



Timothy Cope

Date: 7/21/2025
Expires: 11/30/2025

Traffic Impact Study

Project Cardinal

Project No. 182671

Revision 0

July 21, 2025



Contents

Executive Summary	i
1.0 Introduction.....	1-1
1.1 Introduction.....	1-1
2.0 Project Conditions	2-1
2.1 Land Uses	2-1
2.2 Roadway System	2-1
2.2.1 Roadway Descriptions	2-1
2.2.2 Intersection Descriptions.....	2-1
2.3 Traffic Volumes.....	2-2
2.4 Proposed Development.....	2-2
2.4.1 Land Use Development.....	2-2
2.4.2 Roadway Development.....	2-2
3.0 Traffic Forecasts	3-1
3.1 Project Traffic Volumes	3-1
3.1.1 Trip Generation	3-1
3.1.2 Trip Distribution and Assignment.....	3-2
3.2 Background Traffic Volumes	3-7
3.3 Future Traffic Volumes	3-7
4.0 Traffic Analysis	4-1
4.1 Auxiliary Lane Analysis	4-1
4.2 Traffic Signal Warrant Analysis.....	4-2
4.3 Capacity Analysis	4-2
4.3.1 Existing Scenario	4-6
4.3.2 Background Scenario.....	4-7
4.3.3 Future with Traffic Scenario.....	4-7
4.3.4 Planned Improvements.....	4-10
4.3.5 Potential Mitigation Scenario.....	4-10
4.4 Queue Length Analysis.....	4-11
4.5 Site Circulation	4-18
4.6 Proposed Lane Configuration	4-19
5.0 Conclusions	5-1

Appendix A – Traffic Count Data

Appendix B – Methodology and CMAP Correspondance

Appendix C – Auxiliary Lane Analysis



Appendix D – Traffic Signal Warrant Analysis

Appendix E – Existing Intersection Capacity Analysis

Appendix F – Background Intersection Capacity Analysis

Appendix G – Future with Project Intersection Capacity Analysis

Appendix H – Future with Project and Mitigation Intersection Capacity Analysis

Appendix I – IDOT IL 47 Improvement Plans

Figures

Figure 1-1: Site Location Map	1-2
Figure 1-2: Conceptual Site Plan	1-3
Figure 2-1: Land Use Map	2-3
Figure 2-2: Existing Lane Configuration.....	2-4
Figure 2-3: Existing Traffic Control and Volumes	2-5
Figure 3-1: Phase 1 (2027) Site Generated Trips	3-4
Figure 3-2: Phase 2 (2029) Site Generated Trips	3-5
Figure 3-3: Phase 3 (2031) Site Generated Trips	3-6
Figure 3-4: Background Year 2027 Traffic Volumes.....	3-8
Figure 3-5: Background Year 2029 Traffic Volumes.....	3-9
Figure 3-6: Background Year 2031 Traffic Volumes.....	3-10
Figure 3-7: Phase 1 (2027) Total Future Traffic Volumes.....	3-11
Figure 3-8: Phase 2 (2029) Total Future Traffic Volumes.....	3-12
Figure 3-9: Phase 3 (2031) Total Future Traffic Volumes.....	3-13
Figure 4-1: Proposed Lane Configuration	4-20

Tables

Table E-1: Mitigation Summary.....	ii
Table 3-1: Phase 1 Trip Generation	3-1
Table 3-2: Phase 2 Trip Generation	3-2
Table 3-3: Phase 3 Trip Generation	3-2
Table 3-4: External Trip Distribution.....	3-3
Table 3-5: CMAP Established Growth Rates	3-7
Table 4-1: Peak Hour Traffic Signal Warrant Analysis Summary	4-2
Table 4-2: LOS Criteria for TWSC and AWSC	4-3
Table 4-3: LOS Criteria for Signalized Intersections	4-3
Table 4-4: Capacity Analysis of Unsignalized Intersections (AM Peak Hour)	4-4
Table 4-5: Capacity Analysis of Unsignalized Intersections (PM Peak Hour)	4-5
Table 4-6: Capacity Analysis of Signalized Intersections	4-6
Table 4-7: Capacity Analysis of Unsignalized Intersections (AM Peak Hour with Improvements and Mitigation)	4-8
Table 4-8: Capacity Analysis of Unsignalized Intersections (PM Peak Hour with Improvements and Mitigation)	4-9
Table 4-9: Capacity Analysis of Signalized Intersections with Improvements and Mitigation	4-10
Table 4-10: 95th Percentile Queue Length Analysis (Existing Unsignalized Intersections)	4-12
Table 4-11: 95th Percentile Queue Analysis (Existing and Future No-Build Signalized Intersections)	4-13
Table 4-12: 95th Percentile Queue Analysis (Proposed Access Locations).....	4-15
Table 4-13: 95th Percentile Queue Analysis (Planned Improvements and Mitigation, Existing Intersections).....	4-16
Table 4-14: 95th Percentile Queue Analysis (Recommended Mitigation, Proposed Access Locations)	4-17



List of Abbreviations

Abbreviation	Term/Phrase/Name
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
AM	Morning Peak Hour
AWSC	All-Way Stop Controlled
BDE	Bureau of Design and Environmental Manual
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CMAP	Chicago Metropolitan Agency for Planning
EB	Eastbound
HCM	Highway Capacity Manual
IDOT	Illinois Department of Transportation
ITE	Institute of Transportation Engineers
LOS	Level of Service
MUTCD	Manual on Uniform Traffic Control Devices
NB	Northbound
PHF	Peak Hour Factor
PM	Evening Peak Hour
SB	Southbound
TWLTL	Two-Way Left-Turn Lane
TWSC	Two-Way Stop Controlled
vph	Vehicles per Hour
WB	Westbound

Index and Certification

Pioneer Development

Traffic Impact Study

Project No. 182671

Report Index

Chapter Number	Chapter Title	Number of Pages
E	Executive Summary	2
1.0	Introduction	3
2.0	Project Conditions	4
3.0	Traffic Forecasts	13
4.0	Traffic Analysis	20
5.0	Conclusions	2
Appendix A	Traffic Count Data	30
Appendix B	Methodology and CMAP Correspondence	20
Appendix C	Auxiliary Lane Analysis	4
Appendix D	Traffic Signal Warrant Analysis	5
Appendix E	Existing Intersection Capacity Analysis	11
Appendix F	Background Intersection Capacity Analysis	30
Appendix G	Future with Project Intersection Capacity Analysis	54
Appendix H	Future with Project and Mitigation Intersection Capacity Analysis	54
Appendix I	IDOT IL 47 Improvement Plans	14

Certification

I hereby certify, as a Professional Engineer in the state of Illinois, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by the Pioneer Development or others without specific verification or adaptation by the Engineer.



Timothy Cope, P.E. (IL 062-077365)

Date: July 21, 2025



Executive Summary

The traffic impact study for the proposed Project Cardinal data center development in Yorkville, Illinois, assesses the potential effects of a large-scale project spanning approximately 17.4 million square feet across three campuses. The site is bounded by Ashe Road to the west, Baseline Road to the north, IL 47 to the east, and Galena Road to the south. The development's access plan includes six full-access driveways with three connecting to Baseline Road and three to Galena Road. Driveways are proposed to be two-lane (one lane entry, one exit), while two driveways on Galena Road will be three-lane, providing one entry and two exit lanes to accommodate higher outbound traffic volumes. Access to the site will be phased: Phase 1 will utilize Drive #1 (Baseline) and Drive #6 (Galena); Phase 2 will use Drives #4 and #5 (Galena); and Phase 3 will be served by Drives #2 and #3 (Baseline). There is no planned internal connectivity between the three campuses.

Traffic Projections

Traffic projections were developed for the years 2027, 2029, and 2031, aligning with the completion of Phases 1, 2, and 3 of the project. These projections were based on regional growth data from CMAP extending to 2050. The study evaluated both existing intersections and the proposed driveway connections, focusing on capacity, level of service (LOS), and the need for auxiliary lanes or traffic signals. The westbound approach of Baseline Road at Drive #1, Drive #2, and Drive #3, as well as the eastbound approach of Galena Road at Drive #4, Drive #5, and Drive #6 all meet the warrant and were therefore considered. Similarly, the westbound approach of Galena Road at Drive #4, Drive #5, and Drive #6 meet the warrant were considered. Additionally, the intersection of Baseline Road and Ashe Road is expected to meet the criteria for a traffic signal by 2029, specifically under MUTCD Warrant 3 during the evening peak hour. Signalization at this location is recommended to maintain acceptable traffic operations.

Traffic Analysis

Results of the capacity analysis for the existing intersections indicate that three of the five study area intersections and their approaches currently experience poor LOS. The intersection of IL 47 and Baseline Road and IL 47 and Galena Road experience an overall LOS C with the eastbound and westbound approaches experiencing LOS E or worse. Delays continued to increase with the added traffic in the background scenarios, with no approaches degrading to failing levels of service in the three intersections operating at acceptable levels of service. Signalized intersections along IL 47 are part of a project by IDOT that will be let November 5, 2025. Proposed improvements for this portion of IL 47 provide adequate capacity expansions that result in the signalized intersections operating at acceptable levels of service both overall and at all approaches. By 2031, without improvements, the westbound approach at Baseline Road and Ashe Road would degrade to LOS F. However, with the recommended signalization and auxiliary lanes, this intersection is projected to operate at LOS B or better in all future scenarios.

This study also included a queue analysis, which revealed that existing geometry results in significant queueing at supporting intersection approaches. However, with the combined effect of the IDOT improvements, auxiliary lanes, and signalization, reported queues are expected to remain within acceptable storage limits.

Following implementation of recommended improvements including auxiliary lanes, signalization at Baseline and Ashe, and the IDOT improvements along IL 47, all study intersections are projected to operate at acceptable LOS in full build out conditions. Table E-1 summarizes mitigation identified through the Traffic Impact Study.



Table E-1: Mitigation Summary

Location	Description	Timing (Year)	Responsibility
Galena Road	Widen to three lanes with TWLTL between Eldamain Road and IL 47	Phase 1 (2027)	County/Developer
Drive #1	Westbound Left-Turn Lane with: 265' Taper and 265' storage	Phase 1 (2027)	Developer
Drive #6	Westbound Left-Turn Lane with: 215' Taper and 220' storage	Phase 1 (2027)	Developer
Baseline Road at Ashe Road	Signalize Intersection	Phase 2 (2029)	Village/Developer
Drive #2	Westbound Left-Turn Lane with: 265' Taper and 265' storage	Phase 2 (2029)	Developer
Drive #3	Westbound Left-Turn Lane with: 265' Taper and 265' storage	Phase 2 (2029)	Developer
Drive #4	Westbound Left-Turn Lane with: 215' Taper and 220' storage	Phase 3 (2031)	Developer
Drive #5	Westbound Left-Turn Lane with: 215' Taper and 220' storage	Phase 3 (2031)	Developer
IL 47	IDOT IL 47 Improvements	Nov. 5th, 2025 Letting	IDOT

1.0 Introduction

1.1 Introduction

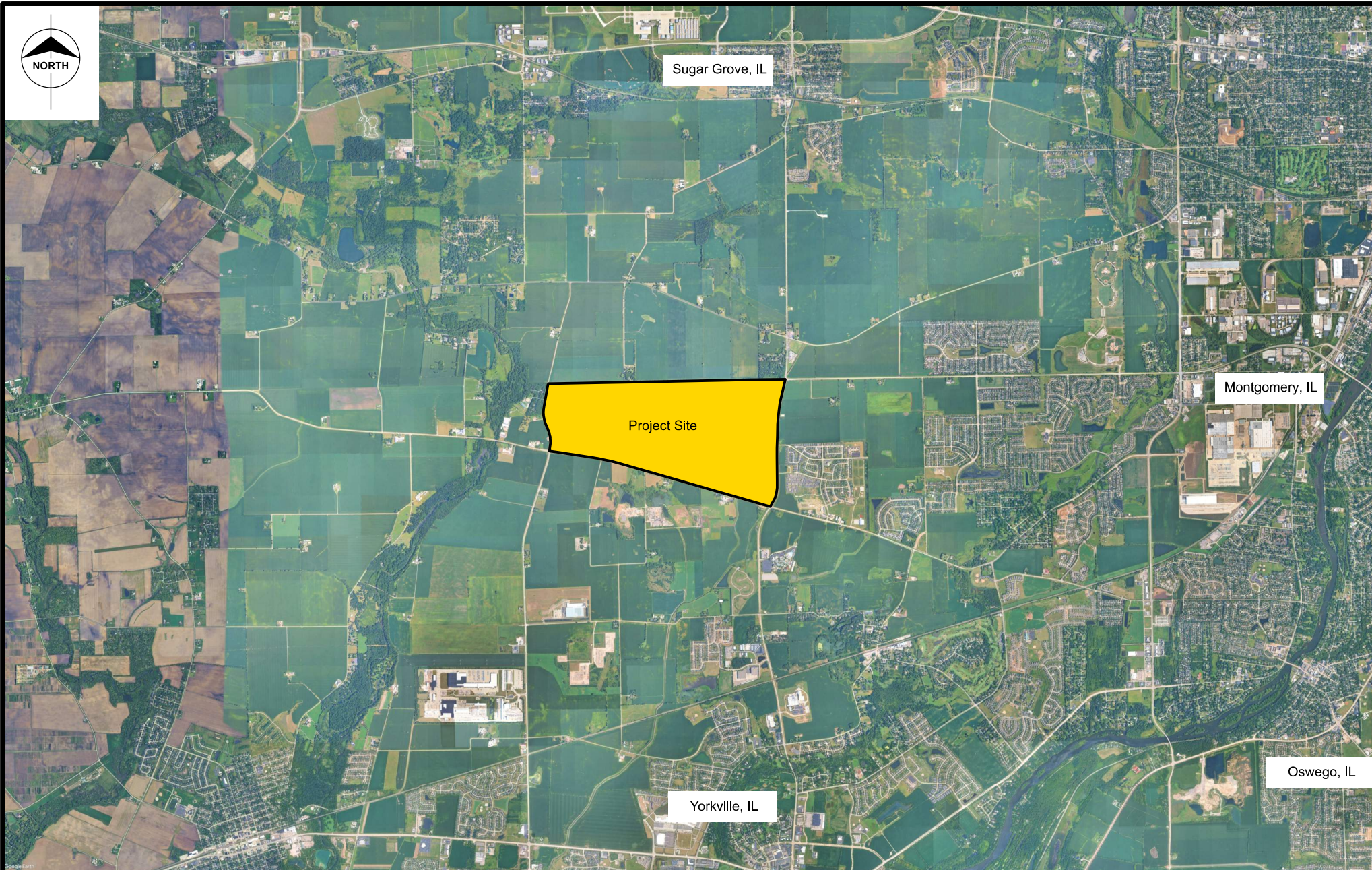
Burns and McDonnell Engineering Company has been tasked with conducting a traffic impact study for a proposed multiphase complex of data centers located in the land bounded by Baseline Road to the north, Ashe Road to the west, Galena Road to the south, and IL 47 to the east in Yorkville, Illinois. Figure 1-1 depicts the proposed site location and surrounding area.

The proposed development consists of 14 data centers totaling 17,313,002 square feet and being developed in three separate phases. The proposed site access plan includes six full access driveways, three along Baseline Road and three along Galena Road. The site plan proposes a total of 3,750 parking stalls. Figure 1-2 illustrates the conceptual site plan for this development.

The purpose of this study is to evaluate the potential traffic impacts of the proposed data centers. Traffic estimates are projected to 2027, 2029, and 2031 based on traffic projections from the Chicago Metropolitan Agency for Planning (CMAP). These years represent the buildout of phases 1, 2 and 3, respectively, of the proposed development. The study area roadway network was identified to include the following critical intersections for evaluation as well as the proposed access drives:

- Intersection #1 – Ashe Road at Baseline Road (TWSC)
- Intersection #2 – Mighell Road at Baseline Road (TWSC)
- Intersection #3 – IL 47 at Baseline Road (Signalized)
- Intersection #4 – IL 47 at Galena Road (Signalized)
- Intersection #5 – Eldamain Road/Ashe Road at Galena Road (Signalized)
- Access Drive #1 – Drive #1 at Baseline Road (TWSC)
- Access Drive #2 – Drive #2 at Baseline Road (TWSC)
- Access Drive #3 – Drive #3 at Baseline Road (TWSC)
- Access Drive #4 – Drive #4 at Galena Road (TWSC)
- Access Drive #5 – Drive #5 at Galena Road (TWSC)
- Access Drive #6 – Drive #6 at Galena Road (TWSC)

This report presents an overview of current roadway conditions, summarizes collected traffic data and capacity analyses, and includes assessments such as signal and turn lane warrant evaluations, site access spacing, and resulting conclusions.



Date July 2025

Designed J. Rathman

Yorkville, IL
Project Cardinal
Traffic Impact Analysis

Figure 1-1: Site Location Map

LEGEND



Study Intersection



Study Area Roads

2.0 Project Conditions

2.1 Land Uses

The land uses for the area surrounding the project site are predominantly residential and agricultural uses in addition to undeveloped land. A visual representation of the surrounding land uses is provided in Figure 2-1.

2.2 Roadway System

The following subsections provide an overview of roadway characteristics within the study area and adjacent to the project site with annual average daily traffic (AADT) volumes and roadway classifications extracted from the IDOT open data geographic information system (GIS) portal. Existing lane configurations for study area intersections are depicted in Figure 2-2.

2.2.1 Roadway Descriptions

Baseline Road is an east/west roadway classified as a local road or street with a posted speed limit of 55 mph. The two-lane, undivided roadway connects Ashe Road to IL 47 and is under the jurisdiction of the municipality. The annual average daily traffic (AADT) volume along Baseline Road just west of IL 47 was reported as 2,600 vehicles per day in year 2024.

IL 47 is a north/south roadway classified as a principal arterial with a posted speed limit of 55 mph. IL 47 services regional traffic from Mahomet to Hebron and is a two-lane, undivided corridor adjacent to the proposed site. The highway is under IDOT jurisdiction, and the AADT of IL 47 south of Baseline Road was reported as 16,000 vehicles per day in year 2023.

Galena Road is an east/west roadway classified as a minor arterial with a posted speed limit of 45 mph. The two-lane, undivided roadway connects Orchard Road to Little Rock and falls under the jurisdiction of the county. The AADT of Galena Road adjacent to the site was reported as 5,050 vehicles per day in year 2024.

Ashe Road is a north/south roadway classified as a minor arterial with a posted speed limit of 55 mph. The two-lane, undivided roadway provides access from Galena Road to Jericho Road and is under the jurisdiction of the township. The AADT of Ashe Road north of Galena Road and north of Baseline Road were reported as 7,700 vehicles per day in year 2024 and 5,150 vehicles per day in year 2023 respectively.

Eldamain Road is a north/south roadway classified as a minor arterial with a posted speed limit of 55 mph. The two-lane, divided roadway is an extension south from the study area of Ashe Road and is under the jurisdiction of the county. The AADT of Eldamain Road south of Galena was reported as 7,800 vehicles per day in year 2024.

Mighell Road is a north/south roadway classified as a local road or street with an assumed regulatory speed of 35 mph. The two-lane, undivided roadway provides + and is under the jurisdiction of the township. The AADT of Mighell Road north of Baseline Road was reported as 1,350 vehicles per day in year 2023.

2.2.2 Intersection Descriptions

Ashe Road at Baseline Road is a three-legged two-way stop-controlled intersection. The northbound approach of Ashe Road consists solely of a shared through and right turn lane that is free flowing. The southbound approach of Ashe Road consists solely of a shared through and left turn lane that is free flowing. The westbound approach of Baseline Road consists of a shared left and right turn lane that is stop-controlled.

Mighell Road at Baseline Road is a three-legged two-way stop-controlled intersection. The eastbound approach of Ashe Road consists solely of a shared through and left turn lane that is free flowing. The westbound approach of Ashe Road consists solely of a shared through and right turn lane that is free flowing. The southbound approach of Mighell Road consists of a shared left and right turn lane that is stop-controlled.

IL 47 at Baseline Road is a four-legged, actuated uncoordinated signalized intersection. The northbound and southbound approaches of IL 47 consist of one shared through/right lane in addition to a dedicated left-turn lane. The eastbound approach of Baseline Road consists of a single lane for through, left, and right-turning movements while the westbound approach of Baseline Road consists of a shared through/left turn lane and a channelized right turn lane that is controlled by a stop bar. The observed cycle length in the weekday AM peak hour is 140 seconds while the observed cycle length in the PM peak hour is 210 seconds.

IL 47 at Galena Road is a four-legged, actuated uncoordinated signalized intersection. The northbound and southbound approaches of IL 47 consist of one dedicated through lane in addition to one dedicated left turn and one dedicated right turn lane. The eastbound and westbound approaches of Galena Road consist of a single lane for through, left, and right-turning movements. The observed cycle length in the weekday AM and PM peak hour was 210 seconds.

Eldamain Road/Ashe Road at Galena Road is a four-legged, actuated uncoordinated signalized intersection. All four approaches of Galena Road, Ashe Road, and Eldamain Road consist of one dedicated through lane in addition to one dedicated left turn and one dedicated right turn lane. The observed cycle length in the weekday AM peak hour is 75 seconds while the observed cycle length in the PM peak hour is 100 seconds.

2.3 Traffic Volumes

For the purposes of evaluating traffic conditions influenced by the proposed development, existing vehicular volume data was collected at the study area intersections previously identified in Section 1.1. Existing traffic counts were collected on Tuesday, June 24th, 2025 with the weekday AM peak hour traffic counts collected from 7:00 AM – 9:00 AM and the PM peak hour traffic conditions collected from 4:00 PM – 6:00 PM. A summary of the traffic volumes collected in 15-minute intervals is provided in Appendix A. The existing lane configuration is illustrated in Figure 2-2 and the existing traffic control and volumes in Figure 2-3.

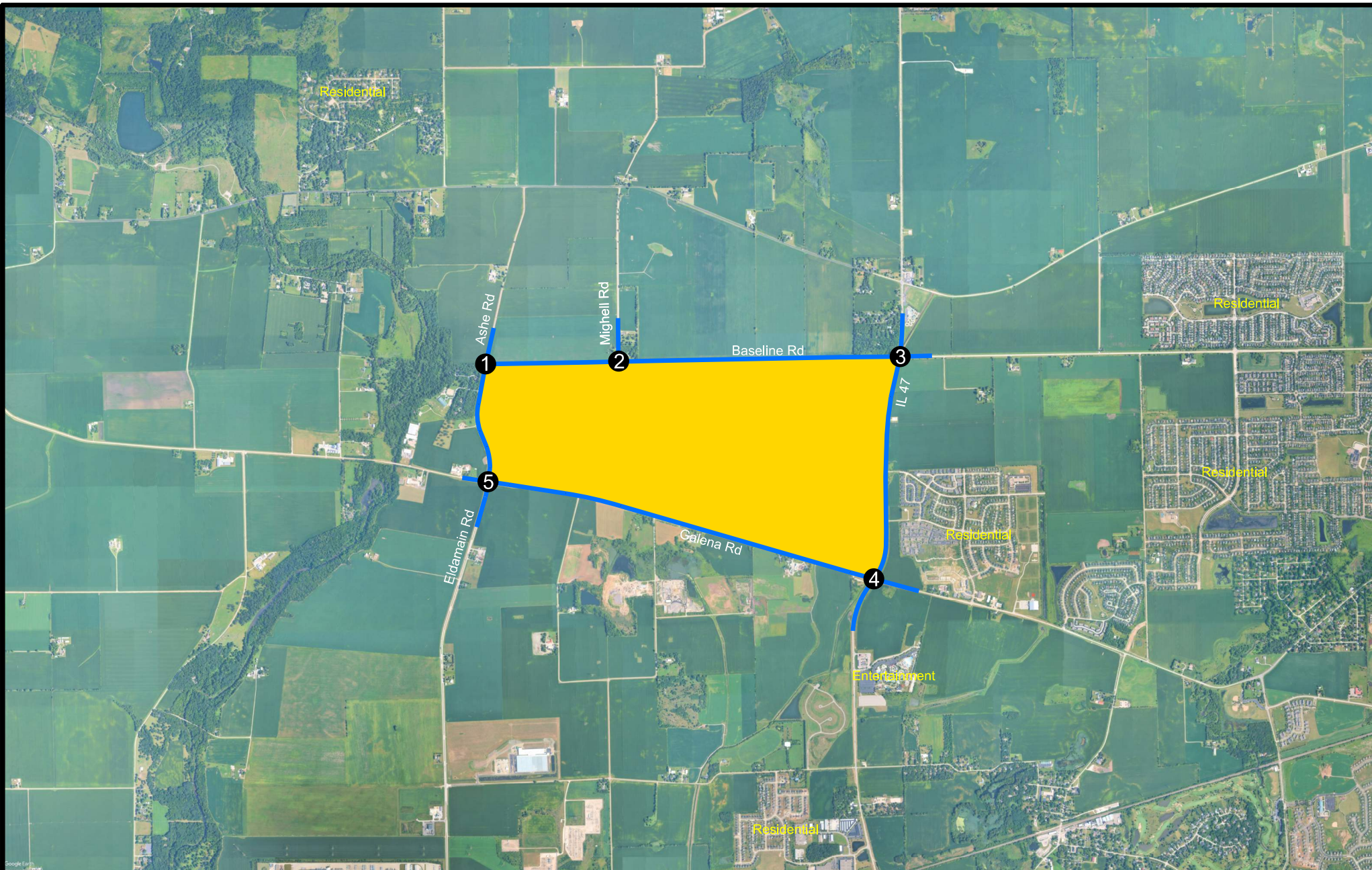
2.4 Proposed Development

2.4.1 Land Use Development

There are currently no publicly known proposed developments within the immediate study area that are reported to impact traffic patterns in the near future. While the undeveloped land use in the study surrounding area is identified for potential, future site development, no definitive project traffic associated to surrounding area projects has been identified at this time.

2.4.2 Roadway Development

For the purposes of this study, it is currently understood that there are no other known planned roadway development projects within the study area; however, the county has expressed interest in exploring capacity improvements along Galena Road and Baseline Road as part of the study's final recommendations. The proposed access plan includes three full access driveways extending southward from Baseline Road and three full access driveways extending northward from Galena Road.



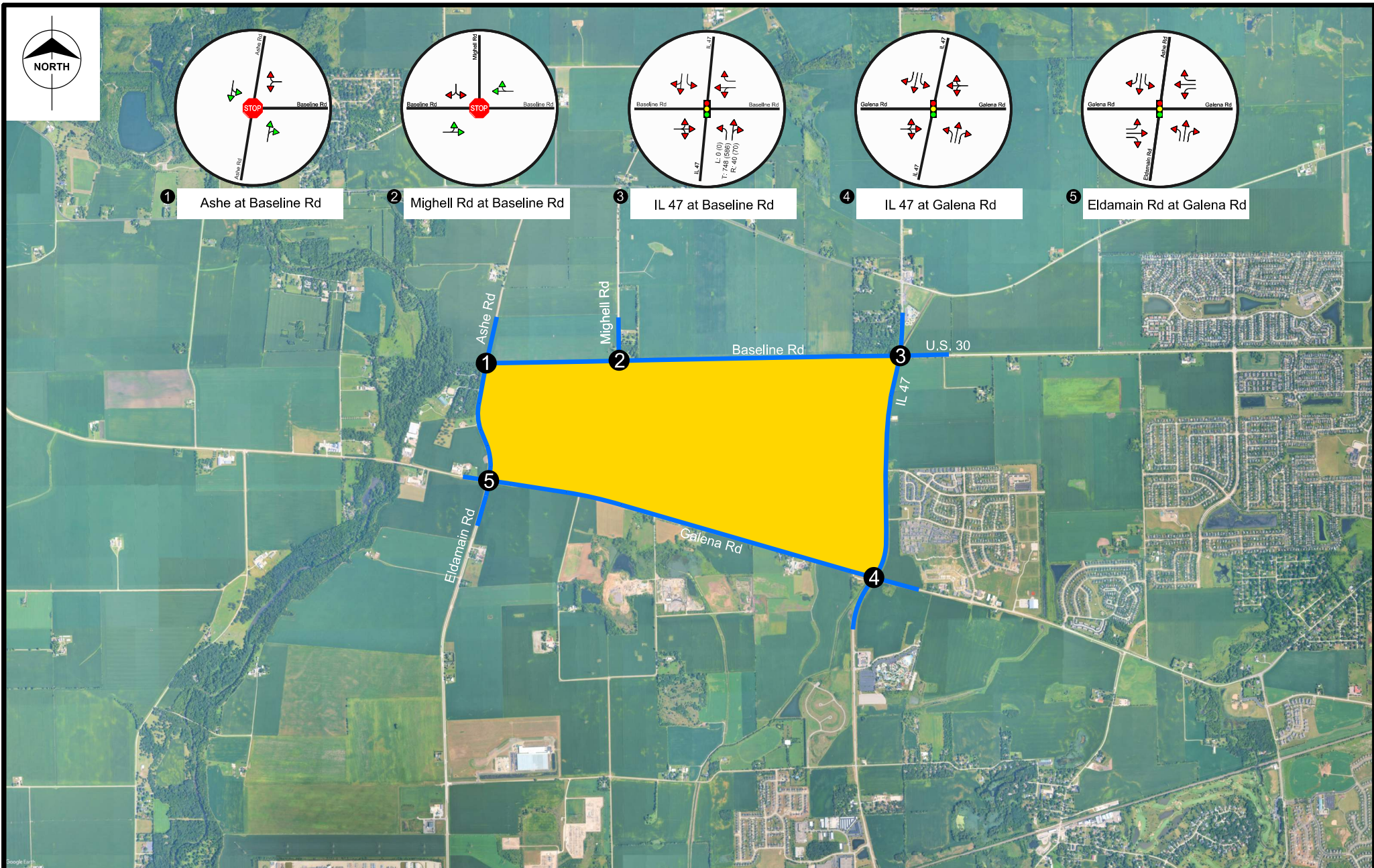
Date July 2025

Designed J. Rathman

Yorkville, IL
Project Cardinal
Traffic Impact Analysis
Figure 2-1: Land Use Map

LEGEND

-  Study Intersection
-  Study Area Roads



Date July 2025

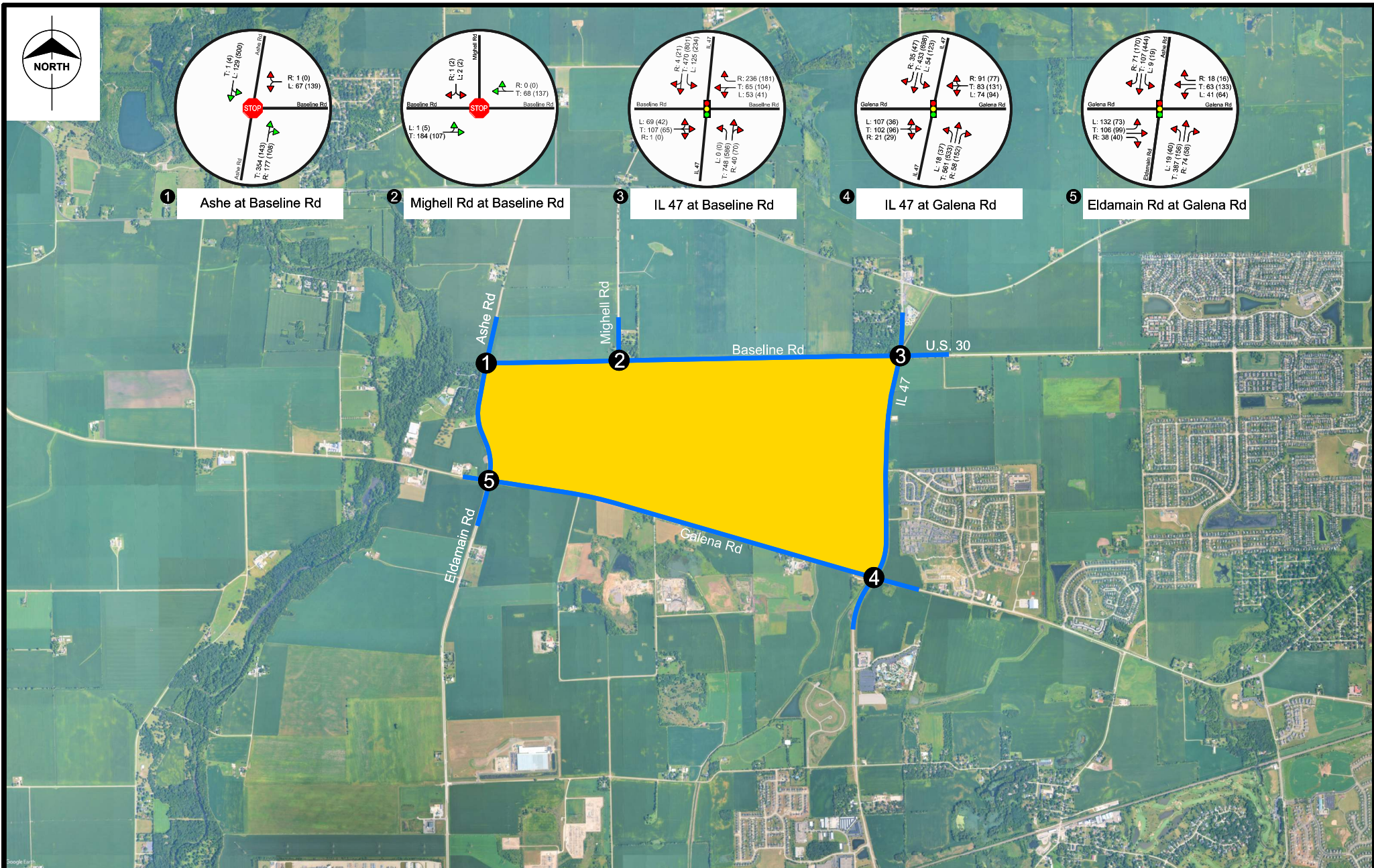
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 2-2: Existing Lane Configuration

LEGEND

-  Study Intersection
-  Study Area Roads



Date July 2025

Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 2-3: Existing Traffic Control and Volumes

LEGEND

- Study Intersection
- Study Area Roads

3.0 Traffic Forecasts

3.1 Project Traffic Volumes

3.1.1 Trip Generation

The proposed development consists of approximately 8,656,501 square feet of data center land use. Generated trips were calculated per Institute of Transportation Engineers (ITE) trip generation methodologies utilizing the current *ITE Trip Generation Manual, 11th Edition*. The following ITE land use code was referenced for the purposes of this study:

Data Center (ITE Land Use Code 160) – A data center is a free-standing warehouse type of facility that is primarily used for off-site storage of computer systems and associated components including applications and secure data. Some data centers may include maintenance areas and a small office. Data centers may be occupied by single or multiple tenants. Data centers typically have a small number of employees and visitors.

The *ITE Trip Generation Manual, 11th Edition* estimates trip generation projections based on assessments of various similar sites throughout the United States and offers estimates of projected vehicle trips based on building square footage. Trip projections are presented based both on averages linear rates and fitted curve equations and selection of the trip project methodology is based on an assessment of the number of assessed sites and resulting R^2 as a measure of curve fit. Recommendations of utilizing the fitted curve projection approach typically occur when either there are at least 20 representative land use data points or the resulting R^2 values is or greater than 0.75. Furthermore, peak hour trip evaluations are evaluated based on the peak hour of the adjacent street which is representative for one hour from 7 AM to 9 AM and 4 PM to 6 PM.

For the purposes of this assessment the following equations were referenced for the estimation of projected traffic across the proposed site developments:

- Weekday [Average Rate] = $0.99 \times (\text{Units})$
- Weekday, AM Peak Hour of Adjacent Street [Average Rate] = $0.11 \times (\text{Units})$
- Weekday, PM Peak Hour of Adjacent Street [Fitted Curve] = $0.11 \times (\text{Units}) - 5.65$

Table 3-1 summarizes the resulting trip generation projections for the proposed development considering each development's respective size as part of Phase 1.

Table 3-1: Phase 1 Trip Generation

Description		Weekday Daily	Weekday AM			Weekday PM		
Developments	Size KSF		Total	In	Out	Total	In	Out
Building 1	1,361.2	1,348	171	94	77	144	43	101
Building 2	1,361.2	1,348	171	94	77	144	43	101
Building 3	780	772	96	53	43	80	24	56
Building 4	780	772	96	53	43	80	24	56
Phase Total	-	4,240	534	294	240	448	134	314
Grand Total	-	4,240	534	294	240	448	134	314

In total, 4,240 daily weekday, 534 weekday morning peak hour, and 448 weekday evening peak hour trips are projected to be added as new trips to the study area. Table 3-2 summarizes the resulting trip generation projections for the proposed development with respect to newly added trips as part of Phase 2.

Table 3-2: Phase 2 Trip Generation

Description		Weekday Daily	Weekday AM			Weekday PM		
Developments	Size KSF		Total	In	Out	Total	In	Out
Building 8	1,361.2	1,348	171	94	77	144	43	101
Building 9	1,361.2	1,348	171	94	77	144	43	101
Building 10	1,361.2	1,348	171	94	77	144	43	101
Building 11	1,361.2	1,348	171	94	77	144	43	101
Building 12	780	772	96	53	43	80	24	56
Building 13	1,361.2	1,348	171	94	77	144	43	101
Building 14	1,361.2	1,348	171	94	77	144	43	101
Phase Total	-	8,860	1,122	617	505	944	282	662
Grand Total	-	13,100	1,656	911	745	1,392	416	976

As part of the Phase 2 development, 4,240 daily weekday, 534 weekday morning peak hour, and 448 weekday evening peak hour trips are projected to be added as new trips to the study area. In combination of Phase 1 and Phase 2, 13,100 daily weekday, 1,656 weekday morning peak hour, and 1,392 weekday evening peak hour trips are projected to be added as new trips to the study area. Table 3-3 summarizes the resulting trip generation projections for the proposed development with respect to newly added trips as part of Phase 3.

Table 3-3: Phase 3 Trip Generation

Description		Weekday Daily	Weekday AM			Weekday PM		
Developments	Size KSF		Total	In	Out	Total	In	Out
Building 5	1,361.2	1,348	171	94	77	144	43	101
Building 6	1,361.2	1,348	171	94	77	144	43	101
Building 7	1,361.2	1,348	171	94	77	144	43	101
Phase Total	-	4,044	513	282	231	432	129	303
Grand Total	-	17,144	2,169	1,193	976	1,824	545	1279

As part of the Phase 3 development, 4,044 daily weekday, 513 weekday morning peak hour, and 432 weekday evening peak hour trips are projected to be added as new trips to the study area. In combination of Phase 1 and Phase 2, 17,144 daily weekday, 2,169 weekday morning peak hour, and 1,824 weekday evening peak hour trips are projected to be added as new trips to the study area.

3.1.2 Trip Distribution and Assignment

Due to the relative lack of developed land around the proposed site location, the direction from which traffic approaches and departs the site was determined by leveraging the existing traffic patterns observed on Tuesday, June 24th, 2025. The overall trip distribution is summarized in Table 3-4.

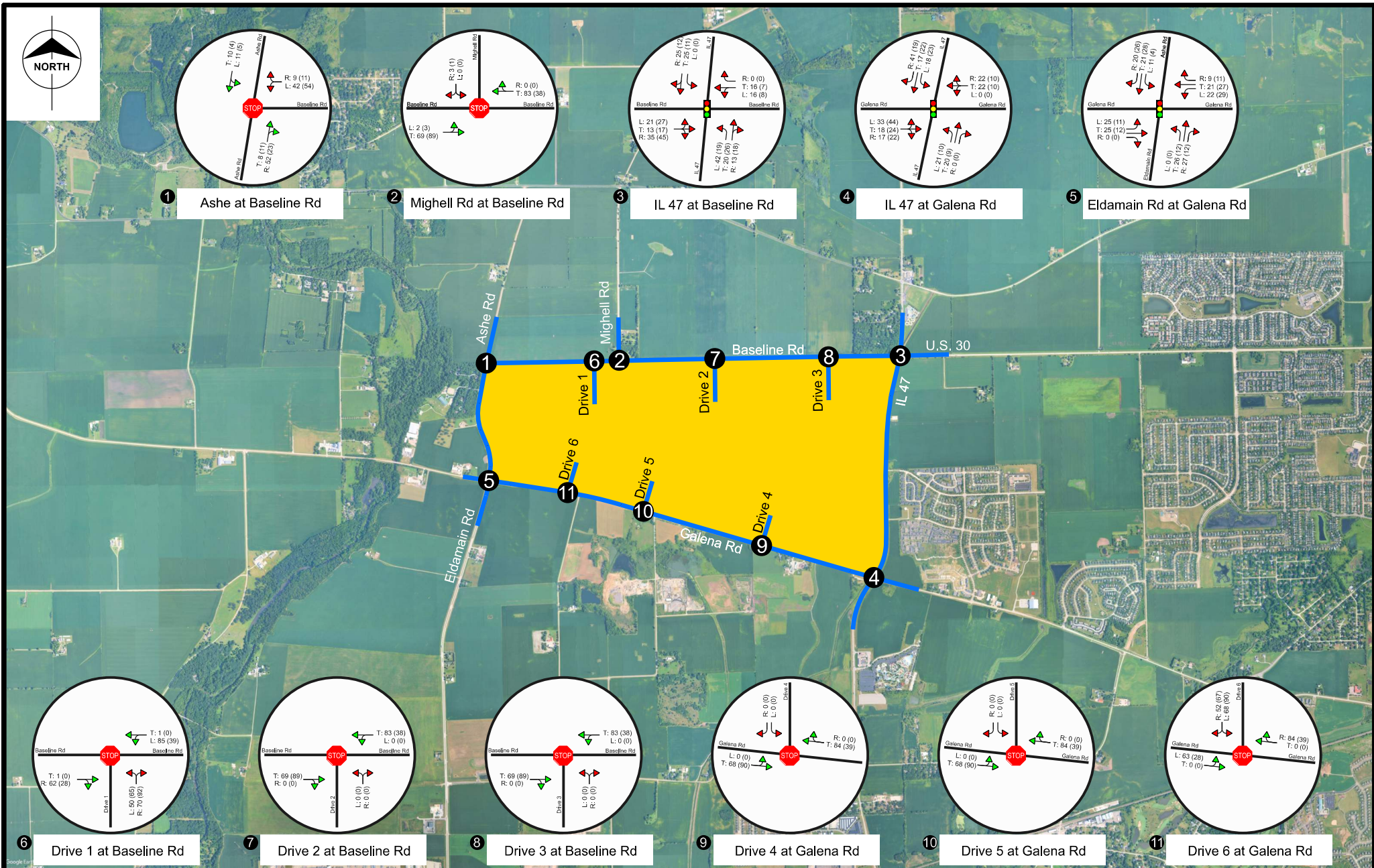
Table 3-4: External Trip Distribution

Cordon Location	Percentage
Ashe Road - North of Baselines Road	7%
Mighell Road - North of Baseline Road	1%
IL 47 - North of Baseline Road	17%
Baseline Road - East of IL 47	11%
Galena Road - East of IL 47	15%
IL 47 - South of Galena Road	14%
Eldamain Road - South of Galena Road	18%
Galena Road - West of Ashe Road	17%

The assignment of traffic to the site was performed based on the location of data centers within the site and their proximity to driveways with consideration towards the development phases. The following summarizes the phase in which each proposed access drive is introduced:

- Phase 1 – Drive #1 and Drive #6
- Phase 2 – Drive #4 and Drive #5
- Phase 3 – Drive #2 and Drive #3

As the driveways for each phase of the proposed development generally anchor the edges of their respective phases, the distribution of each phase's trips is equally distributed amongst its driveways and trips are routed to the appropriate intersection(s) according to the shortest distance to each trip's entry/exit point. The distribution of proposed site generated trips in Phases 1-3 are summarized in Figure 3-1, Figure 3-2, and Figure 3-3, respectively.



Date July 2025

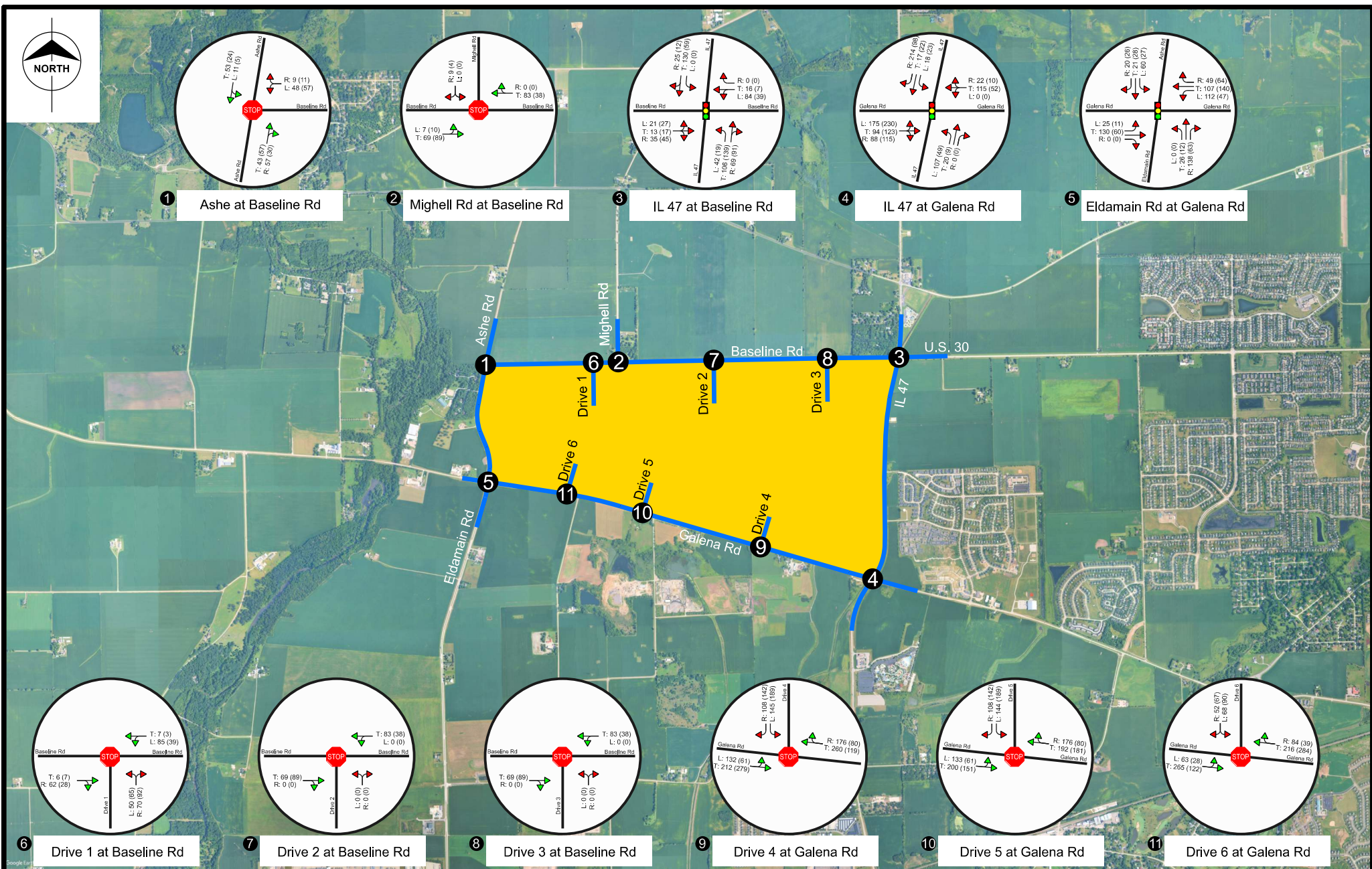
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-1: Phase 1 (2027) Site Generated Trips

LEGEND

- X Study Intersection
- Study Area Roads



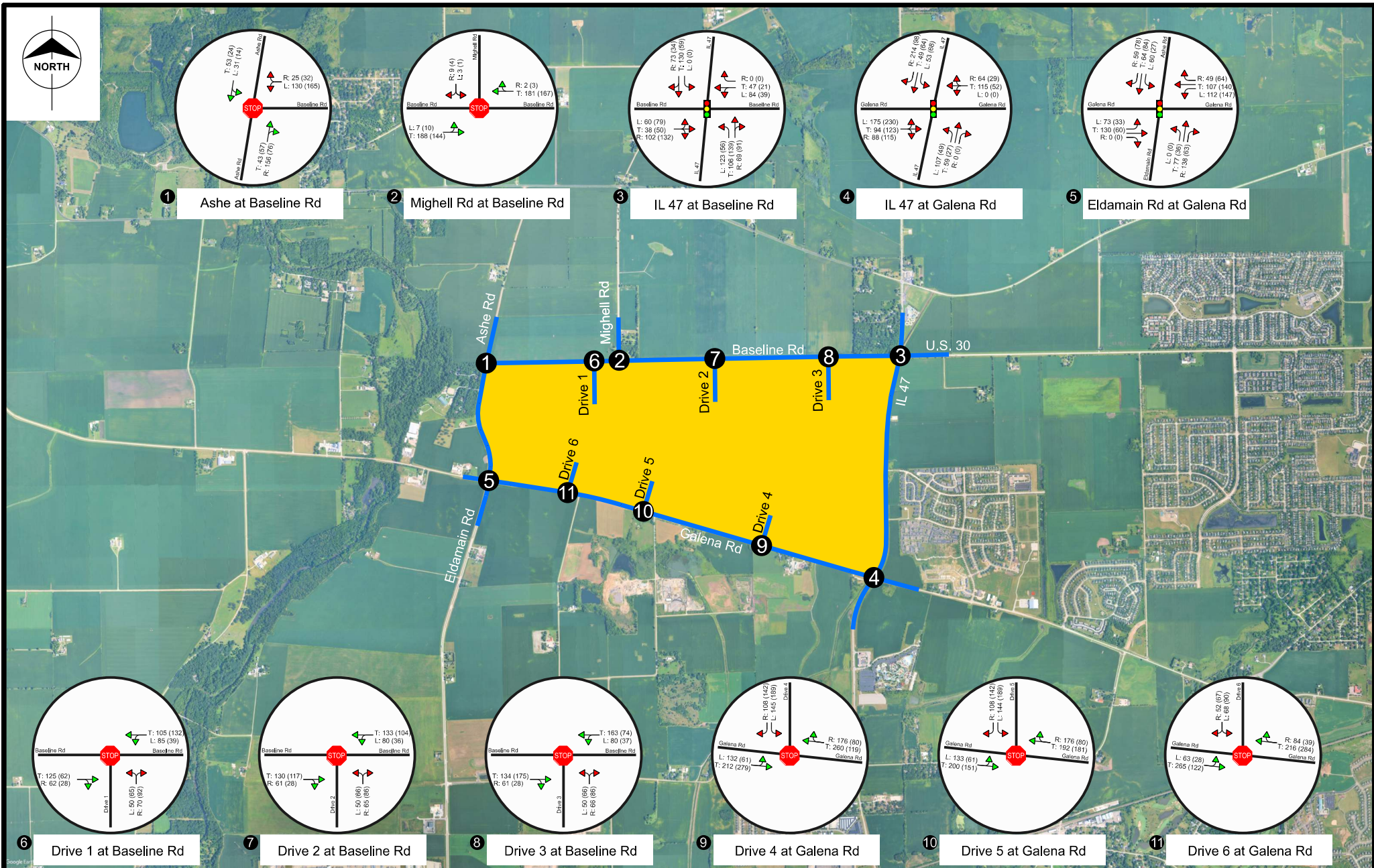
Date July 2025
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-2: Phase 2 (2029) Site Generated Trips

LEGEND

- X Study Intersection
- Study Area Roads



Date July 2025
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-3: Phase 3 (2031) Site Generated Trips

LEGEND

- X Study Intersection
- Study Area Roads

3.2 Background Traffic Volumes

Background traffic volumes were estimated for the years 2027, 2029, and 2031, which represent the anticipated build-out years for Phase 1, Phase 2, and Phase 3, respectively. These volumes account for future growth in the area regardless of the proposed development. The AADT volumes referenced for the study area roadway network were derived from the IDOT database. Table 3-5 summarizes the growth rate determination, and CMAP correspondence regarding the establishment of an area growth rate is provided in Appendix B.

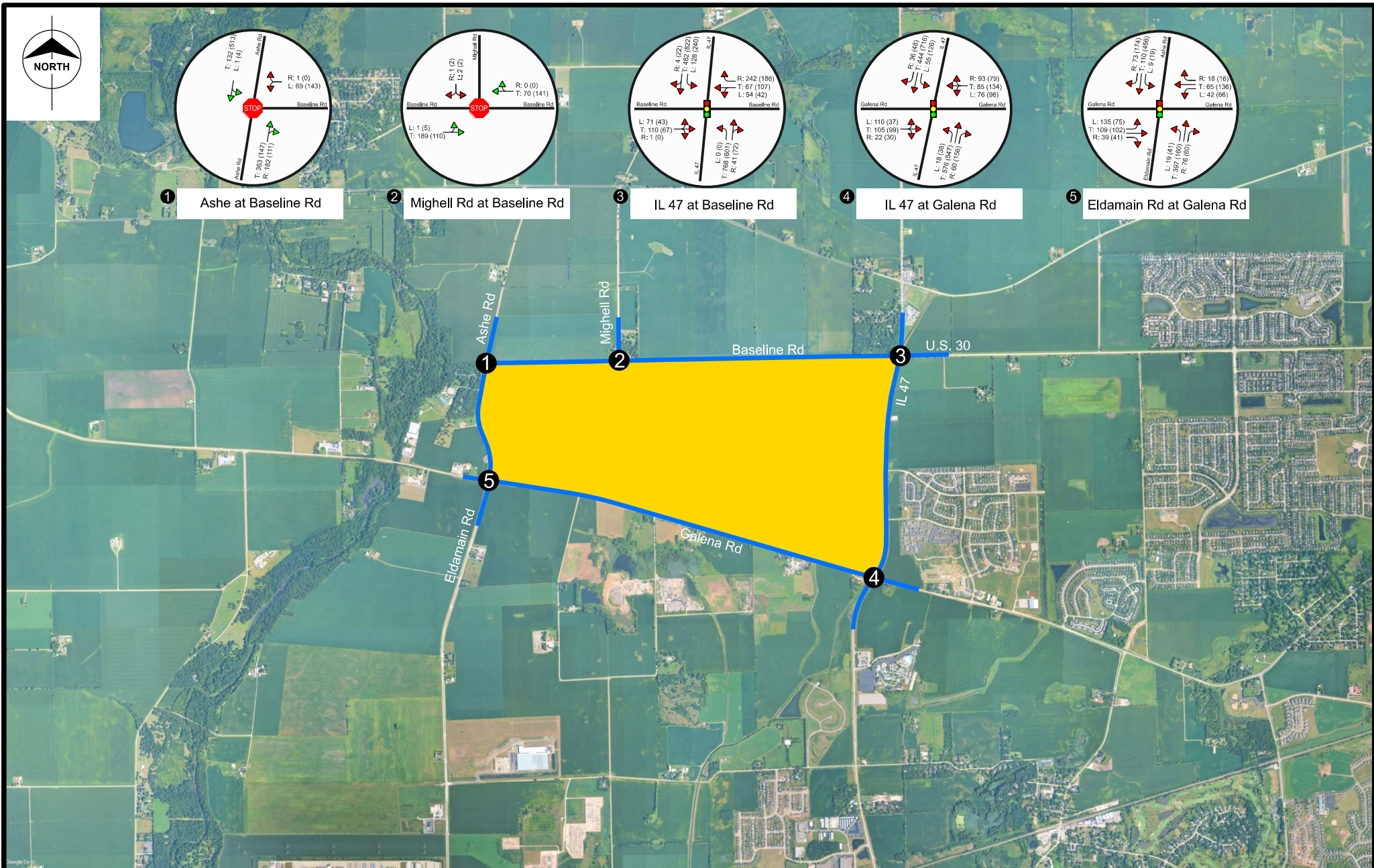
Table 3-5: CMAP Established Growth Rates

Approach		AADT		Effective 26-yr Growth	Compounded Annual Growth Rate
		Current ADT (2023 or 2024, IDOT)	2050 ADT		
Baseline Rd at Ashe Rd	Ashe Rd - North Leg	5,150	6,000	16.5%	0.60%
	Ashe Rd - South Leg	7,700	9,300	20.8%	0.70%
	Baseline Rd - East Leg	2,600	3,600	38.5%	1.30%
Baseline Rd at IL 47	IL 47 - North Leg	20,200	36,000	78.2%	2.20%
	IL 47 - South Leg	16,000	28,000	75.0%	2.20%
	Baseline Rd - West Leg	2,600	3,400	30.8%	1.00%
	Baseline Rd - East Leg	15,800	20,000	26.6%	0.90%
Galena Rd at IL 47	IL 47 - North Leg	16,000	28,000	75.0%	2.20%
	IL 47 - South Leg	15,300	26,100	70.6%	2.10%
	Galena Rd - West Leg	5,000	6,600	32.0%	1.10%
	Galena Rd - East Leg	7,150	9,900	38.5%	1.30%
Galena Rd at Ashe Rd	Ashe Rd - North Leg	7,700	9,300	20.8%	0.70%
	Ashe Rd - South Leg	7,800	9,000	15.4%	0.60%
	Galena Rd - West Leg	5,850	7,800	33.3%	1.10%
	Galena Rd - East Leg	5,050	6,650	31.7%	1.10%
Baseline Rd at Mighell Rd	Mighell Rd - North Leg	1,350	2,050	51.9%	1.60%
	Baseline Rd - West Leg	2,600	3,600	38.5%	1.30%
	Baseline Rd - East Leg	2,600	3,400	30.8%	1.00%

Based on Table 3-5, the CMAP projections show an averaged annual growth rate of 1.30% which was applied as a uniform total growth factor to predict future background traffic volume growth. Figure 3-4, Figure 3-5, and Figure 3-6 illustrate the background traffic volumes for years 2027, 2029, and 2031 respectively.

3.3 Future Traffic Volumes

Future total traffic volumes consist of the projected development trips and background volumes per phase of the development. Total future traffic volumes are depicted for Phase 1 Build, Phase 2 Build, and Phase 3 Build conditions in Figure 3-7, Figure 3-8, and Figure 3-9 respectively.



