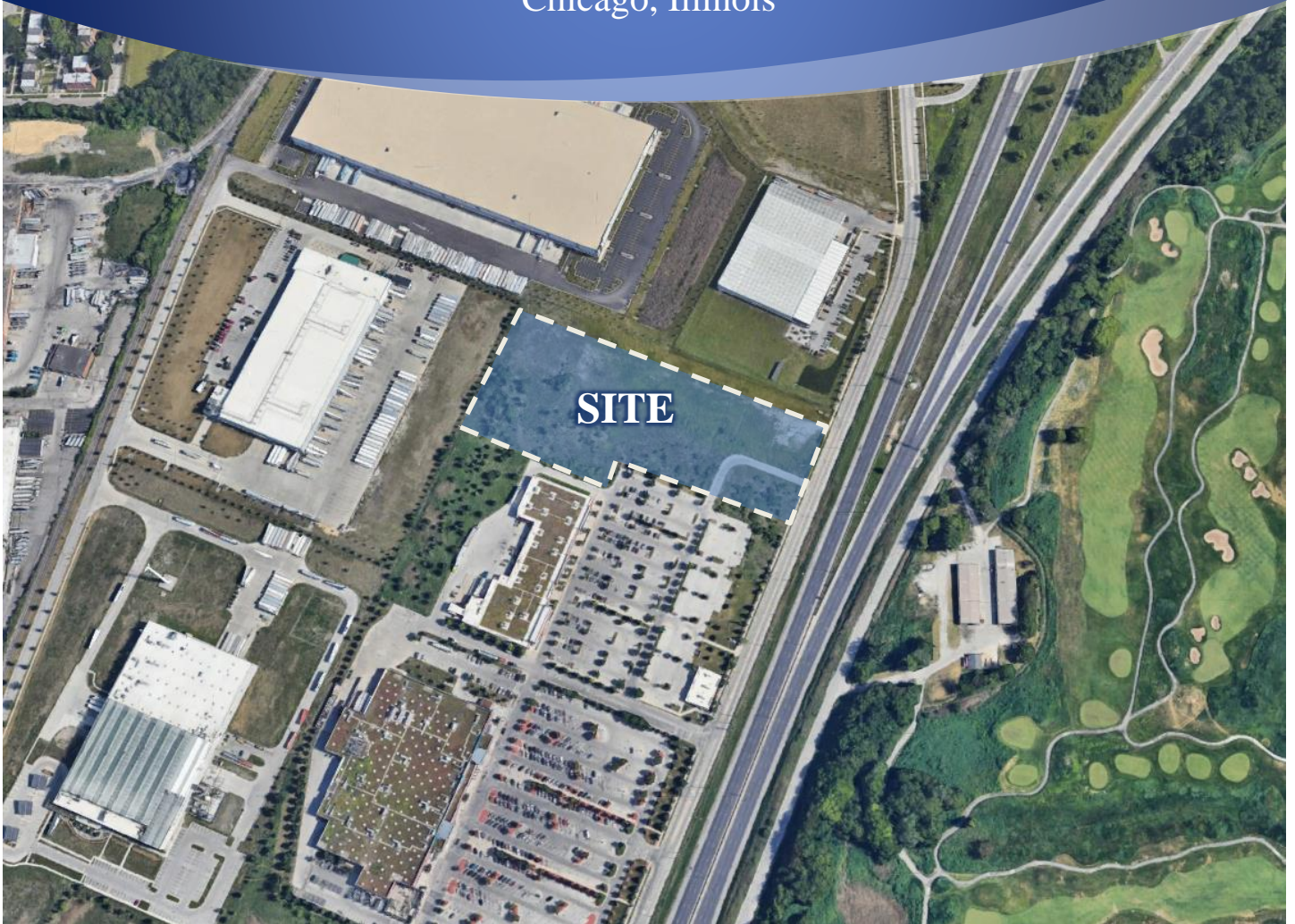


# Traffic Impact Study 10636 S. Woodlawn Avenue

Chicago, Illinois



Prepared For:



October 17, 2023

# Table of Contents

## *List of Figures and Tables, ii*

I. Executive Summary.....	1
1. Introduction.....	3
2. Existing Conditions.....	6
Site Location.....	6
Existing Street System Characteristics.....	6
Alternative Modes of Transportation.....	8
Existing Traffic Volumes.....	8
3. Traffic Characteristics of the Proposed Facility.....	13
Proposed Facility Plan.....	13
Directional Distribution.....	13
Facility-Generated Traffic Volumes.....	14
4. Projected Traffic Conditions.....	17
Facility Traffic Assignment.....	17
No-build Traffic Volumes.....	17
Total Projected Traffic Volumes.....	17
5. Traffic Analysis and Recommendations.....	22
Traffic Analyses.....	22
Discussion and Recommendations.....	27
6. Conclusion.....	29
Appendix	

# List of Figures and Tables

## Figures

Figure 1 – Site Location.....	4
Figure 2 – Aerial View of Site.....	5
Figure 3 – Existing Street Characteristics.....	7
Figure 4 – Existing Traffic Volumes .....	10
Figure 5 – Existing Traffic Volumes - Heavy Vehicles .....	11
Figure 6 – Existing Pedestrian and Bicycle Traffic Volumes.....	12
Figure 7 – Directional Distribution.....	14
Figure 8 – Site-Generated Traffic Volumes – Passenger Vehicles.....	18
Figure 9 – Site-Generated Traffic Volumes – Trucks .....	19
Figure 10 – Year 2029 No-Build Traffic Volumes.....	20
Figure 11 – Year 2029 Total Projected Traffic Volumes .....	21

## Tables

Table 1 – Estimated Daily and Peak Hour Site-Generated Traffic.....	15
Table 2 – Estimated 24-Hour Site-Generated Traffic.....	16
Table 3 – Capacity Analysis Results – Western Avenue with Fulton Street.....	23
Table 4 – Capacity Analysis Results – Unsignalized – Existing Conditions .....	24
Table 5 – Capacity Analysis Results – Unsignalized – No-Build Conditions.....	25
Table 6 – Capacity Analysis Results – Unsignalized –Year 2029 Projected Conditions .....	26

# I. Executive Summary

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed warehouse/distribution building to be located at 10636 S. Woodlawn Avenue in Chicago, Illinois. The objectives of the traffic study are as follows:

- Determine the existing vehicular, pedestrian, bicycle, and public transportation conditions in the study area to establish a base condition.
- Assess the impact that the proposed facility will have on transportation conditions in the area.
- Determine any street, access, bicycle, and pedestrian modifications and/or improvements that will be necessary to effectively accommodate and mitigate future conditions.

Vehicle, pedestrian, and bicycle counts were conducted during the weekday morning and weekday evening peak periods at the intersections of Woodlawn Avenue/Doty Avenue with 103<sup>rd</sup> Street and multiple existing access drives serving the Pullman Community Center, Amazon facility, Pullman Park, and Gotham Greens in order to determine the general peak hour of traffic activity during these time periods.

As proposed, the site will be developed with an approximately 160,025 square-foot warehouse/distribution building with 20 truck loading bays. Access to the facility will be provided via (1) two proposed access drives on Doty Avenue which will replace the existing Pullman Park north access drive and (2) cross-access with Pullman Park.

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

- Primary access to the proposed development will be provided via the following two access drives on Doty Avenue and will replace the Pullman Park north access drive:
  - A proposed full-movement access drive located approximately 595 feet north of the Pullman Park main access drive that will provide access to the employee parking and Pullman Park. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.
  - A proposed full-movement access drive located approximately 900 feet north of the Pullman Park main access drive that will provide access to the loading bays (truck traffic). This access drive will provide one inbound lane and one outbound lane wide enough to accommodate turning truck traffic. Outbound movements should be under stop sign control.

- Consideration should be given to restriping Doty Avenue to provide exclusive left-turn lanes or a two-way, left-turn lane serving the two access drives. Similar to the Woodlawn Avenue/Doty Avenue cross sections further north and south of the subject site, the buffered area between the vehicle lanes and the bike lanes will need to be reduced to accommodate the exclusive left-turn lanes or a two-way, left-turn lane.
- Secondary access to the employee parking for the facility will be provided via cross access with Pullman Park.
- The proposed access system will be adequate in accommodating the traffic estimated to be generated by the facility.
- Area intersections have sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed facility and no street improvements or traffic control modifications are required.

# 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 a proposed warehouse/distribution building to be located at 10636 S. Woodlawn Avenue in Chicago, Illinois. The site, which is currently vacant, is located on the west side of Doty Avenue bounded by Pullman Park on the south and Gotham Greens on the north. As proposed, the site will be developed with an approximately 160,025 square-foot warehouse/distribution building with 20 truck loading bays. Access to the facility will be provided via (2) two proposed access drives on Doty Avenue which will replace the existing Pullman Park north access drive and (2) cross-access with Pullman Park.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed facility will have on traffic conditions in the area, and determine if any street or access improvements are necessary to accommodate the traffic generated by the proposed facility.

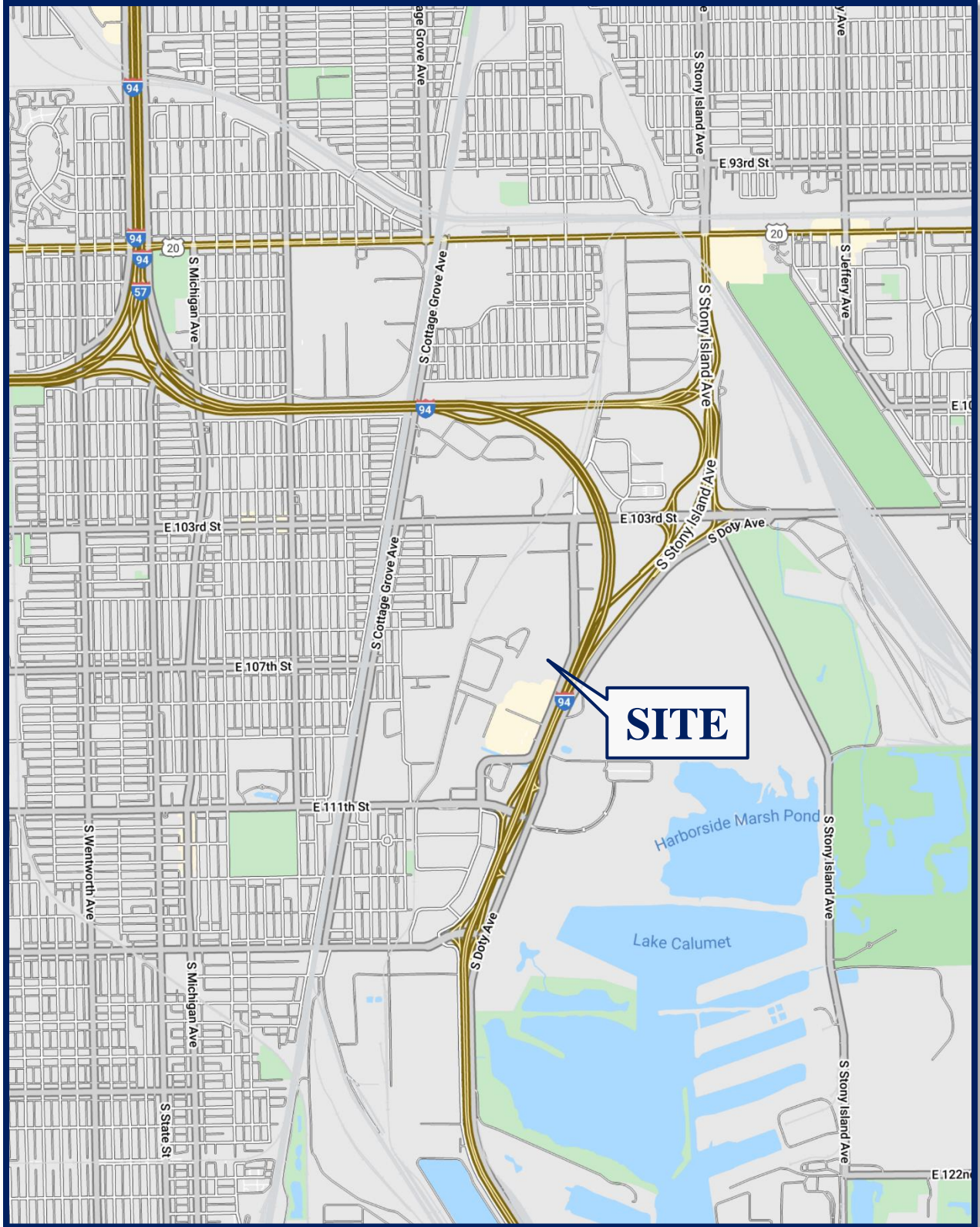
**Figure 1** shows the location of the site in relation to the area street system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

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

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

1. Existing Traffic Volumes – Analyze the capacity of the existing street system based on existing peak hour traffic volumes in the surrounding area.
2. Year 2029 No-build Conditions – Analyze the capacity of the future street system using the no-build traffic volumes that include the existing traffic volumes, ambient traffic growth, and the traffic estimated to be generated by the proposed 10330 S. Woodlawn warehouse/distribution building to be located north of the site.
3. Year 2029 Projected Conditions – Analyze the capacity of the future street system using the projected traffic volumes that include the no-build traffic volumes and the traffic estimated to be generated by the proposed facility.



Site Location

Figure 1

10636 S. Woodlawn Avenue  
Chicago, Illinois



Aerial View of Site

Figure 2

10636 S. Woodlawn Avenue  
Chicago, Illinois





## 2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. 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 street system including lane usage and traffic control devices, and existing peak hour traffic volumes.

### Site Location

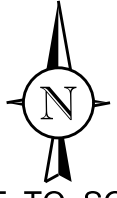
The proposed facility site is bounded by Gotham Greens to the north, Doty Avenue to the east, Pullman Park to the south, and a Whole Foods distribution center to the west. The Pullman Community Center is located on the east side of Woodlawn Avenue north of the site and an Amazon Last Mile Distribution Center (Amazon facility) is located on the west side of Woodlawn Avenue north of the site.

### Existing Street System Characteristics

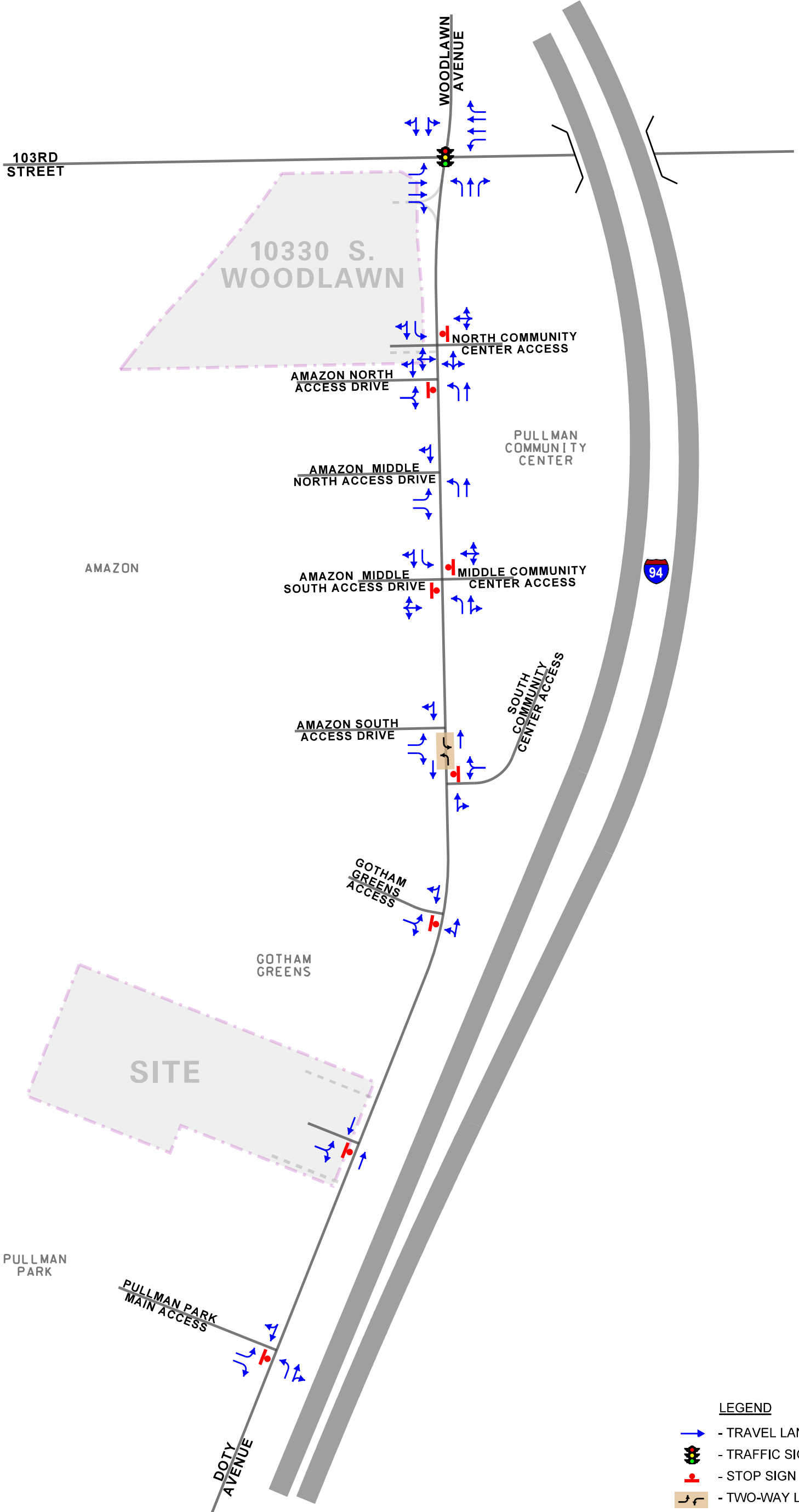
The characteristics of the existing streets near the site are described below and illustrated in **Figure 3**. All streets are under the jurisdiction of the Chicago Department of Transportation (CDOT) unless otherwise noted.





*Woodlawn Avenue/Doty Avenue* is a north-south major collector street that generally provides a three-lane cross section with one vehicle lane in each direction and a center painted median. Woodlawn Avenue becomes Doty Avenue approximately one-half mile south of 103<sup>rd</sup> Street. At its signalized intersection with 103<sup>rd</sup> Street, Woodlawn Avenue provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the northbound approach and an exclusive left-turn lane and a shared through/right-turn lane on the southbound approach. Woodlawn Avenue/Doty Avenue provides left-turn lanes at most access drives south of 103<sup>rd</sup> Street including the Amazon facility, Pullman Community Center, and Pullman Park between 103<sup>rd</sup> Street and 111<sup>th</sup> Street, parking is prohibited on both sides of Woodlawn Avenue/Doty Avenue and a separate bike lane is provided in both directions. Further, a mid-block at-grade pedestrian crossing with pedestrian refuge island is located just north of the Gotham Greens access drive. Woodlawn Avenue/Doty Avenue has a posted speed limit of 30 miles per hour.

*103<sup>rd</sup> Street* is an east-west, minor arterial street that has a full interchange with the Bishop Ford Expressway (Interstate 94) east of Woodlawn Avenue via Stoney Island Avenue. It provides two travel lanes in each direction and has an at-grade railroad crossing located west of its signalized intersection with Woodlawn Avenue. East of Woodlawn Avenue, 103<sup>rd</sup> Street is under the jurisdiction of the Illinois Department of Transportation (IDOT). At its signalized intersection with Woodlawn Avenue, 103<sup>rd</sup> Street provides an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on the eastbound approach and an exclusive left-turn lane, two through lanes, and a free-flow right-turn lane on the westbound approach. 103<sup>rd</sup> Street carries an Annual Average Daily Traffic (AADT) volume of 13,100 to 15,400 vehicles (IDOT 2022) and has a posted speed limit of 35 miles per hour. Parking is restricted on both sides of the street.



NOT TO SCALE



- LEGEND**
-  - TRAVEL LANE
  -  - TRAFFIC SIGNAL
  -  - STOP SIGN
  -  - TWO-WAY LEFT TURN LANE

PULLMAN 4  
10636 S WOODLAWN AVENUE  
CHICAGO, ILLINOIS

EXISTING STREET CHARACTERISTICS

**KLOA**  
Kenig, Lindgren, O'Hara, Aboona, Inc.  
Job No: 23-248      Figure: 3

The access drives located along Woodlawn Avenue/Doty Avenue and included in the study area provide one inbound lane and one outbound lane with the outbound lanes generally under stop sign control except the Pullman Park main access drive and two of the Amazon facility access drives. These three access drives provide one inbound lane and two outbound lane striped for an exclusive left-turn lane and an exclusive right-turn lane. The outbound lanes are generally under stop sign control.

## Alternative Modes of Transportation

Accessibility to and from the area is enhanced by the various alternative modes of transportation serving the area as summarized below.

*Public Transportation* The area is served by the south leg of the CTA rapid transit Red Line which extends from the Loop in downtown Chicago to 95<sup>th</sup> Street on the south. The nearest Red Line station is located at the intersection of 95<sup>th</sup> Street and the Dan Ryan Expressway, two miles northwest of the site. The Metra Electric commuter rail line has stops at 103<sup>rd</sup> Street and Cottage Grove Avenue approximately one mile northwest of the site and at 111<sup>th</sup> Street and Cottage Grove Avenue approximately one mile southwest of the site. In addition, the following bus routes serve the immediate area and have stops near the facility:

- *Route 111A - Pullman Shuttle* primarily runs along 111<sup>th</sup> Street and Doty Avenue from Pullman Park Plaza on the east to the Pullman/111<sup>th</sup> Street and Kensington/115<sup>th</sup> Street Metra stations on the west. Service is provided seven days a week.
- *Route 115 – Pullman/115<sup>th</sup>* primarily runs along Cottage Grove Avenue from the 95<sup>th</sup> Street Red Line station on the north to 115<sup>th</sup> Street and Marshfield Plaza on the south. Service is provided seven days a week.

*Pedestrian Facilities* Sidewalks and high-visibility crosswalks are generally provided on all of the streets within the study area. Countdown pedestrian signals are provided at the signalized intersection of Woodlawn Avenue with 103<sup>rd</sup> Street.

*Bicycle Facilities* Woodlawn Avenue/Doty Avenue provides bike lanes in both directions. According to the City of Chicago’s *Streets for Cycling Plan 2020*, 103<sup>rd</sup> Street and Cottage Grove Avenue are Crosstown Bike Routes.

