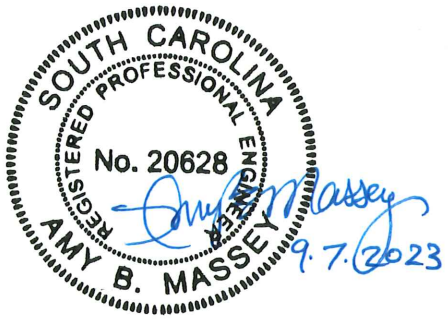
Kimley»Horn



TRANSPORTATION TECHNICAL MEMORANDUM

September 7, 2023

TO: Nick Rebovich, PE
South Carolina Department of Transportation District 2

Hart Clark
Edgefield County Building and Planning

FROM: Amy Massey, PE
Elizabeth Richard
Kimley-Horn and Associates, Inc.

SUBJECT: PROPOSED QUARRY SITE TRAFFIC ANALYSIS

Kimley-Horn and Associates, Inc. was retained by Luck Stone Corporation to complete a Traffic Analysis to review the traffic impact of developing a proposed quarry operation on a site located along Woodlawn Road in Edgefield County, South Carolina. This Technical Memorandum presents the following:

- Executive Summary
- Introduction
- Traffic Volumes
- Analyses
- Conclusion

EXECUTIVE SUMMARY

Based on the capacity analyses, review of turn-lane warrants, and sight distance review, the following developer mitigation is recommended:

- Construct the proposed site access as a full movement two-lane driveway as follows:
  - One southbound egress lane with stop sign control
  - Large right-turn entry radius and wide entrance lane
- Confirm intersection sight distance (ISD) standards for the proposed site access will be met for both passenger vehicles and trucks, based on surveyed conditions.

INTRODUCTION

The proposed development consists of a quarry operation located along Woodlawn Road in Edgefield County. One full movement access point is planned along Woodlawn Road. **Figure 1** shows the site location and **Figure 2** shows the proposed site plan.

This study analyzes both 10-year horizon and fully developed site operating potential in horizon year 2033. The fully developed site is likely planned to occur in a 25-year horizon; however, per Edgefield County and South Carolina Department of Transportation (SCDOT) staff, a 10-year analysis period is sufficient for traffic engineering purposes. Based on coordination with Edgefield County and SCDOT staff, the study area for this Traffic Analysis consists of the following intersections:

- Woodlawn Road and Highway 28
- Woodlawn Road and Site Access

Figure 3 shows the existing geometry at Woodlawn Road and Highway 28. The scope and parameters contained herein were coordinated with and approved by both SCDOT and Edgefield County staff.

Woodlawn Road is a SCDOT-maintained facility. Woodlawn Road is a two-lane undivided major collector with a 2022 SCDOT average annual daily traffic (AADT) count of 650 and 750 vehicles per day (vpd) west of and east of the site, respectively, and a posted speed limit of 45 miles per hour (mph) in the vicinity of the site. For the purposes of this study, Woodlawn Road is assumed to have an east-west orientation.

Highway 28 is a SCDOT-maintained facility. Highway 28 is a two-lane undivided minor arterial with a 2022 SCDOT AADT count of 4,300 vpd and a posted speed limit of 55 mph in the study area. For the purposes of this study, Highway 28 is assumed to have a north-south orientation.

TRAFFIC VOLUMES

Existing 2023 Traffic

Peak-hour intersection turning-movement, heavy-vehicle, and pedestrian counts were performed by Quality Counts on Wednesday, May 24, 2023, from 7:00-9:00 AM and 4:00-6:00 PM at the following intersections:

- Woodlawn Road and Highway 28
- Woodlawn Road and Residential Driveway (located west of the proposed site access)

Raw peak-hour intersection turning-movement count data is attached. 2023 existing peak-hour traffic volumes are shown in **Figure 4**.

2033 Background Traffic

Background traffic consists of existing, historical growth, and approved off-site development traffic as applicable. A 2% annual growth rate was applied to the 2023 existing peak-hour traffic volumes for 10 years to calculate 2033 background traffic volumes based on available SCDOT on-line AADT counts on Woodlawn Road at count stations 235 and 232, and Highway 28 at count station 100 shown in **Table 1** as confirmed with County and SCDOT staff.

Table 1 - SCDOT AADT			
	2022	2013	Growth Rate (2013-2022)
Woodlawn Rd (W of Site Access)	650	550	1.9%
Woodlawn Rd (E of Site Access	750	550	3.5%
Hwy 28 (N of Woodlawn Rd)	4,300	3,800	1.4%
Average			***2.3%***

Based on input from Edgefield County and SCDOT staff, there are no confirmed approved off-site developments in the area for consideration in this study. 2033 background peak-hour traffic volumes are shown in **Figure 4**.

Site Traffic

Tables 2 and 3 below summarize the trip generation potential for the proposed site, showing the 10-year operation and fully developed scenarios, respectively. It is noted that the quarry's 10-year operation projections are based upon historical information provided by Luck Stone Corporation; and the fully-developed potential is based upon an expected factor of 1.45 on 10-year operation trip generation, also provided by Luck Stone Corporation.

Table 2 - Trip Generation - 10-year Operation

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Quarry - Trucks*	236	32	16	16	24	12	12
Quarry - Passenger Cars*	42	0	0	0	16	0	16
Net New External Trips	**278**	**32**	**16**	**16**	**40**	**12**	**28**

*Quarry trips provided by developer

Table 3 - Trip Generation - Fully Developed Site

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Quarry - Trucks*	343	46	23	23	35	18	17
Quarry - Passenger Cars*	60	0	0	0	23	0	23
Net New External Trips	**403**	**46**	**23**	**23**	**58**	**18**	**40**

*Quarry trips provided by developer

The resulting trip generation analysis equates to the following impact levels under 10-year operation conditions:

- 32 AM peak-hour trips
- 40 PM peak-hour trips

The resulting trip generation analysis equates to the following impact levels under fully developed site operation conditions:

- 46 AM peak-hour trips
- 58 PM peak-hour trips

These impacts support a determination of a minimal impact based on a comparison to SCDOT's trip generation threshold of 100 peak-hour trips.

The proposed development's peak-hour trips were assigned to the study intersection based on input from Luck Stone on anticipated market area. The site traffic distribution and assignment for passenger cars and trucks are shown in **Figure 5**, which were reviewed and approved by SCDOT and County staff.

2033 Total Build-Out Traffic

The 2033 total build-out peak-hour traffic volumes consist of 2033 background traffic and proposed site traffic. 2033 total build-out peak-hour traffic volumes for 10-year horizon and fully developed site operation are shown in **Figures 6** and **7** for the AM and PM peak hours, respectively.

The intersection volume development worksheets are attached.

ANALYSES

Kimley-Horn performed analyses under the following scenarios in the AM and PM peak hours:

- 2033 10-year horizon operation
- 2033 fully developed site operation

The following analyses were performed, as described below:

- Capacity analysis
- SCDOT turn lane warrant review
- Intersection sight distance (ISD) review

Capacity Analysis

Capacity analyses were performed using Synchro 11 software to determine the operating characteristics at the proposed unsignalized site access and to evaluate the impacts of the proposed development. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment, or through a particular intersection, within a specified period of time under prevailing operational, geometric and controlling conditions within a set time duration. Synchro 11 uses methodologies contained in the *Highway Capacity Manual* (HCM) to determine the operating characteristics of an intersection.

The *Highway Capacity Manual* (HCM) defines LOS as a "quantitative stratification of a performance measure or measures representing quality of service" and is used to "translate complex numerical performance results into a simple A-F system representative of travelers' perceptions of the quality of service provided by a facility or service". The HCM defines six levels of service, LOS A through LOS

F, with A having the best operating conditions from the traveler's perspective and F having the worst. However, it must be understood that "the LOS letter result hides much of the complexity of facility performance", and that "the appropriate LOS for a given system element in the community is a decision for local policy makers". According to the HCM, "for cost, environmental impact, and other reasons, roadways are typically designed not to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travers' desires against society's desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A."

LOS for a two-way stop-controlled (TWSC) intersection is determined by the control delay at the side-street approaches, typically during the highest volume periods of the day, the AM and PM peak periods. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. With respect to field measurements, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little or no delay.

Table 4 lists the LOS control delay thresholds published in the *Highway Capacity Manual* for unsignalized intersections.

Table 4
Level-of-Service Control Delay Thresholds for Unsignalized Intersections

Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

A peak-hour factor (PHF) of 0.9 was assumed for all future year analyses. Note that assuming a PHF of 0.9 may lead to improved delay and/or queues when comparing existing and background conditions. Heavy vehicle percentages were taken directly from field observations and weighted with projected site truck percentages, subject to a two-percent minimum. Capacity analysis reports generated by Synchro Version 11 software are attached.

Mitigation for traffic impacts caused by the proposed development is based on guidance provided in the SCDOT *ARMS* Manual, which indicates that the TIA 'should include proposed improvements or access management techniques that will mitigate any significant changes in the levels of service.' When determining the proposed development's traffic impact to the study area intersections, the 2033 background and 2033 build-out conditions were compared. For the purposes of this TIA, "significant changes" are generally defined where the overall intersection or stop-controlled approach delay

increases by more than 25% or drops by one or more LOS grade between 2033 background and 2033 build-out conditions.

Table 5 summarizes the LOS, control delay (seconds), and 95th percentile queue lengths at the unsignalized intersection of Woodlawn Road and Highway 28.

Table 5 - Woodlawn Road and Highway 28				
Condition	Measure	WB	NB	SB
		WBLR	NBTR	SBLT
AM Peak Hour				
2023 Existing	LOS (Delay)	A (9.3)	A (0.0)	A (1.6)
	Synchro 95th Q	5'	0'	3'
2033 Background	LOS (Delay)	A (9.1)	A (0.0)	A (1.7)
	Synchro 95th Q	3'	0'	3'
2033 Build-out 10-year Operation	LOS (Delay)	A (9.7)	A (0.0)	A (1.7)
	Synchro 95th Q	5'	0'	3'
2033 Buil-out Fully Developed	LOS (Delay)	B (10.1)	A (0.0)	A (1.7)
	Synchro 95th Q	5'	0'	3'
PM Peak Hour				
2023 Existing	LOS (Delay)	B (10.3)	A (0.0)	A (1.8)
	Synchro 95th Q	10'	0'	3'
2033 Background	LOS (Delay)	B (10.7)	A (0.0)	A (1.6)
	Synchro 95th Q	13'	0'	3'
2033 Build-out 10-year Operation	LOS (Delay)	B (11.3)	A (0.0)	A (1.6)
	Synchro 95th Q	15'	0'	3'
2033 Buil-out Fully Developed	LOS (Delay)	B (11.6)	A (0.0)	A (1.6)
	Synchro 95th Q	15'	0'	3'

As shown in Table 5, the stop-controlled westbound approach is expected to operate at LOS B or better during both peak hours under both site operation scenarios. Therefore, no mitigation improvements are recommended for capacity purposes.

Table 6 summarizes the LOS, control delay (seconds), and 95th percentile queue lengths at the proposed unsignalized intersection of Woodlawn Road and Site Access.

Table 6 - Woodlawn Road and Site Access				
Condition	Measure	EB	WB	SB
		EBLT	WBTR	SBLR
AM Peak Hour				
2033 Build-out 10-year Operation	LOS (Delay)	A (0.9)	A (0.0)	B (10.1)
	Synchro 95th Q	0'	0'	3'
2033 Buil-out Fully Developed	LOS (Delay)	A (1.2)	A (0.0)	B (10.2)
	Synchro 95th Q	0'	0'	3'
PM Peak Hour				
2033 Build-out 10-year Operation	LOS (Delay)	A (0.8)	A (0.0)	A (9.8)
	Synchro 95th Q	0'	0'	3'
2033 Buil-out Fully Developed	LOS (Delay)	A (1.1)	A (0.0)	A (9.9)
	Synchro 95th Q	0'	0'	5'

As shown in Table 6, the Site Access is expected to operate at LOS B or better without turn lanes during both peak hours under both site operation scenarios. Therefore, no mitigation improvements beyond the construction of the site access consisting of a single ingress lane and single egress lane with stop sign control are recommended for capacity purposes.

SCDOT turn lane warrant review

Warrants for additional turn-lane improvements for the Woodlawn Road and Site Access intersection beyond those necessary for capacity were determined based on a review of the figures 9.5A and 9.5E found on pages 9.5 (2) and 9.5 (7) in the *2017 SCDOT Roadway Design Manual*. The results of the warrants for left- and right-turn lanes are summarized below and attached.

Based on the results of the warrants under 10-year and fully developed site operation conditions, neither a westbound right-turn lane nor eastbound left-turn lane along Woodlawn Road at the Site Access is warranted for consideration. Additionally, based on the SCDOT ARMS Manual, recommended right-turn and left-turn storage lengths are not provided for right-turn or left-turn movements with less than 50 vehicles. As shown in Figures 6 and 7, the highest westbound right-turn volume and eastbound left-turn volume projected to enter the site under peak-hour conditions is 14 and 9 vehicles, respectively. Therefore, an exclusive westbound right-turn lane and an exclusive eastbound left-turn lane along Woodlawn Road are not recommended. However, the construction of a large entry radius and wide entrance lane are recommended to facilitate westbound right-turning movements into the site.