Date July 2025

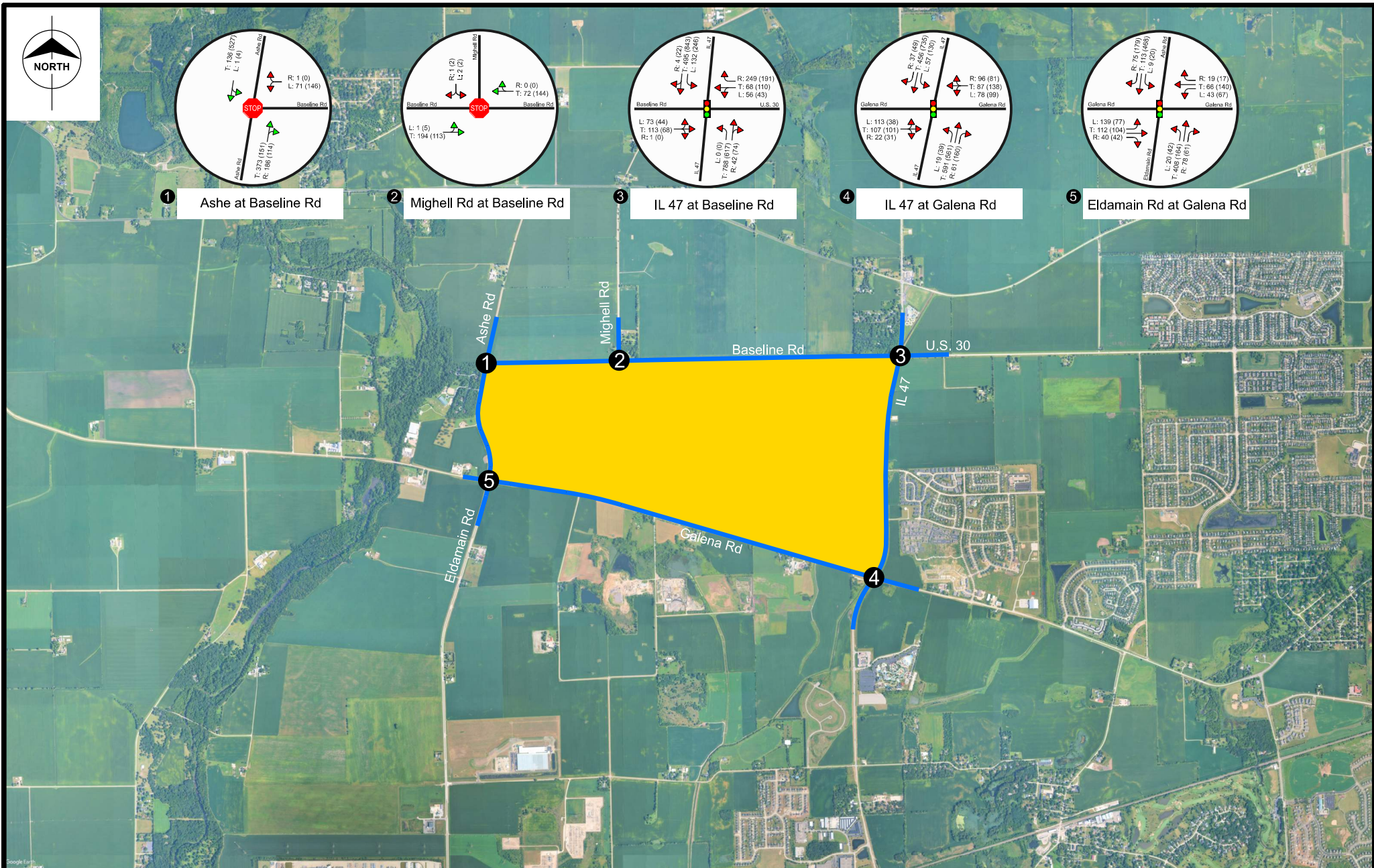
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-4: Background Year 2027 Traffic Volumes

LEGEND

- Study Intersection
- Study Area Roads



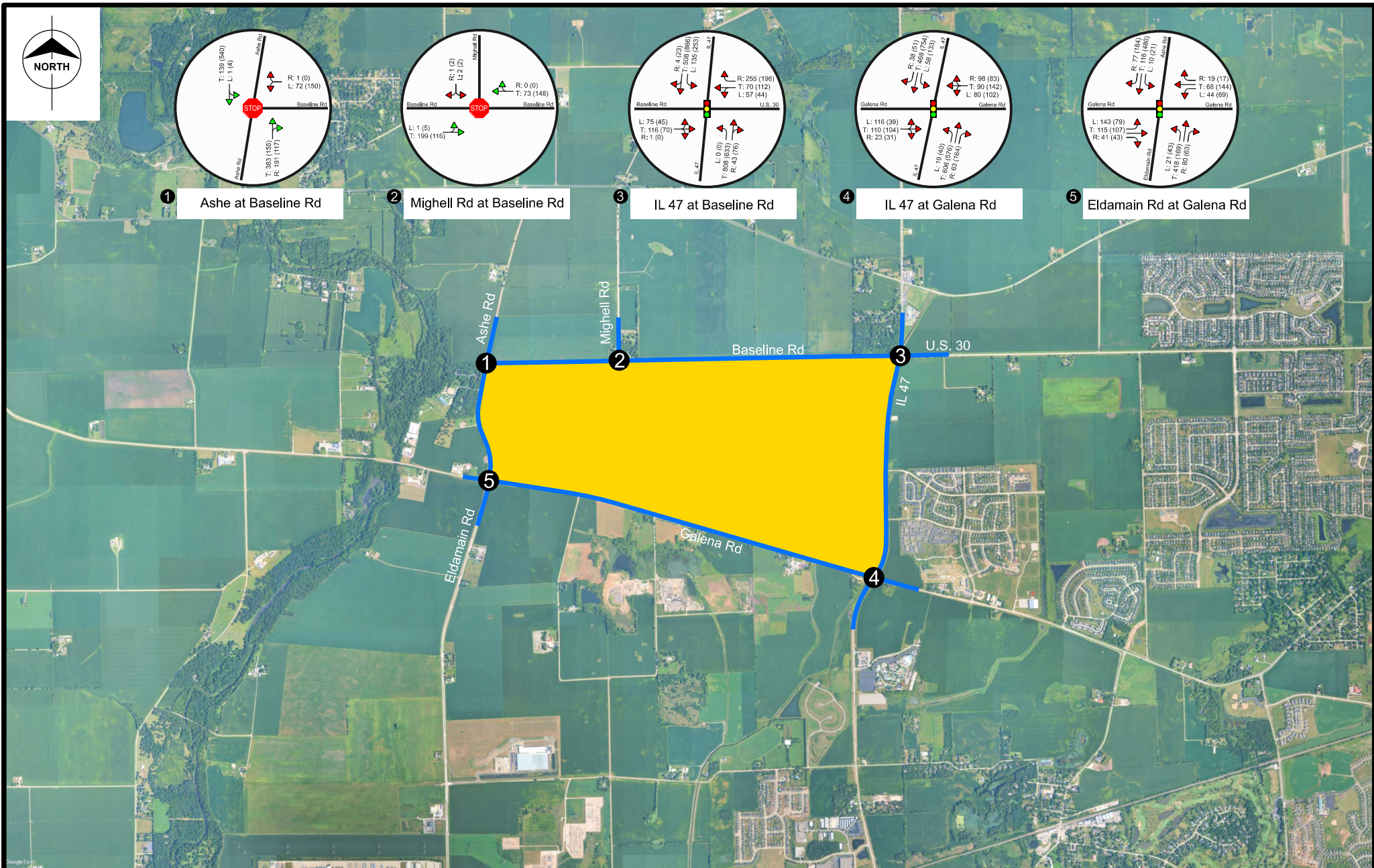
Date July 2025
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-5: Background Year 2029 Traffic Volumes

LEGEND

- X Study Intersection
- Study Area Roads



Date July 2025

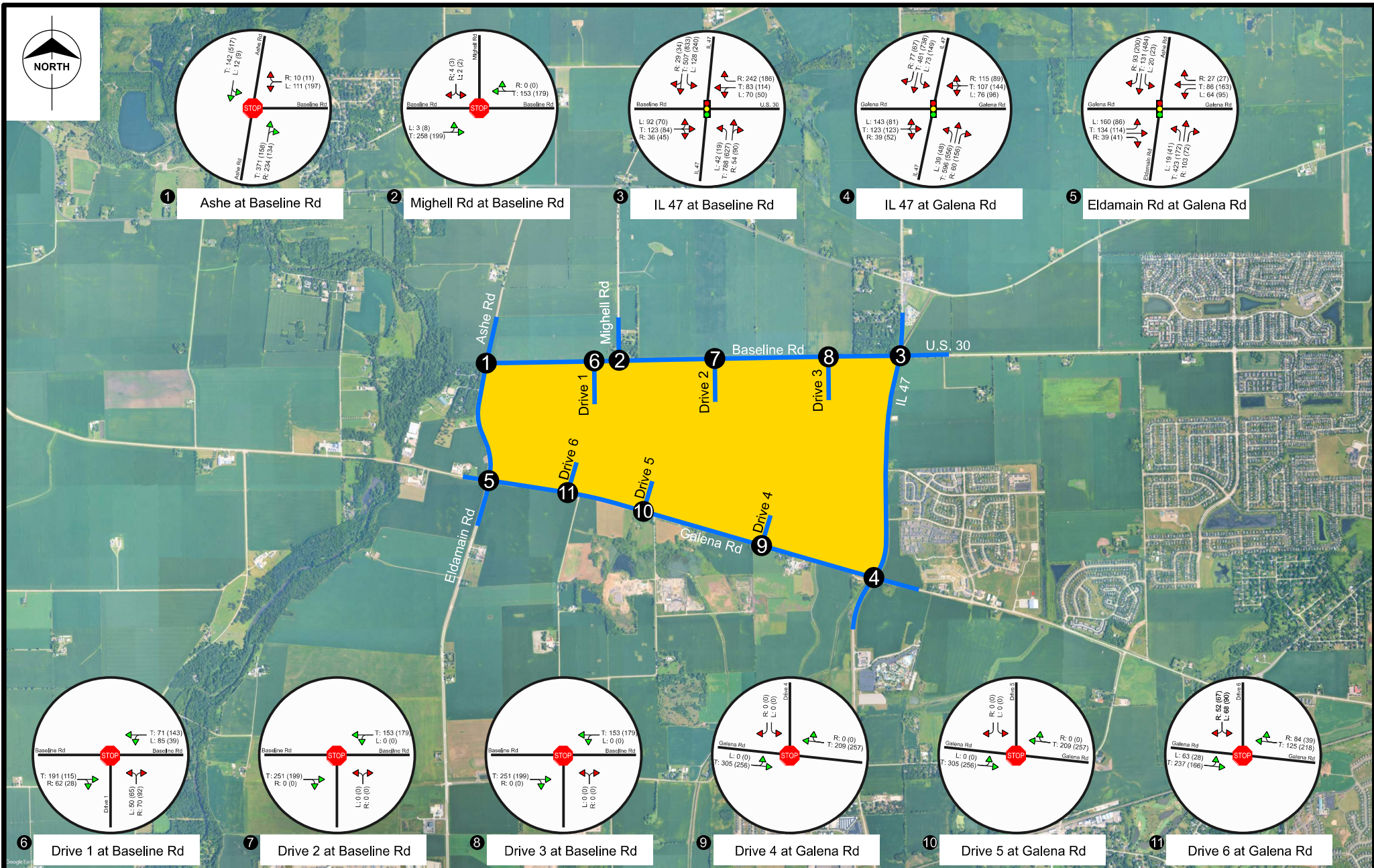
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-6: Background Year 2031 Traffic Volumes

LEGEND

- Study Intersection
- Study Area Roads



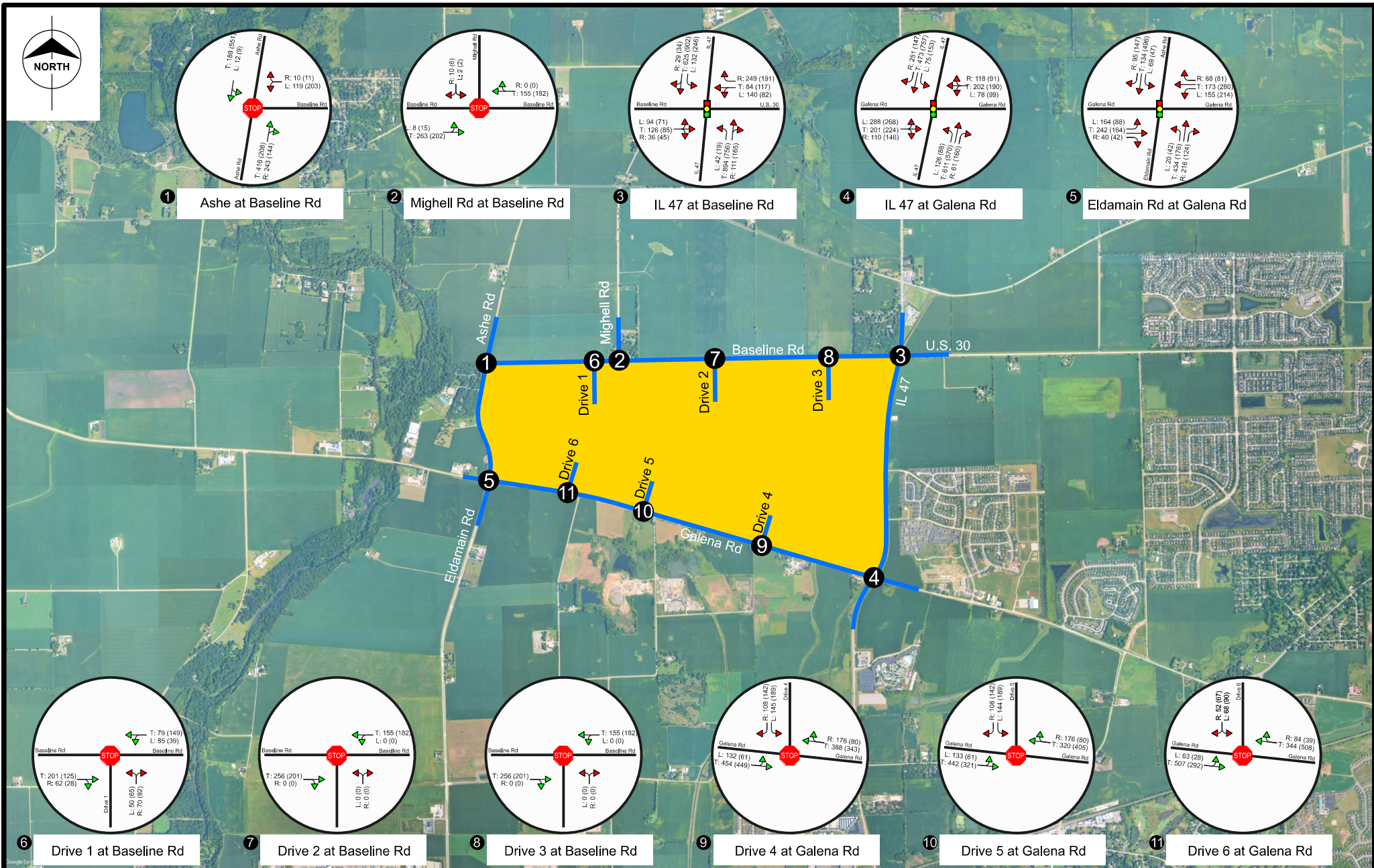
Date July 2025
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-7: Phase 1 (2027) Total Future Traffic Volumes

LEGEND

- X Study Intersection
- Study Area Roads



Date July 2025

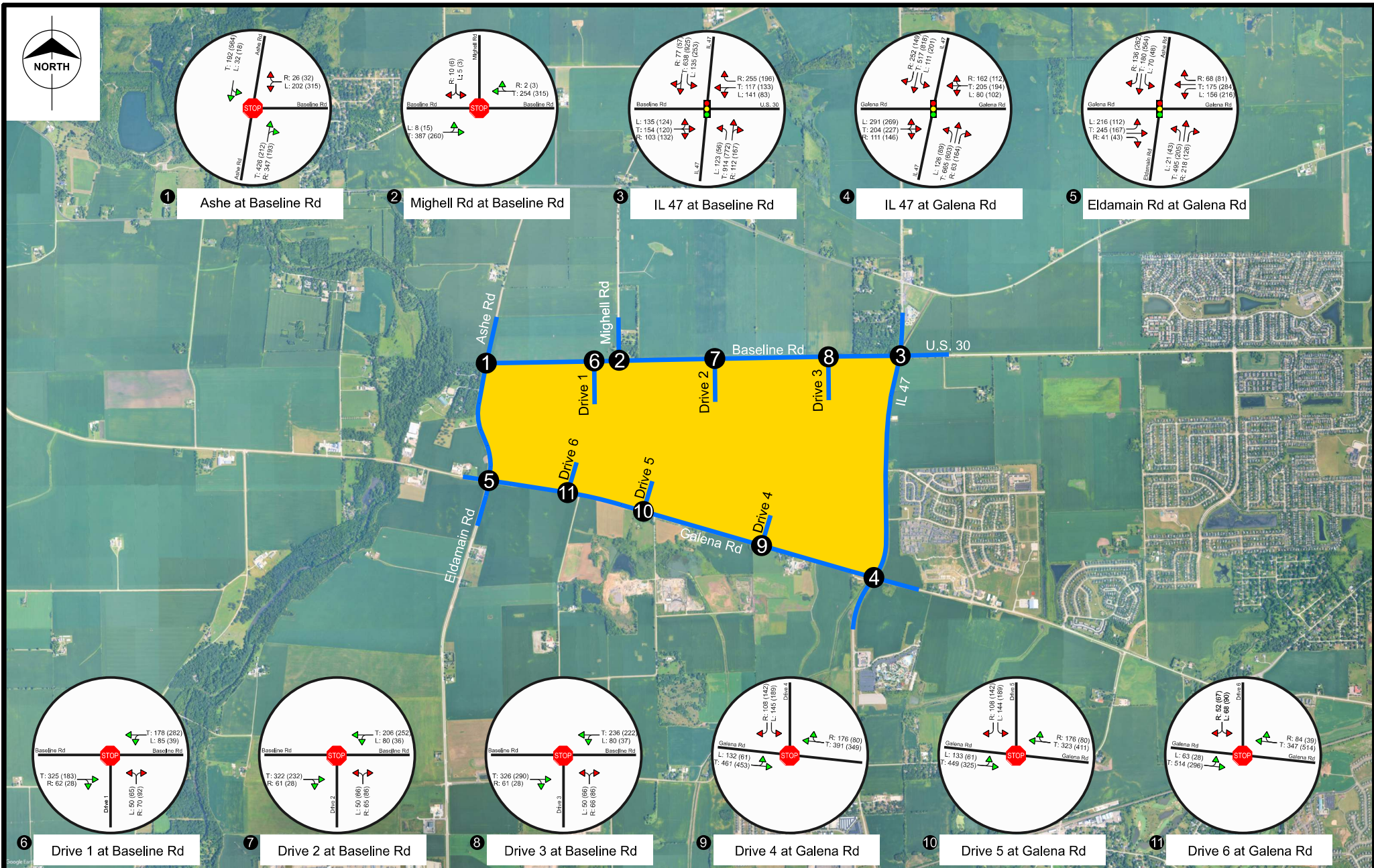
Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-8: Phase 2 (2029) Total Future Traffic Volumes

LEGEND

- Study Intersection
- Study Area Roads



Date July 2025

Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 3-9: Phase 3 (2031) Total Future Traffic Volumes

LEGEND

- X Study Intersection
- Study Area Roads

4.0 Traffic Analysis

Traffic analyses include the evaluation of auxiliary turn lane warrants, traffic signal warrants, intersection capacity, and queue lengths based on projected traffic conditions. Site circulation and proposed lane configuration were considered to assess adequate accommodation of turning and through movements in the study area.

4.1 Auxiliary Lane Analysis

Auxiliary lane warrant analyses were performed along study area intersections in concurrence to methodologies presented in IDOT's *Bureau of Design and Environmental Manual* (BDE). Section 36-3.01 of the BDE defines warrant criteria determined through comparison of projected turning vehicle volume, opposing traffic volume, and percentage share of turning vehicles for left turning movements. Right turning and left turning lanes are evaluated based on separate independent criteria for the major roadway. Auxiliary lane warrant tables and worksheets are included in Appendix C.

Right-Turn Lane Warrant Analysis

Based on the comparison of turning movement volumes and one directional major street volumes, Drive #4, Drive #5, and Drive #6, all satisfy the first right-turn warrant for unsignalized intersections in Phase 2 Build Year 2029. Moreover, the intersections of Drive #4 and Drive #5 with Galena Road satisfy the fifth criteria outlined for right-turn lane consideration as right-turn volumes exceed 150 vehicles per hour (vph) at both drives and mainline through volumes surpass 300 vehicles per lane per hour (vphpl). It is recommended to implement a right-turn auxiliary lane at the following intersections in adherence to the turn lane design parameters established in Section 36-3.02 of the BDE:

- Drive #4 and Galena Road – Westbound Right-Turn Lane in Phase 2 Build Year 2029
- Drive #5 and Galena Road – Westbound Right-Turn Lane in Phase 2 Build Year 2029
- Drive #6 and Galena Road – Westbound Right-Turn Lane in Phase 2 Build Year 2029

Left-Turn Lane Warrant Analysis

Overall, the warrant evaluation found all proposed access drives to meet the criteria of warrant 1 under varying phased build conditions. For the purposes of this analysis, a design speed 5 miles per hour higher than the posted or regulatory speed is applied to warrant 1 left-turn lane evaluations, which results in a design speed of 60 mph along Baseline Road and 50 mph along Galena Road. The existing roadway configurations of Galena Road and Baseline Road are two-lane, two-way undivided typical sections. Left-turn lane accommodation can be achieved through implementation of a dedicated turn lane or through incorporation of a two-way left-turn lane (TWLTL). Left-turn auxiliary lanes or dedicated space is recommended at the following intersections and should be designed to accommodate the 95th percentile queue lengths presented in Section 4.4:

- Drive #1 and Baseline Road – Westbound Left-Turn Lane in Phase 3 Build Year 2031
- Drive #2 and Baseline Road – Westbound Left-Turn Lane in Phase 3 Build Year 2031
- Drive #3 and Baseline Road – Westbound Left-Turn Lane in Phase 3 Build Year 2031
- Drive #4 and Galena Road – Eastbound Left-Turn Lane in Phase 2 Build Year 2029
- Drive #5 and Galena Road – Eastbound Left-Turn Lane in Phase 2 Build Year 2029
- Drive #6 and Galena Road – Eastbound Left-Turn Lane in Phase 1 Build Year 2027

Additional Auxiliary Lane Considerations

Auxiliary lane analyses focused on proposed access locations for the major road, where turn lane warrants were evaluated based on projected turning movement and applicable warrant thresholds at new access drives. When a proposed access location meets turn lane warrant criteria in a future year beyond the opening day, it is recommended that the turn lane be implemented at the time of site phase opening when the drive is introduced to accommodate anticipated traffic demand. Mitigation measures specific to the minor leg approach of the proposed access drive intersections are to be determined by intersection performance results in Section 4.3 of this report. For existing intersections in the study area, the justification for auxiliary lane implementation was also assessed through capacity and queue length analyses. Sections 4.3 and 4.4 present the intersection performance and 95th percentile queue length analyses respectively, which inform the identification of potential mitigation measures such as storage length or the incorporation of auxiliary lanes at existing study area intersections.

4.2 Traffic Signal Warrant Analysis

A peak hour warrant analysis at existing study area intersections was performed to establish an understanding of which intersections satisfy the conditions outlined in the Manual on Uniform Traffic Control Devices (MUTCD) for signalized operations. For the purposes of this study, the intersections of Baseline Road at Ashe Road and Baseline Road at Mighell Road represent existing, unsignalized intersections directly servicing the area. Future study volumes evaluated incorporate a 60% right turn reduction per IDOT guidance to account for single shared lane usage at both intersections.

Based on the results of the signal warrant analysis, the intersection of Baseline Road at Ashe Road satisfies the criteria for Warrant 3 under future build conditions. Table 4-1 highlights the conditions in which the peak hour warrant was met, and Appendix D provides the analysis worksheets summarizing the results.

Table 4-1: Peak Hour Traffic Signal Warrant Analysis Summary

Condition	Satisfies Peak Hour Warrant 3 (Y/N)		
	2029 Build PM	2031 Build AM	2031 Build PM
Baseline Road at Ashe Road			
Condition A	N	Y	Y
Condition B	Y	Y	Y
Baseline Road at Mighell Road			
Condition A	-	-	N
Condition B	-	-	N

4.3 Capacity Analysis

The traffic analysis was performed using Trafficware's Synchro version 12 for intersection analyses. Synchro analyzes data based on the Highway Capacity Manual (HCM) 7th Edition, Chapters 19 and 20 methodologies. The HCM requires four parameters: peak hour factor (PHF), percentage of trucks on the roadway system, existing roadway geometry, and traffic volumes. The PHF represents the ratio of total hourly volume to the peak 15-minute flow rate within the hour. Lower PHFs correspond to greater variability of flow within the peak hour, while higher PHFs indicate less flow variation. Average approach PHF and percent heavy vehicles were used as determined by the traffic counts.

Intersection traffic operations were evaluated using the Level of Service (LOS) concept outlined in the HCM. LOS is defined by the average control delay per vehicle in a peak 15-minute analysis period for intersections. The HCM defines control delay “as the total time that elapses from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line”. The HCM designates intersection operations in six letter categories, A to F, with LOS A indicating the best operational conditions to LOS F representing over capacity conditions. Ranges in control delay which correspond to LOS for Two-Way Stop Controlled (TWSC) and All-Way Stop Controlled (AWSC) intersections are listed in Table 4-2. Ranges in control delay which correspond to LOS for signalized intersections are listed in Table 4-3.

Table 4-2: LOS Criteria for TWSC and AWSC

LOS	Average Control Delay (seconds/vehicle)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50 or $v/c > 1.0$

Source: *HCM 7th Edition* Exhibits 20-2 and 21-8: Level of Service Criteria (Motorized Vehicle Mode)

Table 4-3: LOS Criteria for Signalized Intersections

LOS	Average Control Delay (seconds/vehicle)
A	0-10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80 or $v/c > 1.0$

Source: *HCM 7th Edition* Exhibit 19-8: Level of Service Criteria (Motorized Vehicle Mode)

Local standards indicate that the minimum acceptable level of service is LOS D for an approach or intersection. Approaches performing at a LOS E or LOS F are highlighted in red to indicate unacceptable levels of delay and identify areas where potential mitigation measures are to be explored. Table 4-4 and Table 4-5 show the results of the capacity analysis for unsignalized intersections in the AM and PM peak hours, respectively. Table 4-6 shows the results of the capacity analysis for currently signalized intersections within the study area for both peak hour conditions across all scenarios with existing geometry.

Table 4-4: Capacity Analysis of Unsignalized Intersections (AM Peak Hour)

Intersection/ Approach	Weekday AM													
	Existing (2025)		Background (2027)		Background (2029)		Background (2031)		Future w/Traffic (2027)		Future w/Traffic (2029)		Future w/Traffic (2031)	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Baseline Road at Ashe Road														
WB Left/Right	14.9	B	15.2	C	15.6	C	15.9	C	18.9	C	23.3	C	69.9	F
NB Thru/Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
SB Thru/Left	0.1	A	0.1	A	0.1	A	0.1	A	0.7	A	0.5	A	1.4	A
Mighell Road at Baseline Road														
EB Thru/Right	0.0	A	0.0	A	0.0	A	0.0	A	0.1	A	0.2	A	0.2	A
WB Thru/Left	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
SB Left/Right	9.8	A	9.8	A	9.9	A	9.9	A	10.2	B	9.8	A	12.0	B
Drive #1 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		0.0	A	0.0	A	0.0	A
WB Thru/Left									4.4	A	4.2	A	2.7	A
NB Right/Left									12.2	B	12.4	B	15.5	C
Drive #2 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		N/A		N/A		0.0	A
WB Thru/Left													2.4	A
NB Right/Left													15.6	C
Drive #3 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		N/A		N/A		0.0	A
WB Thru/Left													2.1	A
NB Right/Left													16.1	C
Drive #4 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		N/A		2.1	A	2.1	A
WB Thru/Right											0.0	A	0.0	A
SB Left											170.5	F	178.2	F
SB Right											13.2	B	13.2	B
Drive #5 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		N/A		2.1	A	2.1	A
WB Thru/Right											0.0	A	0.0	A
SB Left											117.5	F	123.1	F
SB Right											12.2	B	12.3	B
Drive #6 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		1.6	A	0.9	A	0.9	A
WB Thru/Right									0.0	A	0.0	A	0.0	A
SB Left/Right									13.2	B	26.2	D	26.7	D

Table 4-5: Capacity Analysis of Unsignalized Intersections (PM Peak Hour)

Intersection/ Approach	Weekday PM													
	Existing (2025)		Background (2027)		Background (2029)		Background (2031)		Future w/Traffic (2027)		Future w/Traffic (2029)		Future w/Traffic (2031)	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Baseline Road at Ashe Road														
WB Left/Right	20.8	C	21.8	C	22.9	C	24.3	C	30.8	D	43.0	E	188.7	F
NB Thru/Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
SB Thru/Left	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.3	A
Mighell Road at Baseline Road														
EB Thru/Right	0.3	A	0.3	A	0.3	A	0.3	A	0.3	A	0.5	A	0.4	A
WB Thru/Left	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
SB Left/Right	9.6	A	9.6	A	9.7	A	9.7	A	10.1	B	9.9	A	11.5	B
Drive #1 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		0.0	A	0.0	A	0.0	A
WB Thru/Left									1.8	A	1.6	A	0.9	A
NB Right/Left									12.2	B	11.4	B	13.2	B
Drive #2 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		N/A		N/A		0.0	A
WB Thru/Left													1.0	A
NB Right/Left													13.7	B
Drive #3 at Baseline Road														
EB Thru/Right	N/A		N/A		N/A		N/A		N/A		N/A		0.0	A
WB Thru/Left													1.2	A
NB Right/Left													14.5	B
Drive #4 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		N/A		1.0	A	1.0	A
WB Thru/Right											0.0	A	0.0	A
SB Left											74.6	F	78.2	F
SB Right											12.5	B	12.5	B
Drive #5 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		N/A		1.4	A	1.4	A
WB Thru/Right											0.0	A	0.0	A
SB Left											56.0	F	58.4	F
SB Right											13.4	B	13.5	B
Drive #6 at Galena Road														
EB Thru/Left	N/A		N/A		N/A		N/A		1.1	A	0.8	A	0.8	A
WB Thru/Right									0.0	A	0.0	A	0.0	A
SB Left/Right									13.3	B	25.1	D	25.6	D

Table 4-6: Capacity Analysis of Signalized Intersections

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound		Intersection	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
TMC #3 - Baseline Road at IL 47	Weekday AM	Existing (2025)	74.0	E	66.1	E	25.6	C	12.3	B	28.8	C
		Background (2027)	75.4	E	66.2	E	28.0	C	13.2	B	30.4	C
		Background (2029)	76.6	E	66.3	E	31.0	C	14.3	B	32.3	C
		Background (2031)	77.7	E	66.5	E	34.6	C	15.7	B	34.7	C
		Future w/Traffic (2027)	108.1	F	41.1	D	58.1	E	27.7	C	51.6	D
		Future w/Traffic (2029)	158.4	F	120.7	F	99.7	F	46.7	D	90.2	F
		Future w/Traffic (2031)	207.2	F	134.2	F	126.6	F	70.1	E	136.8	F
	Weekday PM	Existing (2025)	93.9	F	91.2	F	16.8	B	12.0	B	23.9	C
		Background (2027)	93.8	F	92.0	F	17.8	B	12.9	B	24.8	C
		Background (2029)	95.8	F	96.7	F	18.8	B	13.7	B	26.0	C
		Background (2031)	97.0	F	97.7	F	19.9	B	14.8	B	27.0	C
		Future w/Traffic (2027)	112.7	F	73.6	E	41.1	D	30.3	C	46.8	D
		Future w/Traffic (2029)	138.2	F	136.4	F	78.1	E	53.5	D	76.0	E
		Future w/Traffic (2031)	167.5	F	175.1	F	129.1	F	87.7	F	119.6	F
TMC #4- Galena Road at IL 47	Weekday AM	Existing (2025)	70.6	E	64.0	E	17.0	B	14.2	B	30.8	C
		Background (2027)	70.9	E	63.7	E	18.2	B	15.2	B	31.6	C
		Background (2029)	70.0	E	62.7	E	19.2	B	15.9	B	31.9	C
		Background (2031)	70.3	E	62.4	E	20.5	C	17.0	B	32.7	C
		Future w/Traffic (2027)	69.8	E	53.9	D	27.8	C	23.4	C	37.2	D
		Future w/Traffic (2029)	85.3	F	28.7	C	110.2	F	101.9	F	89.4	F
		Future w/Traffic (2031)	129.2	F	32.6	C	143.8	F	102.5	F	109.7	F
	Weekday PM	Existing (2025)	60.3	E	76.6	E	16.2	B	18.1	B	29.3	C
		Background (2027)	59.6	E	76.6	E	17.2	B	19.3	B	30.1	C
		Background (2029)	59.3	E	77.9	E	18.4	B	20.7	C	31.4	C
		Background (2031)	59.0	E	79.1	E	19.7	B	22.3	C	32.6	C
		Future w/Traffic (2027)	67.5	E	79.3	E	23.1	C	25.3	C	37.0	D
		Future w/Traffic (2029)	94.2	F	32.0	C	89.3	F	133.4	F	99.0	F
		Future w/Traffic (2031)	116.1	F	34.6	F	100.2	C	171.2	F	121.8	F
TMC #5 - Galena Road at Eldamain Road/Ashe Road	Weekday AM	Existing (2025)	14.3	B	15.8	B	13.2	B	10.6	B	13.3	B
		Background (2027)	14.5	B	16.0	B	13.3	B	10.5	B	13.4	B
		Background (2029)	14.8	B	16.3	B	13.3	B	10.5	B	13.5	B
		Background (2031)	15.0	B	16.7	B	13.4	B	10.6	B	13.7	B
		Future w/Traffic (2027)	16.0	B	17.9	B	14.2	B	10.7	B	14.5	B
		Future w/Traffic (2029)	22.8	C	20.4	C	23.0	C	14.2	B	20.9	C
		Future w/Traffic (2031)	24.6	C	22.8	C	25.6	C	14.4	B	22.7	C
	Weekday PM	Existing (2025)	16.7	B	18.1	B	9.7	A	13.1	B	13.9	B
		Background (2027)	17.0	B	18.4	B	9.8	A	13.3	B	14.0	B
		Background (2029)	17.3	B	18.8	B	9.8	A	13.4	B	14.2	B
		Background (2031)	17.6	B	19.2	B	9.9	A	13.5	B	14.4	B
		Future w/Traffic (2027)	18.1	B	19.3	B	10.3	B	14.0	B	14.9	B
		Future w/Traffic (2029)	23.7	C	19.7	B	13.7	B	17.1	B	18.2	B
		Future w/Traffic (2031)	26.2	C	22.7	C	13.7	B	17.7	B	19.6	B

4.3.1 Existing Scenario

Based on the analysis of the signalized intersection results in the existing scenario, the intersection of Galena Road at Eldamain Road/Ashe Road operates at an overall LOS C or better. The intersections of Baseline Road and Galena Road intersections with IL 47 were found to operate at LOS E or worse on their eastbound and westbound approaches in both the morning and evening peak hours.



All study area unsignalized intersections operate with all approaches at LOS C or better.

4.3.2 Background Scenario

In the background scenarios, delays tended to increase due to growth of non-project related traffic. Based on the analysis of the unsignalized intersections, resulting operations were similar to existing conditions as no approaches degrade to a lower LOS in any of the background scenarios.

The analysis of the signalized intersections shows a similar trend to the unsignalized intersections where delays increase, however no intersection approaches see a degradation in LOS.

4.3.3 Future with Traffic Scenario

In the analysis of existing unsignalized intersections in the Future with Project scenarios, the additional site traffic results in increased delay in comparison to the background scenario with some additional degradation of approaches' LOS. Notably, the shared westbound left/right lane of Baseline Road at Ashe Road degrades to LOS E in the Future with Project (2029) scenario and continues to degrade to LOS F in the Future with Project (2031) scenario. The southbound approaches of proposed Drives 4 and 5 at Galena Road perform at LOS F, while Galena Road sees minimal delay and operates at LOS A on both east and westbound approaches at both intersections.

The analysis of the currently signalized intersections shows additional overall LOS degradation to LOS D in both peak hours of the Future with Project (2027) scenario at the intersections of Baseline Road and Galena Road with IL 47. In the Future with Project (2029) scenario, the intersection of Baseline Road at IL 47 degrades to an overall LOS F in the morning peak hour and LOS E in the evening peak hour. A similar reduction in LOS occurs at the intersection of Galena Road with IL 47, with overall operations falling to LOS F in both the morning and evening peak hours. Galena Road at Eldamain Road/Ashe Road degrades to LOS C from LOS B in the evening peak hour. In the Future with Project (2031) scenario, both the Baseline Road and Galena Road intersections with IL 47 operate at LOS F in both the morning and evening peak hours, with at least three of the four approaches failing at both intersections and both peak hours. At Galena Road at Eldamain Road/Ashe Road, the only LOS reduction that occurs is the westbound approach of Galena Road, which drops from LOS B to LOS C.

The capacities of study area intersections with planned improvements to IL 47 and the recommended mitigation measures were analyzed. Table 4-7 and Table 4-8 show the results of the morning and evening peak hour, respectively, in the Future with Traffic scenarios for the years 2027, 2029, and 2031. Table 4-9 shows the analysis results for the morning and peak hours for the study intersections that would be modified and/or signalized with impending improvements and recommended mitigation measures.

**Table 4-7: Capacity Analysis of Unsignalized Intersections
(AM Peak Hour with Improvements and Mitigation)**

Intersection/Approach	Weekday AM					
	Future w/Traffic (2027)		Future w/Traffic (2029)		Future w/Traffic (2031)	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Baseline Road at Ashe Road (Signalized Year 2029)						
WB Left/Right	18.9	C	N/A		N/A	
NB Thru/Right	0.0	A				
SB Thru/Left	0.7	A				
Mighell Road at Baseline Road						
EB Thru/Left	0.1	A	0.2	A	0.2	A
WB Thru/Right	0.0	A	0.0	A	0.0	A
SB Left/Right	10.2	B	9.8	A	12.0	B
Drive #1 at Baseline Road						
EB Thru	0.0	A	0.0	A	0.0	A
EB Right	0.0	A	0.0	A	0.0	A
WB Thru	0.0	A	0.0	A	0.0	A
WB Left	8.0	A	8.0	A	8.4	A
NB Right/Left	12.2	B	12.4	B	15.4	C
Drive #2 at Baseline Road						
EB Thru/Right	N/A		N/A		0.0	A
WB Thru					0.0	A
WB Left					8.4	A
NB Right/Left					15.5	C
Drive #3 at Baseline Road						
EB Thru/Right	N/A		N/A		0.0	A
WB Thru					0.0	A
WB Left					8.4	A
NB Right/Left					16.0	C
Drive #4 at Galena Road						
EB Thru	N/A		0.0	A	0.0	A
EB Left			9.4	A	9.4	A
WB Thru			0.0	A	0.0	A
WB Right			0.0	A	0.0	A
SB Left			30.3	D	30.8	D
SB Right			12.0	B	12.0	B
Drive #5 at Galena Road						
EB Thru	N/A		0.0	A	0.0	A
EB Left			9.1	A	9.1	A
WB Thru			0.0	A	0.0	A
WB Right			0.0	A	0.0	A
SB Left			27.1	D	27.5	D
SB Right			11.2	B	11.3	B
Drive #6 at Galena Road						
EB Thru	0.0	A	0.0	A	0.0	A
EB Left	7.8	A	8.5	A	8.5	A
WB Thru	0.0	A	0.0	A	0.0	A
WB Right	0.0	A	0.0	A	0.0	A
SB Left/Right	11.7	B	16.4	C	16.5	C

**Table 4-8: Capacity Analysis of Unsignalized Intersections
(PM Peak Hour with Improvements and Mitigation)**

Intersection/Approach	Weekday PM					
	Future w/Traffic (2027)		Future w/Traffic (2029)		Future w/Traffic (2031)	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Baseline Road at Ashe Road (Signalized Year 2029)						
WB Left/Right	30.8	D	N/A		N/A	
NB Thru/Right	0.0	A				
SB Thru/Left	0.1	A				
Mighell Road at Baseline Road						
EB Thru/Left	0.3	A	0.5	A	0.4	A
WB Thru/Right	0.0	A	0.0	A	0.0	A
SB Left/Right	10.1	B	9.9	A	11.5	B
Drive #1 at Baseline Road						
EB Thru	0.0	A	0.0	A	0.0	A
EB Right	0.0	A	0.0	A	0.0	A
WB Thru	0.0	A	0.0	A	0.0	A
WB Left	7.6	A	7.6	A	7.8	A
NB Right/Left	11.2	B	11.4	B	13.2	C
Drive #2 at Baseline Road						
EB Thru/Right	N/A		N/A		0.0	A
WB Thru					0.0	A
WB Left					7.9	A
NB Right/Left					13.7	B
Drive #3 at Baseline Road						
EB Thru/Right	N/A		N/A		0.0	A
WB Thru					0.0	A
WB Left					8.1	A
NB Right/Left					14.4	B
Drive #4 at Galena Road						
EB Thru	N/A		0.0	A	0.0	A
EB Left			8.5	A	8.5	A
WB Thru			0.0	A	0.0	A
WB Right			0.0	A	0.0	A
SB Left			25.2	D	25.6	D
SB Right			11.9	B	12.0	B
Drive #5 at Galena Road						
EB Thru	N/A		0.0	A	0.0	A
EB Left			9.1	A	8.7	A
WB Thru			0.0	A	0.0	A
WB Right			0.0	A	0.0	A
SB Left			27.1	D	22.8	D
SB Right			11.2	B	12.8	B
Drive #6 at Galena Road						
EB Thru	0.0	A	0.0	A	0.0	A
EB Left	7.9	A	8.8	A	8.8	A
WB Thru	0.0	A	0.0	A	0.0	A
WB Right	0.0	A	0.0	A	0.0	A
SB Left/Right	12.1	B	17.6	C	17.8	C

Table 4-9: Capacity Analysis of Signalized Intersections with Improvements and Mitigation

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound		Intersection	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
TMC # 1 - Baseline Road at Ashe Road (Signalized Year 2029)	Weekday AM	Future w/Traffic (2027)	N/A		N/A		N/A		N/A		N/A	
		Future w/Traffic (2029)			15.4	B	5.9	A	3.2	A	6.6	A
		Future w/Traffic (2031)			19.1	A	10.3	A	4.8	A	10.9	B
	Weekday PM	Future w/Traffic (2027)	N/A		N/A		N/A		N/A		N/A	
		Future w/Traffic (2029)			13.0	B	5.0	A	5.8	A	6.9	A
		Future w/Traffic (2031)			13.3	B	7.2	A	8.1	A	9.2	A
TMC #3 - Baseline Road at IL 47	Weekday AM	Future w/Traffic (2027)	22.5	C	21.5	C	17.3	B	15.5	B	17.7	B
		Future w/Traffic (2029)	28.0	C	24.6	C	17.9	B	17.2	B	19.5	B
		Future w/Traffic (2031)	27.1	C	26.3	C	21.0	C	22.0	C	22.8	C
	Weekday PM	Future w/Traffic (2027)	25.6	C	28.0	C	14.3	B	15.7	B	17.2	B
		Future w/Traffic (2029)	25.7	C	27.3	C	15.4	B	16.2	B	17.7	B
		Future w/Traffic (2031)	25.4	C	29.3	C	18.5	B	20.0	B	21.0	C
TMC #4- Galena Road at IL 47	Weekday AM	Future w/Traffic (2027)	13.3	B	14.1	B	24.3	C	19.5	B	19.2	B
		Future w/Traffic (2029)	14.3	B	20.0	B	28.6	C	25.1	C	22.5	C
		Future w/Traffic (2031)	16.1	B	22.4	C	34.1	C	29.3	C	26.3	C
	Weekday PM	Future w/Traffic (2027)	14.1	B	13.5	B	26.9	C	26.8	C	23.1	C
		Future w/Traffic (2029)	17.7	B	20.7	C	27.1	C	29.4	C	24.7	C
		Future w/Traffic (2031)	18.6	B	24.3	C	33.3	C	33.4	C	28.6	C

As shown in Table 4-7 through Table 4-9, after analysis of study area intersections and proposed access locations, the planned improvements and recommended mitigation measures result in all intersections and approaches operating at LOS D or higher.

4.3.4 Planned Improvements

The City of Yorkville made available plans prepared for Illinois Department of Transportation (IDOT)'s intended improvement of IL 47 including its intersections with Baseline Road and Galena Road. These improvements include the widening of the typical section of the roadway to two northbound and southbound through lanes along IL 47 with the addition of a southbound left turn lane, westbound left turn lane, channelized northbound right turn lane, and eastbound left and right turn lanes at IL 47 at Baseline Road. At the intersection of IL 47 at Galena Road, westbound left and right turn lanes, eastbound left and right turn lanes were added along with the northbound right turn becoming channelized. The plans for these intersections can be found in Appendix I.

As shown in Table 4-7 through Table 4-9, the analysis of study area intersections and proposed access locations shows that the planned improvements and recommended mitigation measures result in all intersections and approaches operating at LOS D or higher.

4.3.5 Potential Mitigation Scenario

Based upon the analysis of the existing, background, and background with project volumes, the following mitigation measures are recommended at the associated years:

- Baseline Road at Ashe Road (Year 2029)
 - Signalization Intersection
- Galena Road (Year 2027)
 - Widen Galena Road to three lanes with TWLTL between Eldamain Road and IL 47.
- Drive #1 at Baseline Road (Year 2027)



- Westbound left-turning lane with 265' taper and 265' storage length
- Drive #2 at Baseline Road (Year 2029)
 - Westbound left-turning lane with 265' taper and 265' storage length
- Drive #3 at Baseline Road (Year 2029)
 - Westbound left-turning lane with 265' taper 265' storage length
- Drive #4 at Galena Road (Year 2031)
 - Westbound right-turning lane with 215' taper and 220' storage length
- Drive #5 at Galena Road (Year 2031)
 - Westbound right-turning lane with 215' taper and 220' storage length
- Drive #6 at Galena Road (Year 2027)
 - Westbound right-turning lane with 215' taper and 220' storage length

Lengths of auxiliary lanes' taper and storage are derived from 95th percentile queue analysis and Figure 36-3 in IDOT's *Bureau of Design and Environment Manual*. Baseline Road has an assumed design speed of 50 miles per hour and Galena Road has an assumed design speed of 60 miles per hour for the determination of auxiliary lane lengths. This represents an assumption that the design speed is five miles per hour more than the posted speed limit.

4.4 Queue Length Analysis

A queue length analysis was conducted at each of the study area intersections for existing, background, and future conditions with project site traffic as well as future with site traffic, planned improvements, and recommended mitigation measures. The queue lengths presented are representative of 95th percentile queue analysis outputs from Synchro and HCM 7th Edition. A summary of this analysis is provided in Table 4-10 for existing unsignalized intersections, Table 4-11 for existing signalized intersections, and Table 4-12 for proposed access locations.

Table 4-10: 95th Percentile Queue Length Analysis (Existing Unsignalized Intersections)

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound	
			Left	Right	Left	Right	Left	Right	Left	Right
TMC #1 - Baseline Rd at Ashe Rd (TWSC)	Weekday AM	Existing (2025)	N/A		-	15	N/A		N/A	
		Background (2027)			-	17				
		Background (2029)			-	18				
		Background (2031)			-	18				
		Future w/Traffic (2027)			-	38				
		Future w/Traffic (2029)			-	51				
		Future w/Traffic (2031)			-	202				
	Weekday PM	Existing (2025)	N/A		-	46	N/A		N/A	
		Background (2027)			-	50				
		Background (2029)			-	54				
		Background (2031)			-	59				
		Future w/Traffic (2027)			-	102				
		Future w/Traffic (2029)			-	136				
		Future w/Traffic (2031)			-	447				
Storage Length (ft)		N/A		-	-	N/A		N/A		
Taper Length (ft)				-	-					
TMC #2 - Mighell Rd at Baseline Rd (TWSC)	Weekday AM	Existing (2025)	N/A		N/A		N/A		-	0
		Background (2027)							-	0
		Background (2029)							-	0
		Background (2031)							-	0
		Future w/Traffic (2027)							-	1
		Future w/Traffic (2029)							-	1
		Future w/Traffic (2031)							-	3
	Weekday PM	Existing (2025)	N/A		N/A		N/A		-	0
		Background (2027)							-	0
		Background (2029)							-	0
		Background (2031)							-	0
		Future w/Traffic (2027)							-	1
		Future w/Traffic (2029)							-	1
		Future w/Traffic (2031)							-	1
	Storage Length (ft)		N/A		N/A		N/A		-	-
	Taper Length (ft)								-	-

Notes: All values are in feet

As shown in Table 4-10 above, in the existing condition, queue lengths reach a maximum of 46 feet in the evening peak hour at the westbound approach of Baseline Road. Queue lengths increase minimally in the background conditions, with this longest queue reaching 59 feet in the Background (2031) scenario. However, when factoring in site generated traffic are significantly longer in projected Future with Traffic Phase 1 (2027) scenario than any background scenario. Furthermore projected queueing is significantly increased as part of Future with Traffic Phase 2 (2029) and Phase 3 (2031) conditions. Ultimately, the longest queue in the Future with Traffic 2031 scenario reaches 447 feet at the westbound approach of Baseline Road in the evening peak hour.

Table 4-11: 95th Percentile Queue Analysis (Existing and Future No-Build Signalized Intersections)

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound	
			Left	Right	Left	Right	Left	Right	Left	Right
TMC #3 - Baseline Rd at IL 47 (Signalized)	Weekday AM	Existing (2025)	282	-	177	84	974	-	72	313
		Background (2027)	295	-	181	85	1021	-	75	325
		Background (2029)	306	-	186	93	1070	-	104	338
		Background (2031)	317	-	190	108	1118	-	150	350
		Future w/Traffic (2027)	432	-	232	94	1114	-	161	470
		Future w/Traffic (2029)	464	-	410	154	1403	-	241	632
		Future w/Traffic (2031)	680	-	468	182	1542	-	248	920
	Weekday PM	Existing (2025)	217	-	275	130	813	-	158	828
		Background (2027)	220	-	281	139	876	-	164	881
		Background (2029)	228	-	291	151	892	-	162	885
		Background (2031)	236	-	299	158	971	-	166	933
		Future w/Traffic (2027)	397	-	330	170	1098	-	180	1170
		Future w/Traffic (2029)	483	-	477	217	1639	-	494	1214
		Future w/Traffic (2031)	854	-	546	238	1833	-	577	1689
	Storage Length (ft)		-	-	-	-	130	115	230	-
	Taper Length (ft)		-	-	-	-	180	120	215	-
TMC #4 - Galena Rd at IL 47 (Signalized)	Weekday AM	Existing (2025)	401	-	377	-	21	41	47	21
		Background (2027)	416	-	388	-	22	45	50	24
		Background (2029)	422	-	394	-	23	45	52	25
		Background (2031)	437	-	406	-	24	49	55	27
		Future w/Traffic (2027)	531	-	417	-	19	17	35	22
		Future w/Traffic (2029)	1268	-	466	-	232	72	210	329
		Future w/Traffic (2031)	1352	-	566	-	248	76	302	335
	Weekday PM	Existing (2025)	257	-	508	-	35	105	94	31
		Background (2027)	263	-	520	-	37	110	98	33
		Background (2029)	267	-	537	-	39	118	106	34
		Background (2031)	274	-	554	-	41	126	112	37
		Future w/Traffic (2027)	447	-	557	-	48	122	126	52
		Future w/Traffic (2029)	1402	-	477	-	226	183	374	184
		Future w/Traffic (2031)	1446	-	534	-	232	189	513	187
	Storage Length (ft)			-	-	-	-	175	100	190
	Taper Length (ft)			-	-	-	-	180	105	130
TMC #5 - Galena Rd at Eldamain Rd (Signalized)	Weekday AM	Existing (2025)	85	0	35	0	13	4	8	3
		Background (2027)	87	0	36	0	13	5	8	4
		Background (2029)	91	0	37	0	13	6	8	5
		Background (2031)	93	0	37	0	14	7	8	6
		Future w/Traffic (2027)	95	0	46	0	15	18	16	13
		Future w/Traffic (2029)	51	0	51	0	17	46	41	15
		Future w/Traffic (2031)	73	0	54	0	17	52	42	35
	Weekday PM	Existing (2025)	54	0	50	0	23	5	14	35
		Background (2027)	56	0	52	0	23	6	14	35
		Background (2029)	58	0	53	0	24	6	14	36
		Background (2031)	60	0	56	0	24	7	15	36
		Future w/Traffic (2027)	67	0	74	0	25	11	16	39
		Future w/Traffic (2029)	68	0	159	19	32	21	34	44
		Future w/Traffic (2031)	89	0	169	20	30	21	33	46
	Storage Length (ft)		295	260	145	160	145	155	230	230
	Taper Length (ft)		195	230	200	190	185	185	220	230

Notes: All values are in feet



Table 4-11 shows the 95th percentile queue lengths at the currently signalized intersections using existing geometry. The queue lengths at all approaches of the intersections of IL 47 with Baseline Road and Galena Road significantly increase in all scenarios than the unsignalized intersections covered in Table 4-10. The longest queue in either of these intersections occurs at the northbound left auxiliary lane of IL 47 at Baseline Road, which is projected to exceed available storage and impact northbound intersection through movements. In addition, the southbound left turning queue of IL 47 at Baseline Road exceeds existing storage length in both peak hours beginning in the Background with Traffic 2029 scenario. Similar queueing issues occur at the northbound right and southbound left auxiliary lanes of IL 47 at Galena Road beginning in the Background with Traffic (2029) scenario.

The intersection of Galena Road and Eldamain Road is projected to accommodate 95th percentile queues across each turning movement with exception to the westbound left turning lane which is projected to exceed available storage by approximately 1 vehicle during Phase 2 (2029) and Phase 3 (2031) PM peak hour conditions.

Table 4-12: 95th Percentile Queue Analysis (Proposed Access Locations)

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound	
			Left	Right	Left	Right	Left	Right	Left	Right
Drive #1 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2027)	N/A	N/A	19	-	N/A			
		Future w/Traffic (2029)			20	-				
		Future w/Traffic (2031)			27	-				
	Weekday PM	Future w/Traffic (2027)	N/A	N/A	22	-	N/A			
		Future w/Traffic (2029)			22	-				
		Future w/Traffic (2031)			29	-				
	Storage Length (ft)		N/A	N/A	-	-	N/A			
	Taper Length (ft)				-	-				
Drive #2 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2031)	N/A	N/A	27	-	N/A			
	Weekday PM	Future w/Traffic (2031)			28	-				
	Storage Length (ft)		N/A	N/A	-	-	N/A			
	Taper Length (ft)				-	-				
Drive #3 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2031)	N/A	N/A	29	-	N/A			
	Weekday PM	Future w/Traffic (2031)			32	-				
	Storage Length (ft)		N/A	N/A	-	-	N/A			
	Taper Length (ft)				-	-				
Drive #4 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2029)	N/A	N/A	N/A	202	20			
		Future w/Traffic (2031)				205	20			
	Weekday PM	Future w/Traffic (2029)	N/A	N/A	N/A	170	24			
		Future w/Traffic (2031)				174	24			
	Storage Length (ft)		N/A	N/A	N/A	-	-			
	Taper Length (ft)					-	-			
Drive #5 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2029)	N/A	N/A	N/A	169	17			
		Future w/Traffic (2031)				173	18			
	Weekday PM	Future w/Traffic (2029)	N/A	N/A	N/A	145	26			
		Future w/Traffic (2031)				149	27			
	Storage Length (ft)		N/A	N/A	N/A	-	-			
	Taper Length (ft)					-	-			
Drive #6 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2027)	N/A	N/A	N/A	22	-			
		Future w/Traffic (2029)				51	-			
		Future w/Traffic (2031)				52	-			
	Weekday PM	Future w/Traffic (2027)	N/A	N/A	N/A	29	-			
		Future w/Traffic (2029)				65	-			
		Future w/Traffic (2031)				66	-			
	Storage Length (ft)		N/A	N/A	N/A	-	-			
	Taper Length (ft)					-	-			

Notes: All values are in feet

Table 4-12 shows the 95 percentile queue lengths for the proposed access locations and their intersections with Baseline Road or Galena Road using existing geometry on the study are roadway network. The longest queues are projected at Drive #4 and Drive #5, which is consistent with the fact that those drives experience the most additional traffic due to proposed site activities. The longest queue occurs in the Future with Traffic (2031) morning peak hour exiting Drive #4.

Table 4-13: 95th Percentile Queue Analysis
(Planned Improvements and Mitigation, Existing Intersections)

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound	
			Left	Right	Left	Right	Left	Right	Left	Right
TMC #1 - Baseline Road at Ashe Road (TWSC Year 2027)	Weekday AM	Future w/Traffic (2027)	N/A		38	-	N/A		N/A	
	Weekday PM	Future w/Traffic (2027)	N/A		102	-	N/A		N/A	
	Storage Length (ft)		N/A		-	-	N/A		N/A	
	Taper Length (ft)				-	-				
TMC #1 - Baseline Road at Ashe Road (Signalized Year 2029)	Weekday AM	Future w/Traffic (2029)	N/A		98	-	-	338	75	-
		Future w/Traffic (2031)			128	-	-	447	82	-
	Weekday PM	Future w/Traffic (2029)	N/A		115	-	-	92	207	-
		Future w/Traffic (2031)			190	-	-	119	246	-
	Storage Length (ft)		N/A		-	-	-	-	-	-
	Taper Length (ft)				-	-	-	-	-	-
TMC #3 - Baseline Rd at IL 47 (Signalized)	Weekday AM	Future w/Traffic (2027)	51	5	41	44	46	9	54	148
		Future w/Traffic (2029)	63	8	90	45	56	22	62	209
		Future w/Traffic (2031)	86	33	90	54	155	21	81	256
	Weekday PM	Future w/Traffic (2027)	50	12	39	41	31	21	97	249
		Future w/Traffic (2029)	51	13	56	41	31	27	99	276
		Future w/Traffic (2031)	80	36	56	44	80	30	111	328
	Storage Length (ft)		385*	245*	360*	475*	465*	155*	465*	-
	Taper Length (ft)		210*	240*	175*	180*	145*	220*	300*	-
TMC #4- Galena Rd at IL 47 (Signalized)	Weekday AM	Future w/Traffic (2027)	70	1	40	25	25	10	41	16
		Future w/Traffic (2029)	162	25	43	20	73	0	47	36
		Future w/Traffic (2031)	172	24	48	50	86	3	78	39
	Weekday PM	Future w/Traffic (2027)	46	9	51	8	33	35	83	14
		Future w/Traffic (2029)	179	29	52	9	53	35	85	27
		Future w/Traffic (2031)	171	35	61	28	62	35	142	26
	Storage Length (ft)		210*	210*	215*	215*	405*	155*	435*	145*
	Taper Length (ft)		220*	220*	220*	220*	190*	200*	140*	200*

Notes: All values are in feet

*Proposed storage and taper lengths from IDOT plans

As shown in Table 4-13, when implementing the previously described mitigation measures and planned improvements, 95th percentile queue lengths are significantly reduced. The only exception pertains to the proposed of Baseline Road at Ashe Road, which is evaluated as a newly signalized intersection.

At the intersections of IL 47 with Baseline Road and Galena Road, the 95th percentile queues do not exceed the storage lengths of auxiliary lanes proposed on the IDOT plans shown in Appendix I.

**Table 4-14: 95th Percentile Queue Analysis
(Recommended Mitigation, Proposed Access Locations)**

Intersection	Peak Hour	Scenario	Eastbound		Westbound		Northbound		Southbound	
			Left	Right	Left	Right	Left	Right	Left	Right
Drive #1 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2027)	N/A		6	-	19	-	N/A	
		Future w/Traffic (2029)			6	-	20	-		
		Future w/Traffic (2031)			7	-	27	-		
	Weekday PM	Future w/Traffic (2027)	N/A		2	-	22	-	N/A	
		Future w/Traffic (2029)			2	-	22	-		
		Future w/Traffic (2031)			2	-	29	-		
	Storage Length (ft)		N/A	265**	-	-	-	N/A		
Taper Length (ft)		265**		-	-	-				
Drive #2 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2031)	N/A		6	-	27	-	N/A	
	Weekday PM	Future w/Traffic (2031)			2	-	28	-		
	Storage Length (ft)		N/A	265**	-	-	-	N/A		
	Taper Length (ft)			265**	-	-	-			
Drive #3 at Baseline Road (TWSC)	Weekday AM	Future w/Traffic (2031)	N/A		6	-	29	-	N/A	
	Weekday PM	Future w/Traffic (2031)			3	-	32	-		
	Storage Length (ft)		N/A	265**	-	-	-	N/A		
	Taper Length (ft)			265**	-	-	-			
Drive #4 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2029)	13	-	-	0	N/A		56	17
		Future w/Traffic (2031)	13	-	-	0			57	17
	Weekday PM	Future w/Traffic (2029)	5	-	-	0	N/A		58	22
		Future w/Traffic (2031)	5	-	-	0			59	22
	Storage Length (ft)			-	-	215**	N/A		-	-
	Taper Length (ft)			-	-	220**			-	-
Drive #5 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2029)	-	-	-	12	N/A		52	15
		Future w/Traffic (2031)	-	-	-	12			53	15
	Weekday PM	Future w/Traffic (2029)	-	-	-	5	N/A		51	25
		Future w/Traffic (2031)	-	-	-	5			52	25
	Storage Length (ft)			-	-	215**	N/A		-	-
	Taper Length (ft)			-	-	220**			-	-
Drive #6 at Galena Road (TWSC)	Weekday AM	Future w/Traffic (2027)	-	-	-	4	N/A		17	-
		Future w/Traffic (2029)	-	-	-	5			26	-
		Future w/Traffic (2031)	-	-	-	5			26	-
	Weekday PM	Future w/Traffic (2027)	-	-	-	2	N/A		23	-
		Future w/Traffic (2029)	-	-	-	2			37	-
		Future w/Traffic (2031)	-	-	-	2			37	-
	Storage Length (ft)			-	-	215**	N/A		-	-
	Taper Length (ft)			-	-	220**			-	-

Notes: All values are in feet

**Proposed storage and taper lengths for auxiliary lanes

Table 4-14 highlights the 95th percentile queue at the proposed access locations including the proposed mitigation as described in Section 4.3.5. With the implementation of these measures, queue lengths at all intersections do not exceed 60 feet at any approach, scenario, or peak hour. In addition, the provided storage length at the westbound left auxiliary lanes along Baseline Road and westbound right auxiliary lanes along Galena Road is adequate to accommodate projected queues in all studied scenarios.



4.5 Site Circulation

In the proposed site plan, Drive #1 and Drive #6 will provide access between the Phase 1 developments and both Galena Road and Baseline Road. Drive #4 and Drive #5 will serve as primary access to Galena Road for the Phase 2 developments, while the Phase 3 developments will be served by Drive #2 and Drive #3 in connection to Baseline Road. There is no planned internal access or need for internal overall site project access between development campuses. All proposed access drives are anticipated to provide full access from both Galena Road and Baseline Road.

Drives #4, #5, and #6 are all proposed along Galena Road, which is a relatively flat corridor adjacent to the proposed site except for a slight grade increase along the horizontal curve at the intersection of Galena Road and W Beecher Road. There are currently no signage obstructions nor tall vegetation that would impact sight distance lines. When analyzing the proposed access points along Galena Road, the sight distance for the intersecting roadway was derived from the requirements posed in Exhibit 3 of the *Kendall County Highway Access Regulation Ordinance*, January 19, 2021. As established in Section 4.1, the design speed for Galena Road is 50 mph, which results in a minimum intersection sight distance of 1,035' and a minimum stopping sight distance of 475'. It is recommended for all proposed access drives along Galena Road to be positioned in accordance with the intersection sight distance where feasible and meet or exceed the minimum stopping sight distance as directed by the county's requirements.

Drives #1, #2, and #3 are all located along Baseline Road which is under the jurisdiction of the township. While Baseline Road does not have any current signage nor vegetation sight obstructions, there is a noticeable vertical crest curve along the corridor near the intersection of Baseline Road and Mighell Road, which is adjacent to Drive #1. Drive #1 is currently proposed to be positioned approximately 690' feet west from the peak crest of the curve. Drive #2 and Drive #3 are proposed along relatively flat sections of Baseline Road.

Each driveway proposed in connection to adjacent streets are anticipated to facilitate two primary lanes with one entering and one exiting lane. Dedicated left-turning lanes and right-turning lanes from the major roadways of Galena Road and Baseline Road are proposed as recommendations based on the satisfaction of turn lane warrants presented within Section 4.1 of this report. Access drive mitigation recommendations for turn lanes are to be included based on intersection performance as presented in Section 4.3 of this report.

Proposed access drives along Galena Road fall under the spacing classification of Access 2 connections as outlined within the *Kendall County Highway Access Regulation Ordinance*, January 19, 2021, and are recommended to be designed in accordance with county expectations. The requirements for Access 2 connection spacing dictate private access drives should be located 1,320' from another private access drive, 1,760' from a public street connection, and 2,640' from the nearest signalized intersection. The following list establishes the proposed preliminary access spacing for drives along Galena Road:

Proposed Access Drive with Galena Road

- Drive #4: Access 2 Classification, County Jurisdiction
 - 3,280' from Galena Road at Drive #5 (unsignalized) and 3,045' from Galena Road at IL 47 (signalized)
- Drive #5: Access 2 Classification, County Jurisdiction
 - 2,000' from Galena Road at Drive #6 (unsignalized) and 3,280' from Galena Road at Drive #4 (unsignalized)
- Drive #6: Access 2 Classification, County Jurisdiction

- 2,130' from Galena Road at Eldamain Road / Ashe Road (signalized) and 2,000' from Galena Road at Drive #5 (unsignalized)

A majority of the proposed spacing conditions satisfy the criteria established by the county except for the 2,130' spacing between Drive #6 and the Galena Road at Eldamain Road / Ashe Road signalized intersection. It is recommended to adjust the position of Drive #6 along Galena Road to conform to the county guidelines as practicable, provided there are no physical limitations or site-specific constraints. Proposed driveway alignment with opposing existing access points or streets is also recommended where it is feasible to adhere to intersection spacing that is already established.

The following list presents the proposed access drive spacing along Baseline Road, which is under the jurisdiction of the township according to IDOT:

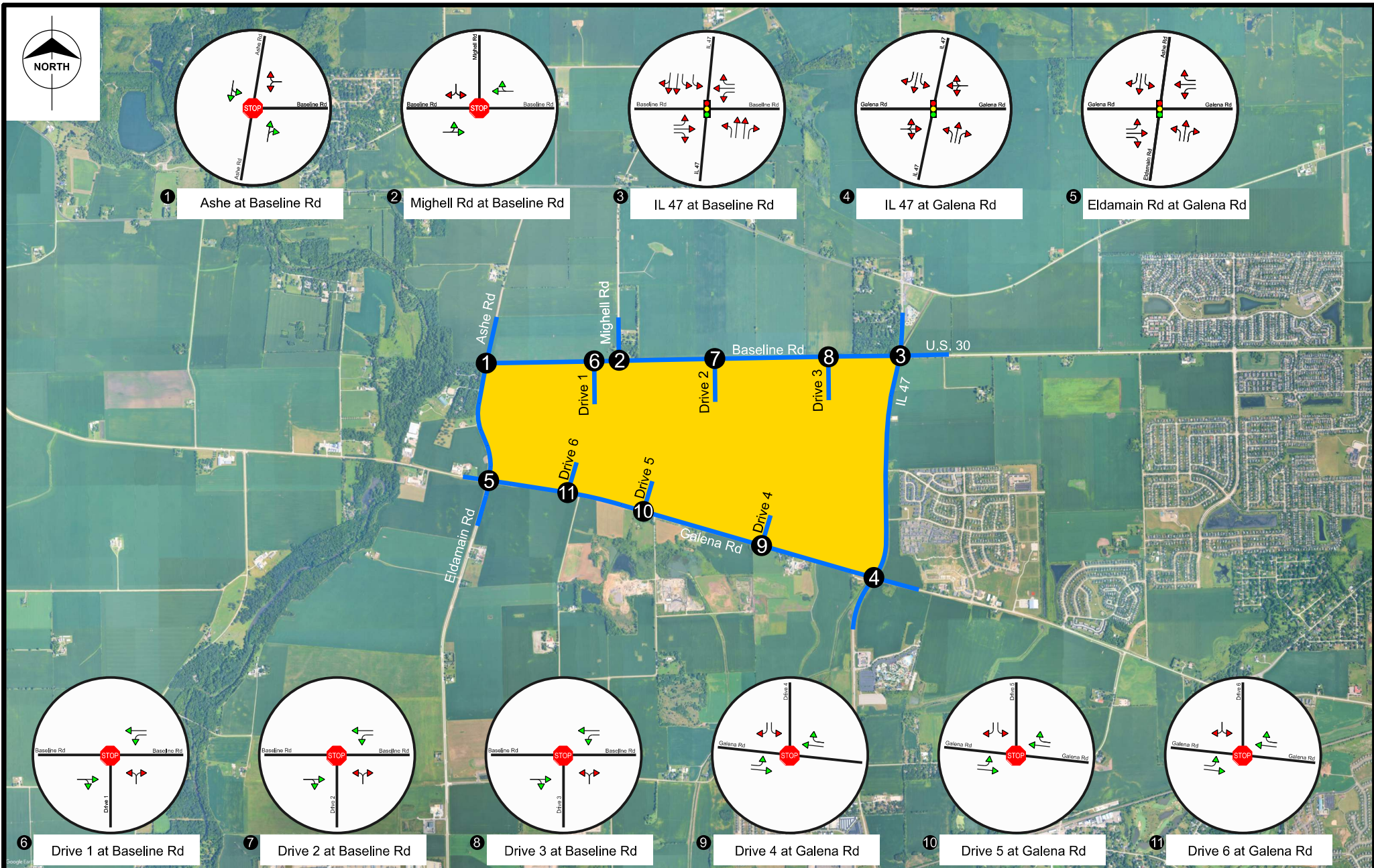
Proposed Access Drive Spacing with Baseline Road

- Drive #1: City Road, Township Jurisdiction
 - 3,090' from Baseline Road at Ashe Road (unsignalized) and 425' from Baseline Road at Mighell Road (unsignalized)
- Drive #2: City Road, Township Jurisdiction
 - 1,455' from Baseline Road at Mighell Road (unsignalized) and 3,660' from Baseline Road at Drive #3 (unsignalized)
- Drive #3: City Road, Township Jurisdiction
 - 3,660' from Baseline Road at Drive #2 (unsignalized) and 2,240' from Baseline Road at IL 47 (signalized)

4.6 Proposed Lane Configuration

The proposed lane configuration includes site access locations, planned improvements of IL 47 and its intersections with Baseline Road and Galena Road, and recommended mitigation measures. The planned improvements from IDOT to IL 47 and these intersections can be found in Appendix I. The proposed lane configuration for the project is summarized in the following list highlighting the proposed modification and implementation timeframe. The proposed lane configuration is also summarized in Figure 4-1.

- Baseline Road at Ashe Road (Year 2029)
 - Signalization Intersection
- Galena Road (Year 2027)
 - Widen Galena Road to three lanes with TWLTL between Eldamain Road and IL 47.
- Drive #1 at Baseline Road (Year 2027)
 - Westbound left-turning lane with 265' taper and 265' storage length
- Drive #2 at Baseline Road (Year 2029)
 - Westbound left-turning lane with 265' taper and 265' storage length
- Drive #3 at Baseline Road (Year 2029)
 - Westbound left-turning lane with 265' taper 265' storage length
- Drive #4 at Galena Road (Year 2031)
 - Westbound right-turning lane with 215' taper and 220' storage length
- Drive #5 at Galena Road (Year 2031)
 - Westbound right-turning lane with 215' taper and 220' storage length
- Drive #6 at Galena Road (Year 2027)
 - Westbound right-turning lane with 215' taper and 220' storage length



Date July 2025

Designed J. Rathman

Yorkville, IL Project Cardinal Traffic Impact Analysis

Figure 4-1: Proposed Lane Configuration

LEGEND

-  Study Intersection
-  Study Area Roads

5.0 Conclusions

The purpose of this study is to evaluate the potential traffic impacts of the proposed Project Cardinal data center development located in the area bordered by Ashe Road to the west, Baseline Road to the north, IL 47 to the east, and Galena road to the south in the city of Yorkville, Illinois. The proposed development consists of approximately 17,444 KSF of data center land use across three campuses.

The proposed access plan includes six full access drives, with three full access driveways extending north to Baseline Road and three additional full access driveways extending south to Galena Road. All three drives accessing Baseline Road and one drive accessing Galena Road are proposed be two lanes with one entering and one exiting. The eastern two drives connecting with Galena Road are proposed as three lanes, with one lane entering the site and two lanes exiting the site.

Background traffic estimates were projected to the years 2027, 2029, and 2031. These years correspond to the anticipated completion date of Phase 1, 2, and 3 of the project, respectively. The growth rate used for these projections were developed in conjunction with CMAP data that projected volumes to 2050. The study area includes the existing two-way stop-controlled (TWSC) intersections of Baseline Road and Ashe Road and Baseline Road and Mighell Road as well as the existing signalized intersections of IL 47 and Baseline Road, IL 47 and Galena Road, and Galena Road and Ashe Road/Eldamain Road. In addition, proposed connections of the six driveways, three (Drives #1, #2, and #3) with Baseline Road and three (Drives #4, #5, and #6) with Galena Road, were evaluated.

This study evaluated whether additional auxiliary lanes are warranted at the study are intersections. The westbound approach of Baseline Road at Drive #1, Drive #2, and Drive #3, as well as the eastbound approach of Galena Road at Drive #4, Drive #5, and Drive #6 all meet the warrant based on the chart comparing left-turn and approach volumes and were therefore considered. Similarly, the westbound approach of Galena Road at Drive #4, Drive #5, and Drive #6 meet the warrant based on the chart comparing right-turn and approach volumes and were also considered.

As part of this study, the methodology established in the MUTCD criteria regarding the necessity of a traffic signal was evaluated at poorly performing intersections. Warrant 3, the peak hour traffic signal warrant, was satisfied in the evening peak hour of the 2029 Background with Future Traffic scenario at the intersection of Baseline Road and Ashe Road, and thus a traffic signal is recommended to be installed at that intersection by the year 2029.

Results of the capacity analysis for the existing intersections indicate that three of the five study area intersections and their approaches currently experience low delay. However, the intersection of IL 47 and Baseline Road and IL 47 and Galena Road experience an overall LOS C with the eastbound and westbound approaches experiencing LOS E or worse. Delays continued to increase with the added traffic in the background scenarios, with no approaches degrading to failing levels of service in the three intersections operating at acceptable levels of service. However, intersections that are currently operating at failing levels of service only increase in delay and degrade to worse levels of service. These failing intersections along IL 47 are part of a project by IDOT that will be let on November 5, 2025. The improvements proposed for this portion of IL 47 in the plans made available provide adequate capacity expansions that result in the intersections along IL 47 operating at acceptable levels of service both overall and at all approaches.

In the Future with Project 2031 scenario, the westbound approach of the intersection of Baseline Road and Ashe Road degrades to LOS F not observed in the 2031 Background scenario. Given that this intersection satisfied Signal Warrant 3 from the MUTCD, this intersection was re-analyzed as a signalized intersection with existing geometry. With this improvement, the intersection and all approaches operated at LOS B or better in all scenarios and peak hours. As a result, the signalization of the intersection of Baseline Road at Ashe Road is recommended in the year 2029, as that is the first year that the signal is warranted.

Additionally, the study area driveways were analyzed for their capacities and operations. With the implementation of the warranted auxiliary lanes as described earlier in the conclusion, all approaches of the intersections of the proposed access locations and either Baseline Road or Galena Road operate at acceptable levels of service in all scenarios and peak hours.

Analysis of 95th percentile queue results was performed on all study intersections, including the existing intersections and the proposed access locations. Lengthy queues were recorded at the eastbound and westbound approaches in all scenarios utilizing the existing geometry, further highlighting the importance of the impending IDOT project on traffic operations in the study area. When considering the improvements from the IDOT project in conjunction with the recommended auxiliary lanes at the access locations and the signalization of Baseline Rd at Ashe Rd, all 95th percentile queues experienced significant improvements, and no queues are projected to exceed the provided storage lengths according to the obtained IDOT plans or minimum lengths recommended by IDOT's *Bureau of Design and Environment Manual*.