## Existing Traffic Volumes

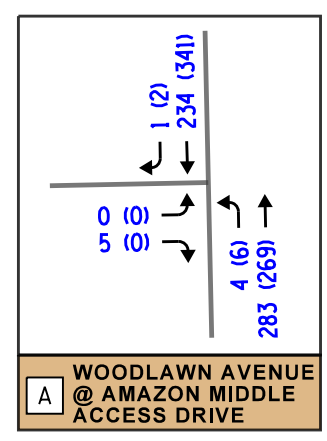
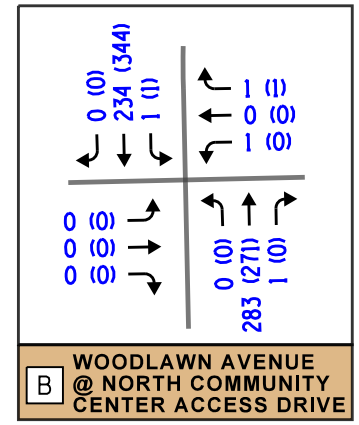
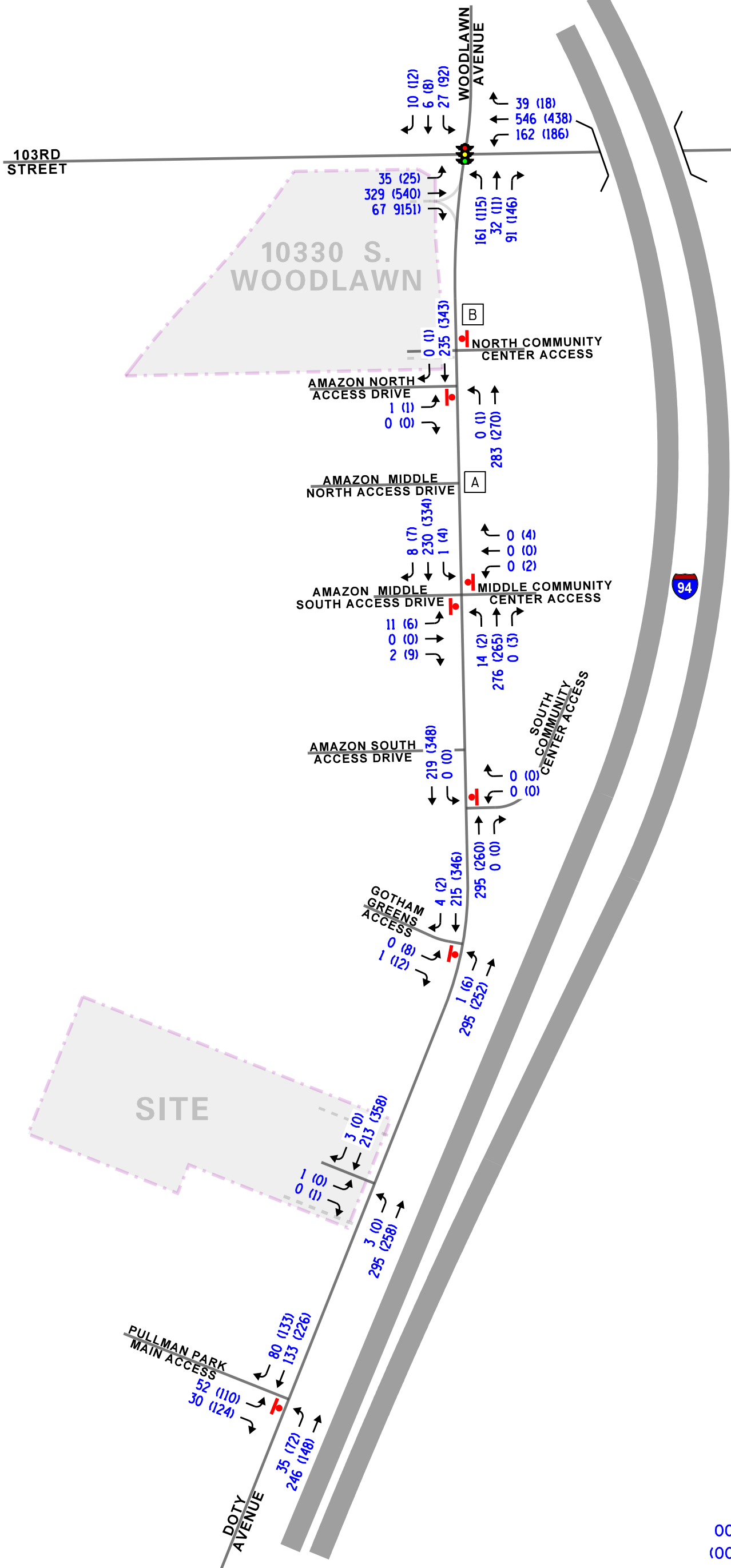
In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic counts in September, 2023 during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods at the following intersections:

- Woodlawn Avenue with 103<sup>rd</sup> Street
- Woodlawn Avenue with the Amazon access drives
- Woodlawn Avenue with the Pullman Community Center access drives
- Woodlawn Avenue with the Gotham Greens access drive
- Doty Avenue with the Pullman Park north and main access drives

The results of the traffic counts indicated that the weekday morning peak hour of traffic occurs from 7:45 A.M. to 8:45 A.M. and the weekday evening peak hour of traffic occurs from 4:00 P.M. to 5:00 P.M. **Figure 4** illustrates the existing peak hour vehicle traffic volumes, inclusive of heavy vehicles. **Figure 5** illustrates the existing heavy vehicle peak hour traffic volumes. **Figure 6** illustrates the existing pedestrian and bicycle volumes, showing direction of travel.



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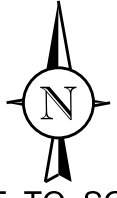


**LEGEND**  
 00 - AM PEAK HOUR (7:45-8:45 AM)  
 (00) - PM PEAK HOUR (4:00-5:00 PM)

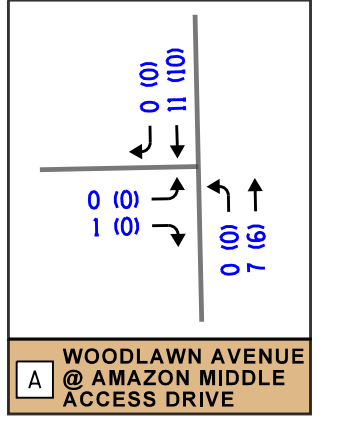
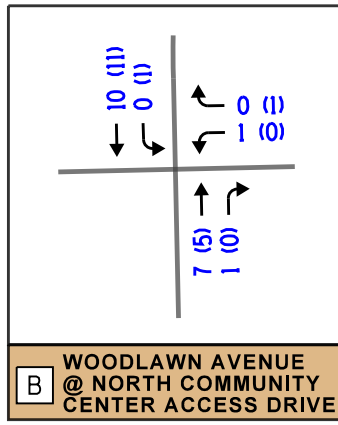
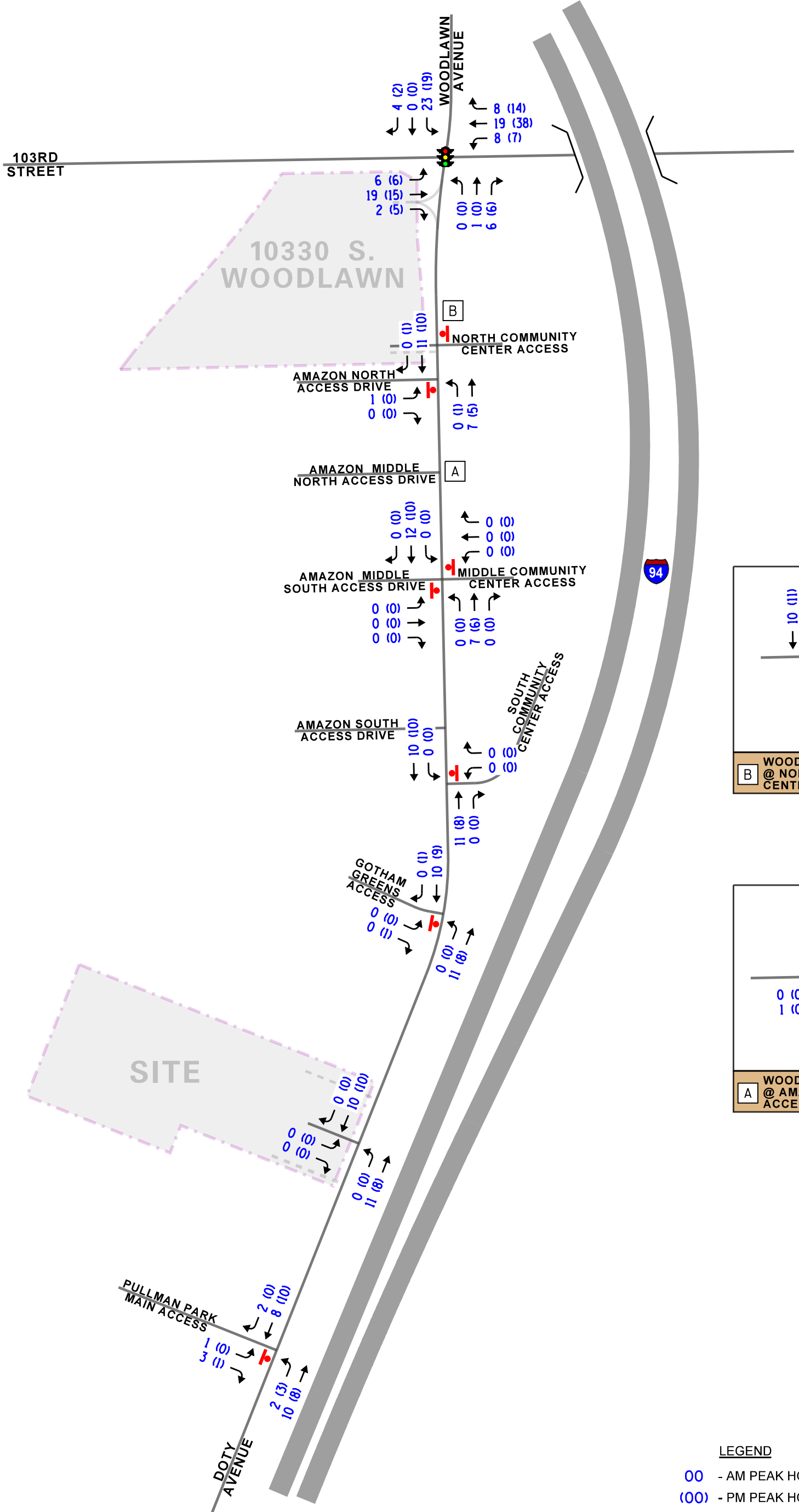
PULLMAN 4  
 10636 S WOODLAWN AVENUE  
 CHICAGO, ILLINOIS

EXISTING TRAFFIC VOLUMES

**KLOA**  
 Kenig, Lindgren, O'Hara, Aboona, Inc.  
 Job No: 23-248      Figure: 4



NOT TO SCALE



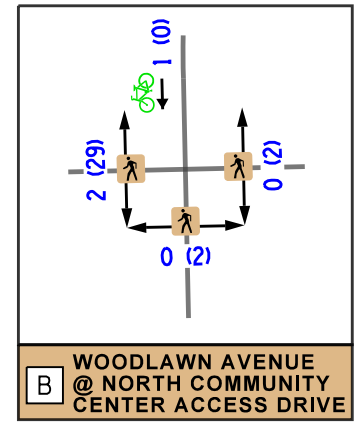
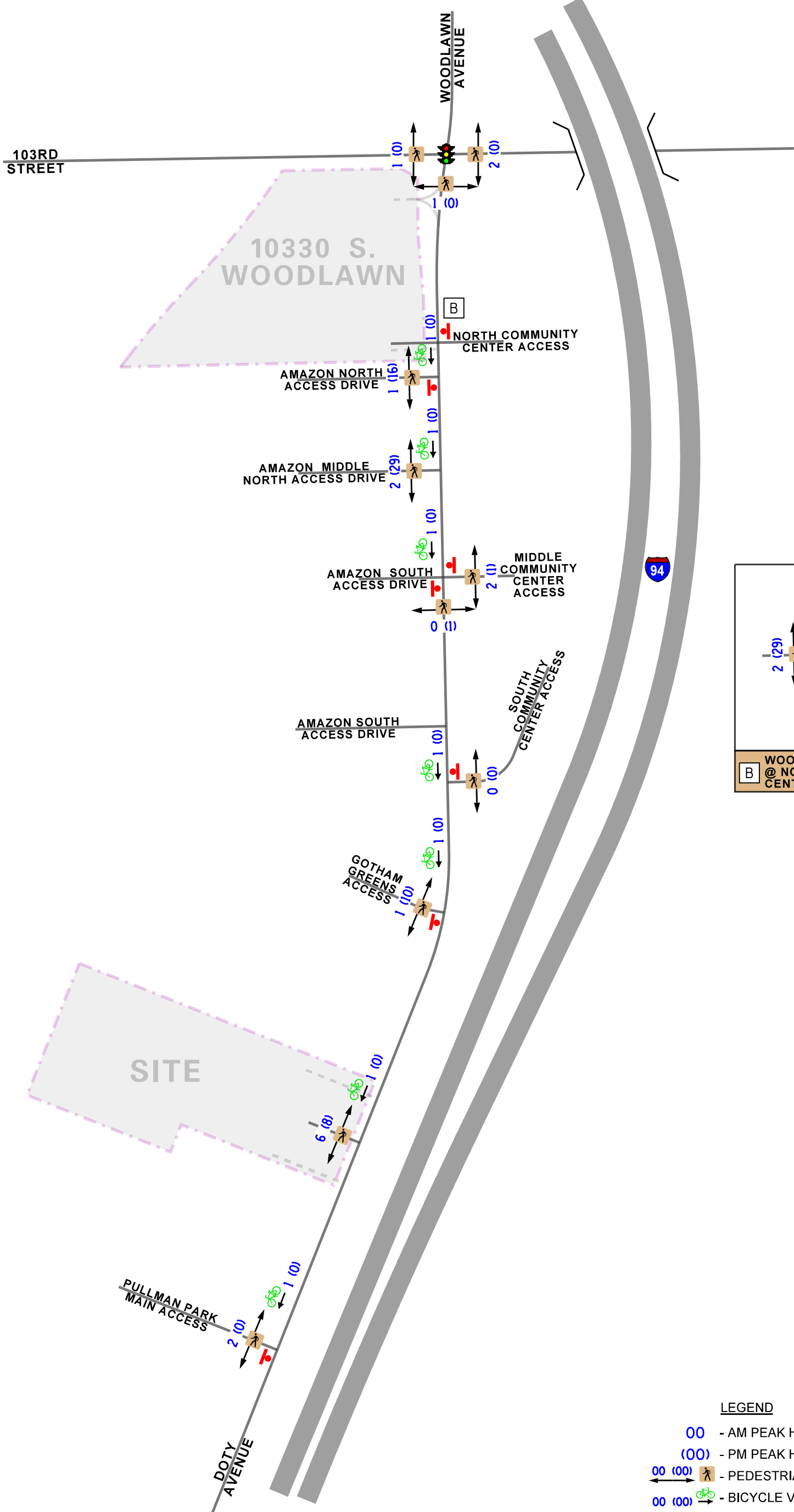
**LEGEND**

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:00-5:00 PM)

PULLMAN 4  
 10636 S WOODLAWN AVENUE  
 CHICAGO, ILLINOIS

**EXISTING TRAFFIC VOLUMES - TRUCKS**

Job No: 23-248 Figure: 5



- LEGEND**
- 00 - AM PEAK HOUR (7:45-8:45 AM)
  - (00) - PM PEAK HOUR (4:00-5:00 PM)
  - 00 (00) [pedestrian icon] - PEDESTRIAN VOLUME
  - 00 (00) [bicycle icon] - BICYCLE VOLUME

PULLMAN 4  
10636 S WOODLAWN AVENUE  
CHICAGO, ILLINOIS

EXISTING PEDESTRIAN AND BICYCLE TRAFFIC VOLUMES

### 3. Traffic Characteristics of the Proposed Facility

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

#### Proposed Facility Plan

As proposed, the site will be developed with a 160,025 square-foot warehouse/distribution building with 20 truck loading bays. In addition, the facility will provide 204 parking spaces for employees on the south and east sides of the building. Primary access to the facility is to be provided via (1) two access drives on Doty Avenue, which will replace the existing Pullman Park north access drive, and (2) cross access with Pullman Park as summarized below:

- A proposed full-movement access drive on Doty Avenue located approximately 595 feet north of the Pullman Park main access drive that will provide access to the employee parking and Pullman Park. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.
- A proposed full-movement access drive on Doty Avenue located approximately 900 feet north of the Pullman Park main access drive that will primarily serve the loading bays of the facility (truck traffic). This access drive will provide one inbound lane and one outbound wide enough to accommodate turning truck traffic. Outbound movements should be under stop sign control.

Consideration should be given to restriping Doty Avenue to provide exclusive left-turn lanes or a two-way, left-turn lane serving the two access drives. Similar to the Woodlawn Avenue/Doty Avenue cross sections further north and south of the subject site, the buffered area between the vehicle lanes and the bike lanes will need to be reduced to accommodate the exclusive left-turn lanes or a two-way, left-turn lane.

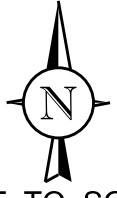
Secondary access to the employee parking for the facility will be provided via cross access with Pullman Park.

A copy of the preliminary site plan is included in the Appendix.

#### Directional Distribution

The directions from which traffic will approach and depart the site was estimated based on existing travel patterns, as determined from the traffic counts, the operation of the existing street system and the proposed facility access system, and previous studies conducted in the area. **Figure 7** illustrates the directional distribution of traffic.





NOT TO SCALE

103RD STREET  
30%  
(10%)

30%  
(40%)

10330 S.  
WOODLAWN

WOODLAWN AVENUE

NORTH  
COMMUNITY  
CENTER  
ACCESS

AMAZON NORTH  
ACCESS DRIVE

AMAZON MIDDLE  
NORTH ACCESS DRIVE

AMAZON MIDDLE  
SOUTH ACCESS DRIVE

MIDDLE COMMUNITY  
CENTER ACCESS

AMAZON SOUTH  
ACCESS DRIVE

SOUTH  
COMMUNITY  
CENTER ACCESS

GOTHAM  
GREENS  
ACCESS



SITE

620'

305'

595'

PULLMAN PARK  
MAIN ACCESS

DOTY AVENUE  
40%  
(50%)

LEGEND

- 00% - PERCENT DISTRIBUTION - PASSENGER VEHICLES
- (00%) - PERCENT DISTRIBUTION - TRUCKS
- 00' - DISTANCE IN FEET

PULLMAN 4  
10636 S WOODLAWN  
AVENUE  
CHICAGO, ILLINOIS

DIRECTIONAL DISTRIBUTION



Job No: 23-247 Figure: 7

## Facility-Generated Traffic Volumes

The total number of employee and truck trips estimated to be generated by the proposed facility was based on the Warehousing (Land-Use Code 150) vehicle trip generation rates contained in *Trip Generation Manual*, 11<sup>th</sup> Edition, published by the Institute of Transportation Engineers (ITE). Copies of the ITE trip generation rates are included in the Appendix.

**Table 1** summarizes the trips projected to be generated by the facility during the peak hours and on a daily basis. **Table 2** summarizes the trips projected to be generated by the facility throughout the day.

Table 1  
ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Trips		
		In	Out	Total	In	Out	Total	In	Out	Total
<b>150</b>	<b>Warehouse (160,025 s.f.)</b>	<b>33</b>	<b>10</b>	<b>43</b>	<b>13</b>	<b>33</b>	<b>46</b>	<b>146</b>	<b>146</b>	<b>292</b>
	Truck Trips	2	3	5	4	3	7	48	48	96
	Passenger Vehicle Trips	31	7	38	9	30	39	98	98	196

Table 2  
ESTIMATED 24-HOUR SITE GENERATED TRAFFIC

Hour	Warehousing (ITE LUC 150) – 160,025 s.f.								
	Trucks			Passenger Vehicles			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
0:00	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	1	1	0	1	1
2:00	1	1	2	0	0	0	1	1	2
3:00	1	0	1	0	1	1	1	1	2
4:00	1	1	2	0	0	0	1	1	2
5:00	2	2	4	3	1	4	5	3	8
6:00	2	2	4	8	1	9	10	3	13
7:00	1	4	5	9	1	10	10	5	15
8:00	2	3	5	31	7	38	33	10	43
9:00	6	3	9	4	4	8	10	7	17
10:00	4	6	10	3	1	4	7	7	14
11:00	5	6	11	3	3	6	8	9	17
12:00	4	2	6	7	7	14	11	9	20
13:00	4	4	8	4	3	7	8	7	15
14:00	3	3	6	6	4	10	9	7	16
15:00	5	4	9	2	10	12	7	14	21
16:00	4	3	7	9	30	39	13	33	46
17:00	2	2	4	3	9	12	5	11	16
18:00	0	0	0	2	7	9	2	7	9
19:00	0	0	0	1	2	3	1	2	3
20:00	1	1	2	0	0	0	1	1	2
21:00	0	1	1	1	4	5	1	5	6
22:00	0	0	0	1	1	2	1	1	2
23:00	0	0	0	1	1	2	1	1	2
<b>Total</b>	<b>51</b>	<b>51</b>	<b>102</b>	<b>98</b>	<b>98</b>	<b>196</b>	<b>146</b>	<b>146</b>	<b>292</b>

Based on daily trips (Table 1) and ITE's Hourly Distribution of Entering and Exiting Truck Trips and Vehicle Trips tables.

## 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 facility.

### Facility Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed facility were assigned to the street system in accordance with the previously described directional distribution (Figure 7). **Figure 8** illustrates the traffic assignment of the new passenger vehicle trips and **Figure 9** illustrates the traffic assignment of the new truck trips for the facility. It should be noted that no facility traffic was assigned to the other Pullman Park access drives in order to provide a conservative (worst case) analysis at the proposed driveways.

### No-Build Traffic Volumes

To account for any additional increase in traffic due to other factors or developments not previously discussed, an ambient growth factor of 0.5 percent per year was also applied to the study area over a six-year period to represent Year 2029 conditions. In order to account for the increase in population in the study area, bicycle and pedestrian volumes were increased by 10 percent at each intersection.

In addition, the traffic that will be generated by a proposed warehouse/distribution building to be located in the southwest quadrant of the 103<sup>rd</sup> Street/Woodlawn Avenue intersection (10330 S. Woodlawn Avenue) was included in the Year 2029 no-build traffic volumes. The volume of traffic that will be generated by the proposed 169,520 square-foot warehouse/distribution building was based on the KLOA, Inc. traffic impact study performed for the facility.

