

Traffic Impact Study and Parking Study

Primrose School

Naperville, Illinois



Prepared For:

RTM Engineering Consultants



December 13, 2024

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Primrose School to be located in Naperville, Illinois. The site, which is currently occupied by an Animal Health Care building and parking lot, is located at 471 E 75th Street. As proposed, the site will be redeveloped with an approximately 13,596 square-foot daycare building and 44 parking spaces of which two will be accessible. Access is proposed off 75th Street via a right-in/right-out access drive.

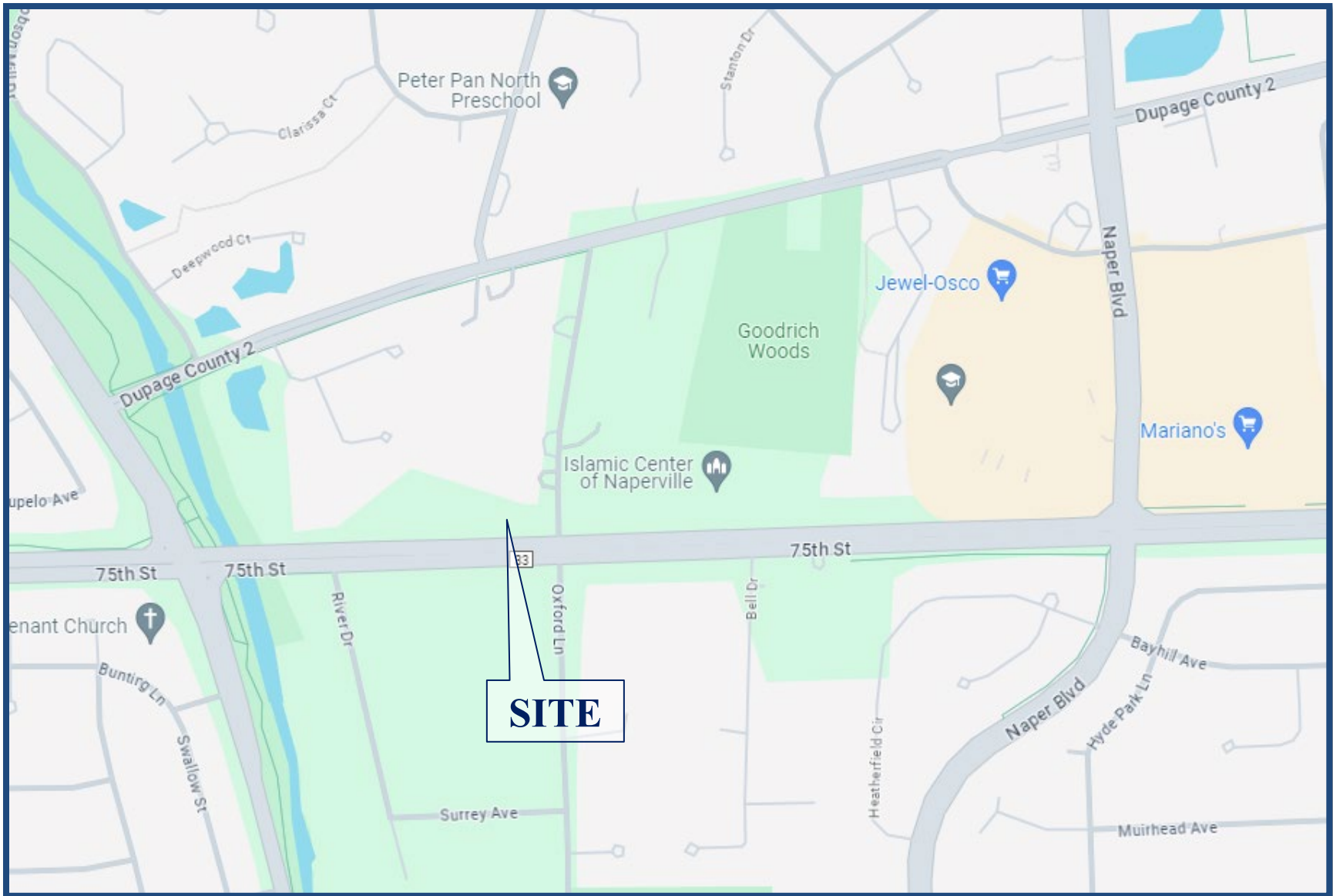
The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any additional roadway or access improvements are necessary to accommodate traffic generated by the proposed development. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the adequacy of the proposed parking supply

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Traffic Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes from traffic counts conducted in 2024.
2. Year 2030 No-Build Conditions – Analyzes the capacity of the existing roadway system using existing traffic volumes increased by an ambient area growth factor not attributable to any particular development and traffic estimated to be generated by other developments in the area.
3. Year 2030 Total Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2030 no-build volumes and the traffic estimated to be generated by the proposed development.



Site Location

Figure 1

*Primrose School
Naperville, Illinois*



Aerial View of Site

Figure 2

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

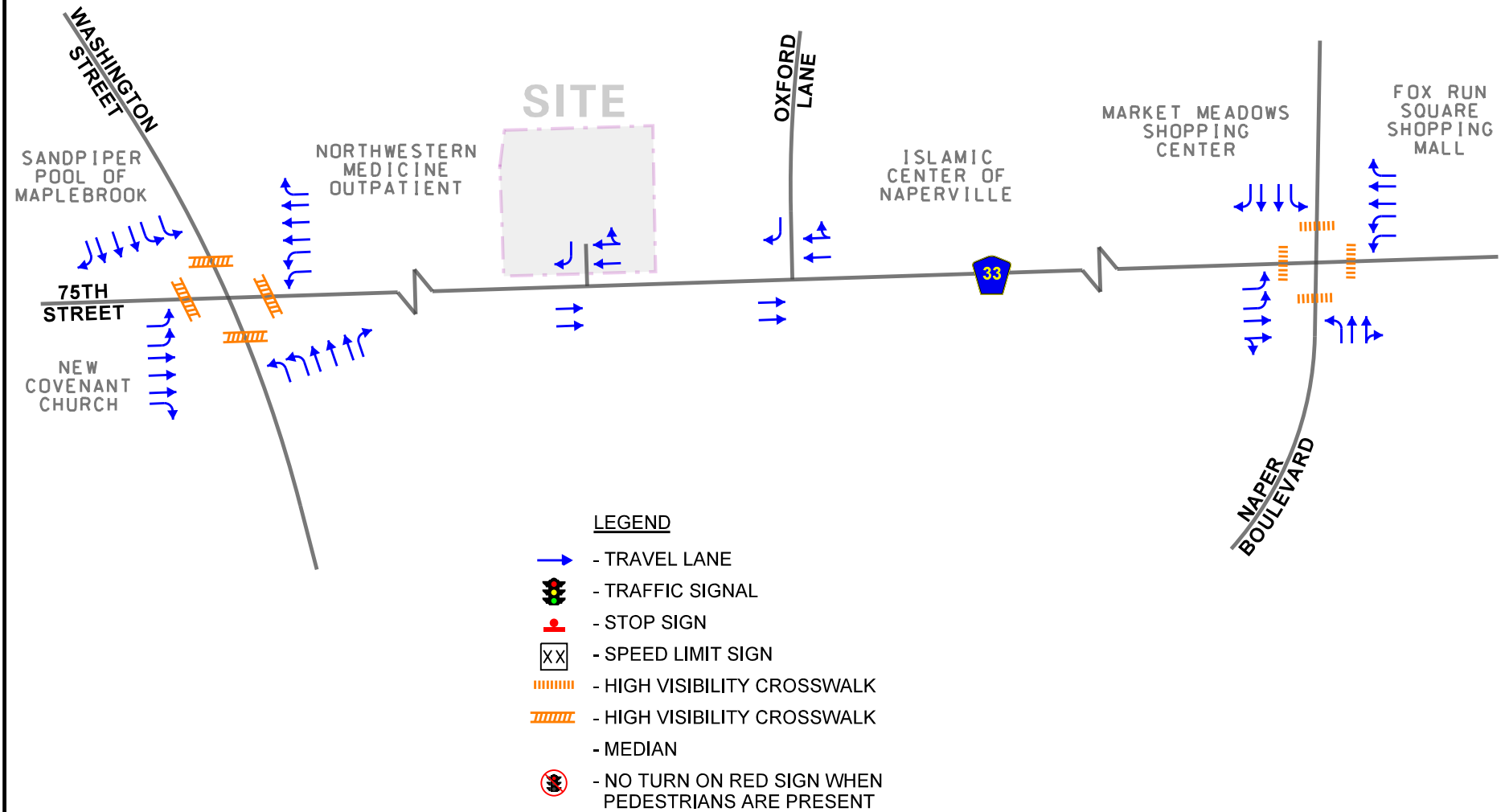
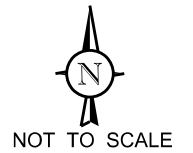
The site, which is currently occupied by an Animal Health Care building and parking lot, is located at 471 E 75th Street in Naperville, Illinois. Land uses in the vicinity of the site are residential and commercial. Commercial land uses include Northwestern Medicine Orthopedics and Christina Rodriguez Orthopedics to the west and the Islamic Center, Brightside Carwash, and the Market Meadows Shopping Center to the east.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3**.

75th Street is an east-west other principal arterial that provides two travel lanes in each direction generally divided by a landscape median. At its signalized intersection with Washington Street, 75th Street provides dual left-turn lanes, three through lanes, and an exclusive right-turn lane on both approaches. High visibility crosswalks and pedestrian signals are provided on all four legs of this intersection. At its signalized intersection with Naper Boulevard, 75th Street provides dual left-turn lanes, a through lane, and a shared through/right-turn lane on the eastbound approach and dual left-turn lanes, two through lanes, and an exclusive right-turn lane on the westbound approach. High visibility crosswalks and pedestrian signals are provided on all four legs of this intersection. At its unsignalized intersection with Oxford Lane, 75th Street does not provide any exclusive lanes. 75th Street is under the jurisdiction of the DuPage County Division of Transportation (DuDOT) and has a posted speed limit of 45 miles per hour. 75th Street carries an annual average daily traffic (AADT) volume of 30,800 vehicles (Illinois Department of Transportation [IDOT] 2020) west of Washington Street, 31,300 vehicles (IDOT 2020) between Washington Street and Naper Boulevard, and 29,000 vehicles (IDOT 2020) east of Naper Boulevard.

Washington Street is a north-south minor arterial roadway that provides two travel lanes in each direction. At its signalized intersection with 75th Street, Washington Street provides dual left-turn lanes, three through lanes, and an exclusive right-turn lane on both approaches. Washington Street is under the jurisdiction of the City of Naperville and has a posted speed limit of 40 miles per hour. Washington Street carries an AADT volume of 16,800 vehicles (IDOT 2020) north of 75th Street and 14,100 vehicles (IDOT 2020) south of 75th Street.



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Existing Roadway Characteristics



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Figure: 3

Naper Boulevard is a north-south, other principal arterial that provides two travel lanes in each direction. At its signalized intersection with 75th Street, Naper Boulevard provides an exclusive left-turn lane, a through lane, and a shared through-right-turn lane on the northbound approach and an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on the southbound approach. Naper Boulevard is under the jurisdiction of the City of Naperville and has a posted speed limit of 35 miles per hour. Naper Boulevard carries an AADT volume of 15,400 vehicles (IDOT 2020) north of 75th Street and 12,100 vehicles (IDOT 2022) south of 75th Street.

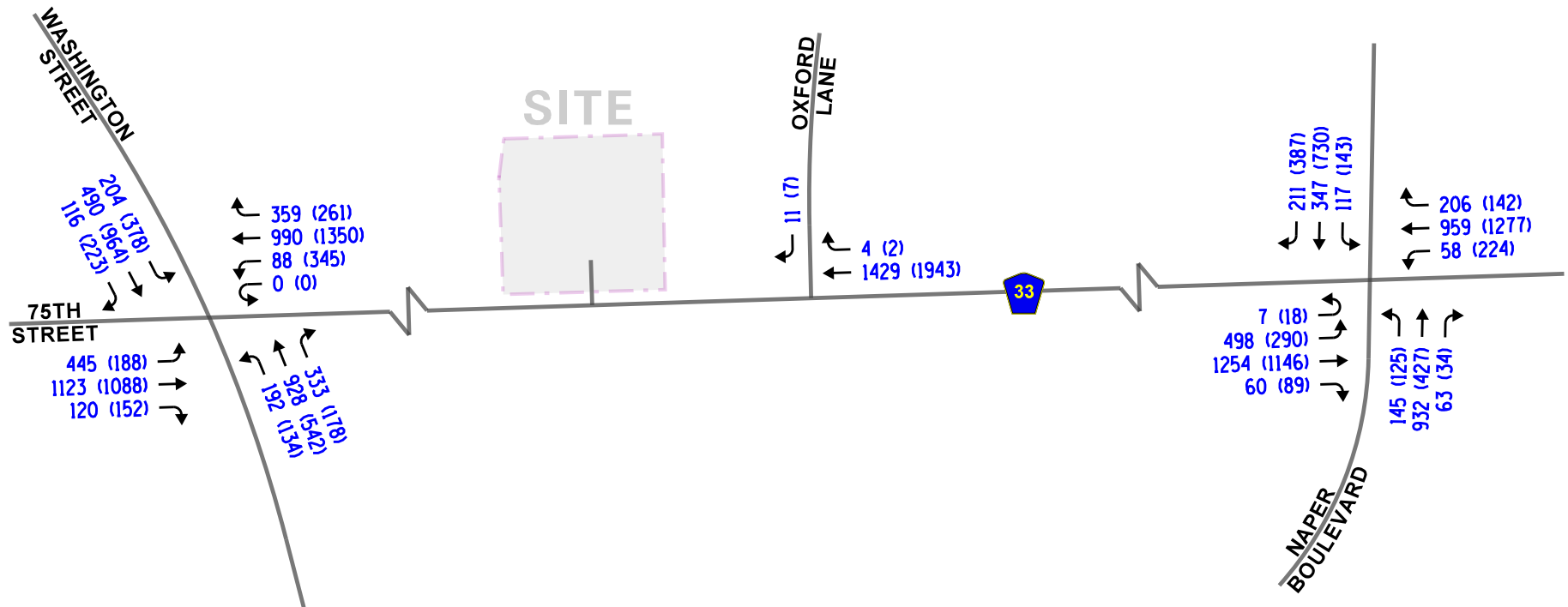
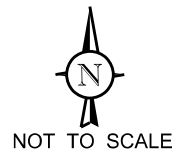
Oxford Lane is a north-south, local roadway that provides one travel lane in each direction. At its unsignalized intersection with 75th Street, Oxford Lane provides an exclusive right-turn lane on the southbound approach. Oxford Lane is under the jurisdiction of Chicago Township and has a posted speed limit of 25 miles per hour. Oxford Lane carries an AADT volume of 325 vehicles (IDOT 2016) north of 75th Street and an AADT of 625 vehicles (IDOT 2020) south of 75th Street.

Existing Traffic Volumes

In order to determine current traffic conditions within the study area, KLOA, Inc. conducted peak period traffic counts at the following intersections:

- 75th Street with Washington Street
- 75th Street with Naper Boulevard
- 75th Street with Oxford Lane

The traffic counts were conducted on Thursday, May 9, 2024, and July 24, 2024 during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods. The results of the traffic counts show that the peak hours of traffic generally occur between 7:15 A.M. and 8:15 A.M. during the weekday morning peak period and between 5:00 P.M. and 6:00 P.M. during the weekday evening peak period. Copies of the traffic count summary sheets are included in the Appendix. The existing traffic volumes are illustrated in **Figure 4**.



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Existing Traffic Volumes



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Figure: 4

Crash Analysis

KLOA, Inc. obtained accident data for the most recent available past five years (2019 to 2023) for the intersections of 75th Street with Washington Street, Oxford Lane, and Naper Boulevard¹. A review of the data indicated that no fatal crashes were reported at these intersections. Summaries of the crash data for these intersections are shown in **Tables 1** through **3**.

