Traffic Impact Study
Proposed Drive-In Bank

Arlington Heights, Illinois

Prepared For:

STOREBUILD

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

December 6, 2021

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed drive-in bank to be located in the southeast quadrant of the intersection of Euclid Avenue with Northwest Highway in Arlington Heights, Illinois.

As proposed, the site, which is currently occupied by a vacant building, will be developed with approximately 4,120 square-foot drive-in bank with three drive-through lanes and 15 parking spaces. Access to the proposed drive-in bank will be provided via a three-quarter access drive located on Euclid Avenue, a right-out only access drive serving the drive-through lanes located on Northwest Highway, and an inbound only access drive located on Northwest Highway.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed drive-in bank will have on traffic conditions in the area, determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed drive-in bank, and evaluate the adequacy of the drive-through stacking and proposed parking supply.

Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site area. The sections of this report present the following:

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

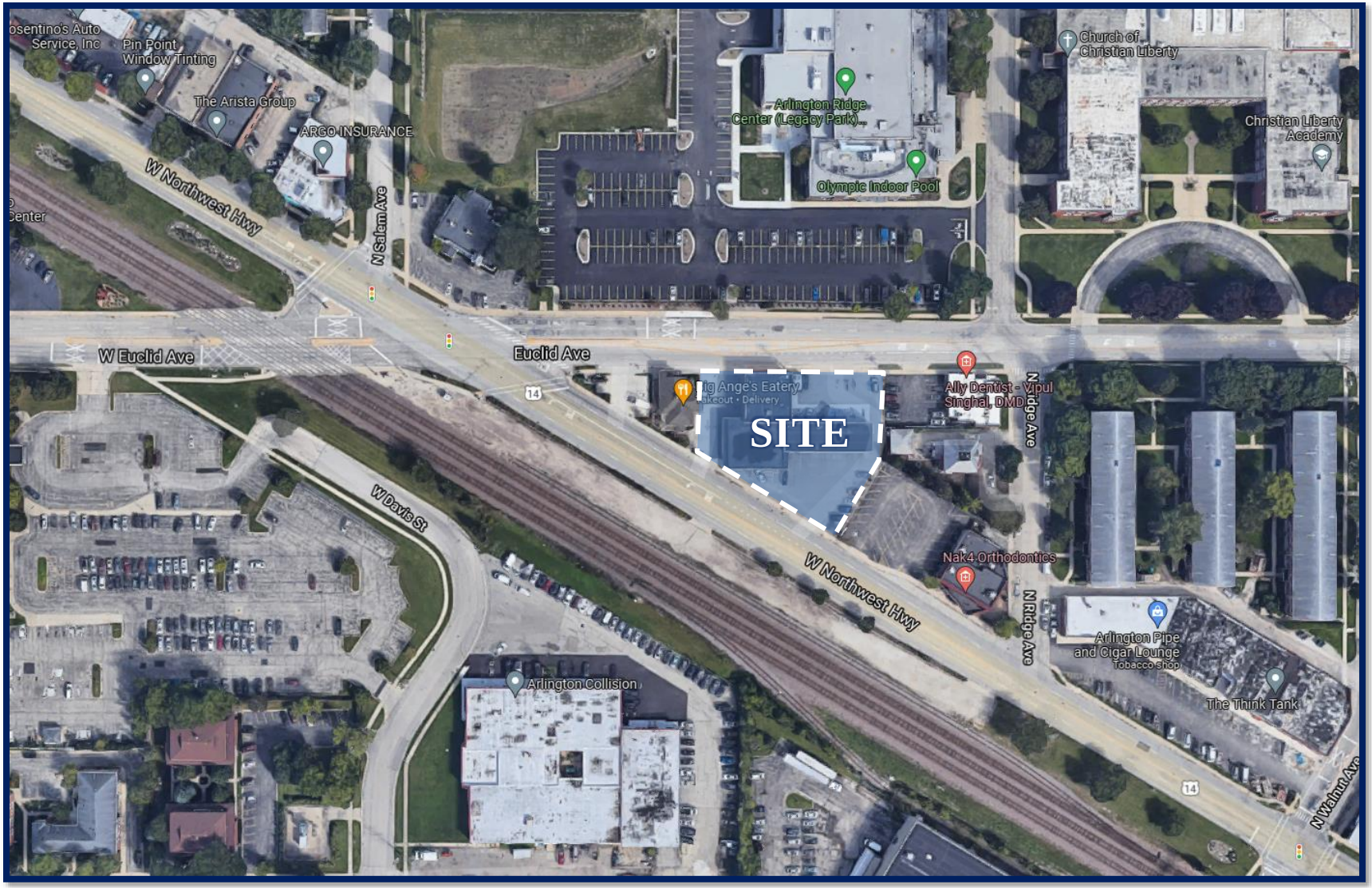
Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Condition - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.

2. No-Build Conditions – Analyze the capacity of the existing roadway system using existing peak hour traffic volumes including ambient traffic growth.

3. Future Condition – Analyze the capacity of the existing roadway system assuming the future projected traffic volumes that include the background traffic volumes and the traffic estimated to be generated by the proposed subject drive-in bank.

Site Location **Figure 1**



Aerial View of Site **Figure 2**

2. Existing Conditions

The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

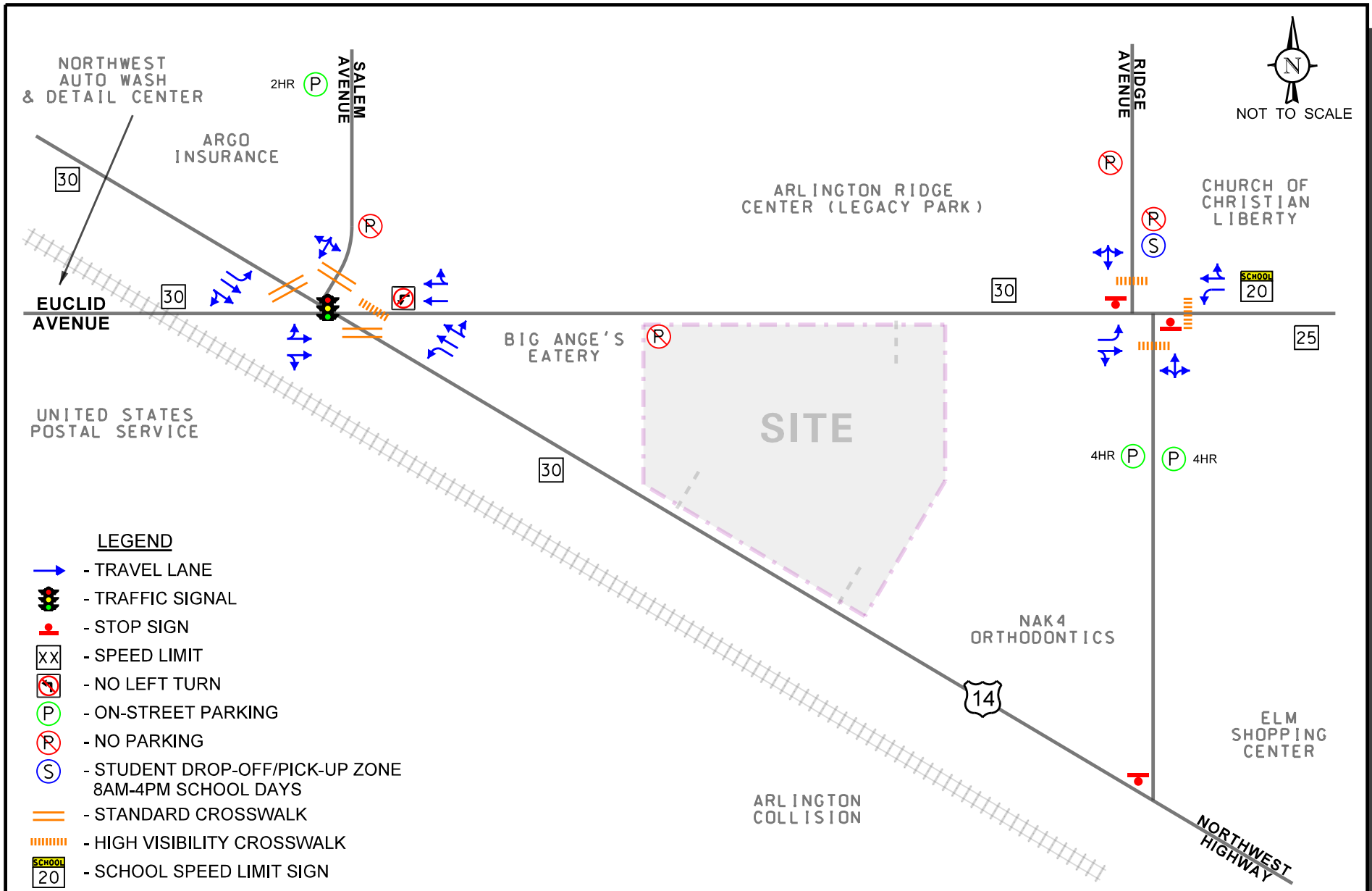
The site, which is currently occupied by a vacant building, is bounded by Euclid Avenue to the north, retail buildings to the east, Northwest Highway to the south and west, and Big Ange's Eatery restaurant to the west. Land uses in the vicinity of the site are primarily residential and commercial. In addition, Union Pacific Northwest (UP-NW) railroad tracks are located south of the site.

Existing Roadway System Characteristics

The characteristics of the existing roadways that surround the proposed drive-in bank are illustrated in **Figure 3** and described below.

Northwest Highway is a northwest-southeast, minor arterial that generally provides two lanes in each direction in the vicinity of the site. At its signalized intersection with Euclid Avenue and Salem Avenue, Northwest Highway provides an exclusive left-turn lane, a through lane, and a combined through/right-turn lane on both approaches. Additionally, standard style crosswalks are provided on the northwest and southeast legs of this intersection. Northwest Highway is under the jurisdiction of the Illinois Department of Transportation (IDOT), is not classified as a Strategic Regional Arterial (SRA) in the vicinity of the site, and carries an Annual Average Daily Traffic (AADT) volume of approximately 15,800 vehicles (IDOT 2017). Northwest Highway has a posted speed limit of 30 miles per hour.

Euclid Avenue is an east-west, minor arterial that provides two lanes in both directions west of Northwest Highway, one lane in the eastbound direction and two lanes in the westbound direction between Northwest Highway and Ridge Avenue, and one lane in both directions east of Ridge Avenue. At its signalized intersection with Northwest Highway and Salem Avenue, Euclid Avenue provides a combined through/left-turn lane and a combined through/right-turn lane on the eastbound approach and a through lane and a combined through/right-turn lane on the westbound approach. Left-turn movements from westbound Euclid Avenue to southeast-bound Northwest Highway are not prohibited. Additionally, a high-visibility crosswalk is provided on the east leg of this intersection. At its unsignalized intersection with Ridge Avenue, Euclid Avenue provides an exclusive left-turn lane and a combined through/right-turn lane on both approaches. Euclid Avenue is under the jurisdiction of the Cook County Department of Transportation and Highways (CCDOTH), carries an AADT of approximately 11,500 vehicles east of Northwest Highway (IDOT 2018) and 14,900 vehicles west of Northwest Highway (IDOT 2019), and has a posted speed limit of 30 miles per hour.



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Existing Roadway Characteristics

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Figure: 3

Ridge Avenue is a north-south, local roadway that provides one lane in each direction in the vicinity of the site. At its unsignalized intersection with Euclid Avenue, Ridge Avenue provides a combined left-turn/through/right-turn lane on both approaches. In addition, high-visibility crosswalks are provided on the north and south legs of this intersection. Parking is not permitted on both sides of the roadway north of Euclid Avenue and is restricted to four-hour parking south of Euclid Avenue.

Salem Avenue is a local roadway that has no outlet north of Northwest Highway. At its signalized intersection with Northwest Highway and Euclid Avenue, Salem Avenue provides a combined left-turn/through/right-turn lane on the southbound approach. In addition, a standard style crosswalk is provided on the north leg of this intersection. Salem Avenue is under the jurisdiction of the Village of Arlington Heights.

Existing Traffic Volumes

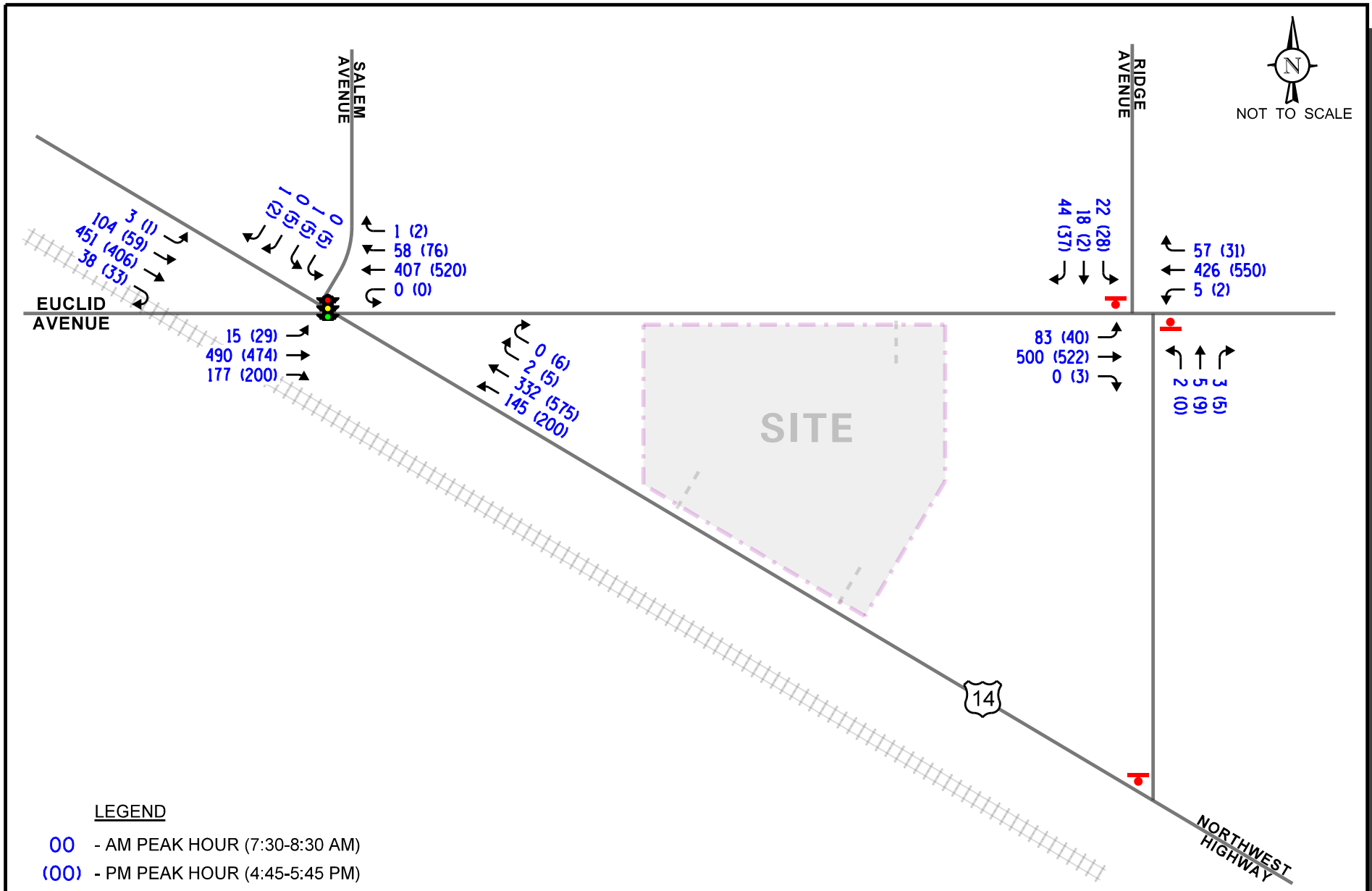
In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. utilized peak period vehicle, pedestrian, and bicycle movement traffic counts using Miovision Video Scout Collection Units on Tuesday, September 21, 2021 during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods at the intersections of Northwest Highway with Euclid Avenue and Salem Avenue and Euclid Avenue with Ridge Avenue. It should be noted that, due to the ongoing COVID-19 pandemic, the traffic volumes were adjusted based on a comparison with IDOT hourly counts. The comparison of the traffic volumes showed that the 2021 traffic counts on Euclid Avenue were consistent with the IDOT hourly counts during the weekday morning peak hour and were 15 percent lower during the weekday evening peak hour. In addition, the 2021 traffic counts on Northwest Highway were 10 percent lower during the weekday morning peak hour and five percent lower during the weekday evening peak hour. As such, the traffic counts were adjusted accordingly. **Figure 4** illustrates the Year 2021 base peak hour traffic volumes. Copies of the traffic count summary sheets are included in the Appendix.

