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Technical Memorandum

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From: Nicholas Aiello, P.E., PTOE., P.T.P

Date: August 2, 2024

Subject: Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis
7402 W. Catalina Drive
City of Phoenix, Maricopa County, Arizona

Project No.: 24000723A

Introduction

Colliers Engineering & Design, Inc is submitting a technical memo for the traffic assessment and signal warrant analysis associated with the Trevor G. Browne High School improvements. Trevor G. Browne High School is located at 7402 W Catalina Drive and is bounded by N 75th Avenue to the west, Catalina Drive to the south, El Oso Park to the north, and residential land uses to the east. The Applicant proposes to construct additional academic buildings on the northern portion of the site for the existing High School. While student enrollment and number of staff are not anticipated to increase with the new construction, it is proposed to modify the existing student pick-up and drop-off circulation internal to the site. As such, the nearby intersections of N 75th Avenue and W Cheery Lynn Road, N 75th Avenue & Northern School Access, and N 74th Avenue & W Thomas Road have been evaluated for potential improvements. Additionally, a traffic signal warrant analysis has been performed for the intersection of N 75th Avenue & Northern School Access.

Access to Trevor G. Browne High School is currently provided via two (2) site access points along N 75th Avenue. The Northern School Access serves as an egress-only approach for left-turn/right-turn movements and is located along N 75th Avenue, approximately 200 feet south of Cora Lane. The Southern School Access serves as an ingress-only approach and functions as the eastern leg of the intersection of N 75th Avenue & W Cheery Lynn Road. Additionally, access is provided to the site via Catalina Drive which intersects N 74th Avenue to the south.

Estrella Middle School and various commercial developments are located within close proximity to the study area. As such, safety and community benefit are important factors in determining potential improvements for the study area. A Site Location Map is provided as **Figure 1** in **Appendix A**.

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Existing Roadway Conditions

Roadways

N 74th Avenue is a north-south oriented urban major arterial roadway under the jurisdiction of the City of Phoenix. The roadway provides one (1) minimum 12-foot-wide travel lane and one (1) minimum 5-foot-wide sidewalk in each direction. The speed limit is not posted. Land uses along N 74th Avenue are commercial and institutional.

N 75th Avenue is a north-south oriented urban major arterial roadway under the jurisdiction of the City of Phoenix. The roadway provides two (2) 12-foot-wide travel lanes in each direction divided by a 12-foot-wide two-way left-turn lane. The posted speed limit is 35 mph. Multiple bus stops are located along N 75th Avenue, approximately every ¼ mile or less in each direction within the study area. The bus stops are serviced by the City of Phoenix bus routes: 75 & MARY. Land uses along N 75th Avenue are primarily residential, institutional, and service-related.

W Thomas Road is an east-west oriented urban arterial roadway under the jurisdiction of the City of Phoenix. The roadway provides two (2) 12-foot-wide travel lanes and one (1) minimum 5-foot-wide sidewalk in each direction divided by a 12-foot-wide two-way left-turn lane. The posted speed limit is 35 mph. Multiple bus stops are located along W Thomas Road, approximately every ¼ mile in each direction within the study area. The bus stops are serviced by the City of Phoenix bus routes: 29, 75, & MARY. Land uses along W Thomas Road are primarily commercial and residential.

W Cheery Lynn Road is an east-west oriented urban local roadway under the jurisdiction of the City of Phoenix. The roadway provides one (1) 15-foot-wide travel lane and one (1) minimum 5-foot-wide sidewalk in each direction. The posted speed limit is 25 mph. Land uses along W Cheery Lynn Road are residential.

Unsignalized Intersections

N 75th Avenue & Northern School Access is a three-leg, unsignalized intersection with stop control on the westbound approach of the Northern School Access. The westbound approach of the Northern School Access provides one (1) shared left-turn/right-turn lane and is a one-way egress-only approach. The northbound approach of N 75th Avenue provides two (2) dedicated through lanes, and the southbound approach of N 75th Avenue provides three (3) dedicated through lanes.

Signalized Intersections

N 75th Avenue & W Cheery Lynn Road is a four-leg, signalized intersection operating on a variable cycle length with a background cycle length of 120 seconds. The eastbound approach of W Cheery Lynn Road provides one (1) shared lane for all turning movements. The westbound approach of W Cheery Lynn Road is an ingress-only approach which acts as the southern school access point and provides two (2) receiving lanes. The northbound approach of N 75th Avenue provides one (1) dedicated left-turn lane, three (3) dedicated through lanes, and one (1) dedicated right-turn lane. The southbound approach of N 75th Avenue provides one (1) dedicated left-turn lane, one (1) dedicated through lane, and one (1) shared through/right-turn lane.

N 74th Avenue & W Thomas Road is a four-leg, signalized intersection operating on a variable cycle length with a background cycle length of 120 seconds. The eastbound approach of W Thomas Road provides one (1) dedicated left-turn lane, two (2) dedicated through lanes, and one (1) shared through/right-turn lane. The westbound approach of W Thomas Road provides one (1) dedicated left-turn lane, three (3) dedicated through lanes, and one (1) dedicated right-turn lane. The northbound approach of N 74th Avenue provides one shared lane for all turning movements. The southbound approach of N 74th Avenue provides one (1) dedicated left-turn lane and one (1) shared through/right-turn lane.

Points of Interest

Trevor G. Browne High School is located at 7402 W Catalina Drive, approximately 700 feet north of the intersection of N 74th Avenue & W Thomas Road. Trevor G. Browne High School has a current enrollment of approximately 2,716 students between 9th & 12th Grade. The earliest arrival period is between 6:45-7:00 AM on Tuesday-Friday and between 7:35-7:50 AM on Monday. The earliest dismissal period is 3:00 PM.

Estrella Middle School is located at 3733 N 75th Avenue, approximately 1,500 feet north of the intersection of N 75th Avenue & Northern School Access. Estrella Middle School has an enrollment of approximately 850 students between 6th and 8th Grade. The earliest arrival period is between 8:00 AM – 8:30 AM. The earliest dismissal period is 3:30 PM. There is no school on Fridays.

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Data Collection

Turning Movement Counts

Turning movement count ("TMC") data was collected on Tuesday, May 14, 2024 from 6:00 AM to 6:00 PM at the following intersections:

- N 75th Avenue & W. Cheery Lynn Road;
- N 75th Avenue & Northern School Access; and
- N 74th Avenue & W Thomas Road.

The data collection efforts and the established peak hours are detailed in **Table 1**. A Volume Flow Diagram illustrating the 2024 Existing Condition is provided as **Figure 2** in **Appendix A.** The processed TMC data is provided in **Appendix B**.

Table 1 – Data Collection Efforts and Established Peak Hours

Peak Period	Date Collected	Traffic Count Time Frame	Established Peak Hour
Weekday Morning	Tuesday, May 14, 2024	6:00 AM to 6:00 PM	6:30 AM – 7:30 AM
Weekday Evening			3:00 PM – 4:00 PM

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Site Observations

Site observations were conducted on Monday, April 22, 2024 at Trevor G. Browne High School. Traffic operations were observed during both the morning peak hour, school dismissal periods, and weekday evening peak hours. The findings are as follows:

Trevor G. Browne High School

- The school pick-up line begins queueing up onsite at the northern school access point along W Cheery Lynn Road and at the southern school access point along N 74th Avenue.
- The northern school access point utilizes a one-way movement to complete student drop off and cars enter at one entrance and exit at another.
- The gates located at the northern school access close at 8:30 AM and reopen at 2:30 PM for drop off and pick up.
- The southern school access point utilizes an internal U-turn movement to complete student drop off and cars exit at the same entrance they entered.
- on the school property. The student parking lot can only be accessed at the northern school access and the staff and visitor lots can be accessed only at the southern school access point.
- A city bus stop is located along N 75th Avenue and is utilized by 100 kids with a 7:45 AM drop off and 3:20 PM pick up.
- Four (4) School Busses enter through the southern school access point along N 74th Avenue and one (1) School Bus utilizes the northern school access point along N 75th Avenue.
- Walkers and Bike Riders enter from the El Oso Park gate along the northern school access point of the school property. The gate locks at 8:30 Am and reopens at 2:30 PM. Walkers and Bike Riders can also access the school at the intersection of N 75th Avenue & W Cheery Lynn Road.

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Crash Analysis

Crash reports were obtained from the City of Phoenix Street Transportation Office of Roadway Safety for the past six (6) years at the following locations:

- The intersection of N 75th Avenue & Northern School Access; and
- Along N 75th Avenue within close proximity to Northern School Access.

Roadway crash statistics provide quantitative data which provide engineers a tool to objectively assess and evaluate the existing roadway conditions and traffic operations. Crash frequency and crash trends at the subject locations were reviewed. **Tables 2-3** illustrate the total number of accidents per year, as well as the accident type, per subject location. The crash data is provided in **Appendix C**.

Table 2 – Accident Statistics – N 75th Avenue & Northern School Access

Accident Type	Year						Total
	2018	2019	2020	2021	2022	2023	
Singular Vehicle	-	-	1	-	-	-	**1**
Same Direction (Sideswipe)	-	-	-		-	1	**1**
Opposite Direction (Sideswipe)	-	-	-	-	1	-	**1**
Total	**0**	**0**	**1**	**0**	**1**	**1**	**3**

Based on a review of the accident data along 75th Avenue & Northern Site Driveway, there were a total of three (3) accidents occurring over the past six (6) years. None of the accidents resulted in injuries to motorists. Additionally, one (1) accident occurred during dawn/dusk when visibility was poor.

Table 3 – Accident Statistics – N 75th Avenue within Close Proximity to Northern School Access

Accident Type	Year						Total
	2018	2019	2020	2021	2022	2023	
Single Vehicle – Fixed Object	2	-	-	-	-	-	**2**
Left Turn	1	1	-	-	1	-	**3**
Angle	-	1	-	-	-	-	**1**
Rear End	-	1	1	-	-	1	**3**
Sideswipe Same Direction	-	-	-	1	-	-	**1**
Total	**3**	**3**	**1**	**1**	**1**	**1**	**10**

Based on a review of the accident data along N 75th Avenue within close proximity to the Northern School Access, there were a total of ten (10) accidents occurring over the past six (6) years, three (3) of which resulted in left-turn collisions and three (3) of which resulted in rear end collisions. Three (3) of the accidents resulted in injuries to motorists. Additionally, three (3) accidents occurred during nighttime while it was dark outside.

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Future Traffic Conditions

To determine the traffic impact of the development, an estimation of the traffic operational characteristics at the Build date, without the construction of the project (or "No-Build" condition), is made. The existing volumes have been projected to the Build year of 2027.

Background Growth

The City of Phoenix Street Transportation Traffic Department Open Data was referenced to estimate the anticipated annual growth rate to account for general increases in traffic due to regional population and employment growth by the build year. A background growth rate was identified to estimate the future traffic volumes to the build out years. It is anticipated that a **3%** growth rate will be utilized for the roadways within the study area. **Table 4** summarizes the background growth rates within the area.

Table 4 – Background Growth Rates

Location Description	Year	Volume	Avg Growth Rate	Avg. Annual Growth
N. 75th Avenue, Northbound	**2021**	14,706	26.5%	**2.13%**
	2020	11,627	-3.4%	
	2020	12,041	-9.4%	
	2015	13,293		
N. 75th Avenue, Southbound	**2021**	15,165	23.2%	**3.03%**
	2020	12,306	9.3%	
	2020	11,257	-14.5%	
	2015	13,171		

Table 5 summarizes the annual growth rate factor within the vicinity of the project site.

Table 5 – Growth Rate

Build-Year Growth Rate	
Growth Rate	3.00%
Years	3
Growth Factor	1.093

2027 No-Build & Build Conditions

The 2027 No-Build & Build volumes were forecasted by applying the applicable background growth rates to the existing traffic volumes. As previously mentioned, the proposed construction is not anticipated to increase student enrollment and/or staff at the school; thus, the 2027 No-Build & Build Volumes are the same. As such, a Volume Flow Diagram illustrating the 2027 Future Traffic Volumes is provided as **Figure 4** in **Appendix A.**

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Traffic Signal Warrant Analysis

Signal warrant methodology and factors are outlined in *Chapter 4C* of the *Arizona Manual on Uniform Traffic Control Devices, 2023* (TMUTCD). Section 4C.01 of the TMUTCD states that to warrant a traffic signal:

"Except for a temporary traffic control signal (See section 4D.11) installed in a temporary traffic control zone, before a traffic control signal is justified at a particular location an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether the installation of a traffic signal is justified at a particular location."

The traffic control signal investigation is comprised of analyzing several factors related to the operation and safety at the study location. The factors are utilized to determine if the potential signalization will improve traffic operations. The AMUTCD outlines multiple traffic signal warrants which are applied to determine if signalization is justified. The warrants applicable to this analysis are defined in **Table 6**.

Table 6 – Traffic Signal Warrant Descriptions

Warrant		Description
1	8-Hour Vehicular Volume	This warrant examines any 8 hours within a study period with consideration given to the large volume of traffic interacting at an intersection and/or large queues of traffic along an intersecting minor street.
2	4-Hour Vehicular Volume	This warrant examines any 4 hours within a study period with consideration given to intersecting traffic volumes as the main consideration.
3	Peak Hour	This warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street suffers undue delay when entering or crossing a major street.

A typical traffic signal warrant analysis is based on hourly traffic volumes over at least a 12-hour period. As previously discussed, 12-hour TMC data was collected at the intersection of N 75th Avenue & Northern School Access on Tuesday, May 14, 2024, from 6:00 AM to 6:00 PM.

Traffic Signal Warrant Analysis Results

This analysis was performed for the intersection of N 75th Avenue & Northern School Access using the latest version of *Trafficware Warrants V.10*. Based on TMUTCD standards, the 4-hour and peak hour traffic signal warrants were **met** based on the 2024 existing traffic volumes and 2027 future traffic volumes. **Table 7** summarizes the warrant analysis results. The traffic signal warrant reports are included in **Appendix D.**

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Table 7 – Traffic Signal Warrant Results

Warrant			Hours Required	2024 Existing Volumes		2027 Future Volumes	
				Hours Reached	Satisfied	Hours Reached	Satisfied
1	8-Hour Vehicular Volume	Condition A	8	4	No	4	No
		Condition B	8	4		4	
2	4-Hour Vehicular Volume		4	4	Yes	4	Yes
3	Peak Hour		1	4	Yes	4	Yes
Total Warrants Satisfied				**2**		**2**	

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HCM Capacity Analysis

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

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics, such as freedom to maneuver, traffic interruption, comfort, and convenience. Six (6) LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F," with Level "A" representing excellent conditions with no delays, and failure and deficient operations denoted by Level "F." The HCM LOS criteria for unsignalized and signalized intersections is summarized in **Table 8**.

Table 8 – HCM LOS/Delay Criteria

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

The Levels of Service for the 2024 Existing and 2027 No-Build Conditions are detailed in **Table 9**. The 95th Percentile Queue Lengths for the 2024 Existing and 2027 No-Build Conditions are detailed in **Table 10.** The capacity analysis calculation worksheets are provided in **Appendix E**.

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Table 9 – Level of Service Summary

Level of Service	Movement		AM Peak Hour						PM Peak Hour					
			2024 Existing			2027 No-Build			2024 Existing			2027 No-Build		
			LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio
N 74th Avenue (NB/SB) & W. W Thomas Road (EB/WB	EB	L	A	3.1	0.12	A	3.3	0.14	B	13.4	0.20	B	15.6	0.25
		T	A	0.4	0.37	A	0.5	0.41	B	16.1	0.48	B	17.7	0.54
		TR	A	0.7	0.37	A	0.9	0.41	B	16.8	0.48	B	18.6	0.54
	WB	L	A	3.8	0.04	A	3.9	0.19	B	11.9	0.23	B	13.4	0.28
		T	A	4.9	0.17	A	5.1	0.19	B	17.1	0.59	B	19.1	0.65
		R	A	4.4	0.04	A	4.5	0.05	B	11.6	0.10	B	12.3	0.11
	NB	LTR	E	72.4	0.51	E	71.8	0.53	F	116.3	0.96	F	142.5	1.05
	SB	LT	E	61.4	0.39	E	61.5	0.31	E	57.8	0.82	E	57.1	0.83
		R	E	62.0	0.40	E	62.2	0.42	D	52.5	0.63	D	51.7	0.64
	Overall		**A**	**3.5**	-	**A**	**3.6**	-	**C**	**23.4**	-	**C**	**25.9**	-
N 75th Avenue (NB/SB) & W Cheery Lynn Road (EB/WB)	EB	LTR	E	65.2	0.76	E	65.2	0.77	E	64.6	0.76	E	63.7	0.77
	NB	L	A	3.3	0.02	A	3.3	0.02	A	4.1	0.11	A	4.6	0.14
		T	A	3.7	0.17	A	3.7	0.18	A	4.9	0.39	A	5.4	0.43
		R	A	3.4	0.07	A	3.4	0.07	A	3.4	0.06	A	3.6	0.06
	SB	L	A	2.1	0.18	A	2.1	0.32	A	3.2	0.25	A	4.0	0.30
		T	A	0.7	0.38	A	0.7	0.42	A	0.8	0.41	A	1.0	0.46
		TR	A	0.7	0.38	A	0.7	0.41	A	0.8	0.41	A	1.0	0.46
	Overall		**A**	**4.5**	-	**A**	**4.6**	-	**A**	**4.9**	-	**A**	**5.2**	-
N 75th Avenue (NB/SB) & Northern Site Access (WB)	WB	LR	c	18.8	0.36	c	21.6	0.42	f	529.1	2.03	f	3024.6	7.38

*Note: Uppercase indicates signalized intersection; lowercase indicates unsignalized intersection.

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Table 10 – HCM 7th Edition 95th Percentile Queue Length Summary

Level of Service	Movement		Storage Length	2024 Existing		2027 No-Build	
				AM Peak	PM Peak	AM Peak	PM Peak
N 74th Avenue (NB/SB) & W Thomas Road (EB/WB	EB	L	120′	15′	20′	18′	23′
		T	>500′	8′	303′	8′	328′
		TR		13′	335′	15′	360′
	WB	L	100′	5′	30′	3′	30′
		T	>500′	60′	360′	68′	393′
		R	80′	15′	50′	15′	53′
	NB	LTR	250′	23′	273′	28′	438′
	SB	L	165′	33′	250′	35′	450′
		TR	>500′	30′	178′	33′	130′
N 75th Avenue (NB/SB) & W Cheery Lynn Road (EB/WB)	EB	LTR	>500′	125′	138′	143′	150′
	NB	L	165′	3′	13′	3′	15′
		T	>500′	50′	145′	58′	173′
		TR	100′	20′	15′	23′	18′
	SB	L	150′	15′	10′	18′	13′
		T	>500′	13′	15′	15′	18′
		TR		13′	15′	15′	18′
N 75th Avenue (NB/SB) & Northern Site Access (WB)	WB	L(R)	500′	40′	665′	50′	1093′

N 74th Avenue & W Thomas Road

2024 Existing Analysis

Under the 2024 Existing condition, all intersection movements operate at Levels of Service "E" or better during both peak hours studied with the exception of the northbound movements which experiences significant delays during the weekday evening peak hour. Additionally, the designated southbound left-turn storage bay would be exceeded during the weekday evening peak hour. The intersection operates at overall Levels of Service "C" or better during both peak hours studied.

2027 No-Build Analysis

Under the 2027 No-Build condition, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at overall Levels of Service "C" or better during both peak hours studied.

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2027 Build Analysis

Under the 2027 Build condition, it is recommended to optimize the traffic signal timings during the weekday evening peak hour by reallocating seven (7) seconds of green time from the eastbound and westbound through movements of W Thomas Road to the northbound approach of N 74th Avenue. Additionally, it is proposed to reallocate four (4) seconds of green time from the eastbound and westbound left-turn movements to the eastbound and westbound through movements of W Thomas Road. With the proposed optimization, all intersection movements would continue to operate at or near No-Build Levels of Service "E" or better during both peak hours studied, and delays on the northbound movements will be significantly reduced by up to 72 seconds during the weekday evening peak hour. Further, queues would be significantly reduced for the southbound left-turn movement during the weekday evening peak hour. The intersection would continue to operate at overall Levels of Service "C" or better during all peak hours studied. The Levels of Service for the 2027 No-Build & 2027 Build Conditions are detailed in **Table 11**. Further, the 95th percentile queue lengths for the 2027 No-Build & Build Conditions are detailed in **Table 12**.

