0		81.2	61.8		88.3	73.6		84.4	71.9	
Actuated g/C Ratio	0.36	0.29		0.44	0.33		0.48	0.40		0.46	0.39	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	226	1005		249	1159		328	718		237	702	
v/s Ratio Prot	0.03	c0.25		c0.07	c0.23		c0.04	c0.32		0.02	0.26	
v/s Ratio Perm	0.14			0.20			0.18			0.14		
v/c Ratio	0.50	0.87		0.61	0.70		0.45	0.81		0.35	0.66	
Uniform Delay, d1	42.2	62.2		40.0	53.7		31.8	49.5		35.1	46.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	7.8		3.1	1.6		0.4	6.6		0.3	2.4	
Delay (s)	42.8	70.1		43.1	55.3		32.2	56.0		35.4	49.1	
Level of Service	D	E		D	E		C	E		D	D	
Approach Delay (s)		67.0			53.4			51.2			47.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	185.2	Sum of lost time (s)	27.2
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	11

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	800	36	136	830	32	220
Future Vol, veh/h	800	36	136	830	32	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	889	40	151	922	36	244

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	929	0	1672	465
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	763	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	732	-	87	544
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	732	-	69	544
Mov Cap-2 Maneuver	-	-	-	-	69	-
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	334	-

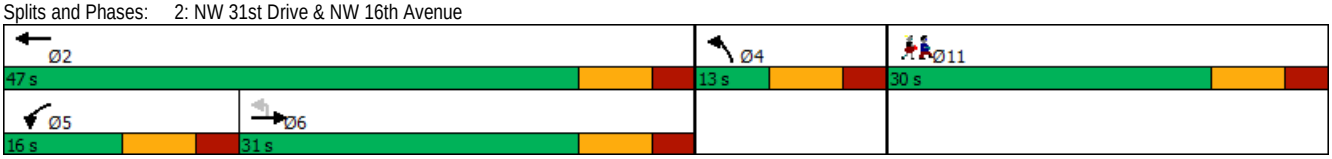
Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	83.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	-	-	732	-
HCM Lane V/C Ratio	0.966	-	-	0.206	-
HCM Control Delay (s)	83.5	-	-	11.2	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	9.6	-	-	0.8	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø11
Lane Configurations							
Traffic Volume (vph)	800	36	136	830	32	220	
Future Volume (vph)	800	36	136	830	32	220	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	160		0	0	
Storage Lanes		0	1		1	0	
Taper Length (ft)			25		25		
Right Turn on Red		Yes				Yes	
Link Speed (mph)	20			20	20		
Link Distance (ft)	968			1349	424		
Travel Time (s)	33.0			46.0	14.5		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Turn Type	NA		Prot	NA	Prot		
Protected Phases	6		5	2	4		11
Permitted Phases							
Detector Phase	6		5	2	4		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	13.0		13.0	13.0	13.0		30.0
Total Split (s)	31.0		16.0	47.0	13.0		30.0
Total Split (%)	34.4%		17.8%	52.2%	14.4%		33%
Yellow Time (s)	5.0		5.0	5.0	5.0		5.0
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	8.0		8.0	8.0	8.0		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	Min	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	800	36	136	830	32	220
Future Volume (vph)	800	36	136	830	32	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3516		1770	3539	1633	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3516		1770	3539	1633	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	889	40	151	922	36	244
RTOR Reduction (vph)	3	0	0	0	224	0
Lane Group Flow (vph)	926	0	151	922	56	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	23.0		8.0	39.0	5.0	
Effective Green, g (s)	23.0		8.0	39.0	5.0	
Actuated g/C Ratio	0.38		0.13	0.65	0.08	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1347		236	2300	136	
v/s Ratio Prot	c0.26		0.09	c0.26	c0.03	
v/s Ratio Perm						
v/c Ratio	0.69		0.64	0.40	0.41	
Uniform Delay, d1	15.5		24.6	5.0	26.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.5		5.6	0.1	2.0	
Delay (s)	17.0		30.2	5.1	28.2	
Level of Service	B		C	A	C	
Approach Delay (s)	17.0			8.6	28.2	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	32.0	
Intersection Capacity Utilization	81.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	95	533	21	58	560
Future Vol, veh/h	25	95	533	21	58	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	100	561	22	61	589

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1283	572	0	0	583	0
Stage 1	572	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	182	520	-	-	991	-
Stage 1	565	-	-	-	-	-
Stage 2	487	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	171	520	-	-	991	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	454	991	-
HCM Lane V/C Ratio	-	-	0.278	0.062	-
HCM Control Delay (s)	-	-	16	8.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	42	39	180	128	40
Future Vol, veh/h	64	42	39	180	128	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	61	57	261	186	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	590	215	244	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	470	825	1322	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	447	825	1322	-	-	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	695	-	-	-	-	-

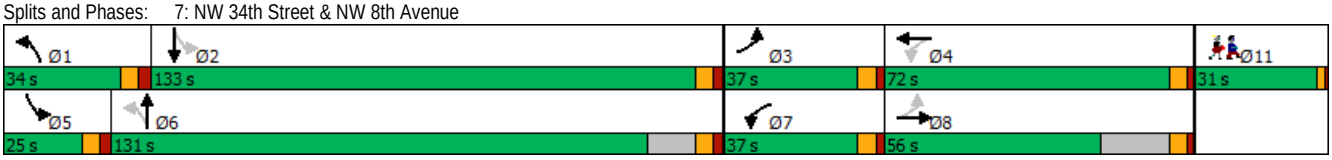
Approach	EB	NB	SB
HCM Control Delay, s	13	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1322	-	447	825	-	-
HCM Lane V/C Ratio	0.043	-	0.208	0.074	-	-
HCM Control Delay (s)	7.8	0	15.2	9.7	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	72	480	39	173	464	36	58	466	136	28	467	88	
Future Volume (vph)	72	480	39	173	464	36	58	466	136	28	467	88	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	37.0	56.0		37.0	72.0		34.0	131.0		25.0	133.0		31.0
Total Split (%)	12.1%	18.2%		12.1%	23.5%		11.1%	42.7%		8.1%	43.3%		10%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 307	
Actuated Cycle Length: 179.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	480	39	173	464	36	58	466	136	28	467	88
Future Volume (vph)	72	480	39	173	464	36	58	466	136	28	467	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3500		1770	3501		1770	1800		1770	1818	
Flt Permitted	0.44	1.00		0.19	1.00		0.17	1.00		0.15	1.00	
Satd. Flow (perm)	812	3500		348	3501		316	1800		278	1818	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	80	533	43	192	516	40	64	518	151	31	519	98
RTOR Reduction (vph)	0	2	0	0	1	0	0	3	0	0	2	0
Lane Group Flow (vph)	80	574	0	192	555	0	64	666	0	31	615	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	51.7	42.5		74.8	59.4		88.1	80.5		83.3	78.1	
Effective Green, g (s)	52.7	43.0		75.3	59.9		89.1	81.0		84.3	78.6	
Actuated g/C Ratio	0.29	0.24		0.42	0.33		0.49	0.45		0.47	0.44	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	288	834		355	1163		221	808		177	792	
v/s Ratio Prot	0.01	c0.16		c0.08	0.16		c0.01	c0.37		0.01	0.34	
v/s Ratio Perm	0.07			0.15			0.13			0.08		
v/c Ratio	0.28	0.69		0.54	0.48		0.29	0.82		0.18	0.78	
Uniform Delay, d1	47.3	62.6		37.1	47.8		31.2	43.4		33.2	43.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.9		0.9	0.1		0.3	6.8		0.2	4.8	
Delay (s)	47.5	64.5		38.0	47.9		31.5	50.2		33.4	48.2	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		62.4			45.3			48.6			47.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	180.3	Sum of lost time (s)	27.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	591	612	98	123	70
Future Vol, veh/h	63	591	612	98	123	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	603	624	100	126	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	724	0	-	0	1104	674
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	876	-	-	-	219	454
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	876	-	-	-	203	454
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	625	-

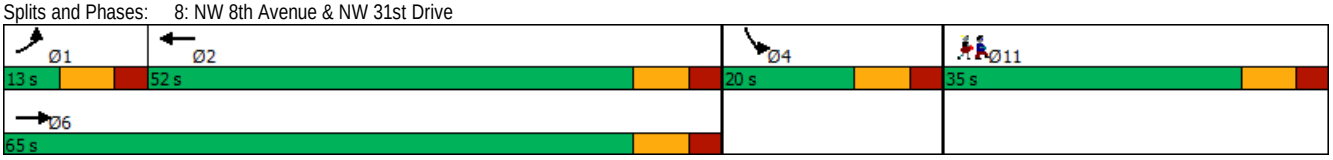
Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	55.2
HCM LOS			F

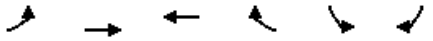
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	876	-	-	-	254
HCM Lane V/C Ratio	0.073	-	-	-	0.775
HCM Control Delay (s)	9.4	-	-	-	55.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	5.7

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø11
Lane Configurations							
Traffic Volume (vph)	63	591	612	98	123	70	
Future Volume (vph)	63	591	612	98	123	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%	0%		0%		
Storage Length (ft)	150			0	0	0	
Storage Lanes	1			0	1	0	
Taper Length (ft)	25				25		
Right Turn on Red				Yes		Yes	
Link Speed (mph)		20	35		25		
Link Distance (ft)		952	1847		1399		
Travel Time (s)		32.5	36.0		38.2		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Turn Type	Prot	NA	NA		Prot		
Protected Phases	1	6	2		4		11
Permitted Phases							
Detector Phase	1	6	2		4		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	13.0	13.0	13.0		13.0		35.0
Total Split (s)	13.0	65.0	52.0		20.0		35.0
Total Split (%)	10.8%	54.2%	43.3%		16.7%		29%
Yellow Time (s)	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	3.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		
Total Lost Time (s)	8.0	8.0	8.0		8.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	None	None		None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 85	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	591	612	98	123	70
Future Volume (vph)	63	591	612	98	123	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.98		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1770	3539	1828		1717	
Flt Permitted	0.95	1.00	1.00		0.97	
Satd. Flow (perm)	1770	3539	1828		1717	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	64	603	624	100	126	71
RTOR Reduction (vph)	0	0	4	0	16	0
Lane Group Flow (vph)	64	603	720	0	181	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	5.0	57.0	44.0		12.0	
Effective Green, g (s)	5.0	57.0	44.0		12.0	
Actuated g/C Ratio	0.06	0.67	0.52		0.14	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	104	2373	946		242	
v/s Ratio Prot	c0.04	0.17	c0.39		c0.11	
v/s Ratio Perm						
v/c Ratio	0.62	0.25	0.76		0.75	
Uniform Delay, d1	39.1	5.6	16.3		35.0	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	10.3	0.1	3.7		11.8	
Delay (s)	49.4	5.6	20.0		46.9	
Level of Service	D	A	B		D	
Approach Delay (s)		9.8	20.0		46.9	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

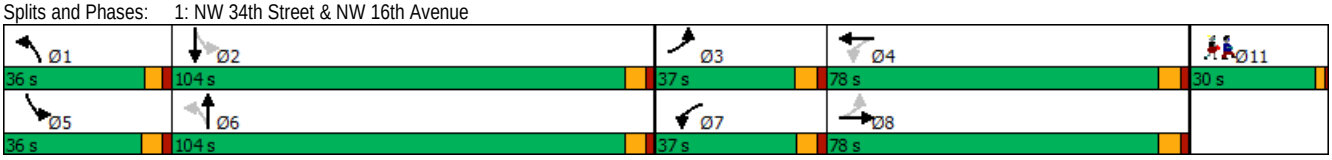
c Critical Lane Group

Westwood Middle School Scenario – Existing Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70	
Future Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 135.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70
Future Volume (vph)	71	517	112	99	556	42	124	301	85	67	396	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3445		1770	3502		1752	1784		1752	1803	
Flt Permitted	0.31	1.00		0.20	1.00		0.22	1.00		0.34	1.00	
Satd. Flow (perm)	582	3445		367	3502		405	1784		629	1803	
Peak-hour factor, PHF	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)	74	539	117	103	579	44	129	314	89	70	412	73
RTOR Reduction (vph)	0	6	0	0	2	0	0	3	0	0	2	0
Lane Group Flow (vph)	74	650	0	103	621	0	129	400	0	70	484	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	44.4	36.8		54.3	41.7		60.5	49.4		57.0	47.9	
Effective Green, g (s)	45.4	37.3		55.3	42.2		61.5	49.9		58.0	48.4	
Actuated g/C Ratio	0.34	0.28		0.41	0.31		0.46	0.37		0.43	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	268	958		288	1102		302	664		352	651	
v/s Ratio Prot	0.02	c0.19		c0.03	c0.18		c0.04	0.22		0.01	c0.27	
v/s Ratio Perm	0.08			0.11			0.16			0.07		
v/c Ratio	0.28	0.68		0.36	0.56		0.43	0.60		0.20	0.74	
Uniform Delay, d1	30.9	43.0		26.5	38.2		24.4	34.0		23.6	37.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5		0.3	0.4		0.4	1.5		0.1	4.6	
Delay (s)	31.1	44.5		26.8	38.6		24.8	35.6		23.7	42.0	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		43.2			37.0			33.0			39.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	27.2
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	643	27	102	667	24	93
Future Vol, veh/h	643	27	102	667	24	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	691	29	110	717	26	100

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	720	0	1285	360
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	877	-	156	637
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	877	-	137	637
Mov Cap-2 Maneuver	-	-	-	-	137	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	459	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	877	-
HCM Lane V/C Ratio	0.346	-	-	0.125	-
HCM Control Delay (s)	20	-	-	9.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	92	410	40	131	481
Future Vol, veh/h	24	92	410	40	131	481
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	27	102	456	44	146	534

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1304	478	0	0	500	0
Stage 1	478	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	177	587	-	-	1054	-
Stage 1	624	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	152	587	-	-	1054	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	370	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	475	1054	-
HCM Lane V/C Ratio	-	-	0.271	0.138	-
HCM Control Delay (s)	-	-	15.4	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.5	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	69	45	36	75	54
Future Vol, veh/h	79	69	45	36	75	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	94	82	54	43	89	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	272	121	153	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	715	928	1415	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	687	928	1415	-	-	-
Mov Cap-2 Maneuver	687	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	874	-	-	-	-	-

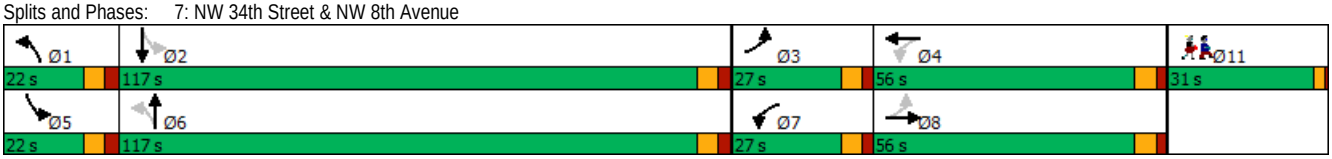
Approach	EB	NB	SB
HCM Control Delay, s	10.3	4.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1415	-	687	928	-	-
HCM Lane V/C Ratio	0.038	-	0.137	0.089	-	-
HCM Control Delay (s)	7.6	0	11.1	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47	
Future Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 114.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47
Future Volume (vph)	68	388	35	132	354	25	32	345	141	21	419	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3495		1770	3504		1770	1782		1770	1835	
Flt Permitted	0.51	1.00		0.26	1.00		0.25	1.00		0.25	1.00	
Satd. Flow (perm)	943	3495		481	3504		457	1782		460	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	431	39	147	393	28	36	383	157	23	466	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	76	470	0	147	421	0	36	540	0	23	518	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.2	24.8		45.7	32.1		51.5	47.2		49.1	46.0	
Effective Green, g (s)	33.2	25.3		46.2	32.6		52.5	47.7		50.1	46.5	
Actuated g/C Ratio	0.29	0.22		0.40	0.28		0.45	0.41		0.43	0.40	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	326	763		361	986		261	734		239	736	
v/s Ratio Prot	0.02	c0.13		c0.05	c0.12		c0.01	c0.30		0.00	0.28	
v/s Ratio Perm	0.05			0.11			0.06			0.04		
v/c Ratio	0.23	0.62		0.41	0.43		0.14	0.74		0.10	0.70	
Uniform Delay, d1	30.8	40.9		23.9	34.0		20.0	28.7		21.0	28.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.3	0.1		0.1	3.8		0.1	3.1	
Delay (s)	30.9	41.9		24.2	34.1		20.1	32.6		21.0	32.0	
Level of Service	C	D		C	C		C	C		C	C	
Approach Delay (s)		40.4			31.5			31.8			31.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	115.8	Sum of lost time (s)	27.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	506	442	45	71	57
Future Vol, veh/h	32	506	442	45	71	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	602	526	54	85	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	580	0	-	0	930	553
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	992	-	-	-	281	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	992	-	-	-	270	532
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	664	-

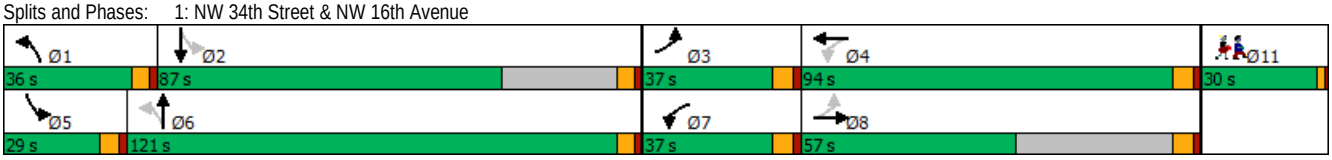
Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	23.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	992	-	-	-	346
HCM Lane V/C Ratio	0.038	-	-	-	0.44
HCM Control Delay (s)	8.8	-	-	-	23.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80	
Future Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	57.0		37.0	94.0		36.0	121.0		29.0	87.0		30.0
Total Split (%)	11.9%	18.3%		11.9%	30.2%		11.6%	38.9%		9.3%	28.0%		10%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 311	
Actuated Cycle Length: 176.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80
Future Volume (vph)	101	657	135	112	647	88	134	421	78	75	343	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3475		1770	1819		1770	1810	
Flt Permitted	0.19	1.00		0.11	1.00		0.25	1.00		0.18	1.00	
Satd. Flow (perm)	350	3449		201	3475		459	1819		344	1810	
Peak-hour factor, PHF	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)	111	722	148	123	711	97	147	463	86	82	377	88
RTOR Reduction (vph)	0	6	0	0	3	0	0	2	0	0	2	0
Lane Group Flow (vph)	111	864	0	123	805	0	147	547	0	82	463	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.3	53.9		74.8	58.6		81.3	67.3		77.0	65.4	
Effective Green, g (s)	66.3	54.4		75.8	59.1		82.3	67.8		78.0	65.9	
Actuated g/C Ratio	0.38	0.31		0.43	0.34		0.47	0.39		0.45	0.38	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	229	1071		236	1172		324	704		251	681	
v/s Ratio Prot	0.03	c0.25		c0.05	c0.23		c0.04	c0.30		0.02	0.26	
v/s Ratio Perm	0.15			0.18			0.18			0.12		
v/c Ratio	0.48	0.81		0.52	0.69		0.45	0.78		0.33	0.68	
Uniform Delay, d1	38.2	55.5		35.9	50.0		30.8	47.0		33.1	45.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	4.3		1.0	1.3		0.4	5.4		0.3	2.7	
Delay (s)	38.8	59.8		36.8	51.4		31.1	52.4		33.4	48.4	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		57.4			49.4			47.9			46.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	175.1	Sum of lost time (s)	27.2
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	36	78	797	32	134
Future Vol, veh/h	767	36	78	797	32	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	852	40	87	886	36	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	892	0	1489	446
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	617	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	756	-	115	560
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	756	-	102	560
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	34.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	300	-	-	756	-
HCM Lane V/C Ratio	0.615	-	-	0.115	-
HCM Control Delay (s)	34.4	-	-	10.4	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	3.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	94	503	21	57	530
Future Vol, veh/h	25	94	503	21	57	530
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	99	529	22	60	558

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1218	540	0	0	551	0
Stage 1	540	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	199	542	-	-	1019	-
Stage 1	584	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	187	542	-	-	1019	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	474	1019	-
HCM Lane V/C Ratio	-	-	0.264	0.059	-
HCM Control Delay (s)	-	-	15.3	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	63	42	39	94	70	40
Future Vol, veh/h	63	42	39	94	70	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	61	57	136	101	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	380	130	159	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	622	920	1420	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	595	920	1420	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	792	-	-	-	-	-

