Appendix C Capacity Analysis

American Structurepoint, Inc.

9825 Kenwood Road, Suite 305
Cincinnati, Ohio 45242
TEL 513.407.8317

www.structurepoint.com

TECHNICAL MEMORANDUM

DATE: March 26, 2025

TO: Ben Mann, PE (Director of Public Works) – City of Fairfield, Ohio

Nick Dill, PE (City Engineer) – City of Fairfield, Ohio

FROM: Gaurav Kashyap, PE, PTOE, RSP2I – American Structurepoint, Inc.

RE: Symmes Road CSX Railroad Grade Separation, City of Fairfield, Ohio – Traffic Operations Analysis

Introduction

American Structurepoint has prepared this memorandum to provide a comprehensive analysis of traffic operations at key intersections along Symmes Road, from Dixie Highway to North Gilmore Road. This analysis covers both the existing/no-build conditions and multiple build alternatives as part of the preliminary design study for the highway-rail grade separation project on Symmes Road. Additionally, it evaluates the feasibility of closing the North Gilmore Road CSX Railroad crossing in the City of Fairfield, Ohio.

The objective of the capacity analysis is to ensure that all study intersections operate at an acceptable level of service under the design year (2048) AM and PM peak hour build conditions.

Study Area

Symmes Road within the study area is a two-lane urban minor arterial that serves as a key corridor providing access to residential neighborhoods, commercial establishments, and institutional facilities. Running east-west with a posted speed limit of 35 mph, it features dedicated turn lanes at major intersections.

The intersection of Dixie Highway and Symmes Road is signalized, featuring dedicated turn lanes on both Dixie Highway and Symmes Road. Dixie Highway is classified as a principal arterial with a posted speed limit of 55 mph.

Hicks Boulevard, Industry Drive, and Tedia Way are classified as local roads and are stop-controlled at their respective intersections with Symmes Road.

The intersection of North Gilmore Road and Symmes Road is signalized, featuring dedicated turn lanes along both North Gilmore Road and Symmes Road. North Gilmore Road is classified as a minor arterial south of Symmes Road and a major collector north of Symmes Road, with a posted speed limit of 35 mph.

Figure 1 provides an overview of the study area, displaying the existing lane configurations at the study intersections.

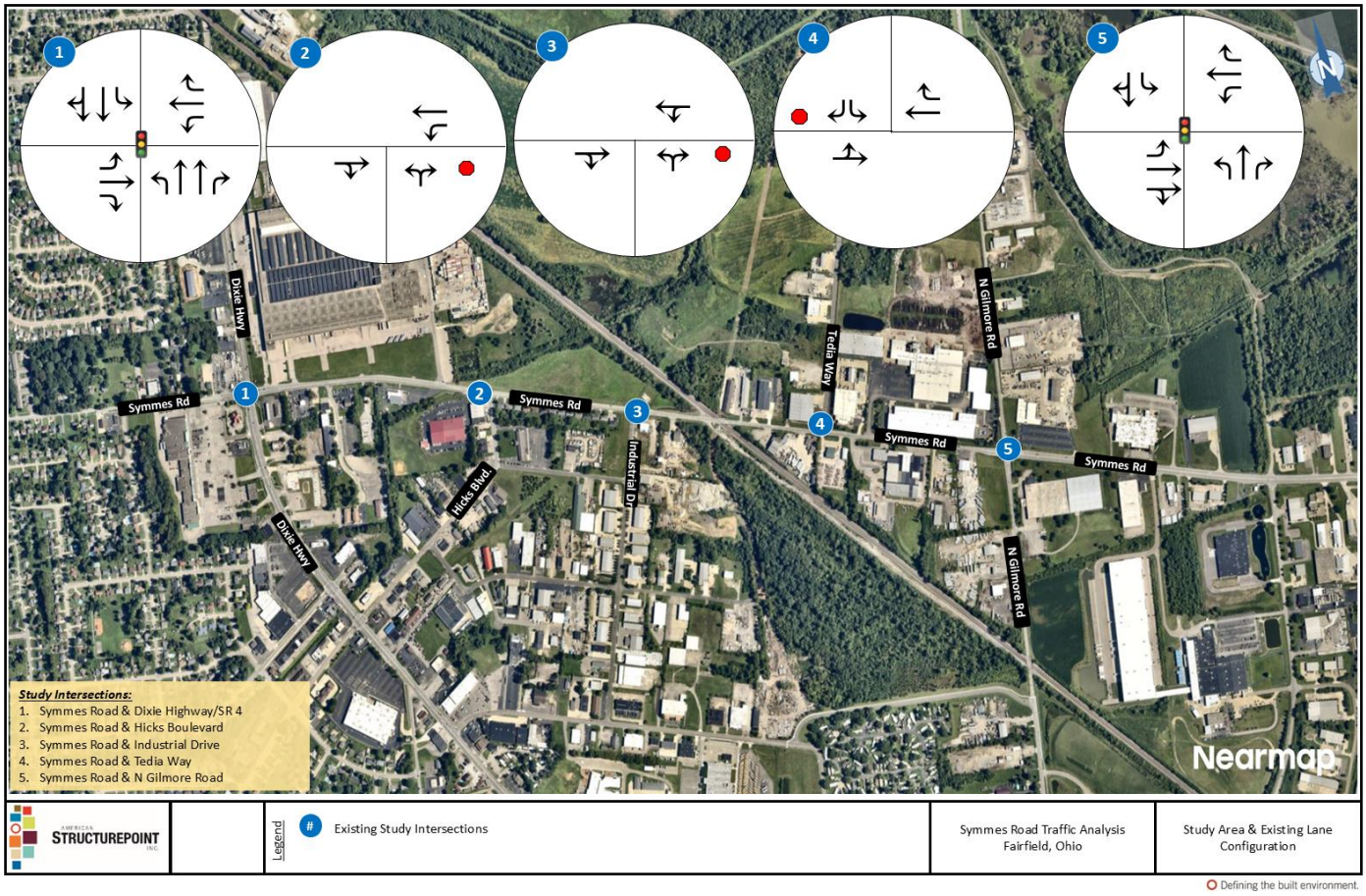


Figure 1: Study Area

Traffic Counts

Turning movement counts were collected at the study intersections on Thursday, May 9, 2024, from 6:00 AM to 9:00 AM and 2:00 PM to 6:00 PM.

Traffic Forecast

HDR, the prime engineering consultant on this project, prepared the certified traffic plates, assuming an 'Opening Year' of 2028 and a 'Design Year' of 2048, in accordance with the 20-year design criteria. The certified traffic plates were approved by the City of Fairfield and used for the capacity analysis of the study intersections under both design year (2048) no-build and build peak hour traffic volume scenarios. The certified traffic plates are included in **Attachment 1** of this memo.

Capacity Analysis

Capacity analysis was performed at the study intersections for the design year (2048) no-build and build AM & PM peak hour scenarios. Synchro 11 was used for the analysis of the signalized and stop-controlled intersections, and HCS 2024 software was used for the analysis of the proposed roundabout which utilizes the methodology outlined in the Highway Capacity Manual (HCM).

To evaluate the performance of the study intersections under different scenarios, numerical outputs from the capacity analysis served as key *Measures of Effectiveness* (MOEs). A widely recognized MOE is *Level of Service* (LOS), which is commonly used by transportation agencies to evaluate traffic operations. LOS is categorized into six levels, ranging from

A to F, where A represents the best operating conditions and F indicates the worst. For signalized, unsignalized, and roundabout intersections, LOS is defined by the average control delay per vehicle, which corresponds directly to driver discomfort, frustration, fuel consumption, and lost travel time. **Table 1** below outlines the LOS thresholds as defined in the HCM:

Table 1: LOS Thresholds for Signalized and Un-signalized Intersections

LOS	Control Delay per Vehicle (seconds)	
	Signalized Intersections	Unsignalized Intersections
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

However, while LOS offers valuable insights into traffic performance, it alone does not always provide a complete picture of the overall facility performance. Consequently, additional performance metrics were included in the analysis to better assess the study intersections and network. In accordance with *ODOT Analysis and Traffic Simulation Manual* (OATS), several other key performance indicators were evaluated, including 95th percentile queue lengths, volume-to-capacity (v/c) ratios, and queue-storage ratios (QSR).

Table 2 below highlights the operational goals for various intersection types (AWSC, TWSC, Roundabout, Signalized) based on their locations within or outside of an MPO (Metropolitan Planning Organization):

Table 2: Traffic Operation Goals (Source: OATS Manual)

Result	Inside An MPO	Outside of an MPO
Intersection LOS	D or better[1]	C or better[1]
Approach LOS	E or better[1]	
Control LOS	E or better[1]	
v/c[2]	All movements < 1.0 with ≤ 0.93 preferred	
QSR[3]	All movements < 1.0	

1: LOS is acceptable if QSR < 1.0; 2: v/c = Volume-to-Capacity ratio; 3: QSR = Queue-Storage ratio

The capacity analysis results at the study intersections under the design year (2048) no-build and build AM & PM peak hour volume scenarios are summarized below. The detailed capacity analysis reports are included in **Attachment 2** of this memo.

Old Symmes Road and Hicks Blvd.

No-Build

The existing intersection of Hicks Boulevard and Symmes Road will operate at an overall LOS A in the design year 2048 AM and PM peak hour scenarios. The northbound approach at this intersection is expected to operate at LOS D and LOS C in the 2048 AM and PM peak hour scenarios, respectively, as indicated in **Table 3**.

Table 3: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Old Symmes Road and Hicks Blvd.

	2048 AM Peak No-Build (Minor Approach Stop-Controlled)					2048 PM Peak No-Build (Minor Approach Stop-Controlled)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBTR	-	-	-	-	-	-	-	-	-	-
EB Approach	-	-	-		-	-	-	-	-	-
WBL	B	10.8	0.22	0.15	20	A	9.2	0.21	0.15	20
WBT	-	-	-	-	-	-	-	-	-	-
WB Approach	A	3.2	-	-	-	A	1.9	-	-	-
NBLR	D	29.7	0.5	0.17	77.5	C	20.4	0.4	0.10	47.5
NB Approach	D	29.7	-	-	-	C	20.6	-	-	-
Intersection	A	4.4	-	-	-	A	3.0	-	-	-

Alternative 2 Roundabout Design South Bridge

Alternative 2 will not change the intersection layout of the Hicks Boulevard and Symmes Road intersection. This intersection will operate the same as the no build condition during the design year. It will operate at overall LOS A in the design year 2048. The northbound approach at this intersection is expected to operate at LOS D and LOS C in the same year during AM and PM peak hour scenarios.

Alternative 3 Roundabout Design North Bridge Intersection Improvements

Alternative 3 constructs a roundabout at the intersection of Hicks Boulevard and Symmes Road. All roundabout movements are expected to operate at LOS A in the 2048 AM and PM peak hour build scenarios as indicated in **Table 4**.

Table 4: Design Year (2048) Build Capacity Analysis Summary - Intersection of Old Symmes Road and Hicks Blvd. – Alternative 3

	2048 AM Peak Build (Alternative 3 Roundabout)					2048 PM Peak Build (Alternative 3 Roundabout)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBT	A	6.7	0.37	0.03	43.5	A	5.7	0.24	0.02	25.6
EBTR	A	7.3	0.41	0.04	53.8	A	6.0	0.27	0.02	28.2
EB Approach	A	7.0	-	-	-	A	5.9	-	-	-
WBLT	A	4.3	0.20	0.02	17.9	A	7.2	0.46	0.06	64.0
WBT	A	4.5	0.22	0.02	20.5	A	8.0	0.52	0.07	79.4
WB Approach	A	4.4	-	-	-	A	7.6	-	-	-
NBLR	A	8.6	0.25	0.06	25.6	A	5.8	0.17	0.12	55.0
NB Approach	A	8.6	-	-	-	A	5.8	-	-	-
Intersection	A	6.3	-	-	-	A	7.0	-	-	-

<u>Alternative 4 Twin Roundabout Design North Bridge Intersection Improvements</u>

Alternative 4 realigns Symmes Road (includes re-distributed traffic volumes) and constructs a proposed roundabout at the Hicks Boulevard and Symmes Road intersection. All roundabout movements are expected to operate at LOS A in 2048 AM and PM peak hour build scenarios as indicated in **Table 5**.

Table 5: Design Year (2048) Build Capacity Analysis Summary - Intersection of Old Symmes Road and Hicks Blvd. – Alternative 4

	2048 AM Peak Build (Alternative 4 Roundabout)					2048 PM Peak Build (Alternative 4 Roundabout)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBTR	A	5.3	0.31	0.02	32.5	A	4.2	0.19	0.01	17.5
EBR	A	5.7	0.35	0.03	40.0	A	4.4	0.21	0.02	20.0
EB Approach	A	5.5	-	-	-	A	4.3	-	-	-
WBLT	A	3.8	0.01	-	0.0	A	7.1	0.02	0.00	2.5
WB Approach	A	3.8	-	-	-	A	7.1	-	-	-
NBL	A	3.9	0.16	0.03	15.0	A	6.8	0.43	0.12	55.0
NBLR	A	3.8	0.14	0.03	12.5	A	6.2	0.38	0.10	45.0
NB Approach	A	3.8	-	-	-	A	6.5	-	-	-
Intersection	A	5.0	-	-	-	A	5.8	-	-	-

Realigned Symmes Road and Hicks Blvd.

Alternative 4 proposes to realign Symmes Road along the existing Veterans Drive creating an additional roundabout at the existing intersection of Hicks Boulevard. While this intersection was not analyzed for all alternatives, it was evaluated for Alternative 4 because of the reconfiguration of Symmes Road. The proposed roundabout at this intersection is expected to operate at a LOS A or better in 2048 AM and PM build scenarios, as indicated in **Table 6**.

Table 6: Design Year (2048) Build Capacity Analysis Summary - Intersection of Symmes Road and Hicks Blvd. – Alternative 4

	2048 AM Peak Build (Roundabout)					2048 PM Peak Build (Roundabout)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
WBLR	A	4.6	0.22	0.02	23	A	8.0	0.50	0.07	74.2
WBR	A	4.9	0.3	0.02	25.0	A	9.1	0.56	0.09	92.5
WB Approach	A	4.8	-	-	-	A	8.6	-	-	-
NBTR	B	10.5	0.4	0.06	43.5	A	7.6	0.32	0.05	35.8
NB Approach	B	10.5	-	-	-	A	7.6	-	-	-
SBL	A	8.3	0.45	0.13	60.0	A	6.5	0.29	0.07	30.0
SBLT	A	7.6	0.40	0.11	47.5	A	6.1	0.26	0.06	25.0
SB Approach	A	7.9	-	-	-	A	6.3			
Intersection	A	7.2	-	-	-	A	7.9	-	-	-

Old Symmes Road and Industry Drive

No-Build

The existing intersection of Industry Drive and Symmes Road will operate at an overall LOS A in the design year 2048 AM and PM peak hour scenarios. The northbound approach at this intersection is expected to operate at LOS F in the same year during AM and PM peak hour scenarios. The no-build traffic analysis is shown in **Table 7**.

Table 7: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Old Symmes Road and Industry Drive

	2048 AM Peak No-Build (Minor Approach Stop-Controlled)					2048 PM Peak No-Build (Minor Approach Stop-Controlled)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBTR	-	-	-	-	-	-	-	-	-	-
EB Approach	-	-	-	-	-	-	-	-		-
WBLT	B	11.0	0.1	0.02	10.0	A	9.0	0.1	0.01	7.5
WB Approach	-	-	-	-	-	-	-	-	-	-
NBLR	F	53.9	0.5	0.16	70.0	F	121.8	1.0	0.39	170
NB Approach	F	54.9	-	-	-	F	121.8	-	-	-
Intersection	A	3.2	-	-	-	A	9.4	-	-	-

<u>Alternative 2 Roundabout Design South Bridge</u>

Alternative 2 will construct a roundabout at the intersection layout of Industry Drive and Symmes Road. All roundabout movements are expected to operate at LOS A in the 2048 AM and PM peak hour build scenarios as indicated in **Table 8**.

Table 8: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Old Symmes Road and Industry Drive – Alternative 2

	2048 AM Peak Build (Alternative 2 Roundabout)					2048 PM Peak Build (Alternative 2 Roundabout)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBT	A	6.4	0.37	0.04	46.1	A	4.7	0.22	0.02	23.0
EBTR	A	7.0	0.42	0.05	53.8	A	5.0	0.25	0.02	25.6
EB Approach	A	6.7	-	-	-	A	4.9	-	-	-
WBLT	A	4.5	0.22	0.01	20.5	A	7.5	0.47	0.04	66.6
WBT	A	4.8	0.25	0.02	25.6	A	8.5	0.54	0.05	84.5
WB Approach	A	4.7	-	-	-	A	8.0	-	-	-
NBLR	A	7.4	0.13	0.02	10.2	A	6.0	0.16	0.04	15.4
NB Approach	A	7.4	-	-	-	A	6.0	-	-	-
Intersection	A	6.0	-	-	-	A	7.0	-	-	-

Alternative 3 Roundabout Design North Bridge Intersection Improvements

Alternative 3 closes the Industry Drive and Symmes Road intersection. No capacity analysis was performed for the intersection closure. It is expected that vehicles currently using this intersection will access Symmes Road from Hicks Boulevard.

Alternative 4 Twin Roundabout Design North Bridge Intersection Improvements

Alternative 4 relocates the Industry Drive and Symmes Road intersection turning it into a four leg, two-way stop-controlled intersection. The intersection is expected to operate at an overall LOS A in the 2048 AM and PM peak hour build scenarios as indicated in **Table 9**.

Table 9: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Old Symmes Road and Industry Drive – Alternative

	2048 AM Peak Build (Alternative 4 -Minor Approach Stop-Controlled)					2048 PM Peak Build (Alternative 4 - Minor Approach Stop-Controlled)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBLT	-	-	-	-	-	-	-	-	-	-
EBT	-	-	-	-	-	-	-	-	-	-
EB Approach	-	-	-	-	-	-	-	-		-
WBT	-	-	-	-	-	-	-	-		-
WBTR	-	-	-	-	-	-	-	-	-	-
WB Approach	-	-	-	-	-	-	-	-	-	-
SBLR	C	18.4	0.1	0.05	5.0	E	40.4	0.02	0.15	170
SB Approach	C	18.4	-	-	-	E	40.4	-	-	-
Intersection	A	0.4	-	-	-	A	0.5	-	-	-

Symmes Road and Tedia Way

No-Build

The existing intersection of Industry Drive and Symmes Road will operate at an overall LOS A in the design year 2048 AM and PM peak hour scenarios. The northbound (driveway) and southbound approaches at this intersection is expected to operate at LOS E and LOS D, respectively, in the same year during AM peak hour. During the PM peak hour, both approaches are expected to operate at LOS F. The no-build traffic analysis is shown in **Table 10**.

Table 10: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Symmes Road and Tedia Way

	2048 AM Peak No-Build (Minor Approach Stop-Controlled)					2048 AM Peak No- Build (Minor Approach Stop-Controlled)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBL	A	8.9	0.04	0.00	2.5	B	11.0	0.05	0.01	5
EB Approach	A	0.3	-	-	-	A	0.6	-	-	-
WBL	B	10.1	0.02	0.00	0.0	A	8.7	0.01	0.00	0.0
WB Approach	A	0.2	-	-	-	A	0.1	-	-	-
NBLTR	F	58.3	0.33	0.65	32.5	F	91.1	0.46	0.90	45
NB Approach	F	58.3	-	-	-	F	91.1	-	-	-
SBL	F	92.5	0.40	0.27	30.0	F	147.5	0.59	0.52	57.5
SBTR	D	26.2	0.16	0.01	15.0	E	41.6	0.39	0.02	42.5
SB Approach	F	56.0	-	-	-	F	76.2	-	-	-
Intersection	A	3.3	-	-	-	A	5.5	-	-	-

Alternative 2 Roundabout Design South Bridge

Alternative 2 will construct a roundabout at the intersection layout of Tedia Way and Symmes Road. The overall intersection is expected to operate at LOS A in the 2048 AM and PM peak hour build scenarios as indicated in **Table 11**.

Table 11: Design Year (2048) Build Capacity Analysis Summary - Intersection of Symmes Road and Tedia Way – Alternative 2

	2048 AM Peak Build (Alternative 2 Roundabout)					2048 PM Peak Build (Alternative 2 Roundabout)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
NEBLT	A	3.2	0.03	0.00	2.6	A	3.2	0.03	0.00	2.6
NEBTR	B	12.0	0.72	0.12	194.1	A	8.3	0.54	-	97.1
NEB Approach	A	11.7	-	-	-	A	8.1	-	-	-
WBLT	A	4.9	0.25	0.02	31.0	A	8.1	0.52	0.07	96.3
WBTR	A	4.9	0.25	0.02	31.0	A	8.1	0.52	0.07	96.3
WB Approach	A	4.9	-	-	-	A	8.1	-	-	-
NWBLTR	A	7.5	0.08	0.01	6.3	A	6.0	0.43	0.01	5.3
NWB Approach	A	7.5	-	-	-	A	6.0	-	-	-
SBLTR	A	5.5	0.08	0.01	7.3	B	12.3	0.19	0.03	14.8
SB Approach	A	5.5	-	-	-	B	12.3	-	-	-
EBLTR	A	5.4	0.06	0.01	4.9	B	11.3	0.12	0.02	8.5
EB Approach	A	5.4	-	-	-	B	11.3	-	-	-
Intersection	A	8.7	-	-	-	A	8.2	-	-	-

Alternative 3 Roundabout Design North Bridge Intersection Improvements

Alternative 3 closes the Tedia Way and Symmes Road intersection. No capacity analysis was performed for the intersection closure. It is expected that vehicles currently using this intersection will access Symmes Road or North Gilmore Road from Bohlke Boulevard.

Alternative 4 Twin Roundabout Design North Bridge Intersection Improvements

Alternative 4 closes the Tedia Way and Symmes Road intersection. No capacity analysis was performed for the intersection closure. It is expected that vehicles currently using this intersection will access Symmes Road or North Gilmore Road from Bohlke Boulevard.

Symmes Road and Dixie Highway

As illustrated in **Table 12**, in the 2048 AM and PM peak hour no-build scenarios, the overall intersection is projected to operate at LOS D in the AM peak hour and LOS E in the PM peak hour. Several approaches experience poor levels of service, with multiple movements operating at LOS E or F, particularly the eastbound through and westbound through movements, as well as the northbound and southbound left-turn and through movements. High delays and volume-to-

capacity ratios are observed, indicating potential congestion and long queue lengths, especially during the PM peak hour.

Table 12: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Symmes Road and Dixie Highway

	2048 AM Peak No-Build (Signal, 115s)					2048 PM Peak No-Build (Signal, 135s)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBL	C	25.3	0.38	1.13	130	F	101.3	0.99	2.65	305
EBT	F	77.9	1.01	0.83	785	D	41.0	0.46	0.29	275
EBR	C	26.6	0.46	1.98	237.5	C	27.2	0.28	1.48	177.5
EB Approach	E	56.5	-	-	-	E	55.3	-	-	-
WBL	C	32.4	0.51	0.24	70	D	36.3	0.57	0.74	216
WBT	C	32.0	0.40	0.11	210	F	90.2	1.01	0.39	787.5
WBR	C	23.6	0.27	0.47	137.5	D	41.2	0.69	1.46	422.5
WB Approach	C	29.0	-	-	-	E	63.5	-	-	-
NBL	D	38.9	0.68	0.60	120	F	80.8	0.96	2.33	465
NBT	D	36.6	0.62	0.64	317.5	D	43.3	0.84	1.27	632.5
NBR	C	26.3	0.24	0.41	122.5	C	20.5	0.09	0.18	55
NB Approach	D	35.3	-	-	-	D	49.3	-	-	-
SBL	E	59.7	0.91	0.81	242.5	D	40.3	0.69	0.56	167.5
SBTR	E	66.5	0.96	0.80	695	E	71.6	0.96	0.87	755
SB Approach	E	65.0	-	-	-	E	67.6	-	-	-
Intersection	D	51.4	-	-	-	E	58.8	-	-	-

The following intersection improvements were recommended for Symmes Road and Dixie Highway as part of the 2048 AM and PM peak hour build scenario analysis to enhance traffic flow, reduce delays, and improve overall operational efficiency:

- **Eastbound Right-Turn Lane:** Extend the existing eastbound right-turn lane to provide a total storage length of 325 feet, supplemented by a 50-foot diverging taper.
- **Eastbound Left-Turn Lane:** Extend the eastbound left-turn lane storage to 300 feet with a 50-foot diverging taper by re-striping the existing two-way left-turn lane.
- **Westbound Through Lane:** Install an additional westbound through lane with 480 feet of storage length (excluding the approach taper).
- **Westbound Right-Turn Lane:** Extend the westbound right-turn lane to provide 375 feet of storage length and a 50-foot diverging taper.
- **Southbound Left-Turn Lane:** Extend the southbound left-turn lane to 475 feet of storage with a 50-foot diverging taper through re-striping of the existing two-way left-turn lane.
- **Southbound Right-Turn Lane:** Install a dedicated southbound right-turn lane with 150 feet of storage length and a 50-foot diverging taper.

Table 13 summarizes the capacity analysis results at the intersection of Symmes Road and Dixie Highway and incorporates the above-mentioned intersection improvements. All the movements at the study intersection are expected to operate LOS E or better in the 2048 AM & PM peak build scenarios.

Table 13: Design Year (2048) Build Capacity Analysis Summary - Intersection of Symmes Road and Dixie

	2048 AM Peak Build (Signal, 135s)					2048 PM Peak Build (Signal, 135s)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBL	C	27.7	0.38	0.61	182.5	E	61.5	0.87	0.93	278
EBT	E	78.0	0.99	1.03	975.0	D	50.7	0.82	0.32	302.5
EBR	C	29.6	0.47	0.98	317.5	B	12.0	0.40	0.38	122.5
EB Approach	E	57.5	-	-	-	D	42.7	-	-	-
WBL	D	51.0	0.70	0.41	117.5	D	46.1	0.61	0.84	242.5
WBT	C	33.8	0.21	0.11	142.5	D	45.2	0.77	0.24	320
WBR	C	21.1	0.24	0.43	162.5	D	40.3	0.94	0.98	367.5
WB Approach	C	32.4	-	-	-	D	43.6	-	-	-
NBL	E	74.4	0.85	1.09	217.5	D	54.2	0.91	1.65	330
NBT	E	61.2	0.85	1.00	500.0	D	49.6	0.95	1.37	682.5
NBR	D	40.5	0.31	0.65	195.0	A	4.4	0.09	0.06	17.5
NB Approach	E	59.9	-	-	-	D	48.4	-	-	-
SBL	E	79.3	1.0	0.99	472.5	D	46.7	0.78	0.38	180
SBT	E	71.8	1.0	0.97	837.5	D	50.4	0.92	0.63	545
SBR	C	26.3	0.15	0.65	97.5	A	9.5	0.38	0.65	97.5
SB Approach	E	70.7	-	-	-	D	42.8	-	-	-
Intersection	E	60.0	-	-	-	D	44.8	-	-	-

Symmes Road and North Gilmore Road

As illustrated in **Table 14**, the overall intersection is expected to operate at LOS B with all the approaches operating at LOS D or better in the 2048 AM & PM peak no-build scenarios.

Table 14: Design Year (2048) No-Build Capacity Analysis Summary - Intersection of Symmes Road and North Gilmore Road

	2048 AM Peak No-Build (Signal, 75s)					2048 AM Peak No-Build (Signal, 80s)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBL	B	16.0	0.15	0.25	30	D	37.8	0.46	0.52	62.5
EBT	B	11.2	0.53	0.26	202.5	A	8.9	0.32	0.15	115
EBTR	B	11.2	0.53	0.25	200	A	8.9	0.32	0.15	115
EB Approach	B	11.5	-		-	B	11.6	-		-
WBL	C	32.7	0.72	1.88	187.5	B	16.1	0.5	1.28	127.5
WBT	B	11.0	0.51	0.09	197.5	C	23.1	0.88	0.24	512.5
WBR	A	8.0	0.09	0.01	22.5	B	10.8	0.53	0.08	182.5
WB Approach	B	16.5	-		-	B	18.7	-		-
NBL	C	30.4	0.48	1.13	107.5	C	31.8	0.35	0.82	77.5
NBT	C	22.1	0.30	0.06	90	C	27.1	0.53	0.13	182.5
NBR	C	22.5	0.34	0.88	87.5	C	26.9	0.51	1.48	147.5
NB Approach	C	25.0	-		-	C	27.8	-		-
SBL	D	48.7	0.84	3.43	257.5	D	37.9	0.57	1.50	112.5
SBTR	C	23.3	0.44	0.07	137.5	C	26.0	0.44	0.08	142.5
SB Approach	D	37.3	-	-	-	C	30.6	-	-	-
Intersection	B	19.5	-	-	-	B	19.9	-	-	-

As part of the 2048 AM and PM peak hour build scenario analysis, it is recommended that the westbound approach be reconfigured to include one left-turn lane, one through lane, and one shared through/right-turn lane. As illustrated in **Table 15**, the overall intersection is expected to operate at LOS B during the 2048 AM peak hour build scenario, with all approaches operating at LOS C or better. During the 2048 PM peak hour build scenario, the overall intersection is expected to operate at LOS C, with all approaches also operating at LOS C or better.

Table 15: Design Year (2048) Build Capacity Analysis Summary - Intersection of Symmes Road and North Gilmore Road

	2048 AM Peak No-Build (Signal, 80s)					2048 AM Peak No-Build (Signal, 90s)				
	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)	LOS	Delay (sec/veh)	v/c	QSR	95% Queue Length (ft.)
EBL	C	23.5	0.25	0.29	35.0	E	64.3	0.72	0.54	64.5
EBT	B	18.4	0.71	0.17	245.0	A	8.7	0.33	0.09	125.0
EBTR	B	18.3	0.74	0.17	252.5	A	8.7	0.33	0.09	130.0
EB Approach	B	18.6	-	-	-	B	13.6	-	-	-
WBL	C	24.1	0.07	0.08	7.5	B	10.8	0.03	0.05	5.0
WBT	B	16.6	0.61	0.09	200.0	C	23.7	0.90	0.25	535.0
WBR	B	16.7	0.61	0.09	197.5	D	41.9	0.98	0.33	722.5
WB Approach	C	16.8	-	-	-	C	32.7	-	-	-
NBL	B	13.0	0.04	0.11	10	C	25.2	0.04	0.11	10.0
NBT	B	12.2	0.02	0.00	5.0	C	23.5	0.03	0.01	7.5
NBR	B	12.2	0.02	0.05	5.0	C	23.6	0.03	0.08	7.5
NB Approach	B	12.6	-	-	-	C	24.1	-	-	-
SBL	C	23.2	0.76	3.70	277.5	C	32.5	0.70	3.13	235.0
SBTR	B	12.4	0.07	0.01	17.5	C	24.2	0.13	0.02	35.0
SB Approach	C	22.3	-	-	-	C	31.2	-	-	-
Intersection	B	18.6	-	-	-	C	27.6	-	-	-

Attachment 1 – Certified Traffic Data

Memo

Date:	Friday, October 04, 2024
Project:	Symmes Road Rail Crossing Elimination Project
To:	Ben Mann, PE, MPA – Public Works Director, City of Fairfield, OH
From:	Dave Becker, PE, PTOE, AICP, HDR
Subject:	Symmes Road Certified Traffic Request

HDR is requesting local approval of certified traffic for the Symmes Road CSX Railroad Grade Separation project in Fairfield, Ohio. The assumed 'Opening Year' for the study has been set for 2028 with a 'Design Year' of 2048 (20-year design criteria).

Detailed turning movement counts were performed at the five (5) project intersections by Gewalt Hamilton Associates, Inc. on Thursday May 9th, 2024. The study intersections include Symmes Road and Hicks Boulevard, SR 4 (Dixie Hwy), Industry Drive, Tedia Way, and N Gilmore Road. Reports of the counts, along with plates, can be found in the **Attachment A**. Based on a review of the counts, the AM and PM peak periods within the project area, are set at 7:15 A.M. – 8:15 A.M., and 4:30 P.M. – 5:30 P.M., respectively.

The ADT volumes were developed by factoring the raw turning movement counts at each intersection with daily and seasonal adjustment factors obtained from the Ohio Department of Transportation's webpage. The daily factors are dependent upon the functional classification of the roadway as well as the specific hours that the traffic count was performed. The seasonal adjustment factors are determined by the functional classification of the roadway, the day of the week and the month that the traffic count was performed.

Design hour volumes (DHVs) were developed for the study area using the peak hour to design hour factors that are published by the Ohio Department of Transportation Office of Statewide Planning and Research. The design hour factors utilized to develop the DHVs are dependent upon the roadway's functional classification as well as the day of the week and month the count was performed. These design hour factors were then applied to the raw movement counts. See **Attachment B** for daily adjustment, seasonal adjustment, and peak hour to design hour factors.

The ADT and design hour volumes were rounded to the nearest ten. Additional traffic was added to the roadway network during the design hours to ensure that all movements show a minimum of 10 vehicles.

Developing the future traffic volumes involves developing a proposed growth rate based on historical traffic volume data. The historical data was extracted from TIMS for the study area, and the results are shown in **Table 1**. The data covers 18 years of growth patterns, from 2005 to 2023. The highest increase was in 2021 (5%) and the largest decrease was in 2015 (-12%). The average growth rate over this span of 18 years is -1%. However, after a detailed review of the historical growth rates for the study area, it was determined that a 0.5%/year growth rate (Background) was appropriate for the area due to anticipated future growth.

