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Memo

TO: Katy Hallgren, Chelsea Bossenbroek – Northgate Resorts

FROM: Kyle M. Reidsma, PE, PTOE and Alyssa M. Wambold, PE, PTOE

STATE OF MICHIGAN
KYLE
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Kyle Reidsma
Sep 21 2022 10:56 AM

DATE: September 21, 2022 **PROJECT NO.:** 211505

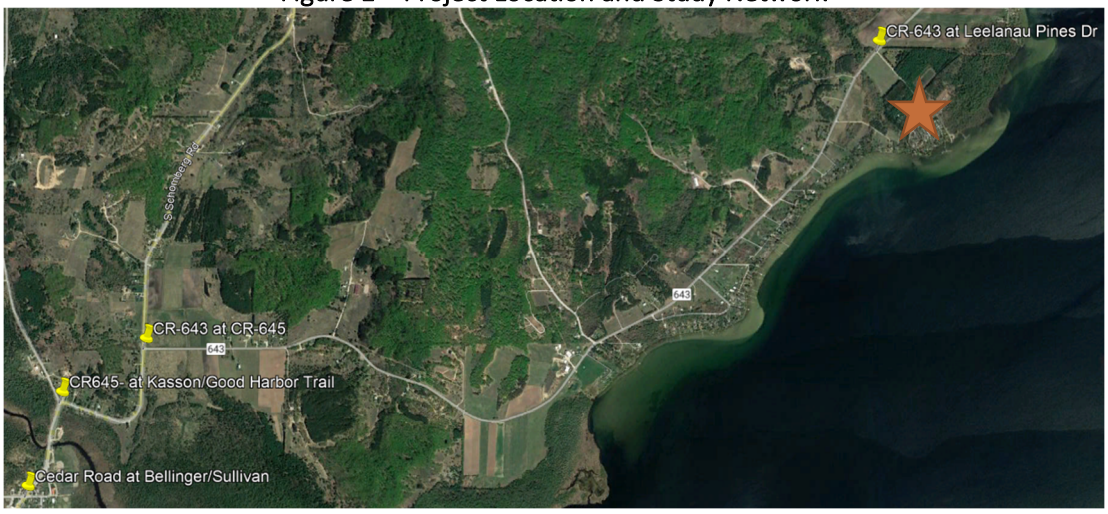
RE: Leelanau Pines Campground Traffic Impact Assessment - **DRAFT**

Introduction

On behalf of Northgate Resorts, Fishbeck has conducted a traffic impact analysis (TIA) related to the expansion of the existing Leelanau Pines Campground located on the east side of CR-643 (S Lake Shore Drive) at the intersection with E Leelanau Pines Drive in Centerville Township, Michigan. The campground currently has 183 campsites with 48 of these campsites designated as "short-term" (campsites that can be rented on a per-night basis) and 135 campsites designated as "seasonal" (campsites that are rented by a single entity for the entire camping season). With the proposed expansion, the campground will have 355 campsites, improved communal facilities, and limited staff housing. The expansion will add 172 short-term campsites for a total of 220 short-term campsites and 135 seasonal campsites. The development will be completed in one phase, assumed to be open and fully operational in 2024. The campground will use the existing driveway on CR-643 (S Lake Shore Drive).

The project location and study intersections are indicated in Figure 1 – Project Location and Study Network.

Figure 1 – Project Location and Study Network



Traffic data was collected over the Labor Day holiday weekend for the check-in and check-out times of the existing campground. It is anticipated that this provides a conservative analysis considering that during the typical spring/summer months, campers arrive and leave on various days of the week depending on the length of their stay. For Labor Day weekend, it is expected that the majority of campers arrive on Friday afternoon and leave on

Monday afternoon. The analysis also used a conservative methodology for trip generation that will be described in detail later.

Study Methodology

The objectives of this TIA were to determine what impacts, if any, the proposed project will have on adjacent roadway traffic operations, and to develop recommendations for any improvements necessary to mitigate the project impacts on the studied intersections. Study analyses were completed relative to peak operations of the campground.

The Leelanau County Road Commission (LCRC) required that a study be prepared for this development. The scope for this Traffic Impact Assessment (TIA) was approved by LCRC, and this study was executed as presented in that scope. Based on the type and size of the proposed development and the likely area of influence for the site trips, traffic operations were analyzed for the following unsignalized intersections, as recommended by the LCRC:

1. CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive.
2. CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road).
3. CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail.
4. CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street.

This study was conducted according to the methodologies and guidance published by Institute of Transportation Engineers (ITE), American Association of State Highway and Transportation Officials (AASHTO), Michigan Department of Transportation (MDOT), and the LCRC.

Existing Traffic Volumes

Vehicular turning movement counts (TMCs) were collected to coincide with peak operations of the campground. Traffic counts were collected at the following study intersections on Labor Day Weekend during the peak check-in period (Friday September 2, 2022, from 2 p.m. to 6 p.m.) and peak check-out period (Monday September 5, 2022, 12 p.m. to 3 p.m.):

- CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive.
- CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road).
- CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail.
- CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street.

The Leelanau Pines Campground currently operates with seasonal and short-term campsites. Current check-in time is 3 p.m. and check-out time is 1 p.m. For the 2022 season, all of the seasonal campsites were occupied. On Labor Day Weekend (when TMCs were completed), all of the short-term campsites were occupied. Occupancy data for the short-term campsites provided by Leelanau Pines Campground indicated that every weekend between July 1 and Labor Day were at or near capacity with the lowest weekend having 45 of the 48 campsites occupied.

Historical traffic data from the Michigan Department of Transportation (MDOT) Transportation Data Management System (TDMS) website was reviewed to determine if there was an impact on the current traffic volume data due to impact of COVID-19. Based on this review, there was no compelling evidence to apply an adjustment factor to the collected TMCs. Traffic volume information is attached to this memo.

Existing Conditions Analysis

Traffic Operations Analysis Methodology

Synchro software was used to perform Highway Capacity Manual (HCM) operational analyses during the Friday Check-In and Monday Check-Out peak hours for all the intersections within this study. According to the most recent editions of the HCM, LOS is a qualitative measure describing operational conditions of a traffic stream or intersection. LOS ranges from A to F, with LOS A representing desirable traffic operations characterized by low delay and LOS F representing extremely poor traffic operations characterized by excessive delays and long vehicle queues. LOS D is generally considered acceptable for most areas. Table 1 – LOS Criteria presents the HCM criteria for various LOS for unsignalized intersections. Output from the Synchro analyses for the various conditions are attached to this memo.

Table 1 – LOS Criteria for Unsignalized Intersections

LOS	Average Stopped Vehicle Delay (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Existing Conditions Traffic Analysis

Synchro models for the existing network were created based on the existing roadway configurations and traffic controls. Where applicable, data concerning the existing intersection and roadway lane configurations, geometry, and traffic control that were observed in the field were entered in the models.

Typically, when entering traffic data into Synchro, heavy vehicle percentages are entered per approach (EB/WB/NB/SB) and not by movement (left/through/right). For this study, any passenger vehicle towing a camper, trailer, boat, or 5th-wheel RV were considered heavy vehicles to provide a more conservative analysis of LOS/delay. Additionally, to better understand the traffic impacts of these vehicles, heavy vehicle percentages were evaluated by movement (left/through/right) to more accurately depict the travel path of site trips to/from the campground through the study area intersections.

The intersection of CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive operates with two-way stop-control, where the westbound E Leelanau Pines Drive approach is required to stop. Northbound and southbound CR-643 (S Lake Shore Drive) are not required to stop or yield. Each approach of this intersection consists of a single lane in each direction.

The intersection of CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road) operates with two-way stop-control, where the westbound CR-645 (S Schomberg Road) approach is required to stop. Northbound and southbound CR-643 (S Lake Shore Drive) are not required to stop or yield. Each approach of this intersection consists of a single lane in each direction.

The intersection of CR-645 (S Schomberg Road) and Kasson Street/Good Harbor Trail operates with two-way stop-control, where the westbound CR-645 (S Schomberg Road) approach is required to stop. Northbound and southbound Kasson Street/S Good Harbor Trail are not required to stop or yield. Each approach of this intersection consists of a single lane in each direction.

The intersection of CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street

operates with all-way stop-control, where all approaches are required to stop. Each approach of this intersection consists of a single lane in each direction.

The resulting LOS and delay for the existing conditions are indicated in Table 2 – LOS Analysis for Existing (2022) Conditions. Existing conditions LOS reports are attached to this memo.

Table 2 – LOS Analysis for Existing (2022) Conditions

Approach/Lane Group	LOS/Delay(s)			
	Friday Check-In		Monday Check-Out	
CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive				
WB E Leelanau Pines Drive	A	8.9	A	9.4
NB CR-643 (S Lake Shore Drive)	A	0.0	A	0.0
SB CR-643 (S Lake Shore Drive)	A	0.7	A	0.5
Overall	A	1.2	A	2.9
CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road)				
WB CR-643 (S Lake Shore Drive)	A	9.8	A	9.6
NB CR-645 (S Schomberg Road)	A	0.0	A	0.0
SB CR-645 (S Schomberg Road)	A	0.0	A	0.8
Overall	A	2.7	A	3.6
CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail				
WB CR-645 (S Schomberg Road)	B	11.9	B	10.8
NB Kasson Street	A	0.0	A	0.0
SB S Good Harbor Trail	A	0.0	A	0.2
Overall	A	2.4	A	2.5
CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street				
EB CR-616 (E Bellinger Road)	A	9.1	A	8.2
WB Sullivan Street	A	8.4	A	9.3
NB CR-616 (S Cedar Road)	B	10.5	A	8.7
SB S Kasson St	B	10.1	A	8.6
Overall	B	10.1	A	8.6

Background Conditions Analysis

Historical traffic data on the MDOT TDMS website was referenced in order to determine the applicable growth rate for the existing traffic volumes to the project build-out year in 2024. Based on this review, a background growth rate of 0.5% was utilized.

Background Conditions Traffic Analysis

The resulting LOS and delay for the background conditions are shown below in Table 3 – LOS Analysis for Background (2024) Conditions. Background conditions LOS reports are attached to this memo.

Table 3 – LOS Analysis for Background (2024) Conditions

Approach/Lane Group	LOS/Delay(s)			
	Friday Check-In		Monday Check-Out	
CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive				
WB E Leelanau Pines Drive	A	8.9	A	9.4
NB CR-643 (S Lake Shore Drive)	A	0.0	A	0.0

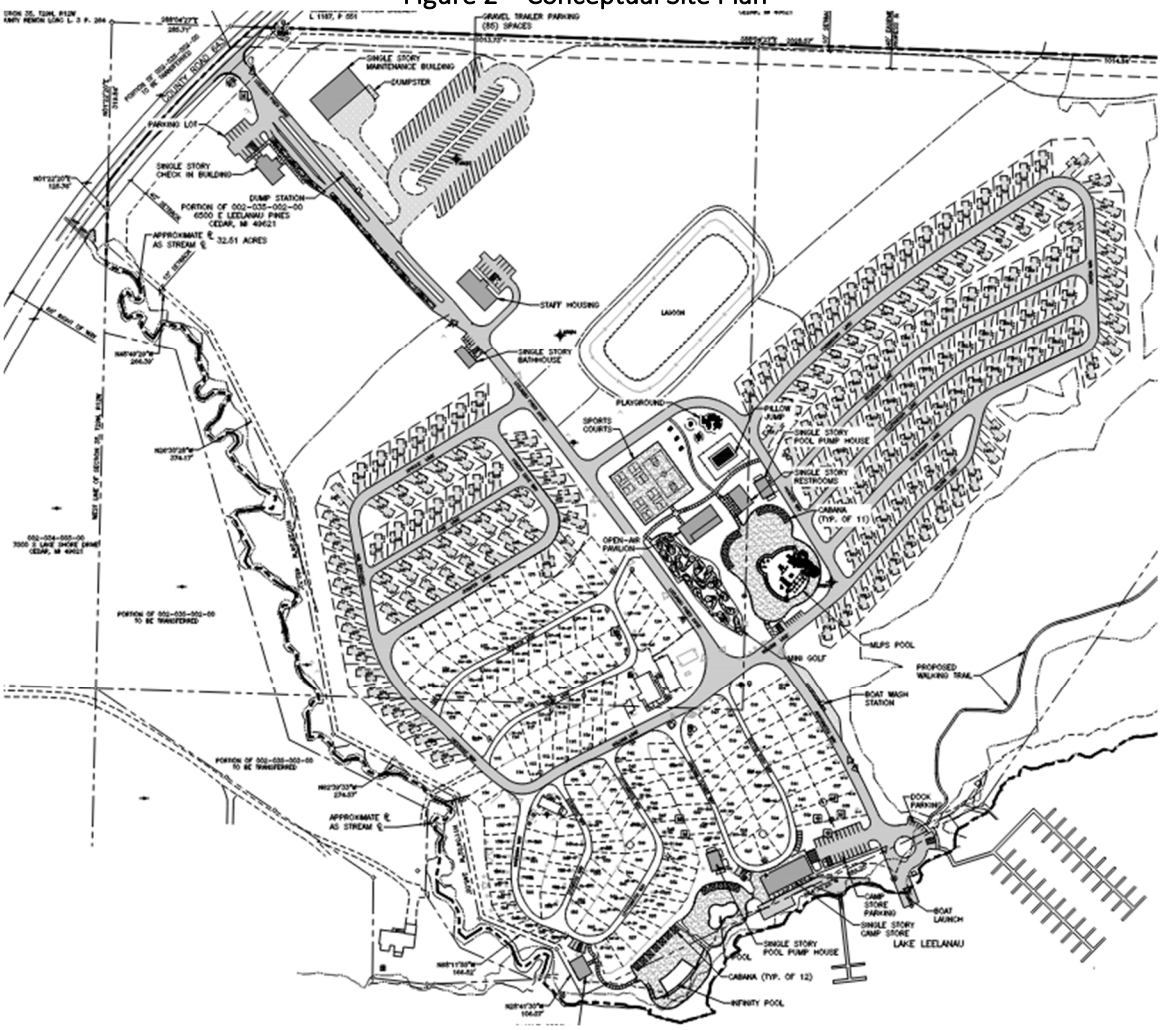
Table 3 – LOS Analysis for Background (2024) Conditions

Approach/Lane Group	LOS/Delay(s)			
	Friday Check-In		Monday Check-Out	
SB CR-643 (S Lake Shore Drive)	A	0.7	A	0.5
Overall	A	1.2	A	2.9
CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road)				
WB CR-643 (S Lake Shore Drive)	A	9.8	A	9.6
NB CR-645 (S Schomberg Road)	A	0.0	A	0.0
SB CR-645 (S Schomberg Road)	A	0.0	A	0.8
Overall	A	2.7	A	3.6
CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail				
WB CR-645 (S Schomberg Road)	B	11.9	B	10.8
NB Kasson Street	A	0.0	A	0.0
SB S Good Harbor Trail	A	0.0	A	0.2
Overall	A	2.4	A	2.5
CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street				
EB CR-616 (E Bellinger Road)	A	9.1	A	8.2
WB Sullivan Street	A	8.4	A	9.3
NB CR-616 (S Cedar Road)	B	10.7	A	8.7
SB S Kasson St	B	10.2	A	8.6
Overall	B	10.2	A	8.6

Site Traffic Characteristics

A representation of the current conceptual site plan is provided in Figure 2 – Conceptual Site Plan below.

Figure 2 – Conceptual Site Plan



Trip Generation

Using the information and methodologies specified in the latest version of Trip Generation (11th Edition), Fishbeck forecast the trips associated with the proposed development during the Friday Check-In and Monday Check-Out peak periods.

The data available in the latest version of Trip Generation for this type of development (Land Use Code 416 – Campground/Recreational Vehicle Park) is based on four other developments that contain between 21 and 135 campsites. The Trip Generation manual advises that local data or specialized data should be collected for this TIA as the proposed development is significantly larger than data available in the manual.

Traffic counts were completed during the Friday Check-In and Monday Check-Out periods of Labor Day Weekend. The Leelanau Pines Campground indicated that they were fully booked for the entirety of the holiday weekend. The number of existing inbound and outbound trips during both peak hours was tabulated. To determine the trip generation of the campground once the expansion is complete, the number of existing sites was compared to the number of proposed sites. While the number of seasonal sites will remain the same (135) the number of short-term sites will increase from 48 to 220, or a factor of 4.58. Given that the short-term rentals tend to arrive and depart during the peak hours and generate more trips than the seasonal campsites, the existing trip

generation volumes from the TMCs were multiplied by the calculated adjustment factor to determine the proposed trip generation.

As described in the existing conditions traffic analysis section above, passenger vehicles towing a camper, trailer, boat, or 5th-wheel RV were considered as heavy vehicles for this study. Conservatively, all of the site generated traffic was assumed to be a heavy vehicle, and new heavy vehicle percentages were calculated for each movement in the future conditions.

Additionally, Northgate Resorts provided a traffic study for a campsite of similar size to the proposed site expansion. The trips counted as part of the provided study are similar or slightly lower than the trip generation calculated for this proposed expansion.

Finally, review of the limited data available in the ITE Trip Generation Manual revealed that the data collected at the existing Leelanau Pines Campground and the trip generation forecast for the proposed expansion are higher than the rates provided in the Trip Generation Manual. The Trip Generation Manual for a campground/RV park has a small sample size of studies, all of which were smaller sized campgrounds than what is being proposed.

A comparison was conducted of the trip generation methods described above of an adjustment factor based on the existing campground, the previous traffic study for a similar-sized campground, and the data from the ITE Trip Generation Manual. The use of the adjustment factor based on the local data collected at the existing Leelanau Pines Campground provided the highest number of proposed trips and therefore the most conservative analysis. The analysis was performed using this method for trip generation. Labor Day is typically the "last weekend of summer" where a majority of campers arrive on Friday evening and leave on Monday afternoon. Compared to a typical summer weekend where campers are more likely to stay for a longer duration of time, counting inbound and outbound traffic on Labor Day Weekend represents a higher-than-normal rate of entering and exiting traffic, will allows for a conservative analysis.

Table 4 – Trip Generation for Proposed Development presents the resulting trip generation for the development.

Table 4 – Trip Generation for Leelanau Pines Campground

Scenario	Units		Friday Check-In			Monday Check-Out		
			In	Out	Total	In	Out	Total
Existing	183	Campsites	19	11	30	16	38	54
Proposed	355	Campsites	87	51	138	74	174	248

Trip Distribution

The directions that site traffic will travel to and from were based upon existing traffic patterns during the Friday Check-In and Monday Check-Out peak periods and the location of the campground. Given the location of the campground and surrounding road network, a majority of traffic will travel to/from the south. Table 5 – Trip Distribution provides the probable distribution based on the existing traffic patterns and campground location.

Table 5 – Trip Distribution

Direction	Via	Split
North	CR-643 (S Lake Shore Drive)	10%
South	CR-651 (S Cedar Road)	90%

Future Conditions Analysis

Turn Lane Warrants

An evaluation was performed in accordance with MDOT requirements to determine if left turn passing lanes or right turn deceleration lanes are required at the site driveway. The results of the analysis indicated that a right turn taper is warranted on CR-643 (S Lake Shore Drive) at E Leelanau Pines Drive. All turn lane warrant charts are attached to this memo. The results of the analysis are presented in Table 6 – Turn Lane Warrants. Although a northbound right turn lane is not warranted, the proposed entrance improvements will include a right turn lane per the standard driveway detail providing by the Road Commission. MDOT turn lane warrant information is attached to this memo.

Table 6 – Turn Lane Warrants

Intersection	Movement	Result
CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive	NB Right Turn	Taper Warranted
	SB Left Turn	Not Warranted

Future Conditions Traffic Analysis

The resulting LOS and delay for the future conditions are shown in Table 7 – LOS Analysis for Future Conditions. Future conditions LOS reports are attached to this memo.

Table 7 – LOS Analysis for Future Conditions

Approach/Lane Group	LOS/Delay(s)			
	Friday Check-In		Monday Check-Out	
CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive				
WB E Leelanau Pines Drive	B	11.4	B	14.2
NB CR-643 (S Lake Shore Drive)	A	0.0	A	0.0
SB CR-643 (S Lake Shore Drive)	A	1.9	A	1.7
Overall	A	3.6	A	8.0
CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road)				
WB CR-643 (S Lake Shore Drive)	B	11.7	B	13.0
NB CR-645 (S Schomberg Road)	A	0.0	A	0.0
SB CR-645 (S Schomberg Road)	A	0.0	A	0.8
Overall	A	3.8	A	7.0
CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail				
WB CR-645 (S Schomberg Road)	B	14.5	C	16.6
NB Kasson Street	A	0.0	A	0.0
SB S Good Harbor Trail	A	0.0	A	0.2
Overall	A	3.4	A	6.6
CR-616 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street				
EB CR-616 (E Bellinger Road)	B	10.5	A	9.8
WB Sullivan Street	A	8.9	A	9.9
NB CR-616 (S Cedar Road)	B	12.6	A	10.0
SB S Kasson St	B	11.5	B	11.2
Overall	B	11.8	B	10.6

Findings and Recommendations

The analyses conducted for this TIA indicate the proposed development will not result in any significant impact to the capacity of the adjacent road network. The proposed site access configuration is appropriate and will acceptably facilitate site ingress and egress. The traffic analysis was based on traffic volumes from Labor Day weekend, which presents a more conservative analysis than a typical summer day when campers arrive and leave throughout the week and are not focused on a Friday arrival and Monday exit like the Labor Day weekend. Trip generation for the proposed site was performed by using a rate based on the existing site volumes on Labor Day weekend. It was found that this method of trip generation was higher, and more conservative, than trip generation from the ITE Trip Generation Manual and a similar sized site that Northgate operates.