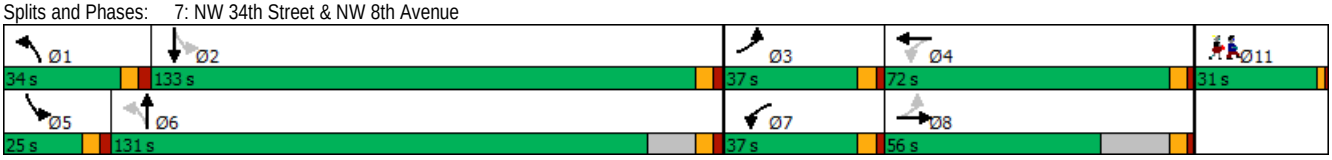
Approach	EB	NB	SB
HCM Control Delay, s	10.9	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1420	-	595	920	-	-
HCM Lane V/C Ratio	0.04	-	0.153	0.066	-	-
HCM Control Delay (s)	7.6	0	12.1	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87	
Future Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	37.0	56.0		37.0	72.0		34.0	131.0		25.0	133.0		31.0
Total Split (%)	12.1%	18.2%		12.1%	23.5%		11.1%	42.7%		8.1%	43.3%		10%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 307	
Actuated Cycle Length: 177.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87
Future Volume (vph)	71	475	39	171	459	36	57	461	135	28	462	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3501		1770	1799		1770	1818	
Flt Permitted	0.44	1.00		0.19	1.00		0.17	1.00		0.15	1.00	
Satd. Flow (perm)	825	3499		357	3501		324	1799		280	1818	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	79	528	43	190	510	40	63	512	150	31	513	97
RTOR Reduction (vph)	0	2	0	0	1	0	0	3	0	0	2	0
Lane Group Flow (vph)	79	569	0	190	549	0	63	659	0	31	608	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	51.1	42.1		74.0	58.8		86.2	78.7		82.0	76.6	
Effective Green, g (s)	52.1	42.6		74.5	59.3		87.2	79.2		83.0	77.1	
Actuated g/C Ratio	0.29	0.24		0.42	0.33		0.49	0.45		0.47	0.43	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	292	837		357	1167		223	800		180	787	
v/s Ratio Prot	0.01	c0.16		c0.08	0.16		c0.01	c0.37		0.01	0.33	
v/s Ratio Perm	0.06			0.14			0.13			0.07		
v/c Ratio	0.27	0.68		0.53	0.47		0.28	0.82		0.17	0.77	
Uniform Delay, d1	46.6	61.5		36.4	46.9		30.8	43.2		32.8	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.8		0.8	0.1		0.3	6.9		0.2	4.7	
Delay (s)	46.7	63.3		37.1	47.0		31.1	50.1		33.0	47.7	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		61.3			44.5			48.4			46.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	177.9	Sum of lost time (s)	27.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	585	606	50	52	69
Future Vol, veh/h	62	585	606	50	52	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	597	618	51	53	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	669	0	-	0	1069	644
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	425	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	919	-	-	-	230	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	919	-	-	-	214	472
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	24
HCM LOS			C

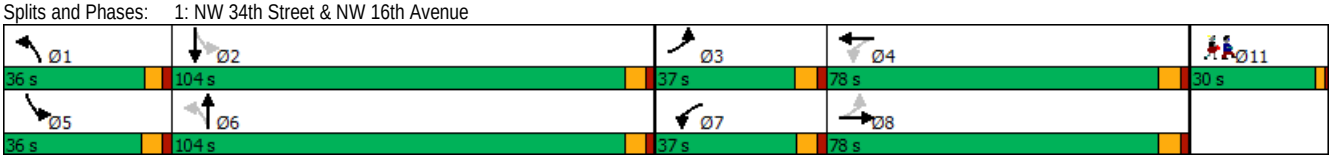
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	919	-	-	-	311
HCM Lane V/C Ratio	0.069	-	-	-	0.397
HCM Control Delay (s)	9.2	-	-	-	24
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8

Westwood Middle School Scenario – Temporary (2021-22) Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	72	527	114	101	567	43	126	307	87	68	404	71	
Future Volume (vph)	72	527	114	101	567	43	126	307	87	68	404	71	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 139.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	527	114	101	567	43	126	307	87	68	404	71
Future Volume (vph)	72	527	114	101	567	43	126	307	87	68	404	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3445		1770	3502		1752	1783		1752	1803	
Flt Permitted	0.30	1.00		0.19	1.00		0.21	1.00		0.34	1.00	
Satd. Flow (perm)	564	3445		353	3502		392	1783		619	1803	
Peak-hour factor, PHF	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)	75	549	119	105	591	45	131	320	91	71	421	74
RTOR Reduction (vph)	0	6	0	0	2	0	0	3	0	0	2	0
Lane Group Flow (vph)	75	662	0	105	634	0	131	408	0	71	493	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	45.7	38.0		56.0	43.1		62.8	51.4		58.9	49.7	
Effective Green, g (s)	46.7	38.5		57.0	43.6		63.8	51.9		59.9	50.2	
Actuated g/C Ratio	0.34	0.28		0.41	0.32		0.46	0.38		0.44	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	263	963		284	1109		299	672		349	657	
v/s Ratio Prot	0.02	c0.19		c0.04	c0.18		c0.04	0.23		0.01	c0.27	
v/s Ratio Perm	0.08			0.12			0.17			0.07		
v/c Ratio	0.29	0.69		0.37	0.57		0.44	0.61		0.20	0.75	
Uniform Delay, d1	31.8	44.2		27.3	39.2		25.0	34.6		24.1	38.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.6		0.3	0.4		0.4	1.6		0.1	4.8	
Delay (s)	32.0	45.8		27.6	39.7		25.4	36.2		24.2	43.0	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		44.4			37.9			33.6			40.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	137.6	Sum of lost time (s)	27.2
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	656	28	104	680	24	95
Future Vol, veh/h	656	28	104	680	24	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	705	30	112	731	26	102

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	735	0	1310	368
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	590	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	866	-	151	629
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	132	629
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	450	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	358	-	-	866	-
HCM Lane V/C Ratio	0.357	-	-	0.129	-
HCM Control Delay (s)	20.5	-	-	9.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	94	418	41	134	491
Future Vol, veh/h	24	94	418	41	134	491
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	27	104	464	46	149	546

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1331	487	0	0	510	0
Stage 1	487	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	170	581	-	-	1045	-
Stage 1	618	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	581	-	-	1045	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	470	1045	-
HCM Lane V/C Ratio	-	-	0.279	0.142	-
HCM Control Delay (s)	-	-	15.6	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.5	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	163	103	105	124	8
Future Vol, veh/h	13	163	103	105	124	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	15	194	123	125	148	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	524	153	158	0	-	0
Stage 1	153	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	512	890	1409	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	464	890	1409	-	-	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	696	-	-	-	-	-

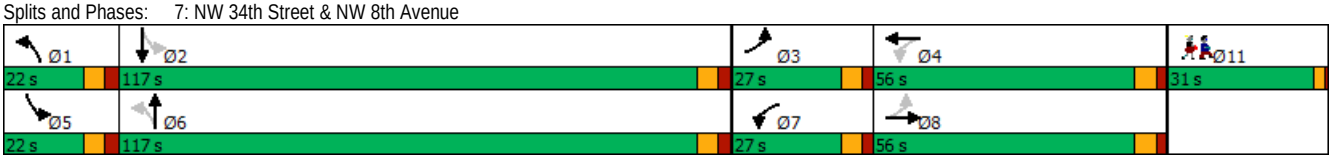
Approach	EB	NB	SB
HCM Control Delay, s	10.4	3.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1409	-	464	890	-	-
HCM Lane V/C Ratio	0.087	-	0.033	0.218	-	-
HCM Control Delay (s)	7.8	0	13	10.2	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	69	396	36	135	361	26	33	352	144	21	427	48	
Future Volume (vph)	69	396	36	135	361	26	33	352	144	21	427	48	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 117	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	396	36	135	361	26	33	352	144	21	427	48
Future Volume (vph)	69	396	36	135	361	26	33	352	144	21	427	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3495		1770	3503		1770	1782		1770	1835	
Flt Permitted	0.50	1.00		0.25	1.00		0.24	1.00		0.24	1.00	
Satd. Flow (perm)	934	3495		465	3503		447	1782		445	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	440	40	150	401	29	37	391	160	23	474	53
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	480	0	150	430	0	37	551	0	23	527	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	33.0	25.5		46.8	33.1		53.3	48.9		50.9	47.7	
Effective Green, g (s)	34.0	26.0		47.3	33.6		54.3	49.4		51.9	48.2	
Actuated g/C Ratio	0.29	0.22		0.40	0.28		0.46	0.42		0.44	0.41	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	323	765		356	991		259	741		235	745	
v/s Ratio Prot	0.02	c0.14		c0.06	c0.12		c0.01	c0.31		0.00	0.29	
v/s Ratio Perm	0.05			0.11			0.06			0.04		
v/c Ratio	0.24	0.63		0.42	0.43		0.14	0.74		0.10	0.71	
Uniform Delay, d1	31.6	42.0		24.6	34.8		20.4	29.3		21.3	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.2		0.3	0.1		0.1	4.1		0.1	3.1	
Delay (s)	31.7	43.1		24.9	34.9		20.5	33.4		21.4	32.5	
Level of Service	C	D		C	C		C	C		C	C	
Approach Delay (s)		41.6			32.3			32.5			32.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	27.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	516	451	46	72	58
Future Vol, veh/h	33	516	451	46	72	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	614	537	55	86	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	592	0	-	0	950	565
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	982	-	-	-	273	523
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	658	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	262	523
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	658	-

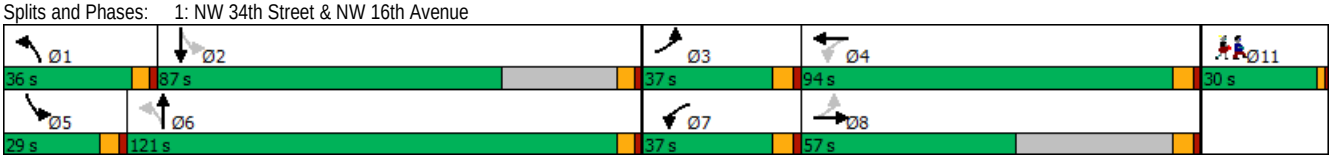
Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	24.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	982	-	-	-	337
HCM Lane V/C Ratio	0.04	-	-	-	0.459
HCM Control Delay (s)	8.8	-	-	-	24.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	103	670	138	114	660	90	137	429	80	77	350	82	
Future Volume (vph)	103	670	138	114	660	90	137	429	80	77	350	82	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
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	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	57.0		37.0	94.0		36.0	121.0		29.0	87.0		30.0
Total Split (%)	11.9%	18.3%		11.9%	30.2%		11.6%	38.9%		9.3%	28.0%		10%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 311	
Actuated Cycle Length: 181.5	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	670	138	114	660	90	137	429	80	77	350	82
Future Volume (vph)	103	670	138	114	660	90	137	429	80	77	350	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3448		1770	3475		1770	1819		1770	1810	
Flt Permitted	0.18	1.00		0.10	1.00		0.23	1.00		0.18	1.00	
Satd. Flow (perm)	332	3448		188	3475		436	1819		328	1810	
Peak-hour factor, PHF	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)	113	736	152	125	725	99	151	471	88	85	385	90
RTOR Reduction (vph)	0	5	0	0	3	0	0	2	0	0	2	0
Lane Group Flow (vph)	113	883	0	125	821	0	151	557	0	85	473	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	67.9	55.8		77.2	60.4		84.0	69.5		79.1	67.3	
Effective Green, g (s)	68.9	56.3		78.2	60.9		85.0	70.0		80.1	67.8	
Actuated g/C Ratio	0.38	0.31		0.43	0.34		0.47	0.39		0.44	0.38	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	227	1078		233	1175		317	707		244	681	
v/s Ratio Prot	0.03	c0.26		c0.05	c0.24		c0.04	c0.31		0.02	0.26	
v/s Ratio Perm	0.16			0.18			0.19			0.13		
v/c Ratio	0.50	0.82		0.54	0.70		0.48	0.79		0.35	0.69	
Uniform Delay, d1	39.1	57.1		37.1	51.6		31.9	48.5		34.5	47.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	4.7		1.2	1.5		0.4	5.8		0.3	3.1	
Delay (s)	39.7	61.8		38.3	53.1		32.3	54.3		34.8	50.4	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		59.3			51.1			49.6			48.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.2
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	782	37	80	813	33	137
Future Vol, veh/h	782	37	80	813	33	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	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	869	41	89	903	37	152

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	910	0	1520	455
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	744	-	109	552
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	493	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	744	-	96	552
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	434	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	38.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	287	-	-	744	-
HCM Lane V/C Ratio	0.658	-	-	0.119	-
HCM Control Delay (s)	38.8	-	-	10.5	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	4.3	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	96	513	21	58	541
Future Vol, veh/h	26	96	513	21	58	541
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	101	540	22	61	569

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1242	551	0	0	562	0
Stage 1	551	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	193	534	-	-	1009	-
Stage 1	577	-	-	-	-	-
Stage 2	497	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	181	534	-	-	1009	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	467	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	466	1009	-
HCM Lane V/C Ratio	-	-	0.276	0.061	-
HCM Control Delay (s)	-	-	15.6	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	66	89	138	98	14
Future Vol, veh/h	22	66	89	138	98	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	96	129	200	142	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	610	152	162	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	458	894	1417	-	-	-
Stage 1	876	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	411	894	1417	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	637	-	-	-	-	-

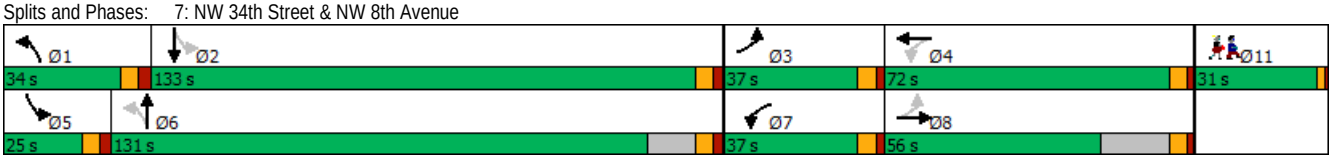
Approach	EB	NB	SB
HCM Control Delay, s	10.8	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1417	-	411	894	-	-
HCM Lane V/C Ratio	0.091	-	0.078	0.107	-	-
HCM Control Delay (s)	7.8	0	14.5	9.5	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	72	485	40	174	468	37	58	470	138	29	471	89	
Future Volume (vph)	72	485	40	174	468	37	58	470	138	29	471	89	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	37.0	56.0		37.0	72.0		34.0	131.0		25.0	133.0		31.0
Total Split (%)	12.1%	18.2%		12.1%	23.5%		11.1%	42.7%		8.1%	43.3%		10%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 307	
Actuated Cycle Length: 181.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	485	40	174	468	37	58	470	138	29	471	89
Future Volume (vph)	72	485	40	174	468	37	58	470	138	29	471	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3500		1770	1799		1770	1818	
Flt Permitted	0.43	1.00		0.18	1.00		0.17	1.00		0.14	1.00	
Satd. Flow (perm)	806	3499		340	3500		309	1799		269	1818	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	80	539	44	193	520	41	64	522	153	32	523	99
RTOR Reduction (vph)	0	2	0	0	1	0	0	3	0	0	2	0
Lane Group Flow (vph)	80	581	0	193	560	0	64	672	0	32	620	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	52.3	43.1		75.7	60.3		89.0	81.4		84.2	79.0	
Effective Green, g (s)	53.3	43.6		76.2	60.8		90.0	81.9		85.2	79.5	
Actuated g/C Ratio	0.29	0.24		0.42	0.33		0.49	0.45		0.47	0.44	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	287	837		353	1168		217	809		172	793	
v/s Ratio Prot	0.01	c0.17		c0.08	0.16		c0.01	c0.37		0.01	0.34	
v/s Ratio Perm	0.07			0.15			0.13			0.08		
v/c Ratio	0.28	0.69		0.55	0.48		0.29	0.83		0.19	0.78	
Uniform Delay, d1	47.7	63.2		37.5	48.1		31.7	44.0		33.8	43.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.0		0.9	0.1		0.3	7.2		0.2	5.0	
Delay (s)	47.9	65.2		38.4	48.2		32.0	51.2		34.0	48.9	
Level of Service	D	E		D	D		C	D		C	D	
Approach Delay (s)		63.1			45.7			49.6			48.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	182.1	Sum of lost time (s)	27.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	597	618	51	53	70
Future Vol, veh/h	63	597	618	51	53	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	609	631	52	54	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	683	0	-	0	1090	657
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	908	-	-	-	223	464
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	908	-	-	-	207	464
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	25.1
HCM LOS			D

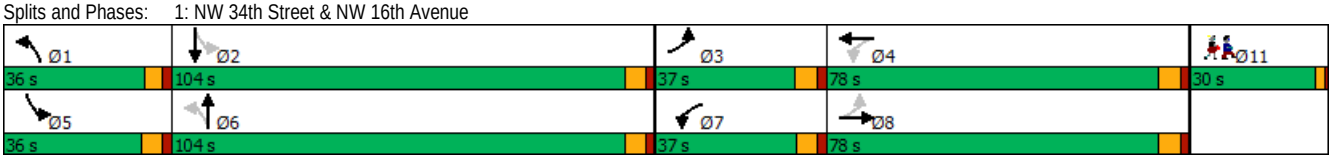
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	908	-	-	-	302
HCM Lane V/C Ratio	0.071	-	-	-	0.416
HCM Control Delay (s)	9.3	-	-	-	25.1
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	2

Littlewood Elementary School Scenario – Existing Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	50	596	125	68	504	36	84	242	77	150	404	60	
Future Volume (vph)	50	596	125	68	504	36	84	242	77	150	404	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 180.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	596	125	68	504	36	84	242	77	150	404	60
Future Volume (vph)	50	596	125	68	504	36	84	242	77	150	404	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3447		1770	3504		1752	1778		1752	1809	
Flt Permitted	0.30	1.00		0.15	1.00		0.17	1.00		0.26	1.00	
Satd. Flow (perm)	564	3447		274	3504		315	1778		478	1809	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	61	727	152	83	615	44	102	295	94	183	493	73
RTOR Reduction (vph)	0	5	0	0	1	0	0	4	0	0	2	0
Lane Group Flow (vph)	61	874	0	83	658	0	102	385	0	183	564	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	72.0	64.4		80.5	68.6		69.1	58.6		83.7	67.4	
Effective Green, g (s)	73.0	64.9		81.5	69.1		70.1	59.1		84.2	67.9	
Actuated g/C Ratio	0.41	0.36		0.45	0.38		0.39	0.33		0.47	0.38	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	283	1244		227	1346		210	584		360	683	
v/s Ratio Prot	0.01	c0.25		c0.03	c0.19		0.03	0.22		c0.05	c0.31	
v/s Ratio Perm	0.08			0.14			0.16			0.18		
v/c Ratio	0.22	0.70		0.37	0.49		0.49	0.66		0.51	0.83	
Uniform Delay, d1	33.6	49.2		32.8	42.0		39.8	51.7		32.2	50.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.5		0.4	0.1		0.6	2.7		0.4	8.1	
Delay (s)	33.8	50.7		33.1	42.1		40.5	54.4		32.6	58.7	
Level of Service	C	D		C	D		D	D		C	E	
Approach Delay (s)		49.6			41.1			51.5			52.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	179.8	Sum of lost time (s)	27.2
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	795	19	52	608	5	47
Future Vol, veh/h	795	19	52	608	5	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	994	24	65	760	6	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1018	0	1516	509
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	677	-	110	509
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	677	-	99	509
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	677	-
HCM Lane V/C Ratio	0.179	-	-	0.096	-
HCM Control Delay (s)	17	-	-	10.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.6	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	29	368	15	63	516
Future Vol, veh/h	13	29	368	15	63	516
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	16	35	449	18	77	629

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1241	458	0	0	467	0
Stage 1	458	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	193	603	-	-	1084	-
Stage 1	637	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	179	603	-	-	1084	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	464	1084	-
HCM Lane V/C Ratio	-	-	0.11	0.071	-
HCM Control Delay (s)	-	-	13.7	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	34	21	31	48	27
Future Vol, veh/h	30	34	21	31	48	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	45	51	31	46	72	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	200	92	112	0	-	0
Stage 1	92	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	786	963	1465	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	769	963	1465	-	-	-
Mov Cap-2 Maneuver	769	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	914	-	-	-	-	-

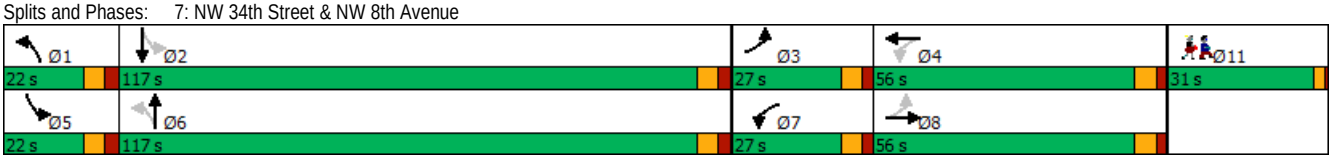
Approach	EB	NB	SB
HCM Control Delay, s	9.4	3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1465	-	769	963	-	-
HCM Lane V/C Ratio	0.021	-	0.058	0.053	-	-
HCM Control Delay (s)	7.5	0	10	8.9	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	49	455	33	113	374	38	133	342	142	36	380	74	
Future Volume (vph)	49	455	33	113	374	38	133	342	142	36	380	74	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 140.3	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	455	33	113	374	38	133	342	142	36	380	74
Future Volume (vph)	49	455	33	113	374	38	133	342	142	36	380	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3503		1770	3490		1770	1781		1770	1817	
Flt Permitted	0.42	1.00		0.19	1.00		0.18	1.00		0.24	1.00	
Satd. Flow (perm)	790	3503		348	3490		338	1781		453	1817	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	59	548	40	136	451	46	160	412	171	43	458	89
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	59	588	0	136	497	0	160	583	0	43	547	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	40.3	33.2		54.4	41.1		73.3	61.4		60.3	54.9	
Effective Green, g (s)	41.3	33.7		54.9	41.6		74.1	61.9		61.3	55.4	
Actuated g/C Ratio	0.29	0.24		0.39	0.30		0.53	0.44		0.43	0.39	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	284	837		291	1029		303	781		252	713	
v/s Ratio Prot	0.01	c0.17		c0.05	c0.14		c0.05	c0.33		0.01	0.30	
v/s Ratio Perm	0.05			0.13			0.23			0.07		
v/c Ratio	0.21	0.70		0.47	0.48		0.53	0.75		0.17	0.77	
Uniform Delay, d1	36.5	49.1		30.6	40.9		23.5	33.0		25.4	37.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.2		0.4	0.1		0.8	3.9		0.1	5.0	
Delay (s)	36.6	51.3		31.0	41.0		24.3	36.9		25.6	42.2	
Level of Service	D	D		C	D		C	D		C	D	
Approach Delay (s)		49.9			38.8			34.2			40.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	141.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	594	494	23	37	53
Future Vol, veh/h	36	594	494	23	37	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	752	625	29	47	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	654	0	-	0	1108	640
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	931	-	-	-	218	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	931	-	-	-	207	474
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	597	-