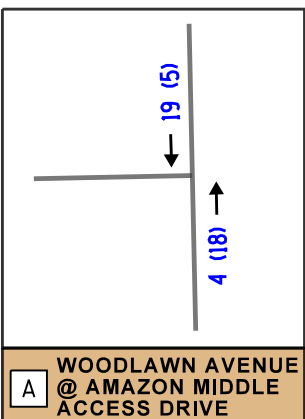
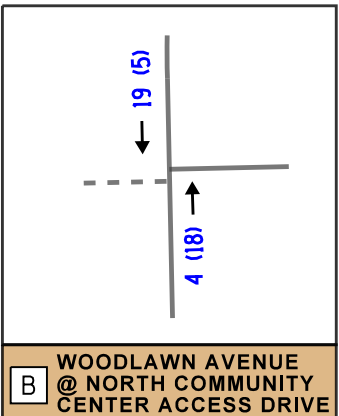
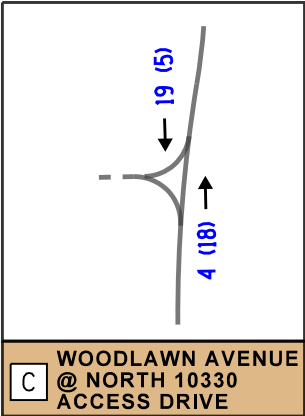
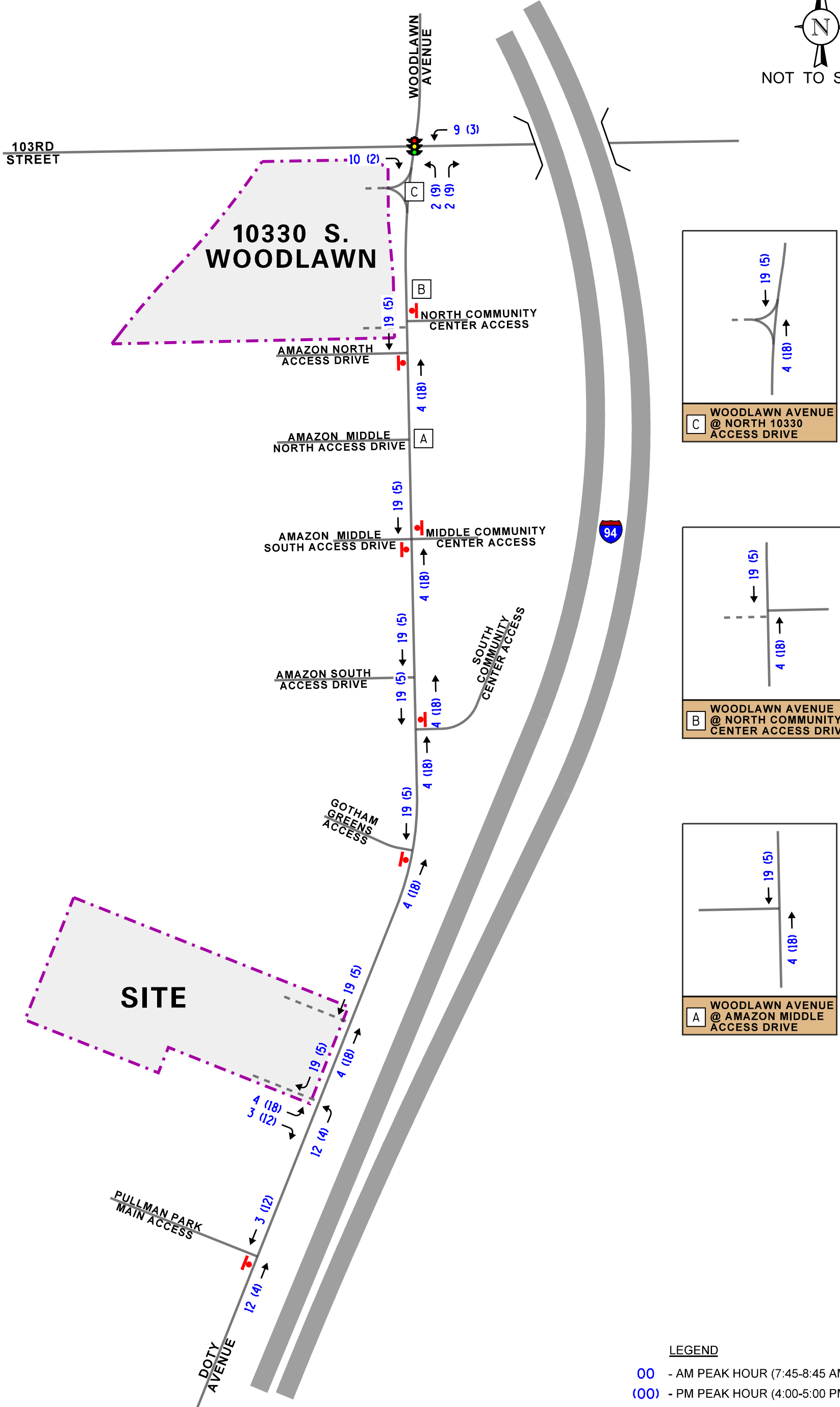
**Figure 10** illustrates the Year 2029 no-build volumes which include the existing traffic volumes increased by the ambient growth factor and the traffic projected to be generated by the 10330 S. Woodlawn Avenue facility.

### Total Projected Traffic Volumes

The Year 2029 no-build traffic volumes were combined with the new peak hour traffic volumes generated by the proposed facility to determine the Year 2029 total traffic volumes, shown in **Figure 11**.



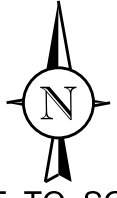
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PULLMAN 4  
10636 S WOODLAWN AVENUE  
CHICAGO, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES  
PASSENGER VEHICLES

**KLOA**  
Kenig, Lindgren, O'Hara, Aboona, Inc.  
Job No: 23-248 Figure: 8



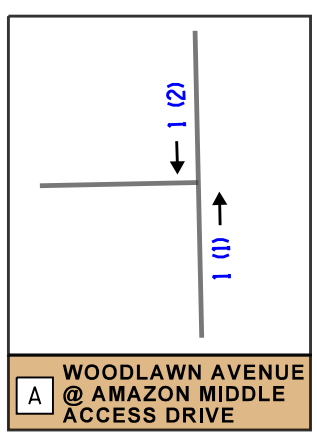
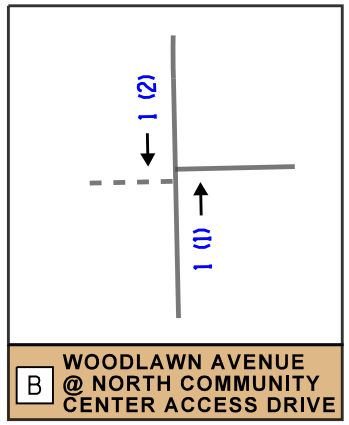
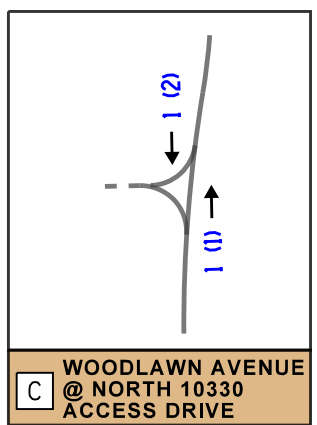
NOT TO SCALE

103RD STREET

10330 S. WOODLAWN

WOODLAWN AVENUE

94



NORTH COMMUNITY CENTER ACCESS

AMAZON NORTH ACCESS DRIVE

AMAZON MIDDLE NORTH ACCESS DRIVE

AMAZON MIDDLE SOUTH ACCESS DRIVE

SOUTH COMMUNITY CENTER ACCESS

AMAZON SOUTH ACCESS DRIVE

GOTHAM GREENS ACCESS

SITE

PULLMAN PARK MAIN ACCESS

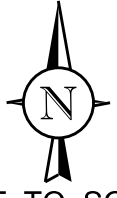
DOTY AVENUE

- LEGEND**
- 00 - AM PEAK HOUR (7:45-8:45 AM)
  - (00) - PM PEAK HOUR (4:00-5:00 PM)

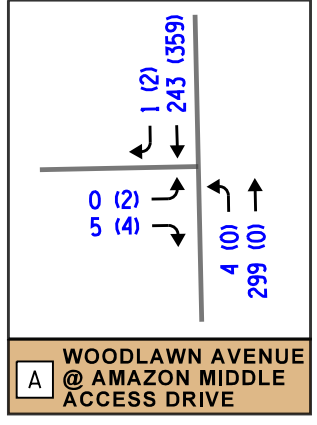
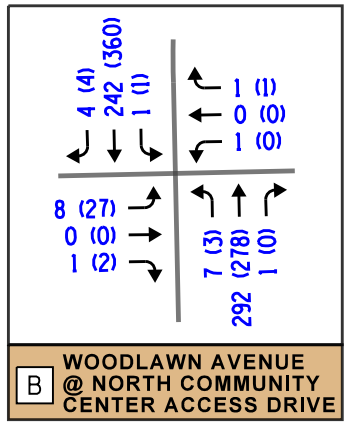
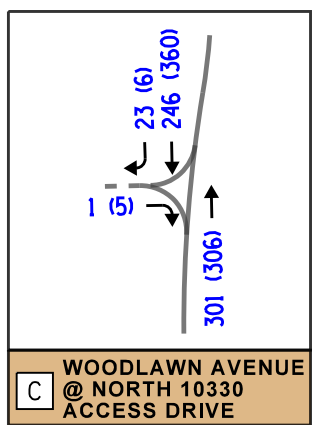
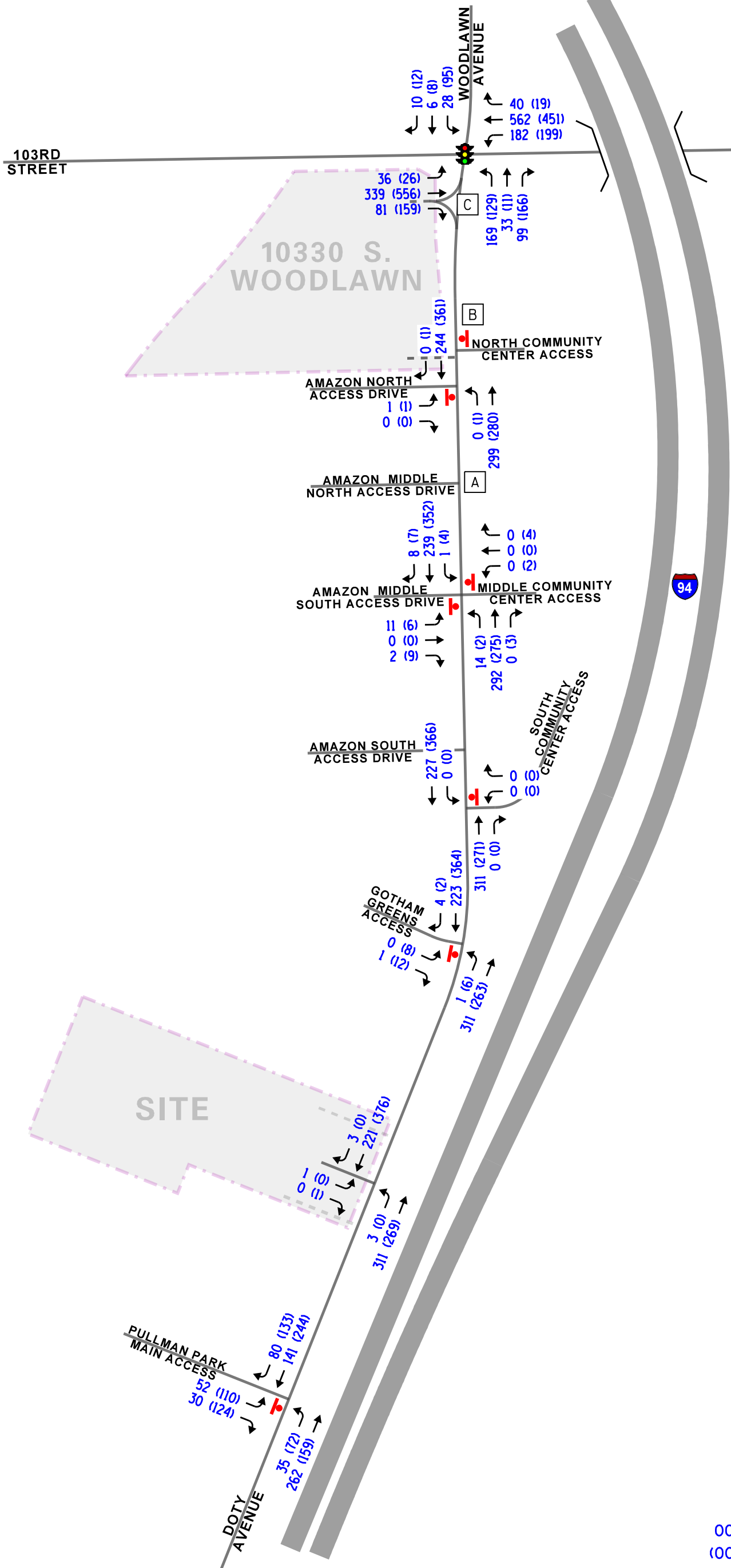
PULLMAN 4  
10636 S WOODLAWN AVENUE  
CHICAGO, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES  
TRUCKS

Job No: 23-248 Figure: 9



NOT TO SCALE



**LEGEND**

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:00-5:00 PM)

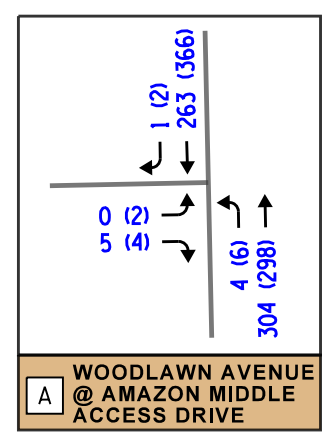
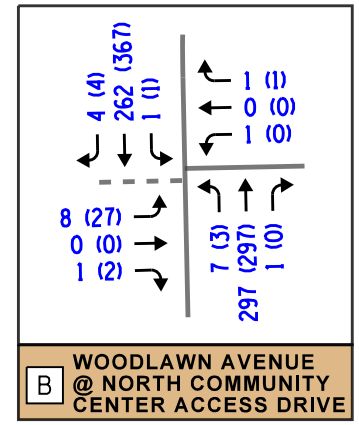
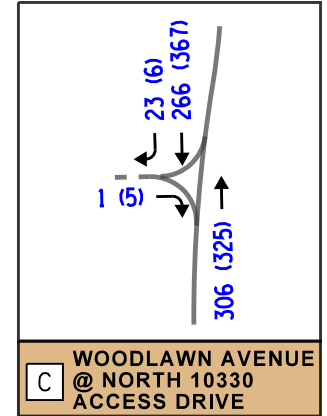
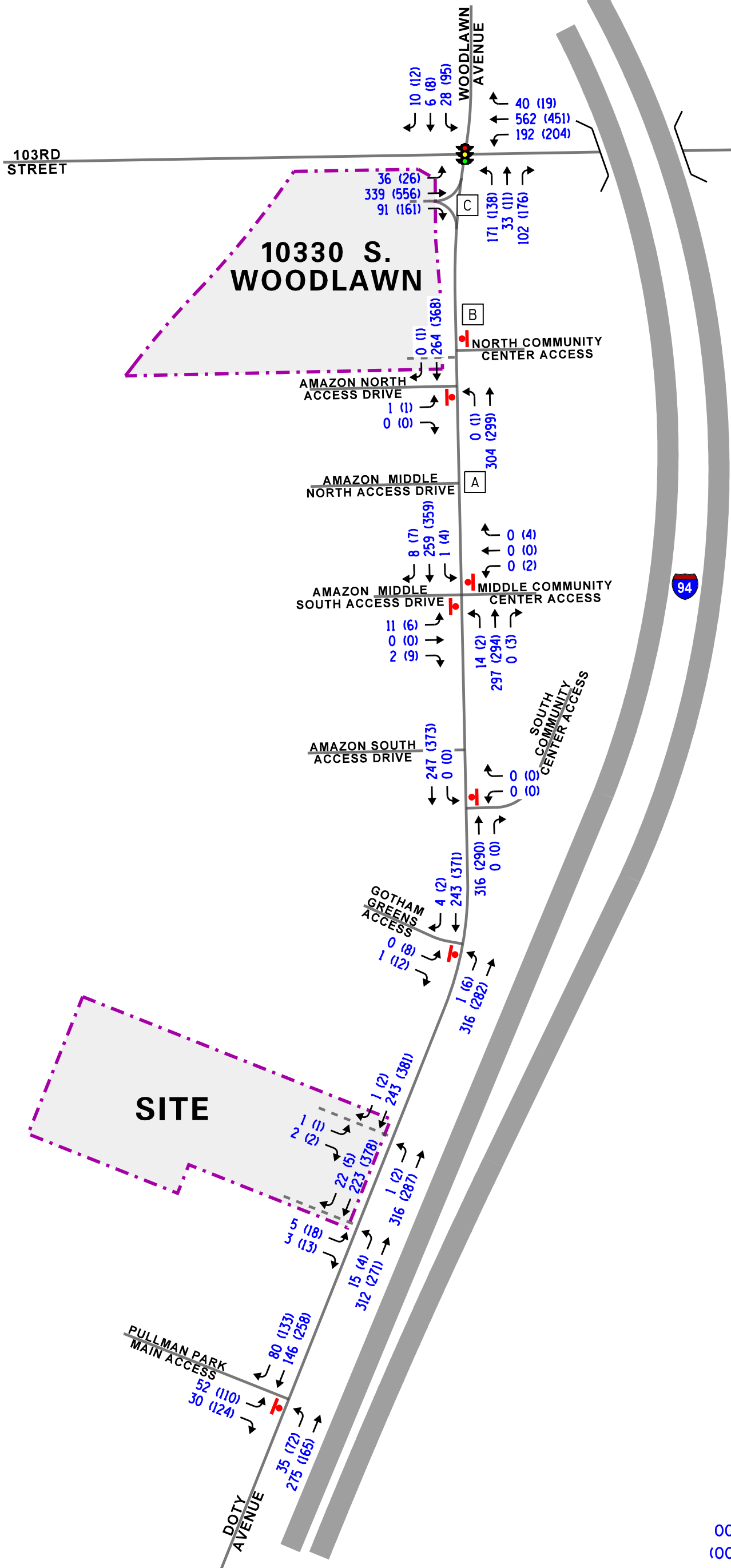
PULLMAN 4  
10636 S WOODLAWN AVENUE  
CHICAGO, ILLINOIS

YEAR 2029 NO-BUILD TRAFFIC VOLUMES

Job No: 23-248 Figure: 10



NOT TO SCALE



**LEGEND**

**00** - AM PEAK HOUR (7:45-8:45 AM)

**(00)** - PM PEAK HOUR (4:00-5:00 PM)

PULLMAN 4  
10636 S WOODLAWN  
AVENUE  
CHICAGO, ILLINOIS

2029 TOTAL TRAFFIC VOLUMES

**KLOA**  
Kenig, Lindgren, O'Hara, Aboona, Inc.  
Job No: 23-248 Figure: 11



## 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 street system and access drives are projected to operate and whether any street improvements or modifications are required.

### Traffic Analyses

Intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing, Year 2029 no-build, and Year 2029 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6<sup>th</sup> Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the signalized intersections were conducted utilizing actual cycle lengths, phasings, and offsets.

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 2029 no-build, and Year 2029 total projected conditions are presented in **Tables 3** through **6**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 3

CAPACITY ANALYSIS RESULTS – WOODLAWN AVENUE WITH 103<sup>rd</sup> STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	A 4.6	B 10.6	A 2.2	A 4.8	A 8.9	*	D 53.5	D 39.2	B 14.6	D 36.7	C 24.8		B 14.6
		A – 8.8			A – 7.5			D – 39.4			C – 32.2			
	Weekday Evening	A 5.0	B 12.4	A 2.9	A 5.9	A 8.1	*	D 35.5	D 35.8	B 14.3	D 47.2	C 24.4		B 13.4
		B – 10.2			A – 7.2			C – 24.1			D – 43.1			
No-Build Conditions	Weekday Morning	A 4.8	B 11.1	A 3.2	A 5.0	A 9.0	*	E 57.3	D 39.1	B 14.6	D 37.2	C 24.6		B 15.2
		A – 9.2			A – 7.6			D – 41.3			C – 32.6			
	Weekday Evening	A 5.2	B 13.0	A 3.0	A 6.3	A 8.3	*	D 37.2	D 35.4	B 14.3	D 47.8	C 24.1		B 13.9
		B – 10.6			A – 7.5			C – 24.7			D – 43.6			
Projected Conditions	Weekday Morning	A 4.8	B 11.2	A 3.2	A 5.1	A 9.0	*	E 58.1	D 39.1	B 14.7	D 37.2	C 24.6		B 15.2
		A – 9.2			A – 7.6			D – 41.6			C – 32.6			
	Weekday Evening	A 5.2	B 13.2	A 3.1	A 6.4	A 8.4	*	D 38.5	D 35.2	B 14.3	D 47.8	C 23.9		B 14.2
		B – 10.7			A – 7.6			C – 25.3			D – 43.6			
Letter denotes Level of Service		L – Left Turn			R – Right Turn									
Delay is measured in seconds.		T – Through			* - Free Flow Movement									

Table 4

## CAPACITY ANALYSIS RESULTS - UNSIGNALIZED – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
<b>Woodlawn Avenue with the North Community Center Access Drive</b>				
• Eastbound Approach	--	--	--	--
• Westbound Approach	B	13.8	B	11.6
• Northbound Left Turn	--	--	--	--
• Southbound Left Turn	A	7.9	A	9.3
<b>Woodlawn Avenue with the North Amazon Access Drive</b>				
• Eastbound Approach	C	15.8	B	14.4
• Northbound Left Turn	--	--	A	9.8
<b>Woodlawn Avenue with the Middle North Amazon Access Drive</b>				
• Eastbound Approach	B	10.0	B	11.5
• Northbound Left Turn	A	7.8	A	8.3
<b>Woodlawn Avenue with the Middle South Amazon Access Drive and the Middle Community Center Access Drive</b>				
• Eastbound Approach	B	12.1	B	11.6
• Westbound Approach	--	--	B	11.0
• Northbound Left Turn	A	7.8	A	8.1
• Southbound Left Turn	A	7.9	A	7.9
<b>Woodlawn Avenue with the South Community Center Access Drive</b>				
• Westbound Approach	--	--	--	--
• Southbound Left Turn	--	--	--	--
<b>Woodlawn Avenue with the Gotham Greens Access Drives</b>				
• Eastbound Approach	A	9.7	B	12.9
• Northbound Left Turn	A	7.8	A	8.2
<b>Doty Avenue with the North Pullman Park Access Drive</b>				
• Eastbound Approach	B	12.9	B	10.6
• Northbound Left Turn <sup>1</sup>	A	7.7	--	--
<b>Doty Avenue with the Pullman Park Main Access Drive</b>				
• Eastbound Approach	B	11.1	B	12.4
• Northbound Left Turn	A	7.8	A	8.3
LOS = Level of Service Delay is measured in seconds. 1 – Illegal Movement				