Table 1

75TH STREET WITH WASHINGTON STREET – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	1	0	0	11	2	3	0	17
2020	0	0	0	13	3	0	0	16
2021	0	0	0	21	0	2	0	23
2022	1	0	1	16	2	5	0	25
2023	<u>2</u>	<u>0</u>	<u>0</u>	<u>9</u>	<u>2</u>	<u>3</u>	<u>0</u>	<u>16</u>
Total	4	0	1	70	9	13	0	97
Average	<1.0	--	<1.0	14.0	1.8	2.6	--	19.4

Table 2

75TH STREET WITH NAPER BOULEVARD – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	2	0	1	4	0	16	0	23
2020	1	0	0	3	1	1	0	6
2021	1	0	0	2	3	3	0	9
2022	3	0	1	4	1	6	0	15
2023	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>3</u>	<u>0</u>	<u>5</u>
Total	8	0	2	13	6	29	0	58
Average	1.6	--	<1.0	2.6	1.2	5.8	--	11.6

¹ IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s).

Table 3

75TH STREET WITH OXFORD LANE – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	1	0	0	1	2
2022	0	0	0	1	0	1	0	2
2023	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	0	0	2	0	1	1	4
Average	--	--	--	<1.0	--	<1.0	<1.0	<1.0

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

The site, which is currently occupied by an Animal Health Care building and parking lot, is located will be redeveloped with an approximately 13,596 square-foot daycare building with up to 194 students and up to 24 employees. A parking lot with 44 parking spaces will be provided on the south side of the day care building, of which two will be accessible. The day care will operate from 6:30 A.M. to 6:00 P.M. (Monday-Friday) providing A1 (infants) to kindergarten and afterschool services. Access is proposed off 75th Street via a right-in/right-out access drive. The access drive will be located approximately 1,165 feet east of Washington Street and will provide one inbound lane and outbound lane with the outbound movement under the stop sign control. A copy of a site plan is included in the Appendix.

Drop-Off and Pick-Up Operation Surveys

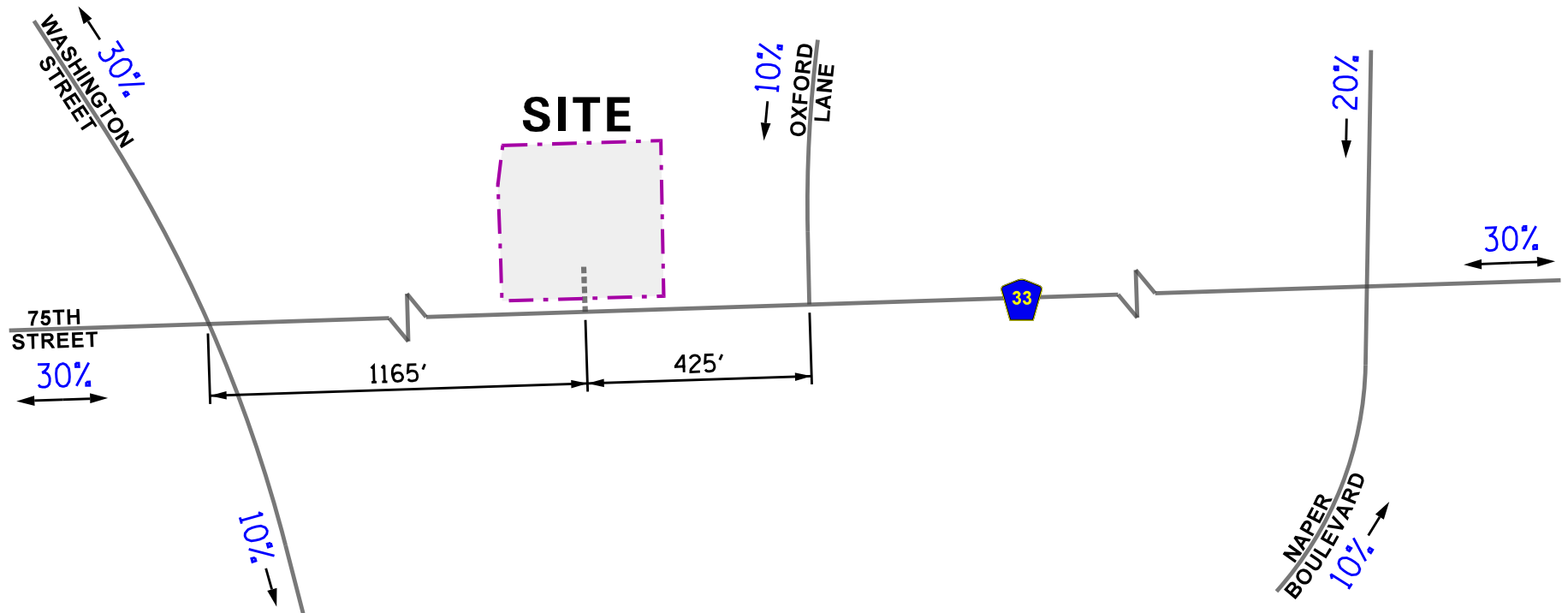
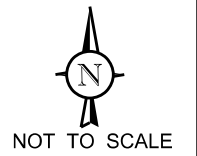
Drop-off and pick-up activities for children are accommodated via the proposed parking spaces. Parents will park and walk their student to/from the vehicle. Surveys of the drop-off and pick-up operations at an existing Primrose School located at 2915 Reflection Drive in Naperville indicated that the drop-off activity usually takes five minutes on average and the pick-up activity usually takes eight minutes on average.

Directional Distribution

The directions from which residents will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts and the location of the access drive which limits movements to right-turns only. **Figure 5** illustrates the directional distribution of the development-generated traffic. Figure 5 also shows the distance, in feet, between the existing and proposed access intersections.

Peak Hour Traffic Volumes

The number of peak hour trips estimated to be generated by the proposed development was based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). The “Daycare Center” (Land-Use Code 565) rates were used to determine the traffic to be generated by the proposed development. **Table 4** shows the weekday morning and weekday evening peak hour traffic to be generated by the proposed development as well as the daily total traffic volumes. Copies of the trip generation sheets are included in the Appendix.



LEGEND

00% - PERCENT DISTRIBUTION

00' - DISTANCE IN FEET

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Naperville, Illinois

Directional Distribution



Job No: 24-186

Figure: 5

Table 4

PROJECTED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

ITE Land- Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Traffic		
		In	Out	Total	In	Out	Total	In	Out	Total
565	Daycare (13,596 s.f.)	79	70	149	71	79	150	322	322	644

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). The traffic assignment for the development is illustrated in **Figure 6**.

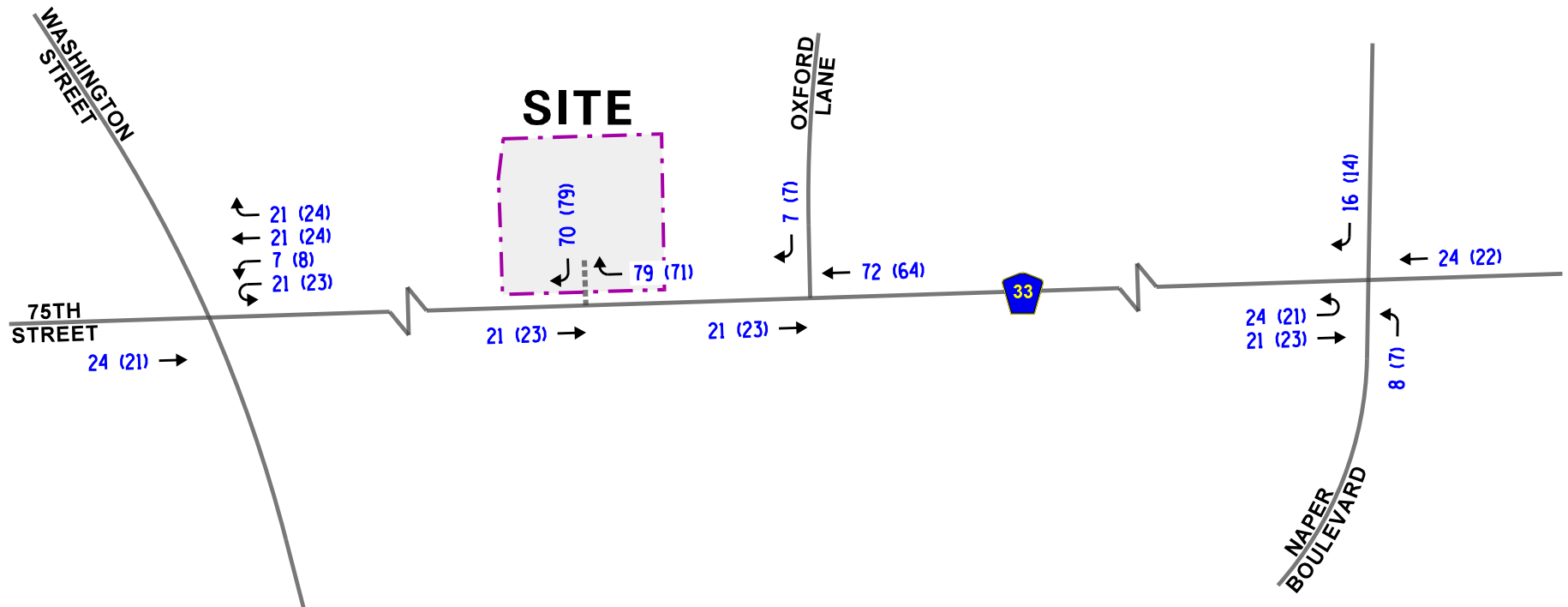
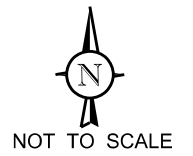
Background (No-Build) Traffic Conditions

The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on Average Daily Traffic (ADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes were increased by an annually compounded growth rate of 0.62 percent per year for six years (buildout year plus five years) for a total of approximately four percent to project Year 2030 background conditions. Additionally, the background traffic volumes include the estimated traffic to be generated by a proposed residential development located at 25 W462 75th Street.

Figure 7 illustrates the Year 2030 no-build conditions. A copy of the CMAP 2050 projections letter is included in the Appendix.

Total Projected Traffic Volumes

The development-generated traffic (Figure 6) was added to the Year 2030 no-build traffic volumes (Figure 7) to determine the Year 2030 total projected traffic volumes, shown in **Figure 8**.



LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (5:00-6:00 PM)

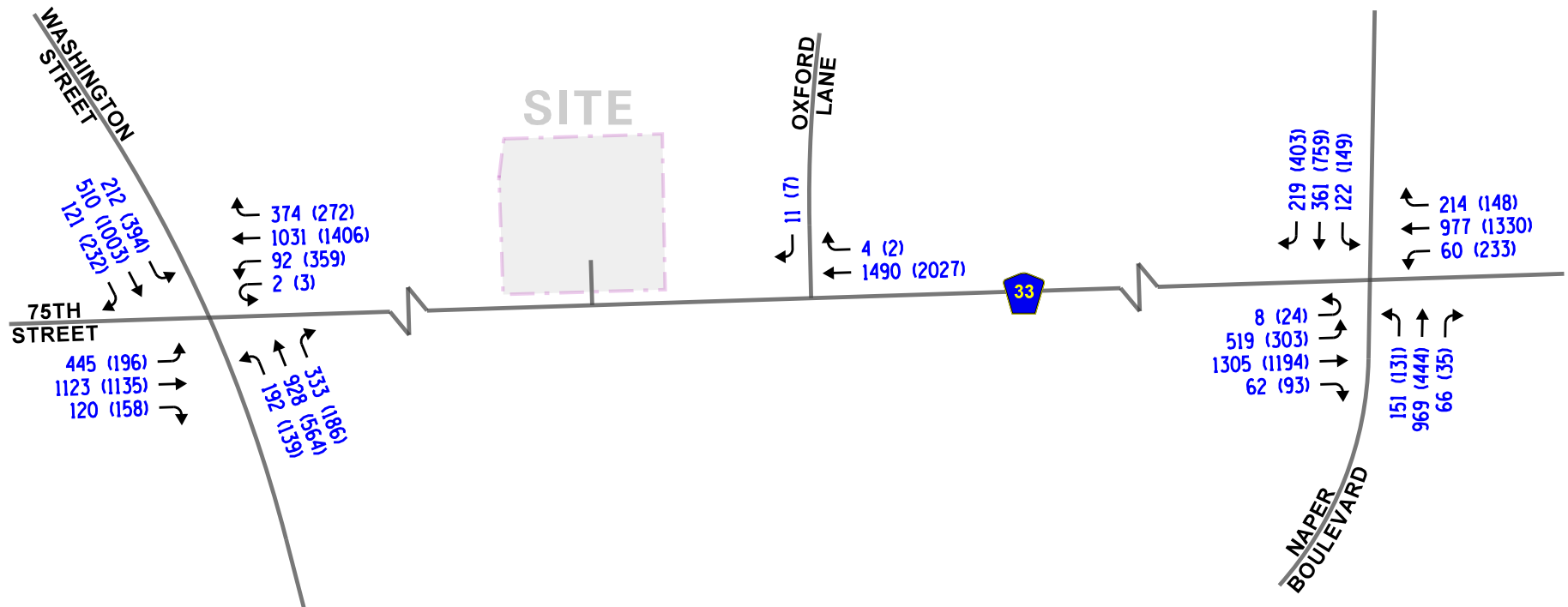
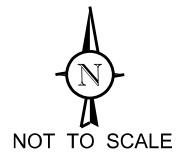
Primrose School
Naperville, Illinois

Site-Generated Traffic Volumes



Job No: 24-186

Figure: 6



LEGEND

- 00 - AM PEAK HOUR (7:15-8:15 AM)
- (00) - PM PEAK HOUR (5:00-6:00 PM)

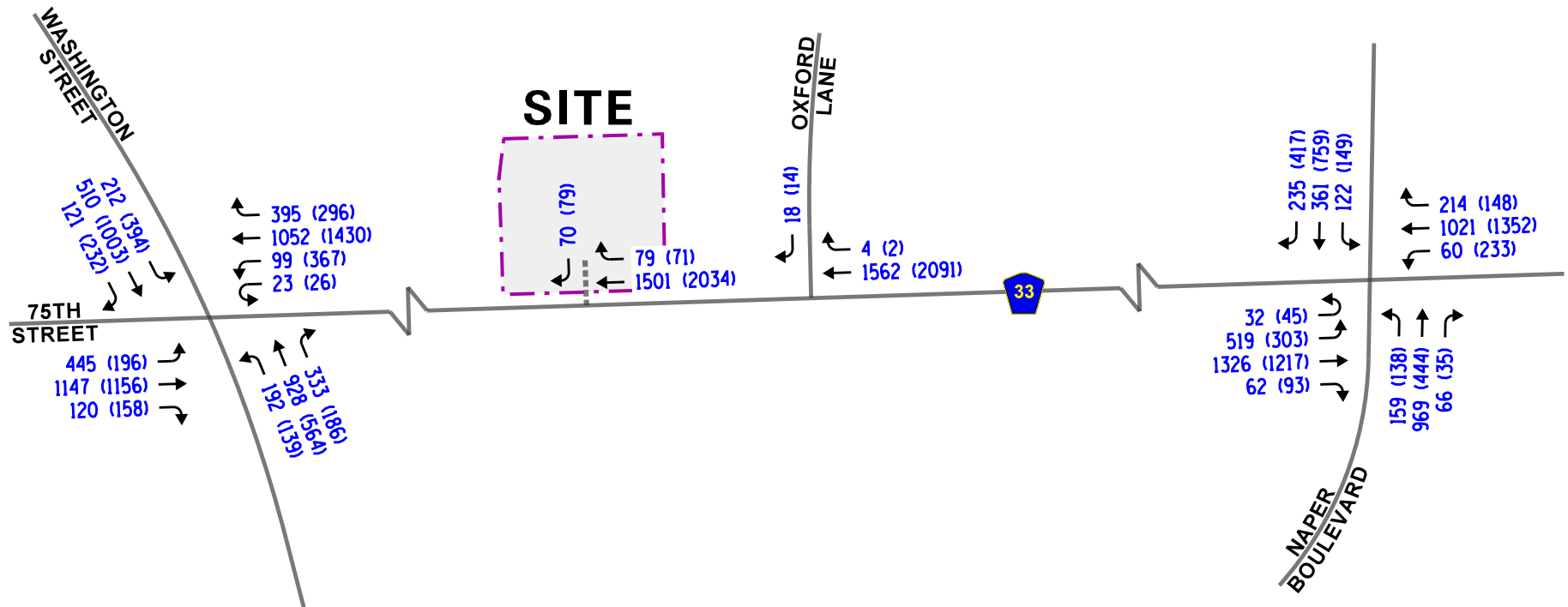
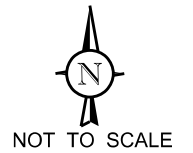
Primrose School
Naperville, Illinois