The increase in average delay experienced by motorists does not increase more than 2.6 seconds during the Friday Check-In peak hour and does not increase more than 5.8 seconds during the Monday Check-Out period. The overall intersection LOS remain at LOS A and B with the proposed conditions, and the proposed conditions do not degrade the LOS by more than one grade for any approach or intersection. The LOS for all of the movements at the study intersections operate acceptably today and will continue to do so under the proposed conditions.

Attachments
By email

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#1 - CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive	Friday Check-In 09/02/22		PHF				0.69				0.87			0.95	
			% Heavy				0%		0%		6%	21%	20%	8%	
			Heavy Vehicles				0		0		3	3	1	4	
		2022	Existing				**5**		**6**		**52**	**14**	**5**	**48**	
		2022	Existing Adj.				5		6		52	14	5	48	
		2024	Background				5		6		53	14	5	48	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**5**		**6**		**53**	**14**	**5**	**48**	
			Site Generated				46		5			78	9		
			Pass By												
			Total Site Gen				46		5		0	78	9	0	
			% Heavy Future				90%		45%		6%	88%	71%	8%	
			Total Future				**51**		**11**		**53**	**92**	**14**	**48**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road)	Friday Check-In 09/02/22		PHF				0.68				0.83			0.75	
			% Heavy				6%		0%		4%	7%	0%	8%	
			Heavy Vehicles				3		0		2	5	0	3	
		2022	Existing				**52**		**0**		**54**	**76**	**0**	**36**	
		2022	Existing Adj.				52		0		54	76	0	36	
		2024	Background				53		0		55	77	0	36	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**53**		**0**		**55**	**77**	**0**	**36**	
			Site Generated				46					78			
			Pass By												
			Total Site Gen				46		0		0	78	0	0	
			% Heavy Future				49%		0%		4%	54%	0%	8%	
			Total Future				**99**		**0**		**55**	**155**	**0**	**36**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3 - CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail	Friday Check-In 09/02/22		PHF				0.85				0.87			0.81	
			% Heavy				6%		0%		3%	7%	0%	6%	
			Heavy Vehicles				5		0		4	9	0	7	
		2022	Existing				**90**		**2**		**132**	**126**	**0**	**110**	
		2022	Existing Adj.				90		2		132	126	0	110	
		2024	Background				91		2		133	127	0	111	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**91**		**2**		**133**	**127**	**0**	**111**	
			Site Generated				46					78			
			Pass By												
			Total Site Gen				46		0		0	78	0	0	
			% Heavy Future				37%		0%		3%	42%	0%	6%	
			Total Future				**137**		**2**		**133**	**205**	**0**	**111**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#4 - CR-651 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street	Friday Check-In 09/02/22		PHF	0.85			0.60			0.88			0.92		
			% Heavy	4%	0%	7%	0%	0%	20%	4%	5%	0%	25%	6%	6%
			Heavy Vehicles	2	0	3	0	0	1	2	10	0	1	10	2
		2022	Existing	**52**	**1**	**46**	**5**	**3**	**5**	**53**	**210**	**2**	**4**	**168**	**33**
		2022	Existing Adj.	52	1	46	5	3	5	53	210	2	4	168	33
		2024	Background	53	1	46	5	3	5	54	212	2	4	170	33
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	**53**	**1**	**46**	**5**	**3**	**5**	**54**	**212**	**2**	**4**	**170**	**33**
			Site Generated	16							62			39	7
			Pass By												
			Total Site Gen	16	0	0	0	0	0	0	62	0	0	39	7
			% Heavy Future	26%	0%	7%	0%	0%	20%	4%	26%	0%	25%	23%	23%
			Total Future	**69**	**1**	**46**	**5**	**3**	**5**	**54**	**274**	**2**	**4**	**209**	**40**

Count Date:	9/2/2022
Count Year:	2022
Existing Adj. Year:	2022
Existing Adjustment Rate:	1.00
Growth Rate:	0.5%
Buildout Year:	2024
Scenario:	Friday Check-In
Bckgrd. Dev. A:	
Bckgrd. Dev. B:	
Bckgrd. Dev. C:	

Count Date:	9/5/2022
Count Year:	2022
Existing Adj. Year:	2022
Existing Adjustment Rate:	1.00
Growth Rate:	0.5%
Buildout Year:	2024
Scenario:	Monday Check-Out
Bckgrd. Dev. A:	
Bckgrd. Dev. B:	
Bckgrd. Dev. C:	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#1 - CR-643 (S Lake Shore Drive) and E Leelanau Pines Drive	Monday Check-Out 09/05/22		PHF				0.79				0.68			0.77	
			% Heavy				21%		22%		8%	0%	33%	12%	
			Heavy Vehicles				6		2		2	0	1	5	
		2022	Existing				**29**		**9**		**25**	**13**	**3**	**43**	
		2022	Existing Adj.				29		9		25	13	3	43	
		2024	Background				29		9		25	13	3	43	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**29**		**9**		**25**	**13**	**3**	**43**	
			Site Generated				157		17			66	8		
			Pass By												
			Total Site Gen				157		17		0	66	8	0	
			% Heavy Future				88%		73%		8%	84%	82%	12%	
			Total Future				**186**		**26**		**25**	**79**	**11**	**43**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - CR-643 (S Lake Shore Drive) and CR-645 (S Schomberg Road)	Monday Check-Out 09/05/22		PHF				0.90				0.83			0.68	
			% Heavy				15%		0%		0%	13%	0%	4%	
			Heavy Vehicles				10		0		0	7	0	1	
		2022	Existing				**66**		**2**		**28**	**52**	**3**	**24**	
		2022	Existing Adj.				66		2		28	52	3	24	
		2024	Background				67		2		28	53	3	24	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**67**		**2**		**28**	**53**	**3**	**24**	
			Site Generated				157					66			
			Pass By												
			Total Site Gen				157		0		0	66	0	0	
			% Heavy Future				75%		0%		0%	61%	0%	4%	
			Total Future				**224**		**2**		**28**	**119**	**3**	**24**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3 - CR-645 (S Schomberg Road) and Kasson Street/S Good Harbor Trail	Monday Check-Out 09/05/22		PHF				0.95				0.85			0.81	
			% Heavy				5%		0%		3%	6%	0%	3%	
			Heavy Vehicles				4		0		2	5	0	3	
		2022	Existing				**86**		**2**		**77**	**83**	**3**	**101**	
		2022	Existing Adj.				86		2		77	83	3	101	
		2024	Background				87		2		78	84	3	102	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				**87**		**2**		**78**	**84**	**3**	**102**	
			Site Generated				157					66			
			Pass By												
			Total Site Gen				157		0		0	66	0	0	
			% Heavy Future				66%		0%		3%	47%	0%	3%	
			Total Future				**244**		**2**		**78**	**150**	**3**	**102**	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#4 - CR-651 (S Cedar Road)/S Kasson Street and CR-616 (E Bellinger Road)/Sullivan Street	Monday Check-Out 09/05/22		PHF	0.93			0.75			0.84			0.90		
			% Heavy	6%	0%	5%	0%	100%	0%	0%	5%	0%	0%	4%	7%
			Heavy Vehicles	2	0	2	0	1	0	0	6	0	0	7	2
		2022	Existing	**32**	**2**	**37**	**0**	**1**	**2**	**36**	**129**	**2**	**1**	**158**	**28**
		2022	Existing Adj.	32	2	37	0	1	2	36	129	2	1	158	28
		2024	Background	32	2	37	0	1	2	36	130	2	1	160	28
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	**32**	**2**	**37**	**0**	**1**	**2**	**36**	**130**	**2**	**1**	**160**	**28**
			Site Generated	13							53			134	23
			Pass By												
			Total Site Gen	13	0	0	0	0	0	0	53	0	0	134	23
			% Heavy Future	33%	0%	5%	0%	100%	0%	0%	32%	0%	0%	48%	49%
			Total Future	**45**	**2**	**37**	**0**	**1**	**2**	**36**	**183**	**2**	**1**	**294**	**51**

CR-643 at Leelanau Pines Drive										
	Westbound			Northbound			Southbound			Int
	L	R	App	T	R	App	L	T	App	
12:00 PM	11	1	12	1	5	6	1	14	15	33
12:15 PM	7	1	8	3	2	5	1	6	7	20
12:30 PM	4	2	6	11	2	13	1	10	11	30
12:45 PM	7	5	12	10	4	14	0	13	13	39
1:00 PM	5	2	7	8	1	9	0	10	10	26
1:15 PM	6	1	7	16	2	18	0	14	14	39
1:30 PM	3	0	3	8	2	10	1	11	12	25
1:45 PM	2	1	3	10	2	12	0	11	11	26
2:00 PM	4	0	4	9	3	12	2	4	6	22
2:15 PM	2	1	3	9	1	10	2	8	10	23
2:30 PM	2	0	2	8	0	8	0	11	11	21
2:45 PM	2	1	3	8	2	10	0	5	5	18

Trip Generation				
		In	Out	Total
12:00 PM	1:00 PM	16	38	54
12:15 PM	1:15 PM	11	33	44
12:30 PM	1:30 PM	10	32	42
12:45 PM	1:45 PM	10	29	39
1:00 PM	2:00 PM	8	20	28
1:15 PM	2:15 PM	12	17	29
1:30 PM	2:30 PM	13	13	26
1:45 PM	2:45 PM	10	12	22
2:00 PM	3:00 PM	10	12	22

		Westbound			Northbound			Southbound			Int
		L	R	App	T	R	App	L	T	App	
12:00 PM	1:00 PM	29	9	38	25	13	38	3	43	46	122
PHF		0.79			0.68			0.77			

CR-643 at Leelanau Pines Dr - TMC

Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982501, Location: 44.869774, -85.734683

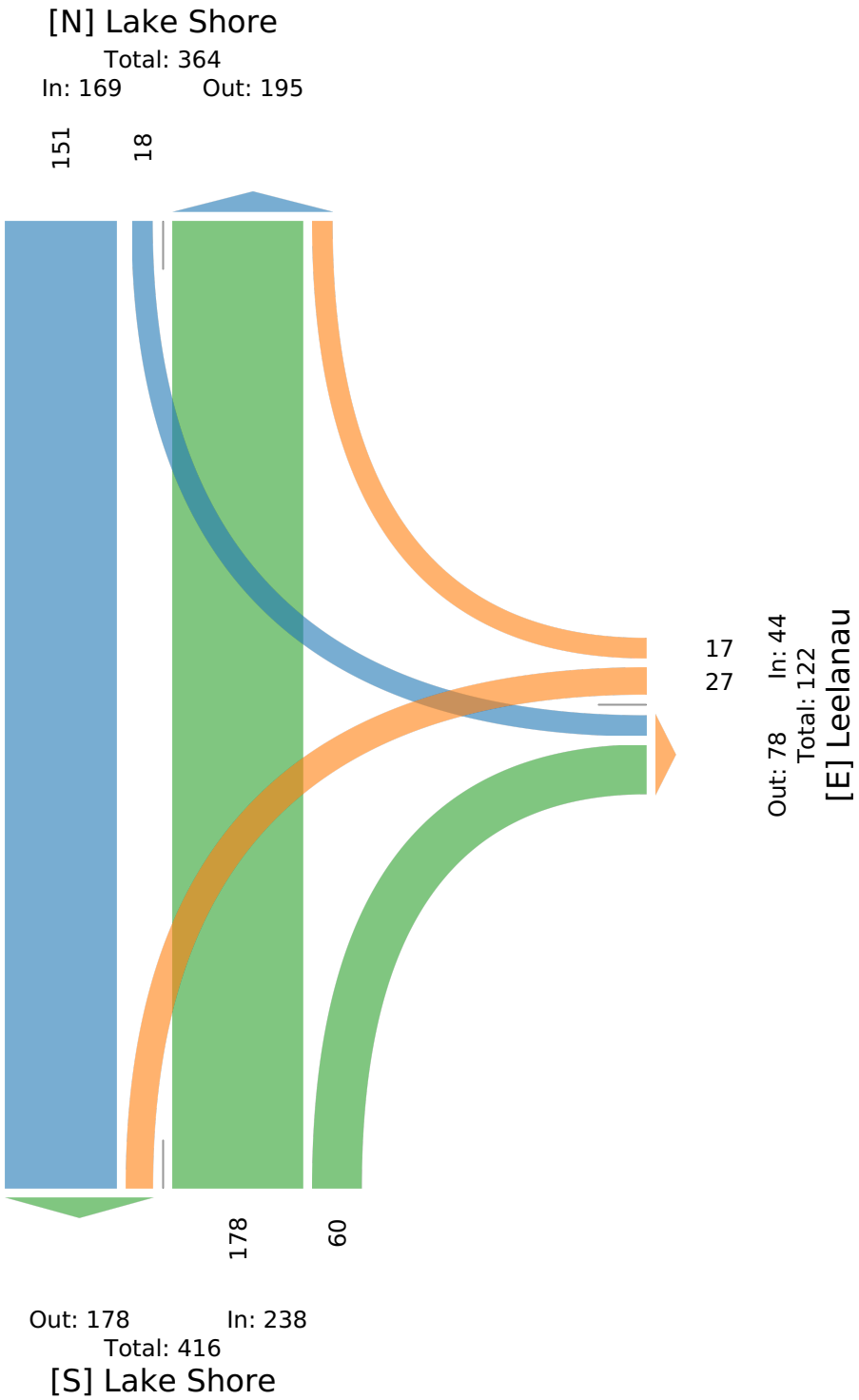
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Leelanau				Lake Shore				Lake Shore				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 2:00PM	4	0	0	**4**	12	0	0	**12**	4	10	0	**14**	**30**
2:15PM	2	1	0	**3**	5	4	0	**9**	0	9	0	**9**	**21**
2:30PM	4	1	0	**5**	16	5	0	**21**	0	7	0	**7**	**33**
2:45PM	3	1	0	**4**	12	2	0	**14**	0	11	0	**11**	**29**
Hourly Total	13	3	0	**16**	45	11	0	**56**	4	37	0	**41**	**113**
3:00PM	1	1	0	**2**	11	1	0	**12**	2	8	0	**10**	**24**
3:15PM	0	2	0	**2**	7	6	0	**13**	0	4	0	**4**	**19**
3:30PM	1	1	0	**2**	11	8	0	**19**	0	6	0	**6**	**27**
3:45PM	0	1	0	**1**	16	1	0	**17**	0	14	0	**14**	**32**
Hourly Total	2	5	0	**7**	45	16	0	**61**	2	32	0	**34**	**102**
4:00PM	2	2	0	**4**	11	2	0	**13**	1	11	0	**12**	**29**
4:15PM	2	1	0	**3**	9	8	0	**17**	3	11	0	**14**	**34**
4:30PM	1	2	0	**3**	16	3	0	**19**	1	12	0	**13**	**35**
4:45PM	3	1	0	**4**	10	6	0	**16**	2	5	0	**7**	**27**
Hourly Total	8	6	0	**14**	46	19	0	**65**	7	39	0	**46**	**125**
5:00PM	1	1	0	**2**	11	0	0	**11**	0	8	0	**8**	**21**
5:15PM	0	1	0	**1**	14	2	0	**16**	1	9	0	**10**	**27**
5:30PM	3	1	0	**4**	11	8	0	**19**	4	16	0	**20**	**43**
5:45PM	0	0	0	**0**	6	4	0	**10**	0	10	0	**10**	**20**
Hourly Total	4	3	0	**7**	42	14	0	**56**	5	43	0	**48**	**111**
Total	27	17	0	**44**	178	60	0	**238**	18	151	0	**169**	**451**
% Approach	61.4%	38.6%	0%	**-**	74.8%	25.2%	0%	**-**	10.7%	89.3%	0%	**-**	-
% Total	6.0%	3.8%	0%	**9.8%**	39.5%	13.3%	0%	**52.8%**	4.0%	33.5%	0%	**37.5%**	-
Lights	25	17	0	**42**	178	60	0	**238**	16	149	0	**165**	445
% Lights	92.6%	100%	0%	**95.5%**	100%	100%	0%	**100%**	88.9%	98.7%	0%	**97.6%**	98.7%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	2	0	0	**2**	0	0	0	**0**	2	2	0	**4**	6
% Buses and Single-Unit Trucks	7.4%	0%	0%	**4.5%**	0%	0%	0%	**0%**	11.1%	1.3%	0%	**2.4%**	1.3%

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

CR-643 at Leelanau Pines Dr - TMC
Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982501, Location: 44.869774, -85.734683

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



CR-643 at Leelanau Pines Dr - TMC

Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982501, Location: 44.869774, -85.734683

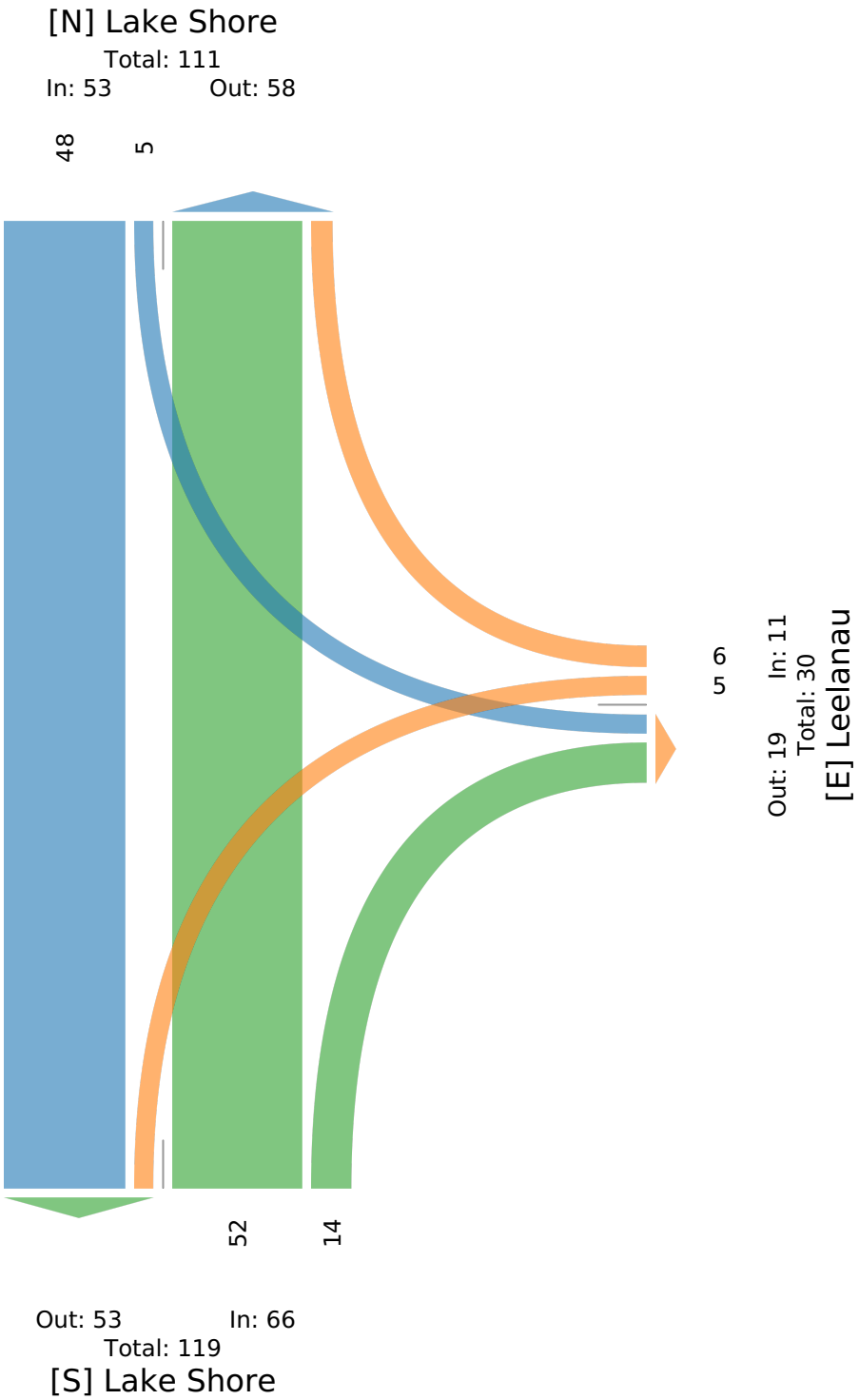
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Leelanau				Lake Shore				Lake Shore				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 3:45PM	0	1	0	**1**	16	1	0	**17**	0	14	0	**14**	**32**
4:00PM	2	2	0	**4**	11	2	0	**13**	1	11	0	**12**	**29**
4:15PM	2	1	0	**3**	9	8	0	**17**	3	11	0	**14**	**34**
4:30PM	1	2	0	**3**	16	3	0	**19**	1	12	0	**13**	**35**
Total	5	6	0	**11**	52	14	0	**66**	5	48	0	**53**	**130**
% Approach	45.5%	54.5%	0%	**-**	78.8%	21.2%	0%	**-**	9.4%	90.6%	0%	**-**	-
% Total	3.8%	4.6%	0%	**8.5%**	40.0%	10.8%	0%	**50.8%**	3.8%	36.9%	0%	**40.8%**	-
PHF	0.625	0.750	-	**0.688**	0.813	0.438	-	**0.868**	0.417	0.857	-	**0.946**	0.929
Lights	5	6	0	**11**	52	14	0	**66**	4	47	0	**51**	128
% Lights	100%	100%	0%	**100%**	100%	100%	0%	**100%**	80.0%	97.9%	0%	**96.2%**	98.5%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	0	0	0	**0**	1	1	0	**2**	2
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	20.0%	2.1%	0%	**3.8%**	1.5%