Table 5

## CAPACITY ANALYSIS RESULTS - UNSIGNALIZED – NO-BUILD CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
<b>Woodlawn Avenue with the 10330 S. Woodlawn Facility North Access Drive</b>				
• Eastbound Approach	A	9.6	B	10.4
<b>Woodlawn Avenue with the North Community Center Access Drive and the 10330 S. Woodlawn Facility South Access Drive</b>				
• Eastbound Approach	C	15.3	C	17.8
• Westbound Approach	B	14.3	B	11.7
• Northbound Left Turn	A	8.0	A	8.9
• Southbound Left Turn	A	8.0	A	9.3
<b>Woodlawn Avenue with the North Amazon Access Drive</b>				
• Eastbound Approach	C	16.3	B	14.9
• Northbound Left Turn	--	--	A	9.9
<b>Woodlawn Avenue with the Middle North Amazon Access Drive</b>				
• Eastbound Approach	B	10.1	B	11.7
• Northbound Left Turn	A	7.8	A	8.3
<b>Woodlawn Avenue with the Middle South Amazon Access Drive and the Middle Community Center Access Drive</b>				
• Eastbound Approach	B	12.3	B	11.8
• Westbound Approach	--	--	B	11.1
• Northbound Left Turn	A	7.8	A	8.1
• Southbound Left Turn	A	7.9	A	7.9
<b>Woodlawn Avenue with the South Community Center Access Drive</b>				
• Westbound Approach	--	--	--	--
• Southbound Left Turn	--	--	--	--
<b>Woodlawn Avenue with the Gotham Greens Access Drives</b>				
• Eastbound Approach	A	9.8	B	13.3
• Northbound Left Turn	A	7.8	A	8.3
<b>Doty Avenue with the North Pullman Park Access Drive</b>				
• Eastbound Approach	B	13.2	B	10.7
• Northbound Left Turn <sup>1</sup>	A	7.8	--	--
<b>Doty Avenue with the Pullman Park Main Access Drive</b>				
• Eastbound Approach	B	11.3	B	12.6
• Northbound Left Turn	A	7.9	A	8.4
LOS = Level of Service Delay is measured in seconds. 1 – Illegal Movement				

Table 6

## CAPACITY ANALYSIS RESULTS - UNSIGNALIZED – PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
<b>Woodlawn Avenue with the 10330 S. Woodlawn Facility North Access Drive</b>				
• Eastbound Approach	A	9.7	B	10.4
<b>Woodlawn Avenue with the North Community Center Access Drive and the 10330 S. Woodlawn Facility South Access Drive</b>				
• Eastbound Approach	C	15.7	C	18.3
• Westbound Approach	B	14.7	B	11.9
• Northbound Left Turn	A	8.1	A	8.9
• Southbound Left Turn	A	8.0	A	9.4
<b>Woodlawn Avenue with the North Amazon Access Drive</b>				
• Eastbound Approach	C	16.8	C	15.3
• Northbound Left Turn	--	--	A	9.9
<b>Woodlawn Avenue with the Middle North Amazon Access Drive</b>				
• Eastbound Approach	B	10.3	B	11.9
• Northbound Left Turn	A	7.9	A	8.4
<b>Woodlawn Avenue with the Middle South Amazon Access Drive and the Middle Community Center Access Drive</b>				
• Eastbound Approach	B	12.5	B	11.9
• Westbound Approach	--	--	B	11.3
• Northbound Left Turn	A	7.9	A	8.1
• Southbound Left Turn	A	8.0	A	7.9
<b>Woodlawn Avenue with the South Community Center Access Drive</b>				
• Westbound Approach	--	--	--	--
• Southbound Left Turn	--	--	--	--
<b>Woodlawn Avenue with the Gotham Greens Access Drives</b>				
• Eastbound Approach	B	10.0	B	13.5
• Northbound Left Turn	A	7.9	A	8.3
<b>Doty Avenue with the North Site Access Drive</b>				
• Eastbound Approach	B	12.8	B	14.6
• Northbound Left Turn	A	9.1	A	9.7
<b>Doty Avenue with the North Pullman Park Access Drive/South Site Access Drive</b>				
• Eastbound Approach	B	12.4	B	13.8
• Northbound Left Turn	A	7.9	A	8.2
<b>Doty Avenue with the Pullman Park Main Access Drive</b>				
• Eastbound Approach	B	11.4	B	12.8
• Northbound Left Turn	A	7.9	A	8.4
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 street and traffic control improvements necessary to accommodate the facility-generated traffic.

### *Woodlawn Avenue with 103<sup>rd</sup> Street*

The results of the capacity analysis indicates that this intersection currently operates at an overall Level of Service (LOS) B during the weekday morning and weekday evening peak hours. Further, all Woodlawn Avenue movements currently operate at LOS D or better during both peak hours and all 103<sup>rd</sup> Street movements operate at LOS B or better during both peak hours.

Under Year 2029 no-build conditions, this intersection is projected to continue to operate at B during both peak hours. Further, all Woodlawn Avenue movements are projected to continue to operate at LOS D or better during both peak hours with the exception of the northbound left-turn movement, which is projected to operate at LOS E during the weekday morning peak hour. All 103<sup>rd</sup> Street movements are projected to continue to operate at LOS B or better during both peak hours.

Under Year 2029 total projected volumes, the intersection is expected to continue to operate at LOS B during both peak hours. Further, all movements are projected to continue to operate at the same level of service as no-build conditions. It should be noted that all movements, including the northbound left turn, are projected to operate with volume to capacity ratios of less than 1.0 and 95<sup>th</sup> percentile queues that can be accommodated within the existing turn lanes.

As such, this intersection has sufficient reserve capacity to accommodate the projected facility-generated traffic volumes and no street improvements and/or traffic control modifications are required at this intersection.

### *Woodlawn Avenue/Doty Avenue with the Existing Area Access Drives (Pullman Community Center, Amazon Facility, Pullman Park, Gotham Greens, and Proposed 10330 S. Woodlawn Facility)*

The results of the capacity analyses indicate that the turning movements to and from the area access drives currently operate at LOS C or better during the weekday morning and weekday evening peak hours.

Under Year 2029 no-build conditions, the turning movements to and from the area access drives are projected to continue to operate at LOS C or better during the weekday morning and evening peak hours.

Under Year 2029 total projected conditions, the turning movements to and from the area access drives are projected to continue to operate at LOS C or better during the weekday morning and evening peak hours. As such, intersections of Woodlawn Avenue/Doty Avenue with the area access drives have sufficient reserve capacity to accommodate the traffic to be generated by the proposed facility and no street improvements and/or traffic control modifications are required.

### *Doty Avenue with the North Pullman Park Access Drive/South Site Access Drive*

The results of the capacity analyses indicate that turning movements to and from the north Community Center access drive currently operate at LOS B or better during the weekday morning and weekday evening peak hours.

As proposed, the existing north Pullman Park access drive will be removed and a proposed full-movement access drive will be provided on Doty Avenue approximately 595 feet north of the Pullman Park main access drive and will provide access to the employees and Pullman Park. The new access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

Under Year 2029 total projected conditions, outbound movements from the access drive are projected to operate at LOS B during both peak hours. Further, the northbound left-turn movement is projected to operate at LOS A with 95<sup>th</sup> percentile queues of one to two vehicles. As such, the proposed access drive will adequately accommodate the projected facility traffic volumes, and will provide efficient access.

### *Doty Avenue with the North Site Access Drive*

As proposed, a full-movement access drive will be provided on Doty Avenue located approximately 900 feet north of the Pullman Park main access drive that will primarily serve the facility loading bays (truck traffic). This access drive will provide one inbound lane and one outbound lane wide enough to accommodate turning truck traffic. Outbound movements should be under stop sign control.

Under Year 2029 total projected conditions, outbound movements from the access drive are projected to operate at LOS B during both peak hours. Further, the northbound left-turn movement is projected to operate at LOS A with 95<sup>th</sup> percentile queues of one to two vehicles. As such, the proposed access drive will provide orderly and efficient access to the facility with limited impact on Doty Avenue.

Consideration should be given to restriping Doty Avenue to provide exclusive left-turn lanes or a two-way, left-turn lane serving the two access drives. Similar to the Woodlawn Avenue/Doty Avenue cross sections further north and south of the subject site, the buffered area between the vehicle lanes and the bike lanes will need to be reduced to accommodate the exclusive left-turn lanes or a two-way, left-turn lane.

## 6. Conclusion

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

- As proposed, the site will be developed with an approximately 160,025 square-foot warehouse/distribution building.
- Primary access to the proposed development will be provided via the following two access drives on Doty Avenue and will replace the Pullman Park north access drive:
  - A proposed full-movement access drive located approximately 595 feet north of the Pullman Park main access drive that will provide access to the employee parking and Pullman Park. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.
  - A proposed full-movement access drive located approximately 900 feet north of the Pullman Park main access drive that will provide access to the loading bays (truck traffic). This access drive will provide one inbound lane and one outbound wide enough to accommodate turning truck traffic. Outbound movements should be under stop sign control.
- Consideration should be given to restriping Doty Avenue to provide exclusive left-turn lanes or a two-way, left-turn lane serving the two access drives. Similar to the Woodlawn Avenue/Doty Avenue cross sections further north and south of the subject site, the buffered area between the vehicle lanes and the bike lanes will need to be reduced to accommodate the exclusive left-turn lanes or a two-way, left-turn lane.
- Secondary access to the employee parking for the facility will be provided via cross access with Pullman Park.
- The proposed access system will be adequate in accommodating the traffic estimated to be generated by the facility.
- Area intersections have sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed facility and no street improvements or traffic control modifications are required.



# Appendix

Traffic Count Summary Sheets  
ITE Trip Generation Worksheets  
Preliminary Site Plan  
Level of Service Criteria  
Capacity Analysis Summary Sheets

# Traffic Count Summary Sheets

















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

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

Count Name: Woodlawn Avenue with 103rd  
Street TMC  
Site Code:  
Start Date: 09/07/2023  
Page No: 1

### Turning Movement Data

Start Time	103rd Street Eastbound						103rd Street Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	0	6	50	7	0	63	0	17	89	11	0	117	0	24	5	9	0	38	0	8	1	3	0	12	230
7:15 AM	0	5	55	5	1	65	1	15	118	8	0	142	0	28	12	16	0	56	0	5	0	4	0	9	272
7:30 AM	0	6	65	16	0	87	0	41	143	17	0	201	0	30	7	14	0	51	0	7	4	1	0	12	351
7:45 AM	0	12	77	15	1	104	4	41	179	12	0	236	0	48	16	19	0	83	0	8	2	2	0	12	435
Hourly Total	0	29	247	43	2	319	5	114	529	48	0	696	0	130	40	58	0	228	0	28	7	10	0	45	1288
8:00 AM	0	12	79	22	0	113	4	34	126	7	2	171	0	46	6	28	0	80	0	5	3	4	0	12	376
8:15 AM	0	7	101	15	0	123	3	26	121	5	0	155	0	19	8	20	0	47	0	8	1	1	0	10	335
8:30 AM	0	4	72	15	0	91	4	46	120	15	0	185	0	40	2	19	1	61	0	6	0	3	0	9	346
8:45 AM	0	8	73	22	0	103	5	43	107	10	0	165	0	17	8	11	0	36	0	10	4	4	0	18	322
Hourly Total	0	31	325	74	0	430	16	149	474	37	2	676	0	122	24	78	1	224	0	29	8	12	0	49	1379
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	7	141	30	0	178	3	39	118	5	0	165	0	32	6	23	0	61	0	30	3	7	0	40	444
4:15 PM	0	6	114	37	0	157	2	46	108	5	0	161	0	23	2	42	0	67	0	18	2	1	0	21	406
4:30 PM	0	4	174	36	0	214	0	44	100	4	0	148	0	32	1	42	0	75	0	26	2	4	0	32	469
4:45 PM	0	8	111	39	0	158	4	37	112	4	0	157	0	24	2	34	0	60	0	18	1	0	0	19	394
Hourly Total	0	25	540	142	0	707	9	166	438	18	0	631	0	111	11	141	0	263	0	92	8	12	0	112	1713
5:00 PM	0	4	107	33	0	144	3	49	81	3	0	136	0	17	2	34	0	53	0	13	6	5	0	24	357
5:15 PM	0	5	105	27	0	137	2	40	101	5	0	148	0	27	3	31	0	61	0	16	2	4	0	22	368
5:30 PM	0	3	83	37	0	123	1	51	76	2	0	130	0	23	2	28	0	53	0	16	5	2	0	23	329
5:45 PM	0	4	102	38	0	144	4	60	73	3	0	140	0	27	2	28	0	57	0	6	2	2	2	10	351
Hourly Total	0	16	397	135	0	548	10	200	331	13	0	554	0	94	9	121	0	224	0	51	15	13	2	79	1405
Grand Total	0	101	1509	394	2	2004	40	629	1772	116	2	2557	0	457	84	398	1	939	0	200	38	47	2	285	5785
Approach %	0.0	5.0	75.3	19.7	-	-	1.6	24.6	69.3	4.5	-	-	0.0	48.7	8.9	42.4	-	-	0.0	70.2	13.3	16.5	-	-	-
Total %	0.0	1.7	26.1	6.8	-	34.6	0.7	10.9	30.6	2.0	-	44.2	0.0	7.9	1.5	6.9	-	16.2	0.0	3.5	0.7	0.8	-	4.9	-
Lights	0	77	1441	383	-	1901	40	592	1683	74	-	2389	0	454	83	372	-	909	0	131	38	35	-	204	5403
% Lights	-	76.2	95.5	97.2	-	94.9	100.0	94.1	95.0	63.8	-	93.4	-	99.3	98.8	93.5	-	96.8	-	65.5	100.0	74.5	-	71.6	93.4
Buses	0	18	18	2	-	38	0	14	26	2	-	42	0	0	0	12	-	12	0	32	0	11	-	43	135
% Buses	-	17.8	1.2	0.5	-	1.9	0.0	2.2	1.5	1.7	-	1.6	-	0.0	0.0	3.0	-	1.3	-	16.0	0.0	23.4	-	15.1	2.3
Single-Unit Trucks	0	2	28	6	-	36	0	17	40	6	-	63	0	3	0	8	-	11	0	5	0	1	-	6	116
% Single-Unit Trucks	-	2.0	1.9	1.5	-	1.8	0.0	2.7	2.3	5.2	-	2.5	-	0.7	0.0	2.0	-	1.2	-	2.5	0.0	2.1	-	2.1	2.0
Articulated Trucks	0	3	22	3	-	28	0	6	23	34	-	63	0	0	1	6	-	7	0	32	0	0	-	32	130
% Articulated Trucks	-	3.0	1.5	0.8	-	1.4	0.0	1.0	1.3	29.3	-	2.5	-	0.0	1.2	1.5	-	0.7	-	16.0	0.0	0.0	-	11.2	2.2
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1



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Count Name: Woodlawn Avenue with 103rd  
Street TMC  
Site Code:  
Start Date: 09/07/2023  
Page No: 3

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	103rd Street Eastbound						103rd Street Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
7:45 AM	0	12	77	15	1	104	4	41	179	12	0	236	0	48	16	19	0	83	0	8	2	2	0	12	435
8:00 AM	0	12	79	22	0	113	4	34	126	7	2	171	0	46	6	28	0	80	0	5	3	4	0	12	376
8:15 AM	0	7	101	15	0	123	3	26	121	5	0	155	0	19	8	20	0	47	0	8	1	1	0	10	335
8:30 AM	0	4	72	15	0	91	4	46	120	15	0	185	0	40	2	19	1	61	0	6	0	3	0	9	346
<b>Total</b>	<b>0</b>	<b>35</b>	<b>329</b>	<b>67</b>	<b>1</b>	<b>431</b>	<b>15</b>	<b>147</b>	<b>546</b>	<b>39</b>	<b>2</b>	<b>747</b>	<b>0</b>	<b>153</b>	<b>32</b>	<b>86</b>	<b>1</b>	<b>271</b>	<b>0</b>	<b>27</b>	<b>6</b>	<b>10</b>	<b>0</b>	<b>43</b>	<b>1492</b>
Approach %	0.0	8.1	76.3	15.5	-	-	2.0	19.7	73.1	5.2	-	-	0.0	56.5	11.8	31.7	-	-	0.0	62.8	14.0	23.3	-	-	-
Total %	0.0	2.3	22.1	4.5	-	28.9	1.0	9.9	36.6	2.6	-	50.1	0.0	10.3	2.1	5.8	-	18.2	0.0	1.8	0.4	0.7	-	2.9	-
PHF	0.000	0.729	0.814	0.761	-	0.876	0.938	0.799	0.763	0.650	-	0.791	0.000	0.797	0.500	0.768	-	0.816	0.000	0.844	0.500	0.625	-	0.896	0.857
Lights	0	29	310	65	-	404	15	140	527	31	-	713	0	153	31	80	-	264	0	4	6	6	-	16	1397
% Lights	-	82.9	94.2	97.0	-	93.7	100.0	95.2	96.5	79.5	-	95.4	-	100.0	96.9	93.0	-	97.4	-	14.8	100.0	60.0	-	37.2	93.6
Buses	0	5	4	0	-	9	0	3	6	0	-	9	0	0	0	3	-	3	0	10	0	4	-	14	35
% Buses	-	14.3	1.2	0.0	-	2.1	0.0	2.0	1.1	0.0	-	1.2	-	0.0	0.0	3.5	-	1.1	-	37.0	0.0	40.0	-	32.6	2.3
Single-Unit Trucks	0	0	10	2	-	12	0	2	4	2	-	8	0	0	0	0	-	0	0	2	0	0	-	2	22
% Single-Unit Trucks	-	0.0	3.0	3.0	-	2.8	0.0	1.4	0.7	5.1	-	1.1	-	0.0	0.0	0.0	-	0.0	-	7.4	0.0	0.0	-	4.7	1.5
Articulated Trucks	0	1	5	0	-	6	0	2	9	6	-	17	0	0	1	3	-	4	0	11	0	0	-	11	38
% Articulated Trucks	-	2.9	1.5	0.0	-	1.4	0.0	1.4	1.6	15.4	-	2.3	-	0.0	3.1	3.5	-	1.5	-	40.7	0.0	0.0	-	25.6	2.5
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	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-



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Start Date: 09/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (4:00 PM)

Start Time	103rd Street Eastbound						103rd Street Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
4:00 PM	0	7	141	30	0	178	3	39	118	5	0	165	0	32	6	23	0	61	0	30	3	7	0	40	444
4:15 PM	0	6	114	37	0	157	2	46	108	5	0	161	0	23	2	42	0	67	0	18	2	1	0	21	406
4:30 PM	0	4	174	36	0	214	0	44	100	4	0	148	0	32	1	42	0	75	0	26	2	4	0	32	469
4:45 PM	0	8	111	39	0	158	4	37	112	4	0	157	0	24	2	34	0	60	0	18	1	0	0	19	394
Total	0	25	540	142	0	707	9	166	438	18	0	631	0	111	11	141	0	263	0	92	8	12	0	112	1713
Approach %	0.0	3.5	76.4	20.1	-	-	1.4	26.3	69.4	2.9	-	-	0.0	42.2	4.2	53.6	-	-	0.0	82.1	7.1	10.7	-	-	-
Total %	0.0	1.5	31.5	8.3	-	41.3	0.5	9.7	25.6	1.1	-	36.8	0.0	6.5	0.6	8.2	-	15.4	0.0	5.4	0.5	0.7	-	6.5	-
PHF	0.000	0.781	0.776	0.910	-	0.826	0.563	0.902	0.928	0.900	-	0.956	0.000	0.867	0.458	0.839	-	0.877	0.000	0.767	0.667	0.429	-	0.700	0.913
Lights	0	19	525	138	-	682	9	160	400	4	-	573	0	111	11	136	-	258	0	73	8	10	-	91	1604
% Lights	-	76.0	97.2	97.2	-	96.5	100.0	96.4	91.3	22.2	-	90.8	-	100.0	100.0	96.5	-	98.1	-	79.3	100.0	83.3	-	81.3	93.6
Buses	0	4	7	1	-	12	0	3	8	0	-	11	0	0	0	3	-	3	0	9	0	2	-	11	37
% Buses	-	16.0	1.3	0.7	-	1.7	0.0	1.8	1.8	0.0	-	1.7	-	0.0	0.0	2.1	-	1.1	-	9.8	0.0	16.7	-	9.8	2.2
Single-Unit Trucks	0	2	1	2	-	5	0	2	26	1	-	29	0	0	0	2	-	2	0	0	0	0	-	0	36
% Single-Unit Trucks	-	8.0	0.2	1.4	-	0.7	0.0	1.2	5.9	5.6	-	4.6	-	0.0	0.0	1.4	-	0.8	-	0.0	0.0	0.0	-	0.0	2.1
Articulated Trucks	0	0	7	1	-	8	0	1	4	13	-	18	0	0	0	0	-	0	0	10	0	0	-	10	36
% Articulated Trucks	-	0.0	1.3	0.7	-	1.1	0.0	0.6	0.9	72.2	-	2.9	-	0.0	0.0	0.0	-	0.0	-	10.9	0.0	0.0	-	8.9	2.1
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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Page No: 1

### Turning Movement Data

Start Time	104th Street Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	1	0	40	0	0	30	0	0	30	70
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	54	0	0	54	0	0	19	0	0	19	73
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	58	0	0	58	0	0	58	116
7:45 AM	0	0	0	0	1	0	0	1	0	1	0	2	0	0	88	0	0	88	0	1	60	0	0	61	151
Hourly Total	0	0	0	0	2	0	0	1	0	1	0	2	0	0	239	1	0	240	0	1	167	0	0	168	410
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	0	0	78	0	0	60	0	0	60	138
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	52	0	0	52	0	0	39	0	0	39	91
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	1	0	66	0	0	63	0	0	63	129
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	36	0	0	36	0	0	67	0	0	67	104
Hourly Total	0	0	0	0	1	0	0	1	0	0	0	1	0	0	231	1	0	232	0	0	229	0	0	229	462
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	0	59	0	0	77	0	0	77	136
4:15 PM	0	0	0	0	25	0	0	0	0	1	0	1	0	0	69	0	0	69	0	1	85	0	0	86	156
4:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	79	0	0	79	0	0	99	0	0	99	178
4:45 PM	0	0	0	0	2	0	0	0	0	0	2	0	0	0	64	0	2	64	0	0	82	0	0	82	146
Hourly Total	0	0	0	0	29	0	0	0	0	1	2	1	0	0	271	0	2	271	0	1	343	0	0	344	616
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	0	53	0	0	98	0	0	98	151
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0	0	62	0	0	68	0	0	68	130
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0	0	54	0	0	94	0	0	94	148
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	0	0	55	0	0	94	0	0	94	149
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224	0	0	224	0	0	354	0	0	354	578
Grand Total	0	0	0	0	32	0	0	2	0	2	2	4	0	0	965	2	2	967	0	2	1093	0	0	1095	2066
Approach %	0.0	0.0	0.0	0.0	-	-	0.0	50.0	0.0	50.0	-	-	0.0	0.0	99.8	0.2	-	-	0.0	0.2	99.8	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1	-	0.2	0.0	0.0	46.7	0.1	-	46.8	0.0	0.1	52.9	0.0	-	53.0	-
Lights	0	0	0	0	-	0	0	0	0	1	-	1	0	0	935	0	-	935	0	1	1050	0	-	1051	1987
% Lights	-	-	-	-	-	-	-	0.0	-	50.0	-	25.0	-	-	96.9	0.0	-	96.7	-	50.0	96.1	-	-	96.0	96.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	12	0	-	12	0	0	16	0	-	16	28
% Buses	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	-	-	1.2	0.0	-	1.2	-	0.0	1.5	-	-	1.5	1.4
Single-Unit Trucks	0	0	0	0	-	0	0	2	0	1	-	3	0	0	12	2	-	14	0	1	17	0	-	18	35
% Single-Unit Trucks	-	-	-	-	-	-	-	100.0	-	50.0	-	75.0	-	-	1.2	100.0	-	1.4	-	50.0	1.6	-	-	1.6	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	6	0	-	6	0	0	9	0	-	9	15
% Articulated Trucks	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	-	-	0.6	0.0	-	0.6	-	0.0	0.8	-	-	0.8	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1