Year 2030 No-Build Traffic Volumes



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Figure: 7



Primrose School
Naperville, Illinois

Year 2030 Total Traffic Volumes



Job No: 24-186

Figure: 8

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drive are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing, Year 2030 no-build, and Year 2030 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the traffic-signal controlled intersections were accomplished using actual and field-measured cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, Year 2030 no-build, and Year 2030 total projected conditions are presented in **Tables 5** through **9**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 5

CAPACITY ANALYSIS RESULTS – 75TH STREET WITH WASHINGTON STREET– SIGNALIZED

Existing Conditions	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
	Weekday Morning	E 74.1	C 29.5	B 15.7	E 73.3	D 40.1	C 29.0	E 79.9	D 54.6	D 43.5	F 83.0	D 47.2	C 24.1	D 46.0
Weekday Evening	D – 40.3			D – 39.4			E – 55.4			D – 52.9			D 48.8	
	F 80.5	D 37.1	C 22.1	F 80.7	C 34.3	B 14.2	F 80.6	E 62.5	D 39.3	E 79.4	E 58.8	D 37.4		
No-Build Conditions	Weekday Morning	D – 41.2			D – 39.8			E – 60.5			E – 60.7			D 46.7
		E 75.6	C 31.1	B 16.5	E 73.4	D 41.9	C 30.6	F 80.9	D 53.9	D 42.7	F 84.0	D 46.4	C 23.5	
	Weekday Evening	D – 41.8			D – 41.1			D – 45.9			D – 52.6			D 49.6
		F 80.7	D 38.8	C 22.9	F 82.9	D 36.3	B 14.9	F 80.8	E 61.9	D 38.8	E 79.7	E 58.1	D 36.6	
Projected Conditions	Weekday Morning	D – 42.7			D – 41.7			E – 60.0			E – 60.2			D 47.0
		E 75.6	C 32.0	B 16.9	E 74.7	D 42.2	C 31.4	F 80.9	D 53.9	D 41.7	F 84.0	D 46.4	C 23.5	
	Weekday Evening	D – 42.3			D – 42.0			D – 54.7			D – 52.6			D 49.9
		F 80.7	D 39.8	C 23.3	F 84.2	D 36.6	B 15.2	F 80.8	E 61.9	D 38.2	E 79.7	E 58.1	D 36.6	
		D – 43.4			D – 42.4			E – 59.9			E – 60.2			
Letter denotes Level of Service L – Left Turn R – Right Turn Delay is measured in seconds. T – Through														

Table 6

CAPACITY ANALYSIS RESULTS – 75TH STREET AND NAPER BOULEVARD– SIGNALIZED

Existing Conditions	Peak Hour	Eastbound		Westbound			Northbound		Southbound			Overall
		L	T/R	L	T	R	L	T/R	L	T	R	
	Weekday Morning	E 71.8	D 42.9	E 72.8	E 56.3	B 18.4	C 31.3	E 69.0	E 60.4	D 45.3	A 8.7	D 52.0
D – 50.9		D – 50.7			E – 64.2		D – 36.5					
Weekday Evening	E 75.6	D 37.8	E 78.8	D 41.8	B 12.0	E 64.1	E 62.3	D 45.3	E 71.6	D 37.0	D 50.2	
	D – 45.4		D – 44.3			E – 62.7		E – 58.0				
No-Build Conditions	Weekday Morning	E 72.3	D 46.1	E 72.9	E 61.8	B 19.5	C 31.4	E 73.2	E 67.1	D 45.5	A 9.7	E 55.1
		D – 53.4		E – 55.2			E – 67.9		D – 38.1			
	Weekday Evening	E 75.5	D 40.5	E 78.8	D 45.0	B 13.0	E 67.0	E 62.4	D 45.9	E 72.5	D 36.7	D 51.9
		D – 47.6		D – 46.8			E – 63.4		E – 58.5			
Projected Conditions	Weekday Morning	E 73.8	D 47.3	E 72.9	E 66.4	B 19.6	C 31.8	E 73.2	E 66.9	D 45.9	B 11.3	E 56.5
		D – 54.9		E – 59.0			E – 67.7		D – 38.1			
	Weekday Evening	E 75.4	D 41.3	E 78.8	D 47.1	B 13.2	E 70.7	E 62.2	D 45.7	E 72.5	D 36.9	D 52.7
		D – 48.4		D – 48.5			E – 64.1		E – 58.3			
Letter denotes Level of Service L – Left Turn R – Right Turn Delay is measured in seconds. T – Through												

Table 7

CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
75th Street with Oxford Lane				
• Southbound Approach	C	16.2	C	20.2
LOS = Level of Service Delay is measured in seconds.				

Table 8

CAPACITY ANALYSIS RESULTS – NO-BUILD CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
75th Street with Oxford Lane				
• Southbound Approach	C	16.8	C	21.2
LOS = Level of Service Delay is measured in seconds.				

Table 9

CAPACITY ANALYSIS RESULTS – TOTAL PROJECTED CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
75th Street with Oxford Lane				
• Southbound Approach	C	17.9	C	22.7
75th Street with Proposed Right-In/Right-Out Access Drive				
• Southbound Approach	C	20.1	D	34.3
LOS = Level of Service Delay is measured in seconds.				

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development-generated traffic.

75th Street with Washington Street

The results of the capacity analyses indicate that the intersection currently operates at an overall Level of Service (LOS) D during the weekday morning and weekday evening peak hours. It should be noted that the left-turn movements of all approaches operate at LOS E/F during both peak hours. The lower levels of service are a result of the long cycle length (150 to 160 seconds during the peak hours) and that the left-turn movements operate on a protected phase only. However, all movements operate with a volume-to-capacity (v/c) ratio of less than one which indicates that volume of traffic is below the capacity of the movements.

Under Year 2030 no-build and total projected conditions, this intersection and all its approaches are projected to continue to operate at the existing levels of service during the weekday morning and the weekday evening peak hour with increase in delay of less than three seconds over the existing conditions. Overall, the proposed development is projected to increase the volume of traffic traversing this intersection by less than two percent. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

75th Street with Naper Boulevard

The results of the capacity analyses indicate that the intersection currently operates at an overall LOS D during the weekday morning and weekday evening peak hours. It should be noted that multiple left-turning movements operate at LOS E during both peak hours. The lower levels of service is a result of the long cycle length (150 to 160 seconds during the peak hours) and the fact that the eastbound and westbound left-turn operation is on a protected phase only. However, all the movements operate with a v/c ratio of less than one and the 95th percentile queues for all movements can be accommodated within the existing lanes.

Under Year 2030 no-build and total projected conditions, this intersection is projected to operate at LOS E during the weekday morning peak hour and LOS D during the weekday evening peak hour with increases in delay of less than five seconds. Some movements are projected to operate at LOS E. However, as is the case under existing conditions, these movements are projected to operate with a v/c ratio of less than one. Overall, the proposed development is projected to increase the volume of traffic traversing this intersection by less than two percent. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

75th Street with Oxford Lane

The results of the capacity analyses indicate that the outbound movement operates at LOS C during the weekday morning and weekday evening peak hours and will continue to do so under future conditions with increases in delay of less than three seconds. As such, the traffic estimated to be provided by the proposed development will have a limited impact on the operation of this intersection and no roadway improvements or traffic control adjustments will be required.

75th Street with Proposed Right-in/Right-Out Access Drive

The results of the capacity analyses indicate that the outbound movement is projected to operate at LOS C during the weekday morning peak hour and LOS D during the weekday evening peak hour. As such, the intersection will be adequate to accommodate the traffic estimated to be generated by the proposed development.

Parking Evaluation

As previously indicated, the site will be developed with an approximately 13,596 square-foot daycare and approximately 44 parking spaces of which two will be accessible parking spaces. In order to determine if the parking supply will be sufficient to meet the peak parking demand of the development, the parking requirements of the proposed development was estimated based on the City of Naperville's Zoning Ordinance, rates published in the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*, 6th Edition, and based on surveys conducted at an existing Primrose School

City of Naperville Requirements

Based on the City of Naperville Code of Ordinance, a daycare center is required to provide a parking ratio of four parking spaces for every 1,000 square-foot of gross area. Based on the above and the area of the proposed development would require a total of 54 parking spaces per the City of Naperville's ordinance.

ITE Parking Generation Manual

Based on the average parking rates published in the Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 6th Edition, the projected average peak parking demand for the development was estimated and shown in **Table 10**.

Table 10

PROJECTED PEAK PARKING DEMAND PER ITE PARKING RATES

ITE Land Use	ITE Parking Rates (Average Rate)
Day Care Center (Land-Use Code 565)	2.27 spaces per 1,000 s.f.
Peak Parking Demand	31

Based on ITE *Parking Generation Manual* rates, the proposed development is projected to have a peak parking demand of 31 parking spaces based on the ITE average rates.

Parking Occupancy Surveys

Parking occupancy surveys were conducted at an existing Primrose School located at 2915 Reflection Drive in Naperville on Thursday, August 1, 2024. The parking surveys were performed every 15 minutes from 6:30 A.M. to 10:00 A.M. and from 3:00 P.M. to 6:30 P.M. The results of the parking surveys are summarized in **Table 10** and **Table 11**, which show the number of occupied parking spaces within the Primrose School parking lot and the adjacent lot during the weekday morning and weekday evening peak periods, respectively. As can be seen, the maximum parking demand is 29 parking spaces occurring once during the weekday morning peak period and 23 parking spaces occurring twice during the weekday evening peak period. It should be noted that two school buses were observed parked in the parking lot during both peak periods and were not included in the results.

It should be noted that the Primrose School located at 2915 Reflection Drive is approximately 12,560 square feet which is approximately 985 square feet smaller than the proposed daycare center. This difference in the square footage of the proposed daycare center translates into a parking demand of four more parking spaces which increases the surveyed parking demand from 29 spaces to 33 spaces during the weekday morning peak period and 23 spaces to 27 spaces during the weekday evening peak period.

Therefore, based on the results of the parking surveys and the ITE parking requirement, the proposed 44 parking spaces will be adequate to accommodate the parking demand of the proposed Primrose School.

Table 11

PARKING SURVEY RESULTS – NUMBER OF OCCUPIED PARKING SPACES –
MORNING PEAK PERIOD

Time	Thursday, August 1, 2024
6:30 AM	3
6:45 AM	5
7:00 AM	7
7:15 AM	12
7:30 AM	18
7:45 AM	20
8:00 AM	23
8:15 AM	23
8:30 AM	29
8:45 AM	26
9:00 AM	26
9:15 AM	24
9:30 AM	25
9:45 AM	26
10:00 AM	26

Table 12

PARKING SURVEY RESULTS – NUMBER OF OCCUPIED PARKING SPACES – EVENING
PEAK PERIOD

Time	Thursday, August 1, 2024
3:00 PM	18
3:15 PM	21
3:30 PM	21
3:45 PM	21
4:00 PM	23
4:15 PM	23
4:30 PM	19
4:45 PM	22
5:00 PM	16
5:15 PM	20
5:30 PM	18
5:45 PM	2
6:00 PM	4
6:15 PM	3
6:30 PM	3

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- As proposed, the site will be redeveloped with a 13,596 square-foot daycare building and 44 parking spaces.
- The area roadway system generally has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development and no additional roadway improvements or traffic control modifications are required.
- The traffic estimated to be generated by the proposed development will be less than two percent of the traffic traversing the intersections of 75th Street with Washington Street and Naper Boulevard.
- Based on the results of a parking survey conducted at a Primrose School in Naperville and ITE parking requirements, the proposed parking supply of 44 parking spaces will be adequate in accommodating the projected peak parking demand of the proposed development.

Appendix

Traffic Count Summary Sheets

Site Plan

ITE Trip Generation Summary Sheets

CMAP Projections Letter

Level of Service Criteria

Capacity Analysis Summary Sheets

Traffic Count Summary Sheets



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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Count Name: Naper Blvd. with 75th Street TMC
Site Code:
Start Date: 05/09/2024
Page No.: 1

Turning Movement Data

Start Time	75th Street Eastbound						75th Street Westbound						Napier Blvd. Northbound						Napier Blvd. Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	2	118	277	18	0	415	0	15	150	54	0	219	0	34	202	15	0	251	0	14	58	38	0	110	995
7:15 AM	4	162	315	15	0	496	0	10	240	61	0	311	0	65	234	15	0	314	0	27	64	54	0	145	1266
7:30 AM	1	120	296	12	0	429	0	18	244	46	0	308	0	27	245	13	0	285	0	26	98	55	0	179	1201
7:45 AM	2	106	342	14	0	464	0	21	279	46	0	346	0	21	207	23	0	251	0	30	83	63	0	176	1237
Hourly Total	9	506	1230	59	0	1804	0	64	913	207	0	1184	0	147	888	66	0	1101	0	97	303	210	0	610	4699
8:00 AM	0	110	301	19	0	430	0	9	196	53	0	258	0	32	246	12	0	290	0	34	102	39	0	175	1153
8:15 AM	0	99	298	8	0	405	0	12	260	59	0	331	0	45	226	13	0	284	0	30	96	43	0	169	1189
8:30 AM	0	79	276	14	0	369	0	13	256	44	0	313	0	28	220	14	0	262	0	28	72	45	0	145	1089
8:45 AM	0	107	273	9	0	389	0	11	241	38	0	290	0	37	186	20	0	243	0	24	73	35	0	132	1054
Hourly Total	0	395	1148	50	0	1593	0	45	953	194	0	1192	0	142	878	59	0	1079	0	116	343	162	0	621	4485
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	53	265	17	0	338	0	47	258	30	0	335	0	36	136	11	0	183	0	47	204	83	0	334	1190
4:15 PM	1	81	311	26	0	419	0	60	253	22	0	335	0	29	111	10	0	150	0	28	172	74	0	274	1178
4:30 PM	1	73	258	24	2	356	0	58	267	29	0	354	0	38	138	8	0	184	0	31	209	83	0	323	1217
4:45 PM	4	61	277	31	0	373	0	50	354	37	0	441	0	25	113	21	0	159	0	42	190	55	0	287	1260
Hourly Total	9	268	1111	98	2	1486	0	215	1132	118	0	1465	0	128	498	50	0	676	0	148	775	295	0	1218	4845
5:00 PM	3	83	294	20	0	400	0	52	321	33	0	406	0	28	89	10	0	127	0	41	182	77	2	300	1233
5:15 PM	1	71	274	24	1	370	0	46	312	32	0	390	0	41	123	8	0	172	0	37	194	98	0	329	1261
5:30 PM	4	57	306	21	0	388	0	64	361	39	0	464	0	35	108	11	0	154	0	41	154	96	0	291	1297
5:45 PM	10	79	272	24	0	385	0	62	283	38	0	383	0	21	107	5	0	133	0	24	200	116	0	340	1241
Hourly Total	18	290	1146	89	1	1543	0	224	1277	142	0	1643	0	125	427	34	0	586	0	143	730	387	2	1260	5032
Grand Total	36	1459	4635	296	3	6426	0	548	4275	661	0	5484	0	542	2691	209	0	3442	0	504	2151	1054	2	3709	19061
Approach %	0.6	22.7	72.1	4.6	-	-	0.0	10.0	78.0	12.1	-	-	0.0	15.7	78.2	6.1	-	-	0.0	13.6	58.0	28.4	-	-	-
Total %	0.2	7.7	24.3	1.6	-	33.7	0.0	2.9	22.4	3.5	-	28.8	0.0	2.8	14.1	1.1	-	18.1	0.0	2.6	11.3	5.5	-	19.5	-
Lights	36	1450	4521	287	-	6294	0	542	4165	648	-	5355	0	535	2658	206	-	3399	0	494	2127	1047	-	3668	18716
% Lights	100.0	99.4	97.5	97.0	-	97.9	-	98.9	97.4	98.0	-	97.6	-	98.7	98.8	98.6	-	98.8	-	98.0	98.9	99.3	-	98.9	98.2
Buses	0	2	20	7	-	29	0	2	26	3	-	31	0	5	14	0	-	19	0	2	13	3	-	18	97
% Buses	0.0	0.1	0.4	2.4	-	0.5	-	0.4	0.6	0.5	-	0.6	-	0.9	0.5	0.0	-	0.6	-	0.4	0.6	0.3	-	0.5	0.5
Single-Unit Trucks	0	5	52	2	-	59	0	2	46	7	-	55	0	2	17	2	-	21	0	6	9	4	-	19	154
% Single-Unit Trucks	0.0	0.3	1.1	0.7	-	0.9	-	0.4	1.1	1.1	-	1.0	-	0.4	0.6	1.0	-	0.6	-	1.2	0.4	0.4	-	0.5	0.8
Articulated Trucks	0	2	42	0	-	44	0	2	38	3	-	43	0	0	2	1	-	3	0	2	2	0	-	4	94
% Articulated Trucks	0.0	0.1	0.9	0.0	-	0.7	-	0.4	0.9	0.5	-	0.8	-	0.0	0.1	0.5	-	0.1	-	0.4	0.1	0.0	-	0.1	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