Train Observations

Euclid Avenue has an at-grade crossing with the Union Pacific – Northwest (UP-NW) Metra Commuter Railway approximately 195 feet west of Northwest Highway. In addition to freight trains, the railroad tracks carry 22 Metra inbound trips and 23 Metra outbound trips on weekdays. Field observations conducted during the peak hours indicated the following:

- During the weekday morning peak hour, three inbound Metra trains were observed. The gates were down for approximately 50 seconds. Westbound queues did not extend to Ridge Avenue either peak hour. During train events, the queues clear within one to two cycles.

- During the weekday evening peak hour, three Metra train events were observed (two outbound trains and one inbound train). The gates were down for approximately 50 seconds. Westbound queues did not extend up Ridge Avenue during either peak hour. During train events, the queues clear within one to two cycles.



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Year 2021 Base Traffic Volumes

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Figure: 4

Crash Analysis

KLOA, Inc. obtained crash data from IDOT for the most recent past five years available (2016 to 2020) for the intersections of Northwest Highway with Euclid Avenue and Salem Avenue and Euclid Avenue with Ridge Avenue[1]. **Tables 1** and **2** show a summary of the crash data. It should be noted that in the past five years, two fatal accidents occurred within proximity of the intersection of Northwest Highway with Euclid Avenue, which we understand consisted of passenger vehicles stopped on the railroad tracks.

Table 1
EUCLID AVENUE WITH NORTHWEST HIGHWAY – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2016	0	0	1	9	0	4	1	15
2017	1	0	0	8	2	2	0	13
2018	0	0	0	9	1	3	0	13
2019	0	0	1	3	3	1	0	8
2020	0	0	0	6	1	1	2	10
Total	**1**	**0**	**2**	**35**	**7**	**11**	**3**	**59**
Average	**<1.0**	**0**	**<1.0**	**7.0**	**1.4**	**2.2**	**<1.0**	**11.8**

Table 2
EUCLID AVENUE WITH RIDGE AVENUE – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2016	2	0	0	1	0	1	1	5
2017	0	0	0	1	0	0	0	1
2018	0	0	0	0	0	0	0	0
2019	0	0	1	0	1	0	0	2
2020	1	0	0	1	0	1	0	3
Total	**3**	**0**	**1**	**3**	**1**	**2**	**1**	**11**
Average	**<1.0**	**0**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**2.2**

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation.

3. Traffic Characteristics of the Proposed Drive-In Bank

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

Proposed Site and Development Plan

As proposed, the plans call for the redeveloping the site with an approximately 4,120 square-foot drive-in bank with three drive-through lanes and 15 parking spaces. Access to the site will be provided via the following:

- A proposed three-quarter access drive located on Euclid Avenue approximately 430 feet east of Northwest Highway. This access drive will provide one inbound lane and one outbound lane restricted to right outbound movements only. Outbound movements should be under stop sign control.

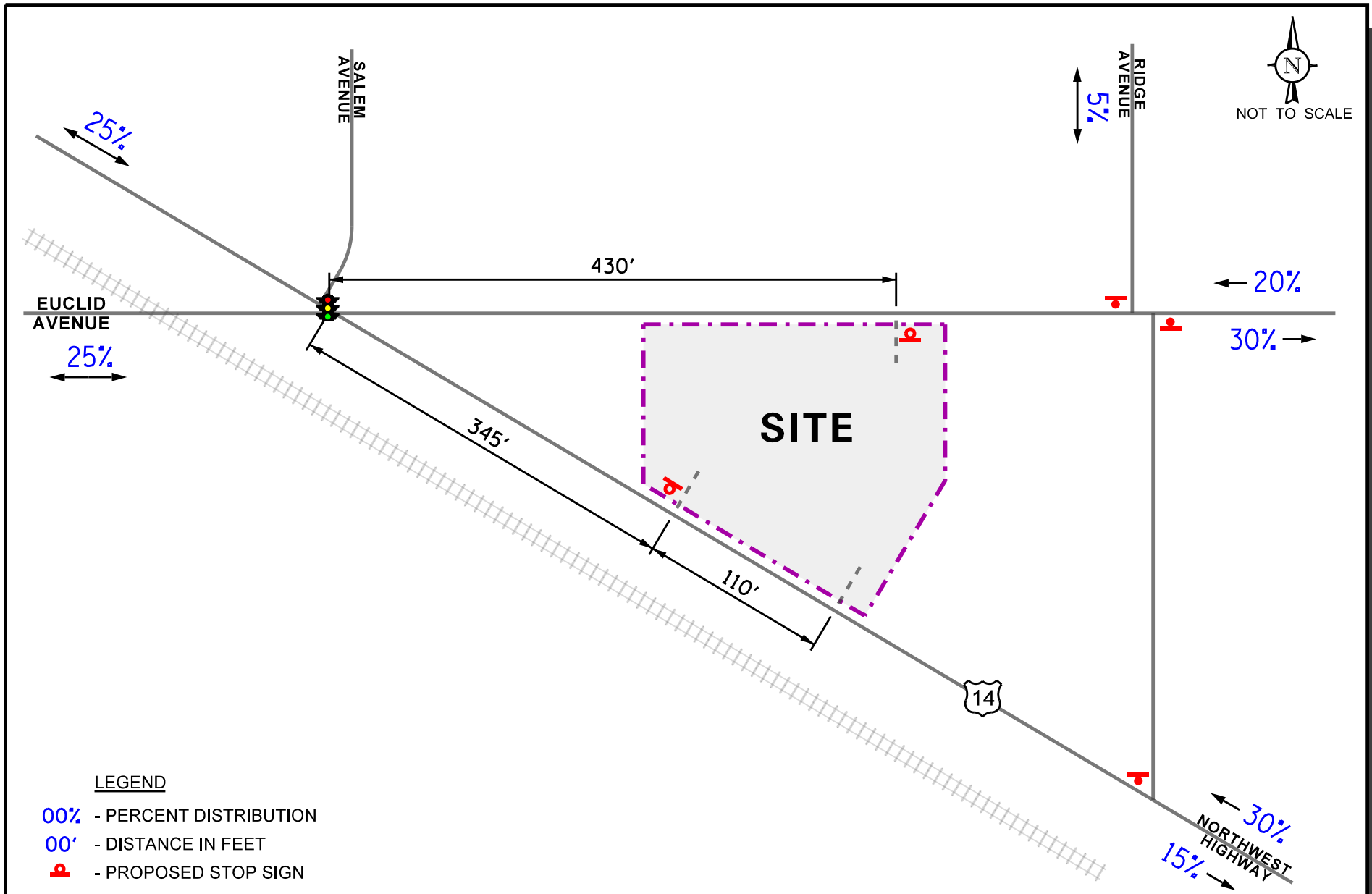
- A proposed inbound-only access drive located on Northwest Highway approximately 455 feet southeast of Euclid Avenue. This access drive will provide one inbound lane.

- A proposed right-out only access drive located on Northwest Highway approximately 345 feet southeast of Euclid Avenue. This access drive will provide one outbound lane that will be under stop sign control.

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

Directional Distribution

The directions from which employees and patrons of the drive-in bank will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the drive-in bank-generated traffic.



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Estimated Directional Distribution

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Figure: 5

Estimated Site Traffic Generation

The volume of traffic generated for the drive-in bank was estimated using data published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition. It is important to note that surveys conducted by ITE have shown that approximately 30 percent of trips made to banks are diverted from the existing traffic on the roadway system. This is particularly true during the weekday morning and evening peak hours when traffic is diverted from the home-to-work and work-to-home trips. Such diverted trips are referred to as pass-by traffic. However, in order to provide a conservative (worst-case) analysis, no pass-by reduction was applied to the trips estimated to be generated by the drive-in bank.

Table 3 tabulates the vehicle trips estimated for the proposed drive-in bank.

Table 3
ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Two-Way Trips
		In	Out	Total	In	Out	Total	
912	Drive-In Bank (4,120 s.f.)	24	17	41	44	43	87	413

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 drive-in bank.

Drive-In Bank Traffic Assignment

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

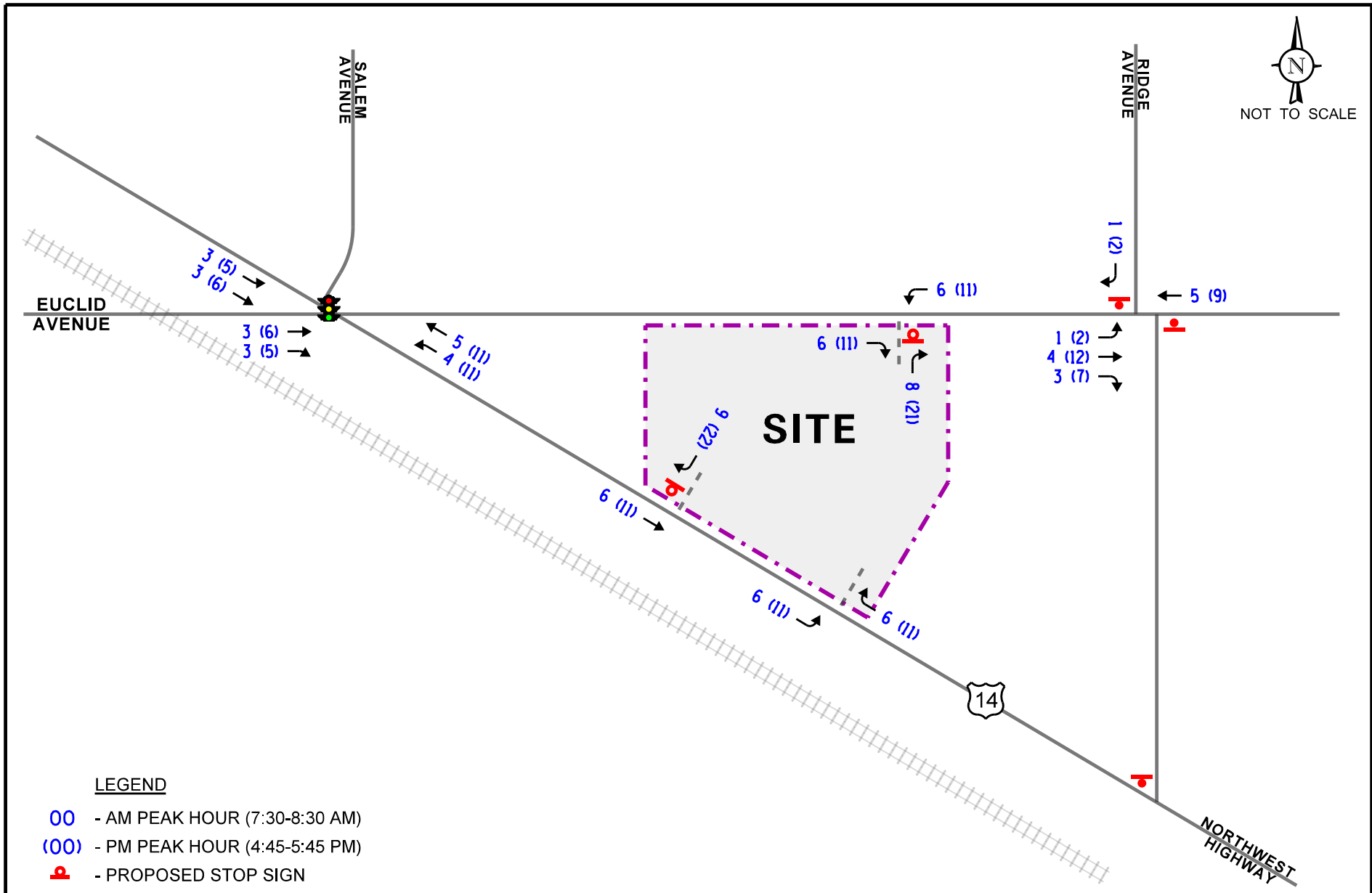
Background Traffic Conditions

The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on AADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes are projected to increase by a compound annual growth rate of approximately 0.42 percent per year. As such, traffic volumes were increased by 2.6 percent to represent Year 2027 (buildout plus five years) conditions. A copy of the CMAP projections letter is included in the Appendix.

Figure 7 illustrates the Year 2027 no-build traffic volumes.

Total Projected Traffic Volumes

The drive-in bank-generated traffic was added to the existing traffic volumes accounting for background growth to determine the Year 2027 total projected traffic volumes, as shown in **Figure 8**.



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New Site Traffic Assignment

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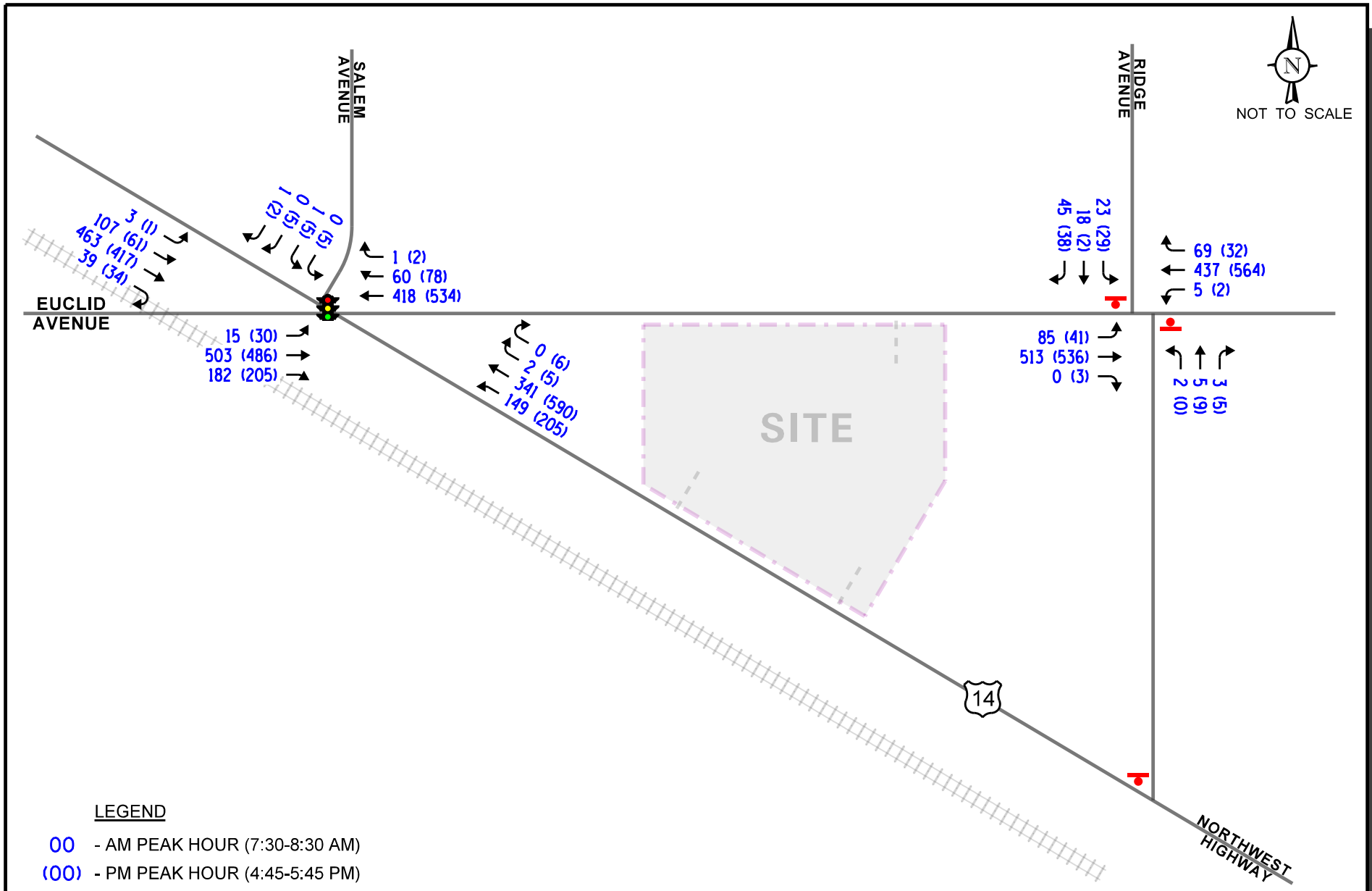