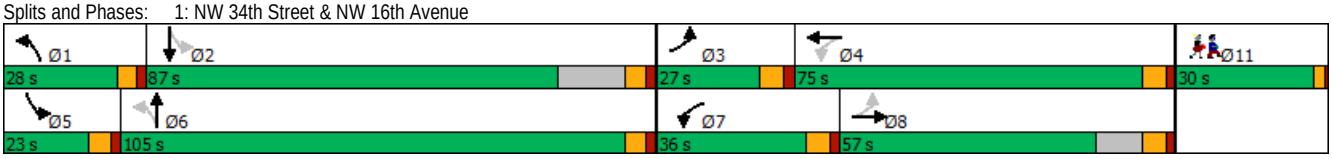
Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	23.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	931	-	-	-	310
HCM Lane V/C Ratio	0.049	-	-	-	0.367
HCM Control Delay (s)	9.1	-	-	-	23.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø11
Lane Configurations									
Traffic Volume (vph)	65	504	119	519	114	374	49	333	
Future Volume (vph)	65	504	119	519	114	374	49	333	
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	
Protected Phases	3	8	7	4	1	6	5	2	11
Permitted Phases	8		4		6		2		
Detector Phase	3	8	7	4	1	6	5	2	
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.8	29.8	11.7	29.8	10.8	33.3	11.3	33.3	30.0
Total Split (s)	27.0	57.0	36.0	75.0	28.0	105.0	23.0	87.0	30.0
Total Split (%)	10.4%	21.9%	13.8%	28.8%	10.8%	40.4%	8.8%	33.5%	12%
Yellow Time (s)	4.8	4.8	4.7	4.8	3.8	4.3	4.3	4.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
Total Lost Time (s)	6.3	6.3	6.2	6.3	5.3	5.8	5.8	5.8	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	42.0	34.1	54.0	40.4	57.2	47.9	50.3	42.3	
Actuated g/C Ratio	0.33	0.27	0.43	0.32	0.45	0.38	0.40	0.33	
v/c Ratio	0.24	0.70	0.41	0.54	0.39	0.72	0.19	0.74	
Control Delay	26.1	46.6	27.5	38.0	24.6	43.1	23.0	46.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.1	46.6	27.5	38.0	24.6	43.1	23.0	46.5	
LOS	C	D	C	D	C	D	C	D	
Approach Delay		44.6		36.2		39.5		44.1	
Approach LOS		D		D		D		D	

Intersection Summary		
Cycle Length: 260		
Actuated Cycle Length: 126.4		
Natural Cycle: 120		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.74		
Intersection Signal Delay: 40.9	Intersection LOS: D	
Intersection Capacity Utilization 73.5%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	504	110	119	519	53	114	374	91	49	333	88
Future Volume (vph)	65	504	110	119	519	53	114	374	91	49	333	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3444		1770	3490		1770	1808		1770	1804	
Flt Permitted	0.35	1.00		0.19	1.00		0.24	1.00		0.26	1.00	
Satd. Flow (perm)	645	3444		345	3490		440	1808		484	1804	
Peak-hour factor, PHF	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)	69	536	117	127	552	56	121	398	97	52	354	94
RTOR Reduction (vph)	0	7	0	0	3	0	0	3	0	0	4	0
Lane Group Flow (vph)	69	646	0	127	605	0	121	492	0	52	444	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	41.0	33.6		53.7	39.9		57.7	47.4		49.6	43.6	
Effective Green, g (s)	42.0	34.1		54.6	40.4		58.7	47.9		50.6	44.1	
Actuated g/C Ratio	0.33	0.27		0.43	0.32		0.46	0.38		0.40	0.35	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	283	925		309	1111		316	682		258	626	
v/s Ratio Prot	0.02	c0.19		c0.05	c0.17		c0.03	c0.27		0.01	0.25	
v/s Ratio Perm	0.07			0.13			0.14			0.07		
v/c Ratio	0.24	0.70		0.41	0.54		0.38	0.72		0.20	0.71	
Uniform Delay, d1	29.7	41.8		24.4	35.7		22.6	33.8		25.4	35.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.9		0.3	0.3		0.3	3.8		0.1	3.7	
Delay (s)	29.9	43.7		24.8	36.0		22.9	37.6		25.5	39.5	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		42.3			34.0			34.7			38.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	126.9	Sum of lost time (s)	27.2
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	642	6	26	678	14	39
Future Vol, veh/h	642	6	26	678	14	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	669	6	27	706	15	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	675	0	1079	338
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	407	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	912	-	213	658
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	912	-	207	658
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	418	-	-	912	-
HCM Lane V/C Ratio	0.132	-	-	0.03	-
HCM Control Delay (s)	14.9	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	27	541	14	16	546
Future Vol, veh/h	11	27	541	14	16	546
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	30	595	15	18	600

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1239	603	0	0	610	0
Stage 1	603	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	194	499	-	-	969	-
Stage 1	546	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	190	499	-	-	969	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	969	-
HCM Lane V/C Ratio	-	-	0.096	0.018	-
HCM Control Delay (s)	-	-	14.2	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	20	6	33	32	3
Future Vol, veh/h	21	20	6	33	32	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	29	9	48	46	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	114	48	50	0	-	0
Stage 1	48	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	882	1021	1557	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	1021	1557	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	957	-	-	-	-	-

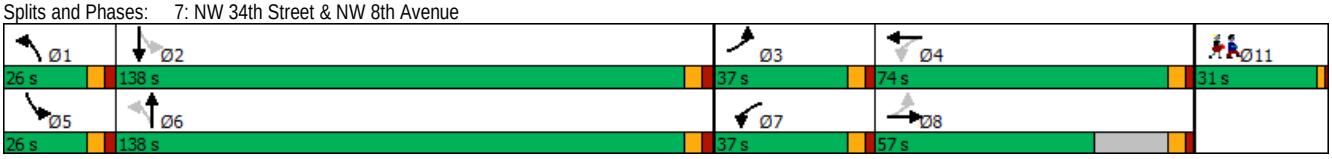
Approach	EB	NB	SB
HCM Control Delay, s	9	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1557	-	877	1021	-	-
HCM Lane V/C Ratio	0.006	-	0.035	0.028	-	-
HCM Control Delay (s)	7.3	0	9.3	8.6	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø11
Lane Configurations									
Traffic Volume (vph)	64	403	134	402	62	443	19	482	
Future Volume (vph)	64	403	134	402	62	443	19	482	
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	
Protected Phases	3	8	7	4	1	6	5	2	11
Permitted Phases	8		4		6		2		
Detector Phase	3	8	7	4	1	6	5	2	
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	4.0	15.0	4.0	15.0	7.0
Minimum Split (s)	10.2	29.2	10.2	28.2	10.8	34.8	10.8	31.8	31.0
Total Split (s)	37.0	57.0	37.0	74.0	26.0	138.0	26.0	138.0	31.0
Total Split (%)	12.1%	18.6%	12.1%	24.2%	8.5%	45.1%	8.5%	45.1%	10%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.7	2.7	2.7	2.7	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
Total Lost Time (s)	5.7	5.7	5.7	5.7	6.3	6.3	6.3	6.3	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	40.4	32.3	57.3	43.3	71.8	66.2	63.6	57.3	
Actuated g/C Ratio	0.28	0.23	0.40	0.30	0.50	0.46	0.44	0.40	
v/c Ratio	0.22	0.61	0.39	0.44	0.25	0.72	0.08	0.80	
Control Delay	33.0	55.2	33.6	42.6	22.7	40.1	21.3	48.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	33.0	55.2	33.6	42.6	22.7	40.1	21.3	48.7	
LOS	C	E	C	D	C	D	C	D	
Approach Delay		52.5		40.5		38.4		47.8	
Approach LOS		D		D		D		D	

Intersection Summary	
Cycle Length: 306	
Actuated Cycle Length: 143.3	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	403	59	134	402	43	62	443	134	19	482	80
Future Volume (vph)	64	403	59	134	402	43	62	443	134	19	482	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3472		1770	3488		1770	1798		1770	1823	
Flt Permitted	0.49	1.00		0.25	1.00		0.18	1.00		0.23	1.00	
Satd. Flow (perm)	904	3472		456	3488		336	1798		436	1823	
Peak-hour factor, PHF	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)	67	420	61	140	419	45	65	461	140	20	502	83
RTOR Reduction (vph)	0	4	0	0	2	0	0	3	0	0	2	0
Lane Group Flow (vph)	67	477	0	140	462	0	65	598	0	20	583	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	39.4	31.8		56.5	42.7		74.0	65.6		64.0	60.6	
Effective Green, g (s)	40.4	32.3		57.0	43.2		75.0	66.1		65.0	61.1	
Actuated g/C Ratio	0.28	0.22		0.39	0.30		0.52	0.45		0.45	0.42	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	299	771		350	1037		261	817		230	766	
v/s Ratio Prot	0.01	c0.14		c0.05	c0.13		c0.02	c0.33		0.00	c0.32	
v/s Ratio Perm	0.05			0.10			0.11			0.04		
v/c Ratio	0.22	0.62		0.40	0.45		0.25	0.73		0.09	0.76	
Uniform Delay, d1	39.4	50.9		30.5	41.3		23.4	32.4		25.3	35.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.0		0.3	0.1		0.2	3.4		0.1	4.5	
Delay (s)	39.5	52.0		30.8	41.5		23.6	35.8		25.3	40.4	
Level of Service	D	D		C	D		C	D		C	D	
Approach Delay (s)		50.5			39.0			34.6			39.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	145.3	Sum of lost time (s)	27.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	543	552	12	15	35
Future Vol, veh/h	27	543	552	12	15	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	566	575	13	16	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	588	0	-	0	921	582
Stage 1	-	-	-	-	582	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	985	-	-	-	285	512
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	985	-	-	-	277	512
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.1
HCM LOS			C

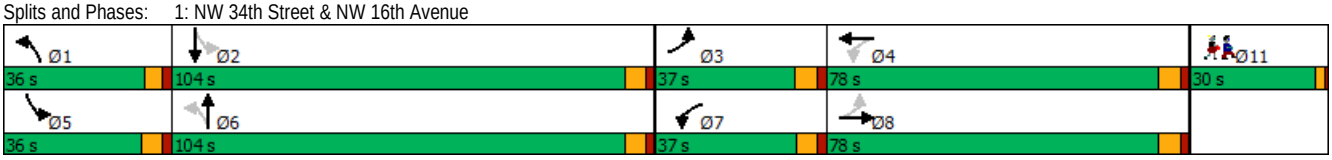
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	985	-	-	-	408
HCM Lane V/C Ratio	0.029	-	-	-	0.128
HCM Control Delay (s)	8.8	-	-	-	15.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Littlewood Elementary Scenario – Temporary (2022-23) Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	52	631	112	70	563	52	102	249	79	172	399	62	
Future Volume (vph)	52	631	112	70	563	52	102	249	79	172	399	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	225		0	435		0	130		0	70		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	50			50			50			50			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		20			20			20			40		
Link Distance (ft)		2375			968			409			1279		
Travel Time (s)		81.0			33.0			13.9			21.8		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.8	29.8		11.7	29.8		10.8	33.3		11.3	33.3		30.0
Total Split (s)	37.0	78.0		37.0	78.0		36.0	104.0		36.0	104.0		30.0
Total Split (%)	13.0%	27.4%		13.0%	27.4%		12.6%	36.5%		12.6%	36.5%		11%
Yellow Time (s)	4.8	4.8		4.7	4.8		3.8	4.3		4.3	4.3		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 285	
Actuated Cycle Length: 188.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	631	112	70	563	52	102	249	79	172	399	62
Future Volume (vph)	52	631	112	70	563	52	102	249	79	172	399	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3459		1770	3495		1752	1778		1752	1807	
Flt Permitted	0.26	1.00		0.15	1.00		0.15	1.00		0.23	1.00	
Satd. Flow (perm)	476	3459		274	3495		275	1778		418	1807	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	63	770	137	85	687	63	124	304	96	210	487	76
RTOR Reduction (vph)	0	4	0	0	2	0	0	4	0	0	2	0
Lane Group Flow (vph)	63	903	0	85	748	0	124	396	0	210	561	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	78.3	70.5		86.2	74.4		71.0	58.5		86.0	67.7	
Effective Green, g (s)	79.3	71.0		87.2	74.9		72.0	59.0		86.5	68.2	
Actuated g/C Ratio	0.42	0.38		0.46	0.40		0.38	0.31		0.46	0.36	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	257	1305		224	1391		207	557		346	655	
v/s Ratio Prot	0.01	c0.26		c0.02	c0.21		0.04	0.22		c0.07	c0.31	
v/s Ratio Perm	0.09			0.15			0.19			0.21		
v/c Ratio	0.25	0.69		0.38	0.54		0.60	0.71		0.61	0.86	
Uniform Delay, d1	34.0	49.3		33.4	43.3		43.4	57.0		35.8	55.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.3		0.4	0.2		3.1	4.3		2.1	10.7	
Delay (s)	34.2	50.6		33.8	43.5		46.5	61.3		37.9	66.1	
Level of Service	C	D		C	D		D	E		D	E	
Approach Delay (s)		49.6			42.6			57.8			58.4	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	188.1	Sum of lost time (s)	27.2
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	11

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	819	54	54	626	64	54
Future Vol, veh/h	819	54	54	626	64	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1024	68	68	783	80	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1092	0	1586	546
Stage 1	-	-	-	-	1058	-
Stage 2	-	-	-	-	528	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	635	-	99	482
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	635	-	88	482
Mov Cap-2 Maneuver	-	-	-	-	88	-
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	497	-

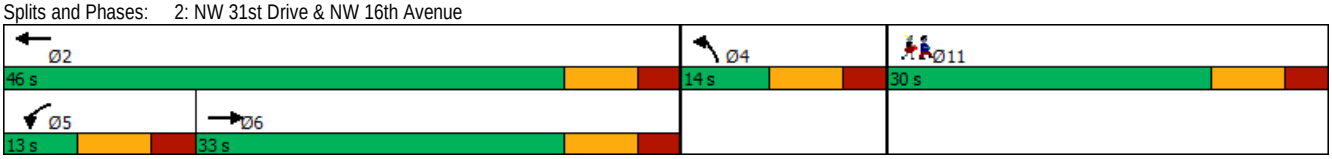
Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	151
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	141	-	-	635	-
HCM Lane V/C Ratio	1.046	-	-	0.106	-
HCM Control Delay (s)	151	-	-	11.3	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	7.9	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø11
Lane Configurations							
Traffic Volume (vph)	819	54	54	626	64	54	
Future Volume (vph)	819	54	54	626	64	54	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	160		0	0	
Storage Lanes		0	1		1	0	
Taper Length (ft)			0		25		
Right Turn on Red		Yes				Yes	
Link Speed (mph)	20			20	20		
Link Distance (ft)	968			1349	424		
Travel Time (s)	33.0			46.0	14.5		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%	0%		
Shared Lane Traffic (%)							
Turn Type	NA		Prot	NA	Prot		
Protected Phases	6		5	2	4		11
Permitted Phases							
Detector Phase	6		5	2	4		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	13.0		13.0	13.0	13.0		30.0
Total Split (s)	33.0		13.0	46.0	14.0		30.0
Total Split (%)	36.7%		14.4%	51.1%	15.6%		33%
Yellow Time (s)	5.0		5.0	5.0	5.0		5.0
All-Red Time (s)	3.0		3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	8.0		8.0	8.0	8.0		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None		None	None	None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 57.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	819	54	54	626	64	54
Future Volume (vph)	819	54	54	626	64	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.94	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3506		1770	3539	1701	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	3506		1770	3539	1701	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1024	68	68	782	80	68
RTOR Reduction (vph)	4	0	0	0	32	0
Lane Group Flow (vph)	1088	0	68	783	116	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	25.2		3.8	37.0	6.1	
Effective Green, g (s)	25.2		3.8	37.0	6.1	
Actuated g/C Ratio	0.43		0.06	0.63	0.10	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1494		113	2215	175	
v/s Ratio Prot	c0.31		0.04	c0.22	c0.07	
v/s Ratio Perm						
v/c Ratio	0.73		0.60	0.35	0.66	
Uniform Delay, d1	14.1		26.9	5.3	25.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.8		8.7	0.1	9.0	
Delay (s)	15.9		35.6	5.4	34.5	
Level of Service	B		D	A	C	
Approach Delay (s)	15.9			7.8	34.5	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	32.0	
Intersection Capacity Utilization	55.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	45	379	25	65	498
Future Vol, veh/h	22	45	379	25	65	498
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	27	55	462	30	79	607

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1242	477	0	0	492	0
Stage 1	477	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	193	588	-	-	1061	-
Stage 1	624	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	179	588	-	-	1061	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	425	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1061	-
HCM Lane V/C Ratio	-	-	0.18	0.075	-
HCM Control Delay (s)	-	-	14.7	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	45	46	96	83	28
Future Vol, veh/h	31	45	46	96	83	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	3	3	4	4	14	14
Mvmt Flow	46	67	69	143	124	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	426	145	166	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	583	900	1400	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	552	900	1400	-	-	-
Mov Cap-2 Maneuver	552	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	764	-	-	-	-	-

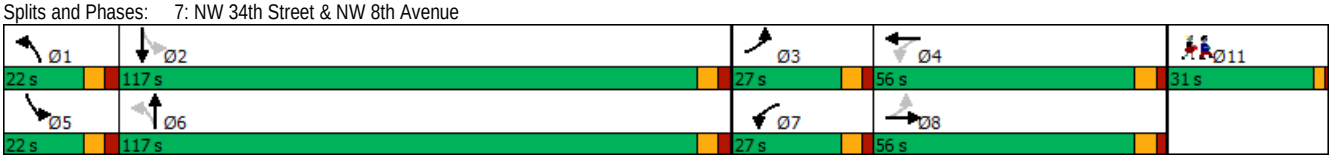
Approach	EB	NB	SB
HCM Control Delay, s	10.4	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1400	-	552	900	-	-
HCM Lane V/C Ratio	0.049	-	0.084	0.075	-	-
HCM Control Delay (s)	7.7	0	12.1	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø11
Lane Configurations													
Traffic Volume (vph)	50	598	20	145	457	39	89	352	194	37	392	32	
Future Volume (vph)	50	598	20	145	457	39	89	352	194	37	392	32	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12	
Grade (%)		0%			0%			0%			0%		
Storage Length (ft)	120		0	150		0	160		0	170		0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (ft)	100			25			25			0			
Right Turn on Red			No			No			No			No	
Link Speed (mph)		20			20			20			20		
Link Distance (ft)		716			952			919			247		
Travel Time (s)		24.4			32.5			31.3			8.4		
Confl. Peds. (#/hr)													
Confl. Bikes (#/hr)													
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)													
Mid-Block Traffic (%)		0%			0%			0%			0%		
Shared Lane Traffic (%)													
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		11
Permitted Phases	8			4			6			2			
Detector Phase	3	8		7	4		1	6		5	2		
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0		4.0	15.0		4.0	15.0		7.0
Minimum Split (s)	10.2	29.2		10.2	28.2		10.8	34.8		10.8	31.8		31.0
Total Split (s)	27.0	56.0		27.0	56.0		22.0	117.0		22.0	117.0		31.0
Total Split (%)	10.7%	22.1%		10.7%	22.1%		8.7%	46.2%		8.7%	46.2%		12%
Yellow Time (s)	4.1	4.1		4.1	4.1		4.1	4.1		4.1	4.1		2.0
All-Red Time (s)	2.1	2.1		2.1	2.1		2.7	2.7		2.7	2.7		1.0
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		-0.5	-0.5		
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3		
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Recall Mode	None	None		None	None		None	Min		None	Min		None

Intersection Summary	
Area Type:	Other
Cycle Length: 253	
Actuated Cycle Length: 177.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	598	20	145	457	39	89	352	194	37	392	32
Future Volume (vph)	50	598	20	145	457	39	89	352	194	37	392	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3522		1770	3497		1770	1763		1770	1841	
Flt Permitted	0.38	1.00		0.14	1.00		0.23	1.00		0.13	1.00	
Satd. Flow (perm)	716	3522		258	3497		420	1763		237	1841	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	60	720	24	175	551	47	107	424	234	45	472	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	744	0	175	598	0	107	658	0	45	511	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	58.4	50.7		78.1	64.2		84.6	74.9		77.6	71.4	
Effective Green, g (s)	59.4	51.2		78.6	64.7		85.6	75.4		78.6	71.9	
Actuated g/C Ratio	0.33	0.29		0.44	0.36		0.48	0.42		0.44	0.40	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	285	1007		296	1263		277	742		161	739	
v/s Ratio Prot	0.01	c0.21		c0.07	0.17		c0.02	c0.37		0.01	0.28	
v/s Ratio Perm	0.06			0.19			0.16			0.11		
v/c Ratio	0.21	0.74		0.59	0.47		0.39	0.89		0.28	0.69	
Uniform Delay, d1	41.4	57.8		36.0	44.0		30.9	47.9		36.3	44.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.5		2.1	0.1		0.3	12.4		0.3	2.8	
Delay (s)	41.6	60.3		38.1	44.1		31.3	60.2		36.6	47.2	
Level of Service	D	E		D	D		C	E		D	D	
Approach Delay (s)		58.9			42.8			56.2			46.3	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	51.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	179.0	Sum of lost time (s)	27.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	80.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	258	568	441	92	67	224
Future Vol, veh/h	258	568	441	92	67	224
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	327	719	558	116	85	284