Table 1: Historical Traffic Volumes from ODOT TIMS

Year	ADT	Growth	Year	ADT	Growth
2023	18251	2%	2013	19975	-3%
2022	17964	0%	2012	20550	0%
2021	17964	5%	2011	20591	-1%
2020	17141	-7%	2010	20841	-1%
2019	18511	1%	2009	21073	1%
2018	18382	1%	2008	20844	-2%
2017	18218	3%	2007	21226	0%
2016	17758	4%	2006	21311	0%
2015	17042	-12%	2005	21247	
2014	19476	-2%		AVERAGE =	-1%

In addition to the anticipated background growth in the study area, the removal of the at-grade railroad crossing and the associated traffic delays that result will lead to increased traffic along Symmes Road. Traffic that avoids the area due to the at-grade crossing will reroute and now use the Symmes Road corridor. There are also several planned developments, including a planned 200,000 SF speculative industrial building at the former GM Fisher Body site (representing 500,000 SF added to the site in the last three years); the ongoing expansions of major regional employers Koch Foods, Pacific Manufacturing, and ThyssenKrupp Bilstein; construction of two new commercial buildings within the Jungle Jim's International Market complex; and occupation of several speculative industrial developments near completion including Seward Point Commerce Park, Fairfield Logistics Park, and Fairfield Trade Center. The City recently purchased several small, vacant and underperforming properties on Route 4 that will be made available as a larger eight (8) acre parcel to incentivize new development. Finally, two large land sites on Tedia Way (104 acres) and Busway Lane (53 acres) are attracting attention for new development and have immediate proximity to the railroad crossing. Based on this information it was determined that an additional 0.5%/year growth rate (Build) was appropriate for the area due to rerouted traffic and anticipated future development.

Included in the traffic plates are the TD, T24 values for each of the roadways within the study area. Design designations were calculated based on the existing traffic counts collected within the study area and are shown in **Table 2**.

Table 2: Design Designations for Symmes Road

	west of Dixie	east of Dixie	west of Hicks	east of Hicks	west of Industry	east of Industry	west of Tedia	east of Tedia	west of Gilmore	east of Gilmore
2028 ADT:	13,230	12,610	12,060	14,370	14,270	14,340	14,510	14,430	14,740	20,340
2048 ADT:	16,130	15,380	14,710	17,530	17,400	17,500	17,700	17,610	17,990	24,820
K:	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.10	0.09
2048 DHV:	1,610	1,500	1,490	1,800	1,780	1,850	1,900	1,880	1,760	2,330
D:	0.74	0.74	0.70	0.68	0.68	0.67	0.65	0.66	0.63	0.64
T24:	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
TD:	0.01	0.06	0.02	0.05	0.04	0.04	0.04	0.04	0.05	0.04

According to ODOT's *Ohio Traffic Forecasting Manual*, this project does not require a formal review by ODOT. Therefore, we are requesting that the Traffic Plates included in **Attachment A** be officially approved by the City of Fairfield.

Table 3: Forecasting Method Selection Criteria from ODOT's Traffic Forecasting Manual

Table 4-2. Traffic Forecasting Method Selection Criteria

Case	Risk Level	Applicable Method(s)	Traffic Forecaster	Certification Required	District Approval Required
TIS	Low (Level 1)	A	Project sponsor or their consultant	No	Yes
	High (Level 2)	F	Project sponsor or their consultant	No	Yes
Planning Study	Not Applicable	B	Project sponsor or their consultant	No	Yes
Locally Administered, Not on State System, and No Federal Funding	Not Applicable	D, E, F	Project sponsor or their consultant	No	No
Locally Administered, Not on State System, with Federal Funding	Low	D, E	Project sponsor or their consultant	No	Yes
	High	F	Project sponsor or their consultant	Yes	No
ODOT Administered or on State System	Low	C (State Routes), D, E	District or their consultant	No	Yes
	High	F	ODOT M&F or project consultant	Yes	No

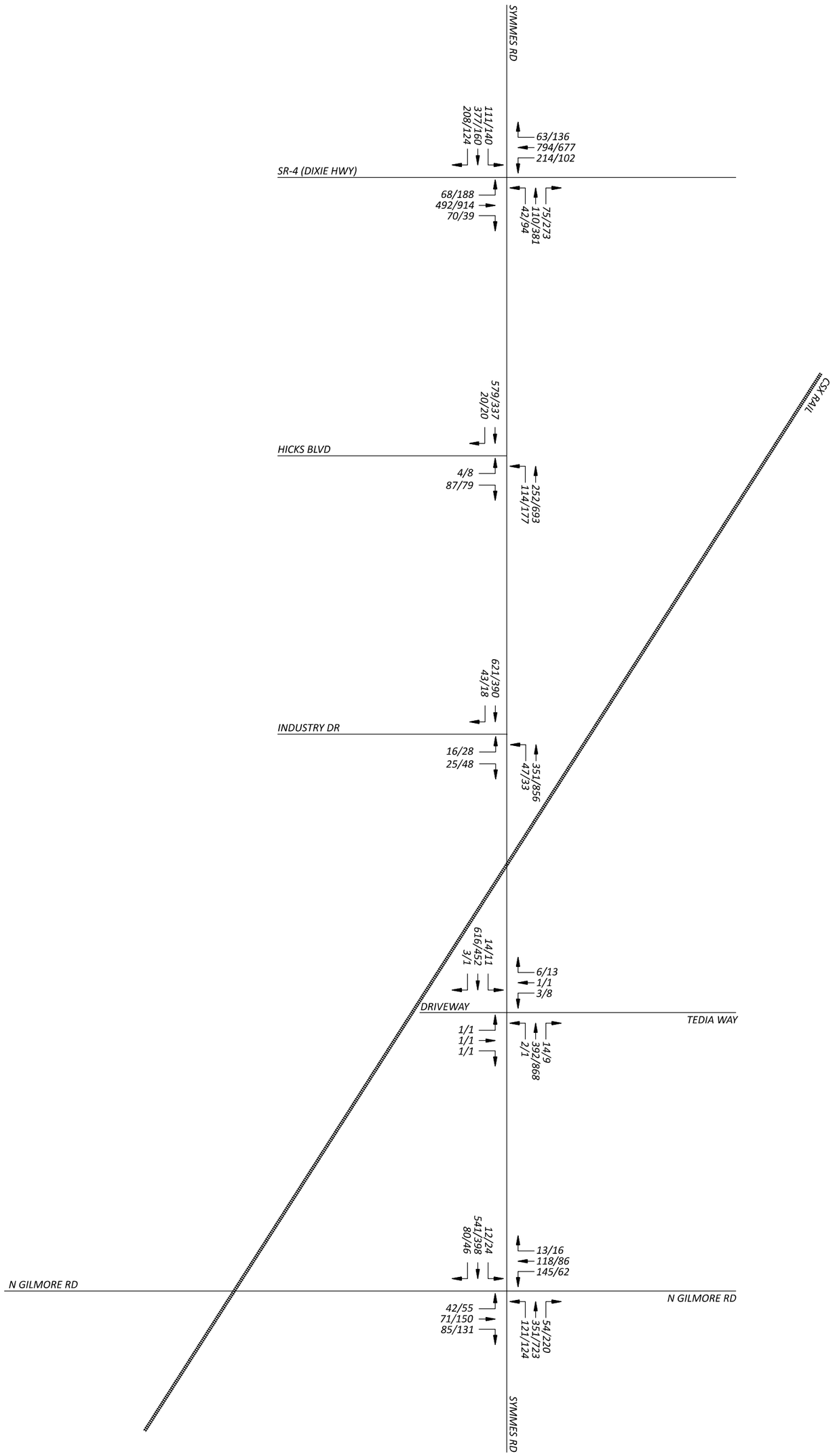
Where A = Simplified State Highway Access Management Manual (SHAMM) Methods
B = Planning Level Traffic
C = Traffic Forecasting Management System (TFMS)
D = MPO Growth Rate
E = Other Growth Rate
F = High Risk (Certified) Design Traffic Process

If you have any questions, please feel free to contact me at (614) 839-6342 or via e-mail at dave.becker@hdrinc.com.

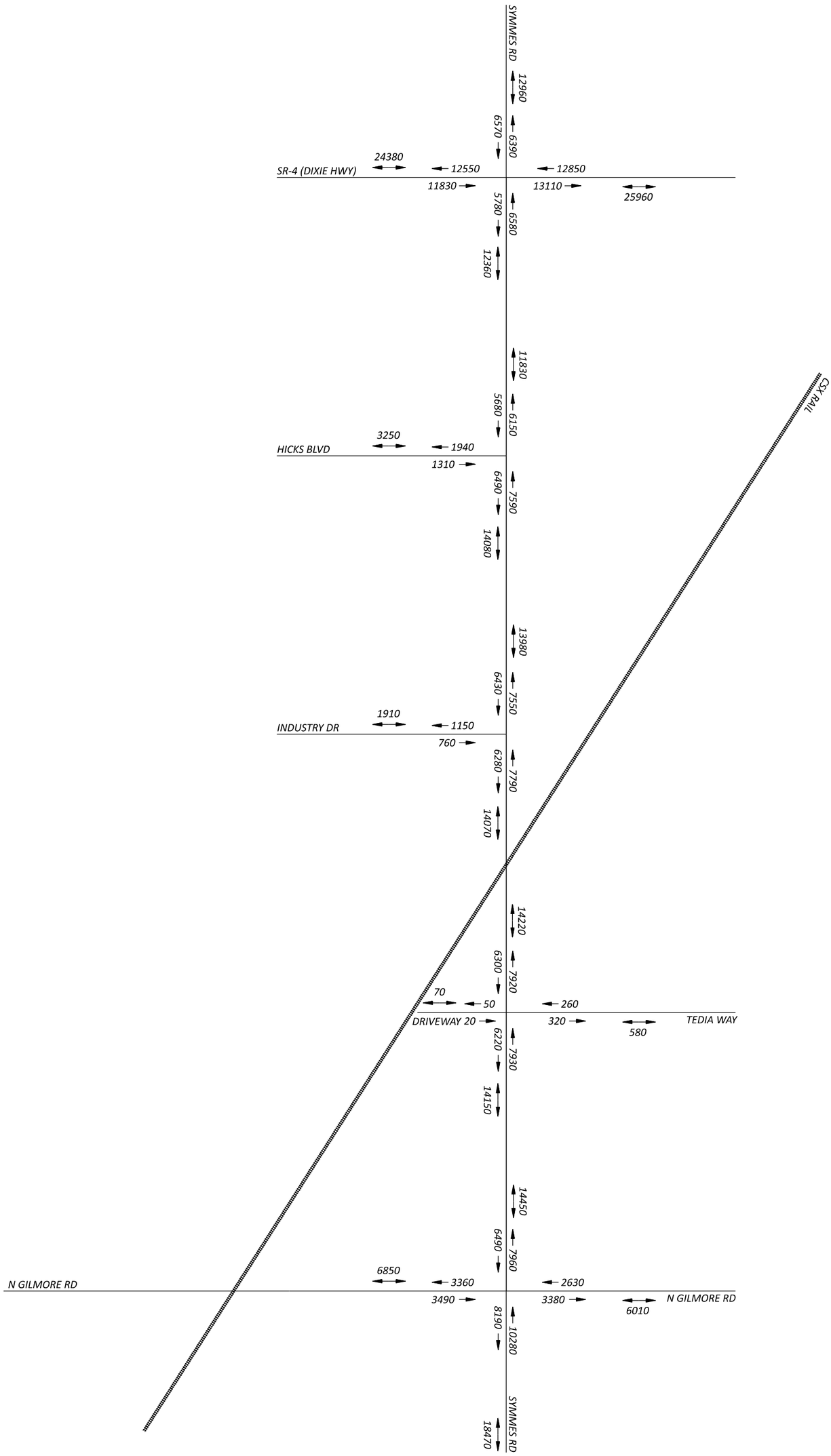
Thank you for your assistance with this project.

Dave Becker

ATTACHMENT A



1 / 8	2024 EXISTING TRAFFIC COUNTS (AM/PM) SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT	ANALYST DATE	0 NOT TO SCALE	N

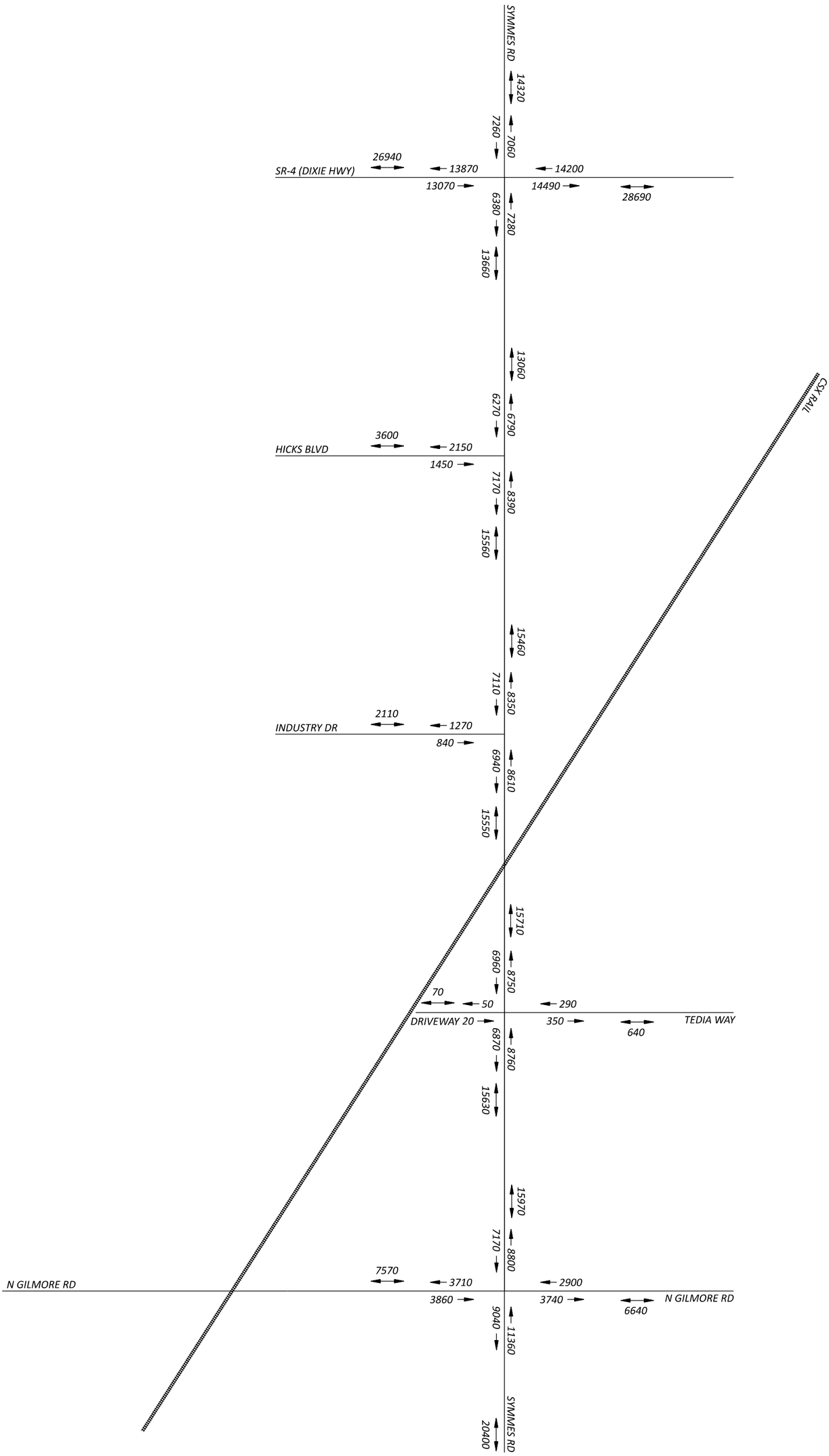


2028 NO BUILD ADTS
SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

ANALYST

DATE

NOT TO SCALE

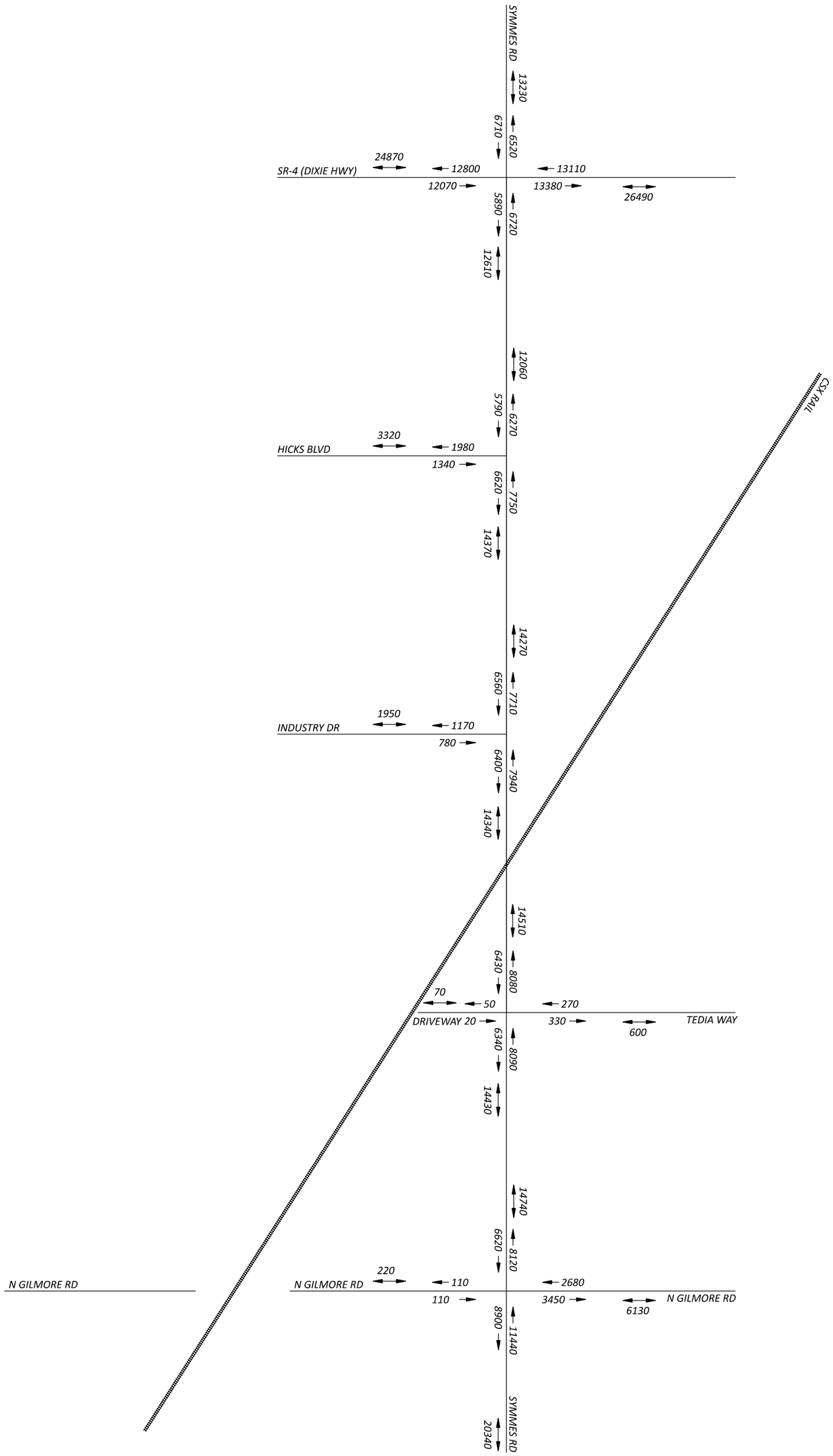


2048 NO BUILD ADTS
SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

ANALYST

DATE

NOT TO SCALE

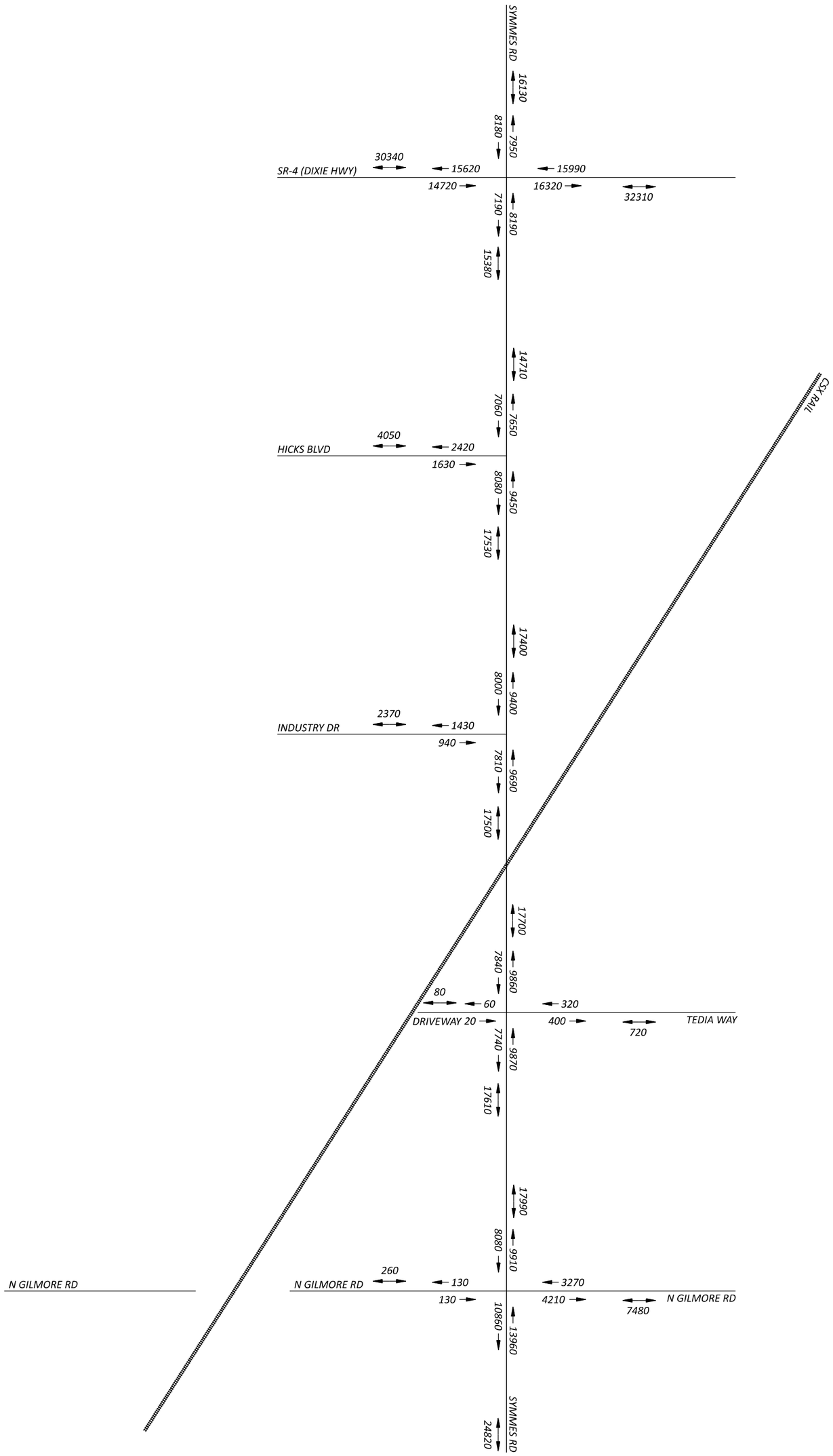


2028 BUILD ADTS
SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

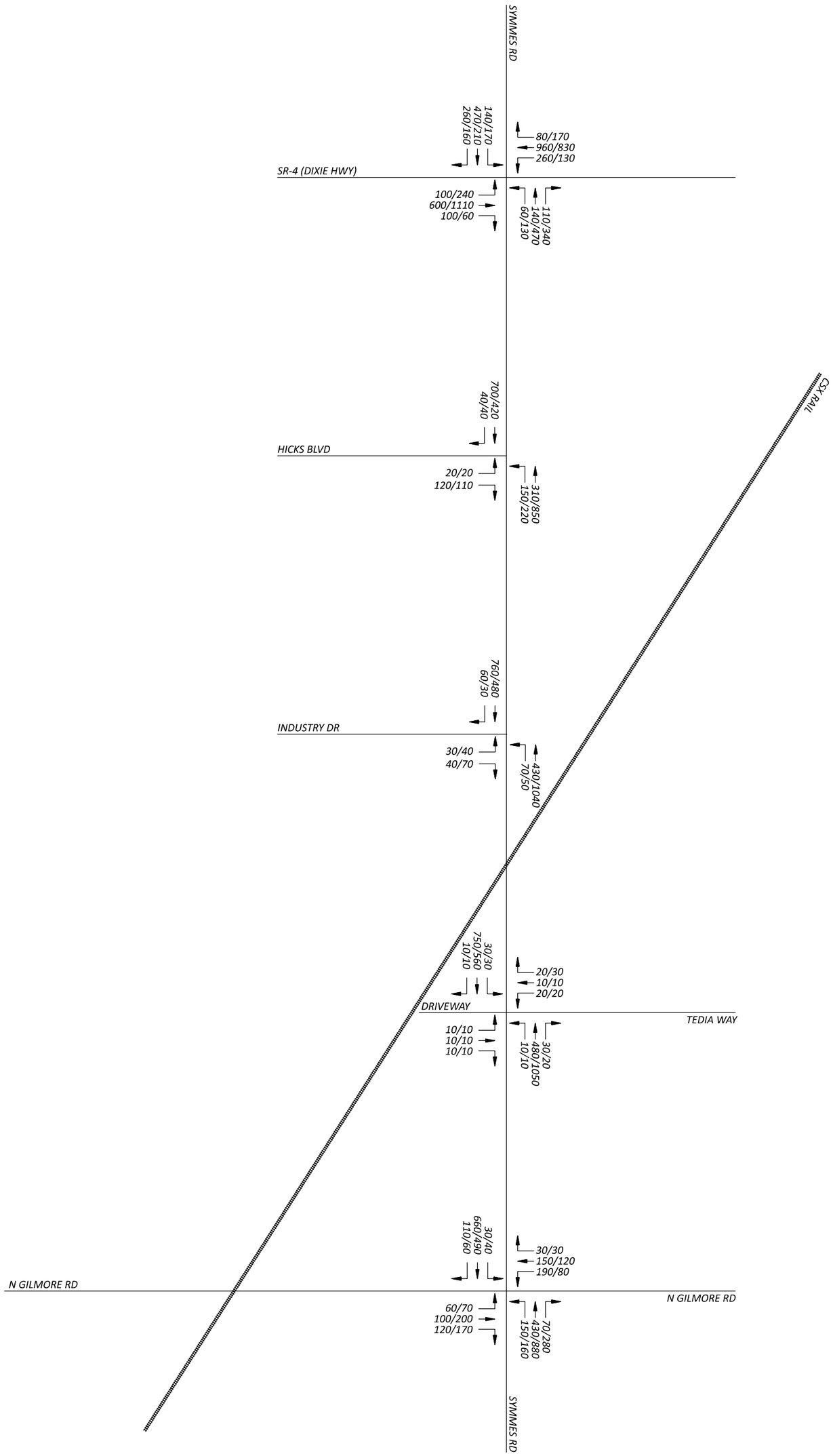
ANALYST

DATE

NOT TO SCALE



8 / 5	2048 BUILD ADTS SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT	ANALYST DATE	NOT TO SCALE



8 | 9

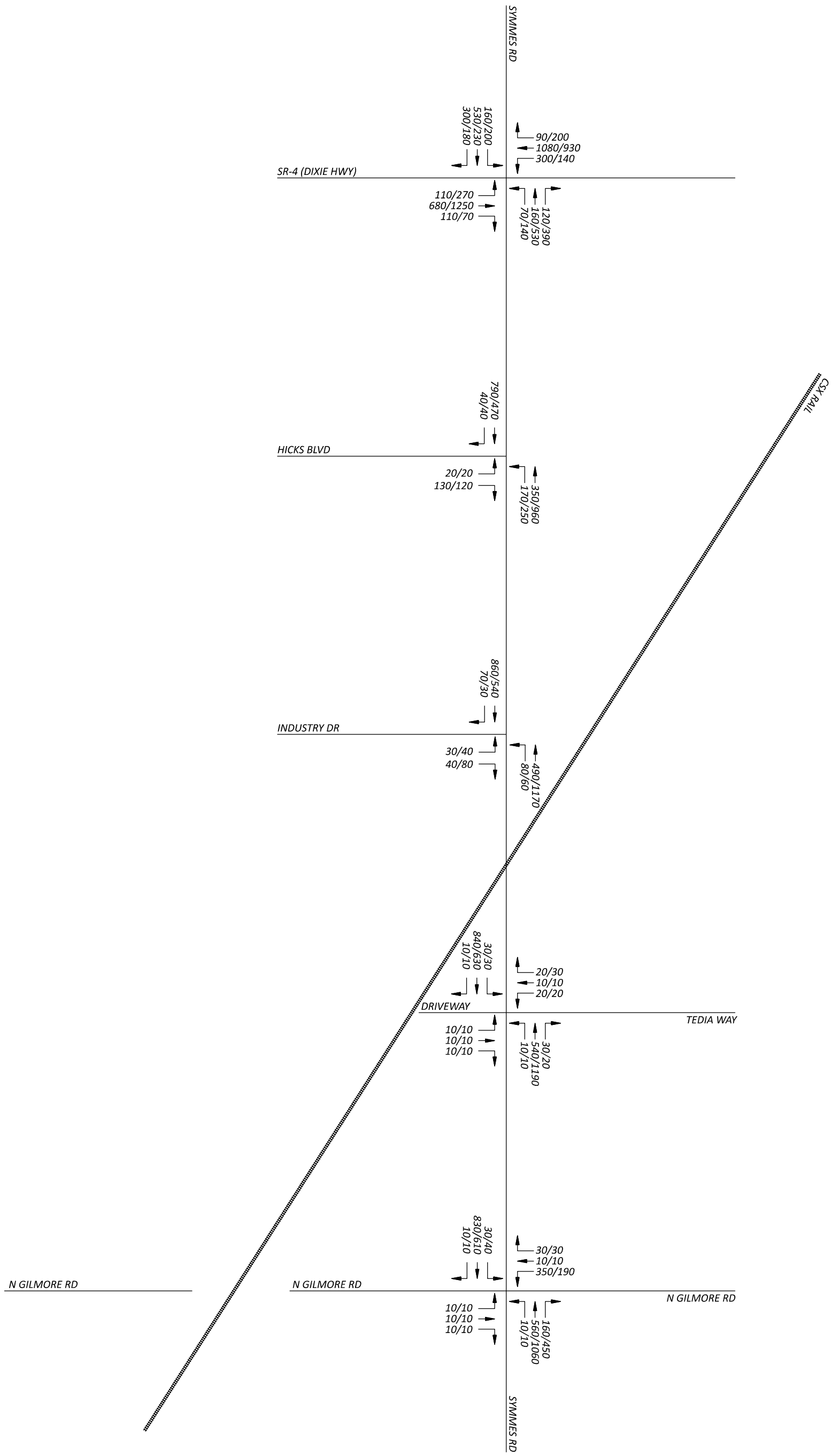
2048 NO BUILD DHVS (AM DHV/PM DHV)
SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