Table 11 – Level of Service Summary

Level of Service	Movement		AM Peak Hour						PM Peak Hour					
			2027 No-Build			2027 Build			2027 No-Build			2027 Build		
			LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio
N 74th Avenue (NB/SB) & W. W Thomas Road (EB/WB	EB	L	A	3.3	0.14	A	3.4	0.15	B	13.4	0.20	B	17.2	0.26
		T	A	0.5	0.41	A	5.7	0.41	B	16.1	0.48	B	19.4	0.56
		TR	A	0.9	0.41	A	6.1	0.41	B	16.8	0.48	C	20.4	0.56
	WB	L	A	3.9	0.19	A	4.3	0.05	B	11.9	0.23	B	14.8	0.29
		T	A	5.1	0.19	A	5.1	0.19	B	17.1	0.59	C	21.1	0.68
		R	A	4.5	0.05	A	4.5	0.05	B	11.6	0.10	B	13.5	0.11
	NB	LTR	E	71.8	0.53	E	71.8	0.53	F	116.3	0.96	E	69.6	0.84
	SB	LT	E	61.5	0.31	E	61.5	0.41	E	57.8	0.82	E	57.1	0.83
		R	E	62.2	0.42	E	62.2	0.42	D	52.5	0.63	D	51.7	0.64
	Overall		**A**	**3.6**	**-**	A	6.9	-	**C**	**23.4**	**-**	C	24.9	-

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Table 12 – HCM 7th Edition 95th Percentile Queue Length Summary

Level of Service	Movement		Storage Length	2027 No-Build		2027 Build	
				AM Peak	PM Peak	AM Peak	PM Peak
N 74th Avenue (NB/SB) & W Thomas Road (EB/WB	EB	L	120'	18'	23'	18'	25'
		T	>500'	8'	328'	8'	363'
		TR		15'	360'	15'	400'
	WB	L	100'	3'	30'	3'	35'
		T	>500'	68'	393'	68'	438'
		R	80'	15'	53'	15'	60'
	NB	LTR	250'	28'	438'	28'	228'
	SB	L	160'	35'	450'	35'	268'
		TR	>500'	33'	130'	33'	193'

N 75th Avenue & W Cheery Lynn Road

2024 Existing Analysis

Under the 2024 Existing condition, the eastbound movements operate at a Level of Service "E" during both peak hours studied and the northbound and southbound movements operate at a Level of Service "A" during both peak hours studied. The intersection operates at an overall Level of Service "A" during both peak hours studied.

2027 No-Build Analysis

Under the 2027 No-Build condition, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "A" or better during both peak hours studied.

N 75th Avenue & Northern School Access

2024 Existing Analysis

Under the 2024 Existing condition, the northbound and southbound movements operate at a Level of Service "A" during both peak hours studied. The westbound movements operate at Levels of Service "C" during the weekday morning peak hour and experience significant delays and failing levels of service during the weekday evening peak hour. Additionally, the 95th percentile queue length for the westbound movements is 665' during the weekday evening peak hour. The intersection operates at overall Levels of Service "C" or better during all peak hours studied.

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2027 No-Build Analysis

Under the 2027 No-Build condition, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied. Additionally, the 95th percentile queue length for the westbound movements is 1,093' during the weekday evening peak hour. The intersection will continue to operate at overall Levels of Service "C" or better during all peak hours studied.

2027 Build Analysis

Under the 2027 Build condition, it is proposed to install a fully-actuated traffic signal at the intersection. The traffic signal would be coordinated with and offset from the traffic signals at the intersections of N 75th Avenue & W Cheery Lynn Road and N 75th Avenue & Osburn Road, which both utilize background cycle lengths of 120 seconds during both peak hours studied. The intersection of N 75th Avenue & Northern School Access is approximately 500 feet south of Osborn Road and 575 feet north of W Cheery Lynn Road; therefore, progression could be achieved between all three (3) intersections. It is proposed to utilize a 60-second background cycle length during the weekday morning peak hour and a 120-second cycle length during the weekday evening peak hour. Additionally, it is proposed to construct two (2) dedicated left turn lanes and one (1) dedicated right-turn lane on the westbound approach of Northern School Access to improve safety and queueing.

With the proposed improvements, all intersection movements would continue to operate at or near No-Build Levels of Service during the weekday morning peak hour and at Levels of Service "D" or better during the weekday evening peak hour, with the exception of the westbound right-turn movement which would exceed the threshold of a Level of Service "D" by less than one (1) second. Additionally, the westbound movements would improve by up to 1,000 seconds of delay during the weekday evening peak hour. The intersection would operate at an overall Level of Service "A" during both peak hours studied. The Levels of Service for the 2027 No-Build & 2027 Build Conditions are detailed in **Table 13**. Further, the 95th percentile queue lengths for the 2027 No-Build & Build Conditions are detailed in **Table 14.**

Table 13 – Level of Service Summary

Level of Service	Movement		AM Peak Hour						PM Peak Hour					
			2027 No-Build			2027 Build			2027 No-Build			2027 Build		
			LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio	LOS	Delay	V/C Ratio
N 75th Avenue (NB/SB) & Northern Site Access (WB)	WB	L(R)	c	18.8	0.36	C	25.3	0.17	f	3024.6	7.38	D	41.7	0.19
		R	-	-	-	C	31.8	0.68	-	-	-	E	55.9	0.87
	NB	T	-	-	-	A	0.1	0.21	-	-	-	A	0.4	0.48
	SB	T	-	-	-	A	0.9	0.54	-	-	-	A	1.7	0.54
	Overall		**-**	**-**	**-**	**A**	**2.6**	**-**	**-**	**-**	**-**	**a**	**6.4**	**-**

*Note: Uppercase indicates signalized intersection; lowercase indicates unsignalized intersection.

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Table 14 – HCM 7th Edition 95th Percentile Queue Length Summary

Level of Service	Movement		Storage Length		2027 No-Build		2027 Build	
			Exist	Prop.	AM Peak	PM Peak	AM Peak	PM Peak
N 75th Avenue (NB/SB) & Northern Site Access (WB)	WB	L(R)	500′	150′	50′	1093′	15′	70′
		R	-	350′	-	-	70′	315′
	NB	T	>500′		-	-	3′	5′
	SB	T	>500′		-	-	13′	45′

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Site Access & Circulation

Operations

Access to Trevor G. Browne High School is currently provided via two (2) site access points along N 75th Avenue. The Northern School Access serves as an egress-only approach for left-turn/right-turn movements and is located along N 75th Avenue, approximately 200 feet south of Cora Lane. The Southern School Access serves as an ingress-only approach and functions as the eastern leg of the intersection of N 75th Avenue & W Cheery Lynn Road. Additionally, access is provided to the site via Catalina Drive which intersects N 74th Avenue to the south. The Applicant proposes to construct academic buildings for the existing High School on the northern portion of the site. While student enrollment and number of staff are not anticipated to increase with the new construction, student pick-up and drop-off circulation will be impacted at the access points along N 75th Avenue.

Currently, there are two (2) receiving lanes on the eastern leg of the intersection of N 75th Avenue & W Cheery Lynn Road. The eastern extent of W Cheery Lynn Road, internal to the site, provides two (2) separate lanes for pick-up/drop-off operations and can accommodate up to approximately 800 feet for pick-up/drop-off operations total. It is proposed to reconfigure the parking lot on the northern portion of the site for the construction of the academic buildings. Additionally, it is proposed to construct an extension between the existing roundabout, internal to the site and northern parking lot. The internal roundabout currently connects to the eastern extent of W Cheery Lynn Road, internal to the site. This connection will effectively serve to reroute the existing pick-up/drop-off lanes along the Southern School Access to loop northeast bound around the auditorium. The connection will continue to provide two (2) pick-up/drop-off lanes which can accommodate up to approximately 1,350 feet for pick-up/drop-off operations. Additionally, the existing pick-up drop-off lanes area along the eastern extent of W Cheery Lynn Road will be restriped as a fire lane to improve safety and effectively separate the path of pick-up/drop-off vehicles from emergency response vehicles.

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Recommended & Proposed Improvements

N 74th Avenue & W Thomas Road

Based on the results of the capacity analysis at the intersection of N 74th Avenue & W Thomas Road, It is recommended to optimize the traffic signal timings for the weekday evening peak hour. With the proposed optimization, all intersection movements would continue to operate at or near No-Build Levels of Service "E" or better during both peak hours studied and delays on the northbound movements would be significantly reduced by up to 72 seconds during the weekday evening peak hour. The intersection would continue to operate at overall Levels of Service "C" or better during both peak hours studied.

N 75th Avenue & Northern School Access

Based on a review of the accident analysis, the traffic signal warrant analysis, and the capacity analysis at the intersection of N 75th Avenue & Northern School Access, the Applicant proposes to construct a fully-actuated traffic signal as well as associated pedestrian improvements.

As previously mentioned, the 2024 existing traffic volumes and 2027 future traffic volumes satisfy the 4-hour and peak hour traffic signal warrant criteria for a traffic signal. As described in the accident analysis, there were 13 accidents either at or within close proximity to the intersection. Four (4) of the accidents occurred due to vehicles attempting to make a left turn from N 75th Avenue onto a side street or driveway during a gap in traffic, and multiple collisions occurred during nighttime. Installing a traffic signal at the intersection would create additional gaps in traffic that would provide drivers with more time to complete a left-turn maneuver and alleviate left-turn collisions along the roadway. Additionally, illumination is a proven counter measure to improve visibility; therefore, it is proposed to mount illumination on the traffic signal poles.

According to the results of the capacity analysis for the 2024 Existing Condition and 2027 No-Build Condition, the westbound movement at the intersection of Northern Site Access experiences significant delays and substantial queueing during the weekday evening peak hour. A traffic signal at the intersection would significantly improve Levels of Service at the westbound approach of N 75th Avenue & Northern School Access and reduce delays for vehicles existing the Northern Site Access, allowing safe and effective traffic flow during both peak hours studied.

In conjunction with the proposed traffic signal, it is proposed to provide striped crosswalks across N 75th Avenue. As illustrated in **Figure 1,** two (2) ADA compliant curb ramps are available on each side of N 75th Avenue. These curb ramps do not connect the eastern and western sides of N 75th Avenue. To benefit pedestrians and improve safety and regional connectivity, it is proposed to construct crosswalks in the roadway in association with the proposed traffic signal at the intersection of N 75th Avenue & Northern School Access.

Figure 1: Existing ADA compliant curb ramps are provided along both directions of N 75th Avenue.

Further, there is an existing pedestrian pathway that bisects El Oso Park, approximately 50 feet north of the Northern School Access along N 75th Avenue.

Figure 2: Street view of El Oso Park Pathway.

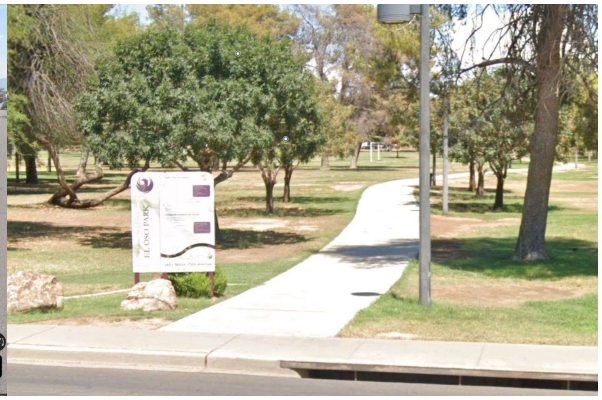


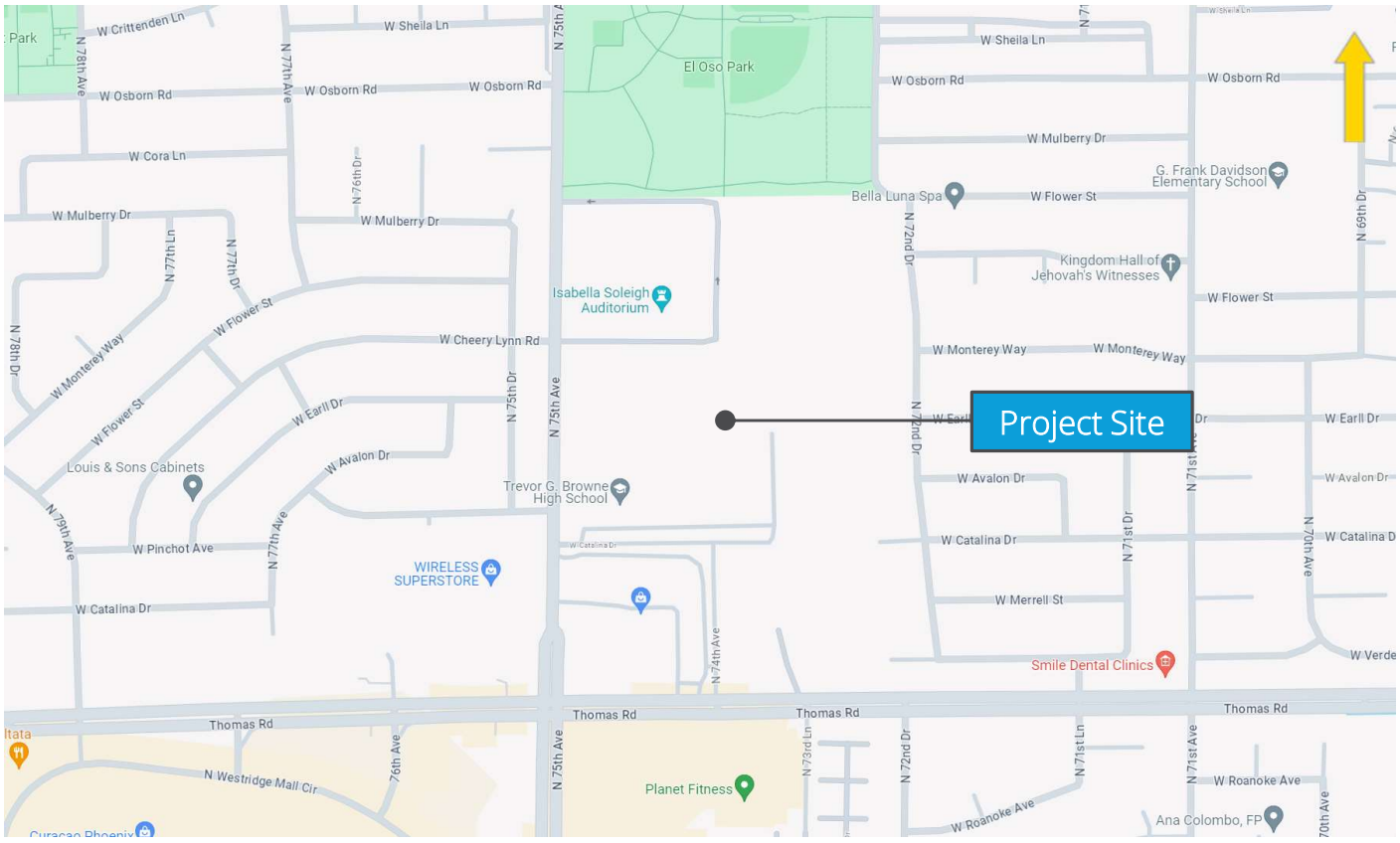
Figure 3: Close- up view of El Oso Park Pathway.

The pathway provides regional connectivity to nearby residential developments to the east and ends along N 75th Avenue as illustrated in **Figures 2** and **3**. The proposed crosswalks will improve access between El Oso Park and the nearby residential developments, thus improving regional connectivity.

Colliers Engineering & Design

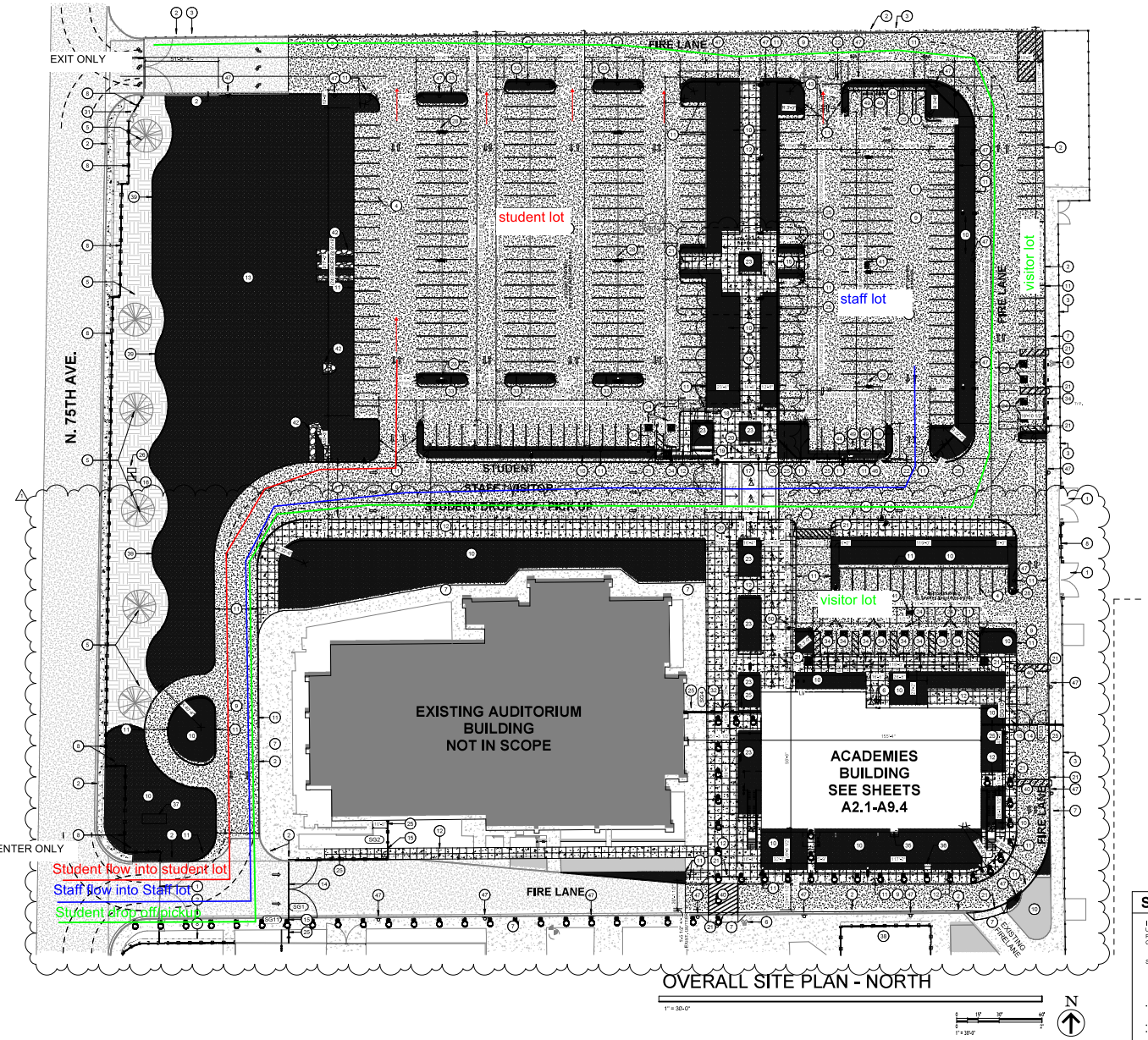
Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

Appendix A | Traffic Figures



Colliers Engineering & Design	Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis	**Figure 1**
	Project No. 24000723A	
	City of Phoenix, Maricopa County, Arizona	**Site Location Map**

Figure 2



KEYNOTES:

1. EXISTING WROUGHT IRON DRIVE GATE TO REMAIN - PROTECT FROM DAMAGE
2. EXISTING CONCRETE CURB TO REMAIN - ANY EXISTING CURBS PREVIOUSLY PAINTED RED TO BE REPAINTED
3. EXISTING CHAIN LINK FENCING TO REMAIN - PROTECT FROM DAMAGE
4. NEW 4" WIDE WHITE PARKING LOT STRIPING
5. EXISTING TREE TO REMAIN - PROTECT FROM DAMAGE
6. NEW 6" CONCRETE CURB
6. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN - PROTECT FROM DAMAGE
6. NEW 6" CONCRETE CURB
7. EXISTING CONCRETE SIDEWALK TO REMAIN
8. EXISTING WROUGHT IRON FENCING TO REMAIN - PROTECT FROM DAMAGE
9. NEW ASPHALT PAVING - SEE CIVIL
10. NEW DECOMPOSED GRANITE LANDSCAPING AREA - SEE LANDSCAPE DRAWINGS
11. NEW CONCRETE CURB - SEE CIVIL
12. NEW CONCRETE SIDEWALK
13. NEW DECOMPOSED GRANITE RETENTION AREA - SEE CIVIL AND LANDSCAPE DRAWINGS
14. NEW WROUGHT IRON DRIVE GATE - SEE GATE SCHEDULE
15. NEW WROUGHT IRON PERSON GATE
16. NEW BACKFLOW DEVICE FOR DOMESTIC WATER AND CAGE
17. NEW RABBED CONCRETE CROSSWALK/SPEED TABLE - SEE CIVIL DRAWINGS
18. NEW CAST IN PLACE CONCRETE STAIR
19. NEW CONCRETE RAMP
20. NEW 12" SQUARE CONCRETE BOLLARD - SEE DETAIL 14/SP2.3
21. NEW ADA CONCRETE CURB RAMP - SEE DETAIL 12/SP2.3 CIVIL DRAWINGS
22. NEW WROUGHT IRON ROLLING GATE WITH GATE OPERATOR AND EXIT DETENTION LOOP - SEE GATE SCHEDULE
23. NEW LANDSCAPING AREA WITH DECOMPOSED GRANITE INFILL AND 4" CONCRETE CURB AROUND EDGE - SEE LANDSCAPING DRAWINGS AND DETAIL 13/SP2.3
24. VAN ACCESSIBLE ADA PARKING - SEE DETAIL 9/SP2.3, ALL ADA STALLS TO HAVE PARKING BUMPERS - SEE DETAIL 8/SP2.3
25. NEW WROUGHT IRON FENCING - MATCH EXISTING HEIGHT/STYLE/COLOR
26. NEW BACKFLOW DEVICE FOR FIRE LINE
27. PROPOSED ELECTRIC BUS CHARGER LOCATION - CONFIRM ACTUAL LOCATION WITH SELECTED BUS AND CHARGER
28. SITE LIGHTING WITH CONCRETE BASE - SEE ELECTRICAL DRAWINGS AND SITE DETAILS
29. EXISTING LIGHT POLE TO REMAIN - PROTECT FROM DAMAGE
30. EXISTING ASPHALT PARKING LOT TO REMAIN
31. EXISTING WROUGHT IRON GATE TO REMAIN - PROTECT FROM DAMAGE
32. NEW WROUGHT IRON "BRUIN PAW" GATE ENTRANCE SEE DETAIL 3/SP2.3 AND 4/SP2.3
33. NEW PARKING ISLAND WITH 6" CONCRETE CURB AND DG INFILL - SEE CIVIL AND LANDSCAPE DRAWINGS
34. NEW ADA PARKING SIGNAGE - SEE DETAIL 11/SP2.3
35. NEW SES - SEE ELECTRICAL PLANS AND SPECIFICATIONS
36. NEW TRANSFORMER - SEE ELECTRICAL PLANS AND SPECIFICATIONS
37. RELOCATED MARQUEE SIGN - COORDINATE EXACT LOCATION IN FIELD WITH ARCHITECT AND OWNER
38. EXISTING BIKE RACK
39. NEW LANDSCAPE CURB HEADER - SEE LANDSCAPE DRAWINGS
40. STRIPED CROSSWALK - SEE CIVIL
41. CATCH BASIN INLET - SEE CIVIL DRAWINGS
42. RIPRAP - SEE CIVIL DRAWINGS
43. DETECTION LOOP
44. GATE OPERATOR ON CONCRETE PAD - SEE GATE SCHEDULE
45. CARD READER - MOUNTED ON DOUBLE HEIGHT GOOSENECK
46. CARD READER - MOUNTED ON SINGLE HEIGHT GOOSENECK
47. FIRE LANE SIGNAGE EVERY 75' PER CITY OF PHOENIX REQUIREMENTS, MOUNT SIGNAGE TO FENCING WHERE APPLICABLE. SEE DETAIL 19/SP2.3
48. FIRE HYDRANT LOCATION - SEE CIVIL DRAWINGS
49. PROVIDE CONCRETE WHEEL STOP IN FRON OF GATE OPERATOR - SEE DETAIL 8/SP2.3
50. 30' TALL FLAGPOLE - SEE SPECIFICATIONS AND DETAIL 7/SP2.3

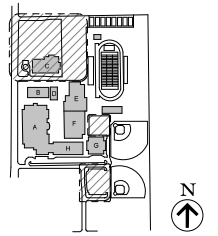
GENERAL NOTES:

A. ALL WORK DONE IN THE PUBLIC RIGHT-OF-WAY REQUIRES A SEPARATE PERMIT.
B. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION - TYPICAL
C. CONTRACTOR SHALL MAINTAIN A SAFE AND SECURE SITE AT ALL TIMES DURING THE COURSE CONSTRUCTION - TYPICAL
D. ALL MATERIALS TO BE REMOVED FROM SITE SHALL BE DISPOSED OF IN A PROPER MANOR AND IN AN APPROPRIATE LANDFILL - TYPICAL
E. THE CONTRACTOR IS TO MAINTAIN FIRE LANE ACCESS DURING CONSTRUCTION. PROVIDE NECESSARY FIRE LANE ACCESS AS REQUIRED BY THE STATE FIRE MARSHAL.
F. THE USE OF PROFANITY, TOBACCO, ALCOHOL OR OTHER DRUGS WILL NOT BE ALLOWED ON THIS SITE. FAILURE TO ADHERE TO THESE RULES SHALL RESULT IN REMOVAL FROM PROJECT SITE
G. CONTRACTOR TO VERIFY ALL SITE CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING THIS CONSTRUCTION. NOTIFY ARCHITECT IMMEDIATELY OF ANY AND ALL DISCREPANCIES - TYPICAL
H. DEVELOPMENT AND USE OF THIS SITE WILL CONFORM WITH ALL APPLICABLE CODES AND ORDINANCES
I. ALL NEW OR RELOCATED UTILITIES WILL BE PLACED UNDERGROUND
J. COORDINATE LIGHT POLE LOCATIONS WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS
K. REFER TO SHEET SP2.4 FOR GATE SCHEDULE.

LEGEND:

- DECOMPOSED GRANITE
- ASPHALT PAVING
- CONCRETE SIDEWALK
- CONCRETE SLAB
- PATH OF TRAVEL TO PUBLIC WAY
- PATH OF TRAVEL TO DISPERSAL AREA

KEYPLAN:



SELF-CERTIFICATION

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME, UNDER MY SUPERVISION, OR REVIEWED BY ME AND, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, CONFORM TO THE PHOENIX BUILDING CONSTRUCTION CODE.

SELF-CERTIFIED BY:

JENIFER WESKALNIES, LEED AP, NCARB 1 • 24 • 2024

- PLANS WERE PREPARED BY OR UNDER THE DIRECT SUPERVISION OF, OR REVIEWED BY THE SELF CERTIFIED PROFESSIONAL
- PLANS ARE COMPLETE
- THE PLANS ARE, AS OF THE DATE OF SUBMISSION, IN COMPLIANCE WITH CITY OF PHOENIX BUILDING, CIVIL, SITE AND ZONING CODES, ORDINANCES AND ALL OTHER APPLICABLE LAWS

adm group
architecture. design. management.
2100 WEST 15TH STREET | TEMPE, AZ 85281 | 480.350.3800

JENIFER E. WESKALNIES 16766 01.31.24

PHOENIX UNION HIGH SCHOOL DISTRICT
TREVOR G. BROWNE HIGH SCHOOL
7402 W. CATALINA DR.
PHOENIX, AZ 85033

ACADEMIES BUILDING & SITE IMPROVEMENTS

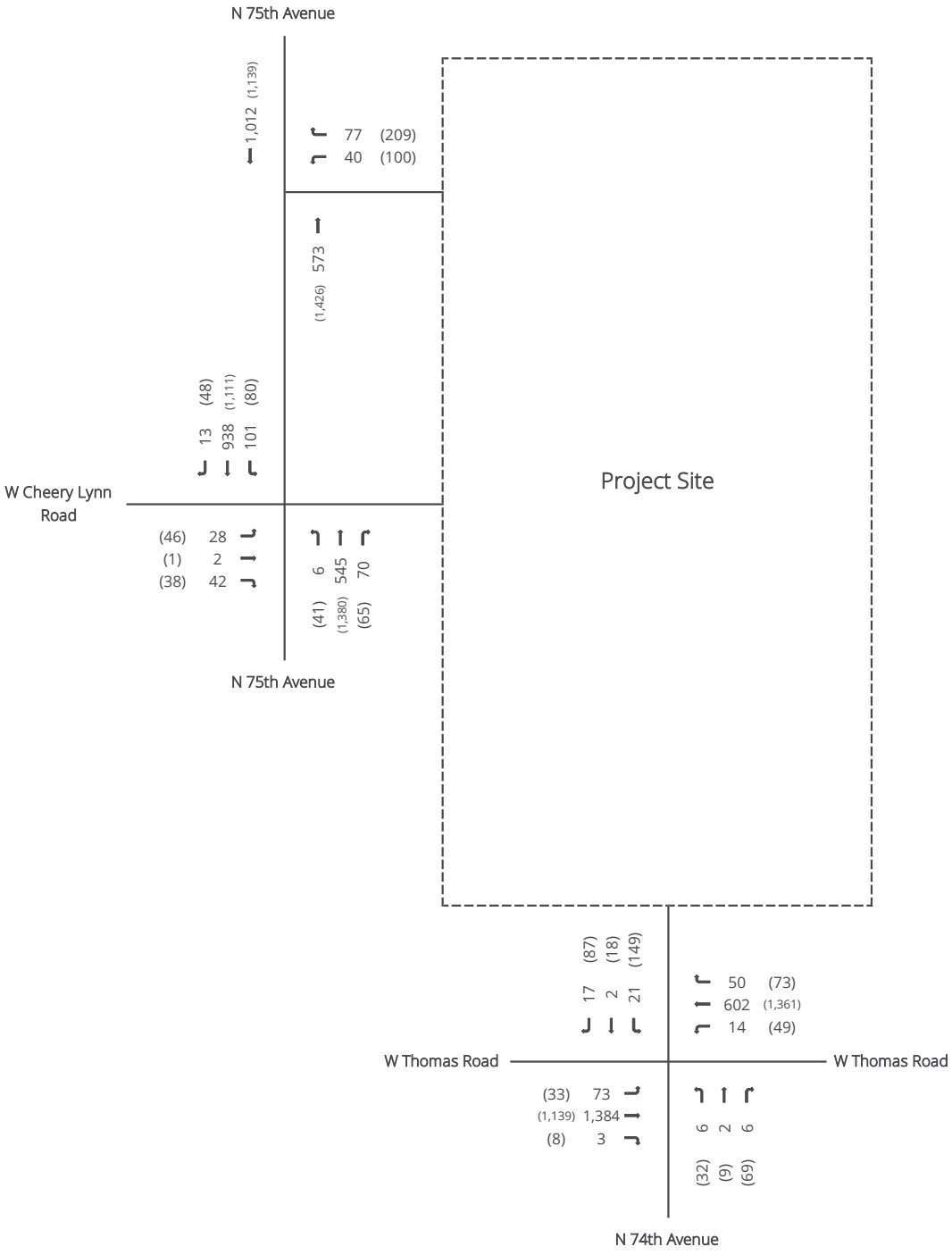
PHOENIX PXU UNION

REVISION	DATE	DESCRIPTION
10	1.31.24	COORDINATION
1	05.20.24	CITY COMMENTS

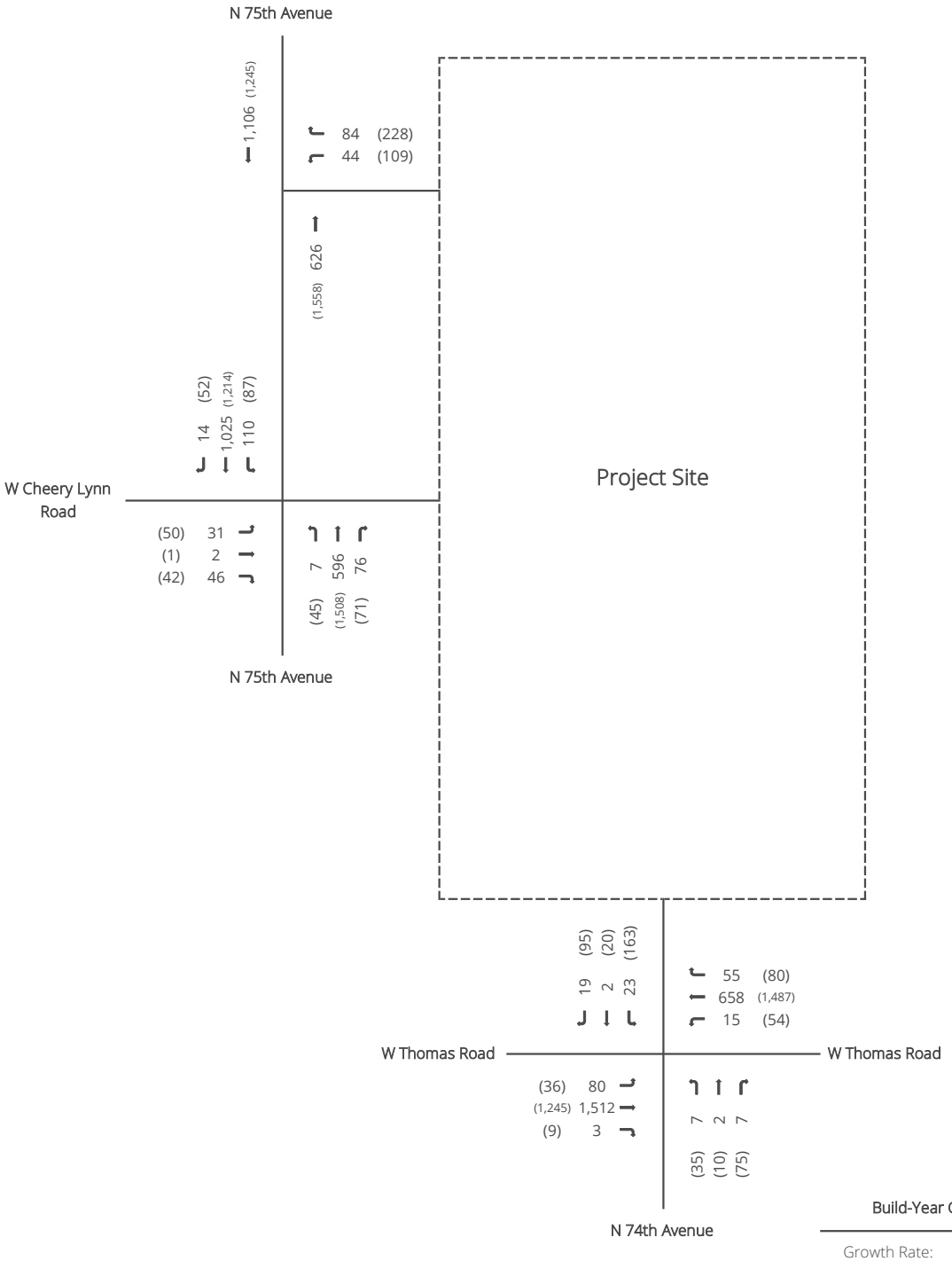
Project Number: 2175-SDA
Date: 05.20.2024
Drawn By: GF / HH
Checked By: JO / JW

NEW SITE PLAN - NORTH

SP2.1



Colliers Engineering & Design	Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis Project No. 24000732A City of Phoenix, Maricopa County, Arizona	Legend AM Peak Hour: ### Through Movement: PM Peak Hour: (###) Turning Movement: Signalized Intersection:	**Figure 3** **2024 Existing Condition** **AM & PM Peak Hours**



Build-Year Growth Rate	
Growth Rate:	3.00%
Years:	3
Growth Factor:	1.093

Colliers Engineering & Design

Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

Project No. 24000732A

City of Phoenix, Maricopa County, Arizona

Legend

AM Peak Hour: ### Through Movement:

PM Peak Hour: (###) Turning Movement:

Signalized Intersection:

Figure 4

2027 Future Traffic Voluumes

AM & PM Peak Hours

Colliers Engineering & Design

Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

Appendix B | Traffic Count Data & Observations

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET: 74th Ave | DATE: 05/14/24 | LOCATION: Phoenix

E-W STREET: W Thomas Rd | DAY: TUESDAY | PROJECT# 24-1302-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	3	0	1	3	1	
6:00 AM	2	0	4	1	0	2	3	198	1	2	77	2	292
6:15 AM	3	0	3	0	0	1	4	230	2	1	94	1	339
6:30 AM	0	0	1	0	0	1	6	274	1	2	129	6	420
6:45 AM	1	0	3	3	0	6	7	306	1	3	136	10	476
7:00 AM	0	0	1	9	1	5	22	380	1	7	157	12	595
7:15 AM	5	2	1	9	1	5	38	424	0	2	180	22	689
7:30 AM	6	3	1	41	2	14	36	417	0	3	249	80	852
7:45 AM	0	14	6	68	4	29	25	417	1	3	269	90	926
8:00 AM	1	7	3	71	1	39	30	343	1	5	216	63	780
8:15 AM	1	1	4	35	1	19	15	338	1	4	201	34	654
8:30 AM	1	0	4	15	1	15	12	272	1	9	216	22	568
8:45 AM	4	1	1	18	0	10	11	193	2	8	166	22	436
9:00 AM	2	0	7	9	0	9	8	162	0	3	183	8	391
9:15 AM	3	0	3	7	1	4	6	153	0	3	171	9	360
9:30 AM	7	0	3	8	1	6	10	174	2	8	171	8	398
9:45 AM	4	0	3	10	1	7	6	149	0	13	170	8	371
10:00 AM	6	0	2	11	0	4	4	143	2	11	194	6	383
10:15 AM	3	1	1	12	1	5	5	127	0	10	143	9	317
10:30 AM	3	1	5	4	0	11	8	138	1	8	191	8	378
10:45 AM	2	2	10	8	6	4	5	144	1	10	166	7	365
11:00 AM	3	1	5	9	1	6	3	172	3	6	180	5	394
11:15 AM	5	2	6	8	1	7	10	173	2	13	171	11	409
11:30 AM	2	1	7	6	1	9	7	176	1	6	184	4	404
11:45 AM	3	3	5	11	1	10	10	170	0	12	170	9	404
12:00 PM	11	0	5	5	4	8	8	180	1	14	171	14	421
12:15 PM	11	2	7	22	2	8	6	192	2	15	164	11	442
12:30 PM	4	0	8	14	2	10	7	178	0	6	182	10	421
12:45 PM	8	1	4	11	2	3	7	177	2	11	184	12	422
1:00 PM	5	0	8	12	2	8	8	194	0	9	216	10	472
1:15 PM	7	0	5	21	1	8	6	201	1	12	192	4	458
1:30 PM	5	0	9	14	0	2	9	200	3	12	201	9	464
1:45 PM	2	2	10	18	3	10	9	220	2	8	198	11	493
2:00 PM	5	3	10	23	3	23	16	242	3	12	234	11	585
2:15 PM	4	0	3	18	3	16	10	258	2	13	268	14	609
2:30 PM	5	2	9	16	4	14	9	248	2	8	267	17	601
2:45 PM	4	1	6	7	0	14	13	277	5	13	341	31	712
3:00 PM	13	4	23	55	3	23	5	273	2	22	288	32	743
3:15 PM	10	3	22	47	6	31	10	295	2	12	351	14	803
3:30 PM	5	1	9	23	5	21	9	276	1	11	332	14	707
3:45 PM	4	1	15	24	4	12	9	295	3	4	390	13	774
4:00 PM	8	0	11	25	2	15	2	308	3	9	354	14	751
4:15 PM	7	3	3	14	4	16	4	245	1	11	364	7	679
4:30 PM	8	0	6	7	1	7	5	231	2	10	400	20	697
4:45 PM	9	2	8	12	1	16	3	256	1	16	395	15	734
5:00 PM	8	0	4	16	3	4	3	249	1	12	364	6	670
5:15 PM	6	0	7	11	1	2	3	253	3	15	354	4	659
5:30 PM	10	0	10	7	0	7	3	224	3	14	321	7	606
5:45 PM	9	0	6	10	3	2	5	245	0	9	362	3	654

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	235	64	297	805	84	508	460	11390	69	430	11077	759	26178
Approach %	39.43	10.74	49.83	57.62	6.01	36.36	3.86	95.56	0.58	3.51	90.31	6.19	
App/Depart	596	/	1283	1397	/	583	11919	/	12492	12266	/	11820	

Peak Hr Begins at: 630 AM

PEAK													
Volumes	6	2	6	21	2	17	73	1384	3	14	602	50	2180
Approach %	42.86	14.29	42.86	52.50	5.00	42.50	5.00	94.79	0.21	2.10	90.39	7.51	
PEAK HR. FACTOR:		0.688			0.756			0.961			0.911		0.942

Peak Hr Begins at: 300 PM

PEAK													
Volumes	32	9	69	149	18	87	33	1139	8	49	1361	73	3027
Approach %	29.09	8.18	62.73	58.66	7.09	34.25	2.80	96.53	0.68	3.30	91.77	4.92	
PEAK HR. FACTOR:		0.438			0.667			0.790			0.816		0.791

CONTROL: Signal
COMMENT 1:
GPS: 33.480223, -112.218357

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET: 75th Ave DATE: 05/14/24 LOCATION: Phoenix