In the proposed site plan, Drive #1 and Drive #6 will provide access between the Phase 1 developments and both Galena Road and Baseline Road. Drive #4 and Drive #5 will serve as primary access to Galena Road for the Phase 2 developments, while the Phase 3 developments will be served by Drive #2 and Drive #3 in connection to Baseline Road. There is no planned internal access or need for internal overall site project access between development campuses.

Following implementation of recommended improvements including auxiliary lanes, signalization at Baseline and Ashe, and the IDOT improvements along IL 47, all study intersections are projected to operate at acceptable LOS in full build out conditions.

Appendix A – Traffic Count Data

TMC #1: Ashe Rd at Baseline Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310264, Location: 41.721198, -88.484824



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Westbound				Ashe Rd Northbound				Ashe Rd Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2025-06-24 7:00AM	11	0	0	11	84	39	0	123	0	26	0	26	160
7:15AM	14	1	0	15	95	41	0	136	0	32	0	32	183
7:30AM	20	0	0	20	93	55	0	148	1	37	0	38	206
7:45AM	22	0	0	22	82	42	0	124	0	34	0	34	180
Hourly Total	67	1	0	68	354	177	0	531	1	129	0	130	729
8:00AM	10	3	0	13	55	31	0	86	1	24	0	25	124
8:15AM	18	0	0	18	42	18	0	60	0	33	0	33	111
8:30AM	15	0	0	15	5	3	0	8	1	28	0	29	52
8:45AM	12	0	0	12	5	1	0	6	0	35	0	35	53
Hourly Total	55	3	0	58	107	53	0	160	2	120	0	122	340
4:00PM	38	1	0	39	25	21	0	46	0	137	0	137	222
4:15PM	28	0	0	28	41	34	0	75	0	117	0	117	220
4:30PM	31	0	0	31	31	27	0	58	2	113	0	115	204
4:45PM	42	0	0	42	32	23	0	55	0	133	0	133	230
Hourly Total	139	1	0	140	129	105	0	234	2	500	0	502	876
5:00PM	38	0	0	38	39	24	0	63	2	137	0	139	240
5:15PM	21	0	0	21	38	21	0	59	0	127	0	127	207
5:30PM	30	0	0	30	26	21	0	47	0	98	0	98	175
5:45PM	25	2	0	27	27	21	0	48	0	97	0	97	172
Hourly Total	114	2	0	116	130	87	0	217	2	459	0	461	794
Total	375	7	0	382	720	422	0	1142	7	1208	0	1215	2739
% Approach	98.2%	1.8%	0%	-	63.0%	37.0%	0%	-	0.6%	99.4%	0%	-	-
% Total	13.7%	0.3%	0%	13.9%	26.3%	15.4%	0%	41.7%	0.3%	44.1%	0%	44.4%	-
Lights	374	7	0	381	712	418	0	1130	7	1198	0	1205	2716
% Lights	99.7%	100%	0%	99.7%	98.9%	99.1%	0%	98.9%	100%	99.2%	0%	99.2%	99.2%
Articulated Trucks	0	0	0	0	1	0	0	1	0	1	0	1	2
% Articulated Trucks	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0%	0.1%	0%	0.1%	0.1%
Buses and Single-Unit Trucks	1	0	0	1	7	4	0	11	0	9	0	9	21
% Buses and Single-Unit Trucks	0.3%	0%	0%	0.3%	1.0%	0.9%	0%	1.0%	0%	0.7%	0%	0.7%	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

TMC #1: Ashe Rd at Baseline Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

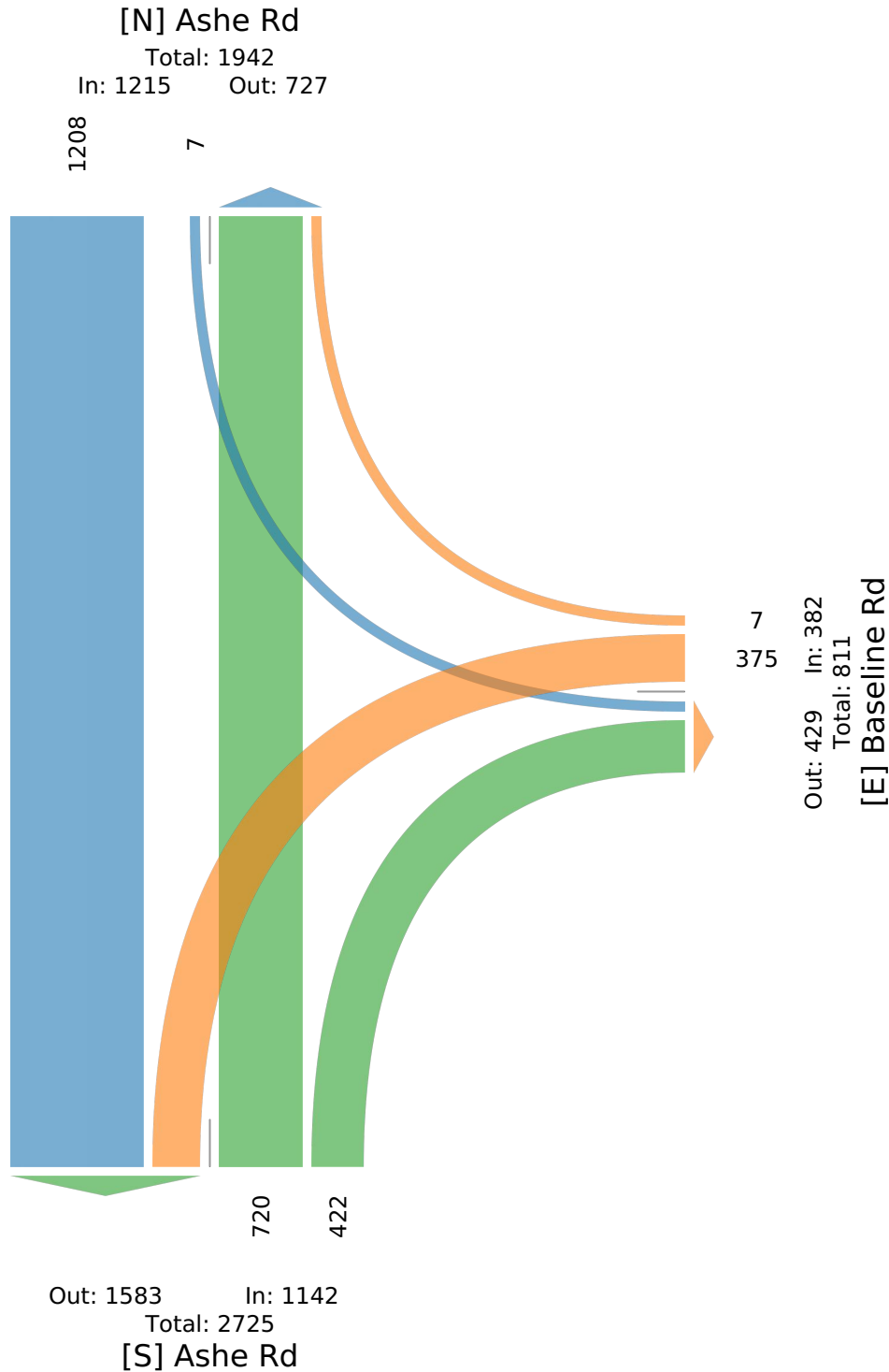
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310264, Location: 41.721198, -88.484824



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #1: Ashe Rd at Baseline Rd - TMC

Tue Jun 24, 2025

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310264, Location: 41.721198, -88.484824

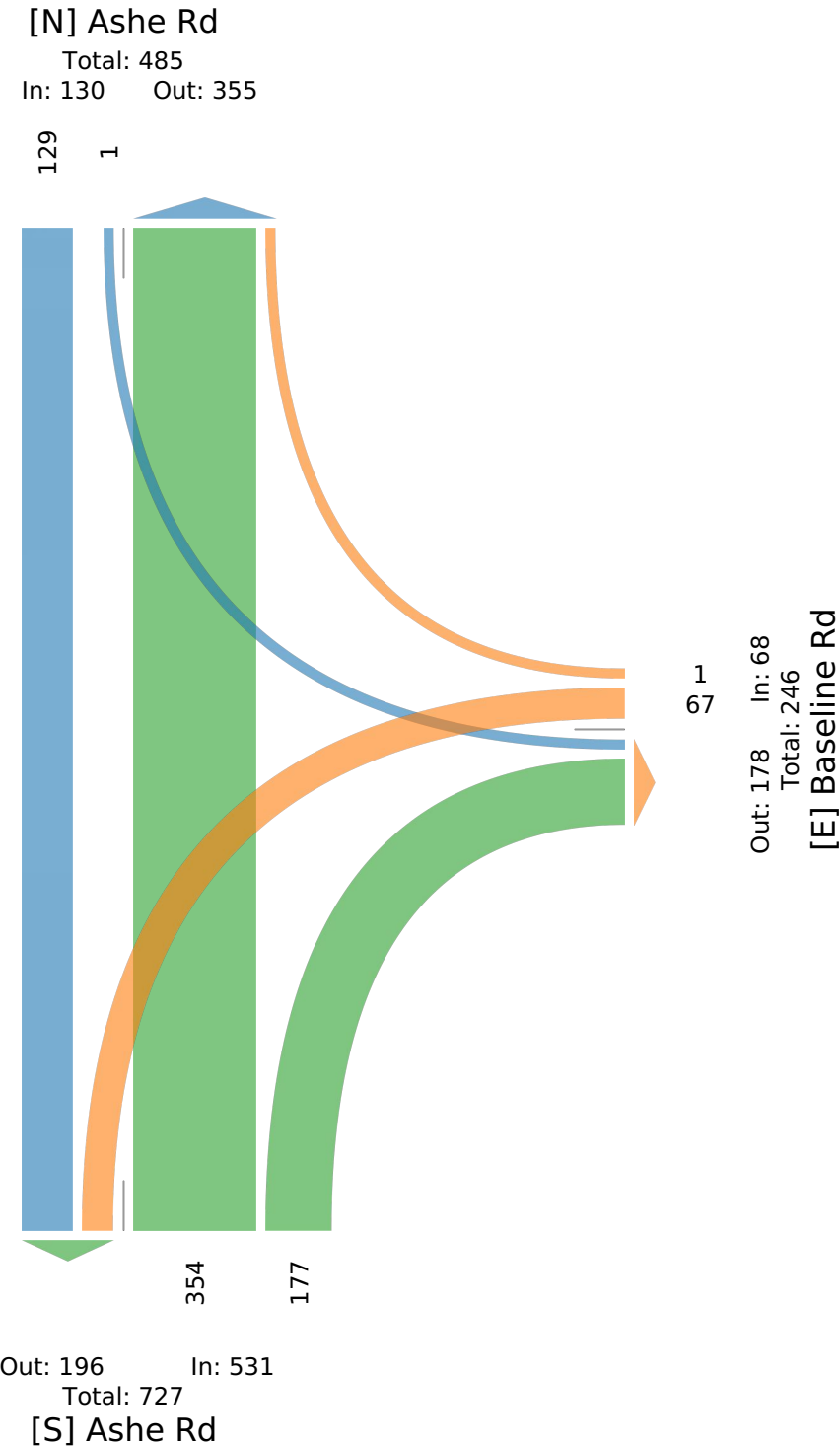


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Westbound				Ashe Rd Northbound				Ashe Rd Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2025-06-24 7:00AM	11	0	0	11	84	39	0	123	0	26	0	26	160
7:15AM	14	1	0	15	95	41	0	136	0	32	0	32	183
7:30AM	20	0	0	20	93	55	0	148	1	37	0	38	206
7:45AM	22	0	0	22	82	42	0	124	0	34	0	34	180
Total	67	1	0	68	354	177	0	531	1	129	0	130	729
% Approach	98.5%	1.5%	0%	-	66.7%	33.3%	0%	-	0.8%	99.2%	0%	-	-
% Total	9.2%	0.1%	0%	9.3%	48.6%	24.3%	0%	72.8%	0.1%	17.7%	0%	17.8%	-
PHF	0.761	0.250	-	0.773	0.932	0.805	-	0.897	0.250	0.872	-	0.855	0.885
Lights	67	1	0	68	351	176	0	527	1	125	0	126	721
% Lights	100%	100%	0%	100%	99.2%	99.4%	0%	99.2%	100%	96.9%	0%	96.9%	98.9%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	0	0	0	0	3	1	0	4	0	4	0	4	8
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0.8%	0.6%	0%	0.8%	0%	3.1%	0%	3.1%	1.1%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #1: Ashe Rd at Baseline Rd - TMC
Tue Jun 24, 2025
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1310264, Location: 41.721198, -88.484824



TMC #1: Ashe Rd at Baseline Rd - TMC

Tue Jun 24, 2025

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310264, Location: 41.721198, -88.484824

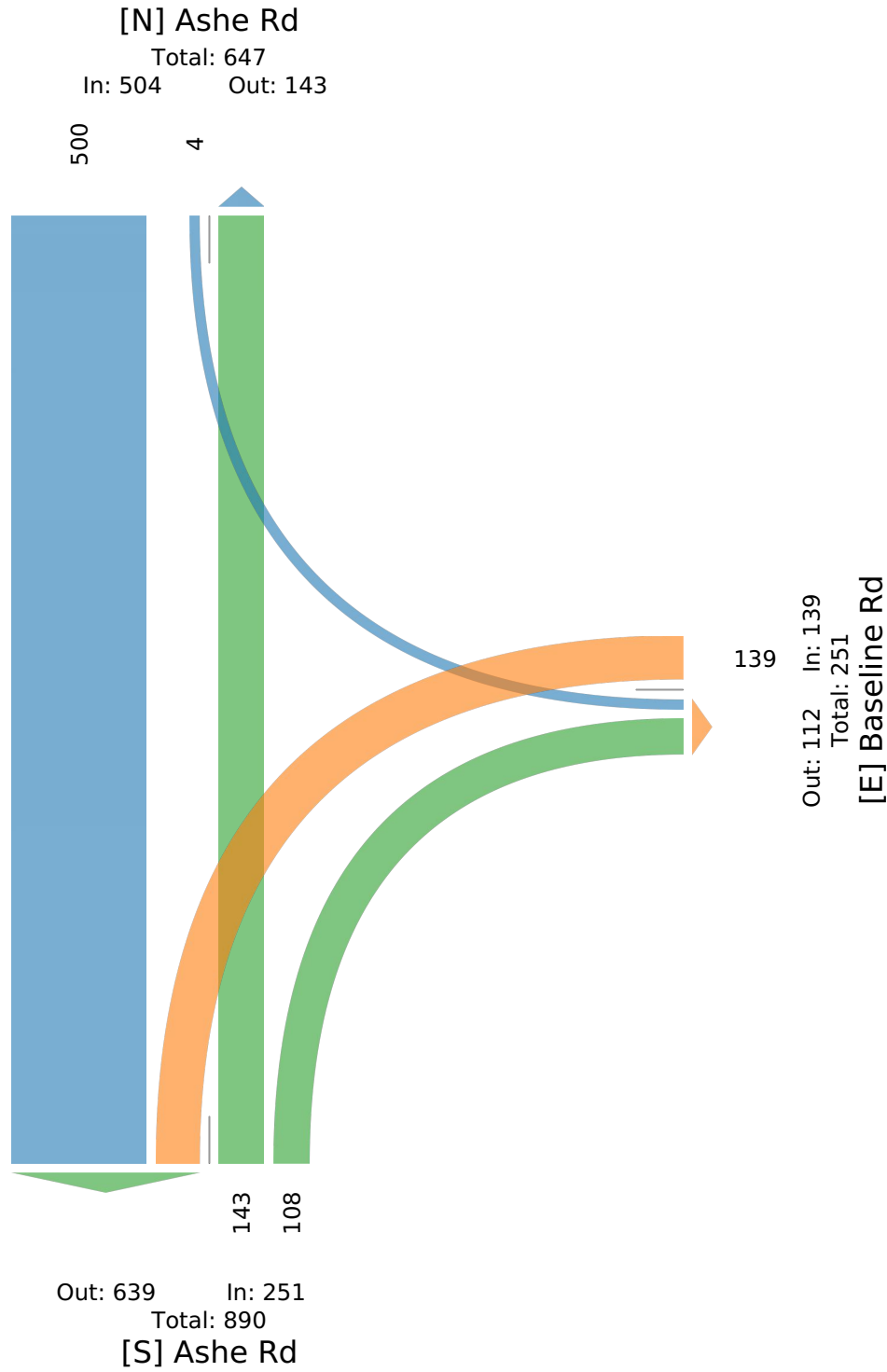


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Westbound				Ashe Rd Northbound				Ashe Rd Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2025-06-24 4:15PM	28	0	0	28	41	34	0	75	0	117	0	117	220
4:30PM	31	0	0	31	31	27	0	58	2	113	0	115	204
4:45PM	42	0	0	42	32	23	0	55	0	133	0	133	230
5:00PM	38	0	0	38	39	24	0	63	2	137	0	139	240
Total	139	0	0	139	143	108	0	251	4	500	0	504	894
% Approach	100%	0%	0%	-	57.0%	43.0%	0%	-	0.8%	99.2%	0%	-	-
% Total	15.5%	0%	0%	15.5%	16.0%	12.1%	0%	28.1%	0.4%	55.9%	0%	56.4%	-
PHF	0.827	-	-	0.827	0.872	0.794	-	0.837	0.500	0.912	-	0.906	0.931
Lights	139	0	0	139	142	107	0	249	4	497	0	501	889
% Lights	100%	0%	0%	100%	99.3%	99.1%	0%	99.2%	100%	99.4%	0%	99.4%	99.4%
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	1	1
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0.2%	0.1%
Buses and Single-Unit Trucks	0	0	0	0	1	1	0	2	0	2	0	2	4
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0.7%	0.9%	0%	0.8%	0%	0.4%	0%	0.4%	0.4%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #1: Ashe Rd at Baseline Rd - TMC
Tue Jun 24, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1310264, Location: 41.721198, -88.484824



TMC #2: Mighell Rd at Baseline Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310265, Location: 41.721373, -88.471622

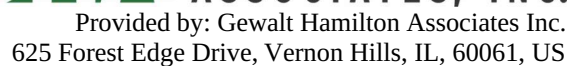


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound				Baseline Rd Westbound				Mighell Rd Southbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2025-06-24 7:00AM	0	42	0	42	14	0	0	14	0	0	0	0	56
7:15AM	0	44	0	44	12	0	0	12	0	0	0	0	56
7:30AM	1	51	0	52	25	0	0	25	2	0	0	2	79
7:45AM	0	47	0	47	17	0	0	17	0	1	0	1	65
Hourly Total	1	184	0	185	68	0	0	68	2	1	0	3	256
8:00AM	1	36	0	37	15	0	0	15	1	0	0	1	53
8:15AM	0	25	0	25	16	0	0	16	0	0	0	0	41
8:30AM	1	4	0	5	16	1	0	17	0	0	0	0	22
8:45AM	0	3	0	3	14	0	0	14	1	0	0	1	18
Hourly Total	2	68	0	70	61	1	0	62	2	0	0	2	134
4:00PM	1	25	0	26	44	0	0	44	1	0	0	1	71
4:15PM	2	32	0	34	22	0	0	22	0	1	0	1	57
4:30PM	1	26	1	28	34	0	0	34	0	0	0	0	62
4:45PM	0	24	0	24	37	0	0	37	1	1	0	2	63
Hourly Total	4	107	1	112	137	0	0	137	2	2	0	4	253
5:00PM	0	26	0	26	38	1	0	39	0	1	0	1	66
5:15PM	0	20	0	20	22	0	0	22	0	0	0	0	42
5:30PM	0	23	0	23	26	0	0	26	0	1	0	1	50
5:45PM	0	18	0	18	30	0	0	30	0	0	0	0	48
Hourly Total	0	87	0	87	116	1	0	117	0	2	0	2	206
Total	7	446	1	454	382	2	0	384	6	5	0	11	849
% Approach	1.5%	98.2%	0.2%	-	99.5%	0.5%	0%	-	54.5%	45.5%	0%	-	-
% Total	0.8%	52.5%	0.1%	53.5%	45.0%	0.2%	0%	45.2%	0.7%	0.6%	0%	1.3%	-
Lights	7	442	1	450	381	2	0	383	6	5	0	11	844
% Lights	100%	99.1%	100%	99.1%	99.7%	100%	0%	99.7%	100%	100%	0%	100%	99.4%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	0	4	0	4	1	0	0	1	0	0	0	0	5
% Buses and Single-Unit Trucks	0%	0.9%	0%	0.9%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

ID: 1310265, Location: 41.721373, -88.471622



TMC #2: Mighell Rd at Baseline Rd - TMC

Tue Jun 24, 2025

AM Peak (7 AM - 8 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310265, Location: 41.721373, -88.471622

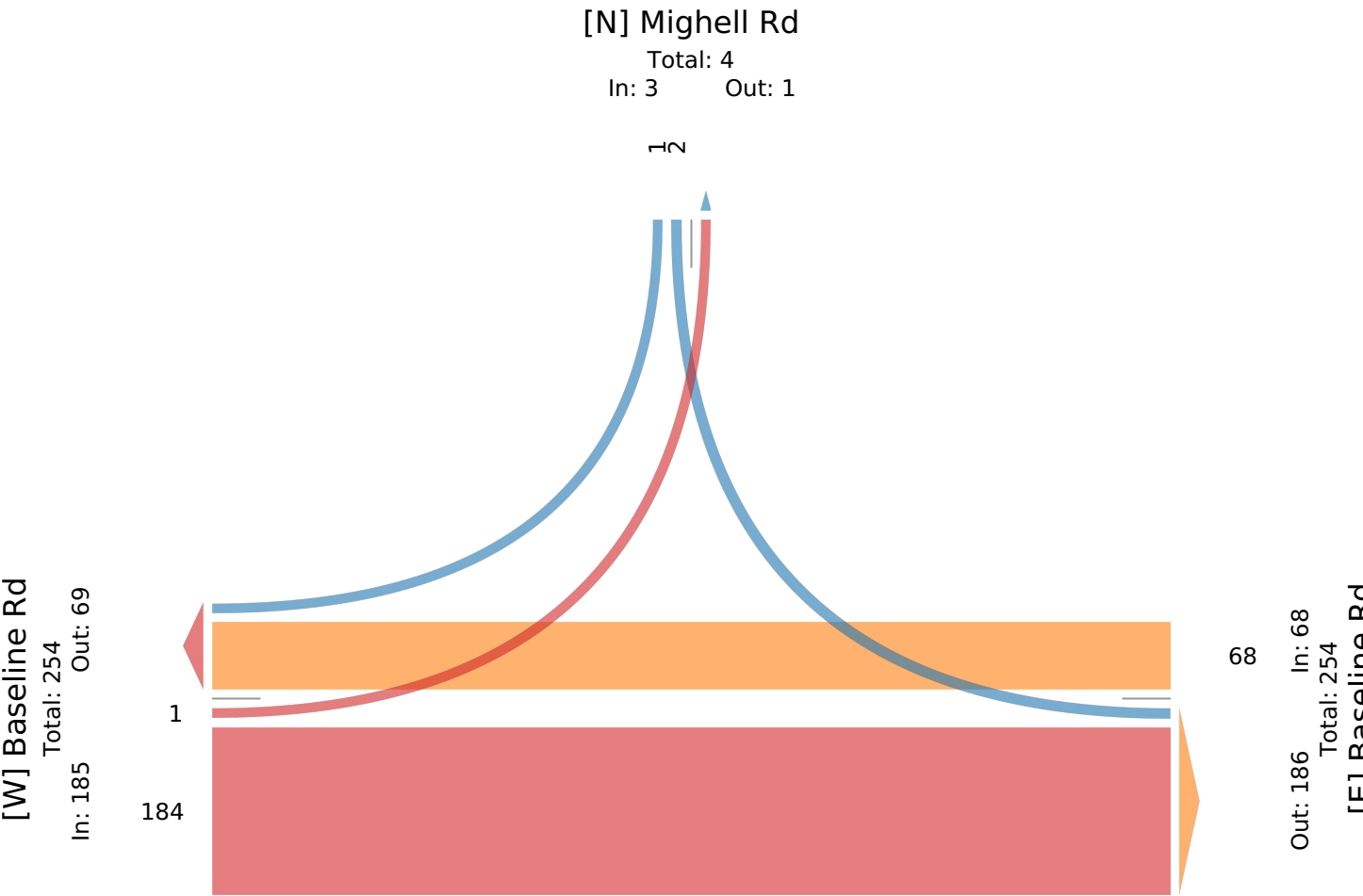


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound				Baseline Rd Westbound				Mighell Rd Southbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2025-06-24 7:00AM	0	42	0	42	14	0	0	14	0	0	0	0	56
7:15AM	0	44	0	44	12	0	0	12	0	0	0	0	56
7:30AM	1	51	0	52	25	0	0	25	2	0	0	2	79
7:45AM	0	47	0	47	17	0	0	17	0	1	0	1	65
Total	1	184	0	185	68	0	0	68	2	1	0	3	256
% Approach	0.5%	99.5%	0%	-	100%	0%	0%	-	66.7%	33.3%	0%	-	-
% Total	0.4%	71.9%	0%	72.3%	26.6%	0%	0%	26.6%	0.8%	0.4%	0%	1.2%	-
PHF	0.250	0.902	-	0.889	0.680	-	-	0.680	0.250	0.250	-	0.375	0.810
Lights	1	183	0	184	68	0	0	68	2	1	0	3	255
% Lights	100%	99.5%	0%	99.5%	100%	0%	0%	100%	100%	100%	0%	100%	99.6%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	0	1	0	1	0	0	0	0	0	0	0	0	1
% Buses and Single-Unit Trucks	0%	0.5%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #2: Mighell Rd at Baseline Rd - TMC
Tue Jun 24, 2025
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1310265, Location: 41.721373, -88.471622



TMC #2: Mighell Rd at Baseline Rd - TMC

Tue Jun 24, 2025

PM Peak (4 PM - 5 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310265, Location: 41.721373, -88.471622

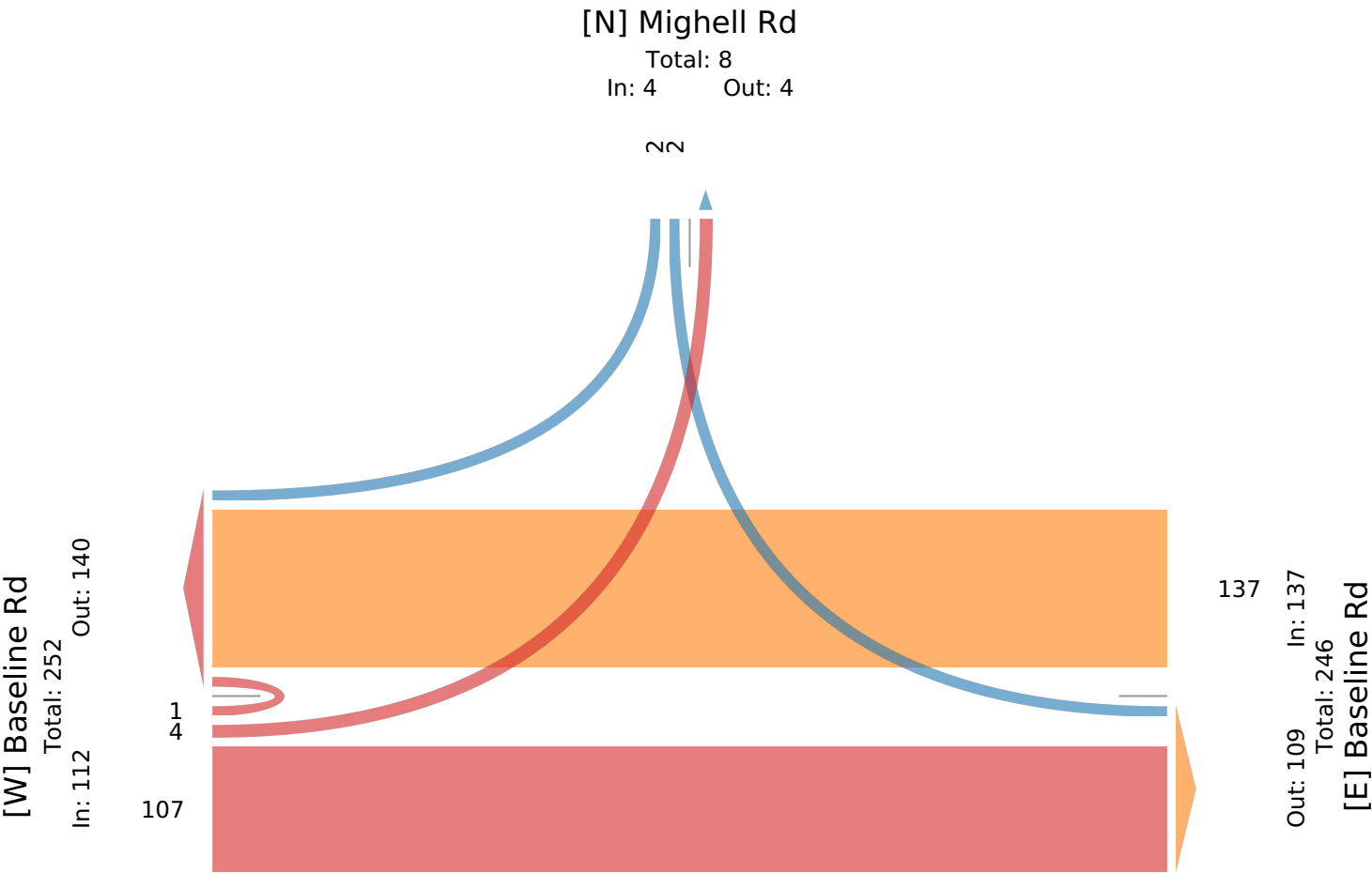


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound				Baseline Rd Westbound				Mighell Rd Southbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2025-06-24 4:00PM	1	25	0	26	44	0	0	44	1	0	0	1	71
4:15PM	2	32	0	34	22	0	0	22	0	1	0	1	57
4:30PM	1	26	1	28	34	0	0	34	0	0	0	0	62
4:45PM	0	24	0	24	37	0	0	37	1	1	0	2	63
Total	4	107	1	112	137	0	0	137	2	2	0	4	253
% Approach	3.6%	95.5%	0.9%	-	100%	0%	0%	-	50.0%	50.0%	0%	-	-
% Total	1.6%	42.3%	0.4%	44.3%	54.2%	0%	0%	54.2%	0.8%	0.8%	0%	1.6%	-
PHF	0.500	0.836	0.250	0.824	0.778	-	-	0.778	0.500	0.500	-	0.500	0.891
Lights	4	106	1	111	137	0	0	137	2	2	0	4	252
% Lights	100%	99.1%	100%	99.1%	100%	0%	0%	100%	100%	100%	0%	100%	99.6%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	0	1	0	1	0	0	0	0	0	0	0	0	1
% Buses and Single-Unit Trucks	0%	0.9%	0%	0.9%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #2: Mighell Rd at Baseline Rd - TMC
Tue Jun 24, 2025
PM Peak (4 PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1310265, Location: 41.721373, -88.471622



TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound					Baseline Rd Westbound					IIL 47 Northbound					IIL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:00AM	24	24	0	0	48	12	14	60	0	86	0	178	9	0	187	26	84	0	0	110	431
7:15AM	16	25	0	0	41	10	15	66	0	91	0	182	4	0	186	26	106	1	0	133	451
7:30AM	19	35	0	0	54	10	20	56	0	86	0	206	15	0	221	30	117	1	0	148	509
7:45AM	20	26	1	0	47	21	16	61	0	98	0	189	10	0	199	32	134	2	0	168	512
Hourly Total	79	110	1	0	190	53	65	243	0	361	0	755	38	0	793	114	441	4	0	559	1903
8:00AM	14	21	0	0	35	12	14	53	0	79	0	171	11	0	182	37	113	0	0	150	446
8:15AM	11	18	0	0	29	14	15	54	0	83	0	136	12	0	148	35	92	3	0	130	390
8:30AM	2	5	0	0	7	18	12	56	0	86	0	203	22	0	225	32	115	3	0	150	468
8:45AM	0	3	1	0	4	8	11	53	0	72	1	186	21	0	208	32	119	2	0	153	437
Hourly Total	27	47	1	0	75	52	52	216	0	320	1	696	66	0	763	136	439	8	0	583	1741
4:00PM	11	12	0	0	23	11	23	48	0	82	0	174	16	0	190	58	198	3	0	259	554
4:15PM	7	17	0	0	24	10	19	47	0	76	0	146	16	0	162	48	221	1	0	270	532
4:30PM	14	21	0	0	35	10	32	51	0	93	0	133	17	0	150	58	181	7	0	246	524
4:45PM	10	15	0	0	25	10	30	35	0	75	0	133	21	0	154	70	201	10	0	281	535
Hourly Total	42	65	0	0	107	41	104	181	0	326	0	586	70	0	656	234	801	21	0	1056	2145
5:00PM	0	13	0	0	13	13	28	33	0	74	0	135	19	0	154	66	205	5	0	276	517
5:15PM	2	9	0	0	11	15	7	42	0	64	0	156	21	0	177	73	197	4	0	274	526
5:30PM	8	14	0	0	22	19	26	42	0	87	1	133	18	0	152	66	207	1	0	274	535
5:45PM	9	9	0	0	18	13	16	30	0	59	0	128	14	0	142	57	207	5	0	269	488
Hourly Total	19	45	0	0	64	60	77	147	0	284	1	552	72	0	625	262	816	15	0	1093	2066
Total	167	267	2	0	436	206	298	787	0	1291	2	2589	246	0	2837	746	2497	48	0	3291	7855
% Approach	38.3%	61.2%	0.5%	0%	-	16.0%	23.1%	61.0%	0%	-	0.1%	91.3%	8.7%	0%	-	22.7%	75.9%	1.5%	0%	-	-
% Total	2.1%	3.4%	0%	0%	5.6%	2.6%	3.8%	10.0%	0%	16.4%	0%	33.0%	3.1%	0%	36.1%	9.5%	31.8%	0.6%	0%	41.9%	-
Lights	164	266	2	0	432	191	296	757	0	1244	1	2327	227	0	2555	711	2258	47	0	3016	7247
% Lights	98.2%	99.6%	100%	0%	99.1%	92.7%	99.3%	96.2%	0%	96.4%	50.0%	89.9%	92.3%	0%	90.1%	95.3%	90.4%	97.9%	0%	91.6%	92.3%
Articulated Trucks	0	0	0	0	0	11	0	18	0	29	0	199	13	0	212	27	157	0	0	184	425
% Articulated Trucks	0%	0%	0%	0%	0%	5.3%	0%	2.3%	0%	2.2%	0%	7.7%	5.3%	0%	7.5%	3.6%	6.3%	0%	0%	5.6%	5.4%
Buses and Single-Unit Trucks	3	1	0	0	4	4	2	12	0	18	1	63	6	0	70	8	82	1	0	91	183
% Buses and Single-Unit Trucks	1.8%	0.4%	0%	0%	0.9%	1.9%	0.7%	1.5%	0%	1.4%	50.0%	2.4%	2.4%	0%	2.5%	1.1%	3.3%	2.1%	0%	2.8%	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

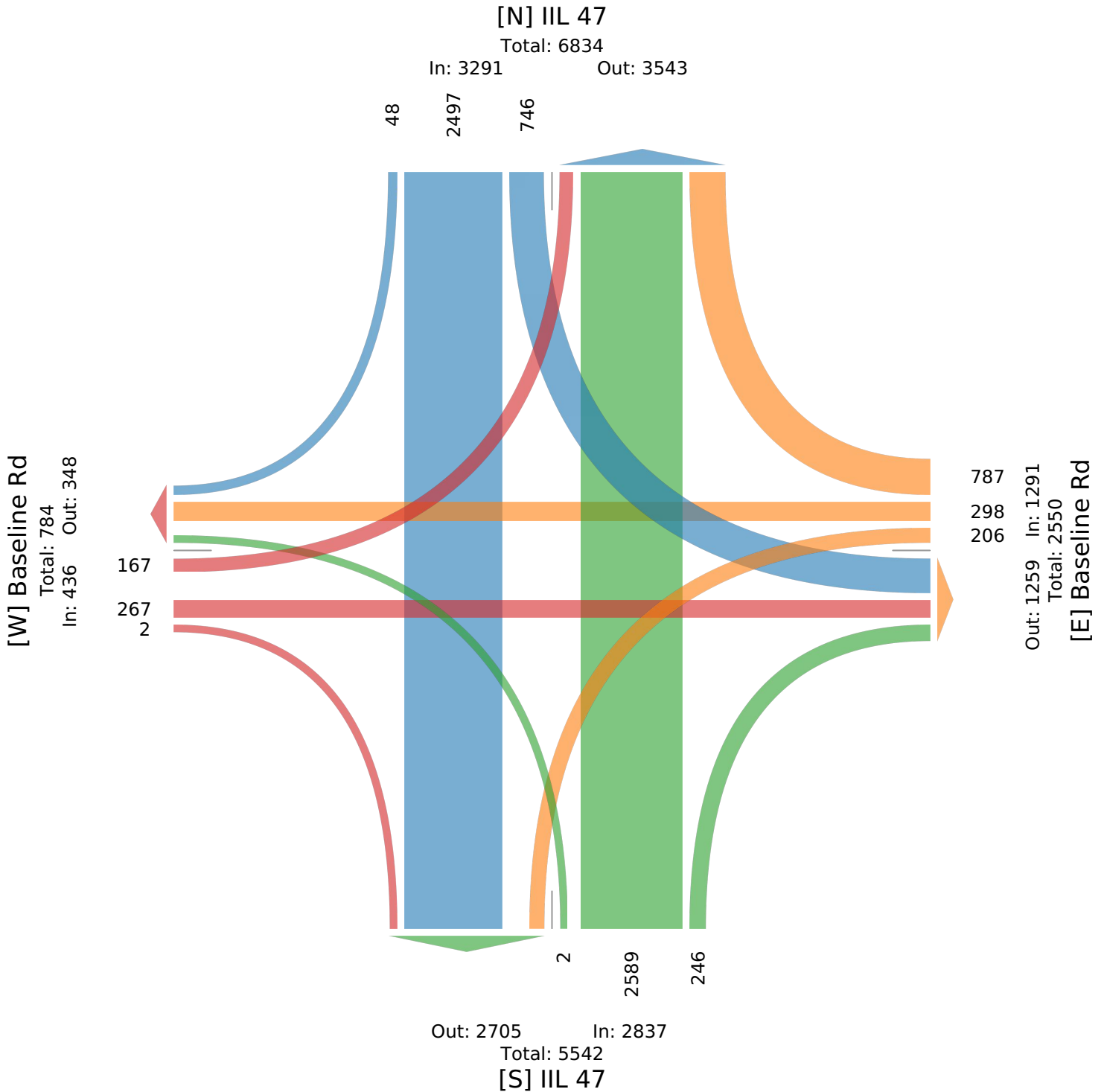
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound					Baseline Rd Westbound					IIL 47 Northbound					IIL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:15AM	16	25	0	0	41	10	15	66	0	91	0	182	4	0	186	26	106	1	0	133	451
7:30AM	19	35	0	0	54	10	20	56	0	86	0	206	15	0	221	30	117	1	0	148	509
7:45AM	20	26	1	0	47	21	16	61	0	98	0	189	10	0	199	32	134	2	0	168	512
8:00AM	14	21	0	0	35	12	14	53	0	79	0	171	11	0	182	37	113	0	0	150	446
Total	69	107	1	0	177	53	65	236	0	354	0	748	40	0	788	125	470	4	0	599	1918
% Approach	39.0%	60.5%	0.6%	0%	-	15.0%	18.4%	66.7%	0%	-	0%	94.9%	5.1%	0%	-	20.9%	78.5%	0.7%	0%	-	-
% Total	3.6%	5.6%	0.1%	0%	9.2%	2.8%	3.4%	12.3%	0%	18.5%	0%	39.0%	2.1%	0%	41.1%	6.5%	24.5%	0.2%	0%	31.2%	-
PHF	0.863	0.764	0.250	-	0.819	0.631	0.813	0.894	-	0.903	-	0.908	0.667	-	0.891	0.845	0.877	0.500	-	0.891	0.937
Lights	69	107	1	0	177	49	65	225	0	339	0	651	35	0	686	115	383	4	0	502	1704
% Lights	100%	100%	100%	0%	100%	92.5%	100%	95.3%	0%	95.8%	0%	87.0%	87.5%	0%	87.1%	92.0%	81.5%	100%	0%	83.8%	88.8%
Articulated Trucks	0	0	0	0	0	3	0	7	0	10	0	73	2	0	75	7	50	0	0	57	142
% Articulated Trucks	0%	0%	0%	0%	0%	5.7%	0%	3.0%	0%	2.8%	0%	9.8%	5.0%	0%	9.5%	5.6%	10.6%	0%	0%	9.5%	7.4%
Buses and Single-Unit Trucks	0	0	0	0	0	1	0	4	0	5	0	24	3	0	27	3	37	0	0	40	72
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	1.9%	0%	1.7%	0%	1.4%	0%	3.2%	7.5%	0%	3.4%	2.4%	7.9%	0%	0%	6.7%	3.8%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

AM Peak (7:15 AM - 8:15 AM)

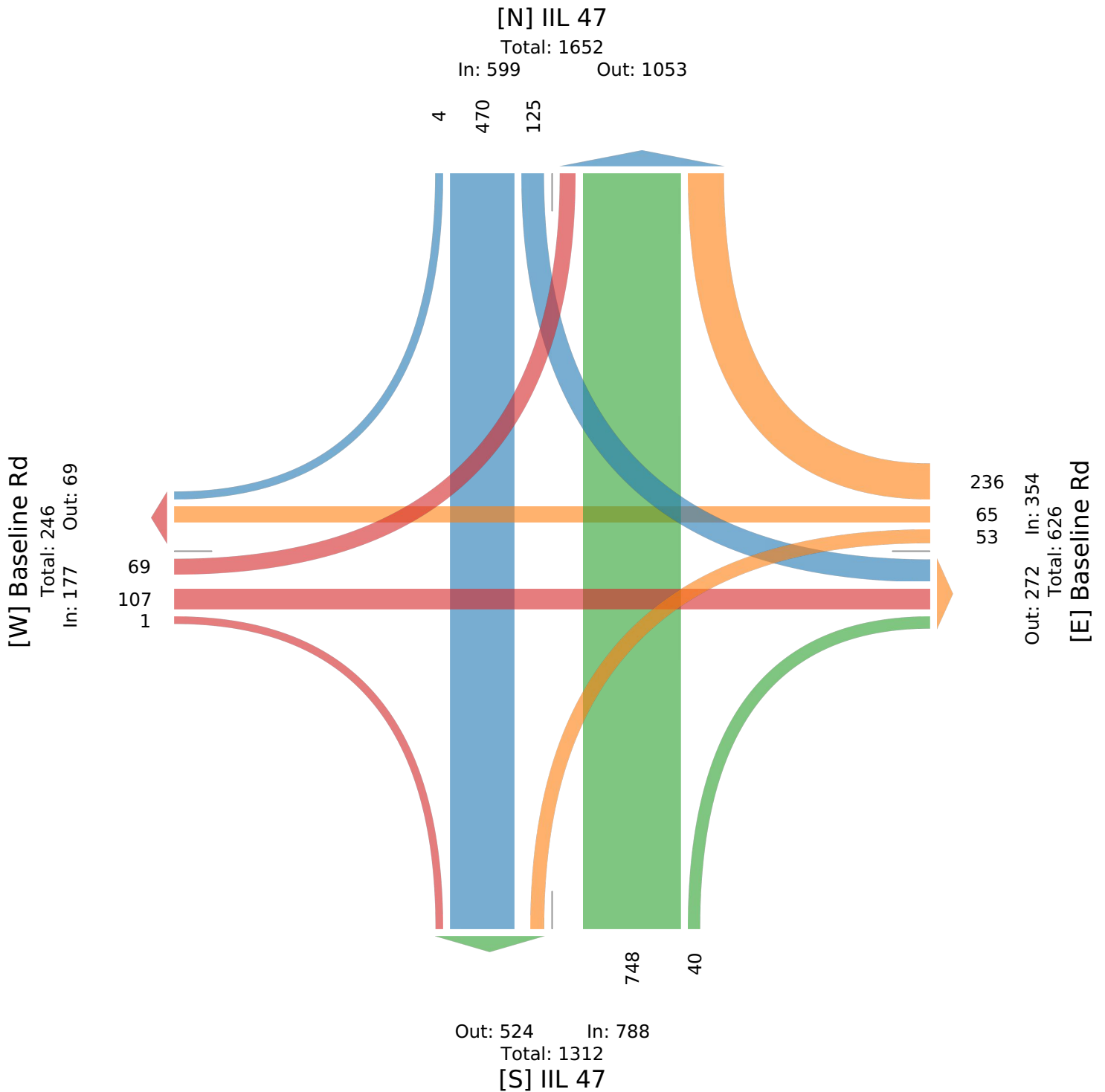
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Baseline Rd Eastbound					Baseline Rd Westbound					IIL 47 Northbound					IIL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 4:00PM	11	12	0	0	23	11	23	48	0	82	0	174	16	0	190	58	198	3	0	259	554
4:15PM	7	17	0	0	24	10	19	47	0	76	0	146	16	0	162	48	221	1	0	270	532
4:30PM	14	21	0	0	35	10	32	51	0	93	0	133	17	0	150	58	181	7	0	246	524
4:45PM	10	15	0	0	25	10	30	35	0	75	0	133	21	0	154	70	201	10	0	281	535
Total	42	65	0	0	107	41	104	181	0	326	0	586	70	0	656	234	801	21	0	1056	2145
% Approach	39.3%	60.7%	0%	0%	-	12.6%	31.9%	55.5%	0%	-	0%	89.3%	10.7%	0%	-	22.2%	75.9%	2.0%	0%	-	-
% Total	2.0%	3.0%	0%	0%	5.0%	1.9%	4.8%	8.4%	0%	15.2%	0%	27.3%	3.3%	0%	30.6%	10.9%	37.3%	1.0%	0%	49.2%	-
PHF	0.750	0.774	-	-	0.764	0.932	0.813	0.887	-	0.876	-	0.842	0.833	-	0.863	0.836	0.906	0.525	-	0.940	0.968
Lights	41	65	0	0	106	39	103	176	0	318	0	532	66	0	598	226	752	21	0	999	2021
% Lights	97.6%	100%	0%	0%	99.1%	95.1%	99.0%	97.2%	0%	97.5%	0%	90.8%	94.3%	0%	91.2%	96.6%	93.9%	100%	0%	94.6%	94.2%
Articulated Trucks	0	0	0	0	0	2	0	5	0	7	0	41	3	0	44	6	36	0	0	42	93
% Articulated Trucks	0%	0%	0%	0%	0%	4.9%	0%	2.8%	0%	2.1%	0%	7.0%	4.3%	0%	6.7%	2.6%	4.5%	0%	0%	4.0%	4.3%
Buses and Single-Unit Trucks	1	0	0	0	1	0	1	0	0	1	0	13	1	0	14	2	13	0	0	15	31
% Buses and Single-Unit Trucks	2.4%	0%	0%	0%	0.9%	0%	1.0%	0%	0%	0.3%	0%	2.2%	1.4%	0%	2.1%	0.9%	1.6%	0%	0%	1.4%	1.4%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #3: IL 47 at Baseline Rd - TMC

Tue Jun 24, 2025

PM Peak (4 PM - 5 PM) - Overall Peak Hour

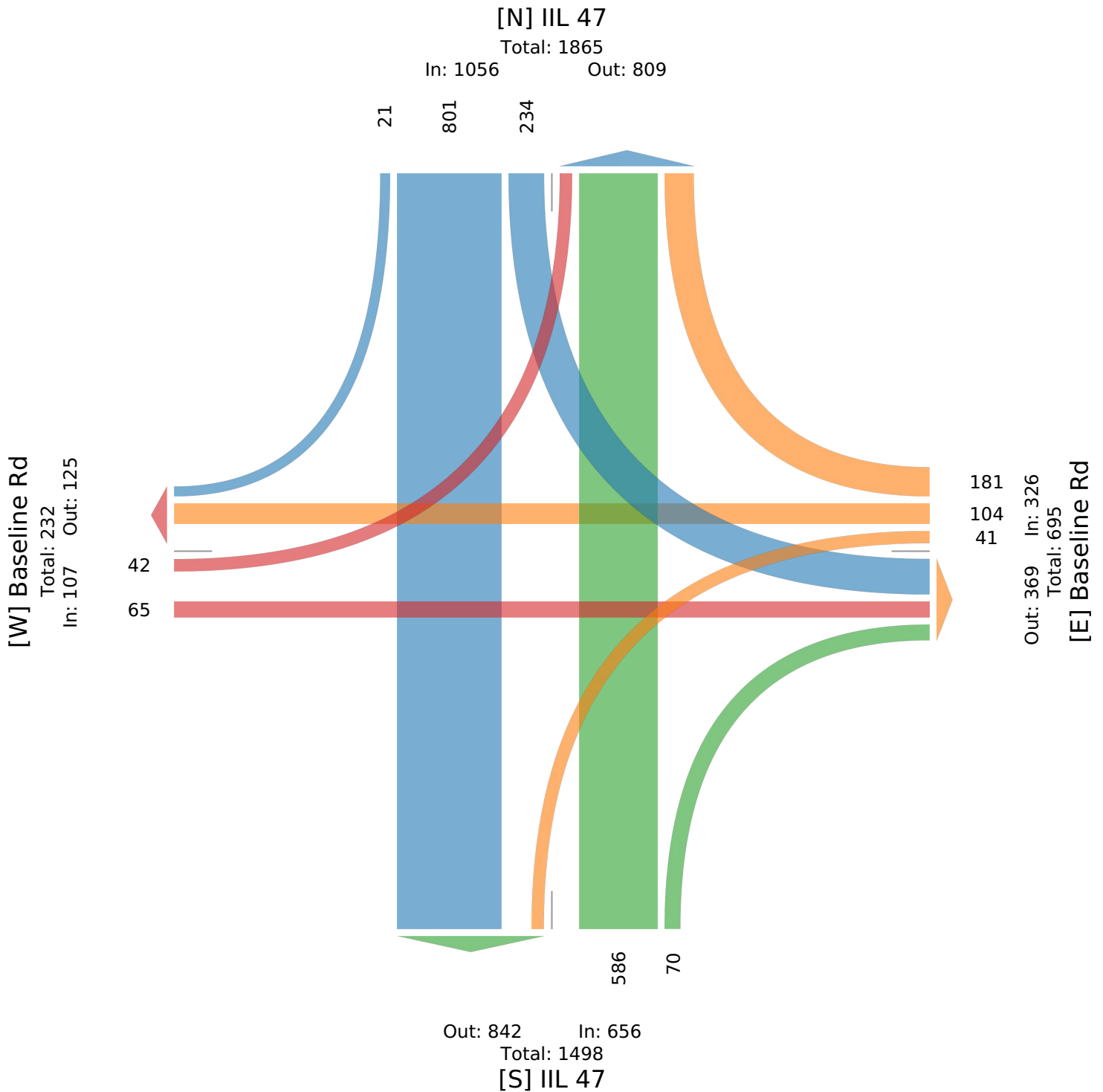
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310266, Location: 41.721774, -88.443815



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					IL 47 Northbound					IL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:00AM	14	29	7	0	50	13	13	26	1	53	6	144	5	0	155	13	87	6	0	106	364
7:15AM	11	33	3	0	47	24	18	44	0	86	8	145	10	0	163	12	81	8	0	101	397
7:30AM	13	32	2	0	47	18	17	36	0	71	5	158	15	0	178	12	100	10	0	122	418
7:45AM	9	28	6	0	43	18	18	31	0	67	8	150	10	0	168	18	127	5	0	150	428
Hourly Total	47	122	18	0	187	73	66	137	1	277	27	597	40	0	664	55	395	29	0	479	1607
8:00AM	12	26	6	0	44	20	21	21	0	62	4	148	14	0	166	14	95	12	0	121	393
8:15AM	14	20	4	0	38	20	25	22	0	67	2	139	20	0	161	13	104	12	0	129	395
8:30AM	72	28	5	0	105	16	19	17	0	52	4	124	14	0	142	9	107	6	0	122	421
8:45AM	61	31	5	0	97	17	17	13	0	47	3	118	12	0	133	17	99	10	0	126	403
Hourly Total	159	105	20	0	284	73	82	73	0	228	13	529	60	0	602	53	405	40	0	498	1612
4:00PM	10	26	6	1	43	16	34	24	0	74	11	129	40	0	180	26	164	11	0	201	498
4:15PM	11	32	6	0	49	15	36	20	0	71	7	113	16	0	136	37	166	7	0	210	466
4:30PM	11	25	6	0	42	18	31	13	0	62	8	150	30	0	188	29	154	13	0	196	488
4:45PM	6	20	8	0	34	19	30	13	0	62	9	140	35	0	184	40	175	12	0	227	507
Hourly Total	38	103	26	1	168	68	131	70	0	269	35	532	121	0	688	132	659	43	0	834	1959
5:00PM	8	29	6	0	43	28	35	19	0	82	9	125	32	0	166	23	168	11	0	202	493
5:15PM	13	22	7	0	42	21	32	26	0	79	11	134	42	0	187	34	161	14	0	209	517
5:30PM	9	25	8	0	42	26	34	19	0	79	8	134	43	0	185	26	194	10	0	230	536
5:45PM	7	24	9	0	40	17	19	16	0	52	8	119	30	0	157	44	189	10	0	243	492
Hourly Total	37	100	30	0	167	92	120	80	0	292	36	512	147	0	695	127	712	45	0	884	2038
Total	281	430	94	1	806	306	399	360	1	1066	111	2170	368	0	2649	367	2171	157	0	2695	7216
% Approach	34.9%	53.3%	11.7%	0.1%	-	28.7%	37.4%	33.8%	0.1%	-	4.2%	81.9%	13.9%	0%	-	13.6%	80.6%	5.8%	0%	-	-
% Total	3.9%	6.0%	1.3%	0%	11.2%	4.2%	5.5%	5.0%	0%	14.8%	1.5%	30.1%	5.1%	0%	36.7%	5.1%	30.1%	2.2%	0%	37.3%	-
Lights	201	403	90	1	695	303	376	336	1	1016	103	1986	359	0	2448	344	2004	86	0	2434	6593
% Lights	71.5%	93.7%	95.7%	100%	86.2%	99.0%	94.2%	93.3%	100%	95.3%	92.8%	91.5%	97.6%	0%	92.4%	93.7%	92.3%	54.8%	0%	90.3%	91.4%
Articulated Trucks	62	7	3	0	72	0	3	16	0	19	6	132	1	0	139	18	118	49	0	185	415
% Articulated Trucks	22.1%	1.6%	3.2%	0%	8.9%	0%	0.8%	4.4%	0%	1.8%	5.4%	6.1%	0.3%	0%	5.2%	4.9%	5.4%	31.2%	0%	6.9%	5.8%
Buses and Single-Unit Trucks	18	20	1	0	39	3	20	8	0	31	2	52	8	0	62	5	49	22	0	76	208
% Buses and Single-Unit Trucks	6.4%	4.7%	1.1%	0%	4.8%	1.0%	5.0%	2.2%	0%	2.9%	1.8%	2.4%	2.2%	0%	2.3%	1.4%	2.3%	14.0%	0%	2.8%	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

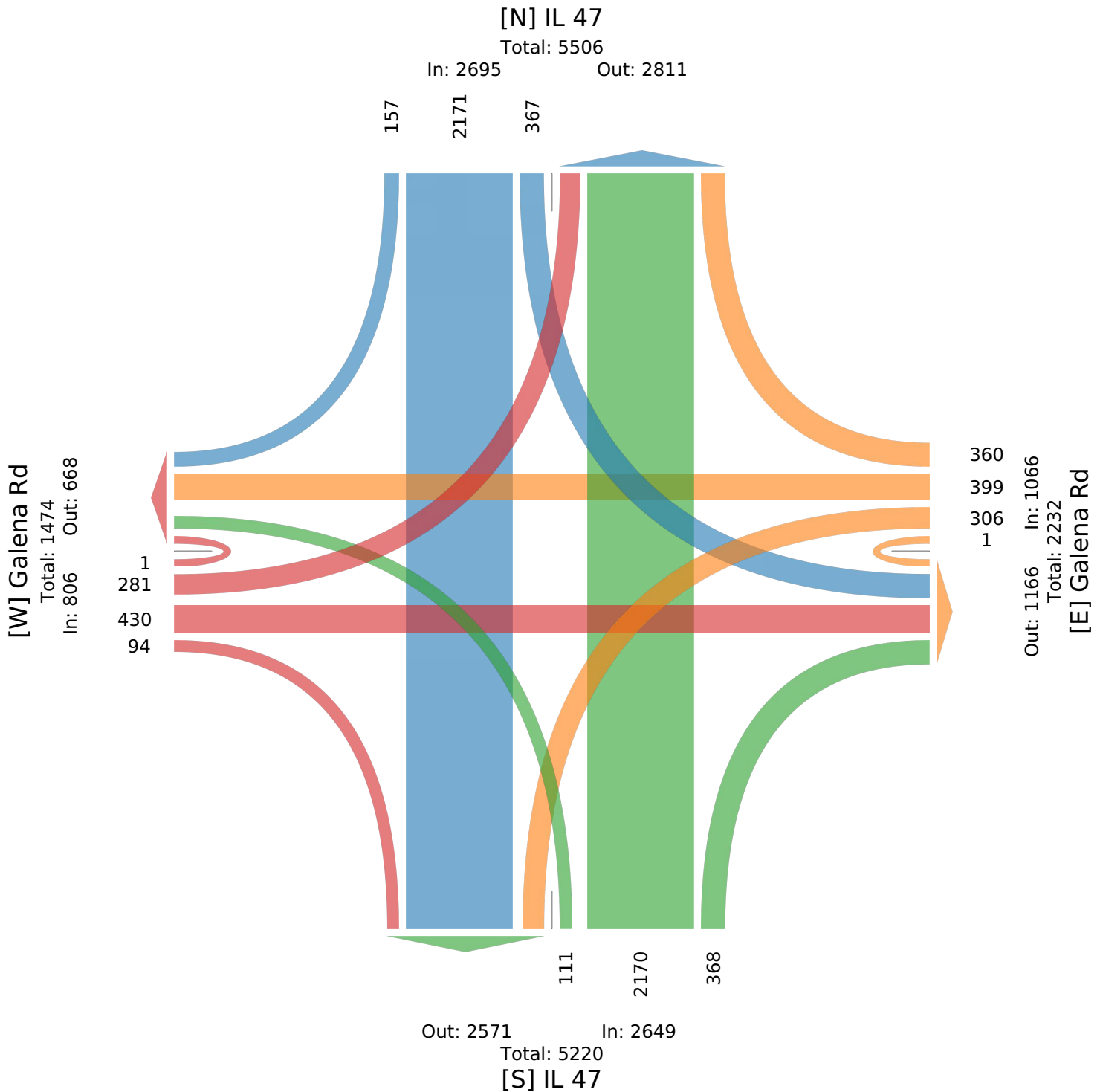
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					IL 47 Northbound					IL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:45AM	9	28	6	0	43	18	18	31	0	67	8	150	10	0	168	18	127	5	0	150	428
8:00AM	12	26	6	0	44	20	21	21	0	62	4	148	14	0	166	14	95	12	0	121	393
8:15AM	14	20	4	0	38	20	25	22	0	67	2	139	20	0	161	13	104	12	0	129	395
8:30AM	72	28	5	0	105	16	19	17	0	52	4	124	14	0	142	9	107	6	0	122	421
Total	107	102	21	0	230	74	83	91	0	248	18	561	58	0	637	54	433	35	0	522	1637
% Approach	46.5%	44.3%	9.1%	0%	-	29.8%	33.5%	36.7%	0%	-	2.8%	88.1%	9.1%	0%	-	10.3%	83.0%	6.7%	0%	-	-
% Total	6.5%	6.2%	1.3%	0%	14.1%	4.5%	5.1%	5.6%	0%	15.1%	1.1%	34.3%	3.5%	0%	38.9%	3.3%	26.5%	2.1%	0%	31.9%	-
PHF	0.372	0.911	0.875	-	0.548	0.925	0.830	0.734	-	0.925	0.563	0.935	0.725	-	0.948	0.750	0.852	0.729	-	0.870	0.956
Lights	80	96	18	0	194	72	72	83	0	227	16	499	52	0	567	44	386	12	0	442	1430
% Lights	74.8%	94.1%	85.7%	0%	84.3%	97.3%	86.7%	91.2%	0%	91.5%	88.9%	88.9%	89.7%	0%	89.0%	81.5%	89.1%	34.3%	0%	84.7%	87.4%
Articulated Trucks	16	1	2	0	19	0	2	6	0	8	1	43	1	0	45	7	30	13	0	50	122
% Articulated Trucks	15.0%	1.0%	9.5%	0%	8.3%	0%	2.4%	6.6%	0%	3.2%	5.6%	7.7%	1.7%	0%	7.1%	13.0%	6.9%	37.1%	0%	9.6%	7.5%
Buses and Single-Unit Trucks	11	5	1	0	17	2	9	2	0	13	1	19	5	0	25	3	17	10	0	30	85
% Buses and Single-Unit Trucks	10.3%	4.9%	4.8%	0%	7.4%	2.7%	10.8%	2.2%	0%	5.2%	5.6%	3.4%	8.6%	0%	3.9%	5.6%	3.9%	28.6%	0%	5.7%	5.2%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

AM Peak (7:45 AM - 8:45 AM)

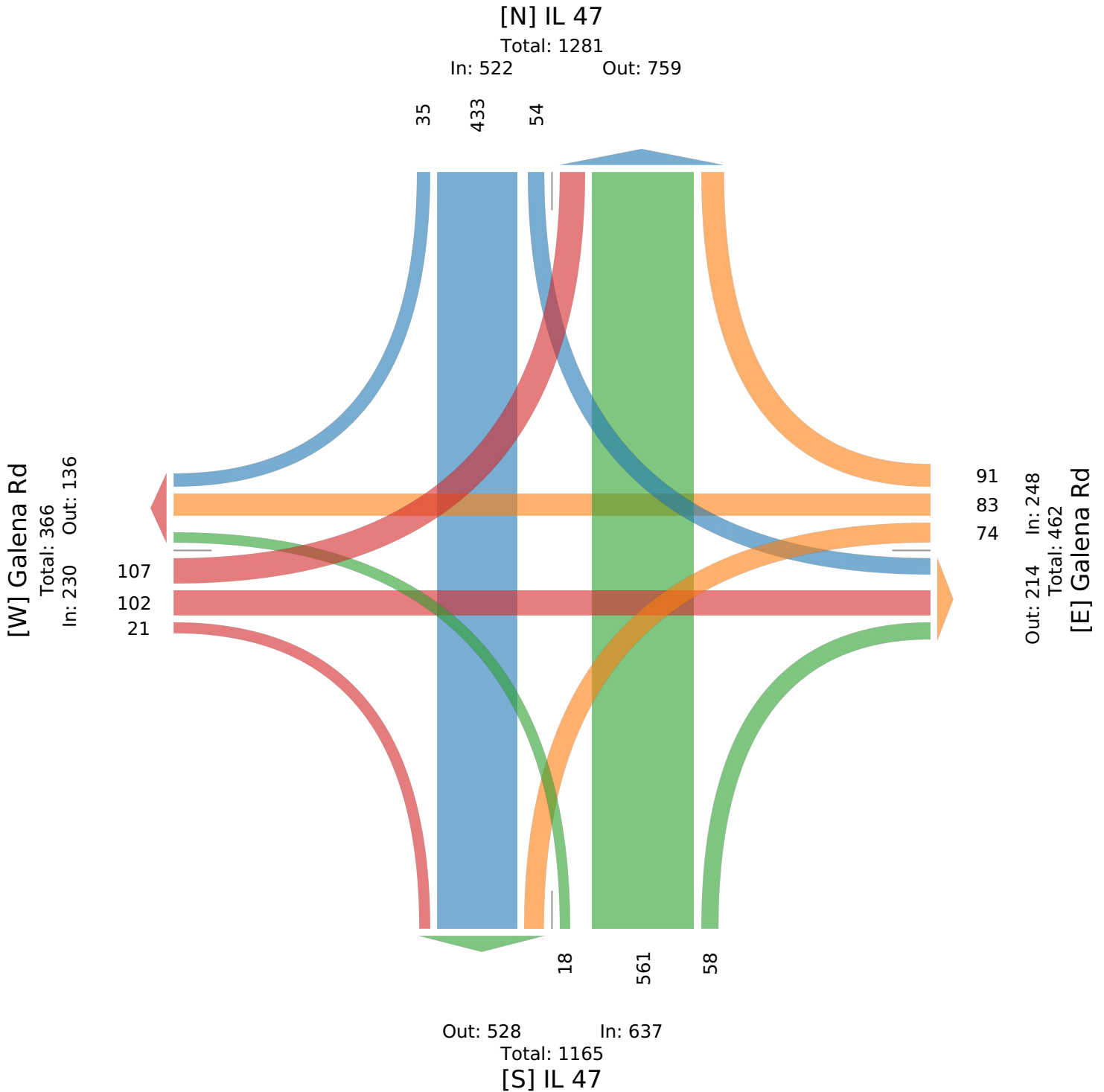
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					IL 47 Northbound					IL 47 Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 4:45PM	6	20	8	0	34	19	30	13	0	62	9	140	35	0	184	40	175	12	0	227	507
5:00PM	8	29	6	0	43	28	35	19	0	82	9	125	32	0	166	23	168	11	0	202	493
5:15PM	13	22	7	0	42	21	32	26	0	79	11	134	42	0	187	34	161	14	0	209	517
5:30PM	9	25	8	0	42	26	34	19	0	79	8	134	43	0	185	26	194	10	0	230	536
Total	36	96	29	0	161	94	131	77	0	302	37	533	152	0	722	123	698	47	0	868	2053
% Approach	22.4%	59.6%	18.0%	0%	-	31.1%	43.4%	25.5%	0%	-	5.1%	73.8%	21.1%	0%	-	14.2%	80.4%	5.4%	0%	-	-
% Total	1.8%	4.7%	1.4%	0%	7.8%	4.6%	6.4%	3.8%	0%	14.7%	1.8%	26.0%	7.4%	0%	35.2%	6.0%	34.0%	2.3%	0%	42.3%	-
PHF	0.692	0.828	0.906	-	0.936	0.839	0.936	0.740	-	0.921	0.841	0.952	0.884	-	0.965	0.769	0.899	0.839	-	0.943	0.958
Lights	20	91	28	0	139	94	128	75	0	297	36	505	152	0	693	122	666	32	0	820	1949
% Lights	55.6%	94.8%	96.6%	0%	86.3%	100%	97.7%	97.4%	0%	98.3%	97.3%	94.7%	100%	0%	96.0%	99.2%	95.4%	68.1%	0%	94.5%	94.9%
Articulated Trucks	15	3	1	0	19	0	0	0	0	0	1	15	0	0	16	0	22	14	0	36	71
% Articulated Trucks	41.7%	3.1%	3.4%	0%	11.8%	0%	0%	0%	0%	0%	2.7%	2.8%	0%	0%	2.2%	0%	3.2%	29.8%	0%	4.1%	3.5%
Buses and Single-Unit Trucks	1	2	0	0	3	0	3	2	0	5	0	13	0	0	13	1	10	1	0	12	33
% Buses and Single-Unit Trucks	2.8%	2.1%	0%	0%	1.9%	0%	2.3%	2.6%	0%	1.7%	0%	2.4%	0%	0%	1.8%	0.8%	1.4%	2.1%	0%	1.4%	1.6%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #4: IL 72 at Galena Rd - TMC