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Year 2027 No-Build Traffic Volumes

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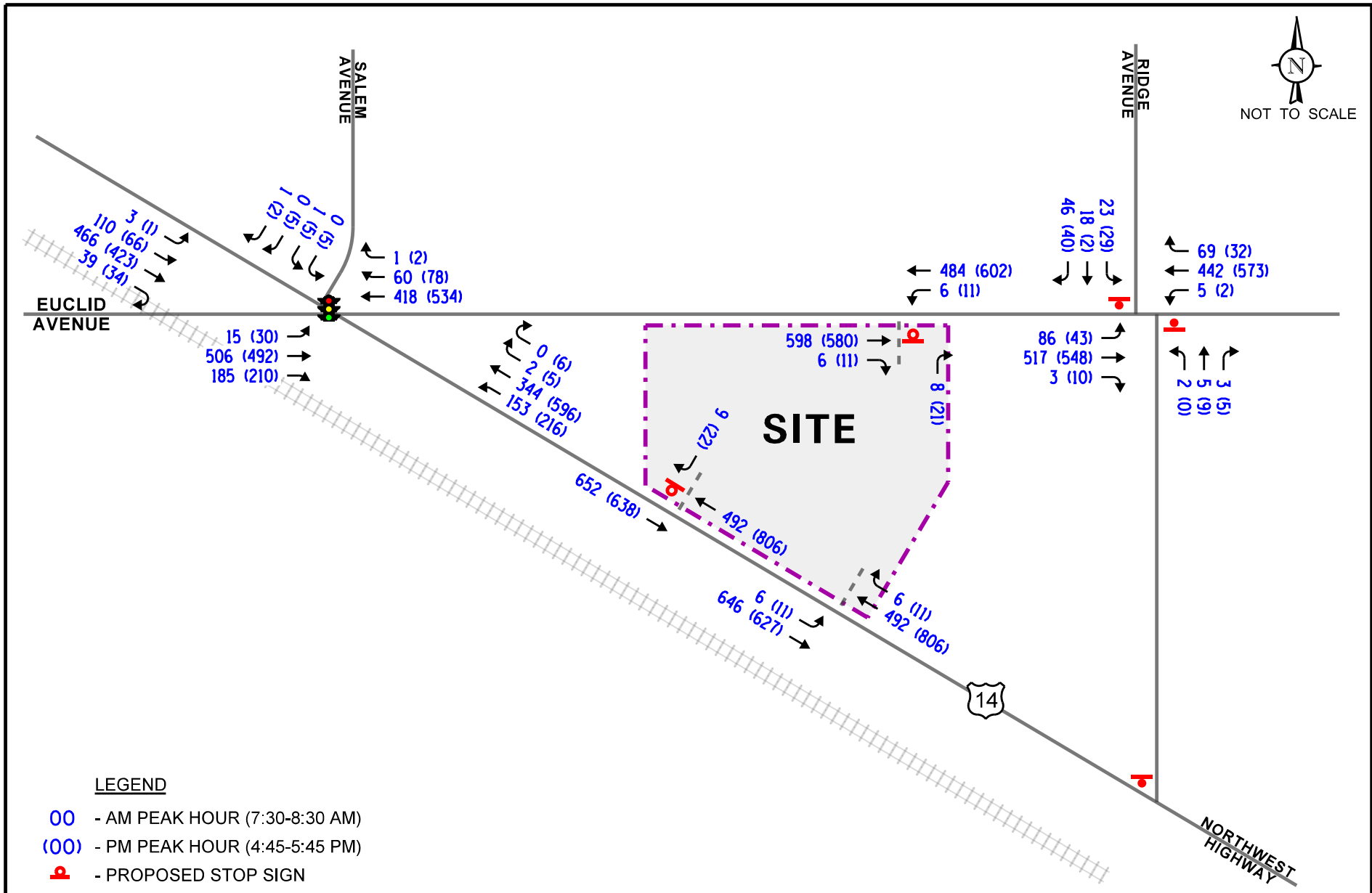

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Year 2027 Total Projected Traffic Volumes

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Figure: 8

5. Traffic Analysis and Recommendations

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

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the base (Year 2021), no-build, and future projected (Year 2027) traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2010* and analyzed using the Synchro/SimTraffic 11 computer software. The analyses for the signalized intersection of Northwest Highway with Euclid Avenue/Salem Avenue were accomplished utilizing (actual or field measured) cycle lengths and phasings.

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 base, no-build and Year 2027 total projected conditions are presented in **Tables 4** through **7**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 4
CAPACITY ANALYSIS RESULTS – NORTHWEST HIGHWAY WITH EUCLID AVENUE/SALEM AVENUE – SIGNALIZED

	Peak Hour	Eastbound (Euclid Avenue)	Westbound (Euclid Avenue)	Southbound (Salem Avenue)	Southeast-bound (Northwest Highway)		Northwest-bound (Northwest Highway)		Overall
		L/T/R	L/T/R	L/T/R	L	TR	L	TR	
Year 2021 Base Conditions	Weekday Morning Peak Hour	C 22.2	B 19.7	E 65.0	C 30.1	D 52.6	C 34.9	D 44.1	C 32.9
					D – 48.6		D – 41.3		
	Weekday Evening Peak Hour	C 25.1	C 22.7	E 69.0	C 33.3	D 54.0	D 49.1	D 51.7	D 37.7
					D – 51.5		D – 51.0		
Year 2027 No-Build Conditions	Weekday Morning Peak Hour	C 23.0	C 20.2	E 65.0	C 29.6	D 52.2	C 34.8	D 43.6	C 33.0
					D – 48.2		D – 41.0		
	Weekday Evening Peak Hour	C 25.6	C 23.0	E 69.0	C 33.5	D 54.1	D 51.3	D 52.0	D 38.2
					D – 51.6		D – 51.8		
Year 2027 Projected Conditions	Weekday Morning	C 23.1	C 20.3	E 65.0	C 29.7	D 52.2	D 35.1	D 43.7	C 33.2
					D – 48.1		D – 41.0		
	Weekday Evening	C 26.0	C 23.2	E 69.0	C 33.9	D 54.0	D 55.6	D 52.3	D 38.8
					D – 51.4		D – 53.1		

Letter denotes Level of Service
Delay is measured in seconds.
L – Left-Turns
T – Through
R – Right-Turns

Table 5
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – BASE CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Ridge Avenue with Euclid Avenue				
• Northbound Approach	C	18.8	C	16.8
• Eastbound Left Turns	A	9.0	A	9.0
• Westbound Left Turns	A	8.6	A	8.6
• Southbound Approach	C	19.6	C	20.5

LOS = Level of Service
Delay is measured in seconds.

Table 6
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – YEAR 2027 NO-BUILD TRAFFIC CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Ridge Avenue with Euclid Avenue				
• Northbound Approach	C	19.3	C	17.2
• Eastbound Left Turns	A	9.0	A	9.1
• Westbound Left Turns	A	8.7	A	8.7
• Southbound Approach	C	20.3	C	21.3

LOS = Level of Service
Delay is measured in seconds.

Table 7
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED – YEAR 2027 PROJECTED TRAFFIC CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Ridge Avenue with Euclid Avenue				
• Northbound Approach	C	19.5	C	17.5
• Eastbound Left Turns	A	9.1	A	9.1
• Westbound Left Turns	A	8.7	A	8.7
• Southbound Approach	C	20.5	C	21.9
Euclid Avenue with Proposed Three-Quarter Access Drive				
• Northbound Right Turns	B	12.6	B	12.6
• Westbound Left Turns	A	8.8	A	8.8
Northwest Highway with Proposed Right-Out Only Access Drive				
• Southbound Right Turns	A	9.9	B	11.5
Northwest Highway with Proposed Inbound-Only Access Drive				
• Southeast-bound Left Turns	A	8.4	A	9.7

LOS = Level of Service
Delay is measured in seconds.

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identify any roadway and traffic control improvements to accommodate the drive-in bank traffic.

Northwest Highway with Euclid Avenue and Salem Avenue

The results of the capacity analysis indicate that overall, this intersection currently operates at level of service (LOS) C during the weekday morning peak hour and LOS D during the weekday evening peak hour. The westbound approach (Euclid Avenue) currently operates at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour, and the eastbound approach (Euclid Avenue) is operating at LOS C during both peak hours. In addition, the northwest bound and southeast-bound approaches (Northwest Highway) are operating at LOS D during both peak hours. The southbound approach (Salem Avenue) is operating at LOS E during both peak hours, which is due to the long cycle lengths (140 seconds) and limited amount of green time allocated to the Salem Avenue approach. The westbound approach is experiencing 95th percentile queues of approximately 210 feet during the weekday morning peak hour and 280 feet during the weekday evening peak hour. The northwest-bound left-turn movements are experiencing 95th percentile queues of approximately 135 feet during the weekday morning peak hour and 205 during the weekday evening peak hour. In addition, the northwest bound through/right-turn movements currently experience 95th percentile queues of approximately 175 feet during the weekday morning peak hour and 345 feet during the weekday evening peak hour. As previously indicated, three train events were observed during the weekday morning peak hour and three train events were observed during the weekday evening peak hour. During train events, the queues clear within one to two cycles.

Under Year 2027 no-build conditions, this intersection overall is projected to continue to operate at existing levels of service during the weekday morning and evening peak hours with increases in delay of less than one second. All of the approaches are projected to continue operating at the same existing levels of service, except for the westbound approach which will operate at LOS C during both peak hours with increases in delay of less than one second.

Under Year 2027 total projected conditions, this intersection overall is projected to continue operating at the same levels of service during the weekday morning and evening peak hours with increases in delay of less than one second. All approaches are projected to continue operating at the same levels of service during both peak hours with increases in delay of less than one second. The northwest-bound left-turn movements will experience 95th percentile queues of approximately 140 feet during the weekday morning peak hour and 270 feet during the weekday evening peak hour. In addition, the northwest-bound through/right-turn movements will experience 95th percentile queues of approximately 190 feet during the weekday morning peak hour and 315 feet during the weekday evening peak hour. As such, the northwest-bound queues will extend past or beyond the proposed access drives during the weekday evening peak hour. However, these queues will clear with every green phase. It is also important to note that the queues will only increase by one to two vehicles under projected conditions during both peak hours.

As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed drive-in bank and no roadway improvements or traffic modifications are required.

Ridge Avenue with Euclid Avenue

The results of the capacity analysis indicate that the northbound and southbound approaches currently operate at LOS C during the weekday morning and evening peak hours. In addition, the eastbound and westbound left-turn movements are operating at LOS A during both peak hours. Under Year 2027 no-build conditions, all movements are projected to operate at the same existing levels of service during both peak hours with increases in delay of less than one second. Under Year 2027 total projected conditions, all movements are projected to operate at the same levels of service during the weekday morning and evening peak hours with increases in delay of approximately one second. As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed drive-in bank and no roadway improvements or traffic modifications are required.

Euclid Avenue with Proposed Three-Quarter Access Drive

Access to the drive-in bank is proposed via a three-quarter access drive located on Euclid Avenue approximately 430 feet east of Northwest Highway. This access drive will provide one inbound lane and one outbound lane restricted to right-turn outbound movements only. Outbound movements should be under stop sign control. Similar to other developments along Euclid Avenue, left-turn movements to the bank will be accommodated via the inside westbound through lane. The results of the capacity analysis indicate that the right-turn outbound movements will operate at LOS B during the weekday morning and evening peak hours with 95th percentile queues of approximately one to two vehicles during both peak hours. In addition, the westbound left-turn movements from Euclid Avenue into the site are projected to operate at LOS A during both peak hours with 95th percentile queues of approximately one to two vehicles. As such, the proposed drive-in bank access drive will be adequate in accommodating the traffic projected to be generated by the proposed development.

Northwest Highway with Proposed Right-Out Only Access Drive

Access from the drive-through lanes is proposed to be provided via a right-out only access drive located on Northwest Highway approximately 345 feet southeast of Euclid Avenue. This access drive will provide one outbound lane that will be under stop sign control. Additionally, this drive should be restricted to right-turn out movements only via pavement markings and appropriate signage.

The results of the capacity analysis indicate that the outbound right-turn movements from the outbound-only access drive onto Northwest Highway is projected to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with 95th percentile queues of one to two vehicles during both peak hours. As such, the proposed drive-in bank access drive will be adequate in accommodating the traffic projected to be generated by the proposed development.

Northwest Highway with Proposed Inbound-Only Access Drive

Access to the drive-in bank is proposed via an inbound-only access drive located on Northwest Highway approximately 455 feet southeast of Euclid Avenue. This access drive will provide one inbound lane. Similar to other developments along Northwest Highway, left-turn movements to the bank will be accommodated via the inside southeast-bound through lane. In addition, the southeast-bound left-turn movements from Northwest Highway into the site will operate at LOS A during both peak hours with 95th percentile queues of one to two vehicles during both peak hours. As such, the proposed drive-in bank access drive will be adequate in accommodating the traffic projected to be generated by the proposed development.

Drive-Through Stacking Evaluation

As proposed, stacking for approximately four vehicles will be provided within each drive-through lane without blocking the circulation system. Observations and surveys performed at numerous banks in the Chicagoland area show that the maximum stacking within a drive-through lane is three to four vehicles. Furthermore, recent studies of an existing drive-in bank located in Glencoe indicated the maximum stacking was only two vehicles. It should be noted that the stacking for drive-through banks has been decreasing over the past decade due to new advancements in online backing, check depositing by phone, and peer-to-peer payment apps such as Zelle and Venmo, which reduce the need to visit a bank. As such, the stacking provided for the proposed drive-through lanes will be sufficient to accommodate the drive-through peak demand.

Parking Evaluation

As previously indicated, the plans call for the redeveloping the site with an approximately 4,120 square-foot drive-in bank with three drive-through lanes and 15 parking spaces. In order to determine the projected parking demand of the proposed development, the parking demand was estimated based on the Village of Arlington Heights Code, and parking rates published in the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*, 5th Edition. Based on the two methodologies, the parking demand for the proposed development is as follows:

Parking Requirements of Proposed Development per Village Code

- Banks (4,120 s.f.)
  - 14 parking spaces (ratio of one parking space for each 3,000 square feet)

Based on the above and the requirements of the Village of Arlington Heights, this translates into 14 parking spaces, which results in a surplus of one parking space.

ITE Parking Generation Manual

- Drive-In Bank (Land-Use Code 912):
  - 15 parking spaces (ratio of 3.72 spaces per 1,000 square feet)

Based on the above and the rates published in the ITE *Parking Generation Manual*, this translates into 15 parking spaces, which results in a surplus of zero parking spaces.

6. Conclusion

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

- The results of the capacity analyses have shown that the existing roadway system has sufficient reserve capacity to accommodate the traffic to be generated by the proposed bank and no roadway improvements and/or traffic control modifications are required.

- The proposed access drives will be adequate in accommodating the traffic projected to be generated by the proposed development and will ensure that a flexible access system is provided.

- The proposed exit-only access drive should be restricted to exiting movements only via pavement markings and appropriate signage.

- The proposed drive-through stacking will be adequate in accommodating the peak demand based on KLOA, Inc.'s surveys of other similar banks.