ANALYST

DATE

0

NOT TO SCALE

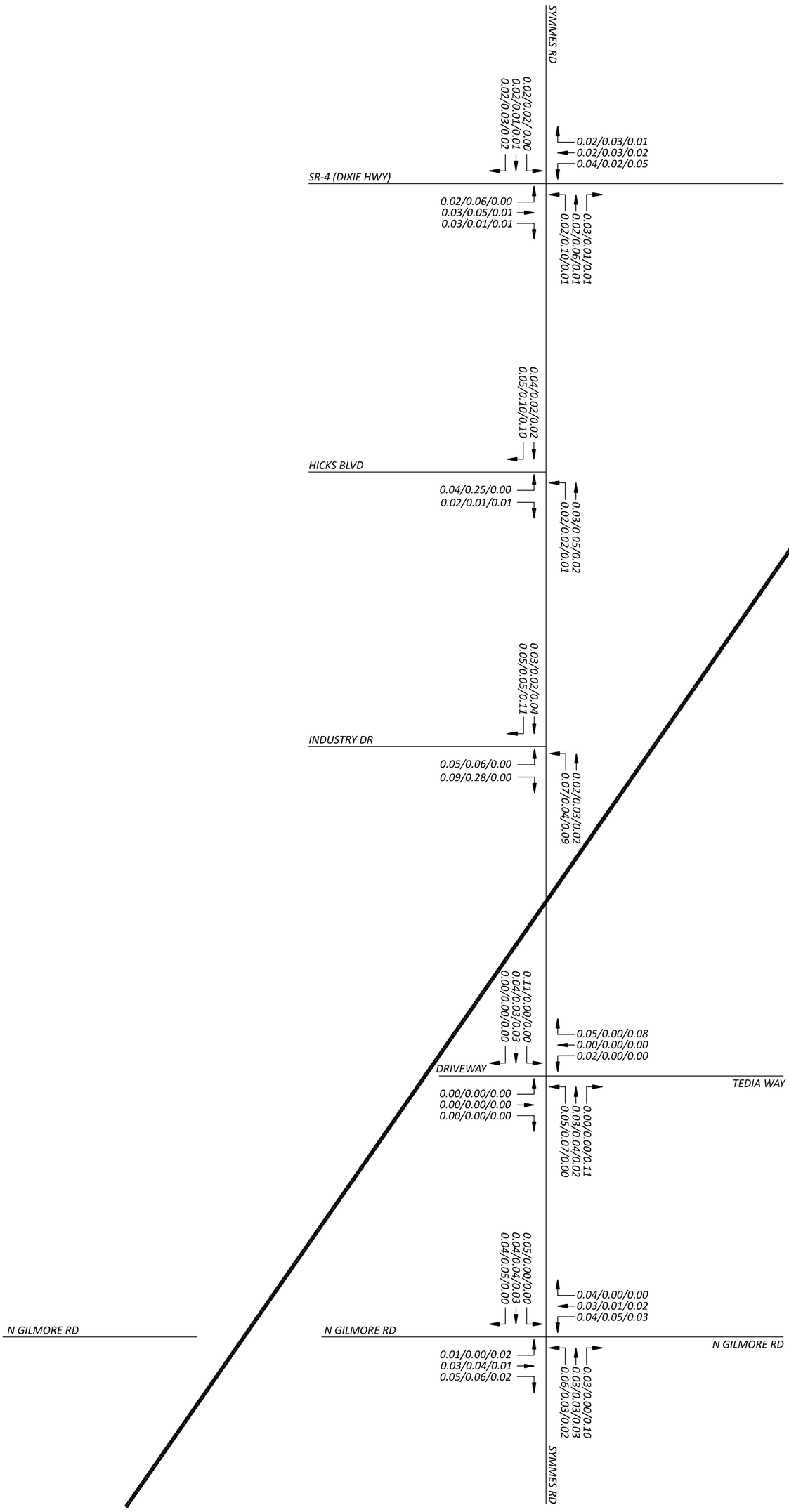


2048 BUILD DHVS (AM DHV/PM DHV)
SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

ANALYST

DATE

NOT TO SCALE



T24 / AM TD / PM TD

SYMMES ROAD RAIL CROSSING ELIMINATION PROJECT

ANALYST

DATE

NOT TO SCALE

Symmes Road & Hicks Boulevard - TMC

Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

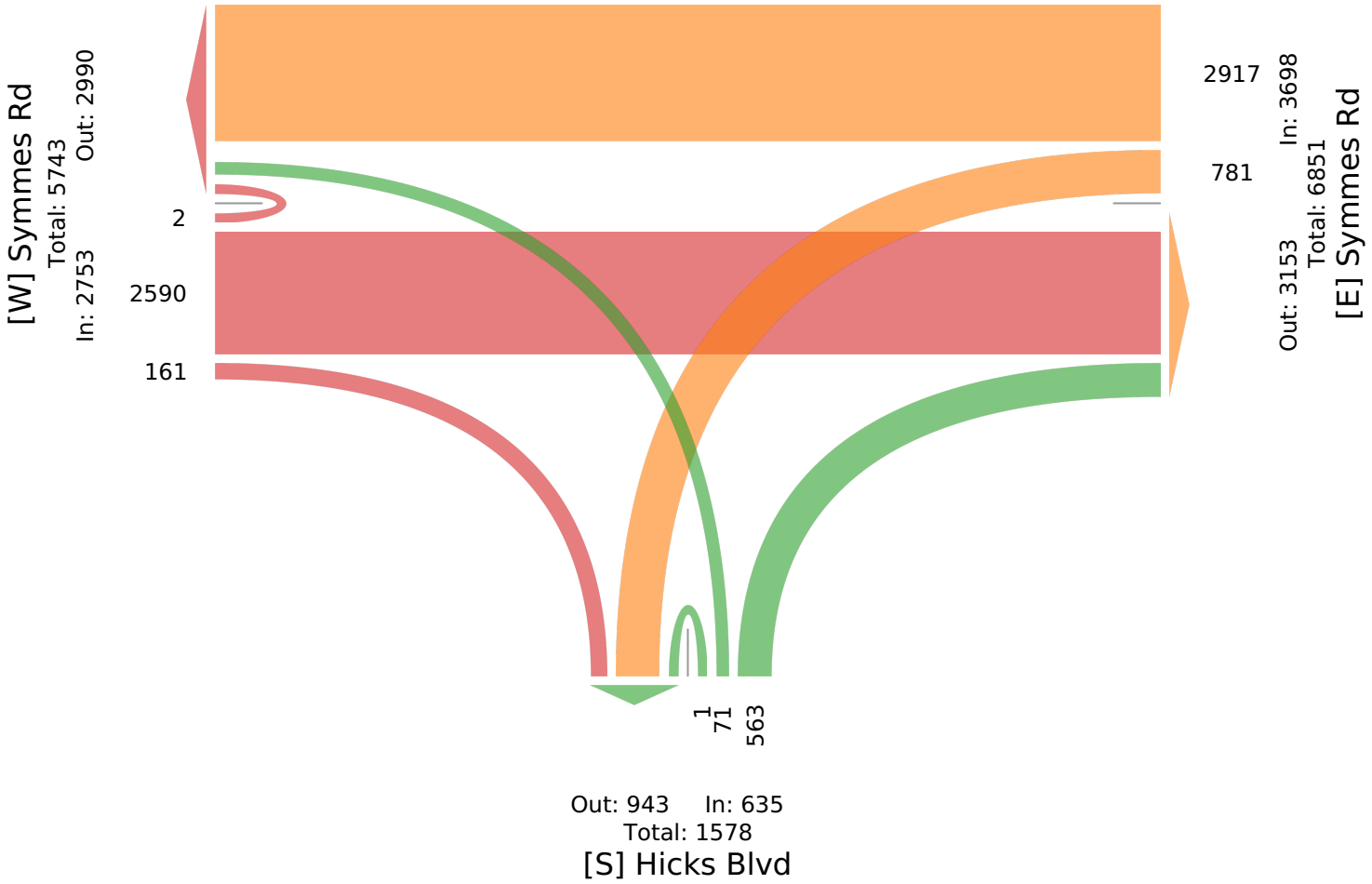
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Hicks Blvd Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 6:00AM	15	1	0	**16**	7	1	0	**8**	7	66	0	**73**	**97**
6:15AM	24	5	0	**29**	12	1	0	**13**	13	87	0	**100**	**142**
6:30AM	27	11	0	**38**	25	1	0	**26**	2	125	0	**127**	**191**
6:45AM	44	18	0	**62**	15	0	0	**15**	14	138	0	**152**	**229**
Hourly Total	110	35	0	**145**	59	3	0	**62**	36	416	0	**452**	**659**
7:00AM	41	10	0	**51**	18	0	0	**18**	7	111	0	**118**	**187**
7:15AM	45	27	0	**72**	23	0	0	**23**	4	142	0	**146**	**241**
7:30AM	57	28	0	**85**	24	2	0	**26**	4	161	0	**165**	**276**
7:45AM	85	33	0	**118**	23	0	0	**23**	6	164	0	**170**	**311**
Hourly Total	228	98	0	**326**	88	2	0	**90**	21	578	0	**599**	**1015**
8:00AM	65	26	0	**91**	17	2	0	**19**	6	112	0	**118**	**228**
8:15AM	61	17	0	**78**	12	0	0	**12**	1	84	0	**85**	**175**
8:30AM	61	10	0	**71**	22	2	0	**24**	4	77	0	**81**	**176**
8:45AM	60	22	0	**82**	15	0	0	**15**	2	74	0	**76**	**173**
Hourly Total	247	75	0	**322**	66	4	0	**70**	13	347	0	**360**	**752**
2:00PM	74	24	0	**98**	24	5	0	**29**	11	93	0	**104**	**231**
2:15PM	113	21	0	**134**	19	2	0	**21**	4	84	0	**88**	**243**
2:30PM	177	33	0	**210**	25	1	0	**26**	1	97	0	**98**	**334**
2:45PM	147	28	0	**175**	14	3	0	**17**	3	80	0	**83**	**275**
Hourly Total	511	106	0	**617**	82	11	0	**93**	19	354	0	**373**	**1083**
3:00PM	141	30	0	**171**	21	1	0	**22**	5	79	0	**84**	**277**
3:15PM	163	37	0	**200**	21	5	0	**26**	6	78	0	**84**	**310**
3:30PM	60	23	0	**83**	20	10	1	**31**	15	70	2	**87**	**201**
3:45PM	192	44	0	**236**	15	0	0	**15**	8	68	0	**76**	**327**
Hourly Total	556	134	0	**690**	77	16	1	**94**	34	295	2	**331**	**1115**
4:00PM	177	42	0	**219**	22	1	0	**23**	6	87	0	**93**	**335**
4:15PM	157	46	0	**203**	15	3	0	**18**	6	82	0	**88**	**309**
4:30PM	176	43	0	**219**	23	1	0	**24**	3	79	0	**82**	**325**
4:45PM	183	46	0	**229**	19	3	0	**22**	5	89	0	**94**	**345**
Hourly Total	693	177	0	**870**	79	8	0	**87**	20	337	0	**357**	**1314**
5:00PM	156	33	0	**189**	27	7	0	**34**	6	61	0	**67**	**290**
5:15PM	163	50	0	**213**	24	3	0	**27**	4	62	0	**66**	**306**
5:30PM	124	38	0	**162**	35	3	0	**38**	2	73	0	**75**	**275**
5:45PM	129	35	0	**164**	26	14	0	**40**	6	67	0	**73**	**277**
Hourly Total	572	156	0	**728**	112	27	0	**139**	18	263	0	**281**	**1148**
Total	2917	781	0	**3698**	563	71	1	**635**	161	2590	2	**2753**	**7086**
% Approach	78.9%	21.1%	0%	**-**	88.7%	11.2%	0.2%	**-**	5.8%	94.1%	0.1%	**-**	-
% Total	41.2%	11.0%	0%	**52.2%**	7.9%	1.0%	0%	**9.0%**	2.3%	36.6%	0%	**38.9%**	-
Lights	2840	769	0	**3609**	554	68	1	**623**	153	2496	2	**2651**	6883
% Lights	97.4%	98.5%	0%	**97.6%**	98.4%	95.8%	100%	**98.1%**	95.0%	96.4%	100%	**96.3%**	97.1%
Articulated Trucks	26	1	0	**27**	0	0	0	**0**	2	34	0	**36**	63
% Articulated Trucks	0.9%	0.1%	0%	**0.7%**	0%	0%	0%	**0%**	1.2%	1.3%	0%	**1.3%**	0.9%
Buses and Single-Unit Trucks	51	11	0	**62**	9	3	0	**12**	6	60	0	**66**	140
% Buses and Single-Unit Trucks	1.7%	1.4%	0%	**1.7%**	1.6%	4.2%	0%	**1.9%**	3.7%	2.3%	0%	**2.4%**	2.0%

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

Symmes Road & Hicks Boulevard - TMC
Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

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



Symmes Road & Hicks Boulevard - TMC

Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

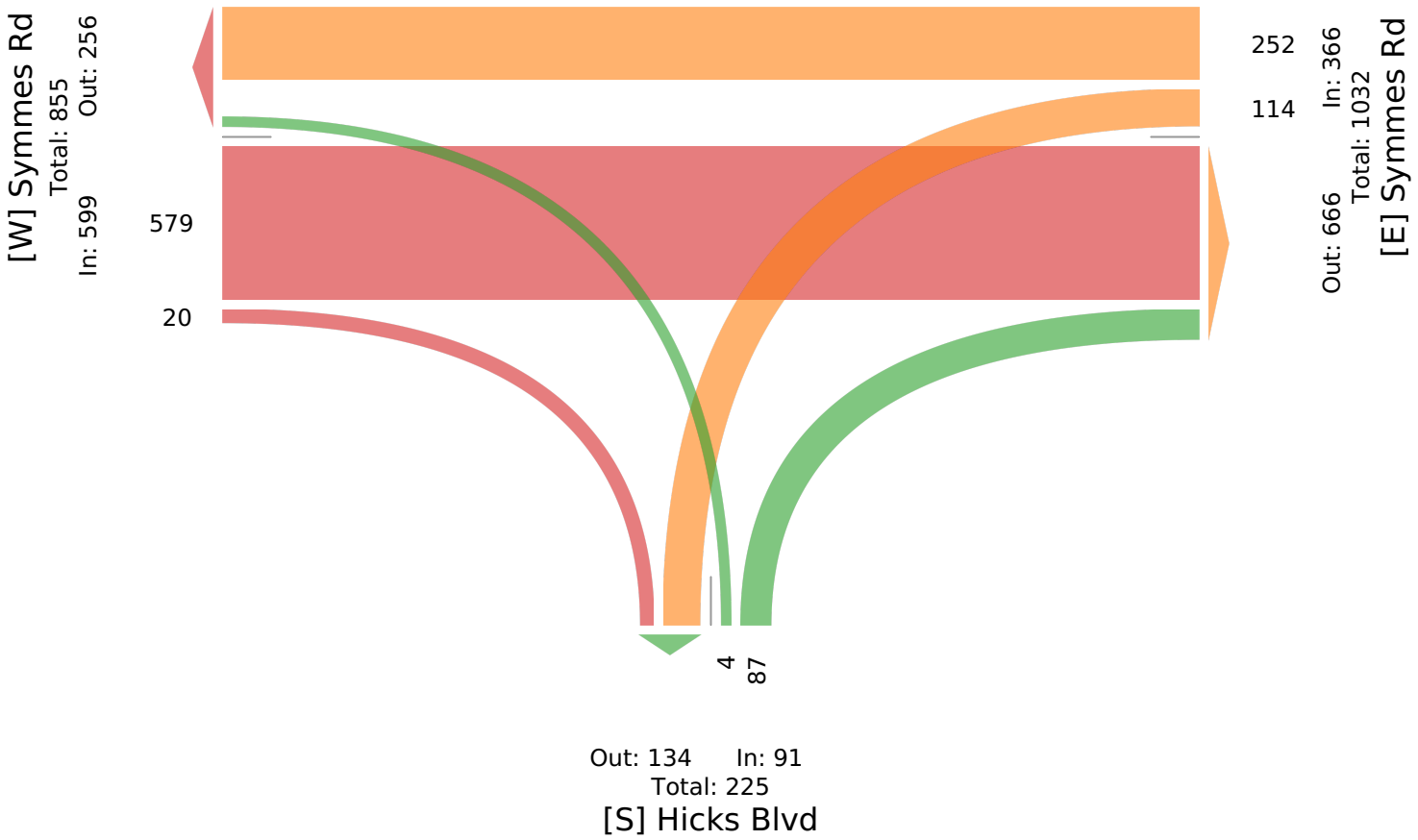
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Hicks Blvd Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 7:15AM	45	27	0	**72**	23	0	0	**23**	4	142	0	**146**	**241**
7:30AM	57	28	0	**85**	24	2	0	**26**	4	161	0	**165**	**276**
7:45AM	85	33	0	**118**	23	0	0	**23**	6	164	0	**170**	**311**
8:00AM	65	26	0	**91**	17	2	0	**19**	6	112	0	**118**	**228**
Total	252	114	0	**366**	87	4	0	**91**	20	579	0	**599**	**1056**
% Approach	68.9%	31.1%	0%	**-**	95.6%	4.4%	0%	**-**	3.3%	96.7%	0%	**-**	-
% Total	23.9%	10.8%	0%	**34.7%**	8.2%	0.4%	0%	**8.6%**	1.9%	54.8%	0%	**56.7%**	-
PHF	0.741	0.864	-	**0.775**	0.906	0.500	-	**0.875**	0.833	0.883	-	**0.881**	0.849
Lights	240	112	0	**352**	86	3	0	**89**	18	568	0	**586**	1027
% Lights	95.2%	98.2%	0%	**96.2%**	98.9%	75.0%	0%	**97.8%**	90.0%	98.1%	0%	**97.8%**	97.3%
Articulated Trucks	4	0	0	**4**	0	0	0	**0**	2	1	0	**3**	7
% Articulated Trucks	1.6%	0%	0%	**1.1%**	0%	0%	0%	**0%**	10.0%	0.2%	0%	**0.5%**	0.7%
Buses and Single-Unit Trucks	8	2	0	**10**	1	1	0	**2**	0	10	0	**10**	22
% Buses and Single-Unit Trucks	3.2%	1.8%	0%	**2.7%**	1.1%	25.0%	0%	**2.2%**	0%	1.7%	0%	**1.7%**	2.1%

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

Symmes Road & Hicks Boulevard - TMC
Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

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



Symmes Road & Hicks Boulevard - TMC

Thu May 9, 2024
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

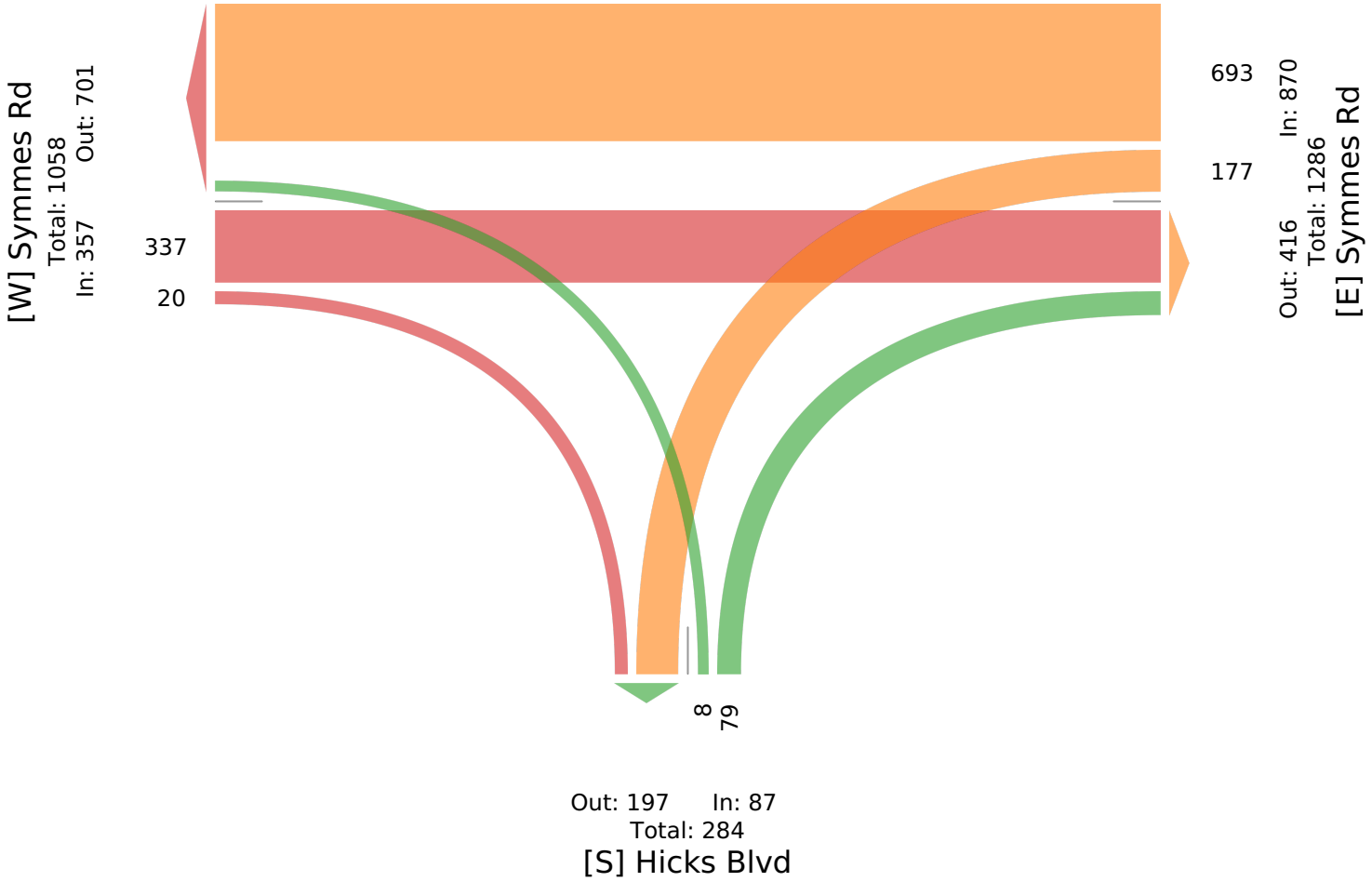
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Hicks Blvd Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 4:00PM	177	42	0	**219**	22	1	0	**23**	6	87	0	**93**	**335**
4:15PM	157	46	0	**203**	15	3	0	**18**	6	82	0	**88**	**309**
4:30PM	176	43	0	**219**	23	1	0	**24**	3	79	0	**82**	**325**
4:45PM	183	46	0	**229**	19	3	0	**22**	5	89	0	**94**	**345**
Total	693	177	0	**870**	79	8	0	**87**	20	337	0	**357**	**1314**
% Approach	79.7%	20.3%	0%	**-**	90.8%	9.2%	0%	**-**	5.6%	94.4%	0%	**-**	-
% Total	52.7%	13.5%	0%	**66.2%**	6.0%	0.6%	0%	**6.6%**	1.5%	25.6%	0%	**27.2%**	-
PHF	0.947	0.962	-	**0.950**	0.859	0.667	-	**0.906**	0.833	0.947	-	**0.949**	0.952
Lights	679	176	0	**855**	78	8	0	**86**	18	330	0	**348**	1289
% Lights	98.0%	99.4%	0%	**98.3%**	98.7%	100%	0%	**98.9%**	90.0%	97.9%	0%	**97.5%**	98.1%
Articulated Trucks	2	0	0	**2**	0	0	0	**0**	0	3	0	**3**	5
% Articulated Trucks	0.3%	0%	0%	**0.2%**	0%	0%	0%	**0%**	0%	0.9%	0%	**0.8%**	0.4%
Buses and Single-Unit Trucks	12	1	0	**13**	1	0	0	**1**	2	4	0	**6**	20
% Buses and Single-Unit Trucks	1.7%	0.6%	0%	**1.5%**	1.3%	0%	0%	**1.1%**	10.0%	1.2%	0%	**1.7%**	1.5%

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

Symmes Road & Hicks Boulevard - TMC
Thu May 9, 2024
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182810, Location: 39.350295, -84.535269

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



Symmes Road & Industry Drive - TMC

Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

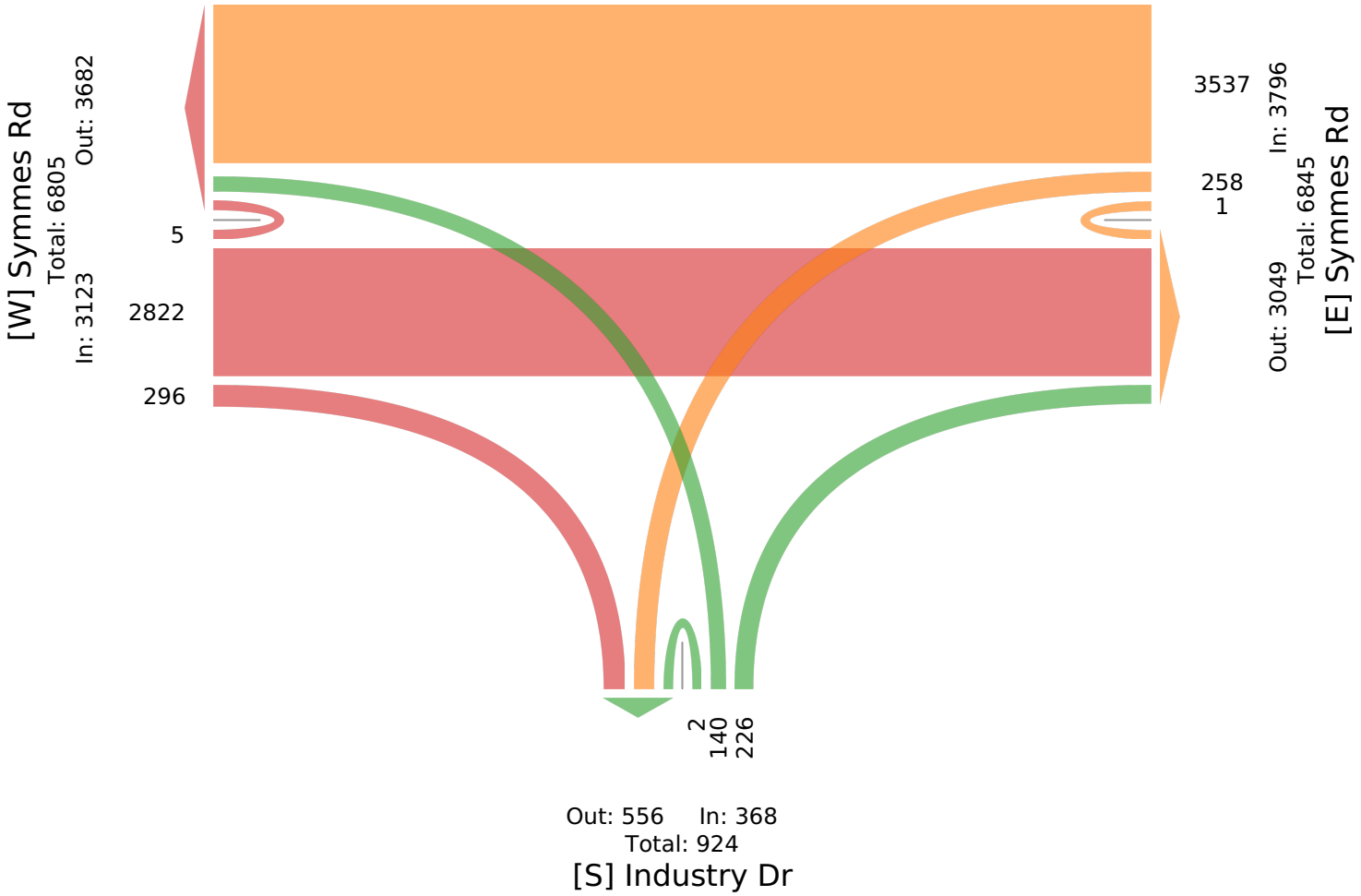
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Industry Dr Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 6:00AM	6	14	0	**20**	1	4	0	**5**	56	6	4	**66**	**91**
6:15AM	25	6	0	**31**	8	3	1	**12**	29	65	1	**95**	**138**
6:30AM	35	4	0	**39**	2	1	0	**3**	9	141	0	**150**	**192**
6:45AM	59	16	0	**75**	5	3	0	**8**	15	138	0	**153**	**236**
Hourly Total	125	40	0	**165**	16	11	1	**28**	109	350	5	**464**	**657**
7:00AM	50	10	0	**60**	6	0	0	**6**	9	123	0	**132**	**198**
7:15AM	68	10	0	**78**	7	2	0	**9**	9	151	0	**160**	**247**
7:30AM	87	15	0	**102**	5	4	0	**9**	17	169	0	**186**	**297**
7:45AM	112	14	0	**126**	8	3	0	**11**	10	182	0	**192**	**329**
Hourly Total	317	49	0	**366**	26	9	0	**35**	45	625	0	**670**	**1071**
8:00AM	84	8	0	**92**	5	7	0	**12**	7	119	0	**126**	**230**
8:15AM	71	10	1	**82**	0	5	0	**5**	7	90	0	**97**	**184**
8:30AM	69	10	0	**79**	5	1	0	**6**	5	91	0	**96**	**181**
8:45AM	80	13	0	**93**	6	5	0	**11**	7	80	0	**87**	**191**
Hourly Total	304	41	1	**346**	16	18	0	**34**	26	380	0	**406**	**786**
2:00PM	89	7	0	**96**	4	6	0	**10**	12	100	0	**112**	**218**
2:15PM	120	9	0	**129**	14	6	0	**20**	10	98	0	**108**	**257**
2:30PM	203	9	0	**212**	15	10	0	**25**	7	114	0	**121**	**358**
2:45PM	164	4	0	**168**	10	2	0	**12**	7	92	0	**99**	**279**
Hourly Total	576	29	0	**605**	43	24	0	**67**	36	404	0	**440**	**1112**
3:00PM	176	6	0	**182**	12	4	0	**16**	7	87	0	**94**	**292**
3:15PM	186	7	0	**193**	5	8	0	**13**	8	86	0	**94**	**300**
3:30PM	67	10	0	**77**	14	8	1	**23**	15	53	0	**68**	**168**
3:45PM	236	6	0	**242**	8	7	0	**15**	1	99	0	**100**	**357**
Hourly Total	665	29	0	**694**	39	27	1	**67**	31	325	0	**356**	**1117**
4:00PM	216	6	0	**222**	15	6	0	**21**	3	93	0	**96**	**339**
4:15PM	193	17	0	**210**	16	7	0	**23**	9	100	0	**109**	**342**
4:30PM	211	4	0	**215**	9	8	0	**17**	5	98	0	**103**	**335**
4:45PM	219	9	0	**228**	7	6	0	**13**	9	98	0	**107**	**348**
Hourly Total	839	36	0	**875**	47	27	0	**74**	26	389	0	**415**	**1364**
5:00PM	181	6	0	**187**	12	8	0	**20**	10	80	0	**90**	**297**
5:15PM	210	15	0	**225**	6	6	0	**12**	4	79	0	**83**	**320**
5:30PM	158	6	0	**164**	9	5	0	**14**	1	106	0	**107**	**285**
5:45PM	162	7	0	**169**	12	5	0	**17**	8	84	0	**92**	**278**
Hourly Total	711	34	0	**745**	39	24	0	**63**	23	349	0	**372**	**1180**
Total	3537	258	1	**3796**	226	140	2	**368**	296	2822	5	**3123**	**7287**
% Approach	93.2%	6.8%	0%	**-**	61.4%	38.0%	0.5%	**-**	9.5%	90.4%	0.2%	**-**	-
% Total	48.5%	3.5%	0%	**52.1%**	3.1%	1.9%	0%	**5.1%**	4.1%	38.7%	0.1%	**42.9%**	-
Lights	3458	240	1	**3699**	207	133	2	**342**	282	2729	5	**3016**	7057
% Lights	97.8%	93.0%	100%	**97.4%**	91.6%	95.0%	100%	**92.9%**	95.3%	96.7%	100%	**96.6%**	96.8%
Articulated Trucks	26	1	0	**27**	6	0	0	**6**	2	35	0	**37**	70
% Articulated Trucks	0.7%	0.4%	0%	**0.7%**	2.7%	0%	0%	**1.6%**	0.7%	1.2%	0%	**1.2%**	1.0%
Buses and Single-Unit Trucks	53	17	0	**70**	13	7	0	**20**	12	58	0	**70**	160
% Buses and Single-Unit Trucks	1.5%	6.6%	0%	**1.8%**	5.8%	5.0%	0%	**5.4%**	4.1%	2.1%	0%	**2.2%**	2.2%

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

Symmes Road & Industry Drive - TMC
Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

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



Symmes Road & Industry Drive - TMC

Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

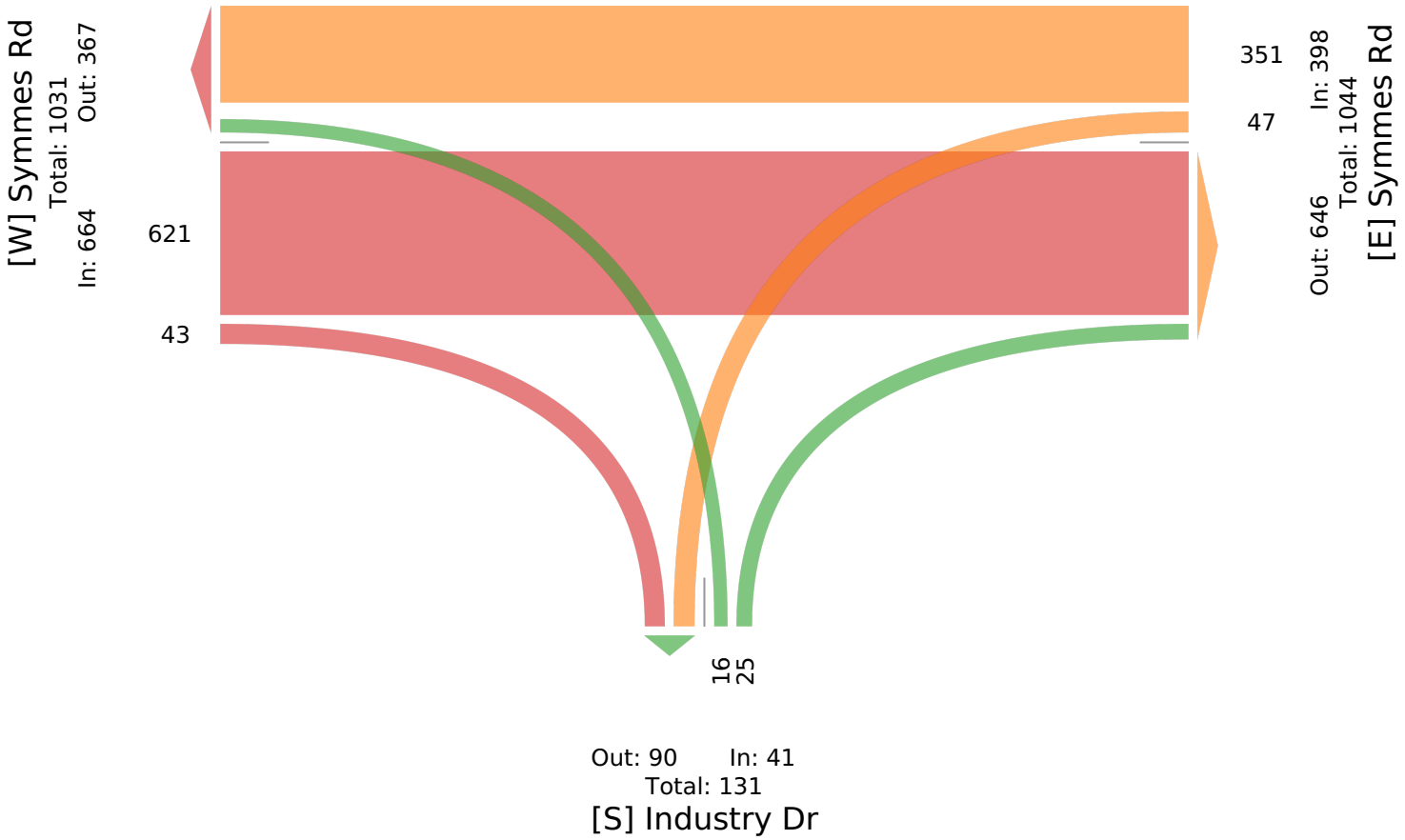
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Industry Dr Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 7:15AM	68	10	0	**78**	7	2	0	**9**	9	151	0	**160**	**247**
7:30AM	87	15	0	**102**	5	4	0	**9**	17	169	0	**186**	**297**
7:45AM	112	14	0	**126**	8	3	0	**11**	10	182	0	**192**	**329**
8:00AM	84	8	0	**92**	5	7	0	**12**	7	119	0	**126**	**230**
Total	351	47	0	**398**	25	16	0	**41**	43	621	0	**664**	**1103**
% Approach	88.2%	11.8%	0%	**-**	61.0%	39.0%	0%	**-**	6.5%	93.5%	0%	**-**	-
% Total	31.8%	4.3%	0%	**36.1%**	2.3%	1.5%	0%	**3.7%**	3.9%	56.3%	0%	**60.2%**	-
PHF	0.783	0.783	-	**0.790**	0.781	0.571	-	**0.854**	0.632	0.853	-	**0.865**	0.838
Lights	340	45	0	**385**	18	15	0	**33**	41	610	0	**651**	1069
% Lights	96.9%	95.7%	0%	**96.7%**	72.0%	93.8%	0%	**80.5%**	95.3%	98.2%	0%	**98.0%**	96.9%
Articulated Trucks	3	0	0	**3**	3	0	0	**3**	0	1	0	**1**	7
% Articulated Trucks	0.9%	0%	0%	**0.8%**	12.0%	0%	0%	**7.3%**	0%	0.2%	0%	**0.2%**	0.6%
Buses and Single-Unit Trucks	8	2	0	**10**	4	1	0	**5**	2	10	0	**12**	27
% Buses and Single-Unit Trucks	2.3%	4.3%	0%	**2.5%**	16.0%	6.3%	0%	**12.2%**	4.7%	1.6%	0%	**1.8%**	2.4%