Tue Jun 24, 2025

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

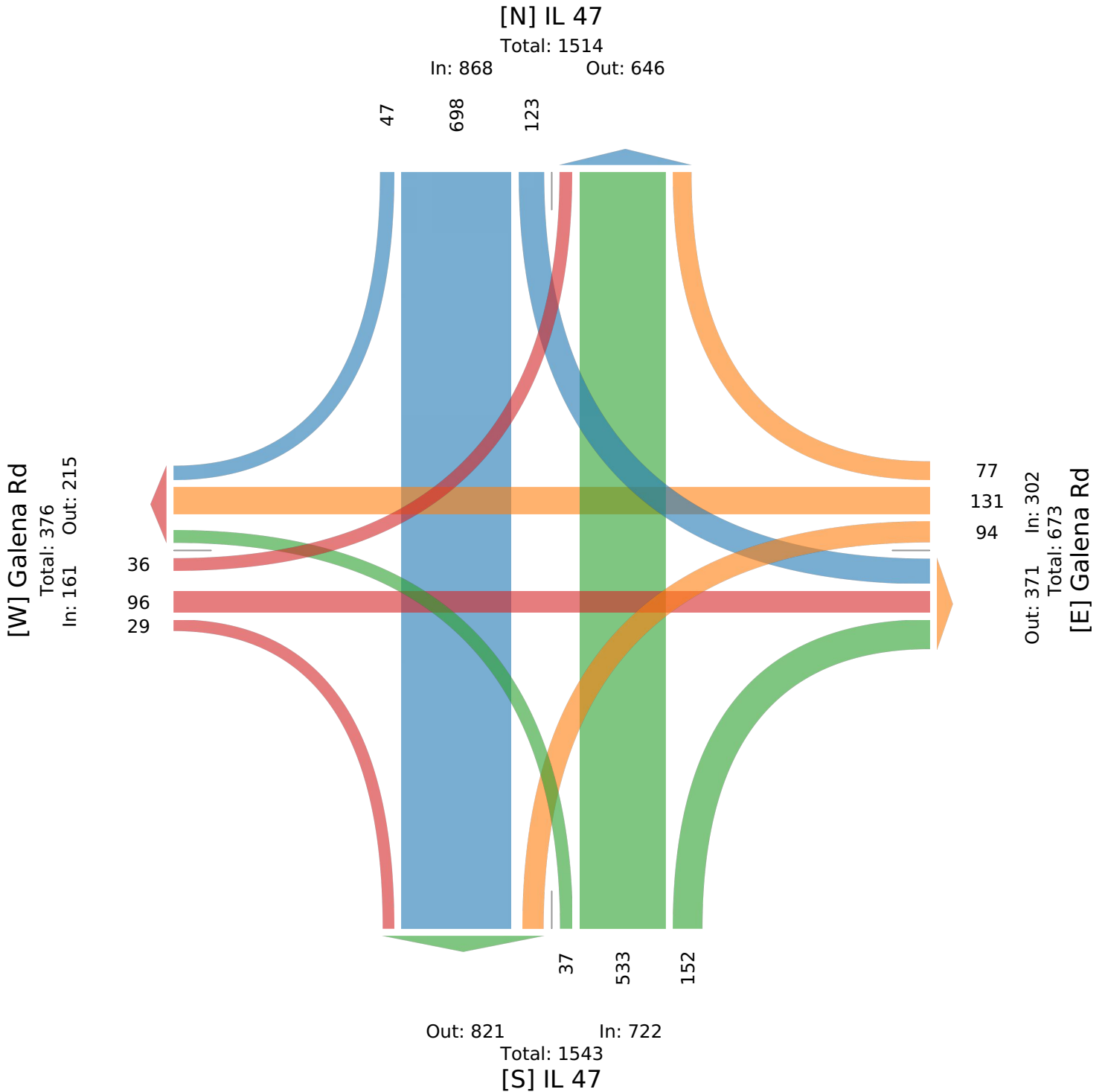
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310267, Location: 41.705327, -88.446401



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					Eldamain Rd Northbound					Ashe Rd Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:00AM	28	35	6	0	69	4	9	4	0	17	3	106	18	0	127	1	24	14	0	39	252
7:15AM	38	22	9	0	69	10	19	6	0	35	3	94	17	0	114	1	23	14	0	38	256
7:30AM	36	23	11	0	70	15	19	2	0	36	7	101	25	0	133	5	28	24	0	57	296
7:45AM	30	26	12	0	68	12	16	6	0	34	6	86	14	0	106	2	32	19	0	53	261
Hourly Total	132	106	38	0	276	41	63	18	0	122	19	387	74	0	480	9	107	71	0	187	1065
8:00AM	20	27	11	0	58	16	16	2	0	34	4	69	13	0	86	1	19	16	0	36	214
8:15AM	25	20	11	0	56	14	17	3	0	34	5	35	40	0	80	1	29	21	0	51	221
8:30AM	4	37	12	0	53	15	14	2	0	31	9	0	71	0	80	0	33	10	0	43	207
8:45AM	1	34	12	0	47	20	13	0	0	33	12	4	63	0	79	5	31	14	0	50	209
Hourly Total	50	118	46	0	214	65	60	7	0	132	30	108	187	0	325	7	112	61	0	180	851
4:00PM	16	16	7	0	39	13	37	1	0	51	5	28	16	0	49	8	112	51	0	171	310
4:15PM	23	28	18	0	69	18	34	6	0	58	8	43	16	0	67	2	105	39	0	146	340
4:30PM	23	27	8	0	58	12	34	3	0	49	14	39	10	0	63	7	93	39	0	139	309
4:45PM	15	23	6	0	44	18	30	2	0	50	8	32	14	0	54	4	121	49	0	174	322
Hourly Total	77	94	39	0	210	61	135	12	0	208	35	142	56	0	233	21	431	178	0	630	1281
5:00PM	12	21	8	0	41	16	35	5	0	56	10	42	18	0	70	6	125	43	0	174	341
5:15PM	13	16	5	0	34	20	34	1	0	55	5	39	19	0	63	4	107	37	0	148	300
5:30PM	18	26	8	0	52	20	33	2	0	55	10	24	16	0	50	3	92	39	0	134	291
5:45PM	15	27	6	0	48	12	24	2	0	38	3	30	6	0	39	2	84	34	0	120	245
Hourly Total	58	90	27	0	175	68	126	10	0	204	28	135	59	0	222	15	408	153	0	576	1177
Total	317	408	150	0	875	235	384	47	0	666	112	772	376	0	1260	52	1058	463	0	1573	4374
% Approach	36.2%	46.6%	17.1%	0%	-	35.3%	57.7%	7.1%	0%	-	8.9%	61.3%	29.8%	0%	-	3.3%	67.3%	29.4%	0%	-	-
% Total	7.2%	9.3%	3.4%	0%	20.0%	5.4%	8.8%	1.1%	0%	15.2%	2.6%	17.6%	8.6%	0%	28.8%	1.2%	24.2%	10.6%	0%	36.0%	-
Lights	315	401	130	0	846	154	370	46	0	570	101	764	284	0	1149	52	1050	461	0	1563	4128
% Lights	99.4%	98.3%	86.7%	0%	96.7%	65.5%	96.4%	97.9%	0%	85.6%	90.2%	99.0%	75.5%	0%	91.2%	100%	99.2%	99.6%	0%	99.4%	94.4%
Articulated Trucks	1	2	13	0	16	55	8	0	0	63	4	1	59	0	64	0	1	0	0	1	144
% Articulated Trucks	0.3%	0.5%	8.7%	0%	1.8%	23.4%	2.1%	0%	0%	9.5%	3.6%	0.1%	15.7%	0%	5.1%	0%	0.1%	0%	0%	0.1%	3.3%
Buses and Single-Unit Trucks	1	5	7	0	13	26	6	1	0	33	7	7	33	0	47	0	7	2	0	9	102
% Buses and Single-Unit Trucks	0.3%	1.2%	4.7%	0%	1.5%	11.1%	1.6%	2.1%	0%	5.0%	6.3%	0.9%	8.8%	0%	3.7%	0%	0.7%	0.4%	0%	0.6%	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

Full Length (7 AM-9 AM, 4 PM-6 PM)

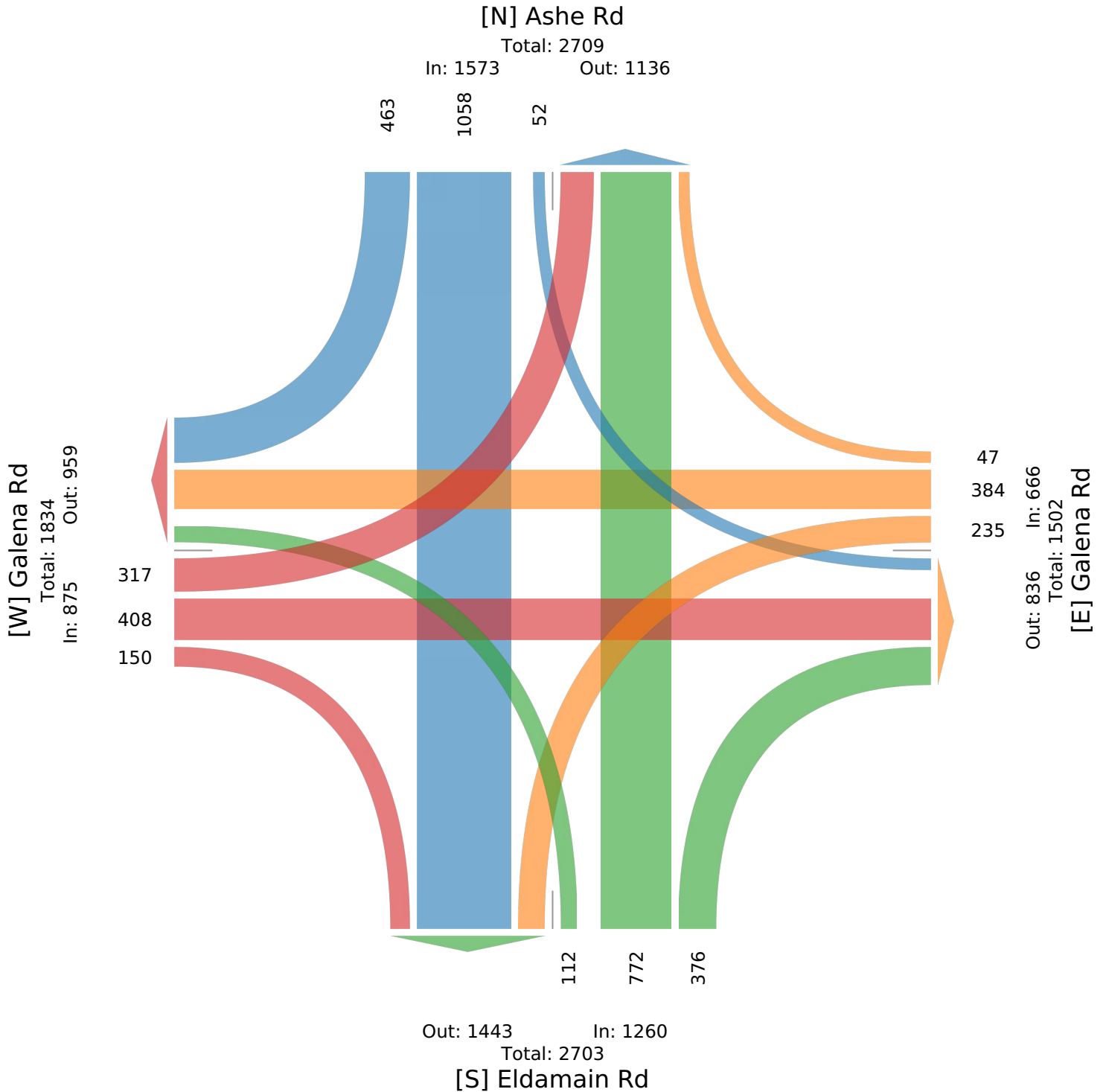
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					Eldamain Rd Northbound					Ashe Rd Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 7:00AM	28	35	6	0	69	4	9	4	0	17	3	106	18	0	127	1	24	14	0	39	252
7:15AM	38	22	9	0	69	10	19	6	0	35	3	94	17	0	114	1	23	14	0	38	256
7:30AM	36	23	11	0	70	15	19	2	0	36	7	101	25	0	133	5	28	24	0	57	296
7:45AM	30	26	12	0	68	12	16	6	0	34	6	86	14	0	106	2	32	19	0	53	261
Total	132	106	38	0	276	41	63	18	0	122	19	387	74	0	480	9	107	71	0	187	1065
% Approach	47.8%	38.4%	13.8%	0%	-	33.6%	51.6%	14.8%	0%	-	4.0%	80.6%	15.4%	0%	-	4.8%	57.2%	38.0%	0%	-	-
% Total	12.4%	10.0%	3.6%	0%	25.9%	3.8%	5.9%	1.7%	0%	11.5%	1.8%	36.3%	6.9%	0%	45.1%	0.8%	10.0%	6.7%	0%	17.6%	-
PHF	0.868	0.757	0.792	-	0.986	0.683	0.829	0.750	-	0.847	0.679	0.913	0.740	-	0.902	0.450	0.836	0.740	-	0.820	0.899
Lights	130	103	30	0	263	17	61	18	0	96	16	386	42	0	444	9	104	70	0	183	986
% Lights	98.5%	97.2%	78.9%	0%	95.3%	41.5%	96.8%	100%	0%	78.7%	84.2%	99.7%	56.8%	0%	92.5%	100%	97.2%	98.6%	0%	97.9%	92.6%
Articulated Trucks	1	1	4	0	6	16	1	0	0	17	1	0	17	0	18	0	0	0	0	0	41
% Articulated Trucks	0.8%	0.9%	10.5%	0%	2.2%	39.0%	1.6%	0%	0%	13.9%	5.3%	0%	23.0%	0%	3.8%	0%	0%	0%	0%	0%	3.8%
Buses and Single-Unit Trucks	1	2	4	0	7	8	1	0	0	9	2	1	15	0	18	0	3	1	0	4	38
% Buses and Single-Unit Trucks	0.8%	1.9%	10.5%	0%	2.5%	19.5%	1.6%	0%	0%	7.4%	10.5%	0.3%	20.3%	0%	3.8%	0%	2.8%	1.4%	0%	2.1%	3.6%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

AM Peak (7 AM - 8 AM)

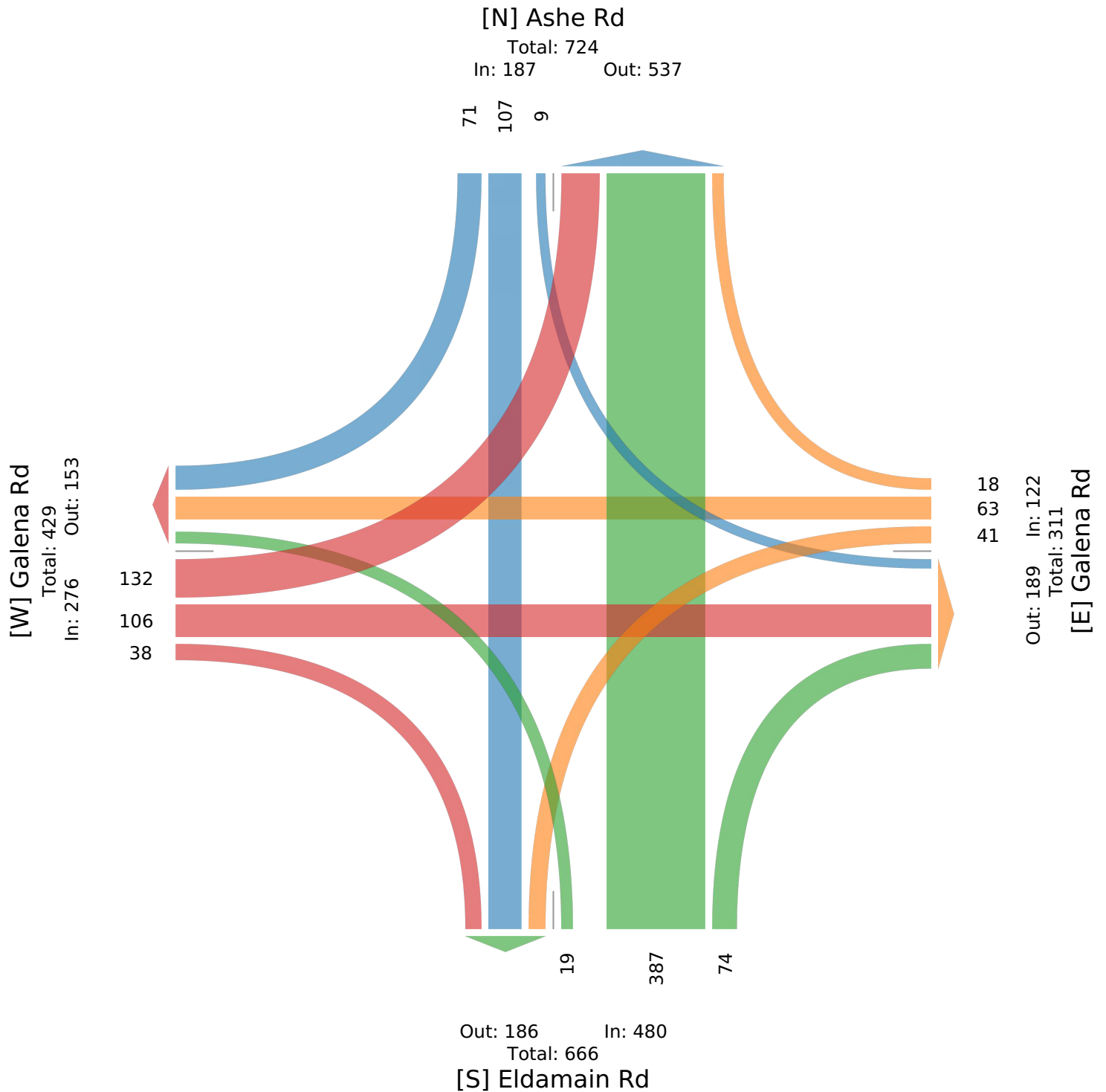
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Galena Rd Eastbound					Galena Rd Westbound					Eldamain Rd Northbound					Ashe Rd Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-06-24 4:15PM	23	28	18	0	69	18	34	6	0	58	8	43	16	0	67	2	105	39	0	146	340
4:30PM	23	27	8	0	58	12	34	3	0	49	14	39	10	0	63	7	93	39	0	139	309
4:45PM	15	23	6	0	44	18	30	2	0	50	8	32	14	0	54	4	121	49	0	174	322
5:00PM	12	21	8	0	41	16	35	5	0	56	10	42	18	0	70	6	125	43	0	174	341
Total	73	99	40	0	212	64	133	16	0	213	40	156	58	0	254	19	444	170	0	633	1312
% Approach	34.4%	46.7%	18.9%	0%	-	30.0%	62.4%	7.5%	0%	-	15.7%	61.4%	22.8%	0%	-	3.0%	70.1%	26.9%	0%	-	-
% Total	5.6%	7.5%	3.0%	0%	16.2%	4.9%	10.1%	1.2%	0%	16.2%	3.0%	11.9%	4.4%	0%	19.4%	1.4%	33.8%	13.0%	0%	48.2%	-
PHF	0.793	0.884	0.556	-	0.768	0.889	0.950	0.667	-	0.918	0.714	0.907	0.806	-	0.907	0.679	0.888	0.867	-	0.909	0.962
Lights	73	96	36	0	205	50	127	16	0	193	40	154	45	0	239	19	442	170	0	631	1268
% Lights	100%	97.0%	90.0%	0%	96.7%	78.1%	95.5%	100%	0%	90.6%	100%	98.7%	77.6%	0%	94.1%	100%	99.5%	100%	0%	99.7%	96.6%
Articulated Trucks	0	1	4	0	5	11	5	0	0	16	0	0	9	0	9	0	1	0	0	1	31
% Articulated Trucks	0%	1.0%	10.0%	0%	2.4%	17.2%	3.8%	0%	0%	7.5%	0%	0%	15.5%	0%	3.5%	0%	0.2%	0%	0%	0.2%	2.4%
Buses and Single-Unit Trucks	0	2	0	0	2	3	1	0	0	4	0	2	4	0	6	0	1	0	0	1	13
% Buses and Single-Unit Trucks	0%	2.0%	0%	0%	0.9%	4.7%	0.8%	0%	0%	1.9%	0%	1.3%	6.9%	0%	2.4%	0%	0.2%	0%	0%	0.2%	1.0%

* L: Left, R: Right, T: Thru, U: U-Turn

TMC #5: Eldamain Rd at Galena Rd - TMC

Tue Jun 24, 2025

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

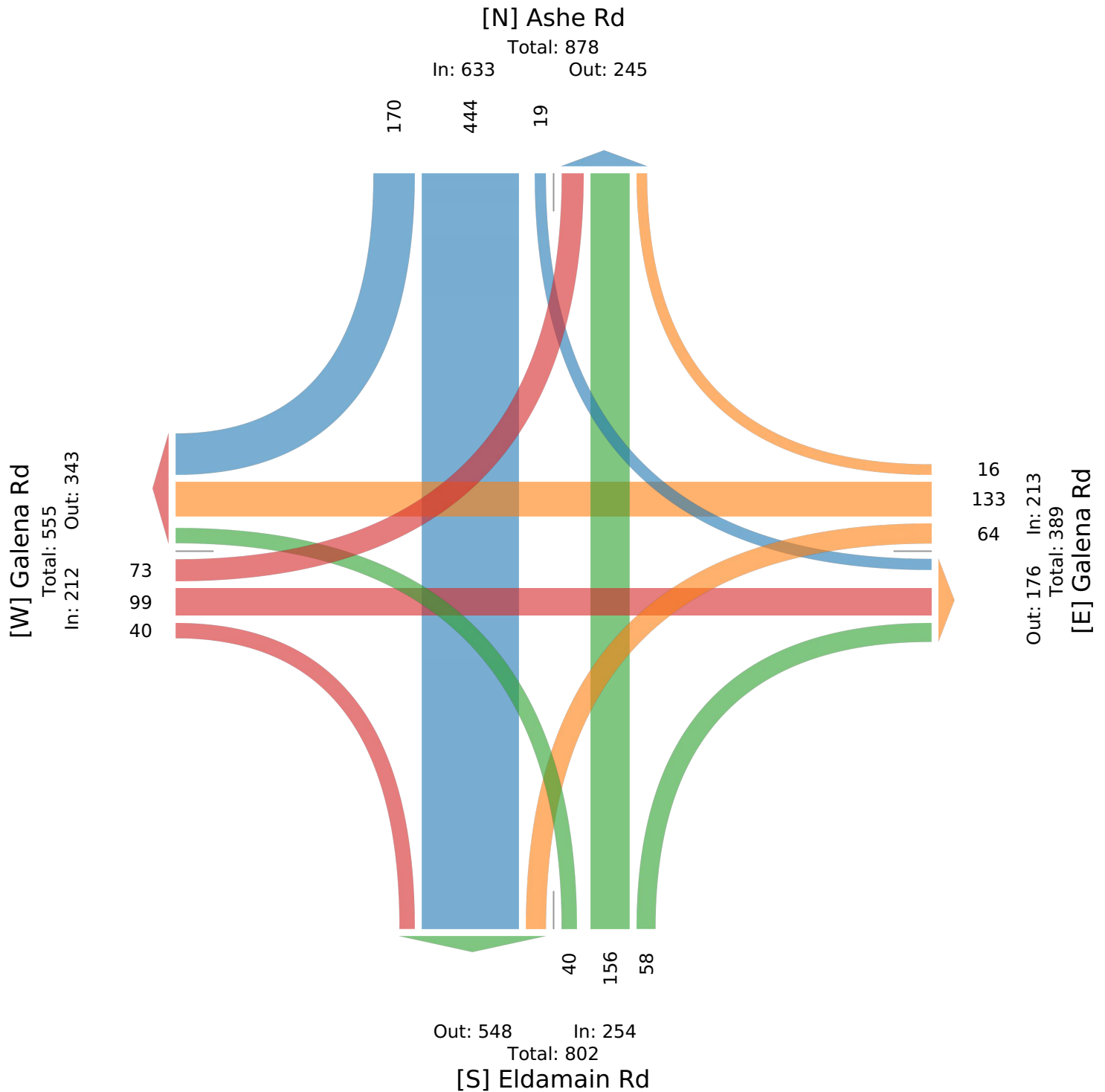
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1310268, Location: 41.712512, -88.484619



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Appendix B – Methodology and CMAQ Correspondance

Methodology Memorandum

Project Understanding

The proposed industrial development is in the City of Yorkville and District 3 of the Illinois Department of Transportation. The site is generally located south of Baseline Road, North of Galena Road, east of Elda m Road, and west of IL 47. The project site is adjacent to both City and State maintained roadways which will require coordination with both interties.

The purposes of the Traffic Impact Analysis (TIA) are to evaluate proposed traffic conditions under build and no-build conditions as it pertains to the proposed development. The TIA will be developed in accordance with the TIA Guidelines contained within the Yorkville, IL Unified Development Ordinance. The proposed scope of services will be performed for normal operating time periods and peak operating time periods.

Scope of Services

The following sections detail the proposed scope of work. The following guidelines will be followed in the preparation of the traffic impact analysis:

- Highway Capacity Manual, 7th Edition
- Institute of Transportation Engineers Trip Generation Manual, 11th Edition
- Yorkville, IL Unified Development Ordinance Traffic Study Guidelines
- IDOT Bureau of Design and Environmental Manual

Project Information

The proposed project site consists of approximately 1,000 acres of Data Center and supporting utility land uses. Two sizes of Data Center buildings are planned for the proposed development, consisting of fourteen (14) total buildings. These include:

- Eleven (11) Data Centers at approximately 1,361,200 SF each
- Three (3) Data Centers at approximately 780,000 SF each

The proposed project site location in relation to Yorkville, IL and Montgomery, IL is shown in Figure 1. A Preliminary Site Plan is shown in Figure 2, depicting general footprint and proposed access locations for the development.



Figure 1: Project Site Location

Definition of the Study Area

The proposed project site is abutted by three IDOT classified roadways and one locally classified roadway, including:

- Hwy 47 – Classified as a Other Principal Arterial by IDOT
- Galena Road – Classified as a Minor Arterial by IDOT
- Ashe Road – Classified as a Minor Arterial by IDOT
- Baseline Road – Classified as a Local Street by IDOT

Figure 3 depicts the surrounding roadways as classified by IDOT.



Figure 3: IDOT Roadway Classifications

Additionally, abutting roadways to the project site are maintained by the following agencies, according to the IDOT Roadway Jurisdiction Map:

- Hwy 47 – Maintained by IDOT
- Galena Road – Maintained by Kendall County
- Ashe Road – Maintained by Kendall County
- Baseline Road – Maintained by Yorkville, IL

Traffic Data Collection

Traffic data collection will be performed for the periods from 7:00 AM-9:00 AM and 4:00 PM-6:00 PM at the following locations:

- Study Int #1 – Eldamain Road at Baseline Road
- Study Int #2 – IL 47 at Baseline Road
- Study Int #3 – IL 47 at Galena Road
- Study Int #4 – Eldamain Road at Galena Road

Trip Generation Data

Trips generated by the proposed development were calculated based upon the intended land use and density. Generated trips were calculated per Institute of Transportation Engineers (ITE) trip generation methodologies utilizing the current *ITE Trip Generation Manual, 11th Edition*. For the purposes of this assessment, Land Use Code 160 – Data Center was referenced. Table 1 summarizes resulting trip generation projections for the proposed development considering each building's respective size and quantity.

Table 1: ITE Trip Generation Calculations

Development		Units	AM Hour			PM Hour		
Number of Buildings	KSF	Daily*	Total*	In*	Out*	Total*	In**	Out**
11	1,361.2	1,348	171	94	77	144	43	101
3	780	772	96	53	43	80	24	56
Total		17,144	2,169	1,193	976	1,824	545	1,279

Note: Trip Generation Calculations Presented per Building

* Average Rate - Referenced Average Rate Equation based on few numbers of studies and less than 0.75 R²

- Weekday: Trips = 0.99 x (Units)
- Weekday, AM Peak Hour of Adjacent Street: Trips = 0.11 x (Units)
- Weekday, PM Peak Hour of Adjacent Street: Trips = 0.09 x (Units)



** Fitted Curve – Referenced Fitted Curve Equation based on an R² greater than 0.75

- Weekday, AM Peak Hour of Adjacent Street: Trips = 0.13 x (Units) – 5.63
- Weekday, PM Peak Hour of Adjacent Street: Trips = 0.11 x (Units) – 5.65

Trip Distribution Assumptions

Trip distribution for the Traffic Study will be approached through review of historical traffic volumes and collected intersection turning movement counts and based on the weighting of traffic demand from currently serviced volumes. Figure 4 depicts the most recent average daily traffic volume data available on IDOT's online data portal.

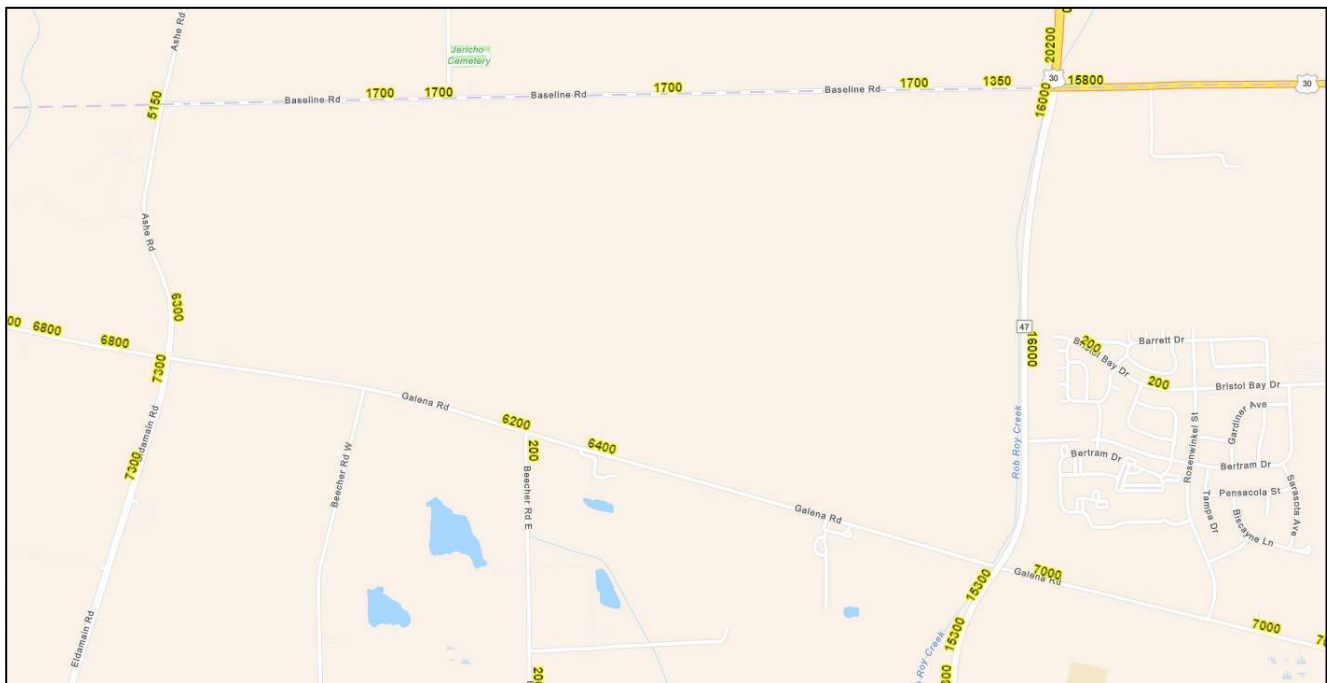


Figure 4: IDOT Average Annual Daily Traffic Volume [Accessed March 13th, 2025]

Background Growth Rate Determination

Future background traffic volume growth is anticipated to be based on correspondence with the Chicago Metropolitan Agency for Planning (CMAP). Following the Traffic Study Scoping Meeting, a request for CMAP growth rates will be prepared. No other area developments are known at this time. Potential area developments that could impact the study area will be requested during the Traffic Study Scoping Meeting.

Intersection Capacity Analysis

Intersection capacity analysis will be performed to *Highway Capacity Manual* methodologies using TrafficWare Synchro version 12. Analysis output files will be provided within the appendix of the report. A target LOS of D or better will be referenced for the purpose of considering traffic mitigation strategies.

As part of the Traffic Study Scoping meeting, existing traffic signal timing sheets within the study area will be requested. In the event that traffic signal timings are not made available, the project team will reference the collected video-based traffic counts to observe typical existing traffic signal cycle-lengths and optimize software traffic signal timings to the phasing splits.

Traffic Analysis Development

The Traffic Study will be prepared according to the following outline:

- I. Introduction**
- II. Project Conditions**
 - a. Land Uses
 - b. Roadway System
 - c. Traffic volumes
 - d. Proposed Development
 - i. Land Use Development
 - ii. Roadway Development
- III. Traffic Forecasts**
 - a. Project Traffic Volumes
 - i. Trip Generation
 - ii. Trip Distribution and Assignment
 - b. Background Traffic Volumes
 - c. Future Traffic Volumes
- IV. Traffic Analysis**
 - a. Auxiliary Lane Analysis
 - b. Traffic Signal Warrant Analysis (if necessary)
 - c. Capacity Analysis
 - i. Existing Scenario
 - ii. Background Scenario
 - iii. Future with Project Scenario
 - iv. Potential Mitigation Scenario
 - d. Queue Length Analysis
 - e. Site Circulation
 - f. Proposed Lane Configuration
- V. Conclusions**

Cope, Timothy B

From: Brad Sanderson <bsanderson@eeiweb.com>
Sent: Friday, June 13, 2025 3:39 PM
To: Cope, Timothy B
Cc: Chris Ott
Subject: RE: Project Cardinal - Traffic Study Requirements

Follow Up Flag: Follow up
Flag Status: Flagged

Two more items to note:

- It would be advisable to contact the Kendall County Highway Department to gather their input.
- The City is looking for commentary on the construction traffic and management also.

Thanks.

BRADLEY P. SANDERSON, PE

Chief Operating Officer / President

bsanderson@eeiweb.com

Direct: 630.466.6720 / Cell: 630.816.0957 / Main: 630.466.6700

52 Wheeler Rd, Sugar Grove, IL 60554

eeiweb.com



ENGINEERING ENTERPRISES, INC.

OUTSTANDING SERVICE | EVERY CLIENT | EVERY DAY



From: Brad Sanderson <bsanderson@eeiweb.com>
Sent: Friday, June 13, 2025 3:29 PM
To: Cope, Timothy B <tbcopes@burnsmcd.com>
Cc: Chris Ott <COtt@eeiweb.com>
Subject: RE: Project Cardinal - Traffic Study Requirements

Good afternoon,

Here are a few comments from us.

Let us know if you have any questions.

BRADLEY P. SANDERSON, PE

Chief Operating Officer / President

bsanderson@eeiweb.com

Direct: 630.466.6720 / Cell: 630.816.0957 / Main: 630.466.6700

52 Wheeler Rd, Sugar Grove, IL 60554

eeiweb.com



From: Cope, Timothy B <tbcope@burnsmcd.com>
Sent: Tuesday, June 10, 2025 2:10 PM
To: Brad Sanderson <bsanderson@eeiweb.com>
Subject: Project Cardinal - Traffic Study Requirements

EXTERNAL SENDER: This email originated outside of EEI. Do not click links, open attachments, or respond if it appears to be suspicious.

Hi Brad,

Sorry again for the phone tag this morning. Like mentioned in the voice mail, my name is Tim Cope and I am working on behalf of Project Cardinal to efforts surround the Traffic Study and was hoping to circle up regarding City of Yorkville requirements. I did read through the Unified Development Ordinance for Yorkville and in-line on the framework of evaluation but am hoping to gather your input on the below:

- Traffic Counts
 - We're hoping to schedule traffic counts soon, we're planning a study extent of the four corner intersections of the property, including:
 - Ashe Rd at Baseline Rd
 - IL 47 at Baseline Rd
 - IL 47 at Galena Rd, and
 - Ashe Rd at Baseline Rd **We are assuming this is meant to say Ashe & Galena? We would also add Baseline Road and Mighell Road as well.**
 - I do not see any immediately adjacent schools to significantly influence peak hour traffic counts.
 - **Is collecting traffic counts in late-June acceptable to the City? Yes.**
- Analysis Tool
 - Our hope is to use TrafficWare Synchro to evaluate intersection control but are also okay in using PTV Vistro or McTrans HCS.
Does the City have any analysis software preferences? Either is acceptable.
- Neighboring Developments
 - My understanding is that other neighboring development projects are in the works.
Can the City please confirm what (if any) adjacent project traffic demand is to be included as part of the traffic analysis? We will share if any becomes available.

Separately, we have developed the attached memorandum pertaining to the overall planned methodology for the traffic study.

I did notice a version of this memo on the City's website so you may have already seen this. My apologies if that is the case!

Let me know if you have any questions.

Thank You,

Timothy Cope, PE, TE, PTOE

Traffic Section Manager | Project Manager

[Burns & McDonnell](#)

Galleria North Tower 1 \ 13737 Noel Rd., Suite 700 \ Dallas, TX 75240

O 816-652-2546 | E tbcope@burnsmcd.com

*Registered PE in: AZ, IL, LA, NE, NV, PR, TX, WA \ Registered TE in: CA



Please consider the environment before printing this email.

This email and any attachments are solely for the use of the addressed recipients and may contain privileged client communication or privileged work product. If you are not the intended recipient and receive this communication, please contact the sender by phone at 816-333-9400, and delete and purge this email from your email system and destroy any other electronic or printed copies. Thank you for your cooperation.

This message may contain confidential information and is intended only for the original recipient. The views or opinions presented in this message are solely those of the sender and do not necessarily represent those of the company, unless specifically stated. If you are not the intended recipient you should not disseminate, distribute or copy this message. If verification is required please request a hard-copy version. Engineering Enterprises, Incorporated 52 Wheeler Road, Sugar Grove, IL., 60554 Warning: This message was scanned for viruses, vandals and malicious content. However, we cannot guarantee that the integrity of this e-mail has been maintained in transmission and do not accept responsibility for the consequences of any virus contamination.



Chicago Metropolitan
Agency for Planning

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

July 10, 2025

Timothy Cope, PE, TE, PTOE
Traffic Section Manager | Project Manager
Burns & McDonnell
Galleria North Tower 1
13737 Noel Rd.
Suite 700
Dallas, TX 75240

Subject: Baseline Road - IL 47 - Galena Road - Ashe Road
IDOT

Dear Mr. Cope:

In response to a request made on your behalf and dated June 24, 2025, we have developed year 2050 average daily traffic (ADT) projections for the subject location. These are in a table on the following page.

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2025 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806 or email me at jrodriguez@cmap.illinois.gov

A handwritten signature in black ink, appearing to read "J. Rodriguez".

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

cc: Rios(IDOT)
2025_trafficForecasts\Yorkville\ke-07-25\ke-07-25.docx

Table:
Year 2050 ADT - Baseline Road at Ashe Road, Baseline Road at IL 47, Galena Road at IL 47,
Galena Road at Ashe Road, and Baseline Road at Mighell Road

ROAD SEGMENT	Current ADT (2023 or 2024)	Year 2050 ADT
Ashe Rd north leg at Baseline Rd	5,150	6,000
Ashe Rd south leg at Baseline Rd	7,700	9,300
Baseline Rd east leg at Ashe Rd	2,600	3,600
IL 47 north leg at Baseline Rd	20,200	36,000
IL 47 south leg at Baseline Rd	16,000	28,000
Baseline Rd west leg at IL 47	2,600	3,400
Baseline Rd east leg at IL 47	15,800	20,000
IL 47 north leg at Galena Rd	16,000	28,000
IL 47 south leg at Galena Rd	15,300	26,100
Galena Rd west leg at IL 47	5,000	6,600
Galena Rd east leg at IL 47	7,150	9,900
Ashe Rd north leg at Galena Rd	7,700	9,300
Ashe Rd south leg at Galena Rd	7,800	9,000
Galena Rd west leg at Ashe Rd	5,850	7,800
Galena Rd east leg at Ashe Rd	5,050	6,650
Mighell Rd north leg at Baseline Rd	1,350	2,050
Baseline Rd west leg at Mighell Rd	2,600	3,600
Baseline Rd east leg at Mighell Rd	2,600	3,400

Finalized by Burns & McDonnell and CMAP, July 10, 2025

TRAFFIC FORECAST RECORD

Record Number: ke-07-25

Type of Report: Projection

Year Sought: 2050

Analyst: JAR

Organization Requestion Forecast: Burns & McDonnell

Contact: Timothy Cope, PE, TE, PTOE

Email or Phone: tbcope@burnsmcd.com

Sponsor: IDOT

Date request was received: 6/24/2025

Date that response was emailed: 6/24/2025

Facility Location: Baseline Road - IL 47 - Galena Road - Ashe Road

Municipality: Yorkville

Cope, Timothy B

From: Jose Rodriguez <JRodriguez@cmap.illinois.gov>
Sent: Tuesday, June 24, 2025 4:14 PM
To: Cope, Timothy B
Subject: RE: Yorkville -CMAP Traffic Volume Projections
Attachments: Preliminary_2025_2050_projectionfactors_YorkvilleDevelopment_BurnsMcD.xlsx

Timothy:

I have developed projections with an effective 26-year growth factor (based on the CMAP model, 2025-2050, and year 2023 or year 2024 IDOT AADT) for the relevant segments.

See attached spreadsheet.

Preview (image):

TPC-1:			
	Current ADT (2023 or 2024 IDOT)		Effective 26- yr Gr Fct
Baseline Rd @Ashe Rd		Yr 2050 ADT	
Ashe Rd north .eg	5,150	6,700	1.298
Ashe Rd south .eg	7,500	9,600	1.280
Baseline Rd east .eg	25,000	31,900	1.275
TPC-2			
	Current ADT (2023 or 2024 IDOT)	Recommended	Effective 26- yr Gr Fct
Baseline Rd @IL47			
IL47 north .eg	25,200	31,900	1.262
IL47 south .eg	25,000	31,900	1.270
Baseline Rd west .eg	25,000	31,400	1.256
Baseline Rd east .eg	25,000	31,900	1.265

Please review and determine whether satisfactory – a CMAP letter will then be issued for the entirety of the 5 intersection project.

If there are any questions, please respond at your earliest convenience.

Thanks,

Jose

Jose Rodriguez
Senior Planner
Chicago Metropolitan Agency for Planning
433 West Van Buren Street
Suite 450
Chicago, IL 60607

jrodriguez@cmap.illinois.gov
312-386-8806 office
708-334-1023 direct cell

From: Cope, Timothy B <tbcope@burnsmcd.com>
Sent: Tuesday, June 24, 2025 1:17 PM
To: Jose Rodriguez <JRodriguez@cmap.illinois.gov>
Subject: CMAP Traffic Volume Projections

Hi Jose,

I received your email based on correspondence from a past project, regarding CMAP traffic volume projections. I'm hoping to request current and future traffic volumes for areas surrounding a development in Yorkville, IL. We'll take these projections for the purposes of developing traffic volume projections from existing counts around the site.

Are you the appropriate person to make this request to?

Below is a summary image for the site where blue lines indicate adjacent roadways with a matching KMZ attached.



Thank You,

Timothy Cope, PE, TE, PTOE

Traffic Section Manager | Project Manager

[Burns & McDonnell](#)

Galleria North Tower 1 \ 13737 Noel Rd., Suite 700 \ Dallas, TX 75240

O 816-652-2546 | **E** tbcope@burnsmcd.com

*Registered PE in: AZ, IL, LA, NE, NV, PR, TX, WA \ Registered TE in: CA



Explore career opportunities >

Please consider the environment before printing this email.

This email and any attachments are solely for the use of the addressed recipients and may contain privileged client communication or privileged work product. If you are not the intended recipient and receive this communication, please contact the sender by phone at 816-333-9400, and delete and purge this email from your email system and destroy any other electronic or printed copies. Thank you for your cooperation.

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

TMC # 1

Baseline Rd @ Ashe Rd

Ashe Rd north leg
 Ashe Rd south leg
 Baseline Rd east leg

Current ADT (2023 or 2024, IDOT)		Effective 26-yr Gr Fct
	Yr 2050 ADT	
5150	6,000	1.165
7700	9,300	1.208
2600	3,600	1.385

TMC # 2

Baseline Rd @ IL 47

IL 47 north leg
 IL 47 south leg
 Baseline Rd west leg
 Baseline Rd east leg

Current ADT (2023 or 2024, IDOT)		Effective 26-yr Gr Fct
	Recommended	
20,200	36,000	1.782
16,000	28,000	1.750
2,600	3,400	1.308
15,800	20,000	1.266

TMC # 3

Galena Rd @ IL 47

IL 47 north leg
 IL 47 south leg
 Galena Rd west leg
 Galena Rd east leg

Current ADT (2023 or 2024, IDOT)		Effective 26-yr Gr Fct
	Recommended	
16,000	28,000	1.750
15,300	26,100	1.706
5,000	6,600	1.320
7,150	9,900	1.385

TMC # 4

Galena Rd at Ashe Rd

Ashe Rd north leg
 Ashe Rd south leg
 Galena Rd west leg
 Galena Rd east leg

Current ADT (2023 or 2024, IDOT)		Effective 26-yr Gr Fct
	Recommended	
7,700	9,300	1.208
7,800	9,000	1.154
5,850	7,800	1.333
5,050	6,650	1.317

TMC # 5

Baseline Rd @ Mighell Rd

Mighell Rd north leg
 Baseline Rd west leg
 Baseline Rd east leg

Current ADT (2023 or 2024, IDOT)		Effective 26-yr Gr Fct
	Recommended	
1,350	2,050	1.519
2,600	3,600	1.385
2,600	3,400	1.308

Data Center

(160)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. 1000 Sq. Ft. GFA: 169

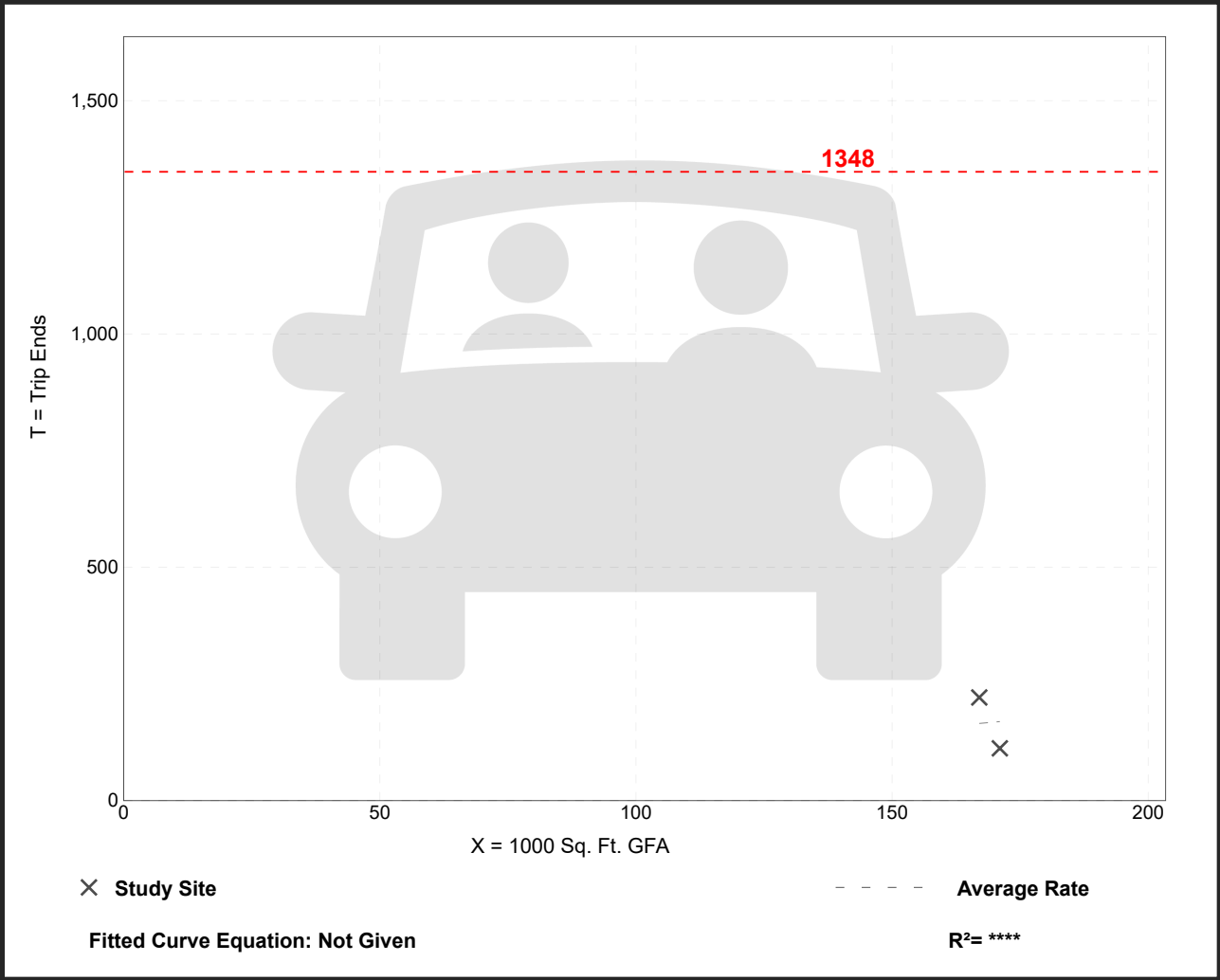
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.99	0.65 - 1.32	*

Data Plot and Equation

Caution – Small Sample Size



Data Center

(160)

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: 6

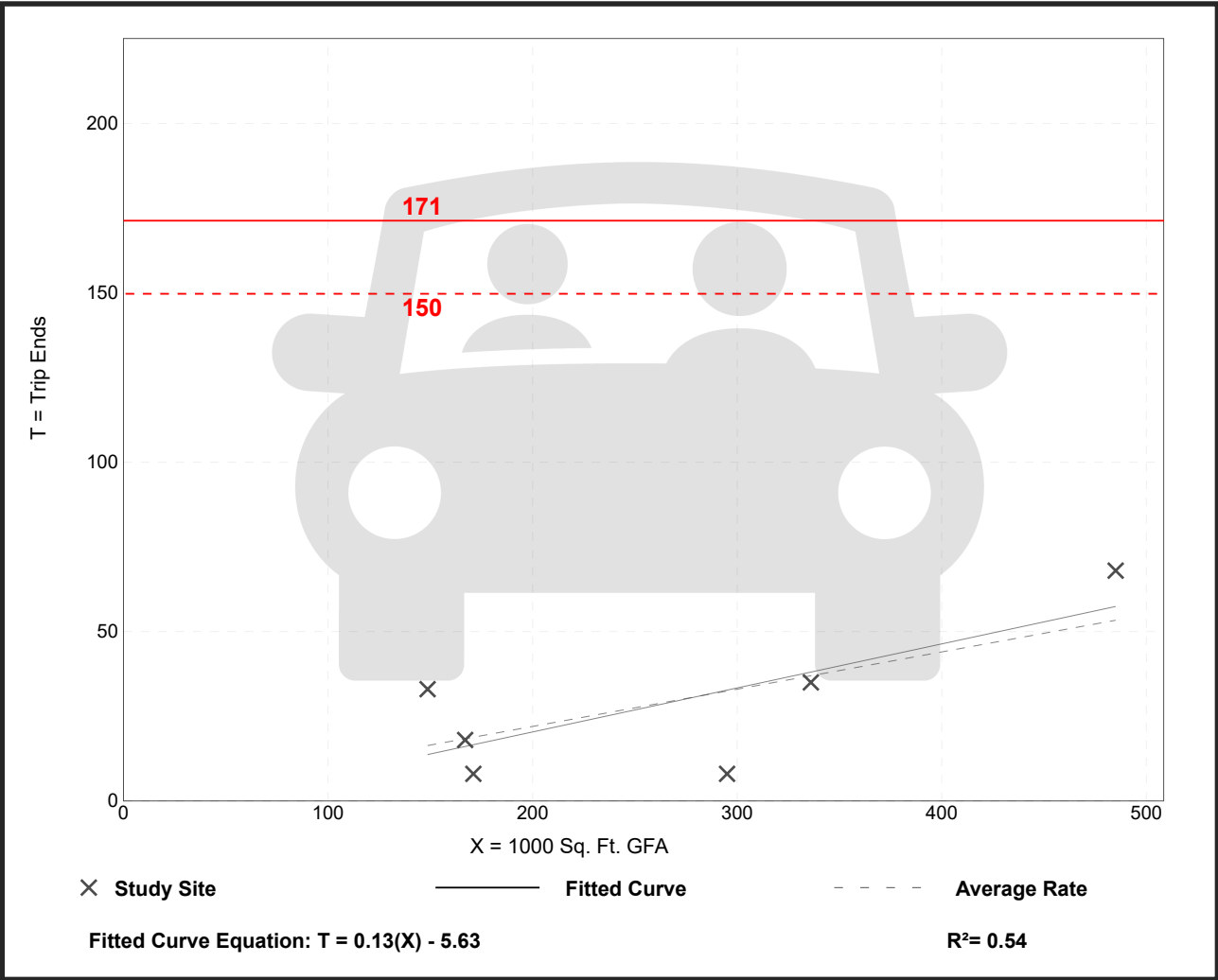
Avg. 1000 Sq. Ft. GFA: 267

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.11	0.03 - 0.22	0.06

Data Plot and Equation



Data Center (160)

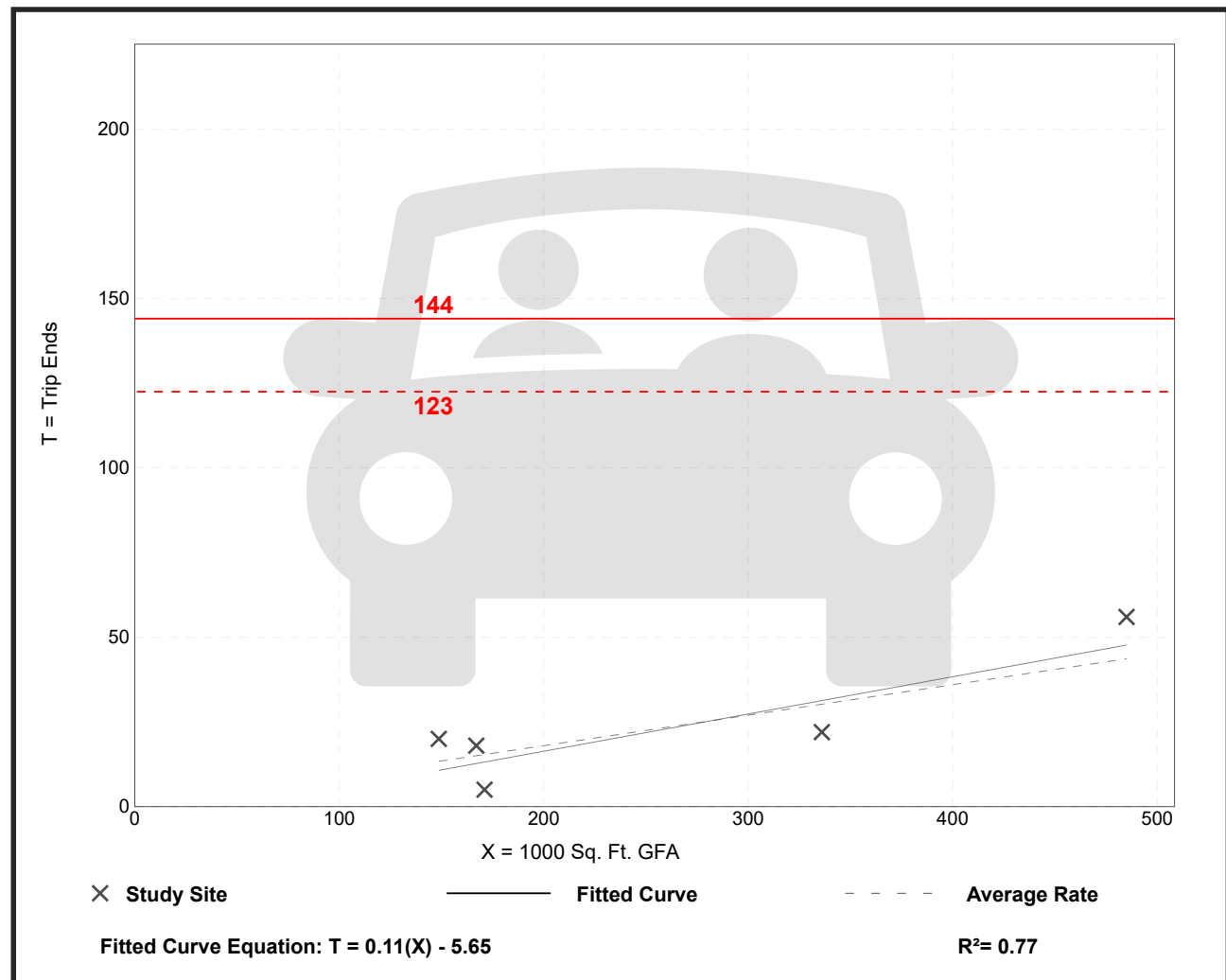
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GFA: 262
 Directional Distribution: 30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.03 - 0.13	0.04

Data Plot and Equation

Caution – Small Sample Size



Data Center

(160)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. 1000 Sq. Ft. GFA: 169

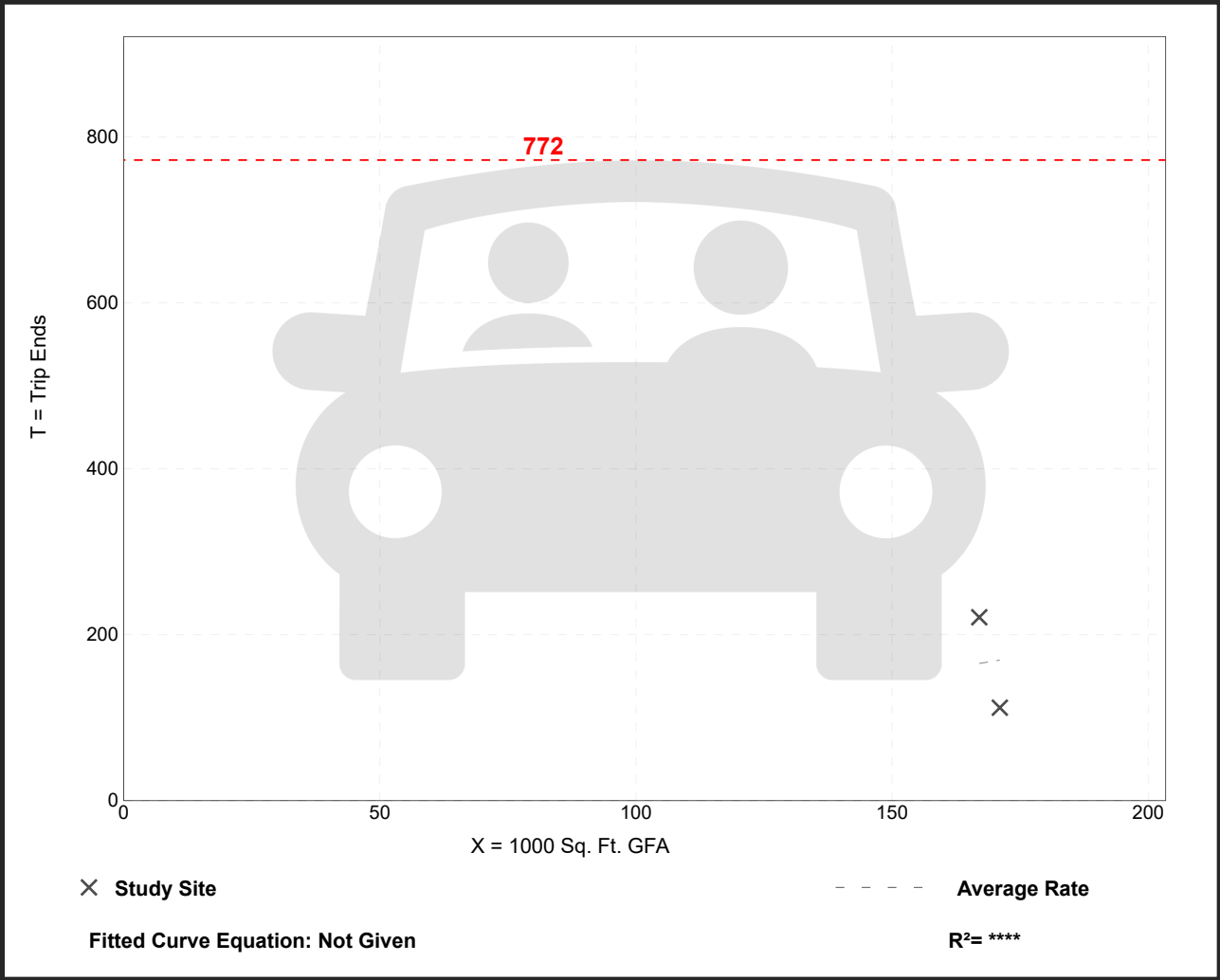
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.99	0.65 - 1.32	*

Data Plot and Equation

Caution – Small Sample Size



Data Center

(160)

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: 6

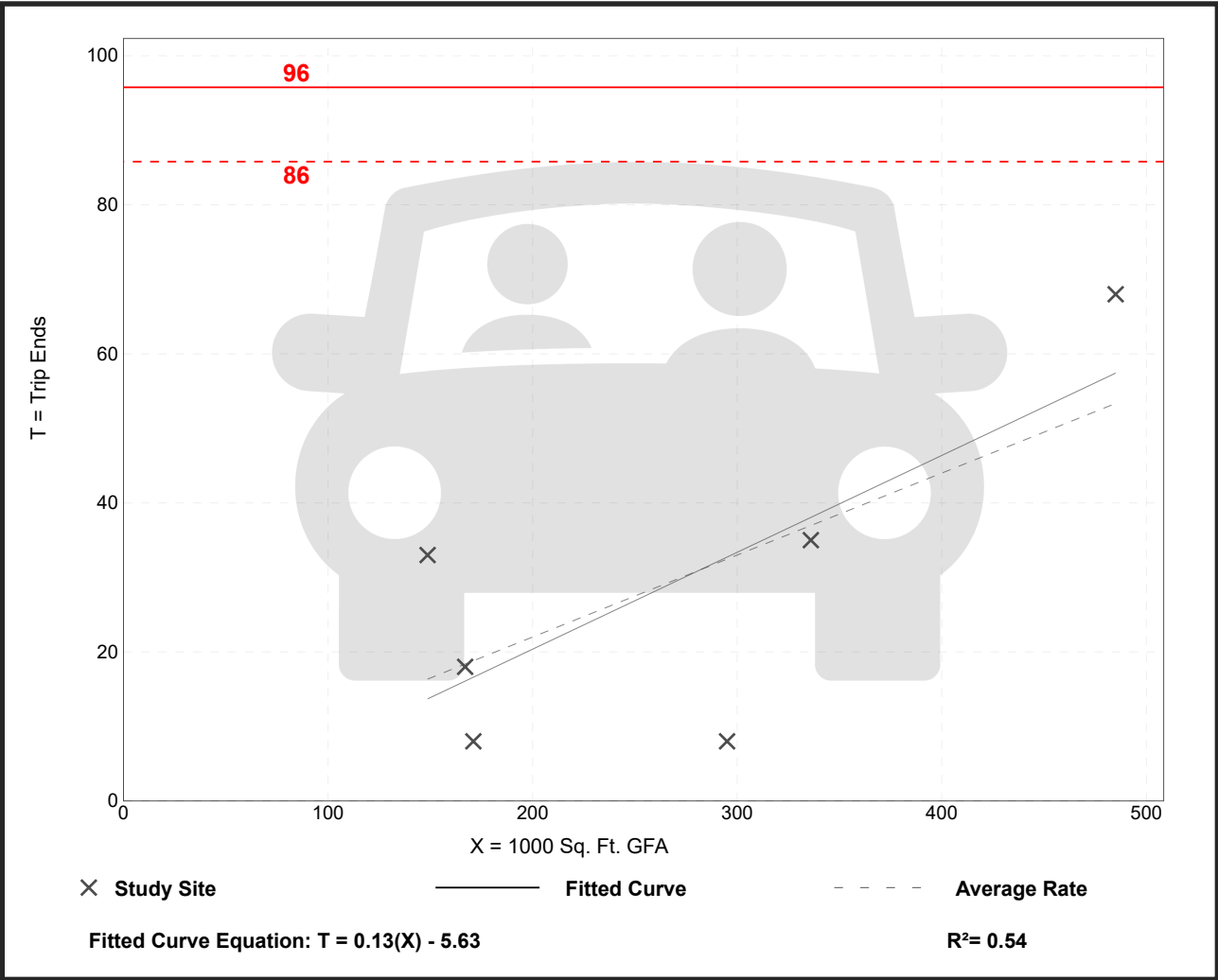
Avg. 1000 Sq. Ft. GFA: 267

Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.11	0.03 - 0.22	0.06

Data Plot and Equation



Data Center (160)