ISD review

A field visit was performed on Thursday, February 9, 2023 to review general ISD availability along the site frontage compared to 2017 SCDOT Roadway Design Manual and American Association of State Highway Transportation Officials (AASHTO) standards. Following this site visit and further discussion,

the currently proposed access is located approximately 1,000 feet east of the existing residential driveway at which counts were collected. This location would meet SCDOT's minimum driveway spacing standard of 325 feet (edge to edge) for a 45-mph posted speed limit. The location is shown in the image below.

Preliminary results for the proposed access location along the site's Woodlawn Road frontage are shown in **Table 7**. Note that Woodlawn Road has a posted speed limit of 45 mph, which is assumed to equate to a 50-mph design speed.

Table 7 - Intersection Sight Distance

Direction Turning	Direction Looking	Required Intersection Sight Distance		ISD Met*	
		Passengar Car (PC)	Truck	PC	Truck
Turning Left	Looking Right	551	845	yes	yes
Turning Right	Looking Left	478	772	yes	yes

Note: Intersection sight distance calculations assume the approach grade will be less than 3%

*Contingent on survey and field observation

Based on the results in Table 7, GIS data available for the area, and aerial maps, the required ISD standard is anticipated to be met for both left- and right-turning passenger carpg 8s and trucks. The required ISD standard for trucks and passenger vehicles are shown in **Figure 8**. It is noted that this location has not been specifically reviewed for ISD in the field, but rather via aerials and GIS data. Therefore, further ISD analysis and field observations will need to be performed based on actual survey in the site planning process.

Based on review of the Google Street View images shown below, it is likely that some level of clearing along the frontage and grading may be necessary.

CONCLUSION

Based on the capacity analyses, review of turn-lane warrants, intersection sight distance review, and ARMS Manual specifications, the following developer mitigation is recommended:

- Construct the proposed site access as a full movement two-lane driveway as follows:
  - One southbound egress lane with stop sign control
  - Large right-turn entry radius and wide entrance lane
- Confirm ISD standards for the proposed site access will be met for both passenger vehicles and trucks, based on surveyed conditions.

The recommended developer mitigation is shown in **Figure 9**, attached.

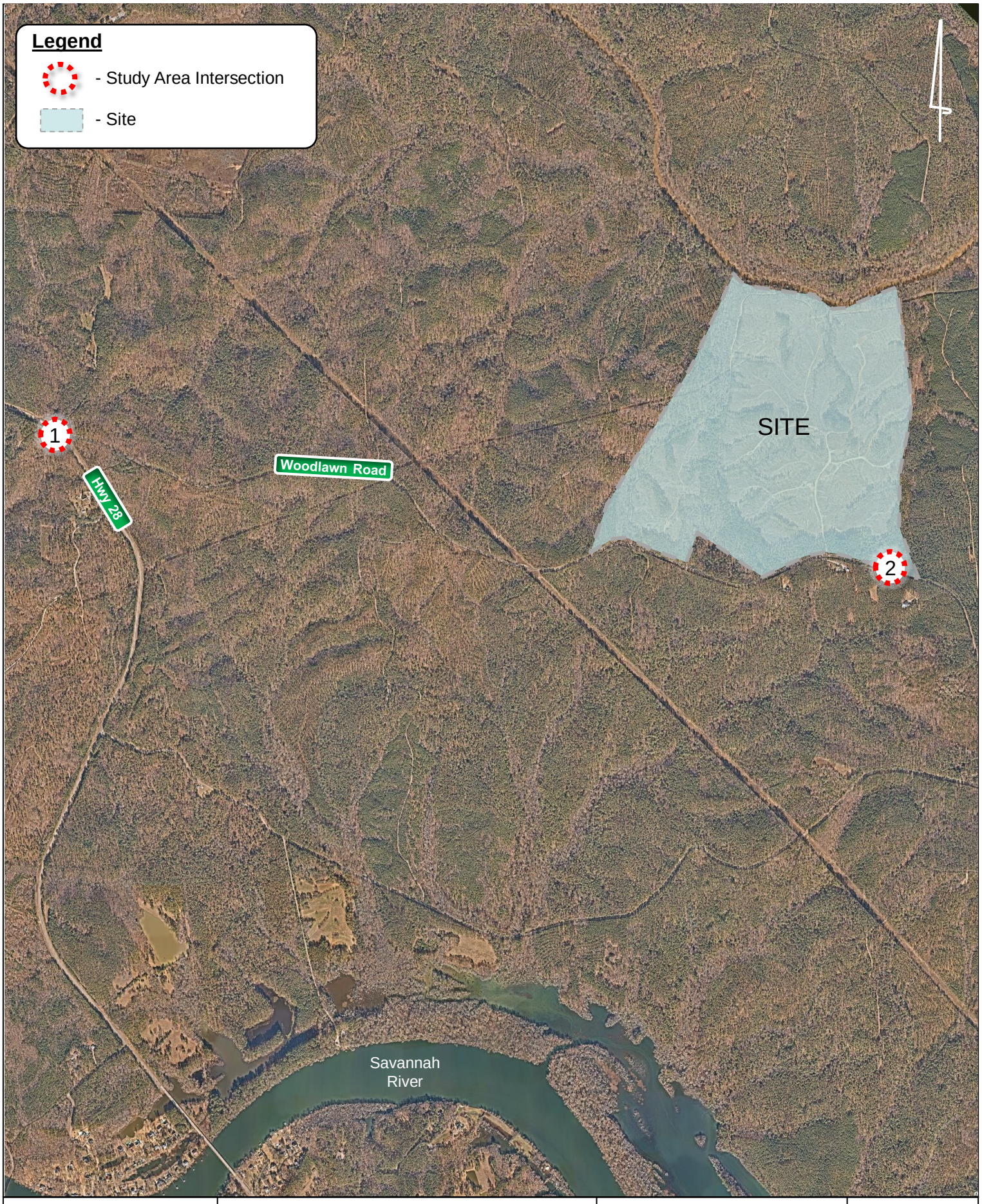
Please contact us with questions.

Attachments:

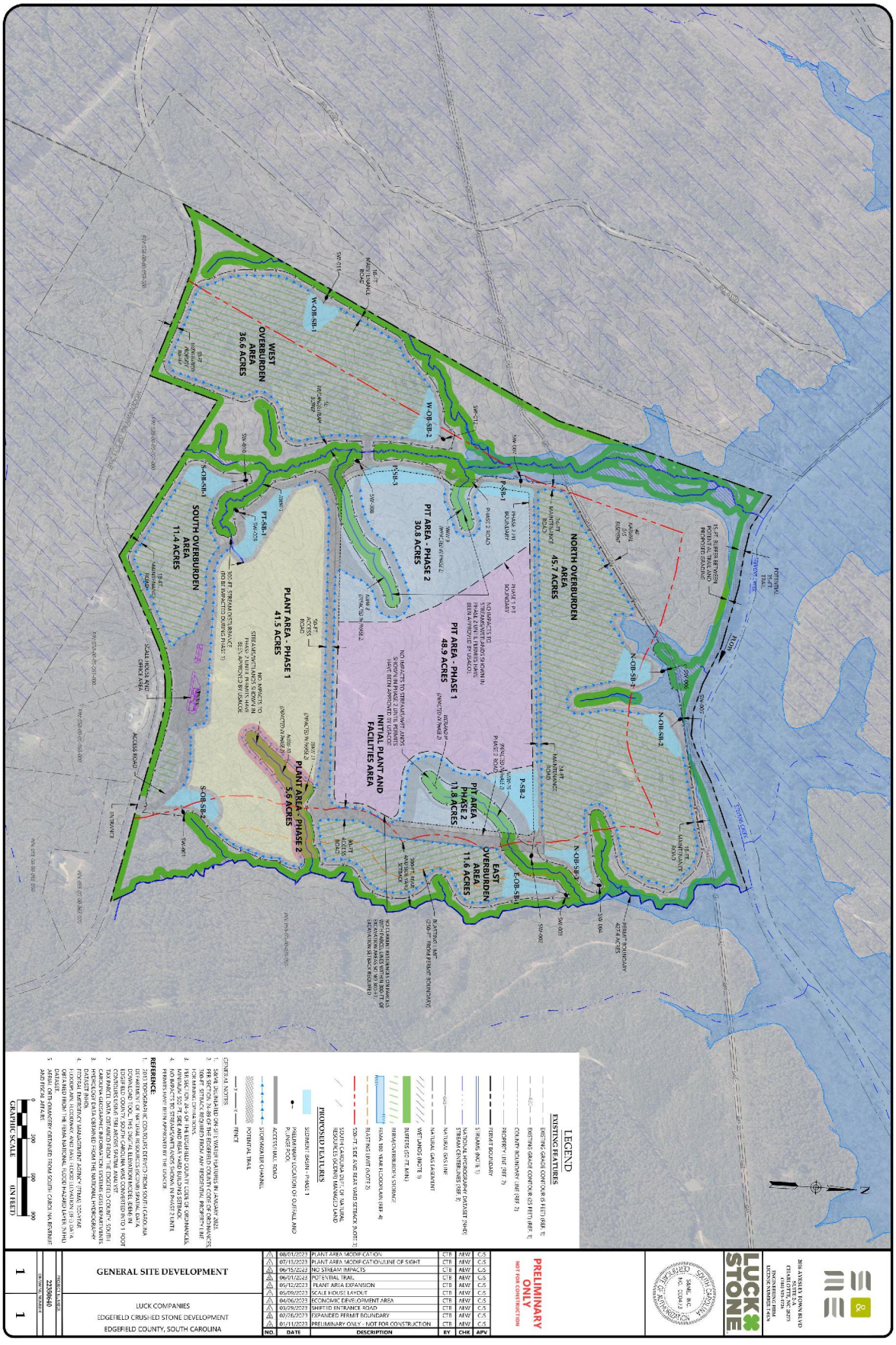
- Figures 1-9
- ISD measurements
- Raw turning movement counts
- Intersection volume development worksheets
- Capacity analysis reports
- SCDOT turn lane warrant review results

Attachments

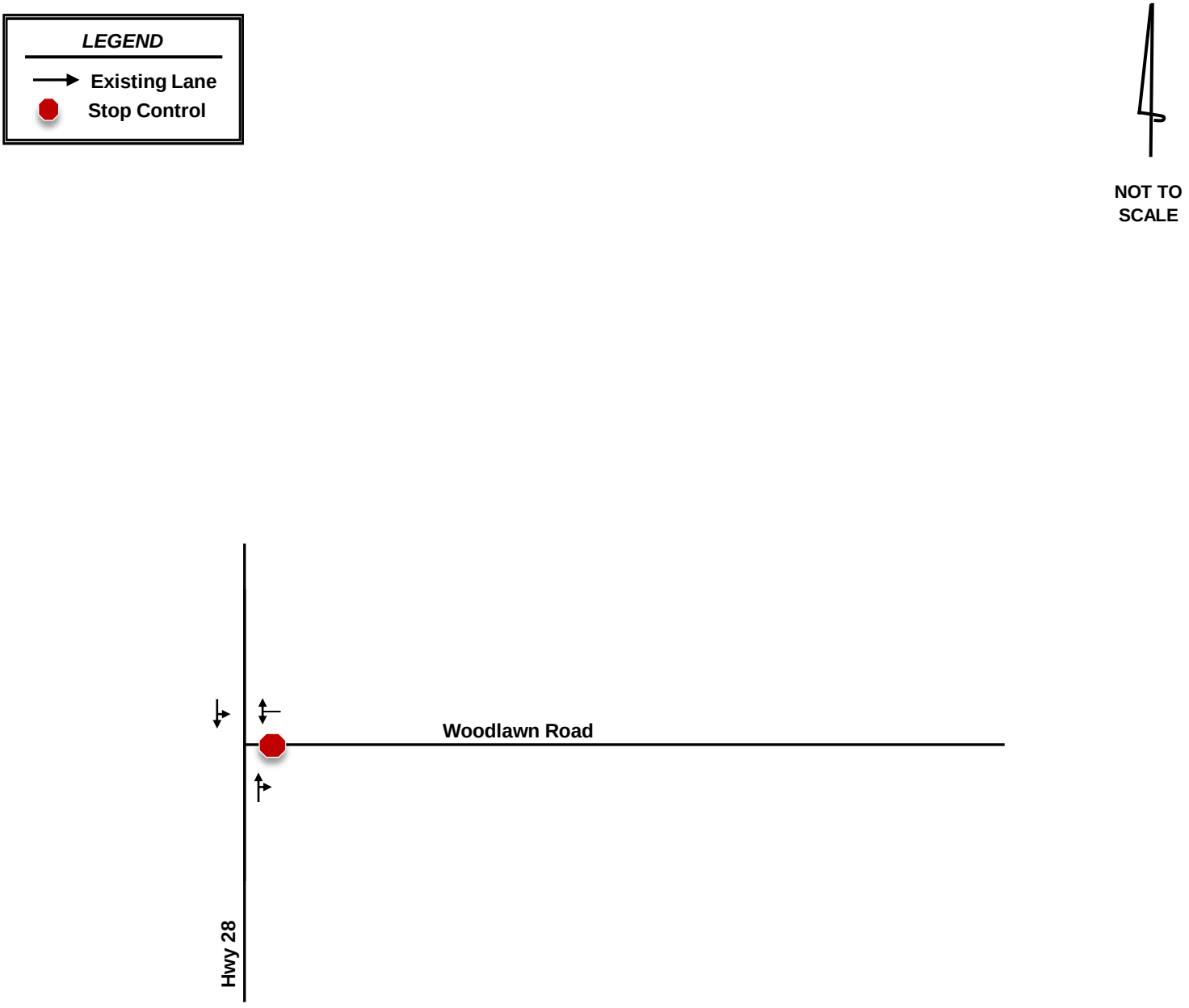
Figures



Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Site Location**	**Figure 1**