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

Symmes Road & Industry Drive - TMC
Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

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



Symmes Road & Industry Drive - TMC

Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

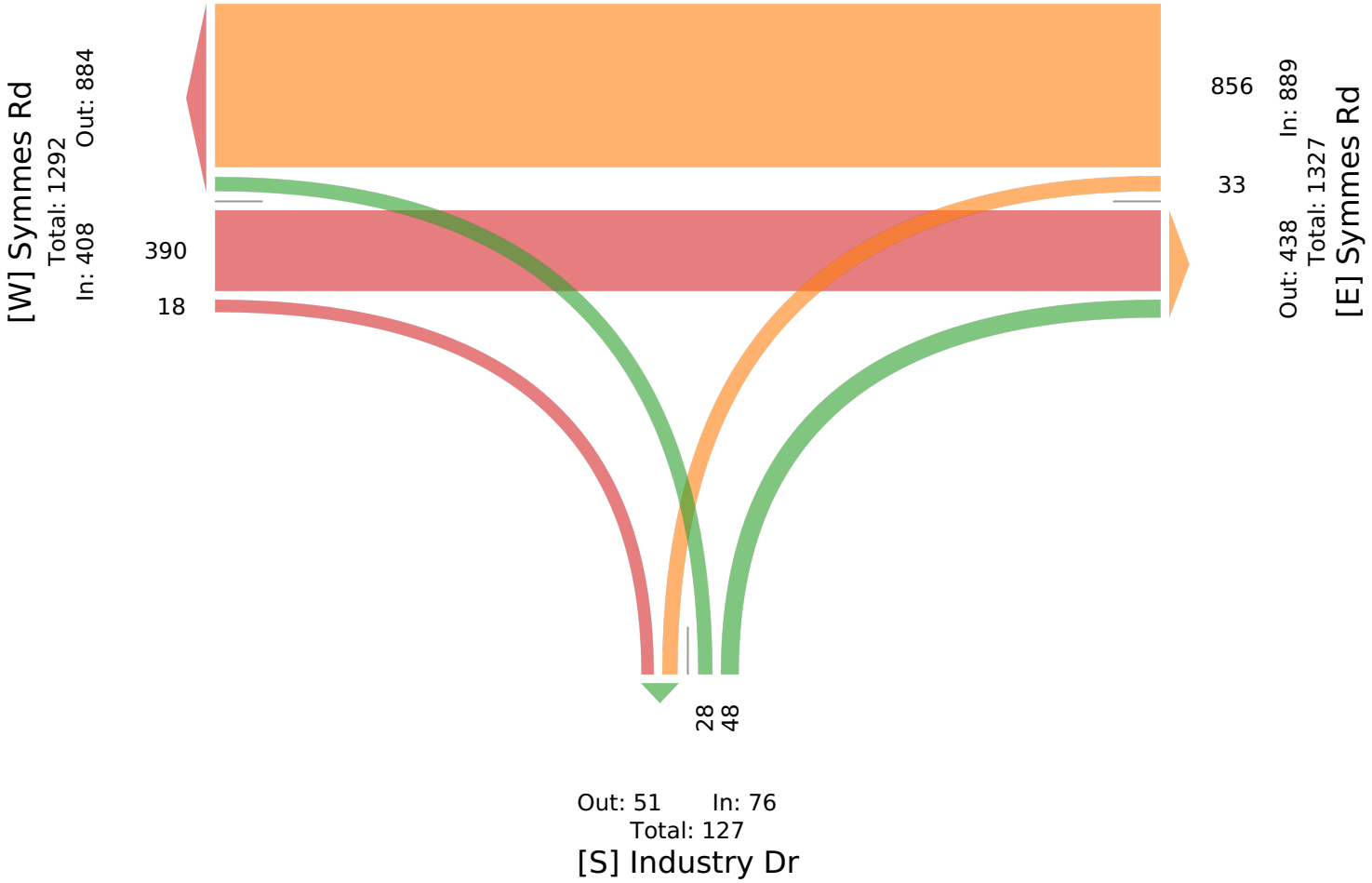
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Symmes Rd Westbound				Industry Dr Northbound				Symmes Rd Eastbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2024-05-09 3:45PM	236	6	0	**242**	8	7	0	**15**	1	99	0	**100**	**357**
4:00PM	216	6	0	**222**	15	6	0	**21**	3	93	0	**96**	**339**
4:15PM	193	17	0	**210**	16	7	0	**23**	9	100	0	**109**	**342**
4:30PM	211	4	0	**215**	9	8	0	**17**	5	98	0	**103**	**335**
Total	856	33	0	**889**	48	28	0	**76**	18	390	0	**408**	**1373**
% Approach	96.3%	3.7%	0%	**-**	63.2%	36.8%	0%	**-**	4.4%	95.6%	0%	**-**	-
% Total	62.3%	2.4%	0%	**64.7%**	3.5%	2.0%	0%	**5.5%**	1.3%	28.4%	0%	**29.7%**	-
PHF	0.907	0.485	-	**0.918**	0.750	0.875	-	**0.826**	0.500	0.975	-	**0.936**	0.961
Lights	843	30	0	**873**	48	28	0	**76**	16	376	0	**392**	1341
% Lights	98.5%	90.9%	0%	**98.2%**	100%	100%	0%	**100%**	88.9%	96.4%	0%	**96.1%**	97.7%
Articulated Trucks	3	0	0	**3**	0	0	0	**0**	0	6	0	**6**	9
% Articulated Trucks	0.4%	0%	0%	**0.3%**	0%	0%	0%	**0%**	0%	1.5%	0%	**1.5%**	0.7%
Buses and Single-Unit Trucks	10	3	0	**13**	0	0	0	**0**	2	8	0	**10**	23
% Buses and Single-Unit Trucks	1.2%	9.1%	0%	**1.5%**	0%	0%	0%	**0%**	11.1%	2.1%	0%	**2.5%**	1.7%

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

Symmes Road & Industry Drive - TMC
Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182811, Location: 39.349296, -84.531063

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



Symmes Road & N Gilmore Road - TMC

Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

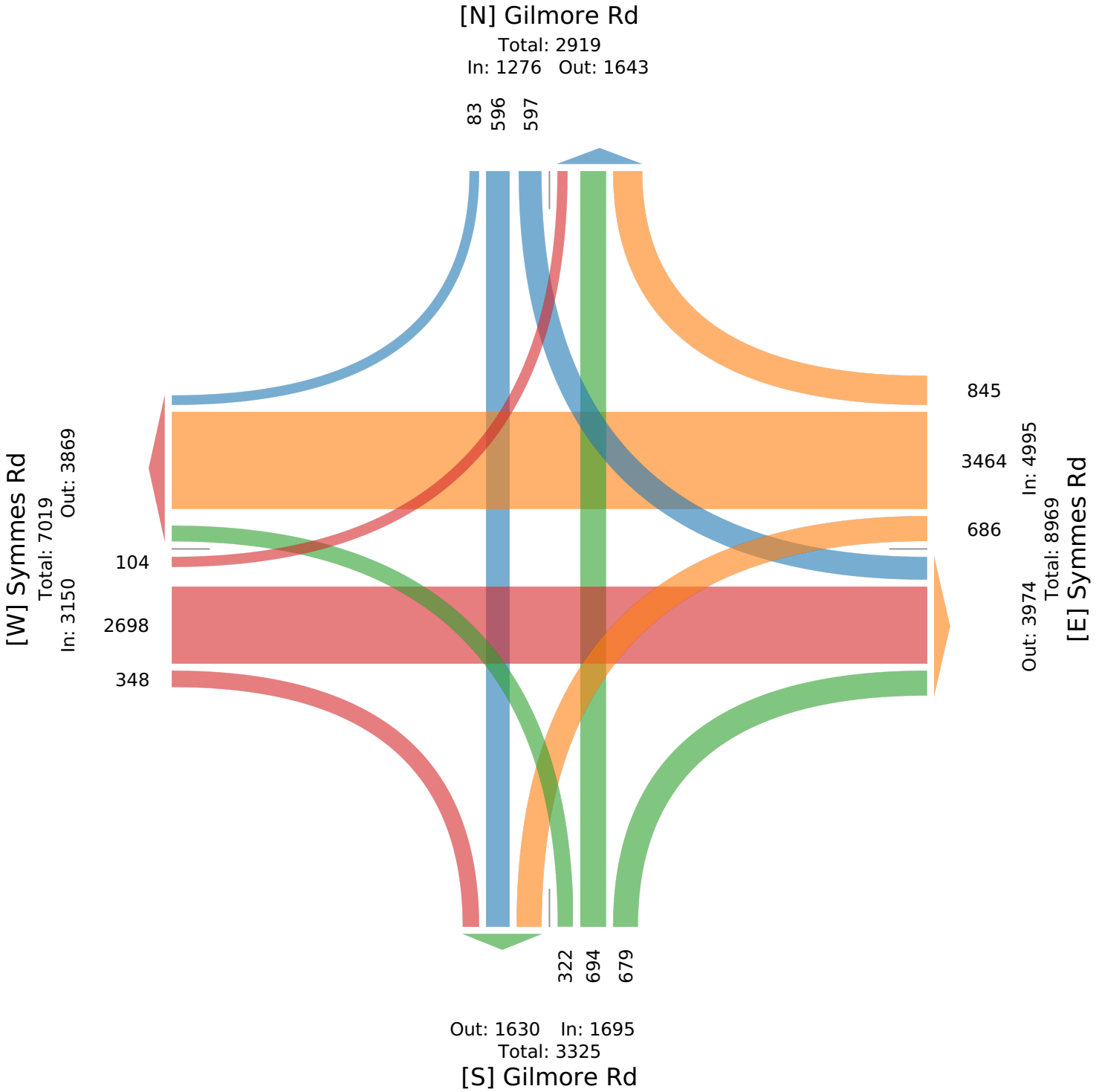
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Gilmore Rd					Symmes Rd					Gilmore Rd					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-05-09 6:00AM	3	12	20	0	**35**	3	41	12	0	**56**	53	12	13	0	**78**	21	5	5	0	**31**	**200**
6:15AM	1	14	35	0	**50**	9	34	14	0	**57**	45	12	4	0	**61**	17	41	1	0	**59**	**227**
6:30AM	2	33	37	0	**72**	9	51	14	0	**74**	6	4	9	0	**19**	13	117	1	0	**131**	**296**
6:45AM	2	30	31	0	**63**	18	84	50	0	**152**	28	16	7	0	**51**	17	120	3	0	**140**	**406**
Hourly Total	8	89	123	0	**220**	39	210	90	0	**339**	132	44	33	0	**209**	68	283	10	0	**361**	**1129**
7:00AM	2	36	28	0	**66**	15	68	44	0	**127**	24	14	2	0	**40**	10	112	6	0	**128**	**361**
7:15AM	1	22	34	0	**57**	15	81	24	0	**120**	25	18	6	0	**49**	13	122	2	0	**137**	**363**
7:30AM	2	26	50	0	**78**	9	96	19	0	**124**	12	13	9	0	**34**	20	145	2	0	**167**	**403**
7:45AM	8	34	33	0	**75**	15	106	34	0	**155**	24	26	25	0	**75**	37	162	2	0	**201**	**506**
Hourly Total	13	118	145	0	**276**	54	351	121	0	**526**	85	71	42	0	**198**	80	541	12	0	**633**	**1633**
8:00AM	3	16	28	0	**47**	15	88	16	0	**119**	26	15	13	0	**54**	10	110	2	0	**122**	**342**
8:15AM	1	16	12	0	**29**	16	82	10	0	**108**	3	11	6	0	**20**	9	85	3	0	**97**	**254**
8:30AM	3	19	9	0	**31**	13	70	15	0	**98**	8	15	8	0	**31**	6	93	3	0	**102**	**262**
8:45AM	6	20	17	0	**43**	10	88	10	0	**108**	12	8	7	0	**27**	5	68	3	0	**76**	**254**
Hourly Total	13	71	66	0	**150**	54	328	51	0	**433**	49	49	34	0	**132**	30	356	11	0	**397**	**1112**
2:00PM	5	23	20	0	**48**	31	84	24	0	**139**	14	13	7	0	**34**	10	79	2	0	**91**	**312**
2:15PM	3	23	19	0	**45**	33	133	24	0	**190**	16	18	9	0	**43**	8	80	4	0	**92**	**370**
2:30PM	3	18	26	0	**47**	28	132	34	0	**194**	28	37	25	0	**90**	25	137	10	0	**172**	**503**
2:45PM	3	26	21	0	**50**	48	153	29	0	**230**	36	41	22	0	**99**	13	88	2	0	**103**	**482**
Hourly Total	14	90	86	0	**190**	140	502	111	0	**753**	94	109	63	0	**266**	56	384	18	0	**458**	**1667**
3:00PM	0	20	16	0	**36**	39	152	15	0	**206**	35	34	12	0	**81**	8	110	1	0	**119**	**442**
3:15PM	1	14	17	0	**32**	49	177	37	0	**263**	32	25	19	0	**76**	11	77	9	0	**97**	**468**
3:30PM	3	24	24	0	**51**	68	156	27	0	**251**	12	21	9	0	**42**	8	80	7	0	**95**	**439**
3:45PM	3	18	12	0	**33**	89	167	45	0	**301**	39	38	8	0	**85**	20	95	4	0	**119**	**538**
Hourly Total	7	76	69	0	**152**	245	652	124	0	**1021**	118	118	48	0	**284**	47	362	21	0	**430**	**1887**
4:00PM	5	29	11	0	**45**	42	179	15	0	**236**	36	47	19	0	**102**	12	88	10	0	**110**	**493**
4:15PM	5	22	24	0	**51**	45	195	31	0	**271**	26	26	9	0	**61**	7	111	5	0	**123**	**506**
4:30PM	3	17	15	0	**35**	44	182	33	0	**259**	30	39	19	0	**88**	7	104	5	0	**116**	**498**
4:45PM	6	25	9	0	**40**	55	219	22	0	**296**	20	40	11	0	**71**	7	102	3	0	**112**	**519**
Hourly Total	19	93	59	0	**171**	186	775	101	0	**1062**	112	152	58	0	**322**	33	405	23	0	**461**	**2016**
5:00PM	4	23	15	0	**42**	46	187	14	0	**247**	23	38	18	0	**79**	6	95	5	0	**106**	**474**
5:15PM	1	10	10	0	**21**	34	167	15	0	**216**	21	49	13	0	**83**	10	84	1	0	**95**	**415**
5:30PM	1	9	11	0	**21**	29	151	19	0	**199**	25	38	8	0	**71**	11	100	2	0	**113**	**404**
5:45PM	3	17	13	0	**33**	18	141	40	0	**199**	20	26	5	0	**51**	7	88	1	0	**96**	**379**
Hourly Total	9	59	49	0	**117**	127	646	88	0	**861**	89	151	44	0	**284**	34	367	9	0	**410**	**1672**
Total	83	596	597	0	**1276**	845	3464	686	0	**4995**	679	694	322	0	**1695**	348	2698	104	0	**3150**	**11116**
% Approach	6.5%	46.7%	46.8%	0%	**-**	16.9%	69.3%	13.7%	0%	**-**	40.1%	40.9%	19.0%	0%	**-**	11.0%	85.7%	3.3%	0%	**-**	-
% Total	0.7%	5.4%	5.4%	0%	**11.5%**	7.6%	31.2%	6.2%	0%	**44.9%**	6.1%	6.2%	2.9%	0%	**15.2%**	3.1%	24.3%	0.9%	0%	**28.3%**	-
Lights	80	580	575	0	**1235**	822	3357	645	0	**4824**	648	674	319	0	**1641**	335	2588	99	0	**3022**	10722
% Lights	96.4%	97.3%	96.3%	0%	**96.8%**	97.3%	96.9%	94.0%	0%	**96.6%**	95.4%	97.1%	99.1%	0%	**96.8%**	96.3%	95.9%	95.2%	0%	**95.9%**	96.5%
Articulated Trucks	2	4	15	0	**21**	12	36	7	0	**55**	2	6	2	0	**10**	7	43	2	0	**52**	138
% Articulated Trucks	2.4%	0.7%	2.5%	0%	**1.6%**	1.4%	1.0%	1.0%	0%	**1.1%**	0.3%	0.9%	0.6%	0%	**0.6%**	2.0%	1.6%	1.9%	0%	**1.7%**	1.2%
Buses and Single-Unit Trucks	1	12	7	0	**20**	11	71	34	0	**116**	29	14	1	0	**44**	6	67	3	0	**76**	256
% Buses and Single-Unit Trucks	1.2%	2.0%	1.2%	0%	**1.6%**	1.3%	2.0%	5.0%	0%	**2.3%**	4.3%	2.0%	0.3%	0%	**2.6%**	1.7%	2.5%	2.9%	0%	**2.4%**	2.3%

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

Symmes Road & N Gilmore Road - TMC
Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

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



Symmes Road & N Gilmore Road - TMC

Thu May 9, 2024
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

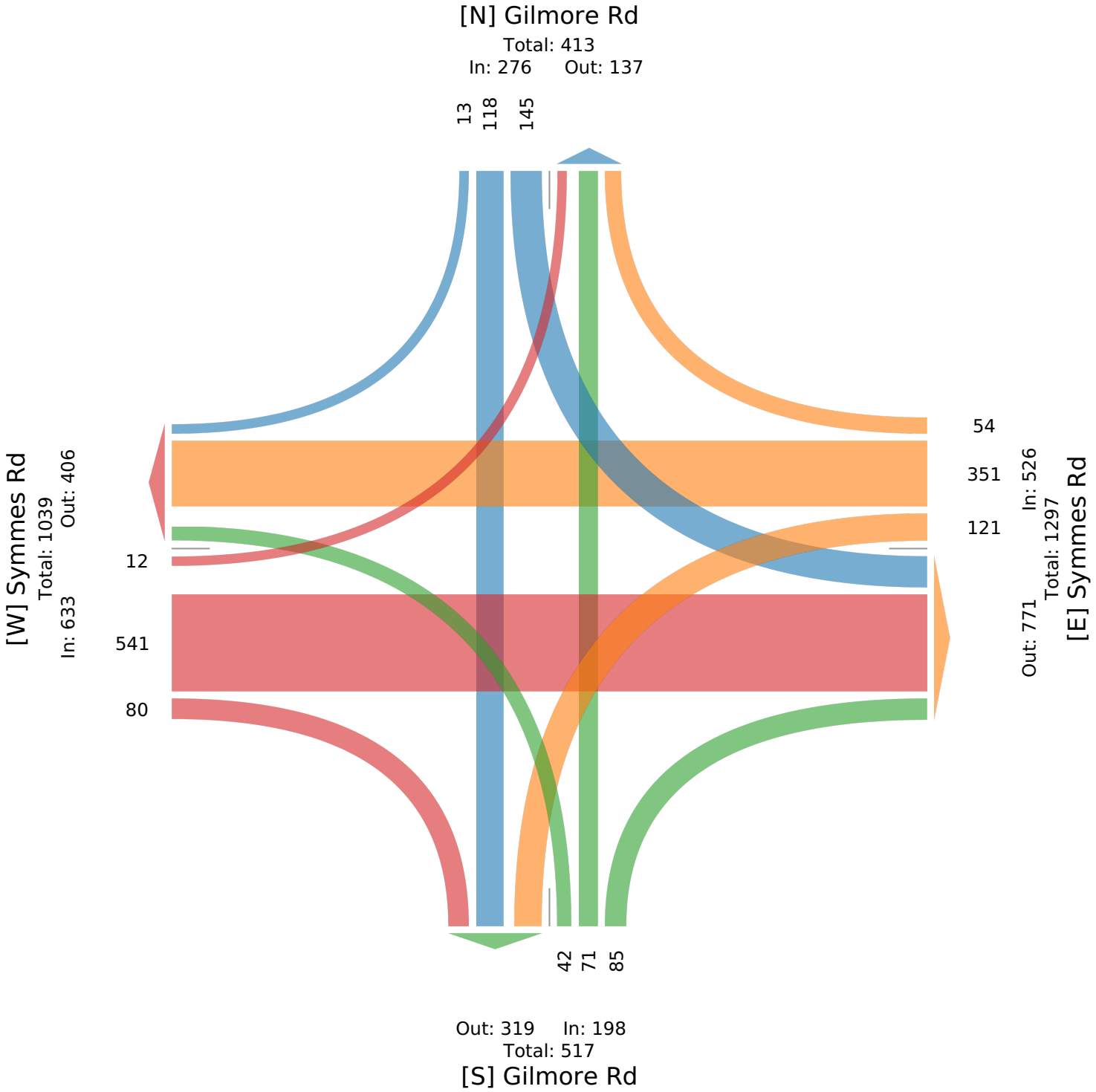
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Gilmore Rd					Symmes Rd					Gilmore Rd					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2024-05-09 7:00AM	2	36	28	0	**66**	15	68	44	0	**127**	24	14	2	0	**40**	10	112	6	0	**128**	**361**
7:15AM	1	22	34	0	**57**	15	81	24	0	**120**	25	18	6	0	**49**	13	122	2	0	**137**	**363**
7:30AM	2	26	50	0	**78**	9	96	19	0	**124**	12	13	9	0	**34**	20	145	2	0	**167**	**403**
7:45AM	8	34	33	0	**75**	15	106	34	0	**155**	24	26	25	0	**75**	37	162	2	0	**201**	**506**
Total	13	118	145	0	**276**	54	351	121	0	**526**	85	71	42	0	**198**	80	541	12	0	**633**	**1633**
% Approach	4.7%	42.8%	52.5%	0%	**-**	10.3%	66.7%	23.0%	0%	**-**	42.9%	35.9%	21.2%	0%	**-**	12.6%	85.5%	1.9%	0%	**-**	-
% Total	0.8%	7.2%	8.9%	0%	**16.9%**	3.3%	21.5%	7.4%	0%	**32.2%**	5.2%	4.3%	2.6%	0%	**12.1%**	4.9%	33.1%	0.7%	0%	**38.8%**	-
PHF	0.406	0.819	0.725	-	**0.885**	0.900	0.828	0.688	-	**0.848**	0.850	0.683	0.420	-	**0.660**	0.541	0.835	0.500	-	**0.787**	0.807
Lights	13	117	138	0	**268**	54	340	118	0	**512**	80	68	42	0	**190**	76	518	12	0	**606**	1576
% Lights	100%	99.2%	95.2%	0%	**97.1%**	100%	96.9%	97.5%	0%	**97.3%**	94.1%	95.8%	100%	0%	**96.0%**	95.0%	95.7%	100%	0%	**95.7%**	96.5%
Articulated Trucks	0	0	5	0	**5**	0	1	0	0	**1**	0	0	0	0	**0**	2	9	0	0	**11**	17
% Articulated Trucks	0%	0%	3.4%	0%	**1.8%**	0%	0.3%	0%	0%	**0.2%**	0%	0%	0%	0%	**0%**	2.5%	1.7%	0%	0%	**1.7%**	1.0%
Buses and Single-Unit Trucks	0	1	2	0	**3**	0	10	3	0	**13**	5	3	0	0	**8**	2	14	0	0	**16**	40
% Buses and Single-Unit Trucks	0%	0.8%	1.4%	0%	**1.1%**	0%	2.8%	2.5%	0%	**2.5%**	5.9%	4.2%	0%	0%	**4.0%**	2.5%	2.6%	0%	0%	**2.5%**	2.4%

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

Symmes Road & N Gilmore Road - TMC
Thu May 9, 2024
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

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



Symmes Road & N Gilmore Road - TMC

Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

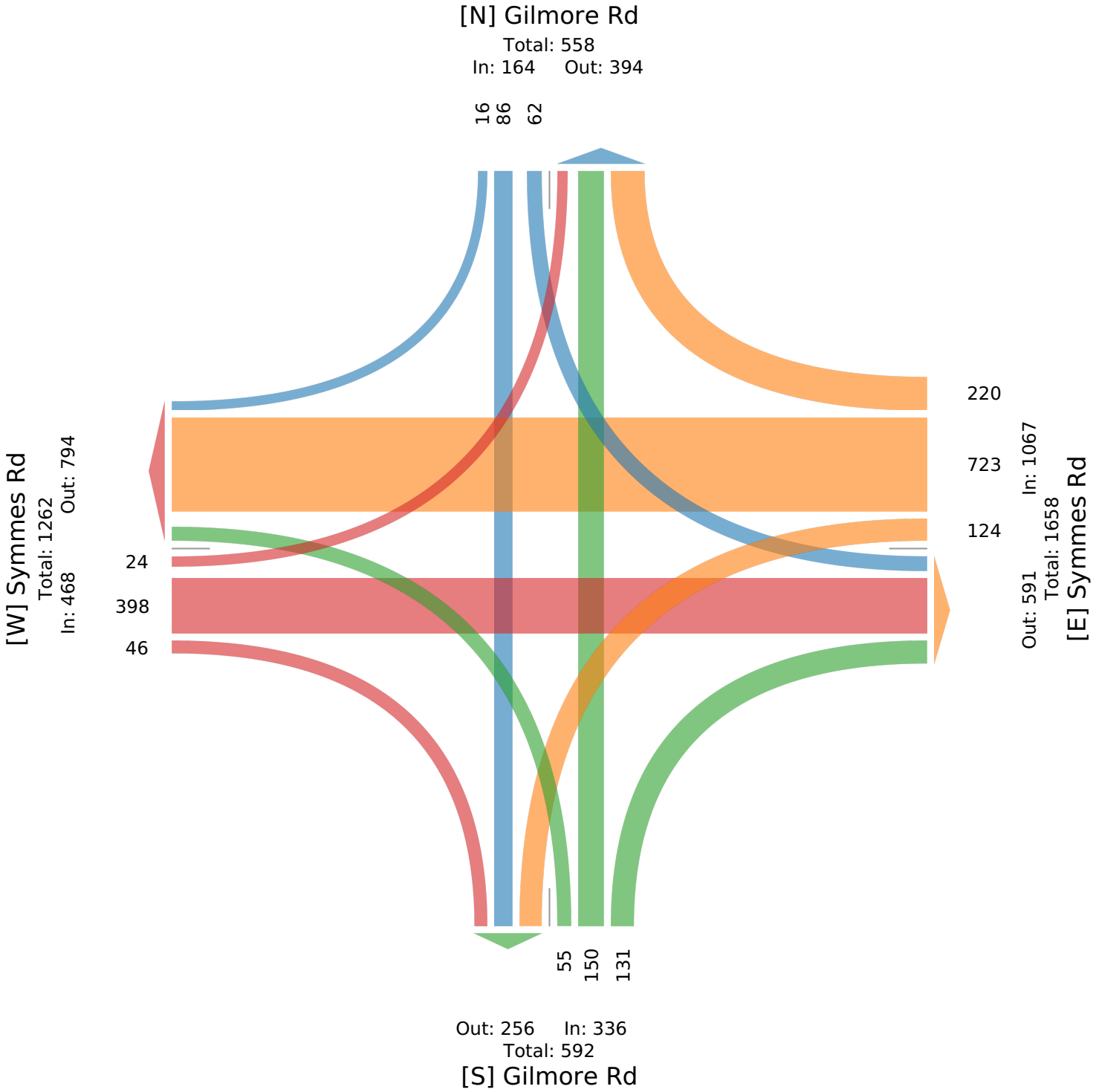
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Gilmore Rd					Symmes Rd					Gilmore Rd					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2024-05-09 3:45PM	3	18	12	0	**33**	89	167	45	0	**301**	39	38	8	0	**85**	20	95	4	0	**119**	**538**
4:00PM	5	29	11	0	**45**	42	179	15	0	**236**	36	47	19	0	**102**	12	88	10	0	**110**	**493**
4:15PM	5	22	24	0	**51**	45	195	31	0	**271**	26	26	9	0	**61**	7	111	5	0	**123**	**506**
4:30PM	3	17	15	0	**35**	44	182	33	0	**259**	30	39	19	0	**88**	7	104	5	0	**116**	**498**
Total	16	86	62	0	**164**	220	723	124	0	**1067**	131	150	55	0	**336**	46	398	24	0	**468**	**2035**
% Approach	9.8%	52.4%	37.8%	0%	**-**	20.6%	67.8%	11.6%	0%	**-**	39.0%	44.6%	16.4%	0%	**-**	9.8%	85.0%	5.1%	0%	**-**	-
% Total	0.8%	4.2%	3.0%	0%	**8.1%**	10.8%	35.5%	6.1%	0%	**52.4%**	6.4%	7.4%	2.7%	0%	**16.5%**	2.3%	19.6%	1.2%	0%	**23.0%**	-
PHF	0.800	0.741	0.646	-	**0.804**	0.618	0.927	0.689	-	**0.886**	0.840	0.798	0.724	-	**0.824**	0.575	0.896	0.600	-	**0.951**	0.946
Lights	16	84	60	0	**160**	215	705	112	0	**1032**	129	149	54	0	**332**	46	387	24	0	**457**	1981
% Lights	100%	97.7%	96.8%	0%	**97.6%**	97.7%	97.5%	90.3%	0%	**96.7%**	98.5%	99.3%	98.2%	0%	**98.8%**	100%	97.2%	100%	0%	**97.6%**	97.3%
Articulated Trucks	0	0	1	0	**1**	3	5	1	0	**9**	0	0	0	0	**0**	0	5	0	0	**5**	15
% Articulated Trucks	0%	0%	1.6%	0%	**0.6%**	1.4%	0.7%	0.8%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0%	1.3%	0%	0%	**1.1%**	0.7%
Buses and Single-Unit Trucks	0	2	1	0	**3**	2	13	11	0	**26**	2	1	1	0	**4**	0	6	0	0	**6**	39
% Buses and Single-Unit Trucks	0%	2.3%	1.6%	0%	**1.8%**	0.9%	1.8%	8.9%	0%	**2.4%**	1.5%	0.7%	1.8%	0%	**1.2%**	0%	1.5%	0%	0%	**1.3%**	1.9%

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

Symmes Road & N Gilmore Road - TMC
Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182813, Location: 39.346831, -84.520115