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

CR-643 at Leelanau Pines Dr - TMC
Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982501, Location: 44.869774, -85.734683

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



CR-643 at Leelanau Pines Dr - TMC

Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982497, Location: 44.869774, -85.734683

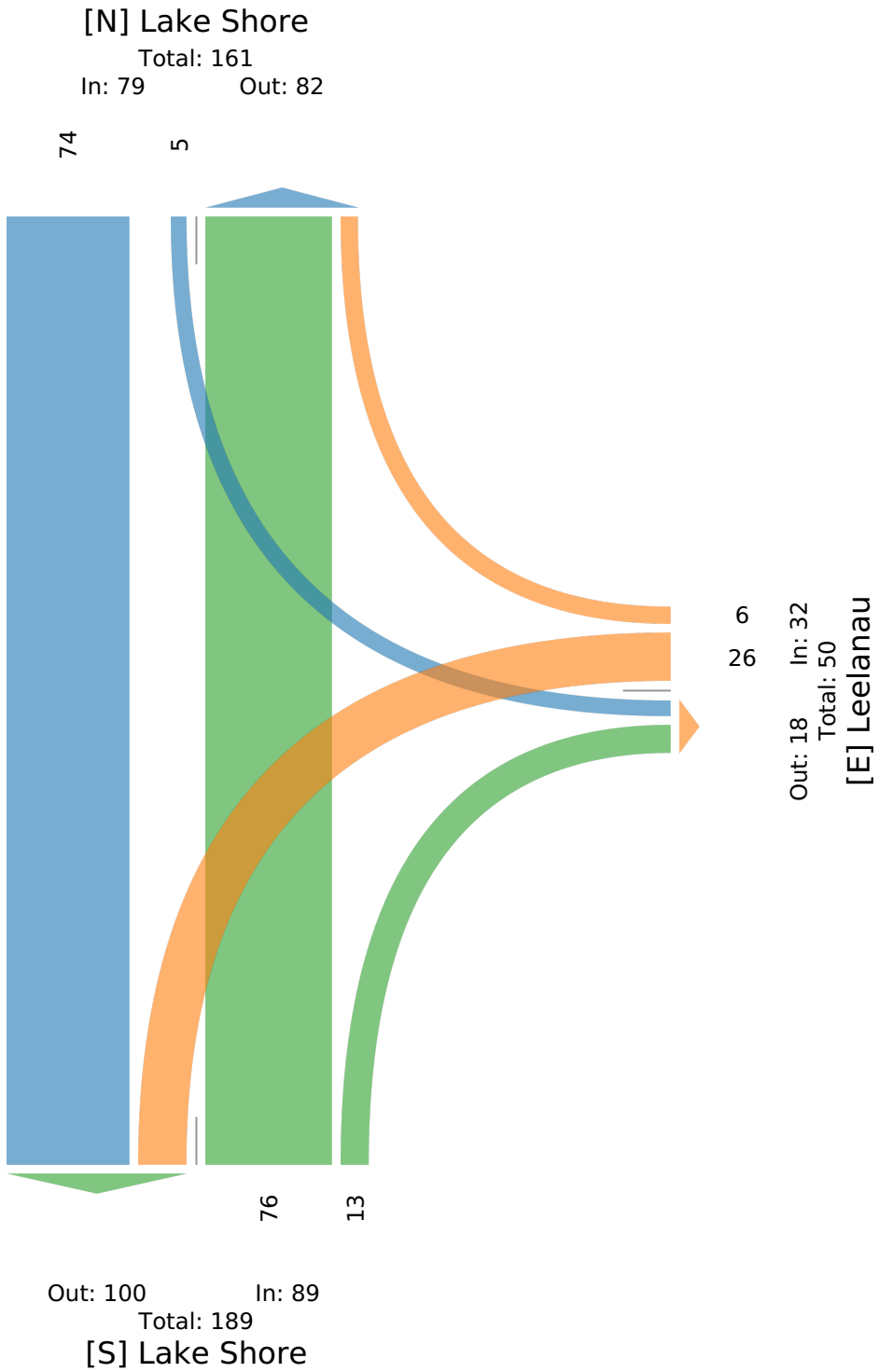
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Leelanau				Lake Shore				Lake Shore				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	5	2	0	**7**	8	1	0	**9**	0	10	0	**10**	**26**
1:15PM	6	1	0	**7**	16	2	0	**18**	0	14	0	**14**	**39**
1:30PM	3	0	0	**3**	8	2	0	**10**	1	11	0	**12**	**25**
1:45PM	2	1	0	**3**	10	2	0	**12**	0	11	0	**11**	**26**
Hourly Total	16	4	0	**20**	42	7	0	**49**	1	46	0	**47**	**116**
2:00PM	4	0	0	**4**	9	3	0	**12**	2	4	0	**6**	**22**
2:15PM	2	1	0	**3**	9	1	0	**10**	2	8	0	**10**	**23**
2:30PM	2	0	0	**2**	8	0	0	**8**	0	11	0	**11**	**21**
2:45PM	2	1	0	**3**	8	2	0	**10**	0	5	0	**5**	**18**
Hourly Total	10	2	0	**12**	34	6	0	**40**	4	28	0	**32**	**84**
Total	26	6	0	**32**	76	13	0	**89**	5	74	0	**79**	**200**
% Approach	81.3%	18.8%	0%	**-**	85.4%	14.6%	0%	**-**	6.3%	93.7%	0%	**-**	-
% Total	13.0%	3.0%	0%	**16.0%**	38.0%	6.5%	0%	**44.5%**	2.5%	37.0%	0%	**39.5%**	-
Lights	26	6	0	**32**	75	13	0	**88**	5	74	0	**79**	199
% Lights	100%	100%	0%	**100%**	98.7%	100%	0%	**98.9%**	100%	100%	0%	**100%**	99.5%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	1	0	0	**1**	0	0	0	**0**	1
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	1.3%	0%	0%	**1.1%**	0%	0%	0%	**0%**	0.5%

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

CR-643 at Leelanau Pines Dr - TMC
Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982497, Location: 44.869774, -85.734683

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



CR-643 at Leelanau Pines Dr - TMC

Mon Sep 5, 2022
Midday Peak, PM Peak (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982497, Location: 44.869774, -85.734683

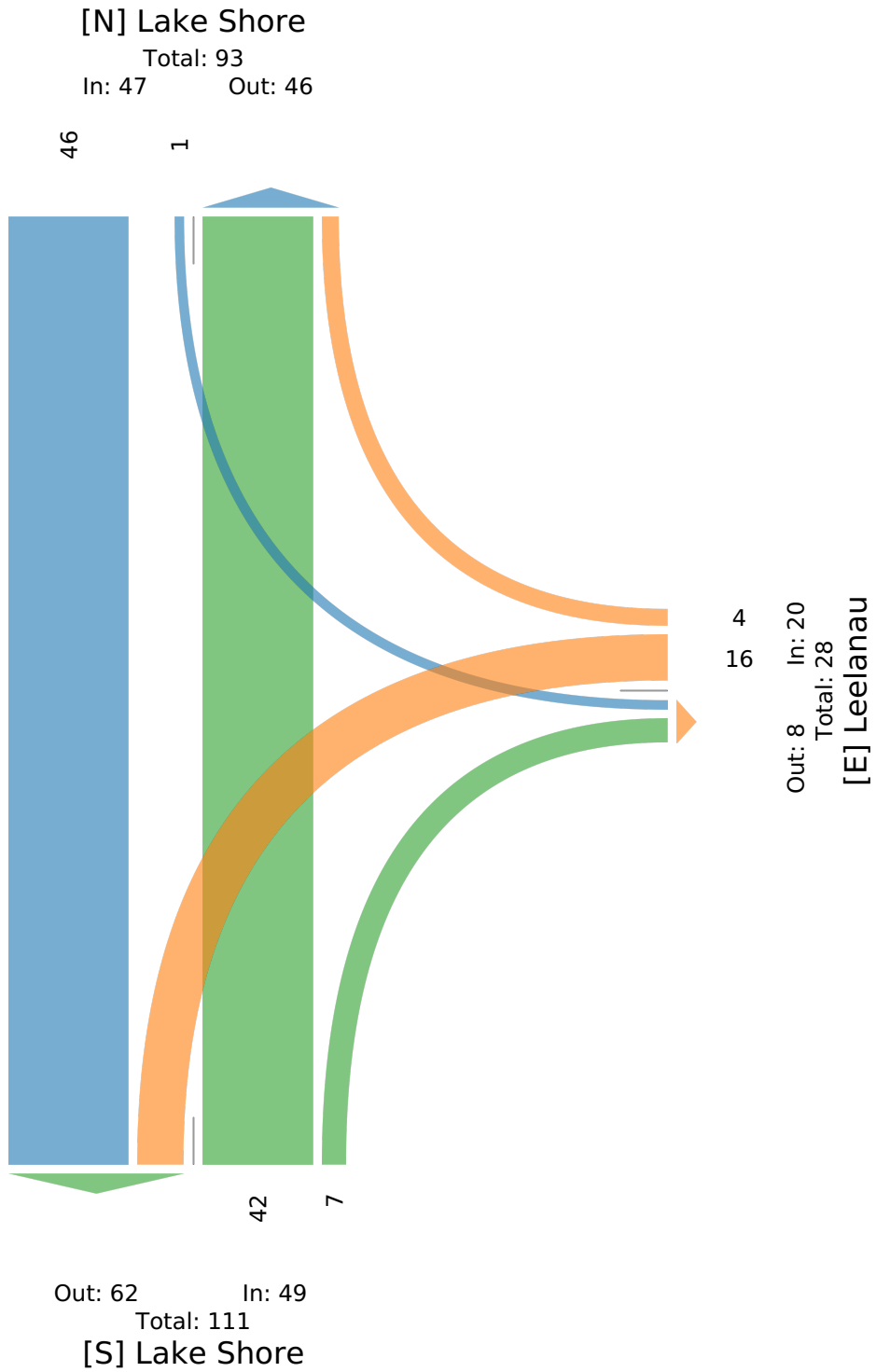
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Leelanau				Lake Shore				Lake Shore				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	5	2	0	**7**	8	1	0	**9**	0	10	0	**10**	**26**
1:15PM	6	1	0	**7**	16	2	0	**18**	0	14	0	**14**	**39**
1:30PM	3	0	0	**3**	8	2	0	**10**	1	11	0	**12**	**25**
1:45PM	2	1	0	**3**	10	2	0	**12**	0	11	0	**11**	**26**
Total	16	4	0	**20**	42	7	0	**49**	1	46	0	**47**	**116**
% Approach	80.0%	20.0%	0%	**-**	85.7%	14.3%	0%	**-**	2.1%	97.9%	0%	**-**	-
% Total	13.8%	3.4%	0%	**17.2%**	36.2%	6.0%	0%	**42.2%**	0.9%	39.7%	0%	**40.5%**	-
PHF	0.667	0.500	-	**0.714**	0.656	0.875	-	**0.681**	0.250	0.821	-	**0.839**	0.744
Lights	16	4	0	**20**	42	7	0	**49**	1	46	0	**47**	116
% Lights	100%	100%	0%	**100%**	100%	100%	0%	**100%**	100%	100%	0%	**100%**	100%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%

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

CR-643 at Leelanau Pines Dr - TMC
Mon Sep 5, 2022
Midday Peak, PM Peak (1 PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982497, Location: 44.869774, -85.734683

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



CR-643 at CR-645 - TMC

Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982502, Location: 44.854828, -85.786677

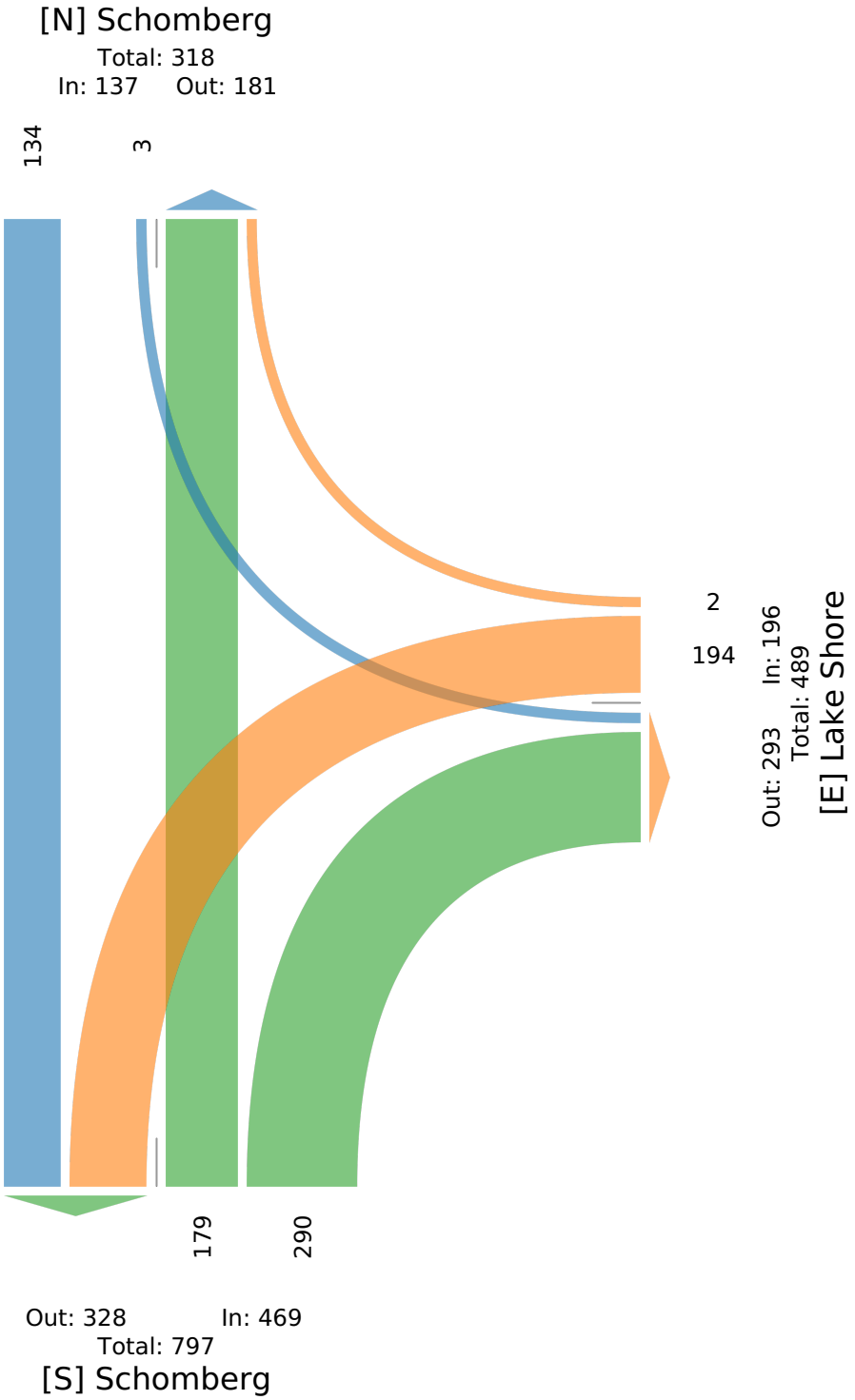
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Lake Shore				Schomberg				Schomberg				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 2:00PM	12	0	0	**12**	10	14	0	**24**	0	12	0	**12**	**48**
2:15PM	15	0	0	**15**	10	18	0	**28**	1	1	0	**2**	**45**
2:30PM	12	0	0	**12**	10	24	0	**34**	0	7	0	**7**	**53**
2:45PM	14	1	0	**15**	6	13	0	**19**	0	7	0	**7**	**41**
Hourly Total	53	1	0	**54**	36	69	0	**105**	1	27	0	**28**	**187**
3:00PM	12	0	0	**12**	10	19	0	**29**	1	5	0	**6**	**47**
3:15PM	6	1	0	**7**	9	13	0	**22**	0	7	0	**7**	**36**
3:30PM	9	0	0	**9**	14	19	0	**33**	0	12	0	**12**	**54**
3:45PM	12	0	0	**12**	8	19	0	**27**	0	11	0	**11**	**50**
Hourly Total	39	1	0	**40**	41	70	0	**111**	1	35	0	**36**	**187**
4:00PM	14	0	0	**14**	13	16	0	**29**	0	13	0	**13**	**56**
4:15PM	13	0	0	**13**	9	19	0	**28**	0	9	0	**9**	**50**
4:30PM	11	0	0	**11**	17	22	0	**39**	1	8	0	**9**	**59**
4:45PM	11	0	0	**11**	13	15	0	**28**	0	7	0	**7**	**46**
Hourly Total	49	0	0	**49**	52	72	0	**124**	1	37	0	**38**	**211**
5:00PM	12	0	0	**12**	11	18	0	**29**	0	10	0	**10**	**51**
5:15PM	10	0	0	**10**	17	22	0	**39**	0	12	0	**12**	**61**
5:30PM	19	0	0	**19**	13	21	0	**34**	0	7	0	**7**	**60**
5:45PM	12	0	0	**12**	9	18	0	**27**	0	6	0	**6**	**45**
Hourly Total	53	0	0	**53**	50	79	0	**129**	0	35	0	**35**	**217**
Total	194	2	0	**196**	179	290	0	**469**	3	134	0	**137**	**802**
% Approach	99.0%	1.0%	0%	**-**	38.2%	61.8%	0%	**-**	2.2%	97.8%	0%	**-**	-
% Total	24.2%	0.2%	0%	**24.4%**	22.3%	36.2%	0%	**58.5%**	0.4%	16.7%	0%	**17.1%**	-
Lights	192	2	0	**194**	175	290	0	**465**	3	130	0	**133**	792
% Lights	99.0%	100%	0%	**99.0%**	97.8%	100%	0%	**99.1%**	100%	97.0%	0%	**97.1%**	98.8%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	2	0	0	**2**	4	0	0	**4**	0	4	0	**4**	10
% Buses and Single-Unit Trucks	1.0%	0%	0%	**1.0%**	2.2%	0%	0%	**0.9%**	0%	3.0%	0%	**2.9%**	1.2%

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

CR-643 at CR-645 - TMC
Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982502, Location: 44.854828, -85.786677

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



CR-643 at CR-645 - TMC

Fri Sep 2, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982502, Location: 44.854828, -85.786677

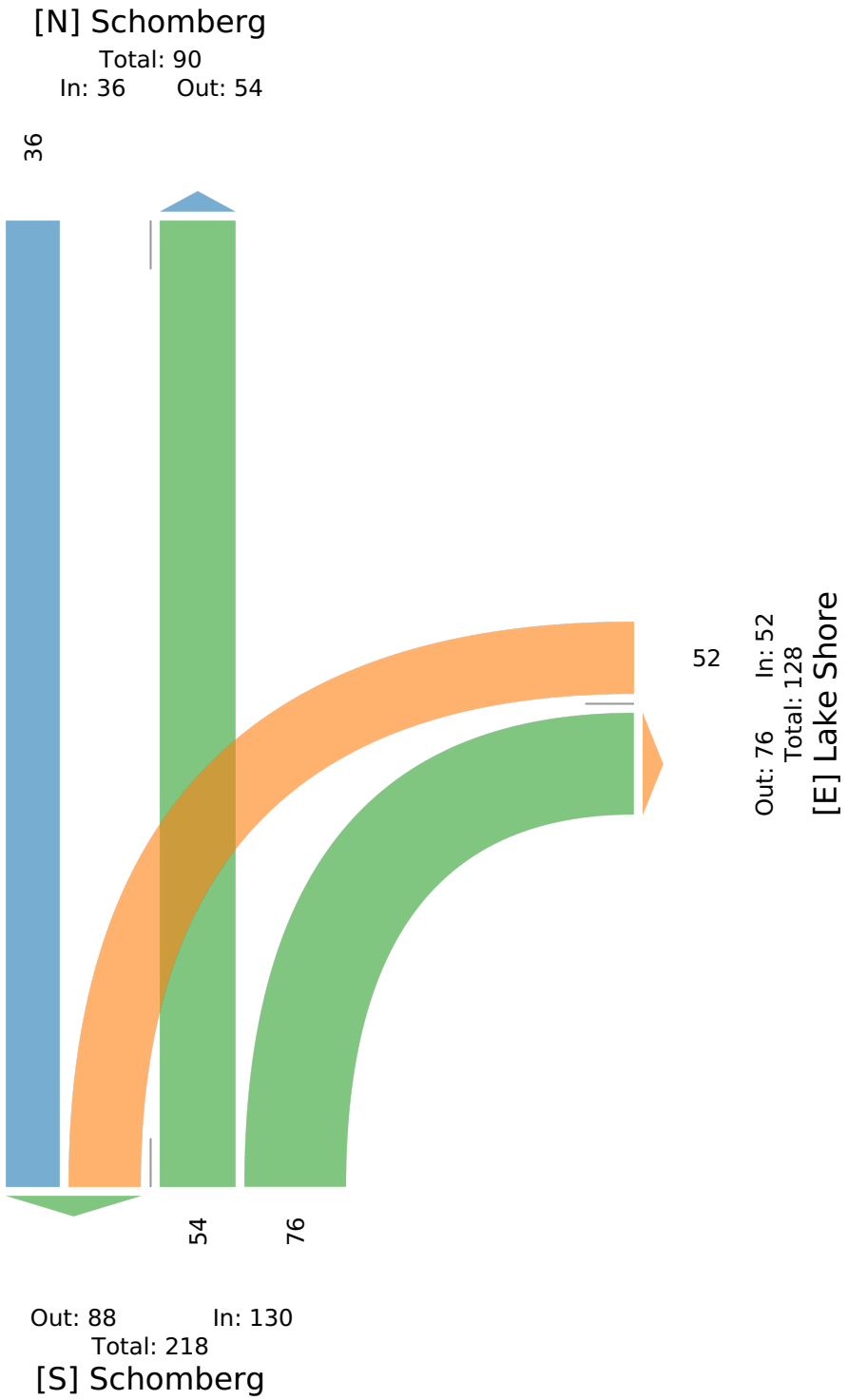
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Lake Shore				Schomberg				Schomberg				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 4:45PM	11	0	0	**11**	13	15	0	**28**	0	7	0	**7**	**46**
5:00PM	12	0	0	**12**	11	18	0	**29**	0	10	0	**10**	**51**
5:15PM	10	0	0	**10**	17	22	0	**39**	0	12	0	**12**	**61**
5:30PM	19	0	0	**19**	13	21	0	**34**	0	7	0	**7**	**60**
Total	52	0	0	**52**	54	76	0	**130**	0	36	0	**36**	**218**
% Approach	100%	0%	0%	**-**	41.5%	58.5%	0%	**-**	0%	100%	0%	**-**	-
% Total	23.9%	0%	0%	**23.9%**	24.8%	34.9%	0%	**59.6%**	0%	16.5%	0%	**16.5%**	-
PHF	0.684	-	-	**0.684**	0.794	0.864	-	**0.833**	-	0.750	-	**0.750**	0.893
Lights	52	0	0	**52**	52	76	0	**128**	0	33	0	**33**	213
% Lights	100%	0%	0%	**100%**	96.3%	100%	0%	**98.5%**	0%	91.7%	0%	**91.7%**	97.7%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	2	0	0	**2**	0	3	0	**3**	5
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	3.7%	0%	0%	**1.5%**	0%	8.3%	0%	**8.3%**	2.3%