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	674	0	-	0	1630	616
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	1014	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	915	-	-	-	102	490
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	312	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	915	-	-	-	~ 66	490
Mov Cap-2 Maneuver	-	-	-	-	~ 66	-
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	312	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	$ 446.3
HCM LOS			F

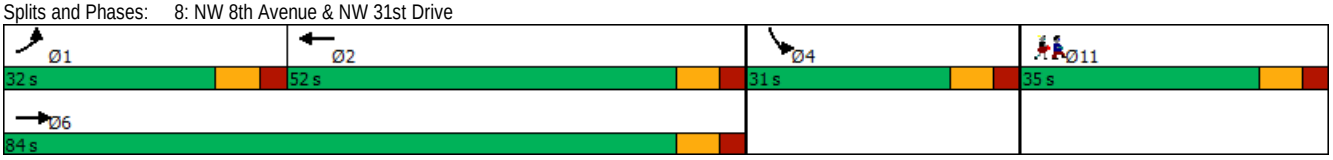
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	915	-	-	-	198
HCM Lane V/C Ratio	0.357	-	-	-	1.86
HCM Control Delay (s)	11.1	-	-	-	$ 446.3
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	1.6	-	-	-	26.5

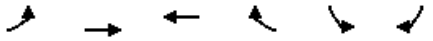
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø11
Lane Configurations							
Traffic Volume (vph)	258	568	441	92	67	224	
Future Volume (vph)	258	568	441	92	67	224	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)		0%	0%		0%		
Storage Length (ft)	150			0	0	0	
Storage Lanes	1			0	1	0	
Taper Length (ft)	25				25		
Right Turn on Red				Yes		Yes	
Link Speed (mph)		20	35		25		
Link Distance (ft)		952	1847		1399		
Travel Time (s)		32.5	36.0		38.2		
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Shared Lane Traffic (%)							
Turn Type	Prot	NA	NA		Prot		
Protected Phases	1	6	2		4		11
Permitted Phases							
Detector Phase	1	6	2		4		
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	13.0	13.0	13.0		13.0		35.0
Total Split (s)	32.0	84.0	52.0		31.0		35.0
Total Split (%)	21.3%	56.0%	34.7%		20.7%		23%
Yellow Time (s)	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	3.0	3.0	3.0		3.0		3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		
Total Lost Time (s)	8.0	8.0	8.0		8.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	None	None	None		None		None

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 115	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	258	568	441	92	67	224
Future Volume (vph)	258	568	441	92	67	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.98		0.90	
Flt Protected	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	3539	1819		1650	
Flt Permitted	0.95	1.00	1.00		0.99	
Satd. Flow (perm)	1770	3539	1819		1650	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	327	719	558	116	85	284
RTOR Reduction (vph)	0	0	4	0	76	0
Lane Group Flow (vph)	327	719	670	0	293	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	24.0	76.0	44.0		23.0	
Effective Green, g (s)	24.0	76.0	44.0		23.0	
Actuated g/C Ratio	0.21	0.66	0.38		0.20	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	369	2338	695		330	
v/s Ratio Prot	c0.18	0.20	c0.37		c0.18	
v/s Ratio Perm						
v/c Ratio	0.89	0.31	0.96		0.89	
Uniform Delay, d1	44.2	8.3	34.7		44.7	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	21.6	0.1	25.2		23.7	
Delay (s)	65.8	8.4	60.0		68.5	
Level of Service	E	A	E		E	
Approach Delay (s)		26.3	60.0		68.5	
Approach LOS		C	E		E	

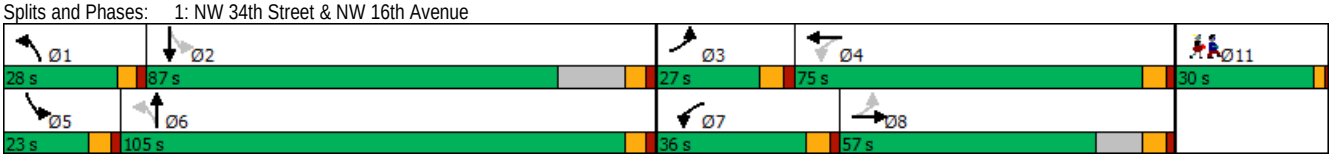
Intersection Summary				
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	32.0	
Intersection Capacity Utilization	80.6%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø11
Lane Configurations									
Traffic Volume (vph)	67	525	123	557	124	385	56	337	
Future Volume (vph)	67	525	123	557	124	385	56	337	
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	
Protected Phases	3	8	7	4	1	6	5	2	11
Permitted Phases	8		4		6		2		
Detector Phase	3	8	7	4	1	6	5	2	
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.8	29.8	11.7	29.8	10.8	33.3	11.3	33.3	30.0
Total Split (s)	27.0	57.0	36.0	75.0	28.0	105.0	23.0	87.0	30.0
Total Split (%)	10.4%	21.9%	13.8%	28.8%	10.8%	40.4%	8.8%	33.5%	12%
Yellow Time (s)	4.8	4.8	4.7	4.8	3.8	4.3	4.3	4.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
Total Lost Time (s)	6.3	6.3	6.2	6.3	5.3	5.8	5.8	5.8	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	43.3	35.5	55.8	42.2	59.2	47.3	53.6	45.0	
Actuated g/C Ratio	0.33	0.27	0.42	0.32	0.45	0.36	0.41	0.34	
v/c Ratio	0.27	0.72	0.44	0.59	0.43	0.78	0.24	0.73	
Control Delay	27.9	48.9	29.3	40.2	25.5	47.7	23.8	46.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.9	48.9	29.3	40.2	25.5	47.7	23.8	46.8	
LOS	C	D	C	D	C	D	C	D	
Approach Delay		46.9		38.4		43.2		44.1	
Approach LOS		D		D		D		D	

Intersection Summary	
Cycle Length: 260	
Actuated Cycle Length: 131.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: NW 34th Street & NW 16th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	525	107	123	557	62	124	385	94	56	337	91
Future Volume (vph)	67	525	107	123	557	62	124	385	94	56	337	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3		6.2	6.3		5.3	5.8		5.8	5.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3486		1770	1808		1770	1803	
Flt Permitted	0.31	1.00		0.18	1.00		0.23	1.00		0.22	1.00	
Satd. Flow (perm)	580	3449		330	3486		432	1808		402	1803	
Peak-hour factor, PHF	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)	71	559	114	131	593	66	132	410	100	60	359	97
RTOR Reduction (vph)	0	7	0	0	3	0	0	3	0	0	4	0
Lane Group Flow (vph)	71	666	0	131	656	0	132	507	0	60	452	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	42.3	35.0		55.8	41.7		57.6	46.8		52.5	44.5	
Effective Green, g (s)	43.3	35.5		56.3	42.2		58.6	47.3		53.5	45.0	
Actuated g/C Ratio	0.33	0.27		0.43	0.32		0.45	0.36		0.41	0.35	
Clearance Time (s)	6.8	6.8		6.7	6.8		5.8	6.3		6.3	6.3	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	264	941		304	1131		311	657		254	624	
v/s Ratio Prot	0.02	c0.19		c0.05	c0.19		c0.04	c0.28		0.02	0.25	
v/s Ratio Perm	0.07			0.14			0.15			0.08		
v/c Ratio	0.27	0.71		0.43	0.58		0.42	0.77		0.24	0.72	
Uniform Delay, d1	30.4	42.6		25.0	36.5		24.1	36.6		25.8	37.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.0		0.4	0.5		0.3	5.6		0.2	4.2	
Delay (s)	30.6	44.6		25.4	37.0		24.4	42.2		26.0	41.3	
Level of Service	C	D		C	D		C	D		C	D	
Approach Delay (s)		43.3			35.1			38.5			39.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	27.2
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	661	18	27	699	44	43
Future Vol, veh/h	661	18	27	699	44	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	689	19	28	728	46	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	708	0	1119	354
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	887	-	201	642
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	887	-	195	642
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	611	-

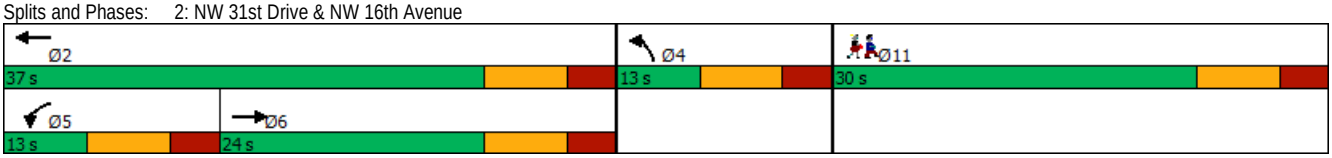
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	22.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	297	-	-	887	-
HCM Lane V/C Ratio	0.305	-	-	0.032	-
HCM Control Delay (s)	22.4	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Lane Group	EBT	WBL	WBT	NBL	Ø11
Lane Configurations					
Traffic Volume (vph)	661	27	699	44	
Future Volume (vph)	661	27	699	44	
Turn Type	NA	Prot	NA	Prot	
Protected Phases	6	5	2	4	11
Permitted Phases					
Detector Phase	6	5	2	4	
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	13.0	13.0	13.0	30.0
Total Split (s)	24.0	13.0	37.0	13.0	30.0
Total Split (%)	30.0%	16.3%	46.3%	16.3%	38%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.0	8.0	8.0	8.0	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	None	Max	None	None	None
Act Effct Green (s)	16.2	5.1	31.5	5.1	
Actuated g/C Ratio	0.34	0.11	0.66	0.11	
v/c Ratio	0.59	0.15	0.31	0.41	
Control Delay	16.1	22.6	5.5	19.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	16.1	22.6	5.5	19.0	
LOS	B	C	A	B	
Approach Delay	16.1		6.1	19.0	
Approach LOS	B		A	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 47.4	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 40.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: NW 31st Drive & NW 16th Avenue



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	661	18	27	699	44	43
Future Volume (vph)	661	18	27	699	44	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0	8.0	8.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3525		1770	3539	1696	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	3525		1770	3539	1696	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	689	19	28	728	46	45
RTOR Reduction (vph)	2	0	0	0	42	0
Lane Group Flow (vph)	706	0	28	728	49	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	6		5	2	4	
Permitted Phases						
Actuated Green, G (s)	16.3		5.1	29.4	3.8	
Effective Green, g (s)	16.3		5.1	29.4	3.8	
Actuated g/C Ratio	0.33		0.10	0.60	0.08	
Clearance Time (s)	8.0		8.0	8.0	8.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1167		183	2114	130	
v/s Ratio Prot	c0.20		0.02	c0.21	c0.03	
v/s Ratio Perm						
v/c Ratio	0.60		0.15	0.34	0.38	
Uniform Delay, d1	13.8		20.1	5.0	21.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.9		1.8	0.1	1.9	
Delay (s)	14.7		21.9	5.1	23.4	
Level of Service	B		C	A	C	
Approach Delay (s)	14.7			5.7	23.4	
Approach LOS	B			A	C	

Intersection Summary				
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.87			
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	32.0	
Intersection Capacity Utilization	40.8%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	35	557	18	16	551
Future Vol, veh/h	15	35	557	18	16	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	38	612	20	18	605

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1263	622	0	0	632	0
Stage 1	622	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	187	487	-	-	951	-
Stage 1	535	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	183	487	-	-	951	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	951	-
HCM Lane V/C Ratio	-	-	0.13	0.018	-
HCM Control Delay (s)	-	-	14.8	8.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	25	18	67	45	3
Future Vol, veh/h	22	25	18	67	45	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	36	26	97	65	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	216	67	69	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	772	997	1532	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	758	997	1532	-	-	-
Mov Cap-2 Maneuver	758	-	-	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	879	-	-	-	-	-

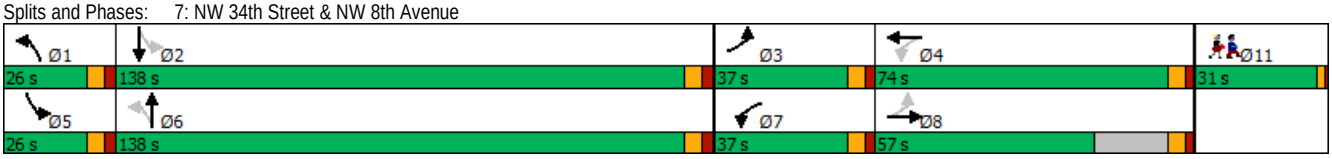
Approach	EB	NB	SB
HCM Control Delay, s	9.3	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1532	-	758	997	-	-
HCM Lane V/C Ratio	0.017	-	0.042	0.036	-	-
HCM Control Delay (s)	7.4	0	10	8.7	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø11
Lane Configurations									
Traffic Volume (vph)	66	441	153	456	48	456	20	497	
Future Volume (vph)	66	441	153	456	48	456	20	497	
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	
Protected Phases	3	8	7	4	1	6	5	2	11
Permitted Phases	8		4		6		2		
Detector Phase	3	8	7	4	1	6	5	2	
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	4.0	15.0	4.0	15.0	7.0
Minimum Split (s)	10.2	29.2	10.2	28.2	10.8	34.8	10.8	31.8	31.0
Total Split (s)	37.0	57.0	37.0	74.0	26.0	138.0	26.0	138.0	31.0
Total Split (%)	12.1%	18.6%	12.1%	24.2%	8.5%	45.1%	8.5%	45.1%	10%
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.0
All-Red Time (s)	2.1	2.1	2.1	2.1	2.7	2.7	2.7	2.7	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	
Total Lost Time (s)	5.7	5.7	5.7	5.7	6.3	6.3	6.3	6.3	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	Min	None	Min	None
Act Effct Green (s)	45.6	36.7	65.0	49.9	79.6	74.0	76.2	69.6	
Actuated g/C Ratio	0.28	0.23	0.40	0.31	0.49	0.46	0.47	0.43	
v/c Ratio	0.24	0.65	0.45	0.48	0.20	0.77	0.09	0.74	
Control Delay	40.3	64.4	41.2	50.4	22.2	44.9	21.1	44.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.3	64.4	41.2	50.4	22.2	44.9	21.1	44.4	
LOS	D	E	D	D	C	D	C	D	
Approach Delay		61.6		48.2		43.3		43.6	
Approach LOS		E		D		D		D	

Intersection Summary	
Cycle Length: 306	
Actuated Cycle Length: 161.9	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: NW 34th Street & NW 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	441	52	153	456	44	48	456	154	20	497	66
Future Volume (vph)	66	441	52	153	456	44	48	456	154	20	497	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3483		1770	3492		1770	1792		1770	1830	
Flt Permitted	0.44	1.00		0.22	1.00		0.21	1.00		0.19	1.00	
Satd. Flow (perm)	827	3483		413	3492		386	1792		355	1830	
Peak-hour factor, PHF	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)	69	459	54	159	475	46	50	475	160	21	518	69
RTOR Reduction (vph)	0	3	0	0	2	0	0	4	0	0	2	0
Lane Group Flow (vph)	69	510	0	159	519	0	50	631	0	21	585	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	44.5	36.2		63.9	49.4		80.2	73.4		76.0	71.3	
Effective Green, g (s)	45.5	36.7		64.4	49.9		81.2	73.9		77.0	71.8	
Actuated g/C Ratio	0.28	0.23		0.40	0.31		0.50	0.46		0.48	0.44	
Clearance Time (s)	6.2	6.2		6.2	6.2		6.8	6.8		6.8	6.8	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	283	790		348	1076		256	818		214	812	
v/s Ratio Prot	0.01	c0.15		c0.06	c0.15		c0.01	c0.35		0.00	0.32	
v/s Ratio Perm	0.06			0.12			0.09			0.04		
v/c Ratio	0.24	0.65		0.46	0.48		0.20	0.77		0.10	0.72	
Uniform Delay, d1	43.5	56.7		34.1	45.5		25.8	36.9		27.4	36.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.4		0.3	0.1		0.1	4.5		0.1	3.2	
Delay (s)	43.7	58.0		34.4	45.6		25.9	41.4		27.5	40.0	
Level of Service	D	E		C	D		C	D		C	D	
Approach Delay (s)		56.3			43.0			40.3			39.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	161.8	Sum of lost time (s)	27.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	529	539	42	30	123
Future Vol, veh/h	100	529	539	42	30	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	551	561	44	31	128

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	605	0	-	0	1067	583
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	971	-	-	-	231	511
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	586	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	971	-	-	-	206	511
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	586	-

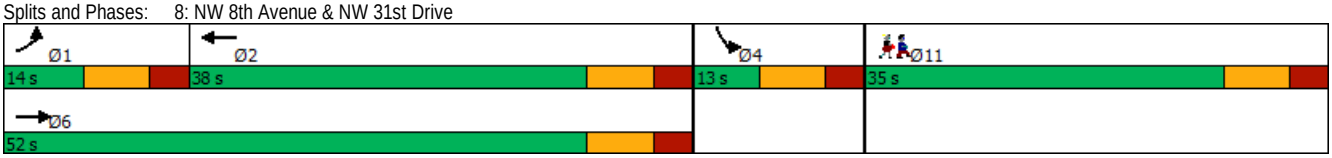
Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	20.1
HCM LOS			C

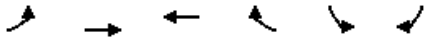
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	396
HCM Lane V/C Ratio	0.107	-	-	-	0.402
HCM Control Delay (s)	9.2	-	-	-	20.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.9

Lane Group	EBL	EBT	WBT	SBL	Ø11
Lane Configurations					
Traffic Volume (vph)	100	529	539	30	
Future Volume (vph)	100	529	539	30	
Turn Type	Prot	NA	NA	Prot	
Protected Phases	1	6	2	4	11
Permitted Phases					
Detector Phase	1	6	2	4	
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	13.0	13.0	13.0	35.0
Total Split (s)	14.0	52.0	38.0	13.0	35.0
Total Split (%)	14.0%	52.0%	38.0%	13.0%	35%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.0	8.0	8.0	8.0	
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None
Act Effct Green (s)	6.0	44.0	30.0	5.0	
Actuated g/C Ratio	0.09	0.68	0.46	0.08	
v/c Ratio	0.64	0.23	0.71	0.65	
Control Delay	48.7	4.3	19.6	23.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	48.7	4.3	19.6	23.8	
LOS	D	A	B	C	
Approach Delay		11.4	19.6	23.8	
Approach LOS		B	B	C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 65	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 16.3	Intersection LOS: B
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: NW 8th Avenue & NW 31st Drive





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	100	529	539	42	30	123
Future Volume (vph)	100	529	539	42	30	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0		8.0	
Lane Util. Factor	1.00	0.95	1.00		1.00	
Frt	1.00	1.00	0.99		0.89	
Flt Protected	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	3539	1844		1644	
Flt Permitted	0.95	1.00	1.00		0.99	
Satd. Flow (perm)	1770	3539	1844		1644	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	104	551	561	44	31	128
RTOR Reduction (vph)	0	0	2	0	118	0
Lane Group Flow (vph)	104	551	603	0	41	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	6.0	44.0	30.0		5.0	
Effective Green, g (s)	6.0	44.0	30.0		5.0	
Actuated g/C Ratio	0.09	0.68	0.46		0.08	
Clearance Time (s)	8.0	8.0	8.0		8.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	163	2395	851		126	
v/s Ratio Prot	c0.06	0.16	c0.33		c0.02	
v/s Ratio Perm						
v/c Ratio	0.64	0.23	0.71		0.32	
Uniform Delay, d1	28.5	4.0	14.0		28.4	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	7.9	0.0	2.7		1.5	
Delay (s)	36.4	4.1	16.7		29.9	
Level of Service	D	A	B		C	
Approach Delay (s)		9.2	16.7		29.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E: Intersection Volume Development Worksheets

Howard Bishop First Scenario

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.93

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		65	446	105		101	501	51		109	260	67		56	379	64
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**67**	**459**	**108**		**104**	**516**	**53**		**112**	**268**	**69**		**58**	**390**	**66**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		101	685	148		136	763	113		134	413	85		68	342	75
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**104**	**706**	**152**		**140**	**786**	**116**		**138**	**425**	**88**		**70**	**352**	**77**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	5	1		1	5	1		1	3	1		1	4	1
AM NON-PROJECT TRAFFIC		**68**	**464**	**109**		**105**	**521**	**54**		**113**	**271**	**70**		**59**	**394**	**67**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	7	2		1	8	1		1	4	1		1	4	1
PM NON-PROJECT TRAFFIC		**105**	**713**	**154**		**141**	**794**	**117**		**139**	**429**	**89**		**71**	**356**	**78**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses						15						15				
AM TOTAL TRAFFIC			**68**	**464**	**109**		**120**	**521**	**54**		**113**	**271**	**85**		**59**	**394**	**67**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses						25						25				
PM TOTAL TRAFFIC			**105**	**713**	**154**		**166**	**794**	**117**		**139**	**429**	**114**		**71**	**356**	**78**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.83
PM PEAK HOUR FACTOR: 0.9

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			569	15		48	626			18		76				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**586**	**15**		**49**	**645**			**19**		**78**				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			799	27		55	941			14		83				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**823**	**28**		**57**	**969**			**14**		**85**				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			6	0		0	6			0		1				
AM NON-PROJECT TRAFFIC			**592**	**15**		**49**	**651**			**19**		**79**				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			8	0		1	10			0		1				
PM NON-PROJECT TRAFFIC			**831**	**28**		**58**	**979**			**14**		**86**				

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers						**124**						**119**				
DIVERSIONS	Buses			15				15									
AM TOTAL TRAFFIC				**607**	**15**		**173**	**666**			**19**		**198**				