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



Symmes Road & SR 4 (Dixie Hwy) - TMC

Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

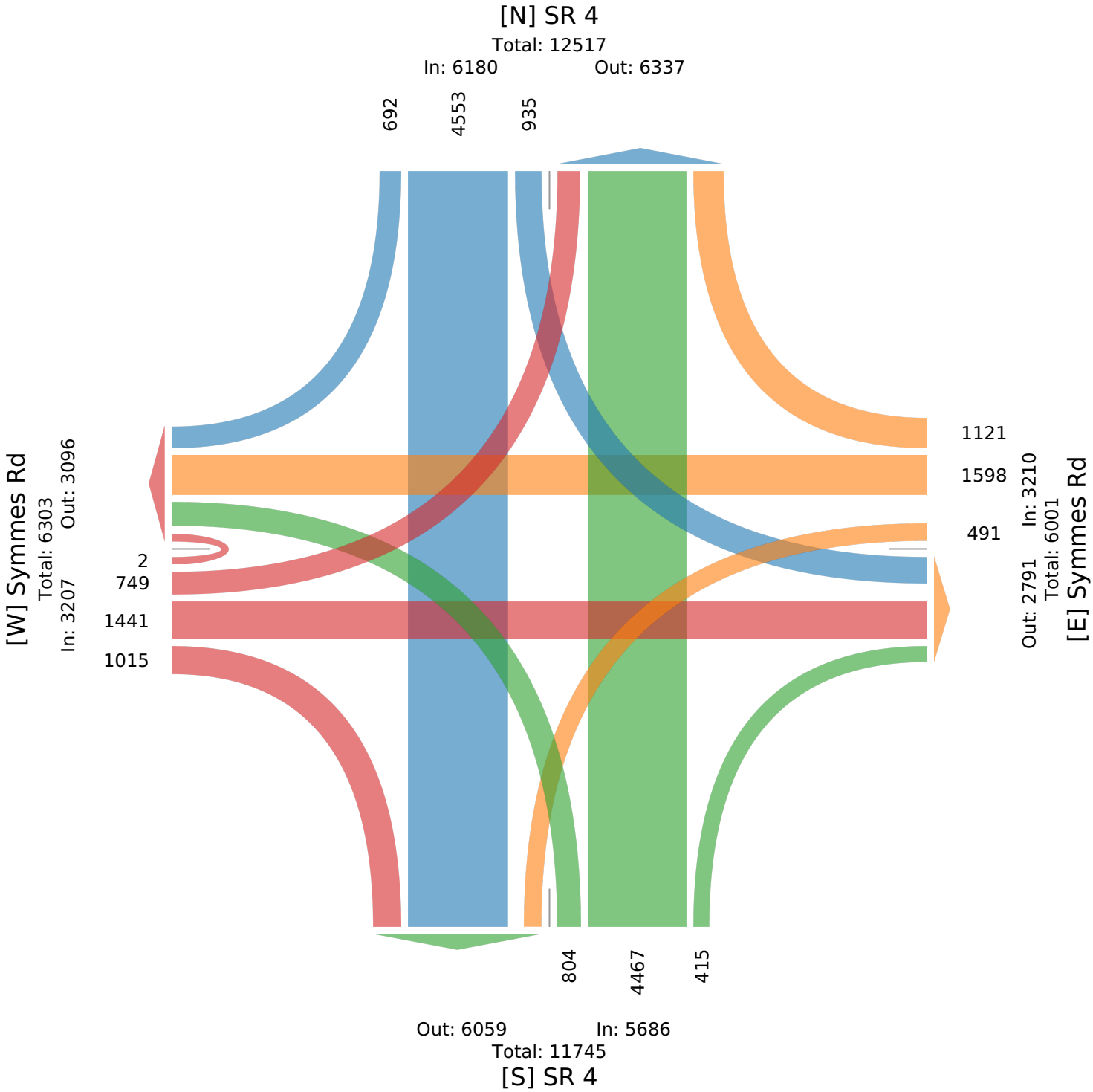
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 4					Symmes Rd					SR 4					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-05-09 6:00AM	9	112	29	0	**150**	15	1	7	0	**23**	12	59	8	0	**79**	46	36	10	0	**92**	**344**
6:15AM	10	168	50	0	**228**	19	4	7	0	**30**	6	37	13	0	**56**	54	43	12	0	**109**	**423**
6:30AM	9	193	47	0	**249**	7	9	2	0	**18**	12	52	12	0	**76**	64	71	19	0	**154**	**497**
6:45AM	13	185	61	0	**259**	19	21	6	0	**46**	12	101	9	0	**122**	60	91	26	0	**177**	**604**
Hourly Total	41	658	187	0	**886**	60	35	22	0	**117**	42	249	42	0	**333**	224	241	67	0	**532**	**1868**
7:00AM	15	199	44	0	**258**	10	20	12	0	**42**	16	117	19	0	**152**	53	72	29	0	**154**	**606**
7:15AM	15	183	54	0	**252**	20	23	14	0	**57**	13	115	13	0	**141**	56	86	31	0	**173**	**623**
7:30AM	17	221	61	0	**299**	16	24	9	0	**49**	17	125	21	0	**163**	45	95	22	0	**162**	**673**
7:45AM	16	191	55	0	**262**	29	43	7	0	**79**	24	135	15	0	**174**	54	124	29	0	**207**	**722**
Hourly Total	63	794	214	0	**1071**	75	110	42	0	**227**	70	492	68	0	**630**	208	377	111	0	**696**	**2624**
8:00AM	19	146	31	0	**196**	33	24	15	0	**72**	27	134	22	0	**183**	47	54	27	0	**128**	**579**
8:15AM	25	159	21	0	**205**	19	33	20	0	**72**	11	91	15	0	**117**	32	48	24	0	**104**	**498**
8:30AM	15	147	29	0	**191**	17	33	16	0	**66**	9	110	21	0	**140**	43	43	23	0	**109**	**506**
8:45AM	13	125	25	0	**163**	12	39	13	0	**64**	14	117	15	0	**146**	26	38	15	2	**81**	**454**
Hourly Total	72	577	106	0	**755**	81	129	64	0	**274**	61	452	73	0	**586**	148	183	89	2	**422**	**2037**
2:00PM	33	167	30	0	**230**	23	42	18	0	**83**	24	171	19	0	**214**	30	47	30	0	**107**	**634**
2:15PM	16	139	32	0	**187**	42	57	17	0	**116**	16	134	29	0	**179**	27	47	21	0	**95**	**577**
2:30PM	27	152	29	0	**208**	80	79	25	0	**184**	19	198	24	0	**241**	18	53	30	0	**101**	**734**
2:45PM	26	130	32	0	**188**	51	90	26	0	**167**	16	184	34	0	**234**	23	40	27	0	**90**	**679**
Hourly Total	102	588	123	0	**813**	196	268	86	0	**550**	75	687	106	0	**868**	98	187	108	0	**393**	**2624**
3:00PM	30	155	25	0	**210**	47	75	24	0	**146**	18	160	39	0	**217**	25	40	31	0	**96**	**669**
3:15PM	30	143	25	0	**198**	69	96	22	0	**187**	22	214	31	0	**267**	27	35	27	0	**89**	**741**
3:30PM	34	166	32	0	**232**	45	42	20	0	**107**	15	257	38	0	**310**	26	24	33	0	**83**	**732**
3:45PM	46	177	22	0	**245**	78	94	36	0	**208**	18	231	43	0	**292**	21	35	32	0	**88**	**833**
Hourly Total	140	641	104	0	**885**	239	307	102	0	**648**	73	862	151	0	**1086**	99	134	123	0	**356**	**2975**
4:00PM	32	157	27	0	**216**	54	99	28	0	**181**	13	214	45	0	**272**	24	42	24	0	**90**	**759**
4:15PM	34	181	23	0	**238**	56	95	24	0	**175**	18	203	36	0	**257**	27	43	28	0	**98**	**768**
4:30PM	29	187	23	0	**239**	78	95	36	0	**209**	11	241	42	0	**294**	31	43	36	0	**110**	**852**
4:45PM	43	154	30	0	**227**	69	107	24	0	**200**	10	223	47	0	**280**	35	46	32	0	**113**	**820**
Hourly Total	138	679	103	0	**920**	257	396	112	0	**765**	52	881	170	0	**1103**	117	174	120	0	**411**	**3199**
5:00PM	32	166	25	0	**223**	59	106	15	0	**180**	11	225	44	0	**280**	28	38	38	0	**104**	**787**
5:15PM	32	170	24	0	**226**	67	73	19	0	**159**	7	225	55	0	**287**	30	33	34	0	**97**	**769**
5:30PM	34	135	23	0	**192**	42	100	12	0	**154**	15	184	44	0	**243**	38	39	29	0	**106**	**695**
5:45PM	38	145	26	0	**209**	45	74	17	0	**136**	9	210	51	0	**270**	25	35	30	0	**90**	**705**
Hourly Total	136	616	98	0	**850**	213	353	63	0	**629**	42	844	194	0	**1080**	121	145	131	0	**397**	**2956**
Total	692	4553	935	0	**6180**	1121	1598	491	0	**3210**	415	4467	804	0	**5686**	1015	1441	749	2	**3207**	**18283**
% Approach	11.2%	73.7%	15.1%	0%	**-**	34.9%	49.8%	15.3%	0%	**-**	7.3%	78.6%	14.1%	0%	**-**	31.6%	44.9%	23.4%	0.1%	**-**	-
% Total	3.8%	24.9%	5.1%	0%	**33.8%**	6.1%	8.7%	2.7%	0%	**17.6%**	2.3%	24.4%	4.4%	0%	**31.1%**	5.6%	7.9%	4.1%	0%	**17.5%**	-
Lights	676	4445	898	0	**6019**	1090	1566	474	0	**3130**	402	4350	785	0	**5537**	995	1410	731	2	**3138**	17824
% Lights	97.7%	97.6%	96.0%	0%	**97.4%**	97.2%	98.0%	96.5%	0%	**97.5%**	96.9%	97.4%	97.6%	0%	**97.4%**	98.0%	97.8%	97.6%	100%	**97.8%**	97.5%
Articulated Trucks	0	34	15	0	**49**	13	5	10	0	**28**	5	41	2	0	**48**	3	5	2	0	**10**	135
% Articulated Trucks	0%	0.7%	1.6%	0%	**0.8%**	1.2%	0.3%	2.0%	0%	**0.9%**	1.2%	0.9%	0.2%	0%	**0.8%**	0.3%	0.3%	0.3%	0%	**0.3%**	0.7%
Buses and Single-Unit Trucks	16	74	22	0	**112**	18	27	7	0	**52**	8	76	17	0	**101**	17	26	16	0	**59**	324
% Buses and Single-Unit Trucks	2.3%	1.6%	2.4%	0%	**1.8%**	1.6%	1.7%	1.4%	0%	**1.6%**	1.9%	1.7%	2.1%	0%	**1.8%**	1.7%	1.8%	2.1%	0%	**1.8%**	1.8%

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

Symmes Road & SR 4 (Dixie Hwy) - TMC
Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

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



Symmes Road & SR 4 (Dixie Hwy) - TMC

Thu May 9, 2024
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

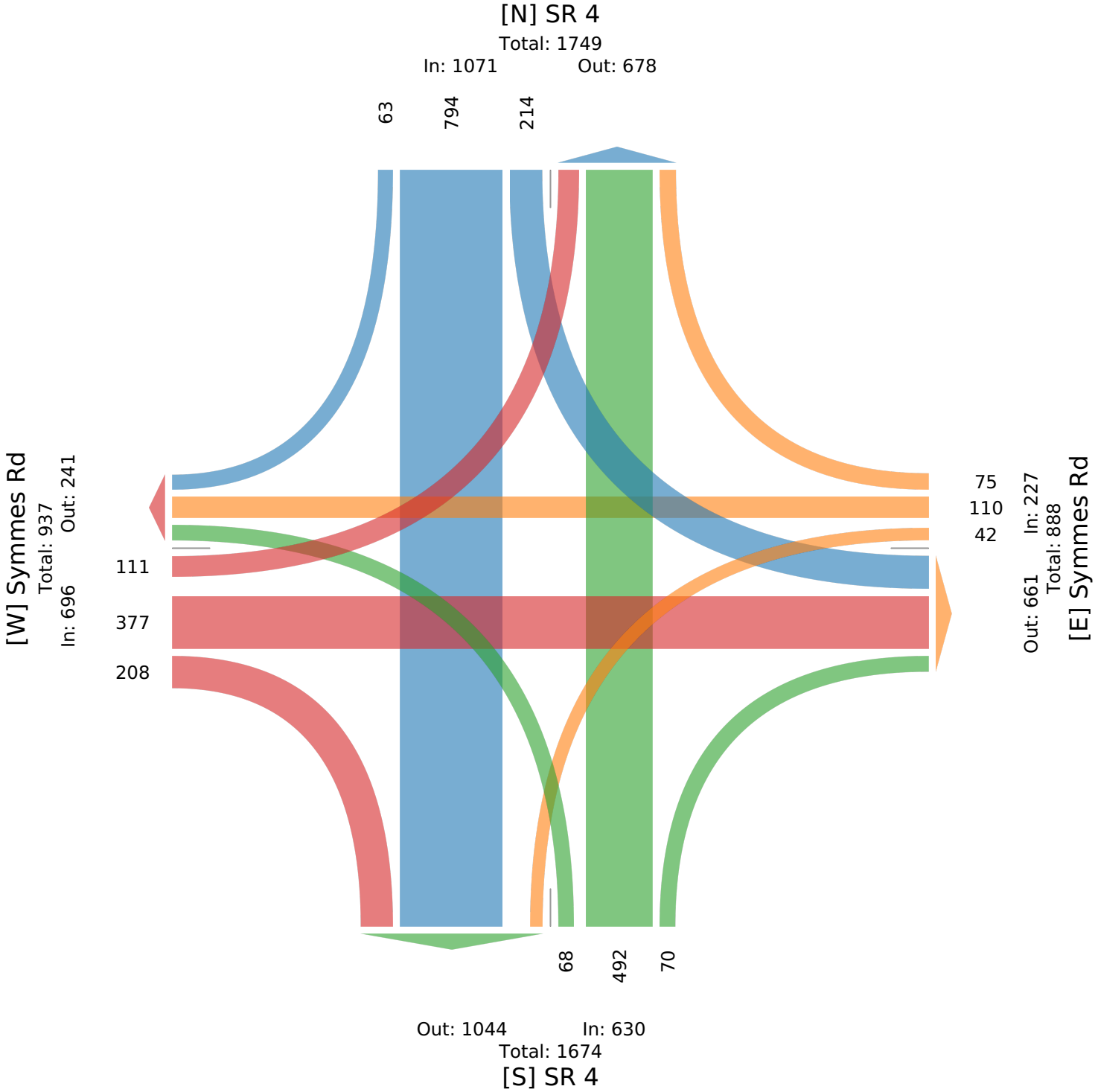
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 4					Symmes Rd					SR 4					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2024-05-09 7:00AM	15	199	44	0	**258**	10	20	12	0	**42**	16	117	19	0	**152**	53	72	29	0	**154**	**606**
7:15AM	15	183	54	0	**252**	20	23	14	0	**57**	13	115	13	0	**141**	56	86	31	0	**173**	**623**
7:30AM	17	221	61	0	**299**	16	24	9	0	**49**	17	125	21	0	**163**	45	95	22	0	**162**	**673**
7:45AM	16	191	55	0	**262**	29	43	7	0	**79**	24	135	15	0	**174**	54	124	29	0	**207**	**722**
Total	63	794	214	0	**1071**	75	110	42	0	**227**	70	492	68	0	**630**	208	377	111	0	**696**	**2624**
% Approach	5.9%	74.1%	20.0%	0%	**-**	33.0%	48.5%	18.5%	0%	**-**	11.1%	78.1%	10.8%	0%	**-**	29.9%	54.2%	15.9%	0%	**-**	-
% Total	2.4%	30.3%	8.2%	0%	**40.8%**	2.9%	4.2%	1.6%	0%	**8.7%**	2.7%	18.8%	2.6%	0%	**24.0%**	7.9%	14.4%	4.2%	0%	**26.5%**	-
PHF	0.926	0.898	0.877	-	**0.895**	0.647	0.640	0.750	-	**0.718**	0.729	0.911	0.810	-	**0.905**	0.929	0.760	0.895	-	**0.841**	0.909
Lights	61	771	209	0	**1041**	74	103	38	0	**215**	69	468	64	0	**601**	202	373	109	0	**684**	2541
% Lights	96.8%	97.1%	97.7%	0%	**97.2%**	98.7%	93.6%	90.5%	0%	**94.7%**	98.6%	95.1%	94.1%	0%	**95.4%**	97.1%	98.9%	98.2%	0%	**98.3%**	96.8%
Articulated Trucks	0	5	1	0	**6**	0	1	2	0	**3**	0	11	1	0	**12**	1	0	0	0	**1**	22
% Articulated Trucks	0%	0.6%	0.5%	0%	**0.6%**	0%	0.9%	4.8%	0%	**1.3%**	0%	2.2%	1.5%	0%	**1.9%**	0.5%	0%	0%	0%	**0.1%**	0.8%
Buses and Single-Unit Trucks	2	18	4	0	**24**	1	6	2	0	**9**	1	13	3	0	**17**	5	4	2	0	**11**	61
% Buses and Single-Unit Trucks	3.2%	2.3%	1.9%	0%	**2.2%**	1.3%	5.5%	4.8%	0%	**4.0%**	1.4%	2.6%	4.4%	0%	**2.7%**	2.4%	1.1%	1.8%	0%	**1.6%**	2.3%

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

Symmes Road & SR 4 (Dixie Hwy) - TMC
Thu May 9, 2024
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

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



Symmes Road & SR 4 (Dixie Hwy) - TMC

Thu May 9, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

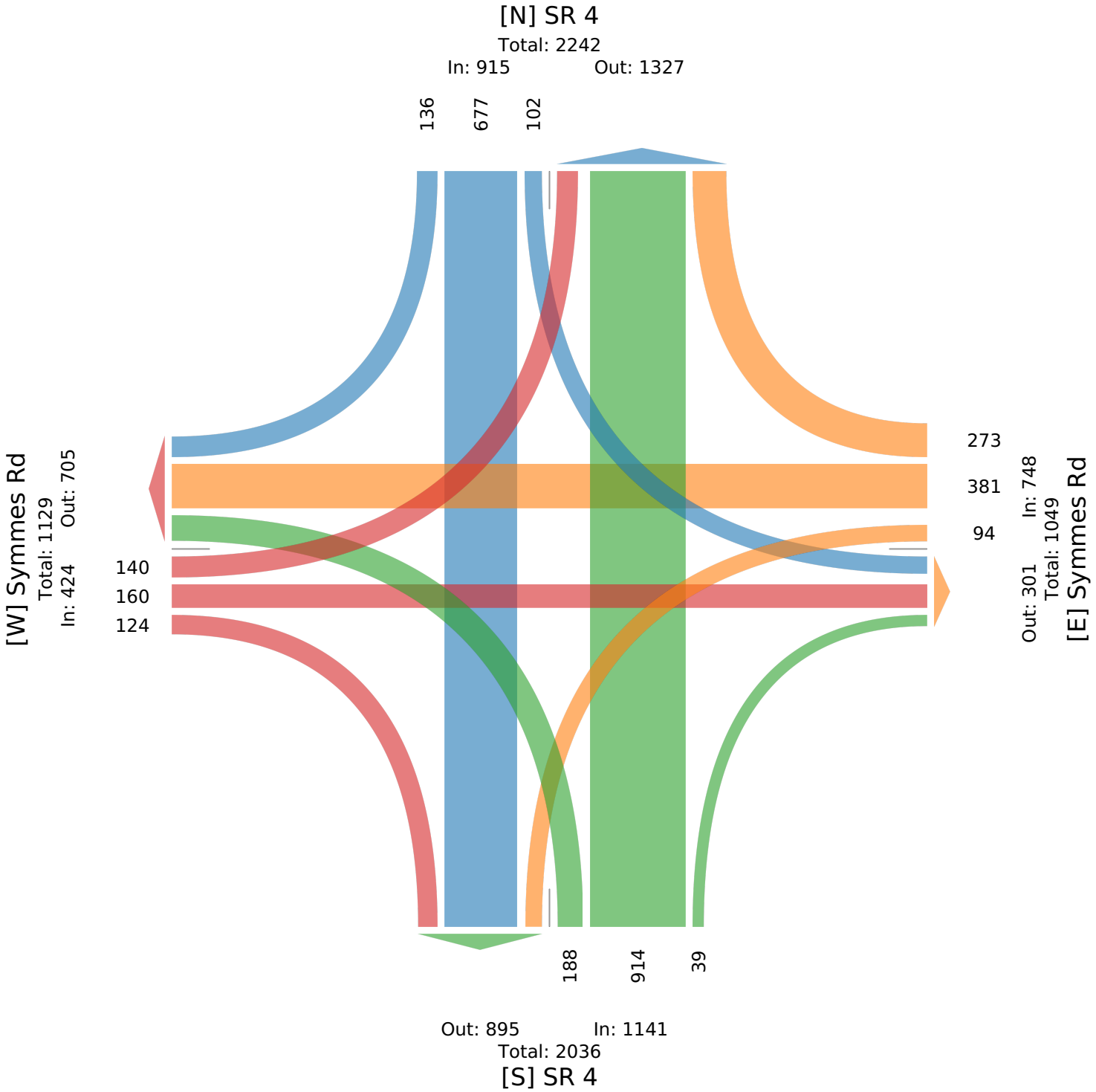
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 4					Symmes Rd					SR 4					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2024-05-09 4:30PM	29	187	23	0	**239**	78	95	36	0	**209**	11	241	42	0	**294**	31	43	36	0	**110**	**852**
4:45PM	43	154	30	0	**227**	69	107	24	0	**200**	10	223	47	0	**280**	35	46	32	0	**113**	**820**
5:00PM	32	166	25	0	**223**	59	106	15	0	**180**	11	225	44	0	**280**	28	38	38	0	**104**	**787**
5:15PM	32	170	24	0	**226**	67	73	19	0	**159**	7	225	55	0	**287**	30	33	34	0	**97**	**769**
Total	136	677	102	0	**915**	273	381	94	0	**748**	39	914	188	0	**1141**	124	160	140	0	**424**	**3228**
% Approach	14.9%	74.0%	11.1%	0%	**-**	36.5%	50.9%	12.6%	0%	**-**	3.4%	80.1%	16.5%	0%	**-**	29.2%	37.7%	33.0%	0%	**-**	-
% Total	4.2%	21.0%	3.2%	0%	**28.3%**	8.5%	11.8%	2.9%	0%	**23.2%**	1.2%	28.3%	5.8%	0%	**35.3%**	3.8%	5.0%	4.3%	0%	**13.1%**	-
PHF	0.791	0.905	0.850	-	**0.957**	0.875	0.890	0.653	-	**0.895**	0.886	0.948	0.855	-	**0.970**	0.886	0.870	0.921	-	**0.938**	0.947
Lights	135	665	97	0	**897**	270	377	93	0	**740**	39	904	187	0	**1130**	121	159	140	0	**420**	3187
% Lights	99.3%	98.2%	95.1%	0%	**98.0%**	98.9%	99.0%	98.9%	0%	**98.9%**	100%	98.9%	99.5%	0%	**99.0%**	97.6%	99.4%	100%	0%	**99.1%**	98.7%
Articulated Trucks	0	3	2	0	**5**	0	0	0	0	**0**	0	4	0	0	**4**	0	1	0	0	**1**	10
% Articulated Trucks	0%	0.4%	2.0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0%	0.4%	0%	0%	**0.4%**	0%	0.6%	0%	0%	**0.2%**	0.3%
Buses and Single-Unit Trucks	1	9	3	0	**13**	3	4	1	0	**8**	0	6	1	0	**7**	3	0	0	0	**3**	31
% Buses and Single-Unit Trucks	0.7%	1.3%	2.9%	0%	**1.4%**	1.1%	1.0%	1.1%	0%	**1.1%**	0%	0.7%	0.5%	0%	**0.6%**	2.4%	0%	0%	0%	**0.7%**	1.0%

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

Symmes Road & SR 4 (Dixie Hwy) - TMC
Thu May 9, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182809, Location: 39.351373, -84.542436

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



Symmes Road & Tedia Way - TMC

Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

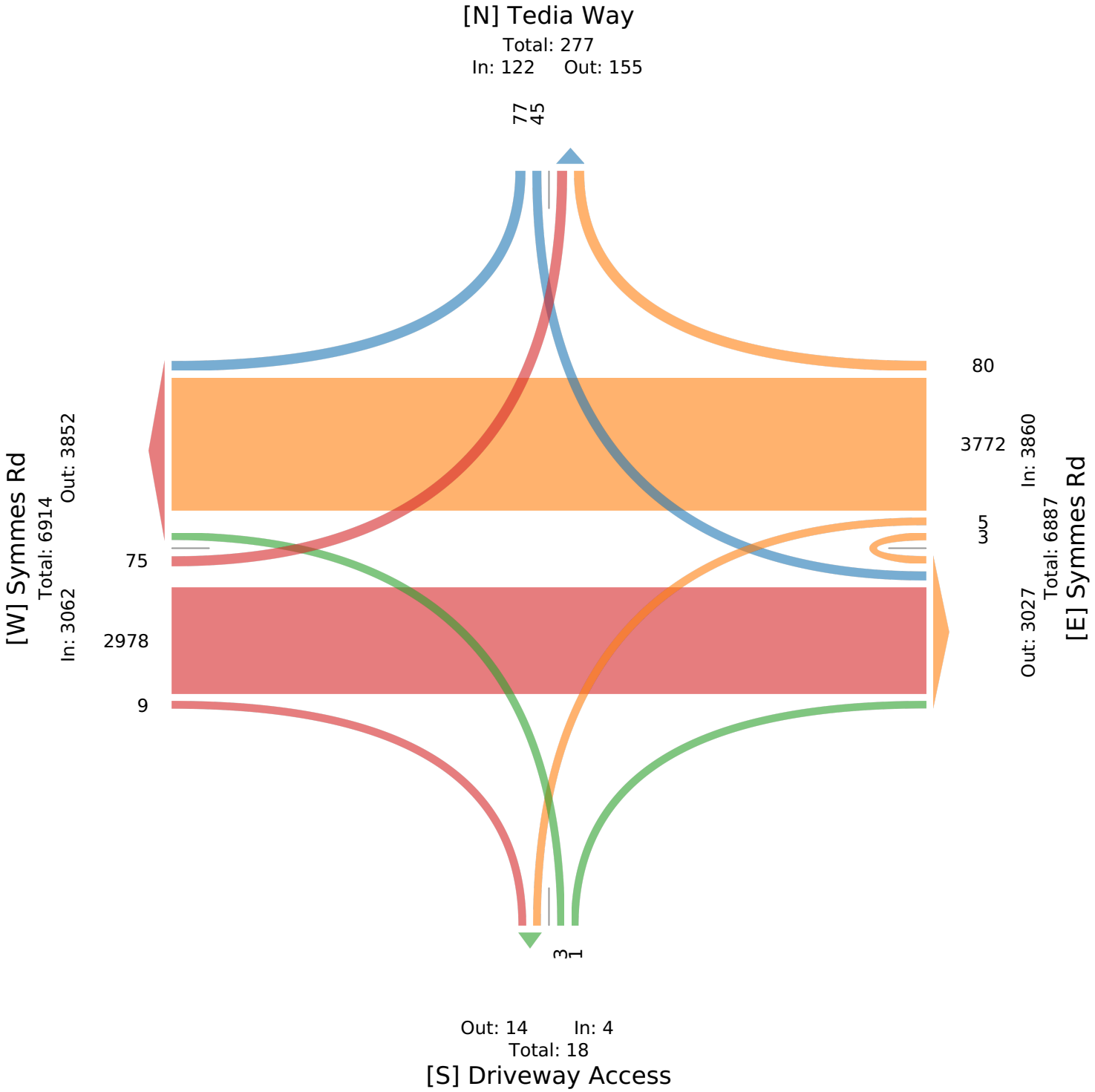
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Tedia Way					Symmes Rd					Driveway Access					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-05-09 6:00AM	1	0	2	0	**3**	9	28	0	1	**38**	0	0	0	0	**0**	0	32	1	0	**33**	**74**
6:15AM	4	0	0	0	**4**	3	30	1	2	**36**	0	0	0	0	**0**	0	68	3	0	**71**	**111**
6:30AM	0	0	0	0	**0**	4	40	0	0	**44**	0	0	0	0	**0**	0	141	1	0	**142**	**186**
6:45AM	1	0	0	0	**1**	8	80	0	0	**88**	0	0	0	0	**0**	0	144	6	0	**150**	**239**
Hourly Total	6	0	2	0	**8**	24	178	1	3	**206**	0	0	0	0	**0**	0	385	11	0	**396**	**610**
7:00AM	5	0	3	0	**8**	2	60	0	0	**62**	0	0	0	0	**0**	1	121	2	0	**124**	**194**
7:15AM	4	0	0	0	**4**	2	79	0	0	**81**	0	0	0	0	**0**	3	145	3	0	**151**	**236**
7:30AM	0	0	1	0	**1**	6	100	1	0	**107**	0	0	0	0	**0**	0	164	3	0	**167**	**275**
7:45AM	1	0	1	0	**2**	2	124	0	0	**126**	0	0	1	0	**1**	0	190	4	0	**194**	**323**
Hourly Total	10	0	5	0	**15**	12	363	1	0	**376**	0	0	1	0	**1**	4	620	12	0	**636**	**1028**
8:00AM	1	0	1	0	**2**	4	89	1	0	**94**	0	0	0	0	**0**	0	117	4	0	**121**	**217**
8:15AM	1	0	0	0	**1**	4	82	0	0	**86**	0	0	0	0	**0**	1	85	4	0	**90**	**177**
8:30AM	0	0	1	0	**1**	3	76	0	0	**79**	0	0	0	0	**0**	0	99	1	0	**100**	**180**
8:45AM	0	0	1	0	**1**	2	96	0	0	**98**	0	0	0	0	**0**	2	75	3	0	**80**	**179**
Hourly Total	2	0	3	0	**5**	13	343	1	0	**357**	0	0	0	0	**0**	3	376	12	0	**391**	**753**
2:00PM	6	0	2	0	**8**	2	99	0	0	**101**	0	0	1	0	**1**	1	96	2	0	**99**	**209**
2:15PM	1	0	2	0	**3**	2	126	0	0	**128**	0	0	0	0	**0**	0	105	3	0	**108**	**239**
2:30PM	6	0	1	0	**7**	7	214	0	0	**221**	0	0	0	0	**0**	0	125	2	0	**127**	**355**
2:45PM	1	0	2	0	**3**	1	179	0	0	**180**	0	0	0	0	**0**	0	95	5	0	**100**	**283**
Hourly Total	14	0	7	0	**21**	12	618	0	0	**630**	0	0	1	0	**1**	1	421	12	0	**434**	**1086**
3:00PM	5	0	7	0	**12**	2	171	0	0	**173**	0	0	0	0	**0**	0	106	1	0	**107**	**292**
3:15PM	4	0	3	0	**7**	2	194	0	0	**196**	0	0	0	0	**0**	1	86	4	0	**91**	**294**
3:30PM	2	0	2	0	**4**	2	86	1	0	**89**	1	0	0	0	**1**	0	54	1	0	**55**	**149**
3:45PM	5	0	3	0	**8**	4	224	0	0	**228**	0	0	0	0	**0**	0	119	5	0	**124**	**360**
Hourly Total	16	0	15	0	**31**	10	675	1	0	**686**	1	0	0	0	**1**	1	365	11	0	**377**	**1095**
4:00PM	4	0	2	0	**6**	2	225	0	0	**227**	0	0	0	0	**0**	0	104	4	0	**108**	**341**
4:15PM	1	0	0	0	**1**	0	208	1	0	**209**	0	0	0	0	**0**	0	117	2	0	**119**	**329**
4:30PM	3	0	3	0	**6**	3	211	0	0	**214**	0	0	0	0	**0**	0	112	0	0	**112**	**332**
4:45PM	6	0	4	0	**10**	1	226	0	0	**227**	0	0	0	0	**0**	0	103	2	0	**105**	**342**
Hourly Total	14	0	9	0	**23**	6	870	1	0	**877**	0	0	0	0	**0**	0	436	8	0	**444**	**1344**
5:00PM	8	0	1	0	**9**	1	202	0	0	**203**	0	0	1	0	**1**	0	76	4	0	**80**	**293**
5:15PM	3	0	2	0	**5**	0	199	0	0	**199**	0	0	0	0	**0**	0	89	5	0	**94**	**298**
5:30PM	3	0	1	0	**4**	1	165	0	0	**166**	0	0	0	0	**0**	0	122	0	0	**122**	**292**
5:45PM	1	0	0	0	**1**	1	159	0	0	**160**	0	0	0	0	**0**	0	88	0	0	**88**	**249**
Hourly Total	15	0	4	0	**19**	3	725	0	0	**728**	0	0	1	0	**1**	0	375	9	0	**384**	**1132**
Total	77	0	45	0	**122**	80	3772	5	3	**3860**	1	0	3	0	**4**	9	2978	75	0	**3062**	**7048**
% Approach	63.1%	0%	36.9%	0%	**-**	2.1%	97.7%	0.1%	0.1%	**-**	25.0%	0%	75.0%	0%	**-**	0.3%	97.3%	2.4%	0%	**-**	-
% Total	1.1%	0%	0.6%	0%	**1.7%**	1.1%	53.5%	0.1%	0%	**54.8%**	0%	0%	0%	0%	**0.1%**	0.1%	42.3%	1.1%	0%	**43.4%**	-
Lights	73	0	44	0	**117**	76	3668	5	3	**3752**	1	0	3	0	**4**	9	2875	67	0	**2951**	6824
% Lights	94.8%	0%	97.8%	0%	**95.9%**	95.0%	97.2%	100%	100%	**97.2%**	100%	0%	100%	0%	**100%**	100%	96.5%	89.3%	0%	**96.4%**	96.8%
Articulated Trucks	0	0	1	0	**1**	1	30	0	0	**31**	0	0	0	0	**0**	0	33	4	0	**37**	69
% Articulated Trucks	0%	0%	2.2%	0%	**0.8%**	1.3%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0%	1.1%	5.3%	0%	**1.2%**	1.0%
Buses and Single-Unit Trucks	4	0	0	0	**4**	3	74	0	0	**77**	0	0	0	0	**0**	0	70	4	0	**74**	155
% Buses and Single-Unit Trucks	5.2%	0%	0%	0%	**3.3%**	3.8%	2.0%	0%	0%	**2.0%**	0%	0%	0%	0%	**0%**	0%	2.4%	5.3%	0%	**2.4%**	2.2%

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

Symmes Road & Tedia Way - TMC
Thu May 9, 2024
Full Length (6 AM-9 AM, 2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

