Exhibit J
Traffic Impact Study

Traffic Impact Analysis for
Grandmarc at Clemson Development
Clemson, South Carolina

Prepared for:

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1.0 Executive Summary

The purpose of this Traffic Impact Analysis (TIA) is to review vehicular traffic impacts as a result of the proposed Grandmarc at Clemson development. The objectives of the study are:

- To estimate trip generation and distribution for the proposed development.
- To perform capacity analyses for the identified study area.
- To determine the potential traffic impacts of the proposed development.
- To develop recommendations for needed roadway and operational improvements to accommodate the proposed development's traffic impacts.

The proposed Grandmarc at Clemson development is located in Clemson, South Carolina east of US 76/SC 28 (Anderson Highway). The site, currently known as Clemson Center, is bound by Butler Street to the north and College Heights Boulevard to the south. As currently envisioned, the proposed site will ultimately consist of the following land uses:

- 25,000 SF of Shopping Center
- 500 Person Apartment Building – Student Housing
- 618 Space Parking Facility to accommodate demand from Apartment Building

The development is expected to be completed (built-out) in 2016, with access provided via two full-movement, unsignalized driveway connections on US 76/SC 28 (Anderson Highway).

This report summarizes the analyses of 2015 existing conditions, 2016 background conditions, and 2016 build-out conditions during the AM and PM peak hours at the following intersections:

1. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #1 (full-movement)
2. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #2 (full-movement)
3. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #3 (full-movement)
4. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #4 (full-movement)
5. US 76/SC 28 (Anderson Highway) at Proposed Driveway #1 (proposed full-movement)
6. US 76/SC 28 (Anderson Highway) at Proposed Driveway #2 (proposed full-movement)

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines set forth by SCDOT and the City of Clemson) and to identify transportation improvements that may be required to accommodate future traffic conditions. This report presents trip generation, distribution, capacity analyses, and recommendations for transportation improvements required to meet anticipated traffic demands.

Based on the capacity analyses contained herein, no roadway improvements are recommended to mitigate impact of the proposed development on the adjacent street network. The overall concept of driveway consolidation from the existing site to the proposed development provides an overall level of operational improvement.

Intersection sight distance should be reviewed at Proposed Driveway #2 due to the existing retaining wall to the south of the proposed location which may impact sight distance based on the exact location of the driveway.

Further discussion between the Client, Kimley-Horn, City of Clemson and SCDOT will need to occur to develop a traffic control plan for pedestrian connectivity and CAT BUS connectivity on US 76/SC 28 (Anderson Highway) at the proposed site location.

2.0 Introduction

The proposed Grandmarc at Clemson development is located in Clemson, South Carolina east of US 76/SC 28 (Anderson Highway). The site, currently known as Clemson Center, is bound by Butler Street to the north and College Heights Boulevard to the south. **Figure 1** provides an aerial of the study area/site location. **Figure 2** shows the proposed site plan. The development is expected to be built-out in 2016. This analysis considers the 2015 existing traffic conditions, the projected 2016 background conditions, and the projected 2016 build-out conditions.

The study area has been identified as:

1. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #1 (full-movement)
2. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #2 (full-movement)
3. US 76/SC 28 (Anderson Highway)) at Clemson Center Driveway #3 (full-movement)
4. US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #4 (full-movement)
5. US 76/SC 28 (Anderson Highway) at Proposed Driveway #1 (proposed full-movement)
6. US 76/SC 28 (Anderson Highway) at Proposed Driveway #2 (proposed full-movement)

Existing roadway laneage can be seen in **Figure 3**.

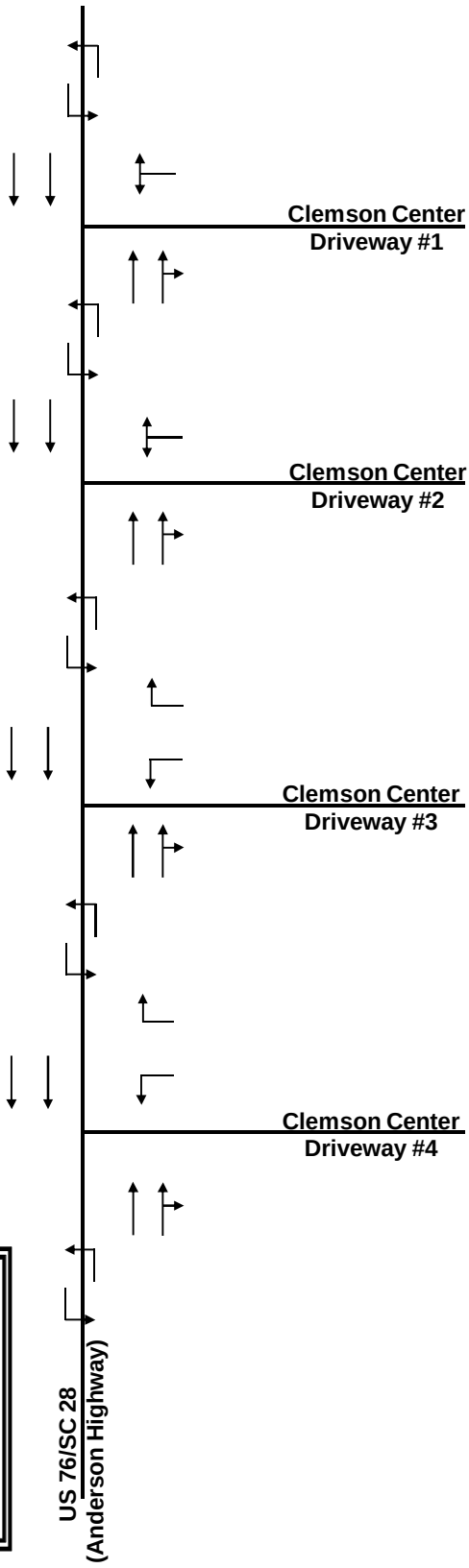
3.0 Existing Traffic Conditions

US 76/SC 28 (Anderson Highway) is a five-lane, undivided principal arterial to the north of the proposed development and a four-lane divided principal arterial to the south of the proposed development. There is a posted speed limit of 40 mph throughout the study area. This roadway has a 2013 South Carolina Department of Transportation (SCDOT) Average Annual Daily Traffic (AADT) volume of 12,500 vehicles per day (vpd) and 23,800 vpd to the north and south of the proposed site, respectively.

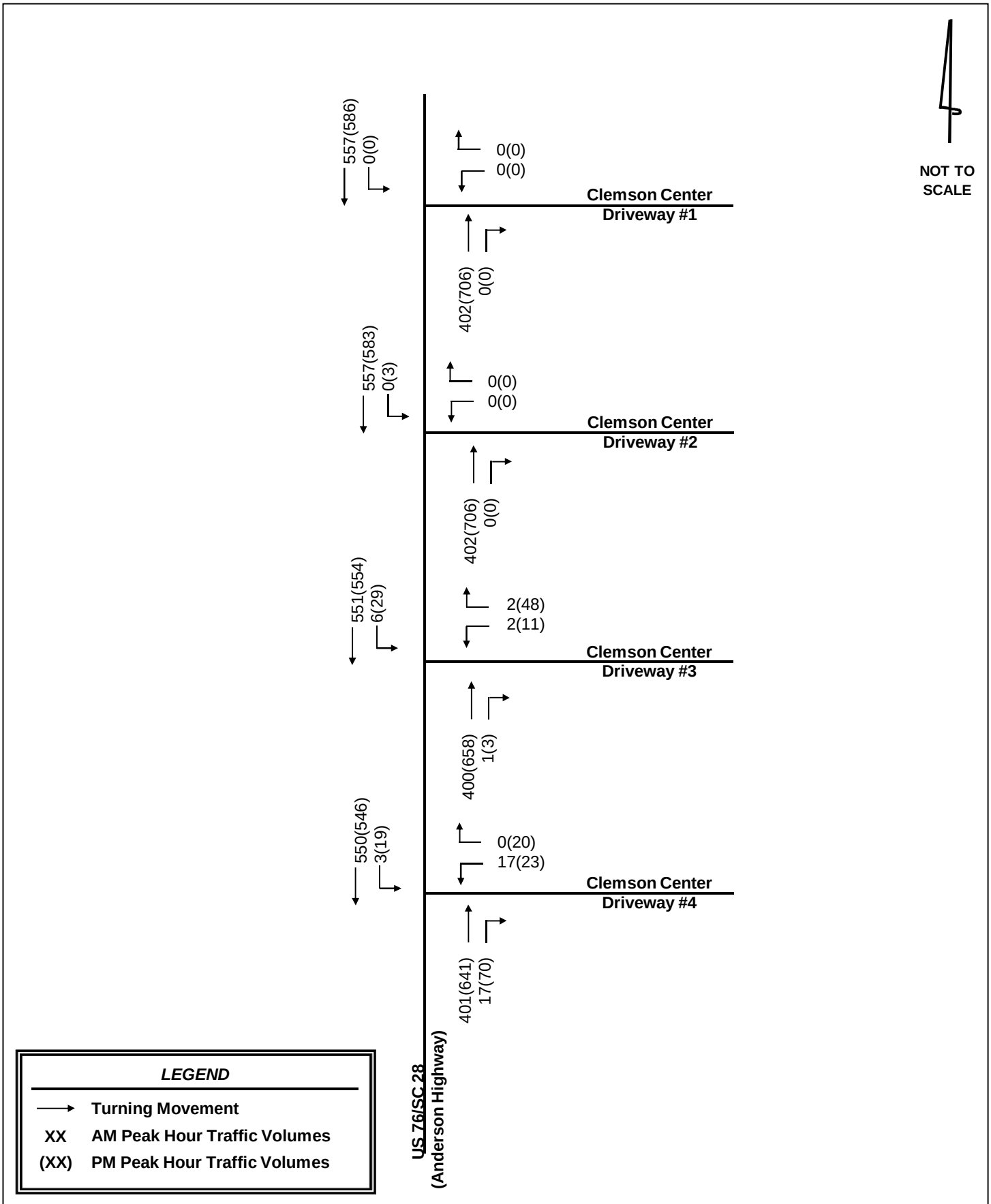
Peak-hour turning movement traffic counts were performed at the four existing intersections on Thursday, February 19, 2015. Existing traffic volumes were balanced due to the close spacing of the study intersections. Traffic counts and calculations are provided in **Appendix A**. **Figure 4** illustrates existing 2015 peak hour traffic volumes.

Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	Study Area/ Site Location	Figure 1

Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	Site Plan	Figure 2



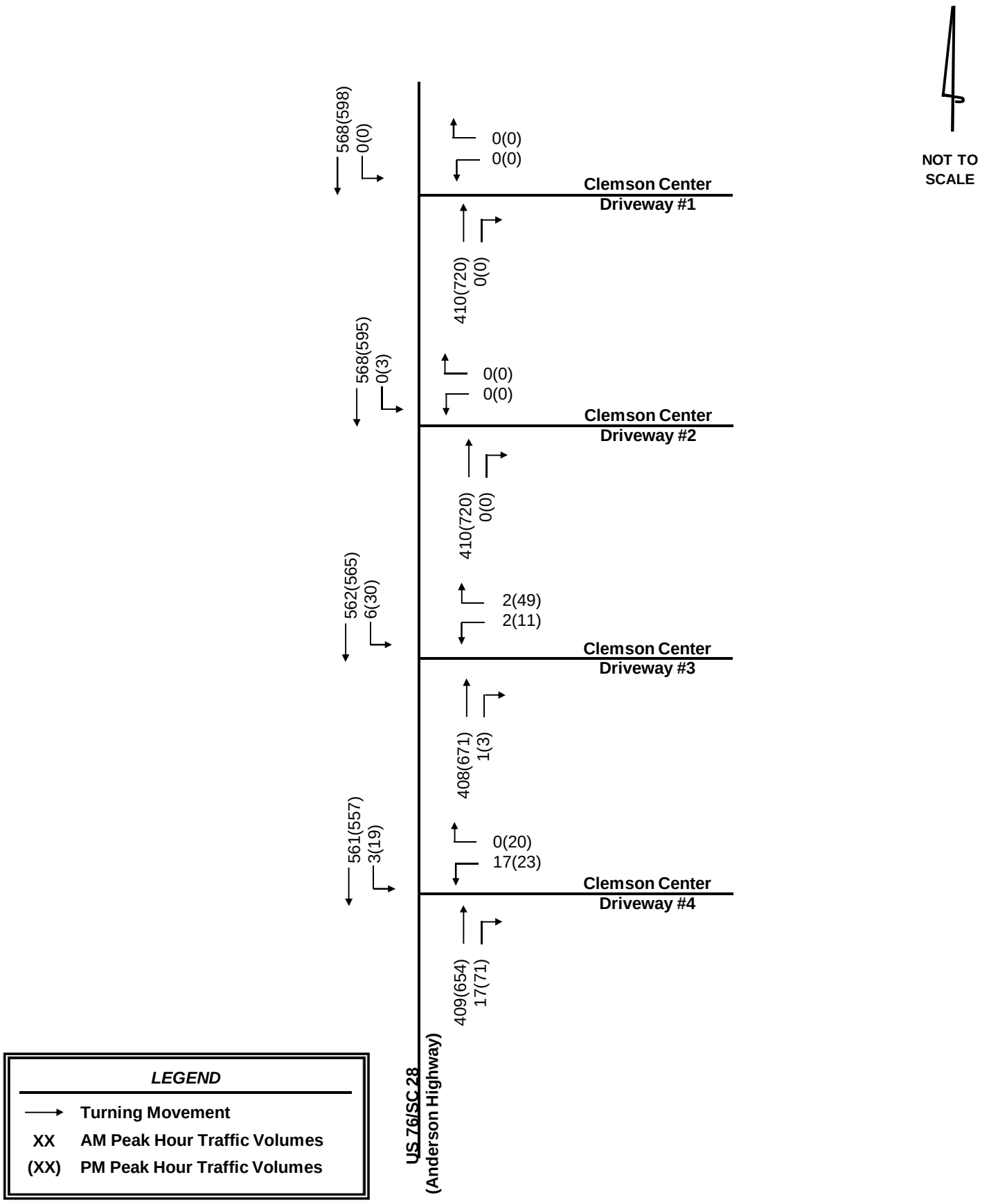
Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	Existing Roadway Laneage	Figure 3



Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	2015 Existing Traffic Volumes	Figure 4

4.0 Projected Background (Non-Project) Traffic

Projected background (non-project) traffic is defined as expected traffic on the roadway network in the future year(s) absent the construction and opening of the proposed project, plus any approved adjacent developments. There were no approved developments included in this analysis. The existing 2015 peak hour traffic volumes were grown at 2% per year to account for the expected background growth in traffic. **Figure 5** illustrates the projected 2016 background traffic volumes (which do not include the Grandmarc at Clemson development volumes).



Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	2016 Background Traffic Volumes	Figure 5

5.0 Project Traffic

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the development, distribution, and assignment of that traffic over the study roadway network.

5.1 PROJECT SITE ACCESS

Access to the proposed Grandmarc at Clemson development will be provided at two (2) proposed locations, which can be seen in the site plan located previously in **Figure 2.** Both driveways will provide full-movement, unsignalized access to US 76/SC 28 (Anderson Highway).

5.2 TRAFFIC GENERATION

The traffic generation potential of the proposed development was determined using the trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, Ninth Edition, 2012). As currently envisioned, the proposed site will ultimately consist of the following land uses:

- 25,000 SF of Shopping Center (ITE 820)
- 500 Person Apartment Building (ITE 220)
- 618 Space Parking Facility to accommodate demand from Apartment Building (Not included in the trip gen, because the 500 person trip generation already encompasses these trips)

For the AM and PM peak hours, the directional split of inbound vs outbound traffic is not available for ITE 220 calculations based upon persons. Thus, the directional split of dwelling units for this land use (ITE 220) was used for this trip generation.

Per discussion with the City of Clemson and SCDOT, a 50% trip reduction was taken from the apartment trip generation to account for multimodal connectivity at this location. The Clemson Area Transit (CAT) Bus is expected to make 6 stops per day at the proposed site. It is also anticipated that some students will walk to/from campus, restaurants, and other destinations due to the site's proximity to several student points of interest.

Pass-by and internal capture trips were included in this analysis due to the nature of the proposed retail and residential land uses. **Table 1** summarizes the projected trip generation.

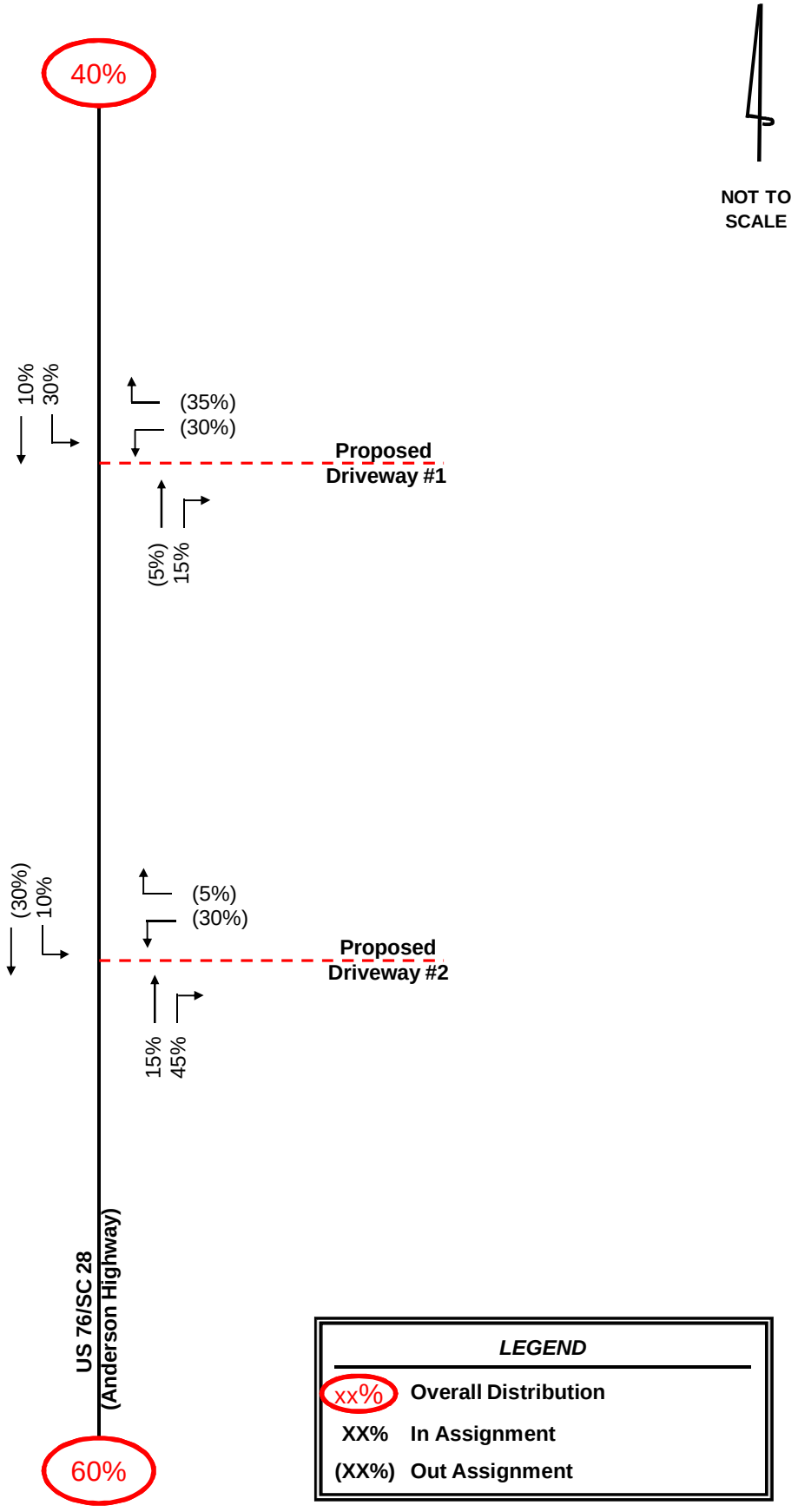
Table 1 - Trip Generation

Land Use	Intensity		Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
Shopping Center	25,000	SF	2,758	67	42	25	237	114	123
Student Apartments	500	Persons	1,671	141	28	113	197	128	69
Subtotal			**4,429**	**208**	**70**	**138**	**434**	**242**	**192**
Retail			381	2	1	1	43	11	32
Residential			381	2	1	1	43	32	11
Internal Capture			**762**	**4**	**2**	**2**	**86**	**43**	**43**
ITE 820 Pass-By - 0% AM / 58% PM			*106*	*0*	*0*	*0*	*106*	*53*	*53*
ITE Pass-By			*106*	*0*	*0*	*0*	*106*	*53*	*53*
Adjacent Street Traffic				*971*			*1,276*		
10% Adjacent Street Traffic			*256*	*0*	*0*	*0*	*256*	*128*	*128*
Pass-By			**106**	**0**	**0**	**0**	**106**	**53**	**53**
Shopping Center			2,271	65	41	24	88	50	38
Student Apartments			1,290	139	27	112	154	96	58
Multimodal Trip Reduction (CAT BUS)-Apartments Only (50% Reduction after Internal Capture and Pass-By)			*-645*	*-70*	*-14*	*-56*	*-77*	*-48*	*-29*
Net New External Trips			**2,916**	**134**	**54**	**80**	**165**	**98**	**67**
Note: Trip generation was calculated using the following data:									
Daily Traffic Generation									
Shopping Center	[ITE 820]	=	Ln (T) = 0.65 Ln (X) +5.83; (50% in, 50% out)						
Student Apartments	[ITE 220]	=	T = 3.47 (X)-64.48; (50% in, 50% out)						
AM Peak-Hour Traffic Generation									
Shopping Center	[ITE 820]	=	Ln (T) = 0.61 Ln (X) + 2.24; (62% in, 38% out)						
Student Apartments	[ITE 220]	=	T = 0.26 (X) + 10.99; DIRECTIONAL DISTRIBUTION NOT AVAILABLE USE DWELLING UNIT DIRECTIONAL DISTRIBUTION (20% in, 80% out)						
PM Peak-Hour Traffic Generation									
Shopping Center	[ITE 820]	=	Ln (T) = 0.67 Ln (X) + 3.31; (48% in, 52% out)						
Student Apartments	[ITE 220]	=	T = 0.39 (X) + 2.09; DIRECTIONAL DISTRIBUTION NOT AVAILABLE USE DWELLING UNIT DIRECTIONAL DISTRIBUTION (65% in, 35% out)						

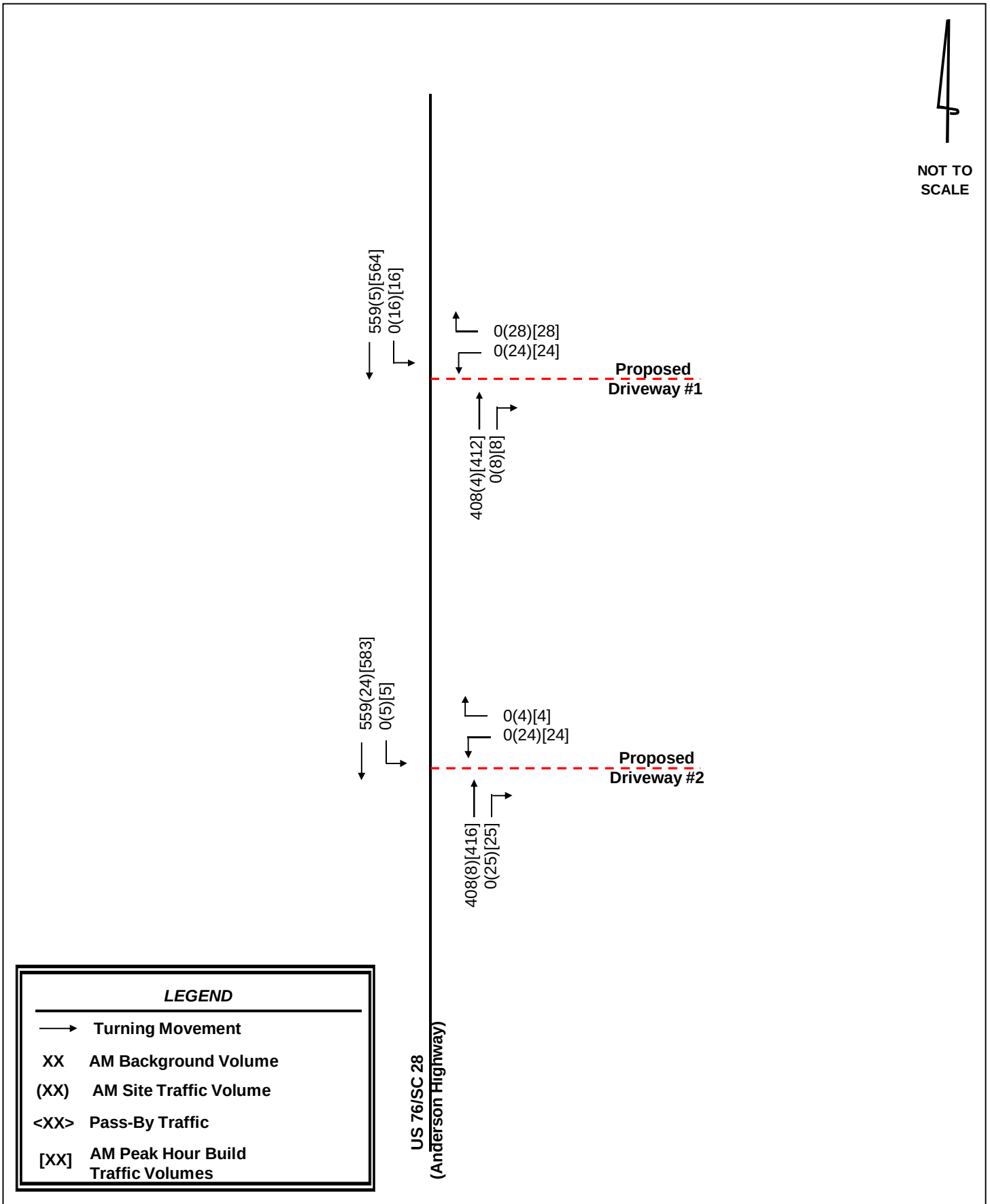
5.3 TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution and assignment of new project trips are based upon a review of land uses and population densities in the area, and the existing peak hour turning movement counts. **Figure 6** summarizes the project trip distribution and assignment.