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Page No: 3

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	104th Street Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
7:45 AM	0	0	0	0	1	0	0	1	0	1	0	2	0	0	88	0	0	88	0	1	60	0	0	61	151
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	0	0	78	0	0	60	0	0	60	138
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	52	0	0	52	0	0	39	0	0	39	91
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	1	0	66	0	0	63	0	0	63	129
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>283</b>	<b>1</b>	<b>0</b>	<b>284</b>	<b>0</b>	<b>1</b>	<b>222</b>	<b>0</b>	<b>0</b>	<b>223</b>	<b>509</b>
Approach %	0.0	0.0	0.0	0.0	-	-	0.0	50.0	0.0	50.0	-	-	0.0	0.0	99.6	0.4	-	-	0.0	0.4	99.6	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	0.2	-	0.4	0.0	0.0	55.6	0.2	-	55.8	0.0	0.2	43.6	0.0	-	43.8	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.000	0.250	0.000	0.250	-	0.250	0.000	0.000	0.804	0.250	-	0.807	0.000	0.250	0.881	0.000	-	0.885	0.843
Lights	0	0	0	0	-	0	0	0	0	1	-	1	0	0	276	0	-	276	0	1	211	0	-	212	489
% Lights	-	-	-	-	-	-	-	0.0	-	100.0	-	50.0	-	-	97.5	0.0	-	97.2	-	100.0	95.0	-	-	95.1	96.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	3	0	-	3	6
% Buses	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	-	-	1.1	0.0	-	1.1	-	0.0	1.4	-	-	1.3	1.2
Single-Unit Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	1	-	2	0	0	5	0	-	5	8
% Single-Unit Trucks	-	-	-	-	-	-	-	100.0	-	0.0	-	50.0	-	-	0.4	100.0	-	0.7	-	0.0	2.3	-	-	2.2	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	2	0	-	2	5
% Articulated Trucks	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	-	-	1.1	0.0	-	1.1	-	0.0	0.9	-	-	0.9	1.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Bicycles on Road	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.5	-	-	0.4	0.2
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





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### Turning Movement Peak Hour Data (4:00 PM)

Start Time	104th Street Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	0	59	0	0	77	0	0	77	136
4:15 PM	0	0	0	0	25	0	0	0	0	1	0	1	0	0	69	0	0	69	0	1	85	0	0	86	156
4:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	79	0	0	79	0	0	99	0	0	99	178
4:45 PM	0	0	0	0	2	0	0	0	0	0	2	0	0	0	64	0	2	64	0	0	82	0	0	82	146
Total	0	0	0	0	29	0	0	0	0	1	2	1	0	0	271	0	2	271	0	1	343	0	0	344	616
Approach %	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	100.0	-	-	0.0	0.0	100.0	0.0	-	-	0.0	0.3	99.7	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.2	-	0.2	0.0	0.0	44.0	0.0	-	44.0	0.0	0.2	55.7	0.0	-	55.8	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.250	-	0.250	0.000	0.000	0.858	0.000	-	0.858	0.000	0.250	0.866	0.000	-	0.869	0.865
Lights	0	0	0	0	-	0	0	0	0	0	-	0	0	0	267	0	-	267	0	0	333	0	-	333	600
% Lights	-	-	-	-	-	-	-	-	-	0.0	-	0.0	-	-	98.5	-	-	98.5	-	0.0	97.1	-	-	96.8	97.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	5	0	-	5	8
% Buses	-	-	-	-	-	-	-	-	-	0.0	-	0.0	-	-	1.1	-	-	1.1	-	0.0	1.5	-	-	1.5	1.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	1	-	1	0	0	1	0	-	1	0	1	3	0	-	4	6
% Single-Unit Trucks	-	-	-	-	-	-	-	-	-	100.0	-	100.0	-	-	0.4	-	-	0.4	-	100.0	0.9	-	-	1.2	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	2
% Articulated Trucks	-	-	-	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	-	0.0	-	0.0	0.6	-	-	0.6	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
Pedestrians	-	-	-	-	29	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-









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Count Name: Woodlawn Avenue with Access  
Drives TMC  
Site Code:  
Start Date: 09/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Access Drive Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	0	5	0	0	0	5	0	0	0	0	0	0	0	3	34	0	0	37	0	0	30	0	0	30	72
7:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	1	2	54	0	0	57	0	0	18	4	0	22	81
7:30 AM	0	1	0	2	0	3	0	0	0	0	0	0	0	4	58	0	0	62	0	0	53	3	0	56	121
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	3	89	0	0	92	0	0	60	1	0	61	154
Hourly Total	0	9	0	2	0	11	0	0	0	0	0	0	1	12	235	0	0	248	0	0	161	8	0	169	428
8:00 AM	0	5	0	1	0	6	0	0	0	0	1	0	0	3	72	0	0	75	0	0	62	2	0	64	145
8:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	2	52	0	0	54	0	0	38	2	0	40	95
8:30 AM	0	5	0	0	0	5	0	0	0	0	1	0	0	6	62	0	0	68	0	1	58	3	0	62	135
8:45 AM	0	2	1	0	0	3	0	1	0	0	0	1	0	4	37	0	0	41	0	1	55	9	0	65	110
Hourly Total	0	12	1	2	0	15	0	1	0	0	2	1	0	15	223	0	0	238	0	2	213	16	0	231	485
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	0	0	0	1	0	0	0	1	0	1	1	0	57	0	0	58	0	1	74	2	0	77	137
4:15 PM	0	1	0	0	0	1	0	0	0	1	1	1	0	0	67	2	0	69	0	1	83	2	0	86	157
4:30 PM	0	3	0	2	0	5	0	0	0	2	0	2	0	1	75	1	0	77	0	1	95	2	0	98	182
4:45 PM	0	1	0	7	0	8	0	2	0	0	0	2	0	0	65	0	1	65	0	1	80	1	0	82	157
Hourly Total	0	6	0	9	0	15	0	2	0	4	1	6	1	1	264	3	1	269	0	4	332	7	0	343	633
5:00 PM	0	3	0	0	0	3	0	0	0	0	0	0	0	1	49	1	0	51	0	0	93	0	0	93	147
5:15 PM	0	1	0	0	0	1	0	1	0	0	0	1	0	1	62	1	0	64	0	1	70	3	0	74	140
5:30 PM	0	2	0	0	0	2	0	2	0	2	0	4	0	0	54	2	0	56	0	5	89	1	0	95	157
5:45 PM	0	2	0	2	0	4	0	1	0	2	0	3	0	1	60	3	0	64	0	21	74	4	0	99	170
Hourly Total	0	8	0	2	0	10	0	4	0	4	0	8	0	3	225	7	0	235	0	27	326	8	0	361	614
Grand Total	0	35	1	15	0	51	0	7	0	8	3	15	2	31	947	10	1	990	0	33	1032	39	0	1104	2160
Approach %	0.0	68.6	2.0	29.4	-	-	0.0	46.7	0.0	53.3	-	-	0.2	3.1	95.7	1.0	-	-	0.0	3.0	93.5	3.5	-	-	-
Total %	0.0	1.6	0.0	0.7	-	2.4	0.0	0.3	0.0	0.4	-	0.7	0.1	1.4	43.8	0.5	-	45.8	0.0	1.5	47.8	1.8	-	51.1	-
Lights	0	34	1	15	-	50	0	7	0	8	-	15	2	30	917	10	-	959	0	33	989	39	-	1061	2085
% Lights	-	97.1	100.0	100.0	-	98.0	-	100.0	-	100.0	-	100.0	100.0	96.8	96.8	100.0	-	96.9	-	100.0	95.8	100.0	-	96.1	96.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	12	0	-	12	0	0	16	0	-	16	28
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	1.3	0.0	-	1.2	-	0.0	1.6	0.0	-	1.4	1.3
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	1	16	0	-	17	0	0	19	0	-	19	37
% Single-Unit Trucks	-	2.9	0.0	0.0	-	2.0	-	0.0	-	0.0	-	0.0	0.0	3.2	1.7	0.0	-	1.7	-	0.0	1.8	0.0	-	1.7	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	7	0	-	7	9
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.2	-	0.0	0.7	0.0	-	0.6	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1



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Count Name: Woodlawn Avenue with Access  
Drives TMC  
Site Code:  
Start Date: 09/07/2023  
Page No: 3

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Access Drive Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	3	89	0	0	92	0	0	60	1	0	61	154
8:00 AM	0	5	0	1	0	6	0	0	0	0	1	0	0	3	72	0	0	75	0	0	62	2	0	64	145
8:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	2	52	0	0	54	0	0	38	2	0	40	95
8:30 AM	0	5	0	0	0	5	0	0	0	0	1	0	0	6	62	0	0	68	0	1	58	3	0	62	135
Total	0	11	0	2	0	13	0	0	0	0	2	0	0	14	275	0	0	289	0	1	218	8	0	227	529
Approach %	0.0	84.6	0.0	15.4	-	-	0.0	0.0	0.0	0.0	-	-	0.0	4.8	95.2	0.0	-	-	0.0	0.4	96.0	3.5	-	-	-
Total %	0.0	2.1	0.0	0.4	-	2.5	0.0	0.0	0.0	0.0	-	0.0	0.0	2.6	52.0	0.0	-	54.6	0.0	0.2	41.2	1.5	-	42.9	-
PHF	0.000	0.550	0.000	0.500	-	0.542	0.000	0.000	0.000	0.000	-	0.000	0.000	0.583	0.772	0.000	-	0.785	0.000	0.250	0.879	0.667	-	0.887	0.859
Lights	0	11	0	2	-	13	0	0	0	0	-	0	0	14	268	0	-	282	0	1	205	8	-	214	509
% Lights	-	100.0	-	100.0	-	100.0	-	-	-	-	-	-	-	100.0	97.5	-	-	97.6	-	100.0	94.0	100.0	-	94.3	96.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	3	0	-	3	6
% Buses	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	0.0	1.1	-	-	1.0	-	0.0	1.4	0.0	-	1.3	1.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	7	0	-	7	9
% Single-Unit Trucks	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	0.0	0.7	-	-	0.7	-	0.0	3.2	0.0	-	3.1	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	2	0	-	2	4
% Articulated Trucks	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	0.0	0.7	-	-	0.7	-	0.0	0.9	0.0	-	0.9	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Bicycles on Road	-	0.0	-	0.0	-	0.0	-	-	-	-	-	-	-	0.0	0.0	-	-	0.0	-	0.0	0.5	0.0	-	0.4	0.2
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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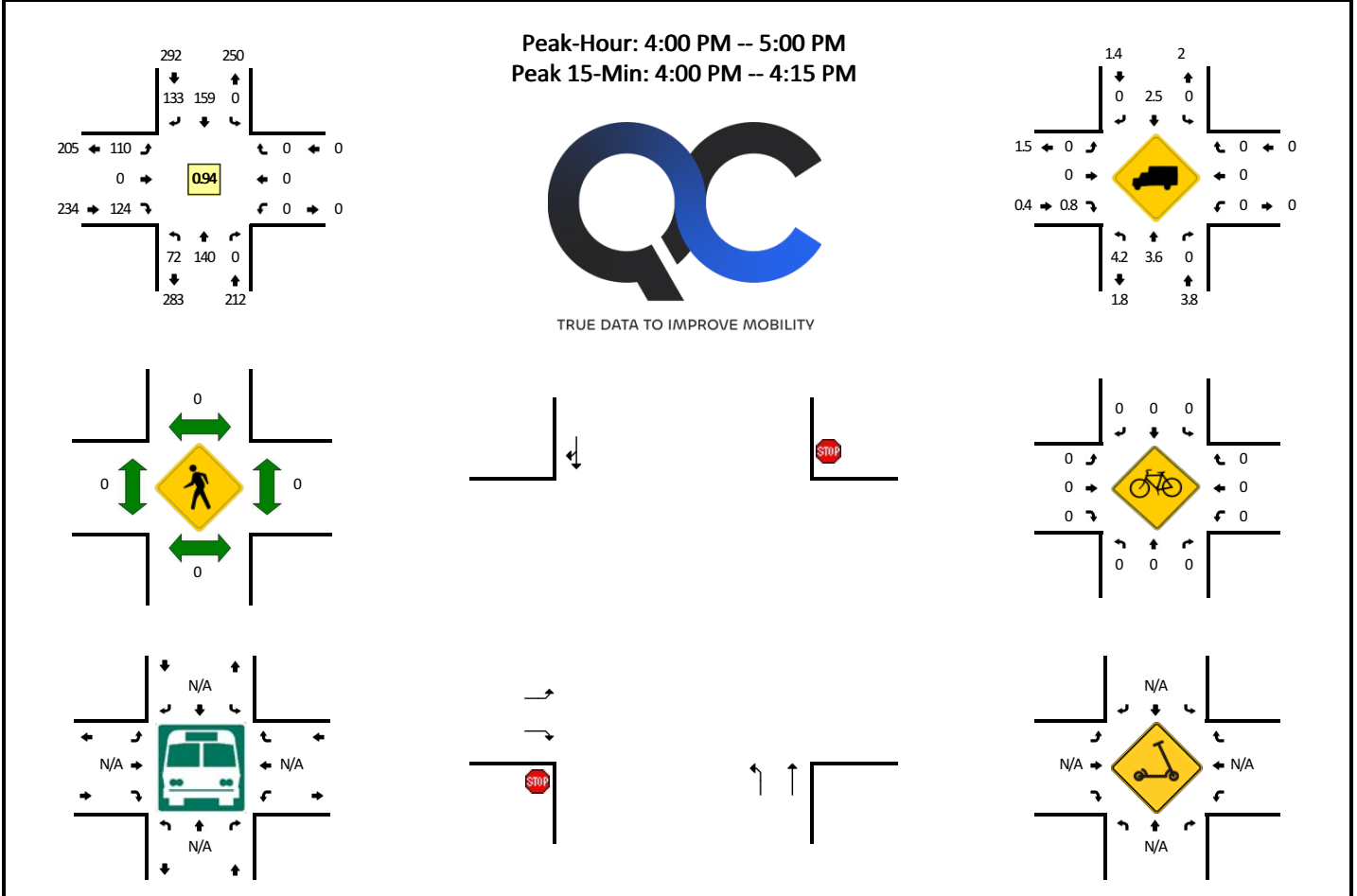
Count Name: Woodlawn Avenue with Access  
Drives TMC  
Site Code:  
Start Date: 09/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (4:00 PM)

Start Time	Access Drive Eastbound						Access Drive Westbound						Woodlawn Avenue Northbound						Woodlawn Avenue 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	
4:00 PM	0	1	0	0	0	1	0	0	0	1	0	1	1	0	57	0	0	58	0	1	74	2	0	77	137
4:15 PM	0	1	0	0	0	1	0	0	0	1	1	1	0	0	67	2	0	69	0	1	83	2	0	86	157
4:30 PM	0	3	0	2	0	5	0	0	0	2	0	2	0	1	75	1	0	77	0	1	95	2	0	98	182
4:45 PM	0	1	0	7	0	8	0	2	0	0	0	2	0	0	65	0	1	65	0	1	80	1	0	82	157
<b>Total</b>	0	6	0	9	0	15	0	2	0	4	1	6	1	1	264	3	1	269	0	4	332	7	0	343	633
Approach %	0.0	40.0	0.0	60.0	-	-	0.0	33.3	0.0	66.7	-	-	0.4	0.4	98.1	1.1	-	-	0.0	1.2	96.8	2.0	-	-	-
Total %	0.0	0.9	0.0	1.4	-	2.4	0.0	0.3	0.0	0.6	-	0.9	0.2	0.2	41.7	0.5	-	42.5	0.0	0.6	52.4	1.1	-	54.2	-
PHF	0.000	0.500	0.000	0.321	-	0.469	0.000	0.250	0.000	0.500	-	0.750	0.250	0.250	0.880	0.375	-	0.873	0.000	1.000	0.874	0.875	-	0.875	0.870
Lights	0	6	0	9	-	15	0	2	0	4	-	6	1	1	258	3	-	263	0	4	322	7	-	333	617
% Lights	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	100.0	100.0	97.7	100.0	-	97.8	-	100.0	97.0	100.0	-	97.1	97.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	5	0	-	5	8
% Buses	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	1.1	0.0	-	1.1	-	0.0	1.5	0.0	-	1.5	1.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	4	0	-	4	7
% Single-Unit Trucks	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	1.1	0.0	-	1.1	-	0.0	1.2	0.0	-	1.2	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Articulated Trucks	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.3	0.2
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
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

**LOCATION:** S Doty Ave -- Walmart Access Dwy  
**CITY/STATE:** Chicago, IL

**QC JOB #:** 16341002  
**DATE:** Tue, Sep 26 2023



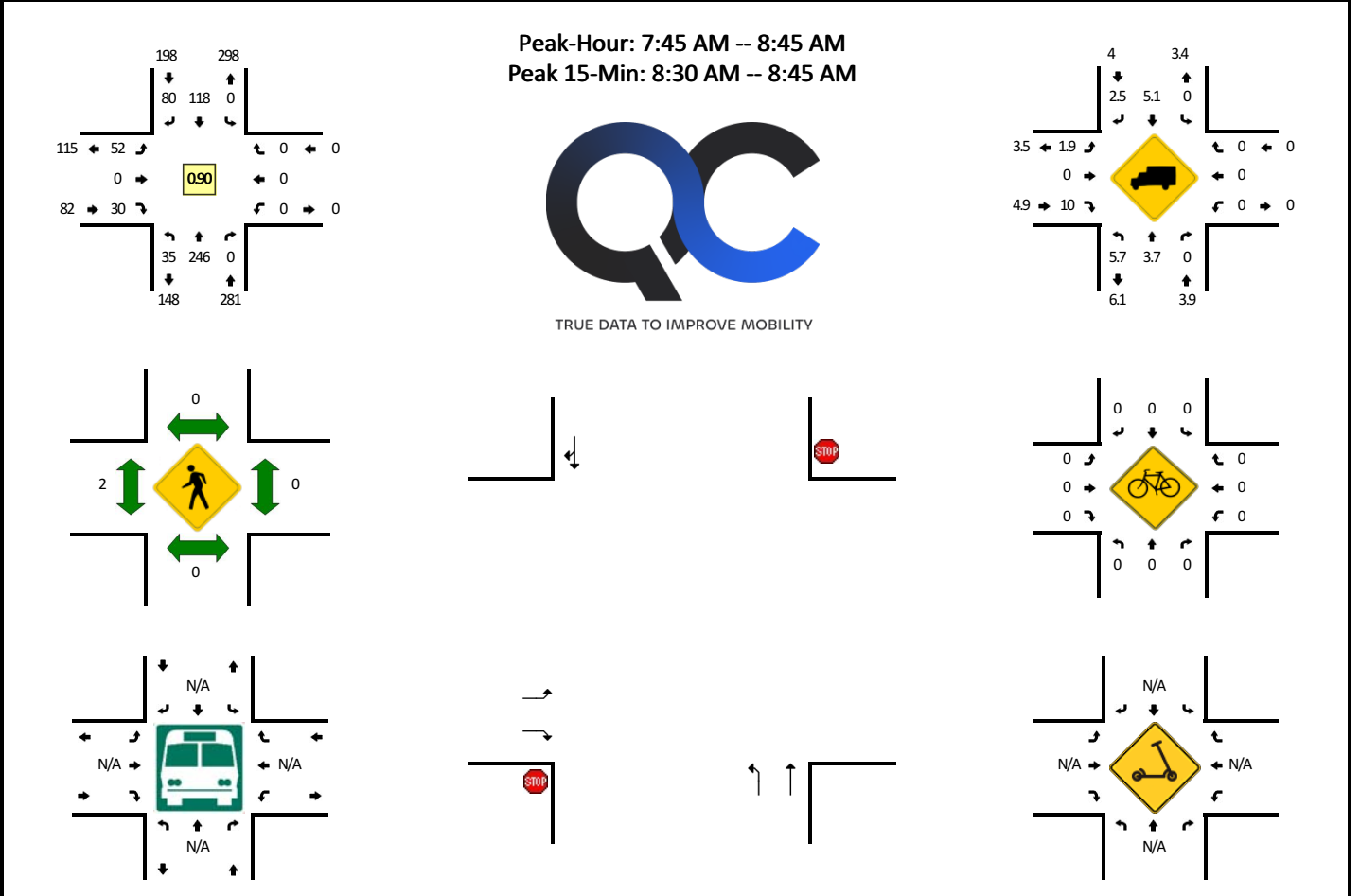
15-Min Count Period Beginning At	S Doty Ave (Northbound)				S Doty Ave (Southbound)				Walmart Access Dwy (Eastbound)				Walmart Access Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	20	38	0	0	0	48	31	0	27	0	33	0	0	0	0	0	197	
4:15 PM	19	39	0	0	0	38	40	0	20	0	31	0	0	0	0	0	187	
4:30 PM	18	35	0	0	0	38	36	0	30	0	27	0	0	0	0	0	184	
4:45 PM	15	28	0	0	0	35	26	0	33	0	33	0	0	0	0	0	170	738
5:00 PM	18	40	0	0	0	38	35	0	25	0	29	0	0	0	0	0	185	726
5:15 PM	19	39	0	0	0	39	31	0	27	0	32	0	0	0	0	0	187	726
5:30 PM	23	37	0	0	0	32	39	0	28	0	35	0	0	0	0	0	194	736
5:45 PM	17	40	0	0	0	32	39	0	30	0	29	0	0	0	0	0	187	753
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	80	152	0	0	0	192	124	0	108	0	132	0	0	0	0	0	788	
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	8	
Buses																		
Pedestrians		0				0					0				0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:



**LOCATION:** S Doty Ave -- Walmart Access Dwy  
**CITY/STATE:** Chicago, IL

**QC JOB #:** 16341001  
**DATE:** Tue, Sep 26 2023



15-Min Count Period Beginning At	S Doty Ave (Northbound)				S Doty Ave (Southbound)				Walmart Access Dwy (Eastbound)				Walmart Access Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	31	0	0	0	13	12	0	9	0	8	0	0	0	0	0	78	
7:15 AM	6	45	0	0	0	21	9	0	6	0	9	0	0	0	0	0	96	
7:30 AM	7	57	0	0	0	26	13	0	8	0	6	0	0	0	0	0	117	
7:45 AM	7	69	0	0	0	39	15	0	6	0	7	0	0	0	0	0	143	434
8:00 AM	5	69	0	0	0	19	15	0	12	0	9	0	0	0	0	0	129	485
8:15 AM	12	47	0	0	0	30	26	0	14	0	5	0	0	0	0	0	134	523
8:30 AM	11	61	0	0	0	30	24	0	20	0	9	0	0	0	0	0	155	561
8:45 AM	9	50	0	0	0	30	17	0	15	0	11	0	0	0	0	0	132	550
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	44	244	0	0	0	120	96	0	80	0	36	0	0	0	0	0	620	
Heavy Trucks	0	8	0	0	0	8	4	0	0	0	4	0	0	0	0	0	24	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

# ITE Trip Generation Sheets

# Warehousing (150)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
On a: Weekday

**Setting/Location: General Urban/Suburban**

Number of Studies: 31

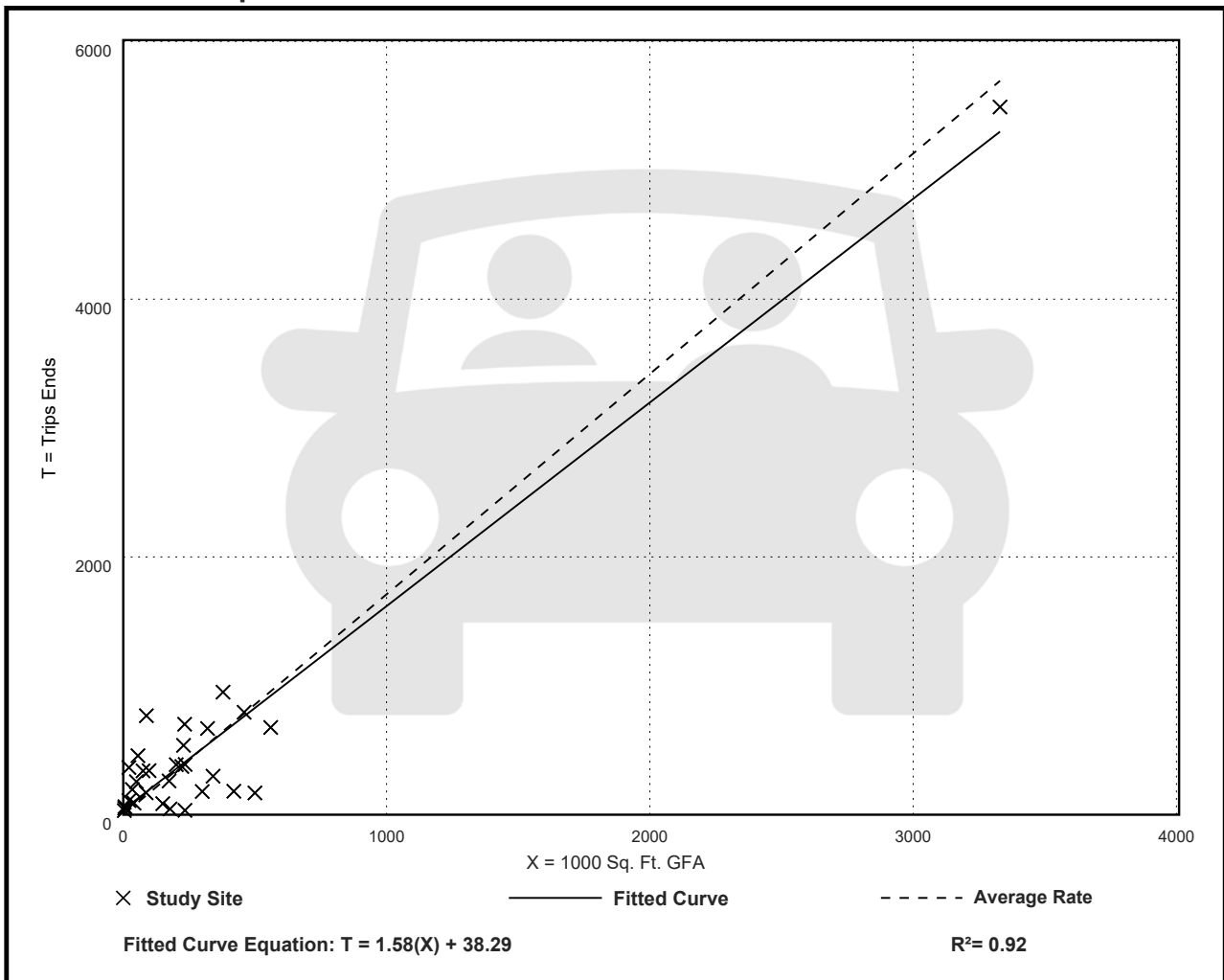
Avg. 1000 Sq. Ft. GFA: 292

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.71	0.15 - 16.93	1.48

## Data Plot and Equation



# Warehousing (150)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**

**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: 36

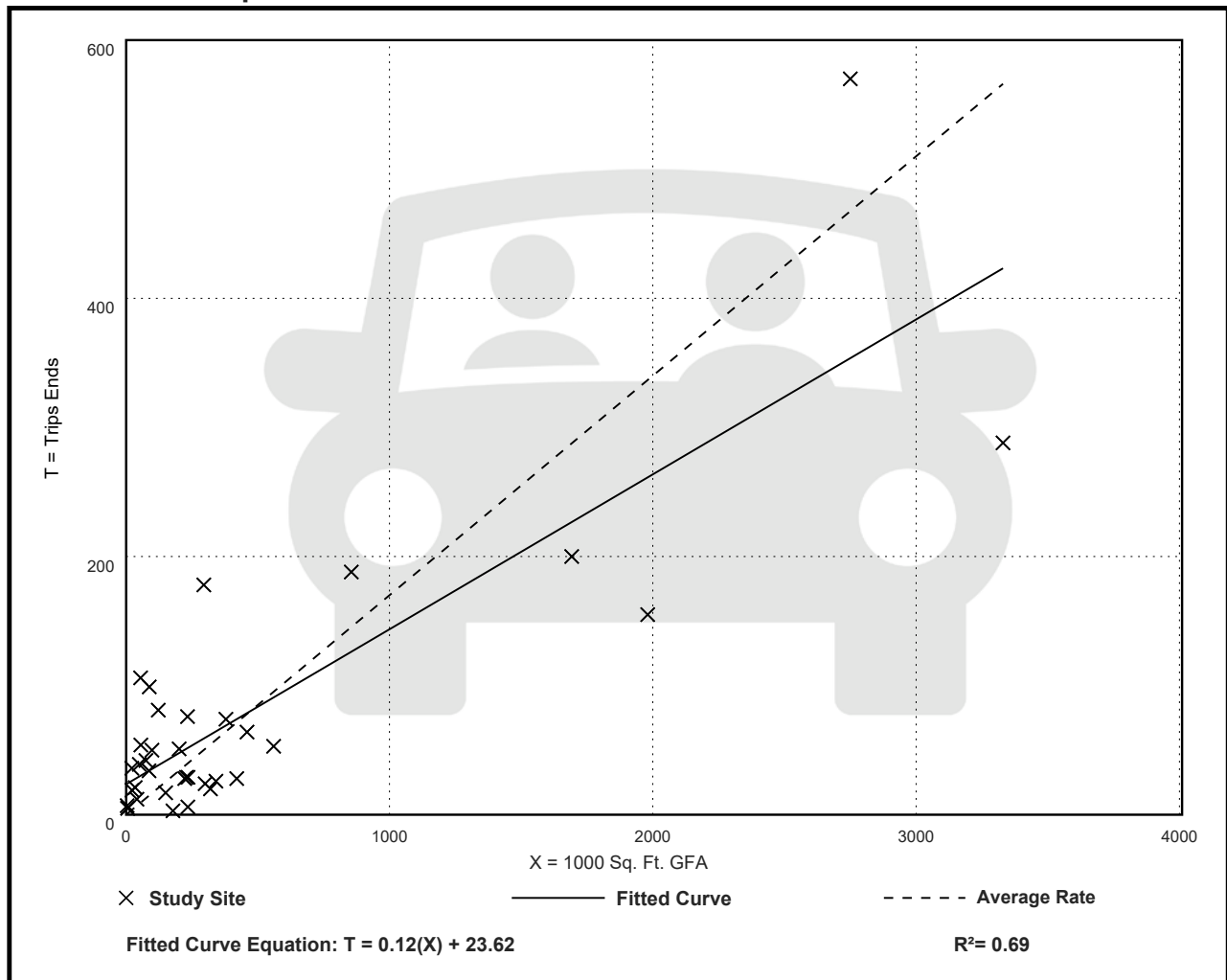
Avg. 1000 Sq. Ft. GFA: 448

Directional Distribution: 77% entering, 23% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.19

## Data Plot and Equation



# Warehousing (150)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**

**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: 49

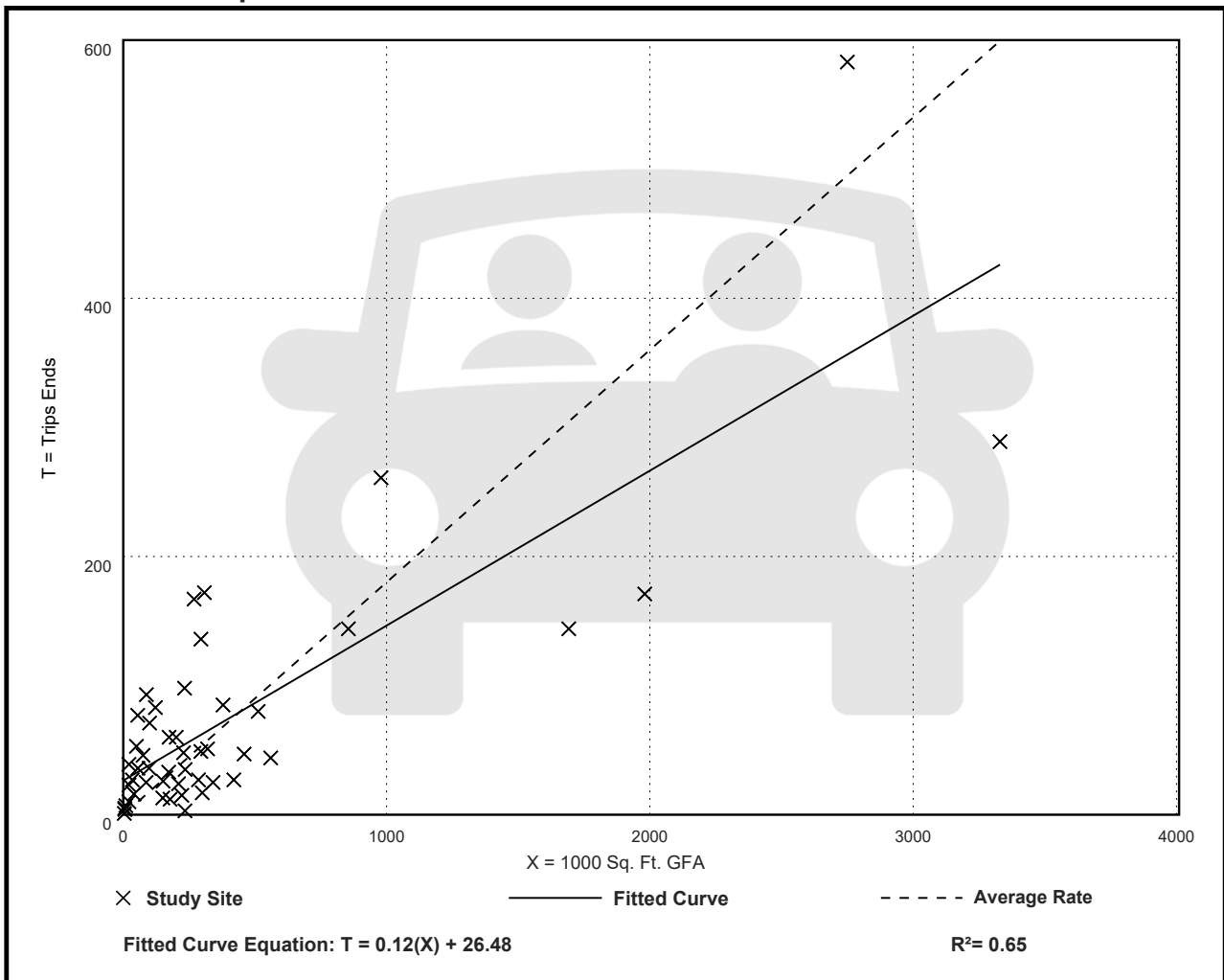
Avg. 1000 Sq. Ft. GFA: 400

Directional Distribution: 28% entering, 72% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.01 - 1.80	0.18

## Data Plot and Equation



# Preliminary Site Plan

SC JOHNSON WAREHOUSE  
(716 E 111TH STREET, BLDG B)

GOTHAM GREENS  
(10636 S. WOODLAWN AVE.)

VACATED 107TH ST.

PROPOSED BUILDING  
±160,025 S.F.

OFFICE SPACE

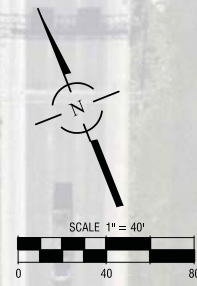
OFFICE SPACE

PLANET FITNESS

PULLMAN RETAIL

DOTY AVENUE

I-94 BISHOP FORD FWY



**SITE PARKING COUNT**

PASSENGER PARKING STALLS =	194
ADA PARKING STALLS =	7
APPROXIMATE DOCK DOORS =	±25
TOTAL PARKING STALLS =	226

**NOTES**  
1. ALL DIMENSIONS ARE TO THE BACK OF CURB, BUILDING, OR PROPERTY LINE UNLESS OTHERWISE NOTED.

NO.	DATE	REMARKS

NO.	DATE	REMARKS
1.	10/10/23	REVISED SIDEWALK

**SITE PLAN EXHIBIT**  
**PULLMAN PHASE 4**  
**INDUSTRIAL BUILDING**  
CHICAGO, IL

**CONSULTING ENGINEERS**  
**SITE DEVELOPMENT ENGINEERS**  
**LAND SURVEYORS**

9575 W. Higgins Road, Suite 700,  
Rosemont, Illinois 60018  
Phone: (847) 698-0660 Fax: (847) 698-0965



**SPACECO INC.**

FILENAME:  
5484.32EXH-SP

DATE:  
03/27/23

JOB NO.  
5484.32

SHEET  
**EXH-SP**  
1 OF 1

## Level of Service Criteria



LEVEL OF SERVICE CRITERIA

<b>Signalized Intersections</b>		
<b>Level of Service</b>	<b>Interpretation</b>	<b>Average Control Delay (seconds per vehicle)</b>
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.	>80.0
<b>Unsignalized Intersections</b>		
<b>Level of Service</b>	<b>Average Total Delay (SEC/VEH)</b>	
A	0 - 10	
B	> 10 - 15	
C	> 15 - 25	
D	> 25 - 35	
E	> 35 - 50	
F	> 50	

Source: *Highway Capacity Manual*, 6<sup>th</sup> Edition.

Capacity Analysis Summary Sheets  
Existing Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

10/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	329	67	162	546	39	161	32	91	27	6	10
Future Volume (vph)	35	329	67	162	546	39	161	32	91	27	6	10
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00		0.99	1.00	0.99	
Frt			0.850			0.850			0.850		0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1491	3465	1485	1719	3689	1335	1745	1877	1409	943	1316	0
Flt Permitted	0.411			0.494			0.556			0.952		
Satd. Flow (perm)	645	3465	1453	893	3689	1335	1020	1877	1389	944	1316	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			97			106			12
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			608				724
Travel Time (s)		29.2			19.2			13.8				16.5
Confl. Peds. (#/hr)			1	1			1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	6%	3%	5%	3%	21%	0%	3%	7%	85%	0%	40%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	383	78	188	635	45	187	37	106	31	19	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	62.6	52.3	52.3	67.7	58.8	58.8	14.9	8.7	8.7	11.0	8.4	
Actuated g/C Ratio	0.70	0.58	0.58	0.75	0.65	0.65	0.17	0.10	0.10	0.12	0.09	

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

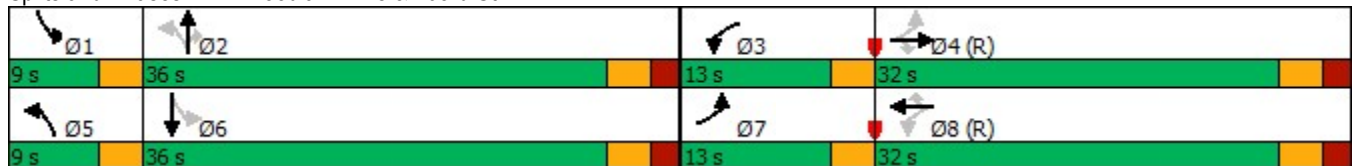
10/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.19	0.09	0.24	0.26	0.05	0.75	0.20	0.46	0.27	0.14	
Control Delay	4.6	10.6	2.2	4.8	8.9	0.2	53.5	39.2	14.6	36.7	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.6	10.6	2.2	4.8	8.9	0.2	53.5	39.2	14.6	36.7	24.8	
LOS	A	B	A	A	A	A	D	D	B	D	C	
Approach Delay		8.8			7.5			39.4			32.2	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	6	54	0	28	91	0	94	20	0	17	4	
Queue Length 95th (ft)	16	90	15	55	133	1	#148	45	41	36	22	
Internal Link Dist (ft)		1418			906			528			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	555	2015	885	774	2411	906	248	646	547	115	461	
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	0.07	0.19	0.09	0.24	0.26	0.05	0.75	0.06	0.19	0.27	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 14.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 58.7%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Vol, veh/h	0	0	0	1	0	1	0	283	1	1	234	0
Future Vol, veh/h	0	0	0	1	0	1	0	283	1	1	234	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	100	0	0	0	2	100	0	4	0
Mvmt Flow	0	0	0	1	0	1	0	337	1	1	279	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	621	621	281	619	621	338	281	0	0	338	0	0
Stage 1	283	283	-	338	338	-	-	-	-	-	-	-
Stage 2	338	338	-	281	283	-	-	-	-	-	-	-
Critical Hdwy	9.1	8.5	7.2	8.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	8.1	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.1	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	4.4	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	285	288	705	290	406	709	1293	-	-	1232	-	-
Stage 1	622	582	-	513	644	-	-	-	-	-	-	-
Stage 2	564	534	-	555	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	284	287	704	290	405	709	1291	-	-	1232	-	-
Mov Cap-2 Maneuver	398	384	-	290	405	-	-	-	-	-	-	-
Stage 1	621	580	-	513	644	-	-	-	-	-	-	-
Stage 2	563	534	-	555	679	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1291	-	-	-	412	1232	-	-
HCM Lane V/C Ratio	-	-	-	-	0.006	0.001	-	-
HCM Control Delay (s)	0	-	-	0	13.8	7.9	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

HCM 6th TWSC  
 4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	283	235	0
Future Vol, veh/h	1	0	0	283	235	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	100	0	0	2	5	0
Mvmt Flow	1	0	0	329	273	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	603	274	274	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	7.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	335	770	1301	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	334	769	1299	-	-	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	553	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1299	-	334	-	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	0	-	15.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
5: Woodlawn Ave & Mid North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	4	283	234	1
Future Vol, veh/h	0	5	4	283	234	1
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	20	0	2	5	0
Mvmt Flow	0	6	5	329	272	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	614	275	275	0	-	0
Stage 1	275	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Critical Hdwy	6.4	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.48	2.2	-	-	-
Pot Cap-1 Maneuver	459	723	1300	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	722	1298	-	-	-
Mov Cap-2 Maneuver	548	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1298	-	-	722	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	-	-
HCM Control Delay (s)	7.8	-	0	10	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	0	2	0	0	0	14	276	0	1	230	8
Future Vol, veh/h	11	0	2	0	0	0	14	276	0	1	230	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	6	0
Mvmt Flow	13	0	2	0	0	0	16	321	0	1	267	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	627	629	272	630	633	323	276	0	0	323	0	0
Stage 1	274	274	-	355	355	-	-	-	-	-	-	-
Stage 2	353	355	-	275	278	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	399	402	772	397	400	723	1299	-	-	1248	-	-
Stage 1	736	687	-	666	633	-	-	-	-	-	-	-
Stage 2	668	633	-	736	684	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	395	396	772	391	394	722	1299	-	-	1246	-	-
Mov Cap-2 Maneuver	495	478	-	491	474	-	-	-	-	-	-	-
Stage 1	727	686	-	657	624	-	-	-	-	-	-	-
Stage 2	660	624	-	733	683	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	0	0.4	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	524	-	1246	-	-
HCM Lane V/C Ratio	0.013	-	-	0.029	-	0.001	-	-
HCM Control Delay (s)	7.8	-	-	12.1	0	7.9	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	295	0	0	219
Future Vol, veh/h	0	0	295	0	0	219
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	4	0	0	5
Mvmt Flow	0	0	383	0	0	284

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	667	383	0	0	383	0
Stage 1	383	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	427	669	-	-	1187	-
Stage 1	694	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	669	-	-	1187	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1187
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	1	295	215	4
Future Vol, veh/h	0	1	1	295	215	4
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	0	1	1	383	279	5

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	668	283	285	0	0
Stage 1	283	-	-	-	-
Stage 2	385	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	426	761	1289	-	-
Stage 1	770	-	-	-	-
Stage 2	692	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	425	760	1288	-	-
Mov Cap-2 Maneuver	425	-	-	-	-
Stage 1	768	-	-	-	-
Stage 2	691	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1288	-	760	-	-
HCM Lane V/C Ratio	0.001	-	0.002	-	-
HCM Control Delay (s)	7.8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↗			↑	↑	
Traffic Vol, veh/h	1	0	3	295	213	3
Future Vol, veh/h	1	0	3	295	213	3
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	1	0	3	343	248	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	605	256	257	0	-	0
Stage 1	256	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	464	788	1320	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	458	784	1314	-	-	-
Mov Cap-2 Maneuver	458	-	-	-	-	-
Stage 1	785	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1314	-	458	-	-
HCM Lane V/C Ratio	0.003	-	0.003	-	-
HCM Control Delay (s)	7.7	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	52	30	35	246	133	80
Future Vol, veh/h	52	30	35	246	133	80
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	10	6	4	6	3
Mvmt Flow	58	33	39	273	148	89