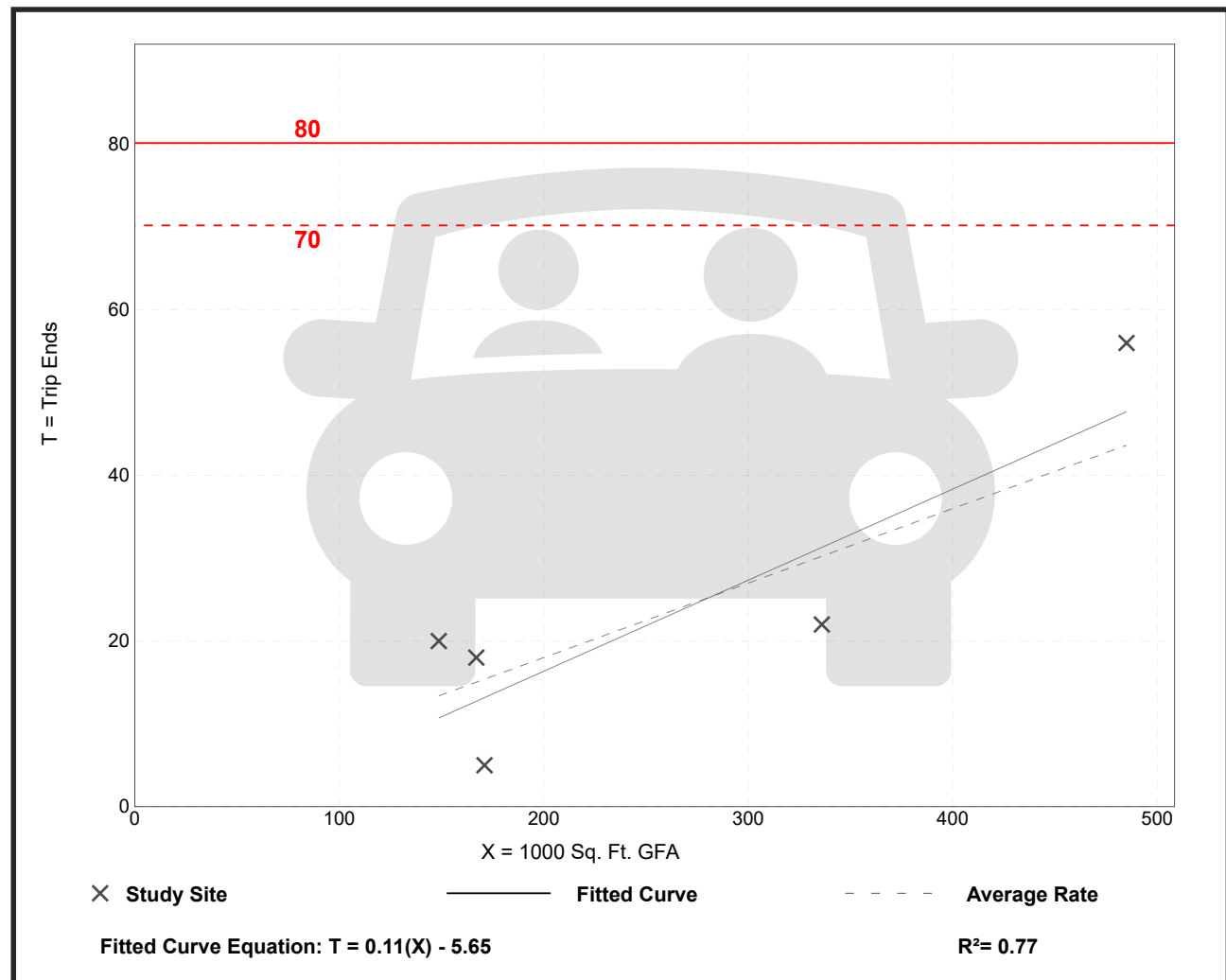
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GFA: 262
 Directional Distribution: 30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.03 - 0.13	0.04

Data Plot and Equation

Caution – Small Sample Size

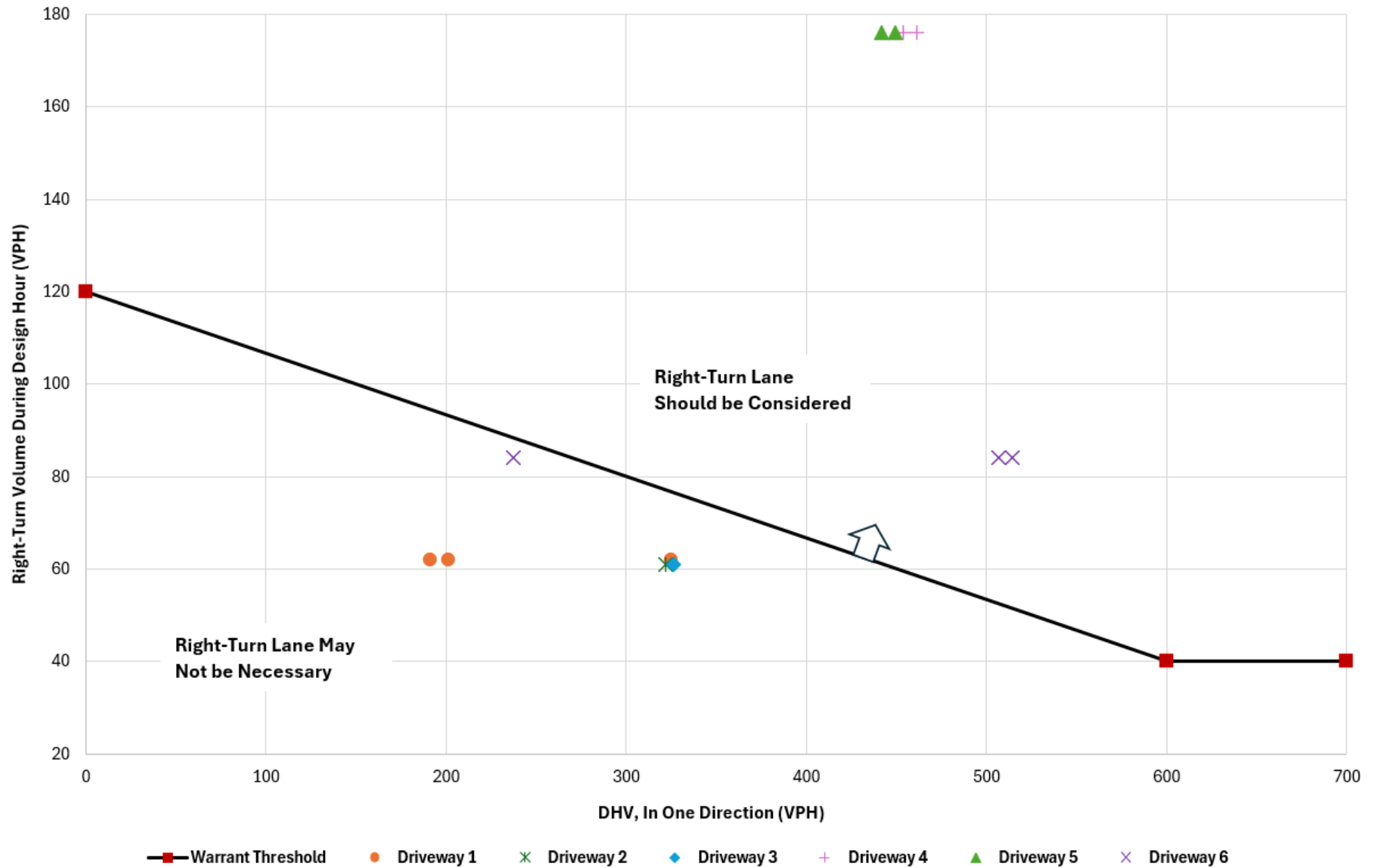


Appendix C – Auxiliary Lane Analysis

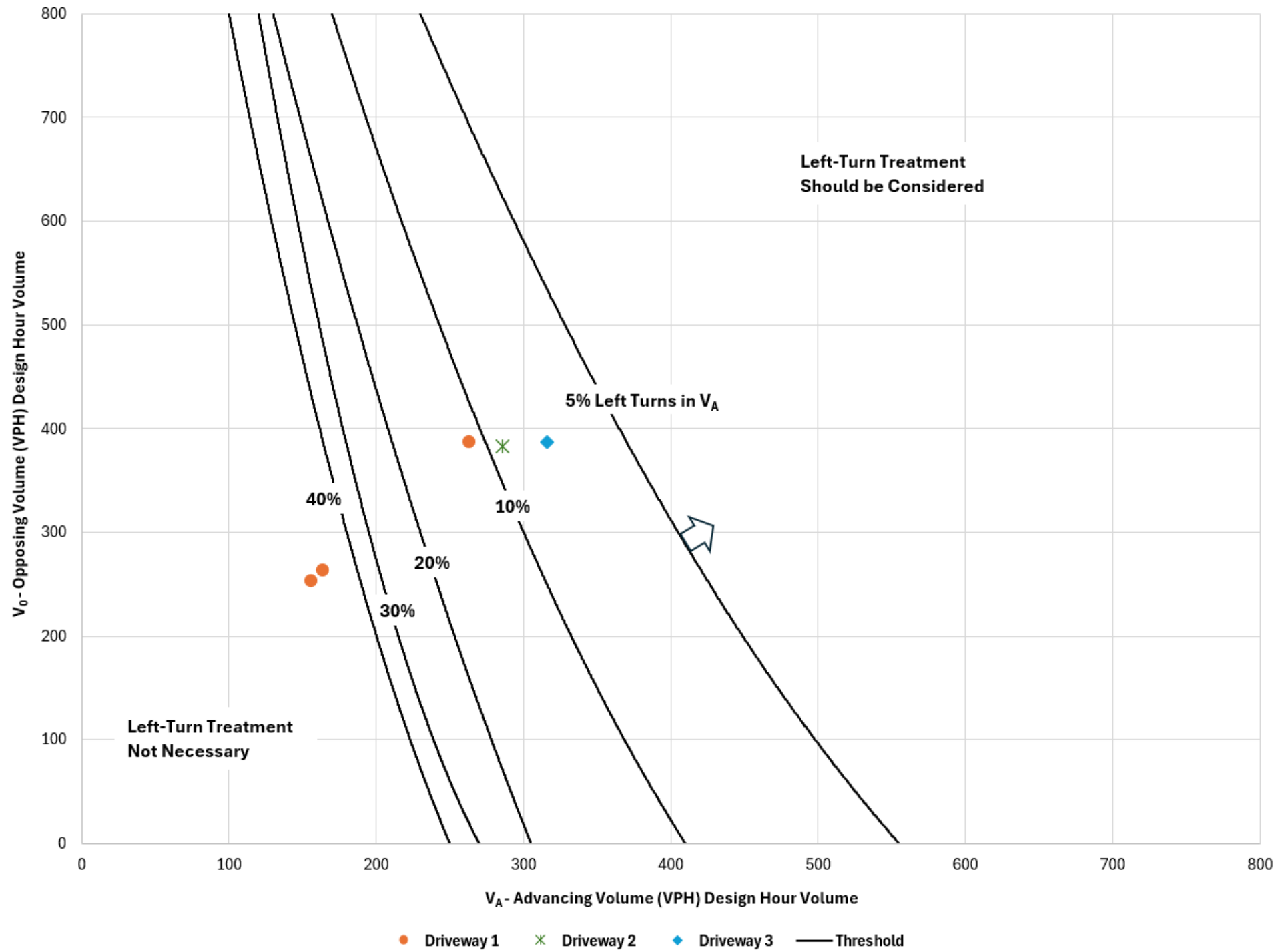
Criteria	Right-Turn Lane Warrants	Criteria Met?						Comments
		Drive 1	Drive 2	Drive 3	Drive 4	Drive 5	Drive 6	
1	Unsignalized intersection on a two lane highway that satisfies the criteria in BDE Figures	No	No	No	Yes	Yes	Yes	Driveway 4, 5, and 6 satisfy the BDE Figure and are warranted beginning in Phase 2 Build Conditions in year 2029.
2	Unsignalized intersection on a four lane highway that satisfies the criteria in BDE Figures	No	No	No	No	No	No	Not on a four lane highway.
3	On expressways where the side street ADT is over 250	No	No	No	No	No	No	Not on an expressway.
4	Any intersection where a capacity analysis determines a right-turn lane is necessary to meet the LOS criteria	No	No	No	No	No	No	Capacity analyses indicate all right turning movements along the major roadway perform at acceptable LOS. Driveway approach for Drives 4 and 5 are to be mitigated outside of the auxiliary lane analysis for the major roadway.
5	At any intersection where the right-turning volume is greater than 150 vph and where there is greater than 300 vphpl on the mainline	No	No	No	Yes	Yes	No	Driveway 4 and 5 exceed 150 vph performing a right turn with mainline volumes higher than 300 vphpl beginning in Phase 2 Build Conditions in year 2029.
6	Uniformity of intersection design along the highway if other intersections have right-turn lanes	No	No	No	No	No	No	No unsignalized intersections between IL 47 and Ashe Road have right-turn lanes.
7	Any intersection where the mainline is curved to the left and the mainline curve requires superelevation	No	No	No	No	No	No	Roads are not on superelevated curves.
8	At railroad crossings where the railroad is located close to the intersection and a right turn lane would be desirable to efficiently move through traffic on the parallel roadway	No	No	No	No	No	No	Not near a railroad.
9	Any intersection where the crash experience, traffic operations, sight distance restrictions, or engineering judgement indicates a significant conflict related to right-turning vehicles.	No	No	No	No	No	No	No additional indicators mandating right-turn lanes.

Criteria	Left-Turn Lane Warrants	Criteria Met?						Comments
		Drive 1	Drive 2	Drive 3	Drive 4	Drive 5	Drive 6	
1	Unsignalized intersection on a two lane highway that satisfies the criteria in BDE Figures	Yes	Yes	Yes	Yes	Yes	Yes	All proposed drives satisfy the BDE Figure and are warranted in the following timeframes, beginning in Phase 1 (Year 2027) Build conditions for Drive 6, Phase 2 (Year 2029) Build conditions for Drives 4 and 5, and Phase 3 (Year 2031) Build Conditions for Drives 1, 2, and 3.
2	Signalized intersection where the left-turning volume is equal to or greater than 75 vph	No	No	No	No	No	No	Not signalized intersections.
3	Any intersection where a capacity analysis determines a left-turn lane is necessary to meet the LOS criteria	No	No	No	No	No	No	Capacity analyses indicate all left turning movements along the major roadway perform at acceptable LOS. Driveway approach for Drives 4 and 5 are to be mitigated outside of the auxiliary lane analysis for the major roadway.
4	Uniformity of intersection design along the highway if other intersections have left-turn lanes	No	No	No	No	No	No	No unsignalized intersections between IL 47 and Ashe Road have left-turn lanes.
5	Any intersection where the crash experience, traffic operations, sight distance restrictions, or engineering judgement indicates a significant conflict related to right-turning vehicles.	No	No	No	No	No	No	No additional indicators mandating left-turn lanes.

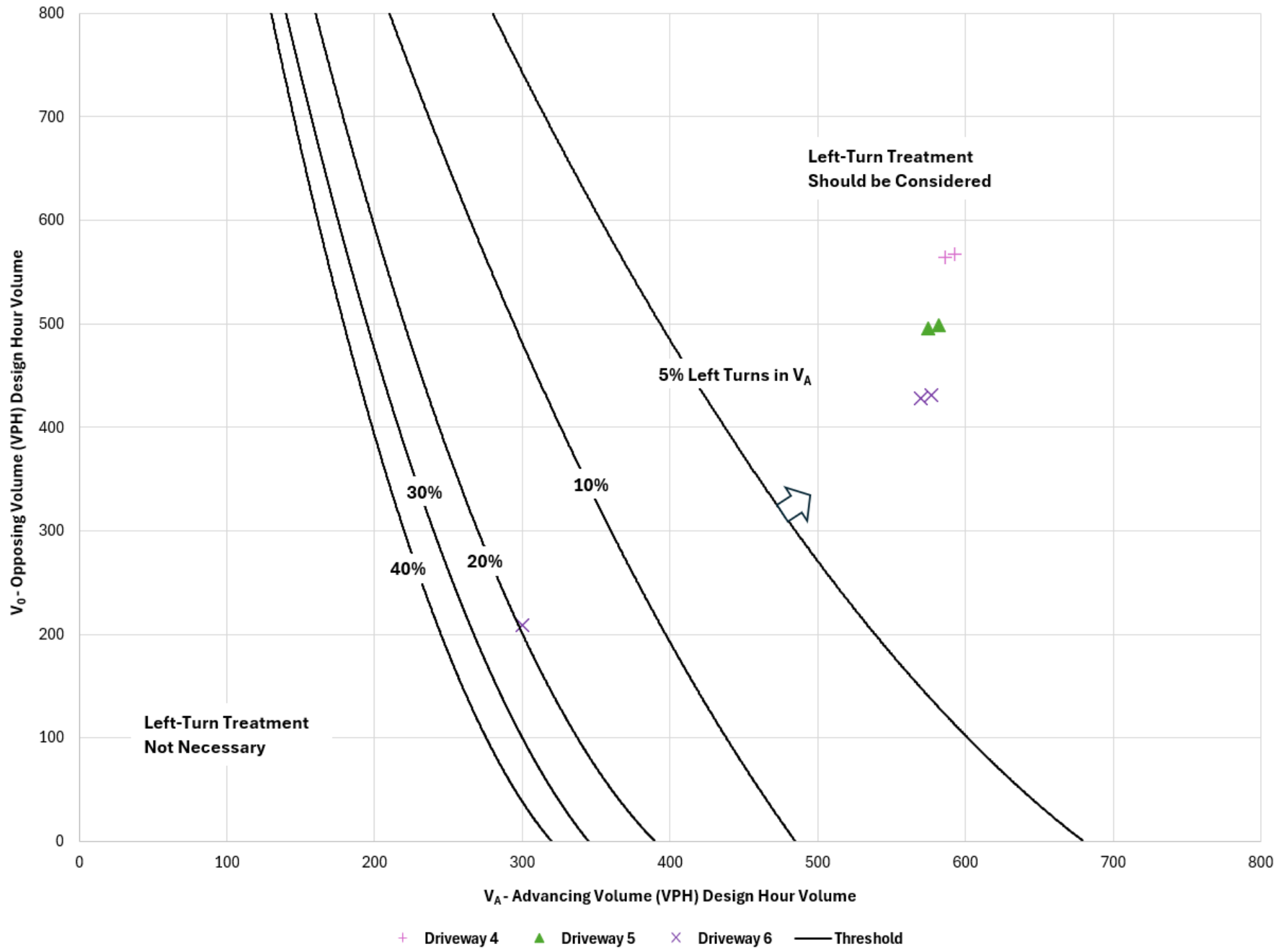
Proposed Driveway Right-Turn Lane Warrant (BDE Figure 36-3.A)



Proposed Driveway Left-Turn Lane Warrant (BDE Figure 36-3.C)



Proposed Driveway Left-Turn Lane Warrant (BDE Figure 36-3.E)



Appendix D – Traffic Signal Warrant Analysis

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Project Cardinal
Project/File #	BMCD #182671
Scenario	2029 Build - PM Peak

Intersection Information			
Major Street (N/S Road)	Ashe Road	Minor Street (E/W Road)	Baseline Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	912 vehicles	Total Approach Volume	214 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	40 percent applied	Right turn reduction of	40 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

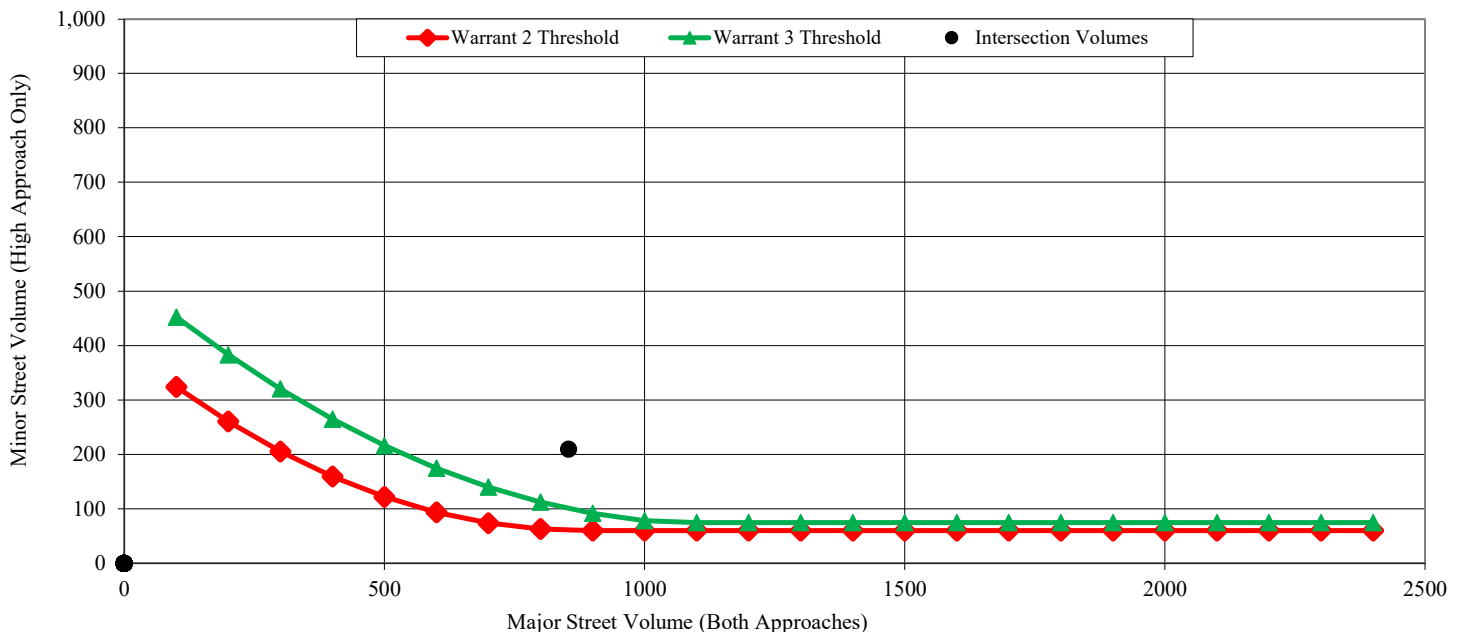
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Not Satisfied	Satisfied
Required values reached for	1126 total, 214 minor, 2.6 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Project Cardinal
Project/File #	BMCD #182671
Scenario	2031 Build - AM Peak

Intersection Information			
Major Street (N/S Road)	Ashe Road	Minor Street (E/W Road)	Baseline Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	997 vehicles	Total Approach Volume	228 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	40 percent applied	Right turn reduction of	40 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

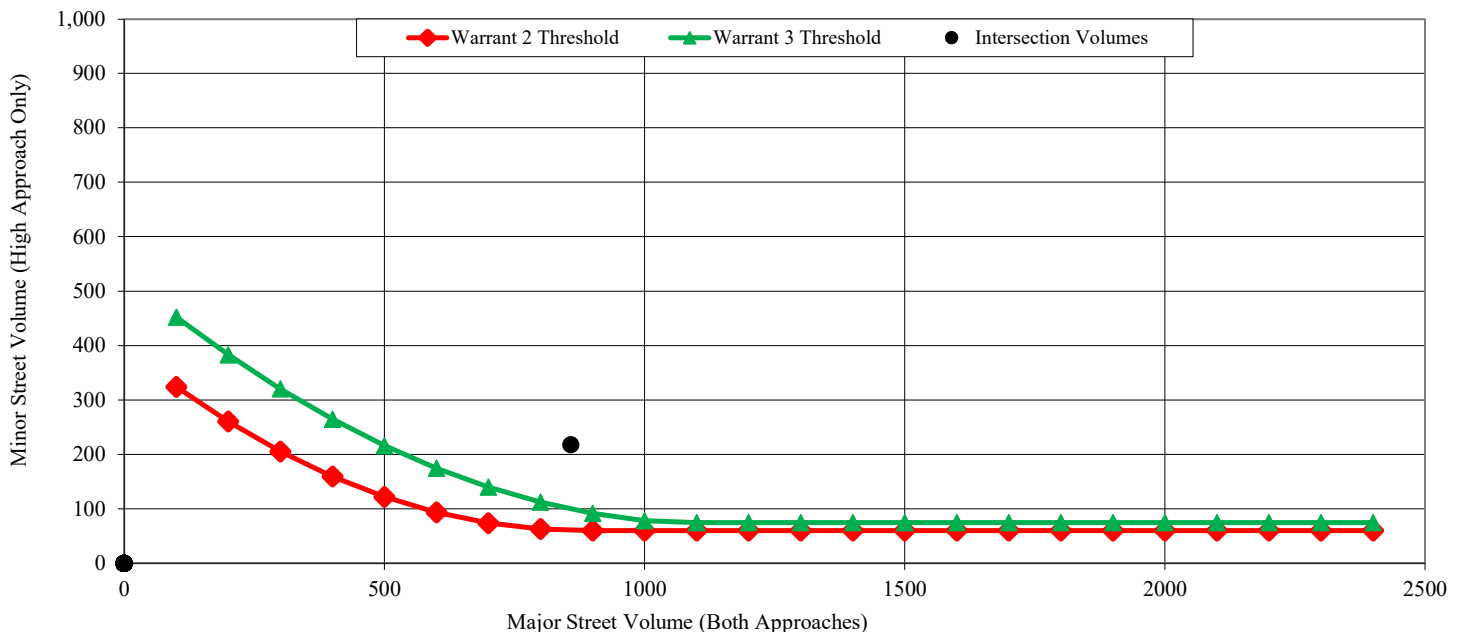
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Satisfied	Satisfied
Required values reached for	1225 total, 228 minor, 4.4 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Project Cardinal
Project/File #	BMCD #182671
Scenario	2031 Build - AM Peak

Intersection Information			
Major Street (E/W Road)	Baseline Road	Minor Street (N/S Road)	Mighell Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	651 vehicles	Total Approach Volume	15 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	40 percent applied	Right turn reduction of	40 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

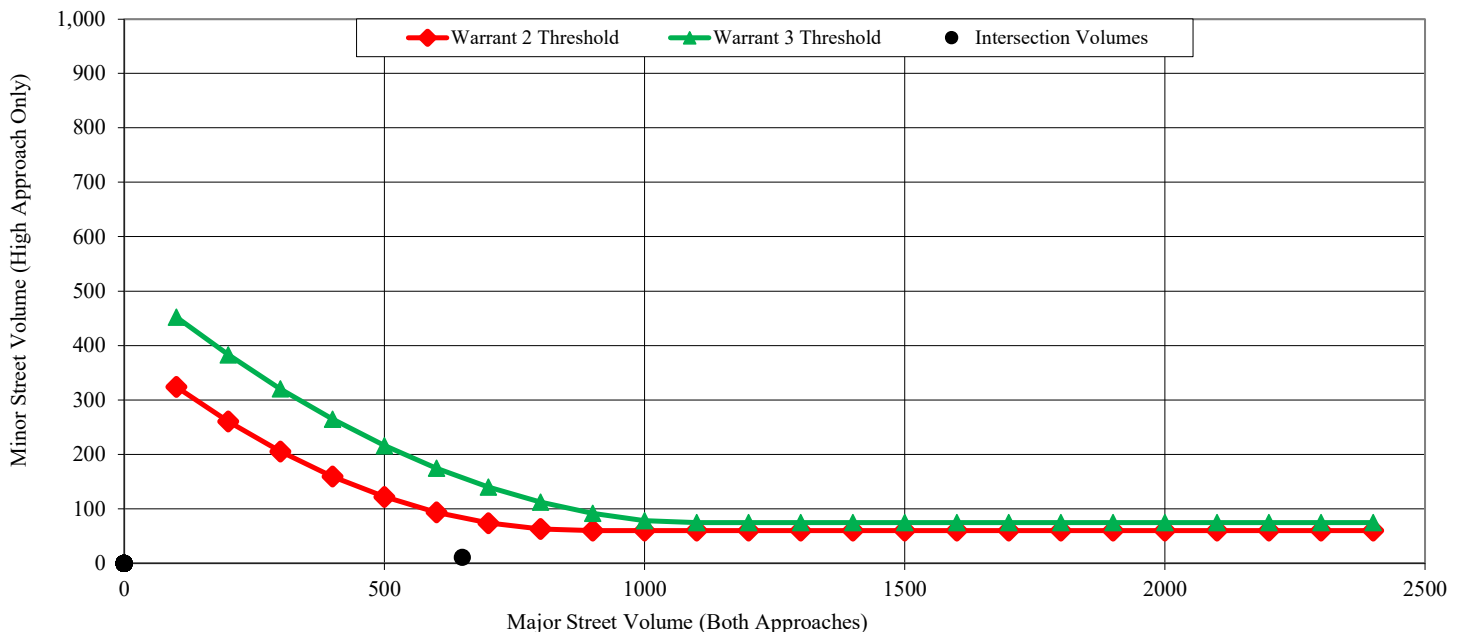
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Not Satisfied	Not Satisfied
Required values reached for	666 total, 15 minor, 0.1 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Project Cardinal
Project/File #	BMCD #182671
Scenario	2031 Build - PM Peak

Intersection Information			
Major Street (N/S Road)	Ashe Road	Minor Street (E/W Road)	Baseline Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	987 vehicles	Total Approach Volume	347 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	40 percent applied	Right turn reduction of	40 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

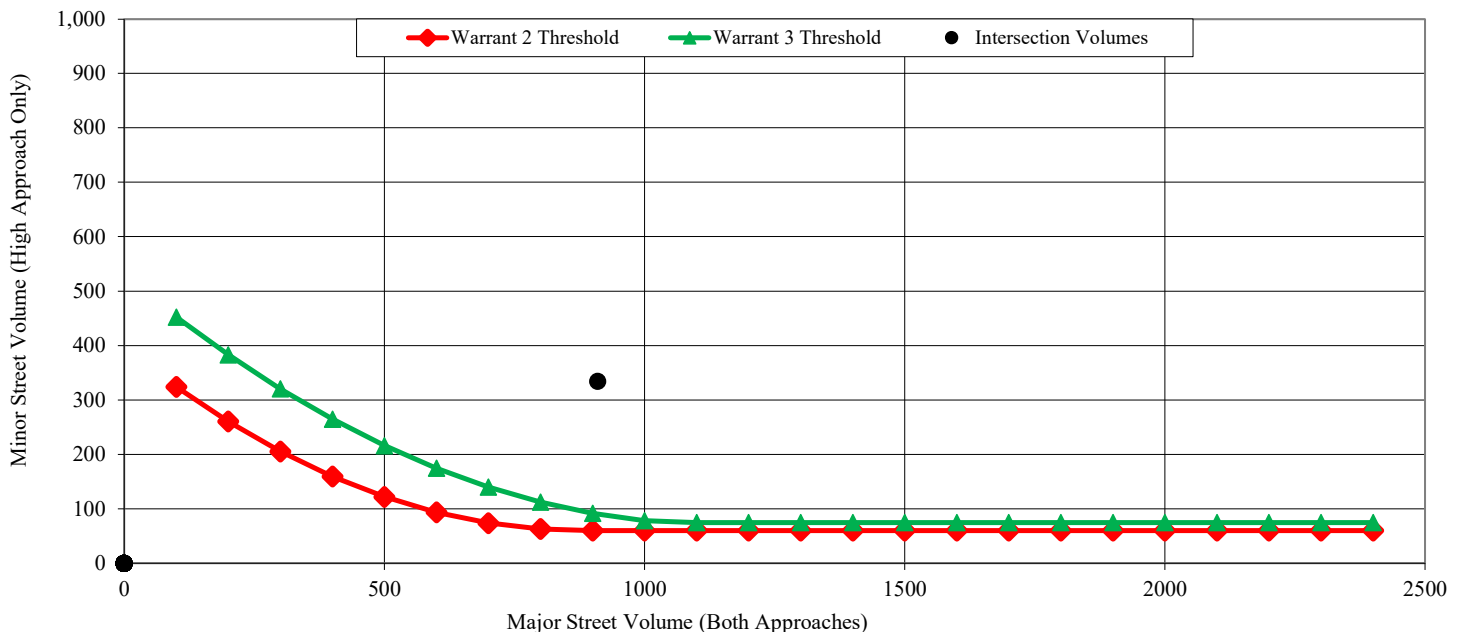
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	1 hour	1 hour	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Satisfied	Satisfied
Required values reached for	1334 total, 347 minor, 18.2 delay	1 hour
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Project Cardinal
Project/File #	BMCD #182671
Scenario	2031 Build - PM Peak

Intersection Information			
Major Street (E/W Road)	Baseline Road	Minor Street (N/S Road)	Mighell Road
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	593 vehicles	Total Approach Volume	9 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	40 percent applied	Right turn reduction of	40 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

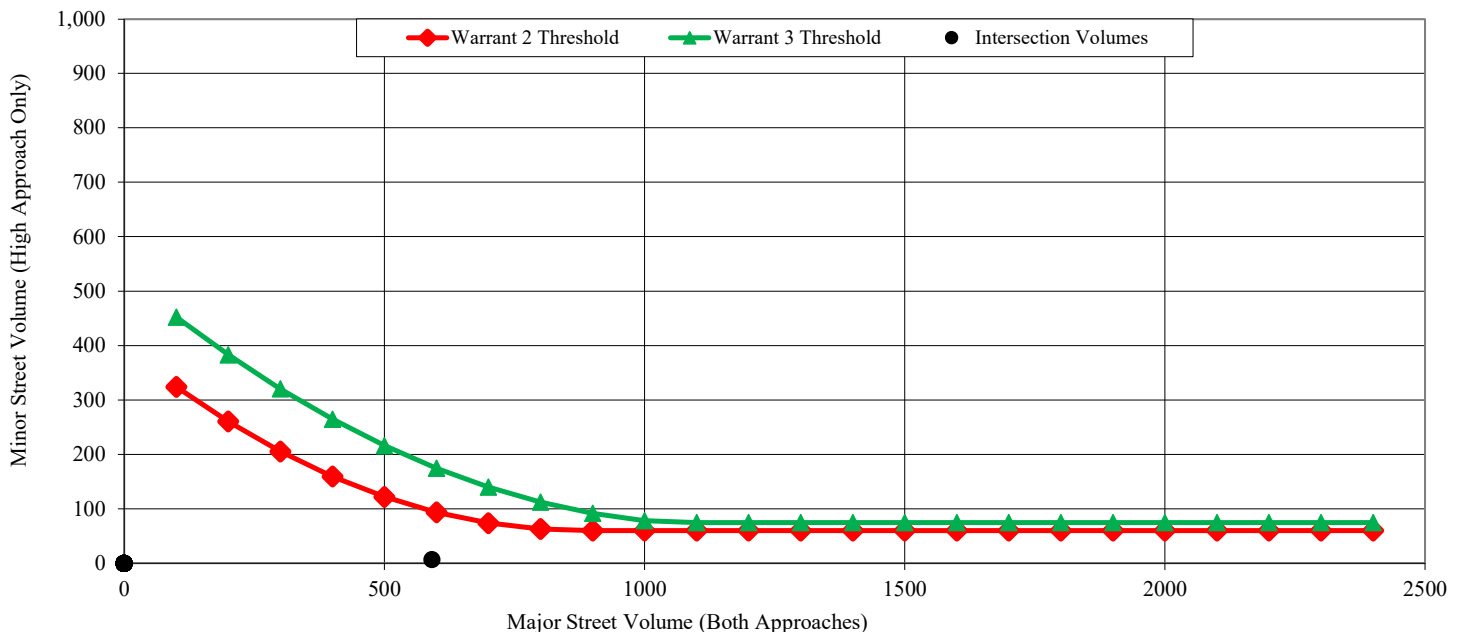
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	350	525	280 (Cond. A) & 420 (Cond. B)
Criteria - Minor Street (veh/hr)	105	53	84 (Cond. A) & 42 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Not Satisfied	Not Satisfied
Required values reached for	602 total, 9 minor, 0 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)



Appendix E – Existing Intersection Capacity Analysis

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	1	354	177	1	129
Future Vol, veh/h	67	1	354	177	1	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	75	1	398	199	1	145
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	644	497	0	0	597	0
Stage 1	497	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	440	577	-	-	990	-
Stage 1	615	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	440	577	-	-	990	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	14.86	0		0.07		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	441	14	-	
HCM Lane V/C Ratio	-	-	0.173	0.001	-	
HCM Ctrl Dly (s/v)	-	-	14.9	8.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	184	68	0	2	1
Future Vol, veh/h	1	184	68	0	2	1
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	1	227	84	0	2	1
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	84	0	-	0	314	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1526	-	-	-	683	981
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	683	981
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	813	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.04	0		9.76		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	10	-	-	-	-	760
HCM Lane V/C Ratio	0.001	-	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.4	0	-	-	-	9.8
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2025 Existing AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	107	1	53	65	236	0	748	40	125	470	4
Future Volume (veh/h)	69	107	1	53	65	236	0	748	40	125	470	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	73	114	1	56	69	0	0	796	43	133	500	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	85	132	1	69	85		561	982	53	276	1109	9
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.00	0.00	0.61	0.61	0.04	0.69	0.69
Sat Flow, veh/h	723	1129	10	833	1026	1547	1810	1605	87	1697	1603	13
Grp Volume(v), veh/h	188	0	0	125	0	0	0	0	839	133	0	504
Grp Sat Flow(s),veh/h/ln	1862	0	0	1858	0	1547	1810	0	1692	1697	0	1616
Q Serve(g_s), s	12.4	0.0	0.0	8.3	0.0	0.0	0.0	0.0	47.8	3.5	0.0	17.5
Cycle Q Clear(g_c), s	12.4	0.0	0.0	8.3	0.0	0.0	0.0	0.0	47.8	3.5	0.0	17.5
Prop In Lane	0.39		0.01	0.45		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	218	0	0	154	0		561	0	1035	276	0	1118
V/C Ratio(X)	0.86	0.00	0.00	0.81	0.00		0.00	0.00	0.81	0.48	0.00	0.45
Avail Cap(c_a), veh/h	275	0	0	271	0		632	0	1035	316	0	1118
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	0.0	56.5	0.0	0.0	0.0	0.0	18.7	19.9	0.0	8.6
Incr Delay (d2), s/veh	19.7	0.0	0.0	9.6	0.0	0.0	0.0	0.0	6.9	1.3	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	0.0	4.2	0.0	0.0	0.0	0.0	17.8	1.8	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	74.0	0.0	0.0	66.1	0.0	0.0	0.0	0.0	25.6	21.2	0.0	10.0
LnGrp LOS	E			E					C	C		A
Approach Vol, veh/h	188			125			839			637		
Approach Delay, s/veh	74.0			66.1			25.6			12.3		
Approach LOS	E			E			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	81.2		19.2	0.0	91.2		14.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	76.7		18.5	5.0	80.2		18.3				
Max Q Clear Time (g_c+I1), s	5.5	49.8		14.4	0.0	19.5		10.3				
Green Ext Time (p_c), s	0.1	5.9		0.3	0.0	3.0		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.8											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2025 Existing AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	102	21	74	83	91	18	561	58	54	433	35
Future Volume (veh/h)	107	102	21	74	83	91	18	561	58	54	433	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	111	106	22	77	86	95	19	584	60	56	451	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	144	124	24	112	119	119	525	1127	964	407	1144	515
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.02	0.65	0.65	0.03	0.66	0.66
Sat Flow, veh/h	463	503	98	347	483	484	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	239	0	0	258	0	0	19	584	60	56	451	36
Grp Sat Flow(s),veh/h/ln	1064	0	0	1313	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	0.7	30.9	2.6	2.1	20.8	2.9
Cycle Q Clear(g_c), s	39.4	0.0	0.0	32.0	0.0	0.0	0.7	30.9	2.6	2.1	20.8	2.9
Prop In Lane	0.46		0.09	0.30		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	0	0	351	0	0	525	1127	964	407	1144	515
V/C Ratio(X)	0.82	0.00	0.00	0.74	0.00	0.00	0.04	0.52	0.06	0.14	0.39	0.07
Avail Cap(c_a), veh/h	568	0	0	624	0	0	549	1127	964	432	1144	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	0.0	61.0	0.0	0.0	10.9	16.1	11.2	12.5	13.7	10.6
Incr Delay (d2), s/veh	5.6	0.0	0.0	3.0	0.0	0.0	0.0	1.7	0.1	0.2	1.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	0.0	10.8	0.0	0.0	0.2	11.9	0.8	0.7	7.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.6	0.0	0.0	64.0	0.0	0.0	10.9	17.8	11.3	12.6	14.7	10.9
LnGrp LOS	E			E			B	B	B	B	B	B
Approach Vol, veh/h	239			258			663			543		
Approach Delay, s/veh	70.6			64.0			17.0			14.2		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	117.3		47.3	7.5	119.0		47.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	112.5		76.5	5.5	114.5		76.5				
Max Q Clear Time (g_c+I1), s	4.1	32.9		41.4	2.7	22.8		34.0				
Green Ext Time (p_c), s	0.0	3.8		1.4	0.0	2.7		1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh				30.8								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2025 Existing AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	106	38	41	63	18	19	387	74	9	107	71
Future Volume (veh/h)	132	106	38	41	63	18	19	387	74	9	107	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	147	118	42	46	70	20	21	430	82	10	119	79
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	478	320	232	310	225	195	485	590	332	303	552	475
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.12	0.03	0.31	0.31	0.01	0.30	0.30
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	147	118	42	46	70	20	21	430	82	10	119	79
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	2.7	2.2	1.1	1.6	1.4	0.4	0.4	8.0	2.3	0.2	1.9	1.4
Cycle Q Clear(g_c), s	2.7	2.2	1.1	1.6	1.4	0.4	0.4	8.0	2.3	0.2	1.9	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	478	320	232	310	225	195	485	590	332	303	552	475
V/C Ratio(X)	0.31	0.37	0.18	0.15	0.31	0.10	0.04	0.73	0.25	0.03	0.22	0.17
Avail Cap(c_a), veh/h	581	903	656	386	843	731	644	1328	748	508	1297	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	14.5	14.0	14.3	15.9	15.5	9.2	12.2	10.2	10.2	10.5	10.3
Incr Delay (d2), s/veh	0.4	0.7	0.4	0.2	0.8	0.2	0.0	1.8	0.4	0.0	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	0.3	0.3	0.5	0.1	0.1	2.3	0.4	0.0	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	15.2	14.4	14.5	16.7	15.7	9.3	13.9	10.6	10.2	10.6	10.5
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	307			136			533			208		
Approach Delay, s/veh	14.3			15.8			13.2			10.6		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	16.8	6.5	11.3	5.5	16.3	8.5	9.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	27.7	5.0	19.3	5.0	27.7	6.3	18.0				
Max Q Clear Time (g_c+I1), s	2.2	10.0	3.6	4.2	2.4	3.9	4.7	3.4				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.5	0.0	0.7	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.3											
HCM 7th LOS	B											

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	65	0	41	104	181	0	586	70	234	801	21
Future Volume (veh/h)	42	65	0	41	104	181	0	586	70	234	801	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	43	67	0	42	107	0	0	604	72	241	826	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	52	80	0	49	124		404	1054	126	498	1336	36
Arrive On Green	0.07	0.07	0.00	0.09	0.09	0.00	0.00	0.68	0.68	0.05	0.76	0.76
Sat Flow, veh/h	728	1135	0	528	1345	1572	1810	1549	185	1767	1756	47
Grp Volume(v), veh/h	110	0	0	149	0	0	0	0	676	241	0	848
Grp Sat Flow(s),veh/h/ln	1864	0	0	1874	0	1572	1810	0	1733	1767	0	1803
Q Serve(g_s), s	10.3	0.0	0.0	13.9	0.0	0.0	0.0	0.0	36.2	7.1	0.0	37.7
Cycle Q Clear(g_c), s	10.3	0.0	0.0	13.9	0.0	0.0	0.0	0.0	36.2	7.1	0.0	37.7
Prop In Lane	0.39		0.00	0.28		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	132	0	0	173	0		404	0	1180	498	0	1371
V/C Ratio(X)	0.83	0.00	0.00	0.86	0.00		0.00	0.00	0.57	0.48	0.00	0.62
Avail Cap(c_a), veh/h	248	0	0	301	0		454	0	1180	705	0	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	81.3	0.0	0.0	79.4	0.0	0.0	0.0	0.0	14.8	12.6	0.0	9.6
Incr Delay (d2), s/veh	12.6	0.0	0.0	11.8	0.0	0.0	0.0	0.0	2.0	0.7	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	7.2	0.0	0.0	0.0	0.0	13.7	2.5	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	93.9	0.0	0.0	91.2	0.0	0.0	0.0	0.0	16.8	13.4	0.0	11.7
LnGrp LOS	F			F					B	B		B
Approach Vol, veh/h	110				149				676		1089	
Approach Delay, s/veh	93.9				91.2				16.8		12.0	
Approach LOS	F				F				B		B	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	14.2	125.2			17.1	0.0	139.4			20.9		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	30.5	109.4			23.6	5.0	134.9			28.5		
Max Q Clear Time (g_c+I1), s	9.1	38.2			12.3	0.0	39.7			15.9		
Green Ext Time (p_c), s	0.6	4.5			0.3	0.0	6.5			0.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	23.9											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	96	29	94	131	77	37	533	152	123	698	47
Future Volume (veh/h)	36	96	29	94	131	77	37	533	152	123	698	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	38	100	30	98	136	80	39	555	158	128	727	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	82	207	58	125	154	87	384	1189	1048	473	1210	801
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.02	0.65	0.65	0.04	0.66	0.66
Sat Flow, veh/h	243	864	241	415	641	361	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	168	0	0	314	0	0	39	555	158	128	727	49
Grp Sat Flow(s),veh/h/ln	1348	0	0	1417	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	21.7	0.0	0.0	1.3	27.9	7.0	4.4	40.9	2.6
Cycle Q Clear(g_c), s	18.5	0.0	0.0	40.2	0.0	0.0	1.3	27.9	7.0	4.4	40.9	2.6
Prop In Lane	0.23		0.18	0.31		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	0	366	0	0	384	1189	1048	473	1210	801
V/C Ratio(X)	0.48	0.00	0.00	0.86	0.00	0.00	0.10	0.47	0.15	0.27	0.60	0.06
Avail Cap(c_a), veh/h	565	0	0	583	0	0	396	1189	1048	513	1210	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	0.0	69.2	0.0	0.0	14.3	16.0	12.4	12.3	17.3	10.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	7.4	0.0	0.0	0.1	1.3	0.3	0.3	2.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	0.0	15.0	0.0	0.0	0.5	11.4	2.5	1.7	16.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.3	0.0	0.0	76.6	0.0	0.0	14.4	17.4	12.7	12.6	19.5	11.0
LnGrp LOS	E			E			B	B	B	B	B	B
Approach Vol, veh/h	168			314			752			904		
Approach Delay, s/veh	60.3			76.6			16.2			18.1		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	123.8		48.5	8.8	126.0		48.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	116.5		69.5	5.5	121.5		69.5				
Max Q Clear Time (g_c+I1), s	6.4	29.9		20.5	3.3	42.9		42.2				
Green Ext Time (p_c), s	0.1	3.9		1.0	0.0	5.1		1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	29.3											
HCM 7th LOS	C											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	99	40	64	133	16	40	156	58	19	444	170
Future Volume (veh/h)	73	99	40	64	133	16	40	156	58	19	444	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	76	103	42	67	139	17	42	162	60	20	463	177
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	367	250	200	352	238	209	348	671	475	561	636	539
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.05	0.36	0.36	0.02	0.33	0.33
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	76	103	42	67	139	17	42	162	60	20	463	177
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.5	2.2	1.1	1.6	3.0	0.4	0.6	2.6	1.3	0.3	9.2	3.5
Cycle Q Clear(g_c), s	1.5	2.2	1.1	1.6	3.0	0.4	0.6	2.6	1.3	0.3	9.2	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	250	200	352	238	209	348	671	475	561	636	539
V/C Ratio(X)	0.21	0.41	0.21	0.19	0.58	0.08	0.12	0.24	0.13	0.04	0.73	0.33
Avail Cap(c_a), veh/h	558	888	711	553	924	808	497	2091	1479	748	2107	1786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	17.0	16.5	14.6	17.6	16.4	9.4	9.7	9.3	8.9	12.5	10.6
Incr Delay (d2), s/veh	0.3	1.1	0.5	0.3	2.3	0.2	0.2	0.2	0.1	0.0	1.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.3	0.4	1.2	0.1	0.2	0.7	0.3	0.1	2.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.7	18.1	17.0	14.9	19.8	16.6	9.6	9.9	9.4	8.9	14.1	11.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	B	B
Approach Vol, veh/h	221		223			264			660			
Approach Delay, s/veh	16.7		18.1			9.7			13.1			
Approach LOS	B		B			A			B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	19.7	7.2	10.3	6.5	18.8	7.5	10.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	47.5	8.5	20.5	5.5	47.5	7.5	21.5				
Max Q Clear Time (g_c+I1), s	2.3	4.6	3.6	4.2	2.6	11.2	3.5	5.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.5	0.0	3.2	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.9											
HCM 7th LOS	B											

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	65	0	41	104	181	0	586	70	234	801	21
Future Volume (veh/h)	42	65	0	41	104	181	0	586	70	234	801	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	43	67	0	42	107	0	0	604	72	241	826	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	52	80	0	49	124		404	1054	126	498	1336	36
Arrive On Green	0.07	0.07	0.00	0.09	0.09	0.00	0.00	0.68	0.68	0.05	0.76	0.76
Sat Flow, veh/h	728	1135	0	528	1345	1572	1810	1549	185	1767	1756	47
Grp Volume(v), veh/h	110	0	0	149	0	0	0	0	676	241	0	848
Grp Sat Flow(s),veh/h/ln	1864	0	0	1874	0	1572	1810	0	1733	1767	0	1803
Q Serve(g_s), s	10.3	0.0	0.0	13.9	0.0	0.0	0.0	0.0	36.2	7.1	0.0	37.7
Cycle Q Clear(g_c), s	10.3	0.0	0.0	13.9	0.0	0.0	0.0	0.0	36.2	7.1	0.0	37.7
Prop In Lane	0.39		0.00	0.28		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	132	0	0	173	0		404	0	1180	498	0	1371
V/C Ratio(X)	0.83	0.00	0.00	0.86	0.00		0.00	0.00	0.57	0.48	0.00	0.62
Avail Cap(c_a), veh/h	248	0	0	301	0		454	0	1180	705	0	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	81.3	0.0	0.0	79.4	0.0	0.0	0.0	0.0	14.8	12.6	0.0	9.6
Incr Delay (d2), s/veh	12.6	0.0	0.0	11.8	0.0	0.0	0.0	0.0	2.0	0.7	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	7.2	0.0	0.0	0.0	0.0	13.7	2.5	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	93.9	0.0	0.0	91.2	0.0	0.0	0.0	0.0	16.8	13.4	0.0	11.7
LnGrp LOS	F			F					B	B		B
Approach Vol, veh/h	110				149				676		1089	
Approach Delay, s/veh	93.9				91.2				16.8		12.0	
Approach LOS	F				F				B		B	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	14.2	125.2			17.1	0.0	139.4			20.9		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	30.5	109.4			23.6	5.0	134.9			28.5		
Max Q Clear Time (g_c+I1), s	9.1	38.2			12.3	0.0	39.7			15.9		
Green Ext Time (p_c), s	0.6	4.5			0.3	0.0	6.5			0.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	23.9											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	96	29	94	131	77	37	533	152	123	698	47
Future Volume (veh/h)	36	96	29	94	131	77	37	533	152	123	698	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	38	100	30	98	136	80	39	555	158	128	727	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	82	207	58	125	154	87	384	1189	1048	473	1210	801
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.02	0.65	0.65	0.04	0.66	0.66
Sat Flow, veh/h	243	864	241	415	641	361	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	168	0	0	314	0	0	39	555	158	128	727	49
Grp Sat Flow(s),veh/h/ln	1348	0	0	1417	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	21.7	0.0	0.0	1.3	27.9	7.0	4.4	40.9	2.6
Cycle Q Clear(g_c), s	18.5	0.0	0.0	40.2	0.0	0.0	1.3	27.9	7.0	4.4	40.9	2.6
Prop In Lane	0.23		0.18	0.31		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	0	366	0	0	384	1189	1048	473	1210	801
V/C Ratio(X)	0.48	0.00	0.00	0.86	0.00	0.00	0.10	0.47	0.15	0.27	0.60	0.06
Avail Cap(c_a), veh/h	565	0	0	583	0	0	396	1189	1048	513	1210	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	0.0	69.2	0.0	0.0	14.3	16.0	12.4	12.3	17.3	10.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	7.4	0.0	0.0	0.1	1.3	0.3	0.3	2.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	0.0	15.0	0.0	0.0	0.5	11.4	2.5	1.7	16.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.3	0.0	0.0	76.6	0.0	0.0	14.4	17.4	12.7	12.6	19.5	11.0
LnGrp LOS	E			E			B	B	B	B	B	B
Approach Vol, veh/h	168			314			752			904		
Approach Delay, s/veh	60.3			76.6			16.2			18.1		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	123.8		48.5	8.8	126.0		48.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	116.5		69.5	5.5	121.5		69.5				
Max Q Clear Time (g_c+I1), s	6.4	29.9		20.5	3.3	42.9		42.2				
Green Ext Time (p_c), s	0.1	3.9		1.0	0.0	5.1		1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				29.3								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2025 Existing PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	99	40	64	133	16	40	156	58	19	444	170
Future Volume (veh/h)	73	99	40	64	133	16	40	156	58	19	444	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	76	103	42	67	139	17	42	162	60	20	463	177
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	367	250	200	352	238	209	348	671	475	561	636	539
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.05	0.36	0.36	0.02	0.33	0.33
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	76	103	42	67	139	17	42	162	60	20	463	177
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.5	2.2	1.1	1.6	3.0	0.4	0.6	2.6	1.3	0.3	9.2	3.5
Cycle Q Clear(g_c), s	1.5	2.2	1.1	1.6	3.0	0.4	0.6	2.6	1.3	0.3	9.2	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	250	200	352	238	209	348	671	475	561	636	539
V/C Ratio(X)	0.21	0.41	0.21	0.19	0.58	0.08	0.12	0.24	0.13	0.04	0.73	0.33
Avail Cap(c_a), veh/h	558	888	711	553	924	808	497	2091	1479	748	2107	1786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	17.0	16.5	14.6	17.6	16.4	9.4	9.7	9.3	8.9	12.5	10.6
Incr Delay (d2), s/veh	0.3	1.1	0.5	0.3	2.3	0.2	0.2	0.2	0.1	0.0	1.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.3	0.4	1.2	0.1	0.2	0.7	0.3	0.1	2.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.7	18.1	17.0	14.9	19.8	16.6	9.6	9.9	9.4	8.9	14.1	11.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	B	B
Approach Vol, veh/h	221					223		264		660		
Approach Delay, s/veh	16.7					18.1		9.7		13.1		
Approach LOS	B					B		A		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	19.7	7.2	10.3	6.5	18.8	7.5	10.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	47.5	8.5	20.5	5.5	47.5	7.5	21.5				
Max Q Clear Time (g_c+I1), s	2.3	4.6	3.6	4.2	2.6	11.2	3.5	5.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.5	0.0	3.2	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.9											
HCM 7th LOS	B											

Appendix F – Background Intersection Capacity Analysis

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	1	363	182	1	132
Future Vol, veh/h	69	1	363	182	1	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	78	1	408	204	1	148
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	661	510	0	0	612	0
Stage 1	510	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	431	567	-	-	977	-
Stage 1	607	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	430	567	-	-	977	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	15.19	0		0.07		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	432	14	-	
HCM Lane V/C Ratio	-	-	0.182	0.001	-	
HCM Ctrl Dly (s/v)	-	-	15.2	8.7	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.7	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	189	70	0	2	1
Future Vol, veh/h	1	189	70	0	2	1
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	1	233	86	0	2	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	86	0	-	0	322	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1522	-	-	-	676	978
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1522	-	-	-	675	978
Mov Cap-2 Maneuver	-	-	-	-	675	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	808	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.04	0		9.81		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	9	-	-	-	-	753
HCM Lane V/C Ratio	0.001	-	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.4	0	-	-	-	9.8
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	110	1	54	67	242	0	768	41	128	482	4
Future Volume (veh/h)	71	110	1	54	67	242	0	768	41	128	482	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	76	117	1	57	71	0	0	817	44	136	513	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	88	135	1	70	87		544	974	52	256	1103	9
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.00	0.00	0.61	0.61	0.05	0.69	0.69
Sat Flow, veh/h	729	1123	10	828	1031	1547	1810	1605	86	1697	1604	13
Grp Volume(v), veh/h	194	0	0	128	0	0	0	0	861	136	0	517
Grp Sat Flow(s),veh/h/ln	1862	0	0	1859	0	1547	1810	0	1692	1697	0	1616
Q Serve(g_s), s	12.9	0.0	0.0	8.5	0.0	0.0	0.0	0.0	51.3	3.6	0.0	18.5
Cycle Q Clear(g_c), s	12.9	0.0	0.0	8.5	0.0	0.0	0.0	0.0	51.3	3.6	0.0	18.5
Prop In Lane	0.39		0.01	0.45		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	224	0	0	158	0		544	0	1026	256	0	1111
V/C Ratio(X)	0.87	0.00	0.00	0.81	0.00		0.00	0.00	0.84	0.53	0.00	0.47
Avail Cap(c_a), veh/h	274	0	0	270	0		615	0	1026	299	0	1111
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	0.0	56.6	0.0	0.0	0.0	0.0	19.8	22.0	0.0	9.0
Incr Delay (d2), s/veh	21.0	0.0	0.0	9.6	0.0	0.0	0.0	0.0	8.2	1.7	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	0.0	4.3	0.0	0.0	0.0	0.0	19.4	2.0	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.4	0.0	0.0	66.2	0.0	0.0	0.0	0.0	28.0	23.8	0.0	10.4
LnGrp LOS	E			E					C	C		B
Approach Vol, veh/h	194			128			861			653		
Approach Delay, s/veh	75.4			66.2			28.0			13.2		
Approach LOS	E			E			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	80.8		19.6	0.0	91.0		15.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.9	76.3		18.5	5.0	80.2		18.3				
Max Q Clear Time (g_c+I1), s	5.6	53.3		14.9	0.0	20.5		10.5				
Green Ext Time (p_c), s	0.1	5.8		0.3	0.0	3.1		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	30.4											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2027 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	105	22	76	85	93	18	576	60	55	444	36
Future Volume (veh/h)	110	105	22	76	85	93	18	576	60	55	444	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	115	109	23	79	89	97	19	600	63	57	463	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	149	126	25	115	123	122	506	1115	953	388	1131	509
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.02	0.64	0.64	0.03	0.65	0.65
Sat Flow, veh/h	465	496	99	349	484	481	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	247	0	0	265	0	0	19	600	63	57	463	38
Grp Sat Flow(s),veh/h/ln	1060	0	0	1313	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	8.2	0.0	0.0	0.0	0.0	0.0	0.7	33.2	2.8	2.2	22.3	3.1
Cycle Q Clear(g_c), s	41.3	0.0	0.0	33.1	0.0	0.0	0.7	33.2	2.8	2.2	22.3	3.1
Prop In Lane	0.47		0.09	0.30		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	0	0	361	0	0	506	1115	953	388	1131	509
V/C Ratio(X)	0.82	0.00	0.00	0.73	0.00	0.00	0.04	0.54	0.07	0.15	0.41	0.07
Avail Cap(c_a), veh/h	555	0	0	615	0	0	530	1115	953	413	1131	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	0.0	0.0	60.8	0.0	0.0	11.6	17.2	11.8	13.5	14.6	11.2
Incr Delay (d2), s/veh	5.6	0.0	0.0	2.9	0.0	0.0	0.0	1.9	0.1	0.2	1.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	11.2	0.0	0.0	0.2	12.9	0.9	0.7	8.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.9	0.0	0.0	63.7	0.0	0.0	11.6	19.1	11.9	13.6	15.7	11.5
LnGrp LOS	E			E			B	B	B	B	B	B
Approach Vol, veh/h	247			265			682			558		
Approach Delay, s/veh	70.9			63.7			18.2			15.2		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	117.3		49.3	7.5	119.0		49.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	112.5		76.5	5.5	114.5		76.5				
Max Q Clear Time (g_c+I1), s	4.2	35.2		43.3	2.7	24.3		35.1				
Green Ext Time (p_c), s	0.0	4.0		1.5	0.0	2.8		1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh				31.6								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldmain Rd/Ashe Rd & Galena Rd