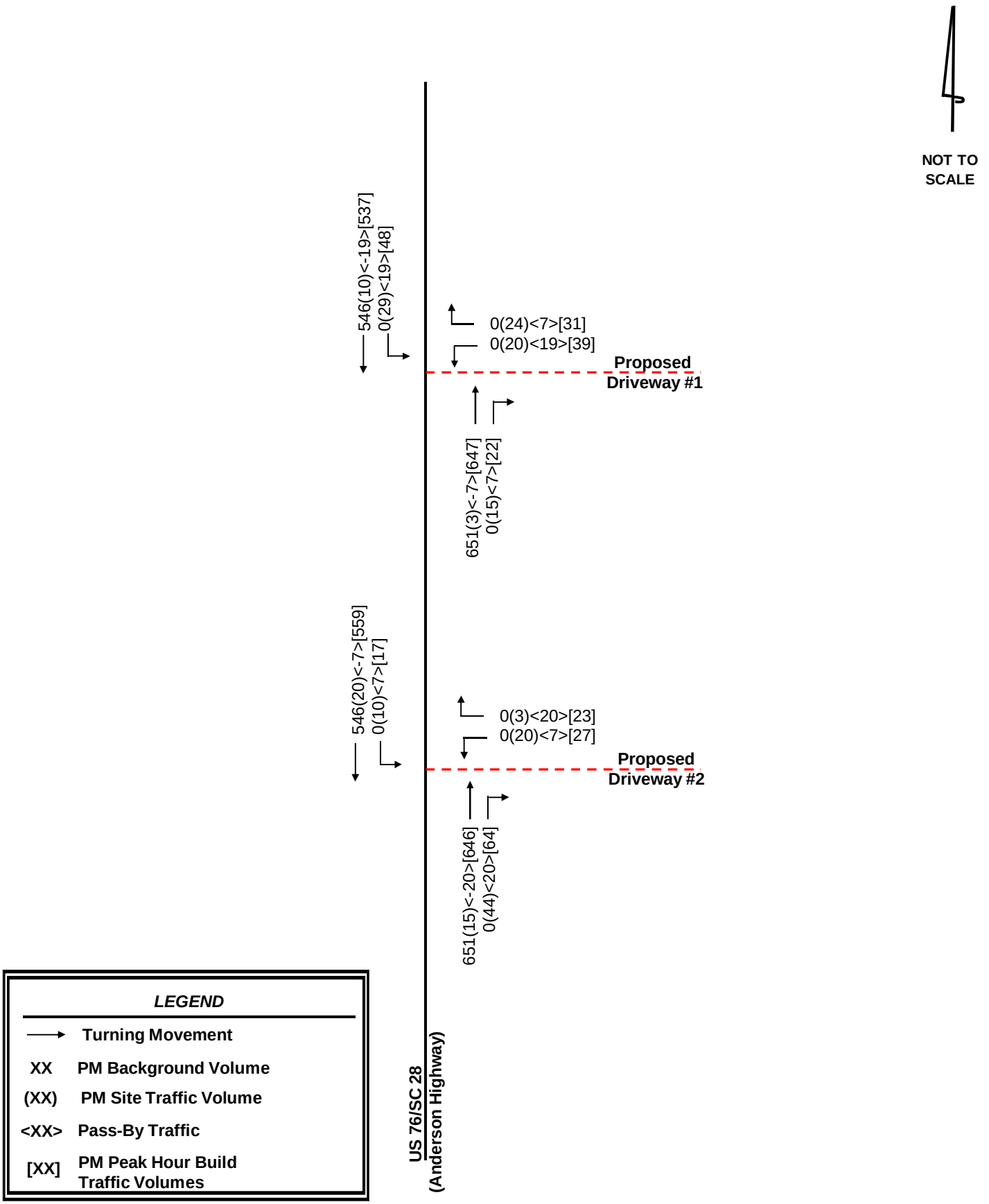
Based on the trip generation from **Table 1** and the anticipated trip distribution, new project trips are assigned to the study roadway network. **Figure 7** illustrates the projected 2016 AM build-out traffic volumes, **Figure 8** illustrates the project 2016 PM build-out traffic volumes. **Appendix B** provides intersection volume worksheets for the intersections within the study network. **Appendix C** provides pass-by calculations.



Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	Site Traffic Distribution and Assignment	Figure 6



Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	2016 AM Build-out Traffic Volumes	Figure 7



Kimley»Horn	Grandmarc at Clemson Traffic Impact Analysis	2016 PM Build-out Traffic Volumes	Figure 8

6.0 Capacity Analysis

Level-of-service determinations were made for the weekday AM and PM peak hours for the existing study network intersections and proposed access intersections using Synchro Version 8. The program uses methodologies contained in the *2010 Highway Capacity Manual* to determine the operating characteristics of an intersection. 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 roadway, traffic, and control conditions.

Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions of a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A being the best and F the worst.

Levels-of-service for unsignalized intersections, with stop control on the minor street(s) only, are reported for the side street approaches. Low levels-of-service for the side street approaches are not uncommon, as vehicles may experience long delays turning onto a major roadway.

Levels-of-service for signalized intersections are reported for the intersection as a whole. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

Capacity analyses were performed for the 2015 existing traffic conditions, 2016 background traffic conditions, and 2016 build-out traffic conditions. Recommended storage lengths are based upon Synchro 95th queue lengths. Synchro analysis results are available in **Appendix D**.

Table 2.0-A lists the LOS control delay thresholds published in the Highway Capacity Manual (HCM) for signalized intersections. Synchro Version 8 software uses the same LOS thresholds as those published in the HCM.

Table 2.0 A
Level-of-Service Control Delay Thresholds for Signalized Intersections

Level-of-Service	Control Delay per Vehicle [sec/veh]
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Table 2.0-B lists the LOS control delay thresholds published in the HCM for unsignalized intersections, as well as the unsignalized operational descriptions assumed herein.

Table 2.0 B
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

6.1 US 76/SC 28 (ANDERSON HIGHWAY) AT CLEMSON CENTER DRIVEWAY #1

Table 3 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #1.

Table 3 - US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #1

Condition	Measure	WB	NB	SBL
		WBLR	NBTR	SBL
AM Peak Hour				
2015 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'
2016 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'
PM Peak Hour				
2015 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'
2016 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'

From the existing traffic counts, it was observed that no vehicles entered or exited Clemson Center Driveway #1 during the AM or PM peak hour on Thursday, February 19, 2015. Therefore, there were no vehicular delays observed at this intersection during the AM or PM peak hours under 2015 existing conditions. Since no change in land use is expected before the horizon year, this intersection is expected to continue to operate with short delays during the 2016 AM and PM background conditions.

This driveway is proposed to be removed as a part of the construction of the proposed site.

6.2 US 76/SC 28 (ANDERSON HIGHWAY) AT CLEMSON CENTER DRIVEWAY #2

Table 4 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #2.

Table 4 - US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #2

Condition	Measure	WB	NB	SBL
		WBLR	NBTR	SBL
AM Peak Hour				
2015 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'
2016 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)
	Synchro 95th Q	0'	0'	0'
PM Peak Hour				
2015 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.1)
	Synchro 95th Q	0'	0'	0'
2016 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.1)
	Synchro 95th Q	0'	0'	0'

From the existing traffic counts, no vehicles entered or exited Clemson Center Driveway #2 during the AM peak hour and only three (3) southbound vehicles entered during the PM peak hour. Therefore, there were no vehicular delays observed at this intersection during the AM peak hour and only a tenth of a second delay on the southbound approach during the PM peak hour. Since no change in land use is expected before the horizon year, this intersection is expected to continue to operate with short delays during the 2016 AM and PM background conditions.

This driveway is proposed to be removed as a part of the construction of the proposed site.

6.3 US 76/SC 28 (ANDERSON HIGHWAY) AT CLEMSON CENTER DRIVEWAY #3

Table 5 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #3.

Table 5 -US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #3

Condition	Measure	WB		NB	SBL
		WBL	WBR	NBTR	SBL
AM Peak Hour					
2015 Existing	LOS (Delay)	B (10.4)		A (0.0)	A (0.1)
	Synchro 95th Q	0'	0'	0'	0'
2016 Background	LOS (Delay)	B (10.8)		A (0.0)	A (0.1)
	Synchro 95th Q	0'	0'	0'	0'
PM Peak Hour					
2015 Existing	LOS (Delay)	B (11.8)		A (0.0)	A (0.6)
	Synchro 95th Q	7'	0'	0'	3'
2016 Background	LOS (Delay)	B (11.9)		A (0.0)	A (0.6)
	Synchro 95th Q	7'	0'	0'	3'

As shown in **Table 5**, there are currently short delays and minimal queuing on all approaches of this intersection during the AM and PM peak hours. Since no change in land use is expected before the horizon year, this intersection is expected to continue to operate with short delays and minimal queuing during the 2016 AM and PM background conditions.

This driveway is proposed to be removed as a part of the construction of the proposed site.

6.4 US 76/SC 28 (ANDERSON HIGHWAY) AT CLEMSON CENTER DRIVEWAY #4

Table 6 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #4.

Table 6 - US 76/SC 28 (Anderson Highway) at Clemson Center Driveway #4

Condition	Measure	WB		NB	SBL
		WBL	WBR	NBTR	SBL
AM Peak Hour					
2015 Existing	LOS (Delay)	B (12.0)		A (0.0)	A (0.1)
	Synchro 95th Q	3'	0'	0'	0'
2016 Background	LOS (Delay)	B (12.1)		A (0.0)	A (0.1)
	Synchro 95th Q	3'	0'	0'	0'
PM Peak Hour					
2015 Existing	LOS (Delay)	B (13.1)		A (0.0)	A (0.4)
	Synchro 95th Q	5'	3'	0'	2'
2016 Background	LOS (Delay)	B (13.2)		A (0.0)	A (0.4)
	Synchro 95th Q	5'	3'	0'	2'

As shown in **Table 6**, there are currently short delays and minimal queuing on all approaches of this intersection during the AM and PM peak hours. Since no change in land use is expected before the horizon year, this intersection is expected to continue to operate with short delays and minimal queuing during the 2016 AM and PM background conditions.

This driveway is proposed to be removed as a part of the construction of the proposed site.

6.5 US 76/SC 28 (ANDERSON HIGHWAY) AT PROPOSED DRIVEWAY #1

Table 7 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Proposed Driveway #1.

Table 7 -US 76/SC 28 (Anderson Highway) at Proposed Driveway #1

Condition	Measure	WB		NB	SBL
		WBL	WBR	NBTR	SBL
AM Peak Hour					
2016 Build-out	LOS (Delay)	B (11.0)		A (0.0)	A (0.3)
	Synchro 95th Q	4'	3'	0'	1'
PM Peak Hour					
2016 Build-out	LOS (Delay)	B (13.6)		A (0.0)	A (1.0)
	Synchro 95th Q	10'	4'	0'	5'

Upon build-out of the site in 2016, there are expected to be short delays on the westbound approach of US 76 at Proposed Driveway #1 (northernmost). This driveway was modeled with a westbound left-turn lane and westbound right-turn lane with one receiving lane entering the site. There is expected to be minimal queuing on all approaches of this intersection when the site is built.

6.6 US 76/SC 28 (ANDERSON HIGHWAY) AT PROPOSED DRIVEWAY #2

Table 8 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized, full-movement intersection of US 76/SC 28 (Anderson Highway) at Proposed Driveway #1.