- The proposed parking supply of 15 parking spaces will be adequate in accommodating the parking demand of the proposed drive-in bank.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Worksheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets

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

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Euclid Avenue with Ridge Avenue
Site Code:
Start Date: 09/21/2021

Turning Movement Data

Start Time	Euclid Avenue Eastbound						Euclid Avenue Westbound						Ridge Avenue Northbound						Ridge 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	85	0	0	90	0	0	63	0	2	63	0	1	1	0	0	2	0	2	1	6	0	9	164
7:15 AM	0	3	105	1	0	109	0	0	68	5	1	73	0	0	1	1	0	2	0	2	3	2	0	7	191
7:30 AM	0	9	143	0	0	152	0	2	107	3	1	112	0	0	2	0	0	2	0	3	1	6	0	10	276
7:45 AM	0	14	130	0	0	144	0	0	113	5	0	118	0	1	1	1	0	3	0	7	2	11	0	20	285
Hourly Total	0	31	463	1	0	495	0	2	351	13	4	366	0	2	5	2	0	9	0	14	7	25	0	46	916
8:00 AM	0	25	114	0	0	139	0	0	95	19	1	114	0	1	1	0	0	2	0	2	7	8	0	17	272
8:15 AM	0	35	113	0	0	148	0	3	111	40	0	154	0	0	1	2	0	3	0	10	8	19	0	37	342
8:30 AM	0	2	78	1	0	81	0	2	98	7	0	107	0	2	1	0	0	3	0	9	1	16	0	26	217
8:45 AM	0	6	105	1	0	112	0	0	100	5	0	105	0	0	0	0	0	0	0	7	0	8	0	15	232
Hourly Total	0	68	410	2	0	480	0	5	404	71	1	480	0	3	3	2	0	8	0	28	16	51	0	95	1063
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	11	111	0	0	122	0	2	120	7	0	129	0	0	1	3	0	4	0	2	3	5	1	10	265
4:15 PM	0	9	113	1	0	123	0	0	103	16	0	119	0	0	6	2	0	8	0	7	0	7	0	14	264
4:30 PM	0	10	99	2	0	111	0	1	121	11	0	133	0	1	3	0	0	4	0	3	3	6	0	12	260
4:45 PM	0	10	105	1	0	116	0	0	106	8	0	114	0	0	2	2	0	4	0	3	1	7	0	11	245
Hourly Total	0	40	428	4	0	472	0	3	450	42	0	495	0	1	12	7	0	20	0	15	7	25	1	47	1034
5:00 PM	0	15	118	1	0	134	0	0	122	12	0	134	0	0	1	3	0	4	0	6	0	8	0	14	286
5:15 PM	0	6	128	1	0	135	0	0	127	5	0	132	0	0	4	0	0	4	0	14	1	15	1	30	301
5:30 PM	0	9	103	0	0	112	0	2	123	6	1	131	0	0	2	0	0	2	0	5	0	7	0	12	257
5:45 PM	0	11	111	1	1	123	0	2	94	17	0	113	0	0	1	0	0	1	0	3	3	8	0	14	251
Hourly Total	0	41	460	3	1	504	0	4	466	40	1	510	0	0	8	3	0	11	0	28	4	38	1	70	1095
Grand Total	0	180	1761	10	1	1951	0	14	1671	166	6	1851	0	6	28	14	0	48	0	85	34	139	2	258	4108
Approach %	0.0	9.2	90.3	0.5	-	-	0.0	0.8	90.3	9.0	-	-	0.0	12.5	58.3	29.2	-	-	0.0	32.9	13.2	53.9	-	-	-
Total %	0.0	4.4	42.9	0.2	-	47.5	0.0	0.3	40.7	4.0	-	45.1	0.0	0.1	0.7	0.3	-	1.2	0.0	2.1	0.8	3.4	-	6.3	-
Lights	0	179	1725	10	-	1914	0	14	1640	166	-	1820	0	6	28	14	-	48	0	85	34	137	-	256	4038
% Lights	-	99.4	98.0	100.0	-	98.1	-	100.0	98.1	100.0	-	98.3	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	98.6	-	99.2	98.3
Buses	0	1	2	0	-	3	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	1	-	1	6
% Buses	-	0.6	0.1	0.0	-	0.2	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.7	-	0.4	0.1
Single-Unit Trucks	0	0	17	0	-	17	0	0	19	0	-	19	0	0	0	0	-	0	0	0	0	0	-	0	36
% Single-Unit Trucks	-	0.0	1.0	0.0	-	0.9	-	0.0	1.1	0.0	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	0	17	0	-	17	0	0	10	0	-	10	0	0	0	0	-	0	0	0	0	0	-	0	27
% Articulated Trucks	-	0.0	1.0	0.0	-	0.9	-	0.0	0.6	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	1	-	1	1

% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.7	-	0.4	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Euclid Avenue with Ridge Avenue
Site Code:
Start Date: 09/21/2021

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Euclid Avenue Eastbound						Euclid Avenue Westbound						Ridge Avenue Northbound						Ridge 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	
7:30 AM	0	9	143	0	0	152	0	2	107	3	1	112	0	0	2	0	0	2	0	3	1	6	0	10	276
7:45 AM	0	14	130	0	0	144	0	0	113	5	0	118	0	1	1	1	0	3	0	7	2	11	0	20	285
8:00 AM	0	25	114	0	0	139	0	0	95	19	1	114	0	1	1	0	0	2	0	2	7	8	0	17	272
8:15 AM	0	35	113	0	0	148	0	3	111	40	0	154	0	0	1	2	0	3	0	10	8	19	0	37	342
Total	0	83	500	0	0	583	0	5	426	67	2	498	0	2	5	3	0	10	0	22	18	44	0	84	1175
Approach %	0.0	14.2	85.8	0.0	-	-	0.0	1.0	85.5	13.5	-	-	0.0	20.0	50.0	30.0	-	-	0.0	26.2	21.4	52.4	-	-	-
Total %	0.0	7.1	42.6	0.0	-	49.6	0.0	0.4	36.3	5.7	-	42.4	0.0	0.2	0.4	0.3	-	0.9	0.0	1.9	1.5	3.7	-	7.1	-
PHF	0.000	0.593	0.874	0.000	-	0.959	0.000	0.417	0.942	0.419	-	0.808	0.000	0.500	0.625	0.375	-	0.833	0.000	0.550	0.563	0.579	-	0.568	0.859
Lights	0	82	485	0	-	567	0	5	414	67	-	486	0	2	5	3	-	10	0	22	18	44	-	84	1147
% Lights	-	98.8	97.0	-	-	97.3	-	100.0	97.2	100.0	-	97.6	-	100.0	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	97.6
Buses	0	1	1	0	-	2	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Buses	-	1.2	0.2	-	-	0.3	-	0.0	0.5	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	5	0	-	5	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	10
% Single-Unit Trucks	-	0.0	1.0	-	-	0.9	-	0.0	1.2	0.0	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	0	9	0	-	9	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	14
% Articulated Trucks	-	0.0	1.8	-	-	1.5	-	0.0	1.2	0.0	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.2
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	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Euclid Avenue with Ridge Avenue
Site Code:
Start Date: 09/21/2021

Turning Movement Peak Hour Data (4:45 PM)

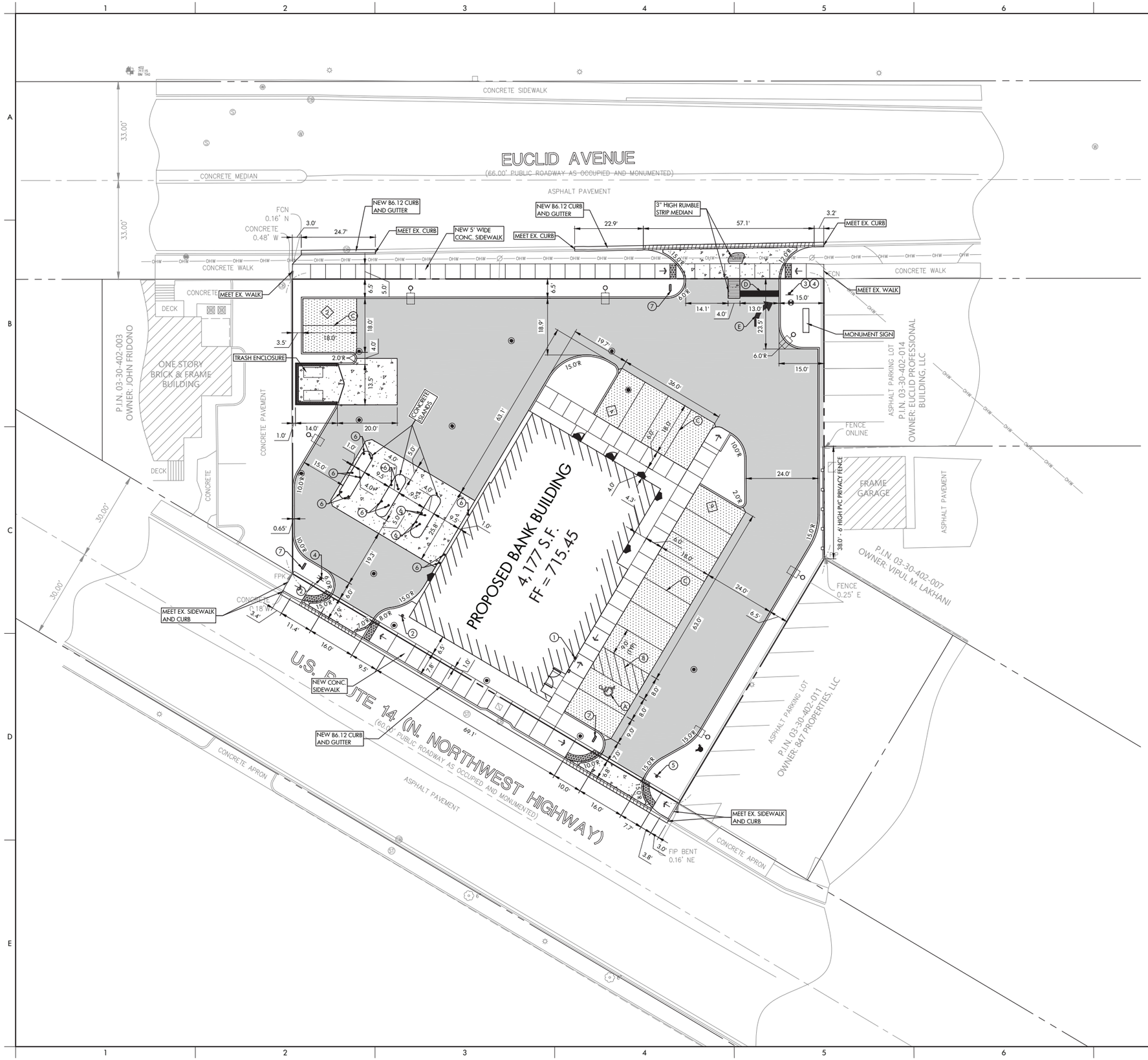
Start Time	Euclid Avenue Eastbound						Euclid Avenue Westbound						Ridge Avenue Northbound						Ridge Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	10	105	1	0	116	0	0	106	8	0	114	0	0	2	2	0	4	0	3	1	7	0	11	245
5:00 PM	0	15	118	1	0	134	0	0	122	12	0	134	0	0	1	3	0	4	0	6	0	8	0	14	286
5:15 PM	0	6	128	1	0	135	0	0	127	5	0	132	0	0	4	0	0	4	0	14	1	15	1	30	301
5:30 PM	0	9	103	0	0	112	0	2	123	6	1	131	0	0	2	0	0	2	0	5	0	7	0	12	257
Total	0	40	454	3	0	497	0	2	478	31	1	511	0	0	9	5	0	14	0	28	2	37	1	67	1089
Approach %	0.0	8.0	91.3	0.6	-	-	0.0	0.4	93.5	6.1	-	-	0.0	0.0	64.3	35.7	-	-	0.0	41.8	3.0	55.2	-	-	-
Total %	0.0	3.7	41.7	0.3	-	45.6	0.0	0.2	43.9	2.8	-	46.9	0.0	0.0	0.8	0.5	-	1.3	0.0	2.6	0.2	3.4	-	6.2	-
PHF	0.000	0.667	0.887	0.750	-	0.920	0.000	0.250	0.941	0.646	-	0.953	0.000	0.000	0.563	0.417	-	0.875	0.000	0.500	0.500	0.617	-	0.558	0.904
Lights	0	40	449	3	-	492	0	2	472	31	-	505	0	0	9	5	-	14	0	28	2	37	-	67	1078
% Lights	-	100.0	98.9	100.0	-	99.0	-	100.0	98.7	100.0	-	98.8	-	-	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	99.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	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
Single-Unit Trucks	0	0	3	0	-	3	0	0	4	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	7
% Single-Unit Trucks	-	0.0	0.7	0.0	-	0.6	-	0.0	0.8	0.0	-	0.8	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Articulated Trucks	0	0	2	0	-	2	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	-	0.0	0.4	0.0	-	0.4	-	0.0	0.4	0.0	-	0.4	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.4
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	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Study Name Euclid Avenue with Northwest Highway/Salem Avenue
Start Date Tuesday, September 21, 2021 7:00 AM
End Date Tuesday, September 21, 2021 6:00 PM
Site Code

Report Summary

		Eastbound							Westbound							Southbound							Southeastbound							Northwestbound							Crosswalk	
Time Period	Class.	U	HL	L	T	BR	I	O	U	HL	T	BR	R	I	O	U	L	BL	R	HR	I	O	U	HL	BL	T	BR	HR	I	O	U	BL	T	BR	HR	I	O	Total		idestria	Total
Peak 1	Lights	0	15	0	470	174	659	575	0	0	398	54	1	453	573	0	0	1	0	1	2	6	0	3	103	385	37	528	358	0	140	288	2	0	430	560	2072	W	0	0
Specified Period	%	0%	100%	0%	96%	98%	97%	97%	0%	0%	98%	93%	100%	97%	96%	0%	0%	100%	0%	100%	100%	100%	0%	100%	99%	94%	97%	95%	95%	0%	97%	95%	100%	0%	96%	95%	96%		0%	
7:00 AM - 9:00 AM	Buses	0	0	0	3	1	4	2	0	0	2	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2	1	8	E	1	1
One Hour Peak	%	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%		100%	
7:30 AM - 8:30 AM	ıgle-Unit Truc	0	0	0	14	1	15	9	0	0	4	3	0	7	15	0	0	0	0	0	0	0	0	0	1	22	1	24	15	0	4	12	0	0	16	23	62	N	1	1
	%	0%	0%	0%	3%	1%	2%	2%	0%	0%	1%	5%	0%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	5%	3%	4%	4%	0%	3%	4%	0%	0%	4%	4%	3%		100%	
	ticulated Truc	0	0	0	3	1	4	4	0	0	3	1	0	4	3	0	0	0	0	0	0	0	0	0	0	3	0	3	1	0	1	0	0	0	1	4	12	NW	0	0
	%	0%	0%	0%	1%	1%	1%	1%	0%	0%	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	1%	0%	0%	0%	1%	1%	1%		0%	
	icycles on Roa	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	SE	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
	Total	**0**	**15**	**0**	**490**	**177**	**682**	**590**	**0**	**0**	**407**	**58**	**1**	**466**	**594**	**0**	**0**	**1**	**0**	**1**	**2**	**6**	**0**	**3**	**104**	**410**	**38**	**555**	**376**	**0**	**145**	**302**	**2**	**0**	**449**	**588**	**2154**		**2**	**2**
	PHF	0	0.75	0	0.88	0.74	0.85	0.83	0	0	0.81	0.58	0.25	0.81	0.89	0	0	0.25	0	0.25	0.5	0.75	0	0.75	0.72	0.82	0.79	0.87	0.83	0	0.86	0.76	0.5	0	0.81	0.92	0.94			
	Approach %						32%	27%						22%	28%						0%	0%						26%	17%						21%	27%				
Peak 2	Lights	0	28	0	410	200	638	685	0	0	448	74	2	524	478	1	5	5	5	2	18	9	0	1	57	381	33	472	643	0	199	539	5	6	749	586	2401	W	0	0
Specified Period	%	0%	97%	0%	100%	100%	100%	99%	0%	0%	99%	97%	100%	99%	99%	100%	100%	100%	100%	100%	100%	100%	0%	100%	97%	98%	100%	98%	98%	0%	100%	98%	100%	100%	99%	99%	99%		0%	
4:00 PM - 6:00 PM	Buses	0	0	0	0	0	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	3	E	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
4:45 PM - 5:45 PM	ıgle-Unit Truc	0	0	0	1	0	1	3	0	0	2	0	0	2	3	0	0	0	0	0	0	0	0	0	2	3	0	5	8	0	1	8	0	0	9	3	17	N	1	1
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	0%	1%	1%	0%	1%	1%	0%	0%	1%	1%	1%		100%	
	ticulated Truc	0	1	0	1	0	2	0	0	0	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	1	0	0	1	2	7	NW	4	4
	%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%		100%	
	icycles on Roa	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	SE	2	2
	%	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%		100%	
	Total	**0**	**29**	**0**	**412**	**200**	**641**	**690**	**0**	**0**	**452**	**76**	**2**	**530**	**482**	**1**	**5**	**5**	**5**	**2**	**18**	**9**	**0**	**1**	**59**	**387**	**33**	**480**	**655**	**0**	**200**	**548**	**5**	**6**	**759**	**592**	**2428**		**7**	**7**
	PHF	0	0.72	0	0.9	0.94	0.91	0.89	0	0	0.86	0.83	0.25	0.86	0.89	0.25	0.62	0.31	0.42	0.5	0.75	0.56	0	0.25	0.82	0.88	0.55	0.9	0.89	0	0.72	0.89	0.42	0.75	0.84	0.94	0.9			
	Approach %						26%	28%						22%	20%						1%	0%						20%	27%						31%	24%				

Preliminary Site Plan



SITE DATA

TOTAL SITE AREA = 0.55 AC

PROPOSED BUILDING AREA = 4,171 S.F.