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

CR-643 at CR-645 - TMC
Fri Sep 2, 2022
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982502, Location: 44.854828, -85.786677

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



CR-643 at CR-645 - TMC

Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

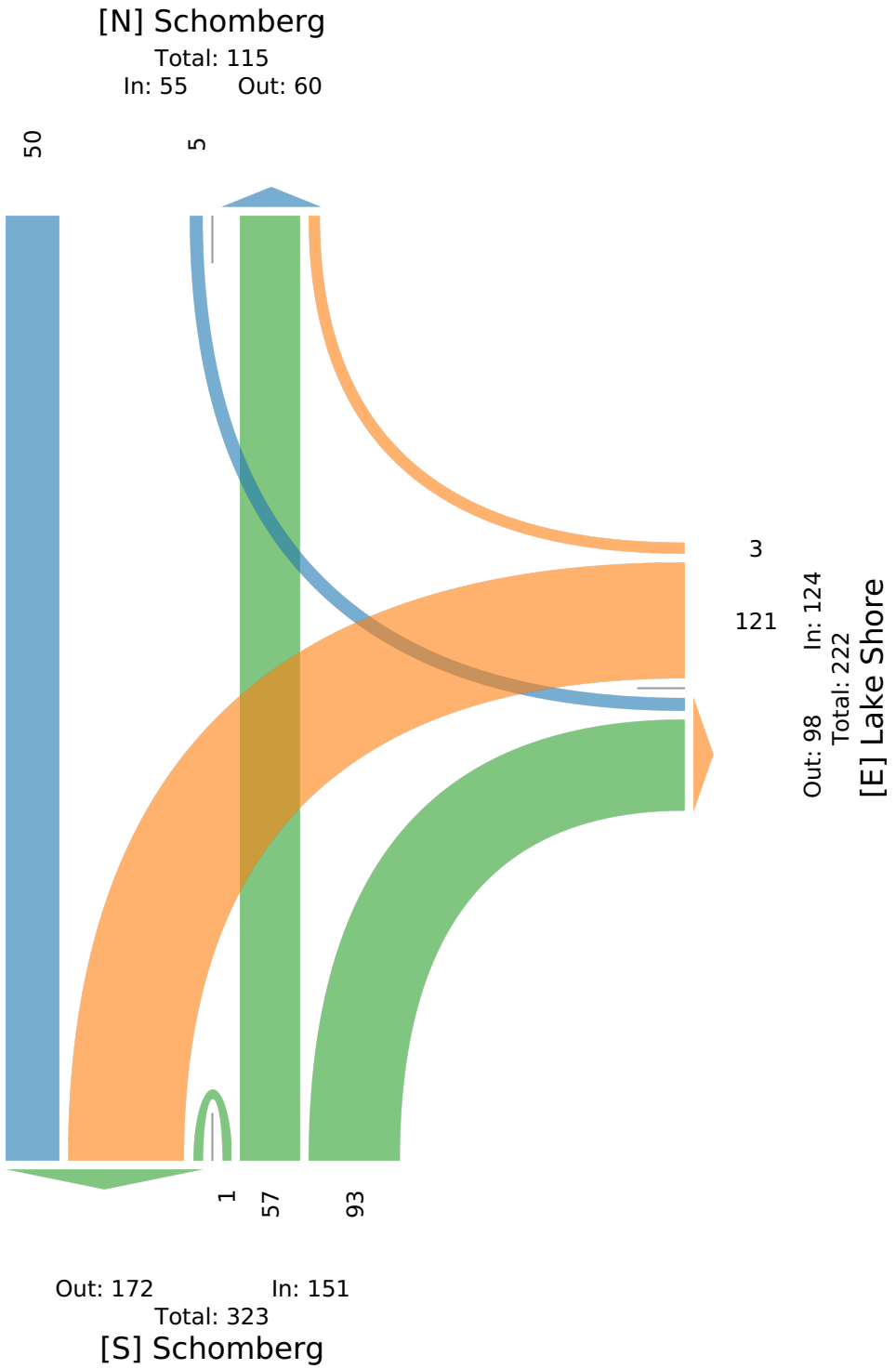
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Lake Shore				Schomberg				Schomberg				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	19	0	0	**19**	6	8	0	**14**	1	5	0	**6**	**39**
1:15PM	17	1	0	**18**	3	12	0	**15**	3	7	0	**10**	**43**
1:30PM	18	1	0	**19**	8	13	0	**21**	0	5	0	**5**	**45**
1:45PM	18	0	0	**18**	8	12	0	**20**	0	5	0	**5**	**43**
Hourly Total	72	2	0	**74**	25	45	0	**70**	4	22	0	**26**	**170**
2:00PM	13	0	0	**13**	9	15	0	**24**	0	7	0	**7**	**44**
2:15PM	11	0	0	**11**	11	10	0	**21**	0	7	0	**7**	**39**
2:30PM	16	0	0	**16**	5	12	0	**17**	0	6	0	**6**	**39**
2:45PM	9	1	0	**10**	7	11	1	**19**	1	8	0	**9**	**38**
Hourly Total	49	1	0	**50**	32	48	1	**81**	1	28	0	**29**	**160**
Total	121	3	0	**124**	57	93	1	**151**	5	50	0	**55**	**330**
% Approach	97.6%	2.4%	0%	**-**	37.7%	61.6%	0.7%	**-**	9.1%	90.9%	0%	**-**	-
% Total	36.7%	0.9%	0%	**37.6%**	17.3%	28.2%	0.3%	**45.8%**	1.5%	15.2%	0%	**16.7%**	-
Lights	121	3	0	**124**	57	91	1	**149**	5	49	0	**54**	327
% Lights	100%	100%	0%	**100%**	100%	97.8%	100%	**98.7%**	100%	98.0%	0%	**98.2%**	99.1%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	0	2	0	**2**	0	1	0	**1**	3
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	0%	2.2%	0%	**1.3%**	0%	2.0%	0%	**1.8%**	0.9%

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

CR-643 at CR-645 - TMC
Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

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



CR-643 at CR-645 - TMC

Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

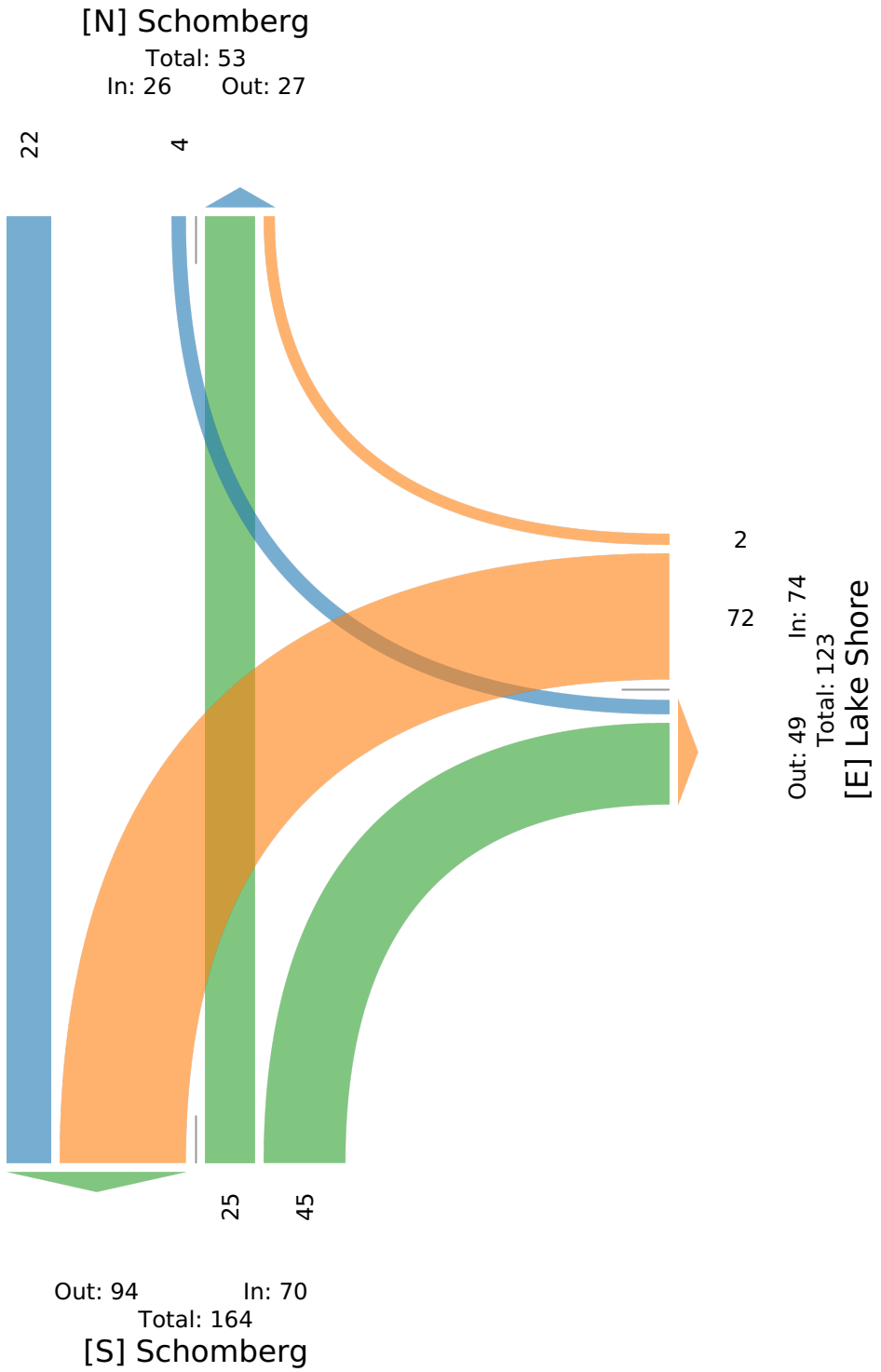
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Lake Shore				Schomberg				Schomberg				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	19	0	0	**19**	6	8	0	**14**	1	5	0	**6**	**39**
1:15PM	17	1	0	**18**	3	12	0	**15**	3	7	0	**10**	**43**
1:30PM	18	1	0	**19**	8	13	0	**21**	0	5	0	**5**	**45**
1:45PM	18	0	0	**18**	8	12	0	**20**	0	5	0	**5**	**43**
Total	72	2	0	**74**	25	45	0	**70**	4	22	0	**26**	**170**
% Approach	97.3%	2.7%	0%	**-**	35.7%	64.3%	0%	**-**	15.4%	84.6%	0%	**-**	-
% Total	42.4%	1.2%	0%	**43.5%**	14.7%	26.5%	0%	**41.2%**	2.4%	12.9%	0%	**15.3%**	-
PHF	0.947	0.500	-	**0.974**	0.781	0.865	-	**0.833**	0.333	0.786	-	**0.650**	0.944
Lights	72	2	0	**74**	25	44	0	**69**	4	21	0	**25**	168
% Lights	100%	100%	0%	**100%**	100%	97.8%	0%	**98.6%**	100%	95.5%	0%	**96.2%**	98.8%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	0	1	0	**1**	0	1	0	**1**	2
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	0%	2.2%	0%	**1.4%**	0%	4.5%	0%	**3.8%**	1.2%

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

CR-643 at CR-645 - TMC
Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

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



CR-643 at CR-645 - TMC

Mon Sep 5, 2022
PM Peak, Forced Peak (1:15 PM - 2:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

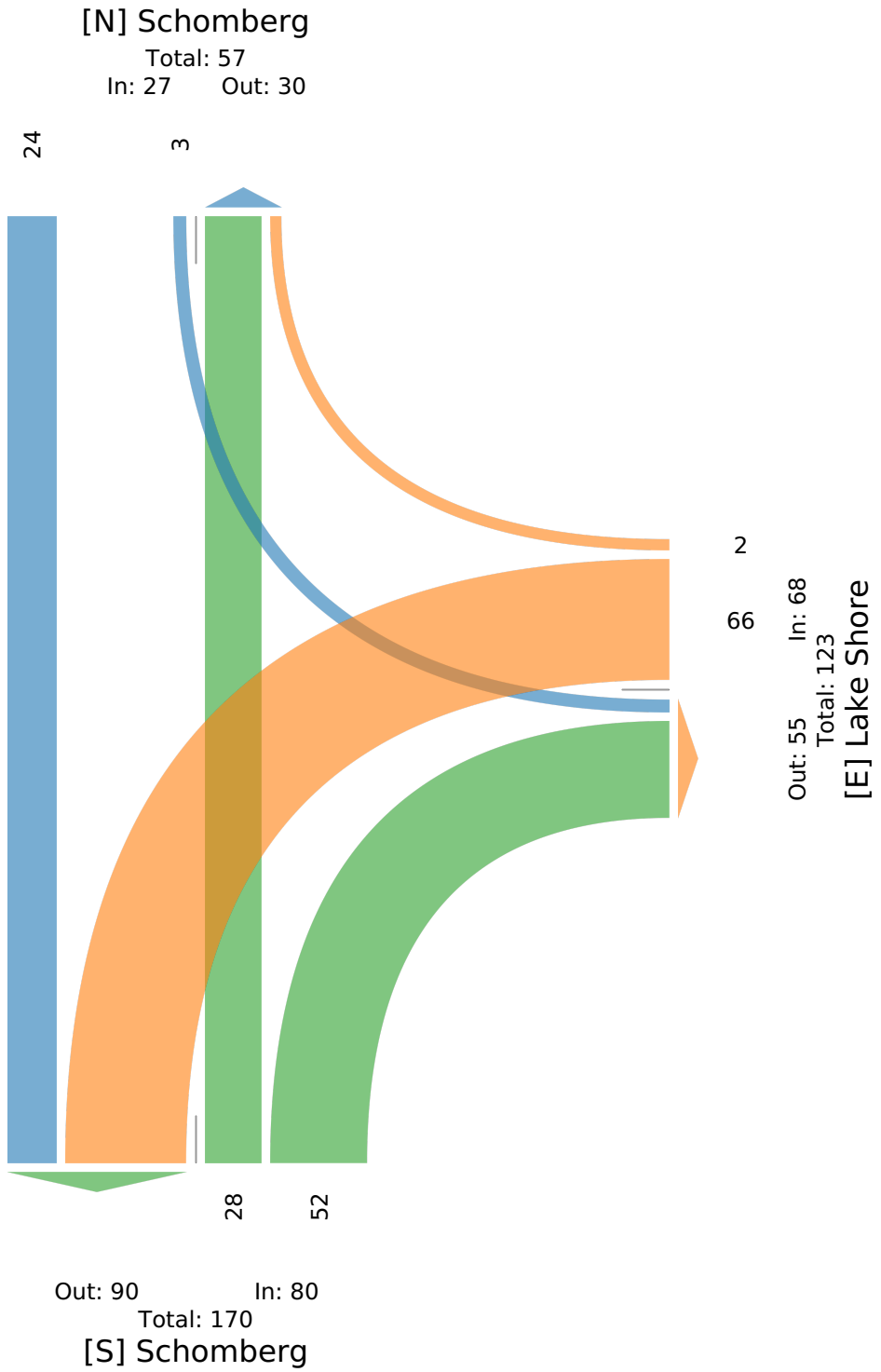
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Lake Shore				Schomberg				Schomberg				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:15PM	17	1	0	**18**	3	12	0	**15**	3	7	0	**10**	**43**
1:30PM	18	1	0	**19**	8	13	0	**21**	0	5	0	**5**	**45**
1:45PM	18	0	0	**18**	8	12	0	**20**	0	5	0	**5**	**43**
2:00PM	13	0	0	**13**	9	15	0	**24**	0	7	0	**7**	**44**
Total	66	2	0	**68**	28	52	0	**80**	3	24	0	**27**	**175**
% Approach	97.1%	2.9%	0%	**-**	35.0%	65.0%	0%	**-**	11.1%	88.9%	0%	**-**	-
% Total	37.7%	1.1%	0%	**38.9%**	16.0%	29.7%	0%	**45.7%**	1.7%	13.7%	0%	**15.4%**	-
PHF	0.917	0.500	-	**0.895**	0.778	0.867	-	**0.833**	0.250	0.857	-	**0.675**	0.972
Lights	66	2	0	**68**	28	50	0	**78**	3	23	0	**26**	172
% Lights	100%	100%	0%	**100%**	100%	96.2%	0%	**97.5%**	100%	95.8%	0%	**96.3%**	98.3%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	0	2	0	**2**	0	1	0	**1**	3
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	0%	3.8%	0%	**2.5%**	0%	4.2%	0%	**3.7%**	1.7%

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

CR-643 at CR-645 - TMC
Mon Sep 5, 2022
PM Peak, Forced Peak (1:15 PM - 2:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982498, Location: 44.854828, -85.786677

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



CR645- at Kasson/Good Harbor Trail - TMC

Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982503, Location: 44.852147, -85.79263