E-W STREET: Cheery Lynn Rd DAY: TUESDAY PROJECT# 24-1302-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	2	0	0	1	0	0	1	0	
6:00 AM	2	95	3	0	186	1	2	0	12	0	0	0	301
6:15 AM	4	123	3	1	192	3	6	0	6	1	0	0	339
6:30 AM	1	133	5	9	258	4	3	0	10	0	0	2	425
6:45 AM	2	118	15	12	211	3	8	0	9	0	0	0	378
7:00 AM	0	118	28	44	210	3	7	2	7	0	0	0	419
7:15 AM	3	176	22	36	259	3	10	0	16	0	0	0	525
7:30 AM	4	207	45	84	281	10	8	4	13	0	0	0	656
7:45 AM	2	216	81	79	325	21	15	27	5	0	0	0	771
8:00 AM	4	160	39	48	244	10	6	13	10	0	0	1	535
8:15 AM	9	177	14	14	216	10	9	2	9	8	1	14	483
8:30 AM	5	132	18	14	207	2	2	2	3	4	0	9	398
8:45 AM	4	153	6	14	200	3	5	1	6	1	0	13	406
9:00 AM	2	161	8	5	178	1	5	0	4	3	0	3	370
9:15 AM	4	141	3	6	180	1	0	0	1	3	0	3	342
9:30 AM	2	157	7	6	180	3	2	0	7	2	0	3	369
9:45 AM	4	149	7	0	208	1	3	0	1	1	0	0	374
10:00 AM	1	183	1	3	196	5	7	0	2	0	0	1	399
10:15 AM	3	169	4	1	163	2	1	0	7	0	0	1	351
10:30 AM	4	195	1	1	199	6	3	0	8	3	0	2	422
10:45 AM	5	174	4	1	180	3	1	0	7	0	0	2	377
11:00 AM	3	175	3	2	197	3	3	0	2	1	0	1	390
11:15 AM	3	171	2	4	182	4	1	0	4	0	0	0	371
11:30 AM	6	209	2	1	181	1	1	0	5	4	1	3	414
11:45 AM	5	190	0	0	195	5	5	0	8	2	0	0	410
12:00 PM	5	222	0	0	179	2	1	0	4	1	0	2	416
12:15 PM	6	209	1	4	202	2	0	0	8	6	0	18	456
12:30 PM	4	256	3	0	213	4	3	0	5	8	0	13	509
12:45 PM	4	226	2	1	209	2	5	0	7	0	0	0	456
1:00 PM	3	232	1	1	213	5	1	0	5	2	0	0	463
1:15 PM	3	242	1	1	209	3	11	0	8	0	0	8	486
1:30 PM	6	258	1	0	238	4	1	0	5	2	0	1	516
1:45 PM	6	250	2	2	228	7	1	0	9	1	0	1	507
2:00 PM	6	268	3	3	232	2	4	0	8	6	0	29	561
2:15 PM	4	264	5	1	217	5	3	0	10	5	0	7	521
2:30 PM	4	348	4	7	252	5	5	0	3	2	0	1	631
2:45 PM	11	276	14	32	275	19	5	0	5	0	0	0	637
3:00 PM	12	368	15	28	295	19	24	0	14	1	0	2	778
3:15 PM	11	346	10	11	245	10	5	1	12	0	0	2	653
3:30 PM	9	314	29	21	290	7	9	0	6	1	0	0	686
3:45 PM	9	348	11	20	281	12	8	0	6	0	0	0	695
4:00 PM	8	306	9	12	264	6	4	0	10	0	1	3	623
4:15 PM	4	367	4	3	235	5	2	0	6	1	0	0	627
4:30 PM	9	311	1	2	258	3	3	0	7	1	0	0	595
4:45 PM	8	348	2	1	251	4	4	0	9	0	0	0	627
5:00 PM	7	292	2	2	274	11	3	0	6	0	0	0	597
5:15 PM	11	301	6	2	273	8	5	1	11	1	0	1	620
5:30 PM	10	304	4	1	242	9	8	1	6	1	0	0	586
5:45 PM	7	310	3	1	264	6	3	1	7	0	0	1	603

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	249	10848	454	541	10867	268	231	55	339	72	3	147	24074
Approach %	2.16	93.91	3.93	4.63	93.07	2.30	36.96	8.80	54.24	32.43	1.35	66.22	
App/Depart	11551	/	11226	11676	/	11278	625	/	1050	222	/	520	

Peak Hr Begins at: 6:30 AM

PEAK													
Volumes	6	545	70	101	938	13	28	2	42	0	0	2	1747
Approach %	0.97	87.76	11.27	9.60	89.16	1.24	38.89	2.78	58.33	0.00	0.00	100.00	
PEAK HR. FACTOR:		0.772			0.883			0.692			0.250		0.832

Peak Hr Begins at: 3:00 PM

PEAK													
Volumes	41	1376	65	80	1111	48	46	1	38	2	0	4	2812
Approach %	2.77	92.85	4.39	6.46	89.67	3.87	54.12	1.18	44.71	33.33	0.00	66.67	
PEAK HR. FACTOR:		0.938			0.906			0.692			0.500		0.904

CONTROL: Signal
COMMENT 1:
GPS: 33.484476, -112.220585

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET: 75th Ave DATE: 05/14/24 LOCATION: Phoenix

E-W STREET: Northern School Access Point DAY: TUESDAY PROJECT# 24-1302-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	0	2	0	0	0	0	0	1	0	
6:00 AM	0	97	0	0	186	0	0	0	0	1	0	0	284
6:15 AM	0	128	1	0	194	0	0	0	0	2	0	1	326
6:30 AM	0	136	2	0	267	0	0	0	0	4	0	2	411
6:45 AM	0	125	1	0	223	0	0	0	0	3	0	7	359
7:00 AM	0	125	0	0	241	0	0	0	0	16	0	32	414
7:15 AM	0	186	0	0	281	0	0	0	0	17	0	36	520
7:30 AM	0	215	0	0	364	0	0	0	0	11	0	60	650
7:45 AM	0	231	0	0	400	0	0	0	0	25	0	102	758
8:00 AM	0	167	0	0	268	0	0	0	0	34	0	76	545
8:15 AM	0	198	2	0	239	0	0	0	0	1	0	1	441
8:30 AM	0	141	2	1	222	0	0	0	0	1	0	3	370
8:45 AM	0	170	1	0	216	0	0	0	0	1	0	3	391
9:00 AM	0	166	3	0	184	0	0	0	0	0	0	2	355
9:15 AM	0	144	0	0	187	0	0	0	0	0	0	1	332
9:30 AM	0	161	1	4	189	0	0	0	0	0	0	4	359
9:45 AM	0	150	2	0	208	0	0	0	0	1	0	2	363
10:00 AM	0	191	0	2	204	0	0	0	0	0	0	1	398
10:15 AM	0	170	1	4	164	0	0	0	0	2	0	0	341
10:30 AM	0	199	1	0	206	0	0	0	0	0	0	4	410
10:45 AM	0	177	0	0	184	0	0	0	0	0	0	0	361
11:00 AM	0	178	1	3	201	0	0	0	0	1	0	3	387
11:15 AM	0	172	0	2	190	0	0	0	0	0	0	4	368
11:30 AM	0	210	3	0	183	0	0	0	0	0	0	1	397
11:45 AM	0	194	1	3	199	0	0	0	0	1	0	2	400
12:00 PM	0	225	0	3	179	0	0	0	0	2	0	4	413
12:15 PM	0	227	0	1	208	0	0	0	0	0	0	4	440
12:30 PM	0	272	0	1	217	0	0	0	0	0	0	2	492
12:45 PM	0	230	1	5	212	0	0	0	0	0	0	5	453
1:00 PM	0	233	0	0	219	0	0	0	0	0	0	3	455
1:15 PM	0	261	0	0	213	0	0	0	0	0	0	3	477
1:30 PM	0	260	0	0	239	0	0	0	0	3	0	1	503
1:45 PM	0	252	0	0	237	0	0	0	0	0	0	1	490
2:00 PM	0	301	0	0	235	0	0	0	0	2	0	1	539
2:15 PM	0	274	0	0	223	0	0	0	0	0	0	0	497
2:30 PM	0	354	0	0	264	0	0	0	0	0	0	1	619
2:45 PM	0	281	0	0	321	0	0	0	0	5	0	3	610
3:00 PM	0	394	0	0	312	0	0	0	0	30	0	65	801
3:15 PM	0	353	0	0	233	0	0	0	0	33	0	79	698
3:30 PM	0	323	0	0	300	0	0	0	0	18	0	24	665
3:45 PM	0	356	0	0	294	0	0	0	0	19	0	41	710
4:00 PM	0	313	0	0	272	0	0	0	0	10	0	38	633
4:15 PM	0	369	0	0	238	0	0	0	0	5	0	8	620
4:30 PM	0	314	0	0	263	0	0	0	0	0	0	3	580
4:45 PM	0	352	0	0	256	0	0	0	0	0	0	1	609
5:00 PM	0	295	0	0	285	0	0	0	0	2	0	2	584
5:15 PM	0	307	0	0	282	0	0	0	0	1	0	0	590
5:30 PM	0	312	0	0	249	0	0	0	0	3	0	4	568
5:45 PM	0	314	0	0	268	0	0	0	0	3	0	1	586

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	11203	23	29	11419	0	0	0	0	257	0	641	23572
Approach %	0.00	99.80	0.20	0.25	99.75	0.00	#DIV/0!	#DIV/0!	#DIV/0!	28.62	0.00	71.38	
App/Depart	11226	/	11844	11448	/	11676	0	/	52	898	/	0	

Peak Hr Begins at: 6:30 AM

PEAK													
Volumes	0	572	3	0	1012	0	0	0	0	40	0	77	1704
Approach %	0.00	99.48	0.52	0.00	100.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	34.19	0.00	65.81	
PEAK HR. FACTOR:		0.773			0.900			0.000			0.552		0.819

Peak Hr Begins at: 300 PM

PEAK													
Volumes	0	1426	0	0	1139	0	0	0	0	100	0	209	2874
Approach %	0.00	100.00	0.00	0.00	100.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	32.36	0.00	67.64	
PEAK HR. FACTOR:		0.905			0.913			0.000			0.690		0.897

CONTROL: 1-Way Stop (WB)
COMMENT 1:
GPS: 33.486074, -112.220576

Colliers Engineering & Design

Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

Appendix C | Crash Data

City of Phoenix
Street Transportation Department
Traffic Services Division

Summary Type: Intersection Crashes
Location: 75th Av and Cheery Lynn Rd
Study Period: 2018 - 2023*
*2023 data preliminary/unofficial

Note: Only collisions within the segment are included in this summary (>150' from the terminal intersections.)
Data Sources: ADOT Records Section (ACIS)

	Incident							Unit 1		Unit 2		
#	Date	Time	Light Cond.	Collision Type	Injury Severity	Intersection (Xn)	Distance from Xn	Dir U1	Action	Dir U2	Action	Comment
1	9/19/2018	2:23 PM	Daylight	Single Vehicle	No injury	75Th Ave and Cora Ln	68	South	Going Straight Ahead	<Null>	<Null>	Fence
2	10/1/2018	10:56 PM	Dark	Single Vehicle	No injury	75Th Ave and Cora Ln	0	South	Going Straight Ahead	<Null>	<Null>	Fence
3	11/1/2018	8:45 PM	Dark	Left turn	No injury	75Th Ave and Cora Ln	0	South	Going Straight Ahead	North	Making Left Turn	Motor Vehicle in Transport
4	1/11/2019	5:51 AM	Daylight	Left turn	No injury	75Th Ave and Cora Ln	0	Not reported	Making Left Turn	Not Reported	Going Straight Ahead	Motor Vehicle in Transport
5	1/27/2019	3:26 PM	Daylight	Angle	No injury	75Th Ave and Cora Ln	0	South	Changing Lanes	South	Going Straight Ahead	Motor Vehicle in Transport
6	7/5/2019	1:08 PM	Daylight	Rear end	No injury	75Th Ave and Cheery Lynn Rd	403	North	Going Straight Ahead	North	Stopped In Trafficway	Motor Vehicle in Transport
7	4/9/2020	5:33 AM	Dawn & Dusk	Single Vehicle	No injury	75Th Ave and Osborn Rd	-481	South	Going Straight Ahead	<Null>	<Null>	Fence
8	11/5/2020	5:16 PM	Daylight	Rear end	Minor injury	75Th Ave and Cheery Lynn Rd	198	South	Going Straight Ahead	South	Going Straight Ahead	Motor Vehicle in Transport
9	7/4/2021	6:14 AM	Daylight	Sideswipe same direction	No injury	75Th Ave and Cora Ln	150	North	Changing Lanes	North	Going Straight Ahead	Motor Vehicle in Transport
10	4/8/2022	2:57 PM	Daylight	Left turn	Minor injury	75Th Ave and Cora Ln	225	Southwest	Making Left Turn	North	Going Straight Ahead	Motor Vehicle in Transport
11	12/2/2022	2:10 PM	Daylight	Sideswipe opposite direction	No injury	75Th Ave and Cheery Lynn Rd	451	North	Making Right Turn	South	Going Straight Ahead	Motor Vehicle in Transport
12	12/10/2022	6:34 PM	Dark	Rear end	Possible injury	75Th Ave and Cora Ln	122	North	Changing Lanes	North	Stopped In Trafficway	Motor Vehicle in Transport
13	9/21/2023	4:50 PM	Daylight	Sideswipe same direction	No injury	75Th Ave and Cheery Lynn Rd	595	South	Going Straight Ahead	South	Going Straight Ahead	Motor Vehicle in Transport

Year	No injury	Possible injury	Minor injury	Rear end	Left turn	Single Vehicle	Sideswipe same	Angle	Sideswipe opposite	Total
2018	3				1	2				3
2019	3			1	1			1		3
2020	1		1	1		1				2
2021	1						1			1
2022	1	1	1	1	1				1	3
2023	1						1			1
Total	**10**	**1**	**2**	**3**	**3**	**3**	**2**	**1**	**1**	**13**

Number	Date	Time	Collision Type	Injury	Description	Location	Light Condition
1	9/19/2018	2:23 PM	Single Vehicle - Fixed Object	0	V1 was traveling southbound along N 75th Avenue and struck a fence, resulting in a single vehicle collision.	Along N 75th Avenue, approximately 200 feet north of Northern School	Daylight
2	10/1/2018	10:56 PM	Single Vehicle - Fixed Object	0	V1 was traveling southbound along N 75th Avenue and struck a fence, resulting in a single vehicle collision.	Along N 75th Avenue, <200 feet north of Northern School Access	Dark
3	11/1/2018	8:45 PM	Left Turn	0	V1 was traveling southbound along N 75th Avenue and V2 was traveling northbound. V1 attempted to make a left-turn into a driveway and was struck by V2, resulting in a left-turn collision.	Along N 75th Avenue, <200 feet north of Northern School Access	Dark
4	1/11/2019	5:51 AM	Left Turn	0	V1 and V2 were traveling along N 75th Avenue (unknown directions), and a left-turn collision occurred.	Along N 75th Avenue, <200 feet north of Northern School Access	Daylight
5	1/27/2019	3:26 PM	Angle	0	V1 and V2 were traveling southbound along N 75th Avenue, and V1 attempted to change lanes, resulting in an angle collision with V2.	Along N 75th Avenue, <200 feet north of Northern School Access	Daylight
6	7/5/2019	1:08 PM	Rear End	0	V1 and V2 were traveling northbound along N 75th Avenue. V1 was traveling straight and V2 was stopped in the trafficway, resulting in a rear end collision.	Along N 75th Avenue, approximately 130 feet south of Northern School Access.	Daylight
7	11/5/2020	5:16 PM	Rear End	1	V1 and V2 were traveling northbound along N 75th Avenue, and either V1 or V2 struck the other (unknown) resulting in a rear end collision. One (1) minor injury occurred.	Along N 75th Avenue, <0.1 miles from Northern School Access	Daylight
8	7/4/2021	6:14 AM	Sideswipe Same Direction	0	V1 and V2 were traveling northbound along N 75th Avenue. V1 attempted to change lanes resulting in a sideswipe collision with V2.	Along N 75th Avenue, <0.1 miles from Northern School Access	Daylight
9	4/8/2022	2:57 PM	Left Turn	1	V1 was traveling southwest bound along N 75th Avenue and V2 was traveling northbound. V1 attempted to make a left-turn into a driveway and was struck by V2. One (1) minor injury occurred.	Along N 75th Avenue, <0.1 miles from Northern School Access	Daylight
10	12/10/2022	6:34 PM	Rear End	1	V1 and V2 were traveling northbound along N 75th Avenue. V1 attempted to change lanes while V2 was stopped in the trafficway, resulting in a rear end collision. One (1) possible injury occurred.	Along N 75th Avenue, <0.1 miles from Northern School Access	Dark

Total Number of Injuries	**3**
Number of Accidents w/ Injury	**3**

Number	Date	Time	Collision Type	Injury	Description	Location	Light Condition
1	4/9/2020	5:33 AM	Single Vehicle - Fixed Object	0	V1 was traveling southbound along N 75th Avenue and struck a fence, resulting in a single vehicle collision.	Intersection of N 75th Avenue & Northern School Access	Dawn & Dusk
2	12/2/2022	2:10 PM	Sideswipe Opposite Direction	0	V1 was traveling northbound along N 75th Avenue, attempting to make a right-turn into the egress-only Northern School Access. V1 was traveling southbound on N 75th Avenue, likely having just turned out from the Northern Site Driveway, and V1 struck V2 resulting in an opposite direction side-swipe collision.	Intersection of N 75th Avenue & Northern School Access	Daylight
3	9/21/2023	4:50 PM	Sideswipe Same Direction	0	V1 and V2 were traveling southbound along N 75th Avenue, and either V1 or V2 sideswiped the other, resulting in a collision.	Intersection of N 75th Avenue & Northern School Access	Daylight

Total Number of Injuries	**0**
Number of Accidents w/ Injury	**0**

Colliers Engineering & Design

Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

Appendix D | Traffic Signal Warrant Analysis

Warrants Summary Report

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

Warrant	Met?	Notes
Warrant 1, Eight-Hour Vehicular Volume		
	No	
Condition A or B Met	No	4 Hours met (8 required)
Condition A and B Me	No	4 Hours met (8 required)
Warrant 2, Four-Hour Vehicular Volume		
	Yes	4 Hours met (4 required)
Warrant 3, Peak Hour		
	Yes	
Condition A Met?	No	0 Hours met (1 required)
Condition B Met?	Yes	4 Hours met (1 required)

Warrant 1: Eight-hour Vehicular Volume

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

Major Street Name:	N 75th Avenue
Major Street Direction:	NB/SB
Minor Street Direction:	WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	4 Hours met (8 required)
Condition B Met?	No	4 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		100% Standard Met? Cond. A OR Cond. B		80% Standard Met? Cond. A AND Cond. B	
					Condition A 100% Column	Condition B 100% Column	Condition A 80% Column	Condition B 80% Column
06:00 to 07:00	**1,356**		**20**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
06:15 to 07:15	**1,439**		**67**		No	No	No	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
06:30 to 07:30	**1,584**		**117**		No	Yes*	No	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
06:45 to 07:45	**1,760**		**182**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				

07:00 to 08:00	**2,043**		**299**		Yes	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
07:15 to 08:15	**2,112**		**361**		Yes	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
07:30 to 08:30	**2,082**		**310**		Yes	Yes*	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
07:45 to 08:45	**1,866**		**243**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
08:00 to 09:00	**1,621**		**120**		No	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
08:15 to 09:15	**1,536**		**12**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
08:30 to 09:30	**1,430**		**11**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

08:45 to 09:45	1,417		11		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

09:00 to 10:00	1,389		10		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

09:15 to 10:15	1,434		9		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

09:30 to 10:30	1,437		10		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

09:45 to 10:45	1,492		10		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

10:00 to 11:00	1,495		7		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

10:15 to 11:15	1,479		10		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

10:30 to 11:30	1,507		12		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

10:45 to 11:45	1,495		9		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

11:00 to 12:00	1,527		12		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

11:15 to 12:15	1,552		14		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

11:30 to 12:30	1,625		14		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

11:45 to 12:45	1,721		15		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

12:00 to 13:00	1,770		17		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

12:15 to 13:15	**1,818**		**14**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
12:30 to 13:30	**1,857**		**13**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
12:45 to 13:45	**1,867**		**15**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
13:00 to 14:00	**1,914**		**11**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
13:15 to 14:15	**1,998**		**11**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
13:30 to 14:30	**2,021**		**8**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
13:45 to 14:45	**2,140**		**5**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

14:00 to 15:00	**2,253**		**12**		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				
14:15 to 15:15	**2,423**		**104**		No	Yes*	No	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
14:30 to 15:30	**2,512**		**216**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
14:45 to 15:45	**2,517**		**257**		Yes	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
15:00 to 16:00	**2,565**		**309**		Yes	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
15:15 to 16:15	**2,444**		**262**		Yes	Yes*	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				
15:30 to 16:30	**2,465**		**163**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	Yes				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				

15:45 to 16:45	2,419		124		No	Yes	Yes	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	Yes				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	Yes				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				

16:00 to 17:00	2,377		65		No	No	No	Yes
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	Yes				

16:15 to 17:15	2,372		21		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

16:30 to 17:30	2,354		9		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

16:45 to 17:45	2,338		13		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

17:00 to 18:00	2,312		16		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

17:15 to 18:15	1,732		12		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

17:30 to 18:30	1,143		11		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	Yes	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	Yes	**Volume >= 80% column (60)?**	No				

17:45 to 18:45	582		4		No	No	No	No
Condition A	Volume >= 100% column (500)?	Yes	Volume >= 100% column (750)?	No				
	Volume >= 80% column (400)?	Yes	Volume >= 80% column (600)?	No				
Condition B	**Volume >= 100% column (750)?**	No	**Volume >= 100% column (75)?**	No				
	Volume >= 80% column (600)?	No	**Volume >= 80% column (60)?**	No				