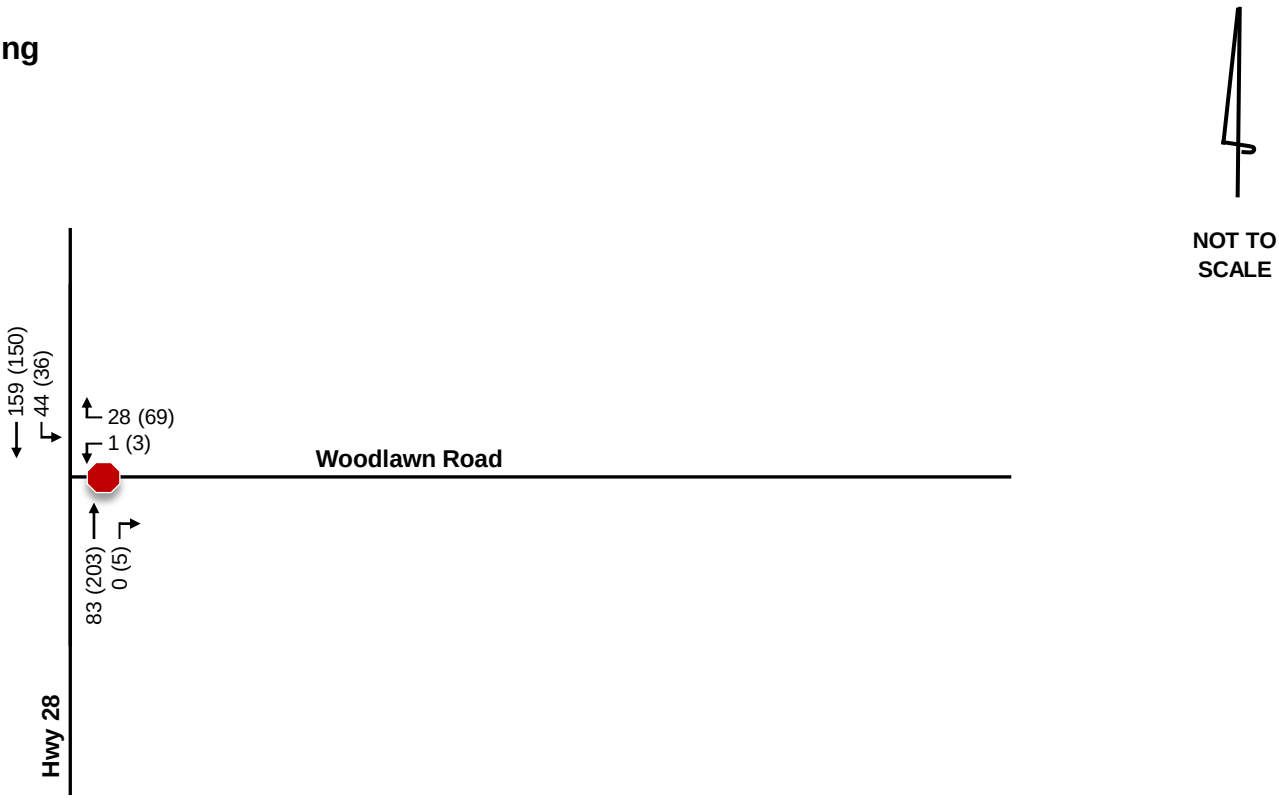


Kimley»Horn	Proposed Quarry Site Transportation Technical Memorandum	Site Plan	Figure 2



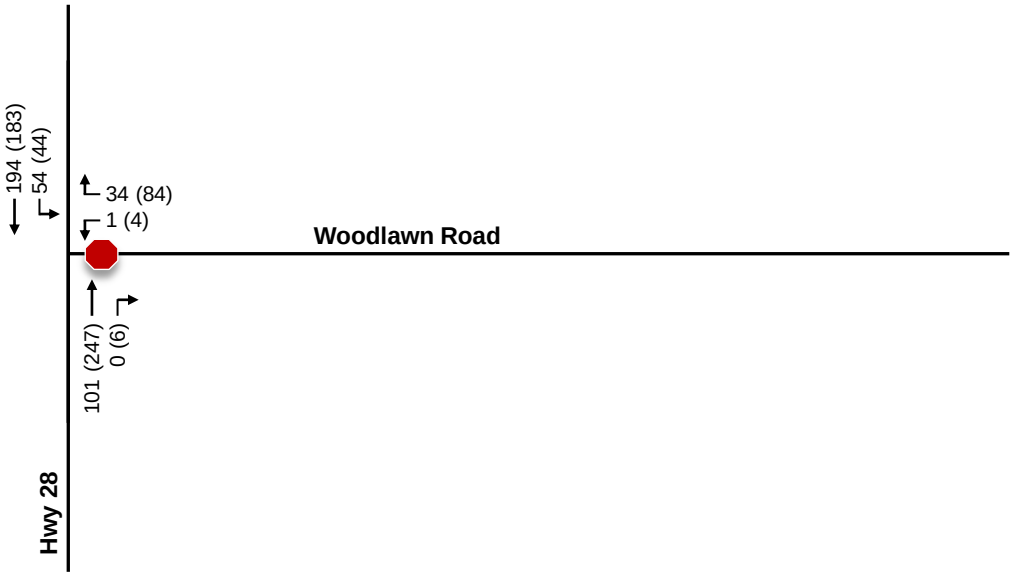
Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Existing Roadway Laneage**	**Figure 3**

2023 Existing



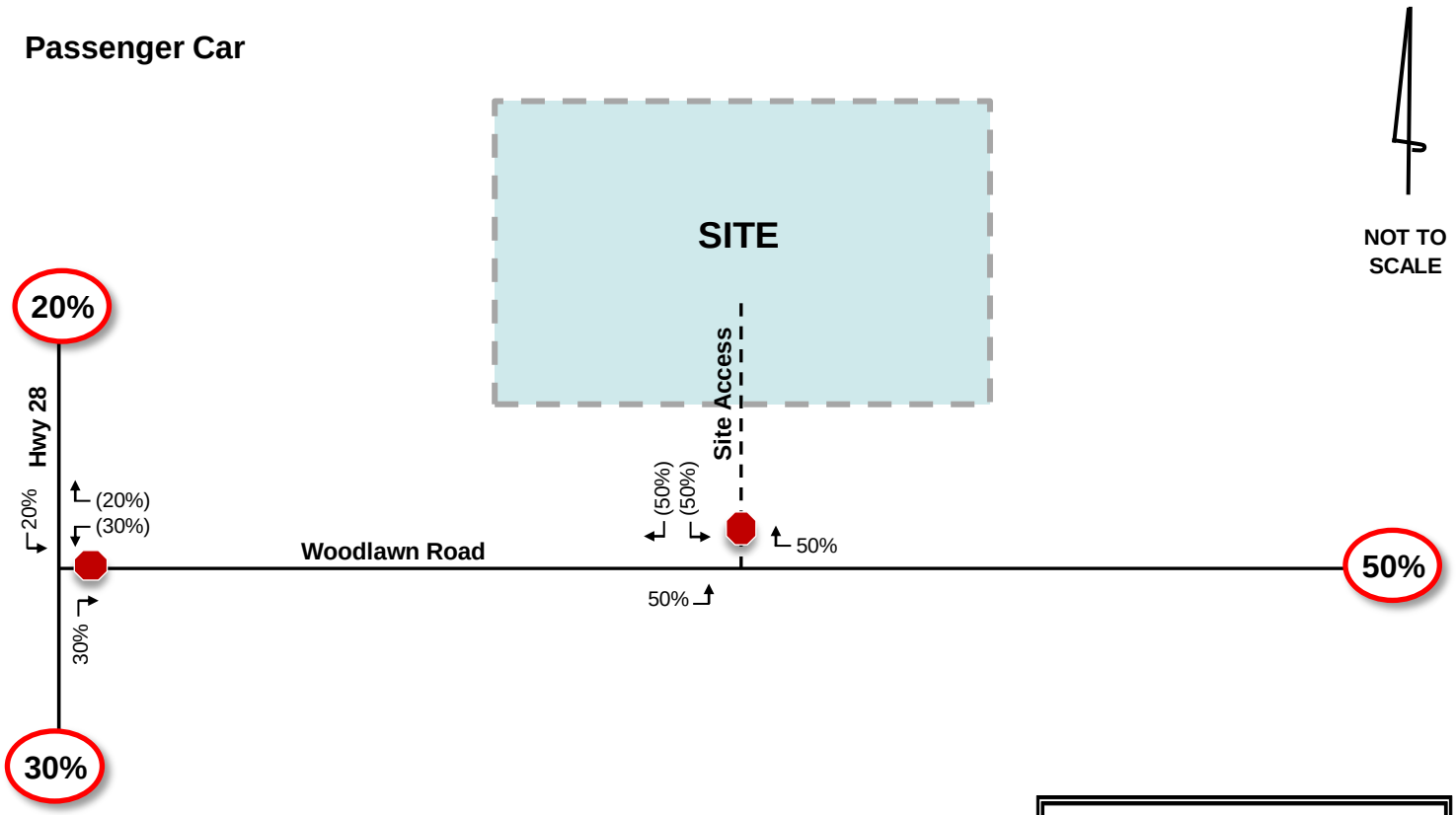
LEGEND	
XX	AM Peak-Hour Traffic Volumes
(XX)	PM Peak-Hour Traffic Volumes
	Stop Control

2033 Background

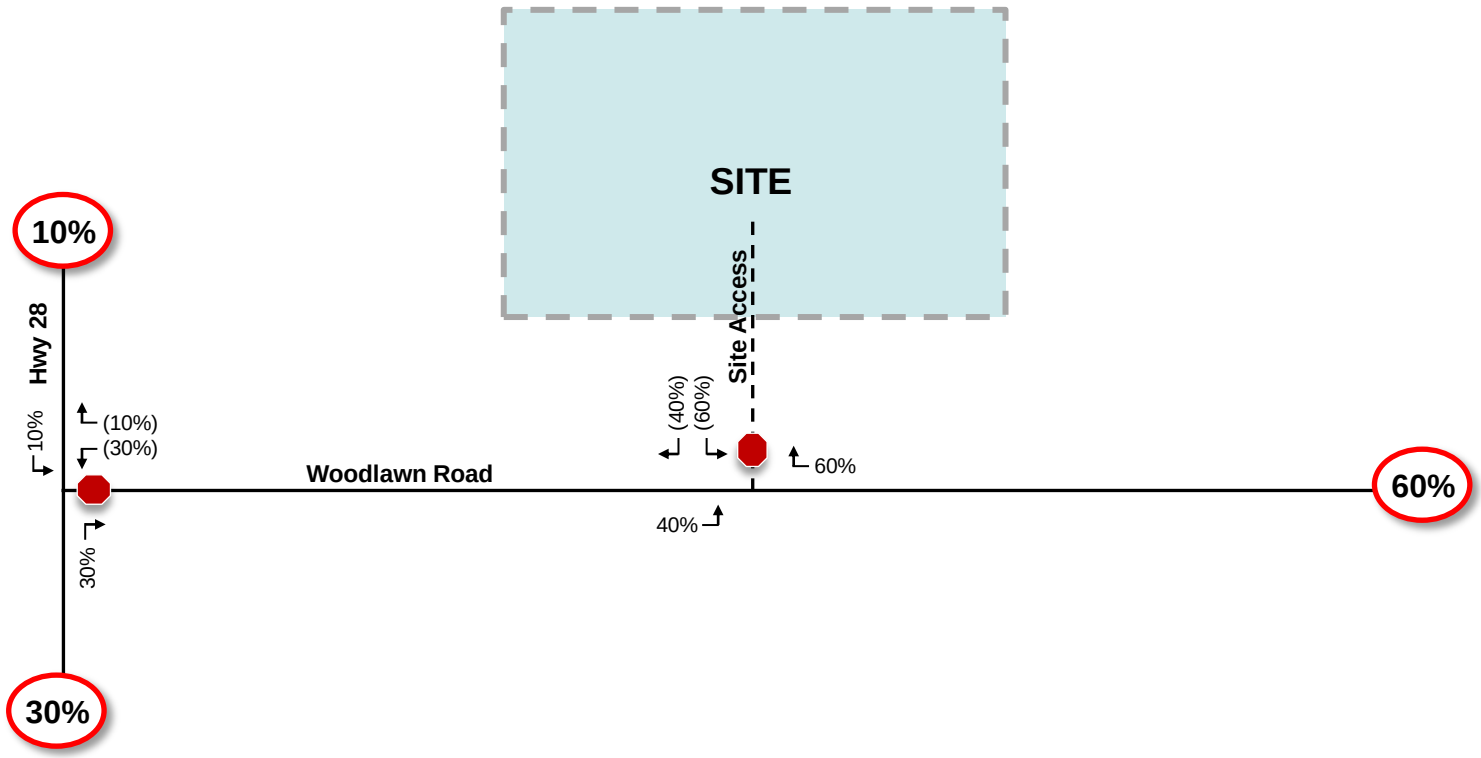


Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Existing & Background Peak Hour Traffic Volumes**	**Figure 4**