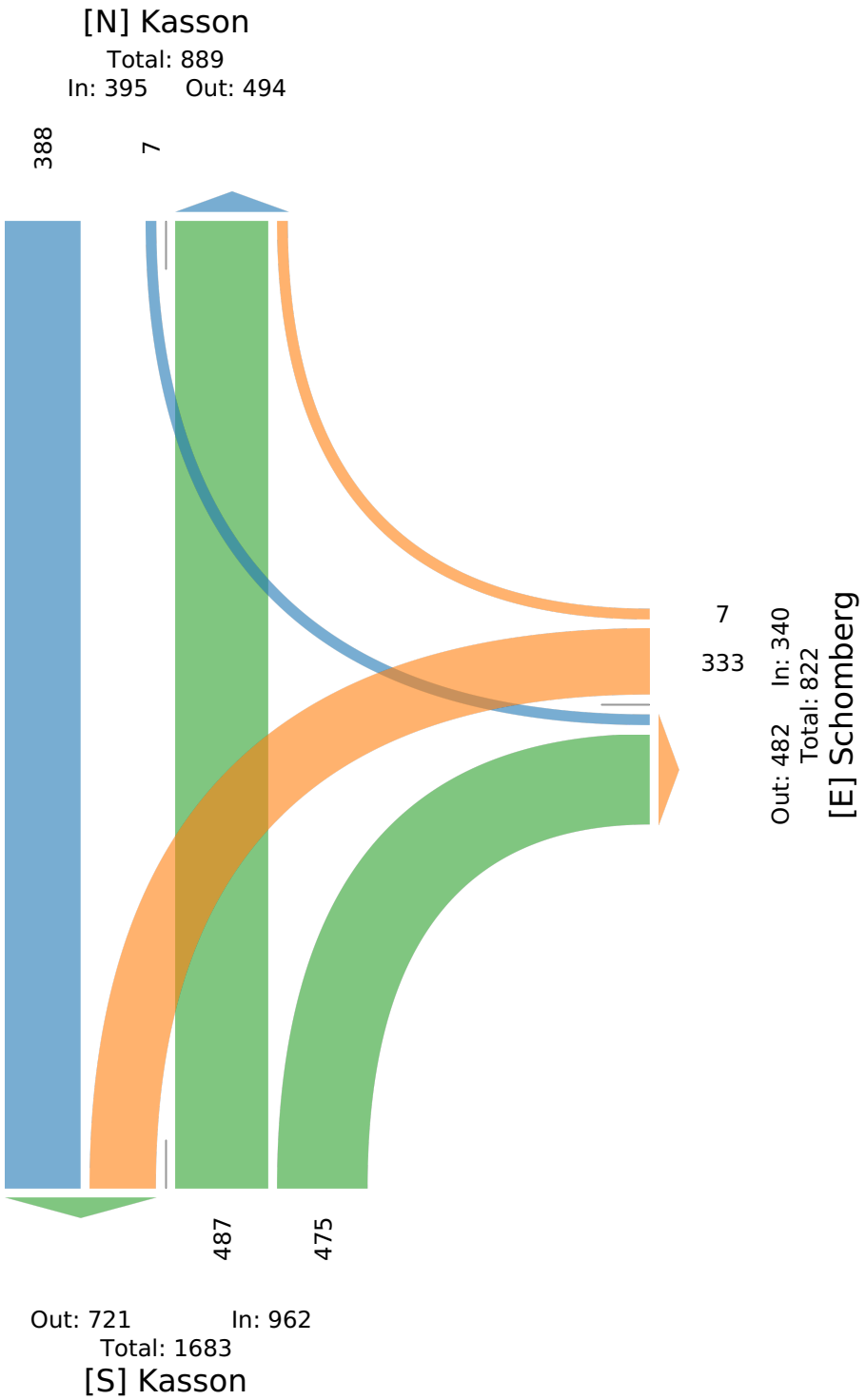
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Schomberg				Kasson				Kasson				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 2:00PM	28	0	0	**28**	43	24	0	**67**	1	19	0	**20**	**115**
2:15PM	17	0	0	**17**	24	28	0	**52**	1	19	0	**20**	**89**
2:30PM	20	0	0	**20**	33	37	0	**70**	1	25	0	**26**	**116**
2:45PM	21	1	0	**22**	27	16	0	**43**	0	30	0	**30**	**95**
Hourly Total	86	1	0	**87**	127	105	0	**232**	3	93	0	**96**	**415**
3:00PM	18	0	0	**18**	32	30	0	**62**	2	18	0	**20**	**100**
3:15PM	13	0	0	**13**	38	23	0	**61**	0	23	0	**23**	**97**
3:30PM	22	0	0	**22**	27	34	0	**61**	1	26	0	**27**	**110**
3:45PM	23	1	0	**24**	32	27	0	**59**	0	21	0	**21**	**104**
Hourly Total	76	1	0	**77**	129	114	0	**243**	3	88	0	**91**	**411**
4:00PM	26	1	0	**27**	30	28	0	**58**	0	28	0	**28**	**113**
4:15PM	22	0	0	**22**	38	29	0	**67**	0	34	0	**34**	**123**
4:30PM	19	0	0	**19**	32	42	0	**74**	0	27	0	**27**	**120**
4:45PM	19	1	0	**20**	20	27	0	**47**	0	29	0	**29**	**96**
Hourly Total	86	2	0	**88**	120	126	0	**246**	0	118	0	**118**	**452**
5:00PM	19	1	0	**20**	32	29	0	**61**	1	18	0	**19**	**100**
5:15PM	21	1	0	**22**	26	39	0	**65**	0	25	0	**25**	**112**
5:30PM	27	1	0	**28**	29	36	0	**65**	0	22	0	**22**	**115**
5:45PM	18	0	0	**18**	24	26	0	**50**	0	24	0	**24**	**92**
Hourly Total	85	3	0	**88**	111	130	0	**241**	1	89	0	**90**	**419**
Total	333	7	0	**340**	487	475	0	**962**	7	388	0	**395**	**1697**
% Approach	97.9%	2.1%	0%	**-**	50.6%	49.4%	0%	**-**	1.8%	98.2%	0%	**-**	-
% Total	19.6%	0.4%	0%	**20.0%**	28.7%	28.0%	0%	**56.7%**	0.4%	22.9%	0%	**23.3%**	-
Lights	328	6	0	**334**	485	467	0	**952**	7	381	0	**388**	1674
% Lights	98.5%	85.7%	0%	**98.2%**	99.6%	98.3%	0%	**99.0%**	100%	98.2%	0%	**98.2%**	98.6%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	5	1	0	**6**	2	8	0	**10**	0	7	0	**7**	23
% Buses and Single-Unit Trucks	1.5%	14.3%	0%	**1.8%**	0.4%	1.7%	0%	**1.0%**	0%	1.8%	0%	**1.8%**	1.4%

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

CR645- at Kasson/Good Harbor Trail - TMC
Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982503, Location: 44.852147, -85.79263

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



CR645- at Kasson/Good Harbor Trail - TMC

Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982503, Location: 44.852147, -85.79263

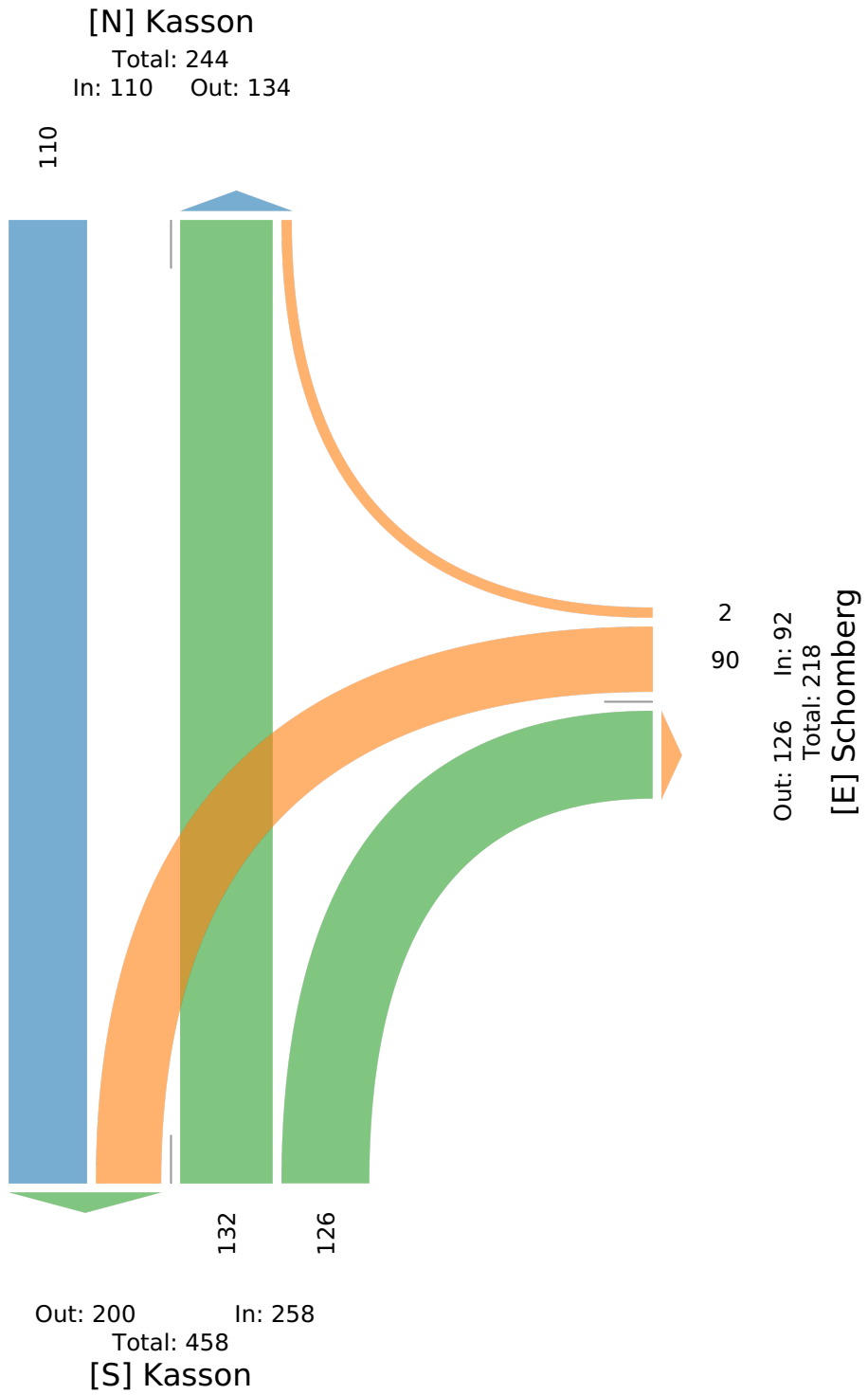
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg / Direction	Schomberg Westbound				Kasson Northbound				Kasson Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-02 3:45PM	23	1	0	**24**	32	27	0	**59**	0	21	0	**21**	**104**
4:00PM	26	1	0	**27**	30	28	0	**58**	0	28	0	**28**	**113**
4:15PM	22	0	0	**22**	38	29	0	**67**	0	34	0	**34**	**123**
4:30PM	19	0	0	**19**	32	42	0	**74**	0	27	0	**27**	**120**
Total	90	2	0	**92**	132	126	0	**258**	0	110	0	**110**	**460**
% Approach	97.8%	2.2%	0%	**-**	51.2%	48.8%	0%	**-**	0%	100%	0%	**-**	-
% Total	19.6%	0.4%	0%	**20.0%**	28.7%	27.4%	0%	**56.1%**	0%	23.9%	0%	**23.9%**	-
PHF	0.865	0.500	-	**0.852**	0.868	0.750	-	**0.872**	-	0.809	-	**0.809**	0.935
Lights	89	2	0	**91**	130	125	0	**255**	0	105	0	**105**	451
% Lights	98.9%	100%	0%	**98.9%**	98.5%	99.2%	0%	**98.8%**	0%	95.5%	0%	**95.5%**	98.0%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	1	0	0	**1**	2	1	0	**3**	0	5	0	**5**	9
% Buses and Single-Unit Trucks	1.1%	0%	0%	**1.1%**	1.5%	0.8%	0%	**1.2%**	0%	4.5%	0%	**4.5%**	2.0%

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

CR645- at Kasson/Good Harbor Trail - TMC
Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982503, Location: 44.852147, -85.79263

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



CR645- at Kasson/Good Harbor Trail - TMC

Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

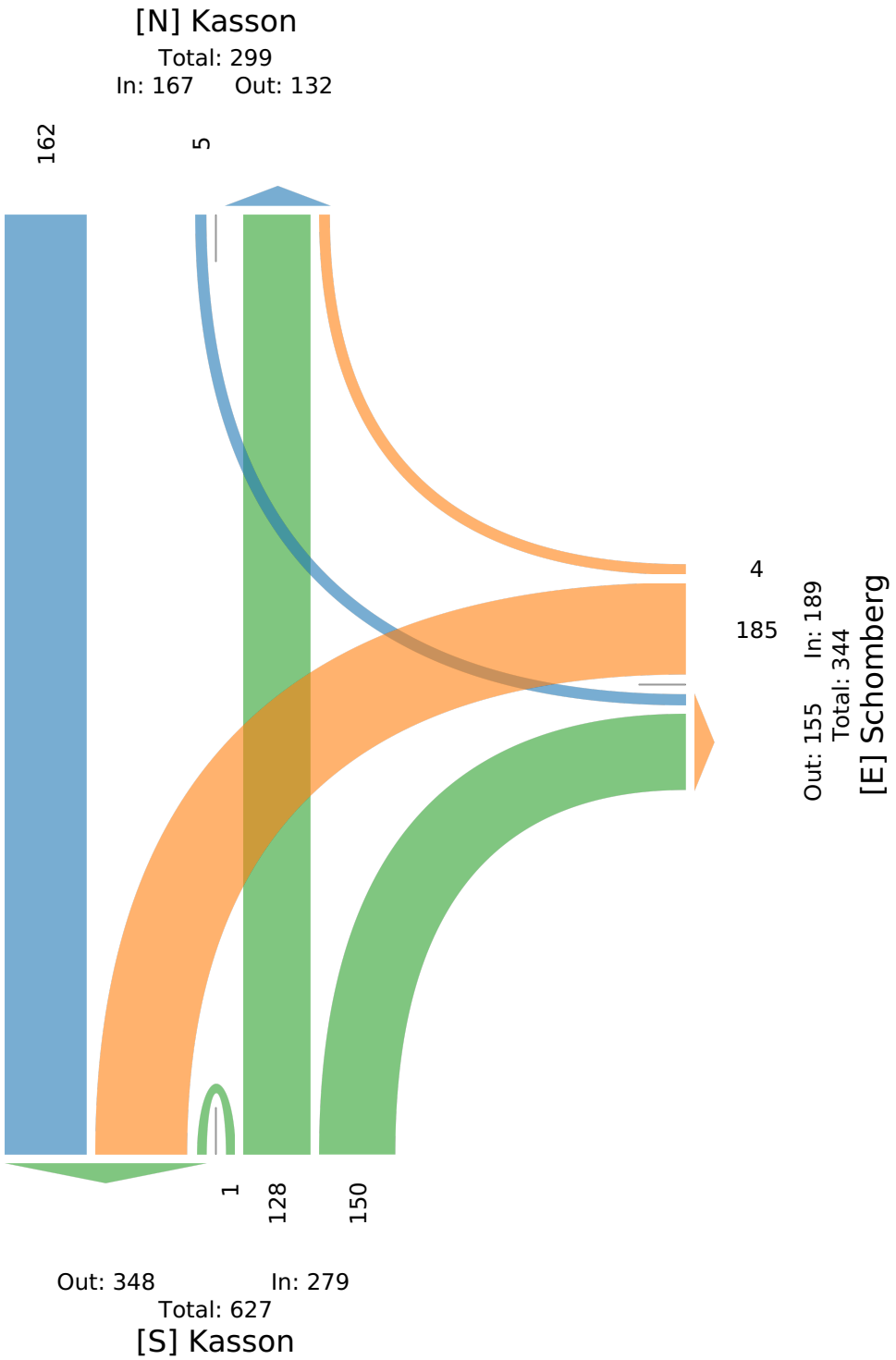
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Schomberg				Kasson				Kasson				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	25	0	0	**25**	16	13	0	**29**	0	13	0	**13**	**67**
1:15PM	24	1	0	**25**	13	17	0	**30**	0	14	0	**14**	**69**
1:30PM	26	0	0	**26**	9	19	1	**29**	1	16	0	**17**	**72**
1:45PM	24	1	0	**25**	13	18	0	**31**	1	18	0	**19**	**75**
Hourly Total	99	2	0	**101**	51	67	1	**119**	2	61	0	**63**	**283**
2:00PM	21	0	0	**21**	21	26	0	**47**	0	18	0	**18**	**86**
2:15PM	21	1	0	**22**	17	21	0	**38**	1	30	0	**31**	**91**
2:30PM	22	0	0	**22**	20	17	0	**37**	1	22	0	**23**	**82**
2:45PM	22	1	0	**23**	19	19	0	**38**	1	31	0	**32**	**93**
Hourly Total	86	2	0	**88**	77	83	0	**160**	3	101	0	**104**	**352**
Total	185	4	0	**189**	128	150	1	**279**	5	162	0	**167**	**635**
% Approach	97.9%	2.1%	0%	**-**	45.9%	53.8%	0.4%	**-**	3.0%	97.0%	0%	**-**	-
% Total	29.1%	0.6%	0%	**29.8%**	20.2%	23.6%	0.2%	**43.9%**	0.8%	25.5%	0%	**26.3%**	-
Lights	184	4	0	**188**	126	148	1	**275**	5	161	0	**166**	629
% Lights	99.5%	100%	0%	**99.5%**	98.4%	98.7%	100%	**98.6%**	100%	99.4%	0%	**99.4%**	99.1%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	1	0	0	**1**	2	2	0	**4**	0	1	0	**1**	6
% Buses and Single-Unit Trucks	0.5%	0%	0%	**0.5%**	1.6%	1.3%	0%	**1.4%**	0%	0.6%	0%	**0.6%**	0.9%

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

CR645- at Kasson/Good Harbor Trail - TMC
Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

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



CR645- at Kasson/Good Harbor Trail - TMC

Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

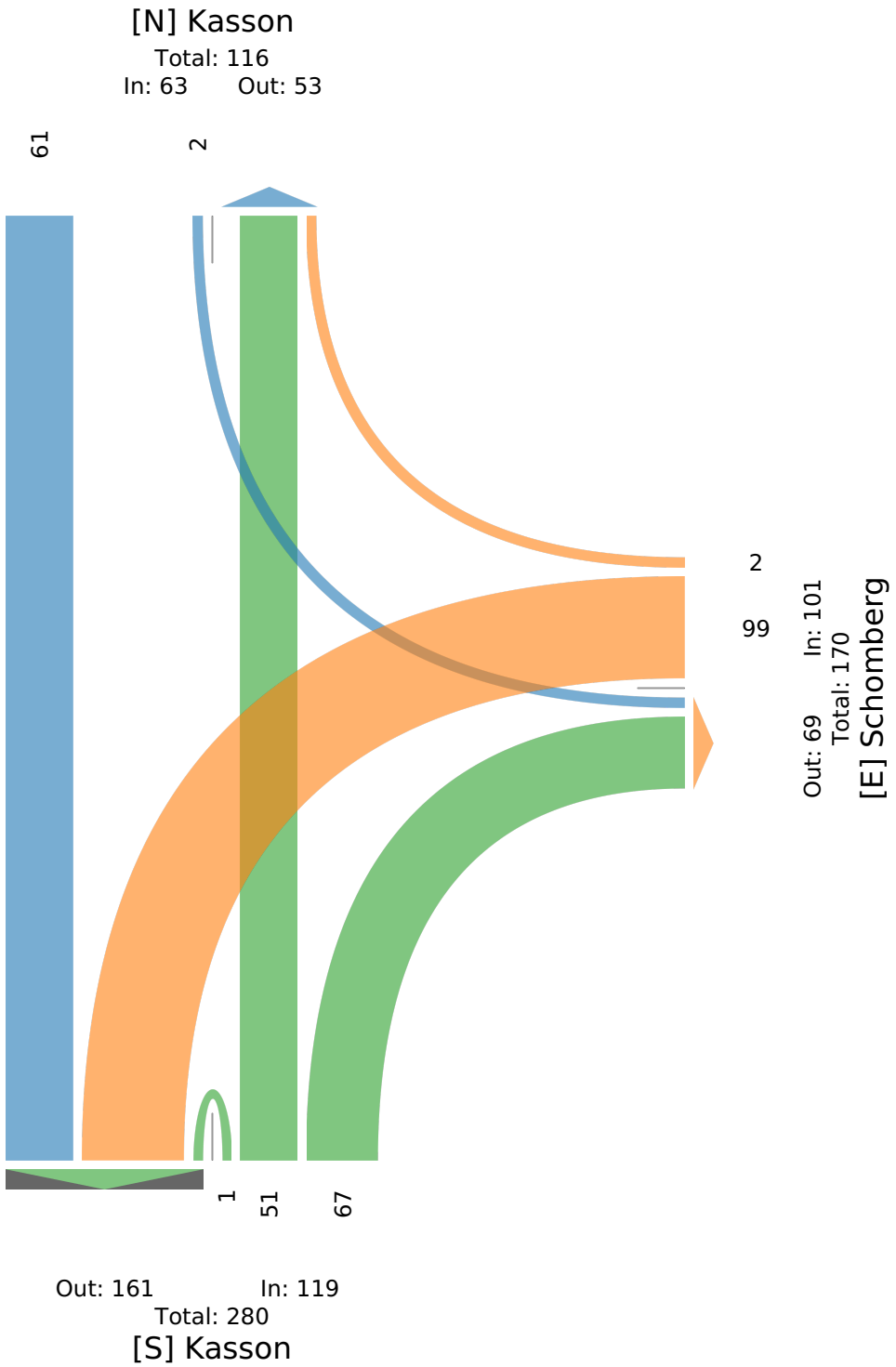
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Schomberg				Kasson				Kasson				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 1:00PM	25	0	0	**25**	16	13	0	**29**	0	13	0	**13**	**67**
1:15PM	24	1	0	**25**	13	17	0	**30**	0	14	0	**14**	**69**
1:30PM	26	0	0	**26**	9	19	1	**29**	1	16	0	**17**	**72**
1:45PM	24	1	0	**25**	13	18	0	**31**	1	18	0	**19**	**75**
Total	99	2	0	**101**	51	67	1	**119**	2	61	0	**63**	**283**
% Approach	98.0%	2.0%	0%	**-**	42.9%	56.3%	0.8%	**-**	3.2%	96.8%	0%	**-**	-
% Total	35.0%	0.7%	0%	**35.7%**	18.0%	23.7%	0.4%	**42.0%**	0.7%	21.6%	0%	**22.3%**	-
PHF	0.952	0.500	-	**0.971**	0.797	0.882	0.250	**0.960**	0.500	0.847	-	**0.829**	0.943
Lights	98	2	0	**100**	50	66	1	**117**	2	60	0	**62**	279
% Lights	99.0%	100%	0%	**99.0%**	98.0%	98.5%	100%	**98.3%**	100%	98.4%	0%	**98.4%**	98.6%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	1	0	0	**1**	1	1	0	**2**	0	1	0	**1**	4
% Buses and Single-Unit Trucks	1.0%	0%	0%	**1.0%**	2.0%	1.5%	0%	**1.7%**	0%	1.6%	0%	**1.6%**	1.4%