Warrant 2: Four-hour Vehicular Volume

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

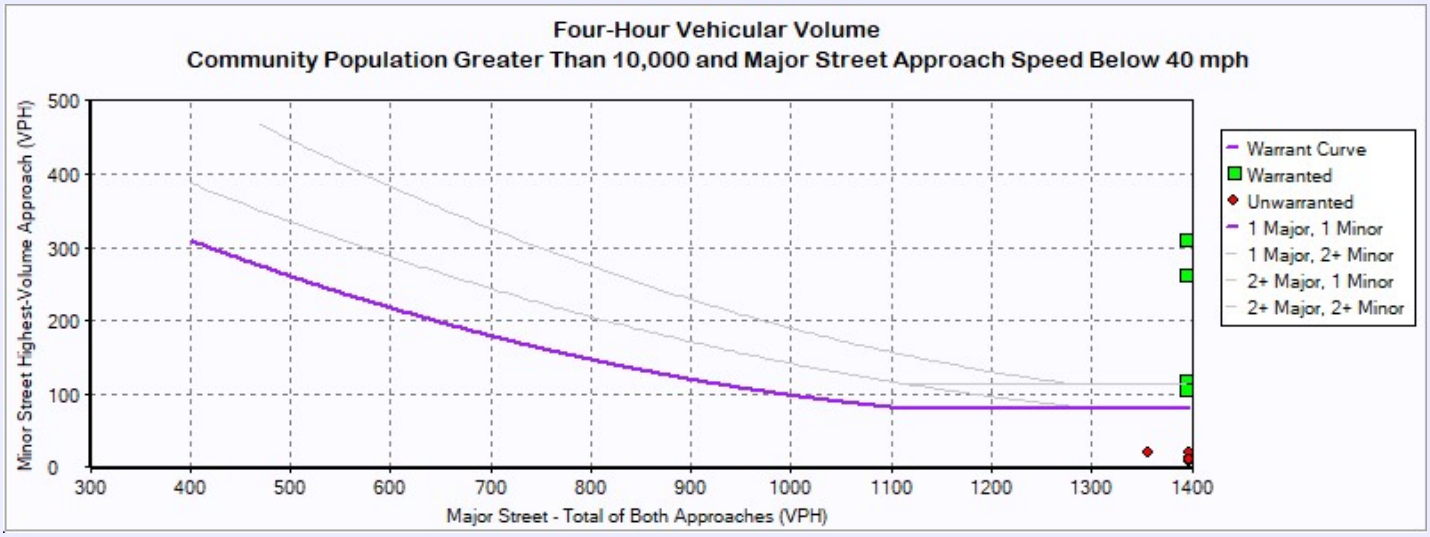
Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

Warrant 2 Met? **Yes**

Details:

Notes	4 Hours met (4 required)
Low population	No



Warrant 2: Four-hour Vehicular Volume

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

Hourly Volumes

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	0	0
01:00:00 - 02:00:00	0	0
02:00:00 - 03:00:00	0	0
03:00:00 - 04:00:00	0	0
04:00:00 - 05:00:00	0	0
05:00:00 - 06:00:00	0	0
06:00:00 - 07:00:00	1,356	20
07:00:00 - 08:00:00	2,043	299
08:00:00 - 09:00:00	1,621	120
09:00:00 - 10:00:00	1,389	10
10:00:00 - 11:00:00	1,495	7
11:00:00 - 12:00:00	1,527	12
12:00:00 - 13:00:00	1,770	17
13:00:00 - 14:00:00	1,914	11
14:00:00 - 15:00:00	2,253	12
15:00:00 - 16:00:00	2,565	309
16:00:00 - 17:00:00	2,377	65
17:00:00 - 18:00:00	2,312	16
18:00:00 - 19:00:00	0	0
19:00:00 - 20:00:00	0	0
20:00:00 - 21:00:00	0	0
21:00:00 - 22:00:00	0	0
22:00:00 - 23:00:00	0	0

23:00:00 - 00:00:00	0	0

Warranted Hours

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
06:30:00 - 07:30:00	1,584.00	117.00
07:30:00 - 08:30:00	2,082.00	310.00
14:15:00 - 15:15:00	2,423.00	104.00
15:15:00 - 16:15:00	2,444.00	262.00

Note: Only data of hours warranted is represented in the above table.

Warrant 3: Peak Hour

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

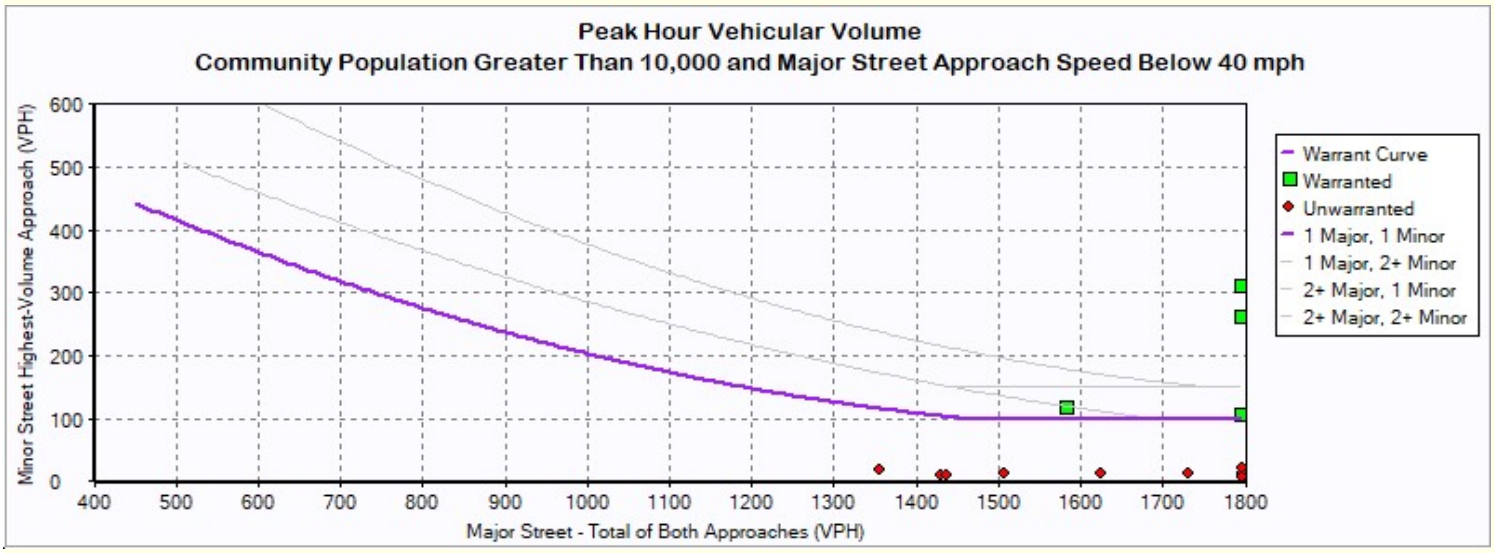
Warrant 3 Met? Yes

Details

Low Population? No

Condition A Met	No	**Condition B Met**	Yes
Notes	0 Hours met (1 required)	**Notes**	4 Hours met (1 required)

Minor Approach Time Delay Condition Met?	Not Met
Minor Approach Volume Condition Met?	Met
Total Entering Intersection Volume Condition Met?	Not Met



Warrant 3: Peak Hour

1: 2027 Existing Traffic Volumes - N 75th Avenue & Northern School Access

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
6:00	1,356	20
6:30	1,584	117
7:30	2,082	310
8:30	1,430	11
9:30	1,437	10
10:30	1,507	12
11:30	1,625	14
12:30	1,857	13
13:30	2,021	8
14:15	2,423	104
15:15	2,444	262
16:15	2,372	21
17:15	1,732	12

Warrants Summary Report

1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

Warrant	Met?	Notes
Warrant 1, Eight-Hour Vehicular Volume		
	No	
Condition A or B Met	No	4 Hours met (8 required)
Condition A and B Me	No	4 Hours met (8 required)
Warrant 2, Four-Hour Vehicular Volume		
	Yes	4 Hours met (4 required)
Warrant 3, Peak Hour		
	Yes	
Condition A Met?	No	0 Hours met (1 required)
Condition B Met?	Yes	4 Hours met (1 required)

Warrant 1: Eight-hour Vehicular Volume

1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

Major Street Name:	N 75th Avenue
Major Street Direction:	NB/SB
Minor Street Direction:	WB

WARRANT 1 MET? **No**

Details:

Condition A Met?	No	4 Hours met (8 required)
Condition B Met?	No	4 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
06:00 to 07:00	**1,483**		**21**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
06:15 to 07:15	**1,574**		**72**		No	Yes*	No	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
06:30 to 07:30	**1,732**		**127**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
06:45 to 07:45	**1,924**		**199**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

07:00 to 08:00	**2,232**		**326**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
07:15 to 08:15	**2,308**		**394**		Yes	Yes*	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
07:30 to 08:30	**2,275**		**338**		Yes*	Yes	Yes*	Yes*
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
07:45 to 08:45	**2,039**		**264**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
08:00 to 09:00	**1,772**		**130**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
08:15 to 09:15	**1,678**		**12**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
08:30 to 09:30	**1,562**		**11**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

08:45 to 09:45	**1,548**		**11**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
09:00 to 10:00	**1,517**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
09:15 to 10:15	**1,567**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
09:30 to 10:30	**1,571**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
09:45 to 10:45	**1,631**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
10:00 to 11:00	**1,634**		**7**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
10:15 to 11:15	**1,617**		**10**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

10:30 to 11:30	1,648		12		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

10:45 to 11:45	1,635		9		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

11:00 to 12:00	1,671		12		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

11:15 to 12:15	1,698		14		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

11:30 to 12:30	1,777		14		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

11:45 to 12:45	1,881		15		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

12:00 to 13:00	1,934		17		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

12:15 to 13:15	1,986		14		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

12:30 to 13:30	2,029		13		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

12:45 to 13:45	2,040		15		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

13:00 to 14:00	2,091		11		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

13:15 to 14:15	2,183		11		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

13:30 to 14:30	2,208		8		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

13:45 to 14:45	2,339		5		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

14:00 to 15:00	**2,463**		**12**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
14:15 to 15:15	**2,649**		**113**		Yes*	Yes*	Yes*	Yes*
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**2,747**		**235**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**2,752**		**280**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**2,804**		**338**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**2,671**		**287**		Yes*	Yes*	Yes*	Yes*
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:30 to 16:30	**2,693**		**179**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				

15:45 to 16:45	**2,642**		**136**		Yes	Yes	Yes	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	Yes				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	Yes				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
16:00 to 17:00	**2,597**		**71**		No	Yes	No	Yes
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	Yes				
16:15 to 17:15	**2,592**		**22**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
16:30 to 17:30	**2,573**		**9**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
16:45 to 17:45	**2,556**		**13**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
17:00 to 18:00	**2,527**		**16**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				
17:15 to 18:15	**1,893**		**12**		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

17:30 to 18:30	1,249		11		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

17:45 to 18:45	636		4		No	No	No	No
Condition A	Volume >= 70% column (350)?	Yes	Volume >= 70% column (525)?	No				
	Volume >= 56% column (280)?	Yes	Volume >= 56% column (420)?	No				
Condition B	**Volume >= 70% column (525)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (420)?	Yes	**Volume >= 56% column (42)?**	No				

Warrant 2: Four-hour Vehicular Volume

1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

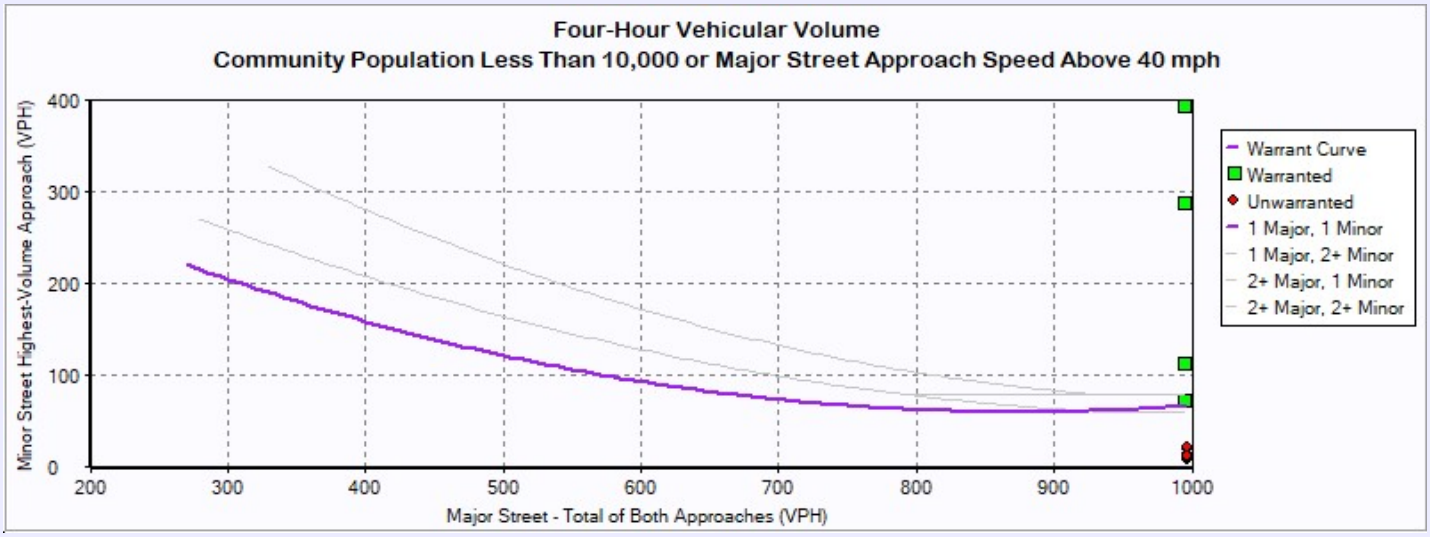
Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

Warrant 2 Met? **Yes**

Details:

Notes	4 Hours met (4 required)
Low population	No



Warrant 2: Four-hour Vehicular Volume

1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

Hourly Volumes

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	0	0
01:00:00 - 02:00:00	0	0
02:00:00 - 03:00:00	0	0
03:00:00 - 04:00:00	0	0
04:00:00 - 05:00:00	0	0
05:00:00 - 06:00:00	0	0
06:00:00 - 07:00:00	1,483	21
07:00:00 - 08:00:00	2,232	326
08:00:00 - 09:00:00	1,772	130
09:00:00 - 10:00:00	1,517	10
10:00:00 - 11:00:00	1,634	7
11:00:00 - 12:00:00	1,671	12
12:00:00 - 13:00:00	1,934	17
13:00:00 - 14:00:00	2,091	11
14:00:00 - 15:00:00	2,463	12
15:00:00 - 16:00:00	2,804	338
16:00:00 - 17:00:00	2,597	71
17:00:00 - 18:00:00	2,527	16
18:00:00 - 19:00:00	0	0
19:00:00 - 20:00:00	0	0
20:00:00 - 21:00:00	0	0
21:00:00 - 22:00:00	0	0
22:00:00 - 23:00:00	0	0

23:00:00 - 00:00:00	0	0

Warranted Hours

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
06:15:00 - 07:15:00	1,574.00	72.00
07:15:00 - 08:15:00	2,308.00	394.00
14:15:00 - 15:15:00	2,649.00	113.00
15:15:00 - 16:15:00	2,671.00	287.00

Note: Only data of hours warranted is represented in the above table.

Warrant 3: Peak Hour

1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

Intersection Information

	Major Street	Minor Street
Street Name	N 75th Avenue	Northern School Access
Direction	NB/SB	WB
Number of Lanes	1	1
Approch Speed	40	25

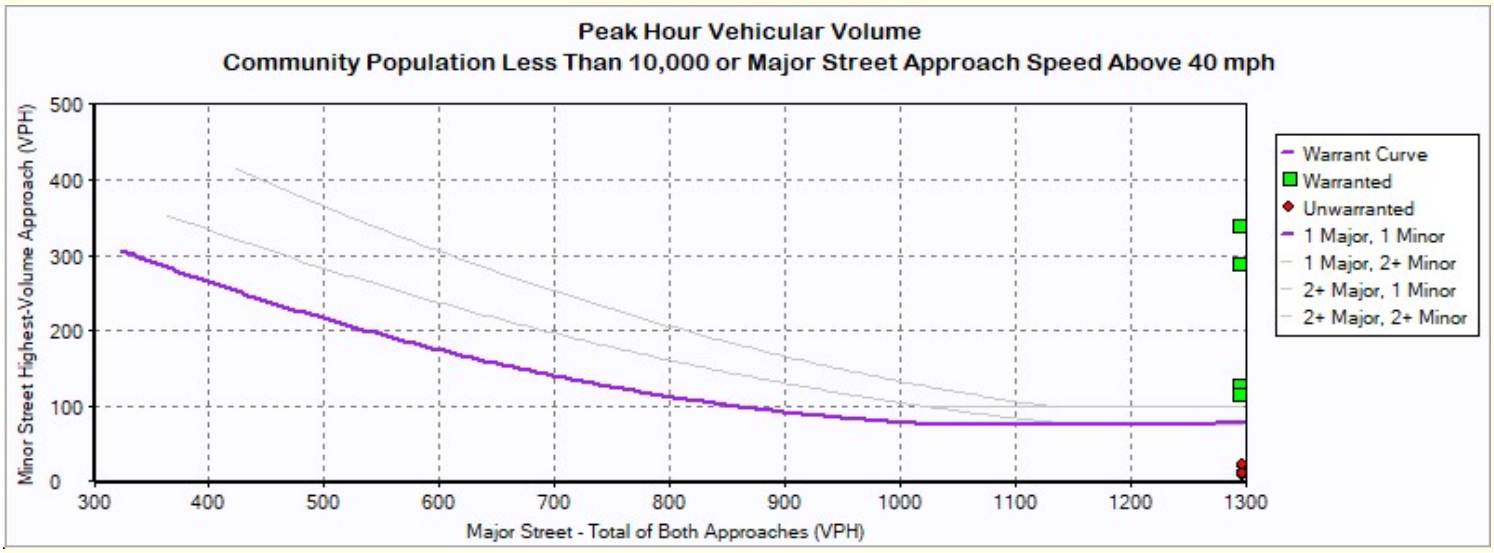
Warrant 3 Met? Yes

Details

Low Population? No

Condition A Met	No	**Condition B Met**	Yes
Notes	0 Hours met (1 required)	**Notes**	4 Hours met (1 required)

Minor Approach Time Delay Condition Met?	Not Met
Minor Approach Volume Condition Met?	Met
Total Entering Intersection Volume Condition Met?	Not Met



Warrant 3: Peak Hour

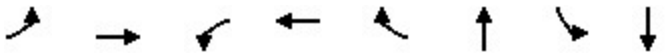
1: 2027 Future Traffic Volumes - N 75th Avenue & Northern School Access

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
6:00	1,483	21
6:30	1,732	127
7:30	2,275	338
8:30	1,562	11
9:30	1,571	10
10:30	1,648	12
11:30	1,777	14
12:30	2,029	13
13:30	2,208	8
14:15	2,649	113
15:15	2,671	287
16:15	2,592	22
17:15	1,893	12

Colliers Engineering & Design

Trevor G. Browne High School Traffic Assessment & Signal Warrant Analysis

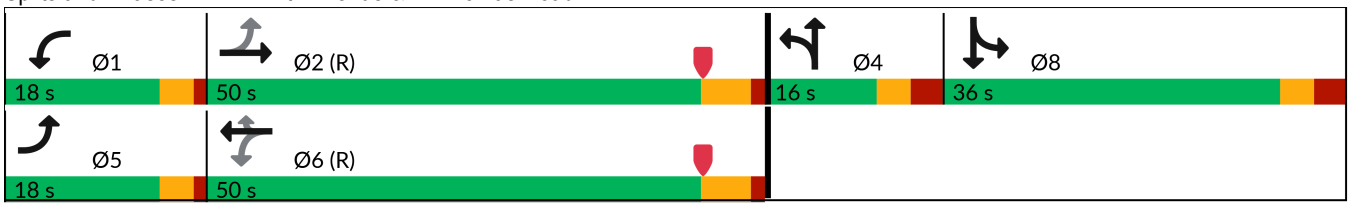
Appendix E | Capacity Analysis Reports

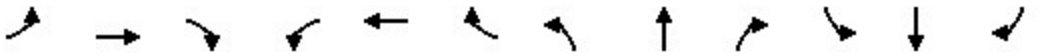


Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	73	1384	14	602	50	2	21	2
Future Volume (vph)	73	1384	14	602	50	2	21	2
Lane Group Flow (vph)	78	1475	15	640	53	14	22	20
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	18.0	50.0	18.0	50.0	50.0	16.0	36.0	36.0
Total Split (%)	15.0%	41.7%	15.0%	41.7%	41.7%	13.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	101.6	99.1	98.4	93.3	93.3	6.3	7.1	7.1
Actuated g/C Ratio	0.85	0.83	0.82	0.78	0.78	0.05	0.06	0.06
v/c Ratio	0.11	0.36	0.04	0.17	0.04	0.14	0.21	0.19
Control Delay (s/veh)	3.4	5.9	4.0	5.8	0.0	42.9	57.9	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.4	5.9	4.0	5.8	0.0	42.9	57.9	27.6
LOS	A	A	A	A	A	D	E	C
Approach Delay (s/veh)		5.8		5.4		42.9		43.5
Approach LOS		A		A		D		D
Queue Length 50th (ft)	6	66	1	42	0	6	17	2
Queue Length 95th (ft)	29	240	9	95	0	28	44	27
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	733	4056	421	3713	1298	157	443	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.36	0.04	0.17	0.04	0.09	0.05	0.05