[illegible]



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Count Name: Naper Blvd. with 75th Street TMC
Site Code:
Start Date: 05/09/2024
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

Start Time	75th Street Eastbound						75th Street Westbound						Naper Blvd. Northbound						Naper Blvd. Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	4	162	315	15	0	496	0	10	240	61	0	311	0	65	234	15	0	314	0	27	64	54	0	145	1266
7:30 AM	1	120	296	12	0	429	0	18	244	46	0	308	0	27	245	13	0	285	0	26	98	55	0	179	1201
7:45 AM	2	106	342	14	0	464	0	21	279	46	0	346	0	21	207	23	0	251	0	30	83	63	0	176	1237
8:00 AM	0	110	301	19	0	430	0	9	196	53	0	258	0	32	246	12	0	290	0	34	102	39	0	175	1153
Total	7	498	1254	60	0	1819	0	58	959	206	0	1223	0	145	932	63	0	1140	0	117	347	211	0	675	4857
Approach %	0.4	27.4	68.9	3.3	-	-	0.0	4.7	78.4	16.8	-	-	0.0	12.7	81.8	5.5	-	-	0.0	17.3	51.4	31.3	-	-	-
Total %	0.1	10.3	25.8	1.2	-	37.5	0.0	1.2	19.7	4.2	-	25.2	0.0	3.0	19.2	1.3	-	23.5	0.0	2.4	7.1	4.3	-	13.9	-
PHF	0.438	0.769	0.917	0.789	-	0.917	0.000	0.690	0.859	0.844	-	0.884	0.000	0.558	0.947	0.685	-	0.908	0.000	0.860	0.850	0.837	-	0.943	0.959
Lights	7	495	1226	56	-	1784	0	56	930	199	-	1185	0	142	921	63	-	1126	0	114	336	209	-	659	4754
% Lights	100.0	99.4	97.8	93.3	-	98.1	-	96.6	97.0	96.6	-	96.9	-	97.9	98.8	100.0	-	98.8	-	97.4	96.8	99.1	-	97.6	97.9
Buses	0	1	3	4	-	8	0	1	5	3	-	9	0	3	8	0	-	11	0	0	7	0	-	7	35
% Buses	0.0	0.2	0.2	6.7	-	0.4	-	1.7	0.5	1.5	-	0.7	-	2.1	0.9	0.0	-	1.0	-	0.0	2.0	0.0	-	1.0	0.7
Single-Unit Trucks	0	0	11	0	-	11	0	1	17	3	-	21	0	0	3	0	-	3	0	3	4	2	-	9	44
% Single-Unit Trucks	0.0	0.0	0.9	0.0	-	0.6	-	1.7	1.8	1.5	-	1.7	-	0.0	0.3	0.0	-	0.3	-	2.6	1.2	0.9	-	1.3	0.9
Articulated Trucks	0	2	14	0	-	16	0	0	7	1	-	8	0	0	0	0	-	0	0	0	0	0	-	0	24
% Articulated Trucks	0.0	0.4	1.1	0.0	-	0.9	-	0.0	0.7	0.5	-	0.7	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Count Name: Naper Blvd. with 75th Street TMC
Site Code:
Start Date: 05/09/2024
Page No: 4

Turning Movement Peak Hour Data (5:00 PM)

Start Time	75th Street Eastbound							75th Street Westbound							Naper Blvd. Northbound							Naper Blvd. Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
5:00 PM	3	83	294	20	0	400		0	52	321	33	0	406		0	28	89	10	0	127		0	41	182	77	2	300	1233
5:15 PM	1	71	274	24	1	370		0	46	312	32	0	390		0	41	123	8	0	172		0	37	194	98	0	329	1261
5:30 PM	4	57	306	21	0	388		0	64	361	39	0	464		0	35	108	11	0	154		0	41	154	96	0	291	1297
5:45 PM	10	79	272	24	0	385		0	62	283	38	0	383		0	21	107	5	0	133		0	24	200	116	0	340	1241
Total	18	290	1146	89	1	1543		0	224	1277	142	0	1643		0	125	427	34	0	586		0	143	730	387	2	1260	5032
Approach %	1.2	18.8	74.3	5.8	-	-		0.0	13.6	77.7	8.6	-	-		0.0	21.3	72.9	5.8	-	-		0.0	11.3	57.9	30.7	-	-	-
Total %	0.4	5.8	22.8	1.8	-	30.7		0.0	4.5	25.4	2.8	-	32.7		0.0	2.5	8.5	0.7	-	11.6		0.0	2.8	14.5	7.7	-	25.0	-
PHF	0.450	0.873	0.936	0.927	-	0.964		0.000	0.875	0.884	0.910	-	0.885		0.000	0.762	0.868	0.773	-	0.852		0.000	0.872	0.913	0.834	-	0.926	0.970
Lights	18	289	1135	89	-	1531		0	224	1261	142	-	1627		0	125	425	34	-	584		0	143	729	386	-	1258	5000
% Lights	100.0	99.7	99.0	100.0	-	99.2		-	100.0	98.7	100.0	-	99.0		-	100.0	99.5	100.0	-	99.7		-	100.0	99.9	99.7	-	99.8	99.4
Buses	0	0	1	0	-	1		0	0	2	0	-	2		0	0	0	0	-	0		0	0	0	0	-	0	3
% Buses	0.0	0.0	0.1	0.0	-	0.1		-	0.0	0.2	0.0	-	0.1		-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	1	5	0	-	6		0	0	5	0	-	5		0	0	2	0	-	2		0	0	1	1	-	2	15
% Single-Unit Trucks	0.0	0.3	0.4	0.0	-	0.4		-	0.0	0.4	0.0	-	0.3		-	0.0	0.5	0.0	-	0.3		-	0.0	0.1	0.3	-	0.2	0.3
Articulated Trucks	0	0	5	0	-	5		0	0	9	0	-	9		0	0	0	0	-	0		0	0	0	0	-	0	14
% Articulated Trucks	0.0	0.0	0.4	0.0	-	0.3		-	0.0	0.7	0.0	-	0.5		-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0		0	0	0	0	-	0		0	0	0	0	-	0		0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-		-	-	-	-	0	-	-		-	-	-	-	0		-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-		-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	100.0	-	-

Naperville, IL Weather: Hot and Dry
 75th St and Oxford Lane North Leg
 Wednesday July 24, 2024

07/24/24
 20:03:49

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - by Mvmt

Int# 1 75/oxford/north

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	1	0	0	0	227	0	0	0	0	0	0	0	228
715	2	0	0	0	284	0	0	0	0	0	0	0	286
730	4	0	0	0	321	0	0	0	0	0	0	0	325
745	2	0	0	1	334	0	0	0	0	0	0	0	337
800	3	0	0	3	270	0	0	0	0	0	0	0	276
815	1	0	0	1	355	0	0	0	0	0	0	0	357
830	4	0	0	0	328	0	0	0	0	0	0	0	332
845	4	0	0	3	384	0	0	0	0	0	0	0	391
1600	1	0	0	1	372	0	0	0	0	0	0	0	374
1615	0	0	0	0	388	0	0	0	0	0	0	0	388
1630	1	0	0	0	382	0	0	0	0	0	0	0	383
1645	4	0	0	3	396	0	0	0	0	0	0	0	403
1700	1	0	0	1	452	0	0	0	0	0	0	0	454
1715	1	0	0	0	445	0	0	0	0	0	0	0	446
1730	3	0	0	0	440	0	0	0	0	0	0	0	443
1745	2	0	0	1	458	0	0	0	0	0	0	0	461
Total	34	0	0	14	5836	0	0	0	0	0	0	0	5884

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - Totals

Int# 1 75/oxford/north

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	1	227	0	0	0	0	0	228	228
715	2	284	0	0	0	0	0	286	286
730	4	321	0	0	0	0	0	325	325
745	2	335	0	0	1	0	0	336	337
800	3	273	0	0	3	0	0	273	276
815	1	356	0	0	1	0	0	356	357
830	4	328	0	0	0	0	0	332	332
845	4	387	0	0	3	0	0	388	391
1600	1	373	0	0	1	0	0	373	374
1615	0	388	0	0	0	0	0	388	388
1630	1	382	0	0	0	0	0	383	383
1645	4	399	0	0	3	0	0	400	403
1700	1	453	0	0	1	0	0	453	454
1715	1	445	0	0	0	0	0	446	446
1730	3	440	0	0	0	0	0	443	443
1745	2	459	0	0	1	0	0	460	461
Total	34	5850	0	0	14	0	0	5870	5884

Naperville, IL Weather: Hot and Dry
75th St and Oxford Lane North Leg
Wednesday July 24, 2024

07/24/24
20:03:49

TEAPAC[Ver 9.50.02] - 15-Minute Flow Rates: by Movement

Int# 1 75/oxford/north

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	4	0	0	0	908	0	0	0	0	0	0	0	912
715	8	0	0	0	1136	0	0	0	0	0	0	0	1144
730	16	0	0	0	1284	0	0	0	0	0	0	0	1300
745	8	0	0	4	1336	0	0	0	0	0	0	0	1348
800	12	0	0	12	1080	0	0	0	0	0	0	0	1104
815	4	0	0	4	1420	0	0	0	0	0	0	0	1428
830	16	0	0	0	1312	0	0	0	0	0	0	0	1328
845	16	0	0	12	1536	0	0	0	0	0	0	0	1564
1600	4	0	0	4	1488	0	0	0	0	0	0	0	1496
1615	0	0	0	0	1552	0	0	0	0	0	0	0	1552
1630	4	0	0	0	1528	0	0	0	0	0	0	0	1532
1645	16	0	0	12	1584	0	0	0	0	0	0	0	1612
1700	4	0	0	4	1808	0	0	0	0	0	0	0	1816
1715	4	0	0	0	1780	0	0	0	0	0	0	0	1784
1730	12	0	0	0	1760	0	0	0	0	0	0	0	1772
1745	8	0	0	4	1832	0	0	0	0	0	0	0	1844

TEAPAC[Ver 9.50.02] - 15-Minute Flow Rates: Appr/Exit Totals

Int# 1 75/oxford/north

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	4	908	0	0	0	0	0	912	912
715	8	1136	0	0	0	0	0	1144	1144
730	16	1284	0	0	0	0	0	1300	1300
745	8	1340	0	0	4	0	0	1344	1348
800	12	1092	0	0	12	0	0	1092	1104
815	4	1424	0	0	4	0	0	1424	1428
830	16	1312	0	0	0	0	0	1328	1328
845	16	1548	0	0	12	0	0	1552	1564
1600	4	1492	0	0	4	0	0	1492	1496
1615	0	1552	0	0	0	0	0	1552	1552
1630	4	1528	0	0	0	0	0	1532	1532
1645	16	1596	0	0	12	0	0	1600	1612
1700	4	1812	0	0	4	0	0	1812	1816
1715	4	1780	0	0	0	0	0	1784	1784
1730	12	1760	0	0	0	0	0	1772	1772
1745	8	1836	0	0	4	0	0	1840	1844

Naperville, IL Weather: Hot and Dry
75th St and Oxford Lane North Leg
Wednesday July 24, 2024

07/24/24
20:03:49

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: by Movement

Int# 1 75/oxford/north

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	9	0	0	1	1166	0	0	0	0	0	0	0	1176
715	11	0	0	4	1209	0	0	0	0	0	0	0	1224
730	10	0	0	5	1280	0	0	0	0	0	0	0	1295
745	10	0	0	5	1287	0	0	0	0	0	0	0	1302
800	12	0	0	7	1337	0	0	0	0	0	0	0	1356
815	9	0	0	4	1067	0	0	0	0	0	0	0	1080*
830	8	0	0	3	712	0	0	0	0	0	0	0	723*
845	4	0	0	3	384	0	0	0	0	0	0	0	391*
1600	6	0	0	4	1538	0	0	0	0	0	0	0	1548
1615	6	0	0	4	1618	0	0	0	0	0	0	0	1628
1630	7	0	0	4	1675	0	0	0	0	0	0	0	1686
1645	9	0	0	4	1733	0	0	0	0	0	0	0	1746
1700	7	0	0	2	1795	0	0	0	0	0	0	0	1804
1715	6	0	0	1	1343	0	0	0	0	0	0	0	1350*
1730	5	0	0	1	898	0	0	0	0	0	0	0	904*
1745	2	0	0	1	458	0	0	0	0	0	0	0	461*

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: Appr/Exit Totals

Int# 1 75/oxford/north

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	9	1167	0	0	1	0	0	1175	1176
715	11	1213	0	0	4	0	0	1220	1224
730	10	1285	0	0	5	0	0	1290	1295
745	10	1292	0	0	5	0	0	1297	1302
800	12	1344	0	0	7	0	0	1349	1356
815	9	1071	0	0	4	0	0	1076	1080*
830	8	715	0	0	3	0	0	720	723*
845	4	387	0	0	3	0	0	388	391*
1600	6	1542	0	0	4	0	0	1544	1548
1615	6	1622	0	0	4	0	0	1624	1628
1630	7	1679	0	0	4	0	0	1682	1686
1645	9	1737	0	0	4	0	0	1742	1746
1700	7	1797	0	0	2	0	0	1802	1804
1715	6	1344	0	0	1	0	0	1349	1350*
1730	5	899	0	0	1	0	0	903	904*
1745	2	459	0	0	1	0	0	460	461*

07/24/24
20:03:49

Int# 2

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Int# 2

[illegible]

Int# 2

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	

Int# 2

[illegible]

07/24/24
20:03:49

Int# 3

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - Totals

Int# 3

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: by Movement

Int# 3

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: Appr/Exit Totals

Int# 3

07/24/24
20:03:49

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

[illegible]

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	

07/24/24
20:03:49

Int# 5

Int# 5Int# 5Int# 5[illegible]

07/24/24
20:03:49

Int# 6

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Int# 6

[illegible]

Int# 6

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	

Int# 6

[illegible]

07/24/24
20:03:49

Int# 7

[illegible]

07/24/24
20:03:49

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	

07/24/24
20:03:49

Int# 9

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Int# 9

[illegible]

Int# 9

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	

Int# 9

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	

07/24/24
20:03:49

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	

07/24/24
20:03:49

Int# 11

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Int# 11

[illegible]

Int# 11

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	

Int# 11

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	

07/24/24
20:03:49

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	



Count Name: Washington Street with 75th Street
TMC
Site Code:
Start Date: 05/09/2024
Page No: 1