2027 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	109	39	42	65	18	19	397	76	9	110	73
Future Volume (veh/h)	135	109	39	42	65	18	19	397	76	9	110	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	150	121	43	47	72	20	21	441	84	10	122	81
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	473	317	230	307	224	194	487	600	338	301	562	484
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.12	0.03	0.32	0.32	0.01	0.30	0.30
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	150	121	43	47	72	20	21	441	84	10	122	81
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	2.8	2.3	1.1	1.7	1.4	0.4	0.4	8.3	2.3	0.2	2.0	1.5
Cycle Q Clear(g_c), s	2.8	2.3	1.1	1.7	1.4	0.4	0.4	8.3	2.3	0.2	2.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	473	317	230	307	224	194	487	600	338	301	562	484
V/C Ratio(X)	0.32	0.38	0.19	0.15	0.32	0.10	0.04	0.74	0.25	0.03	0.22	0.17
Avail Cap(c_a), veh/h	574	894	649	380	834	723	643	1314	740	503	1283	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	14.7	14.2	14.4	16.1	15.7	9.2	12.2	10.2	10.2	10.4	10.3
Incr Delay (d2), s/veh	0.4	0.8	0.4	0.2	0.8	0.2	0.0	1.8	0.4	0.0	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.3	0.3	0.5	0.1	0.1	2.4	0.4	0.0	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.6	15.5	14.6	14.7	16.9	15.9	9.2	14.0	10.6	10.2	10.6	10.4
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	314			139			546			213		
Approach Delay, s/veh	14.5			16.0			13.3			10.5		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	17.2	6.5	11.4	5.5	16.6	8.6	9.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	27.7	5.0	19.3	5.0	27.7	6.3	18.0				
Max Q Clear Time (g_c+l1), s	2.2	10.3	3.7	4.3	2.4	4.0	4.8	3.4				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.5	0.0	0.7	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.4											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	143	0	147	111	4	513
Future Vol, veh/h	143	0	147	111	4	513
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	154	0	158	119	4	552
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	778	218	0	0	277	0
Stage 1	218	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	368	827	-	-	1297	-
Stage 1	823	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	366	827	-	-	1297	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	21.78	0		0.06		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	366	14	-
HCM Lane V/C Ratio		-	-	0.42	0.003	-
HCM Ctrl Dly (s/v)		-	-	21.8	7.8	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	2	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	110	141	0	2	2
Future Vol, veh/h	5	110	141	0	2	2
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	6	124	158	0	2	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	158	0	-	0	293	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	135	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1433	-	-	-	702	892
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	897	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1433	-	-	-	699	892
Mov Cap-2 Maneuver	-	-	-	-	699	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	897	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.33	0		9.62		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	78	-	-	-	-	784
HCM Lane V/C Ratio	0.004	-	-	-	-	0.006
HCM Ctrl Dly (s/v)	7.5	0	-	-	-	9.6
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	67	0	42	107	186	0	601	72	240	822	22
Future Volume (veh/h)	43	67	0	42	107	186	0	601	72	240	822	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	44	69	0	43	110	0	0	620	74	247	847	23
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	53	83	0	50	127		385	1045	125	482	1329	36
Arrive On Green	0.07	0.07	0.00	0.09	0.09	0.00	0.00	0.68	0.68	0.06	0.76	0.76
Sat Flow, veh/h	726	1138	0	527	1347	1572	1810	1549	185	1767	1755	48
Grp Volume(v), veh/h	113	0	0	153	0	0	0	0	694	247	0	870
Grp Sat Flow(s),veh/h/ln	1864	0	0	1874	0	1572	1810	0	1733	1767	0	1803
Q Serve(g_s), s	10.6	0.0	0.0	14.3	0.0	0.0	0.0	0.0	38.5	7.4	0.0	40.2
Cycle Q Clear(g_c), s	10.6	0.0	0.0	14.3	0.0	0.0	0.0	0.0	38.5	7.4	0.0	40.2
Prop In Lane	0.39		0.00	0.28		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	135	0	0	177	0		385	0	1170	482	0	1365
V/C Ratio(X)	0.84	0.00	0.00	0.87	0.00		0.00	0.00	0.59	0.51	0.00	0.64
Avail Cap(c_a), veh/h	255	0	0	299	0		435	0	1170	702	0	1365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	81.3	0.0	0.0	79.3	0.0	0.0	0.0	0.0	15.6	13.7	0.0	10.1
Incr Delay (d2), s/veh	12.5	0.0	0.0	12.7	0.0	0.0	0.0	0.0	2.2	0.8	0.0	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	0.0	7.4	0.0	0.0	0.0	0.0	14.6	2.8	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	93.8	0.0	0.0	92.0	0.0	0.0	0.0	0.0	17.8	14.6	0.0	12.4
LnGrp LOS	F			F					B	B		B
Approach Vol, veh/h	113				153				694		1117	
Approach Delay, s/veh	93.8				92.0				17.8		12.9	
Approach LOS	F				F				B		B	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	14.5	124.4			17.4	0.0	138.9			21.2		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	32.2	107.2			24.3	5.0	134.4			28.3		
Max Q Clear Time (g_c+I1), s	9.4	40.5			12.6	0.0	42.2			16.3		
Green Ext Time (p_c), s	0.6	4.7			0.3	0.0	6.8			0.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	24.8											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2027 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	99	30	96	134	79	38	547	156	126	716	48
Future Volume (veh/h)	37	99	30	96	134	79	38	547	156	126	716	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	39	103	31	100	140	82	40	570	162	131	746	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	84	212	59	127	158	89	364	1174	1036	456	1198	793
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.02	0.64	0.64	0.04	0.66	0.66
Sat Flow, veh/h	242	859	241	412	639	359	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	173	0	0	322	0	0	40	570	162	131	746	50
Grp Sat Flow(s),veh/h/ln	1342	0	0	1411	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	22.3	0.0	0.0	1.4	29.7	7.3	4.6	43.6	2.7
Cycle Q Clear(g_c), s	19.1	0.0	0.0	41.5	0.0	0.0	1.4	29.7	7.3	4.6	43.6	2.7
Prop In Lane	0.23		0.18	0.31		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	0	374	0	0	364	1174	1036	456	1198	793
V/C Ratio(X)	0.49	0.00	0.00	0.86	0.00	0.00	0.11	0.49	0.16	0.29	0.62	0.06
Avail Cap(c_a), veh/h	569	0	0	588	0	0	375	1174	1036	488	1198	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	0.0	0.0	68.8	0.0	0.0	15.4	17.0	13.0	13.1	18.4	11.3
Incr Delay (d2), s/veh	1.0	0.0	0.0	7.7	0.0	0.0	0.1	1.4	0.3	0.3	2.4	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	0.0	15.4	0.0	0.0	0.5	12.2	2.6	1.8	17.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.6	0.0	0.0	76.6	0.0	0.0	15.5	18.4	13.3	13.4	20.8	11.5
LnGrp LOS	E			E			B	B	B	B	C	B
Approach Vol, veh/h	173			322			772			927		
Approach Delay, s/veh	59.6			76.6			17.2			19.3		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.2	122.6		49.8	8.9	125.0		49.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	116.0		70.5	5.5	120.5		70.5				
Max Q Clear Time (g_c+I1), s	6.6	31.7		21.1	3.4	45.6		43.5				
Green Ext Time (p_c), s	0.1	4.0		1.0	0.0	5.4		1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh				30.1								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2027 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	102	41	66	136	16	41	160	60	19	456	174
Future Volume (veh/h)	75	102	41	66	136	16	41	160	60	19	456	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	78	106	43	69	142	17	43	167	63	20	475	181
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	364	252	201	349	240	210	344	683	483	561	647	548
Arrive On Green	0.07	0.14	0.14	0.06	0.13	0.13	0.05	0.36	0.36	0.02	0.34	0.34
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	78	106	43	69	142	17	43	167	63	20	475	181
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.6	2.3	1.1	1.7	3.2	0.4	0.7	2.7	1.4	0.3	9.6	3.6
Cycle Q Clear(g_c), s	1.6	2.3	1.1	1.7	3.2	0.4	0.7	2.7	1.4	0.3	9.6	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	252	201	349	240	210	344	683	483	561	647	548
V/C Ratio(X)	0.21	0.42	0.21	0.20	0.59	0.08	0.12	0.24	0.13	0.04	0.73	0.33
Avail Cap(c_a), veh/h	548	872	697	544	907	793	488	2052	1452	744	2068	1753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	17.3	16.8	14.9	17.9	16.7	9.5	9.7	9.3	8.9	12.7	10.7
Incr Delay (d2), s/veh	0.3	1.1	0.5	0.3	2.3	0.2	0.2	0.2	0.1	0.0	1.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.9	0.3	0.5	1.2	0.1	0.2	0.7	0.3	0.1	2.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	18.4	17.3	15.1	20.2	16.8	9.7	9.9	9.4	9.0	14.3	11.0
LnGrp LOS	B	B	B	B	C	B	A	A	A	A	B	B
Approach Vol, veh/h	227			228			273			676		
Approach Delay, s/veh	17.0			18.4			9.8			13.3		
Approach LOS	B			B			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	20.3	7.3	10.4	6.5	19.4	7.6	10.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	47.5	8.5	20.5	5.5	47.5	7.5	21.5				
Max Q Clear Time (g_c+l1), s	2.3	4.7	3.7	4.3	2.7	11.6	3.6	5.2				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.5	0.0	3.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.0											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	1	373	186	1	136
Future Vol, veh/h	71	1	373	186	1	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	80	1	419	209	1	153
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	679	524	0	0	628	0
Stage 1	524	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	420	557	-	-	964	-
Stage 1	598	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	420	557	-	-	964	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	15.56	0		0.06		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	421	13	-	
HCM Lane V/C Ratio	-	-	0.192	0.001	-	
HCM Ctrl Dly (s/v)	-	-	15.6	8.7	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.7	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	194	72	0	2	1
Future Vol, veh/h	1	194	72	0	2	1
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	1	240	89	0	2	1
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	89	0	-	0	331	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	242	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1519	-	-	-	668	975
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1519	-	-	-	667	975
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	803	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.04	0		9.85		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	9	-	-	-	746	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Ctrl Dly (s/v)	7.4	0	-	-	9.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	113	1	56	68	249	0	788	42	132	495	4
Future Volume (veh/h)	73	113	1	56	68	249	0	788	42	132	495	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	78	120	1	60	72	0	0	838	45	140	527	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	90	138	1	73	88		527	965	52	235	1096	8
Arrive On Green	0.12	0.12	0.12	0.09	0.09	0.00	0.00	0.60	0.60	0.05	0.68	0.68
Sat Flow, veh/h	730	1123	9	844	1013	1547	1810	1606	86	1697	1604	12
Grp Volume(v), veh/h	199	0	0	132	0	0	0	0	883	140	0	531
Grp Sat Flow(s),veh/h/ln	1862	0	0	1858	0	1547	1810	0	1692	1697	0	1616
Q Serve(g_s), s	13.3	0.0	0.0	8.8	0.0	0.0	0.0	0.0	55.0	3.8	0.0	19.6
Cycle Q Clear(g_c), s	13.3	0.0	0.0	8.8	0.0	0.0	0.0	0.0	55.0	3.8	0.0	19.6
Prop In Lane	0.39		0.01	0.45		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	228	0	0	162	0		527	0	1017	235	0	1105
V/C Ratio(X)	0.87	0.00	0.00	0.82	0.00		0.00	0.00	0.87	0.59	0.00	0.48
Avail Cap(c_a), veh/h	273	0	0	269	0		597	0	1017	281	0	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.4	0.0	0.0	56.6	0.0	0.0	0.0	0.0	21.0	24.6	0.0	9.4
Incr Delay (d2), s/veh	22.2	0.0	0.0	9.6	0.0	0.0	0.0	0.0	10.0	2.4	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	0.0	4.4	0.0	0.0	0.0	0.0	21.3	2.3	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.6	0.0	0.0	66.3	0.0	0.0	0.0	0.0	31.0	27.0	0.0	10.9
LnGrp LOS	E			E					C	C		B
Approach Vol, veh/h	199			132			883			671		
Approach Delay, s/veh	76.6			66.3			31.0			14.3		
Approach LOS	E			E			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	80.4		20.0	0.0	90.8		15.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.3	75.9		18.5	5.0	80.2		18.3				
Max Q Clear Time (g_c+I1), s	5.8	57.0		15.3	0.0	21.6		10.8				
Green Ext Time (p_c), s	0.1	5.7		0.2	0.0	3.2		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	32.3											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2029 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	107	22	78	87	96	19	591	61	57	456	37
Future Volume (veh/h)	113	107	22	78	87	96	19	591	61	57	456	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	118	111	23	81	91	100	20	616	64	59	475	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	152	128	25	118	126	126	490	1103	942	371	1119	503
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.63	0.63	0.03	0.64	0.64
Sat Flow, veh/h	467	491	96	350	481	483	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	252	0	0	272	0	0	20	616	64	59	475	39
Grp Sat Flow(s),veh/h/ln	1054	0	0	1315	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	8.5	0.0	0.0	0.0	0.0	0.0	0.7	35.1	2.9	2.3	23.5	3.3
Cycle Q Clear(g_c), s	42.2	0.0	0.0	33.7	0.0	0.0	0.7	35.1	2.9	2.3	23.5	3.3
Prop In Lane	0.47		0.09	0.30		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	0	370	0	0	490	1103	942	371	1119	503
V/C Ratio(X)	0.82	0.00	0.00	0.73	0.00	0.00	0.04	0.56	0.07	0.16	0.42	0.08
Avail Cap(c_a), veh/h	570	0	0	634	0	0	513	1103	942	391	1119	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	0.0	0.0	59.8	0.0	0.0	12.1	18.1	12.2	14.3	15.3	11.7
Incr Delay (d2), s/veh	5.6	0.0	0.0	2.8	0.0	0.0	0.0	2.0	0.1	0.2	1.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	0.0	11.4	0.0	0.0	0.3	13.8	1.0	0.8	9.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.0	0.0	0.0	62.7	0.0	0.0	12.1	20.1	12.3	14.5	16.5	12.0
LnGrp LOS	E			E			B	C	B	B	B	B
Approach Vol, veh/h	252			272			700			573		
Approach Delay, s/veh	70.0			62.7			19.2			15.9		
Approach LOS	E			E			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	115.6		50.2	7.6	117.2		50.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.9	111.1		78.5	5.5	112.5		78.5				
Max Q Clear Time (g_c+I1), s	4.3	37.1		44.2	2.7	25.5		35.7				
Green Ext Time (p_c), s	0.0	4.1		1.5	0.0	2.9		1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				31.9								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2029 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	112	40	43	66	19	20	408	78	9	113	75
Future Volume (veh/h)	139	112	40	43	66	19	20	408	78	9	113	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	154	124	44	48	73	21	22	453	87	10	126	83
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	469	315	228	303	222	192	489	612	345	298	572	493
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.12	0.03	0.32	0.32	0.01	0.31	0.31
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	154	124	44	48	73	21	22	453	87	10	126	83
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	3.0	2.4	1.1	1.7	1.5	0.5	0.4	8.6	2.4	0.2	2.0	1.5
Cycle Q Clear(g_c), s	3.0	2.4	1.1	1.7	1.5	0.5	0.4	8.6	2.4	0.2	2.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	469	315	228	303	222	192	489	612	345	298	572	493
V/C Ratio(X)	0.33	0.39	0.19	0.16	0.33	0.11	0.04	0.74	0.25	0.03	0.22	0.17
Avail Cap(c_a), veh/h	530	841	611	376	823	714	642	1335	752	497	1303	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	15.0	14.5	14.7	16.4	15.9	9.1	12.2	10.1	10.2	10.4	10.2
Incr Delay (d2), s/veh	0.4	0.8	0.4	0.2	0.9	0.2	0.0	1.8	0.4	0.0	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.3	0.3	0.5	0.1	0.1	2.5	0.4	0.0	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	15.8	14.9	14.9	17.2	16.2	9.2	14.0	10.5	10.2	10.6	10.4
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	322				142				562			
Approach Delay, s/veh	14.8				16.3				13.3			
Approach LOS	B				B				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	17.6	6.6	11.4	5.6	17.0	8.6	9.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	28.5	5.1	18.4	5.0	28.5	5.5	18.0				
Max Q Clear Time (g_c+I1), s	2.2	10.6	3.7	4.4	2.4	4.0	5.0	3.5				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.5	0.0	0.8	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.5											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	146	0	151	114	4	527
Future Vol, veh/h	146	0	151	114	4	527
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	157	0	162	123	4	567
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	799	224	0	0	285	0
Stage 1	224	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	357	821	-	-	1289	-
Stage 1	818	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	356	821	-	-	1289	-
Mov Cap-2 Maneuver	356	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	22.88	0		0.06		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	356	14	-	
HCM Lane V/C Ratio	-	-	0.441	0.003	-	
HCM Ctrl Dly (s/v)	-	-	22.9	7.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	2.2	0	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	113	144	0	2	2
Future Vol, veh/h	5	113	144	0	2	2
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	6	127	162	0	2	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	162	0	-	0	300	162
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1429	-	-	-	696	888
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	893	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1429	-	-	-	693	888
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	893	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.32	0		9.65		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	76	-	-	-	778	
HCM Lane V/C Ratio	0.004	-	-	-	0.006	
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	68	0	43	110	191	0	617	74	246	843	22
Future Volume (veh/h)	44	68	0	43	110	191	0	617	74	246	843	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	45	70	0	44	113	0	0	636	76	254	869	23
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	53	83	0	50	130		368	1043	125	468	1328	35
Arrive On Green	0.07	0.07	0.00	0.10	0.10	0.00	0.00	0.67	0.67	0.06	0.76	0.76
Sat Flow, veh/h	729	1134	0	525	1349	1572	1810	1548	185	1767	1756	46
Grp Volume(v), veh/h	115	0	0	157	0	0	0	0	712	254	0	892
Grp Sat Flow(s),veh/h/ln	1864	0	0	1874	0	1572	1810	0	1733	1767	0	1803
Q Serve(g_s), s	11.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	41.2	7.8	0.0	43.3
Cycle Q Clear(g_c), s	11.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	41.2	7.8	0.0	43.3
Prop In Lane	0.39		0.00	0.28		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	136	0	0	180	0		368	0	1167	468	0	1363
V/C Ratio(X)	0.84	0.00	0.00	0.87	0.00		0.00	0.00	0.61	0.54	0.00	0.65
Avail Cap(c_a), veh/h	231	0	0	284	0		417	0	1167	673	0	1363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.9	0.0	0.0	80.8	0.0	0.0	0.0	0.0	16.4	14.9	0.0	10.7
Incr Delay (d2), s/veh	12.9	0.0	0.0	15.9	0.0	0.0	0.0	0.0	2.4	1.0	0.0	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.0	7.9	0.0	0.0	0.0	0.0	15.8	3.2	0.0	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	95.8	0.0	0.0	96.7	0.0	0.0	0.0	0.0	18.8	15.9	0.0	13.1
LnGrp LOS	F			F					B	B		B
Approach Vol, veh/h	115				157				712			
Approach Delay, s/veh	95.8				96.7				18.8			
Approach LOS	F				F				B			
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	15.0	126.5			17.8	0.0	141.5			21.9		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	31.5	110.5			22.5	5.0	137.0			27.5		
Max Q Clear Time (g_c+I1), s	9.8	43.2			13.0	0.0	45.3			17.0		
Green Ext Time (p_c), s	0.6	4.9			0.3	0.0	7.1			0.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	26.0											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2029 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	101	31	99	138	81	39	561	160	130	735	49
Future Volume (veh/h)	38	101	31	99	138	81	39	561	160	130	735	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	40	105	32	103	144	84	41	584	167	135	766	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	86	216	61	130	161	91	343	1160	1023	439	1186	785
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.02	0.64	0.64	0.04	0.65	0.65
Sat Flow, veh/h	244	850	241	412	634	356	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	177	0	0	331	0	0	41	584	167	135	766	51
Grp Sat Flow(s),veh/h/ln	1335	0	0	1403	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	23.6	0.0	0.0	1.5	31.9	7.8	4.9	47.1	2.9
Cycle Q Clear(g_c), s	19.8	0.0	0.0	43.4	0.0	0.0	1.5	31.9	7.8	4.9	47.1	2.9
Prop In Lane	0.23		0.18	0.31		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	0	0	382	0	0	343	1160	1023	439	1186	785
V/C Ratio(X)	0.49	0.00	0.00	0.87	0.00	0.00	0.12	0.50	0.16	0.31	0.65	0.07
Avail Cap(c_a), veh/h	558	0	0	577	0	0	352	1160	1023	473	1186	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	0.0	0.0	69.1	0.0	0.0	16.7	18.2	13.8	14.1	19.7	11.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	8.8	0.0	0.0	0.2	1.6	0.3	0.4	2.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	0.0	16.2	0.0	0.0	0.6	13.2	2.9	1.9	19.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.3	0.0	0.0	77.9	0.0	0.0	16.9	19.7	14.1	14.5	22.4	12.1
LnGrp LOS	E			E			B	B	B	B	C	B
Approach Vol, veh/h	177			331			792			952		
Approach Delay, s/veh	59.3			77.9			18.4			20.7		
Approach LOS	E			E			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	122.6		51.8	8.9	125.2		51.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	115.5		70.5	5.3	120.7		70.5				
Max Q Clear Time (g_c+I1), s	6.9	33.9		21.8	3.5	49.1		45.4				
Green Ext Time (p_c), s	0.1	4.2		1.0	0.0	5.6		1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	31.4											
HCM 7th LOS	C											

HCM 7th Signalized Intersection Summary
5: Eldmain Rd/Ashe Rd & Galena Rd

2029 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	104	42	67	140	17	42	164	61	20	468	179
Future Volume (veh/h)	77	104	42	67	140	17	42	164	61	20	468	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	80	108	44	70	146	18	44	171	64	21	488	186
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	360	255	204	346	242	212	341	694	491	563	658	558
Arrive On Green	0.07	0.14	0.14	0.07	0.13	0.13	0.05	0.37	0.37	0.03	0.35	0.35
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	80	108	44	70	146	18	44	171	64	21	488	186
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.6	2.4	1.2	1.8	3.3	0.4	0.7	2.8	1.4	0.3	10.1	3.8
Cycle Q Clear(g_c), s	1.6	2.4	1.2	1.8	3.3	0.4	0.7	2.8	1.4	0.3	10.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	255	204	346	242	212	341	694	491	563	658	558
V/C Ratio(X)	0.22	0.42	0.22	0.20	0.60	0.08	0.13	0.25	0.13	0.04	0.74	0.33
Avail Cap(c_a), veh/h	537	812	650	535	847	741	479	2052	1452	740	2069	1753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	17.6	17.1	15.1	18.2	17.0	9.6	9.8	9.3	8.9	12.8	10.8
Incr Delay (d2), s/veh	0.3	1.1	0.5	0.3	2.4	0.2	0.2	0.2	0.1	0.0	1.7	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	0.3	0.5	1.3	0.1	0.2	0.7	0.3	0.1	3.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.3	18.7	17.6	15.4	20.6	17.2	9.8	10.0	9.5	8.9	14.5	11.1
LnGrp LOS	B	B	B	B	C	B	A	A	A	A	B	B
Approach Vol, veh/h	232			234			279			695		
Approach Delay, s/veh	17.3			18.8			9.8			13.4		
Approach LOS	B			B			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	20.9	7.4	10.6	6.6	19.9	7.6	10.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	48.5	8.5	19.5	5.5	48.5	7.5	20.5				
Max Q Clear Time (g_c+I1), s	2.3	4.8	3.8	4.4	2.7	12.1	3.6	5.3				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.5	0.0	3.4	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.2											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	1	383	191	1	139
Future Vol, veh/h	72	1	383	191	1	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	81	1	430	215	1	156
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	696	538	0	0	645	0
Stage 1	538	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	411	547	-	-	950	-
Stage 1	590	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	410	547	-	-	950	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	15.91	0		0.06		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	412	13	-	
HCM Lane V/C Ratio	-	-	0.199	0.001	-	
HCM Ctrl Dly (s/v)	-	-	15.9	8.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.7	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	199	73	0	2	1
Future Vol, veh/h	1	199	73	0	2	1
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	1	246	90	0	2	1
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	90	0	-	0	338	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	248	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1518	-	-	-	661	973
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1518	-	-	-	661	973
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	798	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.04	0		9.89		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	9	-	-	-	740	
HCM Lane V/C Ratio	0.001	-	-	-	0.005	
HCM Ctrl Dly (s/v)	7.4	0	-	-	9.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	116	1	57	70	255	0	808	43	135	508	4
Future Volume (veh/h)	75	116	1	57	70	255	0	808	43	135	508	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	80	123	1	61	74	0	0	860	46	144	540	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	91	141	1	74	90		511	958	51	215	1090	8
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.00	0.00	0.60	0.60	0.05	0.68	0.68
Sat Flow, veh/h	730	1123	9	840	1018	1547	1810	1606	86	1697	1604	12
Grp Volume(v), veh/h	204	0	0	135	0	0	0	0	906	144	0	544
Grp Sat Flow(s),veh/h/ln	1862	0	0	1858	0	1547	1810	0	1692	1697	0	1616
Q Serve(g_s), s	13.6	0.0	0.0	9.0	0.0	0.0	0.0	0.0	58.9	4.0	0.0	20.6
Cycle Q Clear(g_c), s	13.6	0.0	0.0	9.0	0.0	0.0	0.0	0.0	58.9	4.0	0.0	20.6
Prop In Lane	0.39		0.00	0.45		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	233	0	0	165	0		511	0	1009	215	0	1098
V/C Ratio(X)	0.88	0.00	0.00	0.82	0.00		0.00	0.00	0.90	0.67	0.00	0.50
Avail Cap(c_a), veh/h	272	0	0	269	0		581	0	1009	263	0	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.4	0.0	0.0	56.7	0.0	0.0	0.0	0.0	22.2	27.3	0.0	9.8
Incr Delay (d2), s/veh	23.3	0.0	0.0	9.8	0.0	0.0	0.0	0.0	12.4	4.8	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.0	4.5	0.0	0.0	0.0	0.0	23.4	2.7	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.7	0.0	0.0	66.5	0.0	0.0	0.0	0.0	34.6	32.1	0.0	11.4
LnGrp LOS	E			E					C	C		B
Approach Vol, veh/h	204				135				906		688	
Approach Delay, s/veh	77.7				66.5				34.6		15.7	
Approach LOS	E				E				C		B	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	10.6	80.0			20.4	0.0	90.6			15.7		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	9.7	75.5			18.5	5.0	80.2			18.3		
Max Q Clear Time (g_c+I1), s	6.0	60.9			15.6	0.0	22.6			11.0		
Green Ext Time (p_c), s	0.1	5.2			0.2	0.0	3.3			0.3		
Intersection Summary												
HCM 7th Control Delay, s/veh	34.7											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2031 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	110	23	80	90	98	19	606	63	58	468	38
Future Volume (veh/h)	116	110	23	80	90	98	19	606	63	58	468	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	121	115	24	83	94	102	20	631	66	60	488	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	155	132	26	121	129	129	472	1090	932	354	1106	498
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.02	0.63	0.63	0.03	0.64	0.64
Sat Flow, veh/h	465	490	97	350	481	479	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	260	0	0	279	0	0	20	631	66	60	488	40
Grp Sat Flow(s),veh/h/ln	1052	0	0	1310	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	9.1	0.0	0.0	0.0	0.0	0.0	0.8	37.6	3.1	2.5	25.1	3.5
Cycle Q Clear(g_c), s	44.1	0.0	0.0	35.0	0.0	0.0	0.8	37.6	3.1	2.5	25.1	3.5
Prop In Lane	0.47		0.09	0.30		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	0	0	379	0	0	472	1090	932	354	1106	498
V/C Ratio(X)	0.83	0.00	0.00	0.74	0.00	0.00	0.04	0.58	0.07	0.17	0.44	0.08
Avail Cap(c_a), veh/h	559	0	0	625	0	0	493	1090	932	378	1106	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.6	0.0	0.0	59.6	0.0	0.0	12.9	19.2	12.8	15.4	16.2	12.3
Incr Delay (d2), s/veh	5.7	0.0	0.0	2.8	0.0	0.0	0.0	2.2	0.1	0.2	1.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	11.8	0.0	0.0	0.3	14.8	1.0	0.8	9.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.3	0.0	0.0	62.4	0.0	0.0	12.9	21.5	13.0	15.6	17.5	12.6
LnGrp LOS	E			E			B	C	B	B	B	B
Approach Vol, veh/h	260			279			717			588		
Approach Delay, s/veh	70.3			62.4			20.5			17.0		
Approach LOS	E			E			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	115.6		52.1	7.6	117.2		52.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	110.5		78.5	5.3	112.7		78.5				
Max Q Clear Time (g_c+l1), s	4.5	39.6		46.1	2.8	27.1		37.0				
Green Ext Time (p_c), s	0.0	4.3		1.6	0.0	3.0		1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	32.7											
HCM 7th LOS	C											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Background AM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	115	41	44	68	19	21	418	80	10	116	77
Future Volume (veh/h)	143	115	41	44	68	19	21	418	80	10	116	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	159	128	46	49	76	21	23	464	89	11	129	86
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	467	316	229	299	219	190	491	621	350	296	581	500
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.12	0.03	0.33	0.33	0.01	0.31	0.31
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	159	128	46	49	76	21	23	464	89	11	129	86
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	3.1	2.5	1.2	1.8	1.6	0.5	0.4	9.0	2.5	0.2	2.1	1.6
Cycle Q Clear(g_c), s	3.1	2.5	1.2	1.8	1.6	0.5	0.4	9.0	2.5	0.2	2.1	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	467	316	229	299	219	190	491	621	350	296	581	500
V/C Ratio(X)	0.34	0.41	0.20	0.16	0.35	0.11	0.05	0.75	0.25	0.04	0.22	0.17
Avail Cap(c_a), veh/h	519	832	604	370	814	706	638	1308	737	489	1277	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	15.3	14.7	14.9	16.7	16.3	9.1	12.4	10.2	10.3	10.5	10.3
Incr Delay (d2), s/veh	0.4	0.8	0.4	0.3	0.9	0.3	0.0	1.8	0.4	0.1	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.9	0.3	0.3	0.6	0.2	0.1	2.6	0.4	0.0	0.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.1	16.1	15.1	15.2	17.7	16.5	9.2	14.2	10.6	10.3	10.6	10.4
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	333			146			576			226		
Approach Delay, s/veh	15.0			16.7			13.4			10.6		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	18.0	6.6	11.5	5.7	17.4	8.8	9.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	28.4	5.1	18.5	5.0	28.4	5.5	18.1				
Max Q Clear Time (g_c+I1), s	2.2	11.0	3.8	4.5	2.4	4.1	5.1	3.6				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.6	0.0	0.8	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.7											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	0	155	117	5	540
Future Vol, veh/h	150	0	155	117	5	540
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	161	0	167	126	5	581
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	821	230	0	0	292	0
Stage 1	230	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	347	815	-	-	1281	-
Stage 1	813	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	815	-	-	1281	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	24.29	0		0.07		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	345	17	-	
HCM Lane V/C Ratio	-	-	0.468	0.004	-	
HCM Ctrl Dly (s/v)	-	-	24.3	7.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	2.4	0	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	116	148	0	2	2
Future Vol, veh/h	5	116	148	0	2	2
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	6	130	166	0	2	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	166	0	-	0	308	166
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1424	-	-	-	689	883
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1424	-	-	-	686	883
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	890	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.31	0		9.69		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	74	-	-	-	772	
HCM Lane V/C Ratio	0.004	-	-	-	0.006	
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	70	0	44	112	196	0	633	76	253	866	23
Future Volume (veh/h)	45	70	0	44	112	196	0	633	76	253	866	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	46	72	0	45	115	0	0	653	78	261	893	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	54	85	0	51	131		349	1035	124	452	1322	36
Arrive On Green	0.07	0.07	0.00	0.10	0.10	0.00	0.00	0.67	0.67	0.06	0.75	0.75
Sat Flow, veh/h	727	1137	0	527	1347	1572	1810	1548	185	1767	1755	47
Grp Volume(v), veh/h	118	0	0	160	0	0	0	0	731	261	0	917
Grp Sat Flow(s),veh/h/ln	1864	0	0	1874	0	1572	1810	0	1733	1767	0	1803
Q Serve(g_s), s	11.4	0.0	0.0	15.3	0.0	0.0	0.0	0.0	43.9	8.2	0.0	46.5
Cycle Q Clear(g_c), s	11.4	0.0	0.0	15.3	0.0	0.0	0.0	0.0	43.9	8.2	0.0	46.5
Prop In Lane	0.39		0.00	0.28		1.00	1.00		0.11	1.00		0.03
Lane Grp Cap(c), veh/h	139	0	0	183	0		349	0	1159	452	0	1358
V/C Ratio(X)	0.85	0.00	0.00	0.87	0.00		0.00	0.00	0.63	0.58	0.00	0.68
Avail Cap(c_a), veh/h	231	0	0	283	0		397	0	1159	663	0	1358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.1	0.0	0.0	81.0	0.0	0.0	0.0	0.0	17.3	16.3	0.0	11.3
Incr Delay (d2), s/veh	13.9	0.0	0.0	16.8	0.0	0.0	0.0	0.0	2.6	1.2	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.0	8.1	0.0	0.0	0.0	0.0	16.9	3.7	0.0	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	97.0	0.0	0.0	97.7	0.0	0.0	0.0	0.0	19.9	17.5	0.0	14.0
LnGrp LOS	F			F					B	B		B
Approach Vol, veh/h	118				160				731		1178	
Approach Delay, s/veh	97.0				97.7				19.9		14.8	
Approach LOS	F				F				B		B	
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	15.4	126.1			18.1	0.0	141.5			22.3		
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5			4.5		
Max Green Setting (Gmax), s	32.5	109.5			22.5	5.0	137.0			27.5		
Max Q Clear Time (g_c+l1), s	10.2	45.9			13.4	0.0	48.5			17.3		
Green Ext Time (p_c), s	0.7	5.1			0.3	0.0	7.5			0.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	27.0											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2031 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	104	31	102	142	83	40	576	164	133	754	51
Future Volume (veh/h)	39	104	31	102	142	83	40	576	164	133	754	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	41	108	32	106	148	86	42	600	171	139	785	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	88	222	62	133	165	92	323	1145	1010	421	1173	776
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.63	0.63	0.04	0.64	0.64
Sat Flow, veh/h	246	849	235	413	630	353	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	181	0	0	340	0	0	42	600	171	139	785	53
Grp Sat Flow(s),veh/h/ln	1329	0	0	1396	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	24.8	0.0	0.0	1.6	34.3	8.3	5.2	50.6	3.1
Cycle Q Clear(g_c), s	20.4	0.0	0.0	45.3	0.0	0.0	1.6	34.3	8.3	5.2	50.6	3.1
Prop In Lane	0.23		0.18	0.31		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	0	0	391	0	0	323	1145	1010	421	1173	776
V/C Ratio(X)	0.49	0.00	0.00	0.87	0.00	0.00	0.13	0.52	0.17	0.33	0.67	0.07
Avail Cap(c_a), veh/h	548	0	0	567	0	0	331	1145	1010	461	1173	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	0.0	0.0	69.2	0.0	0.0	18.2	19.4	14.6	15.2	21.0	12.5
Incr Delay (d2), s/veh	1.0	0.0	0.0	9.8	0.0	0.0	0.2	1.7	0.4	0.5	3.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	0.0	16.9	0.0	0.0	0.6	14.3	3.1	2.0	21.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.0	0.0	0.0	79.1	0.0	0.0	18.4	21.2	15.0	15.6	24.1	12.7
LnGrp LOS	E			E			B	C	B	B	C	B
Approach Vol, veh/h	181			340			813			977		
Approach Delay, s/veh	59.0			79.1			19.7			22.3		
Approach LOS	E			E			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	122.3		53.7	8.9	125.2		53.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	11.5	114.5		70.5	5.3	120.7		70.5				
Max Q Clear Time (g_c+I1), s	7.2	36.3		22.4	3.6	52.6		47.3				
Green Ext Time (p_c), s	0.1	4.3		1.1	0.0	5.8		1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh				32.6								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Background PM
07/16/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	107	43	69	144	17	43	169	63	21	480	184
Future Volume (veh/h)	79	107	43	69	144	17	43	169	63	21	480	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	82	111	45	72	150	18	45	176	66	22	500	192
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	356	257	206	344	245	215	337	703	498	563	669	567
Arrive On Green	0.07	0.14	0.14	0.07	0.13	0.13	0.05	0.37	0.37	0.03	0.35	0.35
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	82	111	45	72	150	18	45	176	66	22	500	192
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.7	2.5	1.2	1.8	3.5	0.4	0.7	2.9	1.5	0.3	10.5	4.0
Cycle Q Clear(g_c), s	1.7	2.5	1.2	1.8	3.5	0.4	0.7	2.9	1.5	0.3	10.5	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	257	206	344	245	215	337	703	498	563	669	567
V/C Ratio(X)	0.23	0.43	0.22	0.21	0.61	0.08	0.13	0.25	0.13	0.04	0.75	0.34
Avail Cap(c_a), veh/h	527	796	637	525	830	726	470	2012	1423	734	2027	1718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	17.9	17.4	15.4	18.6	17.3	9.7	9.9	9.4	8.9	12.9	10.8
Incr Delay (d2), s/veh	0.3	1.1	0.5	0.3	2.5	0.2	0.2	0.2	0.1	0.0	1.7	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	0.4	0.5	1.4	0.1	0.2	0.8	0.3	0.1	3.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5	19.1	17.9	15.7	21.1	17.4	9.9	10.0	9.5	8.9	14.6	11.2
LnGrp LOS	B	B	B	B	C	B	A	B	A	A	B	B
Approach Vol, veh/h	238			240			287			714		
Approach Delay, s/veh	17.6			19.2			9.9			13.5		
Approach LOS	B			B			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	21.5	7.5	10.8	6.7	20.5	7.7	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	48.5	8.5	19.5	5.5	48.5	7.5	20.5				
Max Q Clear Time (g_c+l1), s	2.3	4.9	3.8	4.5	2.7	12.5	3.7	5.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.0	3.5	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.4											
HCM 7th LOS	B											

Appendix G – Future with Project Intersection Capacity Analysis

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	10	371	234	12	142
Future Vol, veh/h	111	10	371	234	12	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	125	11	417	263	13	160
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	735	548	0	0	680	0
Stage 1	548	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	390	540	-	-	922	-
Stage 1	583	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	384	540	-	-	922	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	18.93	0		0.7		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	393	140	-
HCM Lane V/C Ratio		-	-	0.346	0.015	-
HCM Ctrl Dly (s/v)		-	-	18.9	9	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	1.5	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	258	153	0	2	4
Future Vol, veh/h	3	258	153	0	2	4
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	4	319	189	0	2	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	189	0	-	0	515	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1397	-	-	-	524	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1397	-	-	-	522	858
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	736	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.09	0		10.15		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	21	-	-	-	706	
HCM Lane V/C Ratio	0.003	-	-	-	0.01	
HCM Ctrl Dly (s/v)	7.6	0	-	-	10.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	123	36	70	83	242	42	788	54	128	507	29
Future Volume (veh/h)	92	123	36	70	83	242	42	788	54	128	507	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	98	131	38	74	88	0	45	838	57	136	539	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	100	134	39	87	103		411	893	61	180	884	51
Arrive On Green	0.15	0.15	0.15	0.10	0.10	0.00	0.03	0.56	0.56	0.05	0.58	0.58
Sat Flow, veh/h	668	893	259	849	1009	1547	1810	1580	108	1697	1516	87
Grp Volume(v), veh/h	267	0	0	162	0	0	45	0	895	136	0	570
Grp Sat Flow(s),veh/h/ln	1820	0	0	1858	0	1547	1810	0	1688	1697	0	1603
Q Serve(g_s), s	19.6	0.0	0.0	11.5	0.0	0.0	1.4	0.0	65.9	4.5	0.0	30.9
Cycle Q Clear(g_c), s	19.6	0.0	0.0	11.5	0.0	0.0	1.4	0.0	65.9	4.5	0.0	30.9
Prop In Lane	0.37		0.14	0.46		1.00	1.00		0.06	1.00		0.05
Lane Grp Cap(c), veh/h	273	0	0	190	0		411	0	954	180	0	935
V/C Ratio(X)	0.98	0.00	0.00	0.85	0.00		0.11	0.00	0.94	0.75	0.00	0.61
Avail Cap(c_a), veh/h	273	0	0	256	0		425	0	954	212	0	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	0.0	59.2	0.0	0.0	14.4	0.0	27.0	30.7	0.0	18.1
Incr Delay (d2), s/veh	48.7	0.0	0.0	18.1	0.0	0.0	0.1	0.0	17.6	12.1	0.0	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.0	0.0	6.2	0.0	0.0	0.5	0.0	27.9	2.9	0.0	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	105.5	0.0	0.0	77.4	0.0	0.0	14.6	0.0	44.7	42.8	0.0	21.0
LnGrp LOS	F			E			B		D	D		C
Approach Vol, veh/h	267			162			940			706		
Approach Delay, s/veh	105.5			77.4			43.2			25.2		
Approach LOS	F			E			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	80.3		24.6	8.6	82.8		18.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.1	74.3		20.1	5.1	78.3		18.5				
Max Q Clear Time (g_c+I1), s	6.5	67.9		21.6	3.4	32.9		13.5				
Green Ext Time (p_c), s	0.1	3.0		0.0	0.0	3.5		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	47.8											
HCM 7th LOS	D											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2027 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	123	39	76	107	115	39	596	60	73	461	77
Future Volume (veh/h)	143	123	39	76	107	115	39	596	60	73	461	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	149	128	41	79	111	120	41	621	63	76	480	80
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	186	141	44	126	172	172	404	984	841	303	996	448
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.02	0.57	0.57	0.03	0.57	0.57
Sat Flow, veh/h	477	431	134	307	525	525	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	318	0	0	310	0	0	41	621	63	76	480	80
Grp Sat Flow(s),veh/h/ln	1043	0	0	1357	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	19.5	0.0	0.0	0.0	0.0	0.0	1.9	43.5	3.5	3.7	29.4	8.8
Cycle Q Clear(g_c), s	55.1	0.0	0.0	35.6	0.0	0.0	1.9	43.5	3.5	3.7	29.4	8.8
Prop In Lane	0.47		0.13	0.25		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	0	0	469	0	0	404	984	841	303	996	448
V/C Ratio(X)	0.86	0.00	0.00	0.66	0.00	0.00	0.10	0.63	0.07	0.25	0.48	0.18
Avail Cap(c_a), veh/h	589	0	0	694	0	0	413	984	841	321	996	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.4	0.0	0.0	52.4	0.0	0.0	17.8	26.4	17.7	21.3	22.7	18.3
Incr Delay (d2), s/veh	7.3	0.0	0.0	1.6	0.0	0.0	0.1	3.1	0.2	0.4	1.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	0.0	0.0	12.3	0.0	0.0	0.7	18.0	1.2	1.3	12.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.8	0.0	0.0	53.9	0.0	0.0	17.9	29.5	17.9	21.7	24.3	19.2
LnGrp LOS	E			D			B	C	B	C	C	B
Approach Vol, veh/h	318			310			725			636		
Approach Delay, s/veh	69.8			53.9			27.8			23.4		
Approach LOS	E			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	106.7		63.6	8.9	108.0		63.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.6	101.2		87.7	5.3	103.5		87.7				
Max Q Clear Time (g_c+I1), s	5.7	45.5		57.1	3.9	31.4		37.6				
Green Ext Time (p_c), s	0.0	4.1		2.0	0.0	3.1		2.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	37.2											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2027 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	134	39	64	86	27	19	423	103	20	131	93
Future Volume (veh/h)	160	134	39	64	86	27	19	423	103	20	131	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	178	149	43	71	96	30	21	470	114	22	146	103
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	461	306	222	294	213	185	477	617	347	302	605	520
Arrive On Green	0.12	0.16	0.16	0.07	0.11	0.11	0.03	0.32	0.32	0.03	0.33	0.33
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	178	149	43	71	96	30	21	470	114	22	146	103
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	3.7	3.1	1.2	2.7	2.1	0.7	0.4	9.6	3.5	0.3	2.5	2.0
Cycle Q Clear(g_c), s	3.7	3.1	1.2	2.7	2.1	0.7	0.4	9.6	3.5	0.3	2.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	306	222	294	213	185	477	617	347	302	605	520
V/C Ratio(X)	0.39	0.49	0.19	0.24	0.45	0.16	0.04	0.76	0.33	0.07	0.24	0.20
Avail Cap(c_a), veh/h	530	774	562	423	852	739	620	1123	632	463	1097	944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	16.4	15.5	15.6	17.8	17.2	9.3	13.1	11.0	10.3	10.6	10.5
Incr Delay (d2), s/veh	0.5	1.2	0.4	0.4	1.5	0.4	0.0	2.0	0.5	0.1	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.1	0.3	0.5	0.8	0.2	0.1	2.9	0.6	0.1	0.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.7	17.6	16.0	16.0	19.3	17.6	9.3	15.0	11.6	10.4	10.8	10.7
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	370			197			605			271		
Approach Delay, s/veh	16.0			17.9			14.2			10.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	18.5	7.4	11.6	5.6	18.6	9.5	9.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	25.5	8.5	18.0	5.0	25.5	6.7	19.8				
Max Q Clear Time (g_c+I1), s	2.3	11.6	4.7	5.1	2.4	4.5	5.7	4.1				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.6	0.0	0.9	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	191	62	85	71	50	70
Future Vol, veh/h	191	62	85	71	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	67	92	77	54	76
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	275	0	503	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	262	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1288	-	528	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1288	-	488	798
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	723	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		4.36		12.18	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	631	-	-	981	-	
HCM Lane V/C Ratio	0.207	-	-	0.072	-	
HCM Ctrl Dly (s/v)	12.2	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-	

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	237	125	84	68	52
Future Vol, veh/h	63	237	125	84	68	52
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	258	136	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	227	0	-	0	576	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1341	-	-	-	479	861
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1341	-	-	-	450	861
Mov Cap-2 Maneuver	-	-	-	-	450	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	681	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.64	0		13.22		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	378	-	-	-	568	
HCM Lane V/C Ratio	0.051	-	-	-	0.23	
HCM Ctrl Dly (s/v)	7.8	0	-	-	13.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Intersection						
Int Delay, s/veh	6.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	197	11	158	134	9	517
Future Vol, veh/h	197	11	158	134	9	517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	212	12	170	144	10	556
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	817	242	0	0	314	0
Stage 1	242	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	349	802	-	-	1258	-
Stage 1	803	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	802	-	-	1258	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	30.82	0		0.13		
HCM LOS	D					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	356	31	-
HCM Lane V/C Ratio		-	-	0.629	0.008	-
HCM Ctrl Dly (s/v)		-	-	30.8	7.9	0
HCM Lane LOS		-	-	D	A	A
HCM 95th %tile Q(veh)		-	-	4.1	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	199	179	0	2	3
Future Vol, veh/h	8	199	179	0	2	3
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	9	224	201	0	2	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	201	0	-	0	443	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	242	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1383	-	-	-	576	845
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1383	-	-	-	572	845
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	803	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.29	0		10.12		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	70	-	-	-	-	709
HCM Lane V/C Ratio	0.006	-	-	-	-	0.008
HCM Ctrl Dly (s/v)	7.6	0	-	-	-	10.1
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	84	45	50	114	186	19	627	90	240	833	34
Future Volume (veh/h)	70	84	45	50	114	186	19	627	90	240	833	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	72	87	46	52	118	0	20	646	93	247	859	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	79	96	51	58	133		275	929	134	384	1143	47
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.00	0.02	0.61	0.61	0.06	0.66	0.66
Sat Flow, veh/h	631	762	403	572	1299	1572	1810	1510	217	1767	1728	70
Grp Volume(v), veh/h	205	0	0	170	0	0	20	0	739	247	0	894
Grp Sat Flow(s),veh/h/ln	1796	0	0	1871	0	1572	1810	0	1727	1767	0	1798
Q Serve(g_s), s	21.7	0.0	0.0	17.3	0.0	0.0	0.8	0.0	55.6	9.7	0.0	64.5
Cycle Q Clear(g_c), s	21.7	0.0	0.0	17.3	0.0	0.0	0.8	0.0	55.6	9.7	0.0	64.5
Prop In Lane	0.35		0.22	0.31		1.00	1.00		0.13	1.00		0.04
Lane Grp Cap(c), veh/h	226	0	0	191	0		275	0	1062	384	0	1190
V/C Ratio(X)	0.91	0.00	0.00	0.89	0.00		0.07	0.00	0.70	0.64	0.00	0.75
Avail Cap(c_a), veh/h	302	0	0	257	0		294	0	1062	523	0	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.2	0.0	0.0	85.6	0.0	0.0	21.5	0.0	25.0	24.0	0.0	22.0
Incr Delay (d2), s/veh	24.2	0.0	0.0	24.1	0.0	0.0	0.1	0.0	3.8	1.8	0.0	4.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	0.0	9.5	0.0	0.0	0.3	0.0	22.6	4.7	0.0	26.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	107.4	0.0	0.0	109.7	0.0	0.0	21.6	0.0	28.8	25.8	0.0	26.4
LnGrp LOS	F			F			C		C	C		C
Approach Vol, veh/h	205			170			759			1141		
Approach Delay, s/veh	107.4			109.7			28.6			26.2		
Approach LOS	F			F			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.8	123.2		28.8	7.8	132.2		24.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	27.5	105.5		32.5	5.3	127.7		26.5				
Max Q Clear Time (g_c+I1), s	11.7	57.6		23.7	2.8	66.5		19.3				
Green Ext Time (p_c), s	0.6	5.2		0.6	0.0	7.2		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.6											
HCM 7th LOS	D											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2027 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	123	52	96	144	89	48	556	156	149	738	67
Future Volume (veh/h)	81	123	52	96	144	89	48	556	156	149	738	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	84	128	54	100	150	93	50	579	162	155	769	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	115	168	66	124	168	100	300	1090	961	414	1126	745
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.02	0.60	0.60	0.04	0.62	0.62
Sat Flow, veh/h	314	582	228	345	582	345	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	266	0	0	343	0	0	50	579	162	155	769	70
Grp Sat Flow(s),veh/h/ln	1123	0	0	1272	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	0.0	0.0	0.0	8.4	0.0	0.0	2.1	35.9	8.7	6.4	53.5	4.5
Cycle Q Clear(g_c), s	43.1	0.0	0.0	51.5	0.0	0.0	2.1	35.9	8.7	6.4	53.5	4.5
Prop In Lane	0.32		0.20	0.29		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	349	0	0	391	0	0	300	1090	961	414	1126	745
V/C Ratio(X)	0.76	0.00	0.00	0.88	0.00	0.00	0.17	0.53	0.17	0.37	0.68	0.09
Avail Cap(c_a), veh/h	481	0	0	530	0	0	310	1090	961	451	1126	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	0.0	0.0	67.3	0.0	0.0	21.1	22.8	17.3	17.6	24.3	14.9
Incr Delay (d2), s/veh	4.8	0.0	0.0	12.0	0.0	0.0	0.3	1.9	0.4	0.6	3.4	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	0.0	0.0	17.6	0.0	0.0	0.9	15.4	3.3	2.6	22.9	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.5	0.0	0.0	79.3	0.0	0.0	21.4	24.7	17.7	18.2	27.7	15.2
LnGrp LOS	E			E			C	C	B	B	C	B
Approach Vol, veh/h	266			343			791			994		
Approach Delay, s/veh	67.5			79.3			23.1			25.3		
Approach LOS	E			E			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	118.9		59.8	9.2	122.8		59.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.5	111.5		72.5	5.7	118.3		72.5				
Max Q Clear Time (g_c+I1), s	8.4	37.9		45.1	4.1	55.5		53.5				
Green Ext Time (p_c), s	0.1	4.1		1.6	0.0	5.7		1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	37.0											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2027 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	114	41	95	163	27	41	172	72	23	484	200
Future Volume (veh/h)	86	114	41	95	163	27	41	172	72	23	484	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	90	119	43	99	170	28	43	179	75	24	504	222
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	356	262	210	354	267	233	324	698	494	553	671	569
Arrive On Green	0.07	0.14	0.14	0.08	0.14	0.14	0.05	0.37	0.37	0.03	0.35	0.35
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	90	119	43	99	170	28	43	179	75	24	504	222
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.9	2.8	1.2	2.6	4.1	0.7	0.7	3.1	1.8	0.4	11.0	4.9
Cycle Q Clear(g_c), s	1.9	2.8	1.2	2.6	4.1	0.7	0.7	3.1	1.8	0.4	11.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	262	210	354	267	233	324	698	494	553	671	569
V/C Ratio(X)	0.25	0.45	0.21	0.28	0.64	0.12	0.13	0.26	0.15	0.04	0.75	0.39
Avail Cap(c_a), veh/h	511	769	616	541	842	736	453	1904	1347	713	1919	1626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	18.5	17.9	15.5	18.9	17.5	10.1	10.3	9.9	9.2	13.4	11.4
Incr Delay (d2), s/veh	0.4	1.2	0.5	0.4	2.5	0.2	0.2	0.2	0.1	0.0	1.7	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	0.4	0.7	1.6	0.2	0.2	0.9	0.4	0.1	3.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.8	19.8	18.3	15.9	21.5	17.7	10.2	10.5	10.0	9.2	15.1	11.8
LnGrp LOS	B	B	B	B	C	B	B	B	B	A	B	B
Approach Vol, veh/h	252			297			297			750		
Approach Delay, s/veh	18.1			19.3			10.3			14.0		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	21.9	8.1	11.1	6.6	21.1	8.0	11.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	47.5	9.5	19.5	5.5	47.5	7.5	21.5				
Max Q Clear Time (g_c+l1), s	2.4	5.1	4.6	4.8	2.7	13.0	3.9	6.1				
Green Ext Time (p_c), s	0.0	1.1	0.1	0.5	0.0	3.6	0.1	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.9											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	115	28	39	143	65	92
Future Vol, veh/h	115	28	39	143	65	92
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	30	42	155	71	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	380	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1425	-	622	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1425	-	601	908
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	774	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		1.63		11.21	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	750	-	-	386	-	
HCM Lane V/C Ratio	0.228	-	-	0.03	-	
HCM Ctrl Dly (s/v)	11.2	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	166	218	39	90	67
Future Vol, veh/h	28	166	218	39	90	67
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	180	237	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	279	0	-	0	499	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1283	-	-	-	531	780
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1283	-	-	-	517	780
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	799	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.14	0		13.29		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	260	-	-	-	604	
HCM Lane V/C Ratio	0.024	-	-	-	0.283	
HCM Ctrl Dly (s/v)	7.9	0	-	-	13.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2	

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	10	416	243	12	189
Future Vol, veh/h	119	10	416	243	12	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	134	11	467	273	13	212
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	843	604	0	0	740	0
Stage 1	604	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	337	502	-	-	875	-
Stage 1	550	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	502	-	-	875	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	23.26	0		0.55		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	340	107	-
HCM Lane V/C Ratio		-	-	0.427	0.015	-
HCM Ctrl Dly (s/v)		-	-	23.3	9.2	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	2.1	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	263	155	0	2	10
Future Vol, veh/h	8	263	155	0	2	10
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	10	325	191	0	2	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	191	0	-	0	536	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	344	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1394	-	-	-	509	855
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1394	-	-	-	505	855
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	722	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.22	0		9.79		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	53	-	-	-	-	767
HCM Lane V/C Ratio	0.007	-	-	-	-	0.019
HCM Ctrl Dly (s/v)	7.6	0	-	-	-	9.8
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	126	36	140	84	249	42	894	111	132	625	29
Future Volume (veh/h)	94	126	36	140	84	249	42	894	111	132	625	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	100	134	38	149	89	0	45	951	118	140	665	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	88	119	34	148	89		303	840	104	130	892	42
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.03	0.56	0.56	0.05	0.58	0.58
Sat Flow, veh/h	669	897	254	1153	689	1547	1810	1489	185	1697	1534	72
Grp Volume(v), veh/h	272	0	0	238	0	0	45	0	1069	140	0	696
Grp Sat Flow(s),veh/h/ln	1821	0	0	1842	0	1547	1810	0	1674	1697	0	1606
Q Serve(g_s), s	18.5	0.0	0.0	18.0	0.0	0.0	1.5	0.0	79.0	6.5	0.0	44.9
Cycle Q Clear(g_c), s	18.5	0.0	0.0	18.0	0.0	0.0	1.5	0.0	79.0	6.5	0.0	44.9
Prop In Lane	0.37		0.14	0.63		1.00	1.00		0.11	1.00		0.04
Lane Grp Cap(c), veh/h	241	0	0	237	0		303	0	945	130	0	933
V/C Ratio(X)	1.13	0.00	0.00	1.00	0.00		0.15	0.00	1.13	1.08	0.00	0.75
Avail Cap(c_a), veh/h	241	0	0	237	0		316	0	945	130	0	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.8	0.0	0.0	61.0	0.0	0.0	18.7	0.0	30.5	43.9	0.0	21.7
Incr Delay (d2), s/veh	97.7	0.0	0.0	59.7	0.0	0.0	0.2	0.0	72.6	100.5	0.0	5.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	0.0	0.0	12.0	0.0	0.0	0.6	0.0	47.1	6.0	0.0	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	158.4	0.0	0.0	120.7	0.0	0.0	18.9	0.0	103.1	144.4	0.0	27.1
LnGrp LOS	F			F			B		F	F		C
Approach Vol, veh/h	272			238			1114			836		
Approach Delay, s/veh	158.4			120.7			99.7			46.7		
Approach LOS	F			F			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	83.5		23.0	8.6	85.9		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.5	79.0		18.5	5.1	80.4		18.0				
Max Q Clear Time (g_c+I1), s	8.5	81.0		20.5	3.5	46.9		20.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	4.6		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	90.2											
HCM 7th LOS	F											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2029 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	201	110	78	202	118	126	611	61	75	473	251
Future Volume (veh/h)	288	201	110	78	202	118	126	611	61	75	473	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	300	209	115	81	210	123	131	636	64	78	493	261
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	319	204	113	164	417	237	148	608	520	75	585	263
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.04	0.35	0.35	0.03	0.34	0.34
Sat Flow, veh/h	525	365	201	256	745	423	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	624	0	0	414	0	0	131	636	64	78	493	261
Grp Sat Flow(s),veh/h/ln	1091	0	0	1424	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	80.8	0.0	0.0	0.0	0.0	0.0	8.3	73.5	6.1	5.5	55.2	69.9
Cycle Q Clear(g_c), s	117.5	0.0	0.0	36.7	0.0	0.0	8.3	73.5	6.1	5.5	55.2	69.9
Prop In Lane	0.48		0.18	0.20		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	0	0	817	0	0	148	608	520	75	585	263
V/C Ratio(X)	0.98	0.00	0.00	0.51	0.00	0.00	0.88	1.05	0.12	1.04	0.84	0.99
Avail Cap(c_a), veh/h	636	0	0	817	0	0	148	608	520	75	585	263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	0.0	0.0	28.2	0.0	0.0	64.6	68.2	46.4	65.1	64.5	69.4
Incr Delay (d2), s/veh	30.9	0.0	0.0	0.5	0.0	0.0	41.8	49.1	0.5	115.2	13.8	53.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.3	0.0	0.0	12.9	0.0	0.0	5.0	40.0	2.3	4.1	26.1	17.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.3	0.0	0.0	28.7	0.0	0.0	106.4	117.4	46.8	180.4	78.3	123.0
LnGrp LOS	F			C			F	F	D	F	E	F
Approach Vol, veh/h	624			414			831			832		
Approach Delay, s/veh	85.3			28.7			110.2			101.9		
Approach LOS	F			C			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	78.0		122.0	12.8	75.2		122.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	73.5		117.5	8.3	70.7		117.5				
Max Q Clear Time (g_c+I1), s	7.5	75.5		119.5	10.3	71.9		38.7				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		2.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	89.4											
HCM 7th LOS	F											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2029 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	242	40	155	173	68	20	434	216	69	134	95
Future Volume (veh/h)	164	242	40	155	173	68	20	434	216	69	134	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	182	269	44	172	192	76	22	482	240	77	149	106
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	461	346	251	291	411	356	448	587	331	285	638	549
Arrive On Green	0.11	0.19	0.19	0.14	0.22	0.22	0.03	0.31	0.31	0.06	0.34	0.34
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	182	269	44	172	192	76	22	482	240	77	149	106
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	4.8	8.2	1.6	8.4	5.4	2.3	0.6	14.0	11.9	1.7	3.4	2.8
Cycle Q Clear(g_c), s	4.8	8.2	1.6	8.4	5.4	2.3	0.6	14.0	11.9	1.7	3.4	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	346	251	291	411	356	448	587	331	285	638	549
V/C Ratio(X)	0.39	0.78	0.18	0.59	0.47	0.21	0.05	0.82	0.73	0.27	0.23	0.19
Avail Cap(c_a), veh/h	469	560	406	291	616	534	540	812	457	327	793	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	23.1	20.4	17.1	20.2	19.0	13.4	19.1	18.4	14.2	14.0	13.8
Incr Delay (d2), s/veh	0.5	3.8	0.3	3.2	0.8	0.3	0.0	4.8	3.6	0.5	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.5	0.5	1.8	2.1	0.8	0.2	5.6	2.8	0.6	1.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	26.9	20.7	20.2	21.0	19.3	13.5	23.9	21.9	14.7	14.2	13.9
LnGrp LOS	B	C	C	C	C	B	B	C	C	B	B	B
Approach Vol, veh/h	495			440			744			332		
Approach Delay, s/veh	22.8			20.4			23.0			14.2		
Approach LOS	C			C			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	22.9	13.0	15.6	6.0	25.0	10.9	17.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	25.5	8.5	18.0	5.0	25.5	6.7	19.8				
Max Q Clear Time (g_c+l1), s	3.7	16.0	10.4	10.2	2.6	5.4	6.8	7.4				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.9	0.0	0.9	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.9											
HCM 7th LOS	C											

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	62	85	79	50	70
Future Vol, veh/h	201	62	85	79	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	67	92	86	54	76
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	523	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1276	-	514	786
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1276	-	475	786
Mov Cap-2 Maneuver	-	-	-	-	475	-
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	716	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		4.17		12.38	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	618	-	-	933	-	
HCM Lane V/C Ratio	0.211	-	-	0.072	-	
HCM Ctrl Dly (s/v)	12.4	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-	

Intersection						
Int Delay, s/veh	19.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	↰
Traffic Vol, veh/h	132	454	388	176	145	108
Future Vol, veh/h	132	454	388	176	145	108
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	493	422	191	158	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	613	0	-	0	1298	517
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	780	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	966	-	-	-	178	558
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	452	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	966	-	-	-	~ 142	558
Mov Cap-2 Maneuver	-	-	-	-	~ 142	-
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	452	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.11	0		103.32		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	405	-	-	-	142	558
HCM Lane V/C Ratio	0.148	-	-	-	1.11	0.21
HCM Ctrl Dly (s/v)	9.4	0	-	-	170.5	13.2
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.5	-	-	-	8.7	0.8
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s				
+: Computation Not Defined		*: All major volume in platoon				

Intersection						
Int Delay, s/veh	14.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	133	442	320	176	144	108
Future Vol, veh/h	133	442	320	176	144	108
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	480	348	191	157	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	539	0	-	0	1213	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	770	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1029	-	-	-	201	614
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1029	-	-	-	162	614
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	457	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.1	0		72.41		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	416	-	-	-	162	614
HCM Lane V/C Ratio	0.14	-	-	-	0.964	0.191
HCM Ctrl Dly (s/v)	9.1	0	-	-	117.5	12.2
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.5	-	-	-	7.3	0.7

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	507	344	84	68	52
Future Vol, veh/h	63	507	344	84	68	52
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	551	374	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	465	0	-	0	1108	420
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	688	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1096	-	-	-	232	634
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	499	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1096	-	-	-	211	634
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	499	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.94	0		26.24		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	199	-	-	-	297	
HCM Lane V/C Ratio	0.062	-	-	-	0.439	
HCM Ctrl Dly (s/v)	8.5	0	-	-	26.2	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.2	-	-	-	2.1	

Intersection						
Int Delay, s/veh	8.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	203	11	208	144	9	551
Future Vol, veh/h	203	11	208	144	9	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	218	12	224	155	10	592
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	913	301	0	0	378	0
Stage 1	301	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	306	743	-	-	1191	-
Stage 1	755	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	302	743	-	-	1191	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	43.03	0		0.13		
HCM LOS	E					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	312	29	-
HCM Lane V/C Ratio		-	-	0.738	0.008	-
HCM Ctrl Dly (s/v)		-	-	43	8	0
HCM Lane LOS		-	-	E	A	A
HCM 95th %tile Q(veh)		-	-	5.5	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	202	182	0	2	6
Future Vol, veh/h	15	202	182	0	2	6
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	17	227	204	0	2	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	204	0	-	0	465	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1379	-	-	-	559	841
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1379	-	-	-	551	841
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	788	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.53	0		9.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	124	-	-	-	744	
HCM Lane V/C Ratio	0.012	-	-	-	0.012	
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	85	45	82	117	191	19	756	165	246	902	34
Future Volume (veh/h)	71	85	45	82	117	191	19	756	165	246	902	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	73	88	46	85	121	0	20	779	170	254	930	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	77	93	48	90	129		220	771	168	257	1142	43
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.00	0.02	0.55	0.55	0.13	0.66	0.66
Sat Flow, veh/h	634	764	399	768	1093	1572	1810	1405	307	1767	1734	65
Grp Volume(v), veh/h	207	0	0	206	0	0	20	0	949	254	0	965
Grp Sat Flow(s),veh/h/ln	1796	0	0	1862	0	1572	1810	0	1711	1767	0	1799
Q Serve(g_s), s	24.0	0.0	0.0	23.1	0.0	0.0	1.0	0.0	115.3	26.0	0.0	82.9
Cycle Q Clear(g_c), s	24.0	0.0	0.0	23.1	0.0	0.0	1.0	0.0	115.3	26.0	0.0	82.9
Prop In Lane	0.35		0.22	0.41		1.00	1.00		0.18	1.00		0.04
Lane Grp Cap(c), veh/h	218	0	0	219	0		220	0	940	257	0	1185
V/C Ratio(X)	0.95	0.00	0.00	0.94	0.00		0.09	0.00	1.01	0.99	0.00	0.81
Avail Cap(c_a), veh/h	218	0	0	219	0		235	0	940	257	0	1185
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	91.6	0.0	0.0	91.9	0.0	0.0	28.9	0.0	47.4	80.9	0.0	26.4
Incr Delay (d2), s/veh	46.6	0.0	0.0	44.4	0.0	0.0	0.2	0.0	31.8	52.4	0.0	6.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	0.0	0.0	13.7	0.0	0.0	0.4	0.0	54.7	17.0	0.0	35.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	138.2	0.0	0.0	136.4	0.0	0.0	29.0	0.0	79.2	133.2	0.0	32.5
LnGrp LOS	F			F			C		F	F		C
Approach Vol, veh/h	207			206			969			1219		
Approach Delay, s/veh	138.2			136.4			78.1			53.5		
Approach LOS	F			F			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.0	119.8		30.0	7.9	142.9		29.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	26.5	115.3		25.5	5.1	136.7		24.7				
Max Q Clear Time (g_c+l1), s	28.0	117.3		26.0	3.0	84.9		25.1				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.2		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	76.0											
HCM 7th LOS	E											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2029 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	224	146	99	190	91	88	570	160	153	757	147
Future Volume (veh/h)	268	224	146	99	190	91	88	570	160	153	757	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	279	233	152	103	198	95	92	594	167	159	789	153
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	290	222	145	202	384	178	89	636	561	160	683	452
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.03	0.35	0.35	0.06	0.37	0.37
Sat Flow, veh/h	500	418	273	340	723	335	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	664	0	0	396	0	0	92	594	167	159	789	153
Grp Sat Flow(s),veh/h/ln	1191	0	0	1398	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	74.1	0.0	0.0	0.0	0.0	0.0	6.5	66.0	15.8	11.8	78.5	19.1
Cycle Q Clear(g_c), s	111.5	0.0	0.0	37.4	0.0	0.0	6.5	66.0	15.8	11.8	78.5	19.1
Prop In Lane	0.42		0.23	0.26		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	657	0	0	764	0	0	89	636	561	160	683	452
V/C Ratio(X)	1.01	0.00	0.00	0.52	0.00	0.00	1.03	0.93	0.30	1.00	1.16	0.34
Avail Cap(c_a), veh/h	657	0	0	764	0	0	89	636	561	160	683	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	0.0	0.0	31.4	0.0	0.0	58.0	66.0	49.7	53.0	65.8	47.1
Incr Delay (d2), s/veh	37.9	0.0	0.0	0.6	0.0	0.0	104.9	22.6	1.4	69.9	86.1	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.0	0.0	0.0	13.1	0.0	0.0	5.6	33.9	6.5	8.4	51.8	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	94.2	0.0	0.0	32.0	0.0	0.0	162.9	88.6	51.1	122.9	151.9	49.2
LnGrp LOS	F			C			F	F	D	F	F	D
Approach Vol, veh/h	664			396			853			1101		
Approach Delay, s/veh	94.2			32.0			89.3			133.4		
Approach LOS	F			C			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	77.7		116.0	11.0	83.0		116.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	11.8	73.2		111.5	6.5	78.5		111.5				
Max Q Clear Time (g_c+I1), s	13.8	68.0		113.5	8.5	80.5		39.4				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	0.0		2.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	99.0											
HCM 7th LOS	F											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2029 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	164	42	214	280	81	42	176	124	47	496	205
Future Volume (veh/h)	88	164	42	214	280	81	42	176	124	47	496	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	92	171	44	223	292	84	44	183	129	49	517	228
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	329	251	201	408	411	360	280	643	455	507	655	555
Arrive On Green	0.07	0.14	0.14	0.16	0.22	0.22	0.04	0.34	0.34	0.05	0.34	0.34
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	92	171	44	223	292	84	44	183	129	49	517	228
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	2.4	4.9	1.5	6.6	8.2	2.4	0.9	4.0	4.0	1.0	13.8	6.1
Cycle Q Clear(g_c), s	2.4	4.9	1.5	6.6	8.2	2.4	0.9	4.0	4.0	1.0	13.8	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	251	201	408	411	360	280	643	455	507	655	555
V/C Ratio(X)	0.28	0.68	0.22	0.55	0.71	0.23	0.16	0.28	0.28	0.10	0.79	0.41
Avail Cap(c_a), veh/h	403	597	478	663	992	868	365	1358	961	585	1369	1160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	23.2	21.7	15.5	20.2	17.9	12.6	13.5	13.5	10.9	16.6	14.1
Incr Delay (d2), s/veh	0.5	3.2	0.5	1.1	2.3	0.3	0.3	0.2	0.3	0.1	2.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.1	0.5	1.9	3.2	0.8	0.3	1.3	1.0	0.3	4.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	26.4	22.2	16.7	22.4	18.2	12.9	13.8	13.8	11.0	18.8	14.6
LnGrp LOS	B	C	C	B	C	B	B	B	B	B	B	B
Approach Vol, veh/h	307			599			356			794		
Approach Delay, s/veh	23.7			19.7			13.7			17.1		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.7	13.3	12.1	7.0	23.9	8.3	17.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	40.5	18.3	18.1	5.1	40.5	6.1	30.3				
Max Q Clear Time (g_c+l1), s	3.0	6.0	8.6	6.9	2.9	15.8	4.4	10.2				
Green Ext Time (p_c), s	0.0	1.3	0.4	0.7	0.0	3.6	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	18.2											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	28	39	149	65	92
Future Vol, veh/h	125	28	39	149	65	92
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	30	42	162	71	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	398	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1412	-	608	895
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	588	895
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	768	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		1.58		11.36	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	736	-	-	373	-	
HCM Lane V/C Ratio	0.232	-	-	0.03	-	
HCM Ctrl Dly (s/v)	11.4	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

Intersection						
Int Delay, s/veh	13					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	449	343	80	189	142
Future Vol, veh/h	61	449	343	80	189	142
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	488	373	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	460	0	-	0	1037	416
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	621	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1101	-	-	-	256	636
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1101	-	-	-	235	636
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	536	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.01	0		47.97		
HCM LOS	E					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	215	-	-	-	235	636
HCM Lane V/C Ratio	0.06	-	-	-	0.874	0.243
HCM Ctrl Dly (s/v)	8.5	0	-	-	74.6	12.5
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	7.1	0.9

Intersection						
Int Delay, s/veh	10.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	321	405	80	189	142
Future Vol, veh/h	61	321	405	80	189	142
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	349	440	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	527	0	-	0	965	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1040	-	-	-	283	583
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	621	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1040	-	-	-	260	583
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	621	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.39	0		37.73		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	287	-	-	-	260	583
HCM Lane V/C Ratio	0.064	-	-	-	0.789	0.265
HCM Ctrl Dly (s/v)	8.7	0	-	-	56	13.4
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	6	1.1

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	292	508	39	90	67
Future Vol, veh/h	28	292	508	39	90	67
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	317	552	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	595	0	-	0	952	573
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	982	-	-	-	288	519
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	277	519
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	693	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.77	0		25.13		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	158	-	-	-	346	
HCM Lane V/C Ratio	0.031	-	-	-	0.493	
HCM Ctrl Dly (s/v)	8.8	0	-	-	25.1	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.6	

Intersection						
Int Delay, s/veh	13.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	202	26	426	347	32	192
Future Vol, veh/h	202	26	426	347	32	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	227	29	479	390	36	216
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	961	674	0	0	869	0
Stage 1	674	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	287	458	-	-	784	-
Stage 1	510	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	272	458	-	-	784	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	69.95	0		1.4		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	285	257	-	
HCM Lane V/C Ratio	-	-	0.899	0.046	-	
HCM Ctrl Dly (s/v)	-	-	69.9	9.8	0	
HCM Lane LOS	-	-	F	A	A	
HCM 95th %tile Q(veh)	-	-	8.2	0.1	-	