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay (s/veh): 6.6	Intersection LOS: A
Intersection Capacity Utilization 50.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1384	3	14	602	50	6	2	6	21	2	17
Future Volume (veh/h)	73	1384	3	14	602	50	6	2	6	21	2	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1467	1870	1826	1945	1870	1945	1604	1870	1870	1870
Adj Flow Rate, veh/h	78	1472	3	15	640	53	6	2	6	22	2	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	33	2	5	2	2	2	20	2	2	2
Cap, veh/h	652	3990	8	353	3670	1214	12	4	12	56	5	45
Arrive On Green	0.08	1.00	1.00	0.02	0.74	0.74	0.02	0.02	0.02	0.03	0.03	0.03
Sat Flow, veh/h	1781	5262	11	1781	4985	1648	759	253	759	1781	161	1449
Grp Volume(v), veh/h	78	952	523	15	640	53	14	0	0	22	0	20
Grp Sat Flow(s),veh/h/ln	1781	1702	1868	1781	1662	1648	1771	0	0	1781	0	1610
Q Serve(g_s), s	1.2	0.0	0.0	0.3	4.7	1.1	0.9	0.0	0.0	1.5	0.0	1.5
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.3	4.7	1.1	0.9	0.0	0.0	1.5	0.0	1.5
Prop In Lane	1.00		0.01	1.00		1.00	0.43		0.43	1.00		0.90
Lane Grp Cap(c), veh/h	652	2581	1417	353	3670	1214	28	0	0	56	0	51
V/C Ratio(X)	0.12	0.37	0.37	0.04	0.17	0.04	0.51	0.00	0.00	0.39	0.00	0.40
Avail Cap(c_a), veh/h	791	2581	1417	532	3670	1214	149	0	0	447	0	404
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.0	0.0	0.0	3.7	4.8	4.3	58.6	0.0	0.0	57.0	0.0	57.0
Incr Delay (d2), s/veh	0.1	0.4	0.7	0.0	0.1	0.1	13.8	0.0	0.0	4.4	0.0	5.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.3	0.5	0.1	2.4	0.6	0.9	0.0	0.0	1.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.1	0.4	0.7	3.8	4.9	4.4	72.4	0.0	0.0	61.4	0.0	62.0
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1553			708			14			42	
Approach Delay, s/veh		0.7			4.8			72.4			61.7	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	96.6		7.8	8.6	93.9		9.7				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	14.0	* 44		10.1	14.0	* 44		30.1				
Max Q Clear Time (g_c+I1), s	2.3	2.0		2.9	3.2	6.7		3.5				
Green Ext Time (p_c), s	0.0	14.6		0.0	0.1	4.6		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	3.5	
HCM 7th LOS	A	

Notes

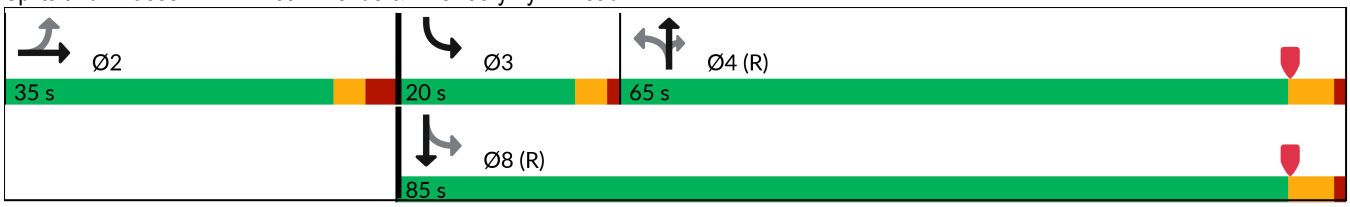
User approved pedestrian interval to be less than phase max green.

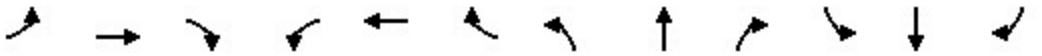
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	6	545	70	101	938
Future Volume (vph)	2	6	545	70	101	938
Lane Group Flow (vph)	87	7	657	84	122	1146
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	8.1	90.2	90.2	90.2	102.3	101.2
Actuated g/C Ratio	0.07	0.75	0.75	0.75	0.85	0.84
v/c Ratio	0.49	0.02	0.17	0.06	0.19	0.40
Control Delay (s/veh)	34.8	5.0	4.6	1.1	2.3	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	5.0	4.6	1.1	2.3	2.8
LOS	C	A	A	A	A	A
Approach Delay (s/veh)	34.9		4.3			2.8
Approach LOS	C		A			A
Queue Length 50th (ft)	27	1	45	0	10	78
Queue Length 95th (ft)	68	6	64	11	22	113
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	502	324	3695	1238	687	2851
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.18	0.07	0.18	0.40

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 85 (71%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay (s/veh): 4.6	Intersection LOS: A
Intersection Capacity Utilization 56.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	2	42	0	0	0	6	545	70	101	938	13
Future Volume (veh/h)	28	2	42	0	0	0	6	545	70	101	938	13
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	1945	1870				1870	1870	1930	1870	1856	1870
Adj Flow Rate, veh/h	34	2	51				7	657	84	122	1130	16
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	4	2	2				2	2	3	2	3	2
Cap, veh/h	44	3	67				438	3935	1260	662	3007	43
Arrive On Green	0.07	0.07	0.07				0.77	0.77	0.77	0.08	1.00	1.00
Sat Flow, veh/h	676	40	1014				491	5106	1635	1781	3559	50
Grp Volume(v), veh/h	87	0	0				7	657	84	122	560	586
Grp Sat Flow(s),veh/h/ln	1729	0	0				491	1702	1635	1781	1763	1846
Q Serve(g_s), s	5.9	0.0	0.0				0.4	4.1	1.5	1.6	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.0				0.4	4.1	1.5	1.6	0.0	0.0
Prop In Lane	0.39		0.59				1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	114	0	0				438	3935	1260	662	1490	1560
V/C Ratio(X)	0.76	0.00	0.00				0.02	0.17	0.07	0.18	0.38	0.38
Avail Cap(c_a), veh/h	424	0	0				438	3935	1260	827	1490	1560
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	0.0	0.0				3.2	3.6	3.3	2.0	0.0	0.0
Incr Delay (d2), s/veh	10.1	0.0	0.0				0.1	0.1	0.1	0.1	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	0.0				0.1	2.0	0.8	0.6	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.2	0.0	0.0				3.3	3.7	3.4	2.1	0.7	0.7
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		87						748			1268	
Approach Delay, s/veh		65.2						3.7			0.8	
Approach LOS		E						A			A	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		13.5	8.9	97.6				106.5				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		7.9	3.6	6.1				2.0				
Green Ext Time (p_c), s		0.4	0.2	5.3				9.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.5									
HCM 7th LOS			A									

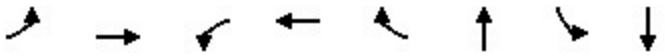
Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	77	573	0	0	1012
Future Vol, veh/h	40	77	573	0	0	1012
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	8	2	2	2	2	3
Mvmt Flow	49	94	699	0	0	1234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1316	349	0	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Critical Hdwy	6.41	7.14	-	-	-	-
Critical Hdwy Stg 1	6.76	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.73	3.92	-	-	-	-
Pot Cap-1 Maneuver	170	552	-	0	0	-
Stage 1	365	-	-	0	0	-
Stage 2	470	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	170	552	-	-	-	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	18.83	0	0
HCM LOS	C		

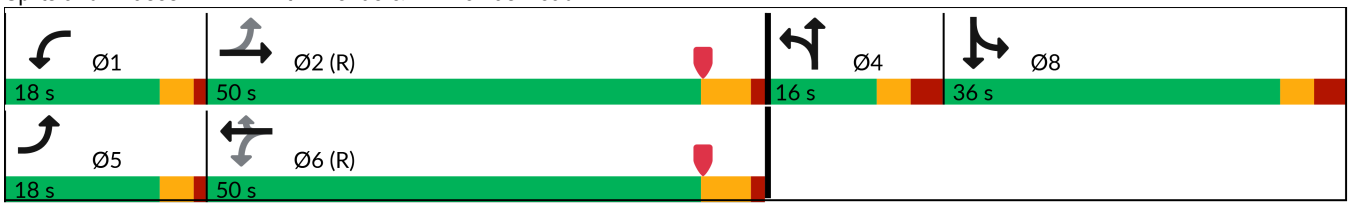
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	401	-
HCM Lane V/C Ratio	-	0.355	-
HCM Control Delay (s/veh)	-	18.8	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	1.6	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	33	1139	49	1361	73	9	149	18
Future Volume (vph)	33	1139	49	1361	73	9	149	18
Lane Group Flow (vph)	42	1452	62	1723	92	139	189	133
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	18.0	50.0	18.0	50.0	50.0	16.0	36.0	36.0
Total Split (%)	15.0%	41.7%	15.0%	41.7%	41.7%	13.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	73.3	66.1	74.3	66.6	66.6	9.0	18.3	18.3
Actuated g/C Ratio	0.61	0.55	0.62	0.56	0.56	0.08	0.15	0.15
v/c Ratio	0.22	0.53	0.26	0.63	0.09	0.72	0.70	0.40
Control Delay (s/veh)	12.8	19.8	12.4	21.3	2.0	53.5	61.7	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.8	19.8	12.4	21.3	2.0	53.5	61.7	15.2
LOS	B	B	B	C	A	D	E	B
Approach Delay (s/veh)		19.6		20.1		53.5		42.5
Approach LOS		B		C		D		D
Queue Length 50th (ft)	11	265	17	338	0	63	141	16
Queue Length 95th (ft)	26	304	35	375	10	109	177	50
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	287	2706	327	2730	960	210	443	464
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.54	0.19	0.63	0.10	0.66	0.43	0.29

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 23.0	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	1139	8	49	1361	73	32	9	69	149	18	87
Future Volume (veh/h)	33	1139	8	49	1361	73	32	9	69	149	18	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1945	1870	1870	1945	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	1442	10	62	1723	92	41	11	87	189	23	110
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	2989	21	274	2943	950	43	11	91	231	37	175
Arrive On Green	0.03	0.57	0.57	0.04	0.58	0.58	0.08	0.08	0.08	0.13	0.13	0.13
Sat Flow, veh/h	1781	5232	36	1781	5106	1648	509	137	1080	1781	282	1346
Grp Volume(v), veh/h	42	938	514	62	1723	92	139	0	0	189	0	133
Grp Sat Flow(s),veh/h/ln	1781	1702	1864	1781	1702	1648	1725	0	0	1781	0	1628
Q Serve(g_s), s	1.2	19.6	19.6	1.7	25.9	3.0	9.6	0.0	0.0	12.4	0.0	9.3
Cycle Q Clear(g_c), s	1.2	19.6	19.6	1.7	25.9	3.0	9.6	0.0	0.0	12.4	0.0	9.3
Prop In Lane	1.00		0.02	1.00		1.00	0.29		0.63	1.00		0.83
Lane Grp Cap(c), veh/h	209	1945	1065	274	2943	950	145	0	0	231	0	211
V/C Ratio(X)	0.20	0.48	0.48	0.23	0.59	0.10	0.96	0.00	0.00	0.82	0.00	0.63
Avail Cap(c_a), veh/h	361	1945	1065	417	2943	950	145	0	0	447	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	15.2	15.2	11.5	16.3	11.4	54.7	0.0	0.0	50.8	0.0	49.5
Incr Delay (d2), s/veh	0.5	0.9	1.6	0.4	0.9	0.2	61.6	0.0	0.0	6.9	0.0	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	12.1	13.4	1.2	14.4	2.0	10.9	0.0	0.0	10.0	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	16.1	16.8	11.9	17.1	11.6	116.3	0.0	0.0	57.8	0.0	52.5
LnGrp LOS	B	B	B	B	B	B	F			E		D
Approach Vol, veh/h		1494			1877			139			322	
Approach Delay, s/veh		16.2			16.7			116.3			55.6	
Approach LOS		B			B			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	74.2		16.0	7.8	74.8		21.5				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	14.0	* 44		10.1	14.0	* 44		30.1				
Max Q Clear Time (g_c+I1), s	3.7	21.6		11.6	3.2	27.9		14.4				
Green Ext Time (p_c), s	0.1	11.1		0.0	0.0	10.7		1.2				

Intersection Summary		
HCM 7th Control Delay, s/veh	23.4	
HCM 7th LOS	C	

Notes

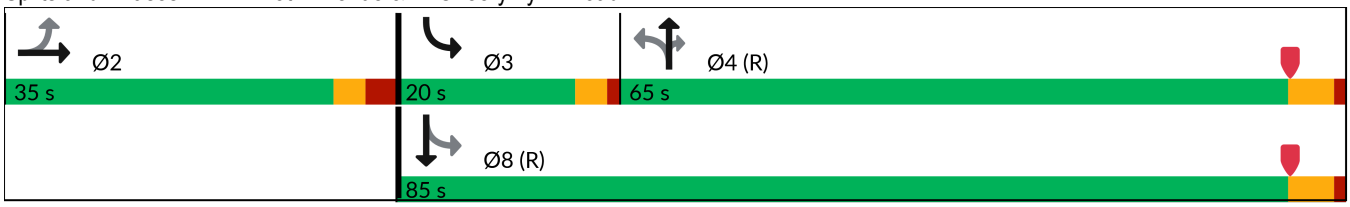
User approved pedestrian interval to be less than phase max green.

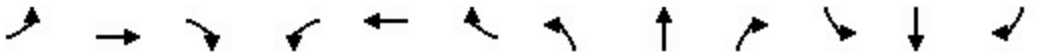
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	41	1380	65	80	1111
Future Volume (vph)	1	41	1380	65	80	1111
Lane Group Flow (vph)	92	45	1500	71	87	1260
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	9.3	88.9	88.9	88.9	101.1	100.0
Actuated g/C Ratio	0.08	0.74	0.74	0.74	0.84	0.83
v/c Ratio	0.51	0.15	0.42	0.05	0.30	0.44
Control Delay (s/veh)	44.9	7.1	6.7	1.9	4.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.9	7.1	6.7	1.9	4.5	3.3
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	44.9		6.5			3.5
Approach LOS	D		A			A
Queue Length 50th (ft)	45	9	135	2	8	101
Queue Length 95th (ft)	96	28	205	17	20	161
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	495	284	3536	1215	392	2836
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.16	0.42	0.06	0.22	0.44

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 119 (99%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 6.3	Intersection LOS: A
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1	38	0	0	0	41	1380	65	80	1111	48
Future Volume (veh/h)	46	1	38	0	0	0	41	1380	65	80	1111	48
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1856				1870	1826	1930	1870	1870	1870
Adj Flow Rate, veh/h	50	1	41				45	1500	71	87	1208	52
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3				2	5	3	2	2	2
Cap, veh/h	65	1	54				399	3836	1259	349	2924	126
Arrive On Green	0.07	0.07	0.07				0.77	0.77	0.77	0.08	1.00	1.00
Sat Flow, veh/h	955	19	783				440	4985	1635	1781	3471	149
Grp Volume(v), veh/h	92	0	0				45	1500	71	87	618	642
Grp Sat Flow(s),veh/h/ln	1757	0	0				440	1662	1635	1781	1777	1843
Q Serve(g_s), s	6.2	0.0	0.0				3.1	11.9	1.3	1.1	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0				3.1	11.9	1.3	1.1	0.0	0.0
Prop In Lane	0.54		0.45				1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	120	0	0				399	3836	1259	349	1497	1553
V/C Ratio(X)	0.76	0.00	0.00				0.11	0.39	0.06	0.25	0.41	0.41
Avail Cap(c_a), veh/h	430	0	0				399	3836	1259	517	1497	1553
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	0.0	0.0				3.5	4.6	3.3	2.9	0.0	0.0
Incr Delay (d2), s/veh	9.6	0.0	0.0				0.6	0.3	0.1	0.4	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	0.0	0.0				0.5	5.8	0.6	0.4	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.6	0.0	0.0				4.1	4.9	3.4	3.2	0.8	0.8
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		92						1616			1347	
Approach Delay, s/veh		64.6						4.8			1.0	
Approach LOS		E						A			A	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		13.8	8.7	97.5				106.2				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		8.2	3.1	13.9				2.0				
Green Ext Time (p_c), s		0.4	0.1	16.8				11.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.9									
HCM 7th LOS			A									

Intersection	
Int Delay, s/veh	56.9

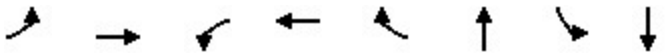
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	209	1426	0	0	1139
Future Vol, veh/h	100	209	1426	0	0	1139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	111	232	1584	0	0	1266

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2217	792	0	-	-	-
Stage 1	1584	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	-	-
Pot Cap-1 Maneuver	~ 51	285	-	0	0	-
Stage 1	~ 106	-	-	0	0	-
Stage 2	477	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 51	285	-	-	-	-
Mov Cap-2 Maneuver	~ 91	-	-	-	-	-
Stage 1	~ 106	-	-	-	-	-
Stage 2	477	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$529.06	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	169	-
HCM Lane V/C Ratio	-	2.031	-
HCM Control Delay (s/veh)	-	$ 529.1	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	26.6	-

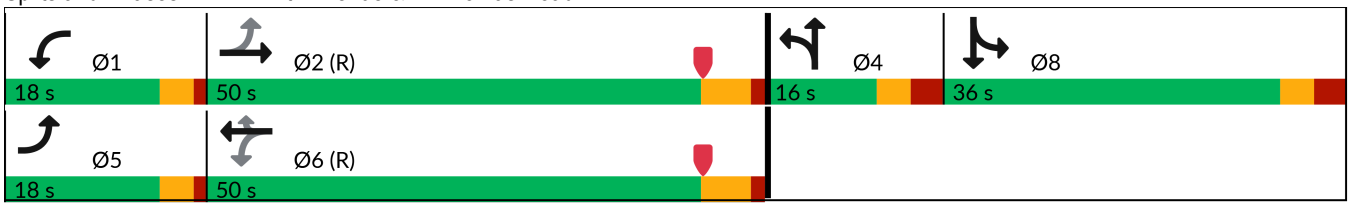
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	80	1512	15	658	55	2	23	2
Future Volume (vph)	80	1512	15	658	55	2	23	2
Lane Group Flow (vph)	85	1612	16	700	59	16	24	22
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	18.0	50.0	18.0	50.0	50.0	16.0	36.0	36.0
Total Split (%)	15.0%	41.7%	15.0%	41.7%	41.7%	13.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	101.5	98.9	98.2	93.1	93.1	6.3	7.2	7.2
Actuated g/C Ratio	0.85	0.82	0.82	0.78	0.78	0.05	0.06	0.06
v/c Ratio	0.13	0.39	0.05	0.18	0.04	0.15	0.22	0.20
Control Delay (s/veh)	3.5	6.3	4.2	6.0	0.0	42.4	58.2	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.5	6.3	4.2	6.0	0.0	42.4	58.2	26.7
LOS	A	A	A	A	A	D	E	C
Approach Delay (s/veh)		6.2		5.6		42.4		43.2
Approach LOS		A		A		D		D
Queue Length 50th (ft)	7	76	1	47	0	7	18	2
Queue Length 95th (ft)	31	275	9	107	0	30	46	28
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	700	4049	389	3703	1294	158	443	391
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.40	0.04	0.19	0.05	0.10	0.05	0.06

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay (s/veh): 6.9	Intersection LOS: A
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1512	3	15	658	55	7	2	7	23	2	19
Future Volume (veh/h)	80	1512	3	15	658	55	7	2	7	23	2	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1467	1870	1826	1945	1870	1945	1604	1870	1870	1870
Adj Flow Rate, veh/h	85	1609	3	16	700	59	7	2	7	24	2	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	33	2	5	2	2	2	20	2	2	2
Cap, veh/h	616	3971	7	321	3652	1208	13	4	13	58	5	48
Arrive On Green	0.08	1.00	1.00	0.02	0.73	0.73	0.02	0.02	0.02	0.03	0.03	0.03
Sat Flow, veh/h	1781	5263	10	1781	4985	1648	773	221	773	1781	146	1461
Grp Volume(v), veh/h	85	1041	571	16	700	59	16	0	0	24	0	22
Grp Sat Flow(s),veh/h/ln	1781	1702	1869	1781	1662	1648	1767	0	0	1781	0	1607
Q Serve(g_s), s	1.4	0.0	0.0	0.3	5.2	1.2	1.1	0.0	0.0	1.6	0.0	1.6
Cycle Q Clear(g_c), s	1.4	0.0	0.0	0.3	5.2	1.2	1.1	0.0	0.0	1.6	0.0	1.6
Prop In Lane	1.00		0.01	1.00		1.00	0.44		0.44	1.00		0.91
Lane Grp Cap(c), veh/h	616	2569	1410	321	3652	1208	30	0	0	58	0	53
V/C Ratio(X)	0.14	0.41	0.41	0.05	0.19	0.05	0.53	0.00	0.00	0.41	0.00	0.42
Avail Cap(c_a), veh/h	754	2569	1410	498	3652	1208	149	0	0	447	0	403
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.2	0.0	0.0	3.8	5.0	4.5	58.5	0.0	0.0	56.9	0.0	56.9
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.1	0.1	0.1	13.3	0.0	0.0	4.6	0.0	5.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.3	0.6	0.1	2.7	0.6	1.1	0.0	0.0	1.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.3	0.5	0.9	3.9	5.1	4.5	71.8	0.0	0.0	61.5	0.0	62.2
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1697			775			16			46	
Approach Delay, s/veh		0.7			5.0			71.8			61.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	96.1		8.0	8.7	93.5		9.8				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	14.0	* 44		10.1	14.0	* 44		30.1				
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.1	3.4	7.2		3.6				
Green Ext Time (p_c), s	0.0	16.7		0.0	0.1	5.1		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	3.6	
HCM 7th LOS	A	

Notes

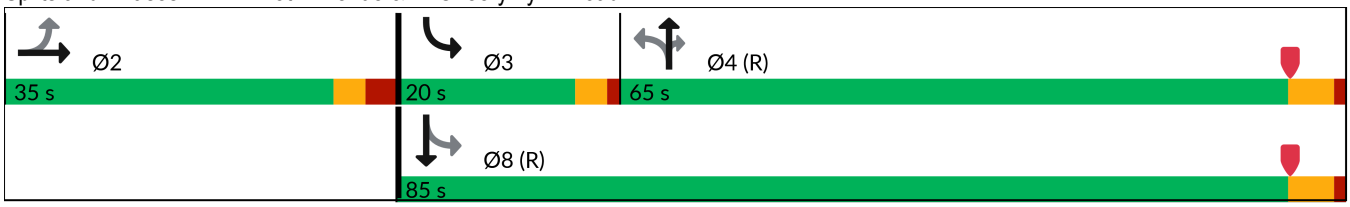
User approved pedestrian interval to be less than phase max green.