Table 8 - US 76/SC 28 (Anderson Highway) at Proposed Driveway #2

Condition	Measure	WB	NB	SBL
		WBLR	NBTR	SBL
AM Peak Hour				
2016 Build-out	LOS (Delay)	B (12.1)	A (0.0)	A (0.1)
	Synchro 95th Q	5'	0'	0'
PM Peak Hour				
2016 Build-out	LOS (Delay)	B (13.8)	A (0.0)	A (0.4)
	Synchro 95th Q	10'	0'	2'

Upon build-out of the site in 2016, there are expected to be short delays on the westbound approach of US 76 at Proposed Driveway #2 (southernmost). This driveway was modeled with a westbound shared-left-right turn lane with one receiving lane entering the site. There is expected to be minimal queuing on all approaches of this intersection when the site is built.

7.0 Auxiliary Turn Lane Warrants

Turn lane warrant analysis were performed based off of turn-lane warrants in the SCDOT Highway Design Manual for right-turns into the site. Auxiliary turn lane warrants were not performed for the southbound left-turns into the site due to the existing two-way left-turn lane on US 76/SC 28 (Anderson Highway), which should provide enough storage for left-turning vehicles. Auxiliary turn lane warrant analysis can be seen in **Appendix E**.

Based off the turn lane warrants, a northbound right-turn lane may not be necessary at Proposed Driveway #1 and may be necessary at Proposed Driveway #2. This turn-lane at Proposed Driveway #2 is not recommended based off the Synchro capacity analysis, where this movement is expected to have zero delay with minimal queuing, if any.

8.0 Recommendations

Based on the capacity analyses contained herein, no roadway improvements are recommended to mitigate impact of the proposed development on the adjacent street network. The overall concept of driveway consolidation from the existing site to the proposed development provides an overall level of operational improvement.

Intersection sight distance should be reviewed at Proposed Driveway #2 due to the existing retaining wall to the south of the proposed location which may impact sight distance based on the exact location of the driveway.

Further discussion between the Client, Kimley-Horn, City of Clemson and SCDOT will need to occur to develop a traffic control plan for pedestrian connectivity and CAT BUS connectivity on US 76/SC 28 (Anderson Highway) at the proposed site location.

Appendix

Appendix A

Turning Movement Counts

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

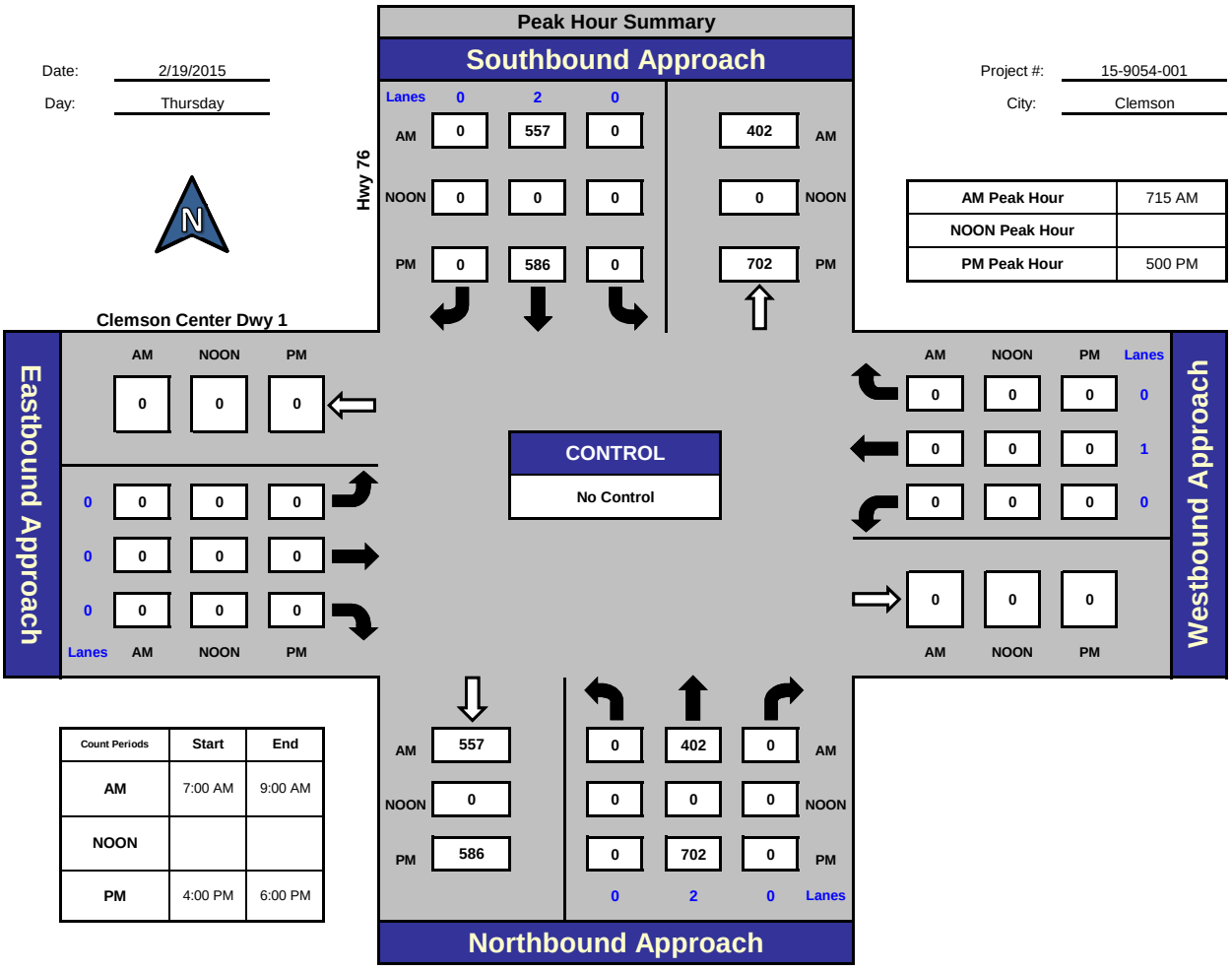
Hwy 76 and Clemson Center Dwy 1 , Clemson

Date: 2/19/2015

Day: Thursday

Project #: 15-9054-001

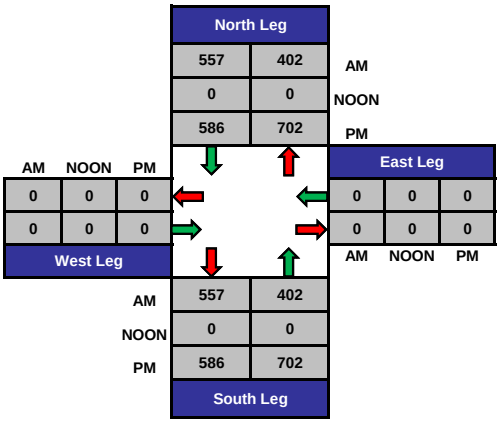
City: Clemson



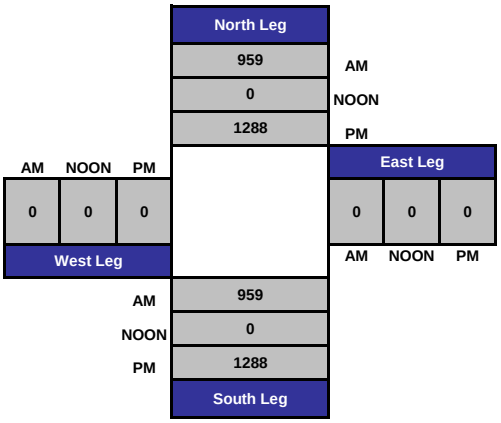
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

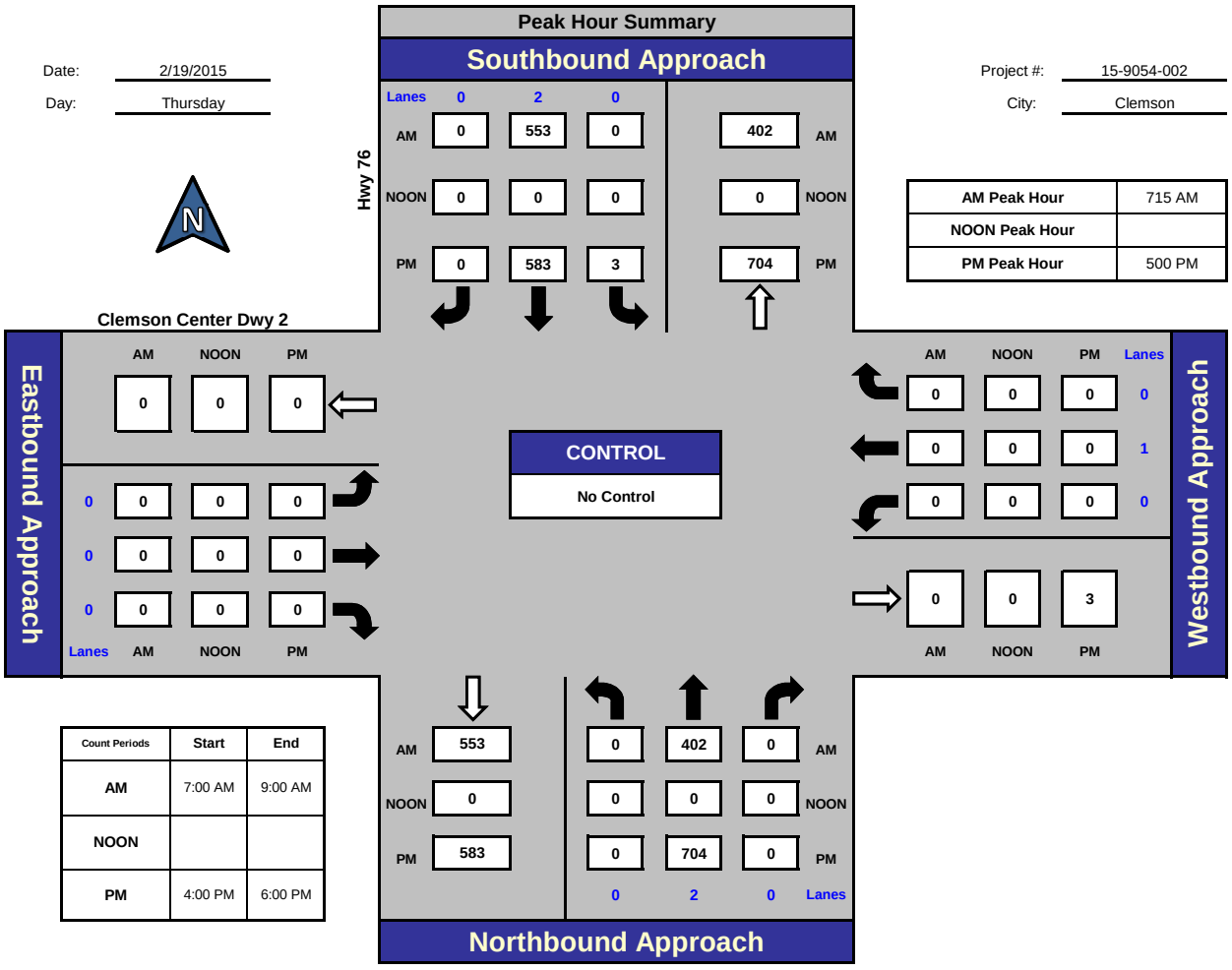
Hwy 76 and Clemson Center Dwy 2 , Clemson

Date: 2/19/2015

Day: Thursday

Project #: 15-9054-002

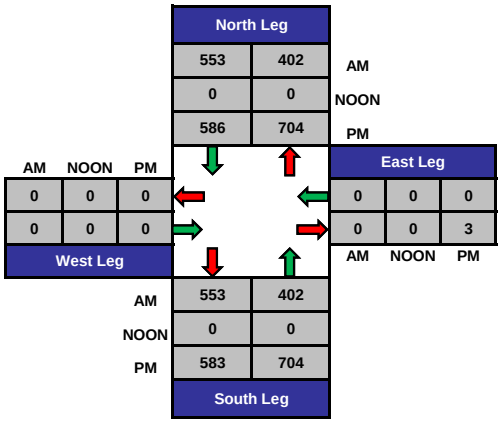
City: Clemson



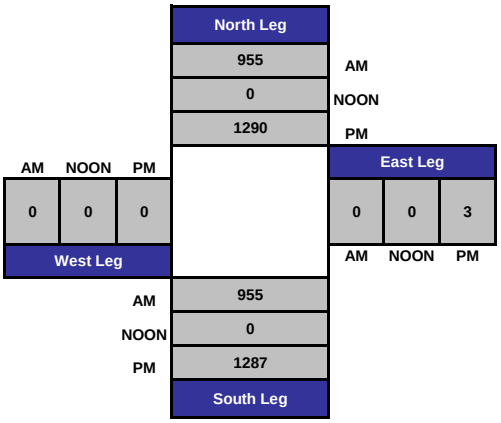
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