Passenger Car



Truck

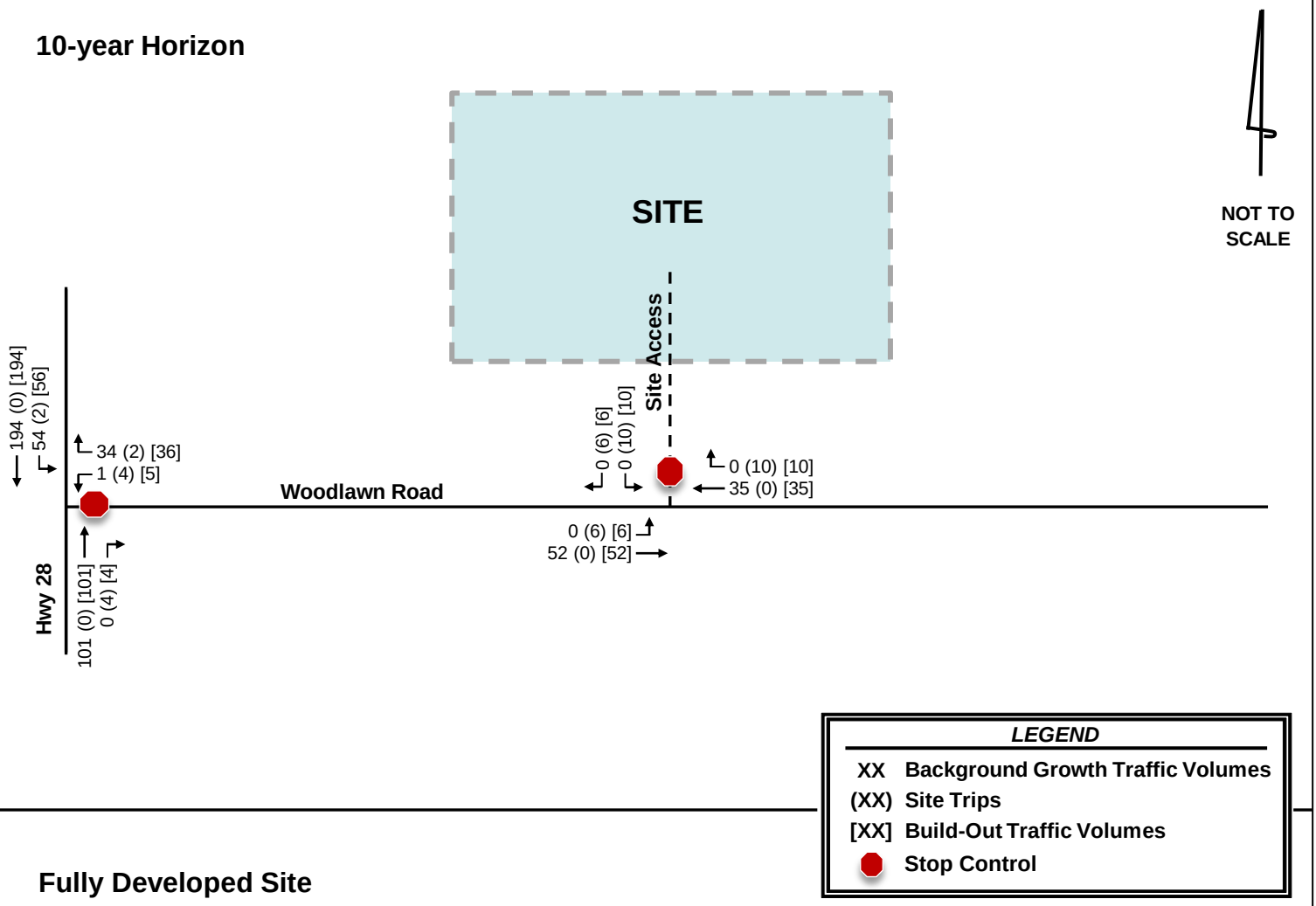


LEGEND

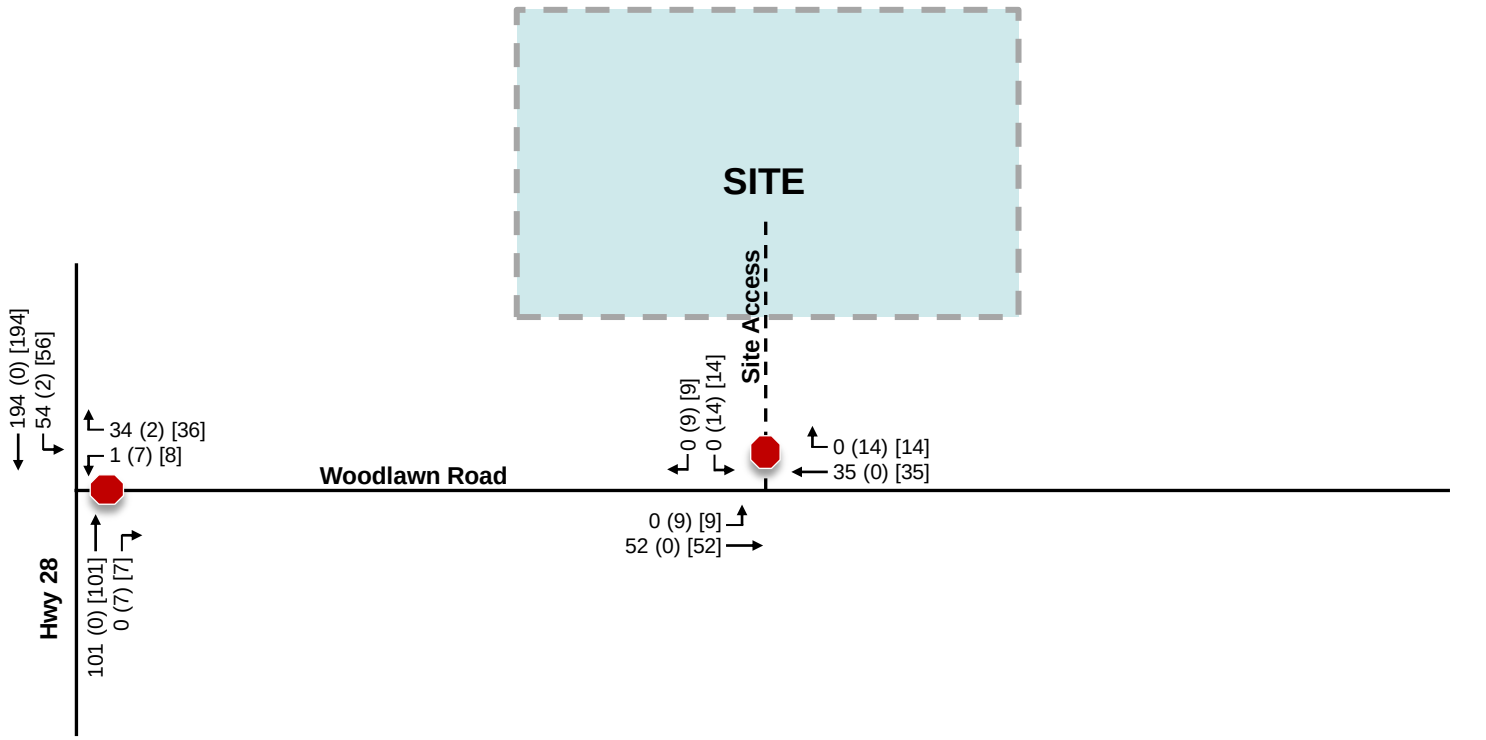
- XX% — Site Traffic Distribution
- XX% — Inbound Assignment
- (XX%) — Outbound Assignment
- Stop Control

Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Site Trip Distribution and Assignment**	**Figure 5**

10-year Horizon

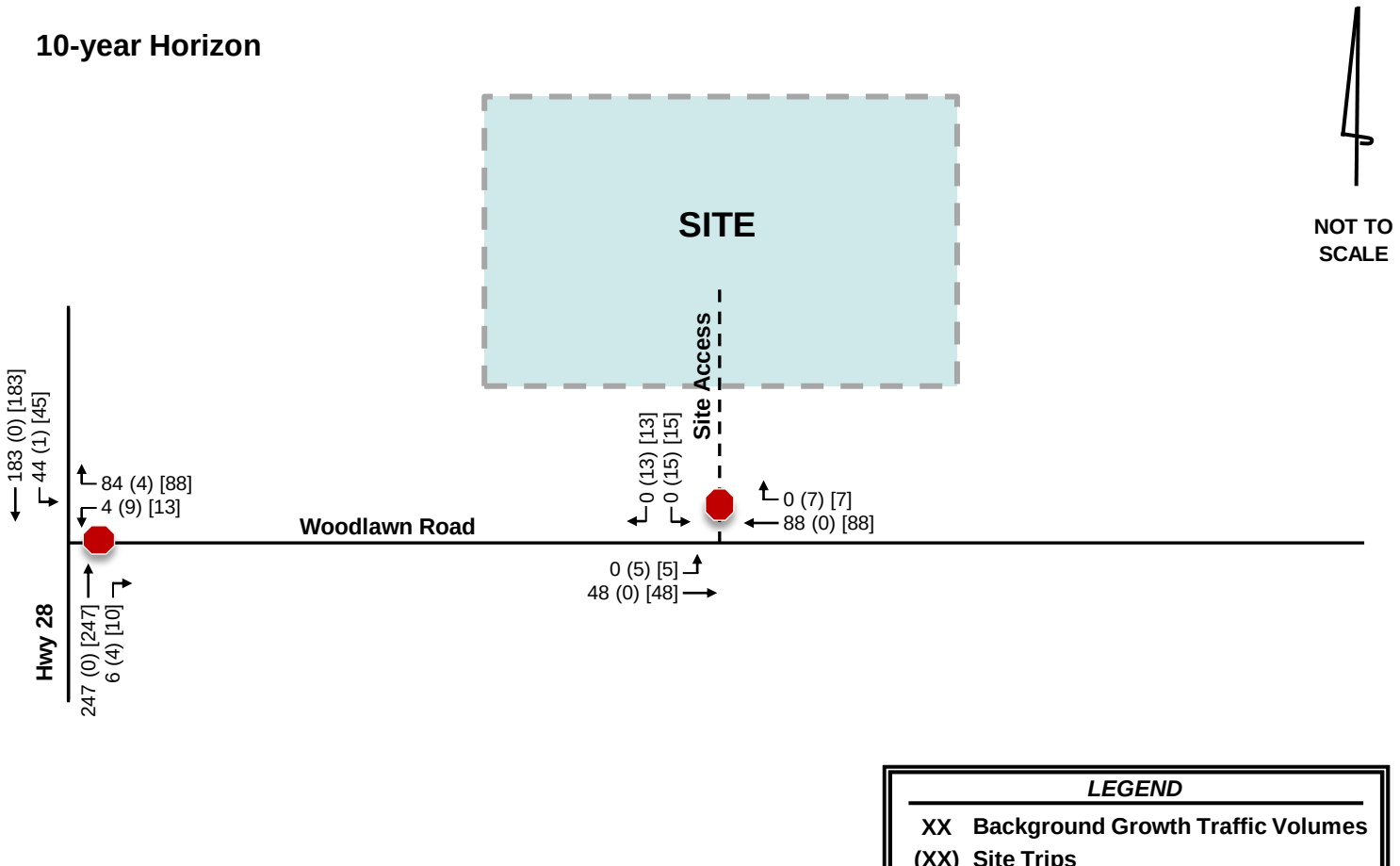


Fully Developed Site



Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**2033 Build-Out AM Peak Hour Traffic Volumes**	**Figure 6**