Turning Movement Data

Start Time	75th Street Eastbound					75th Street Westbound					Washington Street Northbound					Washington Street Southbound					Int. Total				
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total							
7:00 AM	0	71	298	18	0	387	0	14	189	46	0	249	0	35	219	70	0	324	0	56	89	19	0	164	1124
7:15 AM	0	110	303	19	0	432	0	16	228	90	0	334	0	37	234	93	0	364	0	42	115	28	0	185	1315
7:30 AM	0	96	249	24	0	369	0	24	276	121	0	421	0	54	191	79	0	324	0	48	150	20	0	218	1332
7:45 AM	0	149	251	39	0	439	0	23	269	80	0	372	0	51	188	80	0	319	0	62	131	42	0	235	1365
Hourly Total	0	426	1101	100	0	1627	0	77	962	337	0	1376	0	177	832	322	0	1331	0	208	485	109	0	802	5136
8:00 AM	0	73	276	33	1	382	0	25	217	68	0	310	0	43	279	68	1	390	1	51	94	26	0	172	1254
8:15 AM	0	50	315	41	0	406	0	31	229	76	0	336	0	41	228	59	0	328	0	31	90	34	0	155	1225
8:30 AM	0	46	293	31	0	370	0	17	238	72	0	327	0	33	186	58	0	277	0	50	80	22	0	152	1126
8:45 AM	0	50	278	28	0	356	0	27	246	99	0	372	0	39	179	48	0	266	0	40	82	21	0	143	1137
Hourly Total	0	219	1162	133	1	1514	0	100	930	315	0	1345	0	156	872	233	1	1261	1	172	346	103	0	622	4742
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	46	280	37	0	363	0	49	341	32	0	422	0	31	132	36	0	199	0	81	176	55	0	312	1296
4:15 PM	0	47	267	40	0	354	0	75	304	51	0	430	0	31	132	46	0	209	0	68	213	46	0	327	1320
4:30 PM	0	47	243	32	0	322	0	67	324	57	0	448	0	42	136	48	0	226	0	91	252	77	0	420	1416
4:45 PM	0	45	239	44	0	328	0	92	329	52	0	473	0	32	111	35	0	178	0	65	233	66	0	364	1343
Hourly Total	0	185	1029	153	0	1367	0	283	1298	192	0	1773	0	136	511	165	0	812	0	305	874	244	0	1423	5375
5:00 PM	0	45	256	53	0	354	0	103	321	51	0	475	0	33	117	43	0	193	0	118	239	65	0	422	1444
5:15 PM	0	43	290	30	0	363	0	66	356	74	0	496	0	35	146	43	0	224	0	93	231	66	0	390	1473
5:30 PM	0	51	281	37	0	369	0	105	354	70	0	529	0	32	142	41	0	215	0	85	266	51	0	402	1515
5:45 PM	0	49	261	32	0	342	0	71	319	66	0	456	0	34	137	51	0	222	0	82	228	41	0	351	1371
Hourly Total	0	188	1088	152	0	1428	0	345	1350	261	0	1956	0	134	542	178	0	854	0	378	964	223	0	1565	5803
Grand Total	0	1018	4380	538	1	5936	0	805	4540	1105	0	6450	0	603	2757	898	1	4258	1	1063	2669	679	0	4412	21056
Approach %	0.0	17.1	73.8	9.1	-	-	0.0	12.5	70.4	17.1	-	-	0.0	14.2	64.7	21.1	-	-	0.0	24.1	60.5	15.4	-	-	-
Total %	0.0	4.8	20.8	2.6	-	28.2	0.0	3.8	21.6	5.2	-	30.6	0.0	2.9	13.1	4.3	-	20.2	0.0	5.0	12.7	3.2	-	21.0	-
Lights	0	1009	4273	522	-	5804	0	797	4441	1075	-	6313	0	576	2896	887	-	4159	1	1030	2630	670	-	4331	20807
% Lights	-	99.1	97.6	97.0	-	97.8	-	99.0	97.8	97.3	-	97.9	-	95.5	97.8	98.8	-	97.7	100.0	96.9	98.5	98.7	-	98.2	97.9
Buses	0	5	14	3	-	22	0	3	11	22	-	36	0	5	39	2	-	46	0	18	22	1	-	41	145
% Buses	-	0.5	0.3	0.6	-	0.4	-	0.4	0.2	2.0	-	0.6	-	0.8	1.4	0.2	-	1.1	0.0	1.7	0.8	0.1	-	0.9	0.7
Single-Unit Trucks	0	2	51	7	-	60	0	5	41	8	-	54	0	10	20	8	-	38	0	12	13	5	-	30	182
% Single-Unit Trucks	-	0.2	1.2	1.3	-	1.0	-	0.6	0.9	0.7	-	0.8	-	1.7	0.7	0.9	-	0.9	0.0	1.1	0.5	0.7	-	0.7	0.9
Articulated Trucks	0	2	42	6	-	50	0	0	47	0	-	47	0	12	2	1	-	15	0	3	4	3	-	10	122
% Articulated Trucks	-	0.2	1.0	1.1	-	0.8	-	0.0	1.0	0.0	-	0.7	-	2.0	0.1	0.1	-	0.4	0.0	0.3	0.1	0.4	-	0.2	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Bicycles on Road																	
Pedestrians	-	-	-	-	1	-	-	0	-	-	-	1	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Washington Street with 75th Street
TMC
Site Code:
Start Date: 05/09/2024
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

Start Time	75th Street Eastbound							75th Street Westbound							Washington Street Northbound							Washington Street Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total		U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	110	303	19	0	432		0	16	228	90	0	334		0	37	234	93	0	364		0	42	115	28	0	185	1315
7:30 AM	0	96	249	24	0	369		0	24	276	121	0	421		0	54	191	79	0	324		0	48	150	20	0	218	1332
7:45 AM	0	149	251	39	0	439		0	23	269	80	0	372		0	51	188	80	0	319		0	62	131	42	0	235	1365
8:00 AM	0	73	276	33	1	382		0	25	217	68	0	310		0	43	279	68	1	390		1	51	94	26	0	172	1254
Total	0	428	1079	115	1	1622		0	88	990	359	0	1437		0	185	892	320	1	1397		1	203	490	116	0	810	5266
Approach %	0.0	26.4	66.5	7.1	-	-		0.0	6.1	68.9	25.0	-	-		0.0	13.2	63.9	22.9	-	-		0.1	25.1	60.5	14.3	-	-	-
Total %	0.0	8.1	20.5	2.2	-	30.8		0.0	1.7	18.8	6.8	-	27.3		0.0	3.5	16.9	6.1	-	26.5		0.0	3.9	9.3	2.2	-	15.4	-
PHF	0.000	0.718	0.890	0.737	-	0.924		0.000	0.880	0.897	0.742	-	0.853		0.000	0.856	0.799	0.860	-	0.896		0.250	0.819	0.817	0.690	-	0.862	0.964
Lights	0	419	1053	109	-	1581		0	88	963	354	-	1405		0	175	861	319	-	1355		1	192	481	114	-	788	5129
% Lights	-	97.9	97.6	94.8	-	97.5		-	100.0	97.3	98.6	-	97.8		-	94.6	96.5	99.7	-	97.0		100.0	94.6	98.2	98.3	-	97.3	97.4
Buses	0	5	7	3	-	15		0	0	2	3	-	5		0	1	19	1	-	21		0	6	5	1	-	12	53
% Buses	-	1.2	0.6	2.6	-	0.9		-	0.0	0.2	0.8	-	0.3		-	0.5	2.1	0.3	-	1.5		0.0	3.0	1.0	0.9	-	1.5	1.0
Single-Unit Trucks	0	2	6	1	-	9		0	0	13	2	-	15		0	5	11	0	-	16		0	3	4	1	-	8	48
% Single-Unit Trucks	-	0.5	0.6	0.9	-	0.6		-	0.0	1.3	0.6	-	1.0		-	2.7	1.2	0.0	-	1.1		0.0	1.5	0.8	0.9	-	1.0	0.9
Articulated Trucks	0	2	13	2	-	17		0	0	12	0	-	12		0	4	1	0	-	5		0	2	0	0	-	2	36
% Articulated Trucks	-	0.5	1.2	1.7	-	1.0		-	0.0	1.2	0.0	-	0.8		-	2.2	0.1	0.0	-	0.4		0.0	1.0	0.0	0.0	-	0.2	0.7
Bicycles on Road	0	0	0	0	-	0		0	0	0	0	-	0		0	0	0	0	-	0		0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0		-	0.0	0.0	0.0	-	0.0		0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	1	-		-	-	-	-	0	-		-	-	-	-	1	-		-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-		-	-	-	-	-	100.0		-	-	-	-	100.0	-		-	-	-	-	-	-	-



Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: Washington Street with 75th Street
TMC
Site Code:
Start Date: 05/09/2024
Page No: 4

[illegible]

Site Plan

ITE Trip Generation Summary Sheets

Day Care Center (565)

Vehicle Trip Ends vs: Students
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 14

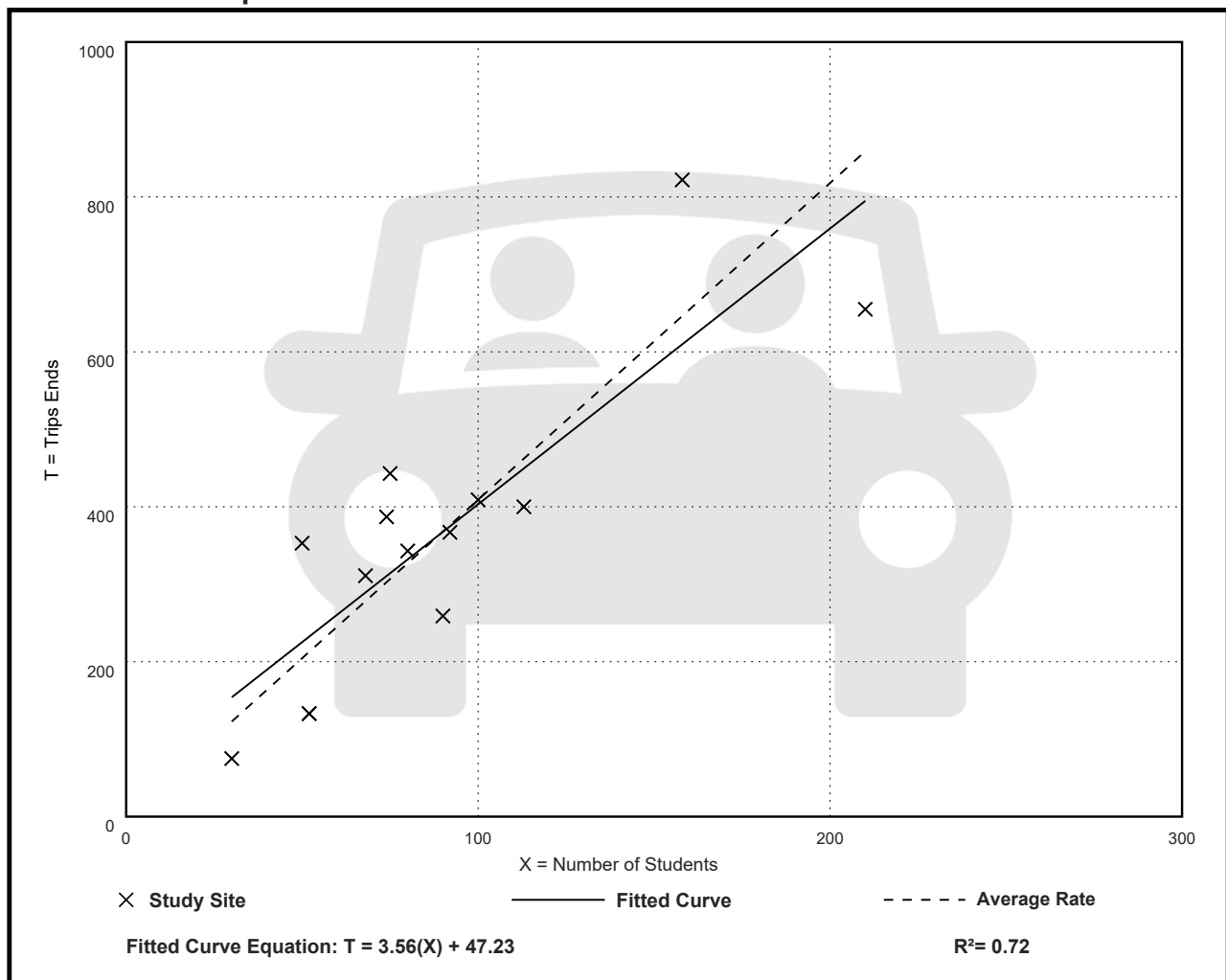
Avg. Num. of Students: 89

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
4.09	2.50 - 7.06	1.21

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 75

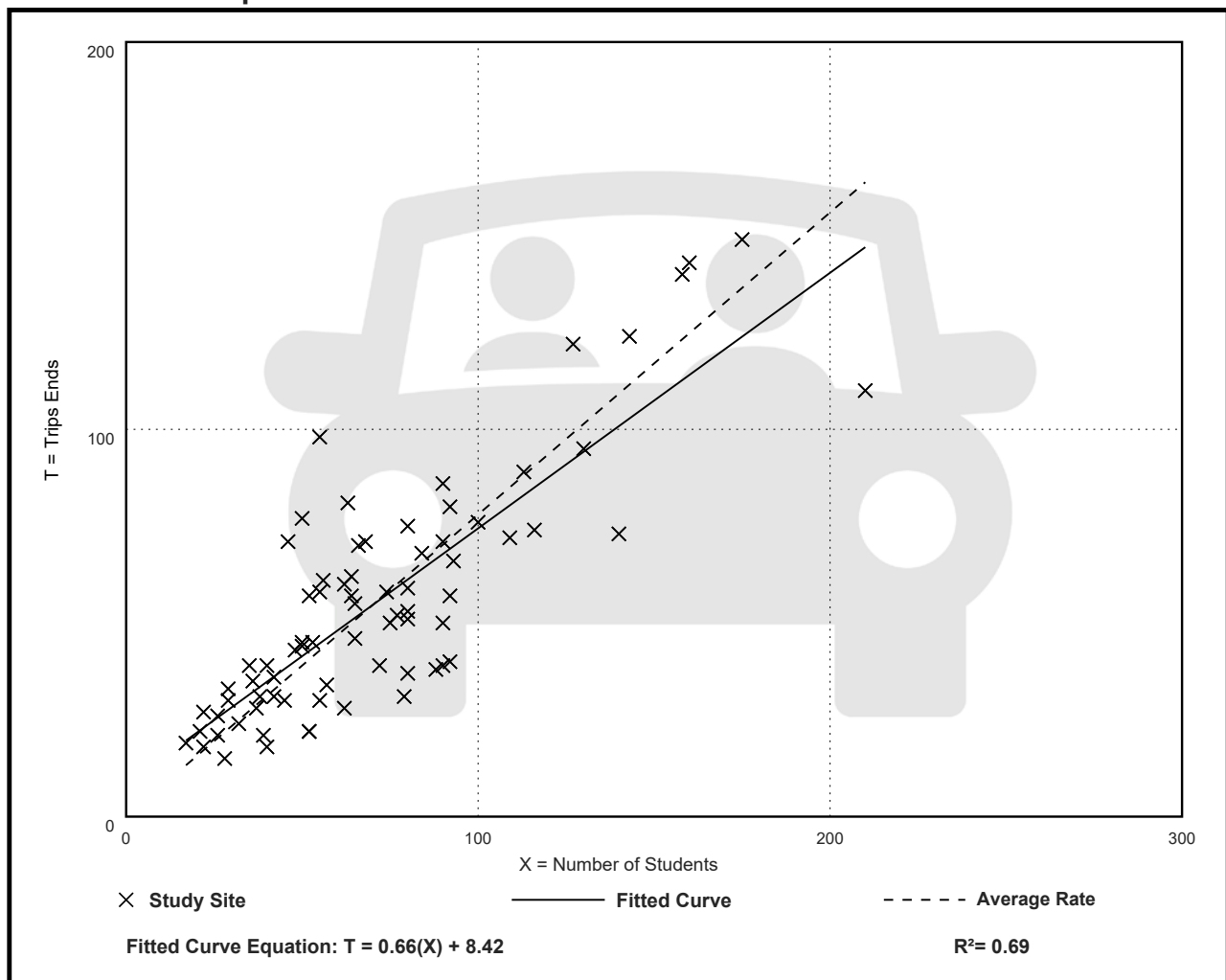
Avg. Num. of Students: 71

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.78	0.39 - 1.78	0.25

Data Plot and Equation



Day Care Center (565)