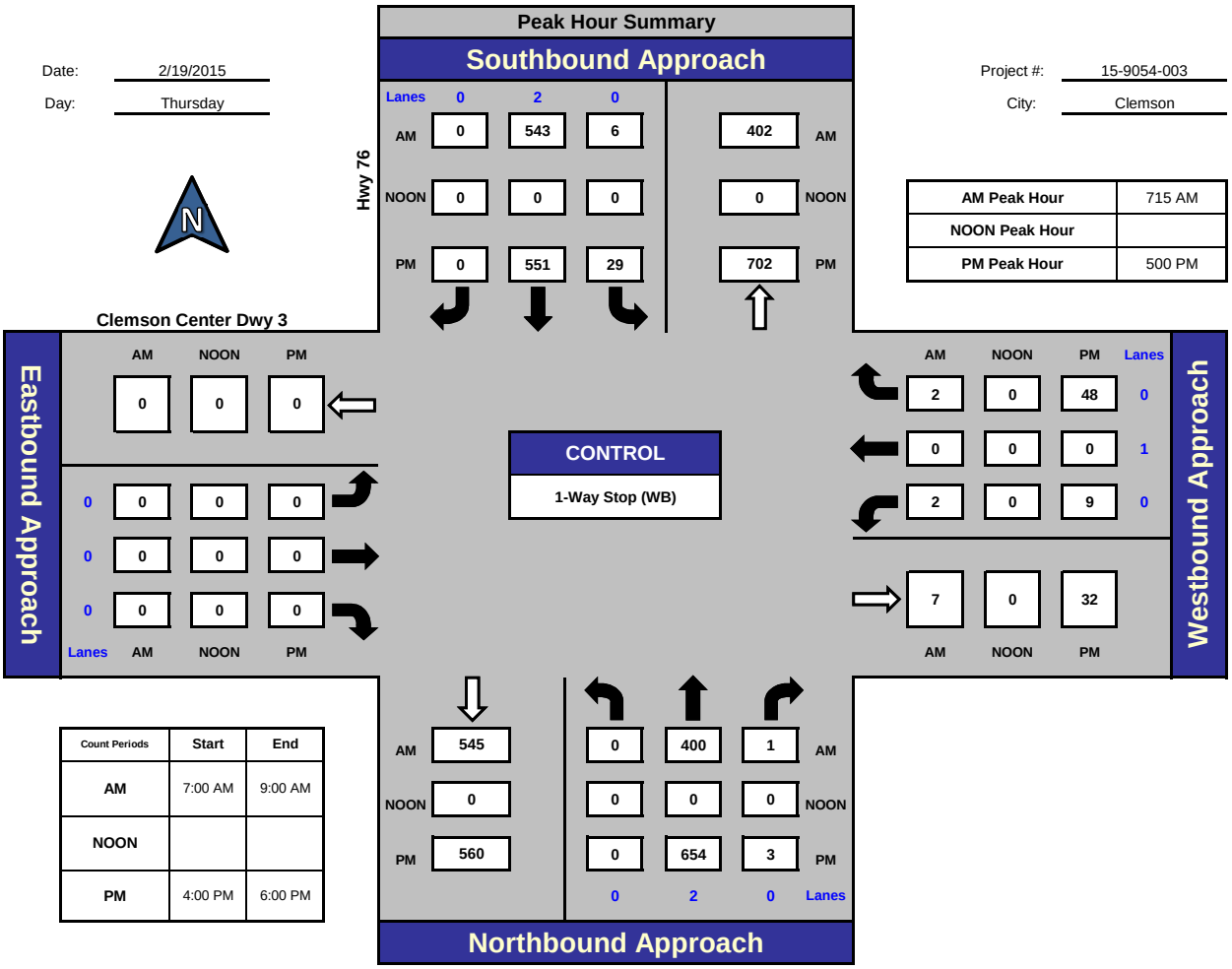
Hwy 76 and Clemson Center Dwy 3 , Clemson

Date: 2/19/2015

Day: Thursday

Project #: 15-9054-003

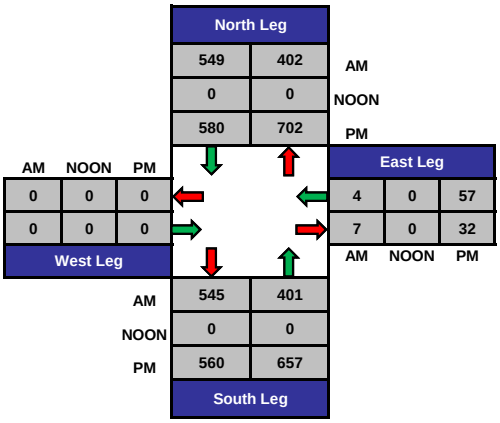
City: Clemson



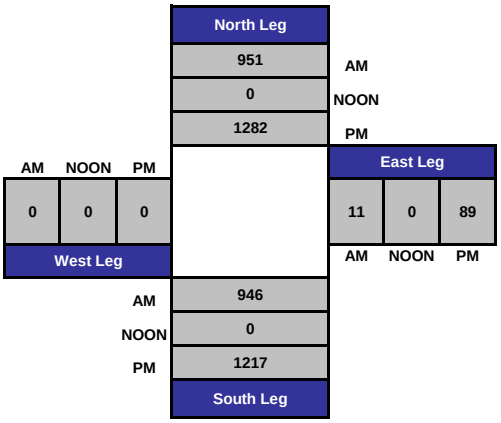
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

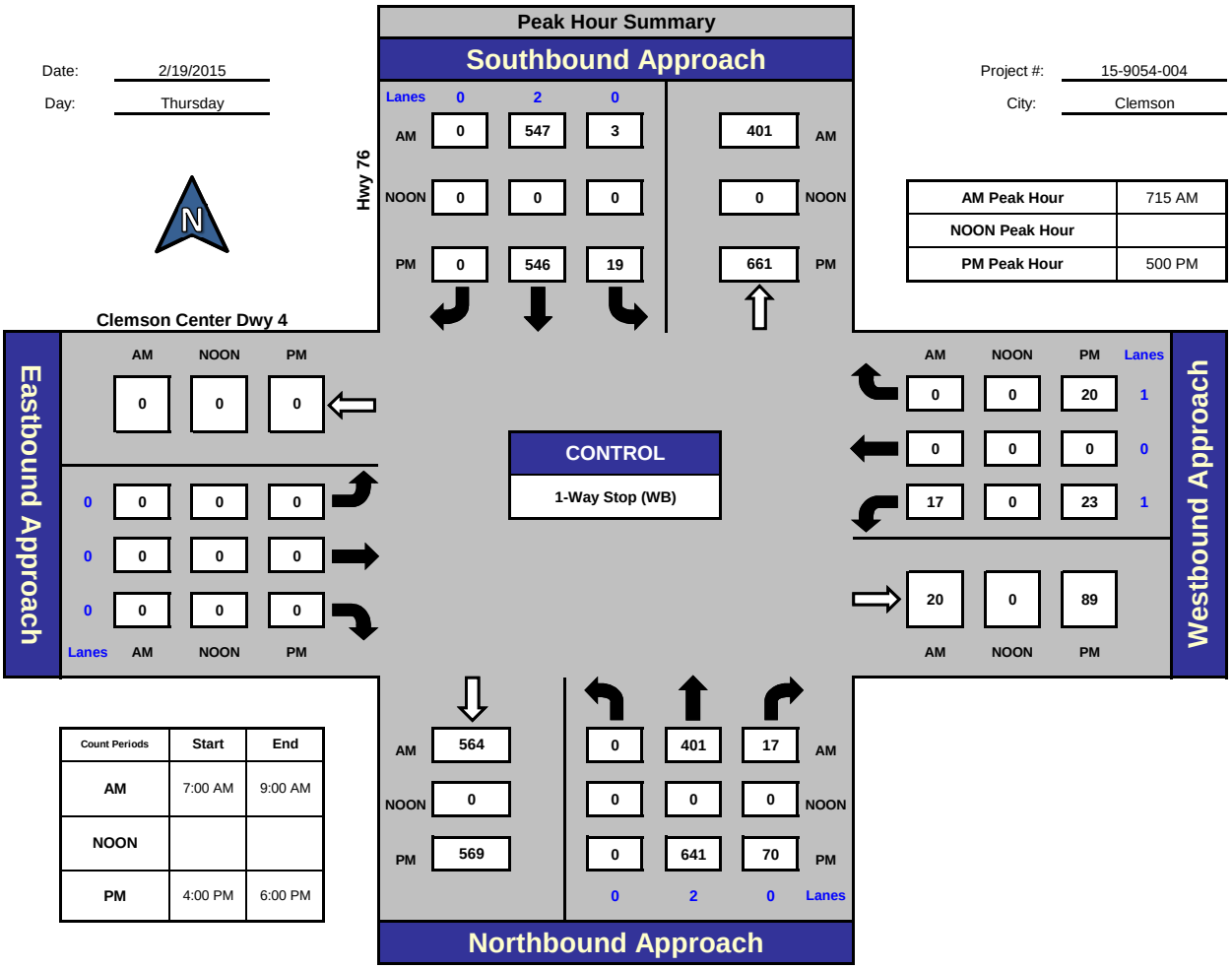
Hwy 76 and Clemson Center Dwy 4 , Clemson

Date: 2/19/2015

Day: Thursday

Project #: 15-9054-004

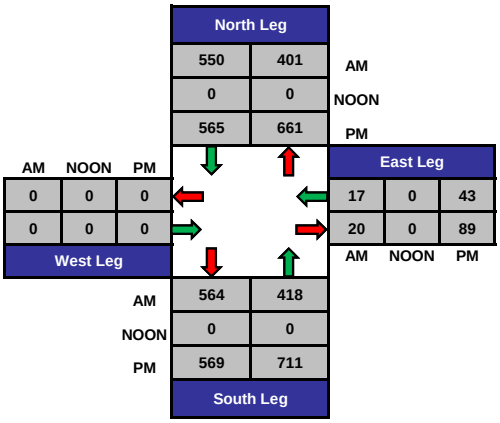
City: Clemson



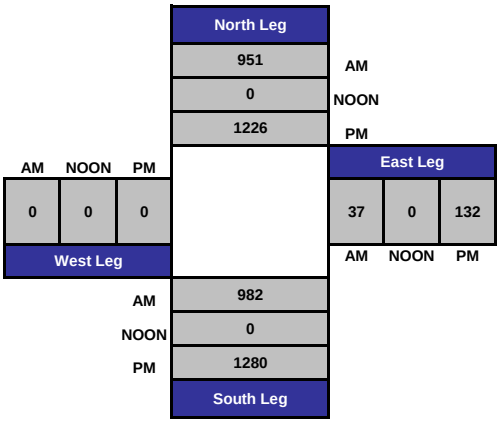
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