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	546	195	239	0	-	0
Stage 1	195	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.42	6.3	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.39	2.254	-	-	-
Pot Cap-1 Maneuver	499	826	1305	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	482	825	1303	-	-	-
Mov Cap-2 Maneuver	564	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1303	-	564	825	-	-
HCM Lane V/C Ratio	0.03	-	0.102	0.04	-	-
HCM Control Delay (s)	7.8	-	12.1	9.5	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.1	-	-

Capacity Analysis Summary Sheets  
Existing Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

10/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	540	151	186	438	18	115	11	146	92	8	12
Future Volume (vph)	25	540	151	186	438	18	115	11	146	92	8	12
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1407	3566	1485	1736	3486	907	1745	1933	1449	1442	1520	0
Flt Permitted	0.477			0.368			0.526			0.870		
Satd. Flow (perm)	707	3566	1485	672	3486	907	966	1933	1449	1321	1520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			166			97			160			13
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			608				724
Travel Time (s)		29.2			19.2			13.8				16.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	24%	3%	3%	4%	9%	78%	0%	0%	4%	21%	0%	17%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	593	166	204	481	20	126	12	160	101	22	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	60.1	50.1	50.1	66.0	59.4	59.4	16.8	8.8	8.8	11.4	8.8	
Actuated g/C Ratio	0.67	0.56	0.56	0.73	0.66	0.66	0.19	0.10	0.10	0.13	0.10	

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

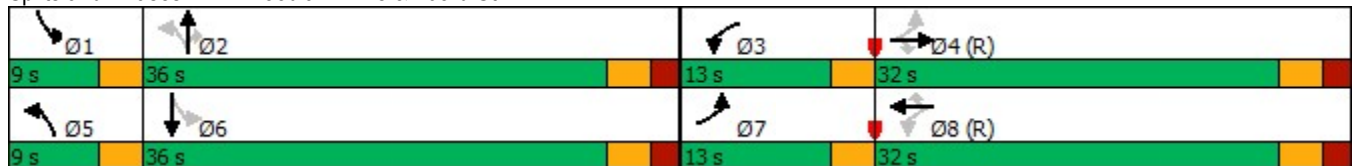
10/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.05	0.30	0.18	0.33	0.21	0.03	0.45	0.06	0.56	0.58	0.14	
Control Delay	5.0	12.4	2.9	5.9	8.1	0.1	35.5	35.8	14.3	47.2	24.4	
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	5.0	12.4	2.9	5.9	8.1	0.1	35.5	35.8	14.3	47.2	24.4	
LOS	A	B	A	A	A	A	D	D	B	D	C	
Approach Delay		10.2			7.2			24.1			43.1	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	3	87	0	29	41	0	62	6	0	~63	5	
Queue Length 95th (ft)	13	155	34	66	110	0	104	22	54	88	26	
Internal Link Dist (ft)		1418			906			528			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	565	1983	899	627	2299	631	278	665	603	174	532	
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	0.05	0.30	0.18	0.33	0.21	0.03	0.45	0.02	0.27	0.58	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.58  
 Intersection Signal Delay: 13.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 57.5%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↗	↘	
Traffic Vol, veh/h	0	0	0	0	0	1	0	271	0	1	344	0
Future Vol, veh/h	0	0	0	0	0	1	0	271	0	1	344	0
Conflicting Peds, #/hr	0	0	2	2	0	0	29	0	2	2	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	100	0	2	0	100	3	0
Mvmt Flow	0	0	0	0	0	1	0	311	0	1	395	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	738	739	426	712	739	313	424	0	0	313	0	0
Stage 1	426	426	-	313	313	-	-	-	-	-	-	-
Stage 2	312	313	-	399	426	-	-	-	-	-	-	-
Critical Hdwy	9.1	8.5	7.2	7.1	6.5	7.2	4.1	-	-	5.1	-	-
Critical Hdwy Stg 1	8.1	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.1	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	4.2	2.2	-	-	3.1	-	-
Pot Cap-1 Maneuver	223	230	562	350	347	547	1146	-	-	850	-	-
Stage 1	482	465	-	702	661	-	-	-	-	-	-	-
Stage 2	591	555	-	631	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	216	223	546	349	336	546	1114	-	-	848	-	-
Mov Cap-2 Maneuver	335	327	-	349	336	-	-	-	-	-	-	-
Stage 1	469	452	-	701	660	-	-	-	-	-	-	-
Stage 2	590	554	-	629	572	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	11.6	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1114	-	-	-	546	848	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	0.001	-	-
HCM Control Delay (s)	0	-	-	0	11.6	9.3	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-



HCM 6th TWSC  
4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	1	0	1	270	343	1
Future Vol, veh/h	1	0	1	270	343	1
Conflicting Peds, #/hr	0	0	16	0	0	16
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	100	2	3	100
Mvmt Flow	1	0	1	307	390	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	716	407	407	0	-	0
Stage 1	407	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	400	648	773	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	384	635	757	-	-	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	757	-	384	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	9.8	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
5: Woodlawn Ave & Mid North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	6	269	341	2
Future Vol, veh/h	2	4	6	269	341	2
Conflicting Peds, #/hr	0	0	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	2	3	0
Mvmt Flow	2	5	7	316	401	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	761	431	432	0	-	0
Stage 1	431	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	376	629	1138	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	355	613	1109	-	-	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1109	-	469	613	-	-
HCM Lane V/C Ratio	0.006	-	0.005	0.008	-	-
HCM Control Delay (s)	8.3	-	12.7	10.9	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	9	2	0	4	2	265	3	4	334	7
Future Vol, veh/h	6	0	9	2	0	4	2	265	3	4	334	7
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	7	0	10	2	0	5	2	305	3	5	384	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	711	711	389	716	714	308	392	0	0	309	0	0
Stage 1	398	398	-	312	312	-	-	-	-	-	-	-
Stage 2	313	313	-	404	402	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	351	361	664	348	359	737	1178	-	-	1263	-	-
Stage 1	632	606	-	703	661	-	-	-	-	-	-	-
Stage 2	702	661	-	627	604	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	347	358	663	340	356	736	1178	-	-	1262	-	-
Mov Cap-2 Maneuver	459	449	-	452	448	-	-	-	-	-	-	-
Stage 1	631	604	-	701	659	-	-	-	-	-	-	-
Stage 2	696	659	-	614	602	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.6		11		0.1		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	563	609	1262	-	-
HCM Lane V/C Ratio	0.002	-	-	0.031	0.011	0.004	-	-
HCM Control Delay (s)	8.1	-	-	11.6	11	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	260	0	0	348
Future Vol, veh/h	0	0	260	0	0	348
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	3	0	0	3
Mvmt Flow	0	0	317	0	0	424

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	741	317	0	0	317	0
Stage 1	317	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	387	728	-	-	1255	-
Stage 1	743	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	387	728	-	-	1255	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	664	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1255	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
 9: Woodlawn Ave/Woodlawn Avenue & Gotham Access

10/04/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	8	12	6	252	346	2
Future Vol, veh/h	8	12	6	252	346	2
Conflicting Peds, #/hr	0	0	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	0	3	3	50
Mvmt Flow	10	15	7	307	422	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	754	433	434	0	-	0
Stage 1	433	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	380	610	1136	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	369	603	1123	-	-	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	732	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1123	-	481	-	-
HCM Lane V/C Ratio	0.007	-	0.051	-	-
HCM Control Delay (s)	8.2	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↑		
Traffic Vol, veh/h	0	1	0	258	358	0
Future Vol, veh/h	0	1	0	258	358	0
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	1	0	293	407	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	700	407	-	0	-	0
Stage 1	407	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	409	648	0	-	-	0
Stage 1	676	-	0	-	-	0
Stage 2	762	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	409	648	-	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	762	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 648	-
HCM Lane V/C Ratio	- 0.002	-
HCM Control Delay (s)	- 10.6	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	110	124	72	148	226	133
Future Vol, veh/h	110	124	72	148	226	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	4	5	4	0
Mvmt Flow	117	132	77	157	240	141

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	622	311	381	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.236	-	-	-
Pot Cap-1 Maneuver	454	731	1167	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	424	731	1167	-	-	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	2.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1167	-	523	731	-	-
HCM Lane V/C Ratio	0.066	-	0.224	0.18	-	-
HCM Control Delay (s)	8.3	-	13.9	11	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.7	-	-

Capacity Analysis Summary Sheets  
No Build Weekday Morning Peak Hour Conditions



Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/21/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	339	81	182	562	40	169	33	99	28	6	10
Future Volume (vph)	36	339	81	182	562	40	169	33	99	28	6	10
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00		0.99	1.00	0.99	
Frt			0.850			0.850			0.850		0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1491	3465	1500	1719	3689	1335	1745	1877	1396	943	1316	0
Flt Permitted	0.404			0.486			0.548			0.930		
Satd. Flow (perm)	634	3465	1467	879	3689	1335	1006	1877	1377	922	1316	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			97			115			12
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			256				724
Travel Time (s)		29.2			19.2			5.8				16.5
Confl. Peds. (#/hr)			1	1			1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	6%	2%	5%	3%	21%	0%	3%	8%	85%	0%	40%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	394	94	212	653	47	197	38	115	33	19	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	62.1	51.8	51.8	67.7	58.7	58.7	15.0	8.8	8.8	11.1	8.5	
Actuated g/C Ratio	0.69	0.58	0.58	0.75	0.65	0.65	0.17	0.10	0.10	0.12	0.09	

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/21/2023

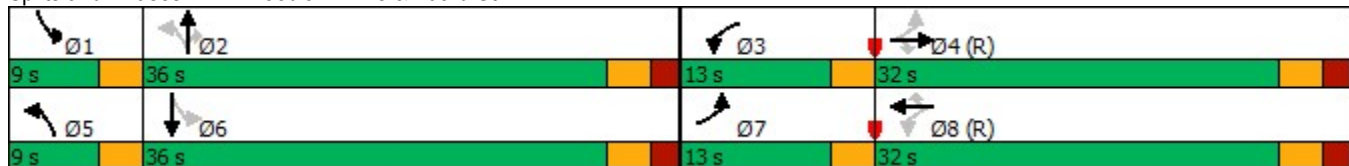


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.20	0.11	0.28	0.27	0.05	0.79	0.21	0.48	0.29	0.14	
Control Delay	4.8	11.1	3.2	5.0	9.0	0.4	57.3	39.1	14.6	37.2	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.8	11.1	3.2	5.0	9.0	0.4	57.3	39.1	14.6	37.2	24.6	
LOS	A	B	A	A	A	A	E	D	B	D	C	
Approach Delay		9.2			7.6			41.3			32.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	6	57	0	32	93	0	100	20	0	19	4	
Queue Length 95th (ft)	16	95	22	62	139	1	#161	46	42	37	22	
Internal Link Dist (ft)		1418			906			176			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	544	1993	885	769	2406	904	249	646	549	115	461	
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	0.08	0.20	0.11	0.28	0.27	0.05	0.79	0.06	0.21	0.29	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 15.2      Intersection LOS: B  
 Intersection Capacity Utilization 60.3%      ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



HCM 6th TWSC  
2: Woodlawn Ave & 10330 North Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	1	0	301	246	23
Future Vol, veh/h	0	1	0	301	246	23
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
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, %	0	0	0	3	4	0
Mvmt Flow	0	1	0	317	259	24

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	259	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	785	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	785	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 785	-
HCM Lane V/C Ratio	- 0.001	-
HCM Control Delay (s)	- 9.6	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0	-

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	8	0	1	1	0	1	7	292	1	1	242	4
Future Vol, veh/h	8	0	1	1	0	1	7	292	1	1	242	4
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	25	0	100	100	0	0	14	2	100	0	4	25
Mvmt Flow	10	0	1	1	0	1	8	348	1	1	288	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	660	660	293	658	662	349	295	0	0	349	0	0
Stage 1	295	295	-	365	365	-	-	-	-	-	-	-
Stage 2	365	365	-	293	297	-	-	-	-	-	-	-
Critical Hdwy	9.35	8.5	8.2	8.1	6.5	6.2	4.24	-	-	4.1	-	-
Critical Hdwy Stg 1	8.35	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.35	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	4.2	4.4	4	3.3	2.326	-	-	2.2	-	-
Pot Cap-1 Maneuver	240	267	519	271	385	699	1201	-	-	1221	-	-
Stage 1	566	571	-	494	627	-	-	-	-	-	-	-
Stage 2	498	512	-	546	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	237	264	518	269	380	699	1198	-	-	1221	-	-
Mov Cap-2 Maneuver	346	364	-	269	380	-	-	-	-	-	-	-
Stage 1	560	569	-	490	622	-	-	-	-	-	-	-
Stage 2	493	508	-	544	668	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.3		14.3		0.2		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1198	-	-	359	388	1221	-	-
HCM Lane V/C Ratio	0.007	-	-	0.03	0.006	0.001	-	-
HCM Control Delay (s)	8	0	-	15.3	14.3	8	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC  
 4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	1	0	0	299	244	0
Future Vol, veh/h	1	0	0	299	244	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	100	0	0	3	5	0
Mvmt Flow	1	0	0	348	284	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	633	285	285	0	-	0
Stage 1	285	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Critical Hdwy	7.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	320	759	1289	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	758	1287	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1287	-	319	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	16.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	4	299	243	1
Future Vol, veh/h	0	5	4	299	243	1
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	20	0	3	5	0
Mvmt Flow	0	6	5	348	283	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	644	286	286	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.4	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.48	2.2	-	-	-
Pot Cap-1 Maneuver	440	712	1288	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	436	711	1286	-	-	-
Mov Cap-2 Maneuver	534	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1286	-	-	711	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	-	-
HCM Control Delay (s)	7.8	-	0	10.1	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	0	2	0	0	0	14	292	0	1	239	8
Future Vol, veh/h	11	0	2	0	0	0	14	292	0	1	239	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	5	0
Mvmt Flow	13	0	2	0	0	0	16	340	0	1	278	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	657	659	283	660	663	342	287	0	0	342	0	0
Stage 1	285	285	-	374	374	-	-	-	-	-	-	-
Stage 2	372	374	-	286	289	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	381	386	761	379	384	705	1287	-	-	1228	-	-
Stage 1	727	679	-	651	621	-	-	-	-	-	-	-
Stage 2	653	621	-	726	677	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	377	380	761	373	378	704	1287	-	-	1226	-	-
Mov Cap-2 Maneuver	481	466	-	476	462	-	-	-	-	-	-	-
Stage 1	718	678	-	642	612	-	-	-	-	-	-	-
Stage 2	645	612	-	723	676	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	0	0.4	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1287	-	-	510	-	1226	-
HCM Lane V/C Ratio	0.013	-	-	0.03	-	0.001	-
HCM Control Delay (s)	7.8	-	-	12.3	0	7.9	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

HCM 6th TWSC  
 7: Woodlawn Ave & South Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1027	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1027	1090	1635	-	-	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1635	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	0	311	0	0	227
Future Vol, veh/h	0	0	311	0	0	227
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	4	0	0	5
Mvmt Flow	0	0	404	0	0	295

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	699	404	0	0	404
Stage 1	404	-	-	-	-
Stage 2	295	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	409	651	-	-	1166
Stage 1	679	-	-	-	-
Stage 2	760	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	409	651	-	-	1166
Mov Cap-2 Maneuver	409	-	-	-	-
Stage 1	679	-	-	-	-
Stage 2	760	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1166	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
 9: Woodlawn Ave/Woodlawn Avenue & Gotham Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	0	1	1	311	223	4
Future Vol, veh/h	0	1	1	311	223	4
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	0	1	1	404	290	5

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	700	294	296	0	0
Stage 1	294	-	-	-	-
Stage 2	406	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	409	750	1277	-	-
Stage 1	761	-	-	-	-
Stage 2	677	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	408	749	1276	-	-
Mov Cap-2 Maneuver	408	-	-	-	-
Stage 1	759	-	-	-	-
Stage 2	676	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1276	-	749	-	-
HCM Lane V/C Ratio	0.001	-	0.002	-	-
HCM Control Delay (s)	7.8	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↑	↑	
Traffic Vol, veh/h	1	0	3	311	221	3
Future Vol, veh/h	1	0	3	311	221	3
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	1	0	3	362	257	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	634	266	267	0	-	0
Stage 1	266	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	446	778	1308	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	439	774	1301	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1301	-	439	-	-
HCM Lane V/C Ratio	0.003	-	0.003	-	-
HCM Control Delay (s)	7.8	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	30	35	262	141	80
Future Vol, veh/h	52	30	35	262	141	80
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	10	6	4	6	3
Mvmt Flow	58	33	39	291	157	89

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	573	204	248	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.3	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.39	2.254	-	-	-
Pot Cap-1 Maneuver	481	817	1295	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	465	816	1293	-	-	-
Mov Cap-2 Maneuver	550	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1293	-	550	816	-	-
HCM Lane V/C Ratio	0.03	-	0.105	0.041	-	-
HCM Control Delay (s)	7.9	-	12.3	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.1	-	-

Capacity Analysis Summary Sheets  
No Build Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/21/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	556	159	199	451	19	129	11	166	95	8	12
Future Volume (vph)	26	556	159	199	451	19	129	11	166	95	8	12
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1407	3566	1485	1719	3486	907	1745	1933	1436	1442	1520	0
Flt Permitted	0.470			0.357			0.519			0.851		
Satd. Flow (perm)	696	3566	1485	646	3486	907	953	1933	1436	1292	1520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			97			182			13
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			256				724
Travel Time (s)		29.2			19.2			5.8				16.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	24%	3%	3%	5%	9%	78%	0%	0%	5%	21%	0%	17%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	611	175	219	496	21	142	12	182	104	22	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	59.6	49.4	49.4	65.9	59.1	59.1	16.9	8.9	8.9	11.5	8.9	
Actuated g/C Ratio	0.66	0.55	0.55	0.73	0.66	0.66	0.19	0.10	0.10	0.13	0.10	

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

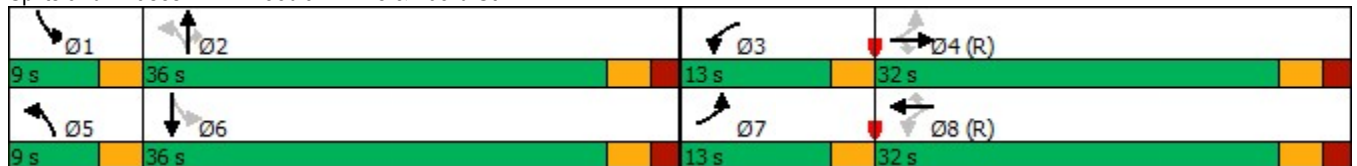
09/21/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.31	0.20	0.36	0.22	0.03	0.51	0.06	0.59	0.59	0.14	
Control Delay	5.2	13.0	3.0	6.3	8.3	0.1	37.2	35.4	14.3	47.8	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	
Total Delay	5.2	13.0	3.0	6.3	8.3	0.1	37.2	35.4	14.3	47.8	24.1	
LOS	A	B	A	A	A	A	D	D	B	D	C	
Approach Delay		10.6			7.5			24.7			43.6	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	4	91	0	31	42	0	71	6	0	~67	5	
Queue Length 95th (ft)	14	165	36	73	115	0	113	21	57	89	26	
Internal Link Dist (ft)		1418			906			176			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	554	1958	894	612	2290	629	279	665	613	175	532	
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	0.05	0.31	0.20	0.36	0.22	0.03	0.51	0.02	0.30	0.59	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 13.9 Intersection LOS: B  
 Intersection Capacity Utilization 59.0% ICU Level of Service B  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



HCM 6th TWSC  
 2: Woodlawn Ave & 10330 North Access

10/04/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	5	0	306	360	6
Future Vol, veh/h	0	5	0	306	360	6
Conflicting Peds, #/hr	0	0	32	0	0	32
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
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, %	0	0	0	3	4	0
Mvmt Flow	0	5	0	322	379	6

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	379	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	672	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	672	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 672	-
HCM Lane V/C Ratio	- 0.008	-
HCM Control Delay (s)	- 10.4	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0	-



Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	27	0	2	0	0	1	3	278	0	1	360	4
Future Vol, veh/h	27	0	2	0	0	1	3	278	0	1	360	4
Conflicting Peds, #/hr	0	0	2	2	0	0	32	0	2	2	0	32
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	7	0	50	0	0	100	33	2	0	100	3	75
Mvmt Flow	31	0	2	0	0	1	3	320	0	1	414	5

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	778	779	451	750	781	322	451	0	0	322	0	0
Stage 1	451	451	-	328	328	-	-	-	-	-	-	-
Stage 2	327	328	-	422	453	-	-	-	-	-	-	-
Critical Hdwy	9.17	8.5	7.7	7.1	6.5	7.2	4.43	-	-	5.1	-	-
Critical Hdwy Stg 1	8.17	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.17	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.75	3.5	4	4.2	2.497	-	-	3.1	-	-
Pot Cap-1 Maneuver	200	214	459	330	329	540	964	-	-	843	-	-
Stage 1	450	447	-	689	651	-	-	-	-	-	-	-
Stage 2	563	542	-	613	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	191	204	440	326	313	539	925	-	-	841	-	-
Mov Cap-2 Maneuver	307	309	-	326	313	-	-	-	-	-	-	-
Stage 1	430	428	-	685	647	-	-	-	-	-	-	-
Stage 2	560	539	-	608	549	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	17.8		11.7			0.1			0		
HCM LOS	C		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	925	-	-	314	539	841	-	-
HCM Lane V/C Ratio	0.004	-	-	0.106	0.002	0.001	-	-
HCM Control Delay (s)	8.9	0	-	17.8	11.7	9.3	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

HCM 6th TWSC  
4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	1	280	361	1
Future Vol, veh/h	1	0	1	280	361	1
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	100	2	3	100
Mvmt Flow	1	0	1	318	410	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	749	429	429	0	-	0
Stage 1	429	-	-	-	-	-
Stage 2	320	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	382	630	756	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	616	739	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	739	-	364	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	9.9	-	14.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
5: Woodlawn Ave & Mid North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	6	279	359	2
Future Vol, veh/h	2	4	6	279	359	2
Conflicting Peds, #/hr	0	0	32	0	0	32
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	2	5	7	328	422	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	797	455	456	0	-	0
Stage 1	455	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	358	609	1115	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	336	592	1084	-	-	-
Mov Cap-2 Maneuver	453	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	704	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1084	-	453	592	-	-
HCM Lane V/C Ratio	0.007	-	0.005	0.008	-	-
HCM Control Delay (s)	8.3	-	13	11.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	9	2	0	4	2	275	3	4	352	7
Future Vol, veh/h	6	0	9	2	0	4	2	275	3	4	352	7
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	7	0	10	2	0	5	2	316	3	5	405	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	743	743	410	748	746	319	413	0	0	320	0	0
Stage 1	419	419	-	323	323	-	-	-	-	-	-	-
Stage 2	324	324	-	425	423	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	334	346	646	331	344	726	1157	-	-	1251	-	-
Stage 1	616	593	-	693	654	-	-	-	-	-	-	-
Stage 2	692	653	-	611	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	330	344	645	324	342	725	1157	-	-	1250	-	-
Mov Cap-2 Maneuver	445	438	-	438	437	-	-	-	-	-	-	-
Stage 1	615	591	-	691	652	-	-	-	-	-	-	-
Stage 2	686	651	-	598	589	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		11.1		0.1		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1157	-	-	547	595	1250	-	-
HCM Lane V/C Ratio	0.002	-	-	0.032	0.012	0.004	-	-
HCM Control Delay (s)	8.1	-	-	11.8	11.1	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	0	271	0	0	366
Future Vol, veh/h	0	0	271	0	0	366
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	3	0	0	3
Mvmt Flow	0	0	330	0	0	446