Vehicle Trip Ends vs: Students

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 75

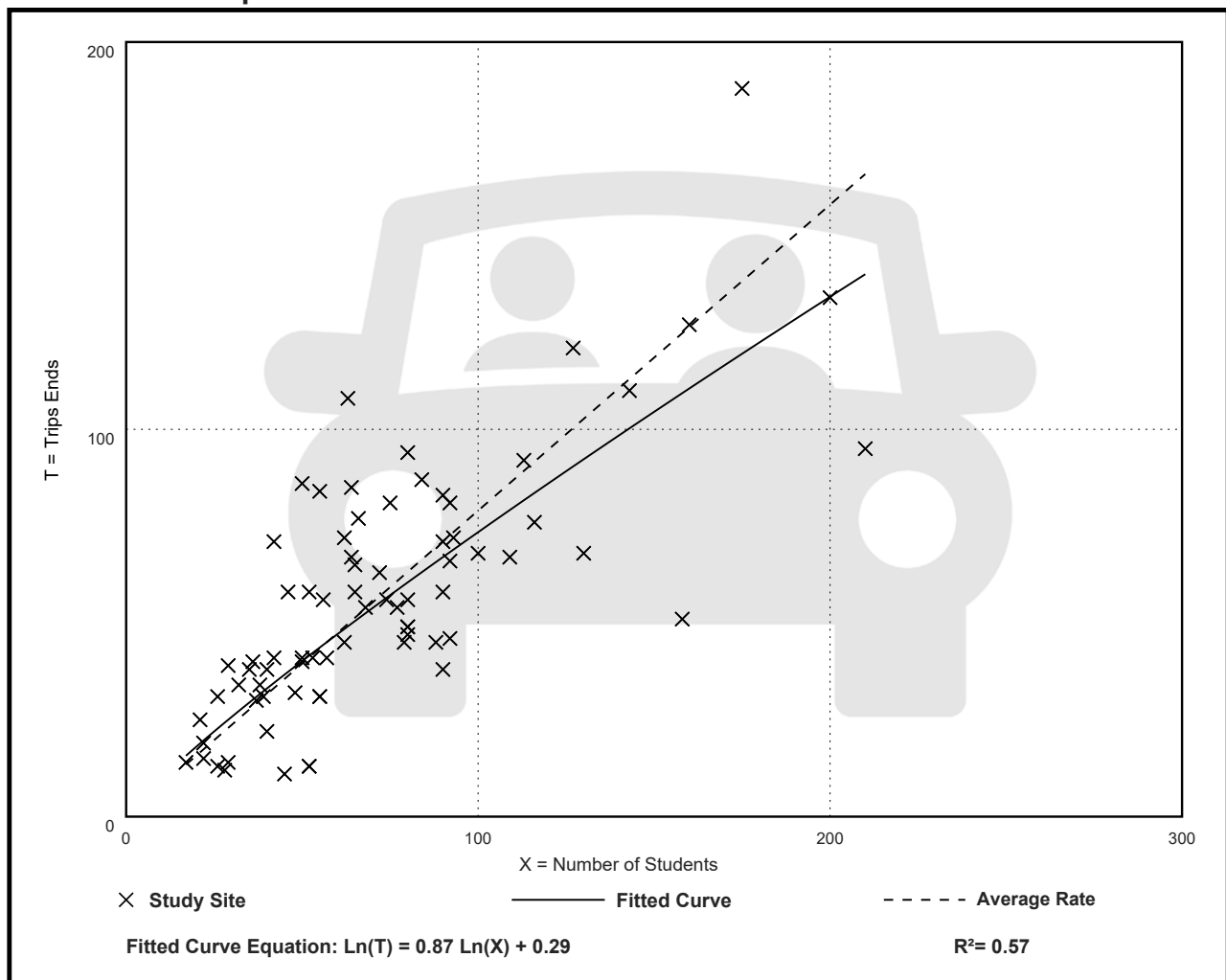
Avg. Num. of Students: 72

Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.72	0.30

Data Plot and Equation



CMAP 2050 Projections Letter



Chicago Metropolitan
Agency for Planning

433 West Van Buren Street, Suite 450
Chicago, IL 60607
cmap.illinois.gov | 312-454-0400

July 23, 2024

Ryan May
Project Coordinator
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: 25W710 75th St
IDOT

Dear Ms. May:

In response to a request made on your behalf and dated July 10, 2024, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT (2020)	Year 2050 ADT
Washington Street, North of 75th Street	16,800	19,100
Washington Street, South of 75th Street	14,100	16,300
75th Street, West of Washington Street	30,800	34,300
75th Street, East of Washington St	31,300	34,700
Oxford Lane (N of 75th St)	325	360
Oxford Lane (S of 75th St)	625	700
75th Street, East of Naper Boulevard	29,000	31,900
Naper Boulevard, North of 75th Street	15,400	17,700
Naper Boulevard, South of 75th Street	12,100	14,900

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2024 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments. If you have any questions, please call me at (312) 386-8806 or email me at jrodriguez@cmap.illinois.gov

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Schwarrz (Strand Associates)
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Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10
B	Good progression, with more vehicles stopping than for Level of Service A.	$> 10 - 20$
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	$> 20 - 35$
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	$> 35 - 55$
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	$> 55 - 80$
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80
Unsignalized Intersections		
Level of Service		Average Total Delay (sec/veh)
A		0 - 10
B		$> 10 - 15$
C		$> 15 - 25$
D		$> 25 - 35$
E		$> 35 - 50$
F		> 50
Source: <i>Highway Capacity Manual</i> , 6 th Edition.		

Capacity Analysis Summary Sheets
Existing Weekday Morning Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  		  	  		 		
Traffic Volume (vph)	428	1079	115	88	990	359	185	892	320	204	490	116
Future Volume (vph)	428	1079	115	88	990	359	185	892	320	204	490	116
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	330		250	240		410	225		190	300		300
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	290			300			200			190		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1538	3502	5301	1599	3335	5301	1615	3335	5353	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1538	3502	5301	1599	3335	5301	1615	3335	5353	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1378			663			966			1184	
Travel Time (s)		20.9			10.0			16.5			20.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	0%	3%	1%	5%	3%	0%	5%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	1124	120	92	1031	374	193	929	333	213	510	121
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1!	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Minimum Split (s)	9.5	64.0	9.5	9.5	54.0	9.5	9.5	51.0	9.5	9.5	51.0	9.5
Total Split (s)	27.0	64.0	18.0	17.0	54.0	18.0	18.0	51.0	17.0	18.0	51.0	27.0
Total Split (%)	18.0%	42.7%	12.0%	11.3%	36.0%	12.0%	12.0%	34.0%	11.3%	12.0%	34.0%	18.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	23.7	68.9	88.0	9.3	54.5	73.9	12.6	36.9	52.7	12.9	37.2	67.4
Actuated g/C Ratio	0.16	0.46	0.59	0.06	0.36	0.49	0.08	0.25	0.35	0.09	0.25	0.45
v/c Ratio	0.82	0.46	0.13	0.42	0.54	0.48	0.69	0.71	0.59	0.74	0.38	0.17
Control Delay	74.1	29.5	15.7	73.3	40.1	29.0	79.9	54.6	43.5	83.0	47.2	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	29.5	15.7	73.3	40.1	29.0	79.9	54.6	43.5	83.0	47.2	24.1
LOS	E	C	B	E	D	C	E	D	D	F	D	C
Approach Delay		40.3			39.4			55.4			52.9	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	218	272	50	45	297	241	95	308	267	106	154	69
Queue Length 95th (ft)	#300	354	96	75	364	361	140	337	336	152	179	105

Lanes, Volumes, Timings 3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250	240		410	225		190	300		300
Base Capacity (vph)	555	2457	911	291	1925	794	300	1572	602	300	1588	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.46	0.13	0.32	0.54	0.47	0.64	0.59	0.55	0.71	0.32	0.17

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 7.5 (5%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 46.0

Intersection LOS: D

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street

 Ø1	 Ø2(R)	 Ø3	 Ø4
17 s	64 s	18 s	51 s
 Ø5	 Ø6(R)	 Ø7	 Ø8
27 s	54 s	18 s	51 s

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	498	1254	60	58	959	206	145	932	63	117	347
Future Volume (vph)	7	498	1254	60	58	959	206	145	932	63	117	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.993				0.850		0.990			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3467	3507	0	3400	3689	1568	1770	3541	0	1752	3689
Flt Permitted		0.950			0.950			0.424			0.097	
Satd. Flow (perm)	0	3467	3507	0	3400	3689	1568	790	3541	0	179	3689
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			4				127		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	7%	3%	3%	3%	2%	1%	0%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	1369	0	60	999	215	151	1037	0	122	361
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	34.0	34.0	67.0		18.0	51.0	51.0	21.0	53.0		12.0	44.0
Total Split (%)	22.7%	22.7%	44.7%		12.0%	34.0%	34.0%	14.0%	35.3%		8.0%	29.3%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		27.2	68.9		8.0	47.8	47.8	60.8	45.9		54.1	41.4
Actuated g/C Ratio		0.18	0.46		0.05	0.32	0.32	0.41	0.31		0.36	0.28
v/c Ratio		0.84	0.85		0.33	0.85	0.37	0.37	0.95		0.76	0.35
Control Delay		71.8	42.9		72.8	56.3	18.4	31.3	69.0		60.4	45.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		71.8	42.9		72.8	56.3	18.4	31.3	69.0		60.4	45.3
LOS		E	D		E	E	B	C	E		E	D
Approach Delay			50.9			50.7			64.2			36.5
Approach LOS			D			D			E			D
Queue Length 50th (ft)		256	634		29	491	64	94	520		75	149
Queue Length 95th (ft)		320	761		54	#621	141	147	#657		#179	205

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	211
Future Volume (vph)	211
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1599
Flt Permitted	
Satd. Flow (perm)	1599
Right Turn on Red	Yes
Satd. Flow (RTOR)	135
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	1%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	220
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	34.0
Total Split (%)	22.7%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	75.0
Actuated g/C Ratio	0.50
v/c Ratio	0.25
Control Delay	8.7
Queue Delay	0.0
Total Delay	8.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	42
Queue Length 95th (ft)	96

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		693	1612		317	1175	585	442	1101		161	1017
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.76	0.85		0.19	0.85	0.37	0.34	0.94		0.76	0.35

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 84 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 52.0

Intersection LOS: D

Intersection Capacity Utilization 91.7%

ICU Level of Service F

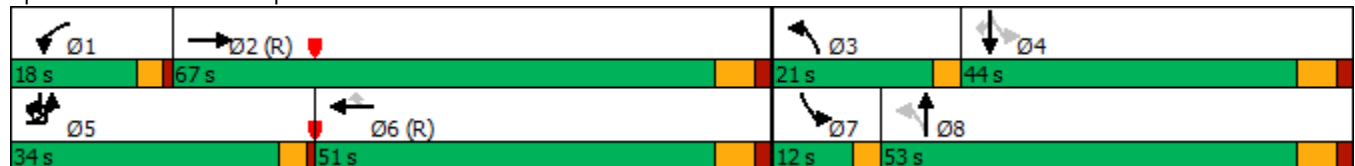
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street



Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	895
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.25
Intersection Summary	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	1429	4	0	11
Future Vol, veh/h	0	0	1429	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1570	4	0	12
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	787
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	334
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	334
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		16.2		
HCM LOS	C					
Minor Lane/Major Mvmt		EBT	WBT	WBR	SBLn1	
Capacity (veh/h)		-	-	-	334	
HCM Lane V/C Ratio		-	-	-	0.036	
HCM Control Delay (s)		-	-	-	16.2	
HCM Lane LOS		-	-	-	C	
HCM 95th %tile Q(veh)		-	-	-	0.1	

Capacity Analysis Summary Sheets
Existing Weekday Evening Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  		 	  		  	  	
Traffic Volume (vph)	188	1088	152	345	1350	261	134	542	178	378	964	223
Future Volume (vph)	188	1088	152	345	1350	261	134	542	178	378	964	223
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	330		250	240		410	225		190	300		300
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	290			300			200			190		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5406	1599	3502	5406	1615	3467	5460	1599	3467	5460	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	5406	1599	3502	5406	1615	3467	5460	1599	3467	5460	1615
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1378			663			966			1184	
Travel Time (s)		20.9			10.0			16.5			20.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	1%	0%	1%	1%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	1133	158	359	1406	272	140	565	185	394	1004	232
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1!	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Minimum Split (s)	9.5	64.0	9.5	9.5	54.0	9.5	9.5	39.0	9.5	9.5	51.0	9.5
Total Split (s)	21.0	64.0	18.0	27.0	70.0	30.0	18.0	39.0	27.0	30.0	51.0	21.0
Total Split (%)	13.1%	40.0%	11.3%	16.9%	43.8%	18.8%	11.3%	24.4%	16.9%	18.8%	31.9%	13.1%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effect Green (s)	13.9	66.1	84.0	20.7	72.9	102.0	11.5	28.6	55.8	22.7	39.7	60.2
Actuated g/C Ratio	0.09	0.41	0.52	0.13	0.46	0.64	0.07	0.18	0.35	0.14	0.25	0.38
v/c Ratio	0.64	0.51	0.19	0.79	0.57	0.26	0.56	0.58	0.33	0.80	0.74	0.38
Control Delay	80.5	37.1	22.1	80.7	34.3	14.2	80.6	62.5	39.3	79.4	58.8	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	37.1	22.1	80.7	34.3	14.2	80.6	62.5	39.3	79.4	58.8	37.4
LOS	F	D	C	F	C	B	F	E	D	E	E	D
Approach Delay		41.2			39.8			60.5			60.7	
Approach LOS		D			D			E			E	
Queue Length 50th (ft)	104	327	87	189	397	119	74	200	141	208	356	175
Queue Length 95th (ft)	146	401	143	246	491	189	111	238	201	264	395	236

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250	240		410	225		190	300		300
Base Capacity (vph)	361	2231	860	497	2461	1058	292	1109	577	552	1518	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.51	0.18	0.72	0.57	0.26	0.48	0.51	0.32	0.71	0.66	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 48.8

Intersection LOS: D

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
27 s	64 s	18 s	51 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
21 s	70 s	30 s	39 s

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	18	290	1146	89	224	1277	142	125	427	34	143	730
Future Volume (vph)	18	290	1146	89	224	1277	142	125	427	34	143	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.989				0.850		0.989			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3502	3537	0	3502	3762	1615	1805	3570	0	1805	3800
Flt Permitted		0.950			0.950			0.122			0.251	
Satd. Flow (perm)	0	3502	3537	0	3502	3762	1615	232	3570	0	477	3800
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			6				92		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	318	1273	0	231	1316	146	129	475	0	147	753
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	31.0	31.0	69.0		31.0	69.0	69.0	14.0	40.0		20.0	46.0
Total Split (%)	19.4%	19.4%	43.1%		19.4%	43.1%	43.1%	8.8%	25.0%		12.5%	28.8%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		20.5	77.2		15.9	72.6	72.6	46.8	32.6		52.8	36.3
Actuated g/C Ratio		0.13	0.48		0.10	0.45	0.45	0.29	0.20		0.33	0.23
v/c Ratio		0.71	0.74		0.67	0.77	0.19	0.75	0.65		0.53	0.87
Control Delay		75.6	37.8		78.8	41.8	12.0	64.1	62.3		45.3	71.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		75.6	37.8		78.8	41.8	12.0	64.1	62.3		45.3	71.6
LOS		E	D		E	D	B	E	E		D	E
Approach Delay			45.4			44.3			62.7			58.0
Approach LOS			D			D			E			E
Queue Length 50th (ft)		167	567		122	615	32	95	238		110	400
Queue Length 95th (ft)		212	708		165	773	86	#172	303		167	472