PARKING PROVIDED =
REGULAR PARKING PROVIDED = 14 SPACES
HANDICAP PARKING PROVIDED = 1 SPACES

TOTAL PARKING PROVIDED = 15 SPACES

SITE PLAN KEYED NOTES

1. R7-8 HANDICAP PARKING SIGN (12"X18") WITH $250 FINE (MOUNTED ON BUILDING WALL)
2. R5-1 DO NOT ENTER SIGN (30"X30")
3. R1-1 STOP SIGN (30"X30")
4. R3-5 RIGHT TURN ONLY SIGN (30"X36")
5. "NO EXIT / ENTRANCE ONLY" SIGN (18"X24")
6. PROTECTIVE BOLLARD (SEE ARCH. DWGS. FOR DETAILS)
7. WAY-FINDING SIGN (SEE SITE SIGNAGE PACKAGE)
A. HANDICAP SYMBOL PER LATEST ADA STANDARDS
8. 4" SOLID YELLOW AT 24" C-C AT 45 DEGREES
C. 4" SOLID YELLOW STRIPE (TYP)
D. 24" WIDE WHITE STOP BAR (INSTALLED 4' BEFORE WALK)
E. WHITE RIGHT TURN ONLY ARROW

GENERAL NOTES

1. ALL DIMENSIONS AND CURB RADII ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL CURB SHALL BE B6.12 CURB AND GUTTER.
3. SIDEWALK IN FRONT OF THE BUILDING AND ON THE EAST SIDE OF FOREST AVENUE SHALL BE COMBINATION SIDEWALK AND BARRIER CURB AND SHALL BE MONOLITHICALLY CAST ACCORDING TO THE DETAIL ON SHEET C6.0.
4. ALL RADII ARE 3.0' UNLESS OTHERWISE NOTED.
5. ALL SITE SIGNAGE SHALL BE IN CONFORMANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) STANDARDS, LATEST EDITION.
6. PARKING SPACES SHALL BE ANGLED AT 90° TO THE ASSOCIATED DRIVE AISLE UNLESS OTHERWISE NOTED.
7. DETECTABLE WARNING STRIPS WITH TRUNCATED DOMES ON ALL CURB RAMPS SHALL CONSIST OF CONTRASTING COLOR TO ADJACENT PAVEMENT COLOR PER IDOT REGULATIONS, PREFERRED COLOR IS RED (FEDERAL COLOR STANDARD 30166)
8. REFER TO ARCHITECTURAL AND SIGNAGE PLANS FOR ANY ADDITIONAL SITE SIGNAGE AND PAVEMENT MARKINGS.
9. ALL TRAFFIC SIGNS SHALL BE INSTALLED AT 7' HIGH MEASURED FROM THE GROUND ELEVATION TO THE BOTTOM OF SIGN.

SITE PAVING LEGEND

HEAVY DUTY ASPHALT PAVEMENT
2.0" BITUMINOUS SURFACE COURSE, HOT MIX ASPHALT, MIX D, N50
7.25" BITUMINOUS BINDER COURSE, HOT MIX ASPHALT, IL-19, N50
4" AGGREGATE BASE COURSE, TYPE B (IDOT GRAD CA-6)

LIGHT DUTY ASPHALT PAVEMENT
2.0" BITUMINOUS SURFACE COURSE, HOT MIX ASPHALT, MIX D, N50
2.5" BITUMINOUS BINDER COURSE, HOT MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B (IDOT GRAD CA-6)

CONCRETE PAVEMENT
8" P.C. CONCRETE PAVEMENT
6x6 - W2.9 x W2.9 WWF @ MIDPOINT OF CONCRETE THICKNESS
4" AGGREGATE BASE (CA-6)

SIDEWALK PAVEMENT
5" P.C. CONCRETE PAVEMENT (THICKEN TO 8" AT DRIVEWAYS)
4" AGGREGATE BASE (CA-6)

REVISIONS

2	12.08.21	REVISED PER VILLAGE REVIEW
1	10.07.21	ISSUED FOR PERMIT

CIVIL ENGINEERS - PLANNERS - DEVELOPMENT CONSULTANTS
CIVWORKS Consulting, LLC
3343 N. NEVA AVENUE
CHICAGO, ILLINOIS 60634
PH: (312) 237-2655
Fax: (312) 637-9454
E-mail: info@civworks.com
Web: www.civworks.com

SHEET TITLE: SITE DIMENSIONAL AND PAVING PLAN

PROJECT: PROPOSED BANK DEVELOPMENT
630 W. NORTHWEST HIGHWAY, ARLINGTON HEIGHTS, IL 60004

PROJ. MGR.:	OP
DRAWN BY:	OP
FIRST ISSUE DATE:	09-21-2021
SCALE:	1"=15'

SHEET NO.
C3.0

PROJ. NUMBER: 21022

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ITE Trip Generation Worksheets

Drive-in Bank
(912)

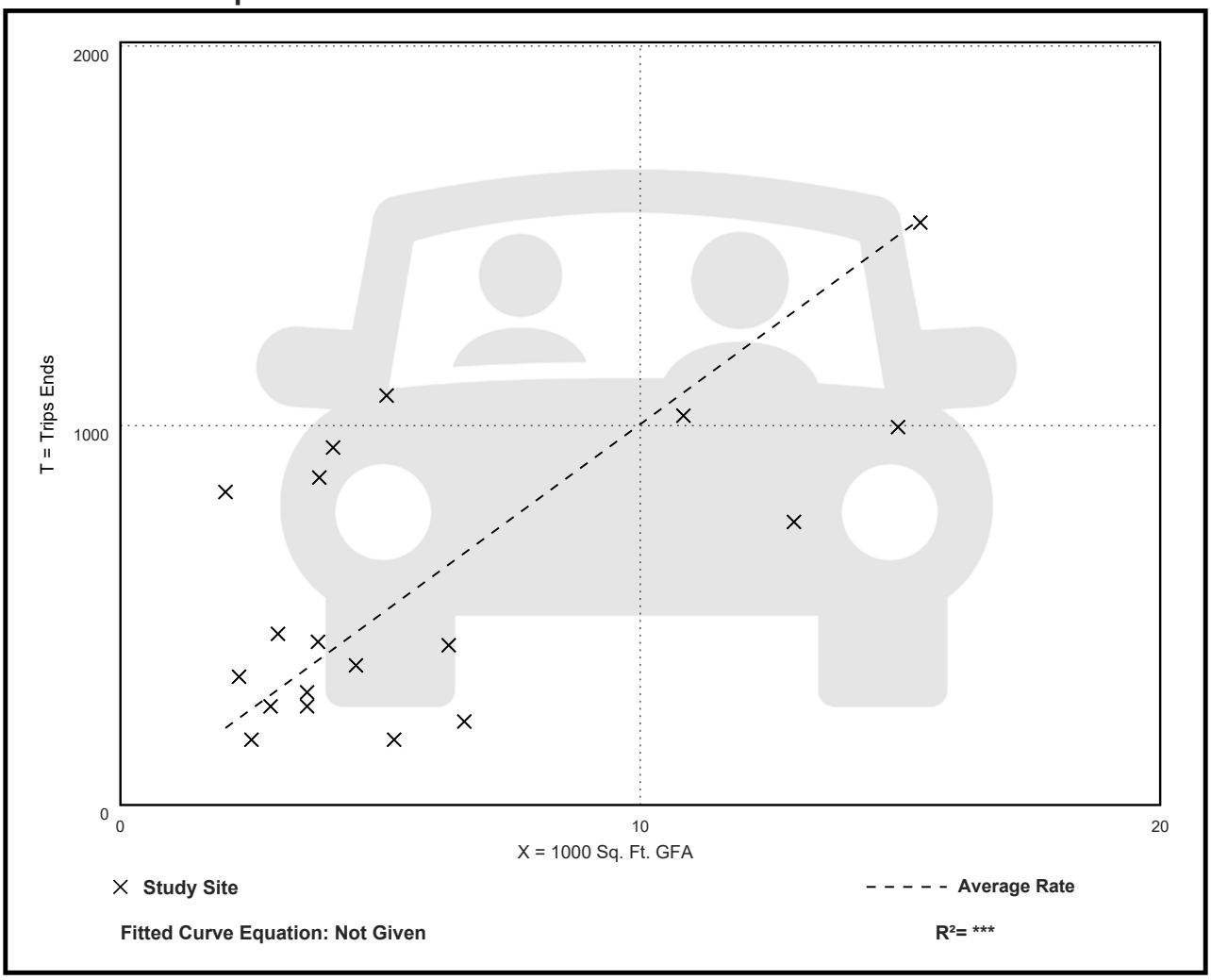
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
100.35	32.67 - 408.42	68.62

Data Plot and Equation



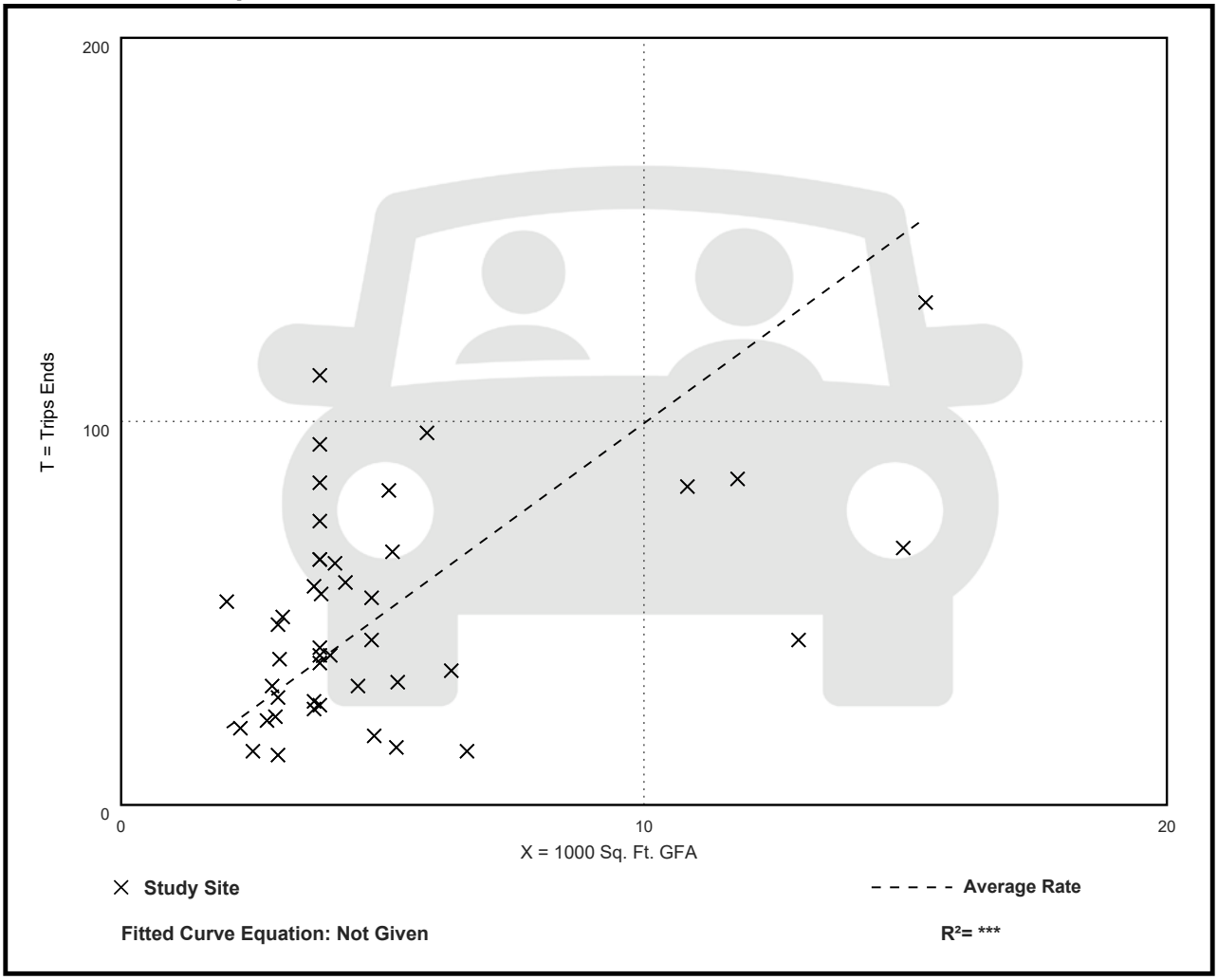
Drive-in Bank
(912)

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: 44
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.95	2.12 - 29.47	6.00