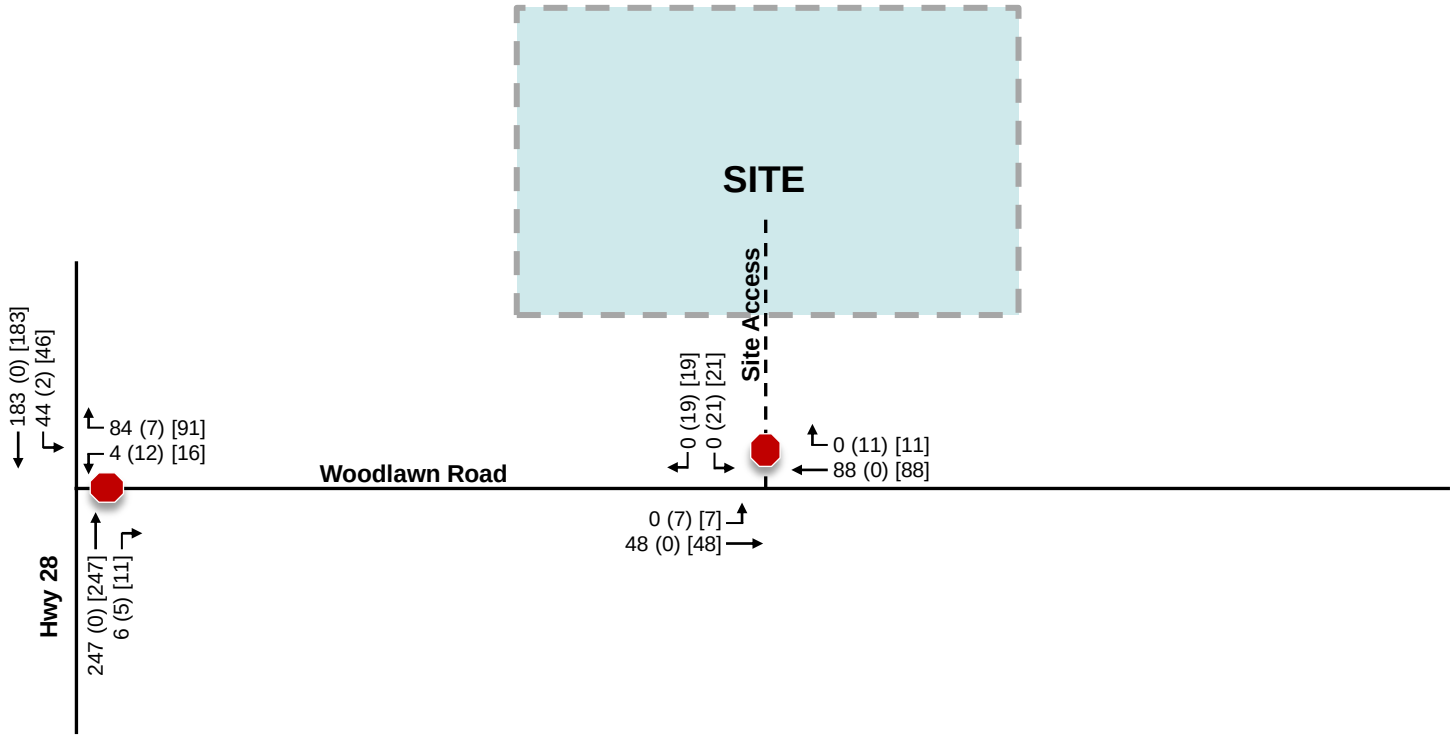
10-year Horizon



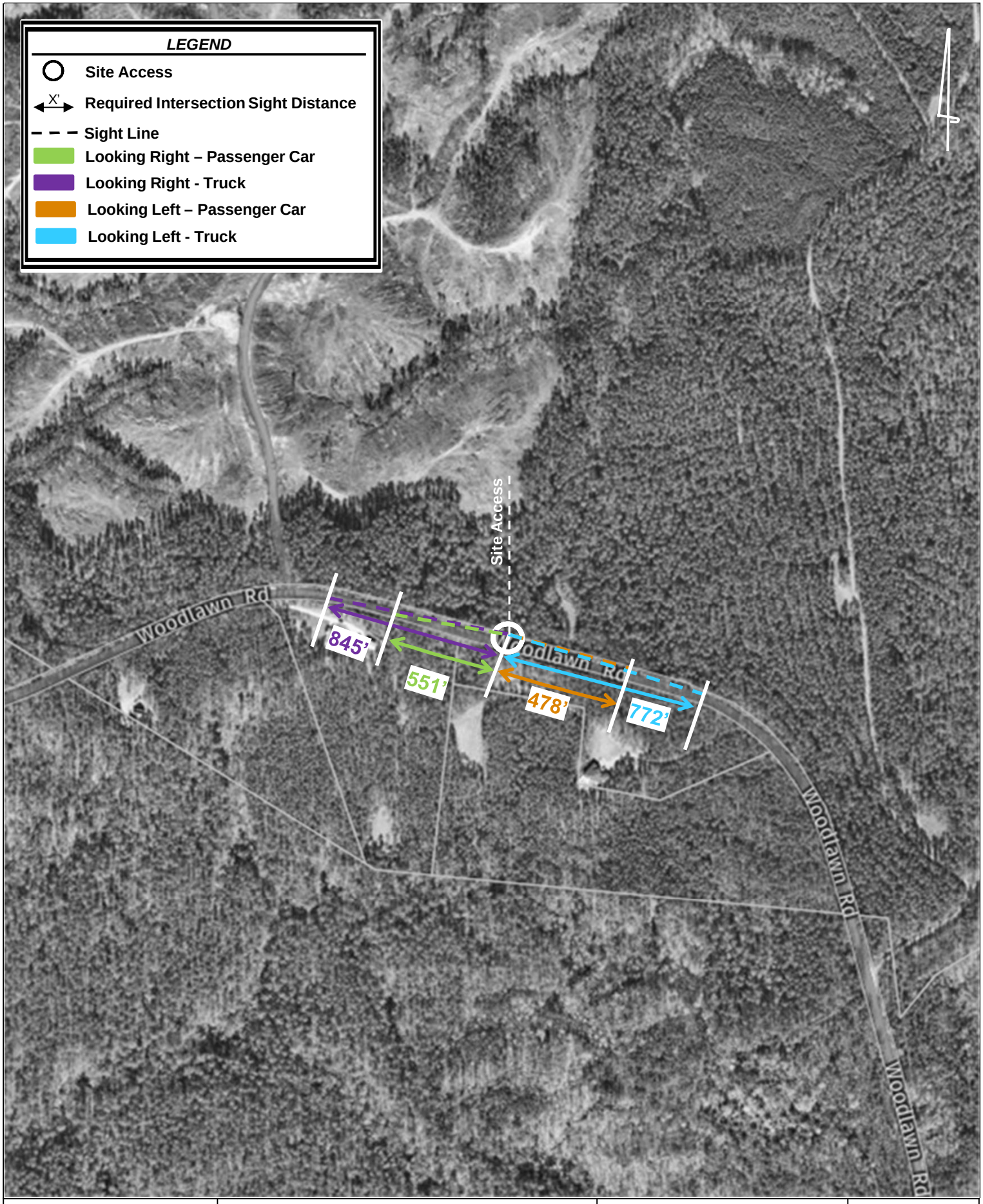
LEGEND

XX	Background Growth Traffic Volumes
(XX)	Site Trips
[XX]	Build-Out Traffic Volumes
	Stop Control

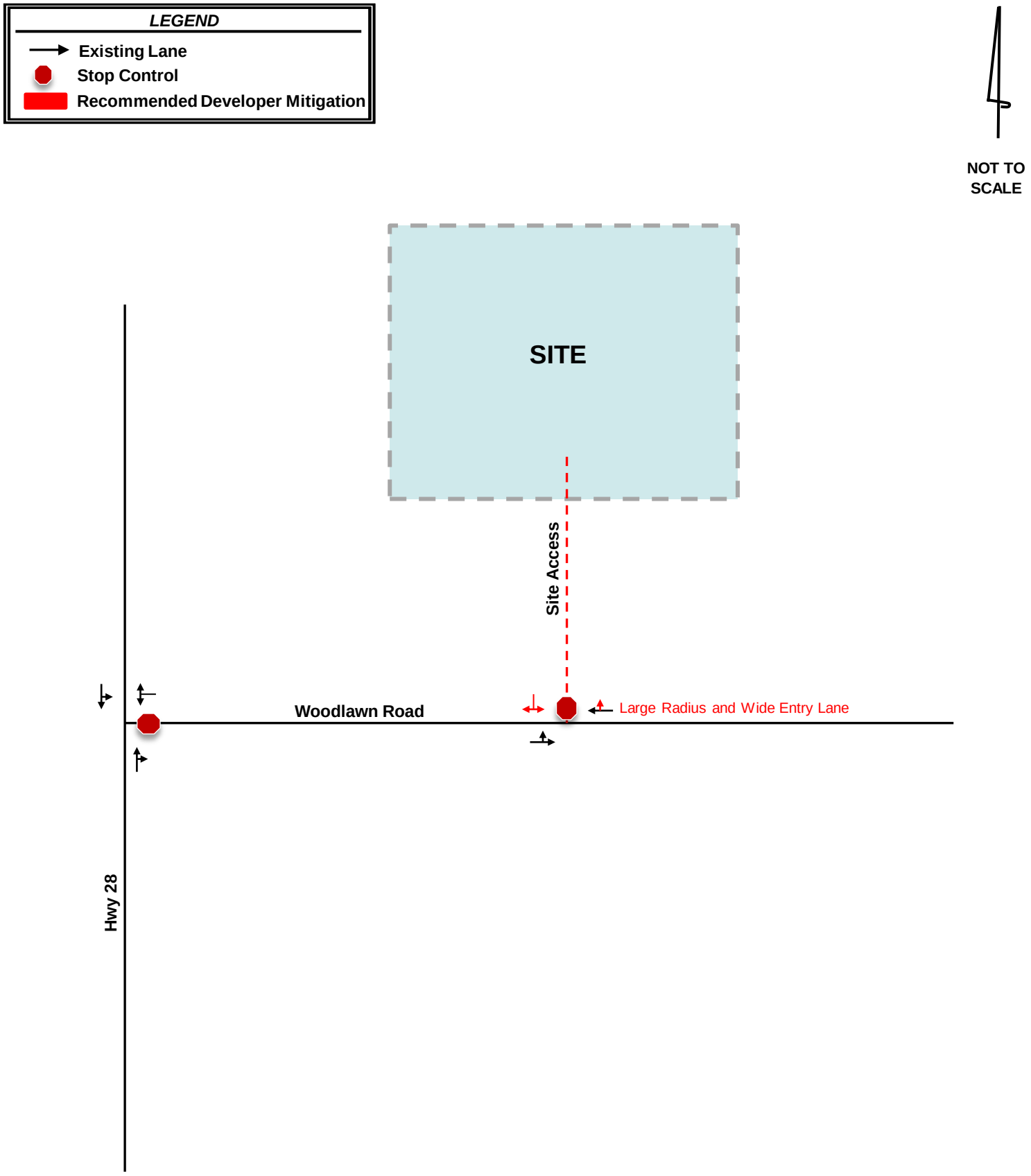
Fully Developed Site



Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**2033 Build-Out PM Peak Hour Traffic Volumes**	**Figure 7**



Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Intersection Sight Distance**	**Figure 8**



Kimley»Horn	**Proposed Quarry Site Transportation Technical Memorandum**	**Recommended Developer Mitigation**	**Figure 9**

ISD Measurements

PROPOSED ACCESS ISD MEASUREMENTS

DATE: 07-17-23

SHEET 1 of 1

Kimley»Horn
NC LICENSE #F-0102
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE 704-333-5131

Drawing name: K:\CHL_PRJ\014081 Luck Stone Corporation\005 Edgefield County\11_DWG\SIGHT TRIANGLES_LOCATION E_2.dwg Layout1
Jul 18, 2023 5:29pm by: lauren.zuend

Turning Movement Counts

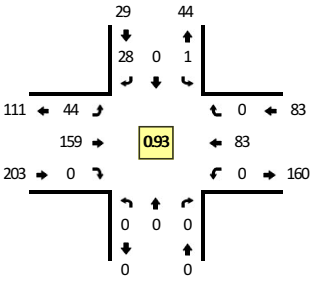
Type of peak hour being reported: Intersection Peak

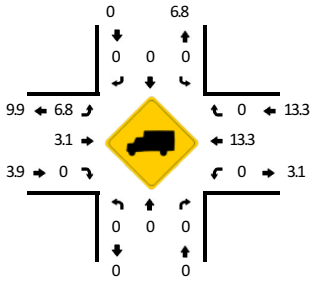
Method for determining peak hour: Total Entering Volume

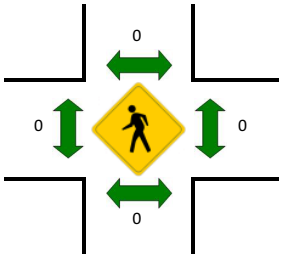
LOCATION: Woodlawn Rd -- Hwy 28
CITY/STATE: McCormick, SC

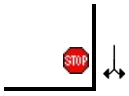
QC JOB #: 16227001
DATE: Wed, May 24 2023

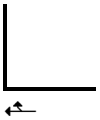
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

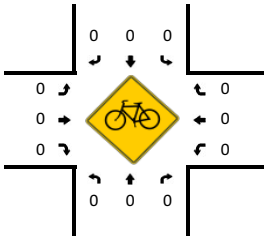


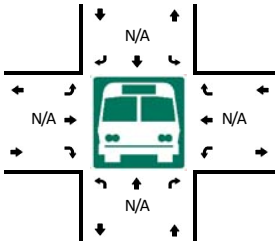


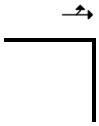


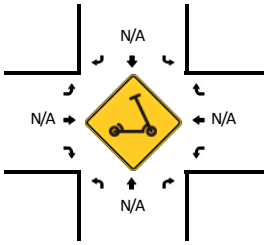












15-Min Count Period Beginning At	Woodlawn Rd (Northbound)				Woodlawn Rd (Southbound)				Hwy 28 (Eastbound)				Hwy 28 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	8	0	12	43	0	0	0	17	0	0	80	
7:15 AM	0	0	0	0	1	0	4	0	11	32	0	0	0	29	0	0	77	
7:30 AM	0	0	0	0	0	0	4	0	13	48	0	0	0	20	0	0	85	
7:45 AM	0	0	0	0	0	0	12	0	8	36	0	0	0	17	0	0	73	315
8:00 AM	0	0	0	0	0	0	6	0	9	39	0	0	0	18	1	0	73	308
8:15 AM	0	0	0	0	1	0	7	0	5	34	0	0	0	25	0	0	72	303
8:30 AM	0	0	0	0	1	0	7	0	7	35	0	0	0	23	0	0	73	291
8:45 AM	0	0	0	0	0	0	5	0	6	24	0	0	0	16	0	0	51	269