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

CR645- at Kasson/Good Harbor Trail - TMC
Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

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



CR645- at Kasson/Good Harbor Trail - TMC

Mon Sep 5, 2022
PM Peak (2 PM - 3 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

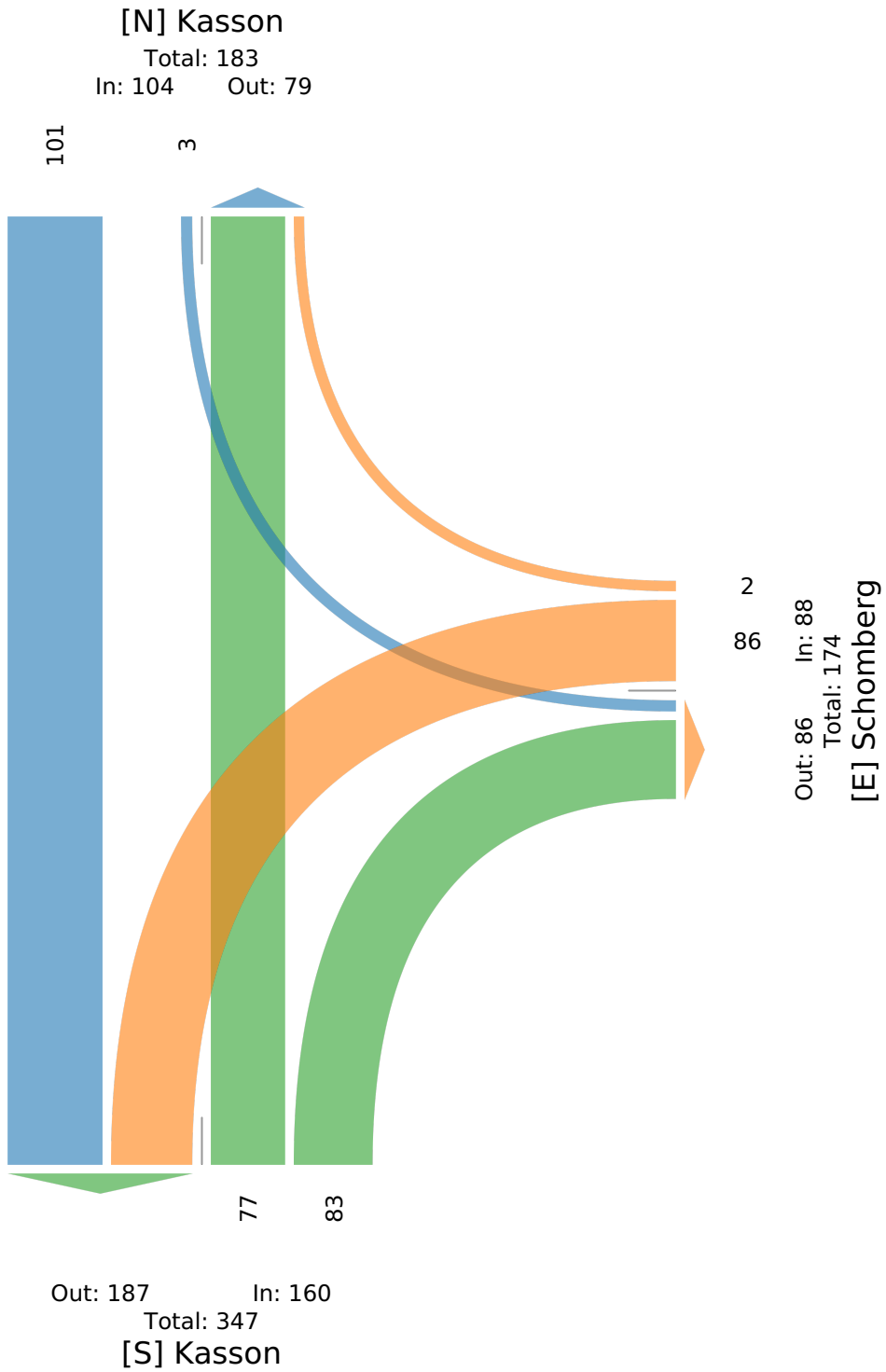
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg / Direction	Schomberg Westbound				Kasson Northbound				Kasson Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2022-09-05 2:00PM	21	0	0	**21**	21	26	0	**47**	0	18	0	**18**	**86**
2:15PM	21	1	0	**22**	17	21	0	**38**	1	30	0	**31**	**91**
2:30PM	22	0	0	**22**	20	17	0	**37**	1	22	0	**23**	**82**
2:45PM	22	1	0	**23**	19	19	0	**38**	1	31	0	**32**	**93**
Total	86	2	0	**88**	77	83	0	**160**	3	101	0	**104**	**352**
% Approach	97.7%	2.3%	0%	**-**	48.1%	51.9%	0%	**-**	2.9%	97.1%	0%	**-**	-
% Total	24.4%	0.6%	0%	**25.0%**	21.9%	23.6%	0%	**45.5%**	0.9%	28.7%	0%	**29.5%**	-
PHF	0.977	0.500	-	**0.957**	0.917	0.798	-	**0.851**	0.750	0.815	-	**0.813**	0.946
Lights	86	2	0	**88**	76	82	0	**158**	3	101	0	**104**	350
% Lights	100%	100%	0%	**100%**	98.7%	98.8%	0%	**98.8%**	100%	100%	0%	**100%**	99.4%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	**0**	1	1	0	**2**	0	0	0	**0**	2
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	1.3%	1.2%	0%	**1.3%**	0%	0%	0%	**0%**	0.6%

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

CR645- at Kasson/Good Harbor Trail - TMC
Mon Sep 5, 2022
PM Peak (2 PM - 3 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982499, Location: 44.852147, -85.79263

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



Cedar Road at Bellinger/Sullivan - TMC

Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982504, Location: 44.847421, -85.795062

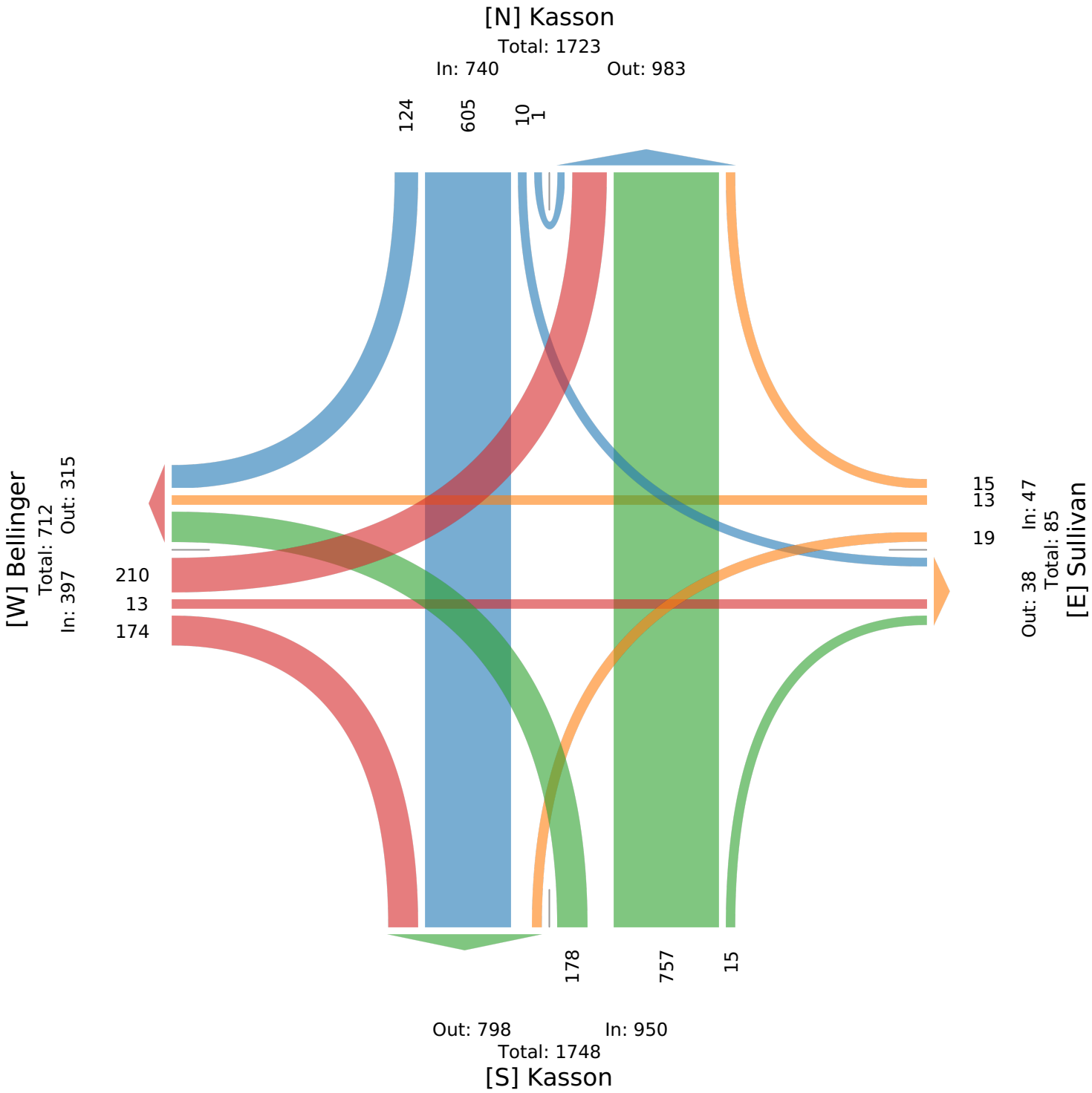
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Bellinger					Sullivan					Kasson					Kasson					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-09-02 2:00PM	12	0	10	0	**22**	0	1	0	0	**1**	9	62	0	0	**71**	0	37	8	0	**45**	**139**
2:15PM	17	0	13	0	**30**	2	2	0	0	**4**	15	39	1	0	**55**	0	28	7	0	**35**	**124**
2:30PM	12	1	9	0	**22**	0	3	1	0	**4**	8	56	0	0	**64**	0	33	9	0	**42**	**132**
2:45PM	10	0	5	0	**15**	0	0	0	0	**0**	9	36	1	0	**46**	0	54	7	0	**61**	**122**
Hourly Total	51	1	37	0	**89**	2	6	1	0	**9**	41	193	2	0	**236**	0	152	31	0	**183**	**517**
3:00PM	9	1	18	0	**28**	1	0	0	0	**1**	14	51	3	0	**68**	0	28	8	0	**36**	**133**
3:15PM	8	3	12	0	**23**	1	0	0	0	**1**	9	54	1	0	**64**	0	30	8	0	**38**	**126**
3:30PM	15	2	5	0	**22**	0	0	1	0	**1**	9	45	0	0	**54**	0	37	9	0	**46**	**123**
3:45PM	9	0	9	0	**18**	1	1	1	0	**3**	13	53	1	0	**67**	0	45	7	0	**52**	**140**
Hourly Total	41	6	44	0	**91**	3	1	2	0	**6**	45	203	5	0	**253**	0	140	32	0	**172**	**522**
4:00PM	14	0	14	0	**28**	1	0	1	0	**2**	8	45	0	0	**53**	3	41	10	0	**54**	**137**
4:15PM	13	1	15	0	**29**	0	0	2	0	**2**	20	55	0	0	**75**	1	45	10	0	**56**	**162**
4:30PM	16	0	8	0	**24**	3	2	1	0	**6**	12	57	1	0	**70**	0	37	6	0	**43**	**143**
4:45PM	13	1	18	0	**32**	1	1	0	0	**2**	6	36	0	0	**42**	0	43	8	1	**52**	**128**
Hourly Total	56	2	55	0	**113**	5	3	4	0	**12**	46	193	1	0	**240**	4	166	34	1	**205**	**570**
5:00PM	17	0	7	0	**24**	3	0	2	0	**5**	11	42	2	0	**55**	1	28	8	0	**37**	**121**
5:15PM	20	2	11	0	**33**	2	0	3	0	**5**	13	41	1	0	**55**	4	38	5	0	**47**	**140**
5:30PM	16	0	10	0	**26**	1	0	2	0	**3**	12	47	3	0	**62**	0	47	6	0	**53**	**144**
5:45PM	9	2	10	0	**21**	3	3	1	0	**7**	10	38	1	0	**49**	1	34	8	0	**43**	**120**
Hourly Total	62	4	38	0	**104**	9	3	8	0	**20**	46	168	7	0	**221**	6	147	27	0	**180**	**525**
Total	210	13	174	0	**397**	19	13	15	0	**47**	178	757	15	0	**950**	10	605	124	1	**740**	**2134**
% Approach	52.9%	3.3%	43.8%	0%	**-**	40.4%	27.7%	31.9%	0%	**-**	18.7%	79.7%	1.6%	0%	**-**	1.4%	81.8%	16.8%	0.1%	**-**	-
% Total	9.8%	0.6%	8.2%	0%	**18.6%**	0.9%	0.6%	0.7%	0%	**2.2%**	8.3%	35.5%	0.7%	0%	**44.5%**	0.5%	28.4%	5.8%	0%	**34.7%**	-
Lights	208	12	171	0	**391**	19	13	14	0	**46**	177	751	15	0	**943**	10	596	120	1	**727**	2107
% Lights	99.0%	92.3%	98.3%	0%	**98.5%**	100%	100%	93.3%	0%	**97.9%**	99.4%	99.2%	100%	0%	**99.3%**	100%	98.5%	96.8%	100%	**98.2%**	98.7%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	2	0	0	**2**	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0.3%	0%	0%	**0.3%**	0.1%
Buses and Single-Unit Trucks	2	1	3	0	**6**	0	0	1	0	**1**	1	6	0	0	**7**	0	7	4	0	**11**	25
% Buses and Single-Unit Trucks	1.0%	7.7%	1.7%	0%	**1.5%**	0%	0%	6.7%	0%	**2.1%**	0.6%	0.8%	0%	0%	**0.7%**	0%	1.2%	3.2%	0%	**1.5%**	1.2%

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

Cedar Road at Bellinger/Sullivan - TMC
Fri Sep 2, 2022
Full Length (2 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982504, Location: 44.847421, -85.795062

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



Cedar Road at Bellinger/Sullivan - TMC

Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982504, Location: 44.847421, -85.795062

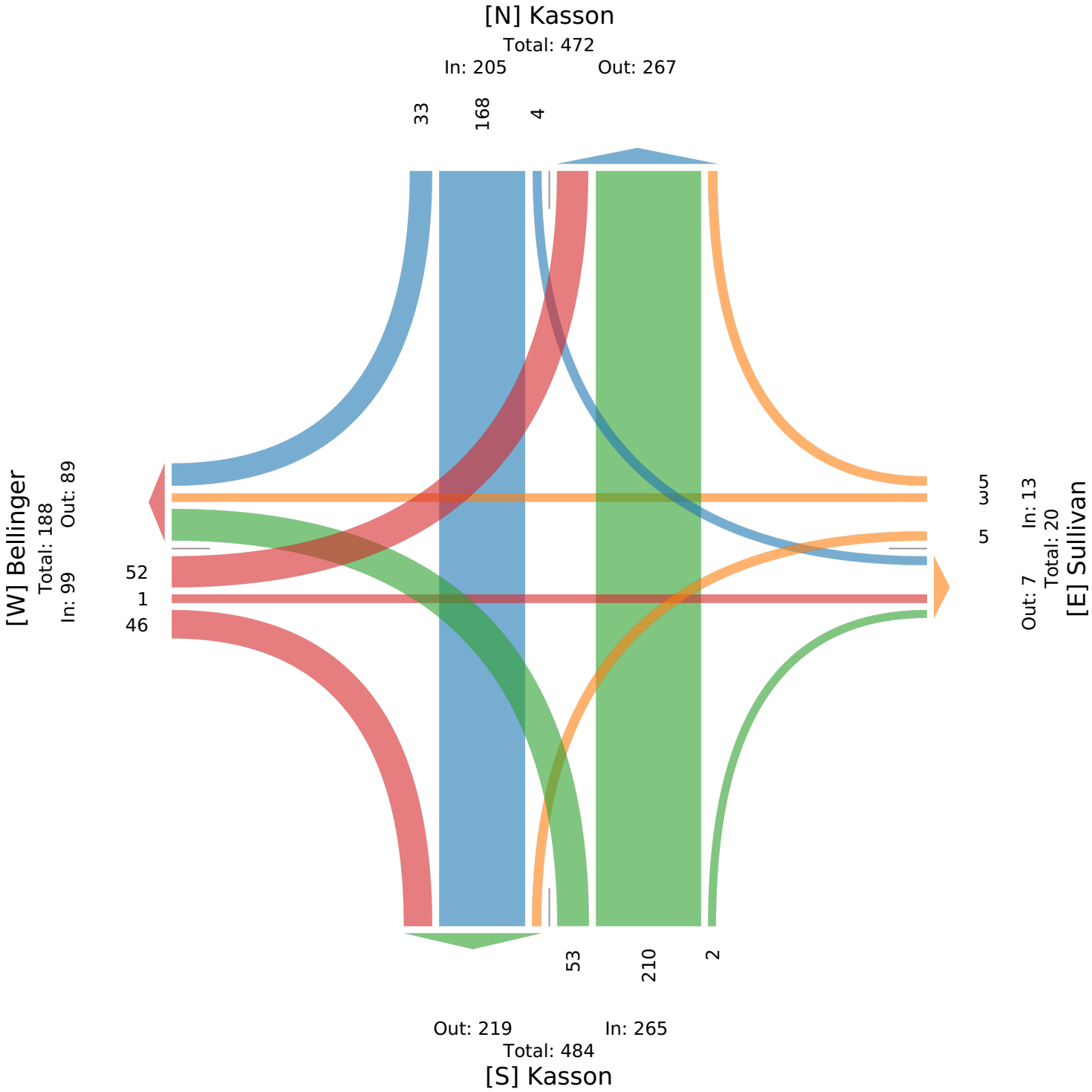
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Bellinger					Sullivan					Kasson					Kasson					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-09-02 3:45PM	9	0	9	0	**18**	1	1	1	0	**3**	13	53	1	0	**67**	0	45	7	0	**52**	**140**
4:00PM	14	0	14	0	**28**	1	0	1	0	**2**	8	45	0	0	**53**	3	41	10	0	**54**	**137**
4:15PM	13	1	15	0	**29**	0	0	2	0	**2**	20	55	0	0	**75**	1	45	10	0	**56**	**162**
4:30PM	16	0	8	0	**24**	3	2	1	0	**6**	12	57	1	0	**70**	0	37	6	0	**43**	**143**
Total	52	1	46	0	**99**	5	3	5	0	**13**	53	210	2	0	**265**	4	168	33	0	**205**	**582**
% Approach	52.5%	1.0%	46.5%	0%	**-**	38.5%	23.1%	38.5%	0%	**-**	20.0%	79.2%	0.8%	0%	**-**	2.0%	82.0%	16.1%	0%	**-**	-
% Total	8.9%	0.2%	7.9%	0%	**17.0%**	0.9%	0.5%	0.9%	0%	**2.2%**	9.1%	36.1%	0.3%	0%	**45.5%**	0.7%	28.9%	5.7%	0%	**35.2%**	-
PHF	0.813	0.250	0.767	-	**0.853**	0.417	0.375	0.625	-	**0.542**	0.663	0.921	0.500	-	**0.883**	0.333	0.933	0.825	-	**0.915**	0.898
Lights	52	1	46	0	**99**	5	3	4	0	**12**	53	209	2	0	**264**	4	164	31	0	**199**	574
% Lights	100%	100%	100%	0%	**100%**	100%	100%	80.0%	0%	**92.3%**	100%	99.5%	100%	0%	**99.6%**	100%	97.6%	93.9%	0%	**97.1%**	98.6%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	2	0	0	**2**	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.2%	0%	0%	**1.0%**	0.3%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	1	0	**1**	0	1	0	0	**1**	0	2	2	0	**4**	6
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	20.0%	0%	**7.7%**	0%	0.5%	0%	0%	**0.4%**	0%	1.2%	6.1%	0%	**2.0%**	1.0%

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

Cedar Road at Bellinger/Sullivan - TMC
Fri Sep 2, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982504, Location: 44.847421, -85.795062