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	387
Future Volume (vph)	387
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1615
Flt Permitted	
Satd. Flow (perm)	1615
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.97
Heavy Vehicles (%)	0%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	399
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	31.0
Total Split (%)	19.4%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	63.2
Actuated g/C Ratio	0.40
v/c Ratio	0.60
Control Delay	37.0
Queue Delay	0.0
Total Delay	37.0
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	290
Queue Length 95th (ft)	372

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		590	1709		590	1706	782	176	754		300	938
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.54	0.74		0.39	0.77	0.19	0.73	0.63		0.49	0.80

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 137.6 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 50.2

Intersection LOS: D

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
31 s	69 s	14 s	46 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
31 s	69 s	20 s	40 s

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	728
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.55
Intersection Summary	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	1943	2	0	7
Future Vol, veh/h	0	0	1943	2	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1983	2	0	7
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	993
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	244
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	244
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		20.2		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	244		
HCM Lane V/C Ratio	-	-	-	0.029		
HCM Control Delay (s)	-	-	-	20.2		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0.1		

Capacity Analysis Summary Sheets
Year 2030 No-Build Weekday Morning Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  			 	  		 	  		 	  
Traffic Volume (vph)	445	1123	120	2	92	1031	374	192	928	333	212	510
Future Volume (vph)	445	1123	120	2	92	1031	374	192	928	333	212	510
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Storage Length (ft)	330		250		240		410	225		190	300	
Storage Lanes	2		1		2		1	2		1	2	
Taper Length (ft)	290				300			200			190	
Lane Util. Factor	0.97	0.91	1.00	0.91	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	3433	5353	1538	0	3500	5301	1599	3335	5301	1615	3335	5353
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	5353	1538	0	3500	5301	1599	3335	5301	1615	3335	5353
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		45				45			40			40
Link Distance (ft)		1378				663			966			1184
Travel Time (s)		20.9				10.0			16.5			20.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	2%	0%	3%	1%	5%	3%	0%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	464	1170	125	0	98	1074	390	200	967	347	221	531
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	3	1!	1	6	7	3	8	1!	7	4
Permitted Phases			2				6			8		
Detector Phase	5	2	3	1	1	6	7	3	8	1	7	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0
Minimum Split (s)	9.5	64.0	9.5	9.5	9.5	54.0	9.5	9.5	51.0	9.5	9.5	51.0
Total Split (s)	27.0	64.0	18.0	17.0	17.0	54.0	18.0	18.0	51.0	17.0	18.0	51.0
Total Split (%)	18.0%	42.7%	12.0%	11.3%	11.3%	36.0%	12.0%	12.0%	34.0%	11.3%	12.0%	34.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5
All-Red Time (s)	1.5	2.0	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5		4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	None	C-Min	None	None	None	None	None	None
Act Effect Green (s)	24.0	67.2	86.4		9.6	52.8	72.3	12.7	38.2	54.2	13.1	38.5
Actuated g/C Ratio	0.16	0.45	0.58		0.06	0.35	0.48	0.08	0.25	0.36	0.09	0.26
v/c Ratio	0.85	0.49	0.14		0.44	0.58	0.51	0.71	0.72	0.60	0.76	0.39
Control Delay	75.6	31.1	16.5		73.4	41.9	30.6	80.9	53.9	42.7	84.0	46.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	31.1	16.5		73.4	41.9	30.6	80.9	53.9	42.7	84.0	46.4
LOS	E	C	B		E	D	C	F	D	D	F	D
Approach Delay		41.8				41.1			54.9			52.6
Approach LOS		D				D			D			D
Queue Length 50th (ft)	225	294	54		48	323	266	99	318	275	110	158
Queue Length 95th (ft)	#330	377	102		79	382	380	144	349	347	#163	185

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

Lane Group	SBR
Left Configurations	
Traffic Volume (vph)	121
Future Volume (vph)	121
Ideal Flow (vphpl)	1900
Storage Length (ft)	300
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	2%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	126
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.5
Total Split (s)	27.0
Total Split (%)	18.0%
Yellow Time (s)	3.0
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	69.0
Actuated g/C Ratio	0.46
v/c Ratio	0.17
Control Delay	23.5
Queue Delay	0.0
Total Delay	23.5
LOS	C
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	69
Queue Length 95th (ft)	108

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250		240		410	225		190	300	
Base Capacity (vph)	556	2398	893		291	1864	775	300	1572	615	300	1588
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.49	0.14		0.34	0.58	0.50	0.67	0.62	0.56	0.74	0.33

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 7.5 (5%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 46.7

Intersection LOS: D

Intersection Capacity Utilization 73.0%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street

				
Ø1	Ø2(R)		Ø3	Ø4
17 s	64 s		18 s	51 s
				
Ø5	Ø6(R)		Ø7	Ø8
27 s	54 s		18 s	51 s

Lanes, Volumes, Timings
3: Washington Street & 75th Street

07/30/2024



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	300
Base Capacity (vph)	732
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.17
Intersection Summary	

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	519	1305	62	60	997	214	151	969	66	122	361
Future Volume (vph)	8	519	1305	62	60	997	214	151	969	66	122	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.993				0.850		0.990			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3468	3507	0	3400	3689	1568	1770	3541	0	1752	3689
Flt Permitted		0.950			0.950			0.411			0.096	
Satd. Flow (perm)	0	3468	3507	0	3400	3689	1568	766	3541	0	177	3689
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			4				127		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	7%	3%	3%	3%	2%	1%	0%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	549	1424	0	63	1039	223	157	1078	0	127	376
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	34.0	34.0	67.0		18.0	51.0	51.0	21.0	53.0		12.0	44.0
Total Split (%)	22.7%	22.7%	44.7%		12.0%	34.0%	34.0%	14.0%	35.3%		8.0%	29.3%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		27.9	68.3		8.2	46.6	46.6	61.5	46.5		54.1	41.6
Actuated g/C Ratio		0.19	0.46		0.05	0.31	0.31	0.41	0.31		0.36	0.28
v/c Ratio		0.85	0.89		0.34	0.91	0.39	0.39	0.98		0.80	0.37
Control Delay		72.3	46.1		72.9	61.8	19.5	31.4	73.2		67.1	45.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		72.3	46.1		72.9	61.8	19.5	31.4	73.2		67.1	45.5
LOS		E	D		E	E	B	C	E		E	D
Approach Delay			53.4			55.2			67.9			38.1
Approach LOS			D			E			E			D
Queue Length 50th (ft)		267	679		31	524	71	98	549		78	156
Queue Length 95th (ft)		335	#857		56	#663	150	152	#702		#193	214

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	219
Future Volume (vph)	219
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1599
Flt Permitted	
Satd. Flow (perm)	1599
Right Turn on Red	Yes
Satd. Flow (RTOR)	128
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	1%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	228
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	34.0
Total Split (%)	22.7%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	76.0
Actuated g/C Ratio	0.51
v/c Ratio	0.26
Control Delay	9.7
Queue Delay	0.0
Total Delay	9.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	49
Queue Length 95th (ft)	107

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		693	1600		317	1146	574	437	1101		158	1022
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.79	0.89		0.20	0.91	0.39	0.36	0.98		0.80	0.37

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 84 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 55.1

Intersection LOS: E

Intersection Capacity Utilization 94.5%

ICU Level of Service F

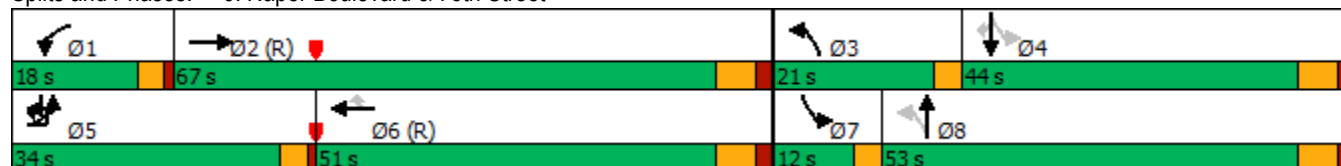
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street



Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	893
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.26
Intersection Summary	

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	1490	4	0	11
Future Vol, veh/h	0	0	1490	4	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1637	4	0	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 821
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 318
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 318
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	318
HCM Lane V/C Ratio	-	-	-	0.038
HCM Control Delay (s)	-	-	-	16.8
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.1

Capacity Analysis Summary Sheets
Year 2030 No-Build Weekday Evening Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  			 	  		 	  		 	 
Traffic Volume (vph)	196	1135	158	3	359	1406	272	139	564	186	394	1003
Future Volume (vph)	196	1135	158	3	359	1406	272	139	564	186	394	1003
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Storage Length (ft)	330		250		240		410	225		190	300	
Storage Lanes	2		1		2		1	2		1	2	
Taper Length (ft)	290				300			200			190	
Lane Util. Factor	0.97	0.91	1.00	0.91	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	3502	5406	1599	0	3501	5406	1615	3467	5460	1599	3467	5460
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3502	5406	1599	0	3501	5406	1615	3467	5460	1599	3467	5460
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		45				45			40			40
Link Distance (ft)		1378				663			966			1184
Travel Time (s)		20.9				10.0			16.5			20.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	2%	0%	1%	0%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	1182	165	0	377	1465	283	145	588	194	410	1045
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	3	1!	1	6	7	3	8	1!	7	4
Permitted Phases			2				6			8		
Detector Phase	5	2	3	1	1	6	7	3	8	1	7	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0
Minimum Split (s)	9.5	64.0	9.5	9.5	9.5	54.0	9.5	9.5	39.0	9.5	9.5	51.0
Total Split (s)	21.0	64.0	18.0	27.0	27.0	70.0	30.0	18.0	39.0	27.0	30.0	51.0
Total Split (%)	13.1%	40.0%	11.3%	16.9%	16.9%	43.8%	18.8%	11.3%	24.4%	16.9%	18.8%	31.9%
Yellow Time (s)	3.0	4.5	3.0	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5
All-Red Time (s)	1.5	2.0	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5		4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	None	C-Min	None	None	None	None	None	None
Act Effct Green (s)	14.2	64.3	82.4		21.0	71.0	100.8	11.7	29.5	57.0	23.2	41.1
Actuated g/C Ratio	0.09	0.40	0.52		0.13	0.44	0.63	0.07	0.18	0.36	0.14	0.26
v/c Ratio	0.66	0.54	0.20		0.82	0.61	0.28	0.58	0.58	0.34	0.82	0.74
Control Delay	80.7	38.8	22.9		82.9	36.3	14.9	80.8	61.9	38.8	79.7	58.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.7	38.8	22.9		82.9	36.3	14.9	80.8	61.9	38.8	79.7	58.1
LOS	F	D	C		F	D	B	F	E	D	E	E
Approach Delay		42.7				41.7			60.0			60.2
Approach LOS		D				D			E			E
Queue Length 50th (ft)	108	355	95		198	433	127	76	209	147	214	368
Queue Length 95th (ft)	152	422	149		259	517	197	115	247	211	275	413

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	232
Future Volume (vph)	232
Ideal Flow (vphpl)	1900
Storage Length (ft)	300
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1615
Flt Permitted	
Satd. Flow (perm)	1615
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	0%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	242
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.5
Total Split (s)	21.0
Total Split (%)	13.1%
Yellow Time (s)	3.0
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	61.8
Actuated g/C Ratio	0.39
v/c Ratio	0.39
Control Delay	36.6
Queue Delay	0.0
Total Delay	36.6
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	180
Queue Length 95th (ft)	246

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250		240		410	225		190	300	
Base Capacity (vph)	361	2170	842		492	2399	1039	292	1109	584	552	1519
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.54	0.20		0.77	0.61	0.27	0.50	0.53	0.33	0.74	0.69

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 49.6

Intersection LOS: D

Intersection Capacity Utilization 73.5%

ICU Level of Service D

Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
27 s	64 s	18 s	51 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
21 s	70 s	30 s	39 s



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	300
Base Capacity (vph)	647
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.37
Intersection Summary	

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	303	1194	93	233	1330	148	131	444	35	149	759
Future Volume (vph)	24	303	1194	93	233	1330	148	131	444	35	149	759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.989				0.850		0.989			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3502	3537	0	3502	3762	1615	1805	3570	0	1805	3800
Flt Permitted		0.950			0.950			0.120			0.238	
Satd. Flow (perm)	0	3502	3537	0	3502	3762	1615	228	3570	0	452	3800
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			6				92		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	1327	0	240	1371	153	135	494	0	154	782
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	31.0	31.0	69.0		31.0	69.0	69.0	14.0	40.0		20.0	46.0
Total Split (%)	19.4%	19.4%	43.1%		19.4%	43.1%	43.1%	8.8%	25.0%		12.5%	28.8%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		21.3	75.9		16.3	70.9	70.9	47.6	33.2		53.7	37.0
Actuated g/C Ratio		0.13	0.47		0.10	0.44	0.44	0.30	0.21		0.34	0.23
v/c Ratio		0.72	0.79		0.68	0.82	0.20	0.78	0.66		0.56	0.89
Control Delay		75.5	40.5		78.8	45.0	13.0	67.0	62.4		45.9	72.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		75.5	40.5		78.8	45.0	13.0	67.0	62.4		45.9	72.5
LOS		E	D		E	D	B	E	E		D	E
Approach Delay			47.6			46.8			63.4			58.5
Approach LOS			D			D			E			E
Queue Length 50th (ft)		176	618		126	672	38	99	247		114	414
Queue Length 95th (ft)		224	760		171	#866	94	#189	314		174	493

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	403
Future Volume (vph)	403
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1615
Flt Permitted	
Satd. Flow (perm)	1615
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.97
Heavy Vehicles (%)	0%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	415
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	31.0
Total Split (%)	19.4%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	64.8
Actuated g/C Ratio	0.40
v/c Ratio	0.61
Control Delay	36.7
Queue Delay	0.0
Total Delay	36.7
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	300
Queue Length 95th (ft)	389

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		590	1681		590	1667	767	176	758		296	938
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.57	0.79		0.41	0.82	0.20	0.77	0.65		0.52	0.83

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 137.6 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 51.9

Intersection LOS: D

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street

			
Ø1	Ø2 (R)	Ø3	Ø4
31 s	69 s	14 s	46 s
			
Ø5	Ø6 (R)	Ø7	Ø8
31 s	69 s	20 s	40 s



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	736
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.56
Intersection Summary	

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	2027	2	0	7
Future Vol, veh/h	0	0	2027	2	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2068	2	0	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1035
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 229
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 229
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	229
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	-	21.2
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.1