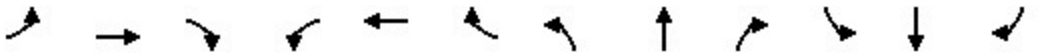
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	7	596	76	110	1025
Future Volume (vph)	2	7	596	76	110	1025
Lane Group Flow (vph)	94	8	718	92	133	1252
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	8.3	89.8	89.8	89.8	102.1	101.0
Actuated g/C Ratio	0.07	0.75	0.75	0.75	0.85	0.84
v/c Ratio	0.51	0.02	0.19	0.07	0.22	0.43
Control Delay (s/veh)	34.9	5.1	4.8	1.1	2.6	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.9	5.1	4.8	1.1	2.6	3.1
LOS	C	A	A	A	A	A
Approach Delay (s/veh)	35.0		4.4			3.1
Approach LOS	C		A			A
Queue Length 50th (ft)	29	1	50	0	12	91
Queue Length 95th (ft)	71	6	71	12	25	132
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	505	290	3680	1236	657	2846
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.03	0.20	0.07	0.20	0.44

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 85 (71%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 4.9	Intersection LOS: A
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2	46	0	0	0	7	596	76	110	1025	14
Future Volume (veh/h)	31	2	46	0	0	0	7	596	76	110	1025	14
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	1945	1870				1870	1870	1930	1870	1856	1870
Adj Flow Rate, veh/h	37	2	55				8	718	92	133	1235	17
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	4	2	2				2	2	3	2	3	2
Cap, veh/h	48	3	72				400	3909	1252	623	2991	41
Arrive On Green	0.07	0.07	0.07				0.77	0.77	0.77	0.08	1.00	1.00
Sat Flow, veh/h	681	37	1012				444	5106	1635	1781	3560	49
Grp Volume(v), veh/h	94	0	0				8	718	92	133	611	641
Grp Sat Flow(s),veh/h/ln	1729	0	0				444	1702	1635	1781	1763	1847
Q Serve(g_s), s	6.4	0.0	0.0				0.5	4.6	1.7	1.8	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	0.0				0.5	4.6	1.7	1.8	0.0	0.0
Prop In Lane	0.39		0.59				1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	122	0	0				400	3909	1252	623	1481	1551
V/C Ratio(X)	0.77	0.00	0.00				0.02	0.18	0.07	0.21	0.41	0.41
Avail Cap(c_a), veh/h	424	0	0				400	3909	1252	787	1481	1551
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	0.0				3.4	3.8	3.5	2.2	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.0	0.0				0.1	0.1	0.1	0.2	0.9	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0				0.1	2.3	0.9	0.7	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.5	0.0	0.0				3.4	3.9	3.6	2.3	0.9	0.8
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		94						818			1385	
Approach Delay, s/veh		64.5						3.9			1.0	
Approach LOS		E						A			A	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		14.1	8.9	97.0				105.9				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		8.4	3.8	6.6				2.0				
Green Ext Time (p_c), s		0.5	0.2	5.9				10.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.6									
HCM 7th LOS			A									

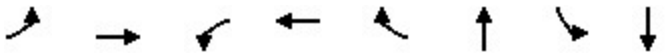
Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	84	626	0	0	1106
Future Vol, veh/h	44	84	626	0	0	1106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	8	2	2	2	2	3
Mvmt Flow	54	102	763	0	0	1349

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1438	382	0	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Critical Hdwy	6.41	7.14	-	-	-	-
Critical Hdwy Stg 1	6.76	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.73	3.92	-	-	-	-
Pot Cap-1 Maneuver	143	526	-	0	0	-
Stage 1	333	-	-	0	0	-
Stage 2	439	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	143	526	-	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	333	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	21.62	0	0
HCM LOS	C		

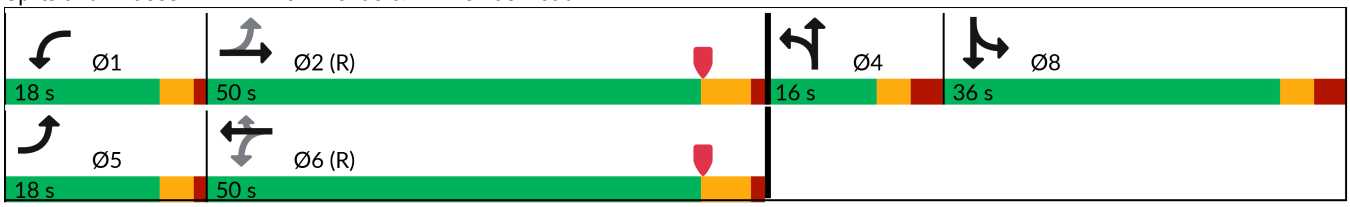
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	370	-
HCM Lane V/C Ratio	-	0.422	-
HCM Control Delay (s/veh)	-	21.6	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	2	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	36	1245	54	1487	80	10	163	20
Future Volume (vph)	36	1245	54	1487	80	10	163	20
Lane Group Flow (vph)	46	1587	68	1882	101	152	206	145
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	18.0	50.0	18.0	50.0	50.0	16.0	36.0	36.0
Total Split (%)	15.0%	41.7%	15.0%	41.7%	41.7%	13.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	71.7	64.4	72.8	65.0	65.0	9.3	19.4	19.4
Actuated g/C Ratio	0.60	0.54	0.61	0.54	0.54	0.08	0.16	0.16
v/c Ratio	0.28	0.60	0.32	0.70	0.10	0.76	0.72	0.41
Control Delay (s/veh)	14.9	22.0	14.4	24.2	2.7	58.8	61.4	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.9	22.0	14.4	24.2	2.7	58.8	61.4	14.6
LOS	B	C	B	C	A	E	E	B
Approach Delay (s/veh)		21.9		22.9		58.8		42.1
Approach LOS		C		C		E		D
Queue Length 50th (ft)	13	310	19	399	0	74	153	17
Queue Length 95th (ft)	29	351	39	436	16	121	189	51
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	266	2635	299	2661	938	210	443	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.60	0.23	0.71	0.11	0.72	0.47	0.31

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 25.4	Intersection LOS: C
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1245	9	54	1487	80	35	10	75	163	20	95
Future Volume (veh/h)	36	1245	9	54	1487	80	35	10	75	163	20	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1945	1870	1870	1945	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1576	11	68	1882	101	44	13	95	206	25	120
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2932	20	246	2885	931	42	12	91	249	39	188
Arrive On Green	0.03	0.56	0.56	0.04	0.57	0.57	0.08	0.08	0.08	0.14	0.14	0.14
Sat Flow, veh/h	1781	5231	37	1781	5106	1648	500	148	1079	1781	281	1347
Grp Volume(v), veh/h	46	1026	561	68	1882	101	152	0	0	206	0	145
Grp Sat Flow(s),veh/h/ln	1781	1702	1864	1781	1702	1648	1726	0	0	1781	0	1628
Q Serve(g_s), s	1.3	22.7	22.7	1.9	30.5	3.4	10.1	0.0	0.0	13.5	0.0	10.1
Cycle Q Clear(g_c), s	1.3	22.7	22.7	1.9	30.5	3.4	10.1	0.0	0.0	13.5	0.0	10.1
Prop In Lane	1.00		0.02	1.00		1.00	0.29		0.62	1.00		0.83
Lane Grp Cap(c), veh/h	186	1908	1044	246	2885	931	145	0	0	249	0	227
V/C Ratio(X)	0.25	0.54	0.54	0.28	0.65	0.11	1.05	0.00	0.00	0.83	0.00	0.64
Avail Cap(c_a), veh/h	336	1908	1044	387	2885	931	145	0	0	447	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	16.6	16.6	12.8	18.0	12.1	55.0	0.0	0.0	50.2	0.0	48.7
Incr Delay (d2), s/veh	0.7	1.1	2.0	0.6	1.2	0.2	87.5	0.0	0.0	6.9	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(95%),veh/ln	1.0	13.8	15.2	1.3	16.6	2.2	12.7	0.0	0.0	10.7	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.6	17.7	18.6	13.4	19.1	12.3	142.5	0.0	0.0	57.1	0.0	51.7
LnGrp LOS	B	B	B	B	B	B	F			E		D
Approach Vol, veh/h		1633			2051			152			351	
Approach Delay, s/veh		17.9			18.6			142.5			54.9	
Approach LOS		B			B			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	72.8		16.0	7.9	73.4		22.7				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	14.0	* 44		10.1	14.0	* 44		30.1				
Max Q Clear Time (g_c+I1), s	3.9	24.7		12.1	3.3	32.5		15.5				
Green Ext Time (p_c), s	0.1	11.2		0.0	0.0	9.0		1.3				

Intersection Summary		
HCM 7th Control Delay, s/veh	25.9	
HCM 7th LOS	C	

Notes

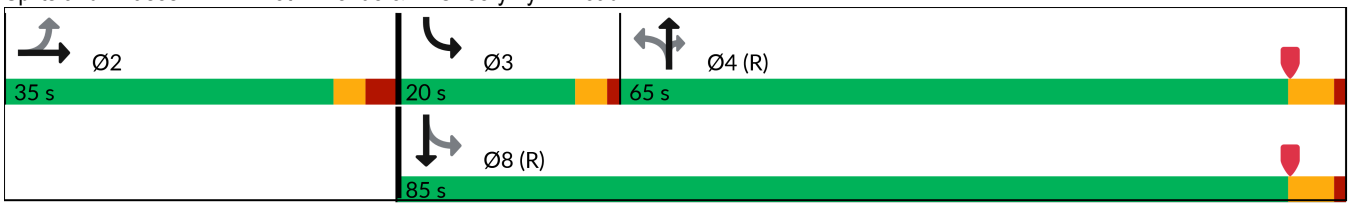
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	45	1508	71	87	1214
Future Volume (vph)	1	45	1508	71	87	1214
Lane Group Flow (vph)	101	49	1639	77	95	1377
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	9.8	87.6	87.6	87.6	100.6	99.5
Actuated g/C Ratio	0.08	0.73	0.73	0.73	0.84	0.83
v/c Ratio	0.54	0.19	0.47	0.06	0.35	0.48
Control Delay (s/veh)	45.8	8.7	7.7	2.3	5.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.8	8.7	7.7	2.3	5.6	3.8
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	45.9		7.5			3.9
Approach LOS	D		A			A
Queue Length 50th (ft)	51	10	166	3	9	121
Queue Length 95th (ft)	105	34	250	20	23	193
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	495	248	3484	1198	363	2822
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.47	0.06	0.26	0.49

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 119 (99%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 7.1	Intersection LOS: A
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1	42	0	0	0	45	1508	71	87	1214	52
Future Volume (veh/h)	50	1	42	0	0	0	45	1508	71	87	1214	52
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1856				1870	1826	1930	1870	1870	1870
Adj Flow Rate, veh/h	54	1	46				49	1639	77	95	1320	57
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3				2	5	3	2	2	2
Cap, veh/h	70	1	60				360	3803	1248	315	2902	125
Arrive On Green	0.07	0.07	0.07				0.76	0.76	0.76	0.08	1.00	1.00
Sat Flow, veh/h	938	17	799				394	4985	1635	1781	3471	150
Grp Volume(v), veh/h	101	0	0				49	1639	77	95	675	702
Grp Sat Flow(s),veh/h/ln	1754	0	0				394	1662	1635	1781	1777	1843
Q Serve(g_s), s	6.8	0.0	0.0				4.0	13.9	1.4	1.2	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0				4.0	13.9	1.4	1.2	0.0	0.0
Prop In Lane	0.53		0.46				1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	131	0	0				360	3803	1248	315	1486	1541
V/C Ratio(X)	0.77	0.00	0.00				0.14	0.43	0.06	0.30	0.45	0.46
Avail Cap(c_a), veh/h	430	0	0				360	3803	1248	481	1486	1541
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	0.0	0.0				3.9	5.0	3.5	3.5	0.0	0.0
Incr Delay (d2), s/veh	9.2	0.0	0.0				0.8	0.4	0.1	0.5	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	0.0	0.0				0.6	6.9	0.7	0.5	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.7	0.0	0.0				4.6	5.4	3.6	4.0	1.0	1.0
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		101						1765			1472	
Approach Delay, s/veh		63.7						5.3			1.2	
Approach LOS		E						A			A	

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		14.6	8.8	96.7				105.4				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		8.8	3.2	15.9				2.0				
Green Ext Time (p_c), s		0.5	0.2	19.2				13.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	5.2
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	232.5

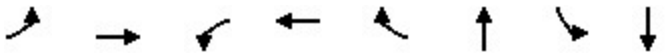
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	228	1558	1245	0	1245
Future Vol, veh/h	109	228	1558	1245	0	1245
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	2	2	2
Mvmt Flow	121	253	1731	1383	0	1383

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3114	1557	0	0	-	-
Stage 1	2423	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	-	-
Pot Cap-1 Maneuver	~ 14	~ 87	-	-	0	-
Stage 1	~ 30	-	-	-	0	-
Stage 2	445	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 14	~ 87	-	-	-	-
Mov Cap-2 Maneuver	~ 27	-	-	-	-	-
Stage 1	~ 30	-	-	-	-	-
Stage 2	445	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 3024.61	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	51	-
HCM Lane V/C Ratio	-	-	7.375	-
HCM Control Delay (s/veh)	-	-	$ 3024.6	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	43.7	-

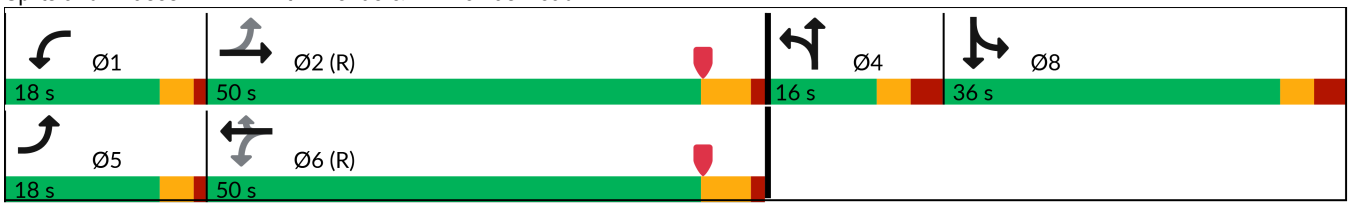
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	80	1512	15	658	55	2	23	2
Future Volume (vph)	80	1512	15	658	55	2	23	2
Lane Group Flow (vph)	85	1612	16	700	59	16	24	22
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	18.0	50.0	18.0	50.0	50.0	16.0	36.0	36.0
Total Split (%)	15.0%	41.7%	15.0%	41.7%	41.7%	13.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	101.6	98.9	98.1	92.9	92.9	6.3	7.2	7.2
Actuated g/C Ratio	0.85	0.82	0.82	0.77	0.77	0.05	0.06	0.06
v/c Ratio	0.14	0.39	0.05	0.18	0.04	0.15	0.22	0.20
Control Delay (s/veh)	3.6	6.3	4.2	6.1	0.0	42.4	58.2	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.6	6.3	4.2	6.1	0.0	42.4	58.2	26.7
LOS	A	A	A	A	A	D	E	C
Approach Delay (s/veh)		6.2		5.6		42.4		43.2
Approach LOS		A		A		D		D
Queue Length 50th (ft)	7	76	1	47	0	7	18	2
Queue Length 95th (ft)	31	275	9	108	0	30	46	28
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	647	4049	389	3698	1201	158	443	391
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.40	0.04	0.19	0.05	0.10	0.05	0.06

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 55 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay (s/veh): 7.0	Intersection LOS: A
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1512	3	15	658	55	7	2	7	23	2	19
Future Volume (veh/h)	80	1512	3	15	658	55	7	2	7	23	2	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1870	1467	1870	1826	1822	1870	1945	1604	1870	1870	1870
Adj Flow Rate, veh/h	85	1609	3	16	700	59	7	2	7	24	2	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	33	2	5	10	2	2	20	2	2	2
Cap, veh/h	581	3971	7	321	3652	1131	13	4	13	58	5	48
Arrive On Green	0.08	1.00	1.00	0.02	0.73	0.73	0.02	0.02	0.02	0.03	0.03	0.03
Sat Flow, veh/h	1668	5263	10	1781	4985	1544	773	221	773	1781	146	1461
Grp Volume(v), veh/h	85	1041	571	16	700	59	16	0	0	24	0	22
Grp Sat Flow(s),veh/h/ln	1668	1702	1869	1781	1662	1544	1767	0	0	1781	0	1607
Q Serve(g_s), s	1.5	0.0	0.0	0.3	5.2	1.3	1.1	0.0	0.0	1.6	0.0	1.6
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.3	5.2	1.3	1.1	0.0	0.0	1.6	0.0	1.6
Prop In Lane	1.00		0.01	1.00		1.00	0.44		0.44	1.00		0.91
Lane Grp Cap(c), veh/h	581	2569	1410	321	3652	1131	30	0	0	58	0	53
V/C Ratio(X)	0.15	0.41	0.41	0.05	0.19	0.05	0.53	0.00	0.00	0.41	0.00	0.42
Avail Cap(c_a), veh/h	710	2569	1410	498	3652	1131	149	0	0	447	0	403
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.2	0.0	0.0	3.8	5.0	4.5	58.5	0.0	0.0	56.9	0.0	56.9
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.1	0.1	0.1	13.3	0.0	0.0	4.6	0.0	5.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.3	0.6	0.1	2.7	0.6	1.1	0.0	0.0	1.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	3.3	0.5	0.9	3.9	5.1	4.5	71.8	0.0	0.0	61.5	0.0	62.2
LnGrp LOS	A	A	A	A	A	A	E			E		E
Approach Vol, veh/h		1697			775			16			46	
Approach Delay, s/veh		0.7			5.0			71.8			61.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	96.1		8.0	8.7	93.5		9.8				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	14.0	* 44		10.1	14.0	* 44		30.1				
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.1	3.5	7.2		3.6				
Green Ext Time (p_c), s	0.0	16.7		0.0	0.1	5.1		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh	3.6	
HCM 7th LOS	A	

Notes

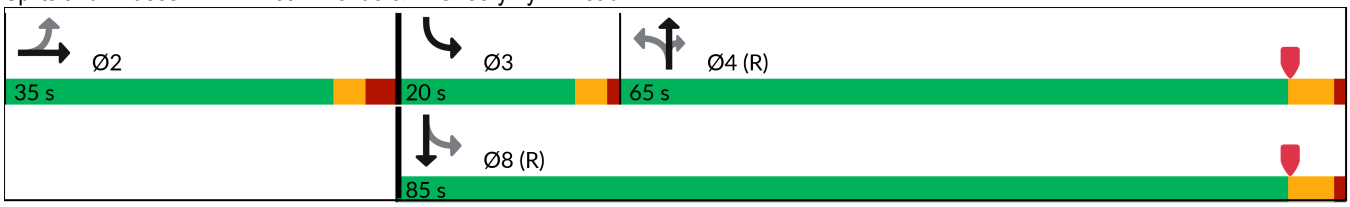
User approved pedestrian interval to be less than phase max green.