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	16	0	52	192	0	0	0	80	0	0	340
Heavy Trucks	0	0	0		0	0	0		4	0	0		0	20	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 10:49 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

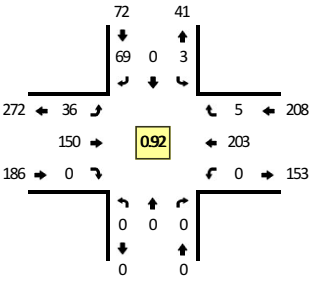
Type of peak hour being reported: Intersection Peak

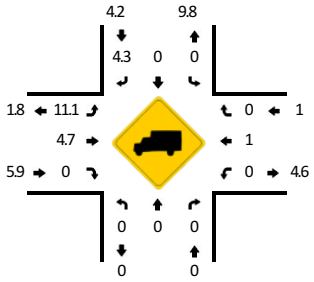
Method for determining peak hour: Total Entering Volume

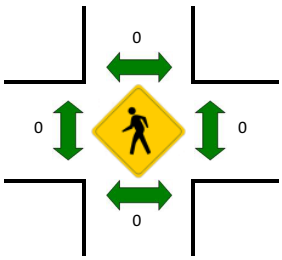
LOCATION: Woodlawn Rd -- Hwy 28
CITY/STATE: McCormick, SC

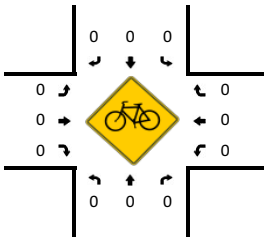
QC JOB #: 16227002
DATE: Wed, May 24 2023

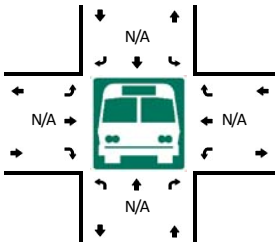
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

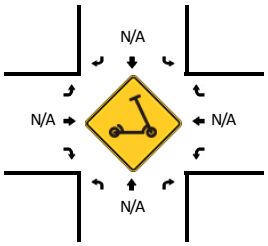












15-Min Count Period Beginning At	Woodlawn Rd (Northbound)				Woodlawn Rd (Southbound)				Hwy 28 (Eastbound)				Hwy 28 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	0	6	43	0	0	0	49	1	0	106	
4:15 PM	0	0	0	0	0	0	8	0	14	39	0	0	0	51	2	0	114	
4:30 PM	0	0	0	0	0	0	8	0	8	39	0	0	0	44	0	0	99	
4:45 PM	0	0	0	0	1	0	18	0	10	34	0	0	0	61	3	0	127	446
5:00 PM	0	0	0	0	1	0	15	0	8	36	0	0	0	47	2	0	109	449
5:15 PM	0	0	0	0	0	0	16	0	6	39	0	0	0	49	0	0	110	445
5:30 PM	0	0	0	0	1	0	20	0	12	41	0	0	0	46	0	0	120	466
5:45 PM	0	0	0	0	5	0	17	0	14	35	0	0	0	49	0	0	120	459

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	72	0	40	136	0	0	0	244	12	0	508
Heavy Trucks	0	0	0		0	0	8		12	12	0		0	0	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 10:49 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

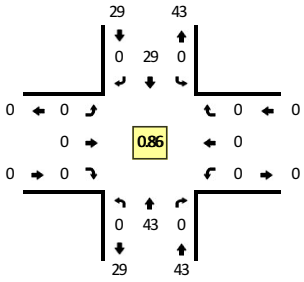
Type of peak hour being reported: Intersection Peak

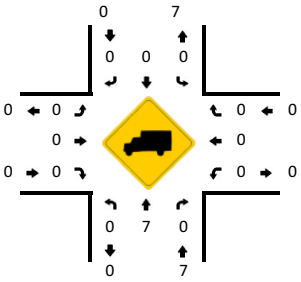
Method for determining peak hour: Total Entering Volume

LOCATION: Woodlawn Rd -- Residential Dwy
CITY/STATE: Edgefield, SC

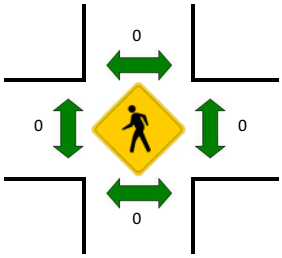
QC JOB #: 16227007
DATE: Wed, May 24 2023

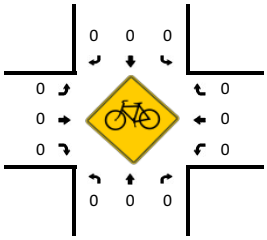
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:00 AM -- 7:15 AM

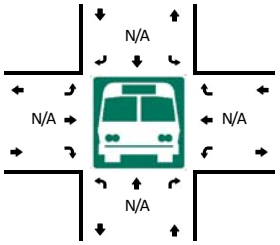


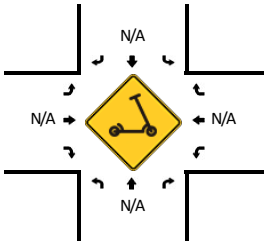


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Woodlawn Rd (Northbound)				Woodlawn Rd (Southbound)				Residential Dwy (Eastbound)				Residential Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	13	0	0	0	8	0	0	0	0	0	0	0	0	0	0	21	
7:15 AM	0	9	0	0	0	4	0	0	0	0	0	0	0	0	0	0	13	
7:30 AM	0	11	0	0	0	6	0	0	0	0	0	0	0	0	0	0	17	
7:45 AM	0	10	0	0	0	11	0	0	0	0	0	0	0	0	0	0	21	72
8:00 AM	0	9	0	0	0	5	0	0	0	0	0	0	0	0	0	0	14	65
8:15 AM	0	7	1	0	0	8	0	0	0	0	0	0	0	0	0	0	16	68
8:30 AM	0	6	0	0	0	10	0	0	0	0	0	0	0	0	0	0	16	67
8:45 AM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	1	0	10	56

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	52	0	0	0	32	0	0	0	0	0	0	0	0	0	0	84
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 10:49 AM

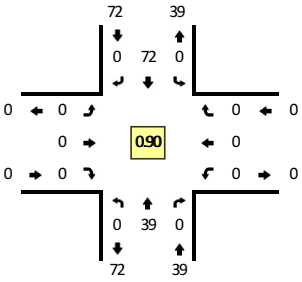
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

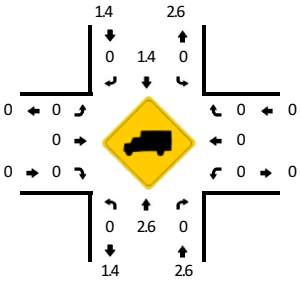
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Woodlawn Rd -- Residential Dwy
CITY/STATE: Edgefield, SC

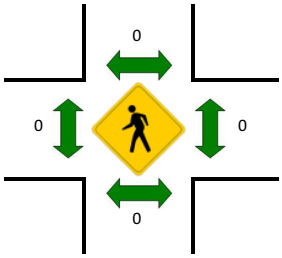
QC JOB #: 16227008
DATE: Wed, May 24 2023

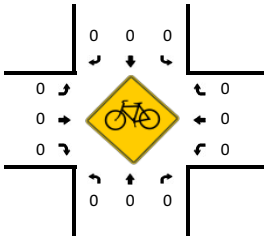
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

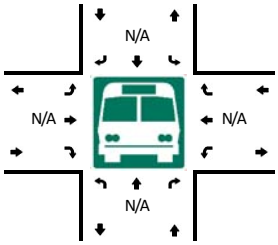


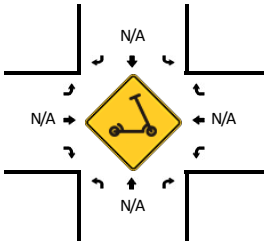


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Woodlawn Rd (Northbound)				Woodlawn Rd (Southbound)				Residential Dwy (Eastbound)				Residential Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0	0	15	
4:15 PM	0	16	0	0	0	10	0	0	0	0	0	0	0	0	0	0	26	
4:30 PM	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	24	
4:45 PM	0	9	0	0	0	17	0	0	0	0	0	0	0	0	0	0	26	91
5:00 PM	0	12	0	0	0	15	0	0	0	0	0	0	0	0	0	0	27	103
5:15 PM	0	8	0	0	0	16	0	0	0	0	0	0	0	0	0	0	24	101
5:30 PM	0	8	0	0	0	23	0	0	0	0	0	0	0	0	0	0	31	108
5:45 PM	0	11	0	0	0	18	0	0	0	0	0	0	0	0	0	0	29	111

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	32	0	0	0	92	0	0	0	0	0	0	0	0	0	0	124
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/15/2023 10:49 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Intersection Volume Development

INTERSECTION VOLUME DEVELOPMENT

Hwy 28 and Woodlawn Road
AM PEAK HOUR

Description	Hwy 28 Northbound				Hwy 28 Southbound				- Eastbound				Woodlawn Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	83	0	0	44	159	0	0	0	0	0	0	1	0	28	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023 Existing Traffic	0	83	0	0	44	159	0	0	0	0	0	0	1	0	28	0
2023 Existng PHF	0.90	0.72	0.90	0.90	0.85	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.25	0.90	0.58	0.90
2033 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Existing/Background Heavy Vehicle %	2%	**13%**	2%	2%	7%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Full Operation Heavy Vehicle %	2%	**13%**	**100%**	2%	**10%**	3%	2%	2%	2%	2%	2%	2%	**80%**	2%	7%	2%
Max Operation Heavy Vehicle %	2%	**13%**	**100%**	2%	**10%**	3%	2%	2%	2%	2%	2%	2%	**88%**	2%	7%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2033 Background Traffic	0	101	0	0	54	194	0	0	0	0	0	0	1	0	34	0
Percent Inbound Assignment	0%	0%	30%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	20%	0%
Passenger Car - Full Operation Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	30%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	10%	0%
Truck - Full Operation Project Trips	0	0	4	0	2	0	0	0	0	0	0	0	4	0	2	0
Project Trips (Total) - Full Operation	0	0	4	0	2	0	0	0	0	0	0	0	4	0	2	0
Percent Inbound Assignment	0%	0%	30%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	20%	0%
Passenger Car - Maximum Operation Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	30%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	10%	0%
Truck - Maximum Operation Project Trips	0	0	7	0	2	0	0	0	0	0	0	0	7	0	2	0
Project Trips (Total) - Maximum Operation	0	0	7	0	2	0	0	0	0	0	0	0	7	0	2	0
2033 Buildout Total - Full Operation	0	101	4	0	56	194	0	0	0	0	0	0	5	0	36	0
2033 Buildout Total - Maximum Operation	0	101	7	0	56	194	0	0	0	0	0	0	8	0	36	0

PM PEAK HOUR

Description	Hwy 28 Northbound				Hwy 28 Southbound				- Eastbound				Woodlawn Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	203	5	0	36	150	0	0	0	0	0	0	3	0	69	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023 Existing Traffic	0	203	5	0	36	150	0	0	0	0	0	0	3	0	69	0
2023 Existng PHF	0.90	0.83	0.42	0.90	0.75	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.75	0.90	0.86	0.90
2033 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Existing/Background Heavy Vehicle %	2%	2%	2%	2%	**11%**	5%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Full Operation Heavy Vehicle %	2%	2%	**41%**	2%	**13%**	5%	2%	2%	2%	2%	2%	2%	**31%**	2%	5%	2%
Max Operation Heavy Vehicle %	2%	2%	**47%**	2%	**15%**	5%	2%	2%	2%	2%	2%	2%	**32%**	2%	6%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2033 Background Traffic	0	247	6	0	44	183	0	0	0	0	0	0	4	0	84	0
Percent Inbound Assignment	0%	0%	30%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	20%	0%
Passenger Car - Full Operation Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	0
Percent Inbound Assignment	0%	0%	30%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	10%	0%
Truck - Full Operation Project Trips	0	0	4	0	1	0	0	0	0	0	0	0	4	0	1	0
Project Trips (Total) - Full Operation	0	0	4	0	1	0	0	0	0	0	0	0	9	0	4	0
Percent Inbound Assignment	0%	0%	30%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	20%	0%
Passenger Car - Maximum Operation Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	7	0	5	0
Percent Inbound Assignment	0%	0%	30%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	10%	0%
Truck - Maximum Operation Project Trips	0	0	5	0	2	0	0	0	0	0	0	0	5	0	2	0
Project Trips (Total) - Maximum Operation	0	0	5	0	2	0	0	0	0	0	0	0	12	0	7	0
2033 Buildout Total - Full Operation	0	247	10	0	45	183	0	0	0	0	0	0	13	0	88	0
2033 Buildout Total - Maximum Operation	0	247	11	0	46	183	0	0	0	0	0	0	16	0	91	0