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



Symmes Road & Tedia Way - TMC

Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

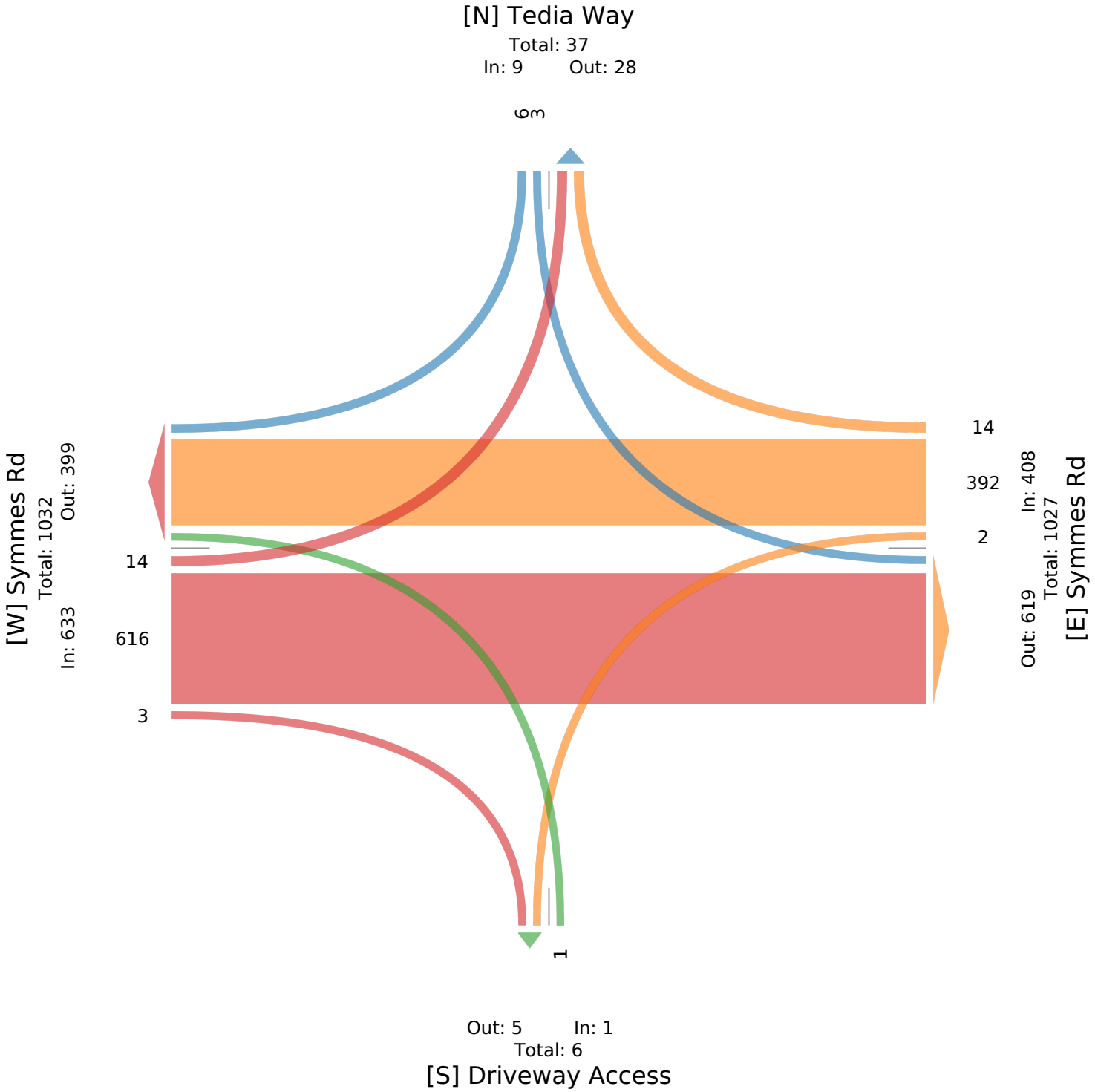
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Tedia Way					Symmes Rd					Driveway Access					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-05-09 7:15AM	4	0	0	0	**4**	2	79	0	0	**81**	0	0	0	0	**0**	3	145	3	0	**151**	**236**
7:30AM	0	0	1	0	**1**	6	100	1	0	**107**	0	0	0	0	**0**	0	164	3	0	**167**	**275**
7:45AM	1	0	1	0	**2**	2	124	0	0	**126**	0	0	1	0	**1**	0	190	4	0	**194**	**323**
8:00AM	1	0	1	0	**2**	4	89	1	0	**94**	0	0	0	0	**0**	0	117	4	0	**121**	**217**
Total	6	0	3	0	**9**	14	392	2	0	**408**	0	0	1	0	**1**	3	616	14	0	**633**	**1051**
% Approach	66.7%	0%	33.3%	0%	**-**	3.4%	96.1%	0.5%	0%	**-**	0%	0%	100%	0%	**-**	0.5%	97.3%	2.2%	0%	**-**	-
% Total	0.6%	0%	0.3%	0%	**0.9%**	1.3%	37.3%	0.2%	0%	**38.8%**	0%	0%	0.1%	0%	**0.1%**	0.3%	58.6%	1.3%	0%	**60.2%**	-
PHF	0.375	-	0.750	-	**0.563**	0.583	0.790	0.500	-	**0.810**	-	-	0.250	-	**0.250**	0.250	0.811	0.875	-	**0.816**	0.813
Lights	6	0	3	0	**9**	13	376	2	0	**391**	0	0	1	0	**1**	3	597	14	0	**614**	1015
% Lights	100%	0%	100%	0%	**100%**	92.9%	95.9%	100%	0%	**95.8%**	0%	0%	100%	0%	**100%**	100%	96.9%	100%	0%	**97.0%**	96.6%
Articulated Trucks	0	0	0	0	**0**	0	3	0	0	**3**	0	0	0	0	**0**	0	5	0	0	**5**	8
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0.8%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0%	0.8%	0%	0%	**0.8%**	0.8%
Buses and Single-Unit Trucks	0	0	0	0	**0**	1	13	0	0	**14**	0	0	0	0	**0**	0	14	0	0	**14**	28
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	7.1%	3.3%	0%	0%	**3.4%**	0%	0%	0%	0%	**0%**	0%	2.3%	0%	0%	**2.2%**	2.7%

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

Symmes Road & Tedia Way - TMC
Thu May 9, 2024
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

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



Symmes Road & Tedia Way - TMC

Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

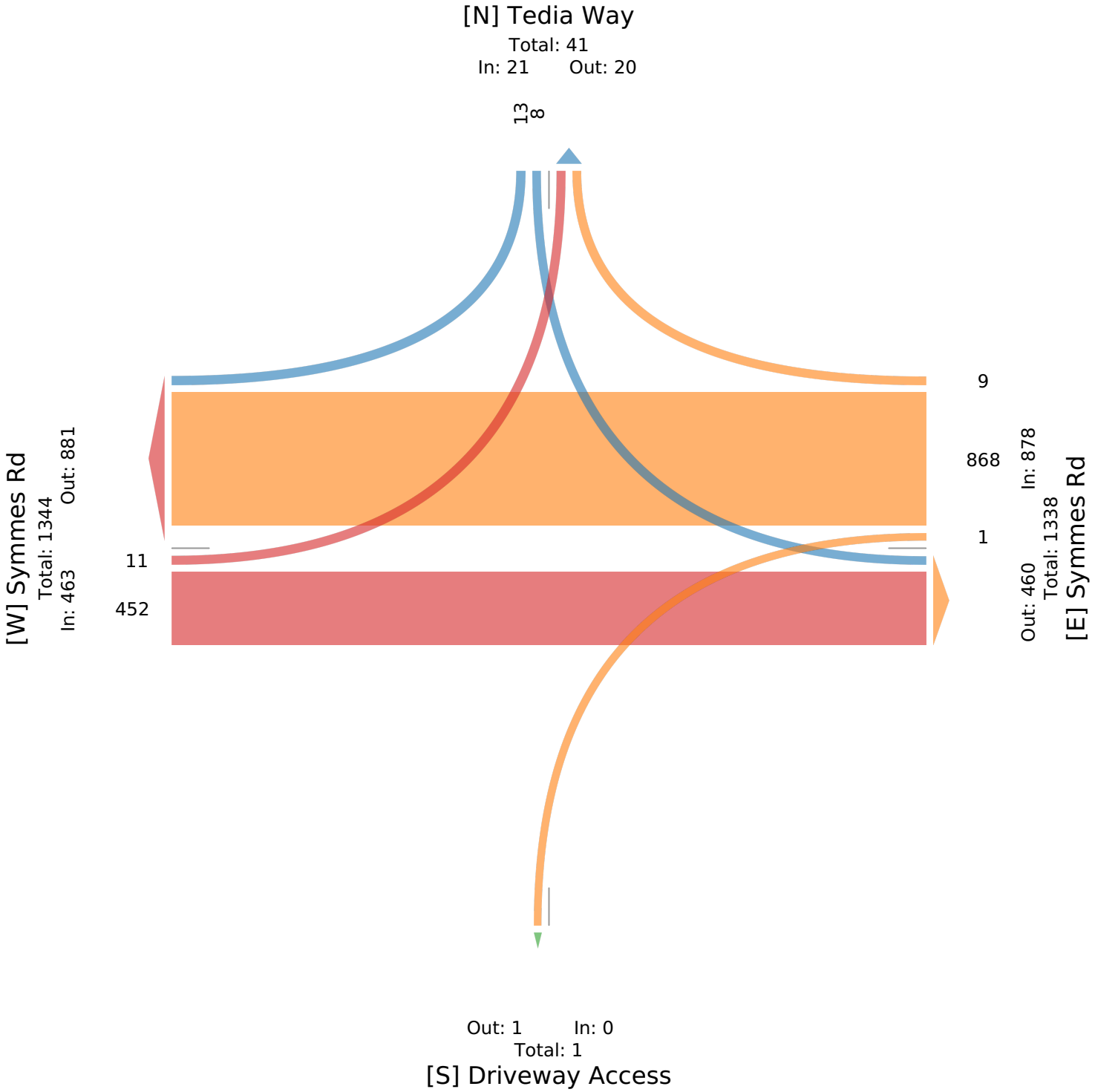
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Tedia Way					Symmes Rd					Driveway Access					Symmes Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2024-05-09 3:45PM	5	0	3	0	**8**	4	224	0	0	**228**	0	0	0	0	**0**	0	119	5	0	**124**	**360**
4:00PM	4	0	2	0	**6**	2	225	0	0	**227**	0	0	0	0	**0**	0	104	4	0	**108**	**341**
4:15PM	1	0	0	0	**1**	0	208	1	0	**209**	0	0	0	0	**0**	0	117	2	0	**119**	**329**
4:30PM	3	0	3	0	**6**	3	211	0	0	**214**	0	0	0	0	**0**	0	112	0	0	**112**	**332**
Total	13	0	8	0	**21**	9	868	1	0	**878**	0	0	0	0	**0**	0	452	11	0	**463**	**1362**
% Approach	61.9%	0%	38.1%	0%	**-**	1.0%	98.9%	0.1%	0%	**-**	0%	0%	0%	0%	**-**	0%	97.6%	2.4%	0%	**-**	-
% Total	1.0%	0%	0.6%	0%	**1.5%**	0.7%	63.7%	0.1%	0%	**64.5%**	0%	0%	0%	0%	**0%**	0%	33.2%	0.8%	0%	**34.0%**	-
PHF	0.650	-	0.667	-	**0.656**	0.563	0.964	0.250	-	**0.963**	-	-	-	-	**-**	-	0.950	0.550	-	**0.933**	0.946
Lights	12	0	8	0	**20**	8	850	1	0	**859**	0	0	0	0	**0**	0	440	11	0	**451**	1330
% Lights	92.3%	0%	100%	0%	**95.2%**	88.9%	97.9%	100%	0%	**97.8%**	0%	0%	0%	0%	**-**	0%	97.3%	100%	0%	**97.4%**	97.7%
Articulated Trucks	0	0	0	0	**0**	0	3	0	0	**3**	0	0	0	0	**0**	0	5	0	0	**5**	8
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0.3%	0%	0%	**0.3%**	0%	0%	0%	0%	**-**	0%	1.1%	0%	0%	**1.1%**	0.6%
Buses and Single-Unit Trucks	1	0	0	0	**1**	1	15	0	0	**16**	0	0	0	0	**0**	0	7	0	0	**7**	24
% Buses and Single-Unit Trucks	7.7%	0%	0%	0%	**4.8%**	11.1%	1.7%	0%	0%	**1.8%**	0%	0%	0%	0%	**-**	0%	1.5%	0%	0%	**1.5%**	1.8%

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

Symmes Road & Tedia Way - TMC
Thu May 9, 2024
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1182812, Location: 39.348056, -84.52548

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



ATTACHMENT B

PEAK HOUR to DESIGN HOUR FACTORS

FUNCTIONAL CLASSIFICATION = 03, 04, 05u

(Urban Principal Arterial, Urban Minor Arterial, & Urban Minor Collector)

Day / Month	Monthly Average by Day-of-Week							
	WEEKDAY MON-THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.25	1.81	1.27	1.25	1.25	1.23	1.18	1.61
February	1.23	1.78	1.26	1.23	1.23	1.19	1.17	1.58
March	1.18	1.63	1.20	1.18	1.17	1.17	1.12	1.47
April	1.13	1.57	1.15	1.14	1.12	1.11	1.08	1.42
May	1.10	1.47	1.12	1.10	1.10	1.07	1.06	1.35
June	1.14	1.51	1.16	1.14	1.14	1.11	1.10	1.40
July	1.14	1.54	1.16	1.14	1.13	1.14	1.11	1.45
August	1.12	1.49	1.14	1.14	1.12	1.10	1.06	1.41
September	1.12	1.53	1.15	1.13	1.13	1.09	1.05	1.42
October	1.12	1.54	1.15	1.12	1.11	1.10	1.05	1.42
November	1.16	1.63	1.17	1.15	1.15	1.15	1.08	1.52
December	1.16	1.61	1.18	1.16	1.16	1.13	1.10	1.50

peak hour volume * factor = design hour volume

source: year 2018,2019,2021 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 15 Stations
2019: 21 Stations
2021: 22 Stations

Ohio Department of Transportatio
Modeling & Forecasting Section
Nov 2022

NOTE: These are NOT seasonal adjustment factors!!!

Note: Insufficient data exists to produce factors for functional classes 06 and 07 Urban.

For converting partial day turning movements counts to seasonally adjusted 24 hour (AADT) counts.
Yellow boxes require user input. Scroll down for 24 hour diagrams. Use the Seasonal AdjuistmtFactors_YYYY spreadsheet to lookup seasonal factor.
Use Avg TD by FC.xslx to compute P&A B&C FACTORs.

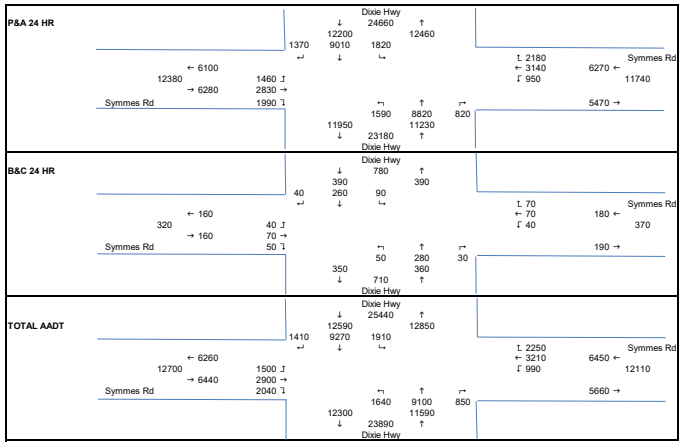
Date of Count: 5/9/2024 5 Thursday May

PART 1: INPUT PARTIAL DAY P&A VEHICLES — ROUTE Symmes Road
PARTIAL COUNT * FACTOR * SEASONAL FACTOR = 24 HR P&A

SOUTH LEG	Dixie Hwy	FC =	3	northbound			APROACH	DEPART						
				LT	THRU	RT	TOTAL	TOTAL		SOUTH LEG			APROACH	DEPART
	LT	THRU	RT	785	4350	402	5537	5914	LT	THRU	RT		TOTAL	TOTAL
P&A FACTOR	2.028	2.028	2.028	1591.98	8821.8	815.256	11229	11958.3	1590	8820	820		11230	11950
SEASONAL FACTOR	1.000	1.000	1.000	1591.98	8821.8	815.256	11229	11958.3	***1590***	***8820***	***820***		***11230***	***11950***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		WEST LEG			APROACH	DEPART
	LT	THRU	RT	731	1410	995	3136	3027	LT	THRU	RT		TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	1464.92	2825.64	1993.98	6284.54	6101.17	1460	2830	1990		6280	6100
SEASONAL F	1.000	1.000	1.000	1464.92	2825.64	1993.98	6284.54	6101.17	***1460***	***2830***	***1990***		***6280***	***6100***
NORTH LEG	Dixie Hwy	FC =	3	southbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		NORTH LEG			APROACH	DEPART
	LT	THRU	RT	898	4445	676	6019	6171	LT	THRU	RT		TOTAL	TOTAL
P&A FACTOR	2.028	2.028	2.028	1821.14	9014.46	1370.93	12206.5	12471.1	1820	9010	1370		12200	12460
SEASONAL F	1.000	1.000	1.000	1821.14	9014.46	1370.93	12206.5	12471.1	***1820***	***9010***	***1370***		***12200***	***12460***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		EAST LEG			APROACH	DEPART
	LT	THRU	RT	474	1566	1090	3130	2710	LT	THRU	RT		TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	949.896	3138.26	2184.36	6272.52	5462.04	950	3140	2180		6270	5470
SEASONAL F	1.000	1.000	1.000	949.896	3138.26	2184.36	6272.52	5462.04	***950***	***3140***	***2180***		***6270***	***5470***

PART 2: INPUT PARTIAL DAY B&C VEHICLES — ROUTE Symmes Road
PARTIAL COUNT * FACTOR = 24 HR B&C

SOUTH LEG	Dixie Hwy	FC =	3	northbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		SOUTH LEG			APROACH	DEPART
	LT	THRU	RT	19	117	13	149	145	LT	THRU	RT		TOTAL	TOTAL
B&C FACTOR	2.410	2.410	2.410	45.79	281.97	31.33	359.09	346.342	50	280	30		360	350
SEASONAL FACTOR	1.000	1.000	1.000	45.79	281.97	31.33	359.09	346.342	***50***	***280***	***30***		***360***	***350***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		WEST LEG			APROACH	DEPART
	LT	THRU	RT	18	31	20	69	67	LT	THRU	RT		TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	41.868	72.106	46.52	160.494	158.782	40	70	50		160	160
SEASONAL FACTOR	1.000	1.000	1.000	41.868	72.106	46.52	160.494	112.992	***40***	***70***	***50***		***160***	***160***
NORTH LEG	Dixie Hwy	FC =	3	southbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		NORTH LEG			APROACH	DEPART
	LT	THRU	RT	37	108	16	161	166	LT	THRU	RT		TOTAL	TOTAL
B&C FACTOR	2.410	2.410	2.410	89.17	260.28	38.56	388.01	395.944	90	260	40		390	390
SEASONAL FACTOR	1.000	1.000	1.000	89.17	260.28	38.56	388.01	395.944	***90***	***260***	***40***		***390***	***390***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		EAST LEG			APROACH	DEPART
	LT	THRU	RT	17	32	31	80	81	LT	THRU	RT		TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	39.542	74.432	72.106	186.08	192.606	40	70	70		180	190
SEASONAL FACTOR	1.000	1.000	1.000	39.542	74.432	72.106	186.08	192.606	***40***	***70***	***70***		***180***	***190***



Group	URBAN MINOR ARTERIAL, COLLECTORS, LOCAL (U04,05,06,07)						
From Year:	2021			To Year:	2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.831	1.129	1.026	1.012	1.007	0.959	1.329
Feb	1.608	1.248	1.307	1.044	1.077	0.982	1.289
Mar	1.384	0.960	0.923	0.908	0.936	0.880	1.110
Apr	1.317	0.913	0.881	0.903	0.900	0.850	1.117
May	1.260	0.922	0.891	0.879	0.849	0.838	1.038
Jun	1.254	0.937	0.892	0.910	0.881	0.872	1.079
Jul	1.308	0.929	0.910	0.896	0.907	0.869	1.122
Aug	1.279	0.918	0.909	0.900	0.880	0.857	1.088
Sep	1.324	0.948	0.918	0.924	0.870	0.829	1.083
Oct	1.377	0.954	0.913	0.904	0.901	0.873	1.122
Nov	1.478	0.968	0.941	0.928	0.953	0.894	1.197
Dec	1.426	0.972	0.954	0.958	0.932	0.893	1.212

Group	URBAN OTHER PRINCIPAL ARTERIAL (U03)						
From Year:	2021			To Year:	2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.740	1.135	1.084	1.072	1.056	0.997	1.272
Feb	1.564	1.239	1.246	1.067	1.091	0.983	1.228
Mar	1.375	1.005	0.968	0.943	0.976	0.899	1.078
Apr	1.332	0.959	0.919	0.936	0.933	0.862	1.061
May	1.247	0.952	0.920	0.909	0.877	0.852	1.020
Jun	1.227	0.948	0.912	0.915	0.888	0.854	1.027
Jul	1.285	0.952	0.921	0.905	0.893	0.842	1.046
Aug	1.257	0.953	0.931	0.920	0.893	0.846	1.026
Sep	1.295	0.960	0.945	0.935	0.900	0.841	1.061
Oct	1.331	0.973	0.936	0.920	0.906	0.852	1.068
Nov	1.393	0.957	0.934	0.917	0.921	0.855	1.093
Dec	1.364	0.973	0.941	0.926	0.918	0.863	1.109

Hourly Percent By Vehicle Type

Urban Minor Arterial

for Partial count factor, enter 1 for hours counted.

Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	Partial Count Factor 2.004 PA	2.326 BC	2.008 Total
0	12-1am	101,286	0.3%	6,321	0.6%	107,607	0.3%	0	0	0	0
1	1-2am	55,421	0.2%	5,822	0.6%	61,243	0.2%	0	0	0	0
2	2-3am	46,088	0.1%	6,340	0.6%	52,428	0.2%	0	0	0	0
3	3-4am	59,179	0.2%	10,079	1.0%	69,258	0.2%	0	0	0	0
4	4-5am	131,821	0.4%	16,040	1.5%	147,861	0.4%	0	0	0	0
5	5-6am	439,431	1.3%	24,815	2.4%	464,246	1.4%	0	0	0	0
6	6-7am	1,215,945	3.7%	45,291	4.3%	1,261,236	3.7%	1	0.037	0.043	0.037
7	7-8am	2,111,094	6.4%	67,809	6.5%	2,178,903	6.4%	1	0.064	0.065	0.064
8	8-9am	2,051,973	6.2%	78,617	7.5%	2,130,590	6.3%	1	0.062	0.075	0.063
9	9-10am	1,732,110	5.3%	82,520	7.9%	1,814,630	5.4%	0	0	0	0
10	10-11am	1,790,009	5.5%	84,539	8.0%	1,874,548	5.5%	0	0	0	0
11	11-12am	2,086,432	6.4%	85,619	8.2%	2,172,051	6.4%	0	0	0	0
12	12-1pm	2,314,243	7.0%	84,469	8.0%	2,398,712	7.1%	0	0	0	0
13	1-2pm	2,256,186	6.9%	82,478	7.9%	2,338,664	6.9%	0	0	0	0
14	2-3pm	2,572,979	7.8%	79,776	7.6%	2,652,755	7.8%	1	0.078	0.076	0.078
15	3-4pm	2,904,103	8.8%	73,991	7.0%	2,978,094	8.8%	1	0.088	0.07	0.088
16	4-5pm	2,921,745	8.9%	60,035	5.7%	2,981,778	8.8%	1	0.089	0.057	0.088
17	5-6pm	2,669,623	8.1%	46,737	4.4%	2,716,360	8.0%	1	0.081	0.044	0.08
18	6-7pm	1,843,335	5.6%	32,760	3.1%	1,876,095	5.5%	0	0	0	0
19	7-8pm	1,281,184	3.9%	24,247	2.3%	1,305,431	3.9%	0	0	0	0
20	8-9pm	952,825	2.9%	18,443	1.8%	971,268	2.9%	0	0	0	0
21	9-10pm	642,118	2.0%	14,211	1.4%	656,329	1.9%	0	0	0	0
22	10-11pm	415,681	1.3%	11,037	1.1%	426,718	1.3%	0	0	0	0
23	11-12pm	246,443	0.8%	8,390	0.8%	254,833	0.8%	0	0	0	0
	Total	32,841,254	100%	1,050,384	100%	33,891,638	100%		0.499	0.43	0.498

Hourly Percent By Vehicle Type

Urban Principal Arterial

for Partial count factor, enter 1 for hours coun

Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	Partial Count Factor 2.028 PA	2.410 BC	2.045 Total
0	12-1am	322,657	0.3%	30,867	0.9%	353,524	0.4%	0	0	0	0
1	1-2am	185,712	0.2%	26,022	0.8%	211,734	0.2%	0	0	0	0
2	2-3am	170,725	0.2%	27,991	0.8%	198,716	0.2%	0	0	0	0
3	3-4am	259,501	0.3%	39,607	1.2%	299,108	0.3%	0	0	0	0
4	4-5am	669,469	0.7%	59,732	1.8%	729,201	0.7%	0	0	0	0
5	5-6am	1,955,939	2.1%	103,021	3.0%	2,058,960	2.1%	0	0	0	0
6	6-7am	4,042,879	4.2%	160,898	4.8%	4,203,777	4.3%	1	0.042	0.048	0.043
7	7-8am	6,079,303	6.4%	216,928	6.4%	6,296,231	6.4%	1	0.064	0.064	0.064
8	8-9am	5,708,179	6.0%	243,017	7.2%	5,951,196	6.0%	1	0.06	0.072	0.06
9	9-10am	5,069,365	5.3%	258,993	7.7%	5,328,358	5.4%	0	0	0	0
10	10-11am	5,149,770	5.4%	262,677	7.8%	5,412,447	5.5%	0	0	0	0
11	11-12am	5,690,975	6.0%	261,917	7.7%	5,952,892	6.0%	0	0	0	0
12	12-1pm	6,124,931	6.4%	253,390	7.5%	6,378,321	6.5%	0	0	0	0
13	1-2pm	6,209,321	6.5%	248,483	7.3%	6,457,804	6.6%	0	0	0	0
14	2-3pm	6,913,138	7.3%	238,273	7.0%	7,151,411	7.3%	1	0.073	0.07	0.073
15	3-4pm	7,891,732	8.3%	215,666	6.4%	8,107,398	8.2%	1	0.083	0.064	0.082
16	4-5pm	8,336,165	8.8%	181,473	5.4%	8,517,638	8.6%	1	0.088	0.054	0.086
17	5-6pm	7,861,161	8.3%	145,289	4.3%	8,006,450	8.1%	1	0.083	0.043	0.081
18	6-7pm	5,597,635	5.9%	108,035	3.2%	5,705,670	5.8%	0	0	0	0
19	7-8pm	3,916,106	4.1%	81,086	2.4%	3,997,192	4.1%	0	0	0	0
20	8-9pm	2,883,489	3.0%	69,194	2.0%	2,952,683	3.0%	0	0	0	0
21	9-10pm	2,008,679	2.1%	58,962	1.7%	2,067,641	2.1%	0	0	0	0
22	10-11pm	1,291,567	1.4%	49,972	1.5%	1,341,539	1.4%	0	0	0	0
23	11-12pm	788,344	0.8%	39,989	1.2%	828,333	0.8%	0	0	0	0
	Total	95,126,742	100%	3,381,482	100%	98,508,224	100%		0.493	0.415	0.489

For converting partial day turning movements counts to seasonally adjusted 24 hour (AADT) counts.
Yellow boxes require user input. Scroll down for 24 hour diagrams. Use the Seasonal AdjuistmtFactors_YYYY spreadsheet to lookup seasonal factor.
Use Avg TD by FC.xslx to compute P&A B&C FACTORs.

Date of Count: 5/9/2024 5 Thursday May

PART 1: INPUT PARTIAL DAY P&A VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR * SEASONAL FACTOR = 24 HR P&A

SOUTH LEG Hicks Blvd FC = 5 — northbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
				69	0	554	623	922		SOUTH LEG			
P&A FACTOR	2.004	2.004	2.004	138.276	0	1110.22	1248.49	1847.69	140	0	1110	1250	1850
SEASONAL FACTOR	1.000	1.000	1.000	138.276	0	1110.22	1248.49	1847.69	***140***	***0***	***1110***	***1250***	***1850***

WEST LEG Symmes Rd FC = 4 — eastbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										WEST LEG			
P&A FACTOR	2.004	2.004	2.004	0	2498	153	2651	2909	0	5010	310	5320	5830
SEASONAL F	1.000	1.000	1.000	0	5005.99	306.612	5312.6	5829.64	***0***	***5010***	***310***	***5320***	***5830***

NORTH LEG Hicks Blvd FC = 5 — southbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										NORTH LEG			
P&A FACTOR	2.004	2.004	2.004	0	0	0	0	0	0	0	0	0	0
SEASONAL F	1.000	1.000	1.000	0	0	0	0	0	***0***	***0***	***0***	***0***	***0***

EAST LEG Symmes Rd FC = 4 — westbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										EAST LEG			
P&A FACTOR	2.004	2.004	2.004	1541.08	5691.36	0	7232.44	6116.21	1540	5690	0	7230	6120
SEASONAL F	1.000	1.000	1.000	1541.08	5691.36	0	7232.44	6116.21	***1540***	***5690***	***0***	***7230***	***6120***

PART 2: INPUT PARTIAL DAY B&C VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR = 24 HR B&C

SOUTH LEG Hicks Blvd FC = 5 — northbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										SOUTH LEG			
B&C FACTOR	2.326	2.326	2.326	6.978	0	20.934	27.912	46.52	10	0	20	30	50
SEASONAL FACTOR	1.000	1.000	1.000	6.978	0	20.934	27.912	46.52	***10***	***0***	***20***	***30***	***50***

WEST LEG Symmes Rd FC = 4 — eastbound

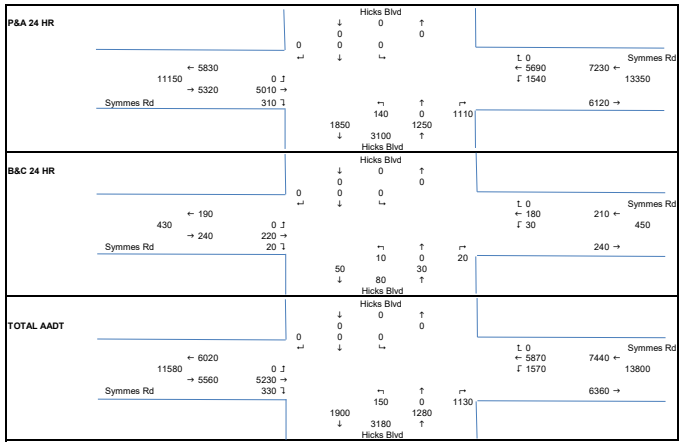
	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										WEST LEG			
B&C FACTOR	2.326	2.326	2.326	0	218.644	18.608	237.252	186.08	0	220	20	240	190
SEASONAL FACTOR	1.000	1.000	1.000	0	218.644	18.608	237.252	179.102	***0***	***220***	***20***	***240***	***190***

NORTH LEG Hicks Blvd FC = 5 — southbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										NORTH LEG			
B&C FACTOR	2.326	2.326	2.326	0	0	0	0	0	0	0	0	0	0
SEASONAL FACTOR	1.000	1.000	1.000	0	0	0	0	0	***0***	***0***	***0***	***0***	***0***

EAST LEG Symmes Rd FC = 4 — westbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR										EAST LEG			
B&C FACTOR	2.326	2.326	2.326	27.912	179.102	0	207.014	239.578	30	180	0	210	240
SEASONAL FACTOR	1.000	1.000	1.000	27.912	179.102	0	207.014	239.578	***30***	***180***	***0***	***210***	***240***



Group:	URBAN MINOR ARTERIAL, COLLECTORS, LOCAL (U04,05,06,07)						
From Year:	2021		To Year:		2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.831	1.129	1.026	1.012	1.007	0.959	1.329
Feb	1.608	1.248	1.307	1.044	1.077	0.982	1.289
Mar	1.384	0.960	0.923	0.908	0.936	0.880	1.110
Apr	1.317	0.913	0.881	0.903	0.900	0.850	1.117
May	1.260	0.922	0.891	0.879	0.849	0.838	1.038
Jun	1.254	0.937	0.892	0.910	0.881	0.872	1.079
Jul	1.308	0.929	0.910	0.896	0.907	0.869	1.122
Aug	1.279	0.918	0.909	0.900	0.880	0.857	1.088
Sep	1.324	0.948	0.918	0.924	0.870	0.829	1.083
Oct	1.377	0.954	0.913	0.904	0.901	0.873	1.122
Nov	1.478	0.968	0.941	0.928	0.953	0.894	1.197
Dec	1.426	0.972	0.954	0.958	0.932	0.893	1.212

Hourly Percent By Vehicle Type

for Partial count factor, enter 1 for hours counted.

Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	Partial Count Factor 2.004 PA	2.326 BC	2.008 Total
		Urban Minor Arterial									
0	12-1am	101,286	0.3%	6,321	0.6%	107,607	0.3%	0	0	0	0
1	1-2am	55,421	0.2%	5,822	0.6%	61,243	0.2%	0	0	0	0
2	2-3am	46,088	0.1%	6,340	0.6%	52,428	0.2%	0	0	0	0
3	3-4am	59,179	0.2%	10,079	1.0%	69,258	0.2%	0	0	0	0
4	4-5am	131,821	0.4%	16,040	1.5%	147,861	0.4%	0	0	0	0
5	5-6am	439,431	1.3%	24,815	2.4%	464,246	1.4%	0	0	0	0
6	6-7am	1,215,945	3.7%	45,291	4.3%	1,261,236	3.7%	1	0.037	0.043	0.037
7	7-8am	2,111,094	6.4%	67,809	6.5%	2,178,903	6.4%	1	0.064	0.065	0.064
8	8-9am	2,051,973	6.2%	78,617	7.5%	2,130,590	6.3%	1	0.062	0.075	0.063
9	9-10am	1,732,110	5.3%	82,520	7.9%	1,814,630	5.4%	0	0	0	0
10	10-11am	1,790,009	5.5%	84,539	8.0%	1,874,548	5.5%	0	0	0	0
11	11-12am	2,086,432	6.4%	85,619	8.2%	2,172,051	6.4%	0	0	0	0
12	12-1pm	2,314,243	7.0%	84,469	8.0%	2,398,712	7.1%	0	0	0	0
13	1-2pm	2,256,186	6.9%	82,478	7.9%	2,338,664	6.9%	0	0	0	0
14	2-3pm	2,572,979	7.8%	79,776	7.6%	2,652,755	7.8%	1	0.078	0.076	0.078
15	3-4pm	2,904,103	8.8%	73,991	7.0%	2,978,094	8.8%	1	0.088	0.07	0.088
16	4-5pm	2,921,745	8.9%	60,035	5.7%	2,981,778	8.8%	1	0.089	0.057	0.088
17	5-6pm	2,669,623	8.1%	46,737	4.4%	2,716,360	8.0%	1	0.081	0.044	0.08
18	6-7pm	1,843,335	5.6%	32,760	3.1%	1,876,095	5.5%	0	0	0	0
19	7-8pm	1,281,184	3.9%	24,247	2.3%	1,305,431	3.9%	0	0	0	0
20	8-9pm	952,825	2.9%	18,443	1.8%	971,268	2.9%	0	0	0	0
21	9-10pm	642,118	2.0%	14,211	1.4%	656,329	1.9%	0	0	0	0
22	10-11pm	415,681	1.3%	11,037	1.1%	426,718	1.3%	0	0	0	0
23	11-12pm	246,443	0.8%	8,390	0.8%	254,833	0.8%	0	0	0	0
	Total	32,841,254	100%	1,050,384	100%	33,891,638	100%		0.499	0.43	0.498

For converting partial day turning movements counts to seasonally adjusted 24 hour (AADT) counts.
Yellow boxes require user input. Scroll down for 24 hour diagrams. Use the Seasonal AdjuistmtFactors_YYYY spreadsheet to lookup seasonal factor.
Use Avg TD by FC.xslx to compute P&A B&C FACTORs.