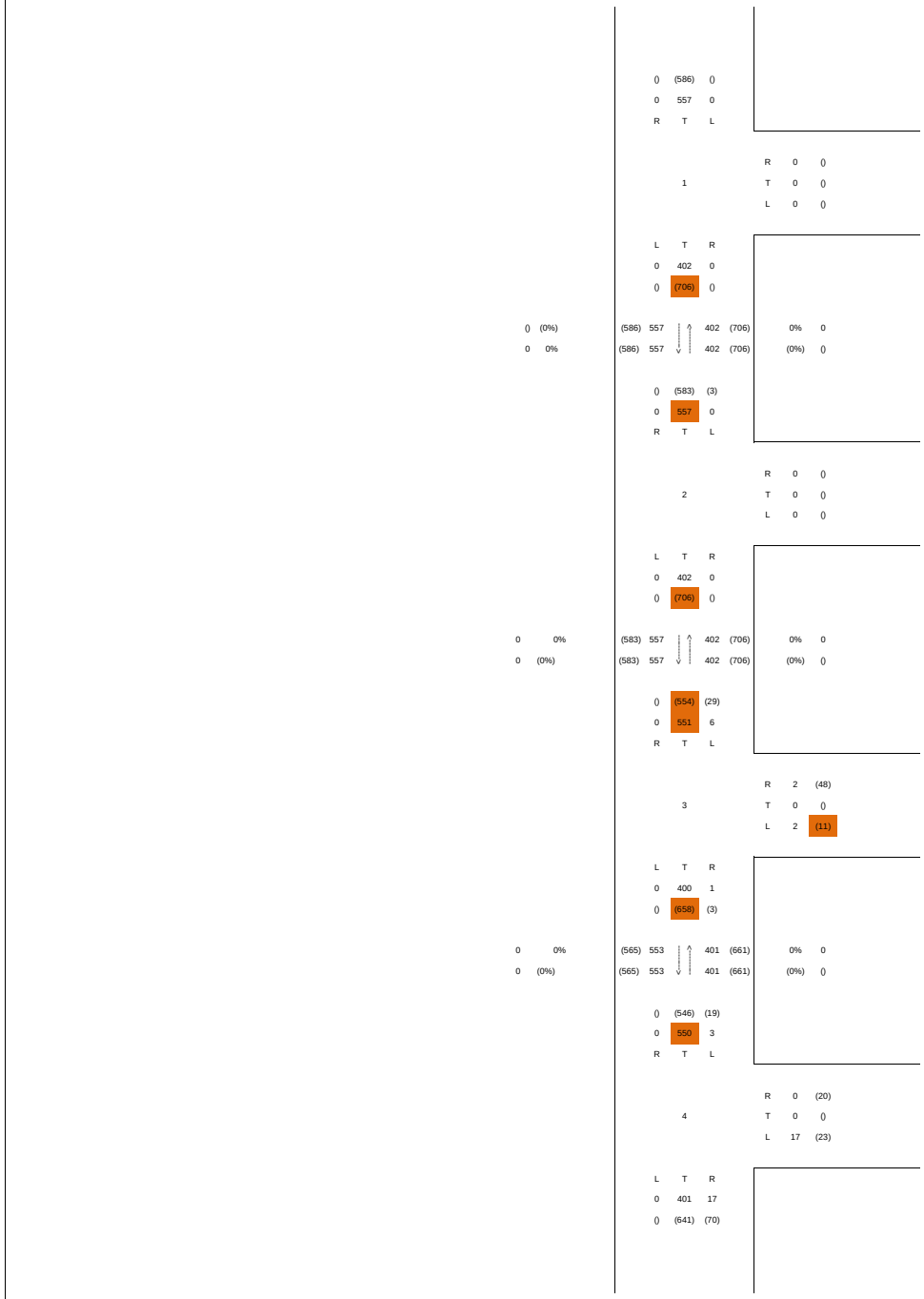
Total Ins & Outs



Total Volume Per Leg



Volume Balancing



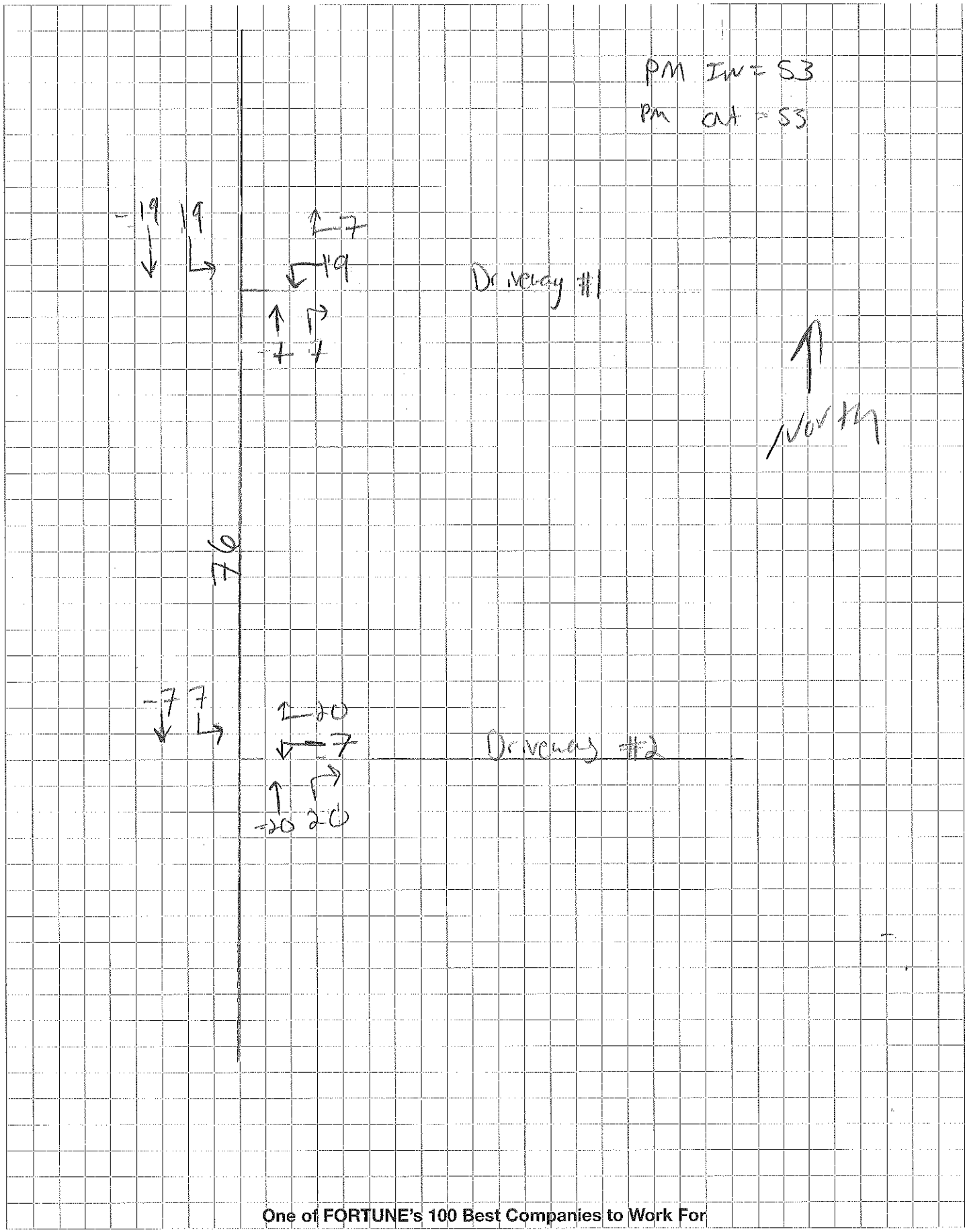
Appendix B

Pass-by Calculations

Kimley»Horn
Expect More. Experience Better.

Job Grandmere / Clemson Subject PM Pass-by Sheet No. ____ of ____

Designed By DBT Date 2/25/15 Checked By ____ Date ____ Job No. ____



Appendix C

Intersection Volume Development

INTERSECTION VOLUME DEVELOPMENT

US 76 and Clemson Center Dwy #1
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	402	0	0	557	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2015 Existing Traffic	0	402	0	0	557	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	410	0	0	568	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-410	0	0	-568	0	0	0	0	0	0	0
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	702	0	0	586	0	0	0	0	0	0	0
Balanced Volumes	0	4	0	0	0	0	0	0	0	0	0	0
2015 Existing Traffic	0	706	0	0	586	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	720	0	0	598	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-720	0	0	-598	0	0	0	0	0	0	0
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

US 76 and Clemson Center Dwy #2
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	402	0	0	553	0	0	0	0	0	0	0
Balanced Volumes	0	0	0	0	4	0	0	0	0	0	0	0
2015 Existing Traffic	0	402	0	0	557	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	410	0	0	568	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-410	0	0	-568	0	0	0	0	0	0	0
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	704	0	3	583	0	0	0	0	0	0	0
Balanced Volumes	0	2	0	0	0	0	0	0	0	0	0	0
2015 Existing Traffic	0	706	0	3	583	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	720	0	3	595	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-720	0	-3	-595	0	0	0	0	0	0	0
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

US 76 and Clemson Center Dwy #3
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #3 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	400	1	6	543	0	0	0	0	2	0	2
Balanced Volumes	0	0	0	0	8	0	0	0	0	0	0	0
2015 Existing Traffic	0	400	1	6	551	0	0	0	0	2	0	2
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
Heavy Vehicle %	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	408	1	6	562	0	0	0	0	2	0	2
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-408	-1	-6	-562	0	0	0	0	-2	0	-2
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #3 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	654	3	29	551	0	0	0	0	9	0	48
Balanced Volumes	0	4	0	0	3	0	0	0	0	2	0	0
2015 Existing Traffic	0	658	3	29	554	0	0	0	0	11	0	48
PHF	0.90	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	671	3	30	565	0	0	0	0	11	0	49
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-671	-3	-30	-565	0	0	0	0	-11	0	-49
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

US 76 and Clemson Center Dwy #4
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #4 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	401	17	3	547	0	0	0	0	17	0	0
Balanced Volumes	0	0	0	0	3	0	0	0	0	0	0	0
2015 Existing Traffic	0	401	17	3	550	0	0	0	0	17	0	0
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
Heavy Vehicle %	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	409	17	3	561	0	0	0	0	17	0	0
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-409	-17	-3	-561	0	0	0	0	-17	0	0
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Clemson Center Dwy #4 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	641	70	19	546	0	0	0	0	23	0	20
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2015 Existing Traffic	0	641	70	19	546	0	0	0	0	23	0	20
PHF	0.90	0.91	0.97	0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	654	71	19	557	0	0	0	0	23	0	20
Percent Inbound Assignment	0%	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%
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Project Trips (Total)	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Redistribution due to Driveway Removal	0	-654	-71	-19	-557	0	0	0	0	-23	0	-20
2016 Buildout Total	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

US 76 at Proposed Driveway #1
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Proposed Driveway #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	400	0	0	548	0	0	0	0	0	0	0
2015 Existing Traffic	0	400	0	0	548	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	408	0	0	559	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	15%	30%	10%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	5%	0%	0%	0%	0%	0%	0%	0%	30%	0%	35%
Total Project Trips	0	4	8	16	5	0	0	0	0	24	0	28
Project Trips (Total)	0	4	8	16	5	0	0	0	0	24	0	28
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2016 Buildout Total	0	412	8	16	564	0	0	0	0	24	0	28

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Proposed Driveway #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	638	0	0	535	0	0	0	0	0	0	0
2015 Existing Traffic	0	638	0	0	535	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	651	0	0	546	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	15%	30%	10%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	5%	0%	0%	0%	0%	0%	0%	0%	30%	0%	35%
Total Project Trips	0	3	15	29	10	0	0	0	0	20	0	23
Project Trips (Total)	0	3	15	29	10	0	0	0	0	20	0	24
Pass-By Traffic	0	-7	7	19	-19	0	0	0	0	19	0	7
2016 Buildout Total	0	647	22	48	537	0	0	0	0	39	0	31

INTERSECTION VOLUME DEVELOPMENT

US 76 at Proposed Driveway #2
AM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Proposed Driveway #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	400	0	0	548	0	0	0	0	0	0	0
2015 Existing Traffic	0	400	0	0	548	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
2016 Background Traffic	0	408	0	0	559	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	15%	45%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	5%
Total Project Trips	0	8	24	5	24	0	0	0	0	24	0	4
Project Trips (Total)	0	8	25	5	24	0	0	0	0	24	0	4
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2016 Buildout Total	0	416	25	5	583	0	0	0	0	24	0	4

PM PEAK HOUR

Description	US 76 Northbound			US 76 Southbound			- Eastbound			Proposed Driveway #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Balanced Volumes	0	638	0	0	535	0	0	0	0	0	0	0
2015 Existing Traffic	0	638	0	0	535	0	0	0	0	0	0	0
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
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	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%
2016 Background Traffic	0	651	0	0	546	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	15%	45%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	5%
Total Project Trips	0	15	44	10	20	0	0	0	0	20	0	3
Project Trips (Total)	0	15	44	10	20	0	0	0	0	20	0	3
Pass-By Traffic	0	-20	20	7	-7	0	0	0	0	7	0	20
2016 Buildout Total	0	646	64	17	559	0	0	0	0	27	0	23

Appendix D

Intersection Capacity Analysis

2015 Existing Conditions

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	402	0	0	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3505	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3505	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	142		93			384
Travel Time (s)	3.9		1.6			6.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	0	447	0	0	619
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	447	0	0	619
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	402	0	0	557
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	447	0	0	619
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	756	223			447	
vC1, stage 1 conf vol	447					
vC2, stage 2 conf vol	309					
vCu, unblocked vol	756	223			447	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	537	780			1110	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	298	149	206	413
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1110	1700
Volume to Capacity	0.00	0.18	0.09	0.00	0.24
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	402	0	0	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3505	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3505	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	123		100			93
Travel Time (s)	3.4		1.7			1.6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	0	402	0	0	557
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	402	0	0	557
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			

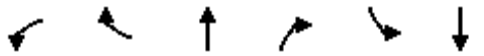
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	402	0	0	557
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	402	0	0	557
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	680	201			402	
vC1, stage 1 conf vol	402					
vC2, stage 2 conf vol	278					
vCu, unblocked vol	680	201			402	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	570	806			1153	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	268	134	186	371
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1153	1700
Volume to Capacity	0.00	0.16	0.08	0.00	0.22
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	2	400	1	6	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	50		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850				
Flt Protected	0.950					0.999
Satd. Flow (prot)	1770	1583	3505	0	0	3536
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1770	1583	3505	0	0	3536
Link Speed (mph)	25		40			40
Link Distance (ft)	278		284			100
Travel Time (s)	7.6		4.8			1.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	2	2	400	1	6	551
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	2	401	0	0	557
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.5%		ICU Level of Service A	
Analysis Period (min) 15			