Data Plot and Equation



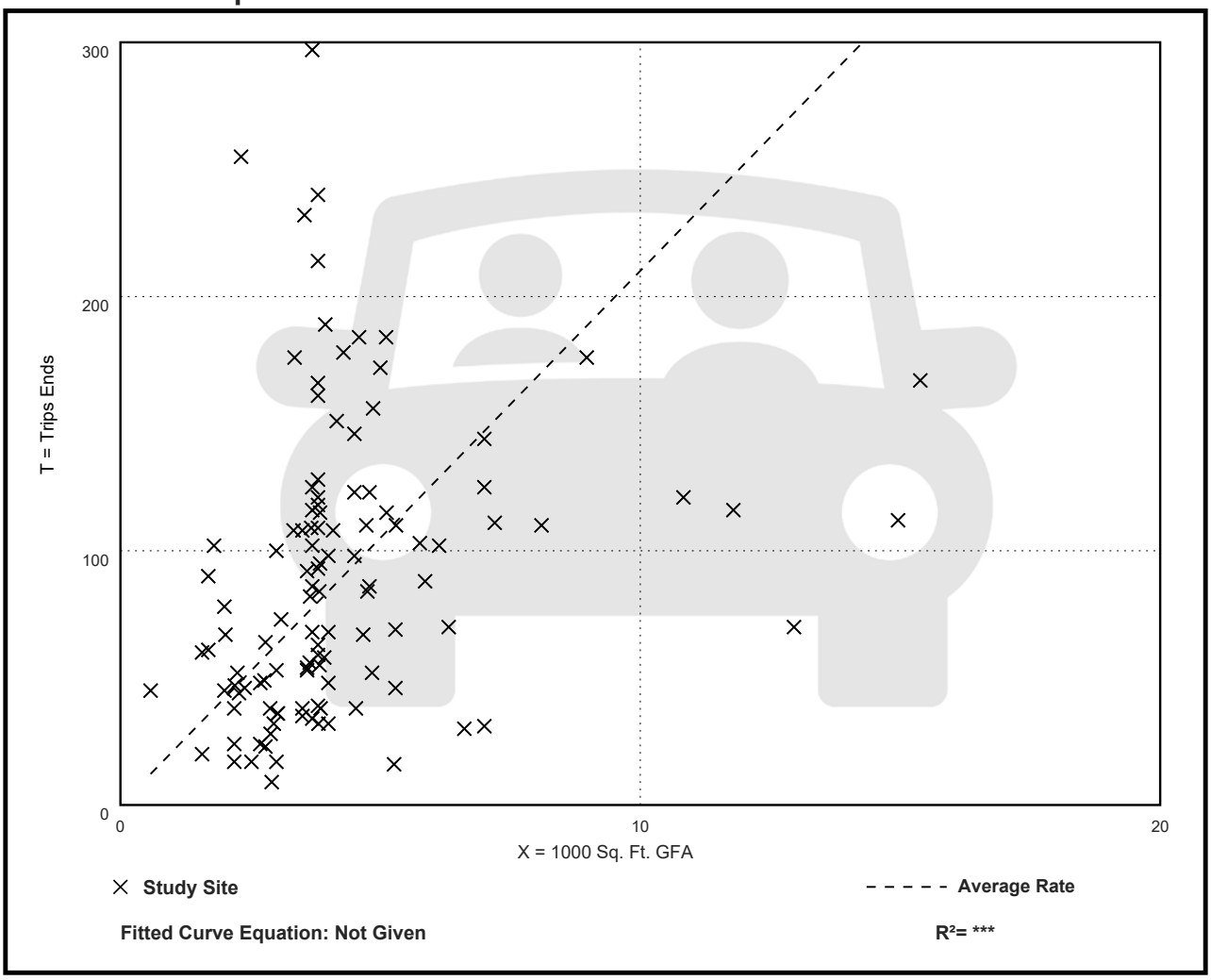
Drive-in Bank
(912)

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: 114
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
21.01	3.04 - 109.91	15.13

Data Plot and Equation



CMAP 2050 Projections Letter

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

October 12, 2021

Elise Purguette
Traffic Engineer
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: ***Euclid Avenue @ Northwest Highway***
IDOT

Dear Mr. Purguette:

In response to a request made on your behalf and dated October 11, 2021, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Euclid Ave east of NW Highway	11,500	12,800
Euclid Ave west of NW Highway	14,900	16,600
NW Highway, @ Euclid Ave	15,800	19,100

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

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

cc: Rios (IDOT)
2021_CY_TrafficForecast\ArlingtonHeights\ck-127-21\ck-127-21.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets

Year 2021 Weekday Morning Peak Hour Conditions

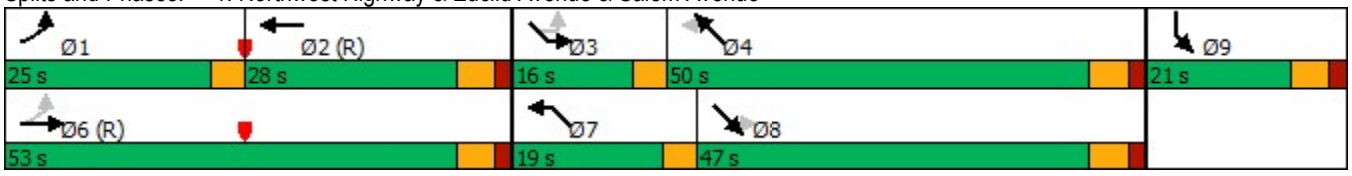
Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	15	490	177	407	58	1	1	1	3	104	451	38
Future Volume (vph)	15	490	177	407	58	1	1	1	3	104	451	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%			0%				0%	
Storage Length (ft)	0		0		0		0			210		0
Storage Lanes	0		0		0		1			1		0
Taper Length (ft)	25						25			200		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	1.00	0.95	0.95
Ped Bike Factor				1.00						1.00		
Frt		0.961		0.981			0.932				0.988	
Flt Protected		0.999					0.976			0.950		
Satd. Flow (prot)	0	3352	0	3441	0	0	1728	0	0	1788	3372	0
Flt Permitted		0.937					0.976			0.488		
Satd. Flow (perm)	0	3144	0	3441	0	0	1728	0	0	917	3372	0
Right Turn on Red			No			No		No				No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30			30				30	
Link Distance (ft)		863		371			409				775	
Travel Time (s)		19.6		8.4			9.3				17.6	
Confl. Peds. (#/hr)						1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	2%	2%	7%	0%	0%	0%	0%	1%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%			0%				0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	725	0	496	0	0	2	0	0	114	520	0
Turn Type	pm+pt	NA		NA			Prot		custom	pm+pt	NA	
Protected Phases	1	6		2			9			3	8	
Permitted Phases	6								3	8		
Detector Phase	1	6		2			9		3	3	8	
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0		3.0	3.0	8.0	
Minimum Split (s)	9.5	37.0		24.0			21.0		9.5	9.5	24.0	
Total Split (s)	25.0	53.0		28.0			21.0		16.0	16.0	47.0	
Total Split (%)	17.9%	37.9%		20.0%			15.0%		11.4%	11.4%	33.6%	
Yellow Time (s)	3.5	4.0		4.0			4.0		3.5	3.5	4.0	
All-Red Time (s)	0.0	2.0		2.0			2.0		0.0	0.0	2.0	
Lost Time Adjust (s)		0.0		0.0			0.0			0.0	0.0	
Total Lost Time (s)		6.0		6.0			6.0			3.5	6.0	
Lead/Lag	Lead			Lag					Lead	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes					Yes	Yes	Yes	
Recall Mode	None	C-Min		C-Min			None		None	None	None	
Act Effct Green (s)		75.5		75.5			5.8			46.0	32.5	
Actuated g/C Ratio		0.54		0.54			0.04			0.33	0.23	

Lane Group	NWL	NWT	NWR
Lane Configurations			
Traffic Volume (vph)	145	332	2
Future Volume (vph)	145	332	2
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	220		0
Storage Lanes	1		0
Taper Length (ft)	145		
Lane Util. Factor	1.00	0.95	0.95
Ped Bike Factor		1.00	
Frt		0.999	
Flt Protected	0.950		
Satd. Flow (prot)	1752	3435	0
Flt Permitted	0.250		
Satd. Flow (perm)	461	3435	0
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)		30	
Link Distance (ft)		493	
Travel Time (s)		11.2	
Confl. Peds. (#/hr)			1
Confl. Bikes (#/hr)			
Peak Hour Factor	0.94	0.94	0.94
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	3%	5%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	154	355	0
Turn Type	pm+pt	NA	
Protected Phases	7	4	
Permitted Phases	4		
Detector Phase	7	4	
Switch Phase			
Minimum Initial (s)	3.0	15.0	
Minimum Split (s)	11.0	36.0	
Total Split (s)	19.0	50.0	
Total Split (%)	13.6%	35.7%	
Yellow Time (s)	3.5	4.0	
All-Red Time (s)	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	3.5	6.0	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	None	
Act Effct Green (s)	52.0	35.6	
Actuated g/C Ratio	0.37	0.25	

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
v/c Ratio		0.43		0.27			0.03			0.31	0.66	
Control Delay		22.2		19.7			65.0			30.1	52.6	
Queue Delay		0.0		0.0			0.0			0.0	0.0	
Total Delay		22.2		19.7			65.0			30.1	52.6	
LOS		C		B			E			C	D	
Approach Delay		22.2		19.7			65.0				48.6	
Approach LOS		C		B			E				D	
Queue Length 50th (ft)		198		122			2			68	227	
Queue Length 95th (ft)		331		211			12			103	271	
Internal Link Dist (ft)		783		291			329				695	
Turn Bay Length (ft)										210		
Base Capacity (vph)		1695		1855			185			388	987	
Starvation Cap Reductn		0		0			0			0	0	
Spillback Cap Reductn		0		0			0			0	0	
Storage Cap Reductn		0		0			0			0	0	
Reduced v/c Ratio		0.43		0.27			0.01			0.29	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 32.9		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue



Lane Group	NWL	NWT	NWR
v/c Ratio	0.51	0.41	
Control Delay	34.9	44.1	
Queue Delay	0.0	0.0	
Total Delay	34.9	44.1	
LOS	C	D	
Approach Delay		41.3	
Approach LOS		D	
Queue Length 50th (ft)	94	141	
Queue Length 95th (ft)	135	177	
Internal Link Dist (ft)		413	
Turn Bay Length (ft)	220		
Base Capacity (vph)	315	1079	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.49	0.33	

Intersection Summary

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	500	0	5	426	67	2	5	3	22	18	44
Future Vol, veh/h	83	500	0	5	426	67	2	5	3	22	18	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	97	581	0	6	495	78	2	6	3	26	21	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	581	0	0	1357	1360	583	1328	1321	534
Stage 1	-	-	-	-	-	-	775	775	-	546	546	-
Stage 2	-	-	-	-	-	-	582	585	-	782	775	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1005	-	-	1003	-	-	127	150	516	133	158	550
Stage 1	-	-	-	-	-	-	394	411	-	526	521	-
Stage 2	-	-	-	-	-	-	502	501	-	390	411	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1005	-	-	1003	-	-	100	135	515	119	142	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	237	-	232	257	-
Stage 1	-	-	-	-	-	-	356	371	-	475	518	-
Stage 2	-	-	-	-	-	-	434	498	-	344	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	18.8	19.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	272	1005	-	-	1003	-	-	343
HCM Lane V/C Ratio	0.043	0.096	-	-	0.006	-	-	0.285
HCM Control Delay (s)	18.8	9	-	-	8.6	-	-	19.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.2

Capacity Analysis Summary Sheets

Year 2021 Weekday Evening Peak Hour Conditions

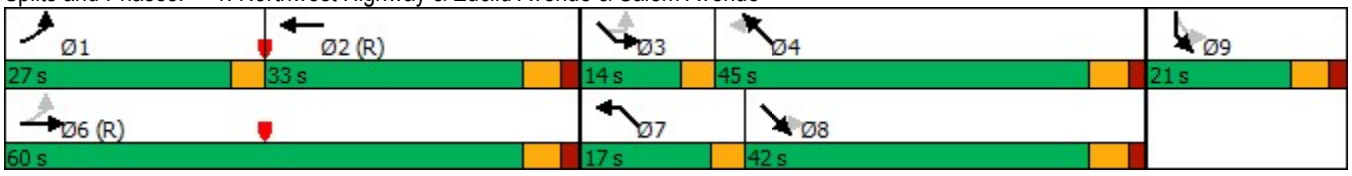
Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
Lane Configurations												
Traffic Volume (vph)	29	474	200	520	76	2	5	5	5	2	1	59
Future Volume (vph)	29	474	200	520	76	2	5	5	5	2	1	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%				0%				
Storage Length (ft)	0		0		0			0	0			210
Storage Lanes	0		0		0			1	0			1
Taper Length (ft)	25							25				200
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00								1.00
Frt		0.957		0.981				0.946				
Flt Protected		0.998						0.971				0.950
Satd. Flow (prot)	0	3444	0	3483	0	0	0	1745	0	0	0	1753
Flt Permitted		0.895						0.971				0.242
Satd. Flow (perm)	0	3088	0	3483	0	0	0	1745	0	0	0	446
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30				
Link Distance (ft)		863		371				409				
Travel Time (s)		19.6		8.4				9.3				
Confl. Peds. (#/hr)	4				4	1					1	
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	1%	3%	0%	0%	0%	0%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%				0%				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	781	0	664	0	0	0	20	0	0	0	67
Turn Type	pm+pt	NA		NA			Perm	Prot			custom	pm+pt
Protected Phases	1	6		2				9				3
Permitted Phases	6						9				3	8
Detector Phase	1	6		2			9	9			3	3
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0	3.0			3.0	3.0
Minimum Split (s)	9.5	37.0		24.0			21.0	21.0			9.5	9.5
Total Split (s)	27.0	60.0		33.0			21.0	21.0			14.0	14.0
Total Split (%)	19.3%	42.9%		23.6%			15.0%	15.0%			10.0%	10.0%
Yellow Time (s)	3.5	4.0		4.0			4.0	4.0			3.5	3.5
All-Red Time (s)	0.0	2.0		2.0			2.0	2.0			0.0	0.0
Lost Time Adjust (s)		0.0		0.0				0.0				0.0
Total Lost Time (s)		6.0		6.0				6.0				3.5
Lead/Lag	Lead			Lag							Lead	Lead
Lead-Lag Optimize?	Yes			Yes							Yes	Yes
Recall Mode	None	C-Min		C-Min			None	None			None	None
Act Effct Green (s)		72.5		72.5				7.2				41.3
Actuated g/C Ratio		0.52		0.52				0.05				0.30

Lane Group	SET	SER	NWL	NWT	NWR	NWR2
Lane Configurations						
Traffic Volume (vph)	406	33	200	575	5	6
Future Volume (vph)	406	33	200	575	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%		
Storage Length (ft)		0	220		0	
Storage Lanes		0	1		0	
Taper Length (ft)			145			
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor				1.00		
Frt	0.989			0.997		
Flt Protected			0.950			
Satd. Flow (prot)	3505	0	1805	3528	0	0
Flt Permitted			0.257			
Satd. Flow (perm)	3505	0	488	3528	0	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30		
Link Distance (ft)	775			493		
Travel Time (s)	17.6			11.2		
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	488	0	222	652	0	0
Turn Type	NA		pm+pt	NA		
Protected Phases	8		7	4		
Permitted Phases			4			
Detector Phase	8		7	4		
Switch Phase						
Minimum Initial (s)	8.0		3.0	15.0		
Minimum Split (s)	24.0		11.0	36.0		
Total Split (s)	42.0		17.0	45.0		
Total Split (%)	30.0%		12.1%	32.1%		
Yellow Time (s)	4.0		3.5	4.0		
All-Red Time (s)	2.0		0.0	2.0		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.0		3.5	6.0		
Lead/Lag	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None		None	None		
Act Effct Green (s)	30.0		49.4	36.7		
Actuated g/C Ratio	0.21		0.35	0.26		

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
v/c Ratio		0.49		0.37				0.22				0.31
Control Delay		25.1		22.7				69.0				33.3
Queue Delay		0.0		0.0				0.0				0.0
Total Delay		25.1		22.7				69.0				33.3
LOS		C		C				E				C
Approach Delay		25.1		22.7				69.0				
Approach LOS		C		C				E				
Queue Length 50th (ft)		252		197				18				41
Queue Length 95th (ft)		352		277				46				72
Internal Link Dist (ft)		783		291				329				
Turn Bay Length (ft)												210
Base Capacity (vph)		1599		1804				186				235
Starvation Cap Reductn		0		0				0				0
Spillback Cap Reductn		0		0				0				0
Storage Cap Reductn		0		0				0				0
Reduced v/c Ratio		0.49		0.37				0.11				0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue



Lane Group	SET	SER	NWL	NWT	NWR	NWR2
v/c Ratio	0.65		0.74	0.71		
Control Delay	54.0		49.1	51.7		
Queue Delay	0.0		0.0	0.0		
Total Delay	54.0		49.1	51.7		
LOS	D		D	D		
Approach Delay	51.5			51.0		
Approach LOS	D			D		
Queue Length 50th (ft)	215		149	291		
Queue Length 95th (ft)	262		205	347		
Internal Link Dist (ft)	695			413		
Turn Bay Length (ft)			220			
Base Capacity (vph)	901		299	990		
Starvation Cap Reductn	0		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.54		0.74	0.66		