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	776	330	0	0	330	0
Stage 1	330	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	369	716	-	-	1241	-
Stage 1	733	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	369	716	-	-	1241	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1241
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
 9: Woodlawn Ave/Woodlawn Avenue & Gotham Access

10/04/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	8	12	6	263	364	2
Future Vol, veh/h	8	12	6	263	364	2
Conflicting Peds, #/hr	0	0	11	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	0	3	3	50
Mvmt Flow	10	15	7	321	444	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	791	456	457	0	-	0
Stage 1	456	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	361	592	1114	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	349	585	1100	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1100	-	460	-	-
HCM Lane V/C Ratio	0.007	-	0.053	-	-
HCM Control Delay (s)	8.3	0	13.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↑		
Traffic Vol, veh/h	0	1	0	269	376	0
Future Vol, veh/h	0	1	0	269	376	0
Conflicting Peds, #/hr	0	0	9	0	0	9
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	1	0	306	427	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	733	427	-	0	-	0
Stage 1	427	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	391	632	0	-	-	0
Stage 1	662	-	0	-	-	0
Stage 2	751	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	391	632	-	-	-	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 632	-
HCM Lane V/C Ratio	- 0.002	-
HCM Control Delay (s)	- 10.7	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	110	124	72	159	244	133
Future Vol, veh/h	110	124	72	159	244	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	4	6	5	0
Mvmt Flow	117	132	77	169	260	141

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	654	331	401	0	-	0
Stage 1	331	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.236	-	-	-
Pot Cap-1 Maneuver	435	713	1147	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	406	713	1147	-	-	-
Mov Cap-2 Maneuver	508	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	738	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	2.6	0
HCM LOS	B		

























Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1147	-	508	713	-	-
HCM Lane V/C Ratio	0.067	-	0.23	0.185	-	-
HCM Control Delay (s)	8.4	-	14.2	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	0.7	-	-



Capacity Analysis Summary Sheets  
Projected Weekday Morning Peak Hour Conditions

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/22/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	339	91	192	562	40	171	33	102	28	6	10
Future Volume (vph)	36	339	91	192	562	40	171	33	102	28	6	10
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98	1.00			1.00		0.99	1.00	0.99	
Frt			0.850			0.850			0.850		0.905	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1491	3465	1500	1719	3689	1335	1745	1877	1383	943	1316	0
Flt Permitted	0.404			0.485			0.548			0.930		
Satd. Flow (perm)	634	3465	1467	877	3689	1335	1006	1877	1364	922	1316	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			97			119			12
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			256				724
Travel Time (s)		29.2			19.2			5.8				16.5
Confl. Peds. (#/hr)			1	1			1		2	2		1
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	6%	2%	5%	3%	21%	0%	3%	9%	85%	0%	40%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	394	106	223	653	47	199	38	119	33	19	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	61.8	51.5	51.5	67.8	58.7	58.7	15.0	8.8	8.8	11.1	8.5	
Actuated g/C Ratio	0.69	0.57	0.57	0.75	0.65	0.65	0.17	0.10	0.10	0.12	0.09	

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/22/2023

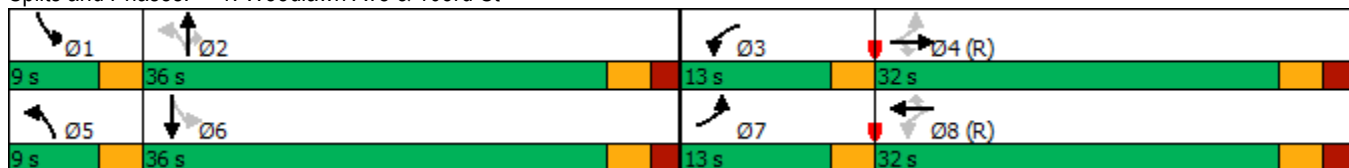


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.20	0.12	0.29	0.27	0.05	0.80	0.21	0.49	0.29	0.14	
Control Delay	4.8	11.2	3.2	5.1	9.0	0.4	58.1	39.1	14.7	37.2	24.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.8	11.2	3.2	5.1	9.0	0.4	58.1	39.1	14.7	37.2	24.6	
LOS	A	B	A	A	A	A	E	D	B	D	C	
Approach Delay		9.2			7.6			41.6			32.6	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	6	57	0	34	93	0	101	20	0	19	4	
Queue Length 95th (ft)	16	96	25	66	140	1	#164	46	43	37	22	
Internal Link Dist (ft)		1418			906			176			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	542	1984	885	769	2406	904	249	646	547	115	461	
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	0.08	0.20	0.12	0.29	0.27	0.05	0.80	0.06	0.22	0.29	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 15.2      Intersection LOS: B  
 Intersection Capacity Utilization 60.9%      ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



HCM 6th TWSC  
2: Woodlawn Ave & 10330 North Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	1	0	306	266	23
Future Vol, veh/h	0	1	0	306	266	23
Conflicting Peds, #/hr	0	0	0	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
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, %	0	0	0	3	5	0
Mvmt Flow	0	1	0	322	280	24

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	280	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	764	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	764	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 764	-
HCM Lane V/C Ratio	- 0.001	-
HCM Control Delay (s)	- 9.7	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0	-

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	8	0	1	1	0	1	7	297	1	1	262	4
Future Vol, veh/h	8	0	1	1	0	1	7	297	1	1	262	4
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	25	0	100	100	0	0	14	3	100	0	4	25
Mvmt Flow	10	0	1	1	0	1	8	354	1	1	312	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	690	690	317	688	692	355	319	0	0	355	0	0
Stage 1	319	319	-	371	371	-	-	-	-	-	-	-
Stage 2	371	371	-	317	321	-	-	-	-	-	-	-
Critical Hdwy	9.35	8.5	8.2	8.1	6.5	6.2	4.24	-	-	4.1	-	-
Critical Hdwy Stg 1	8.35	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.35	7.5	-	7.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	4.2	4.4	4	3.3	2.326	-	-	2.2	-	-
Pot Cap-1 Maneuver	225	253	498	257	370	693	1176	-	-	1215	-	-
Stage 1	541	550	-	490	623	-	-	-	-	-	-	-
Stage 2	492	507	-	528	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	223	250	497	255	366	693	1173	-	-	1215	-	-
Mov Cap-2 Maneuver	334	353	-	255	366	-	-	-	-	-	-	-
Stage 1	535	548	-	486	618	-	-	-	-	-	-	-
Stage 2	487	503	-	526	652	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.7		14.7		0.2		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1173	-	-	347	373	1215	-	-
HCM Lane V/C Ratio	0.007	-	-	0.031	0.006	0.001	-	-
HCM Control Delay (s)	8.1	0	-	15.7	14.7	8	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC  
4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	1	0	0	304	264	0
Future Vol, veh/h	1	0	0	304	264	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	100	0	0	3	5	0
Mvmt Flow	1	0	0	353	307	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	661	308	308	0	-	0
Stage 1	308	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	7.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	307	737	1264	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	306	736	1262	-	-	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	537	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1262	-	306	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	16.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
5: Woodlawn Ave & Mid North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	4	304	263	1
Future Vol, veh/h	0	5	4	304	263	1
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	20	0	3	5	0
Mvmt Flow	0	6	5	353	306	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	672	309	309	0	-	0
Stage 1	309	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.4	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.48	2.2	-	-	-
Pot Cap-1 Maneuver	424	691	1263	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	421	690	1261	-	-	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1261	-	-	690	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	-	-
HCM Control Delay (s)	7.9	-	0	10.3	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	11	0	2	0	0	0	14	297	0	1	259	8
Future Vol, veh/h	11	0	2	0	0	0	14	297	0	1	259	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	5	0
Mvmt Flow	13	0	2	0	0	0	16	345	0	1	301	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	685	687	306	688	691	347	310	0	0	347	0	0
Stage 1	308	308	-	379	379	-	-	-	-	-	-	-
Stage 2	377	379	-	309	312	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	365	372	739	363	370	701	1262	-	-	1223	-	-
Stage 1	706	664	-	647	618	-	-	-	-	-	-	-
Stage 2	649	618	-	705	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	361	366	739	358	364	700	1262	-	-	1221	-	-
Mov Cap-2 Maneuver	469	456	-	465	452	-	-	-	-	-	-	-
Stage 1	697	663	-	638	609	-	-	-	-	-	-	-
Stage 2	641	609	-	702	660	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.5		0		0.4		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	497	-	1221	-	-
HCM Lane V/C Ratio	0.013	-	-	0.03	-	0.001	-	-
HCM Control Delay (s)	7.9	-	-	12.5	0	8	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-



HCM 6th TWSC  
 7: Woodlawn Ave & South Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1027	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1027	1090	1635	-	-	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1635	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	316	0	0	247
Future Vol, veh/h	0	0	316	0	0	247
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	4	0	0	5
Mvmt Flow	0	0	410	0	0	321

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	731	410	0	0	410
Stage 1	410	-	-	-	-
Stage 2	321	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	392	646	-	-	1160
Stage 1	674	-	-	-	-
Stage 2	740	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	392	646	-	-	1160
Mov Cap-2 Maneuver	392	-	-	-	-
Stage 1	674	-	-	-	-
Stage 2	740	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1160	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
 9: Woodlawn Ave/Woodlawn Avenue & Gotham Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	0	1	1	316	243	4
Future Vol, veh/h	0	1	1	316	243	4
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	4	5	0
Mvmt Flow	0	1	1	410	316	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	732	320	322	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	391	725	1249	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	390	724	1248	-	-	-
Mov Cap-2 Maneuver	390	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1248	-	724	-	-
HCM Lane V/C Ratio	0.001	-	0.002	-	-
HCM Control Delay (s)	7.9	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	1	2	1	316	243	1
Future Vol, veh/h	1	2	1	316	243	1
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	100	100	100	4	5	100
Mvmt Flow	1	2	1	333	256	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	599	264	264	0	-	0
Stage 1	264	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Critical Hdwy	7.4	7.2	5.1	-	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	3.1	-	-	-
Pot Cap-1 Maneuver	337	587	893	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	331	582	885	-	-	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	545	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	885	-	465	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	9.1	0	12.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	5	3	15	312	223	22
Future Vol, veh/h	5	3	15	312	223	22
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	4	6	0
Mvmt Flow	6	3	17	363	259	26

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	676	279	292	0	-	0
Stage 1	279	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	422	765	1281	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	760	1272	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1272	-	495	-	-
HCM Lane V/C Ratio	0.014	-	0.019	-	-
HCM Control Delay (s)	7.9	0	12.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	30	35	275	146	80
Future Vol, veh/h	52	30	35	275	146	80
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	10	6	4	8	3
Mvmt Flow	58	33	39	306	162	89

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	593	209	253	0	-	0
Stage 1	209	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.42	6.3	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.39	2.254	-	-	-
Pot Cap-1 Maneuver	468	812	1289	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	452	811	1287	-	-	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1287	-	541	811	-	-
HCM Lane V/C Ratio	0.03	-	0.107	0.041	-	-
HCM Control Delay (s)	7.9	-	12.4	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	-	-

Capacity Analysis Summary Sheets  
Projected Weekday Evening Peak Hour Conditions

Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/22/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	556	161	204	451	19	138	11	176	95	8	12
Future Volume (vph)	26	556	161	204	451	19	138	11	176	95	8	12
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	10	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	135		205	275		315	165		170	135		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			145			85			230		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1407	3566	1485	1703	3486	907	1745	1933	1436	1442	1520	0
Flt Permitted	0.470			0.356			0.513			0.833		
Satd. Flow (perm)	696	3566	1485	638	3486	907	942	1933	1436	1264	1520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177			97			193			13
Link Speed (mph)		35			35			30				30
Link Distance (ft)		1498			986			256				724
Travel Time (s)		29.2			19.2			5.8				16.5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	24%	3%	3%	6%	9%	78%	0%	0%	5%	21%	0%	17%
Bus Blockages (#/hr)	0	0	5	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	611	177	224	496	21	152	12	193	104	22	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	27.0	27.0	5.0	27.0	27.0	6.0	7.0	7.0	6.0	7.0	
Minimum Split (s)	8.0	32.0	32.0	8.0	32.0	32.0	9.0	12.0	12.0	9.0	12.0	
Total Split (s)	13.0	32.0	32.0	13.0	32.0	32.0	9.0	36.0	36.0	9.0	36.0	
Total Split (%)	14.4%	35.6%	35.6%	14.4%	35.6%	35.6%	10.0%	40.0%	40.0%	10.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	59.3	49.2	49.2	65.8	59.1	59.1	17.0	9.0	9.0	11.6	9.0	
Actuated g/C Ratio	0.66	0.55	0.55	0.73	0.66	0.66	0.19	0.10	0.10	0.13	0.10	



Lanes, Volumes, Timings  
1: Woodlawn Ave & 103rd St

09/22/2023

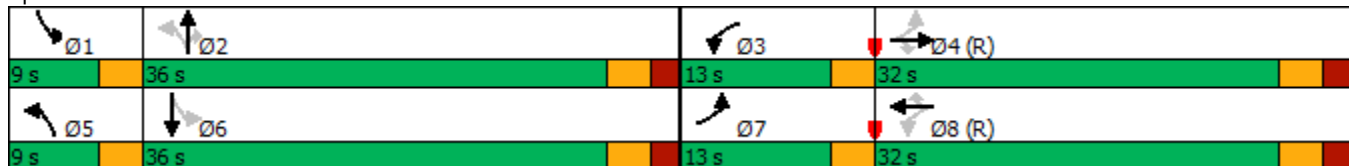


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.31	0.20	0.37	0.22	0.03	0.54	0.06	0.61	0.59	0.13	
Control Delay	5.2	13.2	3.1	6.4	8.4	0.1	38.5	35.2	14.3	47.8	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.2	13.2	3.1	6.4	8.4	0.1	38.5	35.2	14.3	47.8	23.9	
LOS	A	B	A	A	A	A	D	D	B	D	C	
Approach Delay		10.7			7.6			25.3			43.6	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	4	92	0	32	42	0	76	6	0	~67	5	
Queue Length 95th (ft)	14	168	37	75	116	0	120	21	58	89	26	
Internal Link Dist (ft)		1418			906			176			644	
Turn Bay Length (ft)	135		205	275		315	165		170	135		
Base Capacity (vph)	552	1949	892	607	2287	628	279	665	621	175	532	
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	0.05	0.31	0.20	0.37	0.22	0.03	0.54	0.02	0.31	0.59	0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 14.2      Intersection LOS: B  
 Intersection Capacity Utilization 59.8%      ICU Level of Service B  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Woodlawn Ave & 103rd St



HCM 6th TWSC  
2: Woodlawn Ave & 10330 North Access

10/04/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	5	0	325	367	6
Future Vol, veh/h	0	5	0	325	367	6
Conflicting Peds, #/hr	0	0	32	0	0	32
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
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, %	0	0	0	3	5	0
Mvmt Flow	0	5	0	342	386	6

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	386	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	666	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	666	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 666	-
HCM Lane V/C Ratio	- 0.008	-
HCM Control Delay (s)	- 10.4	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0	-

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	27	0	2	0	0	1	3	297	0	1	367	4
Future Vol, veh/h	27	0	2	0	0	1	3	297	0	1	367	4
Conflicting Peds, #/hr	0	0	2	2	0	0	32	0	2	2	0	32
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	108	-	-
Veh in Median Storage, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	10	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	7	0	50	0	0	100	33	2	0	100	4	75
Mvmt Flow	31	0	2	0	0	1	3	341	0	1	422	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	807	808	459	779	810	343	459	0	0	343	0	0
Stage 1	459	459	-	349	349	-	-	-	-	-	-	-
Stage 2	348	349	-	430	461	-	-	-	-	-	-	-
Critical Hdwy	9.17	8.5	7.7	7.1	6.5	7.2	4.43	-	-	5.1	-	-
Critical Hdwy Stg 1	8.17	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.17	7.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.75	3.5	4	4.2	2.497	-	-	3.1	-	-
Pot Cap-1 Maneuver	188	202	452	316	316	524	957	-	-	825	-	-
Stage 1	444	442	-	671	637	-	-	-	-	-	-	-
Stage 2	542	525	-	607	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	179	192	433	312	301	523	918	-	-	823	-	-
Mov Cap-2 Maneuver	296	299	-	312	301	-	-	-	-	-	-	-
Stage 1	424	423	-	667	633	-	-	-	-	-	-	-
Stage 2	539	522	-	602	545	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.3		11.9		0.1		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	918	-	-	303	523	823	-	-
HCM Lane V/C Ratio	0.004	-	-	0.11	0.002	0.001	-	-
HCM Control Delay (s)	8.9	0	-	18.3	11.9	9.4	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

HCM 6th TWSC  
4: Woodlawn Ave & North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	1	299	368	1
Future Vol, veh/h	1	0	1	299	368	1
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	100	2	4	100
Mvmt Flow	1	0	1	340	418	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	779	437	437	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.4	6.2	5.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	3.1	-	-	-
Pot Cap-1 Maneuver	367	624	750	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	350	610	733	-	-	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	707	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	733	-	350	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s)	9.9	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
5: Woodlawn Ave & Mid North Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	6	298	366	2
Future Vol, veh/h	2	4	6	298	366	2
Conflicting Peds, #/hr	0	0	32	0	0	32
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	135	0	75	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	3	4	0
Mvmt Flow	2	5	7	351	431	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	829	464	465	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	343	602	1107	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	322	585	1076	-	-	-
Mov Cap-2 Maneuver	442	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	687	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1076	-	442	585	-	-
HCM Lane V/C Ratio	0.007	-	0.005	0.008	-	-
HCM Control Delay (s)	8.4	-	13.2	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	9	2	0	4	2	294	3	4	359	7
Future Vol, veh/h	6	0	9	2	0	4	2	294	3	4	359	7
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	78	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	4	0
Mvmt Flow	7	0	10	2	0	5	2	338	3	5	413	8

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	773	773	418	778	776	341	421	0	0	342	0	0
Stage 1	427	427	-	345	345	-	-	-	-	-	-	-
Stage 2	346	346	-	433	431	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	319	332	639	316	331	706	1149	-	-	1228	-	-
Stage 1	610	589	-	675	640	-	-	-	-	-	-	-
Stage 2	674	639	-	605	586	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	315	330	638	309	329	705	1149	-	-	1227	-	-
Mov Cap-2 Maneuver	433	428	-	427	427	-	-	-	-	-	-	-
Stage 1	609	587	-	673	638	-	-	-	-	-	-	-
Stage 2	668	637	-	592	584	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.9		11.3		0.1		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1149	-	-	536	579	1227	-	-
HCM Lane V/C Ratio	0.002	-	-	0.032	0.012	0.004	-	-
HCM Control Delay (s)	8.1	-	-	11.9	11.3	7.9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC  
7: Woodlawn Ave & South Amazon Access

10/04/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	6	3	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	1027	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1027	1090	1635	-	-	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1635	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	0	0	290	0	0	373
Future Vol, veh/h	0	0	290	0	0	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	3	0	0	3
Mvmt Flow	0	0	354	0	0	455

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	809	354	0	0	354	0
Stage 1	354	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	353	694	-	-	1216	-
Stage 1	715	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	353	694	-	-	1216	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	643	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1216
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0



HCM 6th TWSC  
 9: Woodlawn Ave/Woodlawn Avenue & Gotham Access

10/04/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	8	12	6	282	371	2
Future Vol, veh/h	8	12	6	282	371	2
Conflicting Peds, #/hr	0	0	11	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	8	0	4	3	50
Mvmt Flow	10	15	7	344	452	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	822	464	465	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.2	-	-	-
Pot Cap-1 Maneuver	346	586	1107	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	335	579	1093	-	-	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1093	-	448	-	-
HCM Lane V/C Ratio	0.007	-	0.054	-	-
HCM Control Delay (s)	8.3	0	13.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	1	2	2	287	381	2
Future Vol, veh/h	1	2	2	287	381	2
Conflicting Peds, #/hr	0	0	9	0	0	9
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	100	100	100	3	3	100
Mvmt Flow	1	2	2	302	401	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	717	411	412	0	0
Stage 1	411	-	-	-	-
Stage 2	306	-	-	-	-
Critical Hdwy	7.4	7.2	5.1	-	-
Critical Hdwy Stg 1	6.4	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	4.4	4.2	3.1	-	-
Pot Cap-1 Maneuver	281	474	770	-	-
Stage 1	501	-	-	-	-
Stage 2	569	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	274	469	761	-	-
Mov Cap-2 Maneuver	274	-	-	-	-
Stage 1	494	-	-	-	-
Stage 2	563	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	761	-	379	-	-
HCM Lane V/C Ratio	0.003	-	0.008	-	-
HCM Control Delay (s)	9.7	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	18	13	4	271	378	5
Future Vol, veh/h	18	13	4	271	378	5
Conflicting Peds, #/hr	0	0	9	0	0	9
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	4	3	0
Mvmt Flow	20	15	5	308	430	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	760	442	445	0	0
Stage 1	442	-	-	-	-
Stage 2	318	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	377	620	1126	-	-
Stage 1	652	-	-	-	-
Stage 2	742	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	368	615	1116	-	-
Mov Cap-2 Maneuver	368	-	-	-	-
Stage 1	643	-	-	-	-
Stage 2	735	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1116	-	443	-	-
HCM Lane V/C Ratio	0.004	-	0.08	-	-
HCM Control Delay (s)	8.2	0	13.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

HCM 6th TWSC  
 12: Doty Ave/Doty Avenue & Pullman Park Main Access

10/04/2023

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	110	124	72	165	258	133
Future Vol, veh/h	110	124	72	165	258	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	115	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	4	7	5	0
Mvmt Flow	117	132	77	176	274	141

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	675	345	415	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.236	-	-	-
Pot Cap-1 Maneuver	422	700	1133	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	393	700	1133	-	-	-
Mov Cap-2 Maneuver	499	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1133	-	499	700	-	-
HCM Lane V/C Ratio	0.068	-	0.235	0.188	-	-
HCM Control Delay (s)	8.4	-	14.4	11.3	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	0.7	-	-