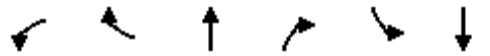
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	2	400	1	6	551
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	2	400	1	6	551
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	688	200			401	
vC1, stage 1 conf vol	400					
vC2, stage 2 conf vol	288					
vCu, unblocked vol	688	200			401	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	566	807			1154	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	267	134	190	367
Volume Left	2	0	0	6	0
Volume Right	2	0	1	0	0
cSH	1132	1700	1700	1154	1700
Volume to Capacity	0.00	0.16	0.08	0.01	0.22
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	10.4	0.0	0.0	0.3	0.0
Lane LOS	B			A	
Approach Delay (s)	10.4	0.0		0.1	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	0	401	17	3	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt			0.994			
Flt Protected	0.950					
Satd. Flow (prot)	1770	1863	3485	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	3485	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	138		540			284
Travel Time (s)	3.8		9.2			4.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	19	0	446	19	3	611
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	465	0	0	614
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			



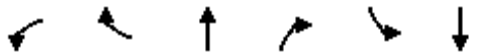
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	0	401	17	3	550
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	0	446	19	3	611
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	767	232			464	
vC1, stage 1 conf vol	455					
vC2, stage 2 conf vol	312					
vCu, unblocked vol	767	232			464	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	531	770			1093	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	0	297	167	207	407
Volume Left	19	0	0	0	3	0
Volume Right	0	0	0	19	0	0
cSH	531	1700	1700	1700	1093	1700
Volume to Capacity	0.04	0.00	0.17	0.10	0.00	0.24
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	12.0	0.0	0.0	0.0	0.2	0.0
Lane LOS	B	A			A	
Approach Delay (s)	12.0		0.0		0.1	
Approach LOS	B					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	706	0	0	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	142		93			384
Travel Time (s)	3.9		1.6			6.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	784	0	0	651
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	784	0	0	651
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.8%		ICU Level of Service A	
Analysis Period (min) 15			



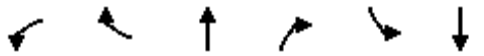
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	706	0	0	586
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	784	0	0	651
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1110	392			784	
vC1, stage 1 conf vol	784					
vC2, stage 2 conf vol	326					
vCu, unblocked vol	1110	392			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	379	607			830	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	523	261	217	434
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	830	1700
Volume to Capacity	0.00	0.31	0.15	0.00	0.26
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	706	0	3	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	123		100			93
Travel Time (s)	3.4		1.7			1.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	784	0	3	648
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	784	0	0	651
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	706	0	3	583
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	784	0	3	648
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1115	392			784	
vC1, stage 1 conf vol	784					
vC2, stage 2 conf vol	331					
vCu, unblocked vol	1115	392			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	378	607			830	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	523	261	219	432
Volume Left	0	0	0	3	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	830	1700
Volume to Capacity	0.00	0.31	0.15	0.00	0.25
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.2	0.0
Lane LOS	A			A	
Approach Delay (s)	0.0	0.0		0.1	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	48	658	3	29	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	50		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.999			
Flt Protected	0.950					0.998
Satd. Flow (prot)	1770	1583	3536	0	0	3532
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1770	1583	3536	0	0	3532
Link Speed (mph)	25		40			40
Link Distance (ft)	278		284			100
Travel Time (s)	7.6		4.8			1.7
Peak Hour Factor	0.90	0.90	0.91	0.90	0.90	0.90
Adj. Flow (vph)	12	53	723	3	32	616
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	53	726	0	0	648
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

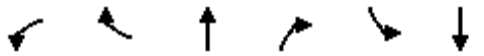
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	48	658	3	29	554
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.91	0.90	0.90	0.90
Hourly flow rate (vph)	12	53	723	3	32	616
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1097	363			726	
vC1, stage 1 conf vol	725					
vC2, stage 2 conf vol	372					
vCu, unblocked vol	1097	363			726	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	92			96	
cM capacity (veh/h)	392	634			873	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	66	482	244	237	410
Volume Left	12	0	0	32	0
Volume Right	53	0	3	0	0
cSH	779	1700	1700	873	1700
Volume to Capacity	0.08	0.28	0.14	0.04	0.24
Queue Length 95th (ft)	7	0	0	3	0
Control Delay (s)	11.8	0.0	0.0	1.6	0.0
Lane LOS	B			A	
Approach Delay (s)	11.8	0.0		0.6	
Approach LOS	B				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	20	641	70	19	546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.986			
Flt Protected	0.950					0.998
Satd. Flow (prot)	1770	1583	3490	0	0	3532
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1770	1583	3490	0	0	3532
Link Speed (mph)	25		40			40
Link Distance (ft)	138		540			284
Travel Time (s)	3.8		9.2			4.8
Peak Hour Factor	0.90	0.90	0.91	0.97	0.90	0.92
Adj. Flow (vph)	26	22	704	72	21	593
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	22	776	0	0	614
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	23	20	641	70	19	546
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.91	0.97	0.90	0.92
Hourly flow rate (vph)	26	22	704	72	21	593
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1079	388			777	
vC1, stage 1 conf vol	740					
vC2, stage 2 conf vol	339					
vCu, unblocked vol	1079	388			777	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	96			97	
cM capacity (veh/h)	393	610			836	

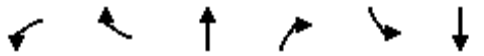
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	26	22	470	307	219	396
Volume Left	26	0	0	0	21	0
Volume Right	0	22	0	72	0	0
cSH	393	610	1700	1700	836	1700
Volume to Capacity	0.07	0.04	0.28	0.18	0.03	0.23
Queue Length 95th (ft)	5	3	0	0	2	0
Control Delay (s)	14.8	11.1	0.0	0.0	1.2	0.0
Lane LOS	B	B			A	
Approach Delay (s)	13.1		0.0		0.4	
Approach LOS	B					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

2016 Background Conditions

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	410	0	0	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3505	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3505	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	142		93			384
Travel Time (s)	3.9		1.6			6.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	0	456	0	0	631
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	456	0	0	631
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	410	0	0	568
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	456	0	0	631
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	771	228			456	
vC1, stage 1 conf vol	456					
vC2, stage 2 conf vol	316					
vCu, unblocked vol	771	228			456	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	531	775			1102	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	304	152	210	421
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1102	1700
Volume to Capacity	0.00	0.18	0.09	0.00	0.25
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	410	0	0	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3505	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3505	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	123		100			93
Travel Time (s)	3.4		1.7			1.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	0	456	0	0	631
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	456	0	0	631
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			

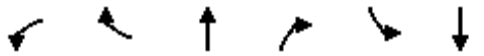
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	410	0	0	568
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	456	0	0	631
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	771	228			456	
vC1, stage 1 conf vol	456					
vC2, stage 2 conf vol	316					
vCu, unblocked vol	771	228			456	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	531	775			1102	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	304	152	210	421
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1102	1700
Volume to Capacity	0.00	0.18	0.09	0.00	0.25
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	2	408	1	6	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	50		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850				
Flt Protected	0.950					0.999
Satd. Flow (prot)	1770	1583	3505	0	0	3536
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1770	1583	3505	0	0	3536
Link Speed (mph)	25		40			40
Link Distance (ft)	278		284			100
Travel Time (s)	7.6		4.8			1.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	2	2	453	1	7	624
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	2	454	0	0	631
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	2	408	1	6	562
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	2	453	1	7	624
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	779	227			454	
vC1, stage 1 conf vol	454					
vC2, stage 2 conf vol	326					
vCu, unblocked vol	779	227			454	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	527	776			1103	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	302	152	215	416
Volume Left	2	0	0	7	0
Volume Right	2	0	1	0	0
cSH	1054	1700	1700	1103	1700
Volume to Capacity	0.00	0.18	0.09	0.01	0.24
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.3	0.0
Lane LOS	B			A	
Approach Delay (s)	10.8	0.0		0.1	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	0	409	17	3	561
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt			0.994			
Flt Protected	0.950					
Satd. Flow (prot)	1770	1863	3485	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	3485	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	138		540			284
Travel Time (s)	3.8		9.2			4.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	19	0	454	19	3	623
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	473	0	0	626
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	0	409	17	3	561
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	0	454	19	3	623
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	782	237			473	
vC1, stage 1 conf vol	464					
vC2, stage 2 conf vol	318					
vCu, unblocked vol	782	237			473	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	525	765			1085	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	0	303	170	211	416
Volume Left	19	0	0	0	3	0
Volume Right	0	0	0	19	0	0
cSH	525	1700	1700	1700	1085	1700
Volume to Capacity	0.04	0.00	0.18	0.10	0.00	0.24
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	12.1	0.0	0.0	0.0	0.2	0.0
Lane LOS	B	A			A	
Approach Delay (s)	12.1		0.0		0.1	
Approach LOS	B					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	720	0	0	598
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	142		93			384
Travel Time (s)	3.9		1.6			6.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	800	0	0	664
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	800	0	0	664
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.2%		ICU Level of Service A	
Analysis Period (min) 15			

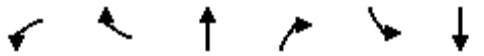
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	720	0	0	598
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	800	0	0	664
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1132	400			800	
vC1, stage 1 conf vol	800					
vC2, stage 2 conf vol	332					
vCu, unblocked vol	1132	400			800	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	372	600			819	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	533	267	221	443
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	819	1700
Volume to Capacity	0.00	0.31	0.16	0.00	0.26
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.0	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	720	0	3	595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	3539	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	123		100			93
Travel Time (s)	3.4		1.7			1.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	800	0	3	661
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	800	0	0	664
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	720	0	3	595
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	800	0	3	661
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1137	400			800	
vC1, stage 1 conf vol	800					
vC2, stage 2 conf vol	337					
vCu, unblocked vol	1137	400			800	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	371	600			819	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	533	267	224	441
Volume Left	0	0	0	3	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	819	1700
Volume to Capacity	0.00	0.31	0.16	0.00	0.26
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.2	0.0
Lane LOS	A			A	
Approach Delay (s)	0.0	0.0		0.1	
Approach LOS	A				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	49	671	3	30	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	50		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.999			
Flt Protected	0.950					0.998
Satd. Flow (prot)	1770	1583	3536	0	0	3532
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1770	1583	3536	0	0	3532
Link Speed (mph)	25		40			40
Link Distance (ft)	278		284			100
Travel Time (s)	7.6		4.8			1.7
Peak Hour Factor	0.90	0.90	0.91	0.90	0.90	0.90
Adj. Flow (vph)	12	54	737	3	33	628
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	54	740	0	0	661
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.9%		ICU Level of Service A	
Analysis Period (min) 15			

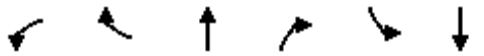
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	49	671	3	30	565
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.91	0.90	0.90	0.90
Hourly flow rate (vph)	12	54	737	3	33	628
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1120	370			741	
vC1, stage 1 conf vol	739					
vC2, stage 2 conf vol	381					
vCu, unblocked vol	1120	370			741	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	91			96	
cM capacity (veh/h)	385	627			862	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	67	492	249	243	419
Volume Left	12	0	0	33	0
Volume Right	54	0	3	0	0
cSH	768	1700	1700	862	1700
Volume to Capacity	0.09	0.29	0.15	0.04	0.25
Queue Length 95th (ft)	7	0	0	3	0
Control Delay (s)	11.9	0.0	0.0	1.6	0.0
Lane LOS	B			A	
Approach Delay (s)	11.9	0.0		0.6	
Approach LOS	B				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	23	20	654	71	19	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.986			
Flt Protected	0.950					0.998
Satd. Flow (prot)	1770	1583	3490	0	0	3532
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1770	1583	3490	0	0	3532
Link Speed (mph)	25		40			40
Link Distance (ft)	138		540			284
Travel Time (s)	3.8		9.2			4.8
Peak Hour Factor	0.90	0.90	0.91	0.97	0.90	0.92
Adj. Flow (vph)	26	22	719	73	21	605
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	22	792	0	0	626
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

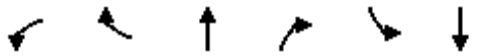


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	23	20	654	71	19	557
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.91	0.97	0.90	0.92
Hourly flow rate (vph)	26	22	719	73	21	605
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1100	396			792	
vC1, stage 1 conf vol	755					
vC2, stage 2 conf vol	345					
vCu, unblocked vol	1100	396			792	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	96			97	
cM capacity (veh/h)	386	603			824	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	26	22	479	313	223	404
Volume Left	26	0	0	0	21	0
Volume Right	0	22	0	73	0	0
cSH	386	603	1700	1700	824	1700
Volume to Capacity	0.07	0.04	0.28	0.18	0.03	0.24
Queue Length 95th (ft)	5	3	0	0	2	0
Control Delay (s)	15.0	11.2	0.0	0.0	1.1	0.0
Lane LOS	B	B			A	
Approach Delay (s)	13.2		0.0		0.4	
Approach LOS	B					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