Intersection Summary

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	522	3	2	550	31	0	9	5	28	21	37
Future Vol, veh/h	40	522	3	2	550	31	0	9	5	28	21	37
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	44	580	3	2	611	34	0	10	6	31	23	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	646	0	0	583	0	0	1334	1320	583	1312	1304	629
Stage 1	-	-	-	-	-	-	670	670	-	633	633	-
Stage 2	-	-	-	-	-	-	664	650	-	679	671	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	949	-	-	1001	-	-	132	158	516	137	162	486
Stage 1	-	-	-	-	-	-	450	459	-	471	476	-
Stage 2	-	-	-	-	-	-	453	468	-	445	458	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	948	-	-	1001	-	-	109	150	516	127	154	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	225	265	-	253	277	-
Stage 1	-	-	-	-	-	-	429	438	-	449	475	-
Stage 2	-	-	-	-	-	-	394	467	-	410	437	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	16.8	20.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	948	-	-	1001	-	-	327
HCM Lane V/C Ratio	0.048	0.047	-	-	0.002	-	-	0.292
HCM Control Delay (s)	16.8	9	-	-	8.6	-	-	20.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.2

Capacity Analysis Summary Sheets

No-Build Weekday Morning Peak Hour Conditions

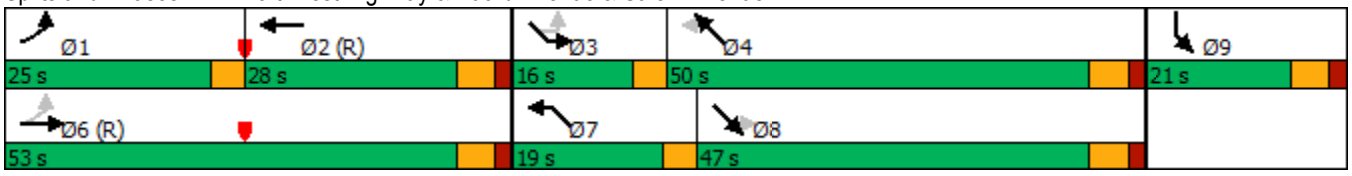
Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	15	503	182	418	60	1	1	1	3	107	463	39
Future Volume (vph)	15	503	182	418	60	1	1	1	3	107	463	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%			0%				0%	
Storage Length (ft)	0		0		0		0			210		0
Storage Lanes	0		0		0		1			1		0
Taper Length (ft)	25						25			200		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	1.00	0.95	0.95
Ped Bike Factor				1.00						1.00		
Frt		0.961		0.981			0.932				0.988	
Flt Protected		0.999					0.976			0.950		
Satd. Flow (prot)	0	3352	0	3441	0	0	1728	0	0	1788	3372	0
Flt Permitted		0.937					0.976			0.481		
Satd. Flow (perm)	0	3144	0	3441	0	0	1728	0	0	904	3372	0
Right Turn on Red			No			No		No				No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30			30				30	
Link Distance (ft)		863		371			409				775	
Travel Time (s)		19.6		8.4			9.3				17.6	
Confl. Peds. (#/hr)						1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	2%	2%	7%	0%	0%	0%	0%	1%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%			0%				0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	745	0	510	0	0	2	0	0	117	534	0
Turn Type	pm+pt	NA		NA			Prot		custom	pm+pt	NA	
Protected Phases	1	6		2			9			3	8	
Permitted Phases	6								3	8		
Detector Phase	1	6		2			9		3	3	8	
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0		3.0	3.0	8.0	
Minimum Split (s)	9.5	37.0		24.0			21.0		9.5	9.5	24.0	
Total Split (s)	25.0	53.0		28.0			21.0		16.0	16.0	47.0	
Total Split (%)	17.9%	37.9%		20.0%			15.0%		11.4%	11.4%	33.6%	
Yellow Time (s)	3.5	4.0		4.0			4.0		3.5	3.5	4.0	
All-Red Time (s)	0.0	2.0		2.0			2.0		0.0	0.0	2.0	
Lost Time Adjust (s)		0.0		0.0			0.0			0.0	0.0	
Total Lost Time (s)		6.0		6.0			6.0			3.5	6.0	
Lead/Lag	Lead			Lag					Lead	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes					Yes	Yes	Yes	
Recall Mode	None	C-Min		C-Min			None		None	None	None	
Act Effct Green (s)		74.7		74.7			5.8			46.8	33.2	
Actuated g/C Ratio		0.53		0.53			0.04			0.33	0.24	

Lane Group	NWL	NWT	NWR
Lane Configurations			
Traffic Volume (vph)	149	341	2
Future Volume (vph)	149	341	2
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	220		0
Storage Lanes	1		0
Taper Length (ft)	145		
Lane Util. Factor	1.00	0.95	0.95
Ped Bike Factor		1.00	
Frt		0.999	
Flt Protected	0.950		
Satd. Flow (prot)	1752	3435	0
Flt Permitted	0.243		
Satd. Flow (perm)	448	3435	0
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)		30	
Link Distance (ft)		493	
Travel Time (s)		11.2	
Confl. Peds. (#/hr)			1
Confl. Bikes (#/hr)			
Peak Hour Factor	0.94	0.94	0.94
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	3%	5%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	159	365	0
Turn Type	pm+pt	NA	
Protected Phases	7	4	
Permitted Phases	4		
Detector Phase	7	4	
Switch Phase			
Minimum Initial (s)	3.0	15.0	
Minimum Split (s)	11.0	36.0	
Total Split (s)	19.0	50.0	
Total Split (%)	13.6%	35.7%	
Yellow Time (s)	3.5	4.0	
All-Red Time (s)	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	3.5	6.0	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	None	
Act Effct Green (s)	52.9	36.3	
Actuated g/C Ratio	0.38	0.26	

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
v/c Ratio		0.44		0.28			0.03			0.32	0.67	
Control Delay		23.0		20.2			65.0			29.6	52.2	
Queue Delay		0.0		0.0			0.0			0.0	0.0	
Total Delay		23.0		20.2			65.0			29.6	52.2	
LOS		C		C			E			C	D	
Approach Delay		23.0		20.2			65.0				48.2	
Approach LOS		C		C			E				D	
Queue Length 50th (ft)		208		127			2			69	233	
Queue Length 95th (ft)		345		218			12			104	277	
Internal Link Dist (ft)		783		291			329				695	
Turn Bay Length (ft)										210		
Base Capacity (vph)		1677		1835			185			390	987	
Starvation Cap Reductn		0		0			0			0	0	
Spillback Cap Reductn		0		0			0			0	0	
Storage Cap Reductn		0		0			0			0	0	
Reduced v/c Ratio		0.44		0.28			0.01			0.30	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 33.0		Intersection LOS: C	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue



Lane Group	NWL	NWT	NWR
v/c Ratio	0.53	0.41	
Control Delay	34.8	43.6	
Queue Delay	0.0	0.0	
Total Delay	34.8	43.6	
LOS	C	D	
Approach Delay		41.0	
Approach LOS		D	
Queue Length 50th (ft)	96	144	
Queue Length 95th (ft)	138	181	
Internal Link Dist (ft)		413	
Turn Bay Length (ft)	220		
Base Capacity (vph)	314	1079	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.51	0.34	

Intersection Summary

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	513	0	5	437	69	2	5	3	23	18	45
Future Vol, veh/h	85	513	0	5	437	69	2	5	3	23	18	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	99	597	0	6	508	80	2	6	3	27	21	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	588	0	0	597	0	0	1392	1395	599	1362	1355	548
Stage 1	-	-	-	-	-	-	795	795	-	560	560	-
Stage 2	-	-	-	-	-	-	597	600	-	802	795	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	992	-	-	989	-	-	121	143	505	126	151	540
Stage 1	-	-	-	-	-	-	384	402	-	516	514	-
Stage 2	-	-	-	-	-	-	493	493	-	381	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	992	-	-	989	-	-	94	128	504	113	135	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	230	-	225	250	-
Stage 1	-	-	-	-	-	-	346	362	-	464	511	-
Stage 2	-	-	-	-	-	-	424	490	-	334	362	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	19.3	20.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	264	992	-	-	989	-	-	334
HCM Lane V/C Ratio	0.044	0.1	-	-	0.006	-	-	0.299
HCM Control Delay (s)	19.3	9	-	-	8.7	-	-	20.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.2

Capacity Analysis Summary Sheets

No-Build Weekday Evening Peak Hour Conditions

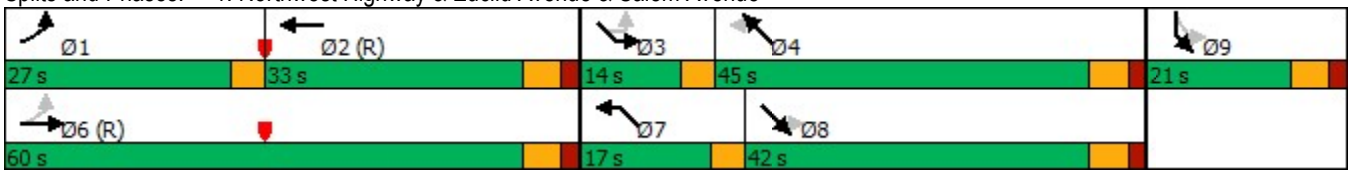
Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
Lane Configurations												
Traffic Volume (vph)	30	486	205	534	78	2	5	5	5	2	1	61
Future Volume (vph)	30	486	205	534	78	2	5	5	5	2	1	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%				0%				
Storage Length (ft)	0		0		0			0	0			210
Storage Lanes	0		0		0			1	0			1
Taper Length (ft)	25							25				200
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00								1.00
Frt		0.957		0.980				0.946				
Flt Protected		0.998						0.971				0.950
Satd. Flow (prot)	0	3444	0	3479	0	0	0	1745	0	0	0	1753
Flt Permitted		0.892						0.971				0.229
Satd. Flow (perm)	0	3078	0	3479	0	0	0	1745	0	0	0	422
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30				
Link Distance (ft)		863		371				409				
Travel Time (s)		19.6		8.4				9.3				
Confl. Peds. (#/hr)	4				4	1					1	
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	1%	3%	0%	0%	0%	0%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%				0%				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	801	0	682	0	0	0	20	0	0	0	69
Turn Type	pm+pt	NA		NA			Perm	Prot			custom	pm+pt
Protected Phases	1	6		2				9				3
Permitted Phases	6						9				3	8
Detector Phase	1	6		2			9	9			3	3
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0	3.0			3.0	3.0
Minimum Split (s)	9.5	37.0		24.0			21.0	21.0			9.5	9.5
Total Split (s)	27.0	60.0		33.0			21.0	21.0			14.0	14.0
Total Split (%)	19.3%	42.9%		23.6%			15.0%	15.0%			10.0%	10.0%
Yellow Time (s)	3.5	4.0		4.0			4.0	4.0			3.5	3.5
All-Red Time (s)	0.0	2.0		2.0			2.0	2.0			0.0	0.0
Lost Time Adjust (s)		0.0		0.0				0.0				0.0
Total Lost Time (s)		6.0		6.0				6.0				3.5
Lead/Lag	Lead			Lag							Lead	Lead
Lead-Lag Optimize?	Yes			Yes							Yes	Yes
Recall Mode	None	C-Min		C-Min			None	None			None	None
Act Effct Green (s)		72.2		72.2				7.2				41.7
Actuated g/C Ratio		0.52		0.52				0.05				0.30

Lane Group	SET	SER	NWL	NWT	NWR	NWR2
Lane Configurations						
Traffic Volume (vph)	417	34	205	590	5	6
Future Volume (vph)	417	34	205	590	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%		
Storage Length (ft)		0	220		0	
Storage Lanes		0	1		0	
Taper Length (ft)			145			
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor				1.00		
Frt	0.989			0.997		
Flt Protected			0.950			
Satd. Flow (prot)	3505	0	1805	3528	0	0
Flt Permitted			0.249			
Satd. Flow (perm)	3505	0	473	3528	0	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30		
Link Distance (ft)	775			493		
Travel Time (s)	17.6			11.2		
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	0	228	669	0	0
Turn Type	NA		pm+pt	NA		
Protected Phases	8		7	4		
Permitted Phases			4			
Detector Phase	8		7	4		
Switch Phase						
Minimum Initial (s)	8.0		3.0	15.0		
Minimum Split (s)	24.0		11.0	36.0		
Total Split (s)	42.0		17.0	45.0		
Total Split (%)	30.0%		12.1%	32.1%		
Yellow Time (s)	4.0		3.5	4.0		
All-Red Time (s)	2.0		0.0	2.0		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.0		3.5	6.0		
Lead/Lag	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None		None	None		
Act Effct Green (s)	30.4		49.7	37.0		
Actuated g/C Ratio	0.22		0.36	0.26		

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
v/c Ratio		0.51		0.38				0.22				0.33
Control Delay		25.6		23.0				69.0				33.5
Queue Delay		0.0		0.0				0.0				0.0
Total Delay		25.6		23.0				69.0				33.5
LOS		C		C				E				C
Approach Delay		25.6		23.0				69.0				
Approach LOS		C		C				E				
Queue Length 50th (ft)		262		205				18				42
Queue Length 95th (ft)		363		286				46				73
Internal Link Dist (ft)		783		291				329				
Turn Bay Length (ft)												210
Base Capacity (vph)		1586		1793				186				230
Starvation Cap Reductn		0		0				0				0
Spillback Cap Reductn		0		0				0				0
Storage Cap Reductn		0		0				0				0
Reduced v/c Ratio		0.51		0.38				0.11				0.30

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 38.2		Intersection LOS: D	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue



Lane Group	SET	SER	NWL	NWT	NWR	NWR2
v/c Ratio	0.66		0.77	0.72		
Control Delay	54.1		51.3	52.0		
Queue Delay	0.0		0.0	0.0		
Total Delay	54.1		51.3	52.0		
LOS	D		D	D		
Approach Delay	51.6			51.8		
Approach LOS	D			D		
Queue Length 50th (ft)	221		153	300		
Queue Length 95th (ft)	269		#216	357		
Internal Link Dist (ft)	695			413		
Turn Bay Length (ft)			220			
Base Capacity (vph)	901		296	992		
Starvation Cap Reductn	0		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.56		0.77	0.67		

Intersection Summary

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	536	3	2	564	32	0	9	5	29	21	38
Future Vol, veh/h	41	536	3	2	564	32	0	9	5	29	21	38
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	46	596	3	2	627	36	0	10	6	32	23	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	664	0	0	599	0	0	1372	1358	599	1349	1341	646
Stage 1	-	-	-	-	-	-	690	690	-	650	650	-
Stage 2	-	-	-	-	-	-	682	668	-	699	691	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	935	-	-	988	-	-	124	150	505	129	154	475
Stage 1	-	-	-	-	-	-	439	449	-	461	468	-
Stage 2	-	-	-	-	-	-	443	459	-	434	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	988	-	-	101	142	505	119	146	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	256	-	244	270	-
Stage 1	-	-	-	-	-	-	417	427	-	438	467	-
Stage 2	-	-	-	-	-	-	383	458	-	398	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	17.2	21.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	311	934	-	-	988	-	-	318
HCM Lane V/C Ratio	0.05	0.049	-	-	0.002	-	-	0.307
HCM Control Delay (s)	17.2	9.1	-	-	8.7	-	-	21.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	1.3