Capacity Analysis Summary Sheets
Year 2030 Total Projected Weekday Morning Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  			 	  		 	  		 	
Traffic Volume (vph)	445	1147	120	23	99	1052	395	192	928	333	212	510
Future Volume (vph)	445	1147	120	23	99	1052	395	192	928	333	212	510
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Storage Length (ft)	330		250		240		410	225		190	300	
Storage Lanes	2		1		2		1	2		1	2	
Taper Length (ft)	290				300			200			190	
Lane Util. Factor	0.97	0.91	1.00	0.91	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	3433	5353	1538	0	3489	5301	1599	3335	5301	1615	3335	5353
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	5353	1538	0	3489	5301	1599	3335	5301	1615	3335	5353
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		45				45			40			40
Link Distance (ft)		1378				663			966			1184
Travel Time (s)		20.9				10.0			16.5			20.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	2%	0%	3%	1%	5%	3%	0%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	464	1195	125	0	127	1096	411	200	967	347	221	531
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	3	1!	1	6	7	3	8	1!	7	4
Permitted Phases			2				6			8		
Detector Phase	5	2	3	1	1	6	7	3	8	1	7	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0
Minimum Split (s)	9.5	64.0	9.5	9.5	9.5	54.0	9.5	9.5	51.0	9.5	9.5	51.0
Total Split (s)	27.0	64.0	18.0	17.0	17.0	54.0	18.0	18.0	51.0	17.0	18.0	51.0
Total Split (%)	18.0%	42.7%	12.0%	11.3%	11.3%	36.0%	12.0%	12.0%	34.0%	11.3%	12.0%	34.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5
All-Red Time (s)	1.5	2.0	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5		4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	None	C-Min	None	None	None	None	None	None
Act Effct Green (s)	24.0	66.2	85.4		10.5	52.8	72.3	12.7	38.2	55.2	13.1	38.5
Actuated g/C Ratio	0.16	0.44	0.57		0.07	0.35	0.48	0.08	0.25	0.37	0.09	0.26
v/c Ratio	0.85	0.51	0.14		0.52	0.59	0.53	0.71	0.72	0.58	0.76	0.39
Control Delay	75.6	32.0	16.9		74.7	42.2	31.4	80.9	53.9	41.7	84.0	46.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	32.0	16.9		74.7	42.2	31.4	80.9	53.9	41.7	84.0	46.4
LOS	E	C	B		E	D	C	F	D	D	F	D
Approach Delay		42.3				42.0			54.7			52.6
Approach LOS		D				D			D			D
Queue Length 50th (ft)	225	307	55		62	331	285	99	318	272	110	158
Queue Length 95th (ft)	#330	388	103		97	391	406	144	349	346	#163	185

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

Lane Group	SBR
Left Configurations	
Traffic Volume (vph)	121
Future Volume (vph)	121
Ideal Flow (vphpl)	1900
Storage Length (ft)	300
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	2%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	126
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.5
Total Split (s)	27.0
Total Split (%)	18.0%
Yellow Time (s)	3.0
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	69.0
Actuated g/C Ratio	0.46
v/c Ratio	0.17
Control Delay	23.5
Queue Delay	0.0
Total Delay	23.5
LOS	C
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	69
Queue Length 95th (ft)	108

Lanes, Volumes, Timings 3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250		240		410	225		190	300	
Base Capacity (vph)	556	2363	884		290	1864	775	300	1572	615	300	1588
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.51	0.14		0.44	0.59	0.53	0.67	0.62	0.56	0.74	0.33

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 7.5 (5%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 47.0

Intersection LOS: D

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street

				
Ø1	Ø2(R)		Ø3	Ø4
17 s	64 s		18 s	51 s
				
Ø5	Ø6(R)		Ø7	Ø8
27 s	54 s		18 s	51 s



Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	300
Base Capacity (vph)	732
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.17
Intersection Summary	

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	32	519	1326	62	60	1021	214	159	969	66	122	361
Future Volume (vph)	32	519	1326	62	60	1021	214	159	969	66	122	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.993				0.850		0.990			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3469	3507	0	3400	3689	1568	1770	3541	0	1752	3689
Flt Permitted		0.950			0.950			0.410			0.097	
Satd. Flow (perm)	0	3469	3507	0	3400	3689	1568	764	3541	0	179	3689
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			4				127		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	7%	3%	3%	3%	2%	1%	0%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	574	1446	0	63	1064	223	166	1078	0	127	376
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	34.0	34.0	67.0		18.0	51.0	51.0	21.0	53.0		12.0	44.0
Total Split (%)	22.7%	22.7%	44.7%		12.0%	34.0%	34.0%	14.0%	35.3%		8.0%	29.3%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		28.5	68.3		8.2	46.0	46.0	61.6	46.5		53.7	41.2
Actuated g/C Ratio		0.19	0.46		0.05	0.31	0.31	0.41	0.31		0.36	0.27
v/c Ratio		0.87	0.90		0.34	0.94	0.39	0.41	0.98		0.80	0.37
Control Delay		73.8	47.3		72.9	66.4	19.6	31.8	73.2		66.9	45.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		73.8	47.3		72.9	66.4	19.6	31.8	73.2		66.9	45.9
LOS		E	D		E	E	B	C	E		E	D
Approach Delay			54.9			59.0			67.7			38.1
Approach LOS			D			E			E			D
Queue Length 50th (ft)		280	696		31	543	71	104	549		78	157
Queue Length 95th (ft)		351	#881		56	#690	150	161	#702		#192	214

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	235
Future Volume (vph)	235
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1599
Flt Permitted	
Satd. Flow (perm)	1599
Right Turn on Red	Yes
Satd. Flow (RTOR)	121
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	1%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	245
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	34.0
Total Split (%)	22.7%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	76.1
Actuated g/C Ratio	0.51
v/c Ratio	0.28
Control Delay	11.3
Queue Delay	0.0
Total Delay	11.3
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	62
Queue Length 95th (ft)	124

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		693	1600		317	1132	569	436	1101		158	1012
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.83	0.90		0.20	0.94	0.39	0.38	0.98		0.80	0.37

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 84 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 56.5

Intersection LOS: E

Intersection Capacity Utilization 95.7%

ICU Level of Service F

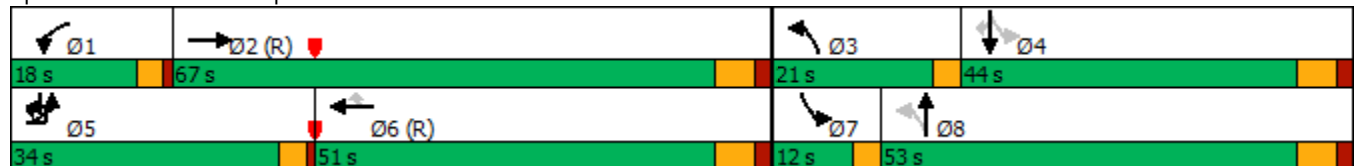
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street





Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	886
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.28
Intersection Summary	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	1562	4	0	18
Future Vol, veh/h	0	0	1562	4	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1716	4	0	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	860
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	299
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	299
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		17.9		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	299		
HCM Lane V/C Ratio	-	-	-	0.066		
HCM Control Delay (s)	-	-	-	17.9		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0.2		

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	1501	79	0	70
Future Vol, veh/h	0	0	1501	79	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1580	83	0	74
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	832
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	312
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	312
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		20.1		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	312		
HCM Lane V/C Ratio	-	-	-	0.236		
HCM Control Delay (s)	-	-	-	20.1		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0.9		

Capacity Analysis Summary Sheets
Year 2030 Total Projected Weekday Evening Peak Hour

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	196	1156	158	26	367	1430	296	139	564	186	394	1003
Future Volume (vph)	196	1156	158	26	367	1430	296	139	564	186	394	1003
Ideal Flow (vphpl)	1900	2000	1900	1900	1900	2000	1900	1900	2000	1900	1900	2000
Storage Length (ft)	330		250		240		410	225		190	300	
Storage Lanes	2		1		2		1	2		1	2	
Taper Length (ft)	290				300			200			190	
Lane Util. Factor	0.97	0.91	1.00	0.91	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	3502	5406	1599	0	3497	5406	1615	3467	5460	1599	3467	5460
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3502	5406	1599	0	3497	5406	1615	3467	5460	1599	3467	5460
Right Turn on Red			No				No			No		
Satd. Flow (RTOR)												
Link Speed (mph)		45				45			40			40
Link Distance (ft)		1378				663			966			1184
Travel Time (s)		20.9				10.0			16.5			20.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	2%	0%	1%	0%	1%	0%	1%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	1204	165	0	409	1490	308	145	588	194	410	1045
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	3	1!	1	6	7	3	8	1!	7	4
Permitted Phases			2				6			8		
Detector Phase	5	2	3	1	1	6	7	3	8	1	7	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0	4.0	15.0
Minimum Split (s)	9.5	64.0	9.5	9.5	9.5	54.0	9.5	9.5	39.0	9.5	9.5	51.0
Total Split (s)	21.0	64.0	18.0	27.0	27.0	70.0	30.0	18.0	39.0	27.0	30.0	51.0
Total Split (%)	13.1%	40.0%	11.3%	16.9%	16.9%	43.8%	18.8%	11.3%	24.4%	16.9%	18.8%	31.9%
Yellow Time (s)	3.0	4.5	3.0	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5
All-Red Time (s)	1.5	2.0	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.5	4.5		4.5	6.5	4.5	4.5	6.5	4.5	4.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	None	C-Min	None	None	None	None	None	None
Act Effect Green (s)	14.2	63.2	81.4		22.0	71.0	100.8	11.7	29.5	58.1	23.2	41.1
Actuated g/C Ratio	0.09	0.40	0.51		0.14	0.44	0.63	0.07	0.18	0.36	0.14	0.26
v/c Ratio	0.66	0.56	0.20		0.85	0.62	0.30	0.58	0.58	0.33	0.82	0.74
Control Delay	80.7	39.8	23.3		84.2	36.6	15.2	80.8	61.9	38.2	79.7	58.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.7	39.8	23.3		84.2	36.6	15.2	80.8	61.9	38.2	79.7	58.1
LOS	F	D	C		F	D	B	F	E	D	E	E
Approach Delay		43.4				42.4			59.9			60.2
Approach LOS		D				D			E			E
Queue Length 50th (ft)	108	371	97		214	443	141	76	209	144	214	368
Queue Length 95th (ft)	152	432	149		#294	529	217	115	247	211	275	413

Lanes, Volumes, Timings

3: Washington Street & 75th Street

07/30/2024

Lane Group	SBR
Left Configurations	↶
Traffic Volume (vph)	232
Future Volume (vph)	232
Ideal Flow (vphpl)	1900
Storage Length (ft)	300
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1615
Flt Permitted	
Satd. Flow (perm)	1615
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.96
Heavy Vehicles (%)	0%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	242
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.5
Total Split (s)	21.0
Total Split (%)	13.1%
Yellow Time (s)	3.0
All-Red Time (s)	1.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	61.8
Actuated g/C Ratio	0.39
v/c Ratio	0.39
Control Delay	36.6
Queue Delay	0.0
Total Delay	36.6
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	180
Queue Length 95th (ft)	246

Lanes, Volumes, Timings 3: Washington Street & 75th Street

07/30/2024

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)	1298			583			886			1104		
Turn Bay Length (ft)	330		250		240		410	225		190	300	
Base Capacity (vph)	361	2135	831		499	2399	1039	292	1109	588	552	1519
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.56	0.20		0.82	0.62	0.30	0.50	0.53	0.33	0.74	0.69

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 49.9

Intersection LOS: D

Intersection Capacity Utilization 74.5%

ICU Level of Service D

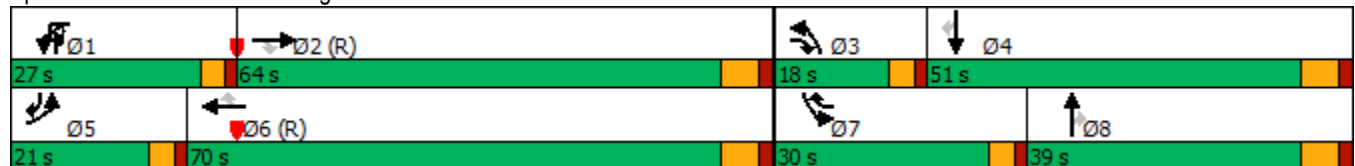
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 3: Washington Street & 75th Street





Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	300
Base Capacity (vph)	647
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.37
Intersection Summary	

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	45	303	1217	93	233	1352	148	138	444	35	149	759
Future Volume (vph)	45	303	1217	93	233	1352	148	138	444	35	149	759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000
Storage Length (ft)		390		0	470		190	125		0	145	
Storage Lanes		2		0	2		1	1		0	1	
Taper Length (ft)		280			280			100			110	
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.95
Frt			0.989				0.850		0.989			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	3502	3537	0	3502	3762	1615	1805	3570	0	1805	3800
Flt Permitted		0.950			0.950			0.120			0.240	
Satd. Flow (perm)	0	3502	3537	0	3502	3762	1615	228	3570	0	456	3800
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			6				92		5			
Link Speed (mph)			45			45			35			35
Link Distance (ft)			1334			383			690			733
Travel Time (s)			20.2			5.8			13.4			14.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	358	1351	0	240	1394	153	142	494	0	154	782
Turn Type	Prot	Prot	NA		Prot	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	5!	5	2		1	6		3	8		7	4
Permitted Phases							6	8			4	
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												
Minimum Initial (s)	3.0	3.0	15.0		3.0	15.0	15.0	3.0	10.0		3.0	10.0
Minimum Split (s)	9.5	9.5	24.5		9.5	24.5	24.5	9.5	24.5		9.5	24.5
Total Split (s)	31.0	31.0	69.0		31.0	69.0	69.0	14.0	40.0		20.0	46.0
Total Split (%)	19.4%	19.4%	43.1%		19.4%	43.1%	43.1%	8.8%	25.0%		12.5%	28.8%
Yellow Time (s)	3.0	3.0	4.5		3.0	4.5	4.5	3.0	4.5		3.0	4.5
All-Red Time (s)	1.0	1.0	2.0		1.0	2.0	2.0	0.0	2.0		0.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.0	6.5		4.0	6.5	6.5	3.0	6.5		3.0	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Min		None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)		22.2	75.8		16.3	69.9	69.9	47.9	33.4		53.6	37.0
Actuated g/C Ratio		0.14	0.47		0.10	0.44	0.44	0.30	0.21		0.34	0.23
v/c Ratio		0.74	0.81		0.68	0.85	0.20	0.81	0.66		0.56	0.89
Control Delay		75.4	41.3		78.8	47.1	13.2	70.7	62.2		45.7	72.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		75.4	41.3		78.8	47.1	13.2	70.7	62.2		45.7	72.5
LOS		E	D		E	D	B	E	E		D	E
Approach Delay			48.4			48.5			64.1			58.3
Approach LOS			D			D			E			E
Queue Length 50th (ft)		187	636		126	698	38	105	247		114	414
Queue Length 95th (ft)		237	782		171	#892	94	#209	314		174	493

Lanes, Volumes, Timings
6: Naper Boulevard & 75th Street

07/30/2024

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	417
Future Volume (vph)	417
Ideal Flow (vphpl)	1900
Storage Length (ft)	395
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1615
Flt Permitted	
Satd. Flow (perm)	1615
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.97
Heavy Vehicles (%)	0%
Shared Lane Traffic (%)	
Lane Group Flow (vph)	430
Turn Type	pm+ov
Protected Phases	5!
Permitted Phases	4
Detector Phase	5
Switch Phase	
Minimum Initial (s)	3.0
Minimum Split (s)	9.5
Total Split (s)	31.0
Total Split (%)	19.4%
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	65.7
Actuated g/C Ratio	0.41
v/c Ratio	0.62
Control Delay	36.9
Queue Delay	0.0
Total Delay	36.9
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	312
Queue Length 95th (ft)	408

Lanes, Volumes, Timings

6: Naper Boulevard & 75th Street

07/30/2024

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Internal Link Dist (ft)			1254			303			610			653
Turn Bay Length (ft)		390			470		190	125			145	
Base Capacity (vph)		590	1677		590	1642	756	176	758		298	938
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.61	0.81		0.41	0.85	0.20	0.81	0.65		0.52	0.83

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 137.6 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 52.7

Intersection LOS: D

Intersection Capacity Utilization 94.3%

ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 6: Naper Boulevard & 75th Street





Lane Group	SBR
Internal Link Dist (ft)	
Turn Bay Length (ft)	395
Base Capacity (vph)	736
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.58
Intersection Summary	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	0	2091	2	0	14
Future Vol, veh/h	0	0	2091	2	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2134	2	0	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1068
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	218
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	218
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		22.7		
HCM LOS				C		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	218		
HCM Lane V/C Ratio	-	-	-	0.066		
HCM Control Delay (s)	-	-	-	22.7		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0.2		

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	2034	71	0	79
Future Vol, veh/h	0	0	2034	71	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2141	75	0	83
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1108
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	204
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	204
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		34.3		
HCM LOS				D		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	204		
HCM Lane V/C Ratio	-	-	-	0.408		
HCM Control Delay (s)	-	-	-	34.3		
HCM Lane LOS	-	-	-	D		
HCM 95th %tile Q(veh)	-	-	-	1.8		