Date of Count: 5/9/2024 5 Thursday May

PART 1: INPUT PARTIAL DAY P&A VEHICLES — ROUTE Symmes Road

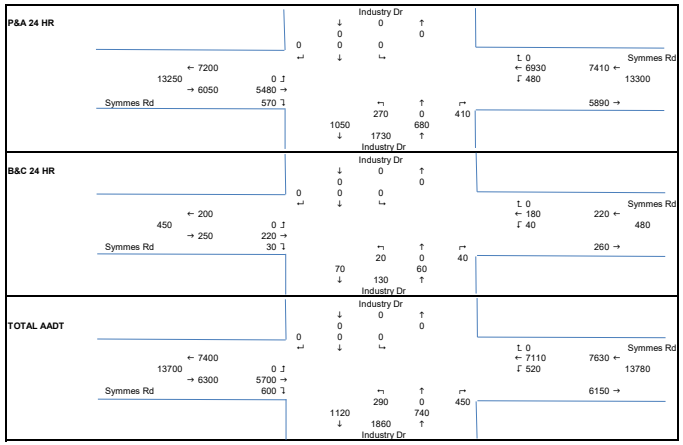
PARTIAL COUNT * FACTOR * SEASONAL FACTOR = 24 HR P&A

SOUTH LEG	Industry Dr	FC =	4	northbound			APROACH	DEPART						
				LT	THRU	RT	TOTAL	TOTAL		SOUTH LEG		APROACH	DEPART
	LT	THRU	RT	135	0	207	342	523	LT	THRU	RT	TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	270.54	0	414.828	685.368	1048.09	270	0	410	680	1050
SEASONAL FACTOR	1.000	1.000	1.000	270.54	0	414.828	685.368	1048.09	***270***	***0***	***410***	***680***	***1050***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		WEST LEG		APROACH	DEPART
	LT	THRU	RT	0	2734	282	3016	3593	LT	THRU	RT	TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	0	5478.94	565.128	6044.06	7200.37	0	5480	570	6050	7200
SEASONAL F	1.000	1.000	1.000	0	5478.94	565.128	6044.06	7200.37	***0***	***5480***	***570***	***6050***	***7200***
NORTH LEG	Industry Dr	FC =	4	southbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		NORTH LEG		APROACH	DEPART
	LT	THRU	RT	0	0	0	0	0	LT	THRU	RT	TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	0	0	0	0	0	0	0	0	0	0
SEASONAL F	1.000	1.000	1.000	0	0	0	0	0	***0***	***0***	***0***	***0***	***0***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		EAST LEG		APROACH	DEPART
	LT	THRU	RT	241	3458	0	3699	2941	LT	THRU	RT	TOTAL	TOTAL
P&A FACTOR	2.004	2.004	2.004	482.964	6929.83	0	7412.8	5893.76	480	6930	0	7410	5890
SEASONAL F	1.000	1.000	1.000	482.964	6929.83	0	7412.8	5893.76	***480***	***6930***	***0***	***7410***	***5890***

PART 2: INPUT PARTIAL DAY B&C VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR = 24 HR B&C

SOUTH LEG	Industry Dr	FC =	4	northbound			APROACH	DEPART						
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		SOUTH LEG		APROACH	DEPART
	LT	THRU	RT	7	0	19	26	32	LT	THRU	RT	TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	16.282	0	44.194	60.476	74.432	20	0	40	60	70
SEASONAL FACTOR	1.000	1.000	1.000	16.282	0	44.194	60.476	74.432	***20***	***0***	***40***	***60***	***70***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		WEST LEG		APROACH	DEPART
	LT	THRU	RT	0	93	14	107	86	LT	THRU	RT	TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	0	216.318	32.564	248.882	200.036	0	220	30	250	200
SEASONAL FACTOR	1.000	1.000	1.000	0	216.318	32.564	248.882	183.754	***0***	***220***	***30***	***250***	***200***
NORTH LEG	Industry Dr	FC =	4	southbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		NORTH LEG		APROACH	DEPART
	LT	THRU	RT	0	0	0	0	0	LT	THRU	RT	TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	0	0	0	0	0	0	0	0	0	0
SEASONAL FACTOR	1.000	1.000	1.000	0	0	0	0	0	***0***	***0***	***0***	***0***	***0***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART					
	FACTOR			LT	THRU	RT	TOTAL	TOTAL		EAST LEG		APROACH	DEPART
	LT	THRU	RT	18	79	0	97	112	LT	THRU	RT	TOTAL	TOTAL
B&C FACTOR	2.326	2.326	2.326	41.868	183.754	0	225.622	260.512	40	180	0	220	260
SEASONAL FACTOR	1.000	1.000	1.000	41.868	183.754	0	225.622	260.512	***40***	***180***	***0***	***220***	***260***



Group	URBAN MINOR ARTERIAL, COLLECTORS, LOCAL (U04,05,06,07)						
From Year:	2021		To Year:		2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.831	1.129	1.026	1.012	1.007	0.959	1.329
Feb	1.608	1.248	1.307	1.044	1.077	0.982	1.289
Mar	1.384	0.960	0.923	0.908	0.936	0.880	1.110
Apr	1.317	0.913	0.881	0.903	0.900	0.850	1.117
May	1.260	0.922	0.891	0.879	0.849	0.838	1.038
Jun	1.254	0.937	0.892	0.910	0.881	0.872	1.079
Jul	1.308	0.929	0.910	0.896	0.907	0.869	1.122
Aug	1.279	0.918	0.909	0.900	0.880	0.857	1.088
Sep	1.324	0.948	0.918	0.924	0.870	0.829	1.083
Oct	1.377	0.954	0.913	0.904	0.901	0.873	1.122
Nov	1.478	0.968	0.941	0.928	0.953	0.894	1.197
Dec	1.426	0.972	0.954	0.958	0.932	0.893	1.212

Hourly Percent By Vehicle Type

for Partial count factor, enter 1 for hours counted.

		Urban Minor Arterial						Partial Count Factor		
								2.004	2.326	2.008
Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	PA	BC	Total
0	12-1am	101,286	**0.3%**	6,321	**0.6%**	107,607	**0.3%**	0	0	0	0
1	1-2am	55,421	**0.2%**	5,822	**0.6%**	61,243	**0.2%**	0	0	0	0
2	2-3am	46,088	**0.1%**	6,340	**0.6%**	52,428	**0.2%**	0	0	0	0
3	3-4am	59,179	**0.2%**	10,079	**1.0%**	69,258	**0.2%**	0	0	0	0
4	4-5am	131,821	**0.4%**	16,040	**1.5%**	147,861	**0.4%**	0	0	0	0
5	5-6am	439,431	**1.3%**	24,815	**2.4%**	464,246	**1.4%**	0	0	0	0
6	6-7am	1,215,945	**3.7%**	45,291	**4.3%**	1,261,236	**3.7%**	1	0.037	0.043	0.037
7	7-8am	2,111,094	**6.4%**	67,809	**6.5%**	2,178,903	**6.4%**	1	0.064	0.065	0.064
8	8-9am	2,051,973	**6.2%**	78,617	**7.5%**	2,130,590	**6.3%**	1	0.062	0.075	0.063
9	9-10am	1,732,110	**5.3%**	82,520	**7.9%**	1,814,630	**5.4%**	0	0	0	0
10	10-11am	1,790,009	**5.5%**	84,539	**8.0%**	1,874,548	**5.5%**	0	0	0	0
11	11-12am	2,086,432	**6.4%**	85,619	**8.2%**	2,172,051	**6.4%**	0	0	0	0
12	12-1pm	2,314,243	**7.0%**	84,469	**8.0%**	2,398,712	**7.1%**	0	0	0	0
13	1-2pm	2,256,186	**6.9%**	82,478	**7.9%**	2,338,664	**6.9%**	0	0	0	0
14	2-3pm	2,572,979	**7.8%**	79,776	**7.6%**	2,652,755	**7.8%**	1	0.078	0.076	0.078
15	3-4pm	2,904,103	**8.8%**	73,991	**7.0%**	2,978,094	**8.8%**	1	0.088	0.07	0.088
16	4-5pm	2,921,745	**8.9%**	60,033	**5.7%**	2,981,778	**8.8%**	1	0.089	0.057	0.088
17	5-6pm	2,669,623	**8.1%**	46,737	**4.4%**	2,716,360	**8.0%**	1	0.081	0.044	0.08
18	6-7pm	1,843,335	**5.6%**	32,760	**3.1%**	1,876,095	**5.5%**	0	0	0	0
19	7-8pm	1,281,184	**3.9%**	24,247	**2.3%**	1,305,431	**3.9%**	0	0	0	0
20	8-9pm	952,825	**2.9%**	18,443	**1.8%**	971,268	**2.9%**	0	0	0	0
21	9-10pm	642,118	**2.0%**	14,211	**1.4%**	656,329	**1.9%**	0	0	0	0
22	10-11pm	415,681	**1.3%**	11,037	**1.1%**	426,718	**1.3%**	0	0	0	0
23	11-12pm	246,443	**0.8%**	8,390	**0.8%**	254,833	**0.8%**	0	0	0	0
	Total	32,841,254	**100%**	1,050,384	**100%**	33,891,638	**100%**		0.499	0.43	0.498

For converting partial day turning movements counts to seasonally adjusted 24 hour (AADT) counts.
Yellow boxes require user input. Scroll down for 24 hour diagrams. Use the Seasonal AdjuistmtFactors_YYYY spreadsheet to lookup seasonal factor.
Use Avg TD by FC.xslx to compute P&A B&C FACTORs.

Date of Count: 5/9/2024 5 Thursday May

PART 1: INPUT PARTIAL DAY P&A VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR * SEASONAL FACTOR = 24 HR P&A

SOUTH LEG Tidia Way FC = 4 — northbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	SOUTH LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
				3	0	1	4	17					
P&A FACTOR	2.004	2.004	2.004	6.012	0	2.004	8.016	34.068	10	0	0	10	40
SEASONAL FACTOR	1.000	1.000	1.000	6.012	0	2.004	8.016	34.068	***10***	***0***	***0***	***10***	***40***

WEST LEG Symmes Rd FC = 4 — eastbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	WEST LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				67	2875	9	2951	3744					
P&A FACTOR	2.004	2.004	2.004	134.268	5761.5	18.036	5913.8	7502.98	130	5760	20	5910	7510
SEASONAL F	1.000	1.000	1.000	134.268	5761.5	18.036	5913.8	7502.98	***130***	***5760***	***20***	***5910***	***7510***

NORTH LEG Tedia Way FC = 4 — southbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	NORTH LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				44	0	73	117	143					
P&A FACTOR	2.004	2.004	2.004	88.176	0	146.292	234.468	286.572	90	0	150	240	280
SEASONAL F	1.000	1.000	1.000	88.176	0	146.292	234.468	286.572	***90***	***0***	***150***	***240***	***280***

EAST LEG Symmes Rd FC = 4 — westbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	EAST LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				8	3668	76	3752	2920					
P&A FACTOR	2.004	2.004	2.004	16.032	7350.67	152.304	7519.01	5851.68	20	7350	150	7520	5850
SEASONAL F	1.000	1.000	1.000	16.032	7350.67	152.304	7519.01	5851.68	***20***	***7350***	***150***	***7520***	***5850***

PART 2: INPUT PARTIAL DAY B&C VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR = 24 HR B&C

SOUTH LEG Tidia Way FC = 4 — northbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	SOUTH LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				0	0	0	0	0					
B&C FACTOR	2.326	2.326	2.326	0	0	0	0	0	0	0	0	0	0
SEASONAL FACTOR	1.000	1.000	1.000	0	0	0	0	0	***0***	***0***	***0***	***0***	***0***

WEST LEG Symmes Rd FC = 4 — eastbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	WEST LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				8	103	0	111	108					
B&C FACTOR	2.326	2.326	2.326	18.608	239.578	0	258.186	251.208	20	240	0	260	250
SEASONAL FACTOR	1.000	1.000	1.000	18.608	239.578	0	258.186	251.208	***20***	***240***	***0***	***260***	***250***

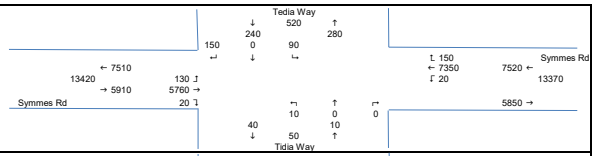
NORTH LEG Tedia Way FC = 4 — southbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	NORTH LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				1	0	4	5	12					
B&C FACTOR	2.326	2.326	2.326	2.326	0	9.304	11.63	27.912	0	0	10	10	30
SEASONAL FACTOR	1.000	1.000	1.000	2.326	0	9.304	11.63	27.912	***0***	***0***	***10***	***10***	***30***

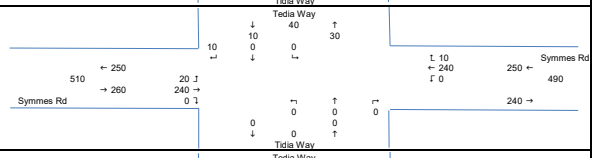
EAST LEG Symmes Rd FC = 4 — westbound

	LT	THRU	RT	LT	THRU	RT	APROACH TOTAL	DEPART TOTAL	LT	EAST LEG THRU	RT	APROACH TOTAL	DEPART TOTAL
FACTOR				0	104	4	108	104					
B&C FACTOR	2.326	2.326	2.326	0	241.904	9.304	251.208	241.904	0	240	10	250	240
SEASONAL FACTOR	1.000	1.000	1.000	0	241.904	9.304	251.208	241.904	***0***	***240***	***10***	***250***	***240***

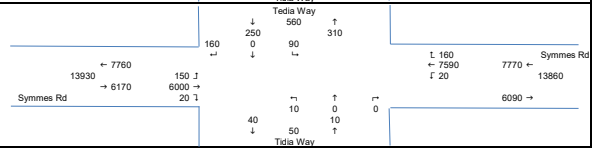
P&A 24 HR



B&C 24 HR



TOTAL AADT



Group:	URBAN MINOR ARTERIAL, COLLECTORS, LOCAL (U04,05,06,07)						
From Year:	2021			To Year:	2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.831	1.129	1.026	1.012	1.007	0.959	1.329
Feb	1.608	1.248	1.307	1.044	1.077	0.982	1.289
Mar	1.384	0.960	0.923	0.908	0.936	0.880	1.110
Apr	1.317	0.913	0.881	0.903	0.900	0.850	1.117
May	1.260	0.922	0.891	0.879	0.849	0.838	1.038
Jun	1.254	0.937	0.892	0.910	0.881	0.872	1.079
Jul	1.308	0.929	0.910	0.896	0.907	0.869	1.122
Aug	1.279	0.918	0.909	0.900	0.880	0.857	1.088
Sep	1.324	0.948	0.918	0.924	0.870	0.829	1.083
Oct	1.377	0.954	0.913	0.904	0.901	0.873	1.122
Nov	1.478	0.968	0.941	0.928	0.953	0.894	1.197
Dec	1.426	0.972	0.954	0.958	0.932	0.893	1.212

Hourly Percent By Vehicle Type

for Partial count factor, enter 1 for hours counted.

Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	Partial Count Factor 2.004 PA	2.326 BC	2.008 Total
			Urban Minor Arterial								
0	12-1am	101,286	0.3%	6,321	0.6%	107,607	0.3%	0	0	0	0
1	1-2am	55,421	0.2%	5,822	0.6%	61,243	0.2%	0	0	0	0
2	2-3am	46,088	0.1%	6,340	0.6%	52,428	0.2%	0	0	0	0
3	3-4am	59,179	0.2%	10,079	1.0%	69,258	0.2%	0	0	0	0
4	4-5am	131,821	0.4%	16,040	1.5%	147,861	0.4%	0	0	0	0
5	5-6am	439,431	1.3%	24,815	2.4%	464,246	1.4%	0	0	0	0
6	6-7am	1,215,945	3.7%	45,291	4.3%	1,261,236	3.7%	1	0.037	0.043	0.037
7	7-8am	2,111,094	6.4%	67,809	6.5%	2,178,903	6.4%	1	0.064	0.065	0.064
8	8-9am	2,051,973	6.2%	78,617	7.5%	2,130,590	6.3%	1	0.062	0.075	0.063
9	9-10am	1,732,110	5.3%	82,520	7.9%	1,814,630	5.4%	0	0	0	0
10	10-11am	1,790,009	5.5%	84,539	8.0%	1,874,548	5.5%	0	0	0	0
11	11-12am	2,086,432	6.4%	85,619	8.2%	2,172,051	6.4%	0	0	0	0
12	12-1pm	2,314,243	7.0%	84,469	8.0%	2,398,712	7.1%	0	0	0	0
13	1-2pm	2,256,186	6.9%	82,478	7.9%	2,338,664	6.9%	0	0	0	0
14	2-3pm	2,572,979	7.8%	79,776	7.6%	2,652,755	7.8%	1	0.078	0.076	0.078
15	3-4pm	2,904,103	8.8%	73,991	7.0%	2,978,094	8.8%	1	0.088	0.07	0.088
16	4-5pm	2,921,745	8.9%	60,033	5.7%	2,981,778	8.8%	1	0.089	0.057	0.088
17	5-6pm	2,669,623	8.1%	46,737	4.4%	2,716,360	8.0%	1	0.081	0.044	0.08
18	6-7pm	1,843,335	5.6%	32,760	3.1%	1,876,095	5.5%	0	0	0	0
19	7-8pm	1,281,184	3.9%	24,247	2.3%	1,305,431	3.9%	0	0	0	0
20	8-9pm	952,825	2.9%	18,443	1.8%	971,268	2.9%	0	0	0	0
21	9-10pm	642,118	2.0%	14,211	1.4%	656,329	1.9%	0	0	0	0
22	10-11pm	415,681	1.3%	11,037	1.1%	426,718	1.3%	0	0	0	0
23	11-12pm	246,443	0.8%	8,390	0.8%	254,833	0.8%	0	0	0	0
	Total	32,841,254	100%	1,050,384	100%	33,891,638	100%		0.499	0.43	0.498

For converting partial day turning movements counts to seasonally adjusted 24 hour (AADT) counts.
Yellow boxes require user input. Scroll down for 24 hour diagrams. Use the Seasonal AdjuistmtFactors_YYYY spreadsheet to lookup seasonal factor.
Use Avg TD by FC.xslx to compute P&A B&C FACTORs.

Date of Count: 5/9/2024 5 Thursday May

PART 1: INPUT PARTIAL DAY P&A VEHICLES — ROUTE Symmes Road

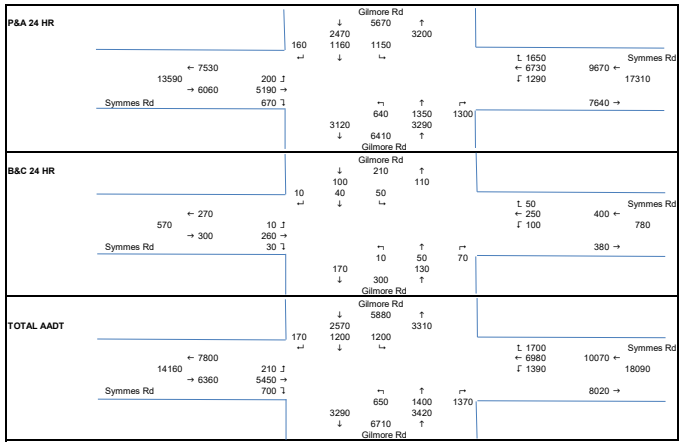
PARTIAL COUNT * FACTOR * SEASONAL FACTOR = 24 HR P&A

SOUTH LEG	Gilmore Rd	FC =	4	northbound			APROACH	DEPART						
				LT	**THRU**	**RT**	TOTAL	TOTAL		**SOUTH LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	319	574	648	1641	1560	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
P&A FACTOR	2.004	2.004	2.004	639.276	1350.7	1298.59	3288.56	3126.24	640	1350	1300		3290	3120
SEASONAL FACTOR	1.000	1.000	1.000	639.276	1350.7	1298.59	3288.56	3126.24	***640***	***1350***	***1300***		***3290***	***3120***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**WEST LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	99	2588	335	3022	3756	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
P&A FACTOR	2.004	2.004	2.004	198.396	5186.35	671.34	6056.09	7527.02	200	5190	670		6060	7530
SEASONAL F	1.000	1.000	1.000	198.396	5186.35	671.34	6056.09	7527.02	***200***	***5190***	***670***		***6060***	***7530***
NORTH LEG	Gilmore Rd	FC =	4	southbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**NORTH LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	575	580	80	1235	1595	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
P&A FACTOR	2.004	2.004	2.004	1152.3	1162.32	160.32	2474.94	3196.38	1150	1160	160		2470	3200
SEASONAL F	1.000	1.000	1.000	1152.3	1162.32	160.32	2474.94	3196.38	***1150***	***1160***	***160***		***2470***	***3200***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**EAST LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	645	3357	822	4824	3811	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
P&A FACTOR	2.004	2.004	2.004	1292.58	6727.43	1647.29	9667.3	7637.24	1290	6730	1650		9670	7640
SEASONAL F	1.000	1.000	1.000	1292.58	6727.43	1647.29	9667.3	7637.24	***1290***	***6730***	***1650***		***9670***	***7640***

PART 2: INPUT PARTIAL DAY B&C VEHICLES — ROUTE Symmes Road

PARTIAL COUNT * FACTOR = 24 HR B&C

SOUTH LEG	Gilmore Rd	FC =	4	northbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**SOUTH LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	3	20	31	54	70	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
B&C FACTOR	2.326	2.326	2.326	6.978	46.52	72.106	125.604	162.82	10	50	70		130	170
SEASONAL FACTOR	1.000	1.000	1.000	6.978	46.52	72.106	125.604	162.82	***10***	***50***	***70***		***130***	***170***
WEST LEG	Symmes Rd	FC =	4	eastbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**WEST LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	5	110	13	128	113	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
B&C FACTOR	2.326	2.326	2.326	11.63	255.86	30.238	297.728	262.838	10	260	30		300	270
SEASONAL FACTOR	1.000	1.000	1.000	11.63	255.86	30.238	297.728	255.86	***10***	***260***	***30***		***300***	***270***
NORTH LEG	Gilmore Rd	FC =	4	southbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**NORTH LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	22	16	3	41	48	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
B&C FACTOR	2.326	2.326	2.326	51.172	37.216	6.978	95.366	111.648	50	40	10		100	110
SEASONAL FACTOR	1.000	1.000	1.000	51.172	37.216	6.978	95.366	111.648	***50***	***40***	***10***		***100***	***110***
EAST LEG	Symmes Rd	FC =	4	westbound			APROACH	DEPART						
	FACTOR			**LT**	**THRU**	**RT**	TOTAL	TOTAL		**EAST LEG**			**APROACH**	**DEPART**
	LT	THRU	RT	41	107	23	171	163	**LT**	**THRU**	**RT**		**TOTAL**	**TOTAL**
B&C FACTOR	2.326	2.326	2.326	95.366	248.882	53.498	397.746	379.138	100	250	50		400	380
SEASONAL FACTOR	1.000	1.000	1.000	95.366	248.882	53.498	397.746	379.138	***100***	***250***	***50***		***400***	***380***



Group:	URBAN MINOR ARTERIAL, COLLECTORS, LOCAL (U04,05,06,07)						
From Year:	2021		To Year:		2021		
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	1.831	1.129	1.026	1.012	1.007	0.959	1.329
Feb	1.608	1.248	1.307	1.044	1.077	0.982	1.289
Mar	1.384	0.960	0.923	0.908	0.936	0.880	1.110
Apr	1.317	0.913	0.881	0.903	0.900	0.850	1.117
May	1.260	0.922	0.891	0.879	0.849	0.838	1.038
Jun	1.254	0.937	0.892	0.910	0.881	0.872	1.079
Jul	1.308	0.929	0.910	0.896	0.907	0.869	1.122
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Nov	1.478	0.968	0.941	0.928	0.953	0.894	1.197
Dec	1.426	0.972	0.954	0.958	0.932	0.893	1.212

Hourly Percent By Vehicle Type

for Partial count factor, enter 1 for hours counted.

		Urban Minor Arterial						Partial Count Factor		
								2.004	2.326	2.008
Hour	Hour of Day	P&A (Cars)	% P&A (Cars)	B&C (Trucks)	% B&C (Trucks)	Total	% Total	Counted Hour	PA	BC	Total
0	12-1am	101,286	**0.3%**	6,321	**0.6%**	107,607	**0.3%**	0	0	0	0
1	1-2am	55,421	**0.2%**	5,822	**0.6%**	61,243	**0.2%**	0	0	0	0
2	2-3am	46,088	**0.1%**	6,340	**0.6%**	52,428	**0.2%**	0	0	0	0
3	3-4am	59,179	**0.2%**	10,079	**1.0%**	69,258	**0.2%**	0	0	0	0
4	4-5am	131,821	**0.4%**	16,040	**1.5%**	147,861	**0.4%**	0	0	0	0
5	5-6am	439,431	**1.3%**	24,815	**2.4%**	464,246	**1.4%**	0	0	0	0
6	6-7am	1,215,945	**3.7%**	45,291	**4.3%**	1,261,236	**3.7%**	1	0.037	0.043	0.037
7	7-8am	2,111,094	**6.4%**	67,809	**6.5%**	2,178,903	**6.4%**	1	0.064	0.065	0.064
8	8-9am	2,051,973	**6.2%**	78,617	**7.5%**	2,130,590	**6.3%**	1	0.062	0.075	0.063
9	9-10am	1,732,110	**5.3%**	82,520	**7.9%**	1,814,630	**5.4%**	0	0	0	0
10	10-11am	1,790,009	**5.5%**	84,539	**8.0%**	1,874,548	**5.5%**	0	0	0	0
11	11-12am	2,086,432	**6.4%**	85,619	**8.2%**	2,172,051	**6.4%**	0	0	0	0
12	12-1pm	2,314,243	**7.0%**	84,469	**8.0%**	2,398,712	**7.1%**	0	0	0	0
13	1-2pm	2,256,186	**6.9%**	82,478	**7.9%**	2,338,664	**6.9%**	0	0	0	0
14	2-3pm	2,572,979	**7.8%**	79,776	**7.6%**	2,652,755	**7.8%**	1	0.078	0.076	0.078
15	3-4pm	2,904,103	**8.8%**	73,991	**7.0%**	2,978,094	**8.8%**	1	0.088	0.07	0.088
16	4-5pm	2,921,745	**8.9%**	60,033	**5.7%**	2,981,778	**8.8%**	1	0.089	0.057	0.088
17	5-6pm	2,669,623	**8.1%**	46,737	**4.4%**	2,716,360	**8.0%**	1	0.081	0.044	0.08
18	6-7pm	1,843,335	**5.6%**	32,760	**3.1%**	1,876,095	**5.5%**	0	0	0	0
19	7-8pm	1,281,184	**3.9%**	24,247	**2.3%**	1,305,431	**3.9%**	0	0	0	0
20	8-9pm	952,825	**2.9%**	18,443	**1.8%**	971,268	**2.9%**	0	0	0	0
21	9-10pm	642,118	**2.0%**	14,211	**1.4%**	656,329	**1.9%**	0	0	0	0
22	10-11pm	415,681	**1.3%**	11,037	**1.1%**	426,718	**1.3%**	0	0	0	0
23	11-12pm	246,443	**0.8%**	8,390	**0.8%**	254,833	**0.8%**	0	0	0	0
	Total	32,841,254	**100%**	1,050,384	**100%**	33,891,638	**100%**		0.499	0.43	0.498

Attachment 2 – Capacity Analysis Reports

DY 2048 No-Build AM Peak
Existing Conditions

02/17/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	470	260	60	140	110	100	600	100	260	960	80
Future Volume (veh/h)	140	470	260	60	140	110	100	600	100	260	960	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1856	1752	1811	1885	1811	1826	1885	1870	1856	1856
Adj Flow Rate, veh/h	156	618	280	80	219	169	123	659	137	295	1067	86
Peak Hour Factor	0.90	0.76	0.93	0.75	0.64	0.65	0.81	0.91	0.73	0.88	0.90	0.93
Percent Heavy Veh, %	2	1	3	10	6	1	6	5	1	2	3	3
Cap, veh/h	406	611	611	157	551	632	182	1067	581	325	1107	89
Arrive On Green	0.08	0.32	0.32	0.06	0.30	0.30	0.06	0.31	0.31	0.09	0.33	0.33
Sat Flow, veh/h	1781	1885	1572	1668	1811	1598	1725	3469	1598	1781	3304	266
Grp Volume(v), veh/h	156	618	280	80	219	169	123	659	137	295	569	584
Grp Sat Flow(s),veh/h/ln	1781	1885	1572	1668	1811	1598	1725	1735	1598	1781	1763	1808
Q Serve(g_s), s	6.8	37.1	15.2	3.7	11.0	8.2	5.5	18.6	6.8	10.5	36.3	36.3
Cycle Q Clear(g_c), s	6.8	37.1	15.2	3.7	11.0	8.2	5.5	18.6	6.8	10.5	36.3	36.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	406	611	611	157	551	632	182	1067	581	325	590	605
V/C Ratio(X)	0.38	1.01	0.46	0.51	0.40	0.27	0.68	0.62	0.24	0.91	0.96	0.96
Avail Cap(c_a), veh/h	409	611	611	165	557	638	184	1067	581	325	590	605
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	24.7	38.7	26.0	29.9	31.5	23.4	29.7	33.9	25.3	32.0	37.4	37.4
Incr Delay (d2), s/veh	0.6	39.2	0.5	2.5	0.5	0.2	9.2	2.7	1.0	27.7	29.1	28.8
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(95%),veh/ln	5.2	31.4	9.5	2.8	8.4	5.5	4.8	12.7	4.9	9.7	27.3	27.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	77.9	26.6	32.4	32.0	23.6	38.9	36.6	26.3	59.7	66.5	66.2
LnGrp LOS	C	F	C	C	C	C	D	D	C	E	E	E
Approach Vol, veh/h		1054			468			919			1448	
Approach Delay, s/veh		56.5			29.0			35.3			65.0	
Approach LOS		E			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	41.3	12.9	43.6	13.5	44.4	15.2	41.3
Change Period (Y+Rc), s	6.1	6.1	6.5	6.5	6.1	6.1	6.5	6.5
Max Green Setting (Gmax), s	10.5	35.2	7.0	37.1	7.5	38.2	8.9	35.2
Max Q Clear Time (g_c+I1), s	12.5	20.6	5.7	39.1	7.5	38.3	8.8	13.0
Green Ext Time (p_c), s	0.0	4.2	0.0	0.0	0.0	0.0	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	700	40	150	310	20	120
Future Vol, veh/h	700	40	150	310	20	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	86	74	50	91
Heavy Vehicles, %	2	10	2	5	25	1
Mvmt Flow	795	45	174	419	40	132