Capacity Analysis Summary Sheets

Projected Weekday Morning Peak Hour Conditions

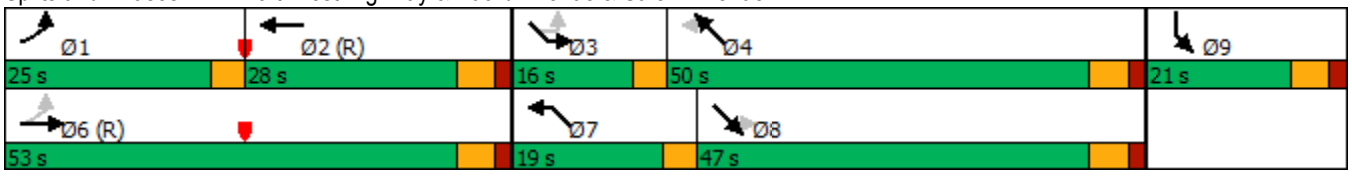
Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
Lane Configurations												
Traffic Volume (vph)	15	506	185	418	60	1	1	1	3	110	466	39
Future Volume (vph)	15	506	185	418	60	1	1	1	3	110	466	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%			0%				0%	
Storage Length (ft)	0		0		0		0			210		0
Storage Lanes	0		0		0		1			1		0
Taper Length (ft)	25						25			200		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	1.00	0.95	0.95
Ped Bike Factor				1.00						1.00		
Frt		0.961		0.981			0.932				0.989	
Flt Protected		0.999					0.976			0.950		
Satd. Flow (prot)	0	3352	0	3441	0	0	1728	0	0	1788	3375	0
Flt Permitted		0.937					0.976			0.476		
Satd. Flow (perm)	0	3144	0	3441	0	0	1728	0	0	894	3375	0
Right Turn on Red			No			No		No				No
Satd. Flow (RTOR)												
Link Speed (mph)		30		30			30				30	
Link Distance (ft)		863		371			409				775	
Travel Time (s)		19.6		8.4			9.3				17.6	
Confl. Peds. (#/hr)						1			1	1		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	2%	2%	7%	0%	0%	0%	0%	1%	6%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%			0%				0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	751	0	510	0	0	2	0	0	120	537	0
Turn Type	pm+pt	NA		NA			Prot		custom	pm+pt	NA	
Protected Phases	1	6		2			9			3	8	
Permitted Phases	6								3	8		
Detector Phase	1	6		2			9		3	3	8	
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0		3.0	3.0	8.0	
Minimum Split (s)	9.5	37.0		24.0			21.0		9.5	9.5	24.0	
Total Split (s)	25.0	53.0		28.0			21.0		16.0	16.0	47.0	
Total Split (%)	17.9%	37.9%		20.0%			15.0%		11.4%	11.4%	33.6%	
Yellow Time (s)	3.5	4.0		4.0			4.0		3.5	3.5	4.0	
All-Red Time (s)	0.0	2.0		2.0			2.0		0.0	0.0	2.0	
Lost Time Adjust (s)		0.0		0.0			0.0			0.0	0.0	
Total Lost Time (s)		6.0		6.0			6.0			3.5	6.0	
Lead/Lag	Lead			Lag					Lead	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes					Yes	Yes	Yes	
Recall Mode	None	C-Min		C-Min			None		None	None	None	
Act Effct Green (s)		74.5		74.5			5.8			46.9	33.3	
Actuated g/C Ratio		0.53		0.53			0.04			0.34	0.24	

Lane Group	NWL	NWT	NWR
Lane Configurations			
Traffic Volume (vph)	153	346	2
Future Volume (vph)	153	346	2
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)		0%	
Storage Length (ft)	220		0
Storage Lanes	1		0
Taper Length (ft)	145		
Lane Util. Factor	1.00	0.95	0.95
Ped Bike Factor		1.00	
Frt		0.999	
Flt Protected	0.950		
Satd. Flow (prot)	1752	3435	0
Flt Permitted	0.241		
Satd. Flow (perm)	445	3435	0
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)		30	
Link Distance (ft)		493	
Travel Time (s)		11.2	
Confl. Peds. (#/hr)			1
Confl. Bikes (#/hr)			
Peak Hour Factor	0.94	0.94	0.94
Growth Factor	100%	100%	100%
Heavy Vehicles (%)	3%	5%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Mid-Block Traffic (%)		0%	
Shared Lane Traffic (%)			
Lane Group Flow (vph)	163	370	0
Turn Type	pm+pt	NA	
Protected Phases	7	4	
Permitted Phases	4		
Detector Phase	7	4	
Switch Phase			
Minimum Initial (s)	3.0	15.0	
Minimum Split (s)	11.0	36.0	
Total Split (s)	19.0	50.0	
Total Split (%)	13.6%	35.7%	
Yellow Time (s)	3.5	4.0	
All-Red Time (s)	0.0	2.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	3.5	6.0	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Recall Mode	None	None	
Act Effct Green (s)	53.1	36.4	
Actuated g/C Ratio	0.38	0.26	

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL	SBR2	SEL2	SEL	SET	SER
v/c Ratio		0.45		0.28			0.03			0.32	0.67	
Control Delay		23.1		20.3			65.0			29.7	52.2	
Queue Delay		0.0		0.0			0.0			0.0	0.0	
Total Delay		23.1		20.3			65.0			29.7	52.2	
LOS		C		C			E			C	D	
Approach Delay		23.1		20.3			65.0				48.1	
Approach LOS		C		C			E				D	
Queue Length 50th (ft)		210		127			2			71	234	
Queue Length 95th (ft)		349		218			12			106	278	
Internal Link Dist (ft)		783		291			329				695	
Turn Bay Length (ft)										210		
Base Capacity (vph)		1673		1831			185			388	988	
Starvation Cap Reductn		0		0			0			0	0	
Spillback Cap Reductn		0		0			0			0	0	
Storage Cap Reductn		0		0			0			0	0	
Reduced v/c Ratio		0.45		0.28			0.01			0.31	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 33.2		Intersection LOS: C	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue



Lane Group	NWL	NWT	NWR
v/c Ratio	0.54	0.41	
Control Delay	35.1	43.7	
Queue Delay	0.0	0.0	
Total Delay	35.1	43.7	
LOS	D	D	
Approach Delay		41.0	
Approach LOS		D	
Queue Length 50th (ft)	99	146	
Queue Length 95th (ft)	140	183	
Internal Link Dist (ft)		413	
Turn Bay Length (ft)	220		
Base Capacity (vph)	314	1079	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.52	0.34	

Intersection Summary

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	517	3	5	442	69	2	5	3	23	18	46
Future Vol, veh/h	86	517	3	5	442	69	2	5	3	23	18	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	3	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	100	601	3	6	514	80	2	6	3	27	21	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	594	0	0	604	0	0	1406	1409	605	1375	1370	554
Stage 1	-	-	-	-	-	-	803	803	-	566	566	-
Stage 2	-	-	-	-	-	-	603	606	-	809	804	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.209	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	987	-	-	984	-	-	118	140	501	124	148	536
Stage 1	-	-	-	-	-	-	380	399	-	513	511	-
Stage 2	-	-	-	-	-	-	489	490	-	377	398	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	987	-	-	984	-	-	91	125	500	111	132	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	227	-	222	247	-
Stage 1	-	-	-	-	-	-	342	359	-	461	508	-
Stage 2	-	-	-	-	-	-	419	487	-	330	358	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	19.5	20.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	987	-	-	984	-	-	332
HCM Lane V/C Ratio	0.045	0.101	-	-	0.006	-	-	0.305
HCM Control Delay (s)	19.5	9.1	-	-	8.7	-	-	20.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	598	6	6	484	0	8
Future Vol, veh/h	598	6	6	484	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	3	0	0
Mvmt Flow	629	6	6	509	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	635	0	-	632
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.1	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.2	-	-	3.3
Pot Cap-1 Maneuver	-	-	958	-	0	484
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	958	-	-	484
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	-	-	958	-
HCM Lane V/C Ratio	0.017	-	-	0.007	-
HCM Control Delay (s)	12.6	-	-	8.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	652	492	0	0	9
Future Vol, veh/h	0	652	492	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	6	5	0	0	0
Mvmt Flow	0	686	518	0	0	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	259
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	746
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	746
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	746
HCM Lane V/C Ratio	-	-	0.013
HCM Control Delay (s)	-	-	9.9
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	646	492	6	0	0
Future Vol, veh/h	6	646	492	6	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	6	5	0	0	0
Mvmt Flow	6	680	518	6	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	524	0	-	0	873	262
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1053	-	-	-	293	743
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1053	-	-	-	290	743
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	689	-

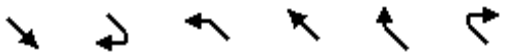
Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1053	-	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	8.4	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Capacity Analysis Summary Sheets

Projected Weekday Evening Peak Hour Conditions

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
Lane Configurations												
Traffic Volume (vph)	30	492	210	534	78	2	5	5	5	2	1	66
Future Volume (vph)	30	492	210	534	78	2	5	5	5	2	1	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%		0%				0%				
Storage Length (ft)	0		0		0			0	0			210
Storage Lanes	0		0		0			1	0			1
Taper Length (ft)	25							25				200
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00								1.00
Frt		0.957		0.980				0.946				
Flt Protected		0.998						0.971				0.950
Satd. Flow (prot)	0	3444	0	3479	0	0	0	1745	0	0	0	1753
Flt Permitted		0.893						0.971				0.220
Satd. Flow (perm)	0	3081	0	3479	0	0	0	1745	0	0	0	406
Right Turn on Red			No			No				No		
Satd. Flow (RTOR)												
Link Speed (mph)		30		30				30				
Link Distance (ft)		863		371				409				
Travel Time (s)		19.6		8.4				9.3				
Confl. Peds. (#/hr)	4				4	1					1	
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	1%	3%	0%	0%	0%	0%	0%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%		0%				0%				
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	813	0	682	0	0	0	20	0	0	0	74
Turn Type	pm+pt	NA		NA			Perm	Prot			custom	pm+pt
Protected Phases	1	6		2				9				3
Permitted Phases	6						9				3	8
Detector Phase	1	6		2			9	9			3	3
Switch Phase												
Minimum Initial (s)	3.0	8.0		15.0			3.0	3.0			3.0	3.0
Minimum Split (s)	9.5	37.0		24.0			21.0	21.0			9.5	9.5
Total Split (s)	27.0	60.0		33.0			21.0	21.0			14.0	14.0
Total Split (%)	19.3%	42.9%		23.6%			15.0%	15.0%			10.0%	10.0%
Yellow Time (s)	3.5	4.0		4.0			4.0	4.0			3.5	3.5
All-Red Time (s)	0.0	2.0		2.0			2.0	2.0			0.0	0.0
Lost Time Adjust (s)		0.0		0.0				0.0				0.0
Total Lost Time (s)		6.0		6.0				6.0				3.5
Lead/Lag	Lead			Lag							Lead	Lead
Lead-Lag Optimize?	Yes			Yes							Yes	Yes
Recall Mode	None	C-Min		C-Min			None	None			None	None
Act Effct Green (s)		71.9		71.9				7.2				42.2
Actuated g/C Ratio		0.51		0.51				0.05				0.30

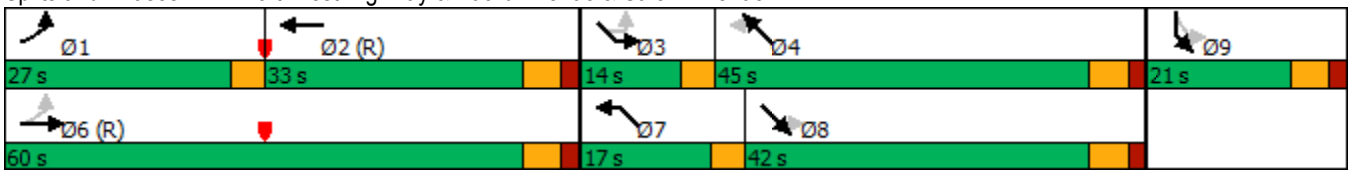


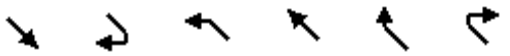
Lane Group	SET	SER	NWL	NWT	NWR	NWR2
Lane Configurations						
Traffic Volume (vph)	423	34	216	601	5	6
Future Volume (vph)	423	34	216	601	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%		
Storage Length (ft)		0	220		0	
Storage Lanes		0	1		0	
Taper Length (ft)			145			
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor				1.00		
Frt	0.989			0.997		
Flt Protected			0.950			
Satd. Flow (prot)	3505	0	1805	3528	0	0
Flt Permitted			0.245			
Satd. Flow (perm)	3505	0	466	3528	0	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30		
Link Distance (ft)	775			493		
Travel Time (s)	17.6			11.2		
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	508	0	240	681	0	0
Turn Type	NA		pm+pt	NA		
Protected Phases	8		7	4		
Permitted Phases			4			
Detector Phase	8		7	4		
Switch Phase						
Minimum Initial (s)	8.0		3.0	15.0		
Minimum Split (s)	24.0		11.0	36.0		
Total Split (s)	42.0		17.0	45.0		
Total Split (%)	30.0%		12.1%	32.1%		
Yellow Time (s)	4.0		3.5	4.0		
All-Red Time (s)	2.0		0.0	2.0		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.0		3.5	6.0		
Lead/Lag	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None		None	None		
Act Effct Green (s)	30.7		50.0	37.1		
Actuated g/C Ratio	0.22		0.36	0.26		

Lane Group	EBL	EBT	EBR	WBT	WBR	WBR2	SBL2	SBL	SBR	SBR2	SEL2	SEL
v/c Ratio		0.51		0.38				0.22				0.35
Control Delay		26.0		23.2				69.0				33.9
Queue Delay		0.0		0.0				0.0				0.0
Total Delay		26.0		23.2				69.0				33.9
LOS		C		C				E				C
Approach Delay		26.0		23.2				69.0				
Approach LOS		C		C				E				
Queue Length 50th (ft)		268		206				18				45
Queue Length 95th (ft)		371		286				46				77
Internal Link Dist (ft)		783		291				329				
Turn Bay Length (ft)												210
Base Capacity (vph)		1581		1786				186				227
Starvation Cap Reductn		0		0				0				0
Spillback Cap Reductn		0		0				0				0
Storage Cap Reductn		0		0				0				0
Reduced v/c Ratio		0.51		0.38				0.11				0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 38.8		Intersection LOS: D	
Intersection Capacity Utilization 89.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Northwest Highway & Euclid Avenue & Salem Avenue





Lane Group	SET	SER	NWL	NWT	NWR	NWR2
v/c Ratio	0.66		0.81	0.73		
Control Delay	54.0		55.6	52.3		
Queue Delay	0.0		0.0	0.0		
Total Delay	54.0		55.6	52.3		
LOS	D		E	D		
Approach Delay	51.4			53.1		
Approach LOS	D			D		
Queue Length 50th (ft)	224		161	306		
Queue Length 95th (ft)	273		#244	364		
Internal Link Dist (ft)	695			413		
Turn Bay Length (ft)			220			
Base Capacity (vph)	901		295	993		
Starvation Cap Reductn	0		0	0		
Spillback Cap Reductn	0		0	0		
Storage Cap Reductn	0		0	0		
Reduced v/c Ratio	0.56		0.81	0.69		

Intersection Summary

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	548	10	2	573	32	0	9	5	29	21	40
Future Vol, veh/h	43	548	10	2	573	32	0	9	5	29	21	40
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	105	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	48	609	11	2	637	36	0	10	6	32	23	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	620	0	0	1404	1389	616	1380	1376	656
Stage 1	-	-	-	-	-	-	711	711	-	660	660	-
Stage 2	-	-	-	-	-	-	693	678	-	720	716	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	927	-	-	970	-	-	118	144	494	123	146	469
Stage 1	-	-	-	-	-	-	427	439	-	455	463	-
Stage 2	-	-	-	-	-	-	437	455	-	422	437	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	926	-	-	970	-	-	95	136	494	113	138	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	250	-	237	261	-
Stage 1	-	-	-	-	-	-	405	416	-	431	462	-
Stage 2	-	-	-	-	-	-	375	454	-	386	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	17.5	21.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	304	926	-	-	970	-	-	312
HCM Lane V/C Ratio	0.051	0.052	-	-	0.002	-	-	0.321
HCM Control Delay (s)	17.5	9.1	-	-	8.7	-	-	21.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	1.3

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	580	11	11	602	0	21
Future Vol, veh/h	580	11	11	602	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	611	12	12	634	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	623	0	-	617
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.1	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.2	-	-	3.3
Pot Cap-1 Maneuver	-	-	968	-	0	494
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	968	-	-	494
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	494	-	-	968	-
HCM Lane V/C Ratio	0.045	-	-	0.012	-
HCM Control Delay (s)	12.6	-	-	8.8	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	638	806	0	0	22
Future Vol, veh/h	0	638	806	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	672	848	0	0	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	424
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	0	579
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	579
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	579
HCM Lane V/C Ratio	-	-	0.04
HCM Control Delay (s)	-	-	11.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	627	806	0	0	0
Future Vol, veh/h	11	627	806	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	660	848	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	848	0	-	0	1202	424
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	785	-	-	-	177	579
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	785	-	-	-	173	579
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	681	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	785	-	-	-	-
HCM Lane V/C Ratio	0.015	-	-	-	-
HCM Control Delay (s)	9.7	0.1	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-