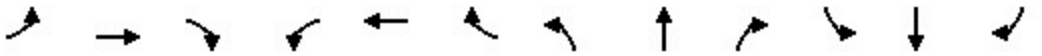
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	7	596	76	110	1025
Future Volume (vph)	2	7	596	76	110	1025
Lane Group Flow (vph)	94	8	718	92	133	1252
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	8.3	89.9	89.9	89.9	102.1	101.0
Actuated g/C Ratio	0.07	0.75	0.75	0.75	0.85	0.84
v/c Ratio	0.51	0.02	0.19	0.07	0.22	0.43
Control Delay (s/veh)	34.9	5.1	4.8	1.1	1.4	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (s/veh)	34.9	5.1	4.8	1.1	1.4	1.5
LOS	C	A	A	A	A	A
Approach Delay (s/veh)	34.9		4.4			1.5
Approach LOS	C		A			A
Queue Length 50th (ft)	29	1	50	0	2	15
Queue Length 95th (ft)	71	6	71	12	7	27
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	508	290	3681	1236	657	2846
Starvation Cap Reductn	0	0	0	0	0	567
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.03	0.20	0.07	0.20	0.55

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 85 (71%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 3.9	Intersection LOS: A
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2	46	0	0	0	7	596	76	110	1025	14
Future Volume (veh/h)	31	2	46	0	0	0	7	596	76	110	1025	14
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870				1870	1870	1930	1870	1856	1870
Adj Flow Rate, veh/h	37	2	55				8	718	92	133	1235	17
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				2	2	3	2	3	2
Cap, veh/h	48	3	72				400	3909	1252	623	2991	41
Arrive On Green	0.07	0.07	0.07				0.77	0.77	0.77	0.08	1.00	1.00
Sat Flow, veh/h	681	37	1012				444	5106	1635	1781	3560	49
Grp Volume(v), veh/h	94	0	0				8	718	92	133	611	641
Grp Sat Flow(s),veh/h/ln	1729	0	0				444	1702	1635	1781	1763	1847
Q Serve(g_s), s	6.4	0.0	0.0				0.5	4.6	1.7	1.8	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	0.0				0.5	4.6	1.7	1.8	0.0	0.0
Prop In Lane	0.39		0.59				1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	122	0	0				400	3909	1252	623	1481	1551
V/C Ratio(X)	0.77	0.00	0.00				0.02	0.18	0.07	0.21	0.41	0.41
Avail Cap(c_a), veh/h	424	0	0				400	3909	1252	787	1481	1551
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	54.8	0.0	0.0				3.4	3.8	3.5	2.2	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.0	0.0				0.1	0.1	0.1	0.1	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0				0.1	2.3	0.9	0.7	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.5	0.0	0.0				3.4	3.9	3.6	2.3	0.7	0.7
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		94						818			1385	
Approach Delay, s/veh		64.5						3.9			0.9	
Approach LOS		E						A			A	

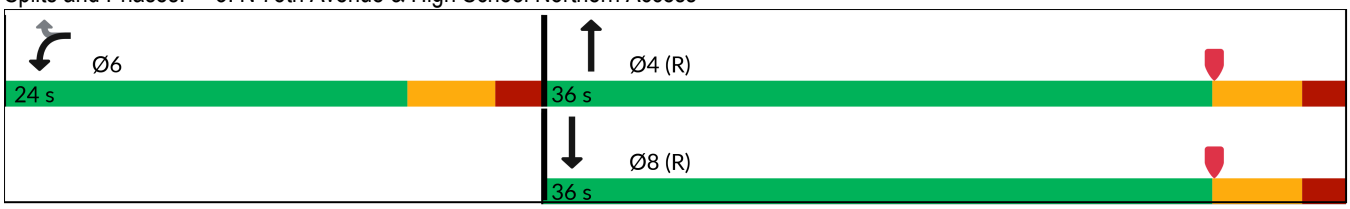
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		14.1	8.9	97.0				105.9				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		8.4	3.8	6.6				2.0				
Green Ext Time (p_c), s		0.5	0.2	5.9				10.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			4.5									
HCM 7th LOS			A									

Lane Group	WBL	WBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	44	84	626	1106
Future Volume (vph)	44	84	626	1106
Lane Group Flow (vph)	54	102	763	1349
Turn Type	Prot	Perm	NA	NA
Protected Phases	6		4	8
Permitted Phases		6		
Detector Phase	6	6	4	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	36.0	36.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	6.8	6.8	44.7	44.7
Actuated g/C Ratio	0.11	0.11	0.75	0.75
v/c Ratio	0.14	0.37	0.20	0.51
Control Delay (s/veh)	24.2	10.4	3.0	5.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.2	10.4	3.0	5.4
LOS	C	B	A	A
Approach Delay (s/veh)	15.2		3.1	5.4
Approach LOS	B		A	A
Queue Length 50th (ft)	9	0	27	100
Queue Length 95th (ft)	20	29	37	145
Internal Link Dist (ft)	365		507	423
Turn Bay Length (ft)				
Base Capacity (vph)	972	546	3786	2610
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.19	0.20	0.52

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 36 (60%), Referenced to phase 4:NBT and 8:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 5.3	Intersection LOS: A
Intersection Capacity Utilization 44.7%	ICU Level of Service A
Analysis Period (min) 15	

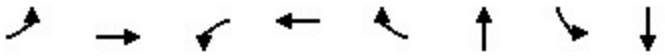
Splits and Phases: 3: N 75th Avenue & High School Northern Access



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	44	84	626	0	0	1106
Future Volume (veh/h)	44	84	626	0	0	1106
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1781	1870	1870	0	0	1856
Adj Flow Rate, veh/h	54	102	763	0	0	1349
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	8	2	2	0	0	3
Cap, veh/h	309	149	3605	0	0	2489
Arrive On Green	0.09	0.09	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3291	1585	5443	0	0	3711
Grp Volume(v), veh/h	54	102	763	0	0	1349
Grp Sat Flow(s),veh/h/ln	1646	1585	1702	0	0	1763
Q Serve(g_s), s	0.9	3.7	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	3.7	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	309	149	3605	0	0	2489
V/C Ratio(X)	0.17	0.68	0.21	0.00	0.00	0.54
Avail Cap(c_a), veh/h	987	476	3605	0	0	2489
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	0.99	0.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	26.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	5.5	0.1	0.0	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	2.8	0.1	0.0	0.0	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	25.3	31.8	0.1	0.0	0.0	0.9
LnGrp LOS	C	C	A			A
Approach Vol, veh/h	156		763			1349
Approach Delay, s/veh	29.5		0.1			0.9
Approach LOS	C		A			A

Timer - Assigned Phs				4		6	8
Phs Duration (G+Y+Rc), s				48.4		11.6	48.4
Change Period (Y+Rc), s				6.0		6.0	6.0
Max Green Setting (Gmax), s				30.0		18.0	30.0
Max Q Clear Time (g_c+I1), s				2.0		5.7	2.0
Green Ext Time (p_c), s				5.4		0.3	11.4

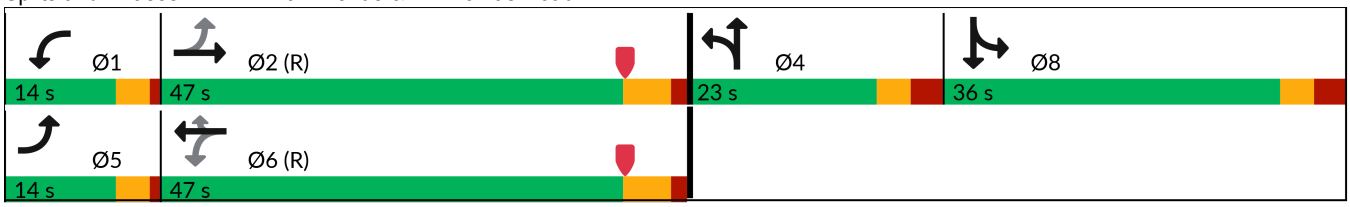
Intersection Summary			
HCM 7th Control Delay, s/veh		2.6	
HCM 7th LOS		A	



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	36	1245	54	1487	80	10	163	20
Future Volume (vph)	36	1245	54	1487	80	10	163	20
Lane Group Flow (vph)	46	1587	68	1882	101	152	206	145
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Split	NA
Protected Phases	5	2	1	6		4	8	8
Permitted Phases	2		6		6			
Detector Phase	5	2	1	6	6	4	8	8
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	5.0	5.0
Minimum Split (s)	9.0	24.6	9.0	24.6	24.6	10.9	23.9	23.9
Total Split (s)	14.0	47.0	14.0	47.0	47.0	23.0	36.0	36.0
Total Split (%)	11.7%	39.2%	11.7%	39.2%	39.2%	19.2%	30.0%	30.0%
Yellow Time (s)	3.0	4.3	3.0	4.3	4.3	3.0	3.0	3.0
All-Red Time (s)	1.0	1.3	1.0	1.3	1.3	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.6	4.0	5.6	5.6	5.9	5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None
Act Effct Green (s)	69.6	62.2	70.8	62.8	62.8	11.4	19.4	19.4
Actuated g/C Ratio	0.58	0.52	0.59	0.52	0.52	0.10	0.16	0.16
v/c Ratio	0.28	0.62	0.33	0.73	0.11	0.65	0.72	0.41
Control Delay (s/veh)	16.6	24.5	16.5	26.8	3.3	44.6	61.4	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	24.5	16.5	26.8	3.3	44.6	61.4	14.6
LOS	B	C	B	C	A	D	E	B
Approach Delay (s/veh)		24.4		25.3		44.7		42.1
Approach LOS		C		C		D		D
Queue Length 50th (ft)	13	318	20	409	0	70	153	17
Queue Length 95th (ft)	33	392	44	488	17	111	189	51
Internal Link Dist (ft)		598		712		160		662
Turn Bay Length (ft)	120		100		80		160	
Base Capacity (vph)	209	2545	237	2572	911	321	443	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.62	0.29	0.73	0.11	0.47	0.47	0.31

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 27.0	Intersection LOS: C
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: N 74th Avenue & W Thomas Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1245	9	54	1487	80	35	10	75	163	20	95
Future Volume (veh/h)	36	1245	9	54	1487	80	35	10	75	163	20	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1945	1870	1870	1945	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1576	11	68	1882	101	44	13	95	206	25	120
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	2823	20	236	2779	897	52	15	113	249	39	188
Arrive On Green	0.03	0.54	0.54	0.04	0.54	0.54	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	5231	37	1781	5106	1648	500	148	1079	1781	281	1347
Grp Volume(v), veh/h	46	1026	561	68	1882	101	152	0	0	206	0	145
Grp Sat Flow(s),veh/h/ln	1781	1702	1864	1781	1702	1648	1726	0	0	1781	0	1628
Q Serve(g_s), s	1.4	23.8	23.8	2.0	31.9	3.6	10.4	0.0	0.0	13.5	0.0	10.1
Cycle Q Clear(g_c), s	1.4	23.8	23.8	2.0	31.9	3.6	10.4	0.0	0.0	13.5	0.0	10.1
Prop In Lane	1.00		0.02	1.00		1.00	0.29		0.62	1.00		0.83
Lane Grp Cap(c), veh/h	179	1837	1006	236	2779	897	181	0	0	249	0	227
V/C Ratio(X)	0.26	0.56	0.56	0.29	0.68	0.11	0.84	0.00	0.00	0.83	0.00	0.64
Avail Cap(c_a), veh/h	269	1837	1006	318	2779	897	246	0	0	447	0	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	18.2	18.2	14.2	19.7	13.3	52.7	0.0	0.0	50.2	0.0	48.7
Incr Delay (d2), s/veh	0.7	1.2	2.2	0.7	1.3	0.3	16.9	0.0	0.0	6.9	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(95%),veh/ln	1.0	14.5	16.0	1.4	17.5	2.4	9.1	0.0	0.0	10.7	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	19.4	20.4	14.8	21.1	13.5	69.6	0.0	0.0	57.1	0.0	51.7
LnGrp LOS	B	B	C	B	C	B	E			E		D
Approach Vol, veh/h		1633			2051			152			351	
Approach Delay, s/veh		19.7			20.5			69.6			54.9	
Approach LOS		B			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	70.4		18.5	7.9	70.9		22.7				
Change Period (Y+Rc), s	4.0	* 5.6		5.9	4.0	* 5.6		5.9				
Max Green Setting (Gmax), s	10.0	* 41		17.1	10.0	* 41		30.1				
Max Q Clear Time (g_c+I1), s	4.0	25.8		12.4	3.4	33.9		15.5				
Green Ext Time (p_c), s	0.1	9.6		0.3	0.0	6.0		1.3				

Intersection Summary		
HCM 7th Control Delay, s/veh	24.9	
HCM 7th LOS	C	

Notes

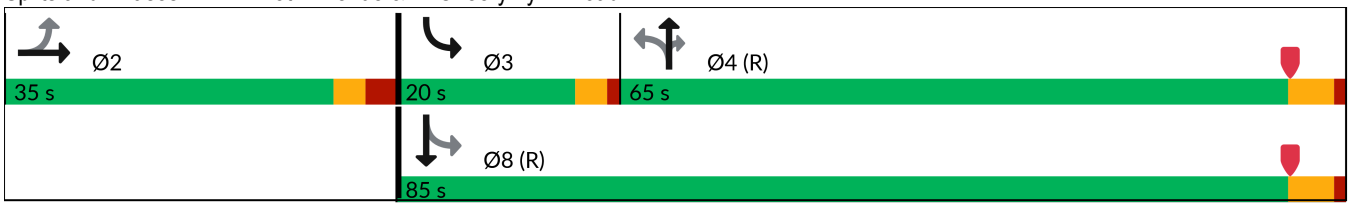
User approved pedestrian interval to be less than phase max green.

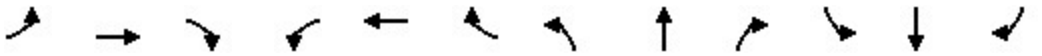
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	45	1508	71	87	1214
Future Volume (vph)	1	45	1508	71	87	1214
Lane Group Flow (vph)	101	49	1639	77	95	1377
Turn Type	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		4		4	8	
Detector Phase	2	4	4	4	3	8
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.6	20.1	20.1	20.1	9.0	20.1
Total Split (s)	35.0	65.0	65.0	65.0	20.0	85.0
Total Split (%)	29.2%	54.2%	54.2%	54.2%	16.7%	70.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.6	1.1	1.1	1.1	1.0	1.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.1	5.1	5.1	4.0	5.1
Lead/Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Min	C-Min	C-Min	None	C-Min
Act Effct Green (s)	9.8	87.6	87.6	87.6	100.6	99.5
Actuated g/C Ratio	0.08	0.73	0.73	0.73	0.84	0.83
v/c Ratio	0.54	0.19	0.47	0.06	0.35	0.48
Control Delay (s/veh)	45.8	8.7	7.7	2.3	10.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.8	8.7	7.7	2.3	10.5	2.6
LOS	D	A	A	A	B	A
Approach Delay (s/veh)	45.9		7.5			3.1
Approach LOS	D		A			A
Queue Length 50th (ft)	51	10	166	3	7	53
Queue Length 95th (ft)	105	34	250	20	43	101
Internal Link Dist (ft)	798		786			507
Turn Bay Length (ft)		165		100	150	
Base Capacity (vph)	495	248	3484	1198	363	2822
Starvation Cap Reductn	0	0	0	0	0	75
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.47	0.06	0.26	0.50

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 119 (99%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 6.7	Intersection LOS: A
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: N 75th Avenue & W Cheery Lynn Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1	42	0	0	0	45	1508	71	87	1214	52
Future Volume (veh/h)	50	1	42	0	0	0	45	1508	71	87	1214	52
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	1.00				1.00	1.00	1.04	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1856				1870	1826	1930	1870	1870	1870
Adj Flow Rate, veh/h	54	1	46				49	1639	77	95	1320	57
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3				2	5	3	2	2	2
Cap, veh/h	70	1	60				360	3803	1248	315	2902	125
Arrive On Green	0.07	0.07	0.07				0.76	0.76	0.76	0.08	1.00	1.00
Sat Flow, veh/h	938	17	799				394	4985	1635	1781	3471	150
Grp Volume(v), veh/h	101	0	0				49	1639	77	95	675	702
Grp Sat Flow(s),veh/h/ln	1754	0	0				394	1662	1635	1781	1777	1843
Q Serve(g_s), s	6.8	0.0	0.0				4.0	13.9	1.4	1.2	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0				4.0	13.9	1.4	1.2	0.0	0.0
Prop In Lane	0.53		0.46				1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	131	0	0				360	3803	1248	315	1486	1541
V/C Ratio(X)	0.77	0.00	0.00				0.14	0.43	0.06	0.30	0.45	0.46
Avail Cap(c_a), veh/h	430	0	0				360	3803	1248	481	1486	1541
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	54.5	0.0	0.0				3.9	5.0	3.5	3.5	0.0	0.0
Incr Delay (d2), s/veh	9.2	0.0	0.0				0.8	0.4	0.1	0.4	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	0.0	0.0				0.6	6.9	0.7	0.5	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.7	0.0	0.0				4.6	5.4	3.6	3.9	0.8	0.8
LnGrp LOS	E						A	A	A	A	A	A
Approach Vol, veh/h		101						1765			1472	
Approach Delay, s/veh		63.7						5.3			1.0	
Approach LOS		E						A			A	

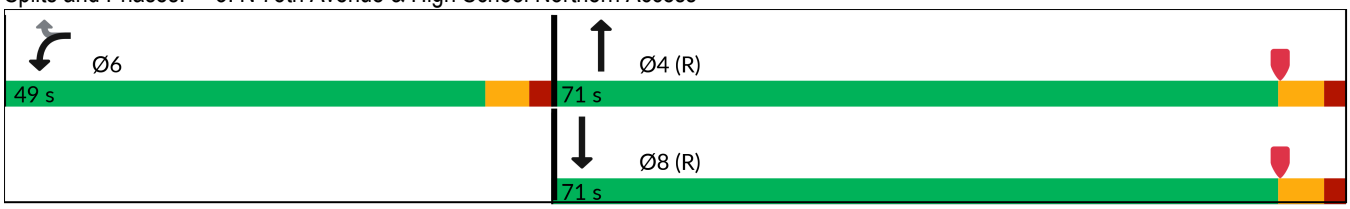
Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		14.6	8.8	96.7				105.4				
Change Period (Y+Rc), s		5.6	4.0	5.1				5.1				
Max Green Setting (Gmax), s		29.4	16.0	59.9				79.9				
Max Q Clear Time (g_c+I1), s		8.8	3.2	15.9				2.0				
Green Ext Time (p_c), s		0.5	0.2	19.2				13.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			5.2									
HCM 7th LOS			A									

Lane Group	WBL	WBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	109	228	1558	1245
Future Volume (vph)	109	228	1558	1245
Lane Group Flow (vph)	121	253	1731	1383
Turn Type	Prot	Perm	NA	NA
Protected Phases	6		4	8
Permitted Phases		6		
Detector Phase	6	6	4	8
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0
Total Split (s)	49.0	49.0	71.0	71.0
Total Split (%)	40.8%	40.8%	59.2%	59.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	23.9	23.9	84.1	84.1
Actuated g/C Ratio	0.20	0.20	0.70	0.70
v/c Ratio	0.17	0.77	0.49	0.55
Control Delay (s/veh)	38.6	58.4	3.2	10.7
Queue Delay	0.0	0.0	0.0	1.4
Total Delay (s/veh)	38.6	58.4	3.3	12.2
LOS	D	E	A	B
Approach Delay (s/veh)	52.0		3.3	12.2
Approach LOS	D		A	B
Queue Length 50th (ft)	40	177	43	248
Queue Length 95th (ft)	61	249	60	387
Internal Link Dist (ft)	365		507	423
Turn Bay Length (ft)				
Base Capacity (vph)	1230	576	3496	2480
Starvation Cap Reductn	0	0	118	842
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.44	0.51	0.84

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 7 (6%), Referenced to phase 4:NBT and 8:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 12.1	Intersection LOS: B
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: N 75th Avenue & High School Northern Access



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	109	228	1558	0	0	1245
Future Volume (veh/h)	109	228	1558	0	0	1245
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1841	0	0	1870
Adj Flow Rate, veh/h	121	253	1731	0	0	1383
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	4	0	0	2
Cap, veh/h	630	289	3606	0	0	2550
Arrive On Green	0.18	0.18	1.00	0.00	0.00	0.95
Sat Flow, veh/h	3456	1585	5356	0	0	3741
Grp Volume(v), veh/h	121	253	1731	0	0	1383
Grp Sat Flow(s),veh/h/ln	1728	1585	1675	0	0	1777
Q Serve(g_s), s	3.6	18.6	0.0	0.0	0.0	4.4
Cycle Q Clear(g_c), s	3.6	18.6	0.0	0.0	0.0	4.4
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	630	289	3606	0	0	2550
V/C Ratio(X)	0.19	0.87	0.48	0.00	0.00	0.54
Avail Cap(c_a), veh/h	1238	568	3606	0	0	2550
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.33
Upstream Filter(I)	1.00	1.00	0.88	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	47.7	0.0	0.0	0.0	0.9
Incr Delay (d2), s/veh	0.1	8.2	0.4	0.0	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	12.6	0.2	0.0	0.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	41.7	55.9	0.4	0.0	0.0	1.7
LnGrp LOS	D	E	A			A
Approach Vol, veh/h	374		1731			1383
Approach Delay, s/veh	51.3		0.4			1.7
Approach LOS	D		A			A

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	92.1	27.9	92.1
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	65.0	43.0	65.0
Max Q Clear Time (g_c+I1), s	2.0	20.6	6.4
Green Ext Time (p_c), s	20.7	1.3	14.5

Intersection Summary	
HCM 7th Control Delay, s/veh	6.4
HCM 7th LOS	A

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