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers						**57**						**85**				
DIVERSIONS	Buses			25				25									
PM TOTAL TRAFFIC				**856**	**28**		**115**	**1,004**			**14**		**171**				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.84
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements						13		50			384	23		71	524	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS						**13**		**52**			**396**	**24**		**73**	**540**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements						9		50			582	15		28	597	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS						**9**		**52**			**599**	**15**		**29**	**615**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH						0		1			4	0		1	5	
AM NON-PROJECT TRAFFIC						**13**		**53**			**400**	**24**		**74**	**545**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH						0		1			6	0		0	6	
PM NON-PROJECT TRAFFIC						**9**		**53**			**605**	**15**		**29**	**621**	

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses											15				15	
AM TOTAL TRAFFIC							**13**		**53**			**415**	**24**		**74**	**560**	

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses											25				25	
PM TOTAL TRAFFIC							**9**		**53**			**630**	**15**		**29**	**646**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.5
PM PEAK HOUR FACTOR: 0.78

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		56		43						26	27				31	23
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**58**		**44**						**27**	**28**				**32**	**24**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		31		18						24	62				50	27
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**32**		**19**						**25**	**64**				**52**	**28**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1		0						0	0				0	0
AM NON-PROJECT TRAFFIC		**59**		**44**						**27**	**28**				**32**	**24**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0		0						0	1				1	0
PM NON-PROJECT TRAFFIC		**32**		**19**						**25**	**65**				**53**	**28**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers											119				124	
DIVERSIONS	Buses																
AM TOTAL TRAFFIC			**59**		**44**						**27**	**147**				**156**	**24**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers											85				57	
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**32**		**19**						**25**	**150**				**110**	**28**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.88
PM PEAK HOUR FACTOR: 0.98

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		57	329	50		113	302	33		29	318	115		18	469	51
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**59**	**339**	**52**		**116**	**311**	**34**		**30**	**328**	**118**		**19**	**483**	**53**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		77	480	55		171	503	40		77	482	138		35	510	67
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**79**	**494**	**57**		**176**	**518**	**41**		**79**	**496**	**142**		**36**	**525**	**69**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	3	1		1	3	0		0	3	1		0	5	1
AM NON-PROJECT TRAFFIC		**60**	**342**	**53**		**117**	**314**	**34**		**30**	**331**	**119**		**19**	**488**	**54**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	5	1		2	5	0		1	5	1		0	5	1
PM NON-PROJECT TRAFFIC		**80**	**499**	**58**		**178**	**523**	**41**		**80**	**501**	**143**		**36**	**530**	**70**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses								10						10		
AM TOTAL TRAFFIC			**60**	**342**	**53**		**117**	**314**	**44**		**30**	**331**	**119**		**29**	**488**	**54**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**80**	**499**	**58**		**178**	**523**	**41**		**80**	**501**	**143**		**36**	**530**	**70**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.93
PM PEAK HOUR FACTOR: 0.95

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		18	432				418	31						43		31
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
AM EXISTING CONDITIONS		**19**	**445**				**431**	**32**						**44**		**32**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		43	623				639	41						24		43
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
PM EXISTING CONDITIONS		**44**	**642**				**658**	**42**						**25**		**44**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0	4				4	0						0		0
AM NON-PROJECT TRAFFIC		**19**	**449**				**435**	**32**						**44**		**32**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0	6				7	0						0		0
PM NON-PROJECT TRAFFIC		**44**	**648**				**665**	**42**						**25**		**44**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers								**129**						**124**		
DIVERSIONS	Buses			10				10									
AM TOTAL TRAFFIC			**19**	**459**				**445**	**161**						**168**		**32**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers								**47**						**70**		
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**44**	**648**				**665**	**89**						**95**		**44**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 6 (South NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		0		0						0	49				74	0
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
AM EXISTING CONDITIONS		**0**		**0**						**0**	**50**				**76**	**0**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		0		0						0	84				67	0
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
PM EXISTING CONDITIONS		**0**		**0**						**0**	**87**				**69**	**0**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0		0						0	1				1	0
AM NON-PROJECT TRAFFIC		**0**		**0**						**0**	**51**				**77**	**0**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0		0						0	1				1	0
PM NON-PROJECT TRAFFIC		**0**		**0**						**0**	**88**				**70**	**0**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers		119		124						129						124
DIVERSIONS	Buses																
AM TOTAL TRAFFIC			**119**		**124**						**129**	**51**				**77**	**124**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers		85		70						47						57
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**85**		**70**						**47**	**88**				**70**	**57**

Howard Bishop Second Scenario

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.96
PM PEAK HOUR FACTOR: 0.91

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		69	502	109		96	540	41		120	292	83		65	384	68
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**71**	**517**	**112**		**99**	**556**	**42**		**124**	**301**	**85**		**67**	**396**	**70**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		98	638	131		109	628	85		130	409	76		73	333	78
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**101**	**657**	**135**		**112**	**647**	**88**		**134**	**421**	**78**		**75**	**343**	**80**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	5	1		1	6	0		1	3	1		1	4	1
AM NON-PROJECT TRAFFIC		**72**	**522**	**113**		**100**	**562**	**42**		**125**	**304**	**86**		**68**	**400**	**71**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	7	1		1	6	1		1	4	1		1	3	1
PM NON-PROJECT TRAFFIC		**102**	**664**	**136**		**113**	**653**	**89**		**135**	**425**	**79**		**76**	**346**	**81**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses						15						15				
AM TOTAL TRAFFIC			**72**	**522**	**113**		**115**	**562**	**42**		**125**	**304**	**101**		**68**	**400**	**71**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses						25						25				
PM TOTAL TRAFFIC			**102**	**664**	**136**		**138**	**653**	**89**		**135**	**425**	**104**		**76**	**346**	**81**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.93
PM PEAK HOUR FACTOR: 0.9

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			624	26		99	648			23		90				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**643**	**27**		**102**	**667**			**24**		**93**				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			745	35		76	774			31		130				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**767**	**36**		**78**	**797**			**32**		**134**				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			6	0		1	7			0		1				
AM NON-PROJECT TRAFFIC			**649**	**27**		**103**	**674**			**24**		**94**				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			8	0		1	8			0		1				
PM NON-PROJECT TRAFFIC			**775**	**36**		**79**	**805**			**32**		**135**				

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers						**124**						**119**				
DIVERSIONS	Buses			15				15									
AM TOTAL TRAFFIC				**664**	**27**		**227**	**689**			**24**		**213**				

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers						**57**						**85**				
DIVERSIONS	Buses			25				25									
PM TOTAL TRAFFIC				**800**	**36**		**136**	**830**			**32**		**220**				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.95

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements						23		89			398	39		127	467	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS						**24**		**92**			**410**	**40**		**131**	**481**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements						24		91			488	20		55	515	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS						**25**		**94**			**503**	**21**		**57**	**530**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH						0		1			4	0		1	5	
AM NON-PROJECT TRAFFIC						**24**		**93**			**414**	**40**		**132**	**486**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH						0		1			5	0		1	5	
PM NON-PROJECT TRAFFIC						**25**		**95**			**508**	**21**		**58**	**535**	

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses											15				15	
AM TOTAL TRAFFIC							**24**		**93**			**429**	**40**		**132**	**501**	

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses											25				25	
PM TOTAL TRAFFIC							**25**		**95**			**533**	**21**		**58**	**560**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.84
PM PEAK HOUR FACTOR: 0.69

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		77		67						44	35				73	52
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**79**		**69**						**45**	**36**				**75**	**54**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		61		41						38	91				68	39
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**63**		**42**						**39**	**94**				**70**	**40**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1		1						0	0				1	1
AM NON-PROJECT TRAFFIC		**80**		**70**						**45**	**36**				**76**	**55**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1		0						0	1				1	0
PM NON-PROJECT TRAFFIC		**64**		**42**						**39**	**95**				**71**	**40**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers											**119**				**124**	
DIVERSIONS	Buses																
AM TOTAL TRAFFIC			**80**		**70**						**45**	**155**				**200**	**55**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers											**85**				**57**	
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**64**		**42**						**39**	**180**				**128**	**40**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.9
PM PEAK HOUR FACTOR: 0.9

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		66	377	34		128	344	24		31	335	137		20	407	46
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**68**	**388**	**35**		**132**	**354**	**25**		**32**	**345**	**141**		**21**	**419**	**47**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		69	461	38		166	446	35		55	448	131		27	449	84
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**71**	**475**	**39**		**171**	**459**	**36**		**57**	**461**	**135**		**28**	**462**	**87**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	4	0		1	4	0		0	3	1		0	4	0
AM NON-PROJECT TRAFFIC		**69**	**392**	**35**		**133**	**358**	**25**		**32**	**348**	**142**		**21**	**423**	**47**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	5	0		2	5	0		1	5	1		0	5	1
PM NON-PROJECT TRAFFIC		**72**	**480**	**39**		**173**	**464**	**36**		**58**	**466**	**136**		**28**	**467**	**88**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses								10						10		
AM TOTAL TRAFFIC			**69**	**392**	**35**		**133**	**358**	**35**		**32**	**348**	**142**		**31**	**423**	**47**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers																
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**72**	**480**	**39**		**173**	**464**	**36**		**58**	**466**	**136**		**28**	**467**	**88**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.84
PM PEAK HOUR FACTOR: 0.98

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		31	491				429	44						69		55
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
AM EXISTING CONDITIONS		**32**	**506**				**442**	**45**						**71**		**57**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		60	568				588	49						50		67
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
PM EXISTING CONDITIONS		**62**	**585**				**606**	**50**						**52**		**69**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0	5				4	0						1		1
AM NON-PROJECT TRAFFIC		**32**	**511**				**446**	**45**						**72**		**58**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	6				6	1						1		1
PM NON-PROJECT TRAFFIC		**63**	**591**				**612**	**51**						**53**		**70**

"AM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers								**129**						**124**		
DIVERSIONS	Buses			10				10									
AM TOTAL TRAFFIC			**32**	**521**				**456**	**174**						**196**		**58**

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers								**47**						**70**		
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**63**	**591**				**612**	**98**						**123**		**70**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 6 (South NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		11		6						12	0				0	9
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
AM EXISTING CONDITIONS		**11**		**6**						**12**	**0**				**0**	**9**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		10		15						9	0				0	6
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
PM EXISTING CONDITIONS		**10**		**15**						**9**	**0**				**0**	**6**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0		0						0	0				0	0
AM NON-PROJECT TRAFFIC		**11**		**6**						**12**	**0**				**0**	**9**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0		0						0	0				0	0
PM NON-PROJECT TRAFFIC		**10**		**15**						**9**	**0**				**0**	**6**

"AM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC	Parents/Teachers		**119**		**124**						**129**						**124**
DIVERSIONS	Buses																
AM TOTAL TRAFFIC			**130**		**130**						**141**	**0**				**0**	**133**

"PM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC	Parents/Teachers		**85**		**70**						**47**						**57**
DIVERSIONS	Buses																
PM TOTAL TRAFFIC			**95**		**85**						**56**	**0**				**0**	**63**

Westwood Middle School Scenario

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.96
PM PEAK HOUR FACTOR: 0.91

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		69	502	109		96	540	41		120	292	83		65	384	68
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**71**	**517**	**112**		**99**	**556**	**42**		**124**	**301**	**85**		**67**	**396**	**70**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		98	638	131		109	628	85		130	409	76		73	333	78
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**101**	**657**	**135**		**112**	**647**	**88**		**134**	**421**	**78**		**75**	**343**	**80**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	10	2		2	11	1		2	6	2		1	8	1
AM NON-PROJECT TRAFFIC		**72**	**527**	**114**		**101**	**567**	**43**		**126**	**307**	**87**		**68**	**404**	**71**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		2	13	3		2	13	2		3	8	2		2	7	2
PM NON-PROJECT TRAFFIC		**103**	**670**	**138**		**114**	**660**	**90**		**137**	**429**	**80**		**77**	**350**	**82**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC		**72**	**527**	**114**		**101**	**567**	**43**		**126**	**307**	**87**		**68**	**404**	**71**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC		**103**	**670**	**138**		**114**	**660**	**90**		**137**	**429**	**80**		**77**	**350**	**82**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.93
PM PEAK HOUR FACTOR: 0.90

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			624	26		99	648			23		90				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**643**	**27**		**102**	**667**			**24**		**93**				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			745	35		76	774			31		130				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**767**	**36**		**78**	**797**			**32**		**134**				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			13	1		2	13			0		2				
AM NON-PROJECT TRAFFIC			**656**	**28**		**104**	**680**			**24**		**95**				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			15	1		2	16			1		3				
PM NON-PROJECT TRAFFIC			**782**	**37**		**80**	**813**			**33**		**137**				

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC			**656**	**28**		**104**	**680**			**24**		**95**				

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC			**782**	**37**		**80**	**813**			**33**		**137**				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.90
PM PEAK HOUR FACTOR: 0.95

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements						23		89			398	39		127	467	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS						**24**		**92**			**410**	**40**		**131**	**481**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements						24		91			488	20		55	515	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS						**25**		**94**			**503**	**21**		**57**	**530**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH						0		2			8	1		3	10	
AM NON-PROJECT TRAFFIC						**24**		**94**			**418**	**41**		**134**	**491**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH						1		2			10	0		1	11	
PM NON-PROJECT TRAFFIC						**26**		**96**			**513**	**21**		**58**	**541**	

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC						**24**		**94**			**418**	**41**		**134**	**491**	

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC						**26**		**96**			**513**	**21**		**58**	**541**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.84
PM PEAK HOUR FACTOR: 0.69

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		77		67						44	35				73	52
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**79**		**69**						**45**	**36**				**75**	**54**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		61		41						38	91				68	39
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**63**		**42**						**39**	**94**				**70**	**40**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		2		1						1	1				2	1
AM NON-PROJECT TRAFFIC		**81**		**70**						**46**	**37**				**77**	**55**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1		1						1	2				1	1
PM NON-PROJECT TRAFFIC		**64**		**43**						**40**	**96**				**71**	**41**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS		-68		93						57	68				47	-47
AM TOTAL TRAFFIC		**13**		**163**						**103**	**105**				**124**	**8**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS		-42		23						49	42				27	-27
PM TOTAL TRAFFIC		**22**		**66**						**89**	**138**				**98**	**14**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.90
PM PEAK HOUR FACTOR: 0.90

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		66	377	34		128	344	24		31	335	137		20	407	46
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**68**	**388**	**35**		**132**	**354**	**25**		**32**	**345**	**141**		**21**	**419**	**47**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		69	461	38		166	446	35		55	448	131		27	449	84
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**71**	**475**	**39**		**171**	**459**	**36**		**57**	**461**	**135**		**28**	**462**	**87**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	8	1		3	7	1		1	7	3		0	8	1
AM NON-PROJECT TRAFFIC		**69**	**396**	**36**		**135**	**361**	**26**		**33**	**352**	**144**		**21**	**427**	**48**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	10	1		3	9	1		1	9	3		1	9	2
PM NON-PROJECT TRAFFIC		**72**	**485**	**40**		**174**	**468**	**37**		**58**	**470**	**138**		**29**	**471**	**89**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC		**69**	**396**	**36**		**135**	**361**	**26**		**33**	**352**	**144**		**21**	**427**	**48**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC		**72**	**485**	**40**		**174**	**468**	**37**		**58**	**470**	**138**		**29**	**471**	**89**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.84
PM PEAK HOUR FACTOR: 0.98

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		31	491				429	44						69		55
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**32**	**506**				**442**	**45**						**71**		**57**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		60	568				588	49						50		67
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**62**	**585**				**606**	**50**						**52**		**69**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	10				9	1						1		1
AM NON-PROJECT TRAFFIC		**33**	**516**				**451**	**46**						**72**		**58**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	12				12	1						1		1
PM NON-PROJECT TRAFFIC		**63**	**597**				**618**	**51**						**53**		**70**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC		**33**	**516**				**451**	**46**						**72**		**58**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC		**63**	**597**				**618**	**51**						**53**		**70**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 1 (West NW 15th Avenue)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			15	151		66	112									
Peak Season Correction Factor	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**15**	**151**		**66**	**115**									

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			24	51		29	115									
Peak Season Correction Factor	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**25**	**51**		**29**	**118**									

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			0	0		0	2									
AM NON-PROJECT TRAFFIC			**15**	**151**		**66**	**117**									

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			1	0		0	2									
PM NON-PROJECT TRAFFIC			**26**	**51**		**29**	**120**									

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS			**151**	**-151**		**-66**										
AM TOTAL TRAFFIC			**166**	**0**		**0**	**117**									

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS			**51**	**-51**		**-29**										
PM TOTAL TRAFFIC			**77**	**0**		**0**	**120**									

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 2 (Middle NW 15th Avenue)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			13	2		20	167			11		9				
Peak Season Correction Factor	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**13**	**2**		**20**	**172**			**11**		**9**				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			24	0		25	120			24		15				
Peak Season Correction Factor	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**25**	**0**		**25**	**124**			**24**		**15**				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			0	0		0	3			0		0				
AM NON-PROJECT TRAFFIC			**13**	**2**		**20**	**175**			**11**		**9**				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			1	0		0	2			0		0				
PM NON-PROJECT TRAFFIC			**26**	**0**		**25**	**126**			**24**		**15**				

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS			**153**	**-2**		**-20**	**-55**			**-11**		**-9**				
AM TOTAL TRAFFIC			**166**	**0**		**0**	**120**			**0**		**0**				

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS			**51**			**-25**	**-5**			**-24**		**-15**				
PM TOTAL TRAFFIC			**77**	**0**		**0**	**121**			**0**		**0**				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 3 (East NW 15th Avenue)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			24				99			85		119				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			25				102			85		119				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			43				85			52		55				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			44				88			52		55				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			1				2			0		0				
AM NON-PROJECT TRAFFIC			26				104			85		119				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			1				2			0		0				
PM NON-PROJECT TRAFFIC			45				90			52		55				

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS			144				10			-85		-119				
AM TOTAL TRAFFIC			170				114			0		0				

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS			36				22			-52		-55				
PM TOTAL TRAFFIC			81				112			0		0				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 4 (North NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements										3	79				112	28
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
AM EXISTING CONDITIONS										**3**	**81**				**115**	**28**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements										3	129				90	19
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
PM EXISTING CONDITIONS										**3**	**133**				**93**	**19**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%
AM BACKGROUND TRAFFIC GROWTH										0	2				2	0
AM NON-PROJECT TRAFFIC										**3**	**83**				**117**	**28**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%
PM BACKGROUND TRAFFIC GROWTH										0	3				2	0
PM NON-PROJECT TRAFFIC										**3**	**136**				**95**	**19**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS											**125**				**140**	
AM TOTAL TRAFFIC										**3**	**208**				**257**	**28**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS											**91**				**50**	
PM TOTAL TRAFFIC										**3**	**227**				**145**	**19**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 5 (Middle NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		4		26							82				112	
Peak Season Correction Factor	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**4**		**26**							**84**				**115**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		19		9							132				90	
Peak Season Correction Factor	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**19**		**9**							**136**				**93**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0		0							2				2	
AM NON-PROJECT TRAFFIC		**4**		**26**							**86**				**117**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0		0							3				2	
PM NON-PROJECT TRAFFIC		**19**		**9**							**139**				**95**	

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS											**125**				**140**	
AM TOTAL TRAFFIC		**4**		**26**							**211**				**257**	

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS											**91**				**50**	
PM TOTAL TRAFFIC		**19**		**9**							**230**				**145**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 6 (South NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		11		6						12	71				103	9
Peak Season Correction Factor	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
AM EXISTING CONDITIONS		**11**		**6**						**12**	**73**				**106**	**9**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		10		15						9	122				84	6
Peak Season Correction Factor	1.03	1.00	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
PM EXISTING CONDITIONS		**10**		**15**						**9**	**126**				**87**	**6**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%
AM BACKGROUND TRAFFIC GROWTH		0		0						0	1				2	0
AM NON-PROJECT TRAFFIC		**11**		**6**						**12**	**74**				**108**	**9**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	1.0%	0.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%
PM BACKGROUND TRAFFIC GROWTH		0		0						0	3				2	0
PM NON-PROJECT TRAFFIC		**10**		**15**						**9**	**129**				**89**	**6**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS		**164**		**60**						**39**	**-39**				**-60**	**200**
AM TOTAL TRAFFIC		**175**		**66**						**51**	**35**				**48**	**209**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS		**118**		**28**						**27**	**-27**				**-28**	**78**
PM TOTAL TRAFFIC		**128**		**43**						**36**	**102**				**61**	**84**

Littlewood Elementary School Scenario

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.82
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		49	579	121		66	489	35		82	235	75		146	392	58
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**50**	**596**	**125**		**68**	**504**	**36**		**84**	**242**	**77**		**150**	**404**	**60**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		63	489	107		116	504	51		111	363	88		48	323	85
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**65**	**504**	**110**		**119**	**519**	**53**		**114**	**374**	**91**		**49**	**333**	**88**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		2	18	4		2	15	1		3	7	2		5	12	2
AM NON-PROJECT TRAFFIC		**52**	**614**	**129**		**70**	**519**	**37**		**87**	**249**	**79**		**155**	**416**	**62**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		2	15	3		4	16	2		3	11	3		1	10	3
PM NON-PROJECT TRAFFIC		**67**	**519**	**113**		**123**	**535**	**55**		**117**	**385**	**94**		**50**	**343**	**91**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS			17	-17			44	15		15				17	-17	
AM TOTAL TRAFFIC		**52**	**631**	**112**		**70**	**563**	**52**		**102**	**249**	**79**		**172**	**399**	**62**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS			6	-6			22	7		7				6	-6	
PM TOTAL TRAFFIC		**67**	**525**	**107**		**123**	**557**	**62**		**124**	**385**	**94**		**56**	**337**	**91**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 16th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.8
PM PEAK HOUR FACTOR: 0.96