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	387	254	2	5	10
Future Vol, veh/h	8	387	254	2	5	10
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	10	478	314	2	6	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	316	0	-	0	812	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	498	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1256	-	-	-	351	730
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1256	-	-	-	347	730
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	615	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.16	0		11.98		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	36	-	-	-	534	
HCM Lane V/C Ratio	0.008	-	-	-	0.035	
HCM Ctrl Dly (s/v)	7.9	0	-	-	12	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	154	103	141	117	255	123	914	112	135	638	77
Future Volume (veh/h)	135	154	103	141	117	255	123	914	112	135	638	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	144	164	110	150	124	0	131	972	119	144	679	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	112	128	86	141	117		168	751	92	130	714	86
Arrive On Green	0.18	0.18	0.18	0.14	0.14	0.00	0.05	0.50	0.50	0.05	0.50	0.50
Sat Flow, veh/h	615	700	470	1012	837	1547	1810	1492	183	1697	1417	171
Grp Volume(v), veh/h	418	0	0	274	0	0	131	0	1091	144	0	761
Grp Sat Flow(s),veh/h/ln	1785	0	0	1849	0	1547	1810	0	1674	1697	0	1588
Q Serve(g_s), s	25.5	0.0	0.0	19.5	0.0	0.0	4.9	0.0	70.5	6.5	0.0	63.9
Cycle Q Clear(g_c), s	25.5	0.0	0.0	19.5	0.0	0.0	4.9	0.0	70.5	6.5	0.0	63.9
Prop In Lane	0.34		0.26	0.55		1.00	1.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	325	0	0	258	0		168	0	843	130	0	801
V/C Ratio(X)	1.29	0.00	0.00	1.06	0.00		0.78	0.00	1.29	1.11	0.00	0.95
Avail Cap(c_a), veh/h	325	0	0	258	0		168	0	843	130	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	0.0	60.3	0.0	0.0	32.2	0.0	34.8	40.6	0.0	33.0
Incr Delay (d2), s/veh	150.0	0.0	0.0	73.9	0.0	0.0	20.2	0.0	141.0	110.2	0.0	21.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.6	0.0	0.0	14.1	0.0	0.0	3.0	0.0	59.0	6.0	0.0	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	207.2	0.0	0.0	134.2	0.0	0.0	52.4	0.0	175.8	150.7	0.0	54.9
LnGrp LOS	F			F			D		F	F		D
Approach Vol, veh/h	418			274			1222			905		
Approach Delay, s/veh	207.2			134.2			162.6			70.1		
Approach LOS	F			F			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	75.0		30.0	10.9	75.1		24.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.5	70.5		25.5	6.4	70.6		19.5				
Max Q Clear Time (g_c+I1), s	8.5	72.5		27.5	6.9	65.9		21.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.0		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	136.8											
HCM 7th LOS	F											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2031 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	204	111	80	205	162	126	665	63	111	517	252
Future Volume (veh/h)	291	204	111	80	205	162	126	665	63	111	517	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	303	213	116	83	214	169	131	693	66	116	539	262
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	287	184	100	148	374	286	138	600	513	105	607	273
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.04	0.35	0.35	0.05	0.35	0.35
Sat Flow, veh/h	480	337	184	234	686	524	1654	1737	1485	1555	1737	781
Grp Volume(v), veh/h	632	0	0	466	0	0	131	693	66	116	539	262
Grp Sat Flow(s),veh/h/ln	1000	0	0	1445	0	0	1654	1737	1485	1555	1737	781
Q Serve(g_s), s	70.0	0.0	0.0	0.0	0.0	0.0	8.6	72.5	6.4	9.5	61.5	68.9
Cycle Q Clear(g_c), s	114.5	0.0	0.0	44.5	0.0	0.0	8.6	72.5	6.4	9.5	61.5	68.9
Prop In Lane	0.48		0.18	0.18		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	571	0	0	808	0	0	138	600	513	105	607	273
V/C Ratio(X)	1.11	0.00	0.00	0.58	0.00	0.00	0.95	1.16	0.13	1.11	0.89	0.96
Avail Cap(c_a), veh/h	571	0	0	808	0	0	138	600	513	105	607	273
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	0.0	0.0	31.5	0.0	0.0	63.6	68.8	47.1	56.8	64.4	66.8
Incr Delay (d2), s/veh	70.6	0.0	0.0	1.0	0.0	0.0	61.4	87.8	0.5	120.2	17.4	45.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.0	0.0	0.0	15.9	0.0	0.0	5.5	45.9	2.4	7.0	29.5	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	129.2	0.0	0.0	32.6	0.0	0.0	125.0	156.6	47.6	176.9	81.9	111.8
LnGrp LOS	F			C			F	F	D	F	F	F
Approach Vol, veh/h	632			466			890			917		
Approach Delay, s/veh	129.2			32.6			143.8			102.5		
Approach LOS	F			C			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	77.0		119.0	13.1	77.9		119.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	72.5		114.5	8.6	73.4		114.5				
Max Q Clear Time (g_c+I1), s	11.5	74.5		116.5	10.6	70.9		46.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.0		3.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	109.7											
HCM 7th LOS	F											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Future with Traffic AM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	245	41	156	175	68	21	495	218	70	180	136
Future Volume (veh/h)	216	245	41	156	175	68	21	495	218	70	180	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	240	272	46	173	194	76	23	550	242	78	200	151
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	441	344	250	274	397	344	424	639	360	266	684	589
Arrive On Green	0.11	0.19	0.19	0.13	0.21	0.21	0.03	0.34	0.34	0.06	0.37	0.37
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	240	272	46	173	194	76	23	550	242	78	200	151
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	6.7	8.8	1.8	8.5	5.8	2.5	0.6	17.1	12.3	1.7	4.8	4.2
Cycle Q Clear(g_c), s	6.7	8.8	1.8	8.5	5.8	2.5	0.6	17.1	12.3	1.7	4.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	441	344	250	274	397	344	424	639	360	266	684	589
V/C Ratio(X)	0.54	0.79	0.18	0.63	0.49	0.22	0.05	0.86	0.67	0.29	0.29	0.26
Avail Cap(c_a), veh/h	441	529	384	274	582	505	507	767	432	303	749	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	24.6	21.7	19.1	21.8	20.5	13.1	19.6	18.0	14.7	14.1	13.9
Incr Delay (d2), s/veh	1.4	4.5	0.4	4.6	0.9	0.3	0.1	8.6	3.1	0.6	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.8	0.5	2.1	2.3	0.8	0.2	7.4	2.8	0.6	1.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.0	29.1	22.1	23.7	22.7	20.8	13.1	28.1	21.1	15.3	14.3	14.1
LnGrp LOS	B	C	C	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h	558				443				815		429	
Approach Delay, s/veh	24.6				22.8				25.6		14.4	
Approach LOS	C				C				C		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	25.7	13.0	16.2	6.2	27.8	11.2	18.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	25.5	8.5	18.0	5.0	25.5	6.7	19.8				
Max Q Clear Time (g_c+l1), s	3.7	19.1	10.5	10.8	2.6	6.8	8.7	7.8				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.9	0.0	1.3	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.7											
HCM 7th LOS	C											

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	325	62	85	178	50	70
Future Vol, veh/h	325	62	85	178	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	67	92	193	54	76
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	421	0	765	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1138	-	371	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1138	-	337	661
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	630	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	2.73		15.5		
HCM LOS				C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	472	-	-	582	-	
HCM Lane V/C Ratio	0.276	-	-	0.081	-	
HCM Ctrl Dly (s/v)	15.5	-	-	8.4	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.3	-	

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	322	61	80	206	50	65
Future Vol, veh/h	322	61	80	206	50	65
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	350	66	87	224	54	71
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	416	0	781	383
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	398	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1143	-	363	664
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1143	-	332	664
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	620	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		2.35		15.64	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	463	-	-	503	-	
HCM Lane V/C Ratio	0.27	-	-	0.076	-	
HCM Ctrl Dly (s/v)	15.6	-	-	8.4	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-	

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	61	80	236	50	66
Future Vol, veh/h	326	61	80	236	50	66
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	66	87	257	54	72
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	421	0	818	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1138	-	346	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	656	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	315	661
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	597	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		2.13		16.14	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	448	-	-	456	-	
HCM Lane V/C Ratio	0.281	-	-	0.076	-	
HCM Ctrl Dly (s/v)	16.1	-	-	8.4	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-	

Intersection						
Int Delay, s/veh	20.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	132	461	391	176	145	108
Future Vol, veh/h	132	461	391	176	145	108
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	501	425	191	158	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	1309	521
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	788	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	964	-	-	-	176	556
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	964	-	-	-	~ 139	556
Mov Cap-2 Maneuver	-	-	-	-	~ 139	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	448	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.09	0		107.79		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	401	-	-	-	139	556
HCM Lane V/C Ratio	0.149	-	-	-	1.13	0.211
HCM Ctrl Dly (s/v)	9.4	0	-	-	178.2	13.2
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.5	-	-	-	8.9	0.8
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s				
+: Computation Not Defined		*: All major volume in platoon				

Intersection						
Int Delay, s/veh	15.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	133	449	323	176	144	108
Future Vol, veh/h	133	449	323	176	144	108
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	488	351	191	157	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	542	0	-	0	1224	447
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	777	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1026	-	-	-	198	612
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	453	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1026	-	-	-	160	612
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	453	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.08	0		75.62		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	411	-	-	-	160	612
HCM Lane V/C Ratio	0.141	-	-	-	0.981	0.192
HCM Ctrl Dly (s/v)	9.1	0	-	-	123.1	12.3
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.5	-	-	-	7.5	0.7

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	514	347	84	68	52
Future Vol, veh/h	63	514	347	84	68	52
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	559	377	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	468	0	-	0	1118	423
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	696	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1093	-	-	-	229	631
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	208	631
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	495	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.93	0		26.74		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	197	-	-	-	293	
HCM Lane V/C Ratio	0.063	-	-	-	0.445	
HCM Ctrl Dly (s/v)	8.5	0	-	-	26.7	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.2	-	-	-	2.2	

Intersection						
Int Delay, s/veh	49.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	315	32	212	193	18	564
Future Vol, veh/h	315	32	212	193	18	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	339	34	228	208	19	606

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	977	332	0	0	435
Stage 1	332	-	-	-	-
Stage 2	645	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	~ 281	715	-	-	1135
Stage 1	732	-	-	-	-
Stage 2	526	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 273	715	-	-	1135
Mov Cap-2 Maneuver	~ 273	-	-	-	-
Stage 1	732	-	-	-	-
Stage 2	513	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	188.69	0	0.25
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	290	56
HCM Lane V/C Ratio	-	-	1.287	0.017
HCM Ctrl Dly (s/v)	-	-	188.7	8.2
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	18.1	0.1

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

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	260	315	3	3	6
Future Vol, veh/h	15	260	315	3	3	6
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	17	292	354	3	3	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	357	0	-	0	681	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1213	-	-	-	419	693
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1213	-	-	-	412	693
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	736	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.44	0		11.49		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	98	-	-	-	565	
HCM Lane V/C Ratio	0.014	-	-	-	0.018	
HCM Ctrl Dly (s/v)	8	0	-	-	11.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	120	132	83	133	196	56	772	167	253	925	57
Future Volume (veh/h)	124	120	132	83	133	196	56	772	167	253	925	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	128	124	136	86	137	0	58	796	172	261	954	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	115	111	122	80	128		98	694	150	232	979	61
Arrive On Green	0.20	0.20	0.20	0.11	0.11	0.00	0.02	0.49	0.49	0.11	0.58	0.58
Sat Flow, veh/h	581	562	617	719	1145	1572	1810	1408	304	1767	1688	104
Grp Volume(v), veh/h	388	0	0	223	0	0	58	0	968	261	0	1013
Grp Sat Flow(s),veh/h/ln	1760	0	0	1864	0	1572	1810	0	1712	1767	0	1792
Q Serve(g_s), s	41.5	0.0	0.0	23.5	0.0	0.0	3.4	0.0	103.5	23.5	0.0	114.6
Cycle Q Clear(g_c), s	41.5	0.0	0.0	23.5	0.0	0.0	3.4	0.0	103.5	23.5	0.0	114.6
Prop In Lane	0.33		0.35	0.39		1.00	1.00		0.18	1.00		0.06
Lane Grp Cap(c), veh/h	348	0	0	209	0		98	0	844	232	0	1040
V/C Ratio(X)	1.12	0.00	0.00	1.07	0.00		0.59	0.00	1.15	1.12	0.00	0.97
Avail Cap(c_a), veh/h	348	0	0	209	0		99	0	844	232	0	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	84.3	0.0	0.0	93.3	0.0	0.0	49.6	0.0	53.3	79.5	0.0	42.6
Incr Delay (d2), s/veh	83.2	0.0	0.0	81.8	0.0	0.0	8.7	0.0	80.1	96.7	0.0	22.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.6	0.0	0.0	16.0	0.0	0.0	1.7	0.0	61.3	18.4	0.0	54.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	167.5	0.0	0.0	175.1	0.0	0.0	58.3	0.0	133.3	176.3	0.0	64.9
LnGrp LOS	F			F			E		F	F		E
Approach Vol, veh/h	388			223			1026			1274		
Approach Delay, s/veh	167.5			175.1			129.1			87.7		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.0	108.0		46.0	9.7	126.3		28.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	103.5		41.5	5.3	121.7		23.5				
Max Q Clear Time (g_c+I1), s	25.5	105.5		43.5	5.4	116.6		25.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.9		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	119.6											
HCM 7th LOS	F											
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
4: IL 47 & Galena Rd

2031 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	227	146	102	194	112	89	603	164	201	818	149
Future Volume (veh/h)	269	227	146	102	194	112	89	603	164	201	818	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	280	236	152	106	202	117	93	628	171	209	852	155
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	274	211	136	193	360	202	89	630	556	160	700	463
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.03	0.35	0.35	0.07	0.38	0.38
Sat Flow, veh/h	480	404	260	330	691	388	1767	1826	1610	1795	1826	1208
Grp Volume(v), veh/h	668	0	0	425	0	0	93	628	171	209	852	155
Grp Sat Flow(s),veh/h/ln	1145	0	0	1409	0	0	1767	1826	1610	1795	1826	1208
Q Serve(g_s), s	67.4	0.0	0.0	0.0	0.0	0.0	6.5	72.1	16.3	14.5	80.5	19.1
Cycle Q Clear(g_c), s	109.5	0.0	0.0	42.1	0.0	0.0	6.5	72.1	16.3	14.5	80.5	19.1
Prop In Lane	0.42		0.23	0.25		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	621	0	0	756	0	0	89	630	556	160	700	463
V/C Ratio(X)	1.08	0.00	0.00	0.56	0.00	0.00	1.05	1.00	0.31	1.31	1.22	0.33
Avail Cap(c_a), veh/h	621	0	0	756	0	0	89	630	556	160	700	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	0.0	0.0	33.7	0.0	0.0	58.4	68.6	50.4	69.1	64.8	45.8
Incr Delay (d2), s/veh	58.1	0.0	0.0	1.0	0.0	0.0	108.2	34.9	1.4	176.8	110.5	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	43.4	0.0	0.0	14.8	0.0	0.0	5.7	38.8	6.8	13.0	57.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	116.1	0.0	0.0	34.6	0.0	0.0	166.7	103.6	51.8	245.9	175.3	47.7
LnGrp LOS	F			C			F	F	D	F	F	D
Approach Vol, veh/h	668			425			892			1216		
Approach Delay, s/veh	116.1			34.6			100.2			171.2		
Approach LOS	F			C			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	77.0		114.0	11.0	85.0		114.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.5	72.5		109.5	6.5	80.5		109.5				
Max Q Clear Time (g_c+I1), s	16.5	74.1		111.5	8.5	82.5		44.1				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		3.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	121.8											
HCM 7th LOS	F											

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Future with Traffic PM
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	167	43	216	284	81	43	205	126	48	564	262
Future Volume (veh/h)	112	167	43	216	284	81	43	205	126	48	564	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	117	174	45	225	296	84	45	214	131	50	588	291
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	314	246	197	389	388	340	260	711	503	513	722	612
Arrive On Green	0.08	0.13	0.13	0.15	0.21	0.21	0.04	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	117	174	45	225	296	84	45	214	131	50	588	291
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	3.4	5.6	1.7	7.5	9.4	2.7	0.9	5.0	4.2	1.0	17.3	8.5
Cycle Q Clear(g_c), s	3.4	5.6	1.7	7.5	9.4	2.7	0.9	5.0	4.2	1.0	17.3	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	246	197	389	388	340	260	711	503	513	722	612
V/C Ratio(X)	0.37	0.71	0.23	0.58	0.76	0.25	0.17	0.30	0.26	0.10	0.81	0.48
Avail Cap(c_a), veh/h	378	537	430	531	788	689	327	1316	931	577	1330	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	25.8	24.1	17.6	23.1	20.4	13.2	13.6	13.4	10.8	17.3	14.6
Incr Delay (d2), s/veh	0.7	3.7	0.6	1.4	3.1	0.4	0.3	0.2	0.3	0.1	2.3	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.4	0.6	2.3	3.9	0.9	0.3	1.7	1.1	0.3	6.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.7	29.5	24.7	18.9	26.2	20.8	13.5	13.8	13.6	10.9	19.6	15.2
LnGrp LOS	C	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h	336			605			390			929		
Approach Delay, s/veh	26.2			22.7			13.7			17.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	27.9	14.1	12.7	7.2	28.1	9.2	17.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+I1), s	3.0	7.0	9.5	7.6	2.9	19.3	5.4	11.4				
Green Ext Time (p_c), s	0.0	1.5	0.3	0.7	0.0	4.4	0.0	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	183	28	39	282	65	92
Future Vol, veh/h	183	28	39	282	65	92
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	30	42	307	71	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	229	0	605	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1339	-	461	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1339	-	443	826
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	657	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.94		13.21	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	608	-	-	219	-	
HCM Lane V/C Ratio	0.281	-	-	0.032	-	
HCM Ctrl Dly (s/v)	13.2	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	28	36	252	66	86
Future Vol, veh/h	232	28	36	252	66	86
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	252	30	39	274	72	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	283	0	620	267
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	452	771
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	436	771
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	686	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.99		13.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	578	-	-	225	-	
HCM Lane V/C Ratio	0.286	-	-	0.031	-	
HCM Ctrl Dly (s/v)	13.7	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	290	28	37	222	66	86
Future Vol, veh/h	290	28	37	222	66	86
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	315	30	40	241	72	93
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	346	0	652	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1213	-	432	711
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1213	-	416	711
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	707	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		1.15		14.49	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	544	-	-	257	-	
HCM Lane V/C Ratio	0.304	-	-	0.033	-	
HCM Ctrl Dly (s/v)	14.5	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-	

Intersection						
Int Delay, s/veh	13.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	453	349	80	189	142
Future Vol, veh/h	61	453	349	80	189	142
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	492	379	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	466	0	-	0	1048	423
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	625	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1095	-	-	-	252	631
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	534	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1095	-	-	-	231	631
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	534	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.01	0		50.01		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	214	-	-	-	231	631
HCM Lane V/C Ratio	0.061	-	-	-	0.888	0.245
HCM Ctrl Dly (s/v)	8.5	0	-	-	78.2	12.5
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	7.3	1

Intersection						
Int Delay, s/veh	11.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	325	411	80	189	142
Future Vol, veh/h	61	325	411	80	189	142
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	353	447	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	534	0	-	0	976	490
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1034	-	-	-	278	578
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1034	-	-	-	256	578
Mov Cap-2 Maneuver	-	-	-	-	256	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	619	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.38	0		39.15		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	284	-	-	-	256	578
HCM Lane V/C Ratio	0.064	-	-	-	0.802	0.267
HCM Ctrl Dly (s/v)	8.7	0	-	-	58.4	13.5
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	6.2	1.1

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	296	514	39	90	67
Future Vol, veh/h	28	296	514	39	90	67
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	322	559	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	601	0	-	0	962	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	976	-	-	-	284	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	976	-	-	-	273	514
Mov Cap-2 Maneuver	-	-	-	-	273	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	689	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.76	0		25.64		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	156	-	-	-	341	
HCM Lane V/C Ratio	0.031	-	-	-	0.5	
HCM Ctrl Dly (s/v)	8.8	0	-	-	25.6	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.7	

Appendix H – Future with Project and Mitigation Intersection Capacity Analysis

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	111	10	371	234	12	142
Future Vol, veh/h	111	10	371	234	12	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	1	0	3
Mvmt Flow	125	11	417	263	13	160
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	735	548	0	0	680	0
Stage 1	548	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	390	540	-	-	922	-
Stage 1	583	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	384	540	-	-	922	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	18.93	0		0.7		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	393	140	-
HCM Lane V/C Ratio		-	-	0.346	0.015	-
HCM Ctrl Dly (s/v)		-	-	18.9	9	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	1.5	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	258	153	0	2	4
Future Vol, veh/h	3	258	153	0	2	4
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	4	319	189	0	2	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	189	0	-	0	515	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1397	-	-	-	524	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1397	-	-	-	522	858
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	736	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.09	0		10.15		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	21	-	-	-	706	
HCM Lane V/C Ratio	0.003	-	-	-	0.01	
HCM Ctrl Dly (s/v)	7.6	0	-	-	10.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	123	36	70	83	242	42	788	54	128	507	29
Future Volume (veh/h)	92	123	36	70	83	242	42	788	54	128	507	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	98	131	38	74	88	0	45	838	0	136	539	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	387	211	252	338	209		82	1255		264	1246	72
Arrive On Green	0.09	0.11	0.11	0.09	0.11	0.00	0.05	0.39	0.00	0.08	0.42	0.42
Sat Flow, veh/h	1810	1900	1610	1697	1900	1547	1810	3244	1447	3291	2956	170
Grp Volume(v), veh/h	98	131	38	74	88	0	45	838	0	136	280	290
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1697	1900	1547	1810	1622	1447	1646	1537	1588
Q Serve(g_s), s	2.5	3.6	1.1	2.0	2.3	0.0	1.3	11.6	0.0	2.2	7.0	7.0
Cycle Q Clear(g_c), s	2.5	3.6	1.1	2.0	2.3	0.0	1.3	11.6	0.0	2.2	7.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	387	211	252	338	209		82	1255		264	648	670
V/C Ratio(X)	0.25	0.62	0.15	0.22	0.42		0.55	0.67		0.51	0.43	0.43
Avail Cap(c_a), veh/h	821	630	607	748	630		170	1255		303	648	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	23.0	19.8	18.3	22.6	0.0	25.4	13.8	0.0	24.0	11.1	11.1
Incr Delay (d2), s/veh	0.3	3.0	0.3	0.3	1.4	0.0	5.6	2.8	0.0	1.6	2.1	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.4	0.7	0.9	0.0	0.6	3.4	0.0	0.8	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	26.0	20.1	18.6	23.9	0.0	31.0	16.6	0.0	25.5	13.2	13.1
LnGrp LOS	B	C	C	B	C		C	B		C	B	B
Approach Vol, veh/h	267			162			883			706		
Approach Delay, s/veh	22.5			21.5			17.3			15.5		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	25.5	9.4	10.5	7.0	27.4	9.5	10.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	21.0	18.0	18.0	5.1	20.9	18.0	18.0				
Max Q Clear Time (g_c+I1), s	4.2	13.6	4.0	5.6	3.3	9.0	4.5	4.3				
Green Ext Time (p_c), s	0.0	2.9	0.1	0.5	0.0	2.3	0.2	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				17.7								
HCM 7th LOS				B								
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2027 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	123	39	76	107	115	39	596	60	73	461	77
Future Volume (veh/h)	143	123	39	76	107	115	39	596	60	73	461	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	149	128	41	79	111	120	41	621	0	76	480	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	496	615	547	578	539	562	300	787		257	849	
Arrive On Green	0.09	0.34	0.34	0.06	0.32	0.32	0.04	0.24	0.00	0.06	0.26	0.00
Sat Flow, veh/h	1457	1811	1434	1767	1707	1497	1654	3300	1485	1555	3300	781
Grp Volume(v), veh/h	149	128	41	79	111	120	41	621	0	76	480	0
Grp Sat Flow(s),veh/h/ln	1457	1811	1434	1767	1707	1497	1654	1650	1485	1555	1650	781
Q Serve(g_s), s	4.1	3.0	1.1	1.7	2.8	3.3	1.1	10.6	0.0	2.2	7.6	0.0
Cycle Q Clear(g_c), s	4.1	3.0	1.1	1.7	2.8	3.3	1.1	10.6	0.0	2.2	7.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	496	615	547	578	539	562	300	787		257	849	
V/C Ratio(X)	0.30	0.21	0.07	0.14	0.21	0.21	0.14	0.79		0.30	0.57	
Avail Cap(c_a), veh/h	496	615	547	620	539	562	369	992		294	992	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.0	14.0	11.8	12.2	15.0	12.7	16.3	21.4	0.0	16.5	19.3	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.3	0.1	0.9	0.9	0.2	3.4	0.0	0.6	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.2	0.3	0.6	1.1	1.0	0.4	3.7	0.0	0.7	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.4	14.8	12.1	12.3	15.9	13.6	16.5	24.8	0.0	17.2	19.9	0.0
LnGrp LOS	B	B	B	B	B	B	B	C		B	B	
Approach Vol, veh/h	318			310			662			556		
Approach Delay, s/veh	13.3			14.1			24.3			19.5		
Approach LOS	B			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	24.8	7.0	19.9	9.6	23.4	8.1	18.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	18.9	5.0	18.0	5.1	18.9	5.0	18.0				
Max Q Clear Time (g_c+I1), s	3.7	5.0	3.1	9.6	6.1	5.3	4.2	12.6				
Green Ext Time (p_c), s	0.0	0.5	0.0	1.7	0.0	0.7	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.2											
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2027 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	134	39	64	86	27	19	423	103	20	131	93
Future Volume (veh/h)	160	134	39	64	86	27	19	423	103	20	131	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	178	149	43	71	96	30	21	470	114	22	146	103
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	456	304	220	290	210	182	484	633	356	309	620	534
Arrive On Green	0.12	0.16	0.16	0.07	0.11	0.11	0.03	0.33	0.33	0.03	0.33	0.33
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	178	149	43	71	96	30	21	470	114	22	146	103
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	3.7	3.2	1.2	2.8	2.1	0.7	0.4	9.6	3.5	0.3	2.5	2.0
Cycle Q Clear(g_c), s	3.7	3.2	1.2	2.8	2.1	0.7	0.4	9.6	3.5	0.3	2.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	456	304	220	290	210	182	484	633	356	309	620	534
V/C Ratio(X)	0.39	0.49	0.20	0.25	0.46	0.16	0.04	0.74	0.32	0.07	0.24	0.19
Avail Cap(c_a), veh/h	529	762	553	575	1126	977	624	1881	1059	471	1841	1585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	16.7	15.8	15.9	18.2	17.6	9.2	13.0	10.9	10.2	10.6	10.4
Incr Delay (d2), s/veh	0.5	1.2	0.4	0.4	1.6	0.4	0.0	1.7	0.5	0.1	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	0.3	0.5	0.8	0.2	0.1	2.9	0.6	0.1	0.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	17.9	16.3	16.4	19.7	18.0	9.2	14.7	11.4	10.3	10.7	10.6
LnGrp LOS	B	B	B	B	B	B	A	B	B	B	B	B
Approach Vol, veh/h	370			197			605			271		
Approach Delay, s/veh	16.3			18.3			13.9			10.6		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	19.1	7.4	11.7	5.6	19.1	9.6	9.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+I1), s	2.3	11.6	4.8	5.2	2.4	4.5	5.7	4.1				
Green Ext Time (p_c), s	0.0	3.0	0.1	0.6	0.0	1.0	0.1	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	191	62	85	71	50	70
Future Vol, veh/h	191	62	85	71	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	67	92	77	54	76
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	275	0	503	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	262	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1288	-	528	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1288	-	490	798
Mov Cap-2 Maneuver	-	-	-	-	490	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	726	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		4.36		12.17	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	632	-	-	1288	-	
HCM Lane V/C Ratio	0.206	-	-	0.072	-	
HCM Ctrl Dly (s/v)	12.2	-	-	8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-	

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	237	125	84	68	52
Future Vol, veh/h	63	237	125	84	68	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	258	136	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	227	0	-	0	530	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1341	-	-	-	509	913
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1341	-	-	-	479	913
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	681	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.64	0		11.68		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	378	-	-	-	-	669
HCM Lane V/C Ratio	0.051	-	-	-	-	0.195
HCM Ctrl Dly (s/v)	7.8	0	-	-	-	11.7
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.7

Intersection						
Int Delay, s/veh	6.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	197	11	158	134	9	517
Future Vol, veh/h	197	11	158	134	9	517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	1	0	1
Mvmt Flow	212	12	170	144	10	556
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	817	242	0	0	314	0
Stage 1	242	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	349	802	-	-	1258	-
Stage 1	803	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	345	802	-	-	1258	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	30.82	0		0.13		
HCM LOS	D					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	356	31	-
HCM Lane V/C Ratio		-	-	0.629	0.008	-
HCM Ctrl Dly (s/v)		-	-	30.8	7.9	0
HCM Lane LOS		-	-	D	A	A
HCM 95th %tile Q(veh)		-	-	4.1	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	199	179	0	2	3
Future Vol, veh/h	8	199	179	0	2	3
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	9	224	201	0	2	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	201	0	-	0	443	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	242	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1383	-	-	-	576	845
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1383	-	-	-	572	845
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	803	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.29	0		10.12		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	70	-	-	-	-	709
HCM Lane V/C Ratio	0.006	-	-	-	-	0.008
HCM Ctrl Dly (s/v)	7.6	0	-	-	-	10.1
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2027 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	84	45	50	114	186	19	627	90	240	833	34
Future Volume (veh/h)	70	84	45	50	114	186	19	627	90	240	833	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	72	87	46	52	118	0	20	646	0	247	859	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	273	185	194	321	184		43	1437		357	1715	70
Arrive On Green	0.08	0.10	0.10	0.08	0.10	0.00	0.02	0.43	0.00	0.10	0.51	0.51
Sat Flow, veh/h	1471	1900	1610	1739	1900	1572	1810	3357	1535	3428	3370	137
Grp Volume(v), veh/h	72	87	46	52	118	0	20	646	0	247	439	455
Grp Sat Flow(s),veh/h/ln	1471	1900	1610	1739	1900	1572	1810	1678	1535	1714	1721	1786
Q Serve(g_s), s	2.6	2.7	1.6	1.6	3.7	0.0	0.7	8.4	0.0	4.3	10.4	10.4
Cycle Q Clear(g_c), s	2.6	2.7	1.6	1.6	3.7	0.0	0.7	8.4	0.0	4.3	10.4	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	273	185	194	321	184		43	1437		357	876	909
V/C Ratio(X)	0.26	0.47	0.24	0.16	0.64		0.47	0.45		0.69	0.50	0.50
Avail Cap(c_a), veh/h	583	553	506	688	553		149	1437		526	876	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	26.4	24.6	21.7	26.9	0.0	29.8	12.5	0.0	26.8	10.0	10.0
Incr Delay (d2), s/veh	0.5	1.9	0.6	0.2	3.7	0.0	7.9	1.0	0.0	2.4	2.0	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.6	0.6	1.6	0.0	0.4	2.5	0.0	1.6	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.7	28.3	25.2	21.9	30.6	0.0	37.7	13.5	0.0	29.2	12.1	12.0
LnGrp LOS	C	C	C	C	C		D	B		C	B	B
Approach Vol, veh/h	205			170			666			1141		
Approach Delay, s/veh	25.6			28.0			14.3			15.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	31.0	9.4	10.5	6.0	36.0	9.4	10.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	26.5	18.0	18.0	5.1	30.9	18.0	18.0				
Max Q Clear Time (g_c+l1), s	6.3	10.4	3.6	4.7	2.7	12.4	4.6	5.7				
Green Ext Time (p_c), s	0.2	3.4	0.1	0.3	0.0	4.6	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh				17.2								
HCM 7th LOS				B								
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2027 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	123	52	96	144	89	48	556	156	149	738	67
Future Volume (veh/h)	81	123	52	96	144	89	48	556	156	149	738	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	84	128	54	100	150	93	50	579	0	155	769	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	411	661	640	601	683	714	226	775		323	930	
Arrive On Green	0.06	0.36	0.36	0.06	0.37	0.37	0.04	0.22	0.00	0.09	0.27	0.00
Sat Flow, veh/h	1188	1826	1572	1810	1870	1572	1767	3469	1610	1795	3469	1208
Grp Volume(v), veh/h	84	128	54	100	150	93	50	579	0	155	769	0
Grp Sat Flow(s),veh/h/ln	1188	1826	1572	1810	1870	1572	1767	1735	1610	1795	1735	1208
Q Serve(g_s), s	3.0	3.3	1.4	2.3	3.8	2.3	1.5	10.7	0.0	4.4	14.3	0.0
Cycle Q Clear(g_c), s	3.0	3.3	1.4	2.3	3.8	2.3	1.5	10.7	0.0	4.4	14.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	661	640	601	683	714	226	775		323	930	
V/C Ratio(X)	0.20	0.19	0.08	0.17	0.22	0.13	0.22	0.75		0.48	0.83	
Avail Cap(c_a), veh/h	540	661	640	639	683	714	275	942		370	1089	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	15.0	12.5	12.1	15.0	10.8	19.9	24.8	0.0	18.4	23.6	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.3	0.1	0.7	0.4	0.5	2.6	0.0	1.1	4.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.3	0.5	0.8	1.5	0.7	0.5	4.0	0.0	1.6	5.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.7	15.6	12.7	12.2	15.7	11.2	20.3	27.4	0.0	19.5	28.3	0.0
LnGrp LOS	B	B	B	B	B	B	C	C		B	C	
Approach Vol, veh/h	266		343				629		924			
Approach Delay, s/veh	14.1		13.5				26.9		26.8			
Approach LOS	B		B				C		C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	29.3	7.6	22.8	8.6	29.5	10.6	19.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.7	24.8	5.0	21.5	11.5	19.0	7.9	18.6				
Max Q Clear Time (g_c+I1), s	4.3	5.3	3.5	16.3	5.0	5.8	6.4	12.7				
Green Ext Time (p_c), s	0.0	0.7	0.0	2.1	0.1	0.8	0.1	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	23.1											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2027 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	114	41	95	163	27	41	172	72	23	484	200
Future Volume (veh/h)	86	114	41	95	163	27	41	172	72	23	484	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	90	119	43	99	170	28	43	179	75	24	504	222
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	358	265	212	355	270	236	323	696	493	551	669	567
Arrive On Green	0.07	0.14	0.14	0.08	0.15	0.15	0.05	0.37	0.37	0.03	0.35	0.35
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	90	119	43	99	170	28	43	179	75	24	504	222
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	1.9	2.8	1.2	2.6	4.1	0.7	0.7	3.1	1.8	0.4	11.0	4.9
Cycle Q Clear(g_c), s	1.9	2.8	1.2	2.6	4.1	0.7	0.7	3.1	1.8	0.4	11.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	265	212	355	270	236	323	696	493	551	669	567
V/C Ratio(X)	0.25	0.45	0.20	0.28	0.63	0.12	0.13	0.26	0.15	0.04	0.75	0.39
Avail Cap(c_a), veh/h	490	709	567	733	1039	909	432	1736	1229	695	1754	1486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	18.5	17.8	15.4	18.9	17.5	10.1	10.4	9.9	9.2	13.5	11.5
Incr Delay (d2), s/veh	0.4	1.2	0.5	0.4	2.4	0.2	0.2	0.2	0.1	0.0	1.7	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	0.4	0.7	1.6	0.2	0.2	0.9	0.4	0.1	3.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.8	19.7	18.3	15.9	21.3	17.7	10.3	10.5	10.1	9.2	15.2	11.9
LnGrp LOS	B	B	B	B	C	B	B	B	B	A	B	B
Approach Vol, veh/h	252			297			297			750		
Approach Delay, s/veh	18.0			19.2			10.4			14.0		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	21.9	8.1	11.2	6.7	21.1	8.0	11.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+l1), s	2.4	5.1	4.6	4.8	2.7	13.0	3.9	6.1				
Green Ext Time (p_c), s	0.0	1.1	0.1	0.5	0.0	3.6	0.0	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.9											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	115	28	39	143	65	92
Future Vol, veh/h	115	28	39	143	65	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	30	42	155	71	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	380	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1425	-	622	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1425	-	603	908
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	776	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		1.63		11.2	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	751	-	-	1425	-	
HCM Lane V/C Ratio	0.227	-	-	0.03	-	
HCM Ctrl Dly (s/v)	11.2	-	-	7.6	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	166	218	39	90	67
Future Vol, veh/h	28	166	218	39	90	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	180	237	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	279	0	-	0	478	237
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1283	-	-	-	546	802
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1283	-	-	-	532	802
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	799	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.14	0		12.14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	260	-	-	-	674	
HCM Lane V/C Ratio	0.024	-	-	-	0.253	
HCM Ctrl Dly (s/v)	7.9	0	-	-	12.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	1	

HCM 7th Signalized Intersection Summary
1: Ashe Rd & Baseline Rd

2029 Future with Traffic AM with Improvements
07/21/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	119	10	416	243	12	189
Future Volume (veh/h)	119	10	416	243	12	189
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1856
Adj Flow Rate, veh/h	134	11	467	273	13	212
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	1	1	0	3
Cap, veh/h	199	16	623	364	153	991
Arrive On Green	0.12	0.12	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1646	135	1116	652	31	1776
Grp Volume(v), veh/h	146	0	0	740	225	0
Grp Sat Flow(s),veh/h/ln	1793	0	0	1768	1806	0
Q Serve(g_s), s	2.2	0.0	0.0	8.9	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	8.9	1.7	0.0
Prop In Lane	0.92	0.08		0.37	0.06	
Lane Grp Cap(c), veh/h	217	0	0	987	1144	0
V/C Ratio(X)	0.67	0.00	0.00	0.75	0.20	0.00
Avail Cap(c_a), veh/h	1151	0	0	2079	2194	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	4.7	3.1	0.0
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.4	0.0	0.0	5.9	3.2	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	146		740		225	
Approach Delay, s/veh	15.4		5.9		3.2	
Approach LOS	B		A		A	
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	20.2		20.2		7.9	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	33.0		33.0		18.0	
Max Q Clear Time (g_c+I1), s	10.9		3.7		4.2	
Green Ext Time (p_c), s	4.7		1.1		0.3	
Intersection Summary						
HCM 7th Control Delay, s/veh			6.6			
HCM 7th LOS			A			

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	263	155	0	2	10
Future Vol, veh/h	8	263	155	0	2	10
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	10	325	191	0	2	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	191	0	-	0	536	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	344	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1394	-	-	-	509	855
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1394	-	-	-	505	855
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	722	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.22	0		9.79		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	53	-	-	-	767	
HCM Lane V/C Ratio	0.007	-	-	-	0.019	
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	126	36	140	84	249	42	894	111	132	625	29
Future Volume (veh/h)	94	126	36	140	84	249	42	894	111	132	625	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	100	134	38	149	89	0	45	951	0	140	665	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	377	200	238	338	256		77	1433		231	1404	65
Arrive On Green	0.08	0.11	0.11	0.11	0.13	0.00	0.04	0.44	0.00	0.07	0.47	0.47
Sat Flow, veh/h	1810	1900	1610	1697	1900	1547	1810	3244	1447	3291	2991	139
Grp Volume(v), veh/h	100	134	38	149	89	0	45	951	0	140	342	354
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1697	1900	1547	1810	1622	1447	1646	1537	1593
Q Serve(g_s), s	3.1	4.5	1.4	5.0	2.8	0.0	1.6	15.2	0.0	2.7	10.0	10.0
Cycle Q Clear(g_c), s	3.1	4.5	1.4	5.0	2.8	0.0	1.6	15.2	0.0	2.7	10.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	377	200	238	338	256		77	1433		231	721	748
V/C Ratio(X)	0.27	0.67	0.16	0.44	0.35		0.58	0.66		0.61	0.47	0.47
Avail Cap(c_a), veh/h	726	519	509	616	519		140	1433		475	721	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	28.4	24.5	22.4	25.9	0.0	31.0	14.5	0.0	29.7	11.9	11.9
Incr Delay (d2), s/veh	0.4	3.8	0.3	0.9	0.8	0.0	6.8	2.4	0.0	2.6	2.2	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.0	0.5	1.8	1.2	0.0	0.8	4.6	0.0	1.0	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.5	32.2	24.8	23.3	26.7	0.0	37.8	17.0	0.0	32.3	14.1	14.1
LnGrp LOS	C	C	C	C	C		D	B		C	B	B
Approach Vol, veh/h	272			238			996			836		
Approach Delay, s/veh	28.0			24.6			17.9			17.2		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	33.6	11.7	11.4	7.3	35.4	9.8	13.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	26.5	18.0	18.0	5.1	30.9	18.0	18.0				
Max Q Clear Time (g_c+l1), s	4.7	17.2	7.0	6.5	3.6	12.0	5.1	4.8				
Green Ext Time (p_c), s	0.1	3.9	0.2	0.5	0.0	3.5	0.2	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				19.5								
HCM 7th LOS				B								
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2029 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	201	110	78	202	118	126	611	61	75	473	251
Future Volume (veh/h)	288	201	110	78	202	118	126	611	61	75	473	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	300	209	115	81	210	123	131	636	0	78	493	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	500	702	661	501	477	503	294	770		229	715	
Arrive On Green	0.17	0.39	0.39	0.06	0.28	0.28	0.07	0.23	0.00	0.06	0.22	0.00
Sat Flow, veh/h	1457	1811	1434	1767	1707	1497	1654	3300	1485	1555	3300	781
Grp Volume(v), veh/h	300	209	115	81	210	123	131	636	0	78	493	0
Grp Sat Flow(s),veh/h/ln	1457	1811	1434	1767	1707	1497	1654	1650	1485	1555	1650	781
Q Serve(g_s), s	9.3	5.4	3.2	2.2	6.9	4.0	4.1	12.4	0.0	2.6	9.4	0.0
Cycle Q Clear(g_c), s	9.3	5.4	3.2	2.2	6.9	4.0	4.1	12.4	0.0	2.6	9.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	702	661	501	477	503	294	770		229	715	
V/C Ratio(X)	0.60	0.30	0.17	0.16	0.44	0.24	0.45	0.83		0.34	0.69	
Avail Cap(c_a), veh/h	505	702	661	547	477	503	294	903		322	1044	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.7	14.4	10.7	15.6	20.1	16.3	19.4	24.7	0.0	20.0	24.5	0.0
Incr Delay (d2), s/veh	1.9	1.1	0.6	0.1	2.9	1.2	1.1	5.5	0.0	0.9	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.1	0.9	0.8	2.8	1.3	1.4	4.7	0.0	0.9	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.7	15.5	11.3	15.8	23.0	17.5	20.4	30.3	0.0	20.8	25.7	0.0
LnGrp LOS	B	B	B	B	C	B	C	C		C	C	
Approach Vol, veh/h	624				414		767				571	
Approach Delay, s/veh	14.3				20.0		28.6				25.1	
Approach LOS	B				B		C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	30.8	9.5	19.2	15.7	23.5	8.4	20.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.7	24.8	5.0	21.5	11.5	19.0	7.9	18.6				
Max Q Clear Time (g_c+l1), s	4.2	7.4	6.1	11.4	11.3	8.9	4.6	14.4				
Green Ext Time (p_c), s	0.0	1.3	0.0	2.0	0.0	1.0	0.0	1.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.5											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2029 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	242	40	155	173	68	20	434	216	69	134	95
Future Volume (veh/h)	164	242	40	155	173	68	20	434	216	69	134	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	182	269	44	172	192	76	22	482	240	77	149	106
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	471	339	246	298	440	381	446	603	340	281	650	560
Arrive On Green	0.11	0.18	0.18	0.16	0.24	0.24	0.03	0.32	0.32	0.06	0.35	0.35
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	182	269	44	172	192	76	22	482	240	77	149	106
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	5.1	8.9	1.8	8.6	5.7	2.4	0.6	14.9	12.7	1.8	3.6	3.0
Cycle Q Clear(g_c), s	5.1	8.9	1.8	8.6	5.7	2.4	0.6	14.9	12.7	1.8	3.6	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	339	246	298	440	381	446	603	340	281	650	560
V/C Ratio(X)	0.39	0.79	0.18	0.58	0.44	0.20	0.05	0.80	0.71	0.27	0.23	0.19
Avail Cap(c_a), veh/h	472	520	378	378	769	667	529	1285	723	320	1257	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	25.1	22.2	17.0	20.8	19.6	14.1	20.0	19.3	15.0	14.7	14.5
Incr Delay (d2), s/veh	0.5	4.7	0.3	1.8	0.7	0.3	0.0	2.5	2.7	0.5	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	0.5	1.8	2.2	0.8	0.2	5.7	2.9	0.6	1.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.6	29.8	22.5	18.8	21.5	19.9	14.1	22.5	22.0	15.5	14.9	14.7
LnGrp LOS	B	C	C	B	C	B	B	C	C	B	B	B
Approach Vol, veh/h	495			440			744			332		
Approach Delay, s/veh	25.0			20.2			22.1			15.0		
Approach LOS	C			C			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	24.9	14.8	16.2	6.1	27.0	11.4	19.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+I1), s	3.8	16.9	10.6	10.9	2.6	5.6	7.1	7.7				
Green Ext Time (p_c), s	0.0	3.5	0.2	0.8	0.0	1.0	0.0	1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.2											
HCM 7th LOS	C											

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	62	85	79	50	70
Future Vol, veh/h	201	62	85	79	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	67	92	86	54	76
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	286	0	523	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1276	-	514	786
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1276	-	477	786
Mov Cap-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	719	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		4.17		12.36	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	619	-	-	1276	-	
HCM Lane V/C Ratio	0.211	-	-	0.072	-	
HCM Ctrl Dly (s/v)	12.4	-	-	8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-	

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰	↰	↰	↰
Traffic Vol, veh/h	132	454	388	176	145	108
Future Vol, veh/h	132	454	388	176	145	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	493	422	191	158	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	613	0	-	0	1202	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	780	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	966	-	-	-	204	632
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	452	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	966	-	-	-	162	632
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	452	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.11	0		22.5		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	405	-	-	-	295	632
HCM Lane V/C Ratio	0.148	-	-	-	0.534	0.186
HCM Ctrl Dly (s/v)	9.4	0	-	-	30.3	12
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	2.9	0.7

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	133	442	320	176	144	108
Future Vol, veh/h	133	442	320	176	144	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	480	348	191	157	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	539	0	-	0	1117	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	770	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1029	-	-	-	229	695
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1029	-	-	-	185	695
Mov Cap-2 Maneuver	-	-	-	-	316	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	457	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.1	0		20.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	416	-	-	-	316	695
HCM Lane V/C Ratio	0.14	-	-	-	0.496	0.169
HCM Ctrl Dly (s/v)	9.1	0	-	-	27.1	11.2
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	2.6	0.6

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	507	344	84	68	52
Future Vol, veh/h	63	507	344	84	68	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	551	374	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	465	0	-	0	1062	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	688	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1096	-	-	-	247	672
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	499	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1096	-	-	-	225	672
Mov Cap-2 Maneuver	-	-	-	-	355	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	499	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.94	0		16.36		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	199	-	-	-	446	
HCM Lane V/C Ratio	0.062	-	-	-	0.292	
HCM Ctrl Dly (s/v)	8.5	0	-	-	16.4	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

HCM 7th Signalized Intersection Summary 1: Ashe Rd & Baseline Rd

2029 Future with Traffic PM with Improvements
07/21/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	203	11	208	144	9	551
Future Volume (veh/h)	203	11	208	144	9	551
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1885
Adj Flow Rate, veh/h	218	12	224	155	10	592
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	1	1	0	1
Cap, veh/h	299	16	484	335	150	872
Arrive On Green	0.18	0.18	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1697	93	1038	718	10	1867
Grp Volume(v), veh/h	231	0	0	379	602	0
Grp Sat Flow(s),veh/h/ln	1798	0	0	1756	1877	0
Q Serve(g_s), s	3.1	0.0	0.0	3.7	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	3.7	6.3	0.0
Prop In Lane	0.94	0.05		0.41	0.02	
Lane Grp Cap(c), veh/h	317	0	0	820	1021	0
V/C Ratio(X)	0.73	0.00	0.00	0.46	0.59	0.00
Avail Cap(c_a), veh/h	1284	0	0	2298	2586	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	4.6	5.3	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.4	0.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.0	0.0	0.0	5.0	5.8	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	231		379		602	
Approach Delay, s/veh	13.0		5.0		5.8	
Approach LOS	B		A		A	
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	16.3		16.3		8.9	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	33.0		33.0		18.0	
Max Q Clear Time (g_c+I1), s	5.7		8.3		5.1	
Green Ext Time (p_c), s	2.1		3.5		0.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			6.9			
HCM 7th LOS			A			

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	202	182	0	2	6
Future Vol, veh/h	15	202	182	0	2	6
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	17	227	204	0	2	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	204	0	-	0	465	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1379	-	-	-	559	841
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1379	-	-	-	551	841
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	788	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.53	0		9.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	124	-	-	-	744	
HCM Lane V/C Ratio	0.012	-	-	-	0.012	
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2029 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	85	45	82	117	191	19	756	165	246	902	34
Future Volume (veh/h)	71	85	45	82	117	191	19	756	165	246	902	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	73	88	46	85	121	0	20	779	0	254	930	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	272	188	197	322	187		42	1430		364	1720	65
Arrive On Green	0.08	0.10	0.10	0.08	0.10	0.00	0.02	0.43	0.00	0.11	0.51	0.51
Sat Flow, veh/h	1471	1900	1610	1739	1900	1572	1810	3357	1535	3428	3381	127
Grp Volume(v), veh/h	73	88	46	85	121	0	20	779	0	254	473	492
Grp Sat Flow(s),veh/h/ln	1471	1900	1610	1739	1900	1572	1810	1678	1535	1714	1721	1788
Q Serve(g_s), s	2.7	2.7	1.6	2.6	3.8	0.0	0.7	10.8	0.0	4.4	11.6	11.6
Cycle Q Clear(g_c), s	2.7	2.7	1.6	2.6	3.8	0.0	0.7	10.8	0.0	4.4	11.6	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	272	188	197	322	187		42	1430		364	875	910
V/C Ratio(X)	0.27	0.47	0.23	0.26	0.65		0.47	0.54		0.70	0.54	0.54
Avail Cap(c_a), veh/h	580	550	504	686	550		148	1430		524	875	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	26.5	24.7	22.1	27.0	0.0	30.0	13.3	0.0	26.8	10.4	10.4
Incr Delay (d2), s/veh	0.5	1.8	0.6	0.4	3.7	0.0	7.9	1.5	0.0	2.4	2.4	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	0.6	0.9	1.7	0.0	0.4	3.3	0.0	1.7	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.7	28.3	25.3	22.6	30.7	0.0	37.9	14.8	0.0	29.3	12.7	12.7
LnGrp LOS	C	C	C	C	C		D	B		C	B	B
Approach Vol, veh/h	207			206			799			1219		
Approach Delay, s/veh	25.7			27.3			15.4			16.2		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	31.0	9.5	10.6	6.0	36.1	9.5	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	26.5	18.0	18.0	5.1	30.9	18.0	18.0				
Max Q Clear Time (g_c+l1), s	6.4	12.8	4.6	4.7	2.7	13.6	4.7	5.8				
Green Ext Time (p_c), s	0.2	3.9	0.1	0.4	0.0	5.0	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	17.7											
HCM 7th LOS	B											
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2029 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	224	146	99	190	91	88	570	160	153	757	147
Future Volume (veh/h)	268	224	146	99	190	91	88	570	160	153	757	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	279	233	152	103	198	95	92	594	0	159	789	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	418	663	663	478	494	557	239	818		326	927	
Arrive On Green	0.16	0.36	0.36	0.06	0.26	0.26	0.06	0.24	0.00	0.09	0.27	0.00
Sat Flow, veh/h	1188	1826	1572	1810	1870	1572	1767	3469	1610	1795	3469	1208
Grp Volume(v), veh/h	279	233	152	103	198	95	92	594	0	159	789	0
Grp Sat Flow(s),veh/h/ln	1188	1826	1572	1810	1870	1572	1767	1735	1610	1795	1735	1208
Q Serve(g_s), s	11.5	6.7	4.5	2.9	6.3	3.0	2.8	11.4	0.0	4.7	15.5	0.0
Cycle Q Clear(g_c), s	11.5	6.7	4.5	2.9	6.3	3.0	2.8	11.4	0.0	4.7	15.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	663	663	478	494	557	239	818		326	927	
V/C Ratio(X)	0.67	0.35	0.23	0.22	0.40	0.17	0.39	0.73		0.49	0.85	
Avail Cap(c_a), veh/h	418	663	663	511	494	557	258	897		362	1037	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.3	16.7	13.3	17.4	21.8	16.0	20.3	25.3	0.0	19.0	25.0	0.0
Incr Delay (d2), s/veh	4.0	1.5	0.8	0.2	2.4	0.7	1.0	2.7	0.0	1.1	6.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	2.7	1.4	1.1	2.8	1.0	1.0	4.3	0.0	1.7	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	18.2	14.1	17.6	24.2	16.6	21.3	28.0	0.0	20.2	31.3	0.0
LnGrp LOS	B	B	B	B	C	B	C	C		C	C	
Approach Vol, veh/h	664		396				686		948			
Approach Delay, s/veh	17.7		20.7				27.1		29.4			
Approach LOS	B		C				C		C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	30.6	8.7	23.7	16.0	23.5	11.0	21.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.7	24.8	5.0	21.5	11.5	19.0	7.9	18.6				
Max Q Clear Time (g_c+I1), s	4.9	8.7	4.8	17.5	13.5	8.3	6.7	13.4				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.7	0.0	0.9	0.0	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	24.7											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2029 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	164	42	214	280	81	42	176	124	47	496	205
Future Volume (veh/h)	88	164	42	214	280	81	42	176	124	47	496	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	92	171	44	223	292	84	44	183	129	49	517	228
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	328	251	201	407	409	358	281	645	456	508	656	556
Arrive On Green	0.07	0.14	0.14	0.15	0.22	0.22	0.04	0.34	0.34	0.05	0.35	0.35
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	92	171	44	223	292	84	44	183	129	49	517	228
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	2.4	4.9	1.5	6.6	8.2	2.4	0.9	4.0	4.0	1.0	13.7	6.1
Cycle Q Clear(g_c), s	2.4	4.9	1.5	6.6	8.2	2.4	0.9	4.0	4.0	1.0	13.7	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	251	201	407	409	358	281	645	456	508	656	556
V/C Ratio(X)	0.28	0.68	0.22	0.55	0.71	0.23	0.16	0.28	0.28	0.10	0.79	0.41
Avail Cap(c_a), veh/h	428	595	476	588	872	762	362	1457	1031	587	1471	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	23.1	21.6	15.6	20.2	17.9	12.6	13.5	13.5	10.9	16.5	14.0
Incr Delay (d2), s/veh	0.5	3.2	0.5	1.2	2.3	0.3	0.3	0.2	0.3	0.1	2.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.1	0.5	1.9	3.2	0.8	0.3	1.3	1.0	0.3	4.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	26.4	22.2	16.7	22.5	18.3	12.8	13.7	13.8	11.0	18.7	14.5
LnGrp LOS	B	C	C	B	C	B	B	B	B	B	B	B
Approach Vol, veh/h	307		599			356			794			
Approach Delay, s/veh	23.7		19.8			13.6			17.0			
Approach LOS	C		B			B			B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.7	13.2	12.1	7.0	23.9	8.3	17.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+l1), s	3.0	6.0	8.6	6.9	2.9	15.7	4.4	10.2				
Green Ext Time (p_c), s	0.0	1.3	0.3	0.7	0.0	3.7	0.0	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	18.2											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	28	39	149	65	92
Future Vol, veh/h	125	28	39	149	65	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	30	42	162	71	100
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	166	0	398	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1412	-	608	895
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	589	895
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	770	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	1.58		11.35		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	737	-	-	1412	-	
HCM Lane V/C Ratio	0.232	-	-	0.03	-	
HCM Ctrl Dly (s/v)	11.4	-	-	7.6	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	449	343	80	189	142
Future Vol, veh/h	61	449	343	80	189	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	488	373	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	460	0	-	0	993	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	621	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1101	-	-	-	272	673
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1101	-	-	-	249	673
Mov Cap-2 Maneuver	-	-	-	-	378	-
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	536	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.01	0		19.54		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	215	-	-	-	378	673
HCM Lane V/C Ratio	0.06	-	-	-	0.543	0.229
HCM Ctrl Dly (s/v)	8.5	0	-	-	25.2	11.9
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.1	0.9

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↱	↱	↱	↱	↱
Traffic Vol, veh/h	61	321	405	80	189	142
Future Vol, veh/h	61	321	405	80	189	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	349	440	87	205	154
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	527	0	-	0	922	440
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1040	-	-	-	300	617
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	621	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1040	-	-	-	276	617
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	621	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.39	0		18.48		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	287	-	-	-	404	617
HCM Lane V/C Ratio	0.064	-	-	-	0.508	0.25
HCM Ctrl Dly (s/v)	8.7	0	-	-	22.8	12.8
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.8	1

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	292	508	39	90	67
Future Vol, veh/h	28	292	508	39	90	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	317	552	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	595	0	-	0	930	552
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	982	-	-	-	296	533
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	285	533
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	693	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.77	0		17.64		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	158	-	-	-	454	
HCM Lane V/C Ratio	0.031	-	-	-	0.376	
HCM Ctrl Dly (s/v)	8.8	0	-	-	17.6	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7	

HCM 7th Signalized Intersection Summary 1: Ashe Rd & Baseline Rd

2031 Future with Traffic AM with Improvements
07/21/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	202	26	426	347	32	192
Future Volume (veh/h)	202	26	426	347	32	192
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1856
Adj Flow Rate, veh/h	227	29	479	390	36	216
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	1	1	0	3
Cap, veh/h	296	38	565	460	140	687
Arrive On Green	0.19	0.19	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1577	201	961	783	63	1169
Grp Volume(v), veh/h	257	0	0	869	252	0
Grp Sat Flow(s),veh/h/ln	1785	0	0	1744	1232	0
Q Serve(g_s), s	5.5	0.0	0.0	16.4	1.3	0.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	16.4	17.7	0.0
Prop In Lane	0.88	0.11		0.45	0.14	
Lane Grp Cap(c), veh/h	335	0	0	1024	826	0
V/C Ratio(X)	0.77	0.00	0.00	0.85	0.30	0.00
Avail Cap(c_a), veh/h	803	0	0	1439	1172	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	6.8	4.6	0.0
Incr Delay (d2), s/veh	3.7	0.0	0.0	3.5	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	2.0	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.1	0.0	0.0	10.3	4.8	0.0
LnGrp LOS	B			B	A	
Approach Vol, veh/h	257		869		252	
Approach Delay, s/veh	19.1		10.3		4.8	
Approach LOS	B		B		A	
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	28.0		28.0		12.0	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	33.0		33.0		18.0	
Max Q Clear Time (g_c+I1), s	18.4		19.7		7.5	
Green Ext Time (p_c), s	5.1		1.1		0.5	
Intersection Summary						
HCM 7th Control Delay, s/veh			10.9			
HCM 7th LOS			B			

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	387	254	2	5	10
Future Vol, veh/h	8	387	254	2	5	10
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	81	81	81	81	81	81
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	10	478	314	2	6	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	316	0	-	0	812	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	498	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1256	-	-	-	351	730
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1256	-	-	-	347	730
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	615	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.16	0		11.98		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	36	-	-	-	534	
HCM Lane V/C Ratio	0.008	-	-	-	0.035	
HCM Ctrl Dly (s/v)	7.9	0	-	-	12	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	154	103	141	117	255	123	914	112	135	638	77
Future Volume (veh/h)	135	154	103	141	117	255	123	914	112	135	638	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1781	1900	1826	1900	1707	1707	1781	1618	1900
Adj Flow Rate, veh/h	144	164	110	150	124	0	131	972	0	144	679	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	8	0	5	0	13	13	8	19	0
Cap, veh/h	374	233	346	328	248		167	1433		223	1152	139
Arrive On Green	0.10	0.12	0.12	0.11	0.13	0.00	0.09	0.44	0.00	0.07	0.42	0.42
Sat Flow, veh/h	1810	1900	1610	1697	1900	1547	1810	3244	1447	3291	2763	333
Grp Volume(v), veh/h	144	164	110	150	124	0	131	972	0	144	378	383
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1697	1900	1547	1810	1622	1447	1646	1537	1558
Q Serve(g_s), s	4.6	5.7	4.0	5.2	4.2	0.0	4.9	16.5	0.0	2.9	13.1	13.1
Cycle Q Clear(g_c), s	4.6	5.7	4.0	5.2	4.2	0.0	4.9	16.5	0.0	2.9	13.1	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	374	233	346	328	248		167	1433		223	641	650
V/C Ratio(X)	0.38	0.70	0.32	0.46	0.50		0.78	0.68		0.65	0.59	0.59
Avail Cap(c_a), veh/h	665	495	568	588	495		223	1433		262	641	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	29.1	22.8	22.7	27.9	0.0	30.7	15.4	0.0	31.4	15.5	15.6
Incr Delay (d2), s/veh	0.6	3.8	0.5	1.0	1.6	0.0	12.3	2.6	0.0	4.2	3.9	3.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.5	1.4	1.9	1.8	0.0	2.5	5.2	0.0	1.2	4.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.4	32.9	23.4	23.7	29.5	0.0	43.0	18.0	0.0	35.6	19.5	19.5
LnGrp LOS	C	C	C	C	C		D	B		D	B	B
Approach Vol, veh/h	418		274			1103			905			
Approach Delay, s/veh	27.1		26.3			21.0			22.0			
Approach LOS	C		C			C			C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	35.0	11.9	13.0	10.9	33.3	11.4	13.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	30.5	18.0	18.0	8.5	27.5	18.0	18.0				
Max Q Clear Time (g_c+l1), s	4.9	18.5	7.2	7.7	6.9	15.1	6.6	6.2				
Green Ext Time (p_c), s	0.0	4.7	0.2	0.8	0.0	3.3	0.2	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.8											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2031 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	204	111	80	205	162	126	665	63	111	517	252
Future Volume (veh/h)	291	204	111	80	205	162	126	665	63	111	517	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1530	1811	1693	1856	1707	1767	1737	1737	1752	1633	1737	922
Adj Flow Rate, veh/h	303	213	116	83	214	169	131	693	0	116	539	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	25	6	14	3	13	9	11	11	10	18	11	66
Cap, veh/h	487	746	704	489	513	560	293	818		232	802	
Arrive On Green	0.16	0.41	0.41	0.05	0.30	0.30	0.08	0.25	0.00	0.07	0.24	0.00
Sat Flow, veh/h	1457	1811	1434	1767	1707	1497	1654	3300	1485	1555	3300	781
Grp Volume(v), veh/h	303	213	116	83	214	169	131	693	0	116	539	0
Grp Sat Flow(s),veh/h/ln	1457	1811	1434	1767	1707	1497	1654	1650	1485	1555	1650	781
Q Serve(g_s), s	11.3	6.6	3.7	2.7	8.4	6.7	4.9	16.7	0.0	4.6	12.4	0.0
Cycle Q Clear(g_c), s	11.3	6.6	3.7	2.7	8.4	6.7	4.9	16.7	0.0	4.6	12.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	746	704	489	513	560	293	818		232	802	
V/C Ratio(X)	0.62	0.29	0.16	0.17	0.42	0.30	0.45	0.85		0.50	0.67	
Avail Cap(c_a), veh/h	554	746	704	515	513	560	331	966		257	927	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.9	16.4	11.8	18.5	23.4	18.5	22.0	30.0	0.0	23.0	28.7	0.0
Incr Delay (d2), s/veh	1.7	1.0	0.5	0.2	2.5	1.4	1.1	6.2	0.0	1.7	1.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.6	1.1	1.0	3.5	2.2	1.8	6.6	0.0	1.6	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.7	17.3	12.3	18.6	25.9	19.9	23.1	36.2	0.0	24.7	30.2	0.0
LnGrp LOS	B	B	B	B	C	B	C	D		C	C	
Approach Vol, veh/h	632			466			824			655		
Approach Delay, s/veh	16.1			22.4			34.1			29.3		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	39.0	11.1	24.8	18.1	29.6	10.7	25.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	34.5	8.5	23.5	17.5	22.5	7.5	24.5				
Max Q Clear Time (g_c+I1), s	4.7	8.6	6.9	14.4	13.3	10.4	6.6	18.7				
Green Ext Time (p_c), s	0.0	1.5	0.0	2.1	0.4	1.3	0.0	2.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	26.3											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Future with Traffic AM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	245	41	156	175	68	21	495	218	70	180	136
Future Volume (veh/h)	216	245	41	156	175	68	21	495	218	70	180	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1856	1589	1040	1856	1900	1663	1900	1263	1900	1856	1885
Adj Flow Rate, veh/h	240	272	46	173	194	76	23	550	242	78	200	151
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
Percent Heavy Veh, %	1	3	21	58	3	0	16	0	43	0	3	1
Cap, veh/h	449	334	243	284	448	389	421	663	373	261	703	605
Arrive On Green	0.10	0.18	0.18	0.16	0.24	0.24	0.03	0.35	0.35	0.06	0.38	0.38
Sat Flow, veh/h	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Grp Volume(v), veh/h	240	272	46	173	194	76	23	550	242	78	200	151
Grp Sat Flow(s),veh/h/ln	1795	1856	1346	991	1856	1610	1584	1900	1070	1810	1856	1598
Q Serve(g_s), s	6.9	9.9	2.0	9.4	6.2	2.6	0.6	18.7	13.4	1.9	5.3	4.6
Cycle Q Clear(g_c), s	6.9	9.9	2.0	9.4	6.2	2.6	0.6	18.7	13.4	1.9	5.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	334	243	284	448	389	421	663	373	261	703	605
V/C Ratio(X)	0.53	0.81	0.19	0.61	0.43	0.20	0.05	0.83	0.65	0.30	0.28	0.25
Avail Cap(c_a), veh/h	449	475	344	344	701	609	493	1172	660	292	1147	988
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	27.7	24.5	18.5	22.6	21.2	14.0	21.0	19.3	15.8	15.2	15.0
Incr Delay (d2), s/veh	1.2	7.1	0.4	2.2	0.7	0.2	0.1	2.8	1.9	0.6	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.6	0.6	2.0	2.5	0.9	0.2	7.3	3.1	0.7	1.9	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.7	34.9	24.9	20.6	23.3	21.5	14.1	23.7	21.2	16.5	15.4	15.2
LnGrp LOS	C	C	C	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h	558			443			815			429		
Approach Delay, s/veh	28.8			21.9			22.7			15.5		
Approach LOS	C			C			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	29.1	15.7	17.2	6.3	31.2	11.4	21.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+I1), s	3.9	20.7	11.4	11.9	2.6	7.3	8.9	8.2				
Green Ext Time (p_c), s	0.0	3.9	0.2	0.8	0.0	1.5	0.0	1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.7											
HCM 7th LOS	C											

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	325	62	85	178	50	70
Future Vol, veh/h	325	62	85	178	50	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	67	92	193	54	76
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	421	0	765	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	378	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1138	-	371	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	341	661
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	636	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		2.73		15.41	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	475	-	-	1138	-	
HCM Lane V/C Ratio	0.274	-	-	0.081	-	
HCM Ctrl Dly (s/v)	15.4	-	-	8.4	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.3	-	

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	322	61	80	206	50	65
Future Vol, veh/h	322	61	80	206	50	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	350	66	87	224	54	71
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	416	0	781	383
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	398	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1143	-	363	664
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1143	-	336	664
Mov Cap-2 Maneuver	-	-	-	-	336	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	627	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		2.35		15.53	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	466	-	-	1143	-	
HCM Lane V/C Ratio	0.268	-	-	0.076	-	
HCM Ctrl Dly (s/v)	15.5	-	-	8.4	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-	

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	61	80	236	50	66
Future Vol, veh/h	326	61	80	236	50	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	66	87	257	54	72
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	421	0	818	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1138	-	346	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	656	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1138	-	319	661
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	606	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		2.13		16.01	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	452	-	-	1138	-	
HCM Lane V/C Ratio	0.279	-	-	0.076	-	
HCM Ctrl Dly (s/v)	16	-	-	8.4	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-	

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	132	461	391	176	145	108
Future Vol, veh/h	132	461	391	176	145	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	501	425	191	158	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	1213	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	788	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	964	-	-	-	201	629
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	964	-	-	-	159	629
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	448	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.09	0		22.8		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	401	-	-	-	292	629
HCM Lane V/C Ratio	0.149	-	-	-	0.539	0.187
HCM Ctrl Dly (s/v)	9.4	0	-	-	30.8	12
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	3	0.7

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	133	449	323	176	144	108
Future Vol, veh/h	133	449	323	176	144	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	488	351	191	157	117
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	542	0	-	0	1128	351
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	777	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1026	-	-	-	226	692
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	453	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1026	-	-	-	182	692
Mov Cap-2 Maneuver	-	-	-	-	313	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	453	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	2.08	0		20.55		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	411	-	-	-	313	692
HCM Lane V/C Ratio	0.141	-	-	-	0.501	0.17
HCM Ctrl Dly (s/v)	9.1	0	-	-	27.5	11.3
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	2.6	0.6