INTERSECTION VOLUME DEVELOPMENT

Site Access and Woodlawn Road
AM PEAK HOUR

Description	- Northbound				Site Access Southbound				Woodlawn Road Eastbound				Woodlawn Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2023 Existing Traffic	0	0	0	0	0	0	0	0	0	43	0	0	0	29	0	0
2023 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.83	0.90	0.90	0.90	0.66	0.90	0.90
2033 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Existing/Background Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%	2%	2%
Full Operation Heavy Vehicle %	2%	2%	2%	2%	**100%**	2%	**100%**	2%	**100%**	7%	2%	2%	2%	2%	**100%**	2%
Max Operation Heavy Vehicle %	2%	2%	2%	2%	**100%**	2%	**100%**	2%	**100%**	7%	2%	2%	2%	2%	**100%**	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2033 Background Traffic	0	0	0	0	0	0	0	0	0	52	0	0	0	35	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	50%	0%
Percent Outbound Assignment	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Passenger Car - Full Operation Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	60%	0%
Percent Outbound Assignment	0%	0%	0%	0%	60%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Truck - Full Operation Project Trips	0	0	0	0	10	0	6	0	6	0	0	0	0	0	10	0
Project Trips (Total) - Full Operation	0	0	0	0	10	0	6	0	6	0	0	0	0	0	10	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	50%	0%
Percent Outbound Assignment	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Passenger Car - Maximum Operation Project Tri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	60%	0%
Percent Outbound Assignment	0%	0%	0%	0%	60%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Truck - Maximum Operation Project Trips	0	0	0	0	14	0	9	0	9	0	0	0	0	0	14	0
Project Trips (Total) - Maximum Operation	0	0	0	0	14	0	9	0	9	0	0	0	0	0	14	0
2033 Buildout Total - Full Operation	0	0	0	0	10	0	6	0	6	52	0	0	0	35	10	0
2033 Buildout Total - Maximum Operation	0	0	0	0	14	0	9	0	9	52	0	0	0	35	14	0

PM PEAK HOUR

Description	- Northbound				Site Access Southbound				Woodlawn Road Eastbound				Woodlawn Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2023 Existing Traffic	0	0	0	0	0	0	0	0	0	39	0	0	0	72	0	0
2023 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.90	0.90	0.78	0.90	0.90
2033 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Existing/Background Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%
Full Operation Heavy Vehicle %	2%	2%	2%	2%	**47%**	2%	**38%**	2%	**100%**	3%	2%	2%	2%	2%	**100%**	2%
Max Operation Heavy Vehicle %	2%	2%	2%	2%	**48%**	2%	**37%**	2%	**100%**	3%	2%	2%	2%	2%	**100%**	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2033 Background Traffic	0	0	0	0	0	0	0	0	0	48	0	0	0	88	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	50%	0%
Percent Outbound Assignment	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Passenger Car - Full Operation Project Trips	0	0	0	0	8	0	8	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	60%	0%
Percent Outbound Assignment	0%	0%	0%	0%	60%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Truck - Full Operation Project Trips	0	0	0	0	7	0	5	0	5	0	0	0	0	0	7	0
Project Trips (Total) - Full Operation	0	0	0	0	15	0	13	0	5	0	0	0	0	0	7	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	50%	0%
Percent Outbound Assignment	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Passenger Car - Maximum Operation Project Tri	0	0	0	0	11	0	12	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	60%	0%
Percent Outbound Assignment	0%	0%	0%	0%	60%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Truck - Maximum Operation Project Trips	0	0	0	0	10	0	7	0	7	0	0	0	0	0	11	0
Project Trips (Total) - Maximum Operation	0	0	0	0	21	0	19	0	7	0	0	0	0	0	11	0
2033 Buildout Total - Full Operation	0	0	0	0	15	0	13	0	5	48	0	0	0	88	7	0
2033 Buildout Total - Maximum Operation	0	0	0	0	21	0	19	0	7	48	0	0	0	88	11	0

Synchro Reports

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	28	83	0	44	159
Future Volume (vph)	1	28	83	0	44	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875					
Flt Protected	0.996					0.989
Satd. Flow (prot)	1623	0	1681	0	0	1809
Flt Permitted	0.996					0.989
Satd. Flow (perm)	1623	0	1681	0	0	1809
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.25	0.58	0.72	0.90	0.85	0.83
Heavy Vehicles (%)	2%	2%	13%	2%	7%	3%
Adj. Flow (vph)	4	48	115	0	52	192
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	115	0	0	244
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	28	83	0	44	159
Future Vol, veh/h	1	28	83	0	44	159
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	25	58	72	90	85	83
Heavy Vehicles, %	2	2	13	2	7	3
Mvmt Flow	4	48	115	0	52	192

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	411	115	0	0	115	0
Stage 1	115	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	597	937	-	-	1443	-
Stage 1	910	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	573	937	-	-	1443	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	894	1443	-
HCM Lane V/C Ratio	-	-	0.058	0.036	-
HCM Control Delay (s)	-	-	9.3	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	69	203	5	36	150
Future Volume (vph)	3	69	203	5	36	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871		0.994			
Flt Protected	0.998					0.989
Satd. Flow (prot)	1590	0	1852	0	0	1767
Flt Permitted	0.998					0.989
Satd. Flow (perm)	1590	0	1852	0	0	1767
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.75	0.86	0.83	0.42	0.75	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	11%	5%
Adj. Flow (vph)	4	80	245	12	48	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	257	0	0	211
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	69	203	5	36	150
Future Vol, veh/h	3	69	203	5	36	150
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	75	86	83	42	75	92
Heavy Vehicles, %	2	4	2	2	11	5
Mvmt Flow	4	80	245	12	48	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	510	251	0	0	257	0
Stage 1	251	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.24	-	-	4.21	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.336	-	-	2.299	-
Pot Cap-1 Maneuver	523	783	-	-	1257	-
Stage 1	791	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	501	783	-	-	1257	-
Mov Cap-2 Maneuver	501	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	763	1257	-
HCM Lane V/C Ratio	-	-	0.11	0.038	-
HCM Control Delay (s)	-	-	10.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	34	101	0	54	194
Future Volume (vph)	1	34	101	0	54	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.868					
Flt Protected	0.999					0.989
Satd. Flow (prot)	1615	0	1681	0	0	1809
Flt Permitted	0.999					0.989
Satd. Flow (perm)	1615	0	1681	0	0	1809
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	2%	7%	3%
Adj. Flow (vph)	1	38	112	0	60	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	112	0	0	276
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	34	101	0	54	194
Future Vol, veh/h	1	34	101	0	54	194
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	90	90	90	90
Heavy Vehicles, %	2	2	13	2	7	3
Mvmt Flow	1	38	112	0	60	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	448	112	0	0	112	0
Stage 1	112	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	568	941	-	-	1447	-
Stage 1	913	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	941	-	-	1447	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	690	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	1447	-
HCM Lane V/C Ratio	-	-	0.042	0.041	-
HCM Control Delay (s)	-	-	9.1	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	84	247	6	44	183
Future Volume (vph)	4	84	247	6	44	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871		0.997			
Flt Protected	0.998					0.990
Satd. Flow (prot)	1589	0	1857	0	0	1772
Flt Permitted	0.998					0.990
Satd. Flow (perm)	1589	0	1857	0	0	1772
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	4%	2%	2%	11%	5%
Adj. Flow (vph)	4	93	274	7	49	203
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	281	0	0	252
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	84	247	6	44	183
Future Vol, veh/h	4	84	247	6	44	183
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	90	90	90	90
Heavy Vehicles, %	2	4	2	2	11	5
Mvmt Flow	4	93	274	7	49	203

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	579	278	0	0	281	0
Stage 1	278	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.42	6.24	-	-	4.21	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.336	-	-	2.299	-
Pot Cap-1 Maneuver	477	756	-	-	1231	-
Stage 1	769	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	456	756	-	-	1231	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	734	1231	-
HCM Lane V/C Ratio	-	-	0.133	0.04	-
HCM Control Delay (s)	-	-	10.7	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	36	101	4	56	194
Future Volume (vph)	5	36	101	4	56	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.883		0.995			
Flt Protected	0.994					0.989
Satd. Flow (prot)	1431	0	1630	0	0	1797
Flt Permitted	0.994					0.989
Satd. Flow (perm)	1431	0	1630	0	0	1797
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	80%	7%	13%	100%	10%	3%
Adj. Flow (vph)	6	40	112	4	62	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	116	0	0	278
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			

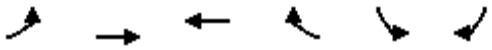
Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	36	101	4	56	194
Future Vol, veh/h	5	36	101	4	56	194
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	90	90	90	90
Heavy Vehicles, %	80	7	13	100	10	3
Mvmt Flow	6	40	112	4	62	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	114	0	0	116	0
Stage 1	114	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	7.2	6.27	-	-	4.2	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	4.22	3.363	-	-	2.29	-
Pot Cap-1 Maneuver	444	925	-	-	1424	-
Stage 1	749	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	422	925	-	-	1424	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	808	1424	-
HCM Lane V/C Ratio	-	-	0.056	0.044	-
HCM Control Delay (s)	-	-	9.7	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	52	35	10	10	6
Future Volume (vph)	6	52	35	10	10	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970		0.947	
Flt Protected		0.995			0.970	
Satd. Flow (prot)	0	1616	1492	0	873	0
Flt Permitted		0.995			0.970	
Satd. Flow (perm)	0	1616	1492	0	873	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		1009	987		1021	
Travel Time (s)		15.3	15.0		27.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	7%	2%	100%	100%	100%
Adj. Flow (vph)	7	58	39	11	11	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	65	50	0	18	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	52	35	10	10	6
Future Vol, veh/h	6	52	35	10	10	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	100	7	2	100	100	100
Mvmt Flow	7	58	39	11	11	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	50	0	-	0	117	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	72	-
Critical Hdwy	5.1	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	3.1	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	1105	-	-	-	690	804
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1105	-	-	-	685	804
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1105	-	-	-	725
HCM Lane V/C Ratio	0.006	-	-	-	0.025
HCM Control Delay (s)	8.3	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	88	247	10	45	183
Future Volume (vph)	13	88	247	10	45	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.995			
Flt Protected	0.994					0.990
Satd. Flow (prot)	1539	0	1826	0	0	1765
Flt Permitted	0.994					0.990
Satd. Flow (perm)	1539	0	1826	0	0	1765
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	31%	5%	2%	41%	13%	5%
Adj. Flow (vph)	14	98	274	11	50	203
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	285	0	0	253
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.9%		ICU Level of Service A	
Analysis Period (min) 15			

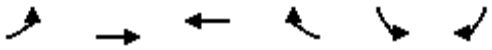
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	88	247	10	45	183
Future Vol, veh/h	13	88	247	10	45	183
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	90	90	90	90
Heavy Vehicles, %	31	5	2	41	13	5
Mvmt Flow	14	98	274	11	50	203

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	583	280	0	0	285	0
Stage 1	280	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.71	6.25	-	-	4.23	-
Critical Hdwy Stg 1	5.71	-	-	-	-	-
Critical Hdwy Stg 2	5.71	-	-	-	-	-
Follow-up Hdwy	3.779	3.345	-	-	2.317	-
Pot Cap-1 Maneuver	430	752	-	-	1217	-
Stage 1	705	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	410	752	-	-	1217	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	679	1217	-
HCM Lane V/C Ratio	-	-	0.165	0.041	-
HCM Control Delay (s)	-	-	11.3	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	48	88	7	15	13
Future Volume (vph)	5	48	88	7	15	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.939	
Flt Protected		0.995			0.973	
Satd. Flow (prot)	0	1675	1719	0	1214	0
Flt Permitted		0.995			0.973	
Satd. Flow (perm)	0	1675	1719	0	1214	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		1009	987		1021	
Travel Time (s)		15.3	15.0		27.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	3%	2%	100%	47%	38%
Adj. Flow (vph)	6	53	98	8	17	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	59	106	0	31	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	48	88	7	15	13
Future Vol, veh/h	5	48	88	7	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	100	3	2	100	47	38
Mvmt Flow	6	53	98	8	17	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	106	0	-	0	167	102
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	65	-
Critical Hdwy	5.1	-	-	-	6.87	6.58
Critical Hdwy Stg 1	-	-	-	-	5.87	-
Critical Hdwy Stg 2	-	-	-	-	5.87	-
Follow-up Hdwy	3.1	-	-	-	3.923	3.642
Pot Cap-1 Maneuver	1046	-	-	-	730	863
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1046	-	-	-	726	863
Mov Cap-2 Maneuver	-	-	-	-	726	-
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	855	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1046	-	-	-	784
HCM Lane V/C Ratio	0.005	-	-	-	0.04
HCM Control Delay (s)	8.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	36	101	7	56	194
Future Volume (vph)	8	36	101	7	56	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890		0.991			
Flt Protected	0.991					0.989
Satd. Flow (prot)	1375	0	1585	0	0	1797
Flt Permitted	0.991					0.989
Satd. Flow (perm)	1375	0	1585	0	0	1797
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	88%	7%	13%	100%	10%	3%
Adj. Flow (vph)	9	40	112	8	62	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	120	0	0	278
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			