2016 Build-out Conditions



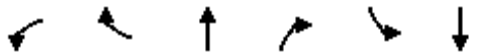
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	28	412	8	16	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.997			
Flt Protected	0.950					0.999
Satd. Flow (prot)	1770	1583	3529	0	0	3536
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1770	1583	3529	0	0	3536
Link Speed (mph)	25		40			40
Link Distance (ft)	278		349			551
Travel Time (s)	7.6		5.9			9.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	31	458	9	18	627
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	31	467	0	0	645
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	28	412	8	16	564
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	31	458	9	18	627
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	811	233			467	
vC1, stage 1 conf vol	462					
vC2, stage 2 conf vol	349					
vCu, unblocked vol	811	233			467	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	96			98	
cM capacity (veh/h)	513	769			1091	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	27	31	305	161	227	418
Volume Left	27	0	0	0	18	0
Volume Right	0	31	0	9	0	0
cSH	513	769	1700	1700	1091	1700
Volume to Capacity	0.05	0.04	0.18	0.09	0.02	0.25
Queue Length 95th (ft)	4	3	0	0	1	0
Control Delay (s)	12.4	9.9	0.0	0.0	0.8	0.0
Lane LOS	B	A			A	
Approach Delay (s)	11.0		0.0		0.3	
Approach LOS	B					

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	4	416	25	5	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.983		0.991			
Flt Protected	0.958					
Satd. Flow (prot)	1754	0	3507	0	0	3539
Flt Permitted	0.958					
Satd. Flow (perm)	1754	0	3507	0	0	3539
Link Speed (mph)	25		40			40
Link Distance (ft)	275		540			349
Travel Time (s)	7.5		9.2			5.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	4	462	28	6	648
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	490	0	0	654
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	4	416	25	5	583
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	4	462	28	6	648
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	811	245			490	
vC1, stage 1 conf vol	476					
vC2, stage 2 conf vol	335					
vCu, unblocked vol	811	245			490	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	514	755			1070	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	31	308	182	221	432
Volume Left	27	0	0	6	0
Volume Right	4	0	28	0	0
cSH	538	1700	1700	1070	1700
Volume to Capacity	0.06	0.18	0.11	0.01	0.25
Queue Length 95th (ft)	5	0	0	0	0
Control Delay (s)	12.1	0.0	0.0	0.3	0.0
Lane LOS	B			A	
Approach Delay (s)	12.1	0.0		0.1	
Approach LOS	B				

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	39	31	647	22	48	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.995			
Flt Protected	0.950					0.996
Satd. Flow (prot)	1770	1583	3522	0	0	3525
Flt Permitted	0.950					0.996
Satd. Flow (perm)	1770	1583	3522	0	0	3525
Link Speed (mph)	25		40			40
Link Distance (ft)	278		349			551
Travel Time (s)	7.6		5.9			9.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	43	34	719	24	53	597
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	34	743	0	0	650
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	39	31	647	22	48	537
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	43	34	719	24	53	597
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1136	372			743	
vC1, stage 1 conf vol	731					
vC2, stage 2 conf vol	405					
vCu, unblocked vol	1136	372			743	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	94			94	
cM capacity (veh/h)	381	626			860	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	43	34	479	264	252	398
Volume Left	43	0	0	0	53	0
Volume Right	0	34	0	24	0	0
cSH	381	626	1700	1700	860	1700
Volume to Capacity	0.11	0.06	0.28	0.16	0.06	0.23
Queue Length 95th (ft)	10	4	0	0	5	0
Control Delay (s)	15.7	11.1	0.0	0.0	2.5	0.0
Lane LOS	C	B			A	
Approach Delay (s)	13.6		0.0		1.0	
Approach LOS	B					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	23	646	64	17	559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.937		0.987			
Flt Protected	0.974					0.999
Satd. Flow (prot)	1700	0	3493	0	0	3536
Flt Permitted	0.974					0.999
Satd. Flow (perm)	1700	0	3493	0	0	3536
Link Speed (mph)	25		40			40
Link Distance (ft)	275		540			349
Travel Time (s)	7.5		9.2			5.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	26	718	71	19	621
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	789	0	0	640
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.7%		ICU Level of Service A	
Analysis Period (min) 15			

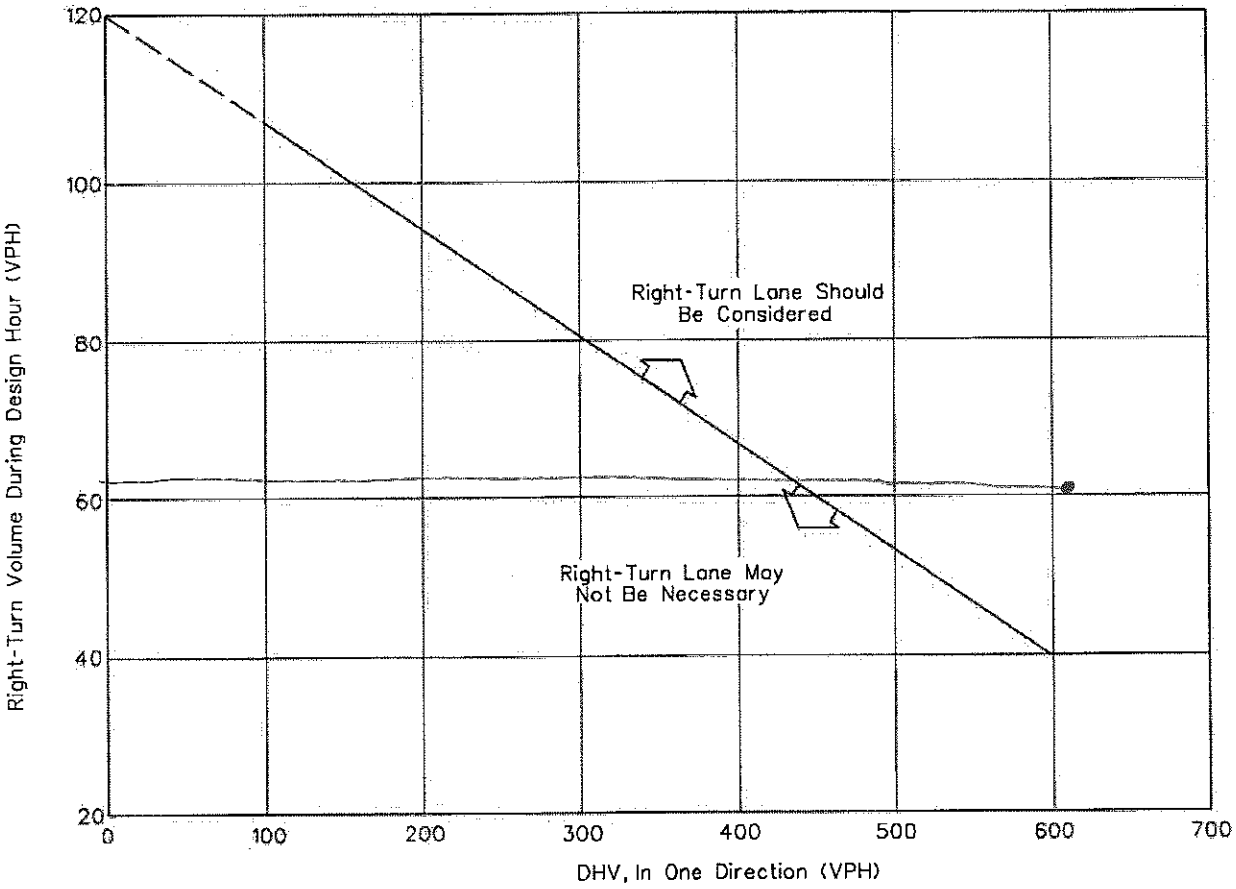
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	23	646	64	17	559
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	26	718	71	19	621
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1102	394			789	
vC1, stage 1 conf vol	753					
vC2, stage 2 conf vol	348					
vCu, unblocked vol	1102	394			789	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	96			98	
cM capacity (veh/h)	386	605			827	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	56	479	310	226	414
Volume Left	30	0	0	19	0
Volume Right	26	0	71	0	0
cSH	463	1700	1700	827	1700
Volume to Capacity	0.12	0.28	0.18	0.02	0.24
Queue Length 95th (ft)	10	0	0	2	0
Control Delay (s)	13.8	0.0	0.0	1.0	0.0
Lane LOS	B			A	
Approach Delay (s)	13.8	0.0		0.4	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

Turn Lane Warrants



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.

Example

Given: Design Speed = 35 miles per hour (mph)
DHV = 250 vehicles per hour (vph)
Right Turns = 100 vehicles per hour (vph)

Problem: Determine if a right-turn lane is necessary.

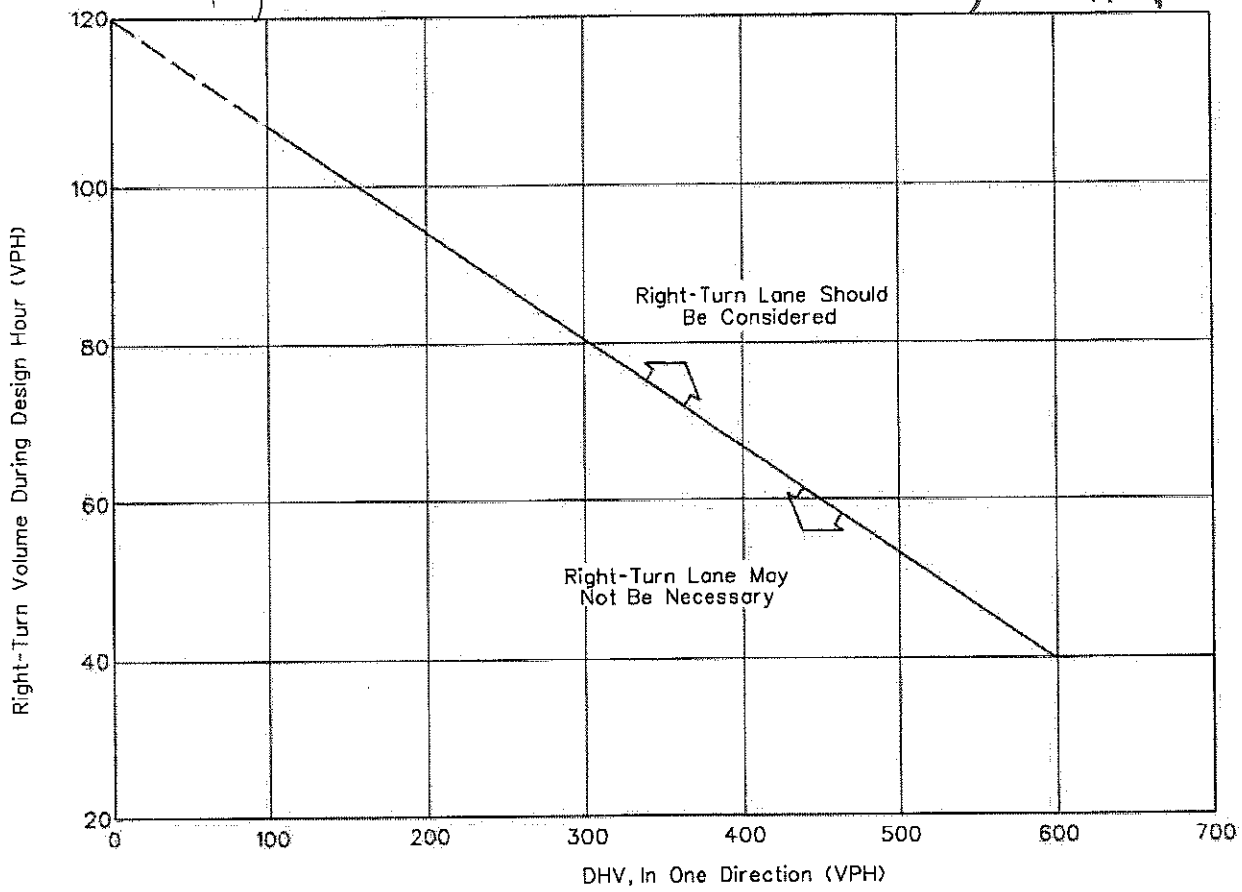
Solution: To read the vertical axis, use 100 – 20 = 80 vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

max volume = 64
DHV = 646
Right-Turn Lane may be considered

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

Figure 15.5A

Right - Turn Larrat for Day - #1



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.

Max Volume = 22

Example

Given: Design Speed = 35 miles per hour (mph)
DHV = 250 vehicles per hour (vph)
Right Turns = 100 vehicles per hour (vph)

22 < 40

Right - Turn lane not considered.

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use 100 – 20 = 80 vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

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

Figure 15.5A