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	514	347	84	68	52
Future Vol, veh/h	63	514	347	84	68	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	559	377	91	74	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	468	0	-	0	1073	377
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	696	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1093	-	-	-	244	669
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	222	669
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	495	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.93	0		16.49		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	197	-	-	-	443	
HCM Lane V/C Ratio	0.063	-	-	-	0.295	
HCM Ctrl Dly (s/v)	8.5	0	-	-	16.5	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

HCM 7th Signalized Intersection Summary 1: Ashe Rd & Baseline Rd

2031 Future with Traffic PM with Improvements
07/21/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	315	32	212	193	18	564
Future Volume (veh/h)	315	32	212	193	18	564
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1885
Adj Flow Rate, veh/h	339	34	228	208	19	606
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	1	1	0	1
Cap, veh/h	440	44	406	370	126	824
Arrive On Green	0.27	0.27	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1622	163	908	828	21	1843
Grp Volume(v), veh/h	374	0	0	436	625	0
Grp Sat Flow(s),veh/h/ln	1790	0	0	1736	1865	0
Q Serve(g_s), s	6.2	0.0	0.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0	5.9	8.8	0.0
Prop In Lane	0.91	0.09		0.48	0.03	
Lane Grp Cap(c), veh/h	486	0	0	776	950	0
V/C Ratio(X)	0.77	0.00	0.00	0.56	0.66	0.00
Avail Cap(c_a), veh/h	1092	0	0	1711	1936	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	6.5	7.3	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.6	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.7	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.3	0.0	0.0	7.2	8.1	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	374		436		625	
Approach Delay, s/veh	13.3		7.2		8.1	
Approach LOS	B		A		A	
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	18.8		18.8		13.2	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	31.5		31.5		19.5	
Max Q Clear Time (g_c+I1), s	7.9		10.8		8.2	
Green Ext Time (p_c), s	2.4		3.5		0.8	
Intersection Summary						
HCM 7th Control Delay, s/veh			9.2			
HCM 7th LOS			A			

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	260	315	3	3	6
Future Vol, veh/h	15	260	315	3	3	6
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	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	17	292	354	3	3	7
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	357	0	-	0	681	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1213	-	-	-	419	693
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1213	-	-	-	412	693
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	736	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.44	0		11.49		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	98	-	-	-	565	
HCM Lane V/C Ratio	0.014	-	-	-	0.018	
HCM Ctrl Dly (s/v)	8	0	-	-	11.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary 3: IL 47 & Baseline Rd

2031 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	120	132	83	133	196	56	772	167	253	925	57
Future Volume (veh/h)	124	120	132	83	133	196	56	772	167	253	925	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1544	1900	1900	1826	1900	1856	1900	1767	1811	1856	1811	1900
Adj Flow Rate, veh/h	128	124	136	86	137	0	58	796	0	261	954	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	24	0	0	5	0	3	0	9	6	3	6	0
Cap, veh/h	305	263	302	325	200		90	1373		364	1533	95
Arrive On Green	0.11	0.14	0.14	0.08	0.11	0.00	0.05	0.41	0.00	0.11	0.47	0.47
Sat Flow, veh/h	1471	1900	1610	1739	1900	1572	1810	3357	1535	3428	3291	204
Grp Volume(v), veh/h	128	124	136	86	137	0	58	796	0	261	499	514
Grp Sat Flow(s),veh/h/ln	1471	1900	1610	1739	1900	1572	1810	1678	1535	1714	1721	1774
Q Serve(g_s), s	5.0	4.0	5.0	2.8	4.6	0.0	2.1	12.2	0.0	4.9	14.5	14.5
Cycle Q Clear(g_c), s	5.0	4.0	5.0	2.8	4.6	0.0	2.1	12.2	0.0	4.9	14.5	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	305	263	302	325	200		90	1373		364	801	826
V/C Ratio(X)	0.42	0.47	0.45	0.26	0.68		0.65	0.58		0.72	0.62	0.62
Avail Cap(c_a), veh/h	545	515	516	666	515		139	1373		491	801	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	26.4	23.9	23.5	28.6	0.0	31.0	15.2	0.0	28.7	13.3	13.3
Incr Delay (d2), s/veh	0.9	1.3	1.0	0.4	4.1	0.0	7.6	1.8	0.0	3.2	3.6	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.7	1.7	1.0	2.1	0.0	1.0	3.9	0.0	1.9	4.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	27.7	25.0	23.9	32.7	0.0	38.6	17.0	0.0	31.9	17.0	16.9
LnGrp LOS	C	C	C	C	C		D	B		C	B	B
Approach Vol, veh/h	388			223			854			1274		
Approach Delay, s/veh	25.4			29.3			18.5			20.0		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.5	31.6	9.5	13.7	7.8	35.4	11.7	11.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	26.5	18.0	18.0	5.1	30.9	18.0	18.0				
Max Q Clear Time (g_c+l1), s	6.9	14.2	4.8	7.0	4.1	16.5	7.0	6.6				
Green Ext Time (p_c), s	0.2	3.8	0.1	0.7	0.0	4.9	0.2	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.0											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary 4: IL 47 & Galena Rd

2031 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	227	146	102	194	112	89	603	164	201	818	149
Future Volume (veh/h)	269	227	146	102	194	112	89	603	164	201	818	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1248	1826	1856	1900	1870	1856	1856	1826	1900	1885	1826	1426
Adj Flow Rate, veh/h	280	236	152	106	202	117	93	628	0	209	852	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	44	5	3	0	2	3	3	5	0	1	5	32
Cap, veh/h	429	708	698	456	486	577	217	809		329	988	
Arrive On Green	0.19	0.39	0.39	0.06	0.26	0.26	0.06	0.23	0.00	0.11	0.28	0.00
Sat Flow, veh/h	1188	1826	1572	1810	1870	1572	1767	3469	1610	1795	3469	1208
Grp Volume(v), veh/h	280	236	152	106	202	117	93	628	0	209	852	0
Grp Sat Flow(s),veh/h/ln	1188	1826	1572	1810	1870	1572	1767	1735	1610	1795	1735	1208
Q Serve(g_s), s	13.9	7.8	5.1	3.6	7.7	4.3	3.4	14.5	0.0	7.2	19.9	0.0
Cycle Q Clear(g_c), s	13.9	7.8	5.1	3.6	7.7	4.3	3.4	14.5	0.0	7.2	19.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	429	708	698	456	486	577	217	809		329	988	
V/C Ratio(X)	0.65	0.33	0.22	0.23	0.42	0.20	0.43	0.78		0.64	0.86	
Avail Cap(c_a), veh/h	462	708	698	472	486	577	232	915		357	1118	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.5	18.4	14.6	21.0	26.2	18.5	24.4	30.6	0.0	21.7	28.9	0.0
Incr Delay (d2), s/veh	3.0	1.3	0.7	0.3	2.6	0.8	1.3	3.8	0.0	3.3	6.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.2	1.7	1.4	3.5	1.5	1.3	5.8	0.0	2.9	8.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	19.6	15.3	21.2	28.8	19.3	25.7	34.4	0.0	25.0	35.4	0.0
LnGrp LOS	B	B	B	C	C	B	C	C		C	D	
Approach Vol, veh/h	668			425			721			1061		
Approach Delay, s/veh	18.6			24.3			33.3			33.4		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	37.6	9.3	28.8	20.6	26.7	13.7	24.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.9	33.1	5.5	27.5	18.5	20.5	10.5	22.5				
Max Q Clear Time (g_c+I1), s	5.6	9.8	5.4	21.9	15.9	9.7	9.2	16.5				
Green Ext Time (p_c), s	0.0	1.7	0.0	2.4	0.2	1.0	0.1	1.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.6											
HCM 7th LOS	C											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 7th Signalized Intersection Summary
5: Eldamain Rd/Ashe Rd & Galena Rd

2031 Future with Traffic PM with Improvements
07/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	167	43	216	284	81	43	205	126	48	564	262
Future Volume (veh/h)	112	167	43	216	284	81	43	205	126	48	564	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1752	1574	1841	1900	1900	1885	1574	1900	1900	1900
Adj Flow Rate, veh/h	117	174	45	225	296	84	45	214	131	50	588	291
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90
Percent Heavy Veh, %	0	3	10	22	4	0	0	1	22	0	0	0
Cap, veh/h	314	246	197	389	388	340	260	711	503	513	722	612
Arrive On Green	0.08	0.13	0.13	0.15	0.21	0.21	0.04	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Grp Volume(v), veh/h	117	174	45	225	296	84	45	214	131	50	588	291
Grp Sat Flow(s),veh/h/ln	1810	1856	1485	1499	1841	1610	1810	1885	1334	1810	1900	1610
Q Serve(g_s), s	3.4	5.6	1.7	7.5	9.4	2.7	0.9	5.0	4.2	1.0	17.3	8.5
Cycle Q Clear(g_c), s	3.4	5.6	1.7	7.5	9.4	2.7	0.9	5.0	4.2	1.0	17.3	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	246	197	389	388	340	260	711	503	513	722	612
V/C Ratio(X)	0.37	0.71	0.23	0.58	0.76	0.25	0.17	0.30	0.26	0.10	0.81	0.48
Avail Cap(c_a), veh/h	378	537	430	531	788	689	327	1316	931	577	1330	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	25.8	24.1	17.6	23.1	20.4	13.2	13.6	13.4	10.8	17.3	14.6
Incr Delay (d2), s/veh	0.7	3.7	0.6	1.4	3.1	0.4	0.3	0.2	0.3	0.1	2.3	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.4	0.6	2.3	3.9	0.9	0.3	1.7	1.1	0.3	6.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.7	29.5	24.7	18.9	26.2	20.8	13.5	13.8	13.6	10.9	19.6	15.2
LnGrp LOS	C	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h	336			605			390			929		
Approach Delay, s/veh	26.2			22.7			13.7			17.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	27.9	14.1	12.7	7.2	28.1	9.2	17.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	43.4	15.5	18.0	5.0	43.5	6.9	26.6				
Max Q Clear Time (g_c+I1), s	3.0	7.0	9.5	7.6	2.9	19.3	5.4	11.4				
Green Ext Time (p_c), s	0.0	1.5	0.3	0.7	0.0	4.4	0.0	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	19.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	183	28	39	282	65	92
Future Vol, veh/h	183	28	39	282	65	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	30	42	307	71	100
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	229	0	605	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1339	-	461	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1339	-	446	826
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	662	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.94		13.17	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	611	-	-	1339	-	
HCM Lane V/C Ratio	0.28	-	-	0.032	-	
HCM Ctrl Dly (s/v)	13.2	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	28	36	252	66	86
Future Vol, veh/h	232	28	36	252	66	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	252	30	39	274	72	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	283	0	620	267
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	452	771
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1280	-	438	771
Mov Cap-2 Maneuver	-	-	-	-	438	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	690	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.99		13.67	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	580	-	-	1280	-	
HCM Lane V/C Ratio	0.285	-	-	0.031	-	
HCM Ctrl Dly (s/v)	13.7	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	290	28	37	222	66	86
Future Vol, veh/h	290	28	37	222	66	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	265	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	315	30	40	241	72	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	346	0	652	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1213	-	432	711
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1213	-	418	711
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	710	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	1.15		14.45		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	545	-	-	1213	-	
HCM Lane V/C Ratio	0.303	-	-	0.033	-	
HCM Ctrl Dly (s/v)	14.4	-	-	8.1	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-	

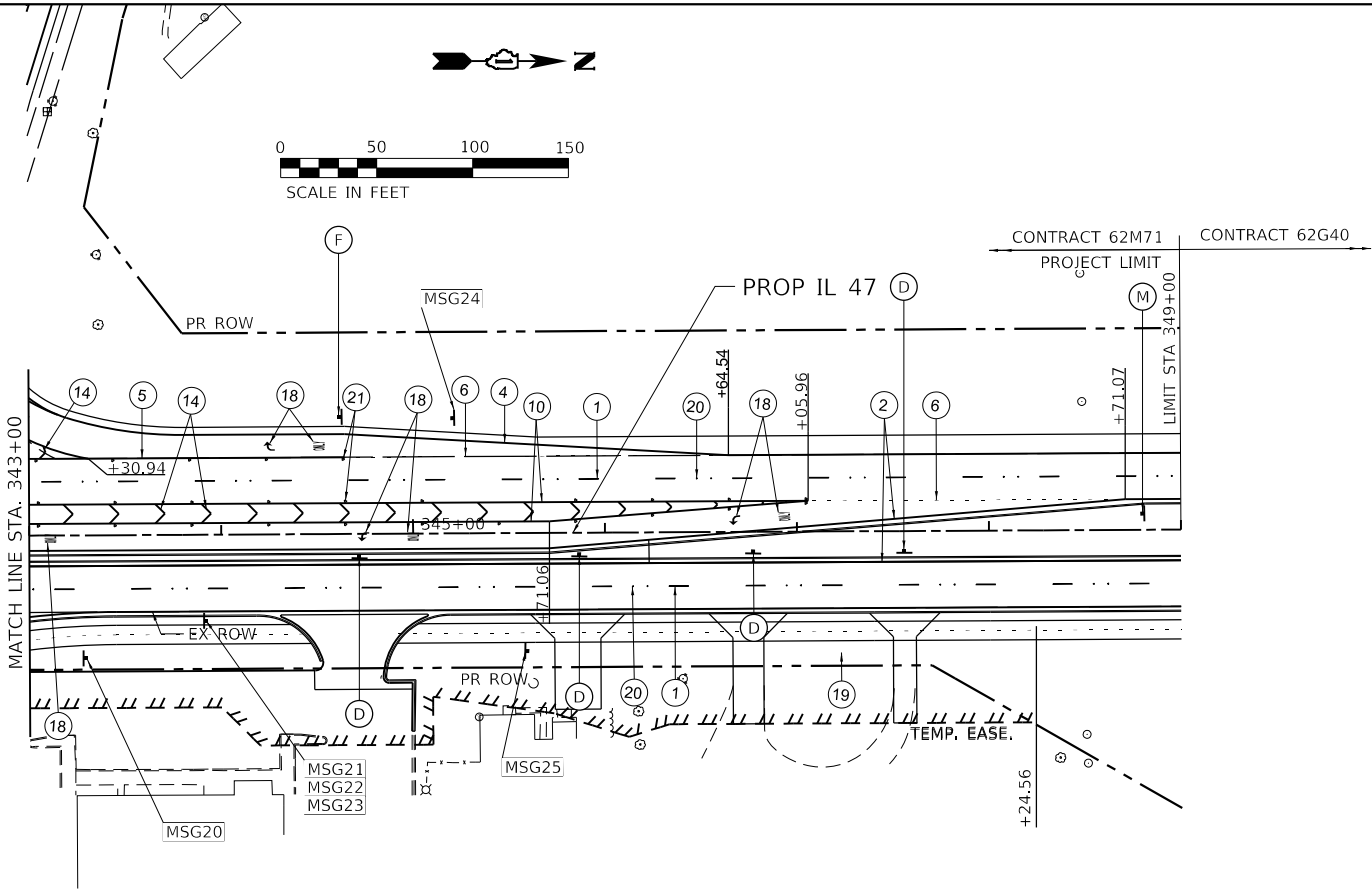
Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	453	349	80	189	142
Future Vol, veh/h	61	453	349	80	189	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	492	379	87	205	154
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	466	0	-	0	1004	379
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	625	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1095	-	-	-	268	668
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	534	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1095	-	-	-	246	668
Mov Cap-2 Maneuver	-	-	-	-	375	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	534	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.01	0		19.78		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	214	-	-	-	375	668
HCM Lane V/C Ratio	0.061	-	-	-	0.548	0.231
HCM Ctrl Dly (s/v)	8.5	0	-	-	25.6	12
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.2	0.9

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↱	↱	↱	↱	↱
Traffic Vol, veh/h	61	325	411	80	189	142
Future Vol, veh/h	61	325	411	80	189	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	353	447	87	205	154
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	534	0	-	0	933	447
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1034	-	-	-	296	612
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1034	-	-	-	272	612
Mov Cap-2 Maneuver	-	-	-	-	400	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	619	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	1.38	0		18.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	284	-	-	-	400	612
HCM Lane V/C Ratio	0.064	-	-	-	0.513	0.252
HCM Ctrl Dly (s/v)	8.7	0	-	-	23.1	12.9
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.8	1

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	296	514	39	90	67
Future Vol, veh/h	28	296	514	39	90	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	215	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	322	559	42	98	73
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	601	0	-	0	941	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	976	-	-	-	292	529
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	976	-	-	-	281	529
Mov Cap-2 Maneuver	-	-	-	-	405	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	689	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.76	0		17.81		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	156	-	-	-	450	
HCM Lane V/C Ratio	0.031	-	-	-	0.379	
HCM Ctrl Dly (s/v)	8.8	0	-	-	17.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7	

Appendix I – IDOT IL 47 Improvement Plans

FILE NAME: C:\062M71\62M71-62M71-05-IL-47.dgn
PLOT: 06/30/2025 11:01:00 AM
PEN TABLE: MSG, L, DOT, PERM, B, R, T, G



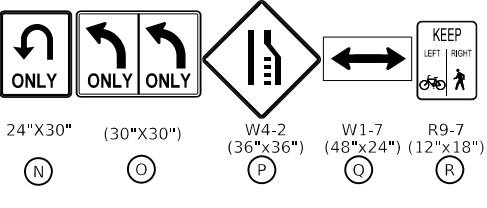
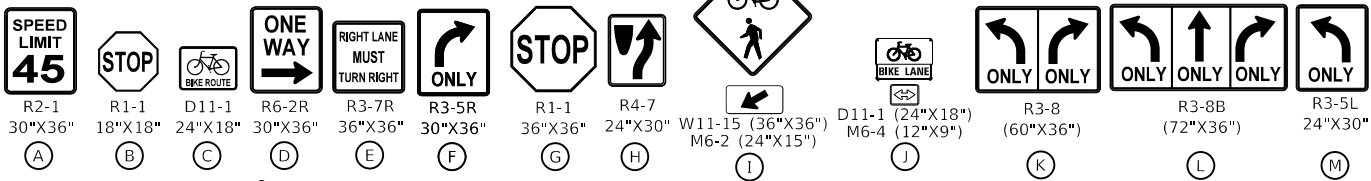
PAVEMENT MARKING LEGEND-DISTRICT 1

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" 10' D-30" S, (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (DOUBLE YELLOW)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 6" 2" DASH-6" SKIP (WHITE)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (YELLOW)
- ⑩ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE)
- ⑭ THERMOPLASTIC PAVEMENT MARKING - LINE 12" CHEVRON 30' C-C (WHITE)

- ⑮ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE)
- ⑯ THERMOPLASTIC PAVEMENT MARKING - LINE 24" STOP BAR (WHITE)
- ⑰ THERMOPLASTIC PAVEMENT MARKING - LINE 12" 45° DIAGONAL @ 30' C-C (YELLOW)
- ⑱ THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ⑲ THERMOPLASTIC PAVEMENT MARKING - LINE 4" 3" DASH-9" SKIP (YELLOW)
- ⑳ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 2 AT 80' O.C.
- ㉑ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 40' O.C.
- ⑧ - ⑨ - ⑪ - ⑬ NOT USED

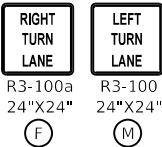
1. PLANS INDICATE PAVEMENT MARKINGS FOR HMA PAVEMENT. IF CONCRETE PVT IS SELECTED, THE PAVEMENT MARKINGS SHALL BE MODIFIED URETHANE PAVEMENT MARKINGS.

SIGNING LEGEND



- NOTES APPLY ONLY TO IL 47 BETWEEN STA 220+00 TO STA 322+00:
1. PROP SIGNS SHALL HAVE SIGN SHEETING PER THE DEPARTMENT'S FABRICATION OF SIGN POLICY, WITH NEW SIGN SUPPORTS.
 2. EXISTING SIGNS ARE TO BE DELIVERED TO THE IDOT YORKVILLE MAINTENANCE, BUNDLED AND SECURED ON A PALLET.
 3. A 12"X12" BLOCK OUT WILL BE REQUIRED FOR ANY SIGNS LOCATED AT A CONCRETE MEDIAN SURFACE LOCATION.
 4. WOOD SIGN SUPPORTS, 6"X4" WILL BE REQUIRED FOR ROADWAY SIGNS.
 5. WOOD SIGN SUPPORTS, 4"X4" SIGNPOSTS ARE TO BE USED FOR SIGNS ALONG THE SHARED USE PATH
 6. MSG AND GS IDENTIFY EXISTING PANEL SIGNS RELOCATED IN THE PROPOSED ROAD. SEE SHEETS 5 AND 10 FOR SCHEDULES

6. "STOP" SIGNS SHALL BE TYPE ZZ SHEETING, THE W4-2 AND W1-7 SHALL BE TYPE AZ (FL YEL), THE W11-5 AND SUPPLEMENTAL M-2(21" X 15") SIGN SHALL BE TYPE AZ (FL YEL GRN) AND ALL REGULATORY AND GUIDE SIGNS ARE TYPE AP SHEETING.
7. BACK TO BACK SIGNS (H) & (M) AND (N) & (H) TO BE INSTALLED FIFTEEN FEET BACK FROM THE NOSE OF THE CONCRETE MEDIAN



** FOR REFERENCE ONLY, SEE ROADWAY REMOVAL SHEETS						RELOCATE SIGN PANEL ASSEMBLY-TYPE A **	RELOCATE SIGN PANEL ASSEMBLY-TYPE B **	RELOCATE SIGN PANEL -TYPE 1 **	PROPOSED LOCATION
ROADWAY **	DIRECTION **	STATION **	OFFSET **	DESCRIPTION **	CODE **				
IL 47	SB	1134+34	-27.9	ADOPT A HIGHWAY	CUSTOM	1	1	8.0	MSG01
IL 47	NB	1157+26	35.6	TOURIST ACTIVITIES, WOODY'S ORCHARD	CUSTOM				MSG02
IL 47	NB	1157+97	33.5	LASALLE MANOR	CUSTOM				MSG03
IL 47	SB	1164+95	-34.1	LASALLE MANOR	CUSTOM				MSG04
IL 47	SB	1217+54	-33.5	YORKVILLE, ETC.	CUSTOM				MSG05
IL 47	NB	1217+96	37.6	SUGAR GROVE, MONTGOMERY, JOLIET	D1-3				MSG06
IL 47	SB	1218+96	-30.5	US 34, MORRIS	D2-2				MSG07
IL 47	SB	1221+49	-35.4	KENDALL COUNTY	D2-2				MSG08
IL 47	NB	1224+53	35.2	KANE COUNTY	D2-2				MSG09
IL 47	SB	1225+32	-38.2	YORKVILLE, MONTGOMERY, JOLIET	D1-3				MSG10
IL 47	NB	1228+76	33.4	SUGAR GROVE, WOODSTOCK	D2-2	1	1	5.0	MSG11
IL 47	SB	1231+60	-36.5	ADDRESS	CUSTOM				MSG12
IL 47	NB	1233+29	31.1	ADDRESS	CUSTOM				MSG13
IL 47	NB	1234+52	36.1	UNLAWFUL PASS SCHOOL BUS	CUSTOM				MSG14
IL 47	SB	1236+59	-31.5	ADDRESS	CUSTOM				MSG15
IL 47	NB	1237+11	30.3	TOURIST ACTIVITIES, MORE POLISH POTTERY	CUSTOM				MSG16
IL 47	NB	1237+72	33.2	NO TRUCKS, 3 TONS	R5-2A				MSG17
IL 47	NB	1239+36	35.2	ADDRESS	CUSTOM				MSG18
IL 47	SB	1239+40	-33.1	ADDRESS	CUSTOM				MSG19
IL 47	NB	1244+35	34.9	ADOPT A HIGHWAY	CUSTOM				MSG20
IL 47	NB	1244+49	32.0	ADDRESS	CUSTOM	1	1	1.0	MSG21
IL 47	NB	1244+53	29.8	ADDRESS	CUSTOM				MSG22
IL 47	NB	1244+58	28.4	ADDRESS	CUSTOM				MSG23
IL 47	SB	1245+34	-30.1	UNLAWFUL PASS SCHOOL BUS	CUSTOM				MSG24
IL 47	NB	1246+10	29.8	ADDRESS	CUSTOM				MSG25
IL 47	SB	1246+91	-33.5	TOURIST ACTIVITIES, MORE POLISH POTTERY	CUSTOM				MSG26
IL 47	NB	1247+01	27.1	ADDRESS	CUSTOM				MSG27
IL 47	EB	100+92	34.7	NO OUTLET	W14-2				MSG28
IL 47	WB	103+93	-19.6	NO PARKING ANY TIME	R7-1				MSG29
IL 47	WB	97+44	-14.0	KENDALL CTY ROUTE 9	M1-6				MSG30
IL 47	EB	101+12	30.2	KENDALL CTY ROUTE 9	M1-6	1	1	7.5	MSG31
IL 47	EB	1013+72	-36.1	YORKVILLE, SUGAR GROVE, HINCKLEY	D1-3				MSG32
IL 47	EB	1015+09	34.2	IL ROUTE 31, JOLIET	D2-2				MSG33
IL 47	EB	1022+24	38.3	ADDRESS	CUSTOM				MSG34
IL 47	WB	98+97	-16.5	DEAD END	W14-1				MSG35
IL 47	WB	94+65	-20.6	ADOPT A HIGHWAY	CUSTOM				MSG36
IL 47	WB	96+87	-22.0	ADDRESS	CUSTOM				MSG37
IL 47	EB	96+99	22.9	AURORA, SUGAR GROVE, YORKVILLE	D1-3				MSG38
IL 47	WB	103+69	-20.2	BIG ROCK, YORKVILLE, SUGAR GROVE	D1-3				MSG39
IL 47	WB	105+10	-21.6	ADDRESS	CUSTOM				MSG40
IL 47	EB	105+81	282.0	ADOPT A HIGHWAY	CUSTOM	1		1.0	MSG41



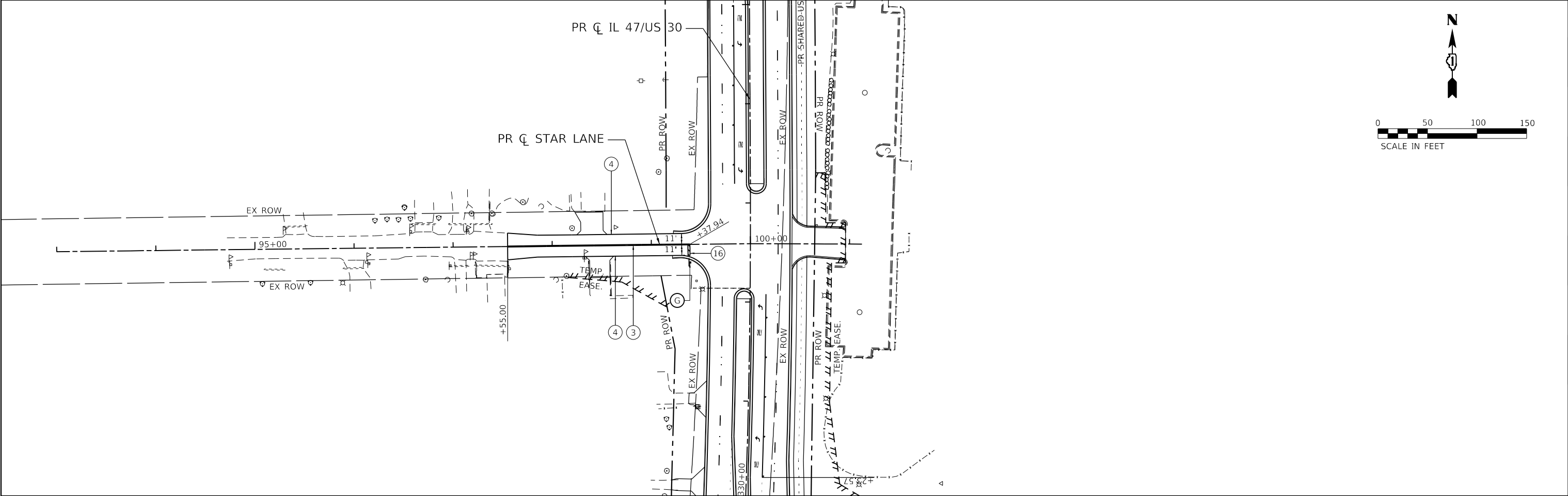
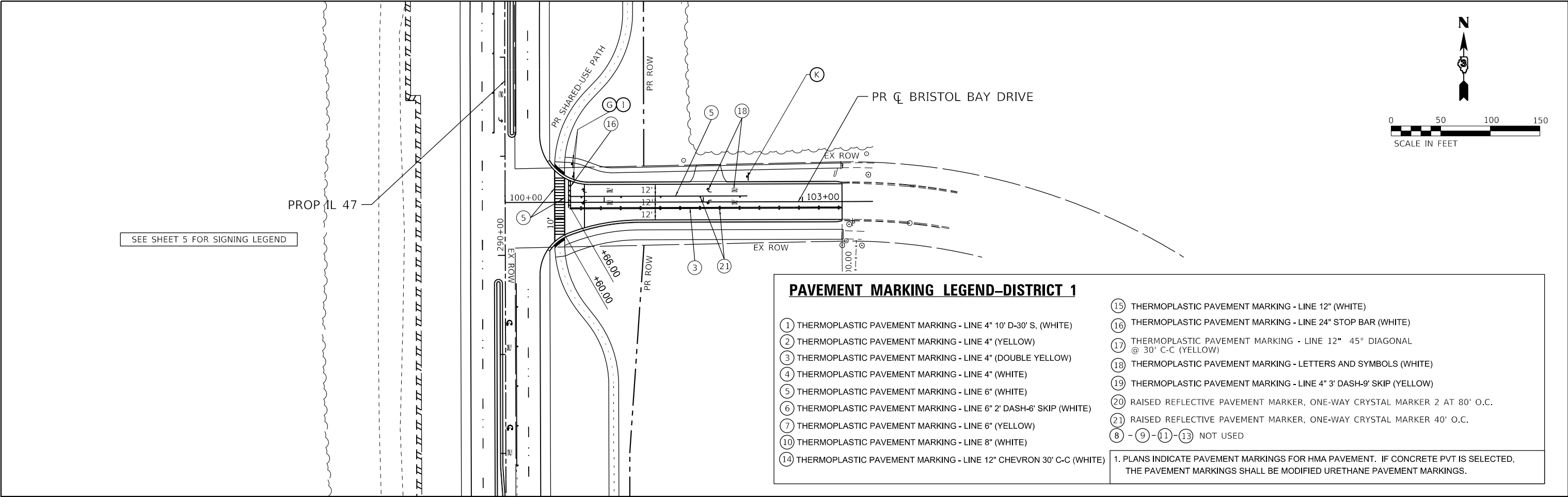
USER NAME = arosalva	DESIGNED - RA	REVISED -
DRAWN - MD	REVISED -	
PLOT SCALE = \$SCALE\$	CHECKED - AS	REVISED -
PLOT DATE = 6/30/2025	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING AND SIGNING PLANS IL ROUTE 47

SCALE: 1"=50' SHEET 5 OF 11 SHEETS STA. 343+00.00 TO STA. 349+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KENDALL	445	245
CONTRACT NO. 62M71				
ILLINOIS FED. AID PROJECT				



AMES Engineering, Inc. CONSULTING ENGINEERS 6330 Belmont Road, Suite 4B Downers Grove, IL 60516	USER NAME = mdelitche	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLAN BRISTOL BAY DRIVE & STAR LANE		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - DMS	CHECKED -	REVISED -				326	2020-198-W&T	KENDALL	445	248
	PLOT SCALE = \$SCALE\$	DATE -	REVISED -				CONTRACT NO. 62M71				
	PLOT DATE = 6/30/2025						ILLINOIS FED. AID PROJECT				
SCALE: 1"=50'		SHEET 1 OF 1 SHEETS		STA.		TO STA.					

FILE NAME: C:\062M71\971\pmmk-13-BristolBay-StarLn.dgn
PLOT DATE: 6/30/2025
PEN TABLE: HPG,LLDOT,permbdr.tbl

FILE NAME: C:\062021\198-30\198-30-4-Baseline-US30.dgn
PLOT DATES: 6/30/2021 10:17:01 PM
PEN TABLE: HPG.LLT.DOT.penn.tbl

**AMES Engineering, Inc.**
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME	= mdeitch
DESIGNED	-
DRAWN	= DMS
CHECKED	-
DATE	-
PLOT SCALE	= \$SCALE\$
PLOT DATE	= 6/30/2025

DESIGNED	-	REVISED	-
DRAWN	= DMS	REVISED	-
CHECKED	-	REVISED	-
DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
US 30/BASELINE ROAD

SCALE: 1"=50' SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KENDALL	445	249
				CONTRACT NO. 62M71
				ILLINOIS FED. AID PROJECT

PAVEMENT MARKING LEGEND-DISTRICT 1

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" 10' D-30' S, (WHITE)

② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW)

③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (DOUBLE YELLOW)

④ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE)

⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE)

⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 6" 2' DASH-6' SKIP (WHITE)

⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (YELLOW)

⑩ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE)

⑭ THERMOPLASTIC PAVEMENT MARKING - LINE 12" CHEVRON 30' C-C (WHITE)
- ⑮ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE)

⑯ THERMOPLASTIC PAVEMENT MARKING - LINE 24" STOP BAR (WHITE)

⑰ THERMOPLASTIC PAVEMENT MARKING - LINE 12" 45° DIAGONAL @ 30' C-C (YELLOW)

⑱ THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)

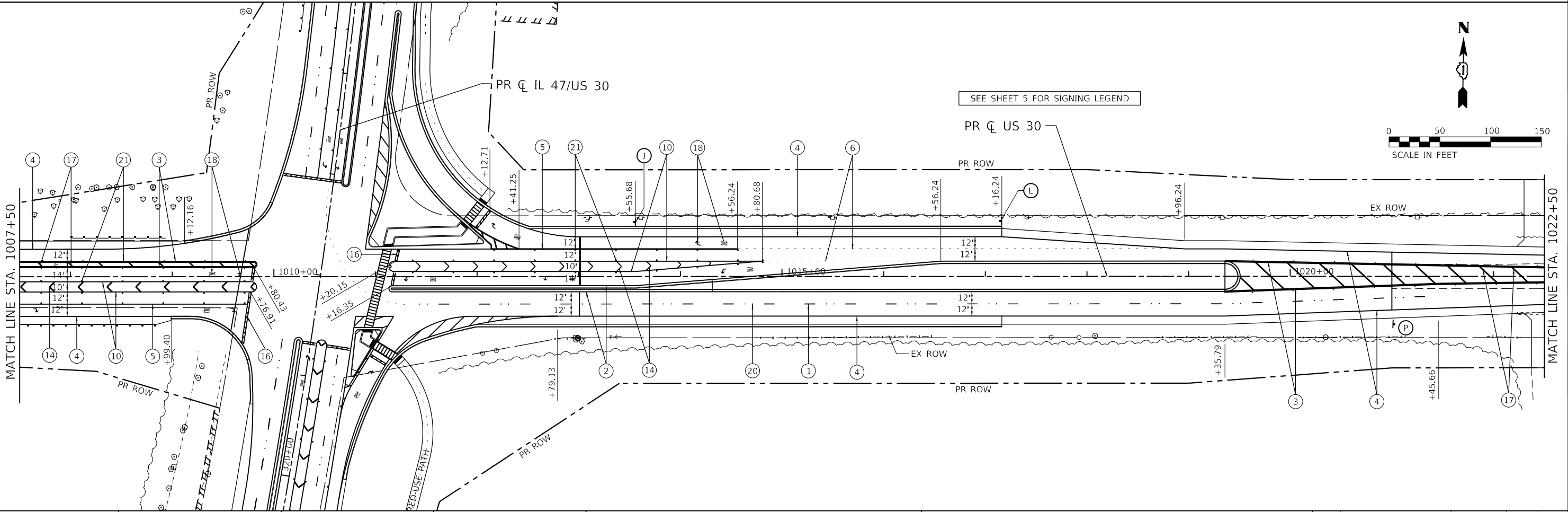
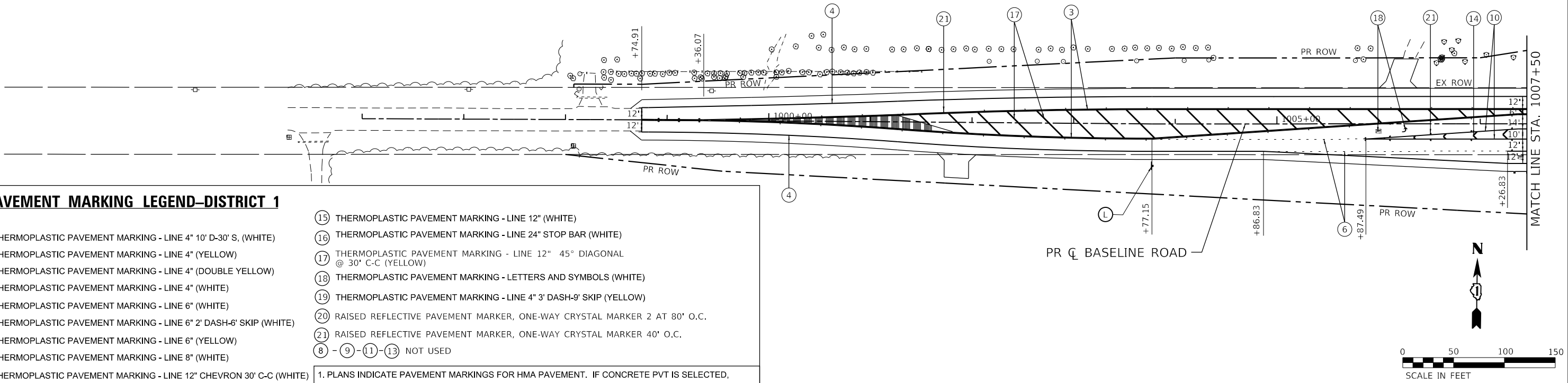
⑲ THERMOPLASTIC PAVEMENT MARKING - LINE 4" 3' DASH-9' SKIP (YELLOW)

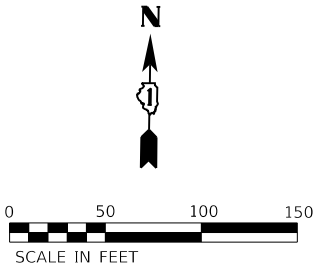
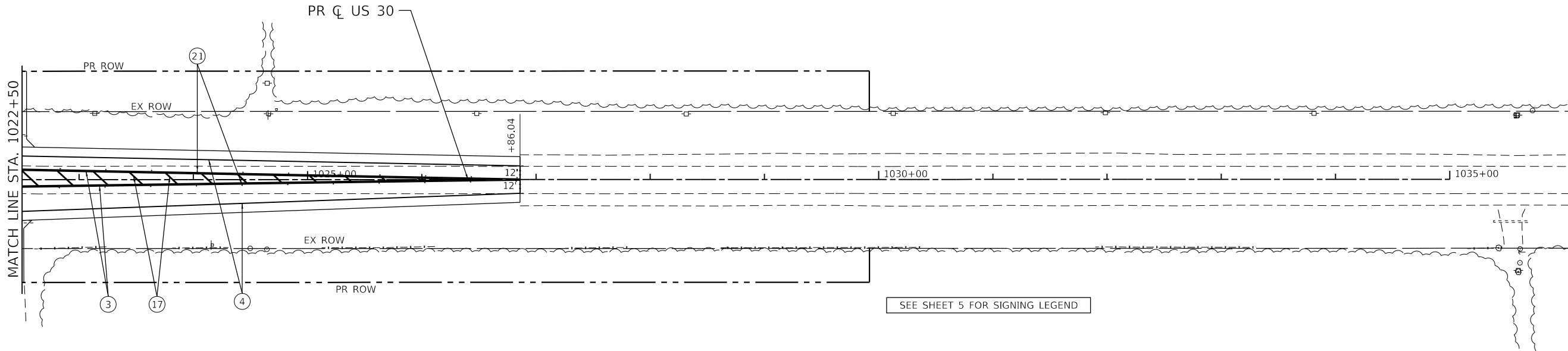
⑳ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 2 AT 80' O.C.

㉑ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 40' O.C.

⑧ - ⑨ - ⑪ - ⑬ NOT USED

1. PLANS INDICATE PAVEMENT MARKINGS FOR HMA PAVEMENT. IF CONCRETE PVT IS SELECTED, THE PAVEMENT MARKINGS SHALL BE MODIFIED URETHANE PAVEMENT MARKINGS.





PAVEMENT MARKING LEGEND-DISTRICT 1

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" 10' D-30' S, (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (DOUBLE YELLOW)
- ④ THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE)
- ⑤ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (WHITE)
- ⑥ THERMOPLASTIC PAVEMENT MARKING - LINE 6" 2' DASH-6' SKIP (WHITE)
- ⑦ THERMOPLASTIC PAVEMENT MARKING - LINE 6" (YELLOW)
- ⑩ THERMOPLASTIC PAVEMENT MARKING - LINE 8" (WHITE)
- ⑭ THERMOPLASTIC PAVEMENT MARKING - LINE 12" CHEVRON 30' C-C (WHITE)

- ⑮ THERMOPLASTIC PAVEMENT MARKING - LINE 12" (WHITE)
- ⑯ THERMOPLASTIC PAVEMENT MARKING - LINE 24" STOP BAR (WHITE)
- ⑰ THERMOPLASTIC PAVEMENT MARKING - LINE 12" 45° DIAGONAL @ 30' C-C (YELLOW)
- ⑱ THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ⑲ THERMOPLASTIC PAVEMENT MARKING - LINE 4" 3' DASH-9' SKIP (YELLOW)
- ⑳ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 2 AT 80' O.C.
- ㉑ RAISED REFLECTIVE PAVEMENT MARKER, ONE-WAY CRYSTAL MARKER 40' O.C.
- ⑧ - ⑨ - ⑪ - ⑬ NOT USED

1. PLANS INDICATE PAVEMENT MARKINGS FOR HMA PAVEMENT. IF CONCRETE PVT IS SELECTED, THE PAVEMENT MARKINGS SHALL BE MODIFIED URETHANE PAVEMENT MARKINGS.

FILE NAME: C:\062021\11-511-pmk-15-Baseline-US30.dgn
PLOT DATE: 6/30/2025
PEN TABLE: HPG-LL.DOT-permtable.tbl

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = mdelitche	DESIGNED -	REVISED -
	DRAWN - DMS	REVISED -
PLOT SCALE = \$SCALE\$	CHECKED -	REVISED -
PLOT DATE = 6/30/2025	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

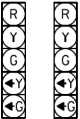
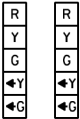
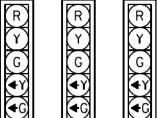
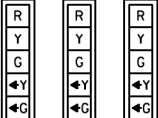
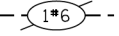
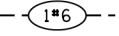
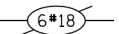
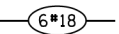
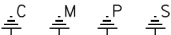
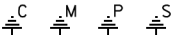
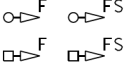
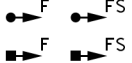
**PAVEMENT MARKING PLAN
US 30/BASELINE ROAD**

SCALE: 1"=50' SHEET 2 OF 2 SHEETS STA. 1022+50.00 TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KENDALL	445	250
CONTRACT NO. 62M71				
ILLINOIS FED. AID PROJECT				

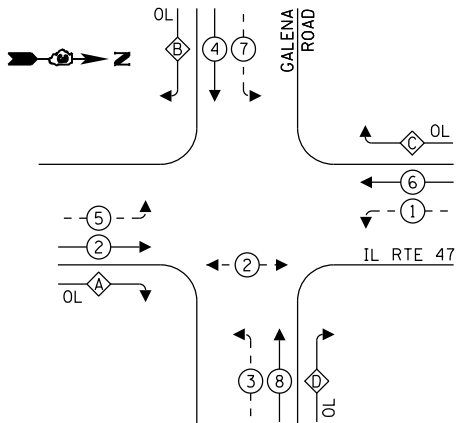
TRAFFIC SIGNAL LEGEND

(NOT TO SCALE)

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONTROLLER CABINET			HANDHOLE -SQUARE -ROUND			SIGNAL HEAD -(P) PROGRAMMABLE SIGNAL HEAD	 P	 P
COMMUNICATION CABINET			HEAVY DUTY HANDHOLE -SQUARE -ROUND			SIGNAL HEAD WITH BACKPLATE -(P) PROGRAMMABLE SIGNAL HEAD -(RB) RETROREFLECTIVE BACKPLATE	 P RB	 P RB
MASTER CONTROLLER			DOUBLE HANDHOLE			PEDESTRIAN SIGNAL HEAD AT RAILROAD INTERSECTIONS		
MASTER MASTER CONTROLLER			JUNCTION BOX			PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER		
UNINTERRUPTABLE POWER SUPPLY			RAILROAD CANTILEVER MAST ARM			ILLUMINATED SIGN "NO LEFT TURN"/"NO RIGHT TURN"		
SERVICE INSTALLATION -(P) POLE MOUNTED			RAILROAD FLASHING SIGNAL			NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE. ALL DETECTOR LOOP CABLE TO BE SHIELDED		
SERVICE INSTALLATION -(G) GROUND MOUNTED -(GM) GROUND MOUNTED METERED	 G GM	 G GM	RAILROAD CROSSING GATE			GROUND CABLE IN CONDUIT, NO. 6 SOLID COPPER (GREEN)		
TELEPHONE CONNECTION			RAILROAD CROSSBUCK			ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1/C		
STEEL MAST ARM ASSEMBLY AND POLE			RAILROAD CONTROLLER CABINET			COAXIAL CABLE		
ALUMINUM MAST ARM ASSEMBLY AND POLE			UNDERGROUND CONDUIT (UC), GALVANIZED STEEL			VENDOR CABLE		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE			TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE			COPPER INTERCONNECT CABLE, NO. 18, 3 PAIR TWISTED, SHIELDED		
SIGNAL POST -(BM) BARREL MOUNTED - TEMPORARY		 BM	SYSTEM ITEM		 SP	FIBER OPTIC CABLE -NO. 62.5/125, MM12F -NO. 62.5/125, MM12F SM12F -NO. 62.5/125, MM12F SM24F	 12F  24F  36F	 12F  24F  36F
WOOD POLE			INTERSECTION ITEM		 IP	GROUND ROD -(C) CONTROLLER -(M) MAST ARM -(P) POST -(S) SERVICE	 C M P S	 C M P S
GUY WIRE			REMOVE ITEM		 R			
SIGNAL HEAD			RELOCATE ITEM		 RL			
SIGNAL HEAD WITH BACKPLATE			ABANDON ITEM		 A			
SIGNAL HEAD OPTICALLY PROGRAMMED	 P P	 P P	CONTROLLER CABINET AND FOUNDATION TO BE REMOVED		 RCF			
FLASHER INSTALLATION -(FS) SOLAR POWERED	 F FS F FS	 F FS F FS	MAST ARM POLE AND FOUNDATION TO BE REMOVED		 RMF			
PEDESTRIAN SIGNAL HEAD			SIGNAL POST AND FOUNDATION TO BE REMOVED		 RPF			
PEDESTRIAN PUSH BUTTON -(APS) ACCESSIBLE PEDESTRIAN PUSH BUTTON	 APS APS	 APS APS	DETECTOR LOOP, TYPE I					
RADAR DETECTION SENSOR			PREFORMED DETECTOR LOOP					
VIDEO DETECTION CAMERA			SAMPLING (SYSTEM) DETECTOR					
RADAR/VIDEO DETECTION ZONE			INTERSECTION AND SAMPLING (SYSTEM) DETECTOR					
PAN, TILT, ZOOM (PTZ) CAMERA			QUEUE AND SAMPLING (SYSTEM) DETECTOR					
EMERGENCY VEHICLE LIGHT DETECTOR			WIRELESS DETECTOR SENSOR					
CONFIMATION BEACON			WIRELESS ACCESS POINT					
WIRELESS INTERCONNECT								
WIRELESS INTERCONNECT RADIO REPEATER								

FILE NAME = S:\WP\Design\Ioven\SamplePlans-DO,NOT,USE\DDGFiles\Legend.06-08-16.dgn Default	USER NAME = plascencia; PLOT SCALE = 100.0000 ' / 1in. PLOT DATE = 6/10/2016	DESIGNED - IP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - IP	REVISED -						326	2020-198-W&T	KANE	445	282
		CHECKED - LP	REVISED -						TS-05		CONTRACT NO. 62M71		
		DATE - 6/8/2016	REVISED -		SCALE: NONE	SHEET 1	OF 7	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT		

PROPOSED CONTROLLER SEQUENCE



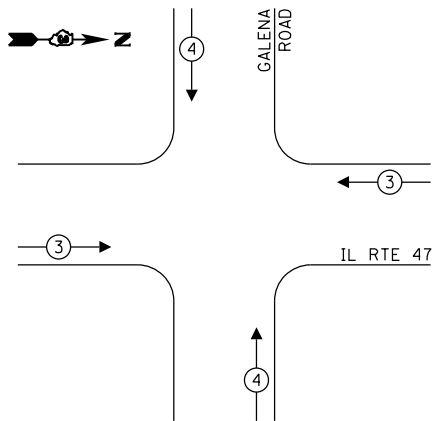
LEGEND:

- ←(*) PROTECTED PHASE
- ←-(*)- PROTECTED/PERMITTED PHASE
- ←-(*)→ PEDESTRIAN PHASE
- ←(*) OL OVERLAP

RIGHT TURN OVERLAP
PHASE DESIGNATION:

OVERLAP LETTER		PROTECTED PHASE
A	=	3
B	=	5
C	=	7
D	=	1

PROPOSED EMERGENCY VEHICLE
PREEMPTION SEQUENCE



TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	LED WATTAGE	MAIN LINE % OPERATION	SIDE STREET % OPERATION	TOTAL WATTAGE
SIGNAL (RED)	22	11	40	10	121.0
(YELLOW)	22	20	4	1	22.0
(GREEN)	22	12	36	9	118.8
PERMISSIVE ARROW	32	10	8	2	32.0
PED. SIGNAL	2	20	80	20	40.00
CONTROLLER	1	100	80	20	100.00
UPS	1	25	80	20	25.00
VIDEO SYSTEM	-	150	80	20	-
LUMINAIRE	-	-	-	-	-
TOTAL =			TOTAL =		458.8

ENERGY COSTS TO:

ILLINOIS DEPARTMENT OF TRANSP., DIST. 3
700 E NORRIS DRIVE
OTTAWA, ILLINOIS 61350

ENERGY SUPPLY: CONTACT: KELLY GONZALEZ
PHONE: (630) 723-2127
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 7076242111

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = mderstche
DESIGNED - TM
DRAWN - TM
PLOT SCALE = %SCALE%
PLOT DATE = 6/13/2025

REVISD -
REVISED -
CHECKED - AS
DATE - 05-30-2025

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

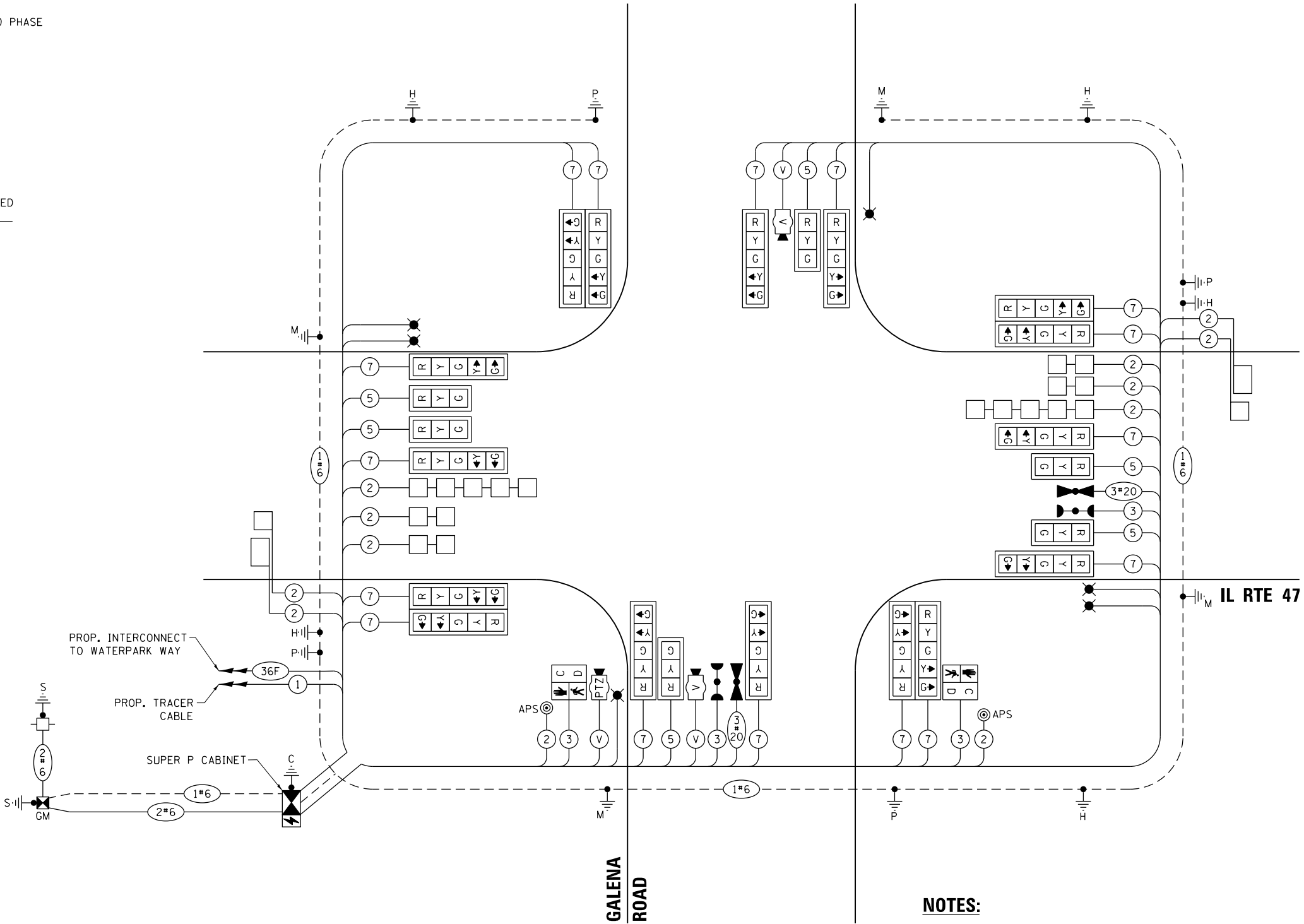
CABLE PLAN, PHASE DESIGNATION DIAGRAM AND
EMERGENCY VEHICLE PREEMPTION SEQUENCE
IL RTE 47 AND GALENA ROAD

SCALE: N.T.S. SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KANE	445	303
CONTRACT NO. 62M71				
ILLINOIS FED. AID PROJECT				

TS SHT NO. 25

TS 865



NOTES:

1. ALL BALLS AND ARROWS NEED A LENS COVER.

CABLE PLAN
(NOT TO SCALE)

SEE TS SHT NO. 33
MATCH LINE STA 319+00

IL RTE 47

EXIST. R.O.W.

62' COMBINATION M.A. - 42" DIA. FDN., (21' DEPTH)
APPROX. STA. 320+77.5, 58.2' LT.16' POST
APPROX. STA. 321+21.7, 76.6' LT.

9'-UC-3"

42'-UC-3"

BASE LINE ROAD

12' 12' 10' 14' 6' 13'

52' COMBINATION M.A. - 36" DIA. FDN., (15' DEPTH)
APPROX. STA. 322+30.0, 114.1' LT.LEFT ON
GREEN
ARROW
ONLY
R10-5
30x36
(4 REQUIRED)0 20 40 60
SCALE IN FEET

PROP. R.O.W.

IL RTE 47

SEE TS SHT NO. 33
MATCH LINE STA 325+00

NOTES:

1. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALLIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND THE ADJACENT HANDHOLE AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC SIGNAL SPECIFICATIONS.
2. THE MOUNTING LOCATIONS OF THE VIDEO DETECTORS WILL BE DETERMINED PER THE MANUFACTURER'S RECOMMENDATIONS.

US RTE 30

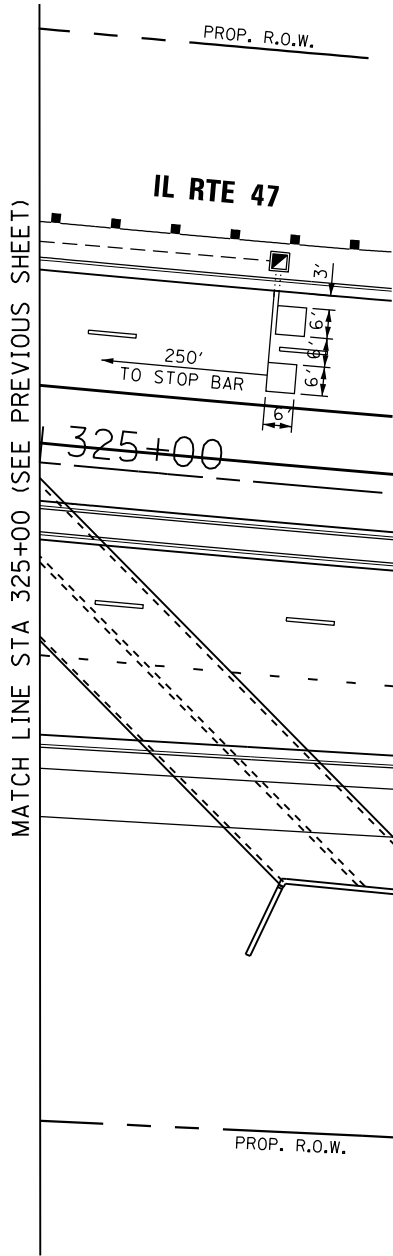
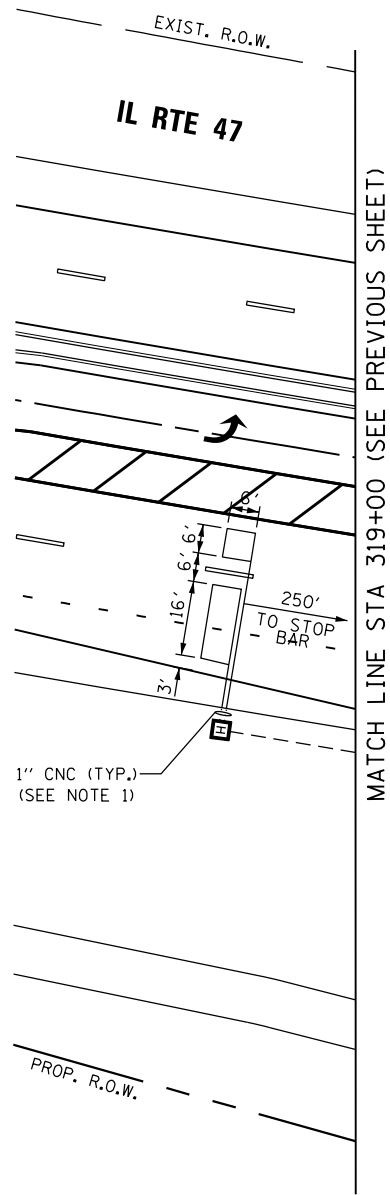
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATIONTRAFFIC SIGNAL INSTALLATION PLAN - SHEET 1 OF 2
IL RTE 47 AND BASE LINE ROAD /US RTE 30

SCALE: 1"=20' SHEET OF SHEETS STA. TO STA.

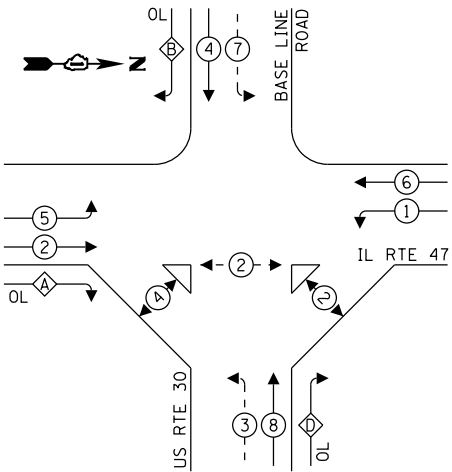
TS 700
EAGLE 8KAMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = mdeische	DESIGNED - TM	REVISED -
	DRAWN - TM	REVISED -
PLOT SCALE = *SCALE*	CHECKED - AS	REVISED -
PLOT DATE = 6/13/2025	DATE - 05-30-2025	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KANE	445	308
CONTRACT NO. 62M71				
ILLINOIS FED. AID PROJECT				



PROPOSED CONTROLLER SEQUENCE



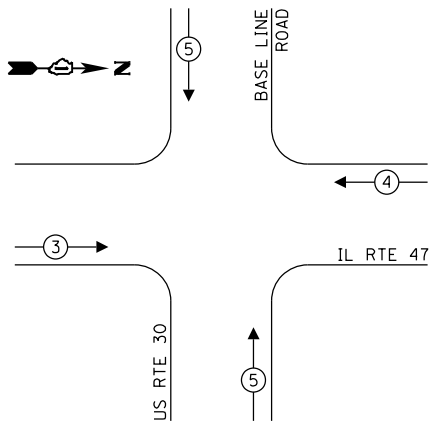
LEGEND:

- ←(*) PROTECTED PHASE
- ←-(*)- PROTECTED/PERMITTED PHASE
- ←-(*)→ PEDESTRIAN PHASE
- ←(*) OL OVERLAP

RIGHT TURN OVERLAP
PHASE DESIGNATION:

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
A	= 2	+ 3
B	= 4	+ 5
D	= 8	+ 1

PROPOSED EMERGENCY VEHICLE
PREEMPTION SEQUENCE



TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS

EQUIPMENT TYPE	QUANTITY	UNIT WATTAGE	TOTAL WATTAGE
SIGNAL HEAD 1 OR 3-SECTION	12	11	132
4-SECTION	-	14	-
5-SECTION	12	13	156
PROGRAMMABLE 3-SECTION	-	22	-
4-SECTION	-	32	-
5-SECTION	-	28	-
PEDESTRIAN SIGNAL	6	15	90
CONTROLLER	1	150	150
MASTER CONTROLLER	-	100	-
UPS	1	25	25
DETECTION RADAR OR VIDEO	1	20	20
BLANK-OUT SIGN	-	25	-
NETWORK SWITCH II OR III	-	35	-
CELLULAR MODEM	-	15	-
TOTAL UPS SIZING			573
UPS CHARGING	1	225	225
BATTERY HEATER MAT	1	180	180
CABINET HEATER	1	200	200
FLASHER	-	15	-
LED STREET NAME SIGN	-	120	-
LUMINAIRE	-	240	960
TOTAL SERVICE WIRE SIZING			1533

NOTES:

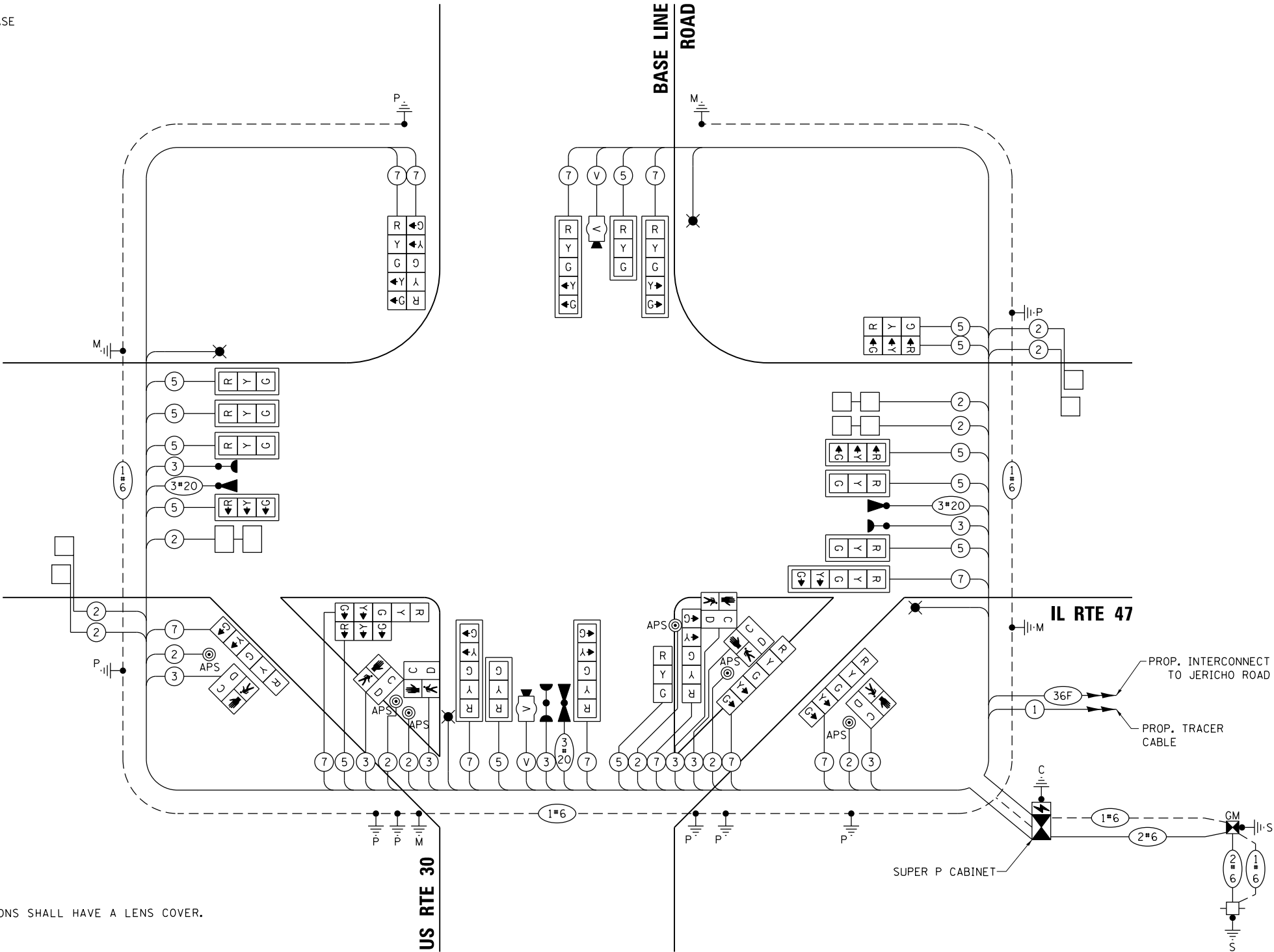
- ALL RED INDICATIONS SHALL HAVE A LENS COVER.

ENERGY COSTS TO:

ILLINOIS DEPARTMENT OF TRANSPORTATION
201 W CENTER COURT
SCHAUMBURG, IL 60196

ENERGY SUPPLY:	CONTACT: JAMIE GADDIS
	PHONE: (630) 294-4732
	COMPANY: COMED
ACCOUNT NUMBER:	5777485000
METER NUMBER:	---

CABLE PLAN
(NOT TO SCALE)



TS 700
EAGLE 8K

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = mderstche
PLOT SCALE = *SCALE*
PLOT DATE = 6/13/2025

DESIGNED - TM	REVISED -
DRAWN - TM	REVISED -
CHECKED - AS	REVISED -
DATE - 05-30-2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND
EMERGENCY VEHICLE PREEMPTION SEQUENCE
IL RTE 47 AND BASE LINE ROAD /US RTE 30

SCALE: N.T.S.	SHEET OF SHEETS	STA. TO STA.
---------------	-----------------	--------------

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	2020-198-W&T	KANE	445	310
CONTRACT NO. 62M71				
ILLINOIS FED. AID PROJECT				