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements			772	18		50	590			5		46				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS			**795**	**19**		**52**	**608**			**5**		**47**				

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			623	6		25	658			14		38				
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS			**642**	**6**		**26**	**678**			**14**		**39**				

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH			24	1		2	18			0		1				
AM NON-PROJECT TRAFFIC			**819**	**20**		**54**	**626**			**5**		**48**				

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH			19	0		1	21			0		1				
PM NON-PROJECT TRAFFIC			**661**	**6**		**27**	**699**			**14**		**40**				

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS				**34**						**59**		**6**				
AM TOTAL TRAFFIC			**819**	**54**		**54**	**626**			**64**		**54**				

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS				**12**						**30**		**3**				
PM TOTAL TRAFFIC			**661**	**18**		**27**	**699**			**44**		**43**				

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.82
PM PEAK HOUR FACTOR: 0.91

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements						13		28			357	15		61	501	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS						**13**		**29**			**368**	**15**		**63**	**516**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements						11		26			525	14		16	530	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS						**11**		**27**			**541**	**14**		**16**	**546**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH						0		1			11	0		2	16	
AM NON-PROJECT TRAFFIC						**13**		**30**			**379**	**15**		**65**	**532**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH						0		1			16	0		0	17	
PM NON-PROJECT TRAFFIC						**11**		**28**			**557**	**14**		**16**	**563**	

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS						9		15				10			-34	
AM TOTAL TRAFFIC						**22**		**45**			**379**	**25**		**65**	**498**	

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS						4		7				4			-12	
PM TOTAL TRAFFIC						**15**		**35**			**557**	**18**		**16**	**551**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 15th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.67
PM PEAK HOUR FACTOR: 0.69

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		29		33						20	30				47	26
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**30**		**34**						**21**	**31**				**48**	**27**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		20		19						6	32				31	3
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**21**		**20**						**6**	**33**				**32**	**3**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1		1						1	1				1	1
AM NON-PROJECT TRAFFIC		**31**		**35**						**22**	**32**				**49**	**28**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1		1						0	1				1	0
PM NON-PROJECT TRAFFIC		**22**		**21**						**6**	**34**				**33**	**3**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS				**10**						**24**	**64**				**34**	
AM TOTAL TRAFFIC		**31**		**45**						**46**	**96**				**83**	**28**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS				**4**						**12**	**33**				**12**	
PM TOTAL TRAFFIC		**22**		**25**						**18**	**67**				**45**	**3**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & SR 121 (NW 34th Street)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.83
PM PEAK HOUR FACTOR: 0.96

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		48	442	32		110	363	37		129	332	138		35	369	72
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**49**	**455**	**33**		**113**	**374**	**38**		**133**	**342**	**142**		**36**	**380**	**74**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		62	391	57		130	390	42		60	430	130		18	468	78
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**64**	**403**	**59**		**134**	**402**	**43**		**62**	**443**	**134**		**19**	**482**	**80**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	14	1		3	11	1		4	10	4		1	12	2
AM NON-PROJECT TRAFFIC		**50**	**469**	**34**		**116**	**385**	**39**		**137**	**352**	**146**		**37**	**392**	**76**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		2	12	2		4	12	1		2	13	4		1	15	2
PM NON-PROJECT TRAFFIC		**66**	**415**	**61**		**138**	**414**	**44**		**64**	**456**	**138**		**20**	**497**	**82**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS			129	-14		29	72			-48		48				-44
AM TOTAL TRAFFIC		**50**	**598**	**20**		**145**	**457**	**39**		**89**	**352**	**194**		**37**	**392**	**32**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS			26	-9		15	42			-16		16				-16
PM TOTAL TRAFFIC		**66**	**441**	**52**		**153**	**456**	**44**		**48**	**456**	**154**		**20**	**497**	**66**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NW 8th Avenue & NW 31st Drive
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.79
PM PEAK HOUR FACTOR: 0.96

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		35	577				480	22						36		51
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**36**	**594**				**494**	**23**						**37**		**53**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		26	527				536	12						15		34
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**27**	**543**				**552**	**12**						**15**		**35**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		1	18				15	1						1		2
AM NON-PROJECT TRAFFIC		**37**	**612**				**509**	**24**						**38**		**55**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		1	16				17	0						0		1
PM NON-PROJECT TRAFFIC		**28**	**559**				**569**	**12**						**15**		**36**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS		**221**	**-44**				**-68**	**68**						**29**		**169**
AM TOTAL TRAFFIC		**258**	**568**				**441**	**92**						**67**		**224**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS		**72**	**-30**				**-30**	**30**						**15**		**87**
PM TOTAL TRAFFIC		**100**	**529**				**539**	**42**						**30**		**123**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Westwood MS Driveway 6 (South NW 31st Drive)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		0		0							57				87	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
AM EXISTING CONDITIONS		**0**		**0**							**59**				**90**	

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		0		0							38				49	
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
PM EXISTING CONDITIONS		**0**		**0**							**39**				**50**	

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH		0		0							2				3	
AM NON-PROJECT TRAFFIC		**0**		**0**							**61**				**93**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH		0		0							1				2	
PM NON-PROJECT TRAFFIC		**0**		**0**							**40**				**52**	

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS		88		205						289					-7	51
AM TOTAL TRAFFIC		**88**		**205**						**289**	**61**				**86**	**51**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS		44		104						102					-2	18
PM TOTAL TRAFFIC		**44**		**104**						**102**	**40**				**50**	**18**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Littlewood ES Driveway 1 (NW 8th Avenue)
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		173	499				397	167						23		270
Peak Season Correction Factor	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.00
AM EXISTING CONDITIONS		**173**	**514**				**409**	**167**						**23**		**270**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		56	510				464	64						38		110
Peak Season Correction Factor	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00	1.00	1.00
PM EXISTING CONDITIONS		**56**	**525**				**478**	**64**						**38**		**110**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%
AM BACKGROUND TRAFFIC GROWTH		0	16				12	0						0		0
AM NON-PROJECT TRAFFIC		**173**	**530**				**421**	**167**						**23**		**270**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	1.0%	0.0%
PM BACKGROUND TRAFFIC GROWTH		0	16				14	0						0		0
PM NON-PROJECT TRAFFIC		**56**	**541**				**492**	**64**						**38**		**110**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS		-173	138				147	-167						-23		-270
AM TOTAL TRAFFIC		**0**	**668**				**568**	**0**						**0**		**0**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS		-56	56				74	-64						-38		-110
PM TOTAL TRAFFIC		**0**	**597**				**566**	**0**						**0**		**0**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Littlewood ES Driveway 2 (SR 121 [NW 34th Street])
COUNT DATE: January 28, 2020
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements										13	375				456	18
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
AM EXISTING CONDITIONS										**13**	**386**				**470**	**18**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements										9	509				539	2
Peak Season Correction Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.03	1.03	1.00
PM EXISTING CONDITIONS										**9**	**524**				**555**	**2**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AM BACKGROUND TRAFFIC GROWTH										0	12				14	1
AM NON-PROJECT TRAFFIC										**13**	**398**				**484**	**19**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
PM BACKGROUND TRAFFIC GROWTH										0	16				17	0
PM NON-PROJECT TRAFFIC										**9**	**540**				**572**	**2**

"AM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																
AM TOTAL TRAFFIC										**13**	**398**				**484**	**19**

"PM PROJECT TRAFFIC" LAND USE TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																
PM TOTAL TRAFFIC										**9**	**540**				**572**	**2**

APPENDIX F: NW 8th Avenue at NW 31st Drive Signal Warrant Analysis

TRAFFIC SIGNAL WARR

SI

Introduction

The *Manual on Uniform Traffic Control Devices 1* (MUTCD) is the source for w refuting the need for traffic signals in the United States. Many warrants are in u The United States, the United Kingdom, Canada, Australia , and South Africa l published signal warrants.

This paper focuses on identifying and compiling existing data to enhance safet application of signal warrants at intersections in the Missouri Valley Institute of (MOVITE) district of the Institute of Transportation Engineers (ITE).

The Problem

The 2000 edition of the MUTCD contains eight warrants for justifying the instal These warrants are listed in Table 1. The MUTCD emphasizes a need for a pc the MUTCD clearly indicates satisfaction of a warrant is not sufficient justificati additional analysis must be conducted to determine whether the signal installa impact on safety operations.

MUTCD Warrant Number	Name
1	Eight-hour vehicular volume
2	Four-hour vehicular volume
3	Peak Hour
4	Pedestrian Volume
5	School Crossing
6	Coordinated Signal System
7	Accident Experience
8	Roadway Network

Table 1: MUTCD Warrants

In “Queue-Based Traffic Signal Warrants: The 4Q/6Q Warrant” published in 1999, John Sampson 2 mentions that , contrary to popular belief, a newly installed traffic signal rarely reduces overall delay, costs, accidents, or speed. Research shows that traffic signals, except perhaps in peak hours, generally have the opposite effect – total delay, user costs, and accidents increase while speeds are unlikely to decrease any time other than when the signal is red.

Because conditions for determining a signal installation are intersection specific, attaining a threshold level at which a signal is warranted can vary for each intersection. Research has been evaluating the need to better define this threshold and also use other methods for signal warrant analysis. This paper provides a limited review of this research.

Literature Review

A literature review was done to verify current and proposed practices in other jurisdictions for determining a signal installation. The following summary reflects a few of the most relevant papers or manuals published.

Texas Department of Transportation

“Traffic Signal Warrants – Guidelines for Conducting a Traffic Signal Warrant Analysis” published by the Texas Department of Transportation 3 (TxDOT) redefines the signal warrants from the eight national MUTCD warrants to 12 Texas MUTCD warrants. Table 2 summarizes the Texas MUTCD warrants and also provides the basis of the National MUTCD. Further, TxDOT will not install a traffic signal if the intersection does not satisfy any of the warrants or if the signal would seriously disrupt progressive traffic flow. As part of the post-warrant analysis, TxDOT recommends analysis of less restrictive forms of traffic control at the intersection. TxDOT also recommends that the advantages of installing a signal clearly outweigh the disadvantages.

Texas MUTCD Warrant 3	Basis (National MUTCD) 1

1. Minimum vehicular volume	8-hour vehicular volume
2. Interruption of continuous traffic	8-hour vehicular volume
3. Minimum pedestrian volume	Pedestrian volumes and gaps
4. School crossing	Number of school children and gaps
5. Progressive movement	Signal progression
6. Accident experience	Accidents and Warrants 1, 2 or 3
7. Systems	Vehicular volumes and road classification
8. Combination of warrants	Vehicular volumes and pedestrians
9. Four hour volumes	4-hour vehicular volume
10. Peak hour delay	Vehicular volume and delay on minor street
11. Peak hour volume	1-hour vehicular volume
12. Volumes of traffic actuated signals*	2- or 8-hour vehicular volumes

* This warrant is in the Texas MUTCD and not the national MUTCD. It is similar to Warrants 9 and 11, but it provides for analysis of the two high hours and eight high hours. Source: TxDOT 3

Table 2: Texas MUTCD Warrants

TxDOT also recommends considering less restrictive forms of assigning right-of-way at an intersection that may have less severe impacts on the intersection. These other forms of control should be considered even if the intersection meets one or more of the traffic signal warrants.

The 4Q/6Q Warrant Procedure

In the article "Queue-Based Traffic-Signal Warrants: The 4Q/6Q Warrant" published in the Institute of Transportation Engineers (ITE) journal, John David Sampson 2 warns that current warrants are inflexible because they are based on fixed volume or accident numbers and do not take into account different site and traffic conditions. The warrants are judgment-based and generally ignore site-specific conditions. In his research, Sampson evaluates warrants based on queues and developed the 4Q/6Q warrant.

The queue-based warrants determine the need for signalization based on the queue lengths on the minor street approach. Queue lengths can be field measured, have a strong theoretical and scientific basis, and correlate directly with delay. Queues reflect, among other things:

- Interference between vehicles, pedestrians, and cyclists
- Difficulty in entering or crossing the traffic stream
- Gap acceptance behavior and local conditions
- Effects of turning volumes
- Number of lanes and other geometric conditions

The practical advantages of queue length warrants are:

- Better interactions among pedestrians, vehicles and bicyclists. The different users would be added to the queue being formed.
- Adjustments are not required for different lanes, speeds, volume combinations, or areas because these will be reflected in the length of the queue.
- Warrant application is simplified because queues are easily measured and verified.
- Queue warrants can be easily explained and justified and
- The warrant is applied in peak hours, thus eliminating the need for off-peak hour measurements.

Through his research, Sampson compared the 4Q/6Q warrants to the MUTCD warrants and found that changing the procedure does not change the answer. Sampson concludes that the 4Q/6Q warrant justifies a signal if any individual vehicle, pedestrian, or cyclist queue measured at regular intervals and averaged over the peak hours is at least four or if the sum of the individual vehicle, pedestrian, and cyclist queues measured anywhere within the intersection exceed six. The 4Q/6Q warrant for traffic signals are simple, flexible, scientifically justifiable and can be used universally.

Proposed Canadian Traffic Signal Warrant Procedure

Synetics, IBI Group, and Earth Tech conducted research to develop a new Canadian Traffic Signal Warrant Procedure. Prepared for the Transportation Association of Canada, the review confirmed two basic forms of signal warrant methodologies in use. They are:

- Discrete Factors Method (DFM): typical examples are the U.S., Quebec, Ontario, and British Columbia. DFM provides some means to combine two factors if the warrant value is not reached for a specific factor.
- Cumulative Factors Method (CFM): typical examples are the Canadian MUTCD and the Calgary method. With CFM, the warrant values from two or more factors are added together to determine need for signalization.

Through an extensive data collection and calibration process , Synetics/ IBI Group/Earth Tech developed a CFM equation that takes into account the extent of the vehicle-vehicle conflict and vehicle-pedestrian conflict as well as all factors deemed important by the Canadian jurisdictions that participated in the project. The final equation is:

$$W = [C_{tow} C_{bt} (V_{m1} \times V_s)/K_1 + (F(V_{m2} \times P_c)L)/ K_2] \times C_i$$

Where:

W = warrant value

C tow = the reduction factor if the intersection is a T-intersection, or if the main street is a one-way street (0.67) – (it is assumed that these two factors only affect the side street vehicles trying to cross the main street, not the pedestrians trying to cross the main street.)

C bt = the maximum of the side street bus factor (C sb) and the side street truck factor (C st) – (it is assumed that these two factors only affect the side street vehicles trying to cross the main street, not the pedestrians trying to cross the main street.)

C i = the product of the 4 geographic factors (C s = intersection spacing, C mt = main street truck, C v = speed, C p = population.)

V m1 = the main street volume – either the total of the two approaches or the highest single approach (if there is a vehicle refuge ≥ 10.0 meters (30 feet)) (averaged over 6 peak hours.)

V m2 = the main street volume – either the total of the two approaches or the highest single approach (if there is a pedestrian refuge ≥ 5.0 meters (15 feet)) (averaged over 6 peak hours.)

V s = the highest side street approach volume *** note: it has been determined that V s must be > 75 for signals to be considered *** (averaged over 6 peak hours.)

F = Pedestrian demographic factor – the maximum of the 3 individual pedestrian demographic factors

P c = the total pedestrian volume crossing the main street (average over 6 peak hours.)

L = number of lanes that the pedestrians have to cross (only half the street if the median is ≥ 5.0 meters.)

K 1 = Veh-Veh denominator constant (K 1 = 1,100 for single lane approaches on the main street, and K 1 = 1,400 for multi-lane approaches.)

K 2 = Veh-Ped denominator constant (K 2 = 2,000 for single lane approaches on the main street, and K 2 = 5,000 for multi-lane approaches.)

The CFM equation calibrates warranting signals at 100 points. Any value 100 points or higher indicates traffic signals should be considered at this intersection. The determination must include local engineering judgment.

NCHRP Report 491

The “National Cooperative Highway Research Program (NCHRP) – Crash Experience Warrant for Traffic Signals” published by the Transportation Research Board, Report 491, evaluated the MUTCD crash experience warrant. The report states that the warrant is insufficient because it does not provide an engineer with a means to determine what changes in safety can be anticipated from installing or removing signal control. In addition, it is not clear that the current threshold of five or more crashes of the type correctable by signal control is based upon a logical and scientific approach for determining changes in intersection safety.

The NCHRP research project develops an improved crash experience warrant and a methodology to estimate the safety impacts of installing or removing traffic signals. Based on the research, the NCHRP report recommends the revisions to the MUTCD shown in Figure 1.

In the standard section of the crash experience warrant, the recommended warrant states that the first action should be to try other measures, both engineering and enforcement, to see if the crash frequency (and presumably severity) can be reduced. This implies that one or more measures are installed and that a suitable time is allowed to observe if crash frequency (severity) is reduced. Further, an appropriate crash analysis is performed to ensure that the observed change is indeed due to the countermeasure.

Paragraph B of the recommended warrant becomes the screening criterion to determine if further study is needed. If the plotted value is below the appropriate curve, then it is likely that installing a signal will result in increased crashes. No further analysis is needed if other warrants are not met. The crash experience should then be monitored for changes and other countermeasures should be considered.

If the plotted value is above the appropriate curve, then paragraph C mandates performing a safety analysis to establish if a net safety benefit can be expected as a result of signal installation. The report provides a procedure that could be adopted in later versions of the MUTCD.

Section 4C.08 Warrant 7, Crash Experience

Support: The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

Standard: The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and The plotted point representing the annual average daily traffic (AADT) entering on the major street (total of both approaches) and the AADT entering on the minor street (total of both approaches for a 4-leg intersection) falls above the applicable curve in Figure 4C-5 (shown here as Figure a) for a 3-leg intersection or in Figure 4C-6 (shown here as Figure b) for a 4-leg intersection. Each curve represents the number of non-rear-end injury crashes not involving pedestrians, in the most recent 3-year period; and

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours. An analysis of expected changes in injury crashes has estimated a net safety benefit after signal installation.

Source: NCHRP 491 5

Figure 1: Recommended revision to the MUTCD crash experience warrant

Warrants to Accommodate Pedestrians and Cyclists

In “Revising the Traffic Signal Warrants to Better Accommodate Pedestrians and Cyclists: Summary Report” for the Texas Transportation Institute, Paul Carlson and Shawn Turner 6 state that the current minimum pedestrian volume warrant is very rarely used to justify the installation of a traffic signal. This rare use may be partly due to the fact that a high number of pedestrians are required and locations with that type of pedestrian traffic typically will meet one of the other warrants. It may also be partly due to the fact that the required data collection of the minimum pedestrian volume warrant is time consuming.

Carlson and Turner make the following warrant recommendations as a result of their research.

- Include pedestrian and cyclists in the minor-street approach volumes for all warrants that currently consider only vehicles for the minor-street approach volumes.
- Include a 30 percent volume reduction factor in the warrants listed here based upon the presence of certain types of pedestrian trip generators such as medical facilities, pedestrian transportation facilities, and activity centers serving pedestrians.
- Change the existing pedestrian warrant to a mid-block-only pedestrian crossing warrant, remove language about pedestrian crossing speeds, and add a reduction factor for high-speed roadways or built-up areas.

Reduction for Right-turn Volumes

In his paper “Traffic Signal Warrants: Two Agencies’ Preferences” published in the Institute of Transportation Engineers (ITE), David R. McDonald 7 examined two state departments of transportation and their preferences of signal warrants to aid the engineer when evaluating the need for traffic signals. As part of the research he analyzed the reduction in right-turn volumes when evaluating signal warrants. The MUTCD states that the effects of right-turn vehicles from the minor street approaches must be considered. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the warrants.

The Manual of Traffic Signal Design 8 (MTSD) suggests that all right turns may be excluded in the analysis if the approach has a separate right-turn lane and a large-radius curb return. This exclusion can also apply when the right turns are made from a through lane and only a small-radius curb return is available.

Through the research, McDonald finds that various districts of the Illinois Department of Transportation use different techniques to account for this reduction in right-turn volumes. Districts one, two , and four use a process called the Pagones Theorem to reduce the number of right turns on the minor approach. The Pagones Theorem is shown in Figure 2.

Conclusions

Through the examination of research in this area, the current edition of the MUTCD is the final authority for justifying signal installation at an intersection. At least one of the eight MUTCD signal warrants must be satisfied to install a signal at the intersection. If none of the warrants are satisfied, a signal should not be installed. Installing a signal under such circumstances will reduce safety.

Transportation professionals could use the 4Q/6Q warrant procedure as part of a screening process to eliminate intersections that may not meet MUTCD warrants. This procedure is quick, flexible , and based on field conditions that can be verified and monitored.

Synetics/ IBI Group/Earth Tech's CFM warrant equation takes into account numerous intersection-specific parameters to evaluate the need for signalization. If the result of the equation is greater than 100, then the intersection could be signalized. However, the result of the equation may not be used to prioritize signalization of intersections in a community. Communities in the MOVITE district may find this method convenient to justify installation (or non-installation) of a signal.

The NCHRP Report 491 evaluated MUTCD crash-experience warrant and has suggested revising some of the paragraphs in the warrant. The report recommends a screening process to determine if a signal should be installed for safety reasons and a safety analysis to determine if a net safety benefit can be expected. Because the NCHRP report is to be adopted in future versions of the MUTCD, transportation professionals in the MOVITE district could start using the recommended process.

Intersections that experience heavy pedestrian and cyclist volumes could use the warrant changes suggested by Carlson and Turner. These changes would better accommodate the pedestrians at intersections and mid-block locations.