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



Cedar Road at Bellinger/Sullivan - TMC

Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

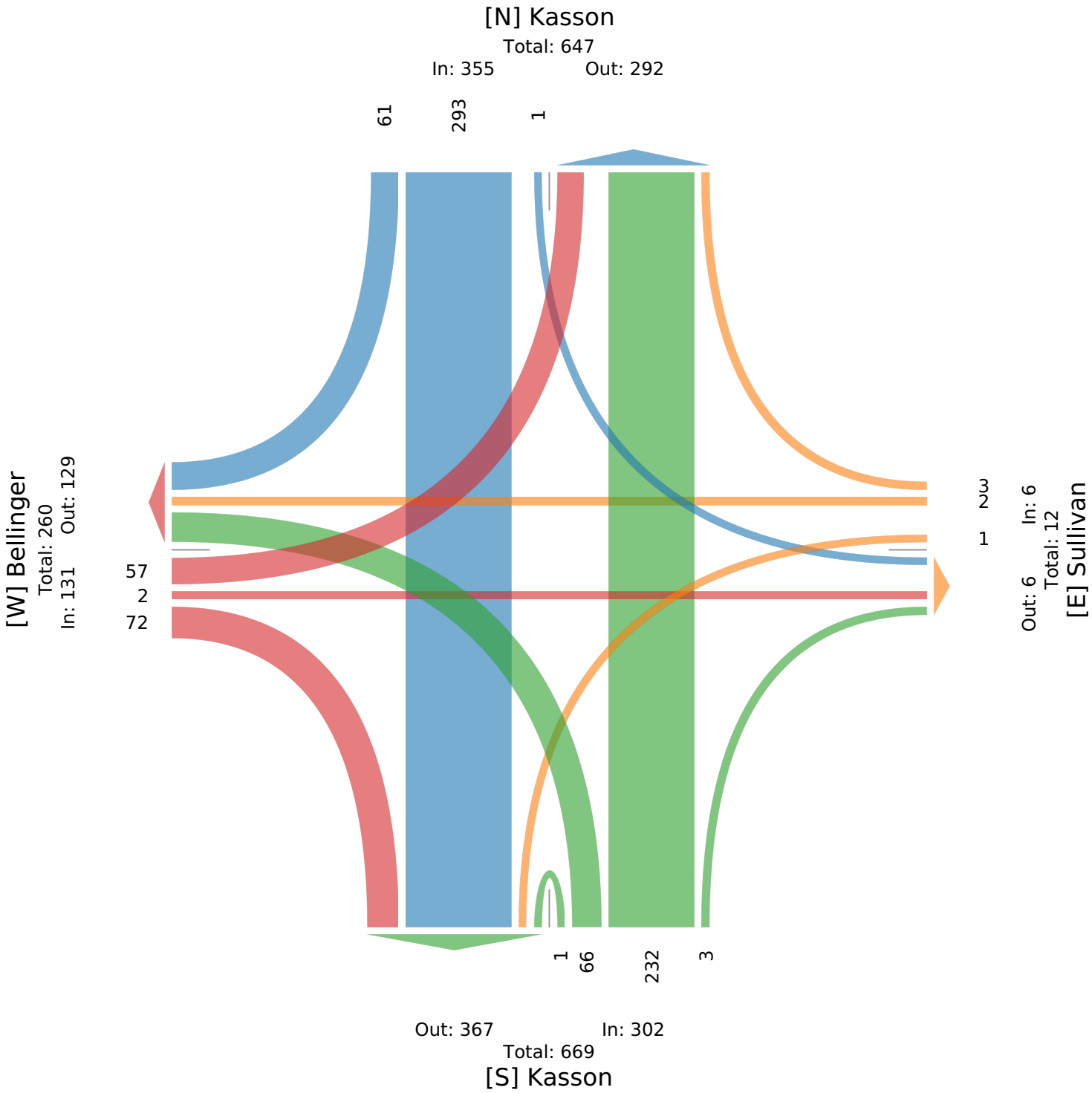
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Bellinger					Sullivan					Kasson					Kasson					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-09-05 1:00PM	7	0	6	0	**13**	0	0	0	0	**0**	11	24	0	0	**35**	0	31	10	0	**41**	**89**
1:15PM	6	0	17	0	**23**	0	1	0	0	**1**	7	30	0	0	**37**	0	33	8	0	**41**	**102**
1:30PM	8	0	7	0	**15**	0	0	0	0	**0**	5	21	0	0	**26**	0	35	6	0	**41**	**82**
1:45PM	4	0	5	0	**9**	1	0	1	0	**2**	8	28	1	0	**37**	0	36	9	0	**45**	**93**
Hourly Total	25	0	35	0	**60**	1	1	1	0	**3**	31	103	1	0	**135**	0	135	33	0	**168**	**366**
2:00PM	9	0	9	0	**18**	0	0	1	0	**1**	10	40	0	0	**50**	0	34	8	0	**42**	**111**
2:15PM	8	0	9	0	**17**	0	0	0	0	**0**	9	26	2	0	**37**	0	44	7	0	**51**	**105**
2:30PM	7	2	10	0	**19**	0	0	1	0	**1**	6	33	0	0	**39**	1	37	4	0	**42**	**101**
2:45PM	8	0	9	0	**17**	0	1	0	0	**1**	10	30	0	1	**41**	0	43	9	0	**52**	**111**
Hourly Total	32	2	37	0	**71**	0	1	2	0	**3**	35	129	2	1	**167**	1	158	28	0	**187**	**428**
Total	57	2	72	0	**131**	1	2	3	0	**6**	66	232	3	1	**302**	1	293	61	0	**355**	**794**
% Approach	43.5%	1.5%	55.0%	0%	**-**	16.7%	33.3%	50.0%	0%	**-**	21.9%	76.8%	1.0%	0.3%	**-**	0.3%	82.5%	17.2%	0%	**-**	-
% Total	7.2%	0.3%	9.1%	0%	**16.5%**	0.1%	0.3%	0.4%	0%	**0.8%**	8.3%	29.2%	0.4%	0.1%	**38.0%**	0.1%	36.9%	7.7%	0%	**44.7%**	-
Lights	57	2	72	0	**131**	1	2	3	0	**6**	66	229	3	1	**299**	1	292	61	0	**354**	790
% Lights	100%	100%	100%	0%	**100%**	100%	100%	100%	0%	**100%**	100%	98.7%	100%	100%	**99.0%**	100%	99.7%	100%	0%	**99.7%**	99.5%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	3	0	0	**3**	0	1	0	0	**1**	4
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.3%	0%	0%	**1.0%**	0%	0.3%	0%	0%	**0.3%**	0.5%

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

Cedar Road at Bellinger/Sullivan - TMC
Mon Sep 5, 2022
Full Length (1 PM-3 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

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



Cedar Road at Bellinger/Sullivan - TMC

Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

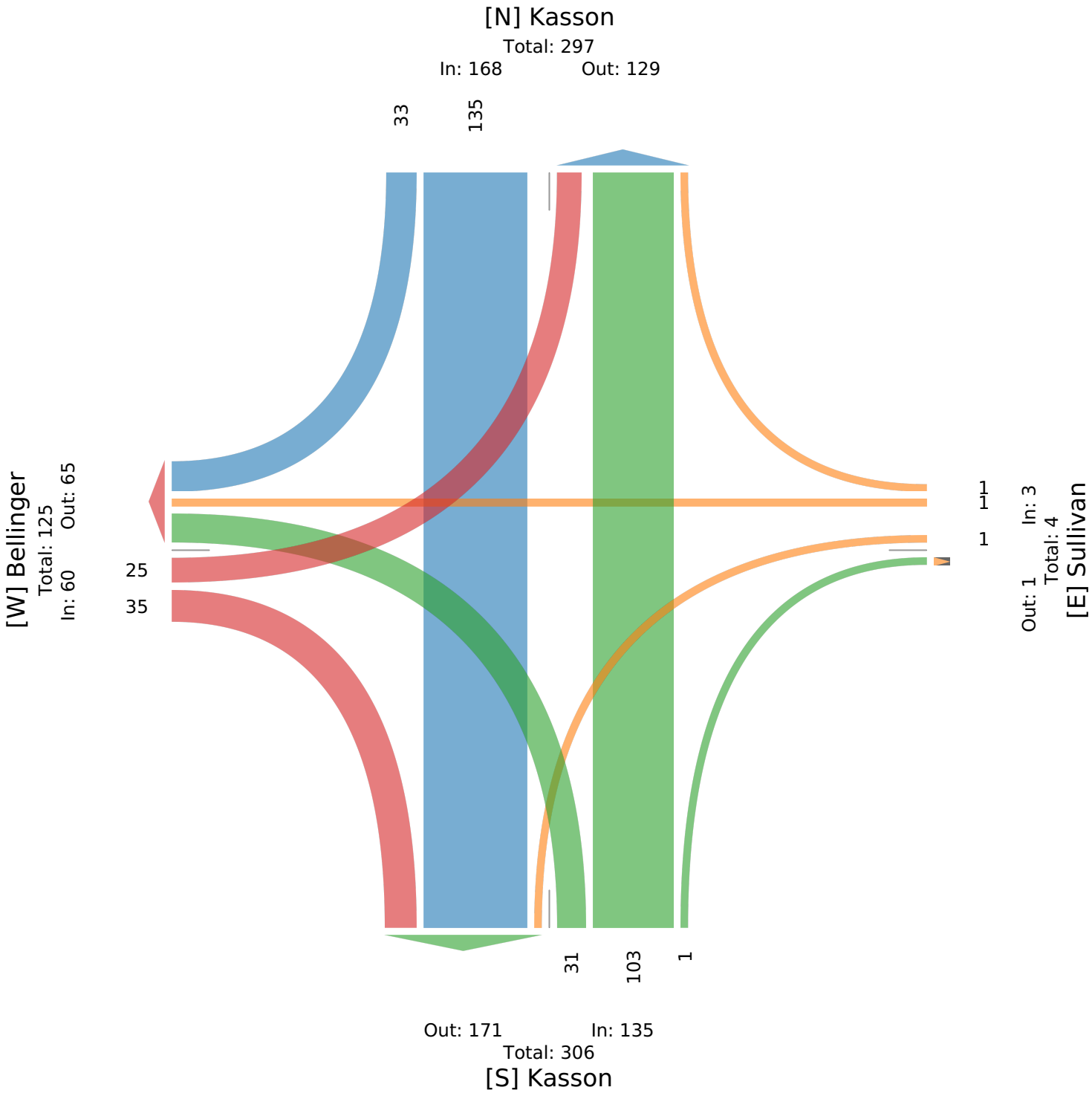
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Bellinger					Sullivan					Kasson					Kasson					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-09-05 1:00PM	7	0	6	0	**13**	0	0	0	0	**0**	11	24	0	0	**35**	0	31	10	0	**41**	**89**
1:15PM	6	0	17	0	**23**	0	1	0	0	**1**	7	30	0	0	**37**	0	33	8	0	**41**	**102**
1:30PM	8	0	7	0	**15**	0	0	0	0	**0**	5	21	0	0	**26**	0	35	6	0	**41**	**82**
1:45PM	4	0	5	0	**9**	1	0	1	0	**2**	8	28	1	0	**37**	0	36	9	0	**45**	**93**
Total	25	0	35	0	**60**	1	1	1	0	**3**	31	103	1	0	**135**	0	135	33	0	**168**	**366**
% Approach	41.7%	0%	58.3%	0%	**-**	33.3%	33.3%	33.3%	0%	**-**	23.0%	76.3%	0.7%	0%	**-**	0%	80.4%	19.6%	0%	**-**	-
% Total	6.8%	0%	9.6%	0%	**16.4%**	0.3%	0.3%	0.3%	0%	**0.8%**	8.5%	28.1%	0.3%	0%	**36.9%**	0%	36.9%	9.0%	0%	**45.9%**	-
PHF	0.781	-	0.515	-	**0.652**	0.250	0.250	0.250	-	**0.375**	0.705	0.858	0.250	-	**0.912**	-	0.938	0.825	-	**0.933**	0.897
Lights	25	0	35	0	**60**	1	1	1	0	**3**	31	102	1	0	**134**	0	134	33	0	**167**	364
% Lights	100%	0%	100%	0%	**100%**	100%	100%	100%	0%	**100%**	100%	99.0%	100%	0%	**99.3%**	0%	99.3%	100%	0%	**99.4%**	99.5%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	1	0	0	**1**	2
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.0%	0%	0%	**0.7%**	0%	0.7%	0%	0%	**0.6%**	0.5%

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

Cedar Road at Bellinger/Sullivan - TMC
Mon Sep 5, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

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



Cedar Road at Bellinger/Sullivan - TMC

Mon Sep 5, 2022
PM Peak (2 PM - 3 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

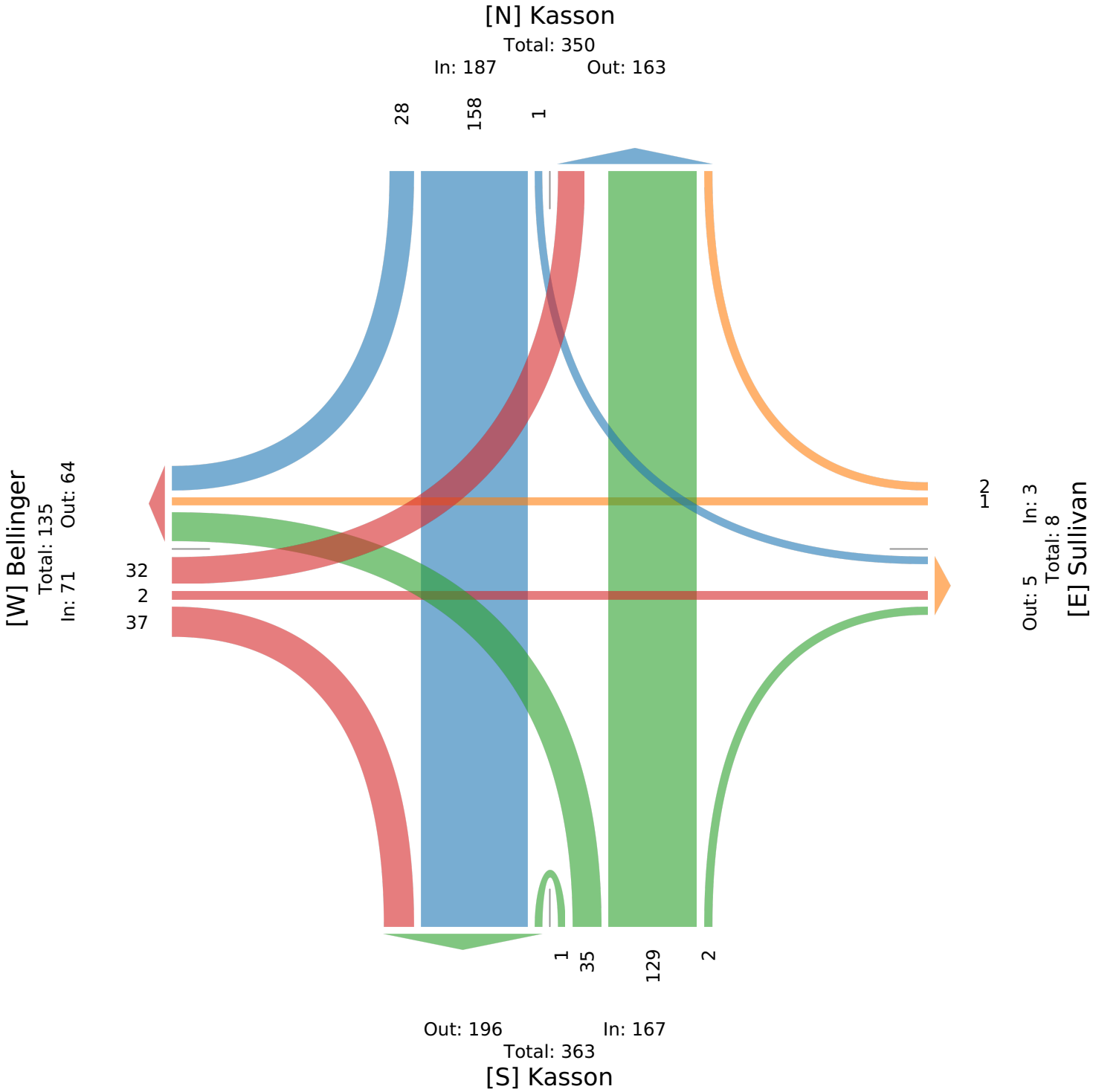
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Bellinger					Sullivan					Kasson					Kasson					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-09-05 2:00PM	9	0	9	0	**18**	0	0	1	0	**1**	10	40	0	0	**50**	0	34	8	0	**42**	**111**
2:15PM	8	0	9	0	**17**	0	0	0	0	**0**	9	26	2	0	**37**	0	44	7	0	**51**	**105**
2:30PM	7	2	10	0	**19**	0	0	1	0	**1**	6	33	0	0	**39**	1	37	4	0	**42**	**101**
2:45PM	8	0	9	0	**17**	0	1	0	0	**1**	10	30	0	1	**41**	0	43	9	0	**52**	**111**
Total	32	2	37	0	**71**	0	1	2	0	**3**	35	129	2	1	**167**	1	158	28	0	**187**	**428**
% Approach	45.1%	2.8%	52.1%	0%	**-**	0%	33.3%	66.7%	0%	**-**	21.0%	77.2%	1.2%	0.6%	**-**	0.5%	84.5%	15.0%	0%	**-**	-
% Total	7.5%	0.5%	8.6%	0%	**16.6%**	0%	0.2%	0.5%	0%	**0.7%**	8.2%	30.1%	0.5%	0.2%	**39.0%**	0.2%	36.9%	6.5%	0%	**43.7%**	-
PHF	0.889	0.250	0.925	-	**0.934**	-	0.250	0.500	-	**0.750**	0.875	0.806	0.250	0.250	**0.835**	0.250	0.898	0.778	-	**0.899**	0.964
Lights	32	2	37	0	**71**	0	1	2	0	**3**	35	127	2	1	**165**	1	158	28	0	**187**	426
% Lights	100%	100%	100%	0%	**100%**	0%	100%	100%	0%	**100%**	100%	98.4%	100%	100%	**98.8%**	100%	100%	100%	0%	**100%**	99.5%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	2	0	0	**2**	0	0	0	0	**0**	2
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.6%	0%	0%	**1.2%**	0%	0%	0%	0%	**0%**	0.5%

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

Cedar Road at Bellinger/Sullivan - TMC
Mon Sep 5, 2022
PM Peak (2 PM - 3 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 982500, Location: 44.847421, -85.795062

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



Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	52	14	5	48
Future Vol, veh/h	5	6	52	14	5	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	87	87	95	95
Heavy Vehicles, %	0	0	6	21	20	8
Mvmt Flow	7	9	60	16	5	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	129	68	0	0	76	0
Stage 1	68	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	870	1001	-	-	1416	-
Stage 1	960	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	867	1001	-	-	1416	-
Mov Cap-2 Maneuver	867	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	935	1416	-
HCM Lane V/C Ratio	-	-	0.017	0.004	-
HCM Control Delay (s)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	0	54	76	0	36
Future Vol, veh/h	52	0	54	76	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	83	83	75	75
Heavy Vehicles, %	6	0	4	7	0	8
Mvmt Flow	76	0	65	92	0	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	159	111	0	0	157	0
Stage 1	111	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	823	948	-	-	1435	-
Stage 1	904	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	823	948	-	-	1435	-
Mov Cap-2 Maneuver	823	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	964	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	823	1435	-
HCM Lane V/C Ratio	-	-	0.093	-	-
HCM Control Delay (s)	-	-	9.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	2	132	126	0	110
Future Vol, veh/h	90	2	132	126	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	87	87	81	81
Heavy Vehicles, %	6	0	3	7	0	6
Mvmt Flow	106	2	152	145	0	136

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	361	225	0	0	297	0
Stage 1	225	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	630	819	-	-	1276	-
Stage 1	803	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	819	-	-	1276	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	881	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	633	1276	-
HCM Lane V/C Ratio	-	-	0.171	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	1	46	5	3	5	53	210	2	4	168	33
Future Vol, veh/h	52	1	46	5	3	5	53	210	2	4	168	33
Peak Hour Factor	0.85	0.85	0.85	0.60	0.60	0.60	0.88	0.88	0.88	0.92	0.92	0.92
Heavy Vehicles, %	4	0	7	0	0	20	4	5	0	25	6	6
Mvmt Flow	61	1	54	8	5	8	60	239	2	4	183	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	8.4	10.6	10.1
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	53%	38%	2%
Vol Thru, %	79%	1%	23%	82%
Vol Right, %	1%	46%	38%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	99	13	205
LT Vol	53	52	5	4
Through Vol	210	1	3	168
RT Vol	2	46	5	33
Lane Flow Rate	301	116	22	223
Geometry Grp	1	1	1	1
Degree of Util (X)	0.387	0.163	0.031	0.305
Departure Headway (Hd)	4.621	5.05	5.153	4.923
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	777	707	690	729
Service Time	2.662	3.106	3.222	2.968
HCM Lane V/C Ratio	0.387	0.164	0.032	0.306
HCM Control Delay	10.6	9.1	8.4	10.1
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	1.8	0.6	0.1	1.3

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	9	25	13	3	43
Future Vol, veh/h	29	9	25	13	3	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	68	68	77	77
Heavy Vehicles, %	21	22	8	0	33	12
Mvmt Flow	37	11	37	19	4	56

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	111	47	0	0	56	0
Stage 1	47	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.61	6.42	-	-	4.43	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.689	3.498	-	-	2.497	-
Pot Cap-1 Maneuver	842	968	-	-	1372	-
Stage 1	929	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	839	968	-	-	1372	-
Mov Cap-2 Maneuver	839	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	866	1372	-
HCM Lane V/C Ratio	-	-	0.056	0.003	-
HCM Control Delay (s)	-	-	9.4	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	2	28	52	3	24
Future Vol, veh/h	66	2	28	52	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	83	83	68	68
Heavy Vehicles, %	15	0	0	13	0	4
Mvmt Flow	73	2	34	63	4	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	109	66	0	0	97	0
Stage 1	66	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.55	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	858	1003	-	-	1509	-
Stage 1	925	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	855	1003	-	-	1509	-
Mov Cap-2 Maneuver	855	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1509	-
HCM Lane V/C Ratio	-	-	0.088	0.003	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	2	77	83	3	101
Future Vol, veh/h	86	2	77	83	3	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	85	85	81	81
Heavy Vehicles, %	5	0	3	6	0	3
Mvmt Flow	91	2	91	98	4	125