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	840	0	1585	818
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	767	-
Critical Hdwy	-	-	4.12	-	6.65	6.21
Critical Hdwy Stg 1	-	-	-	-	5.65	-
Critical Hdwy Stg 2	-	-	-	-	5.65	-
Follow-up Hdwy	-	-	2.218	-	3.725	3.309
Pot Cap-1 Maneuver	-	-	795	-	105	377
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	420	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	795	-	82	377
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	328	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	29.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	795	-
HCM Lane V/C Ratio	0.549	-	-	0.219	-
HCM Control Delay (s)	29.7	-	-	10.8	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	3.1	-	-	0.8	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	760	60	70	430	30	40
Future Vol, veh/h	760	60	70	430	30	40
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	85	63	78	78	92	78
Heavy Vehicles, %	2	5	4	3	6	3
Mvmt Flow	894	95	90	551	33	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	989	0	1673	942
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	731	-
Critical Hdwy	-	-	4.14	-	6.46	6.23
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.236	-	3.554	3.327
Pot Cap-1 Maneuver	-	-	691	-	103	317
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	469	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	691	-	84	317
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	381	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	53.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	153	-	-	691	-
HCM Lane V/C Ratio	0.548	-	-	0.13	-
HCM Control Delay (s)	53.9	-	-	11	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	750	10	10	480	30	10	10	10	20	10	20
Future Vol, veh/h	30	750	10	10	480	30	10	10	10	20	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	140	-	-	-	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	81	92	92	79	92	92	92	92	75	92	92
Heavy Vehicles, %	0	3	0	7	4	0	0	0	0	0	0	0
Mvmt Flow	34	926	11	11	608	33	11	11	11	27	11	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	641	0	0	937	0	0	1663	1663	932	1641	1635	608
Stage 1	-	-	-	-	-	-	1000	1000	-	630	630	-
Stage 2	-	-	-	-	-	-	663	663	-	1011	1005	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	953	-	-	711	-	-	78	98	326	81	102	499
Stage 1	-	-	-	-	-	-	295	324	-	473	478	-
Stage 2	-	-	-	-	-	-	454	462	-	291	322	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	953	-	-	711	-	-	63	88	326	66	92	499
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	88	-	66	92	-
Stage 1	-	-	-	-	-	-	273	300	-	438	467	-
Stage 2	-	-	-	-	-	-	414	451	-	251	298	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	58.3	56
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	99	953	-	-	711	-	-	66	202
HCM Lane V/C Ratio	0.329	0.036	-	-	0.015	-	-	0.404	0.161
HCM Control Delay (s)	58.3	8.9	0	-	10.1	0	-	92.5	26.2
HCM Lane LOS	F	A	A	-	B	A	-	F	D
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	1.5	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	660	110	150	430	70	60	100	120	190	150	30
Future Volume (veh/h)	30	660	110	150	430	70	60	100	120	190	150	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1841	1826	1856	1856	1900	1900	1841	1811	1826	1885	1900
Adj Flow Rate, veh/h	60	795	204	217	518	78	143	147	141	264	183	33
Peak Hour Factor	0.50	0.83	0.54	0.69	0.83	0.90	0.42	0.68	0.85	0.72	0.82	0.92
Percent Heavy Veh, %	0	4	5	3	3	0	0	4	6	5	1	0
Cap, veh/h	409	1514	388	301	1019	885	299	496	413	315	419	75
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	835	2755	707	559	1856	1610	1184	1841	1535	1065	1554	280
Grp Volume(v), veh/h	60	505	494	217	518	78	143	147	141	264	0	216
Grp Sat Flow(s),veh/h/ln	835	1749	1713	559	1856	1610	1184	1841	1535	1065	0	1835
Q Serve(g_s), s	3.6	13.7	13.7	27.5	13.1	1.7	8.5	4.8	5.5	15.4	0.0	7.3
Cycle Q Clear(g_c), s	16.7	13.7	13.7	41.2	13.1	1.7	15.8	4.8	5.5	20.2	0.0	7.3
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	409	961	941	301	1019	885	299	496	413	315	0	494
V/C Ratio(X)	0.15	0.53	0.53	0.72	0.51	0.09	0.48	0.30	0.34	0.84	0.00	0.44
Avail Cap(c_a), veh/h	409	961	941	301	1019	885	299	496	413	315	0	494
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	0.00	1.00
Uniform Delay (d), s/veh	15.8	10.7	10.7	24.5	10.6	8.0	29.3	21.8	22.0	31.1	0.0	22.7
Incr Delay (d2), s/veh	0.2	0.5	0.5	8.2	0.4	0.0	1.2	0.3	0.5	17.6	0.0	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(95%),veh/ln	1.2	8.1	8.0	7.5	7.9	0.9	4.3	3.6	3.5	10.3	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	11.2	11.2	32.7	11.0	8.0	30.4	22.1	22.5	48.7	0.0	23.3
LnGrp LOS	B	B	B	C	B	A	C	C	C	D	A	C
Approach Vol, veh/h		1059			813			431			480	
Approach Delay, s/veh		11.5			16.5			25.0			37.3	
Approach LOS		B			B			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		27.0		48.0		27.0				
Change Period (Y+Rc), s		* 6.8		* 6.8		* 6.8		* 6.8				
Max Green Setting (Gmax), s		* 41		* 20		* 41		* 20				
Max Q Clear Time (g_c+I1), s		18.7		17.8		43.2		22.2				
Green Ext Time (p_c), s		7.2		0.5		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

DY 2048 No-Build PM Peak
Existing Conditions

02/17/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	210	160	130	470	340	240	1110	60	130	830	170
Future Volume (veh/h)	170	210	160	130	470	340	240	1110	60	130	830	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1885	1870	1885	1885	1885	1900	1885	1885	1826	1870	1885
Adj Flow Rate, veh/h	185	241	180	200	528	386	282	1168	67	153	912	215
Peak Hour Factor	0.92	0.87	0.89	0.65	0.89	0.88	0.85	0.95	0.89	0.85	0.91	0.79
Percent Heavy Veh, %	0	1	2	1	1	1	0	1	1	5	2	1
Cap, veh/h	186	524	642	352	524	559	295	1398	741	220	956	225
Arrive On Green	0.07	0.28	0.28	0.07	0.28	0.28	0.13	0.39	0.39	0.07	0.33	0.33
Sat Flow, veh/h	1810	1885	1585	1795	1885	1598	1810	3582	1598	1739	2854	672
Grp Volume(v), veh/h	185	241	180	200	528	386	282	1168	67	153	567	560
Grp Sat Flow(s),veh/h/ln	1810	1885	1585	1795	1885	1598	1810	1791	1598	1739	1777	1749
Q Serve(g_s), s	9.9	14.3	10.3	9.9	37.5	28.0	16.0	39.8	3.2	7.7	42.1	42.2
Cycle Q Clear(g_c), s	9.9	14.3	10.3	9.9	37.5	28.0	16.0	39.8	3.2	7.7	42.1	42.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	186	524	642	352	524	559	295	1398	741	220	595	586
V/C Ratio(X)	0.99	0.46	0.28	0.57	1.01	0.69	0.96	0.84	0.09	0.69	0.95	0.96
Avail Cap(c_a), veh/h	186	524	642	352	524	559	295	1398	741	228	595	586
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	37.1	40.4	26.9	34.1	48.8	37.6	40.4	37.2	20.3	31.9	43.9	43.9
Incr Delay (d2), s/veh	64.3	0.6	0.2	2.1	41.4	3.6	40.5	6.0	0.2	8.5	27.1	27.7
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(95%),veh/ln	12.2	11.0	7.1	8.6	31.5	16.9	18.6	25.3	2.2	6.7	30.5	30.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.3	41.0	27.2	36.3	90.2	41.2	80.8	43.3	20.5	40.3	71.0	71.6
LnGrp LOS	F	D	C	D	F	D	F	D	C	D	E	E
Approach Vol, veh/h		606			1114			1517			1280	
Approach Delay, s/veh		55.3			63.5			49.3			67.6	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	58.8	16.4	44.0	23.3	51.3	16.4	44.0
Change Period (Y+Rc), s	6.1	6.1	6.5	6.5	6.1	6.1	6.5	6.5
Max Green Setting (Gmax), s	10.3	52.1	9.9	37.5	17.2	45.2	9.9	37.5
Max Q Clear Time (g_c+I1), s	9.7	41.8	11.9	16.3	18.0	44.2	11.9	39.5
Green Ext Time (p_c), s	0.0	5.8	0.0	1.9	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	58.8
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	420	40	220	850	20	110
Future Vol, veh/h	420	40	220	850	20	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	83	96	95	67	86
Heavy Vehicles, %	2	10	1	2	0	1
Mvmt Flow	442	48	229	895	30	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	490	0	1819	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	1353	-
Critical Hdwy	-	-	4.11	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	1078	-	86	599
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	243	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1078	-	68	599
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	191	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	387	-	-	1078	-
HCM Lane V/C Ratio	0.408	-	-	0.213	-
HCM Control Delay (s)	20.6	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.8	-

Intersection	
Int Delay, s/veh	9.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	480	30	50	1040	40	70
Future Vol, veh/h	480	30	50	1040	40	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	97	92	48	91	88	75
Heavy Vehicles, %	4	11	9	2	0	0
Mvmt Flow	495	33	104	1143	45	93

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	528	0	1863	512
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	1351	-
Critical Hdwy	-	-	4.19	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.281	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1004	-	81	566
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	244	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1004	-	58	566
Mov Cap-2 Maneuver	-	-	-	-	58	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	175	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	121.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	146	-	-	1004	-
HCM Lane V/C Ratio	0.951	-	-	0.104	-
HCM Control Delay (s)	121.8	-	-	9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	6.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	560	10	10	1050	20	10	10	10	20	10	30
Future Vol, veh/h	30	560	10	10	1050	20	10	10	10	20	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	140	-	-	-	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	95	95	92	96	92	92	92	92	67	65	65
Heavy Vehicles, %	0	3	0	0	2	11	0	0	0	0	0	8
Mvmt Flow	33	589	11	11	1094	22	11	11	11	30	15	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1116	0	0	600	0	0	1819	1799	595	1788	1782	1094
Stage 1	-	-	-	-	-	-	661	661	-	1116	1116	-
Stage 2	-	-	-	-	-	-	1158	1138	-	672	666	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	633	-	-	987	-	-	61	81	508	64	83	253
Stage 1	-	-	-	-	-	-	455	463	-	254	285	-
Stage 2	-	-	-	-	-	-	241	279	-	449	460	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	633	-	-	987	-	-	39	72	508	51	74	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	39	72	-	51	74	-
Stage 1	-	-	-	-	-	-	420	427	-	234	277	-
Stage 2	-	-	-	-	-	-	181	271	-	395	424	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	91.1	76.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	72	633	-	-	987	-	-	51	158
HCM Lane V/C Ratio	0.453	0.052	-	-	0.011	-	-	0.585	0.389
HCM Control Delay (s)	91.1	11	0	-	8.7	0	-	147.5	41.6
HCM Lane LOS	F	B	A	-	A	A	-	F	E
HCM 95th %tile Q(veh)	1.8	0.2	-	-	0	-	-	2.3	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	490	60	160	880	280	70	200	170	80	120	30
Future Volume (veh/h)	40	490	60	160	880	280	70	200	170	80	120	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1900	1870	1856	1752	1870	1885	1870	1856	1870	1900
Adj Flow Rate, veh/h	67	544	105	232	946	452	97	250	202	123	162	38
Peak Hour Factor	0.60	0.90	0.57	0.69	0.93	0.62	0.72	0.80	0.84	0.65	0.74	0.80
Percent Heavy Veh, %	0	3	0	2	3	10	2	1	2	3	2	0
Cap, veh/h	145	1709	329	468	1075	860	277	475	399	217	369	87
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	392	2949	567	782	1856	1485	1182	1885	1585	931	1465	344
Grp Volume(v), veh/h	67	324	325	232	946	452	97	250	202	123	0	200
Grp Sat Flow(s),veh/h/ln	392	1763	1753	782	1856	1485	1182	1885	1585	931	0	1809
Q Serve(g_s), s	11.4	7.6	7.7	17.5	35.3	14.8	6.1	9.2	8.8	10.6	0.0	7.5
Cycle Q Clear(g_c), s	46.7	7.6	7.7	25.2	35.3	14.8	13.6	9.2	8.8	19.8	0.0	7.5
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	145	1021	1016	468	1075	860	277	475	399	217	0	455
V/C Ratio(X)	0.46	0.32	0.32	0.50	0.88	0.53	0.35	0.53	0.51	0.57	0.00	0.44
Avail Cap(c_a), veh/h	145	1021	1016	468	1075	860	277	475	399	217	0	455
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	0.00	1.00
Uniform Delay (d), s/veh	35.5	8.7	8.7	15.3	14.5	10.2	31.1	26.0	25.9	34.5	0.0	25.4
Incr Delay (d2), s/veh	2.3	0.2	0.2	0.8	8.6	0.6	0.8	1.1	1.0	3.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	4.6	4.6	5.1	20.5	7.3	3.1	7.3	5.9	4.5	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	8.9	8.9	16.1	23.1	10.8	31.8	27.1	26.9	37.9	0.0	26.0
LnGrp LOS	D	A	A	B	C	B	C	C	C	D	A	C
Approach Vol, veh/h		716			1630			549			323	
Approach Delay, s/veh		11.6			18.7			27.8			30.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.5		27.1		53.5		27.1				
Change Period (Y+Rc), s		* 6.8		* 6.8		* 6.8		* 6.8				
Max Green Setting (Gmax), s		* 47		* 20		* 47		* 20				
Max Q Clear Time (g_c+I1), s		48.7		15.6		37.3		21.8				
Green Ext Time (p_c), s		0.0		1.0		6.3		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

DY 2048 Build AM Peak
Proposed Improvements

02/17/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	530	300	70	160	120	110	680	110	300	1080	90
Future Volume (veh/h)	160	530	300	70	160	120	110	680	110	300	1080	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1856	1752	1811	1885	1811	1826	1885	1870	1856	1856
Adj Flow Rate, veh/h	178	697	323	93	250	185	136	747	151	341	1200	97
Peak Hour Factor	0.90	0.76	0.93	0.75	0.64	0.65	0.81	0.91	0.73	0.88	0.90	0.93
Percent Heavy Veh, %	2	1	3	10	6	1	6	5	1	2	3	3
Cap, veh/h	466	700	683	132	1177	788	160	881	483	350	1207	662
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.06	0.25	0.25	0.15	0.34	0.34
Sat Flow, veh/h	1781	1885	1572	1668	3441	1598	1725	3469	1598	1781	3526	1572
Grp Volume(v), veh/h	178	697	323	93	250	185	136	747	151	341	1200	97
Grp Sat Flow(s),veh/h/ln	1781	1885	1572	1668	1721	1598	1725	1735	1598	1781	1763	1572
Q Serve(g_s), s	9.3	53.3	21.1	5.2	7.5	9.6	8.5	29.6	10.5	21.0	49.0	5.5
Cycle Q Clear(g_c), s	9.3	53.3	21.1	5.2	7.5	9.6	8.5	29.6	10.5	21.0	49.0	5.5
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	466	700	683	132	1177	788	160	881	483	350	1207	662
V/C Ratio(X)	0.38	1.00	0.47	0.70	0.21	0.23	0.85	0.85	0.31	0.97	0.99	0.15
Avail Cap(c_a), veh/h	471	700	683	138	1179	789	160	881	483	350	1207	662
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	27.2	45.3	29.1	36.9	33.7	21.0	41.3	51.3	38.8	38.4	47.4	25.8
Incr Delay (d2), s/veh	0.5	32.7	0.5	14.2	0.1	0.2	33.1	10.0	1.7	40.9	24.5	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(95%),veh/ln	7.3	39.9	12.7	4.7	5.7	6.5	8.7	20.1	7.8	18.9	33.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	78.0	29.6	51.0	33.8	21.1	74.4	61.2	40.5	79.3	71.8	26.3
LnGrp LOS	C	E	C	D	C	C	E	E	D	E	E	C
Approach Vol, veh/h		1198			528			1034			1638	
Approach Delay, s/veh		57.5			32.4			59.9			70.7	
Approach LOS		E			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	42.8	13.5	60.2	15.2	55.6	17.8	55.9
Change Period (Y+Rc), s	6.1	6.1	6.5	6.5	6.1	6.1	6.5	6.5
Max Green Setting (Gmax), s	21.9	36.7	7.5	53.7	9.1	49.5	11.7	49.5
Max Q Clear Time (g_c+I1), s	23.0	31.6	7.2	55.3	10.5	51.0	11.3	11.6
Green Ext Time (p_c), s	0.0	2.4	0.0	0.0	0.0	0.0	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	830	10	10	560	160	10	10	10	350	10	30
Future Volume (veh/h)	30	830	10	10	560	160	10	10	10	350	10	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1841	1826	1856	1856	1900	1900	1841	1811	1826	1885	1900
Adj Flow Rate, veh/h	60	1000	19	14	675	178	24	15	12	486	12	33
Peak Hour Factor	0.50	0.83	0.54	0.69	0.83	0.90	0.42	0.68	0.85	0.72	0.82	0.92
Percent Heavy Veh, %	0	4	5	3	3	0	0	4	6	5	1	0
Cap, veh/h	243	1400	27	197	1101	290	632	727	606	636	175	482
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	657	3511	67	549	2760	727	1383	1841	1535	1350	444	1221
Grp Volume(v), veh/h	60	498	521	14	431	422	24	15	12	486	0	45
Grp Sat Flow(s),veh/h/ln	657	1749	1829	549	1763	1725	1383	1841	1535	1350	0	1665
Q Serve(g_s), s	5.3	15.8	15.8	1.5	12.8	12.8	0.7	0.3	0.3	22.6	0.0	1.1
Cycle Q Clear(g_c), s	18.1	15.8	15.8	17.2	12.8	12.8	1.8	0.3	0.3	22.9	0.0	1.1
Prop In Lane	1.00		0.04	1.00		0.42	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	243	697	729	197	703	688	632	727	606	636	0	658
V/C Ratio(X)	0.25	0.71	0.71	0.07	0.61	0.61	0.04	0.02	0.02	0.76	0.00	0.07
Avail Cap(c_a), veh/h	332	934	976	271	941	921	740	871	726	742	0	788
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	0.00	1.00
Uniform Delay (d), s/veh	23.0	16.7	16.7	23.9	15.8	15.8	13.0	12.2	12.2	19.2	0.0	12.4
Incr Delay (d2), s/veh	0.5	1.7	1.6	0.2	0.9	0.9	0.0	0.0	0.0	4.1	0.0	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(95%),veh/ln	1.4	9.8	10.1	0.3	8.0	7.9	0.4	0.2	0.2	11.1	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	18.4	18.3	24.1	16.6	16.7	13.0	12.2	12.2	23.2	0.0	12.4
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	A	B
Approach Vol, veh/h		1079			867			51			531	
Approach Delay, s/veh		18.6			16.8			12.6			22.3	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	33.1	32.8	33.1	32.8
Change Period (Y+Rc), s	* 6.8	* 6.8	* 6.8	* 6.8
Max Green Setting (Gmax), s	* 35	* 31	* 35	* 31
Max Q Clear Time (g_c+I1), s	20.1	3.8	19.2	24.9
Green Ext Time (p_c), s	6.2	0.1	4.8	1.1

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	840	10	10	540	30	10	10	10	20	10	20
Future Vol, veh/h	30	840	10	10	540	30	10	10	10	20	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	913	11	11	587	33	11	11	11	22	11	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	620	0	0	924	0	0	1306	1627	462	1154	1616	310
Stage 1	-	-	-	-	-	-	985	985	-	626	626	-
Stage 2	-	-	-	-	-	-	321	642	-	528	990	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	956	-	-	735	-	-	117	101	547	152	103	686
Stage 1	-	-	-	-	-	-	266	324	-	439	475	-
Stage 2	-	-	-	-	-	-	665	467	-	502	323	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	956	-	-	735	-	-	96	92	547	126	94	686
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	92	-	126	94	-
Stage 1	-	-	-	-	-	-	247	301	-	408	464	-
Stage 2	-	-	-	-	-	-	614	456	-	441	300	-

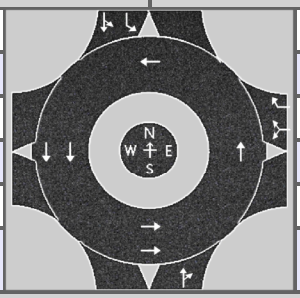
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	41.7	30.2
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	130	956	-	-	735	-	-	126	221
HCM Lane V/C Ratio	0.251	0.034	-	-	0.015	-	-	0.173	0.148
HCM Control Delay (s)	41.7	8.9	0.3	-	10	0.1	-	39.4	24.1
HCM Lane LOS	E	A	A	-	A	A	-	E	C
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.6	0.5

HCS Roundabouts Report

General Information

Analyst	TNA
Agency or Co.	American Structurepoint
Date Performed	2/12/2025
Analysis Year	2048
Time Analyzed	AM Peak Hour
Project Description	Symmes Rd RR Crossing



Site Information

Intersection	Hicks Blvd & Symmes Road
E/W Street Name	Symmes Road
N/S Street Name	Hicks Boulevard
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.92
Jurisdiction	Fairfield, OH

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment					LR		R				TR		L		LT	
Volume (V), veh/h					0	250		320	0		50	170	0	790	40	
Percent Heavy Vehicles, %					3	3		3	3		3	3	3	3	3	
Flow Rate (v_{PCE}), pc/h					0	280		358	0		56	190	0	884	45	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					1				2				1			
Pedestrians Crossing, p/h					0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s				4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway, s				2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				300	338			246		492	437	
Entry Volume, veh/h				291	328			239		478	424	
Circulating Flow (v_c), pc/h	1209			56			884			280		
Exiting Flow (v_{ex}), pc/h	1074			0			414			325		
Capacity (c_{pce}), pc/h				1349	1349			670		1101	1101	
Capacity (c), veh/h				1310	1310			650		1069	1069	
v/c Ratio (x)				0.22	0.25			0.37		0.45	0.40	

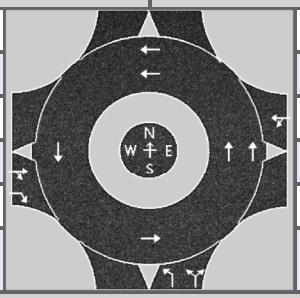
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				4.6	4.9			10.5		8.3	7.6	
Lane LOS				A	A			B		A	A	
95% Queue Length, Q_{95} (veh)				0.9	1.0			1.7		2.4	1.9	
95% Queue Length, Q_{95} (ft)				23.0				43.5			47.5	
Approach Delay, s/veh | LOS				4.8		A	10.5		B	7.9		A
Intersection Delay, s/veh | LOS	7.2						A					

HCS Roundabouts Report

General Information

Analyst	TNA
Agency or Co.	American Structurepoint
Date Performed	2/12/2025
Analysis Year	2048
Time Analyzed	AM Peak Hour
Project Description	Symmes Rd RR Crossing



Site Information

Intersection	Old Symmes Road & Hicks B...
E/W Street Name	Old Symmes Road
N/S Street Name	Hicks Blvd.
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.92
Jurisdiction	Fairfield, OH

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	0	1	0	0	1	1	0	0	0	0	0
Lane Assignment	TR		R				LT		L		LR					
Volume (V), veh/h	0		10	820	0	0	10		0	370		0				
Percent Heavy Vehicles, %	3		3	3	3	3	3		3	3		3				
Flow Rate (v_{PCE}), pc/h	0		11	918	0	0	11		0	414		0				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				2				1							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436			4.3276		4.5436	4.5436				
Follow-Up Headway, s	2.5352	2.5352			2.5352		2.5352	2.5352				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	437	492			11		219	195				
Entry Volume, veh/h	424	478			11		213	189				
Circulating Flow (v_c), pc/h	0			414			11			425		
Exiting Flow (v_{ex}), pc/h	11			425			0			918		
Capacity (c_{pce}), pc/h	1420	1420			999		1406	1406				
Capacity (c), veh/h	1379	1379			970		1365	1365				
v/c Ratio (x)	0.31	0.35			0.01		0.16	0.14				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	5.3	5.7			3.8		3.9	3.8				
Lane LOS	A	A			A		A	A				
95% Queue Length, Q_{95} (veh)	1.3	1.6			0.0		0.6	0.5				
95% Queue Length, Q_{95} (ft)	33.3				0.0			12.8				
Approach Delay, s/veh | LOS	5.5	A		3.8	A		3.8	A				
Intersection Delay, s/veh | LOS	5.0						A					

DY 2048 Build PM Peak
Proposed Improvements

02/17/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	230	180	140	530	390	270	1250	70	140	930	200
Future Volume (veh/h)	200	230	180	140	530	390	270	1250	70	140	930	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1885	1870	1885	1885	1885	1900	1885	1885	1826	1870	1885
Adj Flow Rate, veh/h	217	264	202	215	596	443	318	1316	79	165	1022	253
Peak Hour Factor	0.92	0.87	0.89	0.65	0.89	0.88	0.85	0.95	0.89	0.85	0.91	0.79
Percent Heavy Veh, %	0	1	2	1	1	1	0	1	1	5	2	1
Cap, veh/h	250	322	506	351	777	471	348	1379	847	209	1119	661
Arrive On Green	0.10	0.17	0.17	0.15	0.22	0.22	0.15	0.39	0.39	0.08	0.31	0.31
Sat Flow, veh/h	1810	1885	1585	1795	3582	1598	1810	3582	1598	1739	3554	1598
Grp Volume(v), veh/h	217	264	202	215	596	443	318	1316	79	165	1022	253
Grp Sat Flow(s),veh/h/ln	1810	1885	1585	1795	1791	1598	1810	1791	1598	1739	1777	1598
Q Serve(g_s), s	8.9	15.4	6.1	6.7	17.8	19.2	14.6	40.7	0.8	7.3	31.5	4.3
Cycle Q Clear(g_c), s	8.9	15.4	6.1	6.7	17.8	19.2	14.6	40.7	0.8	7.3	31.5	4.3
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	250	322	506	351	777	471	348	1379	847	209	1119	661
V/C Ratio(X)	0.87	0.82	0.40	0.61	0.77	0.94	0.91	0.95	0.09	0.79	0.91	0.38
Avail Cap(c_a), veh/h	381	620	756	351	927	538	396	1379	847	209	1119	661
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	48.8	45.6	11.5	42.9	41.9	17.1	30.7	34.1	4.2	28.8	37.6	7.8
Incr Delay (d2), s/veh	12.7	5.2	0.5	3.1	3.3	23.2	23.4	15.5	0.2	17.9	12.8	1.7
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(95%),veh/ln	11.1	12.1	4.9	9.7	12.8	14.7	13.2	27.3	0.7	7.2	21.8	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	50.7	12.0	46.1	45.2	40.3	54.2	49.6	4.4	46.7	50.4	9.5
LnGrp LOS	E	D	B	D	D	D	D	D	A	D	D	A
Approach Vol, veh/h		683			1254			1713			1440	
Approach Delay, s/veh		42.7			43.6			48.4			42.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	50.0	23.0	26.0	23.0	42.0	17.8	31.2
Change Period (Y+Rc), s	6.1	6.1	6.5	6.5	6.1	6.1	6.5	6.5
Max Green Setting (Gmax), s	8.9	43.9	11.5	37.5	19.9	32.9	19.5	29.5
Max Q Clear Time (g_c+I1), s	9.3	42.7	8.7	17.4	16.6	33.5	10.9	21.2
Green Ext Time (p_c), s	0.0	0.9	0.2	2.1	0.3	0.0	0.4	3.6

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	610	10	10	1060	450	10	10	10	190	10	30
Future Volume (veh/h)	40	610	10	10	1060	450	10	10	10	190	10	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1900	1870	1856	1752	1870	1885	1870	1856	1870	1900
Adj Flow Rate, veh/h	67	678	18	14	1140	726	14	12	12	292	14	38
Peak Hour Factor	0.60	0.90	0.57	0.69	0.93	0.62	0.72	0.80	0.84	0.65	0.74	0.80
Percent Heavy Veh, %	0	3	0	2	3	10	2	1	2	3	2	0
Cap, veh/h	93	2067	55	456	1263	737	385	461	387	418	109	295
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	249	3508	93	749	2143	1250	1352	1885	1585	1376	445	1208
Grp Volume(v), veh/h	67	341	355	14	919	947	14	12	12	292	0	52
Grp Sat Flow(s),veh/h/ln	249	1763	1839	749	1763	1631	1352	1885	1585	1376	0	1653
Q Serve(g_s), s	1.7	8.0	8.1	0.8	36.6	46.5	0.7	0.4	0.5	16.8	0.0	2.0
Cycle Q Clear(g_c), s	48.2	8.0	8.1	8.8	36.6	46.5	2.7	0.4	0.5	17.1	0.0	2.0
Prop In Lane	1.00		0.05	1.00		0.77	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	93	1039	1084	456	1039	961	385	461	387	418	0	404
V/C Ratio(X)	0.72	0.33	0.33	0.03	0.88	0.99	0.04	0.03	0.03	0.70	0.00	0.13
Avail Cap(c_a), veh/h	93	1039	1084	456	1039	961	521	650	546	561	0	576
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	0.00	1.00
Uniform Delay (d), s/veh	40.8	8.6	8.6	10.8	14.4	16.5	25.1	23.5	23.5	30.0	0.0	24.1
Incr Delay (d2), s/veh	23.5	0.2	0.2	0.0	9.3	25.4	0.0	0.0	0.0	2.4	0.0	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(95%),veh/ln	3.5	5.0	5.2	0.2	21.4	28.9	0.4	0.3	0.3	9.4	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	8.7	8.7	10.8	23.7	41.9	25.2	23.5	23.6	32.5	0.0	24.2
LnGrp LOS	E	A	A	B	C	D	C	C	C	C	A	C
Approach Vol, veh/h		763			1880			38			344	
Approach Delay, s/veh		13.6			32.7			24.1			31.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	55.0	26.8	55.0	26.8
Change Period (Y+Rc), s	* 6.8	* 6.8	* 6.8	* 6.8
Max Green Setting (Gmax), s	* 48	* 28	* 48	* 29
Max Q Clear Time (g_c+I1), s	50.2	4.7	48.5	19.1
Green Ext Time (p_c), s	0.0	0.1	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	630	10	10	1190	20	10	10	10	20	10	30
Future Vol, veh/h	30	630	10	10	1190	20	10	10	10	20	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	685	11	11	1293	22	11	11	11	22	11	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1315	0	0	696	0	0	1431	2094	348	1740	2088	658
Stage 1	-	-	-	-	-	-	757	757	-	1326	1326	-
Stage 2	-	-	-	-	-	-	674	1337	-	414	762	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	522	-	-	896	-	-	95	52	648	56	52	407
Stage 1	-	-	-	-	-	-	366	414	-	164	223	-
Stage 2	-	-	-	-	-	-	410	220	-	586	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	522	-	-	896	-	-	64	45	648	40	45	407
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	45	-	40	45	-
Stage 1	-	-	-	-	-	-	328	371	-	147	213	-
Stage 2	-	-	-	-	-	-	341	210	-	502	370	-

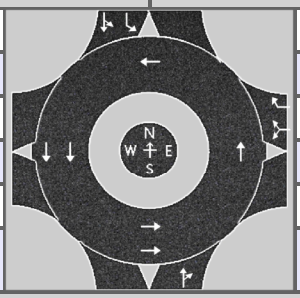
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.3	84.1	86.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	76	522	-	-	896	-	-	40	135
HCM Lane V/C Ratio	0.429	0.062	-	-	0.012	-	-	0.543	0.322
HCM Control Delay (s)	84.1	12.4	0.6	-	9.1	0.2	-	172.7	43.8
HCM Lane LOS	F	B	A	-	A	A	-	F	E
HCM 95th %tile Q(veh)	1.7	0.2	-	-	0	-	-	1.9	1.3

HCS Roundabouts Report

General Information

Analyst	TNA
Agency or Co.	American Structurepoint
Date Performed	2/12/2025
Analysis Year	2048
Time Analyzed	PM Peak Hour
Project Description	Symmes Rd RR Crossing



Site Information

Intersection	Hicks Blvd & Symmes Road
E/W Street Name	Symmes Road
N/S Street Name	Hicks Boulevard
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.92
Jurisdiction	Fairfield, OH

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0
Lane Assignment					LR		R				TR		L		LT	
Volume (V), veh/h					0	310		960	0		60	200	0	470	40	
Percent Heavy Vehicles, %					3	3		3	3		3	3	3	3	3	
Flow Rate (v_{PCE}), pc/h					0	347		1075	0		67	224	0	526	45	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					1				2				1			
Pedestrians Crossing, p/h					0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s				4.5436	4.5436			4.3276		4.5436	4.5436	
Follow-Up Headway, s				2.5352	2.5352			2.5352		2.5352	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				668	754			291		303	268	
Entry Volume, veh/h				649	732			283		294	261	
Circulating Flow (v_c), pc/h	918			67			526			347		
Exiting Flow (v_{ex}), pc/h	750			0			1142			392		
Capacity (c_{pce}), pc/h				1336	1336			908		1036	1036	
Capacity (c), veh/h				1297	1297			882		1005	1005	
v/c Ratio (x)				0.50	0.56			0.32		0.29	0.26	

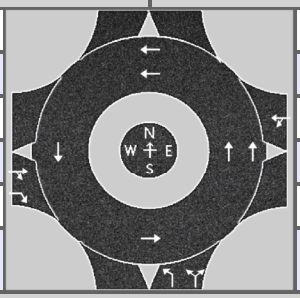
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				8.0	9.1			7.6		6.5	6.1	
Lane LOS				A	A			A		A	A	
95% Queue Length, Q_{95} (veh)				2.9	3.7			1.4		1.2	1.0	
95% Queue Length, Q_{95} (ft)				74.2				35.8			25.0	
Approach Delay, s/veh | LOS				8.6		A	7.6		A	6.3		A
Intersection Delay, s/veh | LOS	7.9						A					

HCS Roundabouts Report

General Information

Analyst	TNA
Agency or Co.	American Structurepoint
Date Performed	2/12/2025
Analysis Year	2048
Time Analyzed	PM Peak Hour
Project Description	Symmes Rd RR Crossing



Site Information

Intersection	Old Symmes Road & Hicks B...
E/W Street Name	Old Symmes Road
N/S Street Name	Hicks Blvd.
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.92
Jurisdiction	Fairfield, OH

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	0	1	0	0	1	1	0	0	0	0	0
Lane Assignment	TR		R				LT		L		LR					
Volume (V), veh/h	0		10	500	0	0	10		0	1020		0				
Percent Heavy Vehicles, %	3		3	3	3	3	3		3	3		3				
Flow Rate (v_{PCE}), pc/h	0		11	560	0	0	11		0	1142		0				
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				2				1							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s	4.5436	4.5436			4.3276		4.5436	4.5436				
Follow-Up Headway, s	2.5352	2.5352			2.5352		2.5352	2.5352				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	268	303			11		605	537				
Entry Volume, veh/h	261	294			11		588	521				
Circulating Flow (v_c), pc/h	0			1142			11			1153		
Exiting Flow (v_{ex}), pc/h	11			1153			0			560		
Capacity (c_{pce}), pc/h	1420	1420			538		1406	1406				
Capacity (c), veh/h	1379	1379			522		1365	1365				
v/c Ratio (x)	0.19	0.21			0.02		0.43	0.38				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	4.2	4.4			7.1		6.8	6.2				
Lane LOS	A	A			A		A	A				
95% Queue Length, Q_{95} (veh)	0.7	0.8			0.1		2.2	1.8				
95% Queue Length, Q_{95} (ft)	17.9				2.5			46.1				
Approach Delay, s/veh | LOS	4.3	A		7.1	A		6.5	A				
Intersection Delay, s/veh | LOS	5.8						A					