McDonald states that some districts in Illinois use the Pagones Theorem to remove engineering judgment during warrant analysis for the reduction of right-turn volumes on the minor approach. The theorem provides various reduction factors based on the lane configuration and volume of traffic. The Pagones Theorem could also be used in the MOVITE district to evaluate signal installation at locations where a right-turning movement is dominant.

First, determine which lane configuration represents the leg that is being studied. Then, based on the movements for each hour, find the percent reduction for each hour with the Pagones Theorem*.

Situation	Approach Configuration	Pagones Theorem Condition	Reduction of right turns
1	Shared left/through right	R > 0.7A	Reduce R by 60 percent
		0.7A≥ R > 0.35A	Reduce R by 30 percent
		R ≤ 0.35A	Reduce R by 20 percent
2	Exclusive left, shared through/right	R >3T	Reduce R by 60 percent
		3T ≥ R ≥ T/3	Reduce R by 30 percent
		R ≤ T/3	Reduce R by 20 percent
3	Any configuration with an exclusive right turn lane (usually ≥ 600 feet long)		Reduce R by 75 percent in all cases
4	Shared left/through and shared through/right	R > (T+L)	Reduce R by 65 percent
		L > (T+R)	Use Situation 2
		L = T = R (± 10 vehicles)	Reduce R by 40 percent
		L = T > 3R	Reduce R by 20 percent
		R = T >3L	Reduce R by 50 percent
		All other cases	Reduce R by 30 percent
5	Exclusive left, exclusive through and shared through/right	R > T	Reduce R by 75 percent
		T ≥ R ≥ T/2	Reduce R by 50 percent
		T/2 ≥ R > T/4	Reduce R by 30 percent
		R ≤ T/4	Reduce R by 15 percent

Where:

L = number of left turning vehicles in approach

T = number of through vehicles in approach

R = number of right turning vehicles in approach; and

A = (L+T+R)
* Note : This is just one step of the IDOT District 1 Signal Warrant Analysis. Mainline configuration factors and volume modifications should also be considered per District 1 procedure.

Source: McDonald 7

Figure 2: Pagones Theorem provided by Illinois Department of Transportation District 1 – used with a 12-hour manual traffic count.

Sources

1. "Manual on Uniform Traffic Control Devices," Federal Highway Administration, 2003
2. Sampson, John David, "Queue-Based Traffic-Signal Warrants: The 4Q/6Q Warrant," Institute of Transportation Engineers, April 1999
3. Texas Department of Transportation, "Traffic Signal Warrants – Guidelines for Conducting a Traffic Signal Warrant Analysis," Report Number 3991-2
4. Synetics, IBI Group, Earth Tech, "Canadian Traffic Signal Warrant Procedure,"
5. " National Cooperative Highway Research Program (NCHRP) – Crash Experience Warrant for Traffic Signals", Transportation Research Board, Report 491
6. Carlson, Paul J. and Turner, Shawn M., "Revising the Traffic Signal Warrants to Better Accommodate Pedestrians and Cyclists: Summary Report," Texas Transportation Institute, Project Summary Report 2136-S.
7. McDonald, David R., Jr., "Traffic Signal Warrants: Two Agencies' Preferences," Institute of Transportation Engineers (ITE), January 2001.
8. "Manual of Traffic Signal Design" Institute of Transportation Engineers, 200x

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click here for a brief bio

Hour	Raw Existing TMCs								
	Southbound			Eastbound			Westbound		
Start - End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
7:00 AM - 8:00 AM	36	0	51	35	577	0	0	480	22
8:00 AM - 9:00 AM	54	0	67	58	626	0	0	482	38
9:00 AM - 10:00 AM	43	0	31	18	432	0	0	418	31
10:00 AM - 11:00 AM	6	0	18	18	457	0	0	420	13
11:00 AM - 12:00 PM	11	0	16	15	519	0	0	426	7
12:00 PM - 1:00 PM	9	0	28	17	431	0	0	479	14
1:00 PM - 2:00 PM	21	0	32	28	491	0	0	551	13
2:00 PM - 3:00 PM	9	0	25	33	588	0	0	517	13
3:00 PM - 4:00 PM	41	0	65	58	547	0	1	595	48
4:00 PM - 5:00 PM	24	0	43	43	623	0	0	639	41
5:00 PM - 6:00 PM	14	0	50	46	666	0	0	749	42
6:00 PM - 7:00 PM	16	0	31	31	509	0	0	544	10

Hour	Existing Peak Season TMCs						PSCF = 1.03			Pagones		SWA Scenario A		SWA Scenario B	
	Southbound			Eastbound			Westbound			%		Major	Minor	Major	Minor
Start - End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Reduction	SBR	(EB & WB)	(SB)	(WB)	(EBL)
7:00 AM - 8:00 AM	37	0	53	36	594	0	0	494	23	30%	37	1,147	74	517	36
8:00 AM - 9:00 AM	56	0	69	60	645	0	0	496	39	30%	48	1,240	104	535	60
9:00 AM - 10:00 AM	44	0	32	19	445	0	0	431	32	30%	22	927	66	463	19
10:00 AM - 11:00 AM	6	0	19	19	471	0	0	433	13	60%	8	936	14	446	19
11:00 AM - 12:00 PM	11	0	16	15	535	0	0	439	7	30%	11	996	22	446	15
12:00 PM - 1:00 PM	9	0	29	18	444	0	0	493	14	60%	12	969	21	507	18
1:00 PM - 2:00 PM	22	0	33	29	506	0	0	568	13	30%	23	1,116	45	581	29
2:00 PM - 3:00 PM	9	0	26	34	606	0	0	533	13	60%	10	1,186	19	546	34
3:00 PM - 4:00 PM	42	0	67	60	563	0	1	613	49	30%	47	1,286	89	663	60
4:00 PM - 5:00 PM	25	0	44	44	642	0	0	658	42	30%	31	1,386	56	700	44
5:00 PM - 6:00 PM	14	0	52	47	686	0	0	771	43	60%	21	1,547	35	814	47
6:00 PM - 7:00 PM	16	0	32	32	524	0	0	560	10	30%	22	1,126	38	570	32

Hour	Future 2021 Background Peak Season TMCs						Growth = 1.0%		
	Southbound			Eastbound			Westbound		
Start - End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
7:00 AM - 8:00 AM	37	0	54	36	600	0	0	499	23
8:00 AM - 9:00 AM	57	0	70	61	651	0	0	501	39
9:00 AM - 10:00 AM	44	0	32	19	449	0	0	435	32
10:00 AM - 11:00 AM	6	0	19	19	476	0	0	437	13
11:00 AM - 12:00 PM	11	0	16	15	540	0	0	443	7
12:00 PM - 1:00 PM	9	0	29	18	448	0	0	498	14
1:00 PM - 2:00 PM	22	0	33	29	511	0	0	574	13
2:00 PM - 3:00 PM	9	0	26	34	612	0	0	538	13
3:00 PM - 4:00 PM	42	0	68	61	569	0	1	619	49
4:00 PM - 5:00 PM	25	0	44	44	648	0	0	665	42
5:00 PM - 6:00 PM	14	0	53	47	693	0	0	779	43
6:00 PM - 7:00 PM	16	0	32	32	529	0	0	566	10

Hour	Howard Bishop Scenario 1 Diversions					
	SBL		EBT	WBT	WBR	
Start - End	%	Assign	Buses	Buses	%	Assign
7:00 AM - 8:00 AM						
8:00 AM - 9:00 AM	51%	23	0	0	51%	34
9:00 AM - 10:00 AM	51%	124	10	10	51%	129
10:00 AM - 11:00 AM	51%	23	0	0	51%	23
11:00 AM - 12:00 PM						
12:00 PM - 1:00 PM						
1:00 PM - 2:00 PM						
2:00 PM - 3:00 PM						
3:00 PM - 4:00 PM	45%	19	0	0	45%	26
4:00 PM - 5:00 PM	45%	70	0	0	45%	47
5:00 PM - 6:00 PM						
6:00 PM - 7:00 PM						

Hour	Howard Bishop Scenario 2 Diversions					
	SBL		EBT	WBT	WBR	
Start - End	%	Assign	Buses	Buses	%	Assign
7:00 AM - 8:00 AM	51%	23			51%	34
8:00 AM - 9:00 AM	51%	124	5	5	51%	129
9:00 AM - 10:00 AM	51%	23	5	5	51%	23
10:00 AM - 11:00 AM						
11:00 AM - 12:00 PM						
12:00 PM - 1:00 PM						
1:00 PM - 2:00 PM						
2:00 PM - 3:00 PM	45%	19	0	0	45%	26
3:00 PM - 4:00 PM	45%	70	0	0	45%	47
4:00 PM - 5:00 PM						
5:00 PM - 6:00 PM						
6:00 PM - 7:00 PM						

Hour	Future 2021 with Howard Bishop Scenario 1 Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
	Southbound			Eastbound			Westbound			%		Major	Minor	Major	Minor
Start - End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Reduction	SBR	(EB & WB)	(SB)	(WB)	(EBL)
7:00 AM - 8:00 AM	37	0	54	36	600	0	0	499	23	30%	38	1,158	75	522	36
8:00 AM - 9:00 AM	80	0	70	61	651	0	0	501	73	30%	49	1,286	129	574	61
9:00 AM - 10:00 AM	168	0	32	19	459	0	0	445	161	20%	26	1,084	194	606	19
10:00 AM - 11:00 AM	29	0	19	19	476	0	0	437	36	30%	13	968	42	473	19
11:00 AM - 12:00 PM	11	0	16	15	540	0	0	443	7	30%	11	1,005	22	450	15
12:00 PM - 1:00 PM	9	0	29	18	448	0	0	498	14	60%	12	978	21	512	18
1:00 PM - 2:00 PM	22	0	33	29	511	0	0	574	13	30%	23	1,127	45	587	29
2:00 PM - 3:00 PM	9	0	26	34	612	0	0	538	13	60%	10	1,197	19	551	34
3:00 PM - 4:00 PM	61	0	68	61	569	0	1	619	75	30%	48	1,325	109	695	61
4:00 PM - 5:00 PM	95	0	44	44	648	0	0	665	89	20%	35	1,446	130	754	44
5:00 PM - 6:00 PM	14	0	53	47	693	0	0	779	43	60%	21	1,562	35	822	47
6:00 PM - 7:00 PM	16	0	32	32	529	0	0	566	10	30%	22	1,137	38	576	32

Hour	Future 2021 with Howard Bishop Scenario 2 Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
	Southbound			Eastbound			Westbound			%		Major	Minor	Major	Minor
Start - End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Reduction	SBR	(EB & WB)	(SB)	(WB)	(EBL)
7:00 AM - 8:00 AM	60	0	54	36	600	0	0	499	57	30%	38	1,192	98	556	36
8:00 AM - 9:00 AM	181	0	70	61	656	0	0	506	168	20%	56	1,391	237	674	61
9:00 AM - 10:00 AM	67	0	32	19	454	0	0	440	55	20%	26	968	93	495	19
10:00 AM - 11:00 AM	6	0	19	19	476	0	0	437	13	60%	8	945	14	450	19
11:00 AM - 12:00 PM	11	0	16	15	540	0	0	443	7	30%	11	1,005	22	450	15
12:00 PM - 1:00 PM	9	0	29	18	448	0	0	498	14	60%	12	978	21	512	18
1:00 PM - 2:00 PM	22	0	33	29	511	0	0	574	13	30%	23	1,127	45	587	29
2:00 PM - 3:00 PM	28	0	26	34	612	0	0	538	39	30%	18	1,223	46	577	34
3:00 PM - 4:00 PM	112	0	68	61	569	0	1	619	96	30%	48	1,346	160	716	61
4:00 PM - 5:00 PM	25	0	44	44	648	0	0	665	42	30%	31	1,399	56	707	44
5:00 PM - 6:00 PM	14	0	53	47	693	0	0	779	43	60%	21	1,562	35	822	47
6:00 PM - 7:00 PM	16	0	32	32	529	0	0	566	10	30%	22	1,137	38	576	32

Hour		Future 2023 Background Peak Season TMCs								Growth = 1.0%
		Southbound			Eastbound			Westbound		
Start	End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
7:00 AM	8:00 AM	38	0	55	37	612	0	0	509	24
8:00 AM	9:00 AM	58	0	71	62	665	0	0	511	40
9:00 AM	10:00 AM	45	0	33	20	458	0	0	444	33
10:00 AM	11:00 AM	6	0	20	20	485	0	0	446	13
11:00 AM	12:00 PM	11	0	16	15	551	0	0	452	7
12:00 PM	1:00 PM	9	0	30	19	457	0	0	508	14
1:00 PM	2:00 PM	23	0	34	30	521	0	0	585	13
2:00 PM	3:00 PM	9	0	27	35	624	0	0	549	13
3:00 PM	4:00 PM	43	0	69	62	580	0	1	632	50
4:00 PM	5:00 PM	26	0	45	45	661	0	0	678	43
5:00 PM	6:00 PM	14	0	54	48	707	0	0	794	44
6:00 PM	7:00 PM	16	0	33	33	540	0	0	577	10

Hour		Littlewood Diversions							
		SBL		SBR		EBL		WBR	
Start	End	%	Assign	%	Assign	%	Assign	%	Assign
7:00 AM	8:00 AM	9%	29	55%	169	59%	221	18%	68
8:00 AM	9:00 AM	9%	2	55%	14	59%	18	18%	5
9:00 AM	10:00 AM								
10:00 AM	11:00 AM								
11:00 AM	12:00 PM								
12:00 PM	1:00 PM								
1:00 PM	2:00 PM	9%	15	54%	87	55%	72	23%	30
2:00 PM	3:00 PM	9%	5	54%	30	55%	23	23%	10
3:00 PM	4:00 PM								
4:00 PM	5:00 PM								
5:00 PM	6:00 PM								
6:00 PM	7:00 PM								

Hour		Future 2023 with Littlewood Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
		Southbound			Eastbound			Westbound			%		Major	Minor	Major	Minor
Start	End	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Reduction	SBR	(EB & WB)	(SB)	(WB)	(EBL)
7:00 AM	8:00 AM	67	0	224	258	612	0	0	509	92	60%	90	1,471	157	601	258
8:00 AM	9:00 AM	60	0	85	80	665	0	0	511	45	30%	60	1,301	120	556	80
9:00 AM	10:00 AM	45	0	33	20	458	0	0	444	33	30%	23	955	68	477	20
10:00 AM	11:00 AM	6	0	20	20	485	0	0	446	13	60%	8	964	14	459	20
11:00 AM	12:00 PM	11	0	16	15	551	0	0	452	7	30%	11	1,025	22	459	15
12:00 PM	1:00 PM	9	0	30	19	457	0	0	508	14	60%	12	998	21	522	19
1:00 PM	2:00 PM	38	0	121	102	521	0	0	585	43	60%	48	1,251	86	628	102
2:00 PM	3:00 PM	14	0	57	58	624	0	0	549	23	60%	23	1,254	37	572	58
3:00 PM	4:00 PM	43	0	69	62	580	0	1	632	50	30%	48	1,325	91	683	62
4:00 PM	5:00 PM	26	0	45	45	661	0	0	678	43	30%	32	1,427	58	721	45
5:00 PM	6:00 PM	14	0	54	48	707	0	0	794	44	60%	22	1,593	36	838	48
6:00 PM	7:00 PM	16	0	33	33	540	0	0	577	10	30%	23	1,160	39	587	33

Crossing NW 8th Avenue at NW 31st Drive

Time	Pedestrians	Hourly
8:00 AM	2	4
8:15 AM	2	2
8:30 AM	0	0
8:45 AM	0	1
9:00 AM	0	1
9:15 AM	0	
9:30 AM	1	
9:45 AM	0	

2:30 PM	3	10
2:45 PM	0	10
3:00 PM	2	15
3:15 PM	5	16
3:30 PM	3	16
3:45 PM	5	
4:00 PM	3	
4:15 PM	5	

Crash Summary, NW 8th Avenue and NW 31st Drive Intersection, 2015 – 2019

	2015	2016	2017	2018	2019	5-Year Total
TOTAL	6	2	3	2	3	**16**
SEVERITY						
PDO	3	2	1	1	3	**10**
Injury	3	0	2	1	0	**6**
Fatal	0	0	0	0	0	**0**
CRASH TYPE						
Rear-End	6	2	1	2	3	**14**
Sideswipe	0	0	1	0	0	**1**
Other	0	0	1	0	0	**1**
CRASH DIRECTIONALITY						
Westbound	4	2	3	1	3	**13**
Eastbound	2	0	0	1	0	**3**
LIGHTING CONDITIONS						
Daylight	4	2	2	2	3	**13**
Dark/Dusk/Dawn	2	0	1	0	0	**3**
SURFACE CONDITIONS						
Dry	3	1	3	2	1	**10**
Wet	3	1	0	0	2	**6**
ALCOHOL INVOLVEMENT						
No	6	2	3	2	3	**16**
Yes	0	0	0	0	0	**0**

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Existing 2020 Volumes Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST SOUTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,147	74	Y			Y			Y			Y	Y	**Y**		
08:00 AM TO 09:00 AM	1,240	104	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
09:00 AM TO 10:00 AM	927	66	Y			Y			Y			Y	Y	**Y**		
10:00 AM TO 11:00 AM	936	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	996	22	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	969	21	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,116	45	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,186	19	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,286	89	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	1,386	56	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	1,547	35	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,126	38	Y			Y			Y			Y				
	13,862	583			**0**			**2**			**0**			**4**	**2**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Existing 2020 Volumes with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: WB NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: EBL NW 8th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST WESTBOUND	MINOR ST EASTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	517	36							Y							
08:00 AM TO 09:00 AM	535	60							Y				Y			
09:00 AM TO 10:00 AM	463	19														
10:00 AM TO 11:00 AM	446	19														
11:00 AM TO 12:00 PM	446	15														
12:00 PM TO 01:00 PM	507	18							Y							
01:00 PM TO 02:00 PM	581	29							Y							
02:00 PM TO 03:00 PM	546	34							Y							
03:00 PM TO 04:00 PM	663	60	Y						Y				Y			
04:00 PM TO 05:00 PM	700	44	Y						Y							
05:00 PM TO 06:00 PM	814	47	Y						Y			Y				
06:00 PM TO 07:00 PM	570	32							Y							
	6,788	413			**0**			**0**			**0**			**0**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 1 Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST SOUTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,158	75	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
08:00 AM TO 09:00 AM	1,286	129	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
09:00 AM TO 10:00 AM	1,084	194	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
10:00 AM TO 11:00 AM	968	42	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,005	22	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	978	21	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,127	45	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,197	19	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,325	109	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	1,446	130	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
05:00 PM TO 06:00 PM	1,562	35	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,137	38	Y			Y			Y			Y				
	14,273	859			**1**			**5**			**3**			**5**	**4**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 1 Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: WB NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: EBL NW 8th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST WESTBOUND	MINOR ST EASTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	522	36							Y							
08:00 AM TO 09:00 AM	574	61							Y				Y			
09:00 AM TO 10:00 AM	606	19	Y						Y							
10:00 AM TO 11:00 AM	473	19														
11:00 AM TO 12:00 PM	450	15														
12:00 PM TO 01:00 PM	512	18							Y							
01:00 PM TO 02:00 PM	587	29							Y							
02:00 PM TO 03:00 PM	551	34							Y							
03:00 PM TO 04:00 PM	695	61	Y						Y				Y			
04:00 PM TO 05:00 PM	754	44	Y						Y			Y				
05:00 PM TO 06:00 PM	822	47	Y						Y			Y				
06:00 PM TO 07:00 PM	576	32							Y							
	7,122	415			**0**			**0**			**0**			**0**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 2 Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST SOUTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,192	98	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
08:00 AM TO 09:00 AM	1,391	237	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:00 AM TO 10:00 AM	968	93	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
10:00 AM TO 11:00 AM	945	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,005	22	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	978	21	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,127	45	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,223	46	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,346	160	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	1,399	56	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	1,562	35	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,137	38	Y			Y			Y			Y				
	14,273	865			**2**			**4**			**2**			**4**	**2**	**1**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 2 Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: WB NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: EBL NW 8th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST WESTBOUND	MINOR ST EASTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES	→		600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	556	36							Y							
08:00 AM TO 09:00 AM	674	61	Y						Y				Y			
09:00 AM TO 10:00 AM	495	19							Y							
10:00 AM TO 11:00 AM	450	19														
11:00 AM TO 12:00 PM	450	15														
12:00 PM TO 01:00 PM	512	18							Y							
01:00 PM TO 02:00 PM	587	29							Y							
02:00 PM TO 03:00 PM	577	34							Y							
03:00 PM TO 04:00 PM	716	61	Y						Y				Y			
04:00 PM TO 05:00 PM	707	44	Y						Y							
05:00 PM TO 06:00 PM	822	47	Y						Y			Y				
06:00 PM TO 07:00 PM	576	32							Y							
	7,122	415			**0**			**0**			**0**			**0**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2023 Volumes with Littlewood Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST SOUTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,471	157	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM	1,301	120	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
09:00 AM TO 10:00 AM	955	68	Y			Y			Y			Y	Y	**Y**		
10:00 AM TO 11:00 AM	964	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,025	22	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	998	21	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,251	86	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
02:00 PM TO 03:00 PM	1,254	37	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,325	91	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	1,427	58	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	1,593	36	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,160	39	Y			Y			Y			Y				
	14,724	749			**1**			**4**			**2**			**5**	**3**	**1**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 8th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 8th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2023 Volumes with Littlewood Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: WB NW 8th Avenue # OF APPROACH LANES: 2