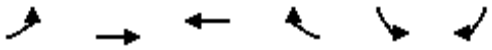
Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	36	101	7	56	194
Future Vol, veh/h	8	36	101	7	56	194
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	90	90	90	90
Heavy Vehicles, %	88	7	13	100	10	3
Mvmt Flow	9	40	112	8	62	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	456	116	0	0	120	0
Stage 1	116	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	7.28	6.27	-	-	4.2	-
Critical Hdwy Stg 1	6.28	-	-	-	-	-
Critical Hdwy Stg 2	6.28	-	-	-	-	-
Follow-up Hdwy	4.292	3.363	-	-	2.29	-
Pot Cap-1 Maneuver	432	923	-	-	1420	-
Stage 1	734	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	410	923	-	-	1420	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	752	1420	-
HCM Lane V/C Ratio	-	-	0.065	0.044	-
HCM Control Delay (s)	-	-	10.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	52	35	14	14	9
Future Volume (vph)	9	52	35	14	14	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.961		0.948	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1563	1399	0	874	0
Flt Permitted		0.993			0.970	
Satd. Flow (perm)	0	1563	1399	0	874	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		1009	987		1021	
Travel Time (s)		15.3	15.0		27.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	7%	2%	100%	100%	100%
Adj. Flow (vph)	10	58	39	16	16	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	68	55	0	26	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	52	35	14	14	9
Future Vol, veh/h	9	52	35	14	14	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	100	7	2	100	100	100
Mvmt Flow	10	58	39	16	16	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	55	0	-	0	125	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	5.1	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	3.1	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	1100	-	-	-	682	802
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1100	-	-	-	676	802
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1100	-	-	-	720
HCM Lane V/C Ratio	0.009	-	-	-	0.035
HCM Control Delay (s)	8.3	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	16	91	247	11	46	183
Future Volume (vph)	16	91	247	11	46	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885		0.994			
Flt Protected	0.992					0.990
Satd. Flow (prot)	1517	0	1818	0	0	1758
Flt Permitted	0.992					0.990
Satd. Flow (perm)	1517	0	1818	0	0	1758
Link Speed (mph)	45		55			55
Link Distance (ft)	1063		1068			1054
Travel Time (s)	16.1		13.2			13.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	32%	6%	2%	47%	15%	5%
Adj. Flow (vph)	18	101	274	12	51	203
Shared Lane Traffic (%)						
Lane Group Flow (vph)	119	0	286	0	0	254
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

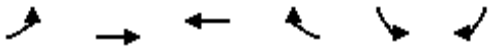
Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	91	247	11	46	183
Future Vol, veh/h	16	91	247	11	46	183
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	90	90	90	90
Heavy Vehicles, %	32	6	2	47	15	5
Mvmt Flow	18	101	274	12	51	203

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	585	280	0	0	286	0
Stage 1	280	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.72	6.26	-	-	4.25	-
Critical Hdwy Stg 1	5.72	-	-	-	-	-
Critical Hdwy Stg 2	5.72	-	-	-	-	-
Follow-up Hdwy	3.788	3.354	-	-	2.335	-
Pot Cap-1 Maneuver	427	749	-	-	1205	-
Stage 1	703	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	407	749	-	-	1205	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1205	-
HCM Lane V/C Ratio	-	-	0.179	0.042	-
HCM Control Delay (s)	-	-	11.6	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	48	88	11	21	19
Future Volume (vph)	7	48	88	11	21	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.985		0.936	
Flt Protected		0.993			0.975	
Satd. Flow (prot)	0	1630	1661	0	1215	0
Flt Permitted		0.993			0.975	
Satd. Flow (perm)	0	1630	1661	0	1215	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		1009	987		1021	
Travel Time (s)		15.3	15.0		27.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	100%	3%	2%	100%	48%	37%
Adj. Flow (vph)	8	53	98	12	23	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	61	110	0	44	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	48	88	11	21	19
Future Vol, veh/h	7	48	88	11	21	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	100	3	2	100	48	37
Mvmt Flow	8	53	98	12	23	21

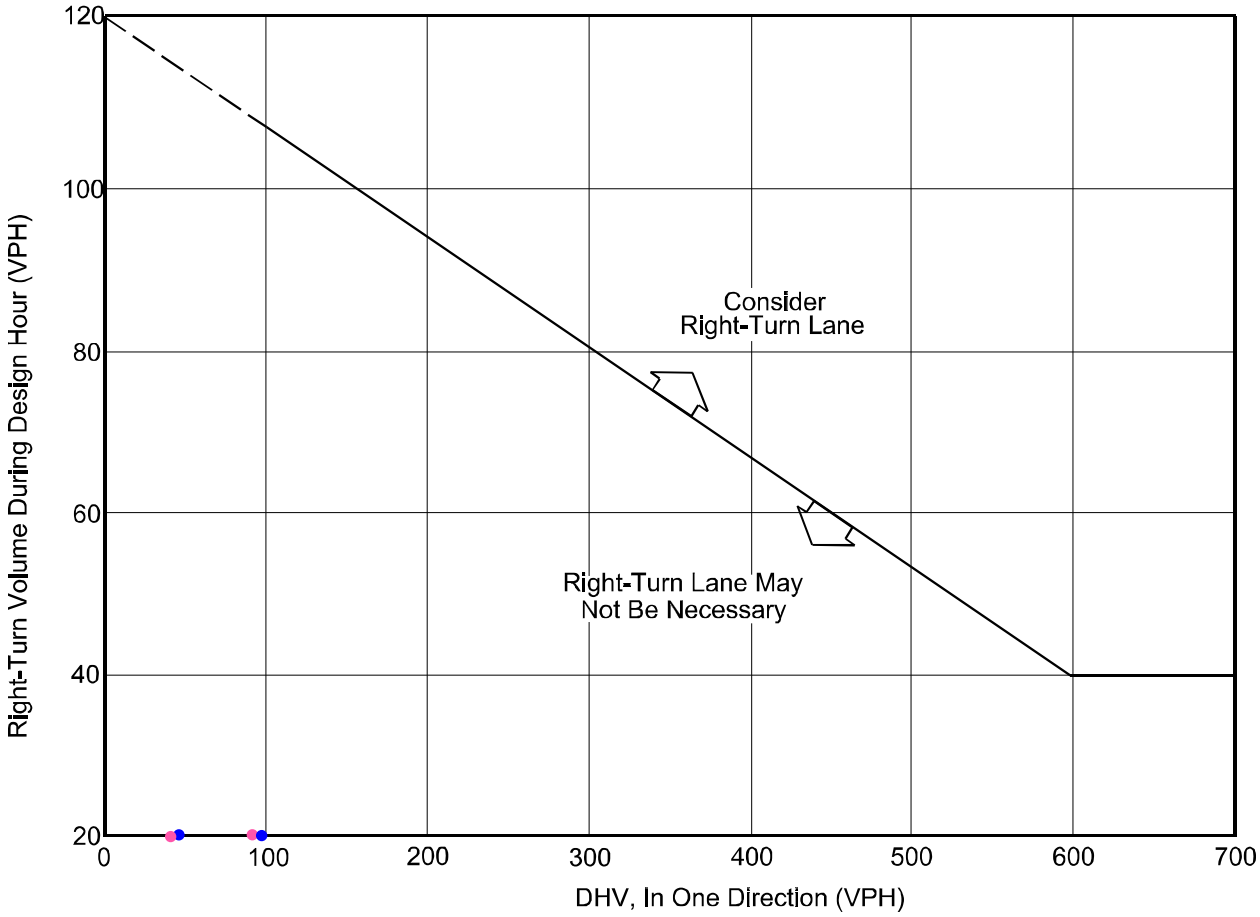
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	110	0	-	0	173	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	69	-
Critical Hdwy	5.1	-	-	-	6.88	6.57
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	3.1	-	-	-	3.932	3.633
Pot Cap-1 Maneuver	1042	-	-	-	722	863
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	849	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1042	-	-	-	716	863
Mov Cap-2 Maneuver	-	-	-	-	716	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	849	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1042	-	-	-	779
HCM Lane V/C Ratio	0.007	-	-	-	0.057
HCM Control Delay (s)	8.5	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

SCDOT Turn Lane Warrants

Woodlawn Road and Site Access



Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

2033 Build - Full Operation

AM	PM
V_{WB} = 45	V_{WB} = 95
V_{WBR} = 10	V_{WBR} = 7

Right-turn may not be necessary

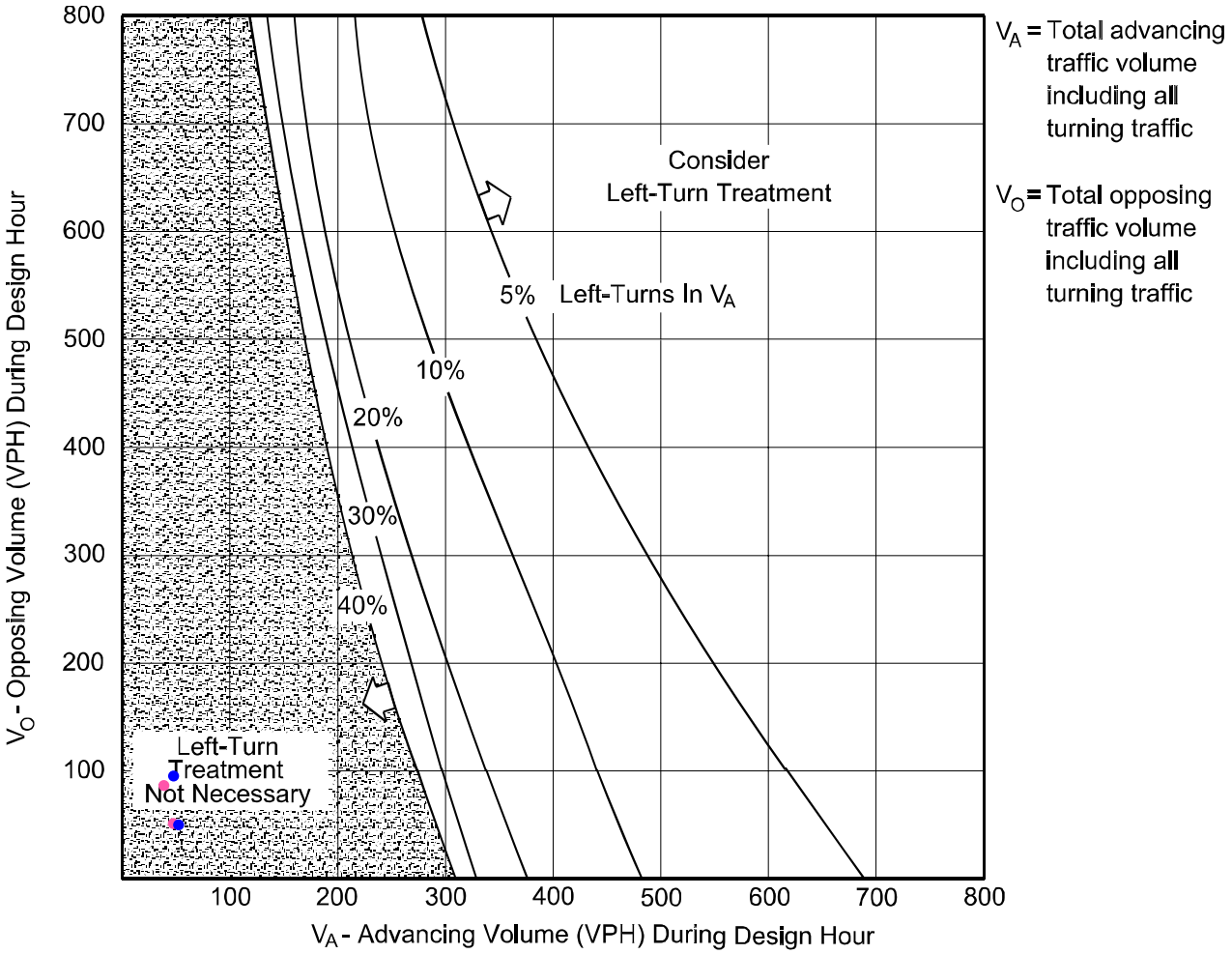
2033 Build - Max Operation

AM	PM
V_{WB} = 49	V_{WB} = 99
V_{WBR} = 14	V_{WBR} = 11

Right-turn may not be necessary

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A

Woodlawn Road and Site Access



Instructions:

1. *The family of curves represents the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.*

2. *Read V_A and V_O into the chart and locate the intersection of the two volumes.*

3. *Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.*

2033 Build - Full Operation

AM	PM
V_{EBL}= 6 = 10%	V_{EBL}= 5 = 9%
V_O= 45	V_O = 95
V_A = 58	V_A = 53
Left-turn may not be necessary	Left turn may not be necessary

2033 Build - Max Operation

AM	PM
V_{EBL}= 9 = 15%	V_{EBL}= 7 = 13%
V_O = 49	V_O = 99
V_A = 61	V_A = 55
Left-turn may not be necessary	Left-turn may not be necessary

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (50 mph)
Figure 9.5-E