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	140	0	0	189	0
Stage 1	140	-	-	-	-	-
Stage 2	133	-	-	-	-	-
Critical Hdwy	6.45	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	710	913	-	-	1397	-
Stage 1	879	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	708	913	-	-	1397	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	1397	-
HCM Lane V/C Ratio	-	-	0.13	0.003	-
HCM Control Delay (s)	-	-	10.8	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	2	37	0	1	2	36	129	2	1	158	28
Future Vol, veh/h	32	2	37	0	1	2	36	129	2	1	158	28
Peak Hour Factor	0.93	0.93	0.93	0.75	0.75	0.75	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles, %	6	0	5	0	100	0	0	5	0	0	4	7
Mvmt Flow	34	2	40	0	1	3	43	154	2	1	176	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9.3	8.7	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	45%	0%	1%
Vol Thru, %	77%	3%	33%	84%
Vol Right, %	1%	52%	67%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	71	3	187
LT Vol	36	32	0	1
Through Vol	129	2	1	158
RT Vol	2	37	2	28
Lane Flow Rate	199	76	4	208
Geometry Grp	1	1	1	1
Degree of Util (X)	0.24	0.099	0.007	0.243
Departure Headway (Hd)	4.344	4.671	6.2	4.216
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	829	768	578	854
Service Time	2.357	2.693	4.227	2.229
HCM Lane V/C Ratio	0.24	0.099	0.007	0.244
HCM Control Delay	8.7	8.2	9.3	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.3	0	1

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	53	14	5	48
Future Vol, veh/h	5	6	53	14	5	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	87	87	95	95
Heavy Vehicles, %	0	0	6	21	20	8
Mvmt Flow	7	9	61	16	5	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	130	69	0	0	77	0
Stage 1	69	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.3	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.38	-
Pot Cap-1 Maneuver	869	1000	-	-	1415	-
Stage 1	959	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	866	1000	-	-	1415	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	934	1415	-
HCM Lane V/C Ratio	-	-	0.017	0.004	-
HCM Control Delay (s)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	0	55	77	0	36
Future Vol, veh/h	53	0	55	77	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	83	83	75	75
Heavy Vehicles, %	6	0	4	7	0	8
Mvmt Flow	78	0	66	93	0	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	161	113	0	0	159	0
Stage 1	113	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	821	945	-	-	1433	-
Stage 1	902	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	945	-	-	1433	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	964	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	821	1433	-
HCM Lane V/C Ratio	-	-	0.095	-	-
HCM Control Delay (s)	-	-	9.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	2	133	127	0	111
Future Vol, veh/h	91	2	133	127	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	87	87	81	81
Heavy Vehicles, %	6	0	3	7	0	6
Mvmt Flow	107	2	153	146	0	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	363	226	0	0	299	0
Stage 1	226	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	628	818	-	-	1274	-
Stage 1	802	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	628	818	-	-	1274	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	880	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1274	-
HCM Lane V/C Ratio	-	-	0.173	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	1	46	5	3	5	54	212	2	4	170	33
Future Vol, veh/h	53	1	46	5	3	5	54	212	2	4	170	33
Peak Hour Factor	0.85	0.85	0.85	0.60	0.60	0.60	0.88	0.88	0.88	0.92	0.92	0.92
Heavy Vehicles, %	4	0	7	0	0	20	4	5	0	25	6	6
Mvmt Flow	62	1	54	8	5	8	61	241	2	4	185	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	8.4	10.7	10.2
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	53%	38%	2%
Vol Thru, %	79%	1%	23%	82%
Vol Right, %	1%	46%	38%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	100	13	207
LT Vol	54	53	5	4
Through Vol	212	1	3	170
RT Vol	2	46	5	33
Lane Flow Rate	305	118	22	225
Geometry Grp	1	1	1	1
Degree of Util (X)	0.392	0.166	0.031	0.308
Departure Headway (Hd)	4.63	5.068	5.169	4.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	777	705	687	727
Service Time	2.671	3.124	3.241	2.98
HCM Lane V/C Ratio	0.393	0.167	0.032	0.309
HCM Control Delay	10.7	9.1	8.4	10.2
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	1.9	0.6	0.1	1.3

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	9	25	13	3	43
Future Vol, veh/h	29	9	25	13	3	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	68	68	77	77
Heavy Vehicles, %	21	22	8	0	33	12
Mvmt Flow	37	11	37	19	4	56

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	111	47	0	0	56	0
Stage 1	47	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.61	6.42	-	-	4.43	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.689	3.498	-	-	2.497	-
Pot Cap-1 Maneuver	842	968	-	-	1372	-
Stage 1	929	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	839	968	-	-	1372	-
Mov Cap-2 Maneuver	839	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	866	1372	-
HCM Lane V/C Ratio	-	-	0.056	0.003	-
HCM Control Delay (s)	-	-	9.4	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	2	28	53	3	24
Future Vol, veh/h	67	2	28	53	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	83	83	68	68
Heavy Vehicles, %	15	0	0	13	0	4
Mvmt Flow	74	2	34	64	4	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	109	66	0	0	98	0
Stage 1	66	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.55	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	858	1003	-	-	1508	-
Stage 1	925	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	855	1003	-	-	1508	-
Mov Cap-2 Maneuver	855	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1508	-
HCM Lane V/C Ratio	-	-	0.089	0.003	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	87	2	78	84	3	102
Future Vol, veh/h	87	2	78	84	3	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	85	85	81	81
Heavy Vehicles, %	5	0	3	6	0	3
Mvmt Flow	92	2	92	99	4	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	276	142	0	0	191	0
Stage 1	142	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.45	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	707	911	-	-	1395	-
Stage 1	878	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	705	911	-	-	1395	-
Mov Cap-2 Maneuver	705	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	709	1395	-
HCM Lane V/C Ratio	-	-	0.132	0.003	-
HCM Control Delay (s)	-	-	10.8	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	2	37	0	1	2	36	130	2	1	160	28
Future Vol, veh/h	32	2	37	0	1	2	36	130	2	1	160	28
Peak Hour Factor	0.93	0.93	0.93	0.75	0.75	0.75	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles, %	6	0	5	0	100	0	0	5	0	0	4	7
Mvmt Flow	34	2	40	0	1	3	43	155	2	1	178	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	9.3	8.7	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	45%	0%	1%
Vol Thru, %	77%	3%	33%	85%
Vol Right, %	1%	52%	67%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	168	71	3	189
LT Vol	36	32	0	1
Through Vol	130	2	1	160
RT Vol	2	37	2	28
Lane Flow Rate	200	76	4	210
Geometry Grp	1	1	1	1
Degree of Util (X)	0.241	0.099	0.007	0.246
Departure Headway (Hd)	4.346	4.678	6.208	4.218
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	828	767	577	855
Service Time	2.359	2.7	4.235	2.231
HCM Lane V/C Ratio	0.242	0.099	0.007	0.246
HCM Control Delay	8.7	8.2	9.3	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.3	0	1

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	11	53	92	14	48
Future Vol, veh/h	51	11	53	92	14	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	69	69	87	87	95	95
Heavy Vehicles, %	90	45	6	88	71	8
Mvmt Flow	74	16	61	106	15	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	114	0	0	167	0
Stage 1	114	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	7.3	6.65	-	-	4.81	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	4.31	3.705	-	-	2.839	-
Pot Cap-1 Maneuver	631	834	-	-	1083	-
Stage 1	732	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	834	-	-	1083	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	651	1083	-
HCM Lane V/C Ratio	-	-	0.138	0.014	-
HCM Control Delay (s)	-	-	11.4	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	99	0	55	155	0	36
Future Vol, veh/h	99	0	55	155	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	83	83	75	75
Heavy Vehicles, %	49	0	4	54	0	8
Mvmt Flow	146	0	66	187	0	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	208	160	0	0	253	0
Stage 1	160	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.89	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.89	-	-	-	-	-
Critical Hdwy Stg 2	5.89	-	-	-	-	-
Follow-up Hdwy	3.941	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	686	890	-	-	1324	-
Stage 1	766	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	686	890	-	-	1324	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	867	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	686	1324	-
HCM Lane V/C Ratio	-	-	0.212	-	-
HCM Control Delay (s)	-	-	11.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	137	2	133	205	0	111
Future Vol, veh/h	137	2	133	205	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	87	87	81	81
Heavy Vehicles, %	37	0	3	42	0	6
Mvmt Flow	161	2	153	236	0	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	271	0	0	389	0
Stage 1	271	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.77	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.77	-	-	-	-	-
Critical Hdwy Stg 2	5.77	-	-	-	-	-
Follow-up Hdwy	3.833	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	538	773	-	-	1181	-
Stage 1	700	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	538	773	-	-	1181	-
Mov Cap-2 Maneuver	538	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	540	1181	-
HCM Lane V/C Ratio	-	-	0.303	-	-
HCM Control Delay (s)	-	-	14.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0	-

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	1	46	5	3	5	54	274	2	4	209	40
Future Vol, veh/h	69	1	46	5	3	5	54	274	2	4	209	40
Peak Hour Factor	0.85	0.85	0.85	0.60	0.60	0.60	0.88	0.88	0.88	0.92	0.92	0.92
Heavy Vehicles, %	26	0	7	0	0	20	4	26	0	25	23	23
Mvmt Flow	81	1	54	8	5	8	61	311	2	4	227	43
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	8.9	12.6	11.5
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	59%	38%	2%
Vol Thru, %	83%	1%	23%	83%
Vol Right, %	1%	40%	38%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	330	116	13	253
LT Vol	54	69	5	4
Through Vol	274	1	3	209
RT Vol	2	46	5	40
Lane Flow Rate	375	136	22	275
Geometry Grp	1	1	1	1
Degree of Util (X)	0.499	0.219	0.034	0.392
Departure Headway (Hd)	4.793	5.787	5.663	5.126
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	746	614	636	696
Service Time	2.861	3.887	3.663	3.201
HCM Lane V/C Ratio	0.503	0.221	0.035	0.395
HCM Control Delay	12.6	10.5	8.9	11.5
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	2.8	0.8	0.1	1.9

Intersection	
Int Delay, s/veh	8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	186	26	25	79	11	43
Future Vol, veh/h	186	26	25	79	11	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	68	68	77	77
Heavy Vehicles, %	88	73	8	84	82	12
Mvmt Flow	235	33	37	116	14	56

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	179	95	0	0	153	0
Stage 1	95	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	7.28	6.93	-	-	4.92	-
Critical Hdwy Stg 1	6.28	-	-	-	-	-
Critical Hdwy Stg 2	6.28	-	-	-	-	-
Follow-up Hdwy	4.292	3.957	-	-	2.938	-
Pot Cap-1 Maneuver	649	798	-	-	1057	-
Stage 1	752	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	640	798	-	-	1057	-
Mov Cap-2 Maneuver	640	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	656	1057	-
HCM Lane V/C Ratio	-	-	0.409	0.014	-
HCM Control Delay (s)	-	-	14.2	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2	0	-

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	224	2	28	119	3	24
Future Vol, veh/h	224	2	28	119	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	83	83	68	68
Heavy Vehicles, %	75	0	0	61	0	4
Mvmt Flow	249	2	34	143	4	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	149	106	0	0	177	0
Stage 1	106	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	7.15	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	698	954	-	-	1411	-
Stage 1	765	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	696	954	-	-	1411	-
Mov Cap-2 Maneuver	696	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	698	1411	-
HCM Lane V/C Ratio	-	-	0.36	0.003	-
HCM Control Delay (s)	-	-	13	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0	-

Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	244	2	78	150	3	102
Future Vol, veh/h	244	2	78	150	3	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	85	85	81	81
Heavy Vehicles, %	66	0	3	47	0	3
Mvmt Flow	257	2	92	176	4	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	314	180	0	0	268	0
Stage 1	180	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	7.06	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	4.094	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	565	868	-	-	1307	-
Stage 1	718	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	563	868	-	-	1307	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1307	-
HCM Lane V/C Ratio	-	-	0.458	0.003	-
HCM Control Delay (s)	-	-	16.6	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.4	0	-

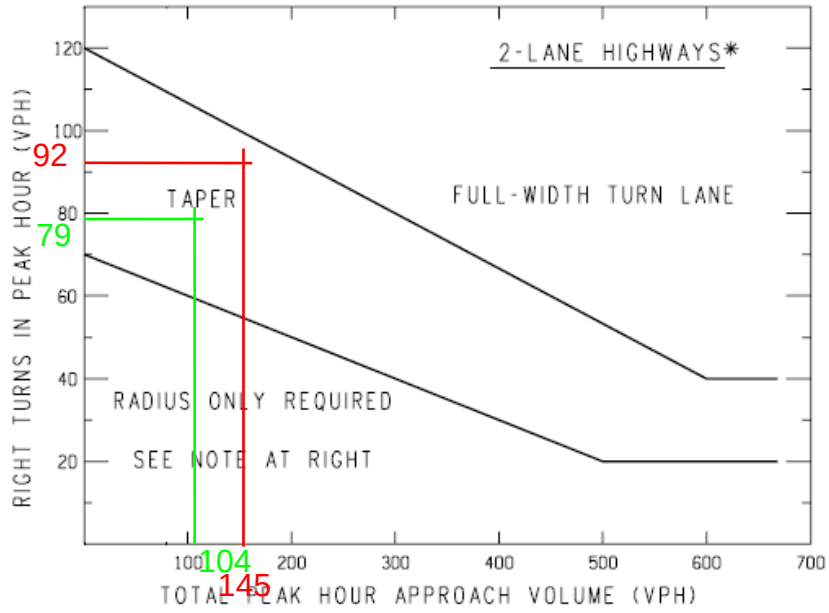
Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	2	37	0	1	2	36	183	2	1	294	51
Future Vol, veh/h	45	2	37	0	1	2	36	183	2	1	294	51
Peak Hour Factor	0.93	0.93	0.93	0.75	0.75	0.75	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles, %	33	0	5	0	100	0	0	32	0	0	48	49
Mvmt Flow	48	2	40	0	1	3	43	218	2	1	327	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	9.9	10	11.2
HCM LOS	A	A	A	B

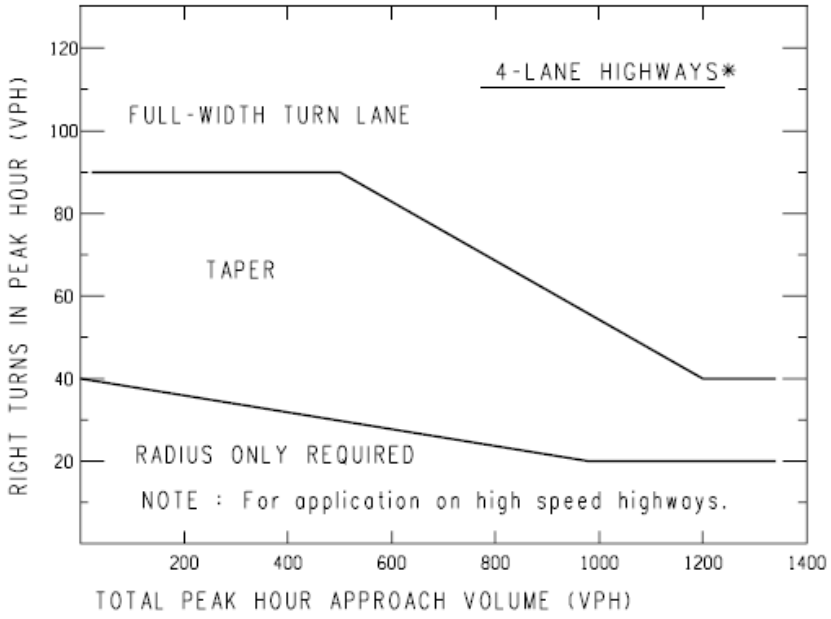
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	54%	0%	0%
Vol Thru, %	83%	2%	33%	85%
Vol Right, %	1%	44%	67%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	221	84	3	346
LT Vol	36	45	0	1
Through Vol	183	2	1	294
RT Vol	2	37	2	51
Lane Flow Rate	263	90	4	384
Geometry Grp	1	1	1	1
Degree of Util (X)	0.336	0.144	0.008	0.467
Departure Headway (Hd)	4.604	5.723	6.8	4.377
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	623	523	823
Service Time	2.645	3.786	4.878	2.411
HCM Lane V/C Ratio	0.338	0.144	0.008	0.467
HCM Control Delay	10	9.8	9.9	11.2
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.5	0.5	0	2.5

Friday Check-In
Monday Check-Out



NOTE: For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour
Right turns = Peak hour
Right turns – 20



*If a center left-turn lane exists (ie 3 or 5 lane roadway), subtract the number of left turns in approach volume form the total approach volume to get an adjusted total approach volume.

Sample Problem: The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hous is 100 vph. Determine if a right turn lane is recommended.

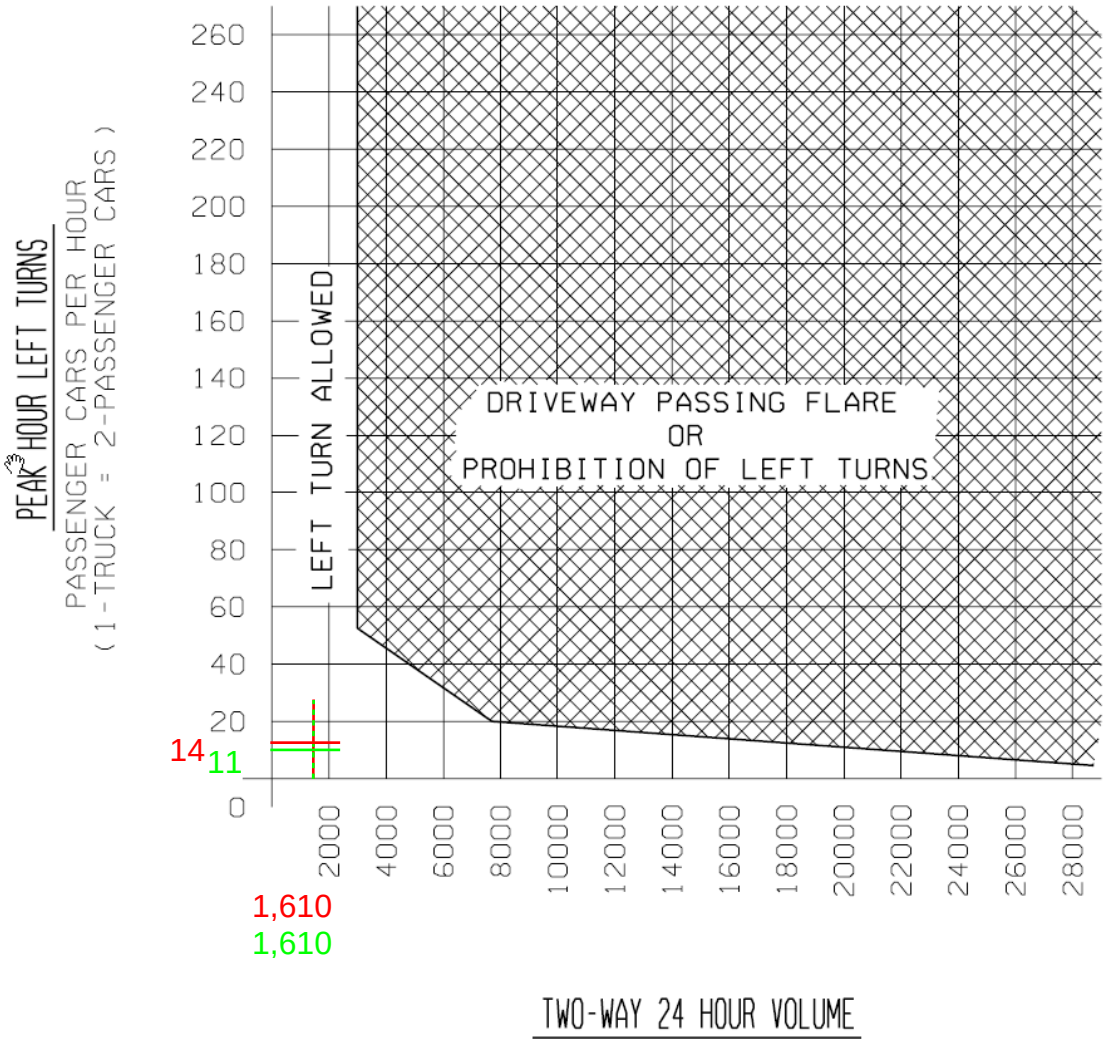
Solution: Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.

Friday Check-In
Monday Check-Out

1.2.3 Traffic Volume Guidelines for Driveway Passing Flares

Driveways serving large developments along state trunkline highways frequently generate large numbers of left-turns. On two-lane, two-way roadways, this situation can aggravate the efficiency of traffic operations and often make shoulder maintenance difficult. In such situations, prohibition of left-turns at driveways to large developments or construction of driveway passing flares should be considered.

In an attempt to alleviate the types of problems outlined above, the following chart is provided showing the relationship between peak hour left-turns and 24-hour volumes. When peak hour left-turns and 24-hour volumes fall within the area above and to the right of the trend line, left-turns should be prohibited or a driveway passing flare be installed. If a driveway passing flare is constructed, the entire cost should be borne by the developer. For additional information and geometric design guidance regarding driveway passing flares, please refer to Geometric Design Guide GEO-650.



NOTE: This chart is based on Total Development and is for Two-Way Roadways.