MINOR STREET: EBL NW 8th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST WESTBOUND	MINOR ST EASTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	601	258	Y	Y	**Y**		Y		Y	Y	**Y**		Y			
08:00 AM TO 09:00 AM	556	80					Y		Y				Y			
09:00 AM TO 10:00 AM	477	20														
10:00 AM TO 11:00 AM	459	20														
11:00 AM TO 12:00 PM	459	15														
12:00 PM TO 01:00 PM	522	19							Y							
01:00 PM TO 02:00 PM	628	102	Y				Y		Y				Y			
02:00 PM TO 03:00 PM	572	58							Y							
03:00 PM TO 04:00 PM	683	62	Y						Y				Y			
04:00 PM TO 05:00 PM	721	45	Y						Y			Y				
05:00 PM TO 06:00 PM	838	48	Y						Y			Y				
06:00 PM TO 07:00 PM	587	33							Y							
	7,103	760			**1**			**0**			**1**			**0**	**0**	**0**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

APPENDIX G: NW 16th Avenue at NW 31st Drive Signal Warrant Analysis

Hour			Raw Existing TMCs								
			Northbound			Eastbound			Westbound		
Start	-	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
7:00 AM	-	8:00 AM	5	0	46	1	772	18	54	590	0
8:00 AM	-	9:00 AM	12	0	106	0	693	38	112	727	0
9:00 AM	-	10:00 AM	18	0	76	1	569	15	48	626	0
10:00 AM	-	11:00 AM	6	0	19	2	564	11	14	626	0
11:00 AM	-	12:00 PM	1	0	25	0	606	6	20	652	0
12:00 PM	-	1:00 PM	3	0	21	0	647	7	20	677	1
1:00 PM	-	2:00 PM	10	0	32	0	619	5	23	670	0
2:00 PM	-	3:00 PM	11	0	47	0	680	4	29	733	0
3:00 PM	-	4:00 PM	32	0	102	3	664	36	82	766	0
4:00 PM	-	5:00 PM	14	0	83	1	799	27	55	941	0
5:00 PM	-	6:00 PM	15	0	77	0	786	20	40	1,126	0
6:00 PM	-	7:00 PM	8	0	45	0	661	9	20	745	0

Hour			Existing Peak Season TMCs							PSCF = 1.03		Pagones		SWA Scenario A		SWA Scenario B	
			Northbound			Eastbound			Westbound					Major	Minor	Major	Minor
Start	-	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	% Reduction	NBR	(EB & WB)	(NB)	(EB)	(WBL)
7:00 AM	-	8:00 AM	5	0	47	1	795	19	56	608	0	60%	19	1,479	24	815	56
8:00 AM	-	9:00 AM	12	0	109	0	714	39	115	749	0	60%	44	1,617	56	753	115
9:00 AM	-	10:00 AM	19	0	78	1	586	15	49	645	0	60%	31	1,296	50	602	49
10:00 AM	-	11:00 AM	6	0	20	2	581	11	14	645	0	60%	8	1,253	14	594	14
11:00 AM	-	12:00 PM	1	0	26	0	624	6	21	672	0	60%	10	1,323	11	630	21
12:00 PM	-	1:00 PM	3	0	22	0	666	7	21	697	1	60%	9	1,392	12	673	21
1:00 PM	-	2:00 PM	10	0	33	0	638	5	24	690	0	60%	13	1,357	23	643	24
2:00 PM	-	3:00 PM	11	0	48	0	700	4	30	755	0	60%	19	1,489	30	704	30
3:00 PM	-	4:00 PM	33	0	105	3	684	37	84	789	0	60%	42	1,597	75	724	84
4:00 PM	-	5:00 PM	14	0	85	1	823	28	57	969	0	60%	34	1,878	48	852	57
5:00 PM	-	6:00 PM	15	0	79	0	810	21	41	1,160	0	60%	32	2,032	47	831	41
6:00 PM	-	7:00 PM	8	0	46	0	681	9	21	767	0	60%	18	1,478	26	690	21

Hour			Future 2021 Background Peak Season TMCs							Growth = 1.0%	
			Northbound			Eastbound			Westbound		
Start	-	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
7:00 AM	-	8:00 AM	5	0	47	1	803	19	57	614	0
8:00 AM	-	9:00 AM	12	0	110	0	721	39	116	756	0
9:00 AM	-	10:00 AM	19	0	79	1	592	15	49	651	0
10:00 AM	-	11:00 AM	6	0	20	2	587	11	14	651	0
11:00 AM	-	12:00 PM	1	0	26	0	630	6	21	679	0
12:00 PM	-	1:00 PM	3	0	22	0	673	7	21	704	1
1:00 PM	-	2:00 PM	10	0	33	0	644	5	24	697	0
2:00 PM	-	3:00 PM	11	0	48	0	707	4	30	763	0
3:00 PM	-	4:00 PM	33	0	106	3	691	37	85	797	0
4:00 PM	-	5:00 PM	14	0	86	1	831	28	58	979	0
5:00 PM	-	6:00 PM	15	0	80	0	818	21	41	1,172	0
6:00 PM	-	7:00 PM	8	0	46	0	688	9	21	775	0

Hour			Howard Bishop Scenario 1 Diversions					
			NBR		EBT	WBT	WBL	
Start	-	End	%	Assign	Buses	Buses	%	Assign
7:00 AM	-	8:00 AM						
8:00 AM	-	9:00 AM	49%	22	0	0	49%	33
9:00 AM	-	10:00 AM	49%	119	15	15	49%	124
10:00 AM	-	11:00 AM	49%	22	0	0	49%	22
11:00 AM	-	12:00 PM						
12:00 PM	-	1:00 PM						
1:00 PM	-	2:00 PM						
2:00 PM	-	3:00 PM						
3:00 PM	-	4:00 PM	55%	23	0	0	55%	32
4:00 PM	-	5:00 PM	55%	85	25	25	55%	57
5:00 PM	-	6:00 PM						
6:00 PM	-	7:00 PM						

Hour			Howard Bishop Scenario 2 Diversions					
			NBR		EBT	WBT	WBL	
Start	-	End	%	Assign	Buses	Buses	%	Assign
7:00 AM	-	8:00 AM	49%	22	0	0	49%	33
8:00 AM	-	9:00 AM	49%	119	8	8	49%	124
9:00 AM	-	10:00 AM	49%	22	7	7	49%	22
10:00 AM	-	11:00 AM						
11:00 AM	-	12:00 PM						
12:00 PM	-	1:00 PM						
1:00 PM	-	2:00 PM						
2:00 PM	-	3:00 PM	55%	23	0	0	55%	32
3:00 PM	-	4:00 PM	55%	85	25	25	55%	57
4:00 PM	-	5:00 PM						
5:00 PM	-	6:00 PM						
6:00 PM	-	7:00 PM						

Hour			Future 2021 with Howard Bishop Scenario 1 Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
			Northbound			Eastbound			Westbound					Major	Minor	Major	Minor
Start	-	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	% Reduction	NBR	(EB & WB)	(NB)	(EB)	(WBL)
7:00 AM	-	8:00 AM	5	0	47	1	803	19	57	614	0	60%	19	1,494	24	823	57
8:00 AM	-	9:00 AM	12	0	132	0	721	39	149	756	0	60%	53	1,665	65	760	149
9:00 AM	-	10:00 AM	19	0	198	1	607	15	173	666	0	60%	79	1,462	98	623	173
10:00 AM	-	11:00 AM	6	0	42	2	587	11	36	651	0	60%	17	1,287	23	600	36
11:00 AM	-	12:00 PM	1	0	26	0	630	6	21	679	0	60%	10	1,336	11	636	21
12:00 PM	-	1:00 PM	3	0	22	0	673	7	21	704	1	60%	9	1,406	12	680	21
1:00 PM	-	2:00 PM	10	0	33	0	644	5	24	697	0	60%	13	1,370	23	649	24
2:00 PM	-	3:00 PM	11	0	48	0	707	4	30	763	0	60%	19	1,504	30	711	30
3:00 PM	-	4:00 PM	33	0	129	3	691	37	117	797	0	60%	52	1,645	85	731	117
4:00 PM	-	5:00 PM	14	0	171	1	856	28	115	1,004	0	60%	68	2,004	82	885	115
5:00 PM	-	6:00 PM	15	0	80	0	818	21	41	1,172	0	60%	32	2,052	47	839	41
6:00 PM	-	7:00 PM	8	0	46	0	688	9	21	775	0	60%	18	1,493	26	697	21

Hour			Future 2021 with Howard Bishop Scenario 2 Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
			Northbound			Eastbound			Westbound					Major	Minor	Major	Minor
Start	-	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	% Reduction	NBR	(EB & WB)	(NB)	(EB)	(WBL)
7:00 AM	-	8:00 AM	5	0	69	1	803	19	90	614	0	60%	28	1,527	33	823	90
8:00 AM	-	9:00 AM	12	0	229	0	729	39	240	764	0	60%	92	1,772	104	768	240
9:00 AM	-	10:00 AM	19	0	101	1	599	15	71	658	0	60%	40	1,344	59	615	71
10:00 AM	-	11:00 AM	6	0	20	2	587	11	14	651	0	60%	8	1,265	14	600	14
11:00 AM	-	12:00 PM	1	0	26	0	630	6	21	679	0	60%	10	1,336	11	636	21
12:00 PM	-	1:00 PM	3	0	22	0	673	7	21	704	1	60%	9	1,406	12	680	21
1:00 PM	-	2:00 PM	10	0	33	0	644	5	24	697	0	60%	13	1,370	23	649	24
2:00 PM	-	3:00 PM	11	0	71	0	707	4	62	763	0	60%	28	1,536	39	711	62
3:00 PM	-	4:00 PM	33	0	191	3	716	37	142	822	0	60%	76	1,720	109	756	142
4:00 PM	-	5:00 PM	14	0	86	1	831	28	58	979	0	60%	34	1,897	48	860	58
5:00 PM	-	6:00 PM	15	0	80	0	818	21	41	1,172	0	60%	32	2,052	47	839	41
6:00 PM	-	7:00 PM	8	0	46	0	688	9	21	775	0	60%	18	1,493	26	697	21

Hour		Future 2023 Background Peak Season TMCs								Growth = 1.0%	
		Northbound			Eastbound			Westbound			
Start	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	
7:00 AM	8:00 AM	5	0	48	1	819	20	58	626	0	
8:00 AM	9:00 AM	12	0	112	0	736	40	118	772	0	
9:00 AM	10:00 AM	20	0	80	1	604	15	50	665	0	
10:00 AM	11:00 AM	6	0	21	2	599	11	14	665	0	
11:00 AM	12:00 PM	1	0	27	0	643	6	22	692	0	
12:00 PM	1:00 PM	3	0	23	0	686	7	22	718	1	
1:00 PM	2:00 PM	10	0	34	0	657	5	25	711	0	
2:00 PM	3:00 PM	11	0	49	0	721	4	31	778	0	
3:00 PM	4:00 PM	34	0	108	3	705	38	87	813	0	
4:00 PM	5:00 PM	14	0	88	1	848	29	59	998	0	
5:00 PM	6:00 PM	15	0	81	0	835	22	42	1,195	0	
6:00 PM	7:00 PM	8	0	47	0	702	9	22	790	0	

Hour		Littlewood Diversions					
		NBL		NBR		EBR	
Start	End	%	Assign	%	Assign	%	Assign
7:00 AM	8:00 AM	19%	59	2%	6	9%	34
8:00 AM	9:00 AM	19%	5	2%	1	9%	3
9:00 AM	10:00 AM						
10:00 AM	11:00 AM						
11:00 AM	12:00 PM						
12:00 PM	1:00 PM						
1:00 PM	2:00 PM	19%	30	2%	3	9%	12
2:00 PM	3:00 PM	19%	10	2%	1	9%	4
3:00 PM	4:00 PM						
4:00 PM	5:00 PM						
5:00 PM	6:00 PM						
6:00 PM	7:00 PM						

Hour		Future 2023 with Littlewood Diversions TMCs									Pagones		SWA Scenario A		SWA Scenario B	
		Northbound			Eastbound			Westbound					Major	Minor	Major	Minor
Start	End	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	% Reduction	NBR	(EB & WB)	(NB)	(EB)	(WBL)
7:00 AM	8:00 AM	64	0	54	1	819	54	58	626	0	30%	38	1,558	102	874	58
8:00 AM	9:00 AM	17	0	113	0	736	43	118	772	0	60%	45	1,669	62	779	118
9:00 AM	10:00 AM	20	0	80	1	604	15	50	665	0	60%	32	1,335	52	620	50
10:00 AM	11:00 AM	6	0	21	2	599	11	14	665	0	60%	8	1,291	14	612	14
11:00 AM	12:00 PM	1	0	27	0	643	6	22	692	0	60%	11	1,363	12	649	22
12:00 PM	1:00 PM	3	0	23	0	686	7	22	718	1	60%	9	1,434	12	693	22
1:00 PM	2:00 PM	40	0	37	0	657	17	25	711	0	30%	26	1,410	66	674	25
2:00 PM	3:00 PM	21	0	50	0	721	8	31	778	0	60%	20	1,538	41	729	31
3:00 PM	4:00 PM	34	0	108	3	705	38	87	813	0	60%	43	1,646	77	746	87
4:00 PM	5:00 PM	14	0	88	1	848	29	59	998	0	60%	35	1,935	49	878	59
5:00 PM	6:00 PM	15	0	81	0	835	22	42	1,195	0	60%	32	2,094	47	857	42
6:00 PM	7:00 PM	8	0	47	0	702	9	22	790	0	60%	19	1,523	27	711	22

Crossing NW 16th Avenue at NW 31st Drive

Time	Pedestrians	Hourly
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	0	0
9:00 AM	0	0
9:15 AM	0	
9:30 AM	0	
9:45 AM	0	

2:30 PM	0	0
2:45 PM	0	0
3:00 PM	0	0
3:15 PM	0	0
3:30 PM	0	0
3:45 PM	0	
4:00 PM	0	
4:15 PM	0	

Crash Summary, NW 16th Avenue and NW 31st Drive Intersection, 2015 – 2019

	2015	2016	2017	2018	2019	5-Year Total
TOTAL	0	2	1	0	0	**3**
SEVERITY						
PDO	0	1	0	0	0	**1**
Injury	0	1	1	0	0	**2**
Fatal	0	0	0	0	0	**0**
CRASH TYPE						
Rear-End	0	2	1	0	0	**3**
Other	0	0	0	0	0	**0**
LIGHTING CONDITIONS						
Daylight	0	2	1	0	0	**3**
Dark/Dusk/Dawn	0	0	0	0	0	**0**
SURFACE CONDITIONS						
Dry	0	2	1	0	0	**3**
Wet	0	0	0	0	0	**0**
ALCOHOL INVOLVEMENT						
No	0	2	1	0	0	**3**
Yes	0	0	0	0	0	**0**

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Existing 2020 Volumes Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST NORTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,479	24	Y			Y			Y			Y				
08:00 AM TO 09:00 AM	1,617	56	Y			Y			Y			Y				
09:00 AM TO 10:00 AM	1,296	50	Y			Y			Y			Y				
10:00 AM TO 11:00 AM	1,253	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,323	11	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	1,392	12	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,357	23	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,489	30	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,597	75	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	1,878	48	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	2,032	47	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,478	26	Y			Y			Y			Y				
	18,191	416			**0**			**1**			**0**			**1**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Existing 2020 Volumes with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: EB NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: WBL NW 16th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND	MINOR ST WESTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	815	56	Y						Y			Y				
08:00 AM TO 09:00 AM	753	115	Y				Y		Y			Y	Y	**Y**		
09:00 AM TO 10:00 AM	602	49	Y						Y							
10:00 AM TO 11:00 AM	594	14							Y							
11:00 AM TO 12:00 PM	630	21	Y						Y							
12:00 PM TO 01:00 PM	673	21	Y						Y							
01:00 PM TO 02:00 PM	643	24	Y						Y							
02:00 PM TO 03:00 PM	704	30	Y						Y							
03:00 PM TO 04:00 PM	724	84	Y				Y		Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	852	57	Y						Y			Y				
05:00 PM TO 06:00 PM	831	41	Y						Y			Y				
06:00 PM TO 07:00 PM	690	21	Y						Y							
	8,511	533			**0**			**0**			**0**			**2**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 1 Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST NORTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,494	24	Y			Y			Y			Y				
08:00 AM TO 09:00 AM	1,665	65	Y			Y			Y			Y	Y	**Y**		
09:00 AM TO 10:00 AM	1,462	98	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
10:00 AM TO 11:00 AM	1,287	23	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,336	11	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	1,406	12	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,370	23	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,504	30	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,645	85	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	2,004	82	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
05:00 PM TO 06:00 PM	2,052	47	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,493	26	Y			Y			Y			Y				
	18,718	526			**0**			**3**			**0**			**4**	**3**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 1 Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: EB NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: WBL NW 16th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND	MINOR ST WESTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	823	57	Y						Y			Y				
08:00 AM TO 09:00 AM	760	149	Y				Y		Y	Y	**Y**	Y	Y	**Y**		
09:00 AM TO 10:00 AM	623	173	Y	Y	**Y**		Y		Y	Y	**Y**		Y			
10:00 AM TO 11:00 AM	600	36	Y						Y							
11:00 AM TO 12:00 PM	636	21	Y						Y							
12:00 PM TO 01:00 PM	680	21	Y						Y							
01:00 PM TO 02:00 PM	649	24	Y						Y							
02:00 PM TO 03:00 PM	711	30	Y						Y							
03:00 PM TO 04:00 PM	731	117	Y				Y		Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	885	115	Y				Y		Y			Y	Y	**Y**		
05:00 PM TO 06:00 PM	839	41	Y						Y			Y				
06:00 PM TO 07:00 PM	697	21	Y						Y							
	8,634	805			**1**			**0**			**2**			**3**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 2 Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST NORTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,527	33	Y			Y			Y			Y				
08:00 AM TO 09:00 AM	1,772	104	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
09:00 AM TO 10:00 AM	1,344	59	Y			Y			Y			Y				
10:00 AM TO 11:00 AM	1,265	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,336	11	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	1,406	12	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,370	23	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	1,536	39	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,720	109	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
04:00 PM TO 05:00 PM	1,897	48	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	2,052	47	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,493	26	Y			Y			Y			Y				
	18,718	525			**0**			**2**			**0**			**2**	**2**	**2**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2021 Volumes with Howard Bishop Scenario 2 Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: EB NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: WBL NW 16th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND	MINOR ST WESTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	823	90	Y				Y		Y			Y	Y	**Y**		
08:00 AM TO 09:00 AM	768	240	Y	Y	**Y**		Y		Y	Y	**Y**	Y	Y	**Y**	**Y**	
09:00 AM TO 10:00 AM	615	71	Y						Y				Y			
10:00 AM TO 11:00 AM	600	14	Y						Y							
11:00 AM TO 12:00 PM	636	21	Y						Y							
12:00 PM TO 01:00 PM	680	21	Y						Y							
01:00 PM TO 02:00 PM	649	24	Y						Y							
02:00 PM TO 03:00 PM	711	62	Y						Y				Y			
03:00 PM TO 04:00 PM	756	142	Y				Y		Y	Y	**Y**	Y	Y	**Y**		
04:00 PM TO 05:00 PM	860	58	Y						Y			Y				
05:00 PM TO 06:00 PM	839	41	Y						Y			Y				
06:00 PM TO 07:00 PM	697	21	Y						Y							
	8,634	805			**1**			**0**			**2**			**3**	**1**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2023 Volumes with Littlewood Diversions Traditional Major/Minor (Scenario A)

MAJOR STREET: NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: NW 31st Drive # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND/ WESTBOUND	MINOR ST NORTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	1,558	102	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
08:00 AM TO 09:00 AM	1,669	62	Y			Y			Y			Y	Y	**Y**		
09:00 AM TO 10:00 AM	1,335	52	Y			Y			Y			Y				
10:00 AM TO 11:00 AM	1,291	14	Y			Y			Y			Y				
11:00 AM TO 12:00 PM	1,363	12	Y			Y			Y			Y				
12:00 PM TO 01:00 PM	1,434	12	Y			Y			Y			Y				
01:00 PM TO 02:00 PM	1,410	66	Y			Y			Y			Y	Y	**Y**		
02:00 PM TO 03:00 PM	1,538	41	Y			Y			Y			Y				
03:00 PM TO 04:00 PM	1,646	77	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	1,935	49	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	2,094	47	Y			Y			Y			Y				
06:00 PM TO 07:00 PM	1,523	27	Y			Y			Y			Y				
	18,796	561			**0**			**2**			**0**			**4**	**1**	**0**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

NW 16th Avenue and NW 31st Drive

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 16th Avenue and NW 31st Drive
Gainesville, FL

SCENARIO: Future 2023 Volumes with Littlewood Diversions with Major Street Left as "Minor Street" (Scenario B)

MAJOR STREET: EB NW 16th Avenue # OF APPROACH LANES: 2

MINOR STREET: WBL NW 16th Avenue # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST EASTBOUND	MINOR ST WESTBOUND LEFT	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A &1-B						WARRANT 2	WARRANT 3
									WARRANT 1-A			WARRANT 1-B				
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	150		900	75		480	120		720	60			
07:00 AM TO 08:00 AM	874	58	Y						Y			Y				
08:00 AM TO 09:00 AM	779	118	Y				Y		Y			Y	Y	**Y**		
09:00 AM TO 10:00 AM	620	50	Y						Y							
10:00 AM TO 11:00 AM	612	14	Y						Y							
11:00 AM TO 12:00 PM	649	22	Y						Y							
12:00 PM TO 01:00 PM	693	22	Y						Y							
01:00 PM TO 02:00 PM	674	25	Y						Y							
02:00 PM TO 03:00 PM	729	31	Y						Y			Y				
03:00 PM TO 04:00 PM	746	87	Y				Y		Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	878	59	Y						Y			Y				
05:00 PM TO 06:00 PM	857	42	Y						Y			Y				
06:00 PM TO 07:00 PM	711	22	Y						Y							
	8,822	550			**0**			**0**			**0**			**2**	**